SPM performance management

What's new

The following sections detail what is new in SPM performance management (NN10141-711) for release 9.

Features

There were no new features added to this document.

Other changes

There were no other changes made to this document.

Performance management strategy

SPM performance management parameters are configured using several data schema tables, Operational Measurements (OMs), and Office Parameters (OParms).

Tools and utilities

Data schema tables and OMs are accessed using the MAP display commands.

Operational measurements

Operational measurements (OMs) are used to view performance data and are summarized in the table below, Summary of performance management indicators.

Summary of performance management indicators (Sheet 1 of 11)

OM name	OM register	Purpose
DSPRMAN		contains resource utilization information for DSP resources.
	COTDENY	counts the number of denied COT requests.
	COTFAIL	counts the CCS7 COT failures for trunks on each SPM node.
	COTHI	counts the highest number of COT resources allocated from the node-level pool during a collection/transfer period.
	COTLOST	counts the COT resources taken away from or lost by resource management users (such as call processing).
	COTLOW	Counts the low-water-mark threshold violations on the SPM node-level pool of COT resources since the last collection period.
	COTUTIL	calculates the percentage of the total COT resources in the node-level pool allocated to resource management users (such as call processing).
	DTMFDENY	counts the number of denied DTMF requests
	DTMFHI	counts the highest number of DTMF resources allocated from the node-level pool during a collection/transfer period.
	DTMFLOST	counts the DTMF resources removed from SPM resource management users (such as call processing) due to sparing actions.
	DTMFLOW	counts the low-water-mark threshold violations on the SPM node-level pool of DTMF resources since the last collection period.

Summary of performance management indicators (Sheet 2 of 11)

OM name	OM register	Purpose
	DTMFUTIL	calculates the percentage of the total DTMF resources in the node-level pool allocated to resource management users (such as call processing).
	MFDENY	counts the number of denied MF requests.
	MFHI	counts the highest number of MF resources allocated from the node-level pool during a collection/transfer period.
	MFLOST	counts the MF resources removed from SPM resource management users (such as call processing) due to sparing actions.
	MFLOW	counts the low-water-mark threshold violations on the SPM node-level pool of MF resources since the last collection period.
	MFUTIL	calculates the percentage of the total MF resources in the node-level pool allocated to resource management users (such as call processing).
	TONEDENY	counts the number of denied TONESYN requests.
	TONELOST	counts the TONE resources taken away from SPM resource management users (such as call processing) due to sparing actions.
	TONELOW	counts the low-water-mark threshold violations on the SPM node-level pool of TONE resources since the last collection period.
	TONEUTIL	calculates the percentage of the total TONE resources in the node-level pool allocated to resource management users (such as call processing).
	TONHI	counts the highest number of TONE resources allocated from the node-level pool during a collection/transfer period.
ECANRMAN		contains echo cancellation statistics.

Summary of performance management indicators (Sheet 3 of 11)

OM name	OM register	Purpose
	ATMPTS	counts the total number of attempts to allocate an echo canceller resource from the ECAN pool on the SPM.
	ATMPTSOV	counts the total number of times during the collection period (OM transfer period) the register ATMPTS has overflowed.
	ECANDENY	counts the number of denied ECAN requests.
	ECANFAIL	counts the number of ECAN failures to converge SOS events
	ECANHI	counts the highest number of ECAN resources allocated from the node-level pool during a collection/transfer period.
	ECANLOST	counts the ECAN resources removed from SPM resource management users (such as call processing) due to sparing actions.
	ECANLOW	counts the low-water-mark threshold violations on the SPM node-level pool of ECAN resources since the last collection period.
	ECANUTIL	calculates the percentage of the total ECAN resources in the node-level pool allocated to resource management users (such as call processing).
	USGSECS	counts the total of seconds during the collection period for which at least one ECAN was allocated.
ENETPLNK		Enet Peripheral Link (ENETPLNK) monitors the performance of enhanced network (ENET) peripheral side (P-side) links.
	ENLKERR	increments when an InSv DS-512link goes to ISTB state (non-critical fault).
	ENLKFLT	increments when there is a fault on an InSv DS-512 link (for example, SYSB state).
	ENLKISOU	increments every 100 seconds, if the SPM is in isolated (NA) state because of an out-of-service link.

Summary of performance management indicators (Sheet 4 of 11)

OM name	OM register	Purpose
	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 causes isolation of an SPM.
	ENMLKPAR	increments when In Service ENET P-side links becomes 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 causes 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 ENET integrity error or when an ENCP101 log is generated for the SPM.
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.
	NDUERR	increments when any of the following occurs: • 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 one of the following occurs: • the node goes to ISTB state from INSV, or • the node goes to SYSB from ISTB or INSV

Summary of performance management indicators (Sheet 5 of 11)

OM name	OM register	Purpose
	NDUMBP	increments when a Unit of an SPM goes to MANB state from any other state.
	NDUMBU	increments every 100 seconds that 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, when a LOADMOD command on a unit completes successfully, this register increments.
	NDUNAP	increments when a unit of an SPM goes to a Not Available (NA) state.
	NDUNAU	increments every 100 seconds that 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 that 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.
	NDUSWERR	increments when a SPM 311 logs is generated for a unit in an SPM.
	NDUTRAP	increments when a SPM 312 log 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.

Summary of performance management indicators (Sheet 6 of 11)

OM name	OM register	Purpose
	PMERR	increments when one of the following occurs: • 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 one of the following occurs: • the node goes to ISTB state from INSV, or • 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 1when a node remains in MANB state for 100 seconds, or more.
	PMMSBU	increments by 1 if a node remains in SYSB state for 100 seconds, or more.
	PMMWXFR	increments by 1 whenever a MANUAL PROT switching completes successfully.
	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, or more.
	PMUSBU	increments by 1, if any of the units in the node remains in SYSB state for 100 seconds, or more.
PMTYP		PMTYP is used to assess the performance of a group of PMs of the same type.

Summary of performance management indicators (Sheet 7 of 11)

OM name	OM register	Purpose
	PMTERR	increments when the OM register PM:PMERR is incremented for any of the SPMs in a switch.
	PMTFLT	increments when the OM register PM:PMFLT is incremented for any of the SPMs in a switch.
	PMTINTEG	increments when the OM register PM:PMINTEG is incremented for any of the SPMs in a switch.
	PMTMBP	increments when 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 when the OM register PM:PMMWXFR is incremented for any of the SPMs in a switch.
	PMTMCXFR	increments when the OM register PM:PMMCXFR is incremented for any of the SPMs in a switch.
	PMTSBP	increments when 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.
SPMACT		SPM activity counting. Primarily measures the occupancy of the CEM processor in a given SPM.
	AVGCEMAP	CEM Average Application Class Occupancy (per time interval).
	AVGCEMBK	CEM Average Background Class Occupancy (average per time interval).
	AVGCEMSY	CEM Average System Class Occupancy (per time interval).
	AVGORIG	average Originations (per time interval).

Summary of performance management indicators (Sheet 8 of 11)

OM name	OM register	Purpose
	AVGTERM	average Terminations (per time interval).
	CEMAPPHI	CEM Application Occupancy Highwater Mark displays the highest value of the samples taken during the collection interval.
	CEMBAKHI	CEM Background Class Highwater Mark displays the highest value of the samples taken during the collection interval.
	CEMSYSHI	CEM System Class Occupancy Highwater Mark displays the highest value of the samples taken during the collection interval.
	NUMREPTS	Number of Reports increments each time a new report is received.
	ORIGHI	Originations Highwater Mark displays the largest value of the samples taken during the collection interval.
	TERMHI	Terminations Highwater Mark displays the largest value of the samples taken during the collection interval.
	TOTLORIG	Total Originations is a summation of the total originations data collected during the time interval.
	TOTLTERM	Total Terminations is a summation of the total terminations data collected during the time interval.
	CAPINDEX	Capacity Index contains one of the following CEM capacity levels: • 0 - Standard • 1 - Enhanced • 2 - Premium ***Note:*** Value 1 (Enhanced) applies to DMSCP nodes only.

Summary of performance management indicators (Sheet 9 of 11)

OM name	OM register	Purpose
SPMOVLD		Spectrum OverloadNew provides metrics on the SPM flow control system and the system overload control component. ***Note:*** In the following list, OM registers that apply to the system overload control component start with an 'S'. All other OM registers apply to the flow control system.
	OVLDNUM SOVLDNUM	Number of times the system entered overload. For SOC (system overload control), this means the CM is in beyond_capacity state.
	OVLDPNUM	Number of times the SPM entered "overload pending".
	OVLDUSG SOVLDUSG	For Flow control, OVLDUSG represents the number of seconds the system was in overload. For SOC, SOVLDUSG represents the number of messages that were processed by SOC while the CM was in a beyond_capacity state.
	OVLDPUSG	Number of seconds the SPM was in 'overload pending'.
	CLSDLYD SCLSDLYD	The number of calls delayed by the two systems. When flow control and SOC are active, this is equal to the number of new originations.
	CLSDND CLSPTQ SCLSDND	In flow control, CLSDND represents calls that were denied because there were too many calls in the flow control system. CLSPTQ represents calls denied because of too many messages on a PTQ. In SOC, these two registers are combined into a single 'Calls Denied' register that counts calls that were tossed regardless of the reason. This register in SOC includes origination messages that were counted in SMSGPTQ and SHDROVFL.
	CLSABDN SCLSABDN	Calls in either system that were abandoned by the client. Normally the abandon message comes from call processing on the Core.

Summary of performance management indicators (Sheet 10 of 11)

OM name	OM register	Purpose
	CLSMSC	Calls lost to miscellaneous resource failures.
	SNUMORIG	Total number of originations passing through SOC (delayed or not)
	SMSGLOST	Number of messages lost because of SOC system limits (includes SMSGPTQ and SHDROVFL)
	SMSGPTQ	Number of messages of any type that were lost due to PTQ overflow.
	SHDROVFL	Number of messages of any type that were lost due to SOC header array overflow.
SPMUSAGE		SPM UniverSal Activity Gauging Element collects call processing event information.
	ABDN	Call processing (Callp) abandon messages (average per time interval).
	CONF	Callp confusion messages (average per time interval).
	COTDENY	counts the number of denied COT requests.
	ECANDENY	counts the number of denied ECAN requests.
	EXIT_MSG	Callp exit messages (average per time interval).
	NETFND	Callp network integrity found (average per time interval).
	NETINTG	Callp integrity lost (average per time interval).
	NETNFND	Callp network integrity not found (average per time interval).
	NETPAR	Callp parity errors (average per time interval).
	NUMREPTS	Number of Reports increments each time a new report is received.
	RELCAL	Callp release call messages (average per time interval).

Summary of performance management indicators (Sheet 11 of 11)

OM name	OM register	Purpose
	TONEDENY	counts the number of denied TONESYN requests.
	TXFAIL	Callp deny messages (average per time interval).

Office parameters

Office parameters (OParms) for SP17 and later that can be modified are summarized in the table below, Summary of office parameters.

Summary of office parameters (Sheet 1 of 2)

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.

Summary of office parameters (Sheet 2 of 2)

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 must 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 must 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 to 7 (with a default of 3). A value of 0 disables the CCNTLRX selector.

Setting threshold values

Threshold values are set using datafill. The following procedure provides an example for setting a COT resource with a low watermark threshold of 75%. This is done by provisioning the COT threshold in table MNNODE and provisioning a DSP RM with COT resources in table MNCKTPAK.

Example of setting COT threshold values

At the MAP level

1 Access table MNNODE:

```
> TABLE MNNODE
```

2 Begin the table addition:

```
> ADD
```

3 Answer each of the prompts with the required datafill provided by the table range.

Example

This following is an example of datafilling table MNNODE.

```
>  ADD
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
> Y
NODEKEY:
> SPM 1
ALIAS:
>COT75
CLASS:
> DMSCP
FLOOR:
> 0
CLKMODE:
> SYNC
CLKREF:
> INTERNAL
```

```
LEDTIMER:
> 15
RSRUTLIM:
> COT 75
RSRUTLIM:
> $
ALRMCTRL:
> COTLOW MJ RPT
ALRMCTRL:
> $
EXECTAB:
> $
CAPINDX:
>STANDARD
TUPLE TO BE ADDED:
SPM 1 COT75 DMSCP 0 SYNC INTERNAL 15 (COT 75)
$ (COTLOW MJ RPT) $ STANDARD
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
> Y
TUPLE ADDED
```

4 Exit table MNNODE:

```
> QUIT
```

5 Access table MNCKTPAK:

```
> TABLE MNCKTPAK
```

6 Begin the table addition:

```
> ADD
```

7 Answer each of the prompts with the required datafill provided by the table range.

Example

The following is an example of datafilling table MNCKTPAK.

```
> ADD
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
```

```
> Y
CPKKEY:
> SPM 1 1 9
CPKTYPE:
> DSP
UNITNO:
> 0
DSPGRPID:
> 1
WRKSPR:
> WORKING
RSRTYPE:
> COT
NUM:
> 8
RSRTYPE:
> $
ALRMCTRL:
> $
PEC:
> NLTX65BA
RELEASE:
> 01
LOAD:
> DSP15BD
TUPLE TO BE ADDED:
SPM 1 1 9 DSP 0 1 WORKING (COT 8) $ $ NLTX65BA
01 DSP15BD
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT.
> Y
TUPLE ADDED
```

8 Exit table MNCKTPAK:

```
> QUIT
```

This procedure is complete.

Retrieving/viewing current performance data

Operational Measurement (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 shows the use of the OMSHOW command for active ECANRMAN counts.

At the MAP level

1 View OM counts:

```
> OMSHOW <om_name> <class>
```

where

<om_name>
is the name of the OM (DSPRMAN, ECANRMAN, SPMACT, or SPMUSAGE)

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

Example of a MAP screen:

```
>OMSHOW ECANRMAN ACTIVE
ECANRMAN
CLASS: ACTIVE
START:1976/01/01 19:30:00 THU; STOP: 2001/07/26 19:57:47 THU;
SLOWSAMPLES: 17 ; FASTSAMPLES: 167 ;

 INFO (SOTS_NODE_INFO_TYPE)
    ECANLOW  ECANLOST   ECANDENY ECANFAIL
   ECANUTIL    ECANHI   ATMPTSOV   ATMPTS
    USGSECS
 0
      SPM 0
          0          0          0         0
          0          0          0         0
          0
```

Example of the SPERFORM level MAP screen:

Note: Do not change the SPERFORM_OM_CONTROL parameter in table OFCVAR from the default value of “Y”. Changing this tuple from “Y” to “N” turns off the data collection for OMs SPMACT and SPMUSAGE.

```
XAC       MS      IOD      Net       PM      CCS      Lns      Trks     Ext      APPL
 .        .        .        .      4 SPM      .        .       17CCP    2Crit  DRMPM2
                                   *C*                         *C*      *C*      M
 SPERFORM                          SysB     ManB     OffL      CBsy     ISTb    InSv
 0 Quit        PM                    0        1        5         0       12      21
 2 SPMAct      SMP                   0        1        4         0       11       0
 3 SPMUSAGE
 4           SPM  30  ISTb Loc: Site HOST Floor   1 Row C FrPos 41
 5           LOAD NAME : MG416CI
 6           STATUS:          RESAON:               LOGS:     TIME:
 7
 8
 9 PFQuery    DMSCP and SMG4 performance data is available in the SPMACT
10            and SPMUSAGE OMs. (The parameter, sperform_om_control,
11            in table OFCVAR turns the OM data collection on and off.
12            for SPMACT and SPMUSAGE.)
13
14            ECAN and DSP data is available in the ECANRMAN and DSPRMAN
15 OMInfo     OMs.
16
17
18
  TEAM26
Time  11:28  > OMInfo
```

Retrieving/viewing current performance data

Operational measurement (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 ECANRMAN 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 (DSPRMAN, ECANRMAN, SPMACT, or SPMUSAGE)

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

Example of a MAP screen:

```
>OMSHOW ECANRMAN ACTIVE
ECANRMAN
CLASS: ACTIVE
START:1976/01/01 19:30:00 THU; STOP: 2001/07/26 19:57:47 THU;
SLOWSAMPLES: 17 ; FASTSAMPLES: 167 ;

 INFO (SOTS_NODE_INFO_TYPE)
    ECANLOW  ECANLOST    ECANDENY ECANFAIL
   ECANUTIL     ECANHI    ATMPTSOV   ATMPTS
    USGSECS
 0
      SPM 0
          0          0           0         0
          0          0           0         0
          0
```

Example of the SPERFORM level MAP screen:

Note: It is recommended that the SPERFORM_OM_CONTROL parameter in table OFCVAR *not be* changed from the default value of "Y". Changing this tuple from "Y" to "N" turns off the data collection for OMs SPMACT and SPMUSAGE.

```
XAC       MS      IOD      Net       PM      CCS      Lns      Trks     Ext      APPL
 .        .        .        .      4 SPM      .        .       17CCP    2Crit  DRMPM2
                                   *C*                         *C*      *C*      M
 SPERFORM                         SysB     ManB     OffL      CBsy     ISTb    InSv
 0 Quit        PM                    0        1        5         0       12      21
 2 SPMAct      SMP                   0        1        4         0       11       0
 3 SPMUSAGE
 4           SPM  30  ISTb Loc: Site HOST Floor   1 Row C FrPos 41
 5           LOAD NAME : MG416CI
 6           STATUS:          RESAON:               LOGS:     TIME:
 7
 8
 9 PFQuery    DMSCP and SMG4 performance data is available in the SPMACT
10            and SPMUSAGE OMs. (The parameter, sperform_om_control,
11            in table OFCVAR turns the OM data collection on and off.
12            for SPMACT and SPMUSAGE.)
13
14            ECAN and DSP data is available in the ECANRMAN and DSPRMAN
15 OMInfo     OMs.
16
17
18
  TEAM26
Time  11:28  > OMInfo
```

Checking CEM call processing capacity

This procedure describes a tool used to determine the call processing capacity for the common equipment module (CEM) in an SPM-based node.

DMSCP class call processing capacity information is taken from the MNNODE table. Supported capacities for this class are Standard, Enhanced, and Premium.

Software Optionality Codes control the number of DMSCP class SPM nodes that can support Enhanced (SPM0020SOC) and Premium (SPM0028SOC) call processing capacities.

SPM call processing capacity information is taken from the table MNCKTPAK Supported capacities for this class are Standard and Premium. If a CEM is not datafilled in the MNCKTPAK table for either of these classes then it displays as Standard capacity.

The table below, CEM call processing capacity, lists and defines the CEM call processing capacity values.

CEM call processing capacity

Value	Definition
Standard	Call processing capacity equal to that of the NTLX82AA.
Enhanced	Call processing capacity approximately equal to two times that of the NTLX82AA
Premium	Call processing capacity approximately equal to three times that of the NTLX82AA

The table below, Variable abbreviations, defines the variables used in this procedure.

Variable abbreviations

Abbreviation	Options	Definition
capcty_val	All Standard Enhanced Premium	the type of CEM call processing capacity
node_type	All MG4K IW DMSCP	the type of SPM-based node in the office. Options consist of: • All SPM-based nodes in the office • MG 4000 nodes only • IW SPM and DPT SPM nodes only • DMSCP SPM nodes only
spm_no	0 - 85	the number of the SPM-based node

During this procedure press the Enter key after typing a command.

Checking CEM call processing capacity

At the MAP terminal

1 Run the SPMCPCAP tool based on the desired option.

If aligning by	Do
node class	step 2
call processing capacity	step 3
node number (single)	step 4

2 List the call processing capacity values by SPM class by typing

```
>SPMCPCAP CAPACITY  node_type
```

Example

```
>spmcpcap class IW
------------------------------------------------------------
  SPM No  Capacity                      Remarks
------------------------------------------------------------
    1     Standard                      None
    9     Standard                      None

>spmcpcap class all
DMSCP:
------------------------------------------------------------
  SPM No  Capacity                      Remarks
------------------------------------------------------------
    20    Standard                      None
    26    Standard                      None
------------------------------------------------------------

IW:
------------------------------------------------------------
  SPM No  Capacity                      Remarks
------------------------------------------------------------
     1    Standard                      None
     9    Standard                      None
------------------------------------------------------------

MG4K:
------------------------------------------------------------
  SPM No  Capacity                      Remarks
------------------------------------------------------------
    31    Premium                       None
    33    Premium                       None
------------------------------------------------------------
```

Go to step .

3 List the call processing capacity values capacity type by typing

>SPMCPCAP CAPACITY capcty_val

Example

```
>spmcpcap capacity premium
------------------------------------------------------------
  SPM No  Capacity                      Remarks
------------------------------------------------------------
    31    Premium                       None
    33    Premium                       None

>spmcpcap capacity all
------------------------------------------------------------
  SPM No  Capacity                      Remarks
------------------------------------------------------------
     1    Standard                      None
     9    Standard                      None
    20    Standard                      None
    26    Standard                      None
    31    Premium                       None
    33    Premium                       None
```

Go to step .

4 List the call processing capacity for a specific SPM-based node by typing

>SPMCPCAP SPM spm_no

Example

```
>spmcpcap spm 9
-----------------------------------------------------------------
  SPM No  Capacity                    Remarks
-----------------------------------------------------------------
     9    Standard                     None
 ----------------------------------------------------------------
```

This procedure is complete.