Carrier Voice over IP Performance Management Operational Measurements Reference Volume 2

ATTENTION

The Carrier Voice over IP Performance Management Operational Measurements Reference document uses four volumes to describe operational measurements (listed alphabetically) that provide information on how to load various components of the DMS switch.

What's new in (I)SN09?

The following new OMs have been added to this volume:

- Halayer
- INSCTP
- IPCM
- MediaPortal
- MPCP
- MSGV

Introduction

Operational Measurements (OMs) provide information on how to load various components of the DMS switch. Periodic scans of switch parts and activities allow you to gather OM information. Specified parameters

define the collection, storage, and transmission of data. OMs provide the following types of data:

- description
- registers
  - — event counts: peg counts are registers that increase each time an event occurs.
  - — usage counts: usage counts scan or sample equipment at equal intervals. These counts increase registers when the scan detects equipment in a specific state.
- associated OM groups

OM information can appear on a terminal or printer. The system can transmit the information to a recording device for additional processing. To request data display at a specified output device, you can enter user commands. You can enter data in tables to schedule the output of the data in advance.

For more information on how to set up an OM system, refer to the *DMS-100 Family Basic Administration Procedures,* 297-1001-300.

In this document

The OMs in an office are dynamic and depend on the switch type(s). For comprehensiveness, this document describes OMs available in an office type of OFFCOMB. The document also describes OMs that are associated with specific components and OMs that are common in Carrier Voice over IP and DMS.

The following table lists the OM groups alphabetically (from F to M) and whether they are associated with a component or common in Carrier Voice over IP and DMS. For a description of an OM group, click on the OM group name.

OM groups available in Carrier Voice over IP (Sheet 1 of 7)

Name	Description	Device, Manager or Application
FBTRAFF	F-bus Platform Traffic	Common
FC	Flexible Calling	Common
FCDRALG2	Flexible Call Detail Record Algorithm (overflow for OM group FCDRALGR)	Common

OM groups available in Carrier Voice over IP (Sheet 2 of 7)

Name	Description	Device, Manager or Application
FCDRALGR	Flexible Call Detail Record (FlexCDR) Algorithm	Common
FCDRTM1E	Flexible Call Detail Record Template (overflow from OM group FCDRTMP1)	Common
FCDRTM2E	Flexible Call Detail Record Template (overflow for OM group FCDRTMP2)	Common
FCDRTMP1	Flexible Call Detail Record Template (0 through 31)	Common
FCDRTMP2	Flexible Call Detail Record Template (32 through 63)	Common
FCNF	FBS Conference	Common
FPDABM	File Processor Dual-access Buffer Memory Counts	Common
FPDEVICE	File Processor Storage Device Counts	Common
FPSCSI	FP SCSI Bus Counts	Common
FRSAGENT	Frame Relay Service Agent	Common
FRSPM	Frame Relay Service Peripheral Module	Common
FRT1	Frame Relay T1 Carrier	Common
FTAM	File Transfer Access and Management	Common
FTROM	Feature Data Block	Common
FTRQ	Feature Queue Software Resources	Common
FTS	FAX-Thru Service	Common
GIACGRP	Group Intercom All Call	Common
GTID	Generic Logical Terminal Identifier	Common
HALayer	High Availability Layer	MCS 5200
GWOVLOM	Gateway Overload OM	MG 9000

OM groups available in Carrier Voice over IP (Sheet 3 of 7)

Name	Description	Device, Manager or Application
HDBOM	History Data Block OM	Common
HFPOM	HFP CPU Occupancy and Layer 2 OMs	Common
HPCBASIC	High Probability Completion - Basic	Common
HPCTRKCGP	High Probability Completion Trunk Group	Common
HTR	Hard to Reach codes	Common
HUNT	Hunt (group)	Common
IBNAC	Integrated Business Network Attendant Console	Common
IBNGRP	Integrated Business Network Group	Common
IBNSG	Integrated Business Network Subgroup	Common
IBNSGLDN	Integrated Business Network Subgroup Listed Directory Number	Common
ILDBD	ISDN Line Drawer BD Channels	Common
ILDBRA	ISDN Line Drawer Basic Rate Access	Common
ILDMSGCT	ISDN Line Drawer Message Counter	Common
ILDOVLD	ISDN Line Drawer Overload	Common
ILDSTAT	ISDN Line Drawer Status	Common
ILR	International Line Restriction	Common
ILRCLASS	International Line Restrictions Class	Common
ININTWRK	Intelligent Network Interworking	Common
INSCTP	AIN (IN) messages using the Stream Control Transmission Protocol (SCTP)	Common
IOC	Input/output Controller Maintenance Summary	Common
IOSYS	Input and Output System	Common

OM groups available in Carrier Voice over IP (Sheet 4 of 7)

Name	Description	Device, Manager or Application
IPCM	IP Client Manager	MCS 5200
IS41TOPS	IS-41 TOPS	Common
ISA	In-Session Activation	Common
ISDD	Incoming start-to-dial delay	Common
ISDNPDOM	ISDN parameter download	Common
ISGBD	ISDN service group Bd D-channel performance summary	Common
ISGBRA	ISDN service group basic rate access channel performance summary	Common
ISGCPU	ISDN services group CPU occupancy	Common
ISGOVLD	ISDN Services Group Overload	Common
ISUPCGRP	ISUP Circuit Group Availability	Common
ISUPCKTA	ISUP Circuit Availability	Common
ISUPCONG	ISUP Congestion	Common
ISUPCONN	Integrated Services User Part connection	Common
ISUPERRS	ISDN User Part Errors	Common
ISUPUSAG	Integrated Services User Part utilization	Common
IWBM	Interworking Bridge Management System	IW SPM ATM
KSHUNT	Key Short Hunt	Common
LIDBCCV	Line Information Database Calling Card Information	Common
LDS	Long Distance Signal	Common
LINAC	Line Access Measurements	Common
LINEHAZ	Line Hazards	Common

OM groups available in Carrier Voice over IP (Sheet 5 of 7)

Name	Description	Device, Manager or Application
LM	Line Module Maintenance Summary	
LMD	Line Traffic	MG 9000
LMSCPUST	Local Message Switch Central Processing Unit Status	Common
LMSMEM	Local Message Switch Memory	Common
LNP	Local Number Portability	Common
LNREDIAL	Last Number Redial	Common
LOGS	Log Messages	Common
M20CARR1	M20 Carrier 1	Common
M20CARR2	M20 Handling 2	Common
MACHCONG	Machine Congestion	Common
MDCWAKUP	Wake-up Call	Common
MDSACT	Message Delivery System Activity	Common
MDSSTATS	MDS Statistics	Common
MediaPortal	Border Control Point	MCS 5200
MNATM	Maintenance ATM interface performance statistics	MG 4000 DPT SPM IW SPM ATM
MNATMA1	Maintenance interface performance statistics AAL1	DPT SPM IW SPM ATM MG 4000
MNATMA5	Maintenance interface performance statistics for ATM Permanent Virtual Connection (PVC) AAL5	MG 4000
MNATMVC	Maintenance ATM Virtual Circuits	MG 4000
MNGEMLNK	Manage Measurements - Gigabit Ethernet Link	MG 4000 IW SPM ATM

OM groups available in Carrier Voice over IP (Sheet 6 of 7)

Name	Description	Device, Manager or Application
MNGEMTRF	Manage Measurements - Nodal Traffic	MG 4000 IW SPM ATM
MPB	Multi-party Bridge	Common
MPCBASE	Multiprotocol Controller Base Software	Common
MPCFASTA	Multi-protocol Controller Fast Applications	Common
MPCLINK2	Multiprotocol Controller Link 2	Common
MPCLINK3	Multiprotocol Controller Link 3	Common
MPCP	Border Control Point Connection Performance	MCS 5200
MPHCON	Multiple Position Hunt Console	Common
MPHGRP	Multiple Position Hunt Console Group	Common
MS	Message Switch	Common
MSCHAIN	Message Switch Chain	Common
MSCHNLK	Message Switch Channelized Link	Common
MSFBUS	Message Switch Frame Transport Bus	Common
MSFBUSTP	Message Switch Frame Transport Bus Taps	Common
MSGPSOC	P-Side Messaging Occupancy	Common
MSGV	Message Validator	MCS 5200
MTA	Metallic Test Access	Common
MTU	Magnetic Tape Unit Maintenance Summary	Common
MULTAUTH	Multiple Calls Per Authcode	Common
MWICTCAP	Message Waiting Indicator for Transaction Capabilities	Common

OM groups available in Carrier Voice over IP (Sheet 7 of 7)

Name	Description	Device, Manager or Application
MWTCAR	Message waiting call request	Common
MWTCAR2	Message Waiting Call Request	Common

Supplementary OMs

The following documents reference OMs that do not appear in this document:

- *North American DMS-100 Operations Measurements Reference Manual,* 297-8021-814
- *Carrier Voice over IP SN07 OSS (ATM and IP) Advance Feature Guide,* PLN-07AT-OSS
- *Carrier Voice over IP Fault Management Logs Reference,* NN10275-909

FBTRAFF

Description

OM group F-bus Platform Traffic (FBTRAFF) monitors traffic OMs for the following F-bus platforms in a DMS office:

- link interface unit (LIU7)
- high-speed link interface unit (HLIU)
- high-speed link router (HSLR)
- Ethernet interface unit (EIU)
- X.25 link interface unit (XLIU)
- application processing unit (APU)
- voice processing unit (VPU)
- network interface unit (NIU)
- frame relay transport unit (FRIU)

FBRAFF registers monitor:

- total number of packets sent from the ASU to the F-bus host. Data that travels from the ASU to the F-bus host travels in the transmit direction.
- total number of packets sent from the F-bus host to the ASU. Data that travels from the F-bus host to the ASU travels in the receive direction.
- total number of octets that travel in the transmit direction.
- total number of octets that travel in the receive direction.
- percentage of total F-bus bandwidth occupied by transmit throughput.
- percentage of total F-bus bandwidth occupied by receive throughput.
- percentage of total F-bus bandwidth occupied by the sum of transmit and receive throughput.

Each item is measured separately for F-bus 0 and F-bus 1.

The following table lists the key and info fields associated with OM group FBTRAFF.

Key field	Info field
FBUS_CONTROLLERS	HOST_INFO

Related functional groups

There are no functional groups associated with OM group FBTRAFF.

Registers

The following table lists the registers associated with OM group FBTRAFF and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group FBTRAFF

Register name	Measures
TXPK1FB0	Transmit packets 1 F-bus 0
RXPK1FB0	Received packets 1 F-bus 0
TXPK1FB1	Transmit packets 1 F-bus 1
RXPK1FB1	Received packets 1 F-bus 1
TXOC1FB0	Transmit octets 1 F-bus 0
RXOC1FB0	Received octets 1 F-bus 0
TXOC1FB1	Transmit octets 1 F-bus 1
RXOC1FB1	Received octets 1 F-bus 1
TXPCFB0	Percentage transmit on F-bus 0
RXPCFB0	Percentage received on F-bus 0
TXPCFB1	Transmitted percentage on F-bus 1
RXPCFB1	Received percentage on F-bus 1
TXRPCFB0	Transmitted and received percentage of F-bus 0
TXRPCFB1	Transmitted and received percentage of F-bus 1

TXPK1FB0

Register type
Peg

Description
TXPK1FB0 is the first register of the total number of transmit packets that travel over F-bus 0. The F-bus host is the message switch (MS) for the single shelf link peripheral processor (SSLPP) and for the DMS SuperNode SE (SNSE). The F-bus host is the local message switch (LMS) for the link peripheral processor (LPP) or enhanced link peripheral processor (ELPP). The value range of this register is 0 to 32 767.

Associated registers
None

Extension registers
TXPK2FB0, TXPK3FB0

Associated logs
None

RXPK1FB0

Register type
Peg

Description
RXPK1FB0 is the first register of the total number of receive packets that travel over F-bus 0. The F-bus host is the MS for the SSLPP and for the SNSE. The F-bus host is the LMS for the LPP or ELPP. The value range of this register is 0 to 32 767.

Associated registers
None

Extension registers
RXPK2FB0, RXPK3FB0

Associated logs
None

TXPK1FB1

Register type
Peg

Description
TXPK1FB1 is the first register of the total number of transmit packets that travel over F-bus 1. The F-bus host is the MS for the SSLPP and for the SNSE. The F-bus host is the LMS for the LPP or ELPP. The value range of this register is 0 to 32 767.

Associated registers
None

Extension registers
RXPK2FB1, RXPK3FB1

Associated logs
None

RXPK1FB1

Register type
Peg

Description
RXPK1FB1 is the first register of the total number of receive packets that travel over F-bus 1. The F-bus host is the MS for the SSLPP and for the SNSE. The F-bus host is the LMS for the LPP or ELPP. The value range of this register is 0 to 32 767.

Associated registers
None

Extension registers
RXPK2FB1, RXPK3FB1

Associated logs
None

TXOC1FB0

Register type
Peg

Description
TXOC1FB0 is the first register of the total number of transmit octets that travel over F-bus 0. The F-bus host is the MS for the SSLPP and for the SNSE. The F-bus host is the LMS for the LPP or ELPP. The value range of this register is 0 to 32 767.

Associated registers
None

Extension registers
TXOC2FB0, TXOC3FB0

Associated logs
None

RXOC1FB0

Register type
Peg

Description
RXOC1FB0 is the first register of the total number of receive octets that travel over F-bus 0. The F-bus host is the MS for the SSLPP and for the SNSE. The F-bus host is the LMS for the LPP or ELPP. The value range of this register is 0 to 32 767.

Associated registers
None

Extension registers
RXOC2FB0, RXOC3FB0

Associated logs
None

TXOC1FB1

Register type
Peg

Description
TXOC1FB1 is the first register of the total number of transmit octets that travel over F-bus 1. The F-bus host is the MS for the SSLPP and for the SNSE. The F-bus host is the LMS for the LPP or ELPP. The value range of this register is 0 to 32 767.

Associated registers
None

Extension registers
TXOC2FB1, TXOC3FB1

Associated logs
None

RXOC1FB1

Register type
Peg

Description
RXOC1FB1 is the first register of the total number of receive octets that travel over F-bus 1. The F-bus host is the MS for the SSLPP and for the SNSE. The F-bus host is the LMS for the LPP or ELPP. The value range of this register is 0 to 32 767.

Associated registers
None

Extension registers
RXOC2FB1, RXOC3FB1

Associated logs
None

TXPCFB0

Register type
Peg

Description
TXPCFB0 monitors the percentage of total F-bus 0 bandwidth occupied by transmit traffic. The F-bus host is the MS for the SSLPP and for the SNSE. The F-bus host is the LMS for the LPP or ELPP. Total bandwidth of an ELPP is up to three times the bandwidth of an LPP. The value range of this register is 0 to 100.

Associated registers
TXOC1FB0, TXOC2FB0, TXOC3FB0

Extension registers
None

Associated logs
None

RXPCFB0

Register type
Peg

Description
RXPCFB0 monitors the percentage of total F-bus 0 bandwidth occupied by receive traffic. The F-bus host is the MS for the SSLPP and for the SNSE. The F-bus host is the LMS for the LPP or ELPP. Total bandwidth of an ELPP is up to three times the bandwidth of an LPP. The value range of this register is 0 to 100.

Associated registers
RXOC1FB0, RXOC2FB0, RXOC3FB0

Extension registers
None

Associated logs
None

TXPCFB1

Register type
Peg

Description
TXPCFB1 monitors the percentage of total F-bus 1 bandwidth occupied by transmit and receive traffic. The F-bus host is the MS for the SSLPP and for the SNSE. The F-bus host is the LMS for the LPP or ELPP. Total bandwidth of an ELPP is up to three times the bandwidth of an LPP. The value range of this register is 0 to 100.

Associated registers
TXOC1FB1, TXOC2FB1, TXOC3FB1

Extension registers
None

Associated logs
None

RXPCFB1

Register type
Peg

Description
RXPCFB1 monitors the percentage of total F-bus 1 bandwidth occupied by transmit and receive traffic. The F-bus host is the MS for the SSLPP and for the SNSE. The F-bus host is the LMS for the LPP or ELPP.Total bandwidth of an ELPP is up to three times the bandwidth of an LPP. The value range of this register is 0 to 100.

Associated registers
RXOC1FB1, RXOC2FB1, RXOC3FB1

Extension registers
None

Associated logs
None

TXRPCFB0

Register type
Peg

Description
TXRPCFB0 monitors the percentage of total F-bus 0 bandwidth occupied by transmit and receive traffic. The F-bus host is the MS for the SSLPP and for the SNSE. The F-bus host is the LMS for the LPP or ELPP. Total bandwidth of an ELPP is up to three times the bandwidth of an LPP. The value range of this register is 0 to 100.

Associated registers
TXOC1FB0, TXOC2FB0, TXOC3FB0, RXOC1FB0, RXOC2FB0, RXOC3FB0

Extension registers
None

Associated logs
None

TXRPCFB1

Register type
Peg

Description
TXRPCFB1 monitors the percentage of total F-bus 1 bandwidth occupied by transmit and receive traffic. The F-bus host is the MS for the SSLPP and for the SNSE. The F-bus host is the LMS for the LPP or ELPP. Total bandwidth of an ELPP is up to three times the bandwidth of an LPP. The value range of this register is 0 to 100.

Associated registers
TXOC1FB1, TXOC2FB1, TXOC3FB1, RXOC1FB1, RXOC2FB1, RXOC3FB1

Extension registers
None

Associated logs
None

FC

Description

OM group Flexible Calling (FC) counts the number of attempts to use Flexible Calling to transfer a conference call.

The following table lists the key and info fields associated with OM group FC.

Key field	Info field
customer group	None

Related functional groups

There are no functional groups associated with OM group FC.

Registers

The following table lists the registers associated with OM group FC and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group FC

Register name	Measures
FCXCONAT	Flexible calling transfer attempts involving a conference
FCXCONSU	Flexible calling transfer successes involving a conference
FCXCONFL	Flexible calling transfer failures involving a conference
FCXC2CAT	Flexible calling call to call transfer attempts
FCXC2CSU	Flexible calling call to call transfer successes
FCXC2CFL	Flexible calling call to call transfer failures

FCXCONAT

Register type
Peg

Description
FCXCONAT counts the number of attempts to use Flexible Calling to transfer a conference.

Associated registers
None

Extension registers
FCXCONA2

Associated logs
None

FCXCONSU

Register type
Peg

Description
FCXCONSU counts the number of successful Flexible Calling transfers of two 2-party calls.

Associated registers
None

Extension registers
None

Associated logs
None

FCXCONFL

Register type
Peg

Description
FCXCONFL counts the number of times a Flexible Calling Conference transfer fails for one of the following reasons:

- different call transfer requirements between the controlling station and the transferred station
- not enough supervision on the trunks
- reference a call type that is not permitted

Associated registers
None

Extension registers
None

Associated logs
None

FCXC2CAT

Register type
Peg

Description
FCXC2CAT counts the number of attempts to use Flexible Calling to transfer two 2-party calls.

Associated registers
None

Extension registers
FCXC2CA2

Associated logs
None

FCXC2CSU

Register type
Peg

Description
FCXC2CSU counts the number of successful Flexible Calling transfers of two 2-party calls.

Associated registers
None

Extension registers
None

Associated logs
None

FCXC2CFL

Register type
Peg

Description
FCXC2CFL counts the number of times a Flexible Calling transfer of two 2-party calls fails. A Flexible Calling transfer of two 2-party calls fails for one of the following reasons:

- different call transfer requirements between the controlling station and the transferred station
- not enough supervision on the trunks
- reference to call type that is not permitted

Associated registers
None

Extension registers
None

Associated logs
None

FCDRALG2

Description

FCDRALG2 is used for an overflow extension registers for OM group Flexible Call Detail Record (FlexCDR) Algorithm (FCDRALGR). FCDRALG2 is pegged only when the UBFR0008 SOC is ON.

FCDRALG2 applies only to DMS.

FCDRALGR provides OMs for counting the CDR template method used to format the CDRs. For additional information on billing, refer to the *"UCS DMS-250 Billing Records Application Guide".*

Each register in FCDRALG2 relates to a register in FCDRALGR. When the register in FCDRALGR reaches 65535, the associated extension register in FCDRALG2 increments. The register in FCDRALG2 resets to zero (0) when it overflows. For example:

```
FCDRALGR; Register FIXED
FCDRALG2; Register FIXED
```

The following table lists the key and info fields associated with OM group FCDRALG2. FCDRALG2 provides eight (8) pre-defined tuples. A value of one (1) in the FCDRALG2 overflow register indicates 65535 pegs. A value of one (1) in the FCDRALGR register indicates one (1) peg.

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group FCDRALG2.

Registers

FCDRALG2 provides eight (8) registers (INTERNAL through RTEATTR). *These registers only apply to DMS.*

FCDRALGR

Description

OM group Flexible Call Detail Record (FlexCDR) Algorithm (FCDRALGR) group provides OMs for counting the CDR template method used to format the CDRs. For additional information on billing, refer to the *UCS DMS-250 Billing Records Application Guide.*

FCDRALG2 is used for register overflows from OM group FCDRALGR.

The following table lists the key and info fields associated with OM group FCDRALGR.

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group FCDRALGR.

Registers

The following table lists the registers associated with OM group FCDRALGR and what they measure. For a description of a register, click on the register name.

Registers for OM group FCDRALGR

Register name	Measures
ICF	Internal CDR Format
CALLTYPE	Calltype Flexdial
SNV	Subscriber Number Validation
TRK	TRKGRP/TRKFEAT
AIN	AIN Indicator
FIXED	Fixed
BESTFIT	Best fit
RTEATTR	Table RTEATTR

ICF

Register type
Peg

Description
ICF counts the number of times the internal formatting algorithm is used when selecting a formatting method.

Associated registers
None

Extension registers
None

Associated logs
None

CALLTYPE

Register type
Peg

Description
CALLTYPE counts the number of times the CDR format is selected through call processing by a template provisioned using the CDRTMPLT option for the CALLTYPE collectible using the FlexDial framework.

Associated registers
None

Extension registers
None

Associated logs
None

SNV

Register type
Peg

Description
SNV counts the number of times the CDR format is selected through call processing by a template provisioned using the CDRTMPLT option in tables AUTHCODU, AUTHCDU2, AUTHCDU3, AUTHCDU4, AUTHCDU5, or ANISCUSP.

Associated registers
None

Extension registers
None

Associated logs
None

TRK

Register type
Peg

Description
TRK counts the number of times the CDR format is selected through call processing by a template provisioned using the CDRTMPLT option in tables TRKGRP or TRKFEAT.

Associated registers
None

Extension registers
None

Associated logs
None

AIN

Register type
Peg

Description
This register is not pegged in the UCS06 release.

Associated registers
None

Extension registers
None

Associated logs
None

FIXED

Register type
Peg

Description
FIXED counts the number of times a fixed CDR template is used to format the CDR.

Associated registers
None

Extension registers
None

Associated logs
None

BESTFIT

Register type
Peg

Description
BESTFIT counts the number of times a best fit analysis is used to determine the CDR template used to format the CDR.

Associated registers
None

Extension registers
None

Associated logs
None

RTEATTR

Register type
Peg

Description
RTEATTR counts the number of times the CDR format is selected through call processing by a template provisioned using the CDRTMPLT option in table RTEATTR.

Associated registers
None

Extension registers
None

Associated logs
None

FCDRTM1E

Description

OM group FCDRTM1E is used for register overflows from OM group Flexible Call Detail Record Template (FCDRTMP1). FCDRTM1E is pegged only when the UBFR0008 SOC is ON.

FCDRTM1E applies only to DMS.

FCDRTMP1 counts the number of times templates 0 through 31 are used to format a CDR. Each register in FCDRTM1E relates to a register in FCDRTMP1. When the register in FCDRTMP1 reaches 65535, the associated extension register in FCDRTM1E increments. The register in FCDRTMP1 resets to zero (0) when it overflows. For example:

```
FCDRTMP1; Register TMPLT_9
FCDRTM1E; Register TMPLT_9
```

The following table lists the key and info fields associated with OM group FCDRTM1E. FCDRTM1E provides 32 pre-defined tuples. A value of one (1) in the FCDRTM1E overflow register indicates 65535 pegs. A value of one (1) in the FCDRTMP1 register indicates one (1) peg.

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group FCDRTM1E.

Registers

FCDRTM1E provides 32 registers (TMPLT_0 through TMPLT_31). For details about the registers, refer to FCDRTMP1.

These registers only apply to DMS.

FCDRTM2E

Description

OM group FCDRTM2E is used for overflow registers from OM group Flexible Call Detail Record Template (FCDRTMP2). FCDRTM2E is pegged only when the UBFR0008 SOC is ON.

FCDRTM2E applies only to DMS.

FCDRTMP2 counts the number of times templates 32 through 63 are used to format a CDR. Each register in FCDRTM2E relates to a register in FCDRTMP2. When the register in FCDRTMP2 reaches 65535, the associated extension register in FCDRTM2E increments. The register in FCDRTMP2 resets to zero (0) when it overflows. For example:

```
FCDRTMP2; Register TMPLT_21
FCDRTM2E; Register TMPLT_21
```

The following table lists the key and info fields associated with OM group FCDRTM2E. FCDRTM2E provides 32 pre-defined tuples. A value of one (1) in the FCDRTM2E overflow register indicates 65535 pegs. A value of one (1) in the FCDRTMP2 register indicates one (1) peg.

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group FCDRTM2E.

Registers

FCDRTM2E provides 32 registers (TMPLT_32 through TMPLT_63). For details about the registers, refer to FCDRTMP2.

These registers only apply to DMS.

FCDRTMP1

Description

OM group Flexible Call Detail Record Template (FCDRTMP1) counts the number of times templates 0 through 31 are used to format a CDR. (Similarly, FCDRTMP2 provides counts for templates 32 through 63.) FCDRTM1E is used for register overflows from FCDRTMP1.

The following table lists the key and info fields associated with OM group FCDRTMP1.

Key field	Info field
None	FCDR_TMPLT1_FLDS

Related functional groups

There are no functional groups associated with FCDRTMP1.

Registers

The following table lists the registers associated with OM group FCDRTMP1 and what they measure. For a description of a register, click on the register name.

Registers for OM group FCDRTMP1 (Sheet 1 of 2)

Register name	Measures
TMPLT_0	Template 0
TMPLT_1	Template 1
TMPLT_2	Template 2
TMPLT_3	Template 3
TMPLT_4	Template 4
TMPLT_5	Template 5
TMPLT_6	Template 6
TMPLT_7	Template 7
TMPLT_8	Template 8
TMPLT_9	Template 9

Registers for OM group FCDRTMP1 (Sheet 2 of 2)

Register name	Measures
TMPLT_10	Template 10
TMPLT_11	Template 11
TMPLT_12	Template 12
TMPLT_13	Template 13
TMPLT_14	Template 14
TMPLT_15	Template 15
TMPLT_16	Template 16
TMPLT_17	Template 17
TMPLT_18	Template 18
TMPLT_19	Template 19
TMPLT_20	Template 20
TMPLT_21	Template 21
TMPLT_22	Template 22
TMPLT_23	Template 23
TMPLT_24	Template 24
TMPLT_25	Template 25
TMPLT_26	Template 26
TMPLT_27	Template 27
TMPLT_28	Template 28
TMPLT_29	Template 29
TMPLT_30	Template 30
TMPLT_31	Template 31

TMPLT_0

Register type
Peg

Description
TMPLT_0 counts the number of times the template at index 0 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_1

Register type
Peg

Description
TMPLT_1 counts the number of times the template at index 1 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_2

Register type
Peg

Description
TMPLT_2 counts the number of times the template at index 2 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_3

Register type
Peg

Description
TMPLT_3 counts the number of times the template at index 3 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_4

Register type
Peg

Description
TMPLT_4 counts the number of times the template at index 4 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_5

Register type
Peg

Description
TMPLT_5 counts the number of times the template at index 5 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_6

Register type
Peg

Description
TMPLT_6 counts the number of times the template at index 6 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_7

Register type
Peg

Description
TMPLT_7 counts the number of times the template at index 7 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_8

Register type
Peg

Description
TMPLT_8 counts the number of times the template at index 8 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_9

Register type
Peg

Description
TMPLT_9 counts the number of times the template at index 9 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_10

Register type
Peg

Description
TMPLT_10 counts the number of times the template at index 10 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_11

Register type
Peg

Description
TMPLT_11 counts the number of times the template at index 11 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_12

Register type
Peg

Description
TMPLT_12 counts the number of times the template at index 12 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_13

Register type
Peg

Description
TMPLT_13 counts the number of times the template at index 13 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_14

Register type
Peg

Description
TMPLT_14 counts the number of times the template at index 14 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_15

Register type
Peg

Description
TMPLT_15 counts the number of times the template at index 15 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_16

Register type
Peg

Description
TMPLT_16 counts the number of times the template at index 16 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_17

Register type
Peg

Description
TMPLT_17 counts the number of times the template at index 17 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_18

Register type
Peg

Description
TMPLT_18 counts the number of times the template at index 18 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_19

Register type
Peg

Description
TMPLT_19 counts the number of times the template at index 19 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_20

Register type
Peg

Description
TMPLT_20 counts the number of times the template at index 20 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_21

Register type
Peg

Description
TMPLT_21 counts the number of times the template at index 21 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_22

Register type
Peg

Description
TMPLT_22 counts the number of times the template at index 22 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_23

Register type
Peg

Description
TMPLT_23 counts the number of times the template at index 23 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_24

Register type
Peg

Description
TMPLT_24 counts the number of times the template at index 24 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_25

Register type
Peg

Description
TMPLT_25 counts the number of times the template at index 25 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_26

Register type
Peg

Description
TMPLT_26 counts the number of times the template at index 26 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_27

Register type
Peg

Description
TMPLT_27 counts the number of times the template at index 27 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_28

Register type
Peg

Description
TMPLT_28 counts the number of times the template at index 28 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_29

Register type
Peg

Description
TMPLT_29 counts the number of times the template at index 29 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_30

Register type
Peg

Description
TMPLT_30 counts the number of times the template at index 30 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_31

Register type
Peg

Description
TMPLT_31 counts the number of times the template at index 31 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

FCDRTMP2

Description

OM group Flexible Call Detail Record Template (FCDRTMP2) counts the number of times templates 32 through 63 are used to format a CDR. (Similarly, FCDRTMP2 provides counts for templates 0 through 31.) FCDRTM2E is used for register overflows from FCDRTMP2.

The following table lists the key and info fields associated with OM group FCDRTMP2.

Key field	Info field
None	FCDR_TMPLT1_FLDS

Related functional groups

There are no functional groups associated with OM group FCDRTMP2.

Registers

The following table lists the registers associated with OM group FCDRTMP2 and what they measure. For a description of a register, click on the register name.

Registers for OM group FCDRTMP1 (Sheet 1 of 2)

Register name	Measures
TMPLT_32	Template 32
TMPLT_33	Template 33
TMPLT_34	Template 34
TMPLT_35	Template 35
TMPLT_36	Template 36
TMPLT_37	Template 37
TMPLT_38	Template 38
TMPLT_39	Template 39
TMPLT_40	Template 40
TMPLT_41	Template 41

Registers for OM group FCDRTMP1 (Sheet 2 of 2)

Register name	Measures
TMPLT_42	Template 42
TMPLT_43	Template 43
TMPLT_44	Template 44
TMPLT_45	Template 45
TMPLT_46	Template 46
TMPLT_47	Template 47
TMPLT_48	Template 48
TMPLT_49	Template 49
TMPLT_50	Template 50
TMPLT_51	Template 51
TMPLT_52	Template 52
TMPLT_53	Template 53
TMPLT_54	Template 54
TMPLT_55	Template 55
TMPLT_56	Template 56
TMPLT_57	Template 57
TMPLT_58	Template 58
TMPLT_59	Template 59
TMPLT_60	Template 60
TMPLT_61	Template 61
TMPLT_62	Template 62
TMPLT_63	Template 63

TMPLT_32

Register type
Peg

Description
TMPLT_32 counts the number of times the template at index 32 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_33

Register type
Peg

Description
TMPLT_33 counts the number of times the template at index 33 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_34

Register type
Peg

Description
TMPLT_34 counts the number of times the template at index 34 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_35

Register type
Peg

Description
TMPLT_35 counts the number of times the template at index 35 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_36

Register type
Peg

Description
TMPLT_36 counts the number of times the template at index 36 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_37

Register type
Peg

Description
TMPLT_37 counts the number of times the template at index 37 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_38

Register type
Peg

Description
TMPLT_38 counts the number of times the template at index 38 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_39

Register type
Peg

Description
TMPLT_39 counts the number of times the template at index 39 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_40

Register type
Peg

Description
TMPLT_40 counts the number of times the template at index 40 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_41

Register type
Peg

Description
TMPLT_41 counts the number of times the template at index 41 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_42

Register type
Peg

Description
TMPLT_42 counts the number of times the template at index 42 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_43

Register type
Peg

Description
TMPLT_43 counts the number of times the template at index 43 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_44

Register type
Peg

Description
TMPLT_44 counts the number of times the template at index 44 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_45

Register type
Peg

Description
TMPLT_45 counts the number of times the template at index 45 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_46

Register type
Peg

Description
TMPLT_46 counts the number of times the template at index 46 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_47

Register type
Peg

Description
TMPLT_47 counts the number of times the template at index 47 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_48

Register type
Peg

Description
TMPLT_48 counts the number of times the template at index 48 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_49

Register type
Peg

Description
TMPLT_49 counts the number of times the template at index 49 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_50

Register type
Peg

Description
TMPLT_50 counts the number of times the template at index 50 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_51

Register type
Peg

Description
TMPLT_51 counts the number of times the template at index 51 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_52

Register type
Peg

Description
TMPLT_52 counts the number of times the template at index 52 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_53

Register type
Peg

Description
TMPLT_53 counts the number of times the template at index 53 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_54

Register type
Peg

Description
TMPLT_54 counts the number of times the template at index 54 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_55

Register type
Peg

Description
TMPLT_55 counts the number of times the template at index 55 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_56

Register type
Peg

Description
TMPLT_56 counts the number of times the template at index 56 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_57

Register type
Peg

Description
TMPLT_57 counts the number of times the template at index 57 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_58

Register type
Peg

Description
TMPLT_58 counts the number of times the template at index 58 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_59

Register type
Peg

Description
TMPLT_59 counts the number of times the template at index 59 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_60

Register type
Peg

Description
TMPLT_60 counts the number of times the template at index 60 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_61

Register type
Peg

Description
TMPLT_61 counts the number of times the template at index 61 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_62

Register type
Peg

Description
TMPLT_62 counts the number of times the template at index 62 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

TMPLT_63

Register type
Peg

Description
TMPLT_63 counts the number of times the template at index 63 is used to format a CDR.

Associated registers
None

Extension registers
None

Associated logs
None

FCNF

Description

FBS Conference (FCNF) is a separate requirement functionality that does not apply to this PCL release.

FPDABM

Description

OM group File Processor Dual-access Buffer Memory Counts (FPDABM) tracks the number of times that the dual-access buffer memory (DABM) changes state. The group counts changes of state to in-service trouble (ISTB) or system busy (SYSB). These states indicate the occurrence of errors related to the DABM and if the errors are part of normal maintenance activities.

The following table lists the key and info fields associated with OM group FPDABM.

Key field	Info field
FPD_SYMB_NUM	FPDABM_OM_INFO_T

Related functional groups

There are no functional groups associated with OM group FBDABM.

Registers

The following table lists the registers associated with OM group FPDABM and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group FPDABM

Register name	Measures
FPDABMIT	FP DABM in-service trouble count
FPDABMRX	FP DABM system busy, caused by a routine exercise (REX) test
FPDABMSB	FP DABM system busy count

FPDABMIT

Register type
Peg

Description
FPDABMIT counts the number of times the DABM changes state to an ISTB.

Associated registers
None

Extension registers
None

Associated logs
FP552

FPDABMRX

Register type
Peg

Description
FPDABMRX counts the number of times the DABM changes state to SYSB as a result of an REX test. This register is not active.

Associated registers
None

Extension registers
None

Associated logs
FP552

FPDABMSB

Register type
Peg

Description
FPDABMSB counts the number of times the DABM changes state to SYSB.

Associated registers
FPDABMRX

Extension registers
None

Associated logs
FP552

FPDEVICE

Description

OM group File Processor Storage Device Counts (FPDEVICE) tracks the number of times each file processor (FP) storage device becomes:

- in-service trouble (ISTB)
- manual busy (ManB)
- not available (NA)
- resource busy (RBSY)
- system busy (SYSB)

FPDEVICE counts the number of times that use indicators specify the device activity. The following table lists the key and info fields associated with OM group FPDEVICE.

Key field	Info field
FPD_SYMB_NUM	FPDEVICE_OM_INFO_T

Related functional groups

There are no functional groups associated with OM group FBDEVICE.

Registers

The following table lists the registers associated with OM group FPDEVICE and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group FPDEVICE (Sheet 1 of 2)

Register name	Measures
FPDEVBR	FP storage device blocks read count
FPDEVBW	FP storage device blocks written count
FPDEVIT	FP storage device ISTB state count
FPDEVITU	FP storage device ISTB state usage
FPDEVMB	FP storage device ManB state count
FPDEVMBU	FP storage device ManB state usage

Registers for OM group FPDEVICE (Sheet 2 of 2)

Register name	Measures
FPDEVNA	FP storage device NA state count
FPDEVNAU	FP storage device NA state usage
FPDEVNU	FP storage device number of usage intervals in the last transfer period
FPDEVRA	FP storage device unrecoverable block assignment count
FPDEVRAR	FP storage device recoverable block assignment count
FPDEVRB	FP storage device RBSY state count
FPDEVRBU	FP storage device RBSY state usage
FPDEVRQ	FP storage device requests count
FPDEVSB	FP storage device SYSB state count
FPDEVSBU	FP storage device SYSB state usage
FPDIP0EU	FP device interface paddleboard for controller 0, enabled usage
FPDIP1EU	FP device interface paddleboard for controller 1, enabled usage

FPDEVBR

Register type
Peg

Description
FPDEVBR counts the number of blocks that the system reads from the given storage device. The register is not active.

Associated registers
FPDEVNU

Extension registers
None

Associated logs
None

FPDEVBW

Register type
Peg

Description
FPDEVBW counts the number of blocks that the system writes to the given storage device. The count takes into account the time interval during which the count accumulates to determine block write traffic. FPDEVBW is not active.

Associated registers
FPDEVNU

Extension registers
None

Associated logs
None

FPDEVIT

Register type
Peg

Description
FPDEVIT increases each time the given storage device changes state to ISTB.

Associated registers
None

Extension registers
None

Associated logs
None

FPDEVITU

Register type
Peg

Description
FPDEVITU increases every 10 seconds when the given storage device is ISTB.

Associated registers
FPDEVNU

Extension registers
None

Associated logs
None

FPDEVMB

Register type
Peg

Description
FPDEVMB increases each time the given storage device changes state to ManB.

Associated registers
None

Extension registers
None

Associated logs
FP503

FPDEVMBU

Register type
Peg

Description
FPDEVMBU increases every 10 seconds when the given storage device is ManB.

Associated registers
FPDEVNU

Extension registers
None

Associated logs
None

FPDEVNA

Register type
Peg

Description
Register FPDEVNA increases each time the given storage device changes state to NA.

Associated registers
None

Extension registers
None

Associated logs
FP503

FPDEVNAU

Register type
Peg

Description
FPDEVNAU increases every 10 seconds when the given storage device is in the NA state.

Associated registers
FPDEVNU

Extension registers
None

Associated logs
None

FPDEVNU

Register type
Peg

Description
FPDEVNU increases every 10 seconds when the usage scan process checks usage conditions for registers in OM group FPDEVICE.

Associated registers
None

Extension registers
None

Associated logs
None

FPDEVRA

Register type
Peg

Description
FPDEVRA counts the number of unrecoverable block reassignments. The register is not active.

Associated registers
FPDEVNU

Extension registers
None

Associated logs
None

FPDEVRAR

Register type
Peg

Description
FPDEVRAR counts the number of recoverable block reassignments. The register is not active.

Associated registers
FPDEVNU

Extension registers
None

Associated logs
None

FPDEVRB

Register type
Peg

Description
FPDEVRB increases each time the given storage device changes state to RBSY.

Associated registers
None

Extension registers
None

Associated logs
FP503

FPDEVRBU

Register type
Peg

Description
FPDEVRBU increases every 10 seconds when the given storage device is in the RBSY state.

Associated registers
FPDEVNU

Extension registers
None

Associated logs
None

FPDEVRQ

Register type
Peg

Description
FPDEVRQ counts the number of requests to the given storage device.

Associated registers
FPDEVNU

Extension registers
None

Associated logs
None

FPDEVSB

Register type
Peg

Description
FPDEVSB increases each time the given storage device changes state to SYSB.

Associated registers
None

Extension registers
None

Associated logs
FP503

FPDEVSBU

Register type
Peg

Description
FPDEVSBU increases every 10 seconds when the given storage device is in the SYSB state.

Associated registers
FPDEVNU

Extension registers
None

Associated logs
None

FPDIP0EU

Register type
Peg

Description
FPDIP0EU increases every 10 seconds when the given SCSI device interface paddleboard (SDIP) on controller 0 is enabled.

Associated registers
FPDEVNU

Extension registers
None

Associated logs
None

FPDIP1EU

Register type
Peg

Description
FPDIP1EU increases every 10 seconds when the given SCSI device interface paddleboard (SDIP) on controller 1 is enabled.

Associated registers
FPDEVNU

Extension registers
None

Associated logs
None

FPSCSI

Description

OM group FP SCSI Bus Counts (FPSCSI) tracks the number of times the SCSI changes state, and indicates bus activity.

The following table lists the key and info fields associated with OM group FPSCSI.

Key field	Info field
FPD_SYMB_NUM	FPSCSI_OM_INFO_T

Related functional groups

There are no functional groups associated with OM group FPSCSI.

Registers

The following table lists the registers associated with OM group FPSCSI and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group FPSCSI (Sheet 1 of 2)

Register name	Measures
FPSCSIEU	FP SCSI bus enabled usage
FPSCSIIT	FP SCSI bus ISTB count
FPSCSIIU	FP SCSI bus device usage
FPSCSIMB	FP SCSI bus ManB count
FPSCSINU	FP SCSI bus number of usage intervals in the last transfer period
FPSCSIRB	FP SCSI bus RBSY count
FPSCSIRS	FP SCSI bus SWEN caused by a REx test
FPSCSIRX	FP SCSI bus SYSB caused by an REx
FPSCSISB	FP SCSI bus SYSB count
FPSCSISW	FP SCSI bus SWEN count

Registers for OM group FPSCSI (Sheet 2 of 2)

Register name	Measures
FPSIPPDO	FP SCSI paddleboard processor storage device access occupancy
FPSIPPIO	FP SCSI paddleboard processor idle occupancy
FPSIPPMO	FP SCSI paddleboard processor maintenance occupancy

FPSCSIEU

Register type
Peg

Description
FPSCSIEU increases every 10 seconds when the SCSI bus is enabled.

Associated registers
FPSCSINU

Extension registers
None

Associated logs
FP504

FPSCSIIT

Register type
Peg

Description
FPSCSIIT increases when the SCSI bus changes state to in-service trouble (ISTB).

Associated registers
None

Extension registers
None

Associated logs
FP504

FPSCSIIU

Register type
Peg

Description
FPSCSIIU increases every 10 seconds when a storage device uses the SCSI. FPSCSIIU is not active.

Associated registers
FPSCSINU

Extension registers
None

Associated logs
None

FPSCSIMB

Register type
Peg

Description
FPSCSIMB increases when the SCSI bus changes state to manual busy (ManB).

Associated registers
None

Extension registers
None

Associated logs
FP504

FPSCSINU

Register type
Peg

Description
FPSCSINU increases every 10 seconds when the usage scan process checks usage conditions for registers in OM group FPSCSI.

Associated registers
None

Extension registers
None

Associated logs
None

FPSCSIRB

Register type
Peg

Description
FPSCSIRB increases when the SCSI bus changes state to resource busy (RBSY).

Associated registers
None

Extension registers
None

Associated logs
FP504

FPSCSIRS

Register type
Peg

Description
FPSCSIRS counts the number of times the SCSI bus changes state to switch enable (SWEN). The SCSI bus changes state to SWEN to switch from one bus to the other because of a routine exercise (REx) test. FPSCSIRS not active.

Associated registers
None

Extension registers
None

Associated logs
FP504

FPSCSIRX

Register type
Peg

Description
FPSCSIRX increases when the SCSI bus changes state to SYSB as a result of a REx test. FPSCSIRX is not active.

Associated registers
None

Extension registers
None

Associated logs
FP504

FPSCSISB

Register type
Peg

Description
FPSCSISB increases when the SCSI bus changes state to the system busy (SYSB).

Associated registers
FPSCSIRX

Extension registers
None

Associated logs
FP504

FPSCSISW

Register type
Peg

Description
FPSCSISW counts the number of times the SCSI bus changes state to switch enable (SWEN). The SCSI bus changes state to SWEN to switch from one bus to the other. FPSCSISW is not active.

Associated registers
FPSCSIRS

Extension registers
None

Associated logs
FP504

FPSIPPDO

Register type
Peg

Description
FPSIPPDO counts the amount of time that the SCSI processor performs device access activity. The register counts the amount in a percentage value. This value increases to the next percentage every 10 seconds. The device access processor occupancy represents the amount of time the processor does not perform maintenance activity and is not idle. FPSIPPDO is not active.

Associated registers
FPSIPPIO, FPSIPPMO, FPSCSINU

Extension registers
None

Associated logs
FP504

FPSIPPIO

Register type
Peg

Description
FPSIPPIO counts the amount of time the SCSI processor is idle. The register counts the amount of time in a percentage value. This value increases to the next percentage value every 10 seconds. FPSIPPIO is not active.

Associated registers
FPSIPPMO, FPSIPPDO, FPSCSINU

Extension registers
None

Associated logs
FP504

FPSIPPMO

Register type
Peg

Description
FPSIPPMO counts the amount of time the SCSI processor performs maintenance activity. The register counts the amount of time in a percentage value. This value increases to the next percentage value every 10 seconds. FPSIPPMO is not active.

Associated registers
FPSIPPIO, FPSIPPDO, FPSCSINU

Extension registers
None

Associated logs
FP504

FRSAGENT

Description

OM group Frame Relay Service Agent (FRSAGENT) monitors the frame relay service (FRS) on each logical channel. FRSAGENT monitors the quality of service the customer that uses a logical channel receives.

FRSAGENT contains registers that count:

- frames received from the frame transport bus (F-bus) that are sent to the T1 carrier
- frames that are received from the T1 carrier
- cyclic redundancy check (CRC) errors
- channel disconnects
- channel originations
- aborts received in the incoming frames
- frames that are too short or too long
- frames that have an invalid data-link connection identifier (DLCI)
- frames set to backward explicit correction notification (BECN) by the agent
- frames discarded at the UNI ingress channel
- frames that exceed the committed information rate for that agent
- frames discarded with the DE bit equal to zero
- frames discarded with the DE bit equal to one
- frames set to forward exact correction notification by the agent
- time-outs by the local management interface
- number of octets received
- number of octets transmitted

The following table lists the key and info fields associated with OM group FRSAGENT.

Key field	Info field
FRSAGENT	FRS_AGENT_INFO (contains the FRS device type, the device index, and the channel number associated with the FRS agent); frame relay interface unit (FRIU) number + channel number

Related functional groups

The DataSPAN operating group is associated with OM group FRSAGENT.

Registers

The following table lists the registers associated with OM group FRSAGENT and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group FRSAGENT (Sheet 1 of 2)

Register name	Measures
ABORTS	Aborts
BECNORIG	Backward explicit correction notification (BECN) bit set on origination
CHANDISC	Channel disconnects
CHANORG	Channel originations
CIRDISC	Committed information rate discarded frames
CIREXCES	Committed information rate exceeded
DE0DISC	Discarded frames with DE = 0
DE1DISC	Discarded frames with DE = 1
FECNORIG	Forward explicit correction notification (FECN) bit origination
FRAREC	Frames received

Registers for OM group FRSAGENT (Sheet 2 of 2)

Register name	Measures
FRASENT	Frames sent
INVALEN	Invalid length
INVDLCI	Invalid data-link connection identifier
LMILOST	Local management interface timeouts
OCTREC	Number of octets received
OCTSENT	Number of octets transmitted
PTERR	Cyclic redundancy check (CRC) errors

ABORTS

Register type
Peg

Description
ABORTS register counts aborts received in the incoming frame.

Associated registers
None

Extension registers
None

Associated logs
None

BECNORIG

Register type
Peg

Description
BECNORIG counts the number of frames the agent sends to BECN.

Associated registers
None

Extension registers
None

Associated logs
None

CHANDISC

Register type
Peg

Description
CHANDISC counts channel disconnects that the A/B bit signaling specifies. The register is valid for FRS agents that run at 56 kbit/s with A/B bit signaling or digital data service.

Associated registers
None

Extension registers
None

Associated logs
None

CHANORG

Register type
Peg

Description
CHANORG counts channel originations that the A/B bit signaling specifies. The register is valid for FRS agents that run 56 kbit/s with A/B bit signaling or 56-kbit/s digital data service.

Associated registers
None

Extension registers
None

Associated logs
None

CIRDISC

Register type
Peg

Description
CIRDISC counts the number of frames discarded at the UNI ingress channel because the number exceeds the total information rate. The

total information rate is the committed information rate (CIR) plus the total information rate (SIR = CIR + EIR). CIRDISC is uploaded to the computing module (CM) with other FRSAGENT registers every 30 minutes.

Associated registers
CIREXCES

Extension registers
None

Associated logs
None

CIREXCES

Register type
Peg

Description
CIREXCES counts the number of frames that exceed the CIR for that agent. The register is uploaded with other registers every 30 minutes.

Associated registers
CIRDISC

Extension registers
None

Associated logs
None

DE0DISC

Register type
Peg

Description
DE0DISC register counts the number of discarded frames, with the discard eligible (DE) bit cleared.

Associated registers
None

Extension registers
None

Associated logs
None

DE1DISC

Register type
Peg

Description
DE1DISC counts the number of discarded frames, with the DE bit set.

Associated registers
None

Extension registers
None

Associated logs
None

FECNORIG

Register type
Peg

Description
FECNORIG counts the number of frames the agent sends to FECN.

Associated registers
None

Extension registers
None

Associated logs
None

FRAREC

Register type
Peg

Description
FRAREC register increments each time the FRIU receives a frame from the T1 carrier.

Associated registers
None

Extension registers
None

Associated logs
None

FRASENT

Register type
Peg

Description
FRASENT register counts frames received from the F-bus that are sent to the T1 carrier.

Associated registers
None

Extension registers
FRASENTX

Associated logs
None

INVALEN

Register type
Peg

Description
INVALEN increments each time the FRS agent receives a frame with an invalid length. The minimum length of the frame depends on two items. It depends if the frame is link access procedure on the D-channel (LAPD), or link access procedure balanced (LAPB). The maximum length is 2106 bytes. If the frame exceeds 2106 bytes, it cannot be routed.

The number of frames with an invalid length can be high. When the number of frames is high it indicates that the telephone operating company is not sending valid data frames to be routed. You must report the problem to the telephone operating company.

Associated registers
None

Extension registers
None

Associated logs
None

INVDLCI

Register type
Peg

Description
INVDLCI register counts frames received from the T1 carrier that have an invalid data-link connection identifier (DLCI).

Associated registers
None

Extension registers
None

Associated logs
None

LMILOST

Register type
Peg

Description
LMILOST increments each time the local management interface (LMI) times out. Each time a connection is lost because the number of LMI errors exceeds a preset threshold, the LMILOST register increments.

Associated registers
None

Extension registers
None

Associated logs
FRS121

OCTREC

Register type
Peg

Description
OCTREC counts the number of octets that were received on the agent.

Associated registers
None

Extension registers
OCTRECX

Associated logs
None

OCTSENT

Register type
Peg

Description
OCTSENT counts the number of octets transmitted on the agent.

Associated registers
None

Extension registers
OCTSENTX

Associated logs
None

PTERR

Register type
Peg

Description
PTERR counts CRC errors. Each CRC error detected means that one frame was as a result of damage in the frame.

Associated registers
None

Extension registers
None

Associated logs
None

FRSPM

Description

OM group Frame Relay Service Peripheral Module (FRSPM) monitors traffic and faults on the frame relay service (FRS) device. FRSPM allows operating company personnel to determine the response of the FRS device to frame switching demands. To determine the quality of service that an FRS device provides, the operating company personnel use fault numbers reported by OM registers. If the device has a high number of faults, the operating company personnel can take action.

Registers in the FRSPM group count:

- faults on the FRS device
- errors on the message switch link
- cyclic redundancy check (CRC) errors
- frames sent to the T1 carrier from the frame relay interface unit (FRIU)
- frames received in the FRIU from the T1 carrier
- discarded frames received in the FRIU from the T1 carrier or the frame transport bus (F-bus)

The following table lists the key and info fields associated with OM group FRSPM.

Key field	Info field
None	FRS_PM_INFO is the FRS peripheral module (PM) type. The only valid FRS PM type is FRIU.

Related functional groups

The following functional groups are associated with OM group FRSPM:

- DMS-100
- DataSPAN

Registers

The following table lists the registers associated with OM group FRSPM and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group FRSPM

Register name	Measures
FRMERR	Frame errors
FRREC	Frames received
FRSENT	Frames sent
MSLKERRP	Message switch link errors
PMFAULT	Frame relay device faults
PORTERR	Cyclic redundancy check errors

FRMERR

Register type
Peg

Description
FRMERR counts discarded frames received in the FRIU from the T1 carrier, for one of the following reasons:

- invalid frame length
- invalid data-link connection identifier (DLCI)

Associated registers
None

Extension registers
None

Associated logs
None

FRREC

Register type
Peg

Description
FRREC counts frames received in the FRIU unit from the T1 carrier.

Associated registers
None

Extension registers
FRRECX

Associated logs
None

FRSENT

Register type
Peg

Description
FRSENT counts frames sent to the T1 carrier from the FRIU.

Associated registers
None

Extension registers
FRSENTX

Associated logs
None

MSLKERRP

Register type
Peg

Description
MSLKERRP counts errors on the message switch link. Message switch link errors include longitudinal redundancy check (LRC) errors and F-bus transmission buffer overflow errors. If the value of MSLKERRP is high, it indicates that the FRS device is overloaded and frames can be lost.

Associated registers
None

Extension registers
None

Associated logs
None

PMFAULT

Register type
Peg

Description
PMFAULT counts faults on the FRS device. The FRS device faults include:

- the activity of the carrier is interrupted. The interruption causes a total loss of communication with customer devices.
- the activity of the channel is interrupted. The interruption causes a total loss of communication with the connected FRS device
- loss of signal. A signal that is not available causes a total loss of communication with the end device.
- a loss of synchronization between the clocks of the FRIU and the external device
- a user restarts while the FRS device is in service
- the FRS device becomes system busy (SysB)
- the FRIU overload occurs when the FRIU cannot provide service to the traffic load presented to it
- errors appear in the buffers that manage the FRS frames.

If the value of PMFAULT is high, it indicates that the level of service in the device is bad.

Associated registers
None

Extension registers
None

Associated logs
None

PORTERR

Register type
Peg

Description
PORTERR counts cyclic redundancy check (CRC) errors across all channels in the frame relay interface unit. CRC errors are detected from the frames that enter the FRS device from the T1 carrier. If the value of PORTERR is high, a transmission problem can occur.

Associated registers
None

Extension registers
None

Associated logs
None

FRT1

Description

OM group Frame Relay T1 Carrier (FRT1) monitors the performance of a T1 carrier that the frame relay service (FRS) uses.

FRT1 registers count:

- local carrier group alarms (LCGAs) on the T1 carrier
- remote carrier group alarms (RCGAs) on the T1 carrier
- frame loss on the T1 carrier
- the number of times the bit error rate, out-of-service limit, has been reached
- errored seconds (ES) on the T1 carrier
- severely errored seconds (SES) on the T1 carrier
- unavailable seconds on the T1 carrier
- alarm indication signals on the T1 carrier

FRT1 usage registers record when a carrier is:

- system busy (SysB)
- manual busy (ManB)
- central-side (C-side) busy

The following table lists the key and info fields associated with OM group FRT1.

Key field	Info field
None	FRT1OMINF describes the T1 carrier. The FRT1OMINF field contains the frame relay interface unit (FRIU) and number.

Related functional groups

The following functional groups are associated with OM group FRT1:

- SuperNode
- DataSPAN

Registers

The following table lists the registers associated with OM group FRT1 and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group FRT1

Register name	Measures
FRT1AIS	Frame relay T1 alarm indication signals
FRT1BER	Frame relay T1 bit error ratio
FRT1CBU	Frame relay T1 C-side busy usage
FRT1CRC	Frame relay T1 cyclic redundancy check
FRT1ES	Frame relay T1 errored seconds
FRT1LCGA	Frame relay T1 local carrier group alarm
FRT1LOF	Frame relay T1 loss of frame
FRT1MBU	Frame relay T1 manual busy usage
FRT1RCGA	Frame relay T1 remote carrier group alarm
FRT1SBU	Frame relay T1 system busy usage
FRT1SES	Frame relay T1 severely errored seconds
FRT1UAS	Frame relay T1 unavailable seconds

FRT1AIS

Register type
Peg

Description
FRT1AIS increments when an alarm indication signal (AIS) occurs on the T1 carrier. An AIS indicates to the downstream equipment that the local peripheral is not functioning correctly.

Associated registers
None

Extension registers
None

Associated logs
PM110

FRT1BER

Register type
Peg

Description
FRT1BER increments each time the bit error ratio out-of-service limit is reached on the T1 carrier. The bit error ratio out-of-service limit is defined in field BEROL in table CARRMTC. If the value of FRT1BER is high, the carrier is operating at a low quality rate.

Associated registers
None

Extension registers
None

Associated logs
PM110

FRT1CBU

Register type
Usage

Scan rate
100 seconds

Description
FRT1CBU increments every 100 seconds if the T1 carrier is C-side busy.

Associated registers
None

Extension registers
None

Associated logs
None

FRT1CRC

Register type
Peg

Description
FRT1CRC counts the number of CRC errors that are received on the T1 carrier for an exact FRIU.

Associated registers
None

Extension registers
None

Associated logs
None

FRT1ES

Register type
Peg

Description
FRT1ES counts ES on the T1 carrier. ES are seconds during which at least one coding violation or one out-of-frame condition occurs. ESs are counted when the T1 carrier is available. Refer to register FRTISES, that counts SES. The ES threshold is defined in field ES of table CARRMTC. When the carrier reaches this threshold, the carrier goes out-of-service.

Associated registers
None

Extension registers
None

Associated logs
PM110

FRT1LCGA

Register type
Peg

Description
FRT1LCGA register counts LCGA that occur on the T1 carrier. An LCGA is a severe alarm that indicates when the carrier is down and service is interrupted.

Associated registers
None

Extension registers
None

Associated logs
PM110

FRT1LOF

Register type
Peg

Description
FRT1LOF register counts the number of times a loss of frame is detected on the T1 carrier. A repeated loss of frames causes the predetermined threshold to be exceeded and raises an alarm. A loss of frame can affect service.

Associated registers
None

Extension registers
None

Associated logs
PM110

FRT1MBU

Register type
Usage

Scan rate
100 seconds

Description
FRT1MBU increments every 100 seconds if the T1 carrier is ManB.

Associated registers
None

Extension registers
None

Associated logs
None

FRT1RCGA

Register type
Peg

Description
FRT1RCGA counts RCGA that occur on the T1 carrier. An RCGA is sent by the upstream equipment when it detects a problem on the link between the local office and the remote office.

Associated registers
None

Extension registers
None

Associated logs
PM110

FRT1SBU

Register type
Usage

Scan rate
100 seconds

Description
FRT1SBU increments every 100 seconds if the T1 carrier is SysB.

Associated registers
None

Extension registers
None

Associated logs
PM109

FRT1SES

Register type
Peg

Description
FRT1SES counts SES on the T1 carrier. SES are the seconds during which a bit error ratio of 103 occurs. SES are counted while the T1 carrier is available or as specified by the field SESCALC.

Use the SESCALC register to identify the calculation base used. There are two calculation bases available: STD, and BEROS. The STD is and SES calculation that is based on a bit rate error value of 103. BEROS is an SES calculation based on the value of BEROS in table CARRMTC.

The SES threshold is defined in field SES in table CARRMTC. The carrier goes out of service when this threshold is reached.

Associated registers
None

Extension registers
None

Associated logs
PM110

FRT1UAS

Register type
Peg

Description
FRT1UAS counts unavailable seconds on the T1 carrier. Unavailable seconds start after ten consecutive SES occur, and stop when ten non-severely errored seconds occur.

Associated registers
None

Extension registers
None

Associated logs
None

FTAM

Description

OM group File Transfer Access and Management (FTAM) provides operational measurements (OM) for file transfer, access and management activities that occur in the billing server open system interface (OSI) protocol stack.

The following table lists the key and info fields associated with OM group FTAM:

Key field	Info field
None	NCMNODE_INFO

Related functional groups

There are no functional groups associated with OM group FTAM.

Registers

The following table lists the registers associated with OM group FTAM and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group FTAM

Register name	Measures
FASSFL	FTAM association failed
FASSOK	FTAM association successful
FDIRINF	FTAM directory information request
FFILOK	FTAM files successful
FKBOK	FTAM Kbytes successful
FRECAF	FTAM recovery attempt failed
FRECAS	FTAM recovery attempt successful
FRESTF	FTAM restart failed
FRESTS	FTAM restart successful
FRQDEL	Files requested for deletion

FASSFL

Register type
Peg

Description
FASSFL increases after each FTAM association attempt failure.

Associated registers
None

Extension registers
FASSFL2

Associated logs
None

FASSOK

Register type
Peg

Description
FASSOK increases each time an FTAM association attempt succeeds.

Associated registers
None

Extension registers
FASSOK2

Associated logs
None

FDIRINF

Register type
Peg

Description
FDIRINF increases each time the FTAM receives a request for directory information.

Associated registers
None

Extension registers
FDIRINF2

Associated logs
None

FFILOK

Register type
Peg

Description
FFILOK increases each time the FTAM transfers a file correctly from the DMS to a remote station.

Associated registers
None

Extension registers
FFILOK2

Associated logs
None

FKBOK

Register type
Peg

Description
FKBOK records the number of Kbytes of data that the FTAM transfers correctly from the DMS to a remote station.

Associated registers
None

Extension registers
FKBOK2

Associated logs
None

FRECAF

Register type
Peg

Description
FRECAF increases after each FTAM recovery attempt failure.

Associated registers
None

Extension registers
FRECAF2

Associated logs
None

FRECAS

Register type
Peg

Description
FRECAS increases after each successful FTAM recovery.

Associated registers
None

Extension registers
FRECAS2

Associated logs
None

FRESTF

Register type
Peg

Description
FRESTF increases after each FTAM restart failure.

Associated registers
None

Extension registers
FRESTF2

Associated logs
None

FRESTS

Register type
Peg

Description
FRESTS increases each time the FTAM performs a successful restart.

Associated registers
None

Extension registers
FRESTS2

Associated logs
None

FRQDEL

Register type
Peg

Description
FRQDEL increases each time the FTAM handles a request to delete a file.

Associated registers
None

Extension registers
FRQDEL2

Associated logs
None

FTROM

Description

AIN OMs for Telco Engineering (AU2731) introduces OM group Feature Data Block (FTROM). FTROM provides information to assist in switch resource engineering. It is recommended that the OM group be used only for this purpose.

The following table lists the key and info fields associated with OM group FTROM.

Key field	Info field
FTR_NAME	SMALL, MEDIUM, LARGE, X_LARGE, or CRITICAL.

Total of all tuples with info field SMALL = EXTSEIZ for tuple SMALL_FEATURE_DATA

Total of all tuples with info field MEDIUM = EXTSEIZ for tuple MEDIUM_FEATURE_DATA

Total of all tuples with info field LARGE = EXTSEIZ for tuple LARGE_FEATURE_DATA

Total of all tuples with info field X_LARGE =EXTSEIZ for tuple X_LARGE_FEATURE_DATA

Total of all tuples with info field CRITICAL = EXTSEIZ for tuple CRITICAL_FEATURE_DATA

Related functional groups

There are no functional groups associated with OM group FTROM.

Registers

The following table lists the registers associated with OM group FTROM and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group FTROM

Register name	Measures
FTRHI	Register maximum number of FDBs in simultaneous use
FTRSEIZ	Register number of successful FDB allocations

FTRHI

Register type
Peg

Description
FTRHI records the maximum number of simultaneously allocated FDBs of a specific type, during an OM transfer period.

Associated registers
EXTHI

Extension registers
None

Associated logs
None

FTRSEIZ

Register type
Peg

Description
FTRSEIZ records the number of successfully allocated FDBs of a specific type, during an OM transfer period.

Associated registers
EXTSEIZ, EXTSEIZ2

Extension registers
FTRSEIZ2

Associated logs
None

FTRQ

Description

OM group Feature Queue Software Resources (FTRQ) counts the number of successful and unsuccessful requests for feature queue blocks made in an OM transfer period. The high watermark (register FTRQHI) records the maximum number of feature queue blocks to date that were in simultaneous use during a transfer period.

The data supplied by FTRQ is used to monitor the number of feature queue blocks used in an office and provides a measurement of the number of FTRQ features being used at a given time.

The following table lists the key and info fields associated with OM group FTRQ.

Key field	Info field
FTRQOM_TUPLE_KEY is the type of feature queue block.The possible types of feature queue blocks are FTRQAGENTS, FTRQ0WAREAS, FTRQ2WAREAS, FTRQ4WAREAS, FTRQ8WAREAS, FTRQ16WAREAS, FTRQ32WAREAS, FTRQ0WPERMS, FTRQ2WPERMS, FTRQ4WPERMS, FTRQ8WPERMS, FTRQ16WPERMS, FTRQ32WPERMS and FTRQTIMERS.	FTRQOM_INFO is the number of feature queue blocks of one type that are allocated. With the availability of dynamic memory the required number of each type of FTRQ blocks are dynamically allocated and provisioned by office parameter DYNAMIC_MEMORY_SIZE.

The following pools in table OFCENG parameter DYNAMIC_MEMORY_SIZE define the number of feature queue blocks for each block type: FTRQAGENTS, FTRQ0WAREAS, FTRQ2WAREAS, FTRQ4WAREAS, FTRQ8WAREAS, FTRQ16WAREAS, FTRQ32WAREAS, FTRQ0WPERMS, FTRQ2WPERMS, FTRQ4WPERMS, FTRQ8WPERMS, FTRQ16WPERMS, and FTRQ32WPERMS.

Related functional groups

The following functional groups are associated with OM group FTRQ:

- DMS-100 Local
- DMS-100 International
- DMS-250 Toll/Tandem
- DMS-300 Gateway
- DMS-MTX Mobile Telephone Exchange
- Meridian SL-100 PBX
- Datapath
- CCS7 Trunk Signaling

Registers

The following table lists the registers associated with OM group FTRQ and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group FTRQ

Register name	Measures
FTRQHI	Feature queue high-water mark
FTRQOVFL	Feature queue overflow
FTRQSEIZ	Feature queue successful block requests

FTRQHI

Register type
Peg

Description
FTRQHI indicates the high watermark value for the highest number of successful FTRQ block requests made during a transfer period to date. When the FTRQHI peg count exceeds 65535, the register is reset to zero and extension register FTRQHI2 is incremented.

Associated registers
None

Extension registers
FTRQHI2

Associated logs
None

FTRQOVFL

Register type
Peg

Description
FTRQOVFL counts the number of unsuccessful FTRQ block requests made during an OM transfer period. When the FTRQOVFL peg count exceeds 65535, it wraps back to zero and increments extension register FTRQOFL2. Register FTRQOVFL and its extension register FTRQOFL2 provide the total count of unsuccessful requests for FTRQ blocks made in a transfer period.

Associated registers
None

Extension registers
FTRQOFL2

Associated logs
None

FTRQSEIZ

Register type
Peg

Description
FTRQSEIZ measures the number of successful FTRQ block requests during an OM transfer period. FTRQSEIZ is used with extension register FTRQSZ2 to provide the total number of successful FTRQ block requests. Each peg to FTRQSEIZ indicates one successful FTRQ block request in the current OM transfer period. FTRQSEIZ can peg up to 65535 successful FRTQ block requests before it wraps to zero and pegs extension register FTRQSZ2.

Associated registers
None

Extension registers
FTRQSZ2

Associated logs
None

FTS

Description

OM group FAX-Thru Service (FTS) measures the number of activations of the FTS service.

The following table lists the key and info fields associated with OM group FTS.

Key field	Info field
None	None

Related functional groups

The functional group MSA00001 is associated with OM group FTS.

Registers

The following table lists the registers associated with OM group FTS and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group FTS

Register name	Measures
FTSACTIV	Number of FTS activations
FTSACTI2	Number of FTS activations 2
FTSBSYAC	Number of FTS Busy Case activations
FTSRNAAC	Number of FTS Ringing No-Answer activations

FTSACTIV

Register type
Peg

Description
FTSACTIV counts the number of activations of the FTS service.

Associated registers
FTSACTI2

Extension registers
None

Associated logs
None

FTSACTI2

Register type
Peg

Description
FTSACTI2 counts the number of activations of the FTS service.

Associated registers
FTSACTIV

Extension registers
None

Associated logs
None

FTSBSYAC

Register type
Peg

Description
FTSBSYAC counts the number of Busy Case activations of the FTS service.

Associated registers
None

Extension registers
None

Associated logs
None

FTSRNAAC

Register type
Peg

Description
FTSRNAAC counts the number of Ringing No-Answer activations of the FTS service.

Associated registers
None

Extension registers
None

Associated logs
None

GIACGRP

Description

OM group Group Intercom All Call (GIACGRP) monitors the use of the group intercom all call (GIAC) feature. The GIAC feature allows a member of a group intercom (GIC) group to page members of the GIC group. The member can page a maximum of 29 selected members of the GIC group at the same time. The pages occur over the internal speakers of the business set of the GIAC member.

The GIACGRP contains three registers that count:

- attempts to originate a group intercom all call conference
- attempts to originate a group intercom all call conference that fail because of not enough available conference circuits
- attempts to originate a group intercom all call conference that fail because of not enough software or hardware resources

The following table lists the key and info fields associated with OM group GIACGRP.

Key field	Info field
IBNG_INDEX (which is the customer group as defined in table CUSTHEAD)	OMIBNGINFO (which is the customer group name entered in table CUSTHEAD)

Related functional groups

The MDC functional group is associated with OM group GIACGRP.

Registers

The following table lists the registers associated with OM group GIACGRP and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group GIACGRP (Sheet 1 of 2)

Register name	Measures
GIACATT	Group intercom all call origination attempts

Registers for OM group GIACGRP (Sheet 2 of 2)

Register name	Measures
GIACCGRO	Group intercom all call failure-no resources
GIACNOSC	Group intercom all call failure-no conference circuits

GIACATT

Register type
Peg

Description
GIACATT counts attempts to originate a group intercom all call conference.

Associated registers
IBNGRP_GICORIG

Extension registers
None

Associated logs
None

GIACCGRO

Register type
Peg

Description
GIACCGRO counts attempts to originate a group intercom all call conference that fail because of not enough conference circuits. These conference circuits are assigned to the MDC customer group that contains the GIAC group. Field CONF6C in table CUSTENG contains the number of conference circuits assigned to an MDC customer group. The system routes the call to customer group resource overflow (CGRO) treatment.

Associated registers
None

Extension registers
None

Associated logs
None

GIACNOSC

Register type
Peg

Description
GIACNOSC counts attempts to originate a group intercom all call conference that fail. The GIAC fails because not enough conference circuits are available in the office. The system routes the call to no service circuit (NOSC) treatment.

Associated registers
None

Extension registers
None

Associated logs
None

GTID

Description

OM group Generic Logical Terminal Identifier (GTID) monitors GLOGTID pools.

The following table lists the key and info fields associated with OM group GTID.

Key field	Info field
Number in the range 0-63 of the pool, followed by the name provided when the pool is registered.	Number of TIDs currently allocated to the pool.

Related functional groups

There are no functional groups associated with OM group GTID.

Registers

The following table lists the registers associated with OM group GTID and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group GTID

Register name	Measures
GTHIGH	High water
GTHIGH2	High water
GTOVFL	GLOGTID requests from a pool
GTSEIZ	Seizure of a GLOGTID from the pool
GTSEIZ2	Seizure of a GLOGTID from the pool

GTHIGH

Register type
Peg

Description
GTHIGH is the least significant 16 bits of a 32-bit high water register.

Associated registers
GTHIGH2

Extension registers
None

Associated logs
None

GTHIGH2

Register type
Peg

Description
GTHIGH2 is the most significant 16 bits of a 32-bit high water register.

Associated registers
GTHIGH

Extension registers
None

Associated logs
None

GTOVFL

Register type
Usage

Scan rate
Not available

Description
GTOVFL is a usage register and records the number of times a GLOGTID is requested from a pool, but one is not available.

Associated registers
None

Extension registers
None

Associated logs
None

GTSEIZ

Register type
Usage

Scan rate
Not available

Description
GTSEIZ is the least significant 16 bits of a 32-bit usage register. This register records the seizure of a GLOGTID from the pool.

Associated registers
GTSEIZ2

Extension registers
None

Associated logs
None

GTSEIZ2

Register type
Usage

Scan rate
Not available

Description
GTSEIZ2 is the most significant 16 bits of a 32-bit usage register. This register records the seizure of a GLOGTID from the pool.

Associated registers
GTSEIZ

Extension registers
None

Associated logs
None

GWOVLOM

Description

OM Group Gateway Overload OM (GWOVLOM) measures the number of connections that were denied because the MG 9000 was in overload.

The following table lists the key and info fields associated with OM group GWOVLOM.

Key field	Info field
GWOVL_OM_PM_INFO1	GWOVL_OM_TUPLE_DATA1

Related functional groups

There are no functional groups associated with OM group GWOVLOM.

Registers

The following table lists the registers associated with OM group GWOVLOM and what they measure.

Registers for OM group GWOVLOM

Register name	Measures
OVERLOAD	Denied connections

OVERLOAD

Register type
Peg

Description
OVERLOAD counts the number of connection denials when an MG 9000 is in overload.

Associated registers
None

Extension registers
None

Associated logs
None

HALayer

Description

This new OM group is only applicable to the new IBM BladeCenter-T based Border Control Points call Border Control Point (BCP) 7200.

The new BCP 7200 supports all traditional Border Control Point functions – and introduces support for the clustering of Border Control Points into “N+1” fault tolerant service clusters (i.e. “N” active instances, and “1” standby). As a result, the new BCP 7200 and the traditional CPX8216-T Border Control Point (now called BCP 7100) are identical from a functional perspective but very different conceptually:

- the BCP 7100 is comprised of software and hardware components having a static relationship.
- the BCP 7200 Service Cluster is comprised of a set of logical Service Instances (“N” active instances of Border Control Point that actively process calls) that “float” over a predefined set of underlying physical hardware (the Service Nodes). There is no fixed relationship between an active Border Control Point Service Instance and its hosting hardware. This allows very robust handling of failures as Service Instances can fail and be quickly re-instantiated on another available piece of hardware.

The software sub-component that provides the fault tolerance mechanisms (heartbeating, checkpointing, failure detection, etc.) supporting the “N+1” Border Control Pointl Service Cluster is the High Availability Layer (HAL). The new HALayer OM Group gathers statistics on the performance of these underlying fault tolerance mechanisms.

The following table lists the key and info fields associated with OM group HaLayer.

Key field	Info field
None	None

Related functional groups

The following functional groups are related to OM group HaLayer:

- BCP 7200 Media Portal clusters

Registers

The following table lists the registers associated with OM group HaLayer and what they measure. For a description of a register, click on the register name.

Registers for OM group HaLayer

Register name	Measures
statusCnt	status change count
updateCnt	update count
chkPointsRcvd	check points received
chkPointsSent	check points sent
activeInstances	active service instances
standbyInstances	standby instances

statusCnt

Register type
Peg

Description
Number of internal status change events generated by the Fault-tolerance mechanisms on this Service Node.

Associated registers
None

Extension registers
None

Associated logs
None

updateCnt

Register type
Peg

Description
The number of Service Instances that have joined the Service Cluster (from the perspective of this service node).

Associated registers
None

Extension registers
None

Associated logs
None

chkPointsRcvd

Register type
Peg

Description
Number of checkpoints received by this Service Node.

Associated registers
chkPointsSent

Extension registers
None

Associated logs
None

chkPointsSent

Register type
Peg

Description
The number of checkpoints sent by this Service Node.

Associated registers
chkPointsRcvd

Extension registers
None

Associated logs
None

activeInstances

Register type
Peg

Description
Number of active Service Instances in the Service Cluster associated with this Service Node.

Associated registers
standbyInstances

Extension registers
None

Associated logs
None

standbyInstances

Register type
Peg

Description
The number of standby Service Instances in the Service Cluster associated with this Service Node.

Associated registers
activeInstances

Extension registers
None

Associated logs
None

HDBOM

Description

OM group History Data Block OM (HDBOM) tracks the seizures for history data blocks (HDBs).

Note: This OM group was introduced in NA009, but is dormant.

The following table lists the key and info fields associated with OM group HDBOM.

Key field	Info field
HDB_type	Contains the size of the block of each HDB type.

Related functional groups

There are no functional groups associated with OM group HDBOM.

Registers

The following table lists the registers associated with OM group HDBOM and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group HDBOM

Register name	Measures
HDBSEIZ	Number of successful HDB allocations

HDBSEIZ

Register type
Peg

Description
HDBSEIZ records the number of successful HDB allocations.

Associated registers
None

Extension registers
HDBSEIZ2

Associated logs
None

HFPOM

Description

OM group HFP CPU Occupancy and Layer 2 OMs (HFPOM) monitors the HFP CPU use and frame traffic and indicate problems on XLIU channels.

The OM group HFPOM measures the CPU occupancy in the HFP for the following tasks:

- layer 1
- layer 2
- IPF interface
- maintenance
- utility
- tools
- idler
- other

The following table lists the key and info fields associated with OM group HFPOM.

Key field	Info field
Integer value, range 0 to total number of tuples subtract one.	Node name and number. Node name is always XLIU. Number ranges from 0 to 511.

Related functional groups

The DMS Packet Handler functional group is associated with OM group HFPOM.

Registers

The following table lists the registers associated with OM group HFPOM and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group HFPOM

Register name	Measures
HFPL1	Layer 1 occupancy
HFPL2	Layer 2 occupancy
HFPIPF	IPF interface occupancy
HFPMAINT	Maintenance occupancy
HFPUTIL	Utility occupancy
HFPTOOL	Tools occupancy
HFPIDLE	Idler occupancy
HFPOTHER	Other occupancy
FRAMERX	Frames received by HFP
FRAMETX	Frames transmitted from HFP
BADFRAME	Bad frames received by HFP
LINKCGST	Link Congestion
RNRCGST	Severe XLIU Congestion

HFPL1

Register type
Peg

Description
HFPL1 monitors HFP CPU time spent processing the frame receiver task. The frame receiver task determines if the system can pass the frame to the layer 2 processing task. The system can pass the frame to the layer 2 processing task if the frame is not a bad frame.

Associated registers
None

Extension registers
None

Associated logs
None

HFPL2

Register type
Peg

Description
HFPL2 monitors HFP CPU time spent processing layer 2 frames.

Associated registers
None

Extension registers
None

Associated logs
None

HFPIPF

Register type
Peg

Description
HFPIPF monitors HFP CPU time spent interfacing with Integrated Processor and F-bus messaging and passing frames for layer 3 processing.

Associated registers
None

Extension registers
None

Associated logs
None

HFPMAINT

Register type
Peg

Description
HFPMAINT monitors HFP CPU time spent processing maintenance tasks, like loopbacks.

Associated registers
None

Extension registers
None

Associated logs
None

HFPUTIL

Register type
Peg

Description
HFPUTIL monitors HFP CPU time spent processing the timer task and running audits.

Associated registers
None

Extension registers
None

Associated logs
None

HFPTOOL

Register type
Peg

Description
HFPTOOL monitors HFP CPU time spent running tools, like the CPU utilization and frame measurement tools.

Associated registers
None

Extension registers
None

Associated logs
None

HFPIDLE

Register type
Peg

Description
HFPIDLE monitors HFP CPU time that is idle.

Associated registers
None

Extension registers
None

Associated logs
None

HFPOTHER

Register type
Peg

Description
HFPOTHER monitors HFP CPU time spent processing a task other than the following:

- HFPL1
- HFPL2
- HFPIPF
- HFPMAINT

- HFPUTIL
- HFPTOOL
- HFPIDLE

Associated registers
None

Extension registers
None

Associated logs
None

FRAMERX

Register type
Peg

Description
FRAMERX is the total number of frames that the HFP receives. These frames include I, RR, RNR, SABME, DM, DISC, UA, FRMR, and REJ frames. These frames also include incomplete, bad CRC, aborted, invalid length, and continuity test frames.

Associated registers
None

Extension registers
FRAMERX2. To determine the total number of frames received, multiple register FRAMERX2 by 65 536 and add FRAMERX register.

Associated logs
None

FRAMETX

Register type
Peg

Description
FRAMETX is the total number of frames that the HFP transmits. These frames include I, RR, RNR, SABME, DM, DISC,UA, FRMR, REJ, and continuity test frames.

Associated registers
None

Extension registers
FRAMETX2. To determine the total number of frames transmitted, multiply by 65 536 and add register FRAMETX

Associated logs
None

BADFRAME

Register type
Peg

Description
BADFRAME is the total number of incomplete, bad CRC, aborted, and incorrect length frames that the HFP receives.

Associated registers
None

Extension registers
BADFRAM2. To determine the total number of bad frames, multiply by 65 536 and add register BADFRAME.

Associated logs
None

LINKCGST

Register type
Peg

Description
LINKCGST counts the number of times the build-up of data traffic congests a link. A build-up of data traffic occurs in the layer 2 processor output queue. The data terminal equipment (DTE) waits to receive the build-up of data traffic.

Associated registers
None

Extension registers
LINKCGS2

Associated logs
None

RNRCGST

Register type
Peg

Description
RNRCGST counts the number of times the free buffer pools (layers 2 and 3) drop below the severe congestion threshold. This condition causes the system to send RNR messages to the DTE to stop the incoming traffic.

Associated registers
None

Extension registers
RNRCGST2

Associated logs
None

HPCBASIC

Description

OM group High Probability Completion - Basic (HPCBASIC) measures HPC call traffic. Registers in this OM group count the number of HPC call attempts on lines and trunks, and keep track of how these calls are handled.

Note: The use of HPC Network Capabilities is restricted in the United States and U.S. Territories (Puerto Rico and U.S. Virgin Islands) to National Security/Emergency Preparedness (NS/EP) users authorized by the Office of the Manager, National Communication System (OMNCS). Operating company deployment of these HPC Network Capabilities must be coordinated with the OMNCS at the following address:

Office of the Manager
National Communications System
Attn: GETS Program Office
701 South Courthouse Rd.
Arlington, VA 22204-2198
email: gets@ncs.gov

HPCBASIC measures HPC call traffic. Registers in this group count the number of HPC call attempts on lines and trunks, and keep track of how these calls are handled.

HPC is the term used to describe the Government Emergency Telecommunications Service (GETS) functionality in a DMS-100 call context. The equivalent functionality in the context of a DMS-250 call is referred to as Carrier GETS (CGETS). In a DMS-500 office that combines the functionality of the DMS-100 and DMS-250, the OMs in this group can be pegged by both HPC and Carrier GETS calls simultaneously.

HPC calls can peg all the registers in this group. Carrier GETS calls only peg selected OMs in this group as indicated in each OM description.

Note: Flowcharts indicating register hits, represent a single pass through an office. Calls can re-route within the office through call forward or AIN responses, and registers can be pegged multiple times during call processing.

The following table lists the key and info fields associated with OM group HPCBASIC.

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group HPCBASIC.

Registers

The following table lists the registers associated with OM group HPCBASIC and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group HPCBASIC (Sheet 1 of 2)

Register name	Measures
LINEATT	Line attempts
TRKATT	Trunk attempts
TERMLINE	Termination - line
TERMTRK	Termination - trunk
TERMNC	Termination - no circuit
TERMIEC	Termination - IEC
TERMIECN	Termination - IEC no circuit
EXNMCTRL	Exemption from network management control
TQQATT	Trunk queuing attempts
TQQOVFL	Trunk queuing overflow
TQQABDN	Trunk queuing abandon
TQQTMREX	Trunk queuing timer expired
ACGEXMPT	AIN queries of HPC calls exempted
ACGBLOCK	AIN queries of HPC calls blocked

Registers for OM group HPCBASIC (Sheet 2 of 2)

Register name	Measures
EQQABDN	Egress queuing queue abandons
EQQATT	Egress queuing queue attempts
EQQOVFL	Egress queuing queue overflow
EQQTMREX	Egress queuing queue timeout

LINEATT

Register type
Peg

Description
LINEATT counts the number of line origination attempts (including PX, P2, and PRI), recognized as HPC calls on lines served by the measuring switch. LINEATT is not pegged for Carrier GETS.

Associated registers
None

Extension registers
None

Associated logs
None

TRKATT

Register type
Peg

Description
TRKATT counts the number of calls recognized as HPC calls, on incoming trunks of the measuring switch.

Note: TRKATT is pegged when an incoming call is recognized as a Carrier GETS call. TRKATT is pegged based on the CPC and only applies to incoming ISUP trunk groups.

Associated registers
None

Extension registers
None

Associated logs
None

TERMLINE

Register type
Peg

Description
The TERMLINE counts the number of calls recognized by the measuring switch as HPC calls, whose destination is a line served by the measuring switch, including calls that have been call forwarded.

Note: TERMLINE is pegged only if the HPC call successfully terminates on the line. TERMLINE is not pegged if the terminating line is busy or if the HPC call is rejected by a feature such as Selective Call Rejection. TERMLINE is not pegged for Carrier GETS.

Associated registers
None

Extension registers
None

Associated logs
None

TERMTRK

Register type
Peg

Description
TERMTRK counts the number of calls that complete on trunks to points outside the measuring switch, that the switch recognizes as HPC calls. TERMTRK is pegged each time an IAM message is sent from an ISUP trunk, or when the inband signaling trunk is seized.

Note 1: TERMTRK register is unpegged in the case of yielding to glare and COT failure event, if the current value is greater than 0.

Note 2: TERMTRK can be pegged following the pegging of register TERMNC, when an HPC call routes to a busy route, with the AIN Network Busy event armed. In this case TERMNC is pegged, the NB event is hit, and AIN sends a query to the SCP and receives a response of Analyze Route, or AFR trigger.

Note 3: TERMTRK is pegged when a Carrier GETS call completes on a trunk.

Associated registers
None

Extension registers
None

Associated logs
None

TERMNC

Register type
Peg

Description
TERMNC counts the number of outgoing HPC calls that cannot be routed on a trunk to a point outside the measuring switch, because no idle trunks are available.

Note 1: For the definition of TERMNC, a Virtual Facility Group (VFG) is considered as a trunk. Therefore, TERMNC is pegged when an HPC call routes to a VFG when it reaches maximum capacity.

Note 2: GETS HPC calls can interact with features that send the call to an alternate route, and therefore, affects the pegging of TERMNC.

Examples of these calls follow:

- HPC calls with ACR or E-ACR peg TERMNC once, after all routes to carriers in the response fail to route the call
- HPC calls with NEL Network Busy peg TERMNC before AIN takes control of the call
- HPC calls incoming on ISUP that send back a release with cause message due to network busy, peg TERMNC
- HPC calls that are forwarded and cannot be routed outside the measuring switch peg TERMNC (even when CFDA returns the call to the original terminating line)

Note 1: TERMTRK can be pegged following the pegging of register TERMNC, when an HPC call routes to a busy route, with the AIN Network Busy event armed. In this case TERMNC is pegged, the NB event is hit, and AIN sends a query to the SCP and receives a response of Analyze Route, or AFR trigger.

Note 2: For Carrier GETS, TERMNC is pegged when a call cannot be routed because no idle trunks are available. The register is pegged on the second scan when the call is sent to GNCT treatment because no idle trunk members are found.

Associated registers
None

Extension registers
None

Associated logs
None

TERMIEC

Register type
Peg

Description
TERMIEC counts the number of HPC calls intended to complete on trunks to points outside the measuring switch, and that are intended for an IEC.

Note: TERMIEC is pegged only when the trunk group is of type ATC. TERMIEC is not pegged for Carrier GETS.

Associated registers
None

Extension registers
None

Associated logs
None

TERMIECN

Register type
Peg

Description
TERMIECN counts the number of outgoing HPC calls that cannot be routed on a trunk to a point outside the measuring switch because no idle trunks are available, and that are intended for AIN IEC (interLATA call).

Note 1: For the definition of TERMIECN a Virtual Facility Group (VFG) is considered as a trunk. Therefore, TERMNC is pegged when an HPC call is routed to a VFG when it reaches maximum capacity.

Note 2: GETS HPC calls can interact with features that send the call to an alternate route, and therefore, affects the pegging of TERMIECN. TERMIECN is not pegged for Carrier GETS.

Examples of these calls follow:

- HPC calls with ACR or E-ACR peg TERMIECN once, after all routes to carriers in the response fail to route the call
- HPC calls with NEL Network Busy peg TERMIECN before AIN takes control of the call
- HPC calls incoming on ISUP that send back a release with cause message due to network busy, peg TERMIECN
- HPC calls that are forwarded and cannot be routed outside the measuring switch peg TERMIECN (even when CFDA returns the call to the original terminating line)

Note: TERMTRK can be pegged following the pegging of register TERMNC, when an HPC call is routed to a busy route, with the AIN Network Busy event armed. In this case TERMIECN is pegged, the NB event is hit, and AIN sends a query to the SCP and receives a response of Analyze Route, or AFR trigger.

Associated registers
None

Extension registers
None

Associated logs
None

EXNMCTRL

Register type
Peg

Description
EXNMCTRL counts the number of times an HPC call is exempted from an active network management control, on the first idle trunk scan.

Note: EXNMCTRL is pegged when a Carrier GETS call bypasses an active network management control on the first idle scan.

Associated registers
None

Extension registers
None

Associated logs
None

TQQATT

Register type
Peg

Description
TQQATT counts the number of attempts to place HPC calls in all trunk group queues.

Note 1: TQQATT is only pegged when a call is placed on the trunk group queue. It is therefore assumed that the register is pegged only on the second idle trunk scan.

Note 2: TQQATT is pegged each time an attempt is made to place a GETS call in a trunk group queue.

For Carrier GETS, TQQATT is pegged for both trunk and office-wide queuing.

Associated registers
None

Extension registers
None

Associated logs
None

TQQOVFL

Register type
Peg

Description
TQQOVFL counts the number of attempts to place HPC calls in trunk group queues that fail because the queues are full.

Note 1: TQQOVFL is only pegged after a call is placed on the trunk group queue. It is therefore assumed that the register is pegged only on the second idle trunk scan.

Note 2: For Carrier GETS, TQQOVFL counts attempts to place a Carrier GETS call in a queue that fail because the queue for the trunk group is full.

Associated registers
None

Extension registers
None

Associated logs
None

TQQABDN

Register type
Peg

Description
TQQABDN counts the number of HPC calls placed in trunk group queues, but abandoned while in the queue.

Note 1: TQQABDN is only pegged after a call is on the trunk group queue. It is therefore assumed that the register is pegged only on the second idle trunk scan.

Note 2: TQQABDN is pegged when a Carrier GETS call is in queue and the calling party abandons.

Associated registers
None

Extension registers
None

Associated logs
None

TQQTMREX

Register type
Peg

Description
TQQTMREX counts the number of HPC calls removed from trunk group queues due to a timeout treatment.

Note 1: TQQTMREX is only pegged after a call is placed on the trunk group queue. It is therefore assumed that the register is pegged only on the second idle trunk scan.

Note 2: TQQTMREX is pegged when a Carrier GETS call is removed from queue because it timed-out waiting for an idle trunk to become available.

Associated registers
None

Extension registers
None

Associated logs
None

ACGEXMPT

Register type
Peg

Description
ACGEXMPT counts the total number of AIN queries of all HPC calls exempted from AIN ACG controls. ACGEXMPT is not pegged for Carrier GETS.

Associated registers
None

Extension registers
None

Associated logs
None

ACGBLOCK

Register type
Peg

Description
ACGBLOCK counts the total number of AIN queries of all HPC calls blocked by AIN ACG controls. ACBLOCK is not pegged for Carrier GETS.

Associated registers
None

Extension registers
None

Associated logs
None

EQQABDN

Register type
Peg

Description
EQQABDN counts the number of calls placed in egress trunk group queues, but abandoned while in the queue. EQQABDN is not pegged for Carrier GETS.

Associated registers
None

Extension registers
None

Associated logs
None

EQQATT

Register type
Peg

Description
EQQATT counts the number of attempts made to place HPC calls in egress trunk group queues. EQQATT is not pegged for Carrier GETS.

Associated registers
None

Extension registers
None

Associated logs
None

EQQOVFL

Register type
Peg

Description
EQQOVFL counts the number of failed attempts to place HPC calls in egress trunk group queues because the queues are full. EQQOVFL is not pegged for Carrier GETS.

Associated registers
None

Extension registers
None

Associated logs
None

EQQTMREX

Register type
Peg

Description
EQQTMREX counts the number of calls removed from egress trunk group queues due to timeout treatment. EQQTMREX is not pegged for Carrier GETS.

Associated registers
None

Extension registers
None

Associated logs
None

HPCTRKCGP

Description

OM group High Probability Completion Trunk Group (HPCTRKGP) measures HPC call traffic on a trunk group basis. Registers in this group count the number of:

- HPC call attempts on a trunk group
- HPC calls that overflowed because all members of a trunk group are busy
- trunk group queue overflows
- queued calls that encounter a timeout treatment

Note: The use of HPC Network Capabilities is restricted in the United States and U.S. Territories (Puerto Rico and U.S. Virgin Islands) to National Security/Emergency Preparedness (NS/EP) users authorized by the Office of the Manager, National Communication System (OMNCS). Operating company deployment of these HPC Network Capabilities must be coordinated with the OMNCS at the following address:

Office of the Manager
National Communications System
Attn: GETS Program Office
701 South Courthouse Rd.
Arlington, VA 22204-2198
email: gets@ncs.gov

HPC is the term used to describe the Government Emergency Telecommunications Service (GETS) functionality in a DMS-100 call context. The equivalent functionality in the context of a DMS-250 call is referred to as Carrier GETS (CGETS). In a DMS-500 office that combines the functionality of the DMS-100 and DMS-250, the OMs in this group can be pegged by both HPC and Carrier GETS calls simultaneously.

Note: Flowcharts indicating OM register hits, represent a single pass through an office. Calls can re-route within the office through call forward or AIN responses, and OM registers can be pegged multiple times during call processing.

The following table lists the key and info fields associated with OM group HPCTRKCGP.

Key field	Info field
COMMON_LANGUAGE_NAME	HPCTRKGPINFO

Related functional groups

There are no functional groups associated with OM group HPCTRKCGP.

Registers

The following table lists the registers associated with OM group HPCTRKCGP and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group HPCTRKCGP

Register name	Measures
HPCATT	HP Call Attempts
HPCOVFL	HP Call Overflow
QUETMREX	Trunk Queuing Timer Expired
QUEOVFL	Trunk Queuing Overflow

HPCATT

Register type
Peg

Description
HPCATT counts the number of times the switch tries to access a trunk in the trunk group to serve an HPC call. The register is pegged only on the first idle trunk scan.

Note: For Carrier GETS, the HPCATT register is pegged each time a call attempts to access a trunk in the trunk group to serve a Carrier GETS call. HPCATT is pegged only on the first idle trunk scan.

Associated registers
None

Extension registers
None

Associated logs
None

HPCOVFL

Register type
Peg

Description
HPCOVFL counts the number of times the switch tries to access a trunk in the trunk group to serve an HPC call, when all trunks are busy. This register is pegged only on the first idle trunk scan.

Note: For Carrier GETS, the HPCOVFL register is pegged when the DMS switch tries to access a trunk in the trunk group to serve a Carrier GETS call, when all trunks are busy. The register is only pegged on the first idle trunk scan.

Associated registers
None

Extension registers
None

Associated logs
None

QUETMREX

Register type
Peg

Description
QUETMREX register counts the number of HPC calls removed from the trunk group queue due to timeout treatment. The register is only pegged when a call is put on the trunk group queue. It is therefore assumed that the register is pegged only on the second scan.

Note: For Carrier GETS, the QUETMREX register is pegged when a Carrier GETS call is removed from queue because it timed-out waiting for an idle trunk to become available.

Associated registers
None

Extension registers
None

Associated logs
None

QUEOVFL

Register type
Peg

Description
QUEOVFL counts the number of attempts to place HPC calls in the trunk group queue that fail because the trunk group queue is full. The register is pegged only when a call is put on the trunk group queue. It is therefore assumed that the register is pegged only on the second scan.

Note: For Carrier GETS, the QUEOVFL register is pegged when a Carrier GETS call attempts to queue on the trunk group but fails because the queue is full. QUEOVFL is pegged on the second idle scan.

Associated registers
None

Extension registers
None

Associated logs
None

HTR

Description

OM group Hard To Reach (HTR) codes pegs the Answer and Bid counts for all Hard To Reach codes. A code is tagged Hard To Reach when the probability of call completion is extremely low. The Engineering and Administration Data Acquisition System (EADAS) machine uses these counts to calculate the Answer to Bid ratio.

The following table lists the key and info fields associated with OM group HTR.

Key field	Info field
None	HTR_INFO Identifies Hard To Reach call codes.

The information field contains:

- the code control type (CCODE/ACODE/NAC/PFX)
- the destination code on which the HTR code control is applied
- SNPA/STS/ALL

Related functional groups

There are no functional groups associated with OM group HTR.

Registers

The following table lists the registers associated with OM group HTR and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group HTR

Register name	Measures
CAONHTRC	Call attempts on hard to reach codes
CCONHTRC	Call completions on hard to reach codes

CAONHTRC

Register type
Peg

Description
CAONHTRC keeps track of the number of call attempts on a destination code tagged Hard to Reach.

Associated registers
None

Extension registers
none

Associated logs
None

CCONHTRC

Register type
Peg

Description
CCONHTRC keeps track of the number of call completions on a destination code tagged Hard to Reach.

Associated registers
None

Extension registers
none

Associated logs
None

HUNT

Description

OM group Hunt (HUNT) provides information on the performance of each hunt group in the DMS switch. HUNT counts:

- attempts to terminate calls on lines in the hunt group
- attempts that fail to find an available line and overflow
- calls attempted again that terminate on a line and fail

A hunt group is a group of lines where an office searches for an available line to terminate a call. The hunt groups on a DMS-100 switch are:

- directory number hunt (DNH)
- distributed line hunt (DLH)
- multiline hunt (MLH)
- bridged night number (BNN)

The following table lists the key and info fields associated with OM group HUNT.

Key field	Info field
None	HUNT_OM_INFO_TYPE - fields: SNPA, DN, GROUPTYPE, SIZE

The SNPA is the serving numbering plan area of the pilot line. The DN is the seven-digit directory number of the pilot line. The GROUPTYPE is the hunt group type, and SIZE is the maximum number of members.

Related functional groups

There are no functional groups associated with OM group HUNT.

Registers

The following table lists the registers associated with OM group HUNT and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group HUNT

Register name	Measures
HUNTATT	Hunt attempts
HUNTOVFL	Hunt overflow
HUNTRHNT	Hunt rehunt
HUNTTRF	Hunt traffic
HUNTMNT	Hunt maintenance

HUNTATT

Register type
Peg

Description
HUNTATT counts attempts to terminate a call on a line that is a member of a hunt group.

Associated registers
None

Extension registers
None

Associated logs
None

HUNTOVFL

Register type
Peg

Description
HUNTOVFL counts failed attempts to terminate a call on a line that is a member of a hunt group. The attempts HUNTOVFL counts fail because no line is available. The lines can be in a call processing busy state or a maintenance busy state.

If the system directs the call at a line other than the pilot line and the hunt group is not circular, overflow can occur. In this case overflow occurs on a directory number hunt (DNH) group. Overflow can occur even if hunt group members are available.

Associated registers
None

Extension registers
None

Associated logs
None

HUNTRHNT

Register type
Peg

Description
HUNTRHNT increases if the system selects an alternate line in a hunt group because of

- a connection failure on the first line
- a ringing failure on the first line
- other problems on the first line

Associated registers
None

Extension registers
None

Associated logs
None

HUNTTRF

Register type
Peg

Description
HUNTTRF records call processing traffic on the hunt groups in the office. Each hunt group is scanned every 100 seconds to record the call processing usage for each member. The HUNTTRF register records the number of call processing busy members during the sample time. The register will accumulate between transfer periods.

Associated registers
None

Extension registers
None

Associated logs
None

HUNTMNT

Register type
Peg

Description
HUNTMNT records maintenance traffic on the hunt groups in the office. Each hunt group is scanned every 100 seconds to record the maintenance usage for each member. The HUNTMNT register records the number of maintenance busy members during the sample time. The register will accumulate between transfer periods.

Associated registers
None

Extension registers
None

Associated logs
None

IBNAC

Description

OM group Integrated Business Network Attendant Console (IBNAC) provides information about the number and types of calls handled by individual attendant consoles.

The types of calls IBNAC counts include listed directory number, O type, intercepted, transferred, forwarded, recalled, and a miscellaneous category for any other calls. The group also counts the number of times attendants hold, originate, and extend calls.

Usage registers record when consoles are in use, in a talking state, and in a position busy state. Supervisory personnel can use information collected in IBNAC to manage work loads, monitor productivity, and identify training requirements.

This information can be used to determine if attendant console resources are able to handle the expected number of calls. IBNAC can be used to determine the types of calls that occur most often. IBNAC can also be used to determine the time the attendant needs to handle the calls.

You can schedule IBNAC with the same method as other OM group reports. You can view the counts on the MAP at the INACOM display level. INACOM provides real-time counts on an individual attendant console basis. The ACOM and ACDYMS MAP displays provide information on a sub-group basis.

Individual register descriptions contain information on relationships between the registers and MAP displays. The MAP does not display usage counts.

The following table lists the key and info fields associated with OM group IBNAC.

Key field	Info field
an integer (0-254) representing an individual attendant console	customer group name defined in table IBNGRP (maximum: 256).

For OM group IBNAC:

- The subgroup number is 0-7.
- The console CLLI is defined in table ATTCONS (maximum: 255).

- The CLLI for each attendant console must be defined in table ATTCONS.
- The customer group name and subgroup number for each attendant console must be entered in table IBNGRP.

Related functional groups

The IBN Attendant Console is associated with OM group IBNAC.

Registers

The following table lists the registers associated with OM group IBNAC and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group IBNAC (Sheet 1 of 2)

Register name	Measures
IACAUTH	Individual attendant console calls involving authorization codes
IACBSYDR	Individual attendant console position busy duration
IACCFW	Individual attendant console answered call forward calls
IACCTVTU	Individual attendant console activated usage
IACDIAL0	Individual attendant console answered dial 0
IACEXTD	Individual attendant console extended calls
IACHLD	Individual attendant console hold calls
IACINTRP	Individual attendant console answered intercept
IACLDN	Individual attendant console listed directory number
IACLDN1	Individual attendant console listed directory number one
IACLDN2	Individual attendant console listed directory number two
IACLDN3	Individual attendant console listed directory number three

Registers for OM group IBNAC (Sheet 2 of 2)

Register name	Measures
IACLDN4	Individual attendant console listed directory number four
IACLDN5	Individual attendant console listed directory number five
IACLDN6	Individual attendant console listed directory number six
IACLDN7	Individual attendant console listed directory number seven
IACLDNR	Individual attendant console routed listed directory number
IACORGDR	Individual attendant console duration of originated calls
IACORIG	Individual attendant console originated calls
IACPOSBY	Individual attendant console position busy
IACQTOTL	Individual attendant console
IACRECAL	Individual attendant console answered timed recalls
IACSPCL	Individual attendant console answered miscellaneous calls
IACTOTDR	Individual attendant console total duration of answered calls
IACXFRAT	Individual attendant console answered transfer to attendant

IACAUTH

Register type
Peg

Description
IACAUTH increases when an attendant enters an authorization code and presses an AUTH code key.

Associated registers
IBNSG_AUTHCALL (counts the same information for a subgroup)

Extension registers
None

Associated logs
None

IACBSYDR

Register type
Usage

Scan rate
10 seconds

Description
IACBSDYR records if an attendant console is in the position busy state. The count starts when an attendant presses the position busy key and stops when position busy deactivates. To deactivate position busy, press the position busy key again if night service is not active. Press the night service key if night service is active.

Associated registers
IBNSG_ACBSYSDR (provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACCFW

Register type
Peg

Description
IACCFW increases when an attendant answers a forwarded call.

Associated registers
IBNSG_ANSCFW (provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACCTVTU

Register type
Usage

Scan rate
100 seconds

Description
IACCTVTU records if an attendant occupies a console. An attendant console is occupied if the headset is plugged in, even if the console is in position busy or night service mode.

Associated registers
IBNSG_ACTVTU (provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACDIAL0

Register type
Peg

Description
IACDIAL0 increases when an attendant answers a dial 0 type call. Calls counted by IACDIAL0 include:

- all station dial 0 regardless of station type
- automatic station originations routed to the attendant
- incoming calls on attendant trunks

Associated registers
IBNSG_ANSDIAL0 (provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACEXTD

Register type
Peg

Description
IACEXTD counts calls that an attendant extends. The register increases after the attendant dials the destination number.

Associated registers
IBNSG_EXTCALL (provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACHLD

Register type
Peg

Description
IACHLD increases when an attendant presses the hold key or a loop key to place a call on hold while remaining active on another loop key.

Associated registers
IBNSG_HLDCALL (provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACINTRP

Register type
Peg

Description
IACINTRP increases when an attendant answers an intercept-type call. Intercept type calls include:

- station intercept
- incoming intercepted DID
- calls incoming on intercept trunks

Associated registers
INBSG_ANSINTRP (provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACLDN

Register type
Peg

Description
IACLDN increases when an attendant answers a call to its assigned listed directory number(s).

Associated registers
IBNSG_ANSLDN (provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACLDN1

Register type
Peg

Description
IACLDN1 counts call attempts for a listed directory number (LDN) designated as LDN1 for separate attendant consoles. The register counts call attempts for an LDN in table WRDN if the LDNREPRT field is set to Y (yes).

Associated registers
IBNSG_LDN1 (provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACLDN2

Register type
Peg

Description
IACLDN2 counts call attempts for a listed directory number (LDN) designated as LDN2 for separate attendant consoles. The register counts call attempts for an LDN in table WRDN if the LDNREPRT field is set to Y (yes).

Associated registers
IBNSG_LDN2 (provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACLDN3

Register type
Peg

Description
IACLDN3 counts call attempts for a listed directory number (LDN) designated as LDN3 for separate attendant consoles. The register counts call attempts for an LDN in table WRDN if the LDNREPRT field is set to Y (yes).

Associated registers
IBNSG_LDN3 (provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACLDN4

Register type
Peg

Description
IACLDN4 counts call attempts for a listed directory number (LDN) designated as LDN4 for separate attendant consoles. The register counts call attempts for an LDN in table WRDN if the LDNREPRT field is set to Y (yes).

Associated registers
IBNSG_LDN4 (provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACLDN5

Register type
Peg

Description
IACLDN5 counts call attempts for a listed directory number (LDN) designated as LDN5 for separate attendant consoles. The register counts call attempts for an LDN in table WRDN if the LDNREPRT field is set to Y (yes).

Associated registers
IBNSG_LDN5 (provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACLDN6

Register type
Peg

Description
IACLDN6 counts call attempts for a listed directory number (LDN) designated as LDN6 for separate attendant consoles. The register counts call attempts for an LDN in table WRDN if the LDNREPRT field is set to Y (yes).

Associated registers
IBNSG_LDN6 (provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACLDN7

Register type
Peg

Description
IACLDN7 counts call attempts for a listed directory number (LDN) designated as LDN7 for separate attendant consoles. The register counts call attempts for an LDN in table WRDN if the LDNREPRT field is set to Y (yes).

Associated registers
IBNSG_LDN7 (provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACLDNR

Register type
Peg

Description
IACLDNR counts call attempts to a routed listed directory number (LDN) that an attendant answers.

Associated registers
IBNSG_LDNR (provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACORGDR

Register type
Usage

Scan rate
10 seconds

Description
IACORGDR records if an attendant-originated call is in the talking state. An attendant-originated call starts when an idle loop key is pressed, and stops when the hold key, release key, or other loop key is pressed while the attendant is active on a different loop.

Associated registers
IBNSG_ORIGDR (which provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACORIG

Register type
Peg

Description
IACORIG counts calls that originate at an attendant console. The register increases each time the attendant presses an idle loop key and starts to dial.

Associated registers
IBNSG_ORIGCALL (which provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACPOSBY

Register type
Peg

Description
IACPOSBY increases when an attendant presses the position busy key to place the attendant console in the position busy state.

Associated registers
IBNSG_ACPOSBY (which provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACQTOTL

Register type
Peg

Description
IACQTOTL counts the calls an attendant answers. The register increases when the attendant presses a loop or incoming call identification (ICI) key. IACQTOTL increases each time one of the following registers increases:

- IACLDN
- IACINTRP
- IACDIAL0
- IACXFRAT
- IACCFW
- IACRECAL
- IACSPCL

Associated registers
IBNSG_QTOTAL (which provides the same information for a subgroup)

Validation formula
IACQTOTAL = IACLDN + IACINTRP + IACDIAL0 + IACXFRAT + IACCFW + IACRECAL + IACSPCL

Extension registers
None

Associated logs
None

IACRECAL

Register type
Peg

Description
IACRECAL increases when an attendant answers a recall that results from use of Call Waiting, Camp-on or No-Answer features.

Associated registers
IBNSG_RECALLS (which provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACSPCL

Register type
Peg

Description
IACSPCL increases when an attendant answers a call type that any of the following registers do not count:

- IACLDN
- IACINTRP
- IACDIAL0
- IACXRAT
- IACCFW
- IACRECAL

Associated registers
IBNSG_SPCLCCT (which provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACTOTDR

Register type
Usage

Scan rate
10 seconds

Description
IACTOTDR records if an answered call is in the talking state. The call starts when the attendant presses a loop or ICI key. The call stops when the attendant presses the hold key, release key, or other loop key while the attendant is active on a different loop.

Associated registers
IBNSG_TOTDR (which provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IACXFRAT

Register type
Peg

Description
IACXFRAT counts calls that a switch flash and dial 0 or 2 transfers from a station by switch flash and dial 0 or 2. IACXFRAT also counts calls that are recalled to the attendant over tie trunks.

Associated registers
IBNSG_ANSXERAT (which provides the same information for a subgroup)

Extension registers
None

Associated logs
None

IBNGRP

Description

OM group Integrated Business Network Group (IBNGRP) provides information about the use of Integrated Business Network (IBN) call processing by a customer group. A customer group is a set of lines that belong to a group of individuals that request special services.

Registers in this group are package dependent. The basic registers, NORIG0, NORIG1, DOD, STNSTN, NDIAL0, CXFRTOAT, CXFR, GINTRCPT, GINCATOT, and CODEBLK appear in feature package NTX100AA. The remaining registers appear only if the required feature package is present.

The group intercom feature in feature package NTX106AA allows a customer to use abbreviated dialing to call a part of a set group. Register GICORIG increases when the customer uses the group intercom feature.

The security code feature in package NTX573AA and NTX574AA allows the system to assign a code to an IBN station directory number (DN). The code allows the system to restrict feature activation for the DN. Register SECINVAL counts the invalid security codes dialed.

The ring again (RAG) feature in package NTX106AA allows a station to monitor a busy DN. The station can also notify the user when the DN becomes free. Registers SRGACMPL, RGADEACT, RGADELTN, and RGAOVWRT count successful and unsuccessful RAG completions, deactivations, deletions, and overwrites.

The permanent hold feature in package NTX106AA allows a business set to hold an active call against the DN of the business set. The business set can then retrieve the held call from the same station. Registers HLDRES, HLDSUCC, HLDRCLL, and HLDABAN, count the following calls:

- correctly held calls
- calls held without completion
- held calls that abandon
- held calls that recall

The inspect key feature in package NTXE40AA allows a business set user to display information about keys. These keys include feature keys, directory number keys, and calling numbers. Register INSPECT increases when the business set user uses the inspect key.

The following table lists the key and info fields associated with OM group IBNGRP.

Key field	Info field
None	OMIBNGINFO, the customer group as field CUSTNAME defines in table CUSTENG. One customer name for each customer group (max. 4095). The tuple number of IBNGRP functions as the key in the OMSHOW command.

Parameter CUSTOMER_GROUP_IBNGRP_OM_COUNT in table OFCENG specifies the data store for the customer group operational measurements.

Parameter NO_OF_FTR_DATA_BLKS in table OFCENG specifies the number of feature data blocks available.

Parameter NO_OF_FTR_CONTROL_BLKS in table OFCENG specifies the number of feature control blocks available.

Parameter FTRQ2WAREAS in table OFCENG specifies the maximum number of FTRQ two-word areas the engineering interval requires.

Parameter FTRQ8WAREAS in table OFCENG specifies the maximum number of FTRQ8WAREAS blocks the ring again feature requires.

Parameter FTRQAGENTS in table OFCENG specifies the number of agents that can have the ring again feature waiting or active.

The group intercom feature is assigned in the DF field of table IBNFEAT.

The security code feature is assigned in the DF field of table IBNFEAT and the FEAT field of table KSETFEAT.

The ring again feature is assigned in the OPTLIST field of table IBNLINES and the FEAT field of table KSETLINES.

The permanent hold feature is assigned in the OPTLIST field of table IBNLINES.

The inspect key feature is assigned in the DF field of table KSETFEAT.

Related functional groups

The following functional groups are associated with OM group IBNGRP:

- Integrated Business Network (IBN)
- 500/2500 set

Registers

The following table lists the registers associated with OM group IBNGRP and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group IBNGRP (Sheet 1 of 2)

Register name	Measures
CODEBLK	Code blocked
DOD	Direct outward dial
GICORIG	Group intercom originations
GINCATOT	Group incoming total
GINTRCPT	Given intercept
HLDABAN	Held abandons
HLDFRES	Held call failures resources
HLDRCLL	Held recalls
HLDSUCC	Held successful
INSPECT	IBN INSPECT key use
NDIAL0	Number of dial 0 attempts
NORIG0	Number of originations
RGADEACT	Ring again deactivation
RGADELTN	Ring again deletions
RGAOVWRT	Ring again overwrites
SECINVAL	Security code invalid

Registers for OM group IBNGRP (Sheet 2 of 2)

Register name	Measures
SRGACMPL	Successful ring again completions
STNSTN	Station to station

CODEBLK

Register type
Peg

Description
CODEBLK increases when the system blocks a call because of integrated business networks (IBN) code restrictions.

Associated registers
None

Extension registers
None

Associated logs
None

DOD

Register type
Peg

Description
DOD increases when a station or attendant places a direct outward dial (DOD) call. To dial a DOD call to the exchange network without attendant help, dial the DOD access code. After you receive a second dial tone, dial the external number. Access codes are assigned in table IBNXLA. Calls that are successful and not successful are counted.

Associated registers
None

Extension registers
None

Associated logs
None

GICORIG

Register type
Peg

Description
GICORIG counts abbreviated dialing calls that originate from business sets and integrated business network (IBN) lines in the customer group. The group intercom (GIC) feature allows customers to use abbreviated dialing to call a member of a set group. The register increases when a station uses the GIC feature and the call is answered or not answered.

Associated registers
None

Extension registers
None

Associated logs
None

GINCATOT

Register type
Peg

Description
GINCATOT counts incoming calls for a customer group. The register counts calls between customer groups in the same switch only when field INTRAGOUP in table IBNXLA is set to N.

Associated registers
None

Extension registers
None

Associated logs
None

GINTRCPT

Register type
Peg

Description
GINTRCPT increases when a call is given intercept treatment. The register counts originating, terminating, and tandem class of service and code restriction problems. The register also counts attendant attempts to complete calls to denied incoming (DIN) stations.

GINTRCPT does not count calls that the system routes to announcements, tones, and attendant answers.

Associated registers
None

Extension registers
None

Associated logs
None

HLDABAN

Register type
Peg

Description
HLDABAN counts held calls that abandon the line before the calls recall.

Associated registers
HLDSUCC

Validation formula
HLDSUCC - HLDABAN = held calls that do not abandon the line before the calls recall

Extension registers
None

Associated logs
None

HLDFRES

Register type
Peg

Description
HLDFRES counts calls that the system cannot place on hold because of not enough of feature data blocks. No software resource treatment is given. Parameter NO_OF_FTR_DATA_BLKS in table OFCENG specifies the number of data blocks available.

Associated registers
TRSNOSR in OM group TRMTRS increases when no software resource treatment is given.

Extension registers
None

Associated logs
None

HLDRCLL

Register type
Peg

Description
HLDRCLL counts calls on hold that recall. When station A has the recall option, HLDRCLL increases when that recall is to occur. The recall can be in the form of receiver off-hook (ROH) tone or ringing.

Associated registers
None

Extension registers
None

Associated logs
None

HLDSUCC

Register type
Peg

Description
HLDSUCC counts calls that are correctly placed on hold.

Associated registers
HLDABAN

Validation formula
HLDSUCC - HLDABAN = held calls that do not abandon the line before the calls recall

Extension registers
None

Associated logs
None

INSPECT

Register type
Peg

Description
INSPECT increases when the you use the inspect key on a display electronic business set. You can use the inspect key to view associated information for feature or directory number (DN) key on a business set. The inspect key also displays call information on an incoming call. The information displays even if the call is not answered.

Associated registers
None

Extension registers
None

Associated logs
None

NDIAL0

Register type
Peg

Description
NDIAL0 increases when a station or tie trunk user dials a code to reach an attendant instead of dialing the attendant's directory number. NDIAL0 includes:

- station dial attendant
- automatic line originations if the route is to the attendant

Note: Attempts and seizures on incoming attendant trunks do not increase.

Associated registers
None

Extension registers
None

Associated logs
None

NORIG0

Register type
Peg

Description
NORIG0 counts calls that originated at a station or with an attendant. The register counts permanent signal partial dial calls. The register does not attendant extended calls.

Associated registers
NORIG in OFZ counts originating calls that the central controller (CC) recognizes.

Extension registers
NORIG1

Associated logs
None

RGADEACT

Register type
Peg

Description
RGADEACT counts ring again (RAG) attempts the user deletes when the user dials the release code. RAG release occurs when a user with a pending RAG request activates RAG for another directory number.

Associated registers
None

Extension registers
None

Associated logs
None

RGADELTN

Register type
Peg

Description
RGADELTN counts ring again (RAG) attempts that the system deletes for any of the following reasons:

- no response to RAG ringing
- lines removed from service
- RAG feature deleted from caller
- call forwarding activated

Associated registers
None

Extension registers
None

Associated logs
None

RGAOVWRT

Register type
Peg

Description
RGAOVWRT increases when a ring again (RAG) overwrite occurs. A RAG overwrite occurs when station A has a ring again request pending to a busy station B. If station A dials another busy station and activates RAG again, the new RAG request overwrites the previous RAG request.

Associated registers
None

Extension registers
None

Associated logs
None

SECINVAL

Register type
Peg

Description
SECINVAL increases when a user dials an invalid security code number. A security code allows a code to be assigned to an integrated business network (IBN) station directory number. The code can restrict feature activation for the directory number.

Associated registers
None

Extension registers
None

Associated logs
None

SRGACMPL

Register type
Peg

Description
SRGACMPL counts successful ring again (RAG) attempts. RAG allows a station to monitor a busy directory number in the same customer group. Rag also allows a station to notify the user when the directory number becomes free.

Associated registers
None

Extension registers
None

Associated logs
None

STNSTN

Register type
Peg

Description
STNSTN increases when a station dials another station within a customer group. The register does not count call transfer attempts by stations or attendant-originated calls.

Associated registers
None

Extension registers
None

Associated logs
None

IBNSG

Description

OM group Integrated Business Network Subgroup (IBNSG) provides information about the activities of customer group attendant consoles by the subgroup.

A customer group is a set of lines which belong to a group of individuals that request special services. Subgroups allow customers to have attendant-type calls that the subgroups answer locally during the day or busy hours. Subgroups centralize this function. A customer group can have up to seven subgroups. A subgroup can have up to 32 consoles.

The following table lists the key and info fields associated with OM group IBNSG.

Key field	Info field
None	Contains the customer group name and subgroup name. This field has an integer range (0 to 2047) and represents the 256 customer groups that can have attendant consoles and the eight possible subgroups within each customer group (256 x 8 = 2048).

Related functional groups

The following functional groups are associated with OM group IBNSG:

- Integrated Business Network (IBN)
- Attendant Consoles

Registers

The following table lists the registers associated with OM group IBNSG and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group IBNSG (Sheet 1 of 3)

Register name	Measures
ABNDN	Abandoned calls to attendant
ACBSYSDR	Attendant console busy position duration

Registers for OM group IBNSG (Sheet 2 of 3)

Register name	Measures
ACPOSBY	Attendant console position busy
ACTVTU	Activated usage
ANSCFW	Answered call forward calls
ANSDELAY	Answer delay
ANSDIAL0	Answered dial 0
ANSINTRP	Answer intercept
ANSLDN	Answered listed directory numbers
ANSXFRAT	Answered transfer attendant
ATQDFL	Attendant queue deflection
AUTHCALL	Authorization call
CORECALL	Camp-on recall
CWINQU	Calls waiting in queue
CWRECALL	Call waiting recall
DARECALL	Attendant answered recalls
EXTDCALL	Extended calls
HLDCALL	Held call
LPHLDREC	Loop held recalls
LPOVFL	Loop overflows
LPU	Loop usage
NSCALLS	Night service calls
ORIGCALL	Originated calls
ORIGDR	Originated duration
QTOTAL	Queue total

Registers for OM group IBNSG (Sheet 3 of 3)

Register name	Measures
RECALLS	Recalls
SERIALRC	Serial call recalls
SPCLCCT	Special calls accounted
TOTDR	Total duration
WRKTMU	Work time usage

ABNDN

Register type
Peg

Description
ADNDN increases when a caller in the subgroup queue abandons the call before a console answers. The caller abandons the call as the caller listens to audible ringing.

Associated registers
None

Extension registers
None

Associated logs
None

ACBSYSDR

Register type
Usage

Scan rate
10 seconds

Description
ACBSYSDR records if an attendant console is position busy.

Associated registers
IBNAC_IACBSYDR

Extension registers
None

Associated logs
None

ACPOSBY

Register type
Peg

Description
ACPOSBY increases when the attendant presses the position busy key and makes the attendant console position busy.

Associated registers
IBNAC_IACPOSBY

Extension registers
None

Associated logs
None

ACTVTU

Register type
Usage

Scan rate
100 seconds

Description
ACTVTU records if an attendant console in a customer subgroup is active. A console is active as long as a headset is plugged in. The register also counts consoles in the *position busy* or *night* state.

Associated registers
IBNAC_IACCTVTU

Extension registers
None

Associated logs
None

ANSCFW

Register type
Peg

Description
ANSCFW increases when an attendant answers a call that comes in to a station. The register counts the call when the call forward feature is set to *forward to the attendant*. The numbers 5, 6, or 7 on the console display indicate that a call is call forwarded.

Associated registers
IBNAC_IACCFW

Extension registers
None

Associated logs
None

ANSDELAY

Register type
Peg

Description
ANSDELAY increases when an attendant answers a call that waits in the queue longer than a specified time. The customer assigns the specified time (from four to 60 seconds) in field ANSTIME in table CUSTCONS.

Associated registers
QTOTAL

Validation formula
IBNSG_ANSDELAY / IBNSG_QTOTAL x 100 = percentage of answered calls delayed more than the specified time

Extension registers
None

Associated logs
None

ANSDIAL0

Register type
Peg

Description
ANSDIAL0 increases when an attendant answers an incoming call indicator (ICI) with the number 1 (ICI-1). The ICI-1 is associated with station-dialed zero calls, automatic station originations to the attendant,

and incoming calls on attendant trunks. Table IBNXLA specifies the type of call assigned to field ICI-1.

Associated registers
None

Extension registers
None

Associated logs
None

ANSINTRP

Register type
Peg

Description
ANSINTRP increases when an attendant answers an intercept call. The number 8 on the console display indicates an intercept call. The following intercept call categories are included:

- station intercept
- incoming intercepted DID
- extended private switched communication service (EPSCS) calls
- calls incoming on intercept trunks from other PBXs

Associated registers
IBNAC_IIACINTRP

Extension registers
None

Associated logs
None

ANSLDN

Register type
Peg

Description
ANSLDN increases when an attendant answers a call to the listed directory number (LDN). If a customer has more than one LDN, all LDN-answered calls increases this register. LDNs are in field DNNM in table WRDN.

Associated registers
IBNAC_IACLDN

Extension registers
None

Associated logs
None

ANSXFRAT

Register type
Peg

Description
ANSXFRAT increases when an attendant answers a call a station transferred to an attendant by switch-hook flash and dialing zero. This register also increases when a station does not answer for a specified amount of time and recalls the attendant. The specified time before the station recalls the attendant is in field CWNATO in table CUSTCONS.

Associated registers
IBNAC_IACXFRAT

Extension registers
None

Associated logs
None

ATQDFL

Register type
Peg

Description
ATQDFL increases when a call deflects from the customer subgroup queue to a busy tone or announcement. The call deflects because the attendant queue size exceeds the threshold size. Deflections do not occur for do not answer recalls, camp-on recalls, or call waiting recalls. The attendant queue threshold is in field CQDIVTHR in table SUBGRP.

Associated registers
None

Extension registers
None

Associated logs
None

AUTHCALL

Register type
Peg

Description
AUTHCALL increases when an attendant in a customer subgroup presses the authorization validation (AUTH) key. The register increases after the attendant enters an authorization code when the attendant originates or extends a call.

Associated registers
IBNAC_IACAUTH

Extension registers
None

Associated logs
None

CORECALL

Register type
Peg

Description
CORECALL counts camp-on recalls that an attendant answers (The number 3 on the console display indicates a camped-on recall). An attendant directs a call to a busy station and the call is camped-on to the station. When the busy station goes on-hook, the call rings and connects. If the call is not answered within a specific time, the system routes the camped-on call back to the attendant. The specified time is in field ACORECTO in table CUSTCONS.

Associated registers
None

Extension registers
None

Associated logs
None

CWINQU

Register type
Usage

Scan rate
10 seconds

Description
CWINQU records the number of calls in the customer subgroup that wait in the attendant queue for a free attendant console. The register also records calls that are abandoned while the call waits in the queue.

Associated registers
None

Extension registers
None

Associated logs
None

CWRECALL

Register type
Peg

Description
CWRECALL counts attendant-answered recalls from attendant-extended calls to busy stations with the call waiting feature. The number 4 on the console display indicates a call waiting recall. The register increases when the attendant does not answer the calls within a specified time. The specified time is assigned in field CWNATO in table CUSTCONS.

Associated registers
None

Extension registers
None

Associated logs
None

DARECALL

Register type
Peg

Description
DARECALL counts calls that an attendant directs to a station and receives no answer. The number 2 on the console display indicates a recall. The system redirects unanswered calls back to the attendant, and the attendant answers the call.

Associated registers
None

Extension registers
None

Associated logs
None

EXTDCALL

Register type
Peg

Description
EXTDCALL counts calls that attendants in a customer subgroup extend.

Associated registers
IBNAC_IACEXTD

Extension registers
None

Associated logs
None

HLDCALL

Register type
Peg

Description
HLDCALL increases when an attendant presses the hold key or another loop key while active on a loop.

Associated registers
IBNAC_IACHLD

Extension registers
None

Associated logs
None

LPHLDREC

Register type
Peg

Description
LPHLDREC increases when an attendant answers a recall held on a loop.

Associated registers
None

Extension registers
None

Associated logs
None

LPOVFL

Register type
Peg

Description
LPOVFL counts loops in a subgroup attendant consoles that are busy because the loop has held and queued calls. The calls wait for an attendant console to become free. The register does not count direct console-to-console calls, or night service calls the system redirects from another subgroup.

Associated registers
None

Extension registers
None

Associated logs
None

LPU

Register type
Usage

Scan rate
10 seconds

Description
LPU records if the customer subgroup uses attendant loops. The register counts loops on which attendants are active and loops that have held calls. The register also counts consoles in the position busy or night state with plugged in headsets.

Associated registers
None

Extension registers
None

Associated logs
None

NSCALLS

Register type
Peg

Description
NSCALLS increases when a call requires night service treatment.

Associated registers
None

Extension registers
None

Associated logs
None

ORIGCALL

Register type
Peg

Description
ORIGCALL counts calls that an attendant in a customer subgroup originates. This register increases when an attendant presses an idle loop key and starts to dial.

Associated registers
None

Extension registers
None

Associated logs
IBNAC_IACORIG

ORIGDR

Register type
Usage

Scan rate
10 seconds

Description
ORIGDR records when a call that an attendant originates is in the talking state.

Associated registers
IBNAC_IACORGDR

Extension registers
None

Associated logs
None

QTOTAL

Register type
Peg

Description
QTOTAL counts calls the enqueue calls of attendant consoles in a subgroup.

Associated registers
ANSCFW, ANSDIAL0, ANSINTRP, ANSLDN, ANSXFRAT, RECALLS, SERIALRC, SPCLCCT

Validation formula
IBNSG_QTOTAL = IBNSG_ANSLDN + IBNSG_ANSINTRP + IBNSG_ANSDIAL0 + IBNSG_ANSXFRAT + IBNSG_RECALLS + IBNSG_SPCLCCT + IBNSG_ANSCFW +IBNSG_SERIALRC

Extension registers
None

Associated logs
None

RECALLS

Register type
Peg

Description
RECALLS counts recalls in a customer subgroup.

Associated registers
CORECALL, CWRECALL, DARECALL, SERIALRC, IBNAC_IACRECAL

Validation formula
IBNSG_QTOTAL = IBNSG_ANSLDN + IBNSG_ANSINTRP + IBNSG_ANSDIAL0 + IBNSG_ANSXFRAT + IBNSG_RECALLS + IBNSG_SPCLCCT + IBNSG_ANSCFW +IBNSG_SERIALRC

Extension registers
None

Associated logs
None

SERIALRC

Register type
Peg

Description
SERIALRC counts serial call recalls that an attendant consoles in a subgroup answers.

Associated registers
None

Extension registers
None

Associated logs
None

SPCLCCT

Register type
Peg

Description
SPCLCCT increases when an attendant answers a call.

This register does not count the following calls:

- transfer-to-attendant
- dial zero
- recall
- call forward
- intercepted
- listed directory number

SPCLCCT also counts attendant-answered station calls that other attendant-answered registers do not count because of data entry errors. This register also counts calls with an unassigned translation selector field (ATT).

Associated registers
None

Extension registers
None

Associated logs
IBNAC_IACSPCL

TOTDR

Register type
Usage

Scan rate
10 seconds

Description
TOTDR records if an attendant-answered call is in a talking state.

Associated registers
IBNAC_IACTOTDR

Extension registers
None

Associated logs
None

WRKTMU

Register type
Usage

Scan rate
10 seconds

Description
WRKTMU records if attendants in a customer subgroup are active on a loop. An attendant is active on a loop when:

- an attendant answers a loop key to answer a call, originate a call, or access a call held before
- an attendant presses a loop key or an incoming call identification indicator (ICI) key to answer an ICI lamp indication
- a console is in the position busy or night state with an attached headset

Associated registers
None

Extension registers
None

Associated logs
None

IBNSGLDN

Description

OM group Integrated Business Network Subgroup Listed Directory Number (IBNSGLDN) provides separate peg counts for each listed directory number (LDN) assigned to a subgroup in a console customer group. IBNSGLDN collects measurements for up to seven LDNs in a subgroup. An eighth register counts calls the system routes from other groups or subgroups.

The following table lists the key and info fields associated with OM group IBNSGLDN.

Key field	Info field
IBNSG_INDEX identifies IBN subgroup	OMIBNSGINFO identifies customer group and subgroup by name

You must enter LDNs in table WRDN (DN_SEL= 'M') to increase registers in IBNSGLDN.

Related functional groups

There are no functional groups associated with OM group IBNSGLDN.

Registers

The following table lists the registers associated with OM group IBNSGLDN and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group IBNSGLDN (Sheet 1 of 2)

Register name	Measures
LDN1	Listed directory number one calls
LDN2	Listed directory number two calls
LDN3	Listed directory number three calls
LDN4	Listed directory number four calls
LDN5	Listed directory number five calls
LDN6	Listed directory number six calls

Registers for OM group IBNSGLDN (Sheet 2 of 2)

Register name	Measures
LDN7	Listed directory number seven calls
LDNR	Routed listed directory number calls

LDN1

Register type
Peg

Description
LDN1 counts calls that an attendant answers on LDN1.

Associated registers
IBNAC_IACLDN1

Extension registers
None

Associated logs
None

LDN2

Register type
Peg

Description
LDN2 counts calls that an attendant answers on LDN2.

Associated registers
IBNAC_IACLDN2

Extension registers
None

Associated logs
None

LDN3

Register type
Peg

Description
LDN3 counts calls that an attendant answers on LDN3.

Associated registers
IBNAC_IACLDN3

Extension registers
None

Associated logs
None

LDN4

Register type
Peg

Description
LDN4 counts calls that an attendant answers on LDN4.

Associated registers
IBNAC_IACLDN4

Extension registers
None

Associated logs
None

LDN5

Register type
Peg

Description
LDN5 counts calls that an attendant answers on LDN5.

Associated registers
IBNAC_IACLDN5

Extension registers
None

Associated logs
None

LDN6

Register type
Peg

Description
LDN6 counts calls that an attendant answers on LDN6.

Associated registers
IBNAC_IACLDN6

Extension registers
None

Associated logs
None

LDN7

Register type
Peg

Description
LDN7 counts calls that an attendant answers on LDN7.

Associated registers
IBNAC_IACLDN7

Extension registers
None

Associated logs
None

LDNR

Register type
Peg

Description
LDNR counts calls that an attendant answers for routed listed directory numbers.

Associated registers
IBNAC_IACLDNR

Extension registers
None

Associated logs
None

ILDBD

Description

ATTENTION

The ISDN line drawer for remotes (ILDR) is first available for remote switching center-SONET (RSC-S) in the NA007/XPM08 timeframe. ISDN is available for remote switching center (RSC) configurations in the NA007/XPM08 timeframe. The ILDR is first available for the remote line concentrating module (RLCM), outside plant module (OPM), and outside plant access cabinet (OPAC) configurations in the NA008/XPM81 timeframe.

The first release of the ILDR product in NA007 also includes no more than two Bd-channels (used for 100% low speed packet data) for each line drawer. This engineering restriction for 100% packet data usage on the ISDN Delta channel will be removed in NA008. The delivery of feature AF6811, ILDR Overload Control will remove the restriction.

OM group Integrated Services Digital Network (ISDN) Line Drawer BD Channels (ILDBD) provides information for the ILDR Bd-channel. This information allows operating company personnel to verify normal transit of information (frames) on the links between the ILDR and the packet handler.

ILDBD contains registers that count the following ILDR Bd-channel events:

- frames that the system transmits, which the system discarded
- frames that the system received with cyclic redundancy check (CRC) errors
- frames that the system discards
- frames that the system receives or transmits from or to the packet handler

The following table lists the key and info fields associated with OM group ILDBD.

Key field	Info field
ILDBD_OMTYPE. This key field specifies the number of Bd-channels that can be defined in the switch (0 to MAX_ILD_BD_CHANNELS_ON_SWITCH). The maximum number of defined Bd-channels in the switch is MAX_ILD_BD_CHANNELS_ON_SWITCH.	ILDBD_OMINFO. This field comprises the following subfields: LINE_MODULE (specifies the location of the ILDR, for example, REM1 and the frame and unit numbers of the ILDR host) LINE_DRAWER (specifies the drawer number) BD_CHNL (specifies the Bd-channel number in the drawer [could be 1 or 2])

Related functional groups

There are no functional groups associated with OM group ILDBD.

Registers

The following table lists the registers associated with OM group ILDBD and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group ILDBD

Register name	Measures
IBDTXDSC	Number of frames transmitted that were discarded
IBDCRC	Number of frames received with CRC errors
IBDRXDSC	Number of frames received that were discarded
IBDTXPH	Number of frames transmitted to the packet handler
IBDRXHP	Number of correct frames received from the packet handler

IBDTXDSC

Register type
Peg

Description
IBDTXDSC counts the Bd-channel frames destined for a packet handler that the ILDR discards because of hardware problems.

Associated registers
None

Extension registers
None

Associated logs
None

IBDCRC

Register type
Peg

Description
IBDCRC counts the Bd-channel frames that a packet handles receives and the ILDR discards because of CRC errors.

Associated registers
None

Extension registers
None

Associated logs
None

IBDRXDSC

Register type
Peg

Description
IBDRXDSC counts the Bd-channel frames that a packet handler receives and the ILDR discards. These packets are handled and discarded for the following reasons:

- invalid logical terminal identifiers (LTID)
- messages that are decoded
- flow control problems

- the system aborts
- hardware errors

Associated registers
None

Extension registers
None

Associated logs
None

IBDTXPH

Register type
Peg

Description
IBDTXPH counts the Bd-channel frames that are an ILDR transmits to a packet handler. Each unit in IBDTXPH represents 100 frames.

Associated registers
None

Extension registers
None

Associated logs
None

IBDRXHP

Register type
Peg

Description
IBDRXPH counts the Bd-channel frames that an ILDR receives from a packet handler. Each unit in IBDRXPH represents 100 frames.

Associated registers
None

Extension registers
None

Associated logs
None

ILDBRA

Description

ATTENTION
The ISDN line drawer for remotes (ILDR) is first available for remote switching center-SONET (RSC-S) in the NA007/XPM08 timeframe. The ISDN is first available for remote switching center (RSC) configurations in the NA007/XPM08 timeframe. The ILDR is first available for remote line concentrating module (RLCM), outside plant module (OPM), and outside plant access cabinet (OPAC) configurations in the NA008/XPM81 timeframe.

OM group Integrated Services Digital Network (ISDN) Line Drawer Basic Rate Access (ILDBRA) provides information related to ILDR D-channels. This information allows operating company personnel to verify normal transit of information (frames) on links between the ILDR and the NT1.

ILDBRA contains registers that count the following basic rate access D-channel events:

- SAPI 0, SAPI 16, and SAPI 63 frames the system receives and transmits
- frames with cyclic redundancy check (CRC) errors the system receives
- frames the system discards
- frames transmitted the system discarded
- link resets by an ILDR/far-end device (peer)
- reject frames the system receives and transmits
- receiver not ready (RNR) frames the system receives and transmits

The following table lists the key and info fields associated with OM group ILDBRA.

Key field	Info field
ILDBRA_OMTYPE. This key field specifies the number of ILDRs defined in the CM (0 TO MAX_ILD_NO). The maximum number of ILDRs defined in the CM is MAX_ILD_NO.	ILDBRA_OMINFO. This field comprises the following subfields: • LINE_MODULE (specifies the location of the ILDR, for example, REM1 and the frame and unit numbers of the ILDR host) • LINE_DRAWER (specifies the drawer number)

Related functional groups

There are no functional groups associated with OM group ILDBRA.

Registers

The following table lists the registers associated with OM group ILDBRA and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group ILDBRA (Sheet 1 of 2)

Register name	Measures
IBRTXDSC	Number of frames transmitted that were discarded
IBRCRC	Number of frames received and discarded with CRC errors
IBRRXDSC	Number of frames received that were discarded
IBRS0TX	Number of SAPI0 frames transmitted
IBRS16TX	Number of SAPI 16 frames transmitted
IBRSATX	Number of SAPI 163 frames transmitted
IBRS0RX	Number of SAPI zero frames received
IBRS16RX	Number of SAPI 16 frames received

Registers for OM group ILDBRA (Sheet 2 of 2)

Register name	Measures
IBRSARX	Number of SAPI 63 frames received
IBRLKREI	Number of link resets by the ILDR
IBRLKREP	Number of link resets by the peer
IBRRNRI	Number of RNR frames sent to the peer
IBRRNRP	Number of RNR frames received by the ILDR
IBRREJTX	Number of reject frames transmitted
IBRREJRX	Number of received reject frames

IBRTXDSC

Register type
Peg

Description
IBRTXDSC counts the number of frames for a packet handler but the ILDR discards because of hardware problems.

Associated registers
None

Extension registers
None

Associated logs
ISDN 200, ISDN 201

IBRCRC

Register type
Peg

Description
IBRCRC counts the ILDR BRA D-channel frames the system receives and discards because of CRC error.

Associated registers
None

Extension registers
None

Associated logs
ISDN 200, ISDN 201

IBRRXDSC

Register type
Peg

Description
IBRRXDSC counts the BRA D-channel frames the ILDR discards by the because of the following problems:

- a non-registered terminal endpoint identifier (TEI)
- a message that cannot be decoded
- flow control problems
- part of a message received
- sequencing errors
- an unknown SAPI

Associated registers
None

Extension registers
None

Associated logs
ISDN 200, ISDN 201

IBRS0TX

Register type
Peg

Description
IBRS0TX counts the BRA D-channel SAPI zero frames that an ILDR transmits. The SAPI zero frames indicate a request for call control. Each unit in IBRS0TX represents 100 frames.

Associated registers
None

Extension registers
None

Associated logs
ISDN 200, ISDN 201

IBRS16TX

Register type
Peg

Description
IBRS16TX counts BRA D-channel SAPI 16 frames an ILDR transmits. The SAPI 16 frames indicate a request for packet-switched service. Each unit in IBRS16TX represents 100 frames.

Associated registers
None

Extension registers
None

Associated logs
ISDN 200, ISDN 201

IBRSATX

Register type
Peg

Description
IBRSATX counts the BRA D-channel SAPI 63 frames an ILDR transmits. The SAPI 63 frames indicate a request for layer two management services, like TEI management, error reporting, or physical link control.

Associated registers
None.

Extension registers
None

Associated logs
ISDN 200, ISDN 201

IBRS0RX

Register type
Peg

Description
IBRS0RX counts the BRA D-channel SAPI zero frames an ILDR receives. The SAPI zero frames indicate a request for call control.

Associated registers
None

Extension registers
None

Associated logs
ISDN 200, ISDN 201

IBRS16RX

Register type
Peg

Description
IBRS16RX counts the BRA D-channel SAPI 16 frames an ILDR receives. The SAPI 16 frames indicate a request for packet-switched service.

Associated registers
None

Extension registers
None

Associated logs
ISDN 200, ISDN 201

IBRSARX

Register type
Peg

Description
IBRSARX counts the BRA D-channel SAPI 63 frames an ILDR receives. The SAPI 63 frames indicate a request for layer two management services, like TEI management, error reporting, or link control.

Associated registers
None

Extension registers
None

Associated logs
ISDN 200, ISDN 201

IBRLKREI

Register type
Peg

Description
IBRLKREI counts the link resets by the ILDR.

Associated registers
None

Extension registers
None

Associated logs
None

IBRLKREP

Register type
Peg

Description
IBRLKREP counts the link resets by a far-end device (peer).

Associated registers
None

Extension registers
None

Associated logs
None

IBRRNRI

Register type
Peg

Description
IBRRNRI counts the RNR frames that an ILDR sent to a far-end device (peer).

Associated registers
None

Extension registers
None

Associated logs
None

IBRRNRP

Register type
Peg

Description
IBRRNRP counts the RNR frames that an ILDR receives from a far-end device (peer).

Associated registers
None

Extension registers
None

Associated logs
None

IBRREJTX

Register type
Peg

Description
IBRREJTX counts the number of reject frames an ILDR transmits. Reject frames indicate the far-end lost one of the sequenced frames.

Associated registers
None

Extension registers
None

Associated logs
None

IBRREJRX

Register type
Peg

Description
IBRREJRX counts the number of reject frames an ILDR receives. Reject frames indicate one of the sequenced frames is missing.

Associated registers
None

Extension registers
None

Associated logs
None

ILDMSGCT

Description

ATTENTION
The ISDN line drawer for remotes (ILDR) is first available for remote switching center-SONET (RSC-S) in the NA007/XPM08 timeframe. The ISDN is first available for remote switching center (RSC) configurations in the NA007/XPM08 timeframe. The ILDR is first available for remote line concentrating module (RLCM), outside plant module (OPM), and outside plant access cabinet (OPAC) configurations in the NA008/XPM81 timeframe.

OM group Integrated Services Digital Network (ISDN) Line Drawer Message Counter (ILDMSGCT) provides information related to ILDR messages to and from the XMS-based peripheral module (XPM).

This information allows operating company personnel to:

- verify normal transit of messages on the DMSX data link between the ILDR and the XPM
- verify DMSX protocol performance on the DMSX data link between the ILDR and the XPM

ILDMSGCT contains registers that count the following data:

- wait-for-send times out on messages from the ILDR to the C-side XPM
- wait-for-acknowledgment times out on messages from the ILDR to the C-side XPM
- wait-for-link-idle messages the system receives after a negative acknowledgment on message transfer
- two registers for single and double negative acknowledgments the system receives from the C-side
- wait-for-end-of-messages times out on messages from the C-side XPM to the ILDR
- wait-for-idle messages from the C-side XPM to the ILDR after a message transfer
- messages the ILDR receives from the C-side XPM that have cyclic redundancy check (CRC) errors
- messages from the C-side XPM to the ILDR with more or fewer bytes than permitted

- null messages the system receives from the C-side XPM that are not reset messages
- spurious frame interrupts
- messages with a node number that is not correct that the ILDR receives from the C-side XPM
- two registers that count messages the ILDR correctly receives or transmits to the C-side XPM

The following table lists the key and info fields associated with OM group ILDMSGCT.

Key field	Info field
ILDMSGCT_OMTYPE. This key field specifies the number of ILDR DMSX links defined in the switch (0 to MAX_ILD_DMSX_CHANNELS_ON_SWITCH). The maximum number of ILDR DMSX channels defined in the switch is MAX_ILD_DMSX_CHANNELS_ON_SWITCH.	ILDMSGCT_OMINFO. This field comprises the following subfields: LINE_MODULE (specifies the location of the ILDR, for example, REM1 and the frame and unit numbers of the ILDR host) LINE_DRAWER (specifies the drawer number) LINK_NO (specifies the DMSX linknumbertotheXPM)

Related functional groups

There are no functional groups associated with OM group ILDMSGCT.

Registers

The following table lists the registers associated with OM group ILDMSGCT and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group ILDMSGCT (Sheet 1 of 2)

Register name	Measures
IWFSND	ISDN line drawer wait-for-send time-out
IWFACK	ISDN line drawer wait-for-acknowledgement time-out
IWFNX	ISDN line drawer wait-for-link-idle

Registers for OM group ILDMSGCT (Sheet 2 of 2)

Register name	Measures
NACK	Single negative acknowledgement
IDNACK	ISDN line drawer double negative acknowledgement
IWFMSG	ISDN line drawer wait-for-end-of-message time-out
IWFNR	ISDN line drawer wait-for-idle message
CRC	Incorrect CRC
OVFL	Message with byte overflow or underflow
INULLMSG	ISDN line drawer null messages
IILDSTATE	ISDN line drawer spurious frame interrupt
IINVNODE	ISDN line drawer invalid node
IRCVDSUCC	ISDN line drawer successfully received messages
IXMITSUCC	ISDN line drawer successfully transmitted messages

IWFSND

Register type
Peg

Description
IWFSND counts wait-for-start-of-message time-outs on messages from the C-side XPM to the ILDR.

Associated registers
None

Extension registers
None

Associated logs
None

IWFACK

Register type
Peg

Description
IWFACK counts wait-for-acknowledgment time-outs on messages from the ILDR to the C-side XPM.

Associated registers
None

Extension registers
None

Associated logs
None

IWFNX

Register type
Peg

Description
IWFNX counts wait-for-link-idle messages the system receives after a negative acknowledgment of a message transfer from the C-side XPM.

Associated registers
None

Extension registers
None

Associated logs
None

NACK

Register type
Peg

Description
NACK counts single negative acknowledgment messages an ILDR from the C-side XPM receives. The system sends single negative acknowledgement messages when an ILDR has problems receiving a message from the ILDR occurs.

Associated registers
None

Extension registers
None

Associated logs
None

IDNACK

Register type
Peg

Description
IDNACK counts double negative acknowledgment messages an ILDR receives from the C-side XPM. The system sends double negative acknowledgment messages when a second attempt by the ILDR to send a message is not complete.

Associated registers
None

Extension registers
None

Associated logs
None

IWFMSG

Register type
Peg

Description
IWFMSG counts wait-for-end-of-message time-outs on messages from the C-side XPM to the ILDR.

Associated registers
None.

Extension registers
None

Associated logs
None

IWFNR

Register type
Peg

Description
IWFNR counts wait-for-idle messages from C-side XPM to the ILDR after a message transfer.

Associated registers
None

Extension registers
None

Associated logs
None

CRC

Register type
Peg

Description
CRC counts messages with incorrect CRC the ILDR receives from the C-side XPM.

Associated registers
None

Extension registers
None

Associated logs
None

OVFL

Register type
Peg

Description
OVFL counts messages with more or fewer than the permitted number of bytes the C-side XPM sends to the ILDR.

Associated registers

Extension registers
None

Associated logs
None

INULLMSG

Register type
Peg

Description
INULLMSG counts null messages the ILDR receives from the C-side XPM that are not reset messages.

Associated registers
None

Extension registers
None

Associated logs
None

IILDSTATE

Register type
Peg

Description
IILDSTATE counts spurious frame interrupts, which can occur, for example, when noise is on the line.

Associated registers
None

Extension registers
None

Associated logs
None

IINVNODE

Register type
Peg

Description
IINVNODE counts messages with an invalid node number that an ILDR receives from the C-side XPM.

Associated registers
None

Extension registers
None

Associated logs
None

IRCVDSUCC

Register type
Peg

Description
IRCVDSUCC counts messages from the C-side XPM the ILDR successfully receives.

Associated registers
None

Extension registers
None

Associated logs
None

IXMITSUCC

Register type
Peg

Description
IXMITSUCC counts messages from the ILDR successfully transmits to the C-side XPM.

Associated registers
None

Extension registers
None

Associated logs
None

ILDOVLD

Description

OM group Integrated Services Digital Network (ISDN) Line Drawer Overload (ILDOVLD) measures congestion and overload in the ISDN line drawer for remotes (ILDR). ILDOVLD provides measurements for each sampling time for congestion and overload.

The following table lists the key and info fields associated with OM group ILDOVLD.

Key field	Info field
ILDBRA_OMTYPE. This key field specifies the number of ILDRs defined in the CM (0 TO MAX_ILD_NO). The MAX_ILD_NO is the maximum number of ILDRs defined in the CM.	ILDBRA_OMINFO. This field comprises the following subfields: LINE_MODULE (specifies the location of the ILDR, for example, REM1, and the frame and unit numbers of the ILDR host) DRWRNO_CHARS (specifies the drawer number)

Related functional groups

There are no functional groups associated with OM group ILDOVLD.

Registers

The following table lists the registers associated with OM group ILDOVLD and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group ILDOVLD (Sheet 1 of 2)

Register name	Measures
ILDCENTR	ISDN line drawer congestion state entry
ILDCEXIT	ISDN line drawer congestion state exit
ILDCTIME	ISDN line drawer time in congested state
ILDOENTR	ISDN line drawer overload state entry

Registers for OM group ILDOVLD (Sheet 2 of 2)

Register name	Measures
ILDOEXIT	ISDN line drawer overload state exit
ILDOTIME	ISDN line drawer time in overload state

ILDCENTR

Register type
Peg

Description
ILDCENTR counts the number of ILDR entries to the congestion state.

Associated registers
None

Extension registers
None

Associated logs
PM181

ILDCEXIT

Register type
Peg

Description
ILDCEXIT counts the number of ILDR exits from the congestion state.

Associated registers
None

Extension registers
None

Associated logs
PM181

ILDCTIME

Register type
Peg

Description
ILDCTIME counts the total time spent by ILDR in the congestion state.

Associated registers
None

Extension registers
None

Associated logs
None

ILDOENTR

Register type
Peg

Description
ILDOENTR counts the number of ILDR entries to the overload state.

Associated registers
None

Extension registers
None

Associated logs
PM181

ILDOEXIT

Register type
Peg

Description
ILDOEXIT counts the number of ILDR exits from the overload state.

Associated registers
None

Extension registers
None

Associated logs
PM181

ILDOTIME

Register type
Peg

Description
ILDOTIME counts the total time spent by ILDR in the overload state.

Associated registers
None

Extension registers
None

Associated logs
None

ILDSTAT

Description

ATTENTION
ISDN line drawer for remotes (ILDR) is first available for remote switching center-SONET (RSC-S). The ILDR is also available for remote switching center (RSC) configurations in the NA007/XPM08 timeframe. The ILDR is first available for remote line concentrating module (RLCM), outside plant module (OPM), and outside plant access cabinet (OPAC) configurations in the NA008/XPM81 time frame.

OM group Integrated Services Digital Network (ISDN) Line Drawer Status (ILDSTAT) provides information for ILDR processor occupancy. This information allows the operating company personnel to measure ILDR processor performance.

ILDSTAT contains registers that count the following ILDR central processing unit (CPU) data:

- ILDR processor overhead (The system calculates this value every 24 hours for INSV/ISTB ILDRs.)
- average processor occupancy value, in percent, for the collection time interval. (The system fixes collection time interval by OMXFR and OMHISTORION office parameters. The time interval can be 5, 15, or 30 minutes.)
- average processor occupancy, in percent, that call processing uses during the collection time interval
- lowest and highest processor occupancy, in percent, over the last collection time interval
- average time, in percent, the microprocessor does not have work to do during collection time interval

The following table lists the key and info fields associated with OM group ILDSTAT.

Key field	Info field
ILD_BRA_STAT_OMTYPE. The system uses the key field to specify the number of ILDRs the switch (0 to MAX_ILD_NO) defines. MAX_ILD_NO is the maximum number of ILDRs the systemcandefineintheswitch.	ILDSTAT_OMINFO. This field comprises the following subfields: LINE_MODULE (specifies the location of the ILDR, for example, REM1 and the frame and unit numbers of the ILDR host) LINE_DRAWER (specifies the drawer number)

Related functional groups

There are no functional groups associated with OM group ILDSTAT.

Registers

The following table lists the registers associated with OM group ILDSTAT and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group ILDSTAT

Register name	Measures
ILDOVHD	ILDR overhead
ILDAVOC	ILDR average processor occupancy
ILDAVCP	ILDR average call processing
ILDPKOC	ILDR peak occupancy
ILDLOWOC	ILDR low occupancy
ILDAVAIL	ILDR available time for processing

ILDOVHD

Register type
Peg

Description
ILDOVHD records the amount of processor use dedicated to overhead in each collection time interval. The system uses the overhead value as a constant to calculate the average call processing (ILDAVCP).

The system uses the overhead constant over a 24-hour period. The system checks the available time value in each collection time interval. The system checks the available time value to determine if the value is the highest recorded value.

Note: Highest availability equals lowest occupancy, that is, lowest ILDAVOC. If this value is higher than any of the previous records, the value is stored. The system uses this value to obtain the overhead constant for the following 24-hour period.

Associated registers
None

Validation formula
ILDOVHD = 100 - lowest ILDAVOC

Extension registers
None

Associated logs
None

ILDAVOC

Register type
Peg

Description
The system updates register ILDAVOC every 10 seconds. The system records the average processor occupancy, in percent, for each collection time interval.

Associated registers
ILDAVAIL

Validation formula
ILDAVOC = 100 - ILDAVAIL

Extension registers
None

Associated logs
None

ILDAVCP

Register type
Peg

Description
The system updates register ILDAVCP every 10 seconds. The system records the average processor occupancy, in percent, used for call processing during each collection time interval.

Associated registers
ILDAVOC, ILDOVHD

Validation formula
ILDAVCP = 100 - ILDOVHD - ILDAVAIL

Extension registers
None

Associated logs
None

ILDPKOC

Register type
Peg

Description
ILDPKOC records the peak processor occupancy, in percent, over each collection time interval. The system takes samples every 10 seconds in each collection time interval to determine the lowest available time. The system uses the following formula to derive the peak occupancy:

ILDPKOC = 100 - lowest available time

Associated registers
ILDAVOC, ILDOVHD

Validation formula
ILDAVCP = 100 - ILDOVHD - ILDAVAIL

Extension registers
None

Associated logs
None

ILDLOWOC

Register type
Peg

Description
ILDLOWOC records the lowest processor occupancy value, in percent, over each collection time interval. The system takes samples every 10 seconds in each collection time interval to determine the highest available time. The system uses the following formula to derive the low occupancy value:

ILDLOWOC = 100 - highest available time

Associated registers
None

Extension registers
None

Associated logs
None

ILDAVAIL

Register type
Peg

Description
The system updates register ILDAVAIL every second. The system records the average amount of time, in percent, the microprocessor does not have work to perform during each collection time interval. The availability of the ILDR is inversely proportional to the ILDR average processor occupancy of the ILDR (ILDAVOC) time.

Associated registers
None

Extension registers
None

Associated logs
None

ILR

Description

OM group International Line Restrictions (ILR) measures the performance of the International Line Restrictions feature. ILR counts customer errors and successful and unsuccessful attempts to deactivate and query of the ILR feature.

ATTENTION

Feature AOOOO1914 CEPT International Line Restriction Enhancements removes OM group ILR1 in SN07. All events formerly pegged by ILR1 are now pegged by ILR and new OM group ILRCLASS

The following table lists the key and info fields associated with OM group ILR. The group provides one tuple for each office.

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group ILR.

Registers

The following table lists the registers associated with OM group ILR and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group ILR (Sheet 1 of 3)

Register name	Measures
DABEACT	Deny all but emergency activate
DABEDACT	Deny all but emergency deactivate
DABEUSGE	Deny all but emergency usage
DABLEACT	Deny all but local and emergency activate
DABLEDAC	Deny all but local and emergency deactivate

Registers for OM group ILR (Sheet 2 of 3)

Register name	Measures
DABLEUSG	Deny all but local and emergency usage
DAIACT	Deny all international activate
DAIDACT	Deny all international deactivate
DAIUSGE	Deny all international usage
DANIDACT	Deny all national and international direct dial activate
DANIDDAC	Deny all national and international direct dial deactivate
DANIDUSG	Deny all national and international direct dial usage
DIDDACT	Deny international direct dial activate
DIDDDACT	Deny international direct dial deactivate
DIDDUSGE	Deny international direct dial usage
DNIACT	Deny national and international activate
DNIDACT	Deny national and international direct dial activate
DNIDDACT	Deny national and international direct dial deactivate
DNIDEACT	Deny national and international deactivate
DNIDUSGE	Deny national and international direct dial usage
DNIUSGE	Deny National And International usage
DSSVACT	Deny special service activate
DSSVDACT	Deny special service deactivate
DSSVUSGE	Deny special service use
ILRCERR	International line restriction customer error
ILRINTG	International line restriction interrogation

Registers for OM group ILR (Sheet 3 of 3)

Register name	Measures
ILRUSGE	International line restriction usage
TEMPDAC *DMS only*	Temporary deactivation of ILR feature
TEMPUDAC *DMS only*	Unsuccessful temporary deactivation of ILR

DABEACT

Register type
Peg

Description
DABEACT counts the times a subscriber activates the deny all but emergency calls line restriction. The subscriber receives the confirmation tone to indicate the system accepts the request.

Associated registers
None

Extension registers
None

Associated logs
FTR138

DABEDACT

Register type
Peg

Description
DABEDACT counts the times a subscriber deactivates the deny all but emergency calls line restriction. The subscriber receives the confirmation tone to indicate the system accepts the request.

Associated registers
None

Extension registers
None

Associated logs
FTR138

DABEUSGE

Register type
Peg

Description
DABEUSGE counts the times a subscriber attempts to make a call that is not an emergency call. The system does not allow these calls. The deny all but emergency calls line restriction prevents the attempt.

Associated registers
None

Extension registers
None

Associated logs
None

DABLEACT

Register type
Peg

Description
DABLEACT counts the times a subscriber activates the all but local and emergency calls line restriction. The subscriber receives the confirmation tone to indicate the system accepts the request.

Associated registers
None

Extension registers
None

Associated logs
FTR138

DABLEDAC

Register type
Peg

Description
DABLEDAC counts the times a subscriber deactivates the deny all but local and emergency calls line restriction. The subscriber receives the confirmation tone to indicate the system accepts the request.

Associated registers
None

Extension registers
None

Associated logs
FTR138

DABLEUSG

Register type
Peg

Description
DABLEUSG counts the times a subscriber attempts to make a call that is not a local or an emergency call. The system does not allow these calls. The deny all but local and emergency calls line restriction prevents the attempt.

Associated registers
None

Extension registers
None

Associated logs
None

DAIACT

Register type
Peg

Description
DAIACT counts the times a subscriber activates the deny all international calls line restriction. The subscriber receives the confirmation tone.

Associated registers
None

Extension registers
None

Associated logs
FTR138

DAIDACT

Register type
Peg

Description
DAIDACT counts the times a subscriber correctly deactivates the deny all international calls line restriction. The subscriber receives the confirmation tone.

Associated registers
None

Extension registers
None

Associated logs
FTR138

DAIUSGE

Register type
Peg

Description
DAIUSGE counts the times a subscriber attempts to make an international call which the system does not allow. The system prevents the call because the deny all international calls feature is active.

Associated registers
None

Extension registers
None

Associated logs
None

DANIDACT

Register type
Peg

Description
DANIDACT counts the times a subscriber activates the deny all national and international direct dial calls line restriction. The subscriber receives the confirmation tone to indicate the system accepts the request.

Associated registers
None

Extension registers
None

Associated logs
FTR138

DANIDDAC

Register type
Peg

Description
DANIDDAC counts the times a subscriber deactivates the deny all national and international direct dial calls line restriction. The subscriber receives the confirmation tone to indicate the system accepts the request.

Associated registers
None

Extension registers
None

Associated logs
FTR138

DANIDUSG

Register type
Peg

Description
DANIDUSG counts the times a subscriber attempts to make a national or international direct dial call. The system does not allow these calls. The deny all national and international direct dial calls line restriction prevents the attempt.

Associated registers
None

Extension registers
None

Associated logs
None

DIDDACT

Register type
Peg

Description
DIDDACT counts the times a subscriber activates the deny international direct dial line restriction. The subscriber receives the confirmation tone.

Associated registers
None

Extension registers
None

Associated logs
FTR138

DIDDDACT

Register type
Peg

Description
DIDDDACT counts the times a subscriber deactivates the deny international direct dial line restriction. The subscriber receives the confirmation tone.

Associated registers
None

Extension registers
None

Associated logs
FTR138

DIDDUSGE

Register type
Peg

Description
DIDDUSGE counts the times a subscriber attempts to make an international direct dial call that the system does not allow. The deny international direct dial line restriction prevents the call.

Associated registers
None

Extension registers
None

Associated logs
None

DNIACT

Register type
Peg

Description
DNIACT counts the times a subscriber activates the deny national and all international calls line restriction. The subscriber receives the confirmation tone.

Associated registers
None

Extension registers
None

Associated logs
FTR138

DNIDACT

Register type
Peg

Description
DNIDACT counts the times a subscriber activates the deny national and all international direct dial calls line restriction. The subscriber receives the confirmation tone.

Associated registers
None

Extension registers
None

Associated logs
FTR138

DNIDDACT

Register type
Peg

Description
DNIDDACT counts the times a subscriber deactivates the deny national and all international direct dial calls line restriction. The subscriber receives the confirmation tone.

Associated registers
None

Extension registers
None

Associated logs
FTR138

DNIDEACT

Register type
Peg

Description
DNIDEACT counts the times a subscriber deactivates the deny national and all international calls line restriction. The subscriber receives the confirmation tone.

Associated registers
None

Extension registers
None

Associated logs
FTR138

DNIDUSGE

Register type
Peg

Description
DNIDUSGE counts times a subscriber attempts to make a national or international direct dial call the system does not allow. The deny national and international direct dial calls line restriction prevents the restriction.

Associated registers
None

Extension registers
None

Associated logs
None

DNIUSGE

Register type
Peg

Description
DNIUSGE counts the times a subscriber attempts to make a national or international call that the system does not allow. The deny national and international line restriction prevents the call.

Associated registers
None

Extension registers
None

Associated logs
None

DSSVACT

Register type
Peg

Description
DSSVACT counts the times a subscriber activates the deny special service calls line restriction. The subscriber receives the confirmation tone to indicate the system accepts the request.

Associated registers
None

Extension registers
None

Associated logs
FTR138

DSSVDACT

Register type
Peg

Description
DSSVDACT counts the times a subscriber deactivates the deny special service calls line restriction. The subscriber receives the confirmation tone to indicate the system accepts the request.

Associated registers
None

Extension registers
None

Associated logs
FTR138

DSSVUSGE

Register type
Peg

Description
DSSVUSGE counts the times a subscriber attempts to make a special service call the system does not allow. The deny special service calls line restriction prevents the attempt.

Associated registers
None

Extension registers
None

Associated logs
None

ILRCERR

Register type
Peg

Description
ILRCERR counts the times a subscriber does not use the international line restriction feature correctly. The subscriber receives the reorder tone.

The following events cause this register to increase:

- the subscriber attempts to access ILR when the feature is not assigned (FNAL treatment)
- the subscriber does not dial correctly when the subscriber activates, deactivates, interrogates or programs ILR (NACK treatment)
- the subscriber uses wrong password on deactivation (NACK treatment)
- the subscriber attempts to access ILR when the system denies the feature (NACK treatment)

Associated registers
None

Extension registers
None

Associated logs
FTR138

ILRINTG

Register type
Peg

Description
ILRINTG counts the times a subscriber queries if the system activated the ILR feature. The status determines if the subscriber receives the confirmation or negative acknowledgement tone.

Associated registers
None

Extension registers
None

Associated logs
FTR138

ILRUSGE

Register type
Peg

Description
ILRUSGE counts the times a subscriber activates the ILR feature.

Associated registers
None

Extension registers
None

Associated logs

TEMPDAC

Register type
Peg

Description
TEMPDAC counts the number of successful attempts to deactivate the ILR feature. *The register applies to DMS only.*

Associated registers
None

Extension registers
None

Associated logs

TEMPUDAC

Register type
Peg

Description
TEMPUDAC counts the number of unsuccessful attempts to temporarily deactivate the ILR feature. *The register applies to DMS only.*

Associated registers
None

Extension registers
None

Associated logs
FTR138

ILRCLASS

Description

OM group International Line Restrictions Class (ILRCLASS) measures the performance of the International Line Restrictions (ILR) feature.

ILRCLASS counts usage, activation, and successful and unsuccessful attempts to deactivate the ILR feature.

ATTENTION
Feature A00001914 CEPT International Line Restriction Enhancements removes OM group ILR1 in SN07. All events formerly pegged by ILR1 are now pegged by OM groups ILRCLASS and (existing) ILR.

ILRCLASS has a flexible body that includes registers according to the ILR classes datafilled in table ILRCLASS. Each register increases for each of the following classes of restriction:

Restriction classes

Name	Description
DABE	Deny all but emergency
DABLE	Deny all but local and emergency
DAI	Deny all international
DANID	Deny all national and international direct dial
DIDD	Deny international direct dial
DNI	Deny national and international
DNID	Deny national and international direct dial
DSSV	Deny special service

The following table lists the key and info fields associated with OM group ILRCLASS. The group provides one tuple for each office.

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group ILRCLASS.

Registers

The following table lists the registers associated with OM group ILRCLASS and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group ILRCLASS

Register name	Measures
ACT	Activation
DEACT	Deactivation
USAGE	Usage
UNDACT	Unsuccessful deactivation

ACT

Register type
Peg

Description
ACT counts the attempts to activate the ILR feature.

This register applies only to DMS.

Associated registers
None

Extension registers
None

Associated logs
None

DEACT

Register type
Peg

Description
DEACT counts the number of successful attempts to deactivate the ILR feature.

This register applies only to DMS.

Associated registers
None

Extension registers
None

Associated logs
None

USAGE

Register type
Peg

Description
USAGE measures usage of the ILR feature.

This register applies only to DMS.

Associated registers
None

Extension registers
None

Associated logs
None

UNDACT

Register type
Peg

Description
UNDACT counts the number of unsuccessful attempts to deactivate the ILR feature.

This register applies only to DMS.

Associated registers
None

Extension registers
None

Associated logs
None

ININTWRK

Description

OM group Intelligent Network Interworking (ININTWRK) pegs the number of messages sent and received for intelligent (IN) operator backup calls. A tuple is added for every trunk group datafilled in table ISUPTRK.

To test a register, generate the appropriate ISUP message to peg the register and use OMSHOW to display the data.

The following table lists the key and info fields associated with OM group ININTWRK.

Key field	Info field
Trunk group CLLI	The number of call processing messages sent and received for IN operator backup calls on an ISUP trunk group basis.

Related functional groups

Enhanced Services (ENSV0001) is associated with OM group ININTWRK.

Registers

The following table lists the registers associated with OM group ININTWRK and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group ININTWRK (Sheet 1 of 2)

Register name	Measures
FACINVK	Facility Message (FAC) Invoke
FACRERR	Facility (FAC) Return Error
FACRRSL	Facility (FAC) Return Result
FARINVK	Facility Request (FAR) Invoke
FARRERR	Facility Request (FAR) Return Error
FARRRSL	Facility Request (FAR) Return Result

Registers for OM group ININTWRK (Sheet 2 of 2)

Register name	Measures
IAMINVK	Initial Address Message (IAM) Invoke
IAMOPR	Initial Address Message (IAM) call to Operator
RELINC	Release Message (REL) Incoming without RO
RELOUT	Release Message (REL) Outgoing without RO
RELREJI	Release Message (REL) Reject Incoming
RELREJO	Release Message (REL) Reject Outgoing
RELRERR	Release Message (REL) Return Error
RELRRSL	Release Message (REL) Return Result

FACINVK

Register type
Peg

Description
FACINVK is pegged when an ISUP FAC with an RO Invoke component is received.

Associated registers
None

Extension registers
None

Associated logs
None

FACRERR

Register type
Peg

Description
FACRERR is pegged when an ISUP FAC with an RO ReturnError component is sent.

Associated registers
None

Extension registers
None

Associated logs
TOPS 607

FACRRSL

Register type
Peg

Description
FACRRSL is pegged when an ISUP FAC with an RO ReturnResult component is sent.

Associated registers
None

Extension registers
None

Associated logs
None

FARINVK

Register type
Peg

Description
FARINVK is pegged when an ISUP FAR with an RO Invoke component is received.

Associated registers
None

Extension registers
None

Associated logs
None

FARRERR

Register type
Peg

Description
FARRERR is pegged when an ISUP FAR with an RO ReturnError component is sent.

Associated registers
None

Extension registers
None

Associated logs
TOPS 607

FARRRSL

Register type
Peg

Description
FARRRSL is pegged when an ISUP FAR with an RO ReturnResult component is sent.

Associated registers
None.

Extension registers
None

Associated logs
None

IAMINVK

Register type
Peg

Description
IAMINVK is pegged each time an ISUP IAM message with a remote operation (RO) Invoke component is received.

Associated registers
None

Extension registers
None

Associated logs
None

IAMOPR

Register type
Peg

Description
IAMOPR is pegged when an ISUP IAM with an RO Invoke component is received and the call is sent to an operator terminal.

Associated registers
None

Extension registers
None

Associated logs
None

RELINC

Register type
Peg

Description
RELINC is pegged when an ISUP REL without an RO component is received.

Associated registers

Extension registers
None

Associated logs
None

RELOUT

Register type
Peg

Description
RELOUT is pegged when an ISUP REL without an RO component is sent.

Associated registers
None

Extension registers
None

Associated logs
None

RELREJI

Register type
Peg

Description
RELREJI is pegged when an ISUP REL with an RO Reject component is received.

Associated registers
None

Extension registers
None

Associated logs
TOPS 604

RELREJO

Register type
Peg

Description
RELREJO is pegged when an ISUP REL with an RO Reject component is sent.

Associated registers
None

Extension registers
None

Associated logs
TOPS 603

RELRERR

Register type
Peg

Description
RELRERR is pegged when an ISUP REL with an RO ReturnError component is sent.

Associated registers
None

Extension registers
None

Associated logs
TOPS 606, 607

RELRRSL

Register type
Peg

Description
RELRRSL is pegged when an REL with an RO ReturnResult component is sent.

Associated registers
None

Extension registers
None

Associated logs
None

INSCTP

Description

OM group INSCTP shows data for messages using the Stream Control Transmission Protocol (SCTP).

The following table lists the key and info fields associated with OM group INSCTP. The group provides one tuple for each logical group.

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group INSCTP.

Registers

The following table lists the registers associated with OM group INSCTP and what they measure. For a description of a register, click on the register name.

Registers for OM group INSCTP

Register name	Measures
MSGOUT	Outgoing messages using SCTP
MSGIN	Incoming messages using SCTP
SENDFAIL	Outgoing messages using SCTP that failed
DATAERR	Messages that encountered errors at application data
DATARCVD	Incoming message decoding
MSG2BIG	Messages that fail because of message length beyond maximum size
BMSFAIL	Buffer errors encountered while sending messages over SCTP
NOTREADY *(not used)*	SCTP layer is not ready to process the message

MSGOUT

Register type
Peg

Description
MSGOUT (SCTP msg out) counts outgoing AIN messages that use the SCTP transport.

Associated registers
None

Extension registers
None

Associated logs
None

MSGIN

Register type
Peg

Description
MSGIN (SCTP msg in) counts incoming AIN messages that use the SCTP transport.

Associated registers
None

Extension registers
None

Associated logs
None

SENDFAIL

Register type
Peg

Description
SENDFAIL (SCTP send failure) counts outgoing AIN messages using the SCTP transport that fail.

Associated registers
None

Extension registers
None

Associated logs
None

DATAERR

Register type
Peg

Description
DATAERR (SCTP data error) counts data errors that cause a messaging failure.

Associated registers
None

Extension registers
None

Associated logs
None

MSG2BIG

Register type
Peg

Description
MSG2BIG (SCTP message too big) counts outgoing messages that are not sent because they exceed the maximum message sizes for SCTP (1496 bytes as supported by current SCTP implementation).

Associated registers
None

Extension registers
None

Associated logs
None

BMSFAIL

Register type
Peg

Description
BMSFAIL (SCTP BMS buffer failure) counts buffer failures that cause send or receive failures.

Associated registers
None

Extension registers
None

Associated logs
None

DATARCVD

Register type
Peg

Description
DATARCVD (data received) pegs when the message is received from the SCTP stack and can be decoded.

Associated registers
None

Extension registers
None

Associated logs
None

NOTREADY

Register type
Peg

Description
NOTREADY indicates that the SCTP layer is not ready to send or receive a message. Although the OMSHOW command displays this register, *NOTREADY is not used with the current functionality*.

Associated registers
None

Extension registers
None

Associated logs
None

IOC

Description

OM group Input/output Controller Maintenance Summary (IOC) provides information about the performance of input/output controllers (IOC). Each IOC is an interface between a maximum of 36 input/output devices and the central message controller (CMC).

IOC peg registers count:

- errors and faults in the IOCs
- device errors the system detects on P-side links

IOC usage registers record:

- system busy links and IOCs
- manually busy links and IOCs

The data that the IOC supplies is used to monitor the performance of the IOCs and the output devices that the IOCs support.

The following table lists the key and info fields associated with OM group IOC.

Key field	Info field
None	None

Related functional groups

The following functional groups are associated with OM group IOC:

- DMS-100 Local
- DMS-100/200 Local/Toll
- DMS-200 Toll
- DMS-100 Meridian
- DMS-MTX
- DMS-250 Toll/Tandem
- DMS-300
- Meridian SL-100 PBX
- DMS SuperNode

Registers

The following table lists the registers associated with OM group IOC and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group IOC

Register name	Measures
IOCERR	Input/output controller (IOC) errors
IOCFLT	Input/output controller (IOC) faults
IOCLKERR	Input/output controller (IOC) link errors
IOCLKMBU	Input/output controller (IOC) link manually busy usage
IOCLKSBU	Input/output link system busy usage
IOCMBU	Input/output controller (IOC) manually busy usage
IOCSBU	Input/output controller (IOC) system busy usage

IOCERR

Register type
Peg

Description
IOCERR counts errors the system detects in-service IOCs. The register counts transient errors and errors that make an IOC system busy.

Associated registers
IOCFLT

Extension registers
None

Associated logs
IOD104, IOD115, IOD118, IOD119, IOD120, IOD123, IOD124, IOD125, IOD126, IOD127

IOCFLT

Register type
Peg

Description
IOCFLT counts faults that make an IOC system busy. The faults cause an IOC to remain system busy until manual or system intervention corrects the fault. Manual or system intervention returns the IOC to service.

Associated registers
IOCERR

Extension registers
None

Associated logs
IOD104, IOD109, IOD113, IOD116, IOD118, IOD119, IOD124, IOD125, IOD126, IOD127, IOD129

IOCLKERR

Register type
Peg

Description
IOCLKERR counts the following device errors the system detects on the P-side links of an IOC:

- checksum
- bus overrun
- device not ready

Associated registers
None

Extension registers
None

Associated logs
IOD117, IOD129

IOCLKMBU

Register type
Usage

Scan rate
100 seconds

Description
IOCLKMBU records if P-side input/output controller (IOC) links are manually busy.

Associated registers
None

Extension registers
None

Associated logs
IOD108, IOD112

IOCLKSBU

Register type
Usage

Scan rate
100 seconds

Description
IOCLKSBU records if P-side IOC links are system busy.

Associated registers
None

Extension registers
None

Associated logs
IOD109, IOD113

IOCMBU

Register type
Usage

Scan rate
100 seconds

Description
IOCMBU records if IOCs are manually busy.

Associated registers
None

Extension registers
None

Associated logs
IOD103

IOCSBU

Register type
Usage

Scan rate
100 seconds

Description
IOCSBU records if IOCs are system busy.

Associated registers
None

Extension registers
None

Associated logs
IOD104

IOSYS

Description

OM group Input and Output System (IOSYS) counts errors that the input/output (I/O) system detects in incoming or outgoing messages. Examples of problem conditions include errors or rebounded message interrupts that originate in the central message controller (CMC).

Diagnostics determine if the errors counted by IOSYS originate in the CMC or a network message controller (NMC). If the errors originate in the CMC or NMC, groups CMC or NMC count the errors. Data supplied by IOSYS is used to monitor the performance of the I/O system.

The following table lists the key and info fields associated with OM group IOSYS.

Key field	Info field
None	None

Related functional groups

The following functional groups are associated with OM group IOSYS:

- DMS-100 Local
- DMS-100/200 Local/Toll
- DMS-100/200 Local/Toll with TOPS
- DMS-200 Toll
- DMS-200 with TOPS
- DMS-100 Meridian
- DMS-MTX Mobile Telephone Exchange
- DMS-250 Toll/Tandem
- DMS-300 Gateway
- Meridian SL-100 PBX

Registers

The following table lists the registers associated with OM group IOSYS and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group IOSYS

Register name	Measures
IOSYSERR	Input and output system error

IOSYSERR

Register type
Peg

Description
IOSYSERR counts errors that the input/output (I/O) system detects on incoming or outgoing messages. Examples of problem conditions include errors or rebounded message interrupts that originate in the CMC.

Associated registers
None

Extension registers
None

Associated logs
None

IPCM

Description

The IPCM Register OMs are used for IP Client Manager (IPCM) specific OMs.

The following table lists the key and info fields associated with OM group IPCM.

Key field	Info field
None	None

Related functional groups

The following functional groups are related to OM group IPCM:

- IP Client Manager (IPCM)

Registers

The following table lists the registers associated with OM group IPCM and what they measure. For a description of a register, click on the register name.

Registers for OM group IPCM

Register name	Measures
autoProvSuccCnt	auto-provisioning successful count
autoProvFailCnt	auto-provisioning failed count
fwdSuccCnt	firmware downloads successful count
fwdFailCnt	firmware downloads failed count
devConnectCnt	device connection count
subrConnectCnt	subscriber connections count

autoProvSuccCnt

Register type
Peg

Description
200x device successfully auto-provisioned.

Associated registers
autoProvFailCnt

Extension registers
None

Associated logs
None

autoProvFailCnt

Register type
Peg

Description
200x device failed auto-provisioning.

Associated registers
autoProvSuccCnt

Extension registers
None

Associated logs
None

fwdSuccCnt

Register type
Peg

Description
Successful firmware download for 200x device.

Associated registers
fwdFailCnt

Extension registers
None

Associated logs
None

fwdFailCnt

Register type
Peg

Description
Failed firmware download for 200x device. Download is retried 3 times before this OM is incremented.

Associated registers
fwdSuccCnt

Extension registers
None

Associated logs
None

devConnectCnt

Register type
Usage

Scan rate

Description
Incremented for each 200x device that connects to IPCM. Decremented when 200x device disconnects. OM count depicts number of 200x devices that IPCM is currently servicing.

Associated registers
None

Extension registers
None

Associated logs
None

subrConnectCnt

Register type
Usage

Scan rate

Description
Incremented for each subscriber that logs onto a 200x that the IPCM is servicing. Decremented when subscriber logs outs. OM count represents number of subscribers that the IPCM is servicing.

Associated registers
None

Extension registers
None

Associated logs
None

IS41TOPS

Description

OM group IS-41 TOPS (IS41TOPS) measures application- and transport-level events for the IS-41Automated Directory Assistance Call Completion (ADACC) with release call flow.

ATTENTION

Feature A00003687 TOPS Wireless Intelligent Network Integration removes OM group IS41TOPS in SN07. The feature creates new OM group SMSTOPS, TC7WRLSS and WINTOPS. All events formerly pegged by IS41TOPS are now pegged by TC7WRLSS and WINTOPS.

The following table briefly describes the new OM groups. For a detailed description of an OM group, refer to the respective section in this document.

OM groups that replace IS41TOPS

Name	What it measures
SMSTOPS	Application-level events for the TOPS Short Message Service (SMS)
TC7WRLSS	Transport-level events such as types of TCAP messages sent and received, and SS7 errors on TOPS wireless calls for SMS, Wireless Intelligent Network (WIN), IS-41, and Global System for Mobile Communications (GSM)
WINTOPS	Application-level events for wireless ADACC with release. This group uses WIN in the name since wireless intelligent network capabilities are used to provide ADACC with release for both IS-41 and GSM.

The number of registers to record application- and transport-level events for combinations of Release Link Trunking (RLT) and SMS, and protocol standards IS-41 and GSM exceeds the maximum of 32. SMSTOPS, TC7WRLSS and WINTOPS use a key field with values IS-41 and GSM, and are used for both wireless network standards.

Related functional groups

There are no functional groups associated with OM group IS41TOPS.

Registers

The following table shows the new representations of the registers that were formerly in IS41TOPS. For a detailed description of an OM group, refer to the respective section in this document.

IS41TOPS register (SN06)	New OM group: Key: IS41 or WIN_IS41	New register (SN07)
ANINFINV	WINTOPS	WINBEGIN
ANINFIN2	WINTOPS	WINBEGI2
CONNRES	WINTOPS	REQCONN
CONNRES2	WINTOPS	REQCONN2
ANINFRR	WINTOPS	CONNECT
ANINFRR2	WINTOPS	CONNECT2
ANINFRD	WINTOPS	DISCONN
ANINFRD2	WINTOPS	DISCONN2
RESTIMR	WINTOPS	RESTIMR
RESTIMR2	WINTOPS	RESTIMR2
TLDNTIME	WINTOPS	TLDNTIME
SANTIMR	WINTOPS	SANTIMR
CFRABAN	WINTOPS	ABANDON
CFRDISC	WINTOPS	ERRDISC
CFRFAIL	WINTOPS	ERRCONN
CFRSSFT	WINTOPS	ERRSSFT
RETERRS	TC7WRLSS	RETERRS
RETERRR	TC7WRLSS	RETERRR
REJECTS	TC7WRLSS	REJECTS
REJECTR	TC7WRLSS	REJECTR
NOTLDNS	WINTOPS	NOTLDNS

IS41TOPS register (SN06)	New OM group: Key: IS41 or WIN_IS41	New register (SN07)
NODATA	WINTOPS	NODATA
RXLAFAIL	WINTOPS	RXLAFAIL
MBFULL	TC7WRLSS	MBFULL
RTFNOXLA	TC7WRLSS	RTFNOXLA
RTFNOXLS	TC7WRLSS	RTFNOXLS
RTFSUBCG	TC7WRLSS	RTFSUBCG
RTFSUBFL	TC7WRLSS	RTFSUBFL
RTFUNEQ	TC7WRLSS	RTFUNEQ
RTFNETFL	TC7WRLSS	RTFNETFL
RTFNETCG	TC7WRLSS	RTFNETCG
RTFMISCE	TC7WRLSS	RTFMISCE

SS7 operational measurements

Existing OM groups for C7 and TCAP are defined for pegging events relating to SS7 and TCAP messaging. Existing OM groups TCAPUSAG and TCAPERRS have SS7 subsystem as their key. To track TOPS IS-41 events, use subsystem name IS41TOPS as the key. To track TOPS GSM events, use subsystem name GSMTOPS as the key.

TCAPUSAG contains registers that are pegged during a wireless TOPS call in addition to the pegs in OM groups SMSTOPS, WINTOPS and TC7WRLSS. The following table maps the OM registers in TCAPUSAG to messages sent and received during a wireless TOPS call.

TCAPUSAG mapping to TOPS IS-41 and GSM ADACC events (Sheet 1 of 3)

Register name	Measures	Pegged when
TCMSGOUT, TCMSGOU2	Total TCAP messages originating on this node	IS-41 and GSM TCAP messages sent by TOPS
TCMSGIN, TCMSGIN2	Total TCAP messages terminating at this node	IS-41 and GSM TCAP messages received by TOPS

TCAPUSAG mapping to TOPS IS-41 and GSM ADACC events (Sheet 2 of 3)

Register name	Measures	Pegged when
TCUNIDIR, TCUNIDI2	Total TCAP msgs sent/rcvd w/ package type UNIDIRECTIONAL	Not pegged
TCQWPERM, TCQWPER2	Total TCAP msgs sent/rcvd w/ package type QUERY W/ PERM	- TOPS receives IS-41 ANLYZD or GSM InitialDP - TOPS sends an SMS
TCQNPERM, TCQNPER2	Total TCAP msgs sent/rcvd w/ package type QUERY W/O PERM	Not pegged
TCCWPERM, TCCWPER2	Total TCAP msgs sent/rcvd w/ package type CONV W/ PERM	- TOPS receives IS-41 CONNFAILRPT - TOPS sends one of the following GSM messages: EstablishTemporaryConnection, ResetTimer, Connect, ReleaseCall, DisconnectForwardConnection
TCCNPERM, TCCNPER2	Total TCAP msgs sent/rcvd w/ package type CONV W/O PERM	TOPS sends IS-41 CONNRES or IS-41 RESETTIMER
TCRESPNS, TCRESPN2	Total TCAP msgs sent/rcvd w/ package type RESPONSE	TOPS sends ANLYZD or receives response from message center
TCINVKL, TCINVKL2	Total components sent/rcvd of type INVOKE LAST	- TOPS sends or receives any message listed in this table for TCCWPERM and TCCWPER2, or TCCNPERM and TCCNPER2 - TOPS sends an SMS
TCINVKNL, TCINVKN2	Total components sent/rcvd of type INVOKE NOT LAST	Not pegged
TCRSLTL, TCRSLTL2	Total components sent/rcvd of type RETURN RESULT LAST	- TOPS sends IS-41 ANLYZD Return Result - TOPS receives GSM Application End or SMS response

TCAPUSAG mapping to TOPS IS-41 and GSM ADACC events (Sheet 3 of 3)

Register name	Measures	Pegged when
TCRSLTNL, TCRSLTN2	Total components sent/rcvd of type RETURN RESULT NOT LAST	Not pegged
TCRTERR, TCRTERR2	Total components sent/rcvd of type RETURN ERROR	TOPS sends or receives a RETURN ERROR
TCREJECT, TCREJEC2	Total components sent/rcvd of type REJECT	TOPS sends or receives a REJECT
TCABORT, TCABORT2	Total TCAP msgs sent/rcvd w/ package type ABORT	TOPS sends or receives an ABORT

ISA

Description

OM group In-Session Activation (ISA) measures the number of offers, acceptances, and failures of the ISA service.

The following table lists the key and info fields associated with OM group ISA.

Key field	Info field
None	OMIBNGINFO

The entry in the Info field is the customer group as defined in field CUSTNAME in table CUSTENG. This field allows only one customer name for each customer group (maximum 4095).

Related functional groups

There are no functional groups associated with OM group ISA.

Registers

The following table lists the registers associated with OM group ISA and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group ISA (Sheet 1 of 2)

Register name	Counts
ANNFAIL	ISA announcement fail
BSYACCPT	ISA on a busy condition
BSYKEY1	Key 1 busy condition
BSYKEY2	Key 2 busy condition
BSYKEY3	Key 3 busy condition
BSYOFFER	ISA on a busy condition
ISAABDN	ISA abandoned
ISAINTER	ISA interrupt
RCVRFAIL	Receiver fail

Registers for OM group ISA (Sheet 2 of 2)

Register name	Counts
RNAACCPT	RNA Accept
RNAOFFER	RNA Offers
RNAKEY1	RNA Key 1
RNAKEY2	RNA Key 2
RNAKEY3	RNA Key 3
RSCSHORT	Resources short
XLAFAIL	Translation failure

ANNFAIL

Register type
Peg

Description
ANNFAIL counts the times the system cannot provide an ISA announcement.

Associated registers
None

Extension registers
None

Associated logs
None

BSYACCPT

Register type
Peg

Description
BSYACCPT counts the times the caller accepts ISA on a busy condition.

Associated registers
None

Extension registers
None

Associated logs
None

BSYKEY1

Register type
Peg

Description
BSYKEY1 counts the times a call completion service activates when the caller that uses key 1 encounters a busy condition.

Associated registers
None

Extension registers
None

Associated logs
None

BSYKEY2

Register type
Peg

Description
BSYKEY2 counts the times a call completion service activates when the caller that uses key 2 encounters a busy condition.

Associated registers
None

Extension registers
None

Associated logs
None

BSYKEY3

Register type
Peg

Description
BSYKEY3 counts the times a call completion service activates when the caller that uses key 3 encounters a busy condition.

Associated registers
None

Extension registers
None

Associated logs
None

BSYOFFER

Register type
Peg

Description
BSYOFFER counts the times the system offers ISA to the caller that encounters a busy condition.

Associated registers
None

Extension registers
None

Associated logs
None

ISAABDN

Register type
Peg

Description
ISAABDN counts the times the caller accepts ISA and disconnects before a call completion service activates.

Associated registers
None

Extension registers
None

Associated logs
None

ISAINTER

Register type
Peg

Description
ISAINTER counts the times the caller uses a reject key to interrupt the ISA offer of service. The register counts interruptions that occur during the first level announcement. The operating company defines the first level of announcement, in a ring/no answer (RNA) condition.

Associated registers
None

Extension registers
None

Associated logs
None

RCVRFAIL

Register type
Peg

Description
RCVRFAIL counts the times the system does not offer ISA because not enough or no tone receivers are available.

Associated registers
None

Extension registers
None

Associated logs
None

RNAACCPT

Register type
Peg

Description
RNAACCPT counts the times the caller accepts ISA on an RNA condition.

Associated registers
None

Extension registers
None

Associated logs
None

RNAOFFER

Register type
Peg

Description
RNAOFFER counts the times the system offers ISA to a caller that encounters an RNA condition.

Associated registers
None

Extension registers
None

Associated logs
None

RNAKEY1

Register type
Peg

Description
RNAKEY1 counts the times a caller that uses key 1 encounters an RNA condition and activates a call completion service.

Associated registers
None

Extension registers
None

Associated logs
None

RNAKEY2

Register type
Peg

Description
RNAKEY2 counts the times a caller that uses key 2 encounters an RNA condition and activates a call completion service.

Associated registers
None

Extension registers
None

Associated logs
None

RNAKEY3

Register type
Peg

Description
RNAKEY3 counts the times a caller that uses key 3 encounters an RNA condition and activates a call completion service.

Associated registers
None

Extension registers
None

Associated logs
None

RSCSHORT

Register type
Peg

Description
RSCSHORT counts the times the system does not offer ISA because not enough software resources are available. Extension blocks and FDBs are examples of software resources.

Associated registers
None

Extension registers
None

Associated logs
None

XLAFAIL

Register type
Peg

Description
XLAFAIL counts the times a caller selects a call completion service the system cannot perform because of a translation failure. A caller selects a call completion service if the following conditions are met:

- a caller presses a key during the digit collection period for an ISA announcement
- the key the caller presses corresponds to a feature or a DN to which the system routes the call

When the access code of the feature is used or the DN to which the system routes the call cannot be translated, translation failure occurs.

Associated registers
None

Extension registers
None

Associated logs
None

Description

Incoming start-to-dial delay (ISDD)

The OM group ISDD provides information on the grade of service given to incoming trunk calls to a DMS switch. The incoming trunk calls to a DMS switch go through three types of XMS-based peripheral modules (XPM). When the length of time required to complete a call exceeds a defined threshold, the register for each XPM increases.

The system collects ISDD measurements separately for each of the following XPMs:

- digital trunk controllers (DTC)
- line trunk controllers (LTC)
- remote cluster controllers (RCC)

The system collects the information in a DTC, LTC and RCC. The system transmits data to the central control (CC) every 5 or 15 mins.

- The system collects a set of four measurements for three different signaling types (pulse types). The system also collects a grouping of all other signaling types. The four measurements are:
- trunk seizures (SEIZ) the system counts when an XPM detects an off-hook condition on an idle incoming trunk
- call attempts (ATMPT) the system counts when the XPM accepts a SEIZ for further processing. This action indicates that the XPM services the call
- trunk delays (TDLY) the system counts when the ISDD exceeds a preset threshold (the default is 3 s). The system also counts the elapsed time between call SEIZ and call abandon (ABDN) exceeds the same threshold
- abandons (ABDN) the system counts when an XPM detects an on-hook condition before the XPM returns the start-to-dial signal. The system counts if the number of abandons exceeds the threshold.

The signaling types are:

- dial pulse (DP), excluding DP immediate type trunks
- digitone (DT)

- multi-frequency (MF)
- all other (OTH) types combined, including DP immediate type trunks

The OM group ISDD provides one tuple for each XPM.

- Key field:
  There is no key field
- Info field:
  PM_NAME has three parts
  - site:
    HOST or site_index number
  - pm_type:
    DTC, LTC, or RCC
  - external XPM number:
    integer

Key field	Info field
none	PM_NAME

The XPMs are entered in table LTCINV for DTCs and LTCs, and in table RCCINV for RCCs.

Office parameter ISDD_OM_THRESHOLD in table OFCSTD defines the ISDD threshold. The default value is 3 s. The default value can be set to 1 or 0.5 s.

Related functional groups

The following functional groups are associated with OM group ISDD:

- LTC
- DTC
- RCC

Registers

The following table lists the registers associated with OM group ISDD and what they measure. For a description of a register, click on the register name.

Registers for OM group ISDD

Register name	Measures
DPABDN	Dial pulse (DP) abandon
DPATMPT	Dial pulse (DP) attempt
DPSEIZ	Dial pulse (DP) seizure
DPTDLY	Dial pulse (DP) trunk delay
DTABDN	Digitone (DT) abandon
DTATMPT	Digitone (DT) attempt
DTSEIZ	Digitone (DT) seizure
DTTDLY	Digitone (DT) trunk delay
ISDDMSG	Incoming start-to-dial delay (ISDD) message
MFABDN	Multi-frequency (MF) abandon
MFATMPT	Multi-frequency (MF) attempt
MFSEIZ	Multi-frequency (MF) seizure
MFTDLY	Multi-frequency (MF) trunk delay
OTHABDN	Other (OTH) abandon
OTHATMPT	Other (OTH) attempt
OTHSEIZ	Other (OTH) seizure
OTHTDLY	Other (OTH) trunk delay

DPABDN

Register type
Peg

Description
Dial pulse (DP) abandon (DPABDN)

Register DPABDN increases when an XPM detects an on-hook condition on an incoming DP trunk. The XPM detects the condition before the XPM returns a start-to-dial signal. The system abandons the call.

Register DPABDN does not count DP immediate call ABDNs.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DPATMPT

Register type
Peg

Description
Dial pulse (DP) attempt (DPATMPT)

Register DPATMPT increases when the XPM accepts a SEIZ of the DP trunk of an XPM for further processing.

Register DPATMPT does not call DP immediate call ATMPTs.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DPSEIZ

Register type
Peg

Description
Dial pulse (DP) seizure (DPSEIZ)

Register DPSEIZ increases when the system seizes a DP trunk of an XPM for an incoming call. The system detects a SEIZ when an XPM detects an off-hook condition. The off-hook condition lasts 6 to 9ms on an idle incoming trunk.

Register DPSEIZ does not count DP immediate trunk SEIZs.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DPTDLY

Register type
Peg

Description
Dial pulse (DP) trunk delay (DPTDLY)

Register DPTDLY increases when one of the following intervals exceeds a preset TDLY threshold:

- the interval between the SEIZ of an incoming DP call and the return of the start-to-dial signal
- the interval between call SEIZ and call ABDN

The default TDLY threshold is 3 s.

Register DPTDLY does not count DP immediate calls.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DTABDN

Register type
Peg

Description
Digitone (DT) abandon (DTABDN)

Register DTABDN increases when an XPM detects an on-hook condition on an incoming DT trunk. The XPM detects the on-hook condition before the XPM returns a start-to-dial signal. The system abandons the call.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DTATMPT

Register type
Peg

Description
Digitone (DT) attempt (DTATMPT)

Register DTATMPT increases when the XPM accepts an SEIZ of an incoming DT trunk of an XPM for further processing.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DTSEIZ

Register type
Peg

Description
Digitone (DT) seizure (DTSEIZ)

Register DTSEIZ increases when the system seizes a DT trunk of an XPM for an incoming call. The system detects a SEIZ when an XPM

detects an off-hook condition. The off-hook condition that for 6 to 9 ms on an idle incoming trunk.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DTTDLY

Register type
Peg

Description
Digitone (DT) trunk delay (DTTDLY)

Register DTTDLY increases when one of the following intervals exceeds a preset TDLY threshold:

- The default TDLY threshold is 3 s.
- the interval between the SEIZ of an incoming DT call and the return of a start-to-dial signal
- the interval between call SEIZ and call ABDN, exceeds a preset TDLY threshold

The default TDLY threshold is 3 s.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

ISDDMSG

Register type
Peg

Description
Incoming start-to-dial delay (ISDD) message (ISDDMSG)

Register ISDDMSG increases when the CC receives an ISDD message from an XPM.

Register ISDDMSG determines if the system loses any ISDD data messages during transmission from the XPM to the CC. The number of messages that the CC should receive depends on the reporting interval. If the reporting interval is 15 min. and OMXFR is 30 min., there should be a count of 2 in ISDDMSG. If the reporting interval is 5 min. and OMXFR is 30 min., there should be a count of 6 in ISDDMSG.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

MFABDN

Register type
Peg

Description
Multi-frequency (MF) abandon (MFABDN)

Register MFABDN increases when an XPM detects an on-hook condition on an incoming MF trunk. The XPM detects the on-hook condition before the XPM returns a start-to-dial signal. The system abandons the call.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

MFATMPT

Register type
Peg

Description
Multi-frequency (MF) attempt (MFAMPT)

Register MFATMPT increases when the XPM accepts a SEIZ of an incoming MF trunk of an XPM for further processing.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

MFSEIZ

Register type
Peg

Description
Multi-frequency (MF) seizure (MFSEIZ)

Register MFSEIZ increases when the system seizes an MF trunk of an XPM for an incoming call. The system detects a SEIZ when an XPM detects an off-hook condition lasting for 6 to 9 ms on an idle incoming trunk.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

MFTDLY

Register type
Peg

Description
Multi-frequency (MF) trunk delay (MFTDLY) Register MFTDLY increases when one of the following intervals exceeds a preset TDLY threshold:

- the interval between the SEIZ of an incoming MF call and the return of a start-to-dial signal
- the interval between call SEIZ and call ABDN, exceeds a preset TDLY threshold

The default TDLY threshold is 3 s.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

OTHABDN

Register type
Peg

Description
Other (OTH) abandon (OTHABDN)

Register OTHABDN increases when an XPM detects an on-hook condition on an incoming OTH trunk. The XPM detects the on-hook condition before the XPM returns a start-to-dial signal. The system abandons the call.

All trunk types are OTH trunks except for the following:

- DP
- DT
- MF
- Integrated Services Digital Network (ISDN)
- Common Channel Signaling No. 7 (CCS7)
- nailed up
- foreign exchange (FX)
- maintenance trunks

Register OTHABDN includes DP immediate ABDNs.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

OTHATMPT

Register type
Peg

Description
Other (OTH) attempt

OTHATMPT increases when the XPM accepts a SEIZ of an incoming OTH trunk of an XPM for further processing. OTH trunks include all trunk types except DP, DT, MF, ISDN, CCS7, nailed up, FX, and maintenance trunks.

This register counts DP immediate call ATMPTs.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

OTHSEIZ

Register type
Peg

Description
Other (OTH) seizure (OTHSEIZ)

Register OTHSEIZ increases when the system seizes an OTH trunk of an XPM for an incoming call. All trunk types except DP, DT, MF, ISDN, CCS7, nailed up, FX, and maintenance trunks. The system detects a SEIZ when an XPM detects an off-hook condition. The off-hook condition lasts 6 to 9 ms on an idle incoming trunk.

Register OTHSEIZ counts DP immediate trunk SEIZs.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

OTHTDLY

Register type
Peg

Description
Other (OTH) trunk delay (OTHTDLY)

Register OTHTDLY increases when one of the following intervals exceeds a preset TDLY threshold:

- the interval between the SEIZ of an incoming OTH call and the return of a start-to-dial signal
- the interval between call SEIZ and call ABDN, exceeds a preset TDLY threshold

The default TDLY threshold is 3 s.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

Description

ISDN parameter download

The register ISDNPDOM counts the number of download attempts, download failures, and download completions that occur on each switch. You can find these OMs in the PDATTMPT, PDFAILRE, and PDCOMPLT registers of the ISDNPDOM OM group.

The OM group ISDNPDOM is a single tuple OM group.

Key field	Info field
none	none

Related functional groups

The ISDN functional group associates with OM group ISDNPDOM.

Registers

The following table lists the registers associated with OM group ISDNPDOM and what they measure. For a description of a register, click on the register name.

Registers for OM group ISDNPDOM

Register name	Measures
PDATTMPT	ISDN Download Attempt Register
PDFAILRE	ISDN Download Failure Register
PDCOMPLT	ISDN Download Completion Register

PDATTMPT

Register type
Peg

Description
ISDN Download Attempt Register (PDATTMPT)

The ISDN Download Attempt Register measures the number of parameter download attempts on each switch. A PD Attempt occurs when the system receives a REGISTER message for which the system

can decode the APDU. The system decodes the APDU to identify a request to download.

PDATTMPT = PDFAILRE + PDCOMPLT

Associated registers
Register PDFAILRE: Parameter Download Failures and register PDCOMPLT: Parameter Download Completions are associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

PDFAILRE

Register type
Peg

Description
ISDN Download Failure Register (PDFAILRE)

The ISDN Download Failure Register measures the number of failures of parameter download requests for each switch. A PD Failure occurs when the system receives an error that does not appear in the error event report. The system receives the error report from the XPM or the terminal.

PDFAILRE = PDATTMPT - PDCOMPLT

Associated registers
Register PDATTMPT: Parameter Download Attempts, and register PDCOMPLT: Parameter Download Completions are associated registers.

Extension registers
There are no extension registers.

Associated logs
Log ISDN302 is an associated log.

The system generates the ISDN302 log to communicate an error when the PDFAILRE OM increases.

PDCOMPLT

Register type
Peg

Description
ISDN Download Completion Register

The ISDN Download Completion Register measures the number of parameter download completions on each switch. A PD Completion occurs when the system encounters the following conditions:

- the switch receives the end of a data indication (RELease COMplete)
- the switch receives a completion or error event report from the terminal

Associated registers
Register PDATTMPT: Parameter Download Attempts, and register PDFAILRE: Parameter Download Failures are associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

Description

ISDN service group Bd D-channel performance summary (ISGBD)

The OM group ISGBD monitors traffic handling on Bd-type D-channels in offices that have peripheral module types:

- ISDN line group controller (LGCI)
- ISDN line trunk controller (LTCI)
- ISDN remote cluster controller (RCCI)A Bd-type D-channel carries packet data to a packet handler.

The D-channel handler (DCH) increases the five registers in ISGBD and transfers the counts to the central control (CC). The registers count frames:

- that the system receives from a packet handler
- that the system transmits to a packet handler
- that are destined for packet handlers, but the system discards because of hardware problems
- that the system receives from a packet handler with cyclic redundancy check (CRC) errors
- that the system receives from a packet handler, but discards for one of the following reasons:
  - invalid logical terminal identifiers (LTID)
  - messages that the ? cannot decode
  - flow control problems
  - aborts

The OM group ISGBD provides one tuple for each Bd-type D-channel.

Key field	Info field
ISGBD_OMTYPE	ISGBD_OMINFO

- Key field:
  The ISGBD_OMTYPE values range from 0 to the maximum number of ISDN service groups (ISG) in an office (255) multiplied by the maximum number of channels for each ISG (32).
- Info field:
  Info field ISGBG_OMINFO consists of the extended multiprocessor

system (XMS)-based peripheral module (XPM) number, the DCH number, and the channel number.

Related functional groups

The ISDN offices with LGCI, LTCI, and RCCI peripherals functional groups associate with OM group ISGBD.

Registers

The following table lists the registers associated with OM group groupname and what they measure. For a description of a register, click on the register name.

Registers for OM group groupname

Register name	Measures
DBDCRC	Bd D-channel cyclic redundancy check (CRC) errors
DBDRXDSC	Bd D-channel received and discarded frames
DBDRXPH	Bd D-channel frames received from packet handler
DBDTXDSC	Bd D-channel transmitted and discarded frames
DBDTXPH	Bd D-channel frames transmitted to packet handler

DBDCRC

Register type
Peg

Description
Bd D-channel cyclic redundancy check (CRC) errors (DBDCRC)

Register DBDCRC counts the frames that the system receives from a packet handler and a DCH discards because of CRC errors.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBDRXDSC

Register type
Peg

Description
Bd D-channel received and discarded frames (DBDRXDSC)

Register DBDRXDSC counts the frames that the system receives from a packet handler and a DCH discards for the following reasons:

- LTIDs that are not correct
- messages that the ? cannot decode
- flow control problems
- aborts
- hardware errors

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBDRXPH

Register type
Peg

Description
Bd D-channel frames received from packet handler (DBDRXPH)

Register DBDRXPH counts the frames that the system receives from a packet handler on a Bd-type D-channel. Each unit in DBDRXPH represents 100 frames.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBDTXDSC

Register type
Peg

Description
Bd D-channel transmitted and discarded frames (DBDTXDSC)

Register DBDTXDSC counts the frames destined for a packet handler that a DCH discards because of hardware problems.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBDTXPH

Register type
Peg

Description
Bd D-channel frames transmitted to packet handler (DBDTXPH)

Register DBDTXPH counts the frames that the system transmits to a packet handler on a Bd-type D-channel. Each unit in DBDTXPH represents 100 frames.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

Description

ISDN service group basic rate access channel performance summary (ISGBRA)

The OM group ISGBRA monitors traffic on basic rate access (BRA) D-channels in offices with the following types of peripheral modules:

- ISDN line group controller (LGCI)
- ISDN line trunk controller (LTCI)
- ISDN remote cluster controller (RCCI)

The D-channel handler (DCH) increases the registers in ISGBRA and transfers the counts to the central control (CC).

Fifteen registers in ISGBRA count the following events and frame types:

- frames with cyclic redundancy check (CRC) errors
- service access point identifier (SAPI) frames that the system transmits and receives
- link resets by a DCH and far end
- reject frames that a DCH and far end transmit and receive
- receiver-not-ready (RNR) frames that a DCH transmits and receives

The system makes counts for each DCH. The system does not make counts for each BRA D-channel. A large number of BRA d-channels that can exist on a single DCH (124).

The OM group ISGBRA provides one tuple for each DCH with BRA D-channels.

Key field	Info field
ISGBRA_OMTYPE	ISGBRA_OMINFO

- Key field:
  Key field ISGBRA_OMTYPE consists of the LTCI number and the

ISDN service group (ISG) number for the LTCI. The maximum number for each office is 255.

- Info field:
  Info field ISGBRA_OMINFO consists of the LTCI number and the ISG number.

Related functional groups

The ISDN offices with LGCI, LTCI, and RCCI peripherals functional groups associate with OM group ISGBRA.

Registers

The following table lists the registers associated with OM group ISGBRA and what they measure. For a description of a register, click on the register name.

Registers for OM group ISGBRA

Register name	Measures
DBRCRC	BRA D-channel cyclic redundancy check errors
DBRLKRED	BRA D-channel link resets by D-channel handler
DBRLKREP	BRA D-channel link resets by far-end device
DBRREJRX	BRA D-channel reject frames received
DBRREJTX	BRA D-channel reject frames transmitted
DBRRNRD	BRA D-channel receiver-not-ready (RNR) frames sent
DBRRNRP	BRA D-channel receiver-not-ready (RNR) frames received
DBRRXDSC	BRA D-channel received and discarded frames
DBRS16RX	BRA D-channel received service access point identifier 16 frames
DBRS16TX	BRA D-channel transmitted service access point identifier 16 frames

Registers for OM group ISGBRA

Register name	Measures
DBRSARX	BRA D-channel received service access point identifier 17 and 63 frames
DBRSATX	BRA D-channel transmitted service access point identifier 17 and 63 frames
DBRS0RX	BRA D-channel received service access point identifier 0 frames
DBRS0TX	BRA D-channel transmitted service access point identifier 0 frames
DBRTXDSC	BRA D-channel transmitted and discarded frames

DBRCRC

Register type
Peg

Description
BRA D-channel cyclic redundancy check errors (DBRCRC)

Register DBRCRC counts the frames a DCH discards because of CRC errors.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBRLKRED

Register type
Peg

Description
BRA D-channel link resets by D-channel handler (DBRLKRED)

Register DBRLKRED counts the link resets by a DCH.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBRLKREP

Register type
Peg

Description
BRA D-channel link resets by far-end device (DBRLKREP)

Register DBRLKREP counts the link resets by a far-end device.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBRREJRX

Register type
Peg

Description
BRA D-channel reject frames received (DBRREJRX)

Register DBRREJRX counts the reject frames that a DCH receives. Reject frames indicate that one of the sequenced frames is missing.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBRREJTX

Register type
Peg

Description
BRA D-channel reject frames transmitted (DBRREJTX)

Register DBRREJTX counts the reject frames that a DCH transmits. Reject frames indicate that the far end loses one of the sequenced frames.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBRRNRD

Register type
Peg

Description
BRA D-channel receiver-not-ready (RNR) frames sent (DBRRNRD)

Register DBRRNRD counts the RNR frames that a DCH sends to a far-end device.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBRRNRP

Register type
Peg

Description
BRA D-channel receiver-not-ready (RNR) frames received (DBRRNRP)

Register DBRRNRP counts the RNR frames that a DCH receives from a far-end device.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBRRXDSC

Register type
Peg

Description
BRA D-channel received and discarded frames (DBRRXDSC)

Register DBRRXDSC counts the frames that a DCH discards because of one of the following problems:

- a terminal endpoint identifier that is not registered
- a message that the system cannot decode
- flow control problems
- only a part of a message is received
- sequencing errors
- an SAPI that is not known

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBRS16RX

Register type
Peg

Description
BRA D-channel received service access point identifier 16 frames (DBRS16RX)

Register DBRS16RX counts the SAPI 16 frames that a DCH receives. The SAPI 16 frames indicate a request for packet-switched service.

Each unit in DBRS16RX represents 100 frames.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBRS16TX

Register type
Peg

Description
BRA D-channel transmitted service access point identifier 16 frames (DBRS16TX)

Register DBRS16TX counts the SAPI 16 frames that a DCH transmits. The SAPI 16 frames indicate a request for packet-switched service.

Each unit in DBRS16TX represents 100 frames.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBRSARX

Register type
Peg

Description
BRA D-channel received service access point identifier 17 and 63 frames (DBRRXDSC)

Register DBRSARX counts the SAPI 17 and SAPI 63 frames that a DCH receives.

The SAPI 17 frames indicate a request for intraloop signaling. The SAPI 17 allows terminals on the same BRA interface to communicate. It also allows terminal testing.

The SAPI 63 frames indicate a request for layer 2 management services. Layer 2 management services include terminal endpoint identifier management, error reporting, and physical link control.

Each unit in DBRSARX represents 100 frames.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBRSATX

Register type
Peg

Description
BRA D-channel transmitted service access point identifier 17 and 63 frames (DBRSATX)

Register DBRSATX counts the SAPI 17 and SAPI 63 frames that a DCH transmits.

The SAPI 17 frames indicate a request for intraloop signaling. The SAPI 17 allows terminals on the same frame to communicate. It also allows terminal testing.

The SAPI 63 frames indicate a request for layer 2 management services. Layer 2 management services include terminal endpoint identifier management, error reporting, and physical link control.

Each unit in DBRSATX represents 100 frames.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBRS0RX

Register type
Peg

Description
BRA D-channel received service access point identifier 0 frames (DBRSORX)

Register DBRS0RX counts the SAPI 0 frames that a DCH receives. The SAPI 0 frames indicate a request for call control.

Each unit in DBRS0RX represents 100 frames.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBRS0TX

Register type
Peg

Description
BRA D-channel transmitted service access point identifier 0 frames (DBRSOTX)

Register DBRS0TX counts the SAPI 0 frames that a DCH transmits. The SAPI 0 frames indicate a request for call control.

Each unit in DBRS0TX represents 100 frames.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DBRTXDSC

Register type
Peg

Description
BRA D-channel transmitted and discarded frames (DBRTXDSC)

Register DBRTXDSC counts the frames destined for a packet handler that a DCH discards because of hardware problems.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

Description

ISDN services group CPU occupancy (ISGCPU)

The OM group ISGCPU measures ISDN services group (ISG) occupancy of the D-channel handler (DCH) CPU. The ISGCPU includes a count of the CPU occupancy that lies in each of ten percentage ranges. For example, 0-10%, 10-20%, and so on.

The tuples for each office for OM group ISGCPU depend on the number of ISGs entered.

Key field	Info field
none	ISGPERF_OMINFO

The info field data that the OM report provides has three parts:

- the peripheral module (PM) type
- the PM number
- the ISG number

Correct PM types are as follows:

- ISDN line group controller (LGCI)
- ISDN line trunk controller (LTCI)
- ISDN remote cluster controller (RCCI)

Related functional groups

The ISDN LTC/LGC functional groups associate with OM group ISGCPU.

Registers

The following table lists the registers associated with OM group ISGCPU and what they measure. For a description of a register, click on the register name.

Registers for OM group ISGCPU

Register name	Measures
DCPU10	DCH CPU occupancy £ 10%
DCPU20	DCH CPU occupancy £ 20%
DCPU30	DCH CPU occupancy £ 30%
DCPU40	DCH CPU occupancy £ 40%
DCPU50	DCH CPU occupancy £ 50%
DCP60	DCH CPU occupancy £ 60%
DCPU70	DCH CPU occupancy £ 70%
DCPU80	DCH CPU occupancy £ 80%
DCPU90	DCH CPU occupancy £ 90%
DCPU100	DCH CPU occupancy £ 100%
DCPURTR	DCH CPU real time remaining
DCPUTOT	DCH CPU total count

DCPU10

Register type
Peg

Description
DCH CPU occupancy £ 10% (DCPU10)

Register DCPU10 counts the seconds that the DCH CPU is occupied for less than or equal to 10%. Register DCPU10 divided by DCPUTOT gives the percentage of time an ISG has an average CPU occupancy of 0% to 10%.

Associated registers
Registers DCPU10 to DCPU100 together provide the CPU application profile of an ISG.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DCPU20

Register type
Peg

Description
DCH CPU occupancy £ 20% (DCPU20)

Register DCPU20 counts the seconds that DCH CPU is occupied for more than 10% but less than or equal to 20%. Register DCPU20 divided by DCPUTOT gives the percentage of time an ISG has an average CPU occupancy of 10% to 20%.

Associated registers
Registers DCPU10 to DCPU100 together provide the CPU application profile of an ISG.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DCPU30

Register type
Peg

Description
DCH CPU occupancy £ 30% (DCPU30)

Register DCPU30 counts the seconds that the DCH CPU is occupied for more than 20% but less than or equal to 30%. Register DCPU30 divided by DCPUTOT count gives the percentage of time an ISG has an average CPU occupancy of 20% to 30%.

Associated registers
Registers DCPU10 to DCPU100 together provide the CPU application profile of an ISG.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DCPU40

Register type
Peg

Description
DCH CPU occupancy £ 40% (DCPU40)

Register DCPU40 counts the seconds that the DCH CPU is occupied more than 30% but less than or equal to 40%. Register DCPU40 divided by the DCPUTOT gives the percentage of time an ISG has an average CPU occupancy of 30% to 40%.

Associated registers
Registers DCPU10 to DCPU100 together provide the CPU application profile of an ISG.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DCPU50

Register type
Peg

Description
DCH CPU occupancy £ 50% (DCPU50)

Register DCPU50 counts the seconds that the DCH CPU is occupied for more than 40% but less than or equal to 50%. Register DCPU50 divided by DCPUTOT gives the percentage of time an ISG has an average CPU occupancy of 40% to 50%.

Associated registers
Registers DCPU10 to DCPU100 together provide the CPU application profile of an ISG.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DCP60

Register type
Peg

Description
DCH CPU occupancy £ 60% (DCPU60)

Register DCPU60 counts the seconds that the DCH CPU is occupied for more than 50% but less than or equal to 60%. Register DCPU60 divided by DCPUTOT gives the percentage of time an ISG has an average CPU occupancy of 50% to 60%.

Associated registers
Registers DCPU10 to DCPU100 together provide the CPU application profile of an ISG.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DCPU70

Register type
Peg

Description
DCH CPU occupancy £ 70% (DCPU70)

Register DCPU70 counts the seconds that the DCH CPU is occupied for more than 60% but less than or equal to 70%. Register DCPU70 divided by DCPUTOT gives the percentage of time an ISG has an average CPU occupancy of 60% to 70%.

Associated registers
Registers DCPU10 to DCPU100 together provide the CPU application profile of an ISG.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DCPU80

Register type
Peg

Description
DCH CPU occupancy £ 80% (DCPU80)

Register DCPU80 counts the seconds that the DCH CPU is occupied for more than 70% but less than or equal to 80%. Register DCPU80 divided by DCPUTOT gives the percentage of time an ISG has an average CPU occupancy of 70% to 80%.

Associated registers
Registers DCPU10 to DCPU100 together provide the CPU application profile of an ISG.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DCPU90

Register type
Peg

Description
DCH CPU occupancy £ 90% (DCPU90)

Register DCPU90 counts the seconds that the DCH CPU is occupied for more than 80% but less than or equal to 90%. Register DCPU90 divided by DCPUTOT gives the percentage of time an ISG has an average CPU occupancy of 80% to 90%.

Associated registers
Registers DCPU10 to DCPU100 together provide the CPU application profile of an ISG.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DCPU100

Register type
Peg

Description
DCH CPU occupancy £ 100% (DCPU100)

Register DCPU100 counts the seconds that the DCH CPU is occupied for more than 90% but less than or equal to 100%. Register DCPU100 count divided by DCPUTOT gives the percentage of time an ISG has an average CPU occupancy of 90% to 100%.

Associated registers
Registers DCPU10 to DCPU100 together provide the CPU application profile of an ISG.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DCPURTR

Register type
Usage

Description
DCH CPU real time remaining (DCPURTR)

Register DCPURTR counts the seconds that the DCH CPU is available to process additional calls. Register DCPURTR divided by DCPUTOT gives the percentage of time an ISG CPU is available to process additional calls.

Associated registers
There are no associated registers.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

DCPUTOT

Register type
Usage

Description
DCH CPU total count (DCPUTOT) Register DCPUTOT counts the seconds in the period during which the system counts DCH CPU occupancy.

Associated registers
Register DCPUTOT divided into any other register in this OM group, gives a percentage measurement of that register use.

Extension registers
There are no extension registers.

Associated logs
There are no associated logs.

ISGOVLD

Description

OM group ISDN Services Group Overload (ISGVOLD) measures the degree of overload of an ISDN services group (ISG). The OM group ISGVOLD provides information on the three levels of overload control for an ISG: congestion, overload, and frame discard.

The following table lists the key and info fields associated with OM group ISGOVLD:

Key field	Info field
None	ISGPERF_OMINFO

The info field information the OM report provides has three parts: peripheral module (PM) type, PM number, and ISG number. Correct PM types are as follows:

- ISDN line group controller (LGCI)
- ISDN line trunk controller (LTCI)
- ISDN remote cluster controller (RCCI)

Related functional groups

The following functional groups are associated with OM group ISGOVLD:

- LTCI
- LGCI
- RCCI

Registers

The following table lists the registers associated with OM group ISGVOLD and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group ISGVOLD (Sheet 1 of 2)

Register name	Measures
CONGENTR	Number of times entering congestion
CONGEXIT	Number of times leaving congestion

Registers for OM group ISGVOLD (Sheet 2 of 2)

Register name	Measures
CONGTIME	Congestion Time
OV16DSC	SAPI 16 frames discarded
OVLDENTR	Number of times entering overload
OVLDEXIT	Number of times leaving overload
OVLDTIME	Period of time in overload

CONGENTR

Register type
Peg

Description
CONGENTR counts the times an ISG enters a congested state.

Associated registers
CONGEXIT

Extension registers
None

Associated logs
None

CONGEXIT

Register type
Peg

Description
CONGEXIT counts the number of times that an ISG leaves a congested state.

Associated registers
CONGENTR

Extension registers
None

Associated logs
None

CONGTIME

Register type
Peg

Description
CONGTIME counts the seconds an ISG remains in a congested state.

Associated registers
None

Extension registers
None

Associated logs
None

OV16DSC

Register type
Peg

Description
OV16DSC counts the services access point identifier 16 (SAPI 16) frames the system discards caused by overload controls.

Associated registers
None

Extension registers
OV16DSC2

Associated logs
None

OVLDENTR

Register type
Peg

Description
OVLDENTR counts the number of times an ISG enters an overloaded state.

Associated registers
OVLDEXIT

Extension registers
None

Associated logs
None

OVLDEXIT

Register type
Peg

Description
OVLDEXIT counts the times an ISG leaves an overloaded state.

Associated registers
OVLDENTR

Extension registers
None

Associated logs
None

OVLDTIME

Register type
Peg

Description
OVLDTIME counts the seconds an ISG is in an overloaded state.

Associated registers
None

Extension registers
None

Associated logs
None

ISUPCGRP

Description

OM group ISUP Circuit Group Availability (ISUPCGRP) provides information on circuit availability for the ISDN user part (ISUP). The system uses this information to determine circuit performance.

Register ISCKTRAC increases when a circuit fails a continuity check test.

Register ISCKTRAO increases when a message is received that is not appropriate. This condition indicates that the circuit is defective and is not available.

Register ISCKTRAE counts exit message (EXM) timeouts that occur on a trunk group. A timeout occurs when the end office expects and does not receive an EXM from a tandem office.

The following table lists the key and info fields associated with OM group ISUPCGRP:

Key field	Info field
None	None

Related functional groups

The following functional groups are associated with OM group ISUPCGRP:

- ISDN integrated services digital network
- CCS7 Common Channel Signaling 7

Registers

The following table lists the registers associated with OM group ISUPCGRP and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group ISUPCGRP (Sheet 1 of 2)

Register name	Measures
ISCKTRAC	ISUP circuit reattempt continuity

Registers for OM group ISUPCGRP (Sheet 2 of 2)

Register name	Measures
ISCKTRAO	ISUP circuit reattempt other reasons
ISCKTRAE	ISUP trunk group exit messages

ISCKTRAC

Register type
Peg

Description
ISCKTRAC increases when a circuit in a trunk group fails a continuity check test. The initial address message (IAM) requests the test for the circuit on which a call is made.

Associated registers
None

Extension registers
None

Associated logs
None

ISCKTRAO

Register type
Peg

Description
ISCKTRAO counts automatic repeat call setup attempts that occur for each trunk group for reasons other than:

- two-seizure detections
- continuity check test failures

ISCKTRAO increases for the following reasons:

- a blocking message is received after the initial address message (IAM) is sent and before an acknowledgement is received
- a reset circuit message is received after an IAM is received before an acknowledgement is received

- any other messages that are not appropriate are received before the address complete message (ACM) is received
- an unequipped circuit identification code (UCIC) message is received on a first attempt

Associated registers
None

Extension registers
None

Associated logs
None

ISCKTRAE

Register type
Peg

Description
ISCKTRAE counts exit message (EXM) timeouts that occur on a trunk group. A timeout occurs when the end office expects and does not receive an EXM from a tandem office.

Associated registers
None

Extension registers
None

Associated logs
C7UP102

ISUPCKTA

Description

OM group ISUP Circuit Availability (ISUPCKTA) counts circuit and circuit group blocking and unblocking messages sent between near- and far-end offices. The OM group ISUPCKTA counts determine overall circuit performance for the ISDN user part (ISUP).

Local or remote offices can block separate circuits. The system diverts traffic from blocked circuits for circuit testing and servicing. Two methods are used to unblock a circuit:

- Maintenance personnel originate an unblock (UBL) message or switching equipment at the near-end office returns a blocked circuit to service from the far-end office.
- An initial address message (IAM) received from a far-end office returns a remotely blocked circuit at the near-end office to service.

Registers that count available groups of circuits have also been created. These registers are activated when a future BCS group message sending procedure is implemented.

The following table lists the key and info fields associated with OM group ISUPCKTA:

Key field	Info field
None	None

Related functional groups

The ISDN integrated services digital network functional group is associated with OM group ISUPCKTA.

Registers

The following table lists the registers associated with OM group ISUPCKTA and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group ISUPCKTA (Sheet 1 of 2)

Register name	Measures
ISCKTBLO	ISUP circuit blocked
ISCKTCGU	ISUP circuit group unblock

Registers for OM group ISUPCKTA (Sheet 2 of 2)

Register name	Measures
ISCKTGBF	ISUP circuit group blocked failure
ISCKTGBT	ISUP circuit group blocked this end
ISCKTLBT	ISUP circuit locally blocked
ISCKTRBT	ISUP circuit remote blocked
ISCKTUBL	ISUP circuit unblocked

ISCKTBLO

Register type
Peg

Description
ISCKTBLO counts circuit blocking messages sent to remove traffic from a circuit. The register prevents the far-end office from originating outgoing calls on a blocked circuit.

Associated registers
None

Extension registers
None

Associated logs
C7UP103

ISCKTCGU

Register type
Peg

Description
ISCKTCGU counts the following circuit group unblocking messages that an office sends:

- maintenance-oriented group unblocking
- hardware failure-oriented group unblocking
- software-generated group unblocking

Register ISCKTCGU counts for each trunk in the group.

Associated registers
None

Extension registers
None

Associated logs
C7UP104

ISCKTGBF

Register type
Peg

Description
ISCKTGBF counts circuit group blocking messages that the system sends again after the first attempt to send messages fails. Failure occurs when the time allowed for acknowledgment elapses before the acknowledgment message is received.

Circuits are automatically released from all calls when the system receives a circuit group blocking message.

Associated registers
None

Extension registers
None

Associated logs
C7UP104

ISCKTGBT

Register type
Peg

Description
ISCKTGBT counts circuit group blocking messages sent to block a circuit group at the far-end office for maintenance or software-generated reasons. This action does not affect calls on the circuits. Register ISCKTGBT counts circuit group blocking messages for each trunk in the group.

Associated registers
None

Extension registers
None

Associated logs
C7UP104

ISCKTLBT

Register type
Peg

Description
ISCKTLBT counts circuits that are locally blocked for five min. This action blocks outgoing calls on this circuit at the far-end office. The system sends a blocking message to the far-end office.

ISCKTLBT is not increased for GL04.

Associated registers
None

Extension registers
None

Associated logs
C7UP103

ISCKTRBT

Register type
Peg

Description
ISCKTRBT counts circuits that are blocked from a far-end office for 5 min. The register counts once for each blockage at the 5 min mark.

ISCKTRBT is not increased for GL04.

Associated registers
None

Extension registers
None

Associated logs
C7UP103

ISCKTUBL

Register type
Peg

Description
ISCKTUBL counts circuit unblocking messages that an office sends to cancel the blocked condition of a circuit. Register ISCKTUBL increases when the system receives an initial address message (IAM) from a far-end office to attempt a call on a blocked circuit. The circuit is automatically unblocked when the system receives the IAM message.

Associated registers
None

Extension registers
None

Associated logs
C7UP103

ISUPCONG

Description

ISUP Congestion (ISUPCONG)

The following table lists the key and info fields associated with OM group ISUPCONG:

Key field	Info field
COMMON_LANGUAGE_NAME	None

Related functional groups

There are no functional groups associated with ISUPCONG.

Registers

The following table lists the registers associated with OM group ISUPCONG and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group ISUPCONG

Register name	Measures
NUMBLOCK	Number of Blocked Calls
ACCDFIL	Automatic Congestion Control Datafill

NUMBLOCK

Register type
Peg

Description
NUMBLOCK counts the total number of blocked calls that transfer controlled (TFC) and transfer prohibited (TFP) cause. These blocked calls are caused when the BLOCK option in table TRKSGRP is on.

Associated registers
None

Extension registers
None

Associated logs
None

ACCDFIL

Register type
Peg

Description
ACCDFIL is used to increase the number of times a trunk group detected ACL but could not apply network management (NWM) controls. The NWM controls could not be applied because of missing datafill in table CCS7PPLN.

The technician can take the trunk CLLI and reference table ISUPDEST to determine the point code name of the office experiencing congestion. Refer to table C7RTESET and use the point code name to determine the accurate CCS7 point code.

Refer to tables NWMPPLN, PREPLANS, and CCS7PPLN to implement NWM controls.

Associated registers
None

Extension registers
None

Associated logs
None

ISUPCONN

Description

OM group ISUP connection (ISUPCONN) provides information on circuit availability and call attempts that are unsuccessful. This information determines how the surrounding network affects ISDN user part (ISUP) performance.

The following table lists the key and info fields associated with OM group ISUPCONN.

Key field	Info field
None	None

Related functional groups

The following functional groups are associated with OM group ISUPCONN:

- ISDN integrated services digital network
- CCS7 Common Channel Signaling 7

Registers

The following table lists the registers associated with OM group ISUPCONN and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group ISUPCONN (Sheet 1 of 2)

Register name	Measures
ISCONBAD	ISUP bad
ISCONCOT	ISUP continuity
ISCONFAR	ISUP facility request
ISCONICC	ISUP continuity check
ISCONINR	ISUP information request
ISCONUCA	ISUP unsuccessful address
ISCONUCB	ISUP unsuccessful busy

Registers for OM group ISUPCONN (Sheet 2 of 2)

Register name	Measures
ISCONUCC	ISUP unsuccessful circuit
ISCONUCE	ISUP unsuccessful
ISCONUCF	ISUP unsuccessful faults
ISCONUCN	ISUP unsuccessful numbers
ISCONUCO	ISUP unsuccessful other
ISCONUCS	ISUP unsuccessful service

ISCONBAD

Register type
Peg

Description
ISCONBAD counts call attempts that fail during call setup. When a call attempt fails during call setup, the originating office receives a release message instead of an address complete message.

Associated registers
None

Extension registers
ISCONBD2

Associated logs
None

ISCONCOT

Register type
Peg

Description
ISCONCOT counts calls that fail the first continuity check test. The continuity check request (CCR) message initiates the first test. The CCR message performs an automatic recheck 10 seconds after the first continuity check failure.

Associated registers
None

Extension registers
None

Associated logs
C7UP107

ISCONFAR

Register type
Peg

Description
ISCONFAR counts failures that occur when there is no response to the second attempt to send a facility request message.

Associated registers
None

Extension registers
None

Associated logs
C7UP108

ISCONICC

Register type
Peg

Description
ISCONICC counts calls that receive the continuity check test. The count occurs at the office that performs the continuity check test that the initial address message requests. The register is set to zero (0).

Associated registers
None

Extension registers
ISCONIC2

Associated logs
None

ISCONINR

Register type
Peg

Description
ISCONINR counts failures that occur when there is no response to a second attempt to send an information request message.

Associated registers
None

Extension registers
None

Associated logs
C7UP108

ISCONUCA

Register type
Peg

Description
ISCONUCA counts call attempts that are unsuccessful because another office determines that the number either is not in a valid format or is incomplete.

Associated registers
None

Extension registers
None

Associated logs
C7UP105

ISCONUCB

Register type
Peg

Description
ISCONUCB counts call attempts that are unsuccessful because the called party is busy.

Associated registers
None

Extension registers
ISCONUB2

Associated logs
None

ISCONUCC

Register type
Usage

Description
ISCONUCC counts call attempts that are unsuccessful because there are no correct idle circuits in another office to handle the call.

Associated registers
None

Extension registers
ISCOUCC2

Associated logs
C7UP106

ISCONUCE

Register type
Peg

Description
ISCONUCE counts call attempts that are unsuccessful because switching equipment in another office handles too many calls.

Associated registers
None

Extension registers
ISCOUCE2

Associated logs
C7UP106

ISCONUCF

Register type
Peg

Description
ISCONUCF counts call attempts that are unsuccessful because of a temporary fault in the network at the far end.

Associated registers
None

Extension registers
ISCOUCF2

Associated logs
C7UP106

ISCONUCN

Register type
Peg

Description
ISCONUCN counts call attempts that are unsuccessful because the dialed number is a blank directory number in the far-end office.

Associated registers
None

Extension registers
None

Associated logs
C7UP105

ISCONUCO

Register type
Peg

Description
ISCONUCO counts call attempts that are not successful because of reasons other than the following:

- destination out-of-service faults
- called party busy condition
- numbers not allocated

- temporary faults
- address not complete
- circuit not available
- switching equipment congestion

The system records the reason the call attempt is not successful in the cause field of the release message to the office.

Associated registers
None

Extension registers
ISCONUO2

Associated logs
None

ISCONUCS

Register type
Peg

Description
ISCONUCS counts call attempts that are unsuccessful because an equipment failure occurs at the far-end office. The call attempts also can fail because the directory number of the called party is either disconnected or out of service.

Associated registers
None

Extension registers
None

Associated logs
None

ISUPERRS

Description

OM group ISDN User Part Errors (ISUPERRS) counts abnormal conditions, unexpected messages, and the absence of acknowledgement messages during call setup and call takedown and during maintenance procedures. These counts are used by maintenance personnel to track ISDN user part (ISUP) stability.

If the far end has difficulty in routing a call during call setup, it sends a release (RLS) message to the originating office. The reason for the failure is included in the message. When the RLS message is received, the call is released from the far end. To take down a call, the first party that goes on-hook sends a RLS message. In response, a release complete (RLC) message is sent from the other end. Timers ensure that the call is not left in an inactive state. If the RLC message is not sent within one minute after receipt of an RLS message, the RLS message is sent again. If there is still no response, the far end sends a reset circuit (RSC) message.

The following table lists the key and info fields associated with OM group ISUPERRS:

Key field	Info field
None	None

Related functional groups

The following functional groups are associated with OM group ISUPERRS:

- ISDN
- Common Channel Signaling 7 (CCS7)

Registers

The following table lists the registers associated with OM group ISUPERRS and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group ISUPERRS

Register name	Measures
ISERRBAD	ISDN error bad
ISERRBLO	ISUP error blocking message
ISERRGRS	ISUP error circuit group reset
ISERRHOP	ISDN HOP counter expiry
ISERRREL	ISDN error release (RLS) message

ISERRBAD

Register type
Peg

Description
ISERRBAD counts messages received in inappropriate situations, such as the following:

- RLS or RLC messages received on an idle circuit
- blocking messages received for a blocked circuit
- unblocking messages received for an unblocked circuit
- blocking acknowledgement messages received unexpectedly
- unblocking acknowledgement messages received unexpectedly
- other unreasonable messages received after the initial address message has been sent
- invalid messages

Associated registers
None

Extension registers
None

Associated logs
C7UP101

ISERRBLO

Register type
Peg

Description
ISERRBLO register is incremented when an acknowledgement message is not received within one minute of sending blocking/unblocking messages at 4- to 15-second intervals. Message intervals during the 1-minute period are determined by the blocking/unblocking maintenance timer. The register is incremented at the end of the 1-minute period.

Associated registers
None

Extension registers
None

Associated logs
C7UP100

ISERRGRS

Register type
Peg

Description
ISERRGRS register is incremented when a GRS acknowledgement (GRA) message is not received within one minute of sending a pair of GRS messages.

Associated registers
None

Extension registers
None

Associated logs
C7UP100

ISERRHOP

Register type
Peg

Description
ISERRHOP is pegged every time a hop counter (HC) parameter in the incoming initial address message (IAM) expires.

Associated registers
None

Extension registers
None

Associated logs
C7UP130

ISERRREL

Register type
Peg

Description
ISERRREL register counts circuits that are released in outgoing offices because of the following abnormal conditions:

- no address complete message (ACM) received within 20 to 30 seconds of an initial address message sent by this office
- RLS message received after an ACM and before an answer message

The register also counts circuits released in incoming offices because no continuity message (if applicable) is received at the incoming office after receipt of the initial address message.

All abnormal conditions listed above cause the release of circuits in transit offices because they are both incoming and outgoing offices.

Associated registers
None

Extension registers
None

Associated logs
C7UP102

ISUPUSAG

Description

OM group Integrated Services User Part Utilization (ISUPUSAG) counts incoming and outgoing messages that use ISDN user part (ISUP), based on message types defined in the following standards:

- American National Standard T1.113.2 - 1987- ISUP Message Acronyms
- ITU Q.763
- ETS 300 356-1

The system counts outgoing call processing messages in the digital trunk controller for SS7 (DTC7) and the NA100 Spectrum Peripheral Module (SPM) product. The system counts outgoing maintenance messages in the central control complex (CCC). The system counts incoming call processing and maintenance messages in the message switch and buffer SS7 (MSB7). The system also counts these messages in the link interface unit SS7 (LIU7).

The ISUPUSAG monitors message volume to determine ISUP performance, activity, and stability.

Note: In GL04, OM group ISUPUSAG increases for ISUP and TUP.

The following table lists the key and info fields associated with OM group ISUPUSAG:

Key field	Info field
ISUPOM_MSG_TYPE:	None

The following acronyms are counted in ISUPUSAG and are specified in the following standards:

- American National Standard T1.113.2 D 1987- ISUP Message Acronyms
- ETSI (ETS 300 356-1)
- International (ITU Q.763)

ACM
address complete

ALT
alerting message

ANM
answer

BLA
blocking acknowledgement

BLO
blocking

CCR
continuity check request

CFN
confusion

CGB
circuit group blocking

CGBA
circuit group blocking acknowledgement

CGU
circuit group blocking

CGUA
circuit group unblocking acknowledgement

CMC
call modification completed

CMRJ
call modification rejected

CMR
call modification request

CON
connect

COT
continuity

CPG
call progress message

CQM
circuit query

CQR
circuit query response

CRA
circuit reservation acknowledgement

CRG
charge information

CRM
circuit reservation

CSVR
closed user group selection and validation request

CSVS
closed user group selection and validation response

CVR
circuit validation response

CVT
circuit validation test

DRS
delayed release

EXM
exit

FAA
facility accepted

FAC
facility

FAD
facility deactivated

FAI
facility information

FAR
facility request

FRJ
facility reject

FOT
forward transfer

GRA
circuit group reset acknowledgment

GRS
circuit group reset

IAM
initial address message

IAMN1
initial address message not priority one

IDR
identification request

INF
information

INR
information request

IRS
identification response

LOP
loop prevention

LPA
loop back acknowledgement

NRM
network resource management

PAM
pass along message

PRG
progress

REL
release

RES
resume

RLC
release complete

RPM
reconfiguration progress message (also counts OLM:Overload)

RSC
reset circuit

SAM
subsequent address message

SGM
segmentation

SUS
suspend

UBA
unblocking acknowledgment

UBL
unblocking

UCIC
unequipped circuit identification code

UPA
user part available

UPT
user part available

USR
user-to-user information

The maximum number of keys is 62.

Note: For Carrier VoIP Networks equipped with USPs, incoming ISUP OM messages are not pegged on the XA-Core. They are pegged on the USP. Outgoing OM messages are still displayed on the XA-Core.

Refer to the following documents for details:

- for Carrier VoIP: *Succession Performance Management Operational Measurements Reference*, NN10264-709
- for DMS: *Operational Measurements Reference Manual*, 297-8021-814P3 in your SN07 (DMS) Helmsman collection
- for USP software: *Logs and Operational Measurement Descriptions*, included with the USP software on your SN07 CDs

Related functional groups

The following functional groups are associated with OM group ISUPUSAG:

- ISDN
- ISUP
- CCS7

Registers

The following table lists the registers associated with OM group ISUPUSAG and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group ISUPUSAG

Register name	Measures
ISMSGIN	integrated services digital network user part messages incoming
ISMSGOUT	integrated services digital network user part messages outgoing

ISMSGIN

Register type
Peg

Description
ISMSGIN counts ISUP messages the office receives. These messages include incoming messages that pass through a move (tandem) office. Count each type of incoming ISUP message separately.

These measurements collect in the link interface unit for SS7 (LIU7). The system sends these messages to the central control complex (CCC) when at least one count reaches the maximum value of 65535.

Measurements also collect in the message switch and buffer for SS7 (MSB7). The system sends messages to the central control complex (CCC) every 15 seconds. The system also sends messages to the CCC when at least one count reaches the maximum value of 255.

Associated registers
None

Extension registers
ISMSGIN2

Associated logs
None

ISMSGOUT

Register type
Peg

Description
ISMSGOUT counts ISUP messages sent from an office, including messages that pass through a move (tandem) office. Count each type of ISUP message separately. Count maintenance messages in the central control complex (CCC). Outgoing call processing messages are collected in the digital trunk controller (DTC) and sent to the CC. At least one count reaches the maximum value of 255.

Associated registers
None

Extension registers
ISMSGOT2

Associated logs
None

IWBM

Description

OM group Interworking Bridge Management (IWBM) counts events on the Interworking Bridge Management System. The Interworking Spectrum Peripheral Module (IW SPM) uses the IWBM system to interact with time-division multiplexed trunks and announcements.

The following table lists the key and info fields associated with OM group IWBM.

Key field	Info field
IW SPM bridge pools	BEARER_NETBRIDGE_CLLI

Related functional groups

The the IW SPM Bridges functional group is associated with the IWBM OM group.

Registers

The following table lists the registers associated with OM group IWBM and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group IWBM

Register name	Measures
IWGBATT	IW get_bridge attempts
IWGBFAIL	IW get_bridge attempts failed
IWGBABRT	IW get_bridge attempts aborted
IWFBATT	IW free_bridge attempts
IWFBFAIL	IW free_bridge attempts failed
IWFBABRT	IW free_bridge attempts aborted
IWBTLTST	IW bridge for trunk and line test
IWONSET1	IW onset 1
IWONSET2	IW onset 2

Registers for OM group IWBM

Register name	Measures
IWABATE1	IW bridge abate 1
IWABATE2	IW bridge abate 2
IWBCNFAN	IW bridge for conference or announcement usage

IWGBATT

Register type
Peg

Description
IWGBATT counts the number of get_bridge attempts.

Associated registers
None

Extension registers
IWGBATT2

Associated logs
None

IWGBFAIL

Register type
Peg

Description
IWGBFAIL counts the number of get_bridge attempts that fail as a result of queue failure. A queue failure commonly occurs when all bridges are busy on the associated node.

Associated registers
None

Extension registers
None

Associated logs
None

IWGBABRT

Register type
Peg

Description
IWGBABRT counts the number of aborted get_bridge attempts as a result of incorrect data in the request.

Associated registers
None

Extension registers
None

Associated logs
None

IWFBATT

Register type
Peg

Description
IWFBATT counts the number of attempts to free an IW SPM bridge from an associated call. A free bridge attempt occurs when an interworked call ends.

Associated registers
None

Extension registers
IWFBATT2

Associated logs
None

IWFBFAIL

Register type
Peg

Description
IWFBFAIL counts the number of free bridge attempt failures.

Associated registers
None

Extension registers
None

Associated logs
None

IWFBABRT

Register type
Peg

Description
IWFBABRT counts the number of aborted free_bridge attempts as a result of incorrect data.

Associated registers
None

Extension registers
None

Associated logs
None

IWBTLTST

Register type
Peg

Description
IWBTLTST counts the number of times a packet agent uses an IW bridge for access to trunk or line test facilities present on the ENET. An example would be MTM test circuits.

Associated registers
None

Extension registers
None

Associated logs
None

IWONSET1

Register type
Peg

Description
IWONSET1 counts the number of times that in-use IW bridges exceed 70 percent of the associated bridge pool. Register IWABATE1 always pegs before IWONSET1 pegs again.

Associated registers
IWONSET2, IWABATE1

Extension registers
None

Associated logs
None

IWONSET2

Register type
Peg

Description
IWONSET2 counts the number of times that in use IW bridges exceed 90 percent of the associated bridge pool. Register IWABATE2 pegs before IWONSET2 pegs again.

Associated registers
IWONSET1, IWABATE2

Extension registers
None

Associated logs
None

IWABATE1

Register type
Peg

Description
IWABATE1 counts the number of times the total number of in-use interworking bridges is less than 65 percent of the associated bridge pool. IWABATE1 pegs, after register IWONSET1 has pegged, when the number of in-use IW bridges cross the 65 percent threshold. IWONSET1 must peg again before IWABATE1 pegs a second time.

Associated registers
IWABATE2, IWONSET1

Extension registers
None

Associated logs
None

IWABATE2

Register type
Peg

Description
IWABATE2 counts the number of times the total number of in-use interworking bridges is less than 85 percent of the associated bridge pool. IWABAT2 pegs, after register IWONSET2 has pegged, when the number of in-use IW bridges cross the 85 percent threshold. IWONSET2 must peg again before IWABATE2 pegs a second time.

Associated registers
IWABATE1, IWONSET2

Extension registers
None

Associated logs
None

IWBCNFAN

Register type
Peg

Description
IWBCNFAN counts the number of times a packet agent uses an IW bridge for access to conference or announcement facilities present on the ENET. An example would be MTM service circuits.

Associated registers
None

Extension registers
None

Associated logs
None

KSHUNT

Description

OM group Key Short Hunt (KSHUNT) provides information to operating companies on the use of the Business Set Key Short Hunt feature. This feature allows incoming calls to hunt through a set of directory numbers for an idle directory number on which to terminate. The set of directory numbers can be a standard directory number appearance or a multiple-appearance directory number (MADN). The set of directory numbers can include all or a part of the directory numbers on a Meridian Business Set.

Five registers count:

- attempts to terminate on a short hunt group directory number
- attempts to follow the overflow route
- attempts to terminate on the overflow directory number
- when all of the group is busy and the system provides no overflow option
- failures caused by not enough software resources

Option OVERFLOW in table KSETFEAT specifies the overflow directory number and overflow route.

The following table lists the key and info fields associated with OM group KSHUNT:

Key field	Info field
IBNG_INDEX. This key field identifies up to 4096 customer groups.	OMIBNGINFO. Customer name as defined in field CUSTNAME in table CUSTHEAD. Parameter KSHUNT_EXT_BLOCKS in table OFCENG specifies the number of KSHUNT extension blocks available in a DMS office. Parameter option OVERFLOW in table KSETFEAT specifies the overflow directory number and overflow route.

Related functional groups

The following functional groups are associated with OM group KSHUNT:

- IBN Integrated Business System
- MBS Meridian Business Set

Registers

The following table lists the registers associated with OM group KSHUNT and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group KSHUNT

Register name	Measures
KSHATT	Key short hunt attempts
KSHBLKD	Key short hunt blocked
KSHBUSY	Key short hunt busy
KSHDFLCT	Key short hunt deflect
KSHOVFL	Key short hunt overflow

KSHATT

Register type
Peg

Description
KSHATT increases when a call attempts to terminate on a key short hunt group directory number.

If the short hunt directory number dialed is busy and has the Call Forward Busy feature assigned, then the system forwards the call. Hunting does not occur. In this condition, KSHATT does not increase.

Associated registers
None

Extension registers
None

Associated logs
None

KSHBLKD

Register type
Peg

Description
KSHBLKD increases when the system blocks a call because of an attempt to hunt over more than 56 busy members. This condition can occur when the overflow directory number specified for a short hunt group refers to a member of another short hunt group.

Parameter OVEFLOW in table KSETFEAT specifies the overflow directory number.

Associated registers
None

Extension registers
None

Associated logs
LINE138, TRK138

KSHBUSY

Register type
Peg

Description
Register KSHBUSY increases when:

- a call attempts to terminate on a business set key short hunt group where all directory numbers are busy
- no overflow option associate with the key short hunt group in table KSETFEAT

Associated registers
None

Extension registers
None

Associated logs
LINE138, TRK138

KSHDFLCT

Register type
Peg

Description
KSHDFLCT increases when:

- a call attempts to terminate on a business set key short hunt group where all directory numbers are busy
- the call deflects either to an overflow directory number or an overflow route

Parameter OVERFLOW in table KSETFEAT specify the overflow directory number and overflow route.

Associated registers
None

Extension registers
None

Associated logs
LINE138, TRK138

KSHOVFL

Register type
Peg

Description
KSHOVFL increases when:

- a call attempts to terminate on a business set key short hunt group
- a call attempt to terminate fails because of not enough software resources

When KSHOVFL increases, the system does not hunt and the call terminates on the party dialed if that party is idle. The system can also route the call to busy treatment if that member is busy.

Parameter KSHUNT_EXT_BLOCKS in table OFCENG specifies the number of KSHUNT extension blocks available in a DMS office.

Associated registers
None

Extension registers
None

Associated logs
LINE138, TRK138

LDS

Description

OM group Long Distance Signal (LDS) provides the following measurements:

- toll call terminations on busy lines of end users qualified for LDS
- data for end users with LDS which receive toll calls. Toll calls trigger LDS distinctive call waiting (CWT) tones when office parameter LDS_ENABLED is set to Y. The OM group LDS provides measurements for the following data:
  - call completion and non-completion rates for end users without option CWT
  - call completion and non-completion rates for end users with option CWT
- call completion and non-completion rates for end users. End users receive both LDS and CWT. End users receive calls that trigger standard CWT tones when office parameter LDS_ENABLED is set to N.

TRMTFR2 contains one register for each call treatment. The system names the registers TFRnnnn, where nnnn is the external treatment abbreviation. The system increases the register when the system routes a call to treatment.

The following table lists the key and info fields associated with OM group LDS:

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group LDS.

Registers

The following table lists the registers associated with OM group LDS and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group LDS

Register name	Measures
LDSCWA	Long Distance Signal Toll Call Answer on Busy Line
LDSCWNA	Long Distance Signal Toll Call No Answer on Busy Line
LDSRCWA	Long Distance Signal Regular Call Waiting Tones Applied - Call Answered
LDSRCWNA	Long Distance Signal Regular Call Waiting Tones Applied - Call Not Answered
LDSNCWA	Long Distance Signal Toll Call Answered on Busy Line
LDSNCWNA	Long Distance Signal Toll Call Not Answered on Busy Line
LDSBUSY	Long Distance Signal Total Toll Call Terminations on Busy Line

LDSCWA

Register type
Peg

Description
Under the conditions that follow, the system increments LDSCWA when the system answers a toll call on a busy line:

- The end user has a line with options CWT, Long Distance Signal Option (LDSO), and Long Distance Signal Activate (LDSA).
- The line option LDSV of the end user is set to ACT.
- Office parameter LDS_ENABLED is set to Y.

Associated registers
None

Extension registers
None

Associated logs
None

LDSCWNA

Register type
Peg

Description
Under the conditions that follow, the system increments LDSCWNA when a toll call is not answered on a busy line:

- The end user has a line equipped with options CWT, LDSO, and LDSA.
- The line option LDSV of the end user is set to ACT.
- Office parameter LDS_ENABLED is set to Y.

The system considers a call not answered under the following conditions:

- An LDS time-out occurs.
- The calling or called party goes on-hook and the calling party did not receive a call answer.

Associated registers
None

Extension registers
None

Associated logs
None

LDSRCWA

Register type
Peg

Description
LDSRCWA increases when a user answers a call that triggers standard CWT tones. Register LDSRCWA increases for the following call types:

- local calls that terminate on a busy line provisioned with
  - options CWT, LDSO, and LDSA
  - option LDSV activated
  - office parameter LDS_ENABLED set to Y or N
- toll calls that terminate on a busy line provisioned with
  - options CWT, LDSO, and LDSA
  - option LDSV activated
  - office parameter LDS_ENABLED set to N

Associated registers
None

Extension registers
None

Associated logs
None

LDSRCWNA

Register type
Peg

Description
LDSRCWNA increases when a call that triggers standard CWT tones is not answered. Register LDSRCWNA increases for the following call types:

- local calls that terminate on a busy line provisioned with
  - — options CWT, LDSO, and LDSA
  - — option LDSV activated
  - — office parameter LDS_ENABLED set to Y or N
- toll calls that terminate on a busy line provisioned with
  - — options CWT, LDSO, and LDSA
  - — option LDSV activated
  - — office parameter LDS_ENABLED set to N

Note: The system considers a call not answered when an LDS time-out occurs. The system considers a call not answered when the calling or called party goes on-hook and the calling party did not receive a call answer.

Associated registers
None

Extension registers
None

Associated logs
None

LDSNCWA

Register type
Peg

Description
LDSNCWA increases when a toll call is answered on a busy line under the following conditions:

- The called line has options CWT, LDSO, and LDSA.
- The option LDSV of the called line is set to ACT.
- Office parameter LDS_ENABLED is set to Y.

LDSNCWA does not increase when office parameter LDS_ENABLED is set to N.

Associated registers
None

Extension registers
None

Associated logs
None

LDSNCWNA

Register type
Peg

Description
LDSNCWNA increases when the user answers a toll call on a busy line under the following conditions:

- The called line has options CWT, LDSO, and LDSA.
- The LDSV option of the called line is set to ACT.
- Office parameter LDS_ENABLED is set to Y.

The register LDSNCWNA does not increase when office parameter LDS_ENABLED is set to N.

The system considers a call not answered under the following conditions:

- An LDS time-out occurs
- The calling or called party goes on-hook and the calling party did not receive a call answer.

Associated registers
None

Extension registers
None

Associated logs
None

LDSBUSY

Register type
Peg

Description
LDSBUSY increases when a toll call terminates on a busy line. The line option LDSV of the busy line is set to ACT or INACT.

Register LDSBUSY pegs all toll calls qualified for LDA that terminate on busy lines. The value of register LDSBUSY can appear as follows:

LDSBUSY = LDSCWA + LDSCWNA + LDSNCWA + LDSNCWNA

Associated registers
None

Extension registers
None

Associated logs
None

LIDBCCV

Description

OM group Line Information Database Calling Card Information (LIDBCCV) provides access to verify calling card numbers. The registers track the performance of the access by counting the number of queries and responses and classifying responses as valid access or invalid access.

LIDBCCV contains 21 registers that count the following activities:

- the number of LEC calls and/or LEC validation attempts being processed, regardless of the outcome of the call or validation
- the number of queries sent to LIDB to validate the calling card number
- the number of responses received from the CCS7 network with respect to a launched query
- the number of positive responses from the LIDB to validate the calling card number
- the number of queries that were abandoned
- the number of responses that reply with the reason “no PINS" assigned
- the number of responses that reply with the reason “calling card denial"
- the number of responses that reply with a valid response with an unrestricted PIN
- the number of responses that reply with a valid response with restricted PIN
- the number of responses that reply with a response of “threshold exceeded on PIN"
- the number of responses that reply with a response of nonpayment
- the number of messages that are returned due to unexpected component sequence
- the number of responses that indicate an unexpected data value was found (no PIN match)
- the number of messages that were returned due to unavailable network resources
- the number of responses that were returned due to a missing customer record

- the number of responses that were returned due to data unavailable
- the number of times the process waiting for the response times out
- the number of errors not specifically mentioned
- the number of times that the query could not be processed due to a database failure or congestion
- the number of times a query was returned due to an SCCP Global Title Translation failure
- the number of times a query could not be sent due to Automatic Code Gapping

The following table lists the key and info fields associated with OM group LIDBCCV:

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group LIDBCCV.

Registers

The following table lists the registers associated with OM group LIDBCCV and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group LIDBCCV (Sheet 1 of 2)

Register name	Measures
LIDBTOT	LIDB Total Calls
LIDBTOTQ	LIDB Total Queries
LIDBTOTR	LIDB Total Responses
LIDBRPOS	LIDB Responses Positive
LIDBANQY	LIDB Abandon Query
LIDBNOPN	LIDB No PIN Found
LIDBCCDN	LIDB Calling Card Denial
LIDBPUN	LIDB PIN Unrestricted

Registers for OM group LIDBCCV (Sheet 2 of 2)

Register name	Measures
LIDBPRE	LIDB PIN Restricted
LIDBTHRX	LIDB Threshold Exceeded
LIDBNPAY	LIDB No Payment
LIDBCOMP	LIDB Invalid Component
LIDBDATA	LIDB Unexpected Data (No PIN match)
LIDBNETR	LIDB Unavailable Network Resources
LIDBMREC	LIDB Missing Record
LIDBUNAV	LIDB Data Unavailable
LIDBTMO	LIDB Time Out
LIDBMISC	LIDB Miscellaneous
LIDBDBFC	LIDB Database Failure
LIDBSPTR	LIDB SCCP Translation Failure
LIDBACGF	LIDB Automatic Code Gap Failure

LIDBTOT

Register type
Peg

Description
LIDBTOT counts the number of LEC calls and/or LEC validation attempts being processed by the office, regardless of the outcome of the call or validation.

Associated registers
LIDBTOTQ, LIDBACGF

Validation formula
LIDBTOT = LIDBTOTQ + LIDBACGF

Extension registers
None

Associated logs
None

LIDBTOTQ

Register type
Peg

Description
LIDBTOTQ counts the number of queries launched to LIDB to validate the calling card number.

Associated registers
LIDBTOT, LIDBACGF

Validation formula
LIDBTOT = LIDBTOTQ + LIDBACGF

Extension registers
None

Associated logs
None

LIDBTOTR

Register type
Peg

Description
LIDBTOTR counts the number of responses received from the CCS7 network with respect to the launched query.

Associated registers
LIDBRPOS, LIDBNOPN, LIDBCCDN, LIDBTHRX, LIDBNPAY, LIDBCOMP,LIDBDATA, LIDBNETR, LIDBMREC, LIDBUNAV, LIDBMISC, LIDBDBFC, LIDBSPTR, LIDBANQY, LIDBTMO

Validation formula
LIDBTOTR = LIDBRPOS + LIDBNOPN + LIDBCCDN + LIDBTHRX + LIDBNPAY + LIDBCOMP + LIDBDATA + LIDBNETR + LIDBMREC + LIDBUNAN +LIDBMISC + LIDBDBFC + LIDBSPTR - LIDBANQY - LIDBTMO

Extension registers
None

Associated logs
None

LIDBRPOS

Register type
Peg

Description
LIDBRPOS counts the number of positive responses from the LIDB to validate the calling card number.

Associated registers
LIDBTOTR, LIDBNOPN, LIDBCCDN, LIDBTHRX, LIDBNPAY, LIDBCOMP,LIDBDATA, LIDBNETR, LIDBMREC, LIDBUNAV, LIDBMISC, LIDBDBFC, LIDBSPTR, LIDBANQY, LIDBTMO

Validation formula
LIDBTOTR = LIDBRPOS + LIDBNOPN + LIDBCCDN + LIDBTHRX + LIDBNPAY + LIDBCOMP + LIDBDATA + LIDBNETR + LIDBMREC + LIDBUNAN +LIDBMISC + LIDBDBFC + LIDBSPTR - LIDBANQY - LIDBTMO

Extension registers
None

Associated logs
None

LIDBANQY

Register type
Peg

Description
LIDBANQY counts the number of queries that were abandoned.

Associated registers
LIDBRPOS, LIDBNOPN, LIDBCCDN, LIDBTHRX, LIDBNPAY, LIDBCOMP, LIDBDATA, LIDBNETR, LIDBMREC, LIDBUNAV, LIDBMISC, LIDBDBFC, LIDBSPTR, LIDBTOTR, LIDBTMO

Validation formula
LIDBTOTR = LIDBRPOS + LIDBNOPN + LIDBCCDN + LIDBTHRX + LIDBNPAY + LIDBCOMP + LIDBDATA + LIDBNETR + LIDBMREC + LIDBUNAN +LIDBMISC + LIDBDBFC + LIDBSPTR - LIDBANQY - LIDBTMO

Extension registers
None

Associated logs
None

LIDBNOPN

Register type
Peg

Description
LIDBNOPN counts the number of responses that reply with the reason “no PINs assigned."

Associated registers
LIDBRPOS, LIDBTOTR, LIDBCCDN, LIDBTHRX, LIDBNPAY, LIDBCOMP, LIDBDATA, LIDBNETR, LIDBMREC, LIDBUNAV, LIDBMISC, LIDBDBFC, LIDBSPTR, LIDBANQY, LIDBTMO

Validation formula
LIDBTOTR = LIDBRPOS + LIDBNOPN + LIDBCCDN + LIDBTHRX + LIDBNPAY + LIDBCOMP + LIDBDATA + LIDBNETR + LIDBMREC + LIDBUNAN +LIDBMISC + LIDBDBFC + LIDBSPTR - LIDBANQY - LIDBTMO

Extension registers
None

Associated logs
None

LIDBCCDN

Register type
Peg

Description
LIDBCCDN counts the number of responses that reply with the reason “calling card denial."

Associated registers
LIDBRPOS, LIDBNOPN, LIDBTOTR, LIDBTHRX, LIDBNPAY, LIDBCOMP, LIDBDATA, LIDBNETR, LIDBMREC, LIDBUNAV, LIDBMISC, LIDBDBFC, LIDBSPTR, LIDBANQY, LIDBTMO

Validation formula
LIDBTOTR = LIDBRPOS + LIDBNOPN + LIDBCCDN + LIDBTHRX + LIDBNPAY + LIDBCOMP + LIDBDATA + LIDBNETR + LIDBMREC + LIDBUNAN +LIDBMISC + LIDBDBFC + LIDBSPTR - LIDBANQY - LIDBTMO

Extension registers
None

Associated logs
None

LIDBPUN

Register type
Peg

Description
LIDBPUN counts the number of responses that reply with a valid response with an unrestricted PIN.

Associated registers
LIDBTOTR, LIDBNOPN, LIDBCCDN, LIDBTHRX, LIDBNPAY, LIDBCOMP, LIDBDATA, LIDBNETR, LIDBMREC, LIDBUNAV, LIDBMISC, LIDBDBFC, LIDBSPTR, LIDBANQY, LIDBTMO

Validation formula
LIDBTOTR = LIDBRPOS + LIDBNOPN + LIDBCCDN + LIDBTHRX + LIDBNPAY + LIDBCOMP + LIDBDATA + LIDBNETR + LIDBMREC + LIDBUNAN +LIDBMISC + LIDBDBFC + LIDBSPTR - LIDBANQY - LIDBTMO

Extension registers
None

Associated logs
None

LIDBPRE

Register type
Peg

Description
LIDBPRE counts the number of responses that reply with a valid response with a restricted PIN.

Associated registers
LIDBTOTR, LIDBNOPN, LIDBCCDN, LIDBTHRX, LIDBNPAY, LIDBCOMP, LIDBDATA, LIDBNETR, LIDBMREC, LIDBUNAV, LIDBMISC, LIDBDBFC, LIDBSPTR, LIDBANQY, LIDBTMO

Extension registers
None

Associated logs
None

LIDBTHRX

Register type
Peg

Description
LIDBTHRX counts the number of responses that reply with a response of “threshold exceeded on PIN."

Associated registers
LIDBRPOS, LIDBNOPN, LIDBCCDN, LIDBTOTR, LIDBNPAY, LIDBCOMP, LIDBDATA, LIDBNETR, LIDBMREC, LIDBUNAV, LIDBMISC, LIDBDBFC, LIDBSPTR, LIDBANQY, LIDBTMO

Validation formula
LIDBTOTR = LIDBRPOS + LIDBNOPN + LIDBCCDN + LIDBTHRX + LIDBNPAY + LIDBCOMP + LIDBDATA + LIDBNETR + LIDBMREC + LIDBUNAN +LIDBMISC + LIDBDBFC + LIDBSPTR - LIDBANQY - LIDBTMO

Extension registers
None

Associated logs
None

LIDBNPAY

Register type
Peg

Description
LIDBNPAY counts the number of responses that reply with a response of “nonpayment."

Associated registers
LIDBRPOS, LIDBNOPN, LIDBCCDN, LIDBTHRX, LIDBTOTR, LIDBCOMP, LIDBDATA, LIDBNETR, LIDBMREC, LIDBUNAV, LIDBMISC, LIDBDBFC, LIDBSPTR, LIDBANQY, LIDBTMO

Validation formula
LIDBTOTR = LIDBRPOS + LIDBNOPN + LIDBCCDN + LIDBTHRX + LIDBNPAY + LIDBCOMP + LIDBDATA + LIDBNETR + LIDBMREC + LIDBUNAN +LIDBMISC + LIDBDBFC + LIDBSPTR - LIDBANQY - LIDBTMO

Extension registers
None

Associated logs
None

LIDBCOMP

Register type
Peg

Description
LIDBCOMP counts the number of messages that are returned due to an unexpected component sequence.

Associated registers
LIDBRPOS, LIDBNOPN, LIDBCCDN, LIDBTHRX, LIDBNPAY, LIDBTOTR, LIDBDATA, LIDBNETR, LIDBMREC, LIDBUNAV, LIDBMISC, LIDBDBFC, LIDBSPTR, LIDBANQY, LIDBTMO

Validation formula
LIDBTOTR = LIDBRPOS + LIDBNOPN + LIDBCCDN + LIDBTHRX + LIDBNPAY + LIDBCOMP + LIDBDATA + LIDBNETR + LIDBMREC + LIDBUNAN +LIDBMISC + LIDBDBFC + LIDBSPTR - LIDBANQY - LIDBTMO

Extension registers
None

Associated logs
None

LIDBDATA

Register type
Peg

Description
LIDBDATA counts the number of responses that indicate an unexpected data value was found (no PIN match).

Associated registers
LIDBRPOS, LIDBNOPN, LIDBCCDN, LIDBTHRX, LIDBNPAY, LIDBCOMP, LIDBTOTR, LIDBNETR, LIDBMREC, LIDBUNAV, LIDBMISC, LIDBDBFC, LIDBSPTR, LIDBANQY, LIDBTMO

Validation formula
LIDBTOTR = LIDBRPOS + LIDBNOPN + LIDBCCDN + LIDBTHRX + LIDBNPAY + LIDBCOMP + LIDBDATA + LIDBNETR + LIDBMREC + LIDBUNAN +LIDBMISC + LIDBDBFC + LIDBSPTR - LIDBANQY - LIDBTMO

Extension registers
None

Associated logs
None

LIDBNETR

Register type
Peg

Description
LIDBNETR counts the number of messages that were returned due to unavailable network resources.

Associated registers
LIDBRPOS, LIDBNOPN, LIDBCCDN, LIDBTHRX, LIDBNPAY, LIDBCOMP, LIDBDATA, LIDBTOTR, LIDBMREC, LIDBUNAV, LIDBMISC, LIDBDBFC, LIDBSPTR, LIDBANQY, LIDBTMO

Validation formula
LIDBTOTR = LIDBRPOS + LIDBNOPN + LIDBCCDN + LIDBTHRX + LIDBNPAY + LIDBCOMP + LIDBDATA + LIDBNETR + LIDBMREC + LIDBUNAN +LIDBMISC + LIDBDBFC + LIDBSPTR - LIDBANQY - LIDBTMO

Extension registers
None

Associated logs
None

LIDBMREC

Register type
Peg

Description
LIDBMREC counts the number of responses that were returned due to a missing customer record.

Associated registers
LIDBRPOS, LIDBNOPN, LIDBCCDN, LIDBTHRX, LIDBNPAY, LIDBCOMP, LIDBDATA, LIDBNETR, LIDBTOTR, LIDBUNAV, LIDBMISC, LIDBDBFC, LIDBSPTR, LIDBANQY, LIDBTMO

Validation formula
LIDBTOTR = LIDBRPOS + LIDBNOPN + LIDBCCDN + LIDBTHRX + LIDBNPAY + LIDBCOMP + LIDBDATA + LIDBNETR + LIDBMREC + LIDBUNAN +LIDBMISC + LIDBDBFC + LIDBSPTR - LIDBANQY - LIDBTMO

Extension registers
None

Associated logs
None

LIDBUNAV

Register type
Peg

Description
LIDBUNAV counts the number of responses that were returned due to data unavailable.

Associated registers
LIDBRPOS, LIDBNOPN, LIDBCCDN, LIDBTHRX, LIDBNPAY, LIDBCOMP, LIDBDATA, LIDBNETR, LIDBMREC, LIDBTOTR, LIDBMISC, LIDBDBFC, LIDBSPTR, LIDBANQY, LIDBTMO

Validation formula
LIDBTOTR = LIDBRPOS + LIDBNOPN + LIDBCCDN + LIDBTHRX + LIDBNPAY + LIDBCOMP + LIDBDATA + LIDBNETR + LIDBMREC + LIDBUNAN +LIDBMISC + LIDBDBFC + LIDBSPTR - LIDBANQY - LIDBTMO

Extension registers
None

Associated logs
None

LIDBTMO

Register type
Peg

Description
LIDBTMO counts the number of times the process waiting for the response timed out.

Associated registers
LIDBRPOS, LIDBNOPN, LIDBCCDN, LIDBTHRX, LIDBNPAY, LIDBCOMP, LIDBDATA, LIDBNETR, LIDBMREC, LIDBUNAV, LIDBMISC, LIDBDBFC, LIDBSPTR, LIDBANQY, LIDBTOTR

Validation formula
LIDBTOTR = LIDBRPOS + LIDBNOPN + LIDBCCDN + LIDBTHRX + LIDBNPAY + LIDBCOMP + LIDBDATA + LIDBNETR + LIDBMREC + LIDBUNAN +LIDBMISC + LIDBDBFC + LIDBSPTR - LIDBANQY - LIDBTMO

Extension registers
None

Associated logs
None

LIDBMISC

Register type
Peg

Description
LIDBMISC accumulates all the errors nor specifically mentioned.

Associated registers
LIDBRPOS, LIDBNOPN, LIDBCCDN, LIDBTHRX, LIDBNPAY, LIDBCOMP, LIDBDATA, LIDBNETR, LIDBMREC, LIDBUNAV, LIDBTOTR, LIDBDBFC, LIDBSPTR, LIDBANQY, LIDBTMO

Validation formula
LIDBTOTR = LIDBRPOS + LIDBNOPN + LIDBCCDN + LIDBTHRX + LIDBNPAY + LIDBCOMP + LIDBDATA + LIDBNETR + LIDBMREC + LIDBUNAN +LIDBMISC + LIDBDBFC + LIDBSPTR - LIDBANQY - LIDBTMO

Extension registers
None

Associated logs
None

LIDBDBFC

Register type
Peg

Description
LIDBDBFC counts the number of times that the query could not be processed due to a database failure or congestion.

Associated registers
LIDBRPOS, LIDBNOPN, LIDBCCDN, LIDBTHRX, LIDBNPAY, LIDBCOMP, LIDBDATA, LIDBNETR, LIDBMREC, LIDBUNAV, LIDBMISC, LIDBTOTR, LIDBSPTR, LIDBANQY, LIDBTMO

Validation formula
LIDBTOTR = LIDBRPOS + LIDBNOPN + LIDBCCDN + LIDBTHRX + LIDBNPAY + LIDBCOMP + LIDBDATA + LIDBNETR + LIDBMREC + LIDBUNAN +LIDBMISC + LIDBDBFC + LIDBSPTR - LIDBANQY - LIDBTMO

Extension registers
None

Associated logs
None

LIDBSPTR

Register type
Peg

Description
LIDBSPTR counts the number of times a query was returned due to an SCCP Global Title Translation failure.

Associated registers
LIDBRPOS, LIDBNOPN, LIDBCCDN, LIDBTHRX, LIDBNPAY, LIDBCOMP, LIDBDATA, LIDBNETR, LIDBMREC, LIDBUNAV, LIDBMISC, LIDBDBFC, LIDBTOTR, LIDBANQY, LIDBTMO

Validation formula
LIDBTOTR = LIDBRPOS + LIDBNOPN + LIDBCCDN + LIDBTHRX + LIDBNPAY + LIDBCOMP + LIDBDATA + LIDBNETR + LIDBMREC + LIDBUNAN +LIDBMISC + LIDBDBFC + LIDBSPTR - LIDBANQY - LIDBTMO

Extension registers
None

Associated logs
None

LIDBACGF

Register type
Peg

Description
LIDBACGF counts the number of times a query could not be sent due to Automatic Code Gapping.

Associated registers
LIDBTOTQ, LIDBTOT

Validation formula
LIDBTOT = LIDBTOTQ + LIDBACGF

Extension registers
None

Associated logs
None

LINAC

Description

OM group Line Access Measurements (LINAC) monitors grade of service for line access. The LINAC indicates the problems which customers experience in an attempt to access a telephone network through an XMS-based peripheral module (XPM). Counts are made for each line concentrating module (LCM).

Four registers count the following:

- call attempts
- call failures
- call abandons
- dial tone delays

Register counts for the LCMs are collected in the XPMs and transferred to the central control (CC). The default transfer period is 15 minutes.

The following table lists the key and info fields associated with OM group LINAC:

Key field	Info field
None	Contains the following parts: • LCM_NUMBER is the line module index number • SITE_INDEX is the site number • LCD_TYPE is the module type • EXT_LINE_MOD_NUMBER is the module number

Related functional groups

The following functional groups are associated with OM group LINAC:

- XMS-based peripheral modules (XPM)
- Line concentrating modules (LCM)

Registers

The following table lists the registers associated with OM group LINAC and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group LINAC

Register name	Measures
LINABAN	Line call abandons
LINCAT	Line call attempts
LINCATF	Line call attempt failures
LINTDEL	Line access dial tone delay

LINABAN

Register type
Peg

Description
LINABAN counts calls in a line concentrating module (LCM) that abandon before the dial tone receives.

Associated registers
None

Extension registers
None

Associated logs
None

LINCAT

Register type
Peg

Description
LINCAT counts call attempts in an LCM.

Associated registers
LMD_NORIGATT, which counts line origination attempts for line modules.

Extension registers
None

Associated logs
None

LINCATF

Register type
Peg

Description
LINCATF counts call attempts from an LCM that fail to receive a response from the central control (CC).

Associated registers
None

Extension registers
None

Associated logs
None

LINTDEL

Register type
Peg

Description
LINTDEL records the total dial tone delay time for all calls from an LCM that receive a dial tone during the XPM OM transfer period.

Dial tone delay is the time between a subscriber going off-hook and hearing dial tone. The system reports the value in LINTDEL in tenths of a second.

Associated registers
The following registers are associated with LINTDEL:

- DTSR_DELAY, which counts dial tone delays greater than three seconds for XPMs.
- DTSRPM_DPLDLY, DTSRPM_DGTDLY, and DTSRPM_KSDLY, all of which count dial tone delays in peripheral modules

Average dial tone delay for a call during the transfer period in tenths of a second = LINTDEL divided by LINCAT-LINCATF-LINABAN.

Extension registers
None

Associated logs
None

LINEHAZ

Description

OM group Line Hazards (LINEHAZ) measures the number of line hazard conditions on the loop of the subscriber.

The following table lists the key and info fields associated with OM group LINEHAZ:

Key field	Info field
None	None

Related functional groups

Type A and B line card (North American) functional groups are associated with OM group LINEHAZ.

Registers

The following table lists the registers associated with OM group LINEHAZ and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group LINEHAZ

Register name	Measures
HAZCLR	Hazard cleared
HAZDET	Hazard detected
HAZSCAN	Hazard scan

HAZCLR

Register type
Peg

Description
HAZCLR increases when the system clears the line hazard condition. This register also increases when the cut-off relay manually releases on a line that was in a line hazard condition.

Associated registers
HAZDET

Extension registers
None

Associated logs
LINE133

HAZDET

Register type
Peg

Description
HAZDET increases when the Line Card Monitor feature detects a line hazard condition and isolates the line from the facility hazard. Operation of the cut-off relay in the line card isolates the line from the facility hazard.

Associated registers
HAZCLR

Extension registers
None

Associated logs
LINE132

HAZSCAN

Register type
Peg

Description
HAZSCAN counts the number of lines with a line hazard condition in effect every 100 s.

Associated registers
HAZDET, HAZCLR

Extension registers
None

Associated logs
None

LM

Description

OM group Line Module Maintenance Summary (LM) provides maintenance measurements for line modules and remote line modules.

Nine registers count the following:

- errors detected in in-service LMs
- line card diagnostic tests
- the number of times LMs are made manual busy and system busy
- terminals that are cut off as a result of LMs that are made manual busy and system busy
- outside plant circuit failures

Two usage registers record the number of line modules in the system busy and manual-busy states.

The following table lists the key and info fields associated with OM group LM:

Key field	Info field
None	None

Related functional groups

There are no associated functional groups associated with OM group LM.

Registers

The following table lists the registers associated with OM group LM and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group LM (Sheet 1 of 2)

Register name	Measures
LMCCTDG	Line module circuit diagnostics run
LMCCTFL	Line module circuit diagnostics failed
LMCCTOP	Line module circuit diagnostics outside plant

Registers for OM group LM (Sheet 2 of 2)

Register name	Measures
LMERR	Line module errors
LMFLT	Line module faults
LMMBP	Line module changes to man-busy
LMMBTCO	Line module man busy terminals cut off
LMMBU	Line module manual busy usage
LMSBP	Line module changes to system busy
LMSBTCO	Line module system busy terminals cut off
LMSBU	Line module system busy usage

LMCCTDG

Register type
Peg

Description
LMCCTDG counts line card diagnostic test sequences that run because call processing refers a trouble to the maintenance system.

Register LMCCTDG increases after the diagnostic is complete.

Associated registers
The following registers are associated with LMCCTDG:

- PM_PMCCTDG, which counts line card diagnostic test sequences that run because call processing refers a trouble to the maintenance system. Register PMCCTDG increases after the diagnostic runs.
- PMTYP_PMTCCTDG, which is the amount of the register PM_PMCCTDG for a peripheral module type.

Extension registers
None

Associated logs
None

LMCCTFL

Register type
Peg

Description
LMCCTFL increases when the line card diagnostic can find one of the following faults:

- a peripheral module fault
- a card fault
- a facility fault
- no card
- the wrong card

Associated registers
PM_PMCCTFL, which increases when the line card diagnostic finds one of the following faults:

- a peripheral module fault
- a card fault
- a facility fault
- no card
- the wrong card

Extension registers
None

Associated logs
None

LMCCTOP

Register type
Peg

Description
LMCCTOP counts outside plant circuit failures that one of the conditions that follow detects:

- system diagnostics
- automatic line tests (ALT)
- line insulation tests (LIT)
- long tests

Associated registers
PM_PMCCTOP, which counts outside plant circuit failures that are detected by one of the conditions that follow:

- system diagnostics
- automatic line tests (ALT)
- line insulation tests (LIT)
- long tests

PMTYP_PMTCCTOP is the amount of the register PM_PMCCTOP for a peripheral module type.

Extension registers
None

Associated logs
None

LMERR

Register type
Peg

Description
LMERR counts errors in an in-service line module (LM). LMERR increases when an in-service LM does one of the following:

- reports a software error, RAM parity failure, LM firmware error, or LM controller message congestion
- experiences an accuracy failure
- fails a test during a routine or initializing audit
- puts up a WAI (who-am-I) flag, indicating that processing in the LM completely fails
- fails to respond to messages over either plane

Associated registers
The following registers are associated with LMERR:

- PM_PMERR, which counts errors in an in-service peripheral module.
- PMTYP_PMTERR, which is the amount of the register PM_PMERR for a peripheral module type.

Extension registers
None

Associated logs
None

LMFLT

Register type
Peg

Description
LMFLT counts line module (LM) errors that leave the LM system busy. The system performs the count pending manual interruption or a successful system-initiated recovery attempt.

Errors that are counted in LMFLT are also counted in LMERR.

Associated registers
The following registers are associated with LMFLT:

- PM_PMFLT, which counts PM errors that leave the PM system busy, pending manual interruption or a successful system-initiated recovery attempt.
- TYP_PMTFLT, which is the amount of the register PM_PMFLT for a peripheral module type.

Extension registers
None

Associated logs
None

LMMBP

Register type
Peg

Description
LMMBP counts line modules (LM) in an in-service or an in-service trouble state that are made manual busy.

Associated registers
The following registers are associated with LMMBP:

- PM_PMMBP, which counts PMs within an in-service or an in-service trouble state that is made manual busy.
- PMTYP_PMTMBP, which is the amount of the register PM_PMMBP for a peripheral module type.

Extension registers
None

Associated logs
None

LMMBTCO

Register type
Peg

Description
LMMBTCO counts terminals that are call processing busy, or in the call processing busy deload state, when the line module (LM) is manual busy.

If a warm restart occurs, two-port calls are not cut off. If a restart does not occur, LMMBTCO increases only once for the two terminals that are involved in a two-port call.

When a warm restart occurs from a manual busy state, LMMBTCO counts the terminals that are cut off.

Associated registers
The following registers are associated with LMMBTCO:

- PM_PMMBTCO, which counts terminals that are cut off when the peripheral module (PM) is put in the manual-busy state from an in-service state.
- PMTYP_PMTMBTCO, which is the amount of the register PM_PMMBTCO for a peripheral module type.

Extension registers
None

Associated logs
None

LMMBU

Register type
Usage

Scan rate
100 seconds

Description
LMMBU records if a line module (LM) is manual busy.

Associated registers
The following registers are associated with LMMBU:

- PM_PMMMBU, which records if a peripheral module is manual busy. PMMMBU is a use register. The scan rate is slow: 100 seconds.
- PMTYP_PMTMMBU, which is the amount of the register PM_PMMMBU for a peripheral module type.

Extension registers
None

Associated logs
None

LMSBP

Register type
Peg

Description
LMSBP counts line modules (LM) in an in-service or an in-service trouble state that are made system busy.

Associated registers
The following registers are associated with LMSBP:

- PM_PMSBP, which counts peripheral modules (PM) in an in-service or in-service trouble state that are made system busy.
- PMTYP_PMTSBP, which is the amount of the register PM_PMSBP for a peripheral module type.

Extension registers
None

Associated logs
None

LMSBTCO

Register type
Peg

Description
LMSBTCO counter terminals that are call processing busy, or in the call processing busy deload state, when the line module (LM) is system busy.

Occasionally the LM becomes C-side busy before it becomes system busy. In this occurrence, if the LM can recover but the mate is busy, LMSBTCO counts only the terminals taken over from the mate.

If a take-over occurs, two-port calls cut off. If a take-over does not occur, then LMSBTCO increases once for the two terminals involved in a two-port call.

When a warm restart occurs from a system busy state, LMSBTCO counts the terminals that cut off.

Associated registers
The following registers are associated with LMSBTCO:

- PM_PMSBTCO, which counts terminals that are call processing busy, or in the call processing busy deload state, when the LM is system busy.
- PMTYP_PMTSBTCO, which is the amount of the register PM_PMSBTCO for a peripheral module type.

Extension registers
None

Associated logs
None

LMSBU

Register type
Usage

Scan rate
100 seconds

Description
LMSBU records if a line module (LM) is system busy.

A line module is system busy if it fails an audit of its common control functions, if inaccessible, or if more than 200 controller or line errors are reported within one 10-minute audit period.

Associated registers
The following registers are associated with LMSBU:

- PM_PMMSBU, which records if an LM is system busy. PMMSBU is a use register. The scan rate is slow: 100 seconds.
- PMTYP_PMTMSBU, which is the amount of the register PM_PMMSBU for a peripheral module type.

Extension registers
None

Associated logs
None

LMD

Description

OM group Line Traffic (LMD) is in all types of DMS offices, and provides traffic information for the following peripheral modules (PM):

- remote line modules (RLM)
- line concentrating modules (LCM)
- virtual line concentrating modules (VLCM)
- remote concentrator terminals (RCT)
- remote concentrator subscribers (RCS)
- integrated services line modules (ISLM)
- digital line modules (DLM)
- very small remote (VSR)
- enhanced line concentrating modules (ELCM)
- integrated services digital network (ISDN) line concentrating modules (LCMI)
- intelligent peripheral equipment (IPE)
- line modules (LM)

The following table lists the key and info fields that are associated with OM group LMD.

Key field	Info field
None	LMD_OMINFO (PM identifier)

The PM identifier contains the site identifier (four alphanumeric characters), and frame and unit numbers. For ISLM, the site identifier must be HOST. The frame number is a number from 0 to 511. Unit numbers appear according to the PM types in the following table.

PM types and unit numbers (Sheet 1 of 2)

PM type	Unit number
ALCM	0 - 1
DLM	0 - 1
ELCM	0 - 1

PM types and unit numbers (Sheet 2 of 2)

PM type	Unit number
FRU	0 - 1
IPE	0 - 3
ISLM	0 - 3
LCM	0 - 1
LCME	0 - 1
LCMI	0 - 1
LDT	0
LM	0 - 1
LRU	0 - 9
RCS	0 - 9
RCT	0 - 9
RCU	0 - 9
RDT	0 - 9
VLCM	0 - 1

Related functional groups

There are no functional groups associated with OM group LMD.

Registers

The following table lists the registers associated with OM group LMD and what they measure. For a description of a register, click on the register name.

Registers for OM group LMD

Register name	Measures
LMTRU	Traffic busy use
MADNTATT	MADN secondary member terminating attempts

Registers for OM group LMD

Register name	Measures
NORIGATT	Originating call attempts that the LM reports to the central control, including three-way call (3WC) attempts
NTERMATT	Terminating attempts
ORIGABN	Originating abandons before connection
ORIGBLK	Originating failures
ORIGFAIL	Originating attempt failures
PERCLFL	Terminating call attempt failures
REVERT	Revertive call attempts
STKCOINS	Stuck coins
TERMBLK	Terminating failures

LMTRU

Register type
Usage

Scan rate
100 seconds

Description
LMTRU records the number of lines that are call processing busy or call processing busy deluding.

Associated registers
None

Extension registers
None

Associated logs
None

MADNTATT

Register type
Peg

Description
MADNTATT:

- counts secondary units of MADN groups in the PM that notify the system of an incoming call
- increases for each electronic business (EBS) or ringing 500/2500 set that the system notifies. The primary termination increases in register NTERMATT
- does not count recalls of re-rings of a group unit

Note: In GL04, MADNTATT does not increase

Associated registers
None

Extension registers
None

Associated logs
None

NORIGATT

Register type
Peg

Description
NORIGATT counts the originating call attempts, including three-way calls, that a line module (LM) reports to central control.

The register increases at the start of call processing before the system performs checks for line load control or congestion on the speech link to the networks module. If congestion is present and the originator remains off hook, the switch automatically makes several attempts at origination. Registers NORIGATT and ORIGBLK_ increase for each origination attempt.

Associated registers
The following registers are associated with NORIGATT:

- ORIGBLK
- ORG_NORIG counts start call attempts that central control recognizes
- OTS_NORG counts start call attempts that central control recognizes.

Validation formulas
The following formulas relate to NORIGATT and its associated registers:

- Σ LMD_ORIGATT = (65536 * OFZ_NORIG2) + OFZ_NORIG line modules
- Σ LMD_ORIGATT = (65536 * OTS_NORG2) + OTS_NORG line modules

Extension registers
None

Associated logs
None

NTERMATT

Register type
Peg

Description
NTERMATT counts the attempts to find and available speech link from the networks module to a terminating line. This attempt occurs after call processing determines that the terminating line is available. The count includes:

- the call waited calls that ring through when the previous conversation ends
- the calls that the secondary unit of a multiple appearance directory number (MADN) group answer

Associated registers
The following registers are associated with NTERMATT:

- OFZ_TRMNWAT counts start call attempts to find a speech path to a terminating line.
- SOTS_STRMNWT counts attempts to find a speech path to a terminating line.

Validation formulas
The following formulas relate to NTERMATT and its associated registers:

- Σ LMD_NTERMATT = (65536 * OFZ_TRMNWAT2) + OFZ_TRMNWAT line modules
- Σ LMD_NTERMATT = (65536 * SOTS_STRMNWT2) + SOTS_STRMNWT line modules

Extension registers
None

Associated logs
None

ORIGABN

Register type
Peg

Description
ORIGABN counts originating call attempts that the subscriber abandons before call setup completes. Large counts in ORIGABN indicate line problems in PMs.

Associated registers
The following registers are associated with ORIGABN:

- NORIGATT
- OFZ_ORIGABDN counts originating call attempts that the subscriber abandons before the system routes the call.
- OTS_ORGABDN counts originating call attempts that the subscriber abandons before the call routes.

Validation formulas
The following formulas relate to ORIGABN and its associated registers:

- Σ LMD_ORIGABN = OFZ_ORIGABDN line modules
- Σ LMD_ORIGABN = OFZ_ORIGABDN line modules

Extension registers
None

Associated logs
LINE106, LINE108

ORIGBLK

Register type
Peg

Description
ORIGBLK counts originating call attempts that fail because the idle speech path from the original LM to the networks module is not present. The PM originates the call for as long as the caller stays off hook.

A high count in ORIGBLK can indicate a fault condition such as RLM links that are either manually or system busy. Lower counts indicate a need either to supply more links or to reduce load.

Associated registers
The following registers are associated with ORIGBLK:

- NORIGATT
- OFZ_ORIGLKT counts originating call attempts that fail and route to lockout.
- OTS_ORGLKT counts originating call attempts that fail and route to lockout. These calls do not connect or route to treatment.

Validation formulas
The following formulas relate to ORIGBLK and its associated registers:

- Σ LMD_ORIGBLK = OFZ_ORIGLKT line modules
- Σ LMD_ORIGBLK = OFZ_ORIGLKT line modules

Extension registers
None

Associated logs
NET130

ORIGFAIL

Register type
Peg

Description
ORIGFAIL counts originating call attempts that fail if the system:

- does not send enough digits before a time-out occurs (partial dial)
- sends no digits before a time-out occurs (permanent signal)
- sends additional pulses or bad tones

- generates two Digitone (DT) frequencies that have more than a 6dB spread between both of the frequencies.

  Note: In GL04, ORIGFAIL does not increase when the system receives two DT frequencies that have more than a 6dB spread between the frequencies.

- receives a message type that was not planned from a PM during automatic number identification (ANI) tests on recordable calls. For example, a test failure is an unplanned message type.

  Note: In GL04, ORIGFAIL does not increase when this occurs.

Associated registers
The following registers are associated with ORIGFAIL:

- TRMTCM_TCMPSIG counts calls that the system routes to permanent signal time-out treatment. The system routes the call to treatment because it does not receive digits before a time-out.
- TRMTCM_TCMPDIL counts calls the system routes to partial dial time-out treatment. The system routes the call to treatment when it receives a minimum of one digit, but not all the digits required to complete the call.
- TRMTER_TERRODR counts calls that the system routes to reorder treatment when it receives distorted signals during dialing or impulsing.

Extension registers
None

Associated logs
AMAB151, LINE108, LINE109, LINE104, LINE105, LINE106, LINE138

PERCLFL

Register type
Peg

Description
PERCLFL counts calls that cannot terminate on a line because of problems with ringing the terminating line. A ringing failure on an emergency service line does not cause the call to fail and does not increase PERCLFL. The system attempts ringing until the system is successful.

When the value for office parameter PER_CALL_GND_LOOP_TEST in table OFCVAR is Y, PERCLFL includes loop faults. The system detects loop faults in attempted terminations on ground start lines.

Associated registers
TRMTER_TERSYFL counts calls that the system routes to system failure treatment because of a software or hardware failure in the switching unit.

Extension registers
None

Associated logs
LINE107, LINE110, LINE113, LINE138

REVERT

Register type
Peg

Description
REVERT counts revertive calls initiated on an LM. The register increases when ringing starts after the caller goes on hook for the first time. REVERT does not increase in GL04.

Associated registers
None

Extension registers
None

Associated logs
LINE138

STKCOINS

Register type
Peg

Description
STKCOINS counts attempts to collect or return coins that fail because the coins are stuck. The register increases when call processing stops an attempt to collect or return the coins. The call proceeds as if the attempt to collect or return the coin was successful. This register does not increase in GL04.

Associated registers
None

Extension registers
None

Associated logs
LINE112

TERMBLK

Register type
Peg

Description
TERMBLK counts attempts that fail to find a speech link from the network module to a terminating line for one of the following reasons:

- no speech links are available from the network to a terminating line
- no match is present between an idle channel on the links to the network and an idle channel on the link shelf that serves the terminating line.

Associated registers
The following registers are associated with TERMBLK:

- OFZ_TRMBLK counts attempts to find a voice path from the network module to a terminating line that fail for one of the following reasons:
  - all LM channels to the network are busy
  - no match is present between an idle channel on the links to the network and an idle channel on the line shelf that serves the terminating line
- SOTS_STRMBLK counts attempts to find a voice path from the network to a terminating line that fail for one of the following reasons:
  - all LM channels to the networks are busy
  - no match is present between and idle channel on the links to the network and idle channel on the line shelf that serves the terminating line
- SOTS_STRMRBLK counts calls that the system routes to networks blockage normal (NBLN) traffic treatment because the calls fail to find a voice path from a network module to a terminating line.
- SOTS_STRMMFL counts calls that fail to find a voice path to a terminating line because a network connection is not available.

- TRMTRS_TRSNBLN counts calls that rout to NBLN traffic treatment when the call aborts. The system routes these calls to treatment because of failure to get a channel in the terminating PM.
- TRMTRS_TRSNBLH counts calls that route to the network blockage heavy (NBLH) traffic treatment when the call aborts. The system routes the call to treatment because of failure to get a path through the network.

Validation formulas
The following formulas relate to TERMBLK and its associated registers:

- Σ LMD_TERMBLK = OFZ_TRMBLK line modules
- Σ LMD_TERMBLK = SOTS_SRMBLK line modules

Extension registers
None

Associated logs
NET130

LMSCPUST

Description

OM group Local Message Switch Central Processing Unit Status (LMSCPUST) displays the central processing unit (CPU) occupancy data of a local message switch (LMS) unit.

The LMSCPUST contains seven registers that perform the following procedures:

- accumulate call processing class occupancy
- accumulate scheduler class CPU occupancy
- accumulate foreground class CPU occupancy
- accumulate maintenance class CPU occupancy
- accumulate CPU occupancy of the processes that run in the idle schedule class
- accumulate input and output interrupt CPU occupancy
- accumulate background class CPU occupancy

The following table lists the key and info fields associated with OM group LMSCPUST:

Key field	Info field
None	Duplex_ncmnode_info STRUCT namePM_TYPE,%LIM idunsignedint,%LIM number unitunsignedint,%LIM unit number ENDSTRUCT;

Related functional groups

The local message switch (LMS) is associated with OM group LMSCPUST.

Registers

The following table lists the registers associated with OM group LMSPUST and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group LMSPUST

Register name	Measures
LMSCP	Local message switch call processing class occupancy
LMSSCHED	Local message switch scheduler class occupancy
LMSSYS	Local message switch system class occupancy.
LMSMAINT	Local message switch maintenance class occupancy
LMSBKG	Local message switch background class occupancy
LMSIDLE	Local message switch idle class occupancy
LMSIO	Local message switch input and output interrupt occupancy

LMSCP

Register type
Peg

Description
LMSCP reports the percentage that CPU uses to maintain call processing. In the LMS, the messaging system is the main user of the call processing CPU class. The call processing CPU class provides real-time performance. The messaging system uses the call processing class time to maintain message routes and to program mapper card. The messaging system allows payload traffic to switch through the LPP. The system can use the LMS switch hardware to switch payload traffic through the LPP.

Associated registers
None

Extension registers
None

Associated logs
None

LMSSCHED

Register type
Peg

Description
LMSSCHED accumulates the scheduler class central processing unit occupancy.

Associated registers
None

Extension registers
None

Associated logs
None

LMSSYS

Register type
Peg

Description
LMSSYS accumulates foreground class CPU occupancy.

Associated registers
None

Extension registers
None

Associated logs
None

LMSMAINT

Register type
Peg

Description
LMSMAINT accumulates maintenance class CPU occupancy.

Associated registers
None

Extension registers
None

Associated logs
None

LMSBKG

Register type
Peg

Description
LMSBKG accumulates background class CPU occupancy.

Associated registers
None

Extension registers
None

Associated logs
None

LMSIDLE

Register type
Peg

Description
LMSIDLE accumulates CPU occupancy of the processes that run in the idle schedule class.

Associated registers
None

Extension registers
None

Associated logs
None

LMSIO

Register type
Peg

Description
LMSIO accumulates input and output interrupt CPU occupancy.

Associated registers
None

Extension registers
None

Associated logs
None

LMSMEM

Description

OM group Local Message Switch Memory (LMSMEM) displays the memory usage over the OM transfer period.

LMSMEM contains six registers that:

- display the number of available program store (PS) vast areas. A vast area is 32K-1 words in size.
- displays the number of available data store (DS) vast areas
- displays the amount of total DS memory
- displays the amount of available DS memory
- displays the amount of total PS memory
- displays the amount of available PS memory

The following table lists the key and info fields associated with OM group LMSMEM:

Key field	Info field
None	Duplex_ncmnode_info • STRUCT — name pm_type, %LIM — id unsignedint, %LIM number — unit unsignedint, %LIM unit number • ENDSTRUCT;

Related functional groups

The local message switch is associated with LMSMEM.

Registers

The following table lists the registers associated with OM group LMSMEM and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group LMSMEM

Register name	Measures
PSVTAVL	Program store vast areas available
DSVTAVL	Data store vast areas available
LMSDSTOT	Local message switch data store total
LMSDSAVL	Local message switch program store available
LMSPSTOT	Local message switch program store total
LMSPSAVL	Local message switch program store available

PSVTAVL

Register type
Peg

Description
PSVTAVL displays the number of available program store (PS) vast areas.

Associated registers
None

Extension registers
None

Associated logs
None

DSVTAVL

Register type
Peg

Description
DSVTAVL displays the number of available data store (DS) vast areas.

Associated registers
None

Extension registers
None

Associated logs
None

LMSDSTOT

Register type
Peg

Description
LMSDSTOT displays the amount of total DS memory.

Associated registers
None

Extension registers
None

Associated logs
None

LMSDSAVL

Register type
Peg

Description
LMSDSAVL displays the amount of available DS memory.

Associated registers
None

Extension registers
None

Associated logs
None

LMSPSTOT

Register type
Peg

Description
LMSPSTOT displays the amount of total PS memory.

Associated registers
None

Extension registers
None

Associated logs
None

LMSPSAVL

Register type
Peg

Description
LMSPSAVL displays the amount of available PS memory.

Associated registers
None

Extension registers
None

Associated logs
None

LNP

Description

OM group Local Number Portability (LNP) allows subscribers to change service providers. The OM group LNP also allows subscribers to retain a directory number (DN). To access a ported DN, the DMS switch sends a query to a database at a Service Control Point (SCP). If the dialled DN ports, the SCP returns a location routing number (LRN) that identifies the DN switch. If the dialled DN does not port, the SCP returns the dialled DN.

The OM group LNP counts the number of LNP:

- queries launched
- queries escaped
- queries failures
- response failures
- calls routed to numbers that are not allocated
- queries by the service command QLRN

The following table lists the key and info fields associated with OM group LNP:

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group LNP.

Registers

The following table lists the registers associated with OM group LNP and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group LNP (Sheet 1 of 2)

Register name	Measures
LNPQRY	LNP Query
LNPQRY1	LNP Query extension

Registers for OM group LNP (Sheet 2 of 2)

Register name	Measures
LNPQFT1	LNP Query Failure - T1 timer expiration
LNPRFERR	LNP Query blocked by Automatic Call Gapping
LNPQFRTE	LNP Query Failure - SS7 error
LNPQFACG	LNP Query blocked by Automatic Call Gapping
LNPQFSCP	LNP Fatal protocol/application error in the query message
LNPQFSSP	LNP Query cannot be built
LNPRFCNT	LNP Continue response received
LNPRFDSC	LNP disconnect response received
LNPRFSTR	LNP Send_To_Resource received
LNPQESC	LNP Query escaped
LNPQESC1	LNP Query escaped extension
LNPPORT	LNP Ported number
LNPPORT1	LNP Ported number extension
LNPREL	LNP ISUP Release - cause 26
LNPUADNR	LNP unallocated number on donor
LNPUAHOM	LNP unallocated number on recipient
LNPQLRNQ	Query LRN tool - count of queries.
LNPQLRNR	Query LRN tool - count of responses
LNPQLRNV	Query LRN tool - correct count
LNPQLRNA	Query LRN tool - ACG count

LNPQRY

Register type
Peg

Description
LNPQRY counts the calls that meet an LNP trigger and that result in an LNP SCP query.

Associated registers
None

Extension registers
LNPQRY1

Associated logs
None

LNPQRY1

Register type
Peg

Description
LNPQRY1 counts overflows from the LNPQRY register.

Associated registers
LNPQRY

Extension registers
None

Associated logs
None

LNPQFT1

Register type
Peg

Description
LNPQFT1 counts the number of calls that fail because of a T1 timer time-out. A T1 timer starts when the switch makes query to an LNP SCP. The switch queries the LNP SCP for a call that meets LNP trigger.

Associated registers
None

Extension registers
None

Associated logs
None

LNPRFERR

Register type
Peg

Description
LNPRFERR counts the number of calls that result in a failed LNP SCP query. The query fails because the response generates a fatal protocol error or because of an application error.

Associated registers
None

Extension registers
None

Associated logs
None

LNPQFRTE

Register type
Peg

Description
LNPQFRTE counts the number of SCP queries that the system cannot launch. The system cannot launch SCP queries because of problems with Signaling System 7 (SS7).

Associated registers
None

Extension registers
None

Associated logs
None

LNPQFACG

Register type
Peg

Description
LNPQFACG counts the number of queries the ACG blocks.

Associated registers
None.

Extension registers
None

Associated logs
None

LNPQFSCP

Register type
Peg

Description
LNPQFSCP counts the number of calls that meet an LNP trigger that result in a failed LNP SCP query. The query fails because the SCP query message reports a fatal protocol error or application error.

Associated registers
None

Extension registers
None

Associated logs
None

LNPQFSSP

Register type
Peg

Description
LNPQFSSP counts the number of queries the system cannot build.

Associated registers
None

Extension registers
None

Associated logs
None

LNPRFCNT

Register type
Peg

Description
LNPRFCNT counts the number of continue responses the system receives from the SCP.

Associated registers
None

Extension registers
None

Associated logs
None

LNPRFCNT

Register type
Peg

Description
LNPRFCNT counts the number of continue responses the system receives from the SCP.

Associated registers
None

Extension registers
None

Associated logs
None

LNPRFDSC

Register type
Peg

Description
LNPRFDSC counts the number of disconnect responses that the system received.

Associated registers
None

Extension registers
None

Associated logs
None

LNPRFSTR

Register type
Peg

Description
LNPRFSTR counts the number of send to resource responses that the system received.

Associated registers
None

Extension registers
None

Associated logs
None

LNPQESC

Register type
Peg

Description
LNPQESC counts the number of calls that encounter an LNP trigger that does not launch a query to the LNP SCP.

Associated registers
None

Extension registers
LNPQESC1

Associated logs
None

LNPQESC1

Register type
Peg

Description
LNPQESC1 counts the overflow from register LNPQESC.

Associated registers
LNPQESC

Extension registers
None

Associated logs
None

LNPPORT

Register type
Peg

Description
LNPPORT counts the number of SCP responses to LNP SCP queries that contain a Location Routing Number (LRN).

Associated registers
None

Extension registers
LNPPORT1

Associated logs
None

LNPPORT1

Register type
Peg

Description
LNPPORT1 counts the overflow from register LNPPORT.

Associated registers
LNPPORT

Extension registers
LNPPORT1

Associated logs
None

LNPREL

Register type
Peg

Description
LNPREL counts the number of LNP calls that cause a ISUP REL message with an ISUP cause value of 26.

Associated registers
None

Extension registers
None

Associated logs
None

LNPUADNR

Register type
Peg

Description
LNPUADNR counts the number of LNP calls that meet an indication in the donor switch that is not allocated. This register also counts the number of LPN calls that meet an empty number indication in the donor switch. This indication follows an LNP query in this switch or another switch.

Associated registers
None

Extension registers
None

Associated logs
None

LNPUAHOM

Register type
Peg

Description
LNPUAHOM counts the number of LNP calls that encounter an indication in the recipient switch that is not allocated. This register also counts the number of LPN calls that encounter an empty number indication in the recipient switch. This indication follows an LNP query in this switch or another switch.

Associated registers
None

Extension registers
None

Associated logs
None

LNPQLRNQ

Register type
Peg

Description
LNPQLRNQ counts the number of queries the query-LRN command QLRN sent.

Associated registers
TCMSGOUT, TCINVKL of group TCAPUSAG for TCAP messages.

Extension registers
None

Associated logs
None

LNPQLRNR

Register type
Peg

Description
LNPQLRNR counts the number of responses for the query-LRN command QLRN.

Associated registers
TCMSGIN, TCQWPERM, TCRESPNS of group TCAPUSAG.

Extension registers
None

Associated logs
None

LNPQLRNV

Register type
Peg

Description
LNPQLRNV counts the correct responses the query-LRN command QLRN receives.

Associated registers
None

Extension registers
None

Associated logs
None

LNPQLRNA

Register type
Peg

Description
LNPQLRNA counts the number of times a user of the query-LRN command QLRN selected to override ACG controls.

Associated registers
BLKCASCP, BLKCASMS, SCPOVLDO, SMSOVLDO of group AINACG, which maintain different information about ACG queries.

Extension registers
None

Associated logs
None

LNREDIAL

Description

OM group Last Number Redial (LNR) is an Meridian Digital Centrex (MDC) feature that permits the last number the subscriber dialed to dial again. The subscriber enters a keystroke sequence or access code to dial the number again. When the subscriber dials a number, the system stores the number as the LNR number.

The OM group LNREDIAL provides information on LNR feature activity. Register LNRCATT counts attempts to use LNR. Register LNRCFAIL increases if the system cannot retrieve the last number dialed. Register LNRPOVFL increases when the system cannot store the last number dialed because there are not enough software resources. The system does not count attempts to store the last number the subscriber dials.

The following table lists the key and info fields associated with OM group LNREDIAL:

Key field	Info field
IBNG_INDEX. The tuple number of LNREDIAL serves as the key in the OMSHOW command. The maximum number of key fields is 4096	OMIBNGINFO is the name of the customer group. The field CUSTNAME in table CUSTENG defines the customer name.

Office parameter FTRQ2WAREAS specifies the number of FTRQ2WAREAS software resources an engineering interval requires. Each directory number (DN) assigned the LNR feature requires one FTRQQ2WAREAS block. A DN requires one FTRQQ2WAREAS block to store the last call dialed that involves a 1- to 7-digit number.

Office parameter FTRQ4WAREAS specifies the number of FTRQ4WAREAS software resources that an engineering interval requires. The following require one FTRQ4WAREAS block:

- a DN appearance with the LNR feature in which the last call involves an 8- to 15-digit number
- a DN appearance with the LNR feature in which the last call involves a 1- to 7-digit number. This call occurs when an FTRQ2WAREA block is not available

Office parameter FTRQ8WAREAS specifies the number of FTRQ8WAREAS software resources that an engineering interval requires. The following require one FTRQ8WAREAS block:

- a DN appearance with the LNR feature in which the last call involves a number of more than fifteen digits
- a DN appearance with the LNR feature in which the last call involved an 8- to 15-digit number. This call occurs when no FTRQ4WAREAS block is available
- a DN appearance with the LNR feature in which the last call involves a 1- to 7-digit number. This call occurs when no FTRQ2WAREA block is available

Office parameter FTRQAGENTS specifies the number of agents that can have different features, which include LNR. The LNR can be waiting or active at any time.

Office parameter FTRQSIZE specifies the size of the head table for office parameter FTRQAGENTS.

Table CUSTENG lists the values for the engineering parameters and options for each of the customer groups.

Related functional groups

The following functional groups are associated with OM group LNREDIAL:

- Meridian Digital Centrex
- Meridian SL-100

Registers

The following table lists the registers associated with OM group LNREDIAL and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group LNREDIAL

Register name	Measures
LNRCATT	LNR attempts
LNRCFAIL	LNR call failures
LNRPOVFL	LNR overflow

LNRCATT

Register type
Peg

Description
LNRCATT counts attempts to use the LNR feature.

Associated registers
None

Extension registers
None

Associated logs
AMAB105

LNRCFAIL

Register type
Peg

Description
LNRCFAIL counts attempts to use the LNR feature that fail because the system cannot retrieve the last number stored. Negative acknowledgement treatment receives the call.

Associated registers
The TRMT3_NACK, which increases when acknowledgement (NACK) treatment receives a call.

Extension registers
None

Associated logs
AUD395, AUD398

LNRPOVFL

Register type
Peg

Description
LNRPOVFL increases when the system does not store the last number dialed because not enough software resources are present. The FTRQ2WAREAS,FTRQ4WAREAS, andFTRQ8WAREASoffice parameters allocate these resources.

Associated registers
FTRQ_FTRQOVFL counts requests for a feature queue block that fail because no feature queue blocks are available.

Extension registers
None

Associated logs
SWER

LOGS

Description

OM group Log Messages (LOGS) counts:

- lost log reports
- software error reports from the central control complex (CCC)
- software error reports from peripheral modules (PM)
- trap reports from PMs

The following table lists the key and info fields associated with OM group LOGS:

Key field	Info field
None	None

Office parameter LOG_CENTRAL_BUFFER_SIZE in table OFCVAR defines the length of the central log buffer.

Related functional groups

The following functional groups are associated with OM group LOGS:

- DMS-100 Local
- DMS-100/200 Local/Toll
- DMS-100/200 TOPS
- DMS-200 Toll
- DMS-200 TOPS
- DMS-100 Meridian
- DMS-MTX
- DMS-250 Toll/Tandem
- DMS-300
- Meridian SL-100 PBX

Registers

The following table lists the registers associated with OM group LOGS and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group LOGS

Register name	Measures
LOSTREC	Lost records
PMSWERCT	Module software error
PMTRAPCT	Peripheral module trap
SWERRCT	Software error count

LOSTREC

Register type
Peg

Description
LOSTREC counts log reports lost because the central log buffer or the output device buffers overflows.

Associated registers
None

Extension registers
None

Associated logs
None

PMSWERCT

Register type
Peg

Description
PMSWERCT counts software error reports that peripheral modules (PM) generate and hardware errors that affect software execution.

The value in PMSWERCT can be larger than the number of log reports because of log suppression or buffer overflows.

Associated registers
Register PM_PMERR, which counts errors detected in an in-service PM. Register PM_PMERR counts errors even if the errors result in additional maintenance action.

Extension registers
None

Associated logs
PM122, PM124, PM126, PM180, PM290

PMTRAPCT

Register type
Peg

Description
PMTRAPCT counts trap reports that peripheral modules (PM) generate.

The value in PMTRAPCT can be larger than the number of log reports because of log suppression or buffer overflows.

Collect and bring trap log reports and all associated logs to the attention of the technical support group.

Associated registers
PM_PMERR, which counts errors that an in-service PM detects. Register PM_PMERR counts errors even if the errors result in additional maintenance action.

Extension registers
None

Associated logs
PM125, PM179, PM180, PM300

SWERRCT

Register type
Peg

Description
SWERRCT counts software error reports that the central control complex (CCC) generates.

Software error reports are output as SWER log reports. The value in SWERRCT can be larger than the number of SWER log reports because of log suppression or buffer overflows.

The following cause software error reports:

- software errors
- data corruption
- data errors made by the user

Collect and bring SWER log reports and all associated logs to the attention of the technical support group.

Associated registers
None

Extension registers
None

Associated logs
SWER

M20CARR1

Description

OM group M20 Carrier 1 (M20CARR1) provides information about alarms and state changes that occur on M20 carriers. These 30-channel carriers with 32 time slots support communication at a rate of 2048 kbits/s between the DMS system and the Japanese network.

The following table lists the key and info fields associated with OM group M20CARR1:

Key field	Info field
None	M20OMINF

Related functional groups

There are no functional groups associated with OM group M20CARR1.

Registers

The following table lists the registers associated with OM group M20CARR1 and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group M20CARR1 (Sheet 1 of 2)

Register name	Measures
AISSERR	Alarm indication signal error
AISSFLT	Alarm indication signal fault
ALERR	Alarm error
ALFLT	Alarm fault
CARCBSY	Carrier C-side peripheral busy
CARMANB	Carrier manually busy
CARSYSB	Carrier system busied
FAERR	Frame alignment error
FAFLT	Frame alignment fault

Registers for OM group M20CARR1 (Sheet 2 of 2)

Register name	Measures
SLIPPERR	Slip error
SLIPPFLT	Slip fault

AISSERR

Register type
Peg

Description
AISSERR increases when the central control (CC) generates an alarm because of a fault on an M20 signaling link. The CC detects the fault when a continuous stream of 1's is found on the incoming link. A continuous stream of 1's on the incoming link indicates the link is in a manually busy state. A minimum of one frame of 1's must be received before an alarm indication signal (AIS) is raised.

Associated registers
When the CC detects an AIS fault on an incoming M20 signaling link, AISSERR increases.

Extension registers
None

Associated logs
None

AISSFLT

Register type
Peg

Description
AISSFLT increases when the CC detects an AIS fault on an incoming M20 signaling link. This fault occurs when the CC detects a continuous stream of 1's on the incoming link. A continuous stream of 1's on the incoming link indicates the link is in a manually busy state. At least one frame of 1's must be received before an AIS is raised.

Associated registers
When the CC generates an alarm because of an AIS fault the CC detects on an M20 signaling link, AISSFLT increases.

Extension registers
None

Associated logs
None

ALERR

Register type
Peg

Description
ALERR increases when the CC detects a fault on an M20 signaling link and generates an alarm. The CC detects a fault when a binary 1 is found in bit 2 of timeslot 0. This fault indicates that the incoming 2048 kbits/s signal on the M20 link cannot be received.

Associated registers
When the CC detects a fault on an incoming M20 signaling link, ALERR increases.

Extension registers
None

Associated logs
None

ALFLT

Register type
Peg

Description
ALFLT increases when the CC detects a fault on an incoming M20 signaling link. This fault occurs when a binary 1 is found in bit 2 of timeslot 0. This fault indicates that the incoming 2048 kbits/s signal on the M20 link cannot be received.

Associated registers
When the CC detects a fault on an M20 signaling link and generates an alarm, ALFLT increases.

Extension registers
None

Associated logs
None

CARCBSY

Register type
Peg

Description
Register CARCBSY updates every 100 seconds. Register CARCBSY records the amount of time the M20 carrier is in a Core side (C-side) peripheral busy (CBSY) state. The system places the carrier in this state when the C-side peripheral module goes out of service.

Associated registers
None

Extension registers
None

Associated logs
None

CARMANB

Register type
Peg

Description
CARMANB updates every 100 seconds. Register CARMANB records the amount of time that the M20 carrier is in a manual-busy (ManB) state. Maintenance personnel place a carrier in a ManB state.

Associated registers
None

Extension registers
None

Associated logs
None

CARSYSB

Register type
Peg

Description
CARSYSB updates every 100 seconds. Register CARSYSB records the amount of time that the M20 carrier is in a system busy (SysB) state. The M20 carrier is in a SysB state because of system alarms or faults.

Associated registers
None

Extension registers
None

Associated logs
None

FAERR

Register type
Peg

Description
FAERR increases when the CC generates an alarm because of a frame alignment (FA) fault the CC detects on an M20 signaling link. This fault occurs when a code violation bit is missing or when two bits are not positioned alarm indicates a loss of the incoming signal or a loss of incoming frame alignment.

Associated registers
FAFLT

Extension registers
None

Associated logs
None

FAFLT

Register type
Peg

Description
FAFLT increases when the CC detects an FA fault on an incoming M20 signaling link. This fault occurs when a code violation bit is missing or when two bits are not positioned correctly on the link. The two bits are less or more than 125 us apart. The result is a loss of the incoming signal.

Associated registers
FAERR

Extension registers
None

Associated logs
None

SLIPPERR

Register type
Peg

Description
SLIPPERR increases when the CC generates an alarm because of a slip fault on an M20 signaling link. This fault occurs when a frame of data on the link repeats or slips over.

Associated registers
SLIPPFLT

Extension registers
None

Associated logs
None

SLIPPFLT

Register type
Peg

Description
SLIPPFLT increases when the CC detects a slip fault on an incoming M20 signaling link. This fault occurs when a frame of data on the link repeats or slips over.

Associated registers
SLIPPERR

Extension registers
None

Associated logs
None

M20CARR2

Description

OM group M20 Handling 2 (M20CARR2) provides information about alarms and state changes that occur on M20 handling groups. A handling group consists of six of the 30 voice/data channels on an M20 carrier. The M20 carrier supports communication at a rate of 2048 kbits/s between the DMS system and the Japanese network.

The following table lists the key and info fields associated with OM group M20CARR2:

Key field	Info field
None	M200MINF

Related functional groups

There are no functional groups associated with OM group M20CARR2.

Registers

The following table lists the registers associated with OM group M20CARR2 and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group M20CARR2 (Sheet 1 of 2)

Register name	Measures
H1MANB	Handling group 1 manually busied
H1SYSB	Handling group 1 system busied
H2MANB	Handling group 2 manually busied.
H2SYSB	Handling group 2 system busied
H3MANB	Handling group 3 manually busied
H3SYSB	Handling group 3 system busied
H4MANB	Handling group 4 manually busied
H4SYSB	Handling group 4 system busied
H5MANB	Handling group 5 manually busied

Registers for OM group M20CARR2 (Sheet 2 of 2)

Register name	Measures
H5SYSB	Handling group 5 system busied
HGCFL	Handling group carrier failed
TNR11ERR	Error count for TNR1 alarm for handling group 1
TNR11FLT	Fault count for TNR1 alarm for handling group 1
TNR12ERR	Error count for TNR1 alarm for handling group 2
TNR12FLT	Fault count for TNR1 alarm for handling group 2
TNR13ERR	Error count for TNR1 alarm for handling group 3
TNR13FLT	Fault count for TNR1 alarm for handling group 3
TNR14ERR	Error count for TNR1 alarm for handling group 4
TNR14FLT	Fault count for TNR1 alarm for handling group 4
TNR15ERR	Error count for TNR1 alarm for handling group 5
TNR15FLT	Fault count for TNR1 alarm for handling group 5
TNR21ERR	Error count for TNR2 alarm for handling group 1
TNR21FLT	Fault count for TNR2 alarm for handling group 1
TNR22ERR	Error count for TNR2 alarm for handling group 2
TNR22FLT	Fault count for TNR2 alarm for handling group 2
TNR23ERR	Error count for TNR2 alarm for handling group 3
TNR23FLT	Fault count for TNR2 alarm for handling group 3
TNR24ERR	Error count for TNR2 alarm for handling group 4
TNR24FLT	Fault count for TNR2 alarm for handling group 4
TNR25ERR	Error count for TNR2 alarm for handling group 5
TNR25FLT	Fault count for TNR2 alarm for handling group 5

H1MANB

Register type
Peg

Description
H1MANB updates every 100 seconds. Register H1MANB records the amount of time handling group 1 of an M20 carrier is in a manual-busy state. Handling group 1 is in a manual busy state so that telephone company personnel can perform maintenance tasks on the handling group. An M20 carrier is in an in-service trouble (ISTb) state when a minimum of one of the handling groups is manual busy.

Associated registers
None

Extension registers
None

Associated logs
None

H1SYSB

Register type
Peg

Description
H1SYSB updates every 100s. Register H1SYSB records the amount of time handling group 1 of an M20 carrier is in a system busy state. Handling group 1 can be in a system busy state. An unsolicited message from the extended peripheral module (XPM) also places handling group 1 in a system busy state. An M20 carrier is in an ISTb state when a minimum of one of the handling groups is system busy

Associated registers
None

Extension registers
None

Associated logs
None

H2MANB

Register type
Peg

Description
H2MANB updates every 100s. Register H2MANB records the amount of time handling group 2 of an M20 carrier is in a manual busy state. Handling group 2 is in a manual busy state so that telephone company personnel can perform maintenance tasks. Telephone company personnel perform maintenance tasks on the handling group. An M20 carrier is in an ISTb state when a minimum of one of the handling groups manual busies.

Associated registers
None

Extension registers
None

Associated logs
None

H2SYSB

Register type
Peg

Description
H2SYSB updates every 100 seconds. Register H2SYSB records the amount of time handling group 2 of an M20 carrier is in a system busy state. A carrier fault that the CC detects during an audit places handling group 2 in a system busy state. An unsolicited message from the XPM also places handling group 2 in a system busy state. An M20 carrier is in an ISTb state when a minimum of one of the handling groups is system busy.

Associated registers
None

Extension registers
None

Associated logs
None

H3MANB

Register type
Peg

Description
H3MANB updates every 100 seconds. Register H3MANB records the amount of time handling group 3 of an M20 carrier is in a manual busy state. Handling group 3 is in a manually busy state so that telephone company personnel can perform maintenance tasks on the handling group. An M20 carrier is in an ISTb state when a minimum of one of the handling groups is manually busy.

Associated registers
None

Extension registers
None

Associated logs
None

H3SYSB

Register type
Peg

Description
H3SYSB updates every 100 seconds. Register H3SYSB records the amount of time handling group 3 of an M20 carrier is in a system busy state. A carrier fault that the CC detects during an audit places handling group 3 in a system busy state. An unsolicited message from the XPM also places handling group 3 in a system busy state. An M20 carrier is in an ISTb state when a minimum of one of the handling groups is system busy.

Associated registers
None

Extension registers
None

Associated logs
None

H4MANB

Register type
Peg

Description
H4MANB updates every 100 seconds. Register H4MANB records the amount of time handling group 4 of an M20 carrier is in a manual busy state.

Handling group 4 is in a manually busy state so that telephone company personnel can perform maintenance tasks on the handling group. An M20 carrier is in an ISTb state when a minimum of one of the handling groups is manually busy.

Associated registers
None

Extension registers
None

Associated logs
None

H4SYSB

Register type
Peg

Description
H4SYSB updates every 100 seconds. Register H4SYSB records the amount of time handling group 4 of an M20 carrier is in a system busy state. A carrier fault that CC detects during an audit places handling group 4 in a system busy state. An unsolicited message from the XPM. An M20 carrier is in an ISTb state when a minimum of one of the handling groups is system busy.

Associated registers
None

Extension registers
None

Associated logs
None

H5MANB

Register type
Peg

Description
H5MANB updates every 100 seconds. Register H5MANB records the amount of time handling group 5 of an M20 carrier is in a manual busy state. Handling group 5 is in a manual busy state so that telephone company personnel can perform maintenance tasks on the handling group. An M20 carrier is in an ISTb state when a minimum of one of the handling groups is manually busy.

Associated registers
None

Extension registers
None

Associated logs
None

H5SYSB

Register type
Peg

Description
H5SYSB updates every 100 seconds. Register H5SYSB records the amount of time handling group 5 of an M20 carrier is in a system busy state. Handling group 5 can be in a system busy state. An unsolicited message from the XPM also places handling group 5 in a system busy state. An M20 carrier is in an ISTb state when a minimum of one of the handling groups system busy.

Associated registers
None

Extension registers
None

Associated logs
None

HGCFL

Register type
Peg

Description
HGCFL updates every 100 seconds. Register HGCFL records the amount of time that an M20 carrier is in a carrier failed (CFL) state. An

M20 carrier is in a CFL state because of the failure of the handling groups.

Associated registers
None

Extension registers
None

Associated logs
None

TNR11ERR

Register type
Peg

Description
TNR11ERR increases when the CC generates a TNR1 frame alignment alarm. The CC generates a TNR1 frame alignment alarm when the CC detects a TNR1 fault on handling group 1 of an M20 carrier. The TNR1 faults occur when the correct sequence of framing bits in a handling group is lost.

Associated registers
TNR11FLT

Extension registers
None

Associated logs
None

TNR11FLT

Register type
Peg

Description
TNR11FLT increases when the CC detects a TNR1 fault on handling group 1 of an M20 carrier. A TNR1 fault occurs when the correct sequence of framing bits in a handling group is lost. The group is in a system busy state when the correct sequence of framing bits is lost.

Associated registers
TNR11ERR

Extension registers
None

Associated logs
None

TNR12ERR

Register type
Peg

Description
TNR12ERR increases when the CC generates a TNR1 frame alignment alarm. The CC generates a TRN1 frame alignment alarm when the CC detects a TNR1 fault on handling group 2 of an M20 carrier. TNR1 faults occur when the correct sequence of framing bits in a handling group is lost.

Associated registers
TNR12FLT

Extension registers
None

Associated logs
None

TNR12FLT

Register type
Peg

Description
TNR12FLT increases when the CC detects a TNR1 fault on handling group 2 of an M20 carrier. A TNR1 fault occurs when the correct sequence of framing bits in a handling group is lost. The group is in a system busy state when the correct sequence of framing bits is lost.

Associated registers
TNR12ERR

Extension registers
None

Associated logs
None

TNR13ERR

Register type
Peg

Description
TNR13ERR increases when the CC generates a TNR1 frame alignment alarm. The CC generates a TNR1 frame alignment alarm when the CC detects TNR1 fault on handling group 3 of an M20 carrier. TNR1 faults occur when the correct sequence of framing bits in a handling group is lost.

Associated registers
TNR13FLT

Extension registers
None

Associated logs
None

TNR13FLT

Register type
Peg

Description
TNR13FLT increases when the CC detects a TNR1 fault on handling group 3 of an M20 carrier. A TNR1 fault occurs when the correct sequence of framing bits in a handling group is lost. The group is in a system busy state when the correct sequence of framing bits in a handling group is lost.

Associated registers
TNR13ERR

Extension registers
None

Associated logs
None

TNR14ERR

Register type
Peg

Description
TNR14ERR increases when the CC generates a TNR1 frame alignment alarm. The CC generates a TNR1 frame alignment alarm when detecting a TNR1 fault on handling group 4 of an M20 carrier. TNR1 faults occur when the correct sequence of framing bits in a handling group is lost.

Associated registers
TNR14FLT

Extension registers
None

Associated logs
None

TNR14FLT

Register type
Peg

Description
TNR14FLT increases when the CC detects a TNR1 fault on handling group 4 of an M20 carrier. A TNR1 fault occurs when the correct sequence of framing bits in a handling group is lost. The group is in a system busy state when the correct sequence of framing bits is lost.

Associated registers
TNR14ERR

Extension registers
None

Associated logs
None

TNR15ERR

Register type
Peg

Description
TNR15ERR increases when the CC generates a TNR1 frame alignment alarm. The CC generates a TRN1 frame alignment alarm when the CC detects a TNR1 fault on handling group 5 of an M20 carrier. TNR1 faults occur when the correct sequence of framing bits in a handling group is lost.

Associated registers
TNR15FLT

Extension registers
None

Associated logs
None

TNR15FLT

Register type
Peg

Description
TNR15FLT increases when a the CC detects a TNR1 fault is detected on handling group 5 of an M20 carrier. A TNR1 fault occurs when the correct sequence of framing bits in a handling group is lost. The group is in a system busy state when the correct sequence of framing bits is lost.

Associated registers
TNR15ERR

Extension registers
None

Associated logs
None

TNR21ERR

Register type
Peg

Description
TNR21ERR increases when the CC generates a TNR2 alarm. The CC generates a TNR2 alarm when the CC detects a TNR2 fault on handling group 1 of an M20 carrier. The CC uses the signaling processor (SP) alarm bits on the handling group bit streams to detect TNR2 faults. These faults occur when the remote M20 multiplexer cannot receive signaling information from the local M20 multiplexer.

Associated registers
TNR21FLT

Extension registers
None

Associated logs
None

TNR21FLT

Register type
Peg

Description
TNR21FLT increases when the CC detects a TNR2 fault on handling group 1 of an M20 carrier. The SP alarm bits on the handling group bit streams detect TNR2 faults. These faults occur when the remote M20 multiplexer cannot receive signalling information from the local M20 multiplexer.

Associated registers
TNR21ERR

Extension registers
None

Associated logs
None

TNR22ERR

Register type
Peg

Description
TNR22ERR increases when the CC generates a TNR2 alarm. The CC generates a TNR2 alarm when the CC detects a TNR2 fault on handling group 2 of an M20 carrier. The CC uses the SP alarm bits on the handling group bit streams to detect TNR2 faults. These faults occur when the remote M20 multiplexer cannot receive signaling information from the local M20 multiplexer.

Associated registers
TNR22FLT

Extension registers
None

Associated logs
None

TNR22FLT

Register type
Peg

Description
TNR22FLT increases when the CC detects a TNR2 fault on handling group 2 of an M20 carrier. The CC uses the SP alarm bits on the handling group bit streams to detect TNR2 faults. These faults occur when the remote M20 multiplexer cannot receive signaling information from the local M20 multiplexer.

Associated registers
TNR22ERR

Extension registers
None

Associated logs
None

TNR23ERR

Register type
Peg

Description
TNR23ERR increases when the CC generates a TNR2 alarm. The CC generates a TNR2 alarm when the CC detects a TNR2 fault on handling group 3 of an M20 carrier. The CC uses the SP alarm bits on the handling group bit streams to detect TNR2 faults. These faults occur when the remote M20 multiplexer cannot receive signaling information from the local M20 multiplexer.

Associated registers
TNR23FLT

Extension registers
None

Associated logs
None

TNR23FLT

Register type
Peg

Description
TNR23FLT increases when the CC detects a TNR2 fault on handling group 3 of an M20 carrier. The CC uses the SP alarm bits on the handling group bit streams to detect TNR2 faults. These faults occur when the remote M20 multiplexer cannot receive signaling information from the local M20 multiplexer.

Associated registers
TNR23ERR

Extension registers
None

Associated logs
None

TNR24ERR

Register type
Peg

Description
TNR24ERR increases when the CC generates a TNR2 alarm. The CC generates a TNR2 alarm when the CC detects a TNR2 fault on handling group 4 of an M20 carrier. The CC uses the SP alarm bits on the handling group bit streams to detect TNR2 faults. These faults occur when the remote M20 multiplexer cannot receive signaling information from the local M20 multiplexer.

Associated registers
TNR24FLT

Extension registers
None

Associated logs
None

TNR24FLT

Register type
Peg

Description
TNR24FLT increases when the CC detects a TNR2 fault on handling group 4 of an M20 carrier. The CC uses the SP alarm bits on the handling group bit streams to detect TNR2 faults. These faults occur

when the remote M20 multiplexer cannot receive signaling information from the local M20 multiplexer.

Associated registers
TNR24ERR

Extension registers
None

Associated logs
None

TNR25ERR

Register type
Peg

Description
TNR25ERR increases when the CC generates a TNR2 alarm. The CC generates a TNR2 alarm when the CC detects a TNR2 fault on handling group 5 of an M20 carrier. The SP alarm bits on the handling group bit streams detect TNR2 faults. These faults occur when the remote M20 multiplexer cannot receive signaling information from the local M20 multiplexer.

Associated registers
TNR25FLT

Extension registers
None

Associated logs
None

TNR25FLT

Register type
Peg

Description
TNR25FLT increases when the CC detects a TNR2 fault on handling group 5 of an M20 carrier. The CC uses the SP alarm bits on the handling group bit streams to detect TNR2 faults. These faults occur when the remote M20 multiplexer cannot receive signaling information from the local M20 multiplexer.

Associated registers
TNR25ERR

Extension registers
None

Associated logs
None

MACHCONG

Description

OM group Machine Congestion (MACHCONG) provides information on MC1 and MC2 machine congestion levels in the central control complex (CCC). MC1 and MC2 congestion levels occur in the CCC when predetermined threshold values are exceeded. MC1 and MC2 are defined by the same threshold values that determine when the first- and second-level internal dynamic overload controls (IDOC) are activated.

IDOC is a network management (NWM) feature that generates control signals when internal overload is detected in a switch. The NWM system provides supervision and control of switching office networks to ensure the maximum flow of traffic during overload conditions.

MACHCONG has three registers:

- one usage register that records whether the MC1 and MC2 congestion levels are reached for call processing or the multifrequency queue
- two peg registers that are incremented if the MC1 and MC2 congestion levels are reached for call processing or the multifrequency (MF) queue

The data supplied by MACHCONG is used to assess how well the CCC is processing calls.

The following table lists the key and info fields associated with OM group MACHCONG:

Key field	Info field
nwm_mc_level is a value (MC1, MC2, or MC3) that represents the level of machine congestion. MC1 represents a lower level of machine congestion than MC2, but both levels are triggered by the same causes. MC3 represents the level of machine congestion that results when an office cannot perform call processing because of a dead system or a system restart. The registers in MACHCONG do not count level MC3. The threshold values must be datafilled in table NWMIDOC to specify when MC1 and MC2 levels are reached and IDOC levels one and two are activated.	None

Related functional groups

The following functional groups are associated with OM group MACHCONG:

- DMS-100 Local
- DMS-200 Toll
- DMS-250 Toll/Tandem
- DMS-300 Gateway
- DMS-100 International
- DMS-MTX Mobile Telephone Exchange
- Network Management Internal Dynamic Overload Control

Registers

The following table lists the registers associated with OM group LOGS and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group LOGS

Register name	Measures
MCCPUCT	Machine congestion CPU count
MCMFCT	Machine congestion multifrequency count
MCU	Machine congestion usage

MCCPUCT

Register type
Peg

Description
MCCPUCT is incremented if the MC1 and MC2 congestion levels are reached for CPU call processing. CPU congestion occurs when the percentage of time the CPU spends on call processing exceeds the predetermined threshold values in table NWMIDOC. At maximum speed, MCCPUCT is incremented at one-minute intervals.

Threshold values must be datafilled in table NWMIDOC to specify the percentage of time that the CPU can devote to call processing before the MC1 and MC2 congestion levels are reached and IDOC levels one and two are activated.

Associated registers
None

Extension registers
None

Associated logs
None

MCMFCT

Register type
Peg

Description
MCMFCT is incremented if the MC1 and MC2 congestion levels are reached for incoming multifrequency (MF) calls that are queued while the CCC sets up a connection to a tone receiver. At maximum speed, MCMFCT is incremented at one-minute intervals.

Threshold values must be datafilled in table NWMIDOC to specify when MC1 and MC2 congestion levels are reached and IDOC levels one and two are activated.

Associated registers
None

Extension registers
None

Associated logs
None

MCU

Register type
Peg

Scan rate
10 seconds

Description
MCU records whether the MC1 and MC2 congestion levels have been reached for:

- incoming multifrequency calls that are queued until the CCC sets up a connection to a tone receiver
- CPU call processing

Congestion occurs during CPU call processing when the percentage of time the CPU spends on call processing exceeds the predetermined threshold values in table NWMIDOC.

Threshold values must be datafilled in table NWMIDOC to specify when MC1 and MC2 congestion levels are reached and IDOC levels one and two are activated.

Associated registers
None

Extension registers
None

Associated logs
None

MDCWAKUP

Description

OM group Wake-up Call (MDCWAKUP) maintains counts for aspects of the Wake-Up Call feature.

The following table lists the key and info fields associated with OM group MDCWAKUP:

Key field	Info field
None	None

The user must enter the activation and termination codes for the Wake-Up Call feature in table IBNXLA.

Related functional groups

The Meridian Digital Centrex operating group is associated with OM group MDCWAKUP.

Registers

The following table lists the registers associated with OM group MDCWAKUP and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MDCWAKUP

Register name	Measures
WUCBLCK	Wake-up call ringing blocked
WUCCOMP	Wake-up call completions
WUCDCT	Wake-up call deactivations
WUCDNY	Wake-up call deny activation
WUCDSCRD	Wake-up call request discarded
WUCOVRDU	Wake-up call request overdue
WUCRTRY1	Wake-up call first retry
WUCRTRY2	Wake-up call second retry
WUCSACT	Wake-up call successful activations

WUCBLCK

Register type
Peg

Description
WUCBLCK counts the number of wake-up calls that the system blocks because of ringing limitations.

Associated registers
When the CC detects an AIS fault on an incoming M20 signaling link, AISSERR increases.

Extension registers
None

Associated logs
WUCR101

WUCCOMP

Register type
Peg

Description
WUCCOMP counts the number of wake-up calls that are terminated and answered.

Associated registers
None

Extension registers
None

Associated logs
None

WUCDCT

Register type
Peg

Description
WUCDCT counts the number of complete terminations of the Wake-Up Call feature.

Associated registers
None

Extension registers
None

Associated logs
None

WUCDNY

Register type
Peg

Description
WUCDNY counts the number of Wake-Up Call feature activations that the system denies. Denial occurs because the requested time slot is full or the total number of requests exceeds the allowed limit. Denial of Wake-Up Call feature can also occur because the system gives an invalid time or an invalid ringing time out value.

Associated registers
None

Extension registers
None

Associated logs
None

WUCDSCRD

Register type
Peg

Description
WUCDSCRD counts the number of wake-up calls that the system discards. The system discards the calls when the system makes three wake-up calls but can not complete them.

Associated registers
None

Extension registers
None

Associated logs
WUCR102

WUCOVRDU

Register type
Peg

Description
WUCOVRDU counts the number of wake-up calls that the system discards. The system discards the calls because the request was overdue, as a result of a change in the time or date.

Associated registers
None

Extension registers
None

Associated logs
WUCR102

WUCRTRY1

Register type
Peg

Description
WUCRTRY1 counts the number of wake-up calls that require a retry. A retry is required because the first call attempt is busy or is not answered. WUCRTRY1 increases when the system attempts the first retry.

Associated registers
None

Extension registers
None

Associated logs
None

WUCRTRY2

Register type
Peg

Description
WUCRTRY2) counts the number of wake-up calls that require both first and second retries. The calls require retries because the first retry was busy or was not answered. WUCRTRY2 increases when the system attempts a second retry.

Associated registers
None

Extension registers
None

Associated logs
None

WUCSACT

Register type
Peg

Description
WUCSACT counts the number of successful activations of the Wake-Up Call feature.

Associated registers
None

Extension registers
None

Associated logs
None

MDSACT

Description

OM group Message Delivery System Activity (MDSACT) records events occurring in the DMS switch portion of the Message Delivery System (MDS). The group measures the number of calls

- eligible for MDS
- monitored for MDS
- in which the subscriber chose to use MDS

The following table lists the key and info fields associated with OM group MDSACT:

Key field	Info field
None	None

Related functional groups

The following functional groups are associated with OM group MDSACT:

- Automated Alternate Billing System (AABS)
- Traffic Operator Position System (TOPS)

Registers

The following table lists the registers associated with OM group MDSACT and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MDSACT (Sheet 1 of 2)

Register name	Measures
ACC3RD	Third number call accepted service
ACCCC	Calling card call accepted service
ACCCOL	Collect call accepted service
ELIG3RD	Third number call eligible
ELIGCC	Calling card call eligible
ELIGCOL	Collect calls eligible

Registers for OM group MDSACT (Sheet 2 of 2)

Register name	Measures
INELG3RD	Third number call ineligible
INELGCC	Calling card call ineligible
INELGCOL	Collect call ineligible
MON3RDFA	Monitor third number call failure
MON3RDSU	Monitor third number call success
MONCCSU	Monitor calling card call failure
MONCOLFA	Monitor calling card call success
MONCOLSU	Monitor collect call failure
NOACC3RD	Monitor collect call success
NOACCCC	Third number call did not accept service
NOACCCOL	Calling card call did not accept service

ACC3RD

Register type
Peg

Description
ACC3RD is incremented when a caller on an AABS third number call that has been floated chooses to select MDS.

Associated registers
None

Extension registers
None

Associated logs
None

ACCCC

Register type
Peg

Description
ACCCC is incremented when a subscriber on an AABS calling card call that has been floated chooses to select MDS.

Associated registers
None

Extension registers
None

Associated logs
None

ACCCOL

Register type
Peg

Description
ACCCOL is incremented when a subscriber on an AABS collect call that has been floated selects MDS.

Associated registers
None

Extension registers
None

Associated logs
None

ELIG3RD

Register type
Peg

Description
ELIG3RD is incremented when an AABS third number call is sent from the voice services node to the switch with a language present in table MDSLANG with MONITOR = Y.

Associated registers
None

Extension registers
None

Associated logs
None

ELIGCC

Register type
Peg

Description
ELIGCC is incremented when an AABS calling card call is sent from the voice services node to the switch with a language present in table MDSLANG with MONITOR = Y.

Associated registers
None

Extension registers
None

Associated logs
None

ELIGCOL

Register type
Peg

Description
ELIGCOL is incremented when an AABS collect call is sent from the voice services node to the switch with a language present in table MDSLANG with MONITOR = Y.

Associated registers
None.

Extension registers
None

Associated logs
None

INELG3RD

Register type
Peg

Description
INELG3RD is incremented when an AABS third number call is sent from the voice services node to the switch with a language to which one of the following conditions applies:

- the language is not present in table MDSLANG
- the language is present in table MDSLANG and MONITOR = N

Associated registers
None

Extension registers
INELG3R2

Associated logs
None

INELGCC

Register type
Peg

Description
INELGCC is incremented when an AABS calling card call is sent from the voice services node to the switch with a language to which one of the following conditions applies:

- the language is not present in table MDSLANG
- the language is present in table MDSLANG and MONITOR = N

Associated registers
None

Extension registers
INELGCC2

Associated logs
None

INELGCOL

Register type
Peg

Description
INELGCOL is incremented when an AABS collect call is sent from the voice services node to the switch with a language to which one of the following conditions applies:

- the language is not present in table MDSLANG
- the language is present in table MDSLANG and MONITOR = N

Associated registers
None

Extension registers
None

Associated logs
None

MON3RDFA

Register type
Peg

Description
MON3RDFA is incremented when monitoring an AABS third-number call for MDS selection fails, that is, no receiver was obtained or the call could not be connected to the receiver.

Associated registers
None

Extension registers
None

Associated logs
None

MON3RDSU

Register type
Peg

Description
MON3RDSU is incremented when an AABS third number call is successfully monitored for MDS selection, that is, a receiver was obtained and a connection was made to it.

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Associated registers
None

Extension registers
MON3RDS2

Associated logs
None

MONCCFA

Register type
Peg

Description
MONCCFA is incremented when monitoring an AABS calling card call for MDS selection fails because a receiver was not obtained or the call could not be connected to the receiver.

Associated registers
None

Extension registers
None

Associated logs
None

MONCCSU

Register type
Peg

Description
MONCCSU is incremented when an AABS calling card call is successfully monitored for MDS selection, that is, a receiver was obtained and a connection was made to it.

Associated registers
None

Extension registers
MONCCSU2

Associated logs
None

MONCOLFA

Register type
Peg

Description
MONCOLFA is incremented when monitoring an AABS collect call, which has been sent from the voice services node to the switch, for MDS selection fails. Failures occur because a receiver is not obtained or the call could not be connected to the receiver.

Associated registers
None

Extension registers
None

Associated logs
None

MONCOLSU

Register type
Peg

Description
MONCOLSU is incremented when an AABS collect call is successfully monitored for MDS selection, that is, a receiver is obtained and a connection is made to it.

Associated registers
None

Extension registers
None

Associated logs
None

NOACC3RD

Register type
Peg

Description
NOACC3RD is incremented whenever a subscriber on an AABS third number call is offered MDS and does not choose to select MDS.

Associated registers
None

Extension registers
NOACC3R2

Associated logs
None

NOACCCC

Register type
Peg

Description
NOACCCC is incremented when a subscriber on an AABS calling card call that was offered MDS does not select MDS.

Associated registers
None

Extension registers
None

Associated logs
NOACCCC2

NOACCCOL

Register type
Peg

Description
NOACCCOL is incremented when a subscriber on an AABS collect call that was offered MDS does not select MDS.

Associated registers
None

Extension registers
None

Associated logs
None

MDSSTATS

Description

MDS Statistics

This OM group provides the Modular Documentation System (MDS) provider with information about:

- how many times each offer of service prompt has been played
- the total number of times offer of service prompts have been played
- how the subscribers have accepted the service
- the total number of times the service has been accepted
- how many time the subscribers have interrupted the playing of the offer of service prompts
- how many times the subscribers have hung-up during the playing of the offer of service prompts.

These statistics can be used to determine the percentage of calls that chose MDS with respect to how many have been offered the service. The statistics can also indicate why the service is being offered (for example; due to CLD Busy, RNA, and so forth) and how the subscribers are accepting it. Also useful is to see the percentage of calls that are being offered the Generic prompt due to the switch's inability to determine the exact network condition.

OM group MDSSTATS provides one tuple for each office.

Key field	Info field
none	none

Related functional groups

The TOPS MDS Enhancements functional group is associated with the OM group MDSSTATS.

Registers

The following table lists the registers associated with OM group MDSSTATS and what they measure. For a description of a register, click on the register name.

Registers for OM group MDSSTATS

Register name	Measures
BSYOOSP	Busy Offer of Service Prompt Played
GENOOSP	Generic Offer of Service Prompt Played
HOOKACC	Detection of `Hookflash' For Acceptance of MDS
NETOOSP	Network Busy Offer of Service Prompt Played
PRMTABD	Number of Subscriber Hang-ups During Prompt
PRMTSTP	Detection of `#' to Stop Playing of a Prompt
RNAOOSP	Ring-No-Answer Offer of Service Prompt Played
TOTLACC	Total Number of Subscriber Acceptances for MDS
TOTOOSP	Total Number of Offer of Service Prompts Played
STARACC	Detection of `*' For Acceptance of MDS
ZEROACC	Detection of `0' For Acceptance of MDS

BSYOOSP

Register type
Peg

Description
Busy Offer of Service Prompt Played

This register is pegged whenever the BUSY Offer Of Service Prompt (OOSP) is played.

Associated registers
The TOTOOSP register is pegged every time this register is pegged.

Extension registers
BSYOOSP2

Associated logs
There are no associated logs.

GENOOSP

Register type
Peg

Description
Generic Offer of Service Prompt Played

This register is pegged whenever the GENERIC OOSP is played.

Associated registers
The TOTOOSP register is pegged every time this register is pegged.

Extension registers
GENOOSP2

Associated logs
There are no associated logs.

HOOKACC

Register type
Peg

Description
Detection of `Hookflash' For Acceptance of MDS

This register is pegged whenever the TOPS subsystem detects that the subscriber keyed `hookflash' to choose MDS and was therefore routed to MDS. It is assumed that the hookflash enable office wide parms in the DMS and in the VSN are enabled or disabled consistently with respect to each other (that is, if one is enabled the other is also be enabled).

Associated registers
The TOTLACC register is pegged every time this register is pegged.

Extension registers
HOOKACC2

Associated logs
There are no associated logs.

NETOOSP

Register type
Peg

Description
Network Busy Offer of Service Prompt Played

This register is pegged whenever the NETWORK BUSY OOSP is played.

Associated registers
The TOTOOSP register is pegged every time this register is pegged.

Extension registers
NETOOSP2

Associated logs
There are no associated logs.

PRMTABD

Register type
Peg

Description
Number of Subscriber Hang-ups During Prompt

This register is pegged every time a subscriber hangs up during the playing of a prompt.

Associated registers
There are no associated registers.

Extension registers
PRMTABD2

Associated logs
There are no associated logs.

PRMTSTP

Register type
Peg

Description
Detection of `#' to Stop Playing of a Prompt

This register is pegged every time a subscriber keys `#' to stop the playing of a prompt. A prompt must be playing when the subscriber keys `#' in order to peg this register.

Associated registers
There are no associated registers.

Extension registers
PRMTSTP2

Associated logs
There are no associated logs.

RNAOOSP

Register type
Peg

Description
Ring-No-Answer Offer of Service Prompt Played

This register is pegged whenever the RNA OOSP is played.

Associated registers
There are no associated registers.

Extension registers
RNAOOSP2

Associated logs
There are no associated logs.

TOTLACC

Register type
Peg

Description
Total Number of Subscriber Acceptances for MDS

This register is pegged every time a subscriber chooses and is routed to MDS.

Associated registers
The TOTLACC register is pegged every time registers STARACC, ZEROACC, or HOOKACC are pegged.

Extension registers
TOTLACC2

Associated logs
There are no associated logs.

TOTOOSP

Register type
Peg

Description
Total Number of Offer of Service Prompts Played

This register is pegged whenever any xxxOOSP register is played.

Associated registers
The TOTOOSP register is pegged every time registers BSYOOSP, NETOOSP, RNAOOSP, or GENOOSP are pegged.

Extension registers
TOTOOSP2

Associated logs
There are no associated logs.

STARACC

Register type
Peg

Description
Detection of `*' For Acceptance of MDS

This register is pegged whenever the TOPS subsystem detects that the subscriber keyed `*' to choose MDS and was therefore routed to MDS.

Associated registers
The TOTLACC register is pegged every time this register is pegged.

Extension registers
STARACC2

Associated logs
There are no associated logs.

ZEROACC

Register type
Peg

Description
Detection of `0' For Acceptance of MDS

This register is pegged whenever the TOPS subsystem detects that the subscriber keyed `0' to choose MDS and was therefore routed to MDS.

Associated registers
The TOTLACC register is pegged every time this register is pegged.

Extension registers
ZEROACC2

Associated logs
There are no associated logs.

MediaPortal

Description

These OMs deal with the Border Control Point from the perspective of the Session Manager.

The following table lists the key and info fields associated with OM group MediaPortal.

Key field	Info field
None	None

Related functional groups

The following functional groups are related to OM group MediaPortal:

- Session Manager

Registers

The following table lists the registers associated with OM group MediaPortal and what they measure. For a description of a register, click on the register name.

Registers for OM group MediaPortal

Register name	Measures
createConnectionCount	create connection count
deleteConnectionCount	delete connection count
modifyConnectionCount	modify connection count
disableConnectionCount	disable connection count
responseReceivedCount	response received count
rSipReceivedCount	rSIP messages received count
mediaPortalInsertedCallCount	Media Portal inserted call count
mediaPortalSelectedFromGroupCount	Media Portal selected from group count

Registers for OM group MediaPortal

Register name	Measures
mediaPortalSelectedFromDefaultPoolCount	Media Portal selected from default pool count
mediaPortalResourceUnavailableCount	Media Portal resource unavailable count

createConnectionCount

Register type
Peg

Description
Number of CRCX messages sent to the Media Portal.

Associated registers
deleteConnectionCount, modifyConnectionCount, disableConnectionCount

Extension registers
None

Associated logs
None

deleteConnectionCount

Register type
Peg

Description
Number of DLCX messages sent to the Media Portal.

Associated registers
createConnectionCount, modifyConnectionCount, disableConnectionCount

Extension registers
None

Associated logs
None

modifyConnectionCount

Register type
Peg

Description
Number of MDCX messages sent to the Media Portal.

Associated registers
deleteConnectionCount, createConnectionCount, disableConnectionCount

Extension registers
None

Associated logs
None

disableConnectionCount

Register type
Peg

Description
Number of Disable Connection messages sent to the Media Portal.

Associated registers
deleteConnectionCount, createConnectionCount, modifyConnectionCount

Extension registers
None

Associated logs
None

responseReceivedCount

Register type
Peg

Description
Number of Response messages received from the Media Portal.

Associated registers
None

Extension registers
None

Associated logs
None

rSipReceivedCount

Register type
Peg

Description
Number of RSIP messages received from the Media Portal.

Associated registers
None

Extension registers
None

Associated logs
None

mediaPortalInsertedCallCount

Register type
Peg

Description
Each time a Media Portal is inserted for a call, this OM counter is incremented.

Associated registers
None

Extension registers
None

Associated logs
None

mediaPortalSelectedFromGroupCount

Register type
Peg

Description
Each time a Media Portal is selected from a Media Portal Group, this OM counter is incremented.

Associated registers
mediaPortalSelectedFromDefaultPoolCount, mediaPortalResourceUnavailableCount

Extension registers
None

Associated logs
None

mediaPortalSelectedFromDefaultPoolCount

Register type
Peg

Description
Each time a Media Portal is selected from the default resource pool, this OM counter is incremented.

Associated registers
mediaPortalSelectedFromGroupCount,
mediaPortalResourceUnavailableCount

Extension registers
None

Associated logs
None

mediaPortalResourceUnavailableCount

Register type
Peg

Description
Each time a Media Portal is inserted but has no resource available, this OM counter is incremented.

Associated registers
mediaPortalSelectedFromDefaultPoolCount,
mediaPortalSelectedFromGroupCount

Extension registers
None

Associated logs
None

MNATM

Description

OM group MNATM provides ATM interface performance data for the Multi-service Gateway (MG) 4000, the Interworking Spectrum Peripheral Module (IW SPM) ATM, and the Dynamic Packet Trunk (DPT) SPM.

Use the following formula to calculate the number of incoming ATM cells in an OM collection period for *one* IW SPM ATM.

Formula for *one* IW SPM ATM:

Incoming ATM cells =

Register ICTOTAL + (Extension register ICTOTAL2 x 65,535)

Use the following formula to calculate the number of incoming ATM cells in an OM collection period for *n* IW SPM ATM.

Formula for *n* IW SPM ATM:

Total incoming ATM cells =

Incoming ATM cells IW SPM1 +...+ Incoming ATM cells IW SPM*n*

For 64-kbyte voice streams that are carried over AAL-1 circuit emulation service, use the following formula to calculate the total carried traffic load across *all* IW SPM ATM. The formula assumes 47 bytes of voice payload for each cell and 60 minutes of OM data collection.

Formula for *all* IW SPM ATM:

Total carried traffic in erlang =

(Total incoming ATM cells x 47 bytes/cell x 8 bits/byte) / (64,000 bits/sec x 3600 sec/collection period) = Total incoming ATM cells x 1.63 x 10^{-6}

With the total load, an Erlang B calculator can be used to calculate the number of channels required to carry the load at the specified grade of service. This can be compared to the number of channels calculated by

the IW SPM ATM planning tool. Based on the result, the accuracy of the planning tool can be determined.

The following table lists the key and info fields associated with OM group MNATM.

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group MNATM.

Registers

The following table lists the registers associated with OM group MNATM and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MNATM (Sheet 1 of 2)

Register name	Measures
ICTOTAL	Incoming ATM cells
ICLP0TO	Incoming ATM cells with cell loss priority (CLP)=0
ICLP1TO *(not available)*	Incoming ATM cells with CLP=1
ICNC *(not available)*	Incoming non-compliant ATM cells
ICCLP0NC *(not available)*	Incoming non-compliant ATM cells with CLP=0
ICCLP1NC *(not available)*	Incoming non-compliant ATM cells with CLP=1
ICDISC *(not available)*	Incoming ATM cells discarded
ICCLP0DC *(not available)*	Incoming ATM cells with CLP=0 discarded
ICCLP1DC *(not available)*	Incoming ATM cells with CLP=1 discarded

Registers for OM group MNATM (Sheet 2 of 2)

Register name	Measures
ITAGGED *(not available)*	Incoming tagged ATM cells
OGTOTAL	Outgoing ATM cell
OCLP0TO	Outgoing ATM cells with CLP=0
OCLP1TO *(not available)*	Outgoing ATM cells with CLP=1

ICTOTAL

Register type
Peg

Description
ICTOTAL counts incoming ATM cells.

Associated registers
OGTOTAL, ICDISC

Extension registers
ICTOTAL2

Associated logs
None

ICLP0TO

Register type
Peg

Description
ICLP0TO counts incoming ATM cells with cell loss priority (CLP)=0.

Associated registers
OCLP0TO, ICCLP0DC

Extension registers
ICLP0TO2

Associated logs
None

ICLP1TO

Register type
Peg

Description
ICLP1TO counts incoming ATM cells with CLP=1. Currently, ICLP1TO and its extension register are *not available*.

Associated registers
OCLP1TO, ICCLP1DC

Extension registers
ICLP1TO2

Associated logs
None

ICNC

Register type
Peg

Description
ICNC counts incoming non-compliant ATM cells. Non-compliant cells are those that do not meet the traffic policing requirement. Currently, ICNC and its extension register are *not available*.

Associated registers
None

Extension registers
ICNC2

Associated logs
None

ICCLP0NC

Register type
Peg

Description
ICCLP0NC counts incoming non-compliant ATM cells with CLP=0. Currently, ICCLP0NC and its extension register are *not available*.

Associated registers
None

Extension registers
ICCLP0NC2

Associated logs
None

ICCLP1NC

Register type
Peg

Description
ICCLP1NC counts incoming non-compliant ATM cells with CLP=1. Currently, ICCLP1NC and its extension register are *not available*.

Associated registers
None

Extension registers
ICCLP1NC2

Associated logs
None

ICDISC

Register type
Peg

Description
ICDISC counts incoming ATM cells that are discarded. The policing hardware can discard cells that do not meet the traffic contract for a connection. Currently, ICDISC and its extension register are *not available*.

Associated registers
OGTOTAL, ICTOTAL

Extension registers
ICDISC2

Associated logs
None

ICCLP0DC

Register type
Peg

Description
ICCLP0DC counts incoming ATM cells with CLP=0 that are discarded. Currently, ICCLP0DC and its extension register are *not available*.

Associated registers
OCLP0TO, ICLP0TO

Extension registers
ICCLP0DC2

Associated logs
None

ICCLP1DC

Register type
Peg

Description
ICCLP1DC counts incoming ATM cells with CLP=1 that are discarded. Currently, ICCLP1DC and its extension register are *not available*.

Associated registers
OCLP1TO, ICLP1TO

Extension registers
ICCLP1DC2

Associated logs
None

ITAGGED

Register type
Peg

Description
ITAGGED counts incoming tagged ATM cells. Tagging occurs when the policing algorithm changes CLP from 0 to 1, which reduces the priority of the outgoing cell. Currently, ITAGGED and its extension register are *not available*.

Associated registers
None

Extension registers
ITAGGED2

Associated logs
None

OGTOTAL

Register type
Peg

Description
OGTOTAL counts outgoing ATM cells.

Associated registers
ICTOTAL, ICDISC

Validation formula
OGTOTAL = ICTOTAL - ICDISC

Extension registers
OGTOTAL2

Associated logs
None

OCLP0TO

Register type
Peg

Description
OCLP0TO counts outgoing ATM cells with CLP=0.

Associated registers
ICLP0TO, ICCLP0DC

Validation formula
OCLP0TO = ICLP0TO - ICCLP0DC

Extension registers
OCLP0TO2

Associated logs
None

OCLP1TO

Register type
Peg

Description
OCLP1TO counts outgoing ATM cells with CLP=1.

Currently, OCLP1TO and its extension register are *not available*.

Associated registers
ICLP1TO, ICCLP1DC

Validation formula
OCLP1TO = ICLP1TO - ICCLP1DC

Extension registers
OCLP1TO2

Associated logs
None

MNATMA1

Description

OM group MNATMA1 measures asynchronous transfer mode (ATM) AAL1 interface performance statistics for the Multi-service Gateway (MG) 4000, the Interworking Spectrum Peripheral ATM (IW SPM ATM), and the Dynamic Packet Trunk (DPT) SPM.

MNATMA1 provides AAL1 layer performance peg counts on an aggregate basis for each ATM interface according to the datafill in table MNATMIF (one tuple for each ATM interface on an SPM). The actual peg counts are accumulated on the peripheral and then uploaded to the OM group using the Spectrum OM Transfer System (SOTS).

The following table lists the key and info fields associated with OM group MNATMA1.

Key field	Info field
<spm_no> *where:* <spm_no> = an integer from 0 to 85	<class_type><spm_no><alias> *where:* <class_type> = DMSCP, IW, or SMG4 <spm_no> = an integer from 0 to 85, as datafilled in tables MNNODE and MNATMIF <alias> = the string name alias of the SPM as datafilled in table MNNODE

Related functional groups

There are no functional groups associated with OM group MNATMA1.

Registers

The following table lists the registers associated with OM group MNATMA1 and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MNATMA1 (Sheet 1 of 2)

Register name	Measures
ICTOTAL	Incoming ATM cells
ICDISC	Incoming ATM cells discarded

Registers for OM group MNATMA1 (Sheet 2 of 2)

Register name	Measures
OGTOTAL	Outgoing total cells
HERRCEL	Head errored cells
LATECEL	Late cells
MSINCEL	Mis-inserted cells
LOSTCEL	Lost cells
SLIPS	Slip events
OOSYNC	Out-of-sync events

ICTOTAL

Register type
Peg

Description
ICTOTAL counts incoming ATM cells.

Associated registers
OGTOTAL, ICDISC

Extension registers
ICTOTAL2

Associated logs
None

ICDISC

Register type
Peg

Description
ICDISC counts incoming ATM cells that are discarded. The policing hardware can discard cells that do not meet the traffic contract for a connection.

Associated registers
OGTOTAL, ICTOTAL

Extension registers
ICDISC2

Associated logs
None

OGTOTAL

Register type
Peg

Description
OGTOTAL counts outgoing ATM cells.

Associated registers
ICTOTAL, ICDISC

Validation formula
OGTOTAL = ICTOTAL - ICDISC

Extension registers
OGTOTAL2

Associated logs
None

HERRCEL

Register type
Peg

Description
HERRCEL counts cells that are discarded because of errors in the AAL1 payload data unit (PDU) header.

Associated registers
None

Extension registers
HERRCEL2

Associated logs
None

LATECEL

Register type
Peg

Description
LATECEL counts cells that are received late. A cell is late when the receiving buffer becomes empty.

Associated registers
None

Extension registers
LATECEL2

Associated logs
None

MSINCEL

Register type
Peg

Description
MSINCEL counts cells that are mis-inserted and received out of sequence. A cell is mis-inserted when the sequence number of that cell is less than the sequence number of a cell that was received previously.

Associated registers
None

Extension registers
MISINCEL2

Associated logs
None

LOSTCEL

Register type
Peg

Description
LOSTCEL counts cells that are not received. Lost cells are detected when the sequence number of an upcoming cell increases by more than 1 from the sequence number of a cell that was received previously.

Associated registers
None

Extension registers
LOSTCEL2

Associated logs
None

SLIPS

Register type
Peg

Description
SLIPS counts slip events (also known as buffer overflow).

Associated registers
None

Extension registers
SLIPS2

Associated logs
None

OOSYNC

Register type
Peg

Description
OOSYNC counts out-of-sync events. An out-of-sync event can be either *transient* (lasting <1 second) or *persistent* (lasting >1 second).

Associated registers
None

Extension registers
OOSYNC2

Associated logs
None

MNATMA5

Description

OM group MNATMA5 measures interface performance statistics for the Multi-service Gateway (MG) 4000 asynchronous transfer mode (ATM) permanent virtual connection (PVC) AAL5. AAL5 PVC connections are datafilled in table ATMCONN. Peg counts are accumulated on the peripheral and then uploaded to the OM group using the Spectrum OM Transfer System (SOTS).

The following table lists the key and info fields associated with OM group MNATMA5.

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group MNATMA5.

Registers

The following table lists the registers associated with OM group MNATMA5 and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MNATMA5

Register name	Measures
CRC32ERR	Protocol data units (PDU) that contain cyclic redundancy check-32 (CRC-32) errors
OVERSDU	PDUs discarded because of an oversized service data units (SDU)
LENVIOL	PDUs discarded because of length violations

CRC32ERR

Register type
Peg

Description
CRC32ERR counts the PDUs that contain CRC-32 errors.

Associated registers
None

Extension registers
None

Associated logs
ATM800

OVERSDU

Register type
Peg

Description
OVERSDU counts the PDUs that are discarded because of oversized service data unit (SDU). An oversized SDU > 2048 bytes.

Associated registers
None

Extension registers
None

Associated logs
ATM800

LENVIOL

Register type
Peg

Description
LENVIOL counts the PDUs discarded because of length violations.

Associated registers
None

Extension registers
None

Associated logs
ATM800

MNATMVC

Description

OM group Maintenance ATM Virtual Circuits (MNATMVC) measures interface performance statistics for the Multi-service Gateway (MG) 4000 asynchronous transfer mode (ATM) permanent virtual connection (PVC) AAL5. AAL5 PVC connections are datafilled in table ATMCONN.

The following table lists the key and info fields associated with OM group MNATMVC.

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group MNATMVC.

Registers

The following table lists the registers associated with OM group MNATMVC and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MNATMVC (Sheet 1 of 2)

Register name	Measures
ICTOTAL	Incoming ATM cells
ICLP0TO	Incoming ATM cells with cell loss priority (CLP)=0
ICLP1TO	Incoming ATM cells with CLP=1
ICNC	Incoming non-compliant ATM cells
ICCLP0NC	Incoming non-compliant ATM cells with CLP=0
ICCLP1NC	Incoming non-compliant ATM cells with CLP=1
ICDISC	Incoming ATM cells discarded
ICCLP0DC	Incoming ATM cells with CLP=0 discarded
ICCLP1DC	Incoming ATM cells with CLP=1 discarded

Registers for OM group MNATMVC (Sheet 2 of 2)

Register name	Measures
ITAGGED	Incoming tagged ATM cells
OGTOTAL	Outgoing ATM cell
OCLP0TO	Outgoing ATM cells with CLP=0
OCLP1TO	Outgoing ATM cells with CLP=1

ICTOTAL

Register type
Peg

Description
ICTOTAL counts incoming ATM cells.

Associated registers
OGTOTAL, ICDISC

Extension registers
ICTOTAL2

Associated logs
None

ICLP0TO

Register type
Peg

Description
ICLP0TO counts incoming ATM cells with cell loss priority (CLP)=0.

Associated registers
OCLP0TO, ICCLP0DC

Extension registers
ICLP0TO2

Associated logs
None

ICLP1TO

Register type
Peg

Description
ICLP1TO counts incoming ATM cells with CLP=1.

Associated registers
OCLP1TO, ICCLP1DC

Extension registers
ICLP1TO2

Associated logs
None

ICNC

Register type
Peg

Description
ICNC counts incoming non-compliant ATM cells. Non-compliant cells are those that do not meet the traffic policing requirement.

Associated registers
None

Extension registers
ICNC2

Associated logs
None

ICCLP0NC

Register type
Peg

Description
ICCLP0NC counts incoming non-compliant ATM cells with CLP=0.

Associated registers
None

Extension registers
ICCLP0NC2

Associated logs
None

ICCLP1NC

Register type
Peg

Description
ICCLP1NC counts incoming non-compliant ATM cells with CLP=1.

Associated registers
None

Extension registers
ICCLP1NC2

Associated logs
None

ICDISC

Register type
Peg

Description
ICDISC counts incoming ATM cells that are discarded. The policing hardware can discard cells that do not meet the traffic contract for a connection.

Associated registers
OGTOTAL, ICTOTAL

Extension registers
ICDISC2

Associated logs
None

ICCLP0DC

Register type
Peg

Description
ICCLP0DC counts incoming ATM cells with CLP=0 that are discarded.

Associated registers
OCLP0TO, ICLP0TO

Extension registers
ICCLP0DC2

Associated logs
None

ICCLP1DC

Register type
Peg

Description
ICCLP0DC counts incoming ATM cells with CLP=1 that are discarded.

Associated registers
OCLP1TO, ICLP1TO

Extension registers
ICCLP1DC2

Associated logs
None

ITAGGED

Register type
Peg

Description
ITAGGED counts incoming tagged ATM cells. Tagging occurs when the policing algorithm changes CLP from 0 to 1, which reduces the priority of the outgoing cell.

Associated registers
None

Extension registers
ITAGGED2

Associated logs
None

OGTOTAL

Register type
Peg

Description
OGTOTAL counts outgoing ATM cells. The formula for OGTOTAL is:

Associated registers
ICTOTAL, ICDISC

Validation formula
OGTOTAL = ICTOTAL - ICDISC

Extension registers
OGTOTAL2

Associated logs
None

OCLP0TO

Register type
Peg

Description
OCLP0TO counts outgoing ATM cells with CLP=0.

Associated registers
ICLP0TO, ICCLP0DC

Validation formula
OCLP0TO = ICLP0TO - ICCLP0DC

Extension registers
OCLP0TO2

Associated logs
None

OCLP1TO

Register type
Peg

Description
OCLP1TO counts outgoing cells with CLP=1.

Associated registers
ICLP1TO, ICCLP1DC

Validation formula
OCLP1TO = ICLP1TO - ICCLP1DC

Extension registers
OCLP1TO2

Associated logs
None

MNGEMLNK

Description

OM group Multiservice Node Gigabit Ethernet Module Link (MNGEMLNK) provides Gigabit Ethernet Link usage statistics to assist with network bandwidth Engineering.

In this OM group, the pegs include:

- The number of packets/octets transmitted/received on the Gigabit Ethernet Link connected to a MG4K-IP/IW-IP node.
- The number of packets/octets transmitted/received with different types of error.

The Gigabit Ethernet Module (GEM) hardware is a Resource Module of MG4K-IP/IW-IP node. The GEM provides a 1 Gigabit/sec Ethernet network interface that will support up to 2016 DS0 voice channels over an IP based packet network

The following table lists the key and info fields associated with OM group MNGEMLNK.

Key field	Info field
SPM_PM _NUMBER	Number value from 1 to 85

Related functional groups

There are no functional groups associated with OM group MNGEMLNK.

Registers

The following table lists the registers associated with OM group MNGEMLNK and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group DPTOFC

Register name	Measures
TXOCT	Number of bytes transmitted on a node.
RXOCT	Number of bytes received on a node.
TXPKT	Number of packets transmitted on a node.

Registers for OM group DPTOFC

Register name	Measures
RXPKT	Number of packets received on a node.
TXEROCT	Number of bytes transmitted in errored packets on a node.
RXEROCT	Number of bytes received in errored packets on a node.
TXERPKT	Number of errored packets transmitted on a node.
RXERPKT	Number of errored packets received on a node.
CRCERPKT	Number of packets received with CRC errors on a node.
UNDERPKT	Number of undersized packets received on a node.
OVERPKT	Number of oversized packets received on a node.
SHORTPKT	Number of short packets received on a node.
LONGPKT	Number of long packets received on a node.

TXOCT

Register type
Peg

Description
TXOCT (Transmitted Octets) counts the total number of kilobytes transmitted on a Gigabit Ethernet Link connected to a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
TXOCT2

Associated logs
None

RXOCT

Register type
Peg

Description
RXOCT (Received Octets) counts the total number of kilobytes received on a Gigabit Ethernet Link connected to a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
RXOCT2

Associated logs
None

TXPKT

Register type
Peg

Description
TXPKT (Transmitted Packets) counts the total number of packets transmitted (measured in kilo packets) on a Gigabit Ethernet Link connected to a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
TXPKT2

Associated logs
None

RXPKT

Register type
Peg

Description
RXPKT (Received Packets) counts the total number of packets received (measured in kilo packets) on a Gigabit Ethernet Link connected to a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
RXPKT2

Associated logs
None

TXEROCT

Register type
Peg

Description
TXEROCT (Transmitted Error Octets) counts the total number of bytes transmitted in errored packets on a Gigabit Ethernet Link connected to a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
TXEROCT2

Associated logs
None

RXEROCT

Register type
Peg

Description
RXEROCT (Received Error Octets) counts the total number of bytes received in errored packets on a Gigabit Ethernet Link connected to a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
RXEROCT2

Associated logs
None

TXERPKT

Register type
Peg

Description
TXERPKT (Transmitted Error Packets) counts the total number of errored packets transmitted on a Gigabit Ethernet Link connected to a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
None

Associated logs
None

RXERPKT

Register type
Peg

Description
RXERPKT (Received Error Packets) counts the total number of errored packets received on a Gigabit Ethernet Link connected to a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
None

Associated logs
None

CRCERPKT

Register type
Peg

Description
CRCERPKT (Cyclic Redundancy Check Error Packets) provides count for total number of packets received with CRC errors on a Gigabit Ethernet Link connected to a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
None

Associated logs
None

UNDERPKT

Register type
Peg

Description
UNDERPKT (Undersize Packets) counts the total number of undersize packets received on a Gigabit Ethernet Link connected to a particular MG4K-IP/IW-IP node.

Undersize packet is one with less than 64 bytes.

Associated registers
None

Extension registers
None

Associated logs
None

OVERPKT

Register type
Peg

Description
OVERPKT (Oversize Packets) counts the total number of oversize packets received on a Gigabit Ethernet Link connected to a particular MG4K-IP/IW-IP node.

Oversize Packet is one with more than 1518 bytes.

Associated registers
None

Extension registers
None

Associated logs
None

SHORTPKT

Register type
Peg

Description
SHORTPKT (Short Packets) counts the total number of short packets (a.k.a. fragments) received on a Gigabit Ethernet Link connected to a particular MG4K-IP/IW-IP node.

A Short Packet is one with less than 64 bytes and CRC error or alignment error.

Associated registers
None

Extension registers
None

Associated logs
None

LONGPKT

Register type
Peg

Description
LONGPKT (Long Packets) provides count for total number of long packets (a.k.a. jabber) received on a Gigabit Ethernet Link connected to a particular MG4K-IP/IW-IP node.

Long Packet is one with more than 1518 bytes and CRC error or alignment error.

Associated registers
None

Extension registers
None

Associated logs
None

MNGEMTRF

Description

The OM group Multiservice Node Gigabit Ethernet Module Traffic (MNGEMTRF) provides statistics of nodal traffic usage.

In this OM group, the pegs include:

- The number of RTP packets/octets transmitted/received for bearer traffic.
- The number packets/octets transmitted/received for different types connections.

The following table lists the key and info fields associated with OM group MNGEMTRF.

Key field	Info field
SPM_PM _NUMBER	Number value from 1 to 85

Related functional groups

There are no functional groups associated with OM group MNGEMTRF.

Registers

The following table lists the registers associated with OM group MNGEMTRF and what they measure at an MG4K-IP or IW-IPO node. For a detailed description of a register, click on the register name.

Registers for OM group DPTOFC

Register name	Measures
TOTCONN	Number of connections handled by a node
TXRTPPK	Number of RTP bytes transmitted from a node
RXRTPPK	Number of RTP bytes received by a node
G711MUCN	Number of G.711 MuLaw codec connections handled by a node
G711ACN	Number of G.711 A-Law codec connections handled by a node

Registers for OM group DPTOFC

Register name	Measures
TXG711PK	Number of RTP packets transmitted for G.711 connections handled by a node
RXG711PK	Number of RTP packets received for G.711 connections handled by a node
G729CN	Number of G.729 connections handled by a node
TXG729PK	Number of RTP packets transmitted for G.729 connections handled by a node
RXG729PK	Number of RTP packets received for G.729 connections handled by a node
CCDCN	Number of 64 Kbyte CCD connections handled by a node
TXCCDPK	Number of RTP packets transmitted for CCD connections handled by a node
RXCCDPK	Number of RTP packets received for CCD connections handled by a node
VBDCN	Number of VBD connections handled by a node
TXVBDPK	Number of VBD packets transmitted by a node
RXVBDPK	Number of VBD packets received by a node
T38CN	Number of T.38 connections handled by a node
TXT38PK	Number of packets transmitted for T.38 connections handled by a node
RXT38PK	Number of packets received for T.38 connections handled by a node
RF2833CN	Number of RF2833CN connections handled by a node
SLSUPCN	Number of SLSUPCN connections handled by a node

TOTCONN

Register type
Peg

Description
TOTCONN (Total Connections) counts the total number connections handled by a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
None

Associated logs
None

TXRTPPK

Register type
Peg

Description
TXRTPOCT (Transmitted RTP Octets) counts the total number of RTP bytes transmitted from a MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
TXRTPPK2

Associated logs
None

RXRTPPK

Register type
Peg

Description
RXRTPOCT (Received RTP Octets) counts the total number of RTP bytes received for a MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
RXRTPPK2

Associated logs
None

G711MUCN

Register type
Peg

Description
G711MUCN (G.711 MuLaw Connections) counts the total number of G.711 MuLaw codec connections handled by a particular MG4K-IP/IW-IP node.

The MG4K-IP/IW-IP uses industry standard G.711 codec as a default codec for Mu-law and A-law at 10 and 20 milliseconds, to encode and decode TDM to and from packets transmitted via RTP over UDP over IP.

ITU-T G.711 is a standard to represent 8 bit compressed pulse code modulation (PCM) samples for signals of voice frequencies, sampled at the rate of 8000 samples/second. G.711 encoder will create a 64 Kbps bitstream. This standard has two forms, A-Law and µ-Law.

Associated registers
None

Extension registers
None

Associated logs
None

G711ACN

Register type
Peg

Description
G711ACN (G.711 A-Law Connections) provides count for total number of G.711 A-Law codec connections handled by a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
None

Associated logs
None

TXG711PK

Register type
Peg

Description
TXG711PK (Transmitted G.711 Connection Packets) counts the total number of RTP packets transmitted for G.711 connections handled by a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
TXG711PK2

Associated logs
None

RXG711PK

Register type
Peg

Description
RXG711PK (Received G.711 Connection Packets) counts the total number of RTP packets received for G.711 connections handled by a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
RXG711P2

Associated logs
None

G729CN

Register type
Peg

Description
G729CN (G.729 Connections) provides count for total number of G.729 connections handled by a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
None

Associated logs
None

TXG729PK

Register type
Peg

Description
TXG729PK (Transmitted G.729 Connection Packets) counts the total number of RTP packets transmitted for G.729 connections handled by a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
TXG729P2

Associated logs
None

RXG729PK

Register type
Peg

Description
RXG729PK (Received G.729 Connection Packets) counts the total number of RTP packets received for G.729 connections handled by a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
RXG729P2

Associated logs
None

CCDCN

Register type
Peg

Description
CCDCN (Clear Channel Data Connections) counts the total number of 64K Clear Channel Data (CCD) Connections handled by a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
None

Associated logs
None

TXCCDPK

Register type
Peg

Description
TXCCDPK (Transmitted Clear Channel Data Connection Packets) count the total number of RTP packets transmitted for Clear Channel Data connections handled by a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
None

Associated logs
None

RXCCDPK

Register type
Peg

Description
RXCCDPK (Received Clear Channel Data Connection Packets) counts the total number of RTP packets received for Clear Channel Data connections handled by a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
None

Associated logs
None

VBDCN

Register type
Peg

Description
VBDCN (Voice Band Data Connections) counts for total number of Voice Band Data (VBD) Connections handled by a particular MG4K-IP/IW-IP node.

VBD will allow pass-through of inband data over established voice channels for packet networks.

Associated registers
None

Extension registers
None

Associated logs
None

TXVBDPK

Register type
Peg

Description
TXVBDPK (Transmitted Voice Band Data Connection Packets) counts the total number of packets transmitted for Voice Band Data connections handled by a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
None

Associated logs
None

RXVBDPK

Register type
Peg

Description
RXVBDPK (Received VBD Connection Packets) counts the total number of packets received for Voice Band Data connections handled by a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
None

Associated logs
None

T38CN

Register type
Peg

Description
T38CN (T.38 Connections) counts the total number of T.38 connections handled by a particular MG4K-IP/IW-IP node.

The T.38 Protocol is used to transmit fax calls over the IP network.

Associated registers
None

Extension registers
None

Associated logs
None

TXT38PK

Register type
Peg

Description
TXT38PK (Transmitted T38 Connection packets) counts the total number of packets transmitted for T.38 connections handled by a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
None

Associated logs
None

RXT38PK

Register type
Peg

Description
RXT38PK (Received T.38 Connection Packets) provides count for total number of packets received for T.38 connections handled by a particular MG4K-IP/IW-IP node.

Associated registers
None

Extension registers
None

Associated logs
None

RF2833CN

Register type
Peg

Description
RF2833CN (RFC2833 Connections) provides count for total number of RFC2833 connections handled by a particular MG4K-IP/IW-IP node.

The RFC2833 is used for tone transmission in all codec types. The speech compression can greatly impair the ability of downstream systems to recognize in-band DTMF tones. RFC2833 provides a solution to this problem. The special RTP data packets will be transmitted instead of generating the tones at the ingress gateway.

These RTP packets will instruct the downstream gateway to generate the appropriate tones.

Associated registers
None

Extension registers
None

Associated logs
None

SLSUPCN

Register type
Peg

Description
SLSUPCN (Silence Suppression Connections) counts the total number of Silence Suppression connections handled by a particular MG4K-IP/IW-IP node.

As much as 50% of human speech consists of silence resulting from pauses between words or breaks in the conversation. Many codecs, such as G.723, recognize silence using a Voice Activity Detector (VAD) and transmit Silence Descriptor (SID) packets instead of empty voice packets.

Associated registers
None

Extension registers
None

Associated logs
None

MPB

Description

OM group Multi-party Bridge (MPB) counts all of the attempts to allocate conference circuits for multi-party bridge calls. The multi-party bridge consists of up to four single-party lines on a DMS-100 switch. Lines associate through the conference circuits located in a maintenance trunk module (MTM). The members of the multi-party bridge group appear as separate parties on a multi-party line.

Operating company personnel use the data the MPB provides to determine if there are enough conference circuits on a switch.

The following table lists the key and info fields associated with OM group MBP:

Key field	Info field
None	None

Related functional groups

The following functional groups are associated with OM group MBP:

- DMS-100 local
- DMS-100/200 local/toll
- DMS-100/200 local/toll with TOPS

Registers

The following table lists the registers associated with OM group MBP and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MPB

Register name	Measures
MPBCONF	Multi-party bridge conference
MPBFAIL	Multi-party bridge failure

MPBCONF

Register type
Peg

Description
MPBCONF counts the successful attempts to allocate a conference circuit for a multi-party bridge call.

Associated registers
MPBFAIL

Extension registers
None

Associated logs
None

MPBFAIL

Register type
Peg

Description
MPBFAIL counts attempts that fail to allocate a conference circuit for a multi-party bridge call. Register MPBFAIL cannot count a second failed attempt in the same bridge group until all bridge group members go on-hook. The system places the bridge group members on hold until all bridge group members go on-hook.

Associated registers
MPBCONF

Extension registers
None

Associated logs
None

MPCBASE

Description

OM group Multiprotocol Controller Base Software (MPCBASE) collects data within multiprotocol controller (MPC) central control software. The data collected includes measurements or the use and availability of MPC cards and nodes, and data transfer through an MPC.

Registers L2UDSIN, L3DUSIN, L2UDSOUT, L3UDSOUT count incoming and outgoing messages an MPC handles. Register CONVESTB counts successful conversations an MPC handles.

The following registers provide information about maintenance problems:

- MPCNSBBU and MPCNSSBU for busy time
- RESETL2 and RESETL3 for link reliability
- CONVERR for protocol problems
- LOSTMSGS for messages that cannot be delivered
- BDAPPERR for MPC card problems

The following registers provide information about available MPC:

- MPCNSOK for MPC node availability
- CONVIREF for conversations not allowed because of high traffic volume
- LOSTMSGS for messages not delivered because there are not enough resources
- FCTRLDEL for messages delayed because of high traffic volume

The following table lists the key and info fields associated with OM group MPCBASE:

Key field	Info field
None. The maximum number of tuples cannot be greater than the index range in table MPC.	MPCOMINFOTYPE

The system creates the Info field with the following information:

- MPCNO refers to the MPC number to which the tuple data applies.
- IOCNO refers to the input/output controller (IOC) where the system locates the MPC.
- CARDNO indicates the card of the MPC for the IOCNO.

The L2 L3, L2_L3 and LNONE links are the entered links. The L2 means that link 2 is entered. The L3 means that link 3 is entered. The L2_L3 means that both link 2 and link 3 are entered. The LNONE means that no links are entered.

The DLDFILE is the download file for the MPC entered in table MPC.

The MPC numbers, IOC information and download file information are entered in table MPC. The MPC links are entered in table X25LINK.

Related functional groups

Functional group MPC is associated with OM group MPCBASE.

Registers

The following table lists the registers associated with OM group MPCBASE and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MPCBASE (Sheet 1 of 2)

Register name	Measures
BDAPPERR	Multiprotocol controller (MPC) board application error
CONVERR	Conversation error
CONVESTB	Conversation established
CONVIREF	Incoming conversation refused
FCTRLDEL	Flow control delay
L2UDSIN	Link 2 user data segment in
L2UDSOUT	Link 2 user data segment out
L3UDSIN	Link 3 user data segment in
L3UDSOUT	Link 3 user data segment out

Registers for OM group MPCBASE (Sheet 2 of 2)

Register name	Measures
LOSTMSGS	Lost messages
MPCNSMBU	Multiprotocol controller (MPC) node status manual busy
MPCNSOK	Multiprotocol controller (MPC) node status okay
MPCNSSBU	Multiprotocol controller (MPC) node status system busy
RESETL2	Reset on link 2
RESETL3	Reset on link 3

BDAPPERR

Register type
Peg

Description
The system increases BDAPPERR when the MPC board cannot process application data. This condition is a peripheral trap.

A peripheral trap indicates problems with the MPC board, the IOC, or the peripheral software.

Associated registers
None

Extension registers
None

Associated logs
MPC103

CONVERR

Register type
Peg

Description
The system increases CONVERR when a conversation reset occurs on links 2 or 3 of the MPC.

Conversation resets are normally caused by protocol problems. Other conversations on the link are not affected.

Associated registers
None

Extension registers
None

Associated logs
MPC102

CONVESTB

Register type
Peg

Description
The system increases CONVESTB when the system establishes a conversation between a DMS switch and a remote.

The system establishes a conversation between a DMS switch and a remote implies that data can be transferred. CONVESTB includes counts for links 2 and 3. Link resets, which re-establish conversations, are also included in this count.

Associated registers
None

Extension registers
None

Associated logs
None

CONVIREF

Register type
Peg

Description
The system increases CONVIREF when the DMS switch refuses an incoming data call from the network.

This count should be zero or very low. A high count can indicate one of the following:

- data entry for the link in table X25LINK is not compatible with the parameters of the remote
- facilities or data entry are not enough to handle the number of calls made
- A user is attempting to make a non authorized attempt to establish a conversation with the DMS switch

Associated registers
None

Extension registers
None

Associated logs
MPC101

FCTRLDEL

Register type
Peg

Description
The system increases FCTRLDEL when flow control delays a message to the MPC. The message is delayed because there is not enough buffer space available.

Retries are done automatically and the system counts each attempt in FCTRLDEL. The system counts the second successful attempt in L2UDSOUT or L3UDSOUT, depending on the link type.

Not enough equipment or the remote not ready to receive messages can cause message delay. The registers reads zero unless the system is sending the data in large bursts. The system sends the data by applications such as the Engineering and Administrative Data Acquisition System (EADAS).

Associated registers
L2UDSOUT, L3UDSOUT

Extension registers
None

Associated logs
None

L2UDSIN

Register type
Peg

Description
L2UDSIN counts incoming data messages that arrive on link 2 of an MPC from a remote user.

Associated registers
LOSTMSGS

Extension registers
None

Associated logs
None

L2UDSOUT

Register type
Peg

Description
L2UDSOUT counts outgoing user data segments on link 2 of an MPC. This count depends on the volume of messages output by a local user of link 2.

Associated registers
None

Extension registers
None

Associated logs
None

L3UDSIN

Register type
Peg

Description
L3UDSIN counts incoming data messages that arrive on link 3 of an MPC from a remote user.

Associated registers
LOSTMSGS

Extension registers
None

Associated logs
None

L3UDSOUT

Register type
Peg

Description
L3UDSOUT counts outgoing user data segments on link 3 of an MPC. This count depends on the volume of messages output by a local user of link 3.

Associated registers
None

Extension registers
None

Associated logs
None

LOSTMSGS

Register type
Peg

Description
LOSTMSGS counts data messages that the system can not deliver to their intended application after the system has established a conversation.

The system can lose messages because of errors or because there is not enough application resources. The count in LOSTMSGS should be zero or very low. A high count indicates that a process no longer reads incoming data.

Associated registers
None

Extension registers
None

Associated logs
MPC102

MPCNSMBU

Register type
Peg

Description
The system increases MPCNSMBU when MPC node status changes to manual busy for maintenance purposes.

The system changes MPC node status to manual busy at the MAP.

Associated registers
MPCLINK2 and MPCLINK3 registers, which are not increased when MPC node status is manual busy.

Extension registers
None

Associated logs
MPC903

MPCNSOK

Register type
Usage

Scan rate
100 seconds

Description
MPCNSOK records if an MPC node is available for use.

MPCNSOK does not record if MPC node status is manual busy, system busy, or offline.

Associated registers
None

Extension registers
None

Associated logs
MPC905

MPCNSSBU

Register type
Peg

Description
The system increases MPCNSSBU when MPC node status changes to system busy.

A problem in the hardware or peripheral software can cause a count other than zero in MPCNSSBU.

Associated registers
None

Extension registers
None

Associated logs
MPC904

RESETL2

Register type
Peg

Description
The system increases RESETL2 when the protocol software executes a reset on link 2.

When a link is reset, all conversations in progress on the link are disabled and communications are re-initiated. MPC data links must be reset each time the MPC is made manual busy for maintenance or system busy. The MPC would be made manual or system busy because of link problems.

This count indicates the reliability of a link and it should be low.

Associated registers
None

Extension registers
None

Associated logs
MPC102

RESETL3

Register type
Peg

Description
The system increases RESETL3 when the protocol software executes a reset on link 3.

When a link is reset, all conversations in progress on the link are disabled and communications are reinitiated. MPC data links must be reset each time the MPC is made manual busy for maintenance or system busy. The MPC is made manual or system busy because of link problems.

This count indicates the reliability of a link and it should be low.

Associated registers
None

Extension registers
None

Associated logs
MPC102

MPCFASTA

Description

OM group Multi-protocol Controller Fast Applications (MPCFASTA) provides information on outgoing traffic and exception conditions for multi-protocol controller (MPC) multilink management.

MPC is a peripheral device that controls data communication between a DMS-100 and a remote system. It can use different data communications protocols.

Four registers count indications of traffic the application generates and record the availability of the data links involved. Table MPCFASTA identifies applications that use the MPC fast utility, a fast input/output interface through the MPC. Each application has an associated logical link, which is a data communications channel through the MPC.

Separate registers for each application show the traffic each application generates (FAMSGOUT), the availability and stability of the data links the applications uses (LLNKAVBL and LLNKXFRD). A register also shows the quantity and quality of internal resources (FAOUTFLD).

The following table lists the key and info fields associated with OM group MPCFASTA:

Key field	Info field
mpcfastapplnid. Application name datafilled in table MPCFASTA. The maximum number of applications allowed is 15.	mpcfastaominfotype

NUMLINKS - Number of logical links datafilled in MLCLIST in table MPCFASTA.

APPLQ - Number of application queue items.

LMKIN - Suggested minimum number of logical links for the application in table MPCFASTA.

Related functional groups

The functional group IBN Attendant Console is associated with OM group MPCFASTA.

Registers

The following table lists the registers associated with OM group MPC-FASTA and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MPCFASTA

Register name	Measures
FAMSGOUT	Fast application message output
FAOUTFLD	Fast application output operation failed
LLNKAVBL	Logical link availability
LLNKXFRD	Logical link data transferred

FAMSGOUT

Register type
Peg

Description
FAMSGOUT counts outgoing messages that the application sends over data links.

Associated registers
None

Extension registers
None

Associated logs
None

FAOUTFLD

Register type
Peg

Description
The system increases FAOUTFLD when an application output attempt fails. Failure occurs because there is not enough internal resources to queue the output attempts.

High counts in FAOUTFLD may show there is not enough of internal resources to queue the output attempts. Application parameters and traffic level estimates allocate internal queue resources. High counts in

FAOUTFLD can also occur because messages are backed up at the multi-protocol controller (MPC). Messages can be backed up because of application or protocol software problems.

FAOUTFLD does not count application output failures caused by invalid application identification, invalid message size, or the links are not availability.

Associated registers
None

Extension registers
None

Associated logs
None

LLNKAVBL

Register type
Usage

Scan rate
100 seconds

Description
The system increases LLNKAVBL when at least one logical link is available for use by an MPC FAST application.

Associated registers
None

Extension registers
None

Associated logs
MPC201

LLNKXFRD

Register type
Peg

Description
The system increases LLNKXFRD when the system sends data to an alternate logical link. The alternate link is used because the logical link that the system first targeted is not available.

The system makes a logical link not available when an output attempt fails or when the system resets the link by software,. A link can also be made unavailable when the system detects no response. The system can use LLNKXFRD as an indicator of link stability.

Associated registers
None

Extension registers
None

Associated logs
MPC201

MPCLINK2

Description

Multiprotocol Controller Link 2 (MPCLINK2) provides information on traffic and faults. These are traffic and faults that occur in the link and network level of the open system interconnect (OSI) model. The OSI model is for link 2 on a multiprotocol controller (MPC). The system collects data at the MPC card level in the peripheral processor software.

The following registers count at the physical level:

- L2PABORT counts frames aborted because of line, modem, or card problems
- L2PSYNCU counts link synchronization errors
- L2PDOWN incremented when the peripheral module processor attempts to enable the physical layer of a link
- L2PHWERR counts hardware errors

The following registers count at the link level:

- L2LSETUP counts link restarts
- L2LDISC counts link disconnects
- L2LDOWN counts links that are out of service (OOS)
- L2LACKTO counts acknowledgement timeouts
- L2LRXMIT counts retransmissions
- L2LLVIO counts invalid messages
- L2LLRVIO counts invalid messages
- L2LRCV counts messages received
- L2LXMIT counts messages transmitted
- L2MSGLST counts incoming messages lost

The following registers count at the network level:

- L2NURVC counts data received
- L2NUXMIT counts data transmitted

The following table lists the key and info fields associated with OM group MPCLINK2:

Key field	Info field
None	The MCPLOMINFOTYPE information field is MPCNO, RF_CONVS, and RXMIT_TIME.

MPCNO is the MPC number in table MPC. DF_CONVS is the number of conversations datafilled on the link. If the user can not enter conversations, the system considers DF_CONVS to be 1.

DF_CONVS must be non-zero. RXMIT_TIME is the value in seconds of the protocol retransmission timer.

The user enters MPC information in table MPC.

Related functional groups

The functional group MPC is associated with OM group MPCLINK2.

Registers

The following table lists the registers associated with OM group MPCLINK2 and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MPCLINK2 (Sheet 1 of 2)

Register name	Measures
L2LACKTO	Link 2 link acknowledgement timeout
L2LDISC	Link 2 link disconnect
L2LDOWN	Link 2 link down
L2LLVIO	Link 2 link local problems
L2LRCV	Link 2 messages received
L2LRVIO	Link 2 link remote violations
L2LRXMIT	Link 2 link retransmission
L2LSETUP	Link 2 link set-up

Registers for OM group MPCLINK2 (Sheet 2 of 2)

Register name	Measures
L2LXMIT	Link 2 messages sent
L2MSGLST	Link 2 messages lost
L2NURCV	Link 2 user data received
L2NUXMIT	Layer 2 link user data transmitted
L2PABORT	Abort on link 2
L2PDOWN	Link 2 time down
L2PHWERR	Link 2 hardware errors
L2PSYNC	Link 2 synchronization error

L2LACKTO

Register type
Peg

Description
The system increases L2LACKTO when acknowledgement for a message sent is not received from the remote within a specified time.

Field T2, or T2_MS in table X25LINK specifies the time. The default is 3 seconds.

If the count in L2LACKTO is high, the link will go OOS and the system increases L2LDOWN. The other option is that the system initiates a link restart and increases the L2LSETUP.

Associated registers
L2LDOWN, L2LSETUP

Extension registers
None

Associated logs
None

L2LDISC

Register type
Peg

Description
The system will increase L2LDISC when the system sends a link disconnect from either end of the link.

A link disconnect terminates communication on a link. A link restart is necessary to prepare the link again for active communication.

Associated registers
None

Extension registers
None

Associated logs
None

L2LDOWN

Register type
Peg

Description
The system increases L2LDOWN once for every second that a link 2 is not in service. A link 2 is not in service because there is not a response from the remote level two software.

The link must be restarted.

Associated registers
None

Extension registers
None

Associated logs
MPC201

L2LLVIO

Register type
Peg

Description
L2LLVIO counts messages from the MPC that are considered invalid by the remote.

Associated registers
None

Extension registers
None

Associated logs
None

L2LRCV

Register type
Peg

Description
The system increases L2LRCV when an incoming message arrives on the link.

Associated registers
None

Extension registers
None

Associated logs
None

L2LRVIO

Register type
Peg

Description
L2LRVIO counts invalid messages received from the remote at the MPC.

Associated registers
None

Extension registers
None

Associated logs
None

L2LRXMIT

Register type
Peg

Description
L2LRXMIT counts messages that are transmitted again because of a request from the remote or because the message was not acknowledged.

Associated registers
None

Extension registers
None

Associated logs
None

L2LSETUP

Register type
Peg

Description
The system increases L2LSETUP when a link restart sequence occurs.

The system initiates a link restart by the local MPC or remote to ensure that communication is possible over a link. During a restart, the system loses the MPC output data and data in transit on the link.

A high count indicates a problem in the line, modem, or card. A high count occurs because of a protocol incompatibility.

Associated registers
None

Extension registers
None

Associated logs
None

L2LXMIT

Register type
Peg

Description
The system increases L2LXMIT when the system sends a message on the link.

Messages can be data related or protocol related.

Associated registers
None

Extension registers
None

Associated logs
None

L2MSGLST

Register type
Peg

Description
L2MSGLST counts incoming messages lost on link 2 of the MPC.

L2MSGLST is correct only for the asynchronous protocol implementation of the MPC subsystem.

Associated registers
None

Extension registers
None

Associated logs
None

L2NURCV

Register type
Peg

Description
The system increases L2NURCV when 1 Kbyte of user data is received at the MPC on the link.

Associated registers
None

Extension registers
None

Associated logs
None

L2NUXMIT

Register type
Peg

Description
The system increases L2NUXMIT when the system transmitts 1 Kbyte of user data on the link from the MPC.

Associated registers
None

Extension registers
None

Associated logs
None

L2PABORT

Register type
Peg

Description
L2PABORT counts outgoing frames on link 2 that are aborted because of line, modem or card problems. L2PABORT also increases when frames are sent with an abort indication at the logical level.

A count in this register may indicate line noise, a common cause of link and network exceptions.

Associated registers
None

Extension registers
None

Associated logs
None

L2PDOWN

Register type
Peg

Description
The system increases L2PDOWN once for every second the peripheral processor tries to enable the physical layer of link 2.

Associated registers
None

Extension registers
None

Associated logs
None

L2PHWERR

Register type
Peg

Description
Hardware errors include:

- direct memory access
- incoming byte overruns
- incoming frame overruns

A non-zero count can be a problem. A count greater than 40 in a 30-minute period indicates the need to replace the MPC card. The need to replace the MPC card is more important in the absence of high L2PABORT or L2PSYNC counts.

Associated registers
None

Extension registers
None

Associated logs
None

L2PSYNC

Register type
Peg

Description
The system increases L2PSYNC when the system detects a loss of carrier or a clear-to-send signal.

Associated registers
None

Extension registers
None

Associated logs
None

MPCLINK3

Description

OM group Multiprotocol Controller Link 3 (MPCLINK3) provides information on traffic and faults that occur in the link, and network level of the open system interconnect (OSI) model. The OSI model is for link 3 on a multiprotocol controller (MPC). The system collects data at the MPC card level in the peripheral processor software.

The following registers count at the physical level:

- L3PABORT counts frames aborted because of line, modem, or card problems
- L3PSYNC counts link synchronization errors
- L3PDOWN increases when the peripheral module processor attempts to enable the layer of a link
- L3PHWERR counts hardware errors

The following registers count at the link level:

- L3LDISC counts link disconnects
- L3LSETUP counts link restarts
- L3LDOWN counts links that are out of service (OOS)
- L3LACKTO counts acknowledgement timeouts
- L3LRXMIT counts retransmissions
- L3LLVIO counts invalid messages
- L3LRVIO counts invalid messages
- L3LRCV counts messages received
- L3LXMIT counts messages transmitted
- L3MSGLST counts incoming messages lost

The following registers count at the network level:

- L3NURCV counts data received
- L3NUXMIT counts data transmitted

The following table lists the key and info fields associated with OM group MPCLINK3:

Key field	Info field
None	The MPCLOMINFOTYPE information field contains MPCNO,DF_CONVS, and RXMIT_TIME. The MPCNO is the MPC number in table MPC. The DF_CONVS is the number of conversations that the user entered on the link. If the user cannot enter conversations, DF_CONVS is 1. The DF_CONVS must be a value that is not zero. The RXMIT_TIME is the value in seconds of the protocol retransmission timer.

Table MPC contains entries for MPC information.

Related functional groups

The functional group MPC is associated with OM group MPCLINK3.

Registers

The following table lists the registers associated with OM group MPCLINK3 and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MPCLINK3 (Sheet 1 of 2)

Register name	Measures
L3LACKTO	Link 3 link acknowledgement timeout
L3LDISC	Link 3 link disconnect
L3LDOWN	Link 3 link down
L3LLVIO	Link 3 link local violations
L3LRCV	Link 3 messages received
L3LRVIO	Link 3 link remote violations
L3LRXMIT	Link 3 link retransmission

Registers for OM group MPCLINK3 (Sheet 2 of 2)

Register name	Measures
L3LSETUP	Link 3 link setup
L3LXMIT	Link 3 messages sent
L3MSGLST	Link 3 messages lost
L3NURCV	Link 3 user data received
L3NUXMIT	Layer 3 link user data transmitted
L3PABORT	Physical abort on link 3
L3PDOWN	Link 3 physical time down
L3PHWERR	Link 3 physical hardware errors
L3PSYNC	Link 3 physical synchronization error

L3LACKTO

Register type
Peg

Description
The system increases L3LACKTO when the system does not receive acknowledgement for a sent message from the remote in a specified time.

Field T2, or T2_MS in table X25LINK specifies the time. The default is 3 seconds.

If the count in L3LACKTO is high, the link will go OOS and L3LDOWN increases. If the count is high, the system can also initiate a link restart and L3LSETUP increases.

Associated registers
L3LDOWN, L3LSETUP

Extension registers
None

Associated logs
None

L3LDISC

Register type
Peg

Description
L3LDISC increases when either end of a link sends a link disconnect.

A link disconnect terminates communication on a link. A link restart is necessary to prepare the link again for active communication.

Associated registers
None

Extension registers
None

Associated logs
None

L3LDOWN

Register type
Peg

Description
L3LDOWN increases once for every second that a link 3 link is not in service because of a lack of response from the remote level 2 software.

The link must be restarted.

Associated registers
None

Extension registers
None

Associated logs
None

L3LLVIO

Register type
Peg

Description
L3LLVIO counts messages from the MPC that the remote considers not correct.

Associated registers
None

Extension registers
None

Associated logs
None

L3LRCV

Register type
Peg

Description
L3LRCV increases when an incoming message arrives on the link.

Associated registers
None

Extension registers
None

Associated logs
None

L3LRVIO

Register type
Peg

Description
L3LRVIO counts messages the system receives from the remote at the MPC that are not correct.

Associated registers
None

Extension registers
None

Associated logs
None

L3LRXMIT

Register type
Peg

Description
L3LRXMIT counts messages the system transmits again because of a request from the remote. The system will also transmit messages again because the message was not acknowledged.

Associated registers
None

Extension registers
None

Associated logs
None

L3LSETUP

Register type
Peg

Description
L3LSETUP increases when a link restart sequence occurs.

The local MPC or remote can initiate a link restart to make sure that communication is possible over a link. A restart causes the loss of MPC output data and data in transit on the link.

A high count indicates a problem in the line, modem, or card. Protocol incompatibility can also cause a high count.

Associated registers
None

Extension registers
None

Associated logs
None

L3LXMIT

Register type
Peg

Description
L3LXMIT increases when the system sends a message on the link.

Messages can be data related or protocol related.

Associated registers
None

Extension registers
None

Associated logs
None

L3MSGLST

Register type
Peg

Description
L3MSGLST counts incoming messages lost on link 3 of the MPC.

L3MSGLST is correct only for the asynchronous protocol implementation of the MPC subsystem.

Associated registers
None

Extension registers
None

Associated logs
None

L3NURCV

Register type
Peg

Description
L3NURCV increases when the MPC on the link receives 1 Kbyte of user data.

Associated registers
None

Extension registers
None

Associated logs
None

L3NUXMIT

Register type
Peg

Description
L3NUXMIT increases when the system transmits 1 kbyte of user data on the link from the MPC.

Associated registers
None

Extension registers
None

Associated logs
None

L3PABORT

Register type
Peg

Description
L3PABORT counts outgoing frames on link 3 that the system aborts because of line, modem, or card problems. The system also aborts outgoing frames because frames are sent with an abort indication at the logical level.

A count in this register may indicate line noise, a common cause of link and network exceptions.

Associated registers
None

Extension registers
None

Associated logs
None

L3PDOWN

Register type
Peg

Description
L3PDOWN increases for every second that peripheral processor tries to enable the physical layer of link three.

Associated registers
None

Extension registers
None

Associated logs
None

L3PHWERR

Register type
Peg

Description
L3PHWERR increases when the system detects hardware errors during hardware maintenance operations on link 3.

Hardware errors include:

- direct memory access
- incoming byte overruns
- incoming frame overruns

A count that is not zero can indicate a problem. A count greater than 40 in a 30-min period indicates the need to replace the MPC card. The situation is more important in the absence of high L3PABORT or L3PSYNC counts.

Associated registers
None

Extension registers
None

Associated logs
None

L3PSYNC

Register type
Peg

Description
L3PSYNC increases when the system detects a loss of carrier or a clear-to-send signal.

A loss of carrier or a clear-to-send signal indicates a line, cable, or modem failure. A high corresponding count in L3PHWERR can indicate a card that has faults.

Associated registers
None

Extension registers
None

Associated logs
None

MPCP

Description

These OMs deal with everything on the host level of the Border Control Point.

The following table lists the key and info fields associated with OM group MPCP.

Key field	Info field
None	None

Related functional groups

The following functional groups are related to OM group MPCP:

- Border Control Point

Registers

The following table lists the registers associated with OM group MPCP and what they measure. For a description of a register, click on the register name.

Registers for OM group MPCP

Register name	Measures
rtpMpPortUsage	Border Control Point port usage
rtpMpAvailBlades	Border Control Point available blades
rtpMpActiveBlades	Border Control Point active blades
connsRemovedLatestCyc	connections removed during latest idle stream audit cycle
connMapEntries	connections map entries
goOnlineCnt	go online count
deniedSvcCnt	denied service count
recCrCxCnt	received create connection count
crCxCnt	created connections count

Registers for OM group MPCP

Register name	Measures
recDelCxCnt	received delete connection count
delCxCnt	delete connection count
mdCxCnt	modify connection count
recMdCxCnt	received modify connection count
recRespCnt	received response count
respCnt	response processed count
rSipCnt	RSIP count
reXmitCnt	retransmission count
auditCycSeqIDCnt	audit cycle count
ConnsCnt	connections count
preExistConnsCnt	preexisting connections count
recoveryConnFailCnt	recovery connection failed count
reconstrConnsCnt	reconstructed connections count

rtpMpPortUsage

Register type
Usage

Scan rate

Description
Meter showing number of ports in use.

Associated registers
None

Extension registers
None

Associated logs
None

rtpMpAvailBlades

Register type
Usage

Scan rate

Description
Meter showing number of blades available to provide service.

Associated registers
rtpMpActiveBlades

Extension registers
None

Associated logs
None

rtpMpActiveBlades

Register type
Usage

Scan rate

Description
Meter showing number of blades with active connections.

Associated registers
rtpMpAvailBlades

Extension registers
None

Associated logs
None

connsRemovedLatestCyc

Register type
Usage

Scan rate

Description
Counter, tracks the total number of connections removed (recovered) by the latest idle stream audit cycle

Associated registers
None

Extension registers
None

Associated logs
None

connMapEntries

Register type
Usage

Scan rate

Description
Meter showing the number of connections in the host CPU's connection map.

Associated registers
None

Extension registers
None

Associated logs
None

goOnlineCnt

Register type
Peg

Description
Counter tracking the number of times the portal has been commanded to an online state. The online state could be commanded via the System Management Console or auto recovering from a service denying alarm.

Associated registers
None

Extension registers
None

Associated logs
None

deniedSvcCnt

Register type
Peg

Description
Counter indicating number of times service was denied through the portal due to errors or lack of resources.

Associated registers
None

Extension registers
None

Associated logs
None

recCrCxCnt

Register type
Peg

Description
Counter indicating number of create connection messages received.

Associated registers
crCxCnt

Extension registers
None

Associated logs
None

crCxCnt

Register type
Peg

Description
Counter indicating number of create connection messages processed.

Associated registers
recCrCxCnt

Extension registers
None

Associated logs
None

recDelCxCnt

Register type
Peg

Description
Counter indicating number of delete connection messages received.

Associated registers
delCxCnt

Extension registers
None

Associated logs
None

delCxCnt

Register type
Peg

Description
Counter indicating number of delete connection messages processed.

Associated registers
recDelCxCnt

Extension registers
None

Associated logs
None

mdCxCnt

Register type
Peg

Description
Counter indicating number of modify connection messages processed.

Associated registers
recMdCxCnt

Extension registers
None

Associated logs
None

recMdCxCnt

Register type
Peg

Description
Counter indicating number of modify connection messages received.

Associated registers
mdCxCnt

Extension registers
None

Associated logs
None

recRespCnt

Register type
Peg

Description
Counter, tracks the number of response messages received.

Associated registers
respCnt

Extension registers
None

Associated logs
None

respCnt

Register type
Peg

Description
Counter, tracks the number of response messages processed.

Associated registers
recRespCnt

Extension registers
None

Associated logs
None

rSipCnt

Register type
Peg

Description
Counter, tracks the number of RSIP message sent.

Associated registers
None

Extension registers
None

Associated logs
None

reXmitCnt

Register type
Peg

Description
Counter, tracks the number of messages retransmitted.

Associated registers
None

Extension registers
None

Associated logs
None

auditCycSeqIDCnt

Register type
Peg

Description
Counter, tracks the number of audit cycles which have occurred removed.

Associated registers
None

Extension registers
None

Associated logs
None

ConnsCnt

Register type
Peg

Description
Counter, tracks the total number of connections removed across all audit cycles

Associated registers
None

Extension registers
None

Associated logs
None

preExistConnsCnt

Register type
Peg

Description
Meter showing the total number of connections the Host CPU found during host recovery.

Associated registers
None

Extension registers
None

Associated logs
None

recoveryConnFailCnt

Register type
Peg

Description
Meter showing the number of media blades to which control can not be re-established during host recovery.

Associated registers
None

Extension registers
None

Associated logs
None

reconstrConnsCnt

Register type
Peg

Description
Meter showing total number of connections reconstructed during last host recovery action.

Associated registers
None

Extension registers
None

Associated logs
None

MPHCON

Description

OM group Multiple Position Hunt Console (MPHCON) monitors the performance of multiple position hunt (MPH) consoles.

The OM group MPHCON contains two registers that count the following:

- calls offered to a multiple position hunt console
- calls that a multiple position hunt console answers

The following table lists the key and info fields associated with OM group MPHCON:

Key field	Info field
a number that identifies the multiple position hunt console as defined in field MPHCNUM in table MPHCON	defines the console group and the console number in the group. Fields MPHGRP and MPHCON in table MPHCON define the console group and number

Related functional groups

The functional group MDC is associated with OM group MPHCON.

Registers

The following table lists the registers associated with OM group MPHCON and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MPHCON

Register name	Measures
MPHCANS	Calls answered
MPHCOFRD	Calls offered

MPHCANS

Register type
Peg

Description
MPHCANS counts calls that a multiple position hunt (MPH) console answers.

Associated registers
None

Extension registers
None

Associated logs
None

MPHCOFRD

Register type
Peg

Description
MPHCOFRD counts calls offered to a multiple position hunt (MPH) console.

Associated registers
None

Extension registers
None

Associated logs
None

MPHGRP

Description

OM group Multiple Position Hunt Console Group (MPHGRP) monitors the performance of multiple position hunt (MPH) console groups.

MPHGRP contains five registers that count:

- calls offered to the MPH console group
- calls placed in the central office queue of the MPH console group
- calls abandoned while in the central office queue of the console group
- calls that the system could not place in a queue for an MPH console group
- calls to the MPH console group that the system routes to night service

The following table lists the key and info fields associated with OM group MPHGRP:

Key field	Info field
the number of the multiple position hunt console group as defined in field MPHGRP in table MPHGRP	None

Table MPC contains entries for MPC information.

Related functional groups

The functional group MDC is associated with OM group MPHGRP.

Registers

The following table lists the registers associated with OM group MPH-GRP and what they measure. For a detailed description of a register,

click on the register name.

Registers for OM group MPGGRP

Register name	Measures
MPHGABDN	Call abandoned
MPHGENQ	Calls enqueued
MPHGNSER	Calls routed to night service
MPHGOFRD	Calls offered
MPHGOVFL	Calls overflowed

MPHGABDN

Register type
Peg

Description
MPHGABDN counts calls the user abandons while in the multiple central office queue of the position hunt (MPH) console group. Register MPHGABDN also counts calls abandoned while the system offers the calls to the console.

Associated registers
None

Extension registers
None

Associated logs
None

MPHGENQ

Register type
Peg

Description
MPHGENQ counts calls the system places in the central office queue of the multiple position hunt (MPH) console group.

Associated registers
None

Extension registers
None

Associated logs
None

MPHGNSER

Register type
Peg

Description
MPHGNSER counts calls to the multiple position hunt (MPH) console group that the system routes to night service. The system assigns the calls a night service directory number (DN).

Associated registers
None

Extension registers
None

Associated logs
None

MPHGOFRD

Register type
Peg

Description
MPHGOFRD counts calls offered to the multiple position hunt (MPH) console group.

Associated registers
None

Extension registers
None

Associated logs
None

MPHGOVFL

Register type
Peg

Description
MPHGOVFL counts calls for a multiple position hunt (MPH) console group that the system cannot place in a queue. The system reroutes calls that overflow the MPH group central office queue to the route specified in field CQOVRTE in table MPHGRP.

Associated registers
None

Extension registers
None

Associated logs
None

MS

Description

OM group Message Switch (MS) monitors the quality of the performance of the message switch (MS). You can use the MS to evaluate maintenance efforts.

The OM group MS resources are in three categories: node, card, and link. The MS node resource has system cards the system requires for the operation of the MS. These system cards include the:

- processor card
- clock card
- memory card
- mapper card
- P-bus termination card
- T-bus termination card

The MS card resource has interface cards that contain the MS ports. The MS link resource has ports that receive messages from peripheral side (P-side) peripheral modules (PM). The system sends messages to the T-bus. The T-bus sends the message to the system.

Seven OM registers are present for each of the three resource categories. Registers count errors, faults, tests, test failures, and MSs that are manually busy. Usage registers record if the MS is manually busy or system busy.

The operating company uses MS to measure the reliability and availability of MS resources.

The following table lists the key and info fields associated with OM group MS:

Key field	Info field
MESSAGE_SWITCH_NUMBER is 0 or 1	None

Related functional groups

There are no functional groups related to OM group MS.

Registers

The following table lists the registers associated with OM group MS and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MS (Sheet 1 of 2)

Register name	Measures
MSCDDIA	Interface card diagnostic
MSCDDIAF	Interface card diagnostic failure
MSCDERR	Interface card errors
MSCDFLT	Interface card fault
MSCDMBP	Interface card manual busy
MSCDMBU	Interface card manual busy use
MSCDSBU	Interface card system busy usage
MSDIA	System card diagnostic
MSDIAF	System card diagnostic failure
MSERR	System card errors
MSFLT	System card faults
MSMBU	Message switch (MS) manual busy usage
MSPTDIA	Port diagnostics
MSPTDIAF	Port diagnostic failures
MSPTERR	Port error
MSPTFLT	Port fault
MSPTMBP	Port manual busy
MSPTMBU	Port manual busy use
MSPTSBU	Port system busy (system busy) usage

Registers for OM group MS (Sheet 2 of 2)

Register name	Measures
MSMBP	Message switch (MS) manual busy
MSSBU	Message switch (MS) system busy usage

MSCDDIA

Register type
Peg

Description
MSCDDIA counts tests on interface cards. Register MSCDDIA includes:

- test commands from the MS shelf and card levels of a MAP display
- return-to-service commands from the MS shelf and card levels of a MAP display

Associated registers
None

Extension registers
None

Associated logs
None

MSCDDIAF

Register type
Peg

Description
MSCDDIAF counts diagnostic tests that fail. If the interface card is in service before the diagnostic test, the system removes the card from service.

Register MSCDDIA also counts the same tests.

Associated registers
MSCDDIA

Extension registers
None

Associated logs
None

MSCDERR

Register type
Peg

Description
MSCDERR counts errors in an in-service interface card. Register MSCDERR includes:

- error reports from the MS maintenance software
- failures in in-service audit or routine exercise tests

Associated registers
None

Extension registers
None

Associated logs
MS263

MSCDFLT

Register type
Peg

Description
MSCDFLT counts errors that require the removal of the interface card from service. Register MSCDFLT includes:

- fault reports from the MS maintenance software
- critical failures in in-service audit or routine exercise tests

MSCDERR also counts these errors.

Associated registers
MSCDERR

Extension registers
None

Associated logs
MS263

MSCDMBP

Register type
Peg

Description
MSCDMBP counts changes of the interface cards from:

- in-service to manually busy
- system busy to manually busy
- from central side (C-side) busy to manually busy
- from offline to manually busy

Associated registers
None

Extension registers
None

Associated logs
MS261, MS262

MSCDMBU

Register type
Usage

Scan rate
100 s

Description
MSCDMBU records if the MS interface cards are manually busy.

Associated registers
None

Extension registers
None

Associated logs
None

MSCDSBU

Register type
Usage

Scan rate
100 seconds

Description
MSCDSBU records if the MS interface cards are system busy.

Associated registers
None

Extension registers
None

Associated logs
None

MSDIA

Register type
Peg

Description
MSDIA counts diagnostic tests the system initiates on the system cards. These tests include:

- test commands from the MS level of a MAP display
- in-service or out-of-service audits
- routine exercise tests

Associated registers
None

Extension registers
None

Associated logs
None

MSDIAF

Register type
Peg

Description
MSDIAF counts diagnostic tests that fail. If the MS is in service before a the diagnostic test, the system removes the MS from service.

Associated registers
MSDIA

Extension registers
None

Associated logs
None

MSERR

Register type
Peg

Description
MSERR counts errors the system detects on the system cards of an in-service MS. Register MSERR includes:

- error reports from computing module maintenance software
- error reports from MS maintenance software
- failures in in-service audit or routine exercise tests

Associated registers
None

Extension registers
None

Associated logs
MS103

MSFLT

Register type
Peg

Description
MSFLT counts errors, counted earlier in register MSERR, that requires the removal from service of the MS from service. MSFLT includes:

- fault reports from computing module maintenance software
- fault reports from MS maintenance software
- critical failures in in-service audit or routine exercise tests

Associated registers
MSERR

Extension registers
None

Associated logs
MS103

MSMBU

Register type
Usage

Scan rate
100 seconds

Description
MSMBU records if the MS is manual busy.

Associated registers
None

Extension registers
None

Associated logs
None

MSPTDIA

Register type
Peg

Description
MSPTDIA counts diagnostic tests the system initiates on MS ports. Register MSPTDIA includes:

- test port commands from the MS card level of the MAP terminal
- return to service port commands from the MS card level of the MAP terminal
- periodic in-service audits
- return to service attempts on system busy ports

Associated registers
None

Extension registers
None

Associated logs
None

MSPTDIAF

Register type
Peg

Description
MSPTDIAF counts diagnostic tests that fail. If the port is in service before the diagnostic test, the system removes the port from service.

MSPTDIA also counts the same diagnostic tests.

Associated registers
MSPTDIA

Extension registers
None

Associated logs
None

MSPTERR

Register type
Peg

Description
MSPTERR counts errors on an in-service port. Register MSPTERR includes:

- error reports from P-side PM maintenance software
- error reports from MS maintenance software
- failures in in-service audit or routine exercise tests

Associated registers
None

Extension registers
None

Associated logs
MS303

MSPTFLT

Register type
Peg

Description
MSPTFLT counts errors, counted earlier in MSPTERR, that require the removal of the MS port from service. Register MSPTFLT includes:

- fault reports from MS maintenance software
- fault reports from computing module, input/output controller, and network maintenance software
- critical failures in in-service audit or routine exercise tests

Associated registers
MSPTERR

Extension registers
None

Associated logs
MS303

MSPTMBP

Register type
Peg

Description
MSPTMBP counts changes of the MS ports from:

- in service to manual busy
- system busy to manual busy
- C-side busy to manual busy
- P-side busy to manual busy

Associated registers
None

Extension registers
None

Associated logs
MS301, MS302

MSPTMBU

Register type
Usage

Scan rate
100 seconds

Description
MSPTMBU records if the MS ports are manually busy.

Associated registers
None

Extension registers
None

Associated logs
None

MSPTSBU

Register type
Usage

Scan rate
100 seconds

Description
MSPTSBU records if the MS ports are system busy.

Associated registers
None

Extension registers
None

Associated logs
None

MSMBP

Register type
Peg

Description
MSMBP counts changes of the MS from in service to manually busy and from system busy to manually busy.

Associated registers
None

Extension registers
None

Associated logs
MS101, MS102

MSSBU

Register type
Usage

Scan rate
100 seconds

Description
MSSBU records if the MS is system busy.

Associated registers
None

Extension registers
None

Associated logs
None

MSCHAIN

Description

OM group Message Switch Chain (MSCHAIN) monitors the performance and maintenance quality of the chains on a message switch (MS). The MS chains are interface cards connected by a bus.

MSCHAIN contains five peg registers that count:

- errors in operation
- critical or continuous faults that make MS chains system busy
- self tests that the system applies
- self tests that fail
- MS chains made manual busy

Register MSCHAIN also contains two-usage registers that record system busy and manually busy time.

The following table lists the key and info fields associated with OM group MSCHAIN:

Key field	Info field
MESSAGE_SWITCH_NUMBER is 0 or 1	None

Related functional groups

There are no functional groups associated with OM group MSCHAIN.

Registers

The following table lists the registers associated with OM group MSCHAIN and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MSCHAIN (Sheet 1 of 2)

Register name	Measures
MSCHDIA	Message switch chain diagnostic
MSCHDIAF	Message switch chain diagnostic failure
MSCHERR	Message switch chain error

Registers for OM group MSCHAIN (Sheet 2 of 2)

Register name	Measures
MSCHFLT	Message switch chain fault
MSCHMBP	Message switch chain manual busy
MSCHMBU	Message switch chain manual busy usage
MSCHSBU	Message switch chain system busy usage

MSCHDIA

Register type
Peg

Description
MSCHDIA counts tests performed on a chain or on an interface card in a chain.

MSCHDIA includes:

- test commands from the MS shelf, chain, and card levels
- test requests from the chain in-service audit
- return-to-service commands from the MS shelf and chain levels
- return-to-service attempts by the audit on a system busy chain

A test on an interface card on a chain causes Register MSCHDIA to increase one time for the interface card. The following conditions cause MSCHDIA to increase one time for each chain and one time for each interface card in the chain:

- a test on an in-service chain
- an out-of-service chain
- a return to service chain

Associated registers
MSCHDIAF

Extension registers
None

Associated logs
MS150

MSCHDIAF

Register type
Peg

Description
MSCHDIAF counts failed self tests that the system performs on a chain or on an interface card in a chain. If the chain is in service before the diagnostic test, the system takes the chain out of service.

A test on an interface card on a chain causes Register MSCHDIAF to increase one time for the interface card if the test fails. A test on an in-service chain causes register MSCHDIAF to increase one time for the chain if the test fails. A test on an out-of-service chain or a return to service on the chain causes MSCHDIAF to increase one time for the chain and one time for each interface card in the chain if the test fails.

Register MSCHDIA also counts the self tests.

Associated registers
MSCHDIA

Extension registers
None

Associated logs
MS153

MSCHERR

Register type
Peg

Description
Register MSCHERR increases when:

- the system detects errors for an in-service chain or chain interface card
- the system adds errors for an out-of-service chain or chain interface card that the system returns to service

Register MSCHERR includes:

- failure of an in-service self test
- error reports from the message switch maintenance software
- in-service trouble faults the system finds during a successful return-to-service from a system or manual action

Register MSCHERR increases one time for each fault on a chain or a chain interface card.

Associated registers
MSCHFLT

Extension registers
None

Associated logs
MS150, MS153, MS154, MS157, MS277

MSCHFLT

Register type
Peg

Description
MSCHFLT counts errors that require the system to take the chain out of service.

Register MSCHFLT includes:

- fault reports from the message switch maintenance software
- critical failures of an in-service test

MSCHFLT increases one time for each fault on the chain or on a chain interface card, if the fault causes the chain to go to system busy.

The errors are also counted by Register MSCHERR.

Associated registers
MSCHERR

Extension registers
None

Associated logs
MS153

MSCHMBP

Register type
Peg

Description
MSCHMBP increases when commands entered from the MS level of a MAP make the chain manually busy.

Register MSCHMBP includes changes from:

- in-service (OK) to manually busy
- system busy to manually busy
- central-side (C-side) busy to manually busy
- offline to manually busy

Register MSCHMBP increases one time for the chain and one for each interface card in the chain.

Associated registers
None

Extension registers
None

Associated logs
MS151, MS152

MSCHMBU

Register type
Usage

Scan rate
100 seconds

Description
MSCHMBU records if the chain is manual busy.

MSCHMBU increases one time for the chain and one time for every interface card in the chain.

Associated registers
None

Extension registers
None

Associated logs
None

MSCHSBU

Register type
Usage

Scan rate
100 seconds

Description
MSCHMBU records if a chain is system busy.

MSCHSBU increases once for the chain and once for every interface card in the chain.

Associated registers
None

Extension registers
None

Associated logs
None

MSCHNLK

Description

OM group Message Switch Channelized Link (MSCHNLK) monitors the performance and maintenance quality of the channelized links on a message switch (MS). The MS channelized links are the channelized wire links that connect MS chains to peripheral side (P-side) nodes.

MSCHNLK contains five peg registers that count:

- errors in operation
- critical or continuous faults that makes MS channelized links system busy
- diagnostics (self tests) that the system applies
- diagnostics that fail
- MS channelized links made manual busy

The OM group MSCHNLK also contains two-usage registers that record system busy and manual busy time.

The following table lists the key and info fields associated with OM group MSCHNLK:

Key field	Info field
MESSAGE_SWITCH_NUMBER is 0 or 1	None

Related functional groups

There are no functional groups associated with OM group MSCHNLK.

Registers

The following table lists the registers associated with OM group MSCHNLK and what they measure. For a detailed description of a

register, click on the register name.

Registers for OM group MSCHNLK

Register name	Measures
MSCLDIA	Message switch channelized link diagnostic (self test)
MSCLDIAF	Message switch channelized link diagnostic (self test) failure
MSCLERR	Message switch channelized link error
MSCLFLT	Message switch channelized link fault
MSCLMBP	Message switch channelized link manual busy
MSCLMBU	Message switch channelized link manual busy usage
MSCLSBU	Message switch channelized link system busy usage

MSCLDIA

Register type
Peg

Description
MSCLDIA counts self tests performed on a channelized link or a port on a channelized link.

MSCLDIA includes the following:

- tests for a port on a channelized link entered at the MS chain card level of a MAP terminal
- return-to-service of a port on a channelized link entered at the MS chain card level
- test of a channelized link entered at the MS chain level
- return-to-service of a channelized link entered at the MS chain level
- periodic in-service audits
- return-to-service attempts on the system-busied link

A test or a return to service on a port on a channelized link causes MSCLDIA to increase one time for that port. A return to service on a channelized causes MSCLDIA to increases one time for the

channelized link and one time for each port on the channelized link that is not P-side or C-side busy. A test on an out-of-service channelized link causes MSCLDIA to increase once for the link and one time for the ENET port on the link. A test on an in-service channelized link causes MSCLDIA to increase one time for the channelized link. A test on ports stop after the first successful test of a port on the channelized link.

Associated registers
MSCLDIAF

Extension registers
None

Associated logs
MS310, MS280

MSCLDIAF

Register type
Peg

Description
MSCLDIAF counts failed self tests on a channelized link or a port on a channelized link. If the port on the channelized link is in service before the self test, the system takes the link out of service.

A test or a return to service on a port on a channelized link causes MSCLDIAF to increase one time for that port, if the operation fails. A test an out-of-service channelized link causes MSCLDIAF to increase one time for the link and one time for the ENET port, if the test fails. A test on an in-service channelized link causes MSCLDIAF to increase. Register MSCLDIA increases one time for the link and one time for each port on the channelized link that fails.

Register MSCLDIA also counts the self tests.

Associated registers
MSCLDIA

Extension registers
None

Associated logs
MS283, MS313

MSCLERR

Register type
Peg

Description
MSCLERR increases when:

- the system detects errors for an in-service channelized link or a port on a channelized link
- the system detects errors for an out-of-service channelized link. The system detects errors for a port on a channelized link that the system brings back to service

Register MSCLERR includes the following:

- failure of an in-service test
- error reports from the P-side peripherals
- error reports from the C-side
- in-service trouble faults found during a successful return-to-service, from a system or manual action

MSCLERR increases one time for the channelized link, when the system reports the fault on the whole link. Register MSCLERR increases one time if the system reports the fault on a port on the channelized link.

Associated registers
MSCLFLT

Extension registers
None

Associated logs
MS280, MS283, MS284, MS310, MS313, MS314, MS317

MSCLFLT

Register type
Peg

Description
MSCLFLT counts errors that require the system to take the channelized link or a port on the channelized link out of service.

Register MSCLFLT includes:

- fault reports from the peripherals
- failures of an in-service test

MSCLFLT increases one time for the channelized link. The register increases if the system reports the fault on the whole link and makes the link system busy. Register MSCLFLT increases one time. The register increases if the system reports fault on a port on a channelized link, and makes the port system busy.

MSCLERR also counts the errors.

Associated registers
MSCLERR

Extension registers
None

Associated logs
MS283, MS313

MSCLMBP

Register type
Peg

Description
MSCLMBP increases when the chain is made busy when the system enters commands at the MS level of a MAP.

Register MSCLMBP includes changes from the following:

- in-service (OK) to manually busy
- system busy to manually busy
- central-side (C-side) busy to manually busy
- P-side busy to manually busy

MSCLMBP increases one time if commands make a port on a channelized link busy. Register MSCLMBP increases one time for the channelized link and one time for each port on the link, if commands make the channelized link busy.

Associated registers
None

Extension registers
None

Associated logs
MS281, MS282, MS311, MS312

MSCLMBU

Register type
Usage

Scan rate
100 seconds

Description
MSCLMBU records if the channelized link is manually busy.

MSCLMBU increases one time for the channelized link and one time for every port on the channelized link, when a command makes the link manually-busy. Register MSCLMBU increases when a port on the channelized link is made manual busy separate from the link.

Associated registers
None

Extension registers
None

Associated logs
None

MSCLSBU

Register type
Usage

Scan rate
100 seconds

Description
MSCLSBU records if a channelized link is system busy.

MSCLSBU increases one time for the channelized link and one time for every port on the channelized link, when the system makes the link system busy. Register MSCLSBU increases when a port on the channelized link is made manually busy. Register MSCLSBU increases when a port on the channelized links made manually busy separate from the link.

Associated registers
None

Extension registers
None

Associated logs
None

MSFBUS

Description

OM group Message Switch Frame Transport Bus (MSFBUS) provides an accurate indication of the performance of the frame transport bus (F-bus) on the message switch (MS).

The following table lists the key and info fields associated with OM group MSFBUS:

Key field	Info field
MESSAGE_SWITCH_NUMBER	None

Related functional groups

There are no functional groups associated with OM group MSFBUS.

Registers

The following table lists the registers associated with OM group MSF-BUS and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MSFBUS

Register name	Measures
MSFBDIA	MS F-bus diagnostic count
MSFBDIAF	MS F-bus diagnostic failure count
MSFBERR	MS F-bus error count
MSFBFLT	MS F-bus fault peg count
MSFBMBP	MS F-bus manual busy peg count
MSFBMBU	MS F-bus manual busy usage count
MSFBSBU	MS F-bus system busy usage count

MSFBDIA

Register type
Peg

Description
MSFBDIA increases for each MS when the system performs a diagnostic on an MS F-bus. Register MSFBDIA increases if the diagnostic test passes or fails. These diagnostic tests include the test and the return-to-service (RTS) commands on the F-bus. This register increases one time for each test on the F-bus.

Associated registers
MSFBDIAF

Extension registers
None

Associated logs
MS400

MSFBDIAF

Register type
Peg

Description
MSFBDIAF increases for each MS when a diagnostic test counted in MSFBDIA fails. If the F-bus is in service before the test, the system puts the F-bus out of service.

This register increases one time for each diagnostic test failure on the F-bus.

Associated registers
MSFBDIA

Extension registers
None

Associated logs
MS403

MSFBERR

Register type
Peg

Description
MSFBERR increases for each MS when the system detects errors for an in-service F-bus. Additional maintenance action does not affect the register count. These errors include the failure of an in-service test and

the receipt of error reports from the MS. This register increases one time for each fault on the F-bus.

Associated registers
MSFBFLT

Extension registers
None

Associated logs
MS403, MS404, MS407

MSFBFLT

Register type
Peg

Description
MSFBFLT counts the number of errors for each MS (counted in MSFBERR) that require the system to take the MS F-bus out of service. These errors include all events that result in the change to system busy (SYSB). The events include the critical failure of an in-service test, and error reports from the MS.

This register increases one time for each fault on the F-bus if the fault causes the F-bus to become SYSB.

Associated registers
MSFBERR

Extension registers
None

Associated logs
MS403, MS404

MSFBMBP

Register type
Peg

Description
MSFBMBP increases for each MS when the F-bus is manually busy (ManB) as a result of commands from the MAP terminal. This register increases one time for each time the F-bus goes from:

- OK to ManB
- system busy to ManB

- C-side busy to ManB
- offline to ManB

MSCLMBP increases one time if commands make a port on a channelized link busy. Register MSCLMBP increases one time for the channelized link and one time for each port on the link, if commands make the channelized link busy.

Associated registers
None

Extension registers
None

Associated logs
MS401, MS404

MSFBMBU

Register type
Peg

Description
MSFBMBU counts the length of time the MS F-bus is in the manual busy (ManB) state. This register increases one time for each ManB state of the F-bus.

Associated registers
None

Extension registers
None

Associated logs
None

MSFBSBU

Register type
Peg

Description
MSFBSBU counts the amount of time the MS F-bus is in the system busy state.

Associated registers
None

Extension registers
None

Associated logs
None

MSFBUSTP

Description

OM group Message Switch Frame Transport Bus Taps (MSFBUSTP) provides an accurate indication of the performance of the frame transport bus (F-bus) taps on the message switch (MS).

The following table lists the key and info fields associated with OM group MSFBUSTP:

Key field	Info field
MESSAGE_SWITCH_NUMBER	None

Related functional groups

There are no functional groups associated with OM group MSFBUSTP.

Registers

The following table lists the registers associated with OM group MSF-BUSTP and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MSFBUSTP

Register name	Measures
MSTPDIA	MS F-bus tap diagnostic count
MSTPDIAF	MS F-bus tap diagnostic failure count
MSTPERR	MS F-bus tap error count
MSTPFLT	MS F-bus tap fault count
MSTPMBP	MS F-bus tap manual busy peg count
MSTPMBU	MS F-bus tap manual busy usage count
MSTPSBU	MS F-bus tap system busy usage count

MSTPDIA

Register type
Peg

Description
MSTPDIA increases for each MS when the system performs a diagnostic test on an MS F-bus tap. Register MSTPDIA increases even if the diagnostic test passes or fails. These diagnostic tests include the test and return-to-service (RTS) commands on an F-bus tap. This register increases one time for each test on the F-bus tap.

Associated registers
MSTPDIAF

Extension registers
None

Associated logs
MS410

MSTPDIAF

Register type
Peg

Description
MSTPDIAF increases for each MS when a diagnostic test counted in MSTPDIA fails. If the F-bus tap is in service before the test, the system puts the F-bus tap out of service.

This register increases one time for each diagnostic test failure on the F-bus tap.

Associated registers
MSTPDIA

Extension registers
None

Associated logs
MS413

MSTPERR

Register type
Peg

Description
MSTPERR increases for each MS when the system detects errors at an in-service F-bus tap. Additional maintenance action does not affect the register count. These errors include the failure of an in-service test, and error reports from the MS. This register increases one time for each fault on an F-bus tap.

Associated registers
MSTPFLT

Extension registers
None

Associated logs
MS413, MS414, MS417

MSTPFLT

Register type
Peg

Description
MSTPFLT counts the number of errors (counted in MSTPERR) that take the MS F-bus tap out of service. These errors include all events that result in the change to system busy (SYSB). These events include the critical failure of an in-service test, and error reports from the MS.

This register increases one time for each fault on the F-bus if the fault causes the F-bus to become SYSB.

Associated registers
MSTPERR

Extension registers
None

Associated logs
MS413

MSTPMBP

Register type
Peg

Description
MSTPMBP increases for each MS when the F-bus tap is manually busy (ManB) as a result of commands from the MAP terminal. This register increases one time when the F-bus goes from:

- OK to ManB
- system busy to ManB
- C-side busy to ManB
- offline to ManB

Associated registers
None

Extension registers
None

Associated logs
MS411, MS412

MSTPMBU

Register type
Peg

Description
MSTPMBU counts the amount of time the MS F-bus tap is in the manually busy state. This register increases one time for each manually busy state of the F-bus tap.

Associated registers
None

Extension registers
None

Associated logs
None

MSTPSBU

Register type
Peg

Description
MSTPSBU counts the amount of time the MS F-bus tap is in the system busy state.

Associated registers
None

Extension registers
None

Associated logs
None

MSGPSOC

Description

OM group P-Side Messaging Occupancy (MSGPSOC) provides data to measure overload conditions on the P-side of a host XPM. Only SX05-based peripherals support this feature.

This OM records the number of incoming and outgoing messages every 10 seconds on each P-side data link. The XPM performs a check once a minute to determine whether the average number of messages on any data link exceeds the threshold value. If an overload condition occurs, the XPM sends a message to the CM. The switch generates a PM420 log any time the average message rate on any data link exceeds 60% of the threshold value.

To view data collection from this OM, use either the OMSHOW command at the command interpreter level or the PMDEBUG monitor interface. To turn off the data collection generated by this OM, change the value of office parameter MSGPSOC_OM_CONTROL in table OFCVAR from Y(es) to N(o).

The following table lists the key and info fields associated with OM group MSGPSOC:

Key field	Info field
None	MSGPSOC_OM_KEY

Related functional groups

There are no functional groups associated with OM group MSGPSOC.

Registers

The following table lists the registers associated with OM group MSGPSOC and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MSGPSOC (Sheet 1 of 2)

Register name	Measures
AM_O_20	Average messages 0% to 20%
AM_20_40	Average messages 20% to 40%

Registers for OM group MSGPSOC (Sheet 2 of 2)

Register name	Measures
AM_40_60	Average messages 40% to 60%
AM_60_80	Average messages 60% to 80%
AM_80_95	Average messages 80% to 95%
AM_OVLD	Average messages greater than 95%
AV_MSGS	Average messages per second over 15 min

AM_O_20

Register type
Peg

Description
The average number of messages received from the corresponding P-side node is less than or equal to 20% of link capacity.

Associated registers
None

Extension registers
None

Associated logs
None

AM_20_40

Register type
Peg

Description
The average number of messages received from the corresponding P-side node is greater than 40% and less than or equal to 60% of link capacity.

Associated registers
None

Extension registers
None

Associated logs
None

AM_40_60

Register type
Peg

Description
The average number of messages received from the corresponding P-side node is greater than 40% and less than or equal to 60% of link capacity.

Associated registers
None

Extension registers
None

Associated logs
None

AM_60_80

Register type
Peg

Description
The average number of messages received from the corresponding P-side node is greater than 60% and less than or equal to 80% of link capacity.

Associated registers
None

Extension registers
None

Associated logs
None

AM_80_95

Register type
Peg

Description
The average number of messages received from the corresponding P-side node is greater than 80% and less than or equal to 95% of link capacity.

Associated registers
None

Extension registers
None

Associated logs
None

AM_OVLD

Register type
Peg

Description
The average number of messages received from the corresponding P-side node is greater than 95% of link capacity.

Associated registers
None

Extension registers
None

Associated logs
None

AV_MSGS

Register type
Peg

Description
The average number of messages received per second is tracked over a 15-minute OM period.

Associated registers
None

Extension registers
None

Associated logs
None

MSGV

Description

This OM group captures counters for the Message Validator service.

The following table lists the key and info fields associated with OM group MSGV.

Key field	Info field
None	None

Related functional groups

The following functional groups are related to OM group MSGV:

- Session Manager

Registers

The following table lists the registers associated with OM group MSGV and what they measure. For a description of a register, click on the register name.

Registers for OM group MSGV

Register name	Measures
illegalEncryptedIMCnt	illegal encrypted IM count

illegalEncryptedIMCnt

Register type
Peg

Description
Tracks number of messages rejected due to unsupported encryption setting: “nt-im-2.0”

Associated registers
None

Extension registers
None

Associated logs
None

MTA

Description

OM group Metallic Test Access (MTA) counts seizures and failures of seizures of metallic test access (MTA) drivers. Usage registers record if MTA drivers are traffic busy or manually busy.

The OM group MTA refers to a single minibar switch of 16 horizontals and 20 verticals. The MTA card connects test equipment to line cards in a line concentrating device (LCD). Minibar drivers have a fixed CLLI, MTADRIVER, in table CLLI MTI. Measurements can be used for office provisioning and for monitoring components to determine if the components require maintenance action.

The following table lists the key and info fields associated with OM group MTA:

Key field	Info field
COMMON_LANGUAGE_NAME. This field contains a fixed CLLI, MTADRIVER	MTA_OM_INFO. This field contains the number of drivers assigned in table MTAMDRIVE

Related functional groups

There are no functional groups associated with OM group MTA.

Registers

The following table lists the registers associated with OM group MTA and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MTA

Register name	Measures
MTAMBU	Metallic test access (MTA) manual busy usage
MTASZFL	Metallic test access (MTA) seizure failures
MTASZRS	Metallic test access (MTA) seizure attempts
MTATRU	Metallic test access (MTA) traffic busy usage

MTAMBU

Register type
Usage

Scan rate
10 seconds

Description
MTAMBU records if MTA drivers are manually busy. This count includes call processing busy or lockout states.

If you set the office parameter OMINERLANGS to Y, counts are in deci-erlangs.

Associated registers
None

Extension registers
None

Associated logs
None

MTASZFL

Register type
Peg

Description
MTASZFL increases when the system abandons a set operation because the driver is in use or is out of service.

Associated registers
None

Extension registers
None

Associated logs
None

MTASZRS

Register type
Peg

Description
MTASZRS increases when the MTA drive performs a set operation on an MTA.

Associated registers
None

Extension registers
None

Associated logs
None

MTATRU

Register type
Usage

Scan rate
10 seconds

Description
MTAMBU records if MTA drivers are manually busy. This count includes call processing busy or lockout states.

If you set the office parameter OMINERLANGS to Y, counts are in deci-erlangs.

Associated registers
None

Extension registers
None

Associated logs
None

MTU

Description

OM group Magnetic Tape Unit Maintenance Summary (MTU) counts errors on in-service magnetic tape units (MTU). The OM group MTU also counts failures of a tape unit to recover from an error. Usage registers in MTU record if magnetic tape units are manually or system busy.

The following table lists the key and info fields associated with OM group MTU:

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group MTU.

Registers

The following table lists the registers associated with OM group MTU and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MTU

Register name	Measures
MTUERR	Magnetic tape unit (MTU) errors
MTUFLT	Magnetic tape unit (MTU) faults
MTUMBU	Magnetic tape unit (MTU) manual busy usage
MTUSBU	Magnetic tape unit (MTU) system busy usage

MTUERR

Register type
Peg

Description
MTUERR counts errors on an in-service magnetic tape unit.

The count includes read errors, write errors, negative results from self-test during initialization, and no response.

Associated registers
None

Extension registers
None

Associated logs
IOD208, IOD207, IOD209, IOGA101, MTD101

MTUFLT

Register type
Peg

Description
MTUFLT increases when a tape unit fails to recover from an error counted in MTUERR. The tape unit must remain system busy until manual interruption or a successful system-initiated recovery attempt.

Associated registers
None

Extension registers
None

Associated logs
IOD208, IOD210, IOD212, IOD213, IOD214, IOD215, SOS100, MTD103

MTUMBU

Register type
Usage

Scan rate
100 seconds

Description
MTUMBU records if magnetic tape units are manually busy.

Associated registers
None

Extension registers
None

Associated logs
IOD203

MTUSBU

Register type
Usage

Scan rate
100 seconds

Description
MTUSBU records if magnetic tape units are system busy.

Associated registers
None

Extension registers
None

Associated logs
IOD204, MTD103

MULTAUTH

Description

Multiple Calls Per Authcode (MULTAUTH) is an OM group.

The AUTHCODX tables have an option called CPACTVAL. If the option is set for a particular authcode, and if that authcode is in use simultaneously for a number of calls greater than the maximum allowed for a given node, then:

- a treatment is set
- the event is logged
- the failure action is taken for the call

For legacy agents, the MULTAUTH OM group provides the ability to determine the number of times that an authcode is used above the maximum number of times set in table AUTHCODX option CPACTVAL field LIMIT.

The following table lists the key and info fields associated with OM group MULTAUTH:

Key field	Info field
None	None

Related functional groups

There are no functional groups associated with OM group MULTAUTH.

Registers

The following table lists the registers associated with OM group MULTAUTH and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MULTAUTH

Register name	Measures
MULTAUTH	Multiple calls per authcode

MULTAUTH

Register type
Peg

Description
MULTAUTH counts the number of calls with authcodes in use above the maximum number of calls allowed.

Associated registers
None

Extension registers
None

Associated logs
MAUC101

MWICTCAP

Description

OM group Message Waiting Indicator for Transaction Capabilities Application Part (MWICTCAP) collects and displays counts for transaction capabilities application part (TCAP) messages for each integrated services digital network (ISDN) primary rate interface (PRI) access interface. MWICTCAP is maintained on a 30-minute basis.

The following table lists the key and info fields associated with OM group MWICTCAP:

Key field	Info field
Logical terminal identifier (LTID) for PRI interface	None

Related functional groups

NI0-PRI Message Services (Functional Group NI-00037) is associated with OM group MWICTCAP.

Registers

The following table lists the registers associated with OM group MWICTCAP and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MWICTCAP

Register name	Measures
ACTATT	MWI activation TCAP attempts
DEACTATT	MWI deactivation TCAP attempts
ACTPROB	Problems with MWI activation on TCAP attempts
DEACTPRB	problems with MWI deactivation TCAP attempts
UNIDIREC	unidirectional TCAP responses to MWI control attempts
UNIDATS	unitdata service TCAP responses to MWI control attempts

ACTATT

Register type
Peg

Description
ACTATT is the total number of transactions capabilities application part (TCAP) queries sent in an attempt to activate message waiting indicator (MWI) for remote client use.

Associated registers
None

Extension registers
None

Associated logs
None

DEACTATT

Register type
Peg

Description
DEACTATT is the total number of TCAP queries sent in an attempt to deactivate MWI for remote client use.

Associated registers
None

Extension registers
None

Associated logs
None

ACTPROB

Register type
Peg

Description
ACTPROB is pegged when it receives TCAP responses with a reject or return error component indicating that an attempt to activate MWI is unsuccessful.

Associated registers
None

Extension registers
None

Associated logs
None

DEACTPRB

Register type
Peg

Description
DEACTPRB is pegged when it receives TCAP Responses with a reject or return error component.

Associated registers
None

Extension registers
None

Associated logs
None

UNIDIREC

Register type
Peg

Description
UNIDIREC is pegged when it receives TCAP messages with a package type of unidirectional and a reject component.

Associated registers
None

Extension registers
None

Associated logs
None

UNIDATS

Register type
Peg

Description
UNITDATS is pegged when it receives unitdata services messages.

Associated registers
None

Extension registers
None

Associated logs
None

MWTCAR

Description

OM group Message waiting call request (MWTCAR) provides information on feature use and traffic measurements. MWTCAR also provides information on failures that result from a lack of software and hardware resources for the following features:

- Integrated Business Network (IBN)
- Message Waiting (MWT)
- Call Request (CAR)
- Call Memory (CM)
- Call Covering (CCV)
- CLASS Message Waiting Indicator (CMWI)

The MWT feature allows a station to receive and retrieve messages from a message center. To receive and retrieve messages the station dials the message center directory number (MCDN). A lit MWT lamp or stuttering dial tone notifies the station that a message/call request waits for retrieval.

The CMWI feature allows an MWT subscriber to know if messages wait for retrieval. The subscriber must have a CLASS set with a MWT lamp and/or display device. A CLASS set is a 500- or 2500- type set that can receive and understand CLASS modem transmissions. The CLASS modem resource (CMR) card transmits the lamp/display control information to the set.

The CAR feature allows the user to make call requests against another station. The user makes the call requests when the terminating station is busy or does not answer. The system can only place one call request against a terminating station.

The Call Request Exempt (CRX) feature exempts the user from call requests against the station.

Several access codes associate with this feature:

- Call request activate (CRA) - The subscriber can encounter a busy line or a line that does not answer. To place a call request against the line, the subscriber dials the CRA access code.
- Call request retrieve (CRR) - To retrieve message waiting and call requests, the subscriber dials the CRR access code.

- Call request delete specific (CRDS) -To delete the call request for a line the requestor can dial the CRDS access code. The requestor dials the directory number (DN) of the line against which the user made the call request. A confirmation tone returns to the requestor.
- Call request delete all (CRDA) - To delete all the messages waiting and call requests for a line, the requestor dials the CRDA access code. A confirmation tone returns to the requestor.

There are two ways to receive a message or call request:

- dial the MCDN - If a message waits, the attendant relays the message. You do not retrieve messages in the order that they queue. The call request retrieve (CRR) access code, defined in table IBNXLA dials if no message is present.
- dial the CRR access code and retrieve the messages or call requests in the order they queue - If the highest message in the queue is a message from the center, the retrieving station connects to the center. If the highest message in the queue is not from the center, the system rings the call request. When the station that made the request is busy or does not answer, the call request remains in the queue.

The MWT lamp or stuttered dial tone remains on until the queue does not contain message or call requests.

The CM feature allows the called party to store the identity of the calling party as a message against the line. The called party can return the call to the calling party without dialing the directory number.

The CCV feature allows a third party (covering station) to answer a call intended for the base station. CCV allows the third party to leave a message for the base station on behalf of the calling party.

The following table lists the key and info fields associated with OM group MWTCAR:

Key field	Info field
None	OMIBNGINFO. The info field Identifies the CUSTNAME of the customer group, defined in table CUSTENG. The tuple number of MWTCAR functions as the key in the OMSHOW command.

Parameter FTRQAGENTS in table OFCENG specifies the number of agents that can have the message waiting/call request feature.

Parameter FTRQSIZE in table OFCENG specifies the size of the feature.

Parameter FTRQ2WAREAS in table OFCENG specifies the number of FTRQ 2 word areas required for the engineering interval.

Parameter FTRQ8WPERMS in table OFCENG specifies the number of FTRQ 8 word permanent blocks needed for the call memory and call covering features.

Parameter NO_OF_FTR_CONTROL_BLKS in table OFCENG specifies the number of control blocks required for this feature.

Parameter NO_OF_FTR_DATA_BLKS in table OFCENG specifies the number of control blocks required for this feature.

The system implements MWT when the data feature field is assigned MWT in table IBNFEAT.

The system implements CAR when you enter Y in field CAR in table IBNFEAY.

The system implements CRx when you enter Y in field CRX in table IBNFEAY.

Field NOTICE in table IBNFEAT allows the operating company to assign the CWMI message waiting notice to each line.

Field ENABLED in table RESOFC allows the operating company to turn on or off delivery of the message waiting indicator information. The system delivers this information to all CMWI subscribers in the office.

Field RETRSMIT in table RESOFC indicates the maximum number of attempts permitted to transmit the message waiting information. The system transmit the information to the set of the subscriber.

Field FEATURE in table IBNXLA indicates the access codes for activation and deactivation of the CMWI feature.

Related functional groups

Integrated business network (IBN) is associated with functional group MWTCAR.

Registers

The following table lists the registers associated with OM group MWT-CAR and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MWTCAR (Sheet 1 of 2)

Register name	Measures
CARATT	Call request attempts
CARDOVFL	Call request delete specific overflows
CARFAIL	Call request failures
CARODACT	Call request delete activation
CAROVFL	Call request overflow
CARRETRV	Call request retrieval
CARRFAIL	Call request retrieval failures
CARROVFL	Call request retrieval overflow
CARDTACT	Call request delete all
CCVATT	Call covering activation attempts
CCVFAIL	Call covering activation failures
CCVOVFL	Call covering software overflow
CMATT	Call memory activation attempts
CMFAIL	Call memory activation failures
CMOVFL	Call memory software resources overflow
CMWIACT	CMWI negative acknowledgements
CMWIDACT	CMWI deactivations
CMWINACK	CMWI no software resources
CMWISW	CMWI retransmissions
CMWITRMS	CMWI unavailable

Registers for OM group MWTCAR (Sheet 2 of 2)

Register name	Measures
CMWIUNAV	CMWI unavailable
CMWRACT	CMWIRING activations
CMWRDACT	CMWIRING deactivations
CMWRDNAC	CMWIRING activation failures
CMWRDNDA	CMWIRING deactivations failures
MWTACT	Message waiting activations
MWTATT	Message waiting attempts
MWTDEACT	Message waiting deactivations
MWTOVFL	Message waiting overflow
MWTQUERY	Message waiting queries

CARATT

Register type
Peg

Description
CARATT counts the attempts to activate message waiting (MWT). The subscriber dials the call request access (CRA) code to activate message waiting.

Associated registers
None

Extension registers
None

Associated logs
None

CARDOVFL

Register type
Peg

Description
CARDOVFL counts attempts to deactivate a call request that fail. To deactivate a call request, the called party dials the call request delete specific access code.

Parameter NO_OF_FTR_DATA_BLKS in table OFCENG specifies a lack of software resources which cause failures.

Associated registers
TRMT3_NOSR, which indicates no software resources, increases when register CARDOVFL increases

Extension registers
None

Associated logs
LINE138

CARFAIL

Register type
Peg

Description
CARFAIL counts attempts to activate the call request feature that fail because of feature restrictions. This count includes attempts to activate call request against a station that has the call request exempt (CRX) option.

Associated registers
None

Extension registers
None

Associated logs
LINE138

CARODACT

Register type
Peg

Description
CARODACT increases when a called party dials the call request delete specific (CRDS) access code. The called party dials the code in an attempt to remove a call request.

Associated registers
None

Extension registers
None

Associated logs
None

CAROVFL

Register type
Peg

Description
CAROVFL counts call request attempts (code CRA) that fail because of a lack of feature data blocks.

Parameter NO_OF_FTR_DATA_BLKS in table OFCENG specifies feature data blocks.

Associated registers
TRMT3_NOSR, which indicates the absence of software resources, increases when CAROVFL is increases.

Extension registers
None

Associated logs
LINE138

CARRETRV

Register type
Peg

Description
CARRETRV counts attempts to retrieve a call request.

Associated registers
None

Extension registers
None

Associated logs
None

CARRFAIL

Register type
Peg

Description
CARRFAIL counts attempts to retrieve a call request that fail because of feature restrictions.

Associated registers
The following registers are associated with register CARRFAIL:

- TRMT3_FINAL, which increases when CARRFAIL increases if the reason for failure is that the system does not allow the feature
- TRMT1_BUSY, which increases when CARRFAIL increases if the reason for failure is that the directory number of the requestor is busy.

Extension registers
None

Associated logs
LINE138

CARROVFL

Register type
Peg

Description
CARROVFL counts attempts to retrieve a call request that fail because of a lack of feature data blocks.

Parameter NO_OF_FTR_DATA_BLKS in table OFCENG specifies feature data blocks.

Associated registers
TRMT3_NOSR, which indicates the absence of software resources, increases when CARROVFL increases.

Extension registers
None

Associated logs
LINE138

CARDTACT

Register type
Peg

Description
CARTDACT counts calls that a caller removes from a station. To remove calls from a station, the caller dials the call request delete all (CRDA) access code.

Associated registers
None

Extension registers
None

Associated logs
None

CCVATT

Register type
Peg

Description
CCVATT counts attempts to activate call covering. The subscriber presses the CCV key to activate call covering. If call covering activates, the following occur:

- the answering party receives a confirmation tone
- the EMW lamp on the set of the called party turns on
- the system saves the directory number of the calling party in a message against the line of the called party.

Associated registers
None

Extension registers
None

Associated logs
None

CCVFAIL

Register type
Peg

Description
CCVFAIL counts attempts to activate call covering that fail because of feature restrictions. This count includes attempts to activate call covering when the following occurs:

- the answering party presses the CCV key when the incoming call is not a direct call
- the primary part of the MADN group does not have EMW assigned
- the calling party and the MADN group are not in the same customer group family
- the answering party is not a secondary member of the MADN group

Associated registers
None

Extension registers
None

Associated logs
None

CCVOVFL

Register type
Peg

Description
CCVOVFL counts call covering attempts that fail because of a lack of FTRQ 8 word permanent (FTRQ8WPERMS) blocks.

Parameter FTRQ8WPERMS in table OFCENG specifies the number number of FTRQ 8 word permanent blocks.

Associated registers
None

Extension registers
None

Associated logs
None

CMATT

Register type
Peg

Description
CMATT counts attempts to activate call memory. To activate call memory, the subscriber presses the LVM key or the EMW key. If call memory activates, the called party receives a confirmation tone. The system connects the called party and the calling party. The EMW lamp on the set of the called party turns on. The system saves the directory number of the caller in a message against the line of the called party.

Associated registers
None

Extension registers
None

Associated logs
None

CMFAIL

Register type
Peg

Description
CMFAIL counts attempts to activate call memory that fail because of feature restrictions. This count includes attempts to activate call memory when:

- the called party presses the LVM key or the EMW key when the incoming call is not a direct call
- the base station does not have EMW assigned
- the calling party and the base station are not in the same customer group family

Associated registers
None

Extension registers
None

Associated logs
None

CMOVFL

Register type
Peg

Description
CMOVFL counts call memory attempts that fail because of a lack of FTRQ 8 word permanent (FTRQ8WPERMS) blocks.

Parameter FTRQ8WPERMS in table OFCENG specifies the number of FTRQ 8 word permanent blocks.

Associated registers
None

Extension registers
None

Associated logs
MS303

CMWIACT

Register type
Peg

Description
CMWIACT counts attempts to activate CLASS message waiting indicator (CMWI) on the set.

Associated registers
None

Extension registers
None

Associated logs
None

CMWIDACT

Register type
Peg

Description
CMWIDACT counts attempts to deactivate CLASS message waiting indicator (CMWI) on the set.

Associated registers
None

Extension registers
None

Associated logs
None

CMWINACK

Register type
Peg

Description
CMWINACK counts CLASS message waiting indicator (CMWI) messages that the system cannot transmit correctly. The system cannot transmit the messages correctly because of a timeout of failure message from the peripheral module.

Associated registers
None

Extension registers
None

Associated logs
None

CMWISW

Register type
Peg

Description
CMWISW counts CLASS-message waiting indicator (CMWI) requests that are discarded. CMWI requests are discarded because there are not enough software resources in the central control (CC).

Associated registers
None

Extension registers
None

Associated logs
None

CMWITRMS

Register type
Peg

Description
CMWITRMS counts CLASS message waiting indicator (CMWI) the system discards. The system discards the messages because the number of retransmissions reaches the maximum.

Associated registers
None

Extension registers
None

Associated logs
None

CMWIUNAV

Register type
Peg

Description
CMWIUNAV counts CLASS message waiting indicator (CMWI) requests the system discards because the CLASS modem resource card is not available.

Associated registers
None

Extension registers
None

Associated logs
None

CMWRACT

Register type
Peg

Description
CMWRACT counts attempts to ENABLE the ringing aspect of the CLASS message waiting indicator (CMWI) feature. To activate the ringing aspect of the CLASS message waiting indicator (CMWI) feature, the subscriber dials the CMWRING feature activation codes.

Associated registers
None

Extension registers
None

Associated logs
None

CMWRDACT

Register type
Peg

Description
CMWRDACT counts attempts to disable the ringing aspect of the CLASS message waiting indicator (CMWI) feature. To disable the ringing aspect, the subscriber dials the CMWIRING feature deactivation code.

Associated registers
None

Extension registers
None

Associated logs
None

CMWRDNAC

Register type
Peg

Description
CMWRDNAC counts attempts that did not enable the ringing aspect of the CLASS-message waiting indicator (CMWI) feature. To enable the ringing aspect, the subscriber dials the CMWIRING feature activation code.

Associated registers
None

Extension registers
None

Associated logs
None

CMWRDNDA

Register type
Peg

Description
CMWRDNDA counts attempts that did not disable the ringing aspect of the CLASS-message waiting indicator (CMWI) feature. To disable the ringing aspect, the subscriber dials the CMWIRING feature release code.

Associated registers
None

Extension registers
None

Associated logs
None

MWTACT

Register type
Peg

Description
MWTACT increases when the message center activates the message waiting lamp.

An activated message waiting lamp indicates that a call request or a message is waiting at the message center.

Associated registers
None

Extension registers
None

Associated logs
None

MWTATT

Register type
Peg

Description
MWTATT counts attempts to activate message waiting. To activate message waiting the subscriber terminates at a message center.

To reach the message center a subscriber calls a line that the system forwards to the message center. To reach the message center, the subscriber can also dial the message center directory number (MCDN).

Associated registers
None

Extension registers
None

Associated logs
None

MWTDEACT

Register type
Usage

Description
MWTDEACT increases when the message center deactivates the message center waiting lamp.

A deactivated message waiting lamp indicates the number of times the subscriber retrieves messages from the message center.

Associated registers
None

Extension registers
None

Associated logs
None

MWTOVFL

Register type
Peg

Description
MWTOVFL increases when the message center attendant cannot activate the message waiting lamp. The attendant cannot activate the message waiting lamp because of a lack of feature data blocks.

Parameters NO_OF_FTR_DATA_BLKS and FTRQ2WAREAS in table OFCENG specific feature data blocks.

The display of the message center attendant will show “TRY AGAIN".

Associated registers
TRMT3_NOSR, which indicates a lack of software resources, when MWTOVFL increases

Extension registers
None

Associated logs
LINE138

MWTQUERY

Register type
Peg

Description
MWTQUERY increases when a message center attendant queries the status of a station for messages in the queue.

Associated registers
None

Extension registers
None

Associated logs
None

MWTCAR2

Description

OM group Message Waiting Call Request (MWTCAR2) increases when a message is in the queue against a line that has the message waiting line option. The notice does not affect the OM group count. Registers in this group record the use of periodic ring notification (PRN).

The following table lists the key and info fields associated with OM group MWTCAR2:

Key field	Info field
None	OMIBNGINFO

Related functional groups

There are no functional groups associated with OM group MWTCAR2.

Registers

The following table lists the registers associated with OM group MWTCAR2 and what they measure. For a detailed description of a register, click on the register name.

Registers for OM group MWTCAR2

Register name	Measures
PRNACT	PRN activation
PRNRACT	PRN ringing activation
PRNRDACT	PRN ringing deactivation

PRNACT

Register type
Peg

Description
PRNACT increases each time a messages is in the queue against a line that has PRN.

Associated registers
None

Extension registers
None

Associated logs
None

PRNRACT

Register type
Peg

Description
PRNRACT increases each time the user attempts to activate the ringing for the PRN notice. To activate the ringing, the user dials the activation code.

Associated registers
None

Extension registers
None

Associated logs
None

PRNRDACT

Register type
Peg

Description
PRNRDACT increases each time the user attempts to deactivate the ringing for the PRN notice. To deactivate ringing, the user dials the deactivation code.

Associated registers
None

Extension registers
None

Associated logs
None