



Dialogic® DSI Signaling Servers
SNMP User Manual

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Revision History

Issue	Date	Description
3	May 2012	Updated to incorporate information for the Dialogic® DSI SS7G41 Signaling Server.
2	August 2008	Updated to incorporate information for the Dialogic® DSI SS7G31 and SS7G32 Signaling Servers.
1	January 2008	Manual created.

Note: The current release of this guide can be found at:
<http://www.dialogic.com/support/helpweb/signaling>

1 Introduction

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1.1 Overview

This document is a supplement to the Dialogic® DSI Signaling Server user manuals describing the operation and capabilities of the Distributed Structured Management Information (DSMI) SNMP agent as it is used on the Dialogic® DSI Signaling Server in SIU and SGW modes.

The existing, basic SNMP agent is already described by the User Manuals and therefore no further reference is made to it in this manual.

DSMI SNMP operation provides comprehensive reporting of the state and alarms for Dialogic® DSI Signaling Server components (e.g., board instances, SS7 links, fans etc.) through SNMP. This information is classified into the following **object groups**:

- Management
- System
- Platform
- IP
- Boards
- SS7
- SIGTRAN
- Access.

Each of these object groups comprise one or more objects. These objects, together with the object groups, are defined in separate SNMP MIB definition files. This implementation of the DSMI SNMP agent only supports 'read' (SNMP GET) requests from SNMP managers. There is no support for 'write' (SNMP PUT) requests.

DSMI SNMP support is implemented as a SNMP subagent and provides support of SNMP versions 1 (RFC1157), 2c (RFC1901) and 3 (RFC2571).

The DSMI SNMP agent provides status information about various aspects of the Server's behavior. It also implements SNMP TRAP/NOTIFY events alerting SNMP manager software to various conditions that the agent has detected. Up to 32 SNMP managers can be defined to receive TRAP notifications. These managers can be configured to receive TRAP notifications supported by the various versions of SNMP.

As well as supporting the DSMI MIB set, the SNMP agent on the Dialogic® DSI Signaling Server provides support for a number of standard MIBs. A user can get further IP related data by accessing the IF-MIB, RFC1213-MIB, IP-MIB, TCP-MIB and UDP-MIB. A user can get further information on the operation of the underlying server platform by accessing the HOST-RESOURCES-MIB. Finally, the Signaling Server also provides support for the Systems Group of the SNMPv2-MIB and is capable of generating a standard cold-start trap.

1.2 Applicability

This document is applicable to the following:

- Dialogic® DSI SS7G30 products, SIU release 2.2.2 or later, or SGW release 2.2.0 or later.
- Dialogic® DSI SS7G41 SIU release 1.0.3 or later, or SWS release 1.0.3 or later.
- Dialogic® DSI DSMI MIB package v2.02 or later.

1.3 Related Documentation

[1] Dialogic® DSI Signaling Servers SS7G3x SIU Mode User Manual

[2] Dialogic® DSI Signaling Servers SS7G3x SGW Mode User Manual

[3] Dialogic® DSI Signaling Servers SS7G41 Operators Manual

2 Activation and Configuration

2.1 Overview

To activate DSMI SNMP on SS7G30 systems the user should use the **CNSNS** command to set **SNMP** to **DSMI** and restart the system to allow activation of the agent.

To activate DSMI SNMP on SS7G41 system the user should use the **CNSNS** command to set **SNMP** to **Y** and restart the system to allow activation of the agent.

Once active, the DSMI SNMP agent is able to respond to SNMP requests. If the user wishes the system to send SNMP TRAPs to a particular SNMP manager, the manager should be configured using the **CNSMI** command.

By default, once a SNMP manager is configured the DSMI SNMP agent will send a TRAP when it detects a change in state of a DSMI Object. A user may disable trapping for particular objects or extend trapping to configuration events for the object through use of the **CNOBS** command.

An SNMP manager may be configured through use of the CNSMx commands to receive SNMP v1, v2c or v3 format TRAPs. If a SNMP v3 trap is required then the SNMP 'user' must first be specified through use of the **CNUSx** command.

Refer to [Section 6: MMI commands on page 44](#) for definitions of the commands and how they are used.

3 The DSMI MIB Structure

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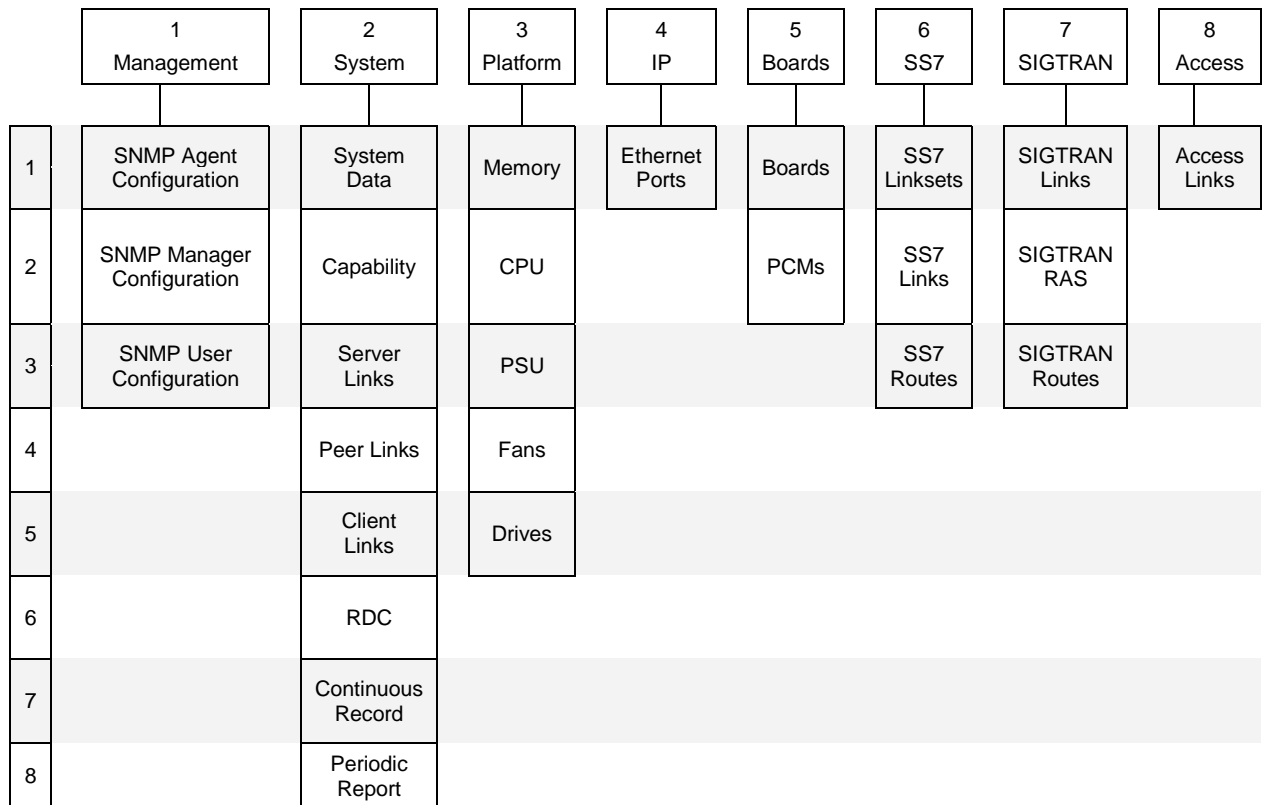
3.1 Enterprise/Family MIB Structure

The Dialogic® DSI Signaling Server MIBS and NOTIFICATION definitions are located under the Dialogic® dlGDSMI OID (.1.3.6.1.4.1.3028.6.2). From this OID, there are two branches: branch 3028.6.2.1 represents the signaling server objects, whereas branch 3028.6.2.2 is used to hold the NOTIFICATION definitions (3028.6.2.2.1) and textual conventions (3028.6.2.2.2).

3.2 The Signaling Server Object Groups and Objects

The following diagram represents the structure and location of the Signaling Server groups and their component objects.

Figure 1. Structure and Location of the Dialogic® DSI Signaling Server Groups and their Component Objects

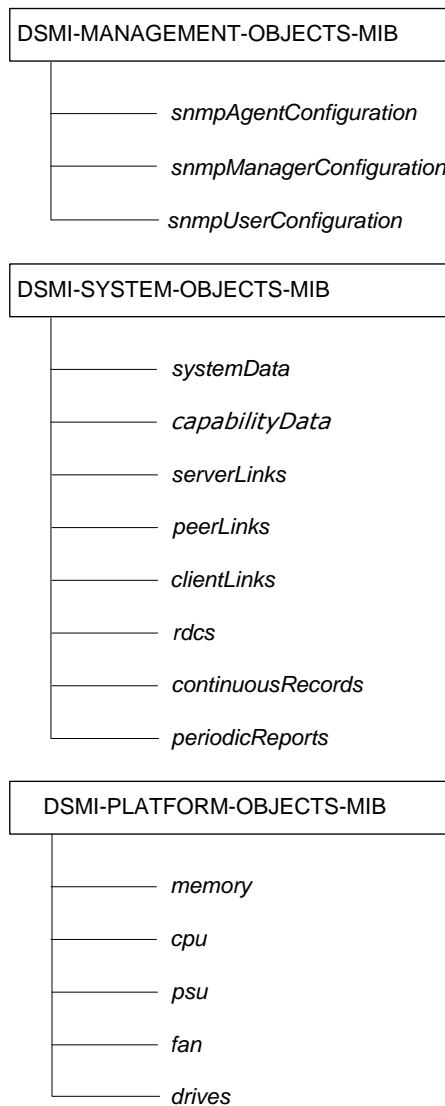


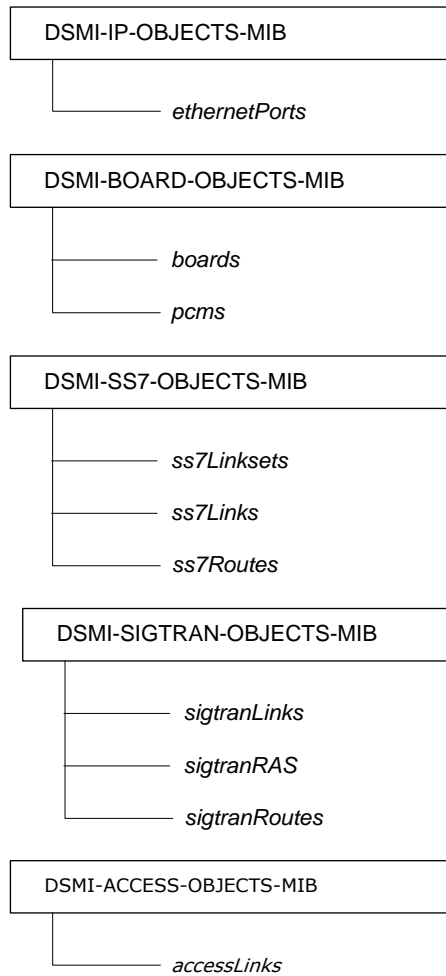
An object is referenced by specifying its object group identifier followed by its own identifier. For example, the Drives object (in the Platform group) is referenced as 3.5. Its fully qualified OID, therefore, is .1.3.6.1.4.1.3028.6.2.1.3.5.

3.3 The MIB Files

There is one MIB definition file per object group as well as additional MIB definition files which define the location of the DSMI objects within the SNMP object hierarchy (DSMI-SMI), the textual conventions used in defining the objects (DSMI-TC) and the notifications generated by the DSMI SNMP agent (DSMI-NOTIFICATION).

The MIB definition files give the object groups and objects more user-friendly names. The following diagrams depict the user-friendly names of the object groups and their respective objects.





It is recommended that the user load the DSMI-SMI, DSMI-TC and DSMI-NOTIFICATION MIBs, as well as all relevant object group MIBs into their SNMP manager.

3.4 Components of an Object

3.4.1 Introduction

Each object comprises two tables. The first table, or the **object table**, holds status data about the object, whereas the second table, or the **administration table**, details the number of rows in the table as well as the current TRAP configuration settings for the object. The object table resides at OID x.y.1 (where x is the object group identifier and y is the object identifier). The administration table resides at OID x.y.2. For example, the AccessLink object table is found at .1.3.6.1.4.1.3028.6.2.1.8.1.1, and the administration table is located at .1.3.6.1.4.1.3028.6.2.1.8.1.2. The administration and objects tables are now described. Whereas the administration table serves a common object-independent function across all objects, the object table has contains attributes which may have object-dependent meaning.

3.4.2 The Administration Table

The administration table has the following columns:

Column Name	Description
dsmiadm...AdminIndex	As there is only one row in this table, this value is always zero.
dsmiadm...UpCount	These count values report the number of rows in the specified state. For example, the UpCount value reports the number of rows in the Up state.
dsmiadm...DownCount	
dsmiadm...InactiveCount	
dsmiadm...ImpairedCount	
dsmiadm...RestartingCount	
dsmiadm...QuiescingCount	
dsmiadm...WarningCount	
dsmiadm...TotalRowCount	The total number of rows in the object table.
dsmiadm...UpTrapConfigure	These values determine the conditions under which a trap will be generated. Each Configure field can be set to generate a trap when a row is created, changed, or destroyed with the given state. Furthermore, the field can be set to 'none' so that no trap is generated or 'all' so that a trap is generated, when any operation (create, change or destroy) is executed on a row within the object table. These settings are controlled by the CNOBS command, which displays the current trap configuration.
dsmiadm...DownTrapConfigure	
dsmiadm...InactiveTrapConfigure	
dsmiadm...ImpairedTrapConfigure	
dsmiadm...RestartingTrapConfigure	
dsmiadm...QuiescingTrapConfigure	
dsmiadm...WarningTrapConfigure	

3.4.3 The Object Table

The object table consists of a common set of columns that are to be found in every object. There may be one or more rows in the object table. This will depend on the functionality being represented by the object. In addition to these columns, some objects have object-specific columns that provide extra information pertaining to the object in question. The common columns are as follows:

Column Name	Data Type	Description
dsmiHeadIndex	ASN_INTEGER	The row index
dsmiHeadRowStatus	RowStatus	Used for row maintenance
dsmiHeadTimeInState	TimeTicks	The duration of time that the object has been in the current state
dsmiHeadIdVal	ASN_UNSIGNED32	A unique identifier for the row
dsmiHeadIdDescription	DisplayString	A string that holds object-specific information
dsmiHeadState	DSMI-OBJSTATE	The current state of the object
dsmiOwnerId	OCTET STRING	Reserved. This field is not used on the Signaling Server. No further reference will be made to the field within this document.

The following section describes each object in greater detail with reference to the common header columns and, if relevant, additional columns that are associated with the object. If the common header fields in an object have object-specific behavior, the details are given. If no details are given for one of the common header fields, it can be assumed that the general purpose description given above applies.

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4.1 DSMI-MANAGEMENT-OBJECTS-MIB (The Management Object Group)

This MIB gathers together the data pertaining to the SNMP configuration of the Dialogic® DSI Signaling Server. There are three objects which go to make up this group. These objects and their attributes are now described in greater detail.

4.1.1 snmpAgentConfigurationObjectTable

This object represents the single SNMP master agent (i.e., there is only one row) that runs on the server.

Column Name	Column Description
dsmiSNMPAgentHeadIndex	-
dsmiSNMPAgentHeadRowStatus	-
dsmiSNMPAgentHeadTimeInState	-
dsmiSNMPAgentHeadIdVal	-
dsmiSNMPAgentHeadIdDescription	-
dsmiSNMPAgentHeadState	<ul style="list-style-type: none">• up The SNMP agent can communicate with managers• impaired The Signaling Server does not have a valid network time source (only occurs if the server has been configured to synchronize its clock with an NTP server)• quiescing The SNMP agent is being disabled
dsmiSNMPAgentRoCommunity	The SNMP read-only access community string (not accessible) by remote SNMP managers)
dsmiSNMPAgentRwCommunity	The SNMP read-write access community string (not accessible by remote SNMP managers)
dsmiSNMPAgentPort	The port on which the SNMP agent will communicate with remote SNMP managers

4.1.2 snmpMgrConfigurationObjectTable

This object represents the remote SNMP managers to which SNMP traps are sent.

Column Name	Column Description
dsmiSNMPMgrHeadIndex	-
dsmiSNMPMgrHeadRowStatus	-
dsmiSNMPMgrHeadTimeInState	-
dsmiSNMPMgrHeadIdVal	The SNMP manager instance
dsmiSNMPMgrHeadIdDescription	-
dsmiSNMPMgrHeadState	<ul style="list-style-type: none"> • up The SNMP manager is configured and will receive TRAP-related notifications • restarting The SNMP manager is being added and will soon be available • quiescing The SNMP manager is being removed
dsmiSNMPMgrIpAddress	The IP address of the SNMP manager
dsmiSNMPMgrTrapPort	The socket/port which will receive TRAP-related notifications
dsmiSNMPMgrCommunityString	The TRAP community string (SNMP v1,v2c)
dsmiSNMPMgrTrapType	Specifies the type of event that will be dispatched to the manager: <ul style="list-style-type: none"> • 1 v1 TRAP • 2 v2 NOTIFICATION • 3 v2 INFORM
dsmiSNMPMgrUserID	If a user identifier value is specified here, it refers to a user in the snmpUserConfigurationObjectTable which defines the SNMP v3 credentials to be used when sending an SNMP v3 TRAP to the above-specified SNMP manager.
dsmiSNMPMgrEngineId	This parameter is used in conjunction with an SNMP v3 TRAP. This value must match the engine identifier value which has been configured on the remote SNMP manager so that v3 TRAP messages can be received properly

4.1.3 snmpUserConfigurationObjectTable

This object represents the different SNMP V3 users that are registered on the local machine. It is also used to define SNMP v3 users registered with SNMP managers (see snmpMgrConfigurationObjectTable above) for receipt of TRAP events.

Column Name	Column Description
dsmiSNMPUserHeadIndex	-
dsmiSNMPUserHeadRowStatus	-
dsmiSNMPUserHeadTimeInState	-
dsmiSNMPUserHeadIdVal	The user's unique identifier in this object (i.e., not the user name)
dsmiSNMPUserHeadIdDescription	-
dsmiSNMPUserHeadState	<ul style="list-style-type: none"> • up The user is configured • quiescing The user is being removed
dsmiSNMPUserUserName	The user name
dsmiSNMPUserSecurityLevel	The SNMP v3 security level (noAuthNoPriv, authNoPriv or authPriv)
dsmiSNMPUserAuthenticationProtocol	MD5 or SHA1 algorithm
dsmiSNMPUserAuthenticationPassphrase	The authentication secret/password
dsmiSNMPUserPrivacyProtocol	AES or DES algorithm
dsmiSNMPUserPrivacyPassphrase	The encryption secret/password

4.2 DSMI-SYSTEM-OBJECTS-MIB (The System Object Group)

This object group represents various software-related entities within the Signaling Server.

4.2.1 sysDataObjectTable

This object identifies system-specific information. There is only one row in this object table.

Column Name	Column Description
dsmiSysDataHeadIndex	-
dsmiSysDataHeadRowStatus	-
dsmiSysDataHeadTimeInState	-
dsmiSysDataHeadIdVal	The system reference
dsmiSysDataHeadIdDescription	The unit ID of the system

Column Name	Column Description
dsmiSysDataHeadState	<ul style="list-style-type: none"> • up The system is up • impaired The system is in overload • restarting The system is starting • quiescing The system is shutting down • warning The system needs to be restarted or is running in trial mode
dsmiSysDataPlatformType	<p>The type of system. This field will have one of these values:</p> <ul style="list-style-type: none"> • SS7G41 (1) The system is a Dialogic® DSI SS7G31 Signaling Server • Reserved (2) This value is reserved • Reserved (3) This value is reserved • Reserved (4) This value is reserved • SS7G2x (5) The system is a Dialogic® DSI SS7G21 or SS7G22 Signaling Server • SS7G31 (6) The system is a Dialogic® DSI SS7G31 Signaling Server • SS7G32 (7) The system is a Dialogic® DSI SS7G32 Signaling Server
dsmiSysDataSysVer	The software version of the software distribution
dsmiSysDataPlatVer	The software version of the platform specific distribution
dsmiSysDataSysContact	Contact details for the system
dsmiSysDataSysName	The host name assigned to the system
dsmiSysDataSysLocation	The physical location of the system
dsmiSysDataSysType	<p>One of the following values:</p> <ul style="list-style-type: none"> • Reserved (1) The server is not running in a recognized mode • SIU (2) The server is running in SIU mode • SGW (3) The server is running in SGW mode • DSC (4) The server is running in DSC mode • SWS (5)

Column Name	Column Description
	The server is running in SWS mode

4.2.2 capDataObjectTable

This object describes the capabilities of the system in terms of the various license statuses.

Column Name	Column Description
dsmiCapDataHeadIndex	-
dsmiCapDataHeadRowStatus	-
dsmiCapDataHeadTimeInState	-
dsmiCapDataHeadIdVal	<p>The dsmiHeadIdVal and dsmiHeadIdDescription will identify the following capabilities as a numerical value and associated strings. This table shows the possible HeadIdVal values and their corresponding HeadIdDescription values:</p> <p>For the SS7G41 the following identifiers are used:</p> <ul style="list-style-type: none"> 1 SIU 2 SWS 3 M2PA 4 M3UA 5 MTP 6 TCAP 7 MAP 8 INAP 9 IS41 10 Reserved 11 Reserved <p>For earlier Signaling Server Generations the following identifiers are used:</p> <ul style="list-style-type: none"> 1 SIU 2 SGW 3 DSC 4 SCTP 5 M2PA 6 M3UA 7 MTP 8 ISUP 9 TUP 10 BICC
dsmiCapDataHeadIdDescription	

Column Name	Column Description
	11 SCCPCL 12 SCCPCO 13 TCAP 14 MAP 15 INAP 16 IS41 17 ISDN 18 DPNSS 19 SNMP 20 MONITORING 21 SS7MD
dsmiCapDataHeadState	<ul style="list-style-type: none"> • up The license capability is up and available for use • down The license capability is available but has failed to activate • inactive The license capability is available but inactive • impaired The license capability is available and active but its use exceeds the limits allows by the license and it is being throttled • warning The license capability is available and active but its use exceeds the limits allows by the license. Consistent use above these limits may lead to it being throttled

4.2.3

serverLinkObjectTable

This object holds data relating to a System acting as Server for a SigDIA-IP link to a Client.

Column Name	Column Description
dsmiServerLinkHeadIndex	-
dsmiServerLinkHeadRowStatus	-
dsmiServerLinkHeadTimeInState	-
dsmiServerLinkHeadIdVal	The link instance
dsmiServerLinkHeadIdDescription	Reserved for future use (as a label)

Column Name	Column Description
dsmiServerLinkHeadState	<ul style="list-style-type: none"> • up The link is in service • down The link is available but is out of service • inactive The link is available but is inactive • quiescing The link is being removed

4.2.4 peerLinkObjectTable

This object holds data relating to a System acting as Server for a SigDIA-IP peer link to another Server.

Column Name	Column Description
dsmiPeerLinkHeadIndex	-
dsmiPeerLinkHeadRowStatus	-
dsmiPeerLinkHeadTimeInState	-
dsmiPeerLinkHeadIdVal	The link instance
dsmiPeerLinkHeadIdDescription	Reserved for future use (as a label)
dsmiPeerLinkHeadState	<ul style="list-style-type: none"> • up The link is in service • down The link is available but is out of service • inactive The link is available but is inactive • quiescing The link is being removed

4.2.5 clientLinkObjectTable

This object holds data relating to a System acting as Client for a SigDIA-IP peer link to a Server.

Column Name	Column Description
dsmiClientLinkHeadIndex	-
dsmiClientLinkHeadRowStatus	-
dsmiClientLinkHeadTimeInState	-
dsmiClientLinkHeadIdVal	The link instance
dsmiClientLinkHeadIdDescription	Reserved for future use (as a label)

Column Name	Column Description
dsmiClientLinkHeadState	<ul style="list-style-type: none"> • up The link is in service • down The link is available but is out of service • inactive The link is available but is inactive • quiescing The link is being removed

4.2.6

RDCObjectTable

This object holds data relating to a Remote Data Centre on a system.

Column Name	Column Description
dsmiRDCHHeadIndex	-
dsmiRDCHHeadRowStatus	-
dsmiRDCHHeadTimeInState	-
dsmiRDCHHeadIdVal	The RDC link instance
dsmiRDCHHeadIdDescription	Reserved for future use (as a label)
dsmiRDCHHeadState	<ul style="list-style-type: none"> • up The link to the RDC is in service • down The link to the RDC is available but is out of service • inactive The link to the RDC is available but is inactive • quiescing The link is being removed

4.2.7

cRecordObjectTable

This object holds data relating to continuous records on a system.

Column Name	Column Description
dsmiCRecordHeadIndex	-
dsmiCRecordHeadRowStatus	-
dsmiCRecordHeadTimeInState	-
dsmiCRecordHeadIdVal	The record's identifier
dsmiCRecordHeadIdDescription	The record's label

Column Name	Column Description
dsmiCRecordHeadState	<ul style="list-style-type: none"> • up The record can be transmitted to an RDC • down The record cannot be transmitted to an RDC • quiescing The record is being removed

4.2.8 pReportObjectTable

This object holds data relating to periodic reports on a system.

Column Name	Column Description
dsmiPReportHeadIndex	-
dsmiPReportHeadRowStatus	-
dsmiPReportHeadTimeInState	-
dsmiPReportHeadIdVal	The report's identifier
dsmiPReportHeadIdDescription	The report's label
dsmiPReportHeadState	<ul style="list-style-type: none"> • up The report can be transmitted to an RDC • down The report cannot be transmitted to an RDC • quiescing The report is being removed

4.3 DSMI-PLATFORM-OBJECTS-MIB (The Platform Object Group)

The Platform Object Group represents various hardware components within the Signaling Server.

4.3.1 memoryObjectTable

This object holds data relating to memory on a platform. There will only be one row in this object table.

Column Name	Column Description
dsmiMemoryHeadIndex	-
dsmiMemoryHeadRowStatus	-
dsmiMemoryHeadTimeInState	-
dsmiMemoryHeadIdVal	Always set to 0
dsmiMemoryHeadIdDescription	-

Column Name	Column Description
dsmiMemoryHeadState	<ul style="list-style-type: none"> • up The memory is in service. • down The memory is out of service.

4.3.2

cpuObjectTable

This object holds data relating to the installed CPUs.

Column Name	Column Description
dsmiCPUHeadIndex	-
dsmiCPUHeadRowStatus	-
dsmiCPUHeadTimeInState	-
dsmiCPUHeadIdVal	The CPU identifier
dsmiCPUHeadIdDescription	-
dsmiCPUHeadState	<ul style="list-style-type: none"> • up The CPU is in service • down The CPU is out of service • impaired The CPU is in an alarm condition • warning The CPU is operating outside of a tolerance which may lead to failure.

4.3.3

psuObjectTable

This object holds data relating to the power supply units (PSUs) installed in the server.

Column Name	Column Description
dsmiPSUReportsHeadIndex	-
dsmiPSUHeadRowStatus	-
dsmiPSUHeadTimeInState	-
dsmiPSUHeadIdVal	The PSU identifier
dsmiPSUHeadIdDescription	-
dsmiPSUHeadState	<ul style="list-style-type: none"> • up The PSU is in service • down The PSU is out of service • warning The PSU is operating outside of a tolerance which may lead to failure.

4.3.4 fanObjectTable

This object holds data relating to the fans installed in the server.

Column Name	Column Description
dsmiFanHeadIndex	-
dsmiFanHeadRowStatus	-
dsmiFanHeadTimeInState	-
dsmiFanHeadIdVal	The fan identifier
dsmiFanHeadIdDescription	-
dsmiFanHeadState	<ul style="list-style-type: none"> • up The fan is in service • down The fan is out of service • impaired One or more of the fans have failed.

4.3.5 driveObjectTable

This object holds data relating to the hard disks installed in the server.

Column Name	Column Description
dsmiDriveHeadIndex	-
dsmiDriveHeadRowStatus	-
dsmiDriveHeadTimeInState	-
dsmiDriveHeadIdVal	The drive identifier
dsmiDriveHeadIdDescription	-
dsmiDriveHeadState	<ul style="list-style-type: none"> • up The disk drive is operational. If the disk forms part of a RAID array then all the RAID devices on this drive are in an 'active sync state'. • down The disk drive is non operational. If the disk forms part of a RAID array then one or more of the RAID devices on this drive is faulty. • restarting One or more of the RAID devices on this drive is synchronising with another RAID device. The disk is considered 'non operational' until synchronisation is complete. array. • inactive The drive is not configured as part of the RAID array and therefore is not in use. This may be due to user action through MMI, the drive not being physically present at startup or a failed drive being removed by the operating software at startup from RAID.

4.4 DSMI-IP-OBJECTS-MIB (The IP Object Group)

The IP Object Group represents the IP interfaces present on the Signaling Server.

4.4.1 ethObjectTable

This object holds data relating to the Ethernet ports in a system.

Column Name	Column Description
dsmiEthHeadIndex	-
dsmiEthHeadRowStatus	-
dsmiEthHeadTimeInState	-
dsmiEthHeadIdVal	The port's associated eth identifier
dsmiEthHeadIdDescription	The port's associated label (if any)
dsmiEthHeadState	<ul style="list-style-type: none"> • up The port is up and is in communication with an adjacent port • down The port is down and is not in communication with an adjacent port. An Ethernet port also enters the Down state when its IP address is set to 0.0.0.0. • inactive The port is a standby port.

4.5 DSMI-BOARD-OBJECTS-MIB (The Board Object Group)

This object group represents the signaling hardware interfaces within the Signaling Server.

4.5.1 boardObjectTable

This object holds data relating to signaling boards installed in the system.

Column Name	Column Description
dsmiBoardHeadIndex	-
dsmiBoardHeadRowStatus	-
dsmiBoardHeadTimeInState	-
dsmiBoardHeadIdVal	The board identifier
dsmiBoardHeadIdDescription	The board label (if any)

Column Name	Column Description
dsmiBoardHeadState	<ul style="list-style-type: none"> • up The board is in service • down The board is out of service • inactive The board is available but is inactive • impaired The board is in service but encountering service-affecting congestion • quiescing Configuration of the board is being removed

4.5.2

pcmObjectTable

This object holds data relating to the PCMs installed in a system.

Column Name	Column Description
dsmiPCMHeadIndex	-
dsmiPCMHeadRowStatus	-
dsmiPCMHeadTimeInState	-
dsmiPCMHeadIdVal	The PCM's associated 'port_id'
dsmiPCMHeadIdDescription	The PCM's associated label (if any)
dsmiPCMHeadState	<ul style="list-style-type: none"> • up The PCM is fully in service • down The PCM is encountering errors and is considered out of service • inactive The PCM is available but is inactive • impaired The PCM is encountering errors, but is considered still in service • quiescing Configuration of the PCM is being removed
dsmiPCMPcmBoard	The PCM board's identifier
dsmiPCMPcmLiu	The PCM's LIU identifier

Column Name	Column Description
dsmiPCMPcmLineStatus	<p>This field is a single byte with the following bit values:</p> <ul style="list-style-type: none"> • bit 0 unused • bit 1 ber10minus5 • bit 2 ber10minus3 • bit 3 remotealarm • bit 4 syncloss • bit 5 ais • bit 6 pcmloss • bit 7 mismatch <p>One of the following DSMI-PCMSTATUS values:</p> <ul style="list-style-type: none"> • ber10minus5 The PCM is encountering a Bit Error Rate (BER) of 10⁵ • ber10minus3 The PCM is encountering a Bit Error Rate (BER) of 10³ • remotealarm The remote end indicates that it is OK, but also indicates that it is detecting an error condition • syncloss Loss of frame alignment since no frame synchronization has been received • ais Alarm indication signal. The remote side sends all ones indicating that there is an error condition, or it is not initialized • pcmloss No signal sensed on the PCM input mismatch - The PCMTYPE setting is inconsistent with the hardware settings on the board

4.6 DSMI-SS7-OBJECTS-MIB (The SS7 Object Group)

This group represents the SS7 Links, Linksets and Routes that have been configured.

4.6.1 ss7LsObjectTable

This object holds data regarding the SS7 linksets configured in a system.

Column Name	Column Description
dsmiSS7LsHeadIndex	-
dsmiSS7LsHeadRowStatus	-
dsmiSS7LsHeadTimeInState	-
dsmiSS7LsHeadIdVal	The linkset identifier

Column Name	Column Description
dsmiSS7LsHeadIdDescription	The linkset label (if any)
dsmiSS7LsHeadState	<ul style="list-style-type: none"> • up All links in the linkset are in service • down All links in the linkset are out of service • inactive The linkset is available but is inactive • impaired Not all of the underlying links are in service but the Destination Point Code is still available • quiescing Configuration of the linkset is being removed

4.6.2 **ss7LinkObjectTable**

This object holds data regarding the SS7 links configured in a system.

Column Name	Column Description
dsmiSS7LinkHeadIndex	-
dsmiSS7LinkHeadRowStatus	-
dsmiSS7LinkHeadTimeInState	-
dsmiSS7LinkHeadIdVal	The link identifier
dsmiSS7LinkHeadIdDescription	The link label (if any)
dsmiSS7LinkHeadState	<ul style="list-style-type: none"> • up The link is in service • down The link is out of service • inactive The link is available but is inactive • impaired The link is in service but is encountering congestion • quiescing Configuration of the link is being removed

4.6.3 **ss7RouteObjectTable**

This object holds data regarding the SS7 routes configured in a system.

Column Name	Column Description
dsmiSS7RtHeadIndex	-
dsmiSS7RtHeadRowStatus	-
dsmiSS7RtHeadTimeInState	-
dsmiSS7RtHeadIdVal	The route identifier

Column Name	Column Description
dsmiSS7RtHeadIdDescription	The route label (if any)
dsmiSS7RtHeadState	<ul style="list-style-type: none"> • up The route is up and the destination can be reached • down The route is down and the destination cannot be reached • inactive The route is available but is inactive • impaired At least one of the associated linksets is unavailable, but the destination can still be reached • quiescing Configuration of the route is being removed

4.7 DSMI-SIGTRAN-OBJECTS-MIB (The SIGTRAN Object Group)

This group represents the SIGTRAN Links, Remote Application Servers and Routes that have been configured.

4.7.1 snLnkObjectTable

This object holds data regarding the SIGTRAN links configured in a system.

Column Name	Column Description
dsmiSnLinkHeadIndex	-
dsmiSnLinkHeadRowStatus	-
dsmiSnLinkHeadTimeInState	-
dsmiSnLinkHeadIdVal	The link identifier
dsmiSnLinkHeadIdDescription	The link label (if any)
dsmiSnLinkHeadState	<ul style="list-style-type: none"> • up The link is in service • down The link is out of service • inactive The link is available but is inactive • quiescing Configuration of the link is being removed

4.7.2 sinRASObjectTable

This object holds data regarding the SIGTRAN remote application servers (RASs) configured in a system.

Note: This object is not currently supported and it will always be in the Up state.

Column Name	Column Description
dsmiSnRASHeadIndex	-
dsmiSnRASHeadRowStatus	-
dsmiSnRASHeadTimeInState	-
dsmiSnRASHeadIdVal	The RAS identifier
dsmiSnRASHeadIdDescription	The RAS label (if any)
dsmiSnRASHeadState	<ul style="list-style-type: none"> • up The RAS is active and the destination can be reached • down The RAS is either under- resourced or the destination cannot be reached • inactive The RAS is inactive • quiescing Configuration of the RAS is being removed

4.7.3 snRtObjectTable

This object holds data regarding the SIGTRAN routes configured in a system.

Column Name	Column Description
dsmiSnRtHeadIndex	-
dsmiSnRtHeadRowStatus	-
dsmiSnRtHeadTimeInState	-
dsmiSnRtHeadIdVal	The route identifier
dsmiSnRtHeadIdDescription	The route label (if any)
dsmiSnRtHeadState	<ul style="list-style-type: none"> • up The route is up and the destination can be reached • down The route is down and the destination cannot be reached • impaired Not all of the underlying Remote Signaling Gateway Processes are in service but the destination can still be reached • quiescing Configuration of the route is being removed

4.8 DSMI-ACCESS-OBJECTS-MIB (The Access Object Group)

The Access Object Group represents the access interfaces that are present in the Signaling Server.

4.8.1 AccessLinkObjectTable

This object holds data regarding the access links configured in a system.

Column Name	Column Description
dsmiAccessLinkHeadIndex	-
dsmiAccessLinkHeadRowStatus	-
dsmiAccessLinkHeadTimeInState	-
dsmiAccessLinkHeadIdVal	The access link identifier
dsmiAccessLinkHeadIdDescription	The access link label (if any)
dsmiAccessLinkHeadState	<ul style="list-style-type: none"> • up The link is in service • down The link is out of service • inactive The link is configured but is inactive • impaired The link is in service but is encountering DLC failures (DPNSS only) • quiescing Configuration of the link is being removed

5 Signaling Server Notifications (TRAPs)

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5.1 The Role of an Object's Administration Table

The object Administration table has the following entries that allow an administrator to control the generation of TRAPs:

dsmiadm...UpTrapConfigure	These values determine the conditions under which a trap will be generated.
dsmiadm...DownTrapConfigure	Each Configure field can be set to generate a trap when a row is created, changed, or destroyed with the given state. Furthermore, the field can be set to 'none' so that no trap is generated, or 'all' so that a trap is generated when any operation (create, change or destroy) is executed on a row within the object table.
dsmiadm...InactiveTrapConfigure	
dsmiadm...ImpairedTrapConfigure	
dsmiadm...RestartingTrapConfigure	
dsmiadm...QuiescingTrapConfigure	These settings are controlled by the CNOBS command, which displays the current trap configuration.
dsmiadm...WarningTrapConfigure	

Each TrapConfigure field takes a DSMI-TRAPCONFIG value as a setting. These are defined with the following values:

TRAP setting	ID	Description
trapall	1	A TRAP will be generated whenever a row is created, changed or destroyed, or whenever an event occurs which affects the object, but not necessarily changes the object state. For example, a trap could be generated for a PCM object subject to RAI. A further trap will be generated for the same PCM if it is subject to AIS – but the state of the PCM object remains the same – in this case DOWN.
trapnone	2	No TRAPs will be generated on this object.
traponcreate	3	A TRAP will be generated when a row is created with the associated state.
traponchange	4	A TRAP will be generated when a row's state changed to the associated state.
trapondestroy	5	A TRAP will be generated when a row with the associated state is destroyed.

These settings are object-wide. There is currently no facility to have TRAPs generated on a per-row basis.

Consider this example configuration on the SS7 Links object (ss7LinksAdminTable):

TRAP setting	Description
dsmiadmSS7LinksUpTrapConfigure	trapNone
dsmiadmSS7LinksDownTrapConfigure	trapOnChange
dsmiadmSS7LinksInactiveTrapConfigure	trapNone
dsmiadmSS7LinksImpairedTrapConfigure	trapNone
dsmiadmSS7LinksRestartingTrapConfigure	(n/a for SS7 Links)
dsmiadmSS7LinksQuiescingTrapConfigure	trapNone
dsmiadmSS7LinksWarningTrapConfigure	(n/a for SS7 Links)

These settings will result in TRAPs being generated whenever an SS7 Link enters the 'Down' state. TRAPs will not be generated for other state transitions.

Configuration of these values from an SNMP manager (by using SNMP SET requests) is not currently possible. These settings must be made from the MMI interface of the Signaling Server using the CNOBS command. This and other SNMP related MMI commands are described in [Section 6: MMI commands on page 44](#).

5.2 Trap Notification Fields

There are seven types of TRAPs that can be received – each one representing the different states to which an object can transition:

Trap	Description
dsmiUp	Operational and available.
dsmiDown	Not available.
dsmiInactive	Operational but not available.
dsmiImpaired	Operational and available but encountering service-affecting condition.
dsmiRestarting	Unavailable but planned to be available.
dsmiQuiescing	Operational but in the process of shutting down/being removed.
dsmiWarning	Operation and available but encountering a non service-affecting condition.

See [Section 4: The DSMI Object Groups and Objects on page 17](#) for the object-specific definition of these states.

Each of these TRAPs contains 4 fields:

Field	Description
dsmi<state>Oid	The Object Identifier (OID) of the object against which the TRAP was generated.
dsmi<state>Index	The row index within the object.
dsmi<state>EventId	The particular event that occurred.
dsmi<state>Severity	The severity of the TRAP.
dsmi<state> OidVal	The identifier for the object against which the TRAP was generated.
dsmi<state> OidDescription	A description of the object against which the TRAP was generated.

The EventId field can carry one of the following values:

Event	ID	Description
NullEvent	0	Reserved.
PCMLoss	1	Loss of signal at PCM input port.
PCMSyncLoss	2	Loss of frame alignment on PCM port.
PCMClear	3	PCM status is cleared due to events occurring at a board level.
AIS	4	PCM input port contains the Alarm Indication Signal (all ones on all timeslots).
RAI	5	PCM port is receiving a Remote Alarm Indication. This usually indicates that the remote end is either failing to achieve frame alignment or that it is experiencing a high bit error rate on the received signal.
BER-10-5	6	The input PCM signal contains a Bit Error Rate (BER) in excess of 1 in 100,000 as measured on the frame alignment pattern. This is usually due to faulty cabling or a faulty PCM board at the remote end.
BER-10-3	7	The input PCM signal contains a Bit Error Rate (BER) in excess of 1 in 1000 as measured on the frame alignment pattern. This is usually due to faulty cabling or a faulty PCM board at the remote end.
PSUFailure	8	The system has detected that one or more power supplies have failed. The system is able to operate with the loss of a single power supply, but the power supply should be replaced at the earliest possible opportunity.
SS7LinkFailure	9	An SS7 signaling link has failed. Usually due to incorrect configuration (signaling timeslot), connectivity fault, or inactive signaling terminal at the remote end.
SS7LinksetLost	10	All signaling links in an SS7 signaling link set have failed. Usually due to incorrect configuration (Point Codes or signaling timeslots), connectivity fault, or inactive signaling terminal at the remote end.

Event	ID	Description
DestinationLost	11	A route to a MTP destination is down.
SS7LinkCongested	12	A SS7 signaling link is encountering congestion.
FanFailure	13	The system has detected a failure of one or more of its cooling fans leading to an inadequate cooling supply. The faulty fan(s) should be replaced immediately.
FanWarning	14	The system has detected either the failure of one of the cooling fans or that a fan is likely to fail. The cooling will remain adequate during this condition, but the fan should be replaced at the next convenient opportunity.
MultifanFailure	15	The system has detected a failure of more than one of its cooling fans, leading to an inadequate cooling supply. The faulty fans should be replaced immediately.
Temperature	16	The internal temperature exceeds a pre-set threshold indicating either an internal fault or failure of the cooling arrangements. Inspection should take place immediately.
HostLinkFailed	17	A RSI link to a SIU host has failed.
SIULinkFailed	18	A RSI link to a partner SIU has failed.
ParseErrors	19	One or more syntax errors were found in the protocol configuration file.
ConfigurationFailed	20	The protocol configuration could not be completed due to errors in the configuration file.
ConfigurationError	21	Reserved.
SystemOverloaded	22	The Dialogic® DSI Signaling Server has detected the onset of an internal overload condition. This is usually due either to extremely high traffic rates or failure conditions causing additional invocation of maintenance procedures. During overload, the Signaling Server will continue to operate as normal. Should the condition occur on a frequent basis (for example, during the busy hour every day), the condition should be reported to your support representative.
RestartError	23	Reserved.
TrialMode	24	The system is in trial mode. All protocol licenses are available for 10 hours, after which time the system will restart.
ProcessorTemperature	25	The CPU temperature is outside a preset threshold, indicating either an internal fault or failure of the cooling arrangements. Inspection should take place immediately.
IPConfigurationFailed	26	Reserved.
UnrecognisedCode	27	Reserved.

Event	ID	Description
BoardFailed	28	<p>The Signaling Server has detected a fault with a signaling processor. This may either be due to a faulty signaling processor board or due to the Signaling Server performing a controlled shutdown of a signaling processor following persistent overload of the processor in order to prevent the overload affecting the remainder of the system. Usually this is due to faulty board (which can be confirmed by changing SS7 links to an alternative processor board using the C7LSC command) or unusual signaling conditions, which may be due to incorrect configuration or a mismatch of configuration between the Signaling Server and the remote end. This alarm condition can only be cleared by manual intervention; the user should block and unblock the affected board.</p> <p>Note that a Processor Fail entry always appears in the alarm log when a board is unblocked. This condition is identified by an event with identical Occurred and Cleared times.</p>
SecurityWarning	29	Reserved.
CPUWarning	30	The system has detected that one or more of the CPUs is likely to fail.
VoltageWarning	31	The system has detected that the voltage on one or more power rails is out of range. This is usually due to either a faulty power supply module or a faulty board causing excessive current consumption.
MemoryFailure	32	The system has detected that one or more of its memory modules has failed.
DefaultWarning	33	The system has detected a low priority low level alarm condition. The user should contact its support contact for further information.
SigtranLinkFailure	34	A SIGTRAN signaling link has failed. This is usually due to incorrect configuration (connectivity fault or inactive signaling at the remote end).
SigtranAssocFailure	35	A SIGTRAN signaling association has failed. This is usually due to incorrect configuration (connectivity fault or inactive signaling at the remote end).
SigtranRouteFailure	36	A SIGTRAN signaling route has failed. This is usually due to incorrect configuration (connectivity fault or inactive signaling at the remote end).
SigtranAppServerFailure	37	Communication with a SIGTRAN Remote Application Server has been lost.
TrafficCongested	38	The throughput congestion level has been reached for the capability.
TrafficEnforcement	39	The licensed traffic rate has been exceeded for a extended period and the system is now limiting traffic to the licensed rate for the capability.
TrafficAbate	40	The throughput, previously congested, is below the congestion abatement level for the capability.

Event	ID	Description
RestartRequired	41	The user has changed configuration parameters that require the system to be restarted before they can take effect. The alarm will persist until the system is restarted.
SystemRestarting	42	The system is (re)starting. This condition will clear when the system is fully in service.
BoardInstalled	43	A Signaling board is being either installed or removed.
BoardReset	44	A Signaling board is being reset.
NTPSyncFailure	45	NTP is active but there is no valid NTP sync source.
EthernetStatus	46	An Ethernet port is configured but cannot communicate with peer equipment.
BoardCongestion	47	The signaling board has reached a congestion threshold.
AccessLinkFailure	48	Loss of signaling on an Access Side signaling link. Usually due to incorrect configuration (signaling timeslot), connectivity fault or inactive signaling terminal at the remote end.
DLCFailure	49	Failure of one or more DLCs on a DPNSS signaling link
RDCFailure	50	Failure of communication with a remote data center. Usually due to incorrect configuration (IP address, username or password), connectivity fault or inactive equipment at the remote end.
HardDiskFull	51	Interaction with the hard disk is no longer possible. No further use of the hard disk is attempted until the system is restarted. The most likely cause is a physical failure of the hard disk drive. If the Hard disk is part of RAID array the Disk Failure may be reported when the disk is the DOWN, INACTIVE or RESTARTING states. Refer to Section 4.3.5 "drivesObjectTable" for details.
HardDiskFailure	52	
CRSendFailure	53	The Signaling Server is unable to transfer information to a remote data center for a Continuous Record. Possible problems include: no RDC available, directory does not exist on RDC for this CR, write failure on RDC. If the problem clears, this alarm persists until any records saved on the hard disk during the failure have been successfully transferred to an RDC.
PRSendFailure	54	The Signaling Server is unable to transfer information to a remote data center for a Periodic Report. Possible problems include: no RDC available, directory does not exist on RDC for this PR, write failure on RDC. If the problem clears, the alarm clears at the next successful transfer of data for the Periodic Report.
cmosbatterylow	67	The CMOS back-up battery back-up has become discharged.
filesyserr	68	File system errors have been detected.

Event	ID	Description
ConfigurationInitiate	200	An event relating to the creation of an object within the system configuration.
ConfigurationChange	201	An event relating to change in object configuration.
ConfigurationEnd	202	An event relating to the removal of an object from the system configuration.

The Severity value follows ITU severity convention and is set to one of the following values:

Severity	ID	Description
Cleared	1	An alarm condition has cleared.
Indeterminate	2	Notification of a non erroneous event (e.g., a configuration change).
Critical	3	A service-affecting event has occurred and immediate corrective action is required.
Major	4	A service-affecting event has occurred and urgent corrective action is required.
Minor	5	A non-service-affecting event has occurred and corrective action is required to prevent the condition from becoming more serious.
Warning	6	A potential or impending service-affecting event has been detected but no significant effects have been felt as yet. Action should be taken to further diagnose the problem to prevent the condition becoming more serious.

6 MMI commands

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6.1 CNSNP – Display SNMP Configuration

Synopsis

The output of this command displays the current SNMP mode, including the read community string. The output of this command can be used to determine whether a SNMP agent is currently activated on the Dialogic® DSI Signaling Server.

Syntax

```
CNSNP;
```

Prerequisites

None.

Attributes

None.

Examples

```
CNSNP;
```

Output format

```
SNMP Configuration
SNMP Y
RCOM *****
EXECUTED
```

6.2 CNSNS – Set SNMP Configuration

Synopsis

This command allows the configuration of the SNMP agent. For the SNMP parameter to take effect a system restart is required.

Note: When the SNMP agent is enabled initially, the RCOM string is assigned a value of 'public'.

Syntax

```
CNSNS:SNMP=, [RCOM=, CONFIRM=]
```

Prerequisites

None

Attributes

CONFIG

Examples

```
CNSNS:SNMP=Y,RCOM=rcomstring,CONFIRM=rcomstring;
```

6.3 CNOBS – Set TRAP Configuration

Synopsis

This command allows a user to determine the conditions under which an SNMP TRAP will be generated for a particular DSMI object.

Essentially, a TRAP can be generated:

- When any row within an object changes state (CHANGE)
- When a new row (with a particular state) is created within an object (CREATE)
- When a row (with a particular state) is destroyed within an object (DESTROY)
- When any combination of the above occur (ALL), or when an event occurs that affects the alarm condition of the object, but does not necessarily change the state.

TRAPs can also be completely disabled (NONE).

Possible states into which a DSMI object can transition are:-

UP	Operational and available
DOWN	Not available
INACTIVE	Operational but not available
IMPAIR	Operational and available but encountering service-affecting condition (e.g.

UP	Operational and available (congestion).
RESTART	Unavailable but will soon be available
QUIESCE	Operational but in the process of shutting down/being removed
WARNING	Operational and available but encountering a non service-affecting condition

Only one state's TRAP configuration can be configured per single invocation of this command.

See the DSMI MIB definition of particular DSMI object for more specific reasons as to why they may enter a particular state. ([Section \(4: The DSMI Object Groups and Objects on page 17.\)](#))

The `CNOBP` command displays the current TRAP configuration for each object.

These TRAP messages are sent to SNMP managers, which are defined with the `CNSMI` command. The default setting for all object states is `CHANGE`.

Syntax

```
CNOBS:OBJGRP=, OBJECT=[, UP=] | [, DOWN=] | [, INACTIVE=] | [, IMPAIR=] | [, RESTART=] | [, QUIESCE=, ] | [, WARNING=];
```

Prerequisites

The DSMI-based SNMP agent must be enabled.

Attributes

CONFIG

Examples

```
CNOBS:OBJGRP=7, OBJECT=2, DOWN=all;
```

This will cause a TRAP to be generated whenever an SS7 link is created in the Down state, or destroyed while in the Down state or when the link enters the Down state

6.4 CNOBP – Display TRAP Configuration

Synopsis

This command displays the current TRAP configuration. The entire TRAP configuration for all available objects will be displayed if no object group is specified. The list of available objects will depend on the current system mode configuration (i.e., SIU/ SWS or SGW). If the `objgrp` parameter is specified, `CNOBP` will display settings for only that object group. The `CNOBS` command allows the TRAP configuration to be changed.

Syntax

```
CNOBP [ :OBJGRP=];
```

Prerequisites

The DSMI-based SNMP agent must be enabled.

Attributes

None.

Examples

```
CNOBP;
```

```
CNOBP:OBJGRP=3;
```

Output format

Configuration SNMP Traps									
OBJGRP	OBJECT	UP	DOWN	INACTIVE	IMPAIR	RESTART	QUIESCE	WARNING	
1	1	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
1	2	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
1	3	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
2	1	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
2	2	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
2	3	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
2	4	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
3	1	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
3	2	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
3	3	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
3	4	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
3	5	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
4	1	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
5	1	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
5	2	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
6	1	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
6	2	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
6	3	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
7	1	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
7	2	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
7	3	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE	CHANGE
EXECUTED									

6.5 CNSMI – Set SNMP Manager Configuration

Synopsis

This command allows the administrator to define up to 32 TRAP destinations (i.e., remote SNMP manager stations). Each manager is defined by its IP address (IPADDR). Additionally, the type of TRAP to be dispatched to the SNMP manager is specified with the TFORMAT parameter. The following values are supported:

- 1 An SNMP v1 TRAP is sent
- 2 An SNMP v2 TRAP is sent
- 3 An SNMP v2 INFORM is sent

The PORT parameter allows the user to configure a destination port that is different from the default standard SNMP TRAP port (162).

If the remote SNMP (v1 or v2c) manager has been configured to only recognize TRAPs received with a community string, the TCOM parameter accommodates that value.

If an SNMP v3 TRAP is to be issued, then the USER parameter value is used. The USER parameter is used to specify a user, which has been defined with the CNUSI command. Furthermore, it will also be necessary to configure an engine identifier, which has been configured on the remote SNMP manager. The engine identifier is configured with the ENGINE parameter.

Finally, the LABEL parameter is used to specify an optional string identifier for the manager.

Syntax

```
CNSMI:MNGR=, IPADDR=, TFORMAT=[, PORT=] [, TCOM=] [, USER=] [, ENGINE=] [, LABEL=];
```

Prerequisites

The DSMI-based SNMP agent must be enabled. If an SNMP v3 TRAP is required, the user referenced by the USER parameter must exist.

Attributes

CONFIG

Examples

This is an example for setting up a simple SNMP v2 TRAP receiver/manager:

```
CNSMI:MNGR=1, IPADDR=192.168.1.22, TFORMAT=2;
```

This next example shows how an SNMP v3 TRAP receiver/manager would be created. The first step is to define the user with the CNUSI command:

```
CNUSI:USER=1, AUTH=MD5, AUTHPASS=abcdefgh, LABEL=user1;  
EXECUTED
```

The next step is to define the manager which references the user that has just been defined:

```
CNSMI:MNGR=2, IPADDR=192.168.1.222, USER=1, ENGINE=1122334455;  
EXECUTED
```

6.6 CNSMC – Change SNMP Manager Configuration

Synopsis

This command allows the administrator to alter an SNMP manager's configuration. The parameters and the associated values are as per the CNSMI command.

Syntax

```
CNSMC:MNGR={ , IPADDR=| , TFORMAT=| , PORT=| , TCOM=| , USER=| , ENGINE=| , LABEL= } ;
```

Prerequisites

The DSMI-based SNMP agent must be enabled.

The manager must already have been defined with the CNSMI command.

If an SNMP v3 user is specified, the user must already be defined.

Attributes

CONFIG

Examples

```
CNSMC:MNGR=1, IPADDR=192.168.220.222;
```

6.7 CNSME – End SNMP Manager Configuration

Synopsis

This command removes an SNMP manager definition from the list of configured SNMP managers. The command takes a single parameter, MNGR, which identifies the particular manager to remove.

Syntax

```
CNSME:MNGR=;
```

Prerequisites

The DSMI-based SNMP agent must be enabled.

The manager must already have been defined with the CNSMI command.

Attributes

CONFIG

Examples

```
CNSME:MNGR=1;
```

6.8 CNSMP – Display SNMP Manager Configuration

Synopsis

This command displays the currently configured SNMP managers. If a MNGR value is specified, only that manager is displayed.

Syntax

```
CNSMP [:MNGR=];
```

Prerequisites

The DSMI-based SNMP agent must be enabled.

Attributes

None.

Examples

```
CNSMP;
```

Output format

```
Configuration SNMP Manager
MNGR  IPADDR          PORT TFORMAT TCOM      USER  ENGINEID  LABEL
1     192.168.220.192  162  1        0
EXECUTED
```

6.9 CNUSI – Set SNMP v3

Synopsis

This command allows the administrator to create SNMP v3 user accounts that are recognized by the local server. It also allows the administrator to define SNMP v3 user accounts for use in conjunction with SNMP v3 TRAP destinations/managers.

A user is defined with an integer user identifier (`USER`), optional authentication (`AUTH/AUTHPASS`) and a label (`LABEL`), which serves as the username. The `USER` and `LABEL` parameters are mandatory. Supported `AUTH` values are SHA and MD5. The password must have a minimum length of 8 characters, and a maximum length of 24 is enforced. The `AUTH` and `AUTHPASS` parameters must be specified together. In other words, it is not possible to configure an `AUTHPASS` value without having also specified the `AUTH` value.

Note that only the authentication attributes can be defined with the `CNUSI` command. If a user requires privacy (encryption) parameters to be applied, the `CNUSC` command is used to configure them.

Syntax

```
CNUSI :USER=[ , AUTH=, AUTHPASS=] , LABEL=;
```

Prerequisites

The DSMI-based SNMP agent must be enabled.

Attributes

```
CONFIG
```

Examples

```
CNUSI:USER=3,AUTH=MD5,AUTHPASS=user3pass,LABEL=user3;
```

6.10 CNUSC – Change SNMP v3 User Configuration

Synopsis

This command allows the configuration of a previously registered SNMP v3 user to be changed. The USER parameter identifies the user account to modify.

The parameters and associated values are as per the CNUSI command, with the additional parameters PRIV and PRIVPASS. Supported PRIV parameter values are DES and AES. As with the AUTHPASS parameter value, the privacy password value (PRIVPASS) must be between 8 and 24 characters long. Also, it is not possible to configure or modify the PRIVPASS value for a user without also specifying the PRIV value. It is, however, possible to modify the PRIV or AUTH values without additionally specifying a corresponding password.

Syntax

```
CNUSC:USER=[,AUTH=|,AUTHPASS=|,PRIV=|,PRIVPASS=|,LABEL=};
```

Prerequisites

The DSMI-based SNMP agent must be enabled.

The SNMP v3 user must already have an entry in the list of configured SNMP v3 users.

Attributes

CONFIG

Examples

```
CNUSC:USER=3,AUTH=SHA;
```

6.11 CNUSE – End SNMP v3

Synopsis

This command removes an SNMP v3 user's configuration entry. The command takes a single parameter, USER, which identifies the user to be removed.

Syntax

```
CNUSE:USER=;
```

Prerequisites

The DSMI-based SNMP agent must be enabled.

The user must be present in the list of configured SNMP v3 users.

Attributes

CONFIG

Examples

CNUSE:USER=3;

6.12 CNUSP – Display SNMP v3

Synopsis

This command displays the current list of configured SNMP v3 users. The passwords are hidden. If a USER value is specified with the command, only that user's details are displayed.

Syntax

CNUSP[:USER=];

Prerequisites

The DSMI-based SNMP agent must be enabled.

Attributes

None.

Examples

CNUSP;

Output format

```
Configuration SNMP Users
USER AUTH AUTHPASS PRIV PRIVPASS LABEL
1 MD5 ***** NONE user1
2 SHA ***** NONE user2
EXECUTED
```

6.13 CNSYS – Set System Configuration

Synopsis

This command can be used to set the system location and system contact details. These values are then mirrored in the System Data object of the System group (i.e., DSMI-SYSTEM-OBJECTS-MIB::sysDataObjectTable).

Syntax

```
CNSYS: [LOCATION= | CONTACT=];
```

Prerequisites

None.

Attributes

CONFIG

Examples

```
CNSYS: LOCATION=RACK3, CONTACT=ADMIN@MAIL.COM;
```

6.14 CNSYP – Display System Configuration

Synopsis

This displays the system contact and system location details.

Syntax

```
CNSYP;
```

Prerequisites

None.

Attributes

None.

Examples

```
CNSYP;
```

Output format

```
SS7G40(SIU) System Configuration
.
.
CONTACT      ADMIN@EMAIL.COM
LOCATION      RACK3
```

7 License

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