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IW SPM IP Performance Management

Performance management strategy

SPM performance management parameters are configured using several data schema tables (refer to the *Data Schema manual*), Operational Measurements (OMs), and Office Parameters (OParms).

Tools and utilities

Data schema tables and OMs are accessed using the MAP display commands (refer to the *Data Schema manual*).

Operational measurements

Operational measurements (OMs) are used to view performance data and are summarized in the table below.

Table 1 Summary of performance management indicators

OM name	OM register	Purpose
ENETPLNK		Enet Peripheral Link (ENETPLNK) monitors the performance of enhanced network (ENET) peripheral side (P-side) links.
	ENLKERR	Increments when an error is detected on in-service links between the network and an SPM.
	ENLKFLT	Increments by 1, whenever the system try to recover a P-side link between the ENET and an SPM and the attempt fails.
	ENLKISOU	Increments every 100 seconds, if the SPM is in isolated (NA) state because of an out-of-service link.
	ENMBLKU	Increments every 100 seconds, by the number of links which are in MANB state.
	ENMLKISO	Increments when an in-service ENET P-side link becomes MANB and cause isolation of an SPM.

Table 1 Summary of performance management indicators

OM name	OM register	Purpose
	ENMLKPAR	Increments when In Service ENET P-side links become MANB while any link on the mate plane is out of service.
	ENSBLKU	Increments every 100 seconds, by the number of links which are in SYSB state.
	ENSLKISO	Increments when an in-service ENET P-side link becomes SYSB and cause isolation of an SPM.
	ENSLKPAR	Increments when in-service ENET P-side links become SYSB while any link on the mate plane is out of service.
	ENSPCHER	Increments when an error is detected on speech connections through the network.
IWBM		Counts different events on the IW Bridge Management system (IWBM). IW SPMs use the IWBM system to interact with time-division multiplexed (TDM) trunks and announcements.
	IWGBATT	Interworking get_bridge attempts. Lists the number of get_bridge attempts.
	IWGBATT2	An extension for additional IWGBATT pegs that may occur beyond the register limit.
	IWGBFAIL	Interworking get_bridge attempts failed. Lists the number of get_bridge attempts that fail as a result of queue failure. The normal cause of a queue failure is that all bridges are busy.
	IWGBABRT	Interworking get_bridge attempts aborted. Lists the number of get_bridge attempts that the system aborts as a result of incorrect data.
	IWFBATT	Interworking free_bridge attempts. Lists the number of free_bridge attempts the system makes. When an interworked call hangs up, the system makes a free_bridge attempt.
	IWFBATT2	An extension for additional IWFBATT pegs that may occur beyond the register limit.

Table 1 Summary of performance management indicators

OM name	OM register	Purpose
	IWFBFAIL	Interworking free_bridge attempts failed. Lists the number of free_bridge attempts that fail.
	IWFBABRT	Interworking free_bridge attempts aborted. Lists the number of free_bridge attempts that the system aborts as a result of incorrect data.
	IWONSET1	Interworking onset 1. Indicates that the number of in use IW bridges exceeds 70% of the system bridges. The system pegs this register when the number of in use bridges reaches 70%. The system must peg register IWABATE1 before pegging IWONSET1 again.
	IWONSET2	Interworking onset 2. Indicates that the number of in use IW bridges exceeds 90% of the system bridges. The system pegs this register when the number of in use bridges reaches 90%. The system must peg register IWABATE2 before pegging IWONSET2 again
	IWABATE1	Interworking bridge abate 1. Indicates that the total number of IW bridges in use is less than 65% of the total system bridges. The system pegs this register after pegging register IWONSET1 and then crosses the 65% threshold. The system must peg register IWONSET1 again before it pegs this register a second time.
	IWABATE2	Interworking bridge abate 2. Indicates that the total number of IW bridges in use is less than 85% of the total system bridges. The system pegs this register after pegging register IWONSET2 and then crosses the 85% threshold. The system must peg register IWONSET2 again before it pegs this register a second time.
NMTCUNIT		Node Maintenance Unit Measurements (NMTCUNIT) measures the overall maintenance reliability performance of one unit of a node. The data provides an indication of the number of system troubles and out-of-service occurrences.

Table 1 Summary of performance management indicators

OM name	OM register	Purpose
	NDUERR	Increments when any of the following happens. • Link300 logs are generated due to faults in links connected to a unit of SPM. • A valid WAI message is received for a unit of SPM. • A restart report is received for a unit of an SPM. • A Unit of SPM goes down to SYSB state from INSV or ISTB state. • A NDUFLT is incremented for a unit.
	NDUFLT	Increments when either one of the following happens: The node goes to ISTB state from INSV. The node goes to SYSB from ISTB or INSV.
	NDUMBP	Increments when a Unit of an SPM goes to MANB state from any other state.
	NDUMBU	Increments every 100 seconds if a Unit of an SPM remains in MANB state.
	NDUMRRST	Increments by 1, when a reload restart is initiated on a Unit by manual maintenance actions. For example, if a loadmod command on a unit completes successfully, this register increments.
	NDUNAP	Increments when a Unit of an SPM goes to Not Available (NA) state.
	NDUNAU	Increments every 100 seconds if a Unit of an SPM is in NA state.
	NDUSBP	Increments when a Unit of an SPM goes to SYSB state from INSV or ISTB state.
	NDUSBU	Increments every 100 seconds if a Unit of an SPM remains in SYSB state.
	NDUSRRST	Increments by 1, when a reload restart is initiated on a Unit by the system. For example, if a system loadmod happens on a unit, this register increments by 1.

Table 1 Summary of performance management indicators

OM name	OM register	Purpose
	NDUSWERR	Increments when a SPM 311 logs is generated for a Unit in an SPM.
	NDUTRAP	Increments when a SPM 312 logs is generated for a Unit in an SPM.
PM		Peripheral Module (PM) OM Group counts the number of errors, faults and maintenance state transitions for DMS peripheral modules (PM) with node number.
	PMERR	Increments when one of the following happens: • Link300 logs are generated due to faults in links connected to the active unit. • A valid WAI message is received for the active unit. • A restart report is received for the active unit. • The SPM goes down to SYSB state from INSV or ISTB state. • PMFLT is incremented for a node.
	PMFLT	Increments when either of the following happens: • The node goes to ISTB state from INSV. • The node goes to SYSB from ISTB or INSV.
	PMINTEG	Increments when an integrity fault occurs and ENCP 101 log is generated.
	PMMBP	Increments by 1 whenever a node goes to MANB state from any other state.
	PMMCXFR	Increments by 1 whenever a force prot switching completes successfully.
	PMMMBU	Increments by 1, if a node remains in MANB state for 100 seconds.
	PMMSBU	Increments by 1 if a node remains in SYSB state for 100 seconds.
	PMMWXFR	Increments by 1 whenever a manual prot switching completes successfully.

Table 1 Summary of performance management indicators

OM name	OM register	Purpose
	PMSBP	Increments by 1 whenever a node goes to SYSB state from any other state.
	PMUMBU	Increments by 1, if any of the units in the node remains in MANB state for 100 seconds.
	PMUSBU	Increments by 1, if any of the units in the node remains in SYSB state for 100 seconds.
PMTYP		PMTYP is used to assess the performance of a group of PMs of the same type.
	PMTERR	Increments whenever the OM register PM:PMERR is incremented for any of the SPMs in a switch.
	PMTFLT	Increments whenever the OM register PM:PMFLT is incremented for any of the SPMs in a switch.
	PMTINTEG	Increments whenever the OM register PM:PMINTEG is incremented for any of the SPMs in a switch.
	PMTMBP	Increments whenever the OM register PM:PMMBP is incremented for any of the SPMs in a switch.
	PMTMMBU	Increments every 100 seconds by the number of SPMs which are in MANB state.
	PMTMSBU	Increments every 100 seconds by the number of SPMs which are in SYSB state.
	PMTMWXFR	Increments whenever the OM register PM:PMMWXFR is incremented for any of the SPMs in a switch.
	PMTMCXFR	Increments whenever the OM register PM:PMMCXFR is incremented for any of the SPMs in a switch.
	PMTSBP	Increments whenever the OM register PM:PMSBP is incremented for any of the SPMs in a switch.
	PMTUMBU	Increments every 100 seconds by the number of SPMs with at least one unit in MANB state.
	PMTUSBU	Increments every 100 seconds by the number of SPMs with at least one unit in SYSB state.

Office parameters

Office parameters (OParms) that can be modified are summarized in the table below.

Table 2 Summary of office parameters

OParm	Data Schema Table	Purpose
DPT_MAX_PORTS	OFCVAR	Defines the maximum number of VToA and VToIP DPT ports that are available for use by the Call Server at any given time.
ENABLE_METERING	OFCENG	Deactivates/activates all of the following: • line/trunk software metering • feature metering • SPM/COIN hardware metering ENABLE_METERING can be set to N (deactivated) or Y (activated), with a default of N. ***Note:*** If the NCW_MOG tuple in table MTRSYSPM is set to DISALLOWED, then setting ENABLE_METERING from Y to N is not allowed.

Table 2 Summary of office parameters

OParm	Data Schema Table	Purpose
FDCP_MFC_EDTK_ON (Flexible Digital Cas Platform Multi frequency Compelled Event Driven Trunk Call Processing ON)	OFCENG	controls the Intelligent Network (IN) triggers from FDCP MFC trunks. The FDCP_MFC_EDTK_ON oparm needs to be datafilled as Y in order to have IN triggers from FDCP MFC trunks. For offices which do not require IN triggering from FDCP MFC trunks, this parameter needs to be set to N.
MAX_CCNTLRX_XLA_PER_CALL (maximum call control re-translate translations per call)	OFCVAR	controls the maximum number of allowed re-translations per single call that can be triggered by the CCNTLRX selector. The range is 0-7 (with a default of 3). A value of 0 disables the CCNTLRX selector.

Retrieving/viewing current performance data

OM data can be viewed using the OMSHOW command. Both active and holding counts can be viewed. Counts remain in active registers until the end of the holding period. At the end of the holding period, the counts are transferred to the holding registers.

The following procedure illustrates the use of the OMSHOW command for active IWBM counts.

Viewing performance data

At the MAP level

1 View OM counts by typing

`>OMSHOW <om_name> <class>`

and pressing the Enter key.

where

om_name
is the name of the OM (IWBM)

class
is the name of the class to appear (ACTIVE or HOLDING)

Example of a MAP screen:

```
>OMSHOW IWBM ACTIVE
IWBM
CLASS: ACTIVE
START:2001/08/16 13:30:00 THU; STOP: 2001/08/16 13:57:47 THU;
SLOWSAMPLES: 3; FASTSAMPLES: 26;


   IWGBATT  IWGBATT2   IWGBFAIL    IWGBABRT
   IFBATT   IWFBATT2   IWFBFAIL    IWFBABRT
   IWONSET1 IWONSET2   IWABATE1    IWABATE2

0
          0         0          0        0
          0         0          0        0
          0         0          0        0
```

Viewing IWS Layer Performance Statistics

Use the following procedure to view Interworking SPM (IWS) Layer performance statistics from a MAP display. The displayed data represents the current15 minute time interval.

Viewing IWS Layer Performance Statistics

At the MAP terminal

1 Access the IWS Connection MAP level by typing

`>MAPCI;MTC;PM;POST SPM <spm_no>;IWSCONN`

and pressing the Enter key.

where

<spm_no>
is the number of the SPM (0 to 85)

2 View IWS layer performance monitoring statistics for the active IWS RM by typing

`>PMSTAT`

and pressing the Enter key.

Example of a MAP screen:

```
PmStat
IWS layer PM Statistics on SPM 3
Period: 2002/02/25 11:00 - 11:14  Data is Valid
        Incoming Cells  Outgoing Cells
AAL1            39648               0
AAL5           192860           18421
Other               0            3622
Total          196449           22043
Discarded           0
```

3 You have completed this procedure. Return to the CI level of the MAP screen by typing

`>QUIT ALL`

and pressing the Enter key.