MIB Reference

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This appendix provides reference information for the one product-specific MIB that is currently available for the Cisco TelePresence Exchange System:
CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB.

CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB

This MIB provides product-specific configuration, status, statistics, events, errors, and alarm notifications for the following devices:

- All nodes in the Cisco TelePresence Exchange System server cluster.
- Cisco TelePresence Exchange System–configured resources which provide the signaling, media services, scheduling, and other functions that enable the system to deliver an end-to-end solution.

This MIB is implemented only on the administration server, which provides management interfaces for all nodes in the server cluster and for the configured resources.

The CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB uses the OID 1.3.6.1.4.1.9.9.758.

For details and to download the MIB, go to:
ftp://ftp.cisco.com/pub/mibs/v2/CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB.my.

For reference information about the MIB, see the following sections:

- Update Intervals for SNMP Tables, page D-1
- Overall Health System Status Objects, page D-2
- Table Objects, page D-3
- Trap Notification Objects, page D-5
- Read-Write Objects, page D-8

Also see the "Configuration Tasks for the CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB" section on page D-10.

Update Intervals for SNMP Tables

Table D-1 shows how long it may take for information, such as a configuration change or event, to take effect in the relevant SNMP table. For example, after adding a new resource, it could take up to 30 seconds before the resource entry shows up in the ctxResourceTable.

Table D-1   SNMP Table Update Intervals for CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB

Type	Update Interval	Tables
Configuration-based tables	30 seconds	ctxServiceProviderTable
		ctxRegionTable
		ctxOrganizationTable
		ctxResourceTable
		ctxSipConfigTable
		ctxMediaCapacityConfigTable
		ctxMeetingConfigTable
		ctxClusterNodeTable
Statistic tables	5 seconds	ctxResourceStatsTable
		ctxAllocStatsTable
Peak history tables	15 seconds	ctxPeakHistAllocTable
		ctxPeakHistAllocPoolTable
Event history table	5 seconds	ctxErrorHistoryTable

Overall Health System Status Objects

Table D-2 defines the states and conditions of objects in the overall system status subtree ctxSystemStatusObjects of the CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB.

Table D-2   Overall Health System Status Objects of the CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB

Object	Status	Description
ctxAdminServersStatus	NORMAL	Both administration servers are fully operational and able to process requests.
	WARNING	One of the administration servers is down, but the other is still functional.
	ERROR	Both administration servers are offline or not functional. This status would never be returned because SNMP would not work if both administration servers were offline.
ctxCallEnginesStatus	NORMAL	Both call engine servers are fully operational and able to process requests.
	WARNING	One of the call engine servers is down, but the other is still functional.
	ERROR	Both call engine servers are offline or not functional.

Table D-2   Overall Health System Status Objects of the CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB (continued)

Object	Status	Description
ctxDatabaseServersStatus	NORMAL	Both database servers are fully operational and able to process requests. In this mode, the current primary database server is active, the current secondary database server is available in the standby state, and the database is replicating.
	WARNING	One of the database servers is down, or the database is not replicating. In this mode, there is no standby database server.
	ERROR	Both database servers are offline or not functional. Having no functional database server is a problem for the entire Cisco TelePresence Exchange System server cluster.
ctxResourceStatus	NORMAL	According to the resource monitoring probes, all configured and enabled resources are operational. See the "Resource Monitoring" section on page 26-3.
	WARNING	One resource is offline or not functional.
	ERROR	Two or more resources are offline or not functional.
ctxSystemConfigStatus	NORMAL	The system configuration is complete enough to enable the scheduling, attending, and One-Button-to-Push (OBTP) functions of the system.
	WARNING	*Not supported.*
	ERROR	The system configuration is not complete and is blocking one of the key functions of the system.
ctxSystemBackupStatus	NORMAL	Backup is scheduled, and the last backup was successful.
	WARNING	Backup is not scheduled or not properly configured.
	ERROR	Last backup has failed.

Table Objects

Table D-3   Table Objects of the CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB

Table Object	OID	Description
ctxServiceProviderTable	1.3.6.1.4.1.9.9.758.1.1.1	This table specifies the configuration information for service providers as they are configured in the Cisco TelePresence Exchange System. Service provider entries provide a logical grouping of regions, organizations, and resources.
ctxRegionTable	1.3.6.1.4.1.9.9.758.1.1.2	This table specifies the configuration information for regions as they are configured in the Cisco TelePresence Exchange System. A region is defined as a set of resources that are similar in terms of network latency, jitter, and quality of service. Typically, a region is a geographic area such as the Americas, Europe, or Asia Pacific, but a region can be a smaller set of resources (for example, U.S. East and U.S. West regions).

Table D-3   Table Objects of the CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB (continued)

Table Object	OID	Description
ctxOrganizationTable	1.3.6.1.4.1.9.9.758.1.1.3	This table specifies the configuration information for an organization as configured in the Cisco TelePresence Exchange System. Organization entries provide a logical grouping of customer endpoints and resources.
ctxResourceTable	1.3.6.1.4.1.9.9.758.1.1.4.1	This table specifies the configuration information for resources as they are configured in the Cisco TelePresence Exchange System. A resource is a server or network device that is configured in the Cisco TelePresence Exchange System to provide call signaling, media services, scheduling, or solution functions. A resource may have additional configuration items, such as the ctxSipConfigTable object. Each of the other ctxResourceObjects tables are indexed by this resource entry. If a resource has SIP configurations, there will be a entry in the ctxSipConfigEntry indexed by this ctxResourceIndex.
ctxSipConfigTable	1.3.6.1.4.1.9.9.758.1.1.4.2	This table specifies the SIP configuration attributes for a resource. Only resources that have SIP attributes will have an entry in this table.
ctxMediaCapacityConfigTable	1.3.6.1.4.1.9.9.758.1.1.4.3	This table specifies the media capacity configuration attributes for a resource. Only resources that have media capacity attributes will have an entry in this table.
ctxMeetingConfigTable	1.3.6.1.4.1.9.9.758.1.1.4.4	This table specifies the meeting configuration attributes for a resource. Only resources that have meeting attributes will have an entry in this table.
ctxClusterNodeTable	1.3.6.1.4.1.9.9.758.1.1.5	This table specifies the configuration information for cluster nodes as they are configured in the Cisco TelePresence Exchange System. A cluster node is a server within the Cisco TelePresence Exchange System, such as an administration server, call engine server, or database server.
ctxResourceStatsTable	1.3.6.1.4.1.9.9.758.1.3.1	This table specifies the run-time resource statistics.
ctxAllocStatsTable	1.3.6.1.4.1.9.9.758.1.3.2	This table specifies the run-time scheduling port allocation statistics.
ctxRegionStatsTable	1.3.6.1.4.1.9.9.758.1.3.3	This table specifies the run-time statistics for regions for scheduling port allocations and call setup failures. This table is similar to the ctxAllocStatsTable table, except that this table provides statistics per region for all resources.
ctxPeakHistAllocTable	1.3.6.1.4.1.9.9.758.1.3.4.3	This table specifies the run-time peak statistics for resource port allocations. This table contains peak port allocations per resource for ctxHistMaxIntervals. The management entity can use this table to monitor the peak port allocations per interval. Setting ctxPeakHistMaxIntervals to 0 would disable this table and clear all entries in the table.

Table D-3   Table Objects of the CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB (continued)

Table Object	OID	Description
ctxPeakHistAllocPoolTable	1.3.6.1.4.1.9.9.758.1.3.4.4	This table specifies the run-time peak port allocation statistics for all resources within a region. This table contains peak port allocations per region for ctxHistMaxIntervals. The management entity can use this table to monitor the peak port allocations per interval. Setting ctxPeakHistMaxIntervals to 0 would disable this table and clear all entries in the table.
ctxErrorHistoryTable	1.3.6.1.4.1.9.9.758.1.4.4	This table contains a history of alarms and events that are generated by the Cisco TelePresence Exchange System. This table is a real-time history table of alarms and events for the Cisco TelePresence Exchange System. When the table reaches its capacity, which is specified in ctxErrorHistoryTableSize, the agent will purge the oldest entry. The management entity can receive real-time events when an object is inserted into this table by configuring ctxErrorHistoryEventNotifyEnable to TRUE and receiving ctxErrorHistoryEvent notifications.

Trap Notification Objects

Table D-4   Trap Notification Objects of the CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB

Notification Object	OID	Description
ciscoCTXSysAdminServersStatusChg	1.3.6.1.4.1.9.9.758.0.1	This notification is sent when the ctxAdminServersStatus changes. ctxStatusChangeNotifyEnable controls whether or not this notification is sent.
ciscoCTXSysDatabaseServersStatusChg	1.3.6.1.4.1.9.9.758.0.2	This notification is sent when the ctxDatabaseServerStatus changes. ctxStatusChangeNotifyEnable controls whether or not this notification is sent.
ciscoCTXSysCallEnginesStatusChg	1.3.6.1.4.1.9.9.758.0.3	This notification is sent when the ctxCallEnginesStatus changes. ctxStatusChangeNotifyEnable controls whether or not this notification is sent.
ciscoCTXSysResourceStatusChg	1.3.6.1.4.1.9.9.758.0.4	This notification is sent when the ctxResourceStatus changes. ctxStatusChangeNotifyEnable controls whether or not this notification is sent.

Table D-4   Trap Notification Objects of the CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB (continued)

Notification Object	OID	Description
ciscoCTXSysSystemConfigStatusChg	1.3.6.1.4.1.9.9.758.0.5	This notification is sent when the ctxSystemConfigStatus changes. ctxStatusChangeNotifyEnable controls whether or not this notification is sent.
ciscoCTXSysSystemBackupStatusChg	1.3.6.1.4.1.9.9.758.0.6	Backup status is a warning if no backup has been scheduled correctly. Status is an error if the last backup has failed. This notification is sent when the ctxSystemBackupStatus changes. ctxStatusChangeNotifyEnable controls whether or not this notification is sent.
ciscoCTXSysLicenseFailure	1.3.6.1.4.1.9.9.758.0.7	License errors are a stateless event. License errors are generated once a day for system-wide license errors or when there is a call that violates a license. The lack of license errors after 24 hours could be considered cleared. This notification is sent for demo license errors: • Warnings begin 5 days prior to demo license expiration if you have not installed a permanent license. • Error messages begin immediately after the demo license expiration if the user has not installed a permanent license. ctxLicenseAlarmNotifyEnable controls whether or not this notification is sent.
ciscoCTXSysUserAuthFailure	1.3.6.1.4.1.9.9.758.0.8	User authentication failures are generated after three consecutive login failures by the same user to either the administration console or CLI of the Cisco TelePresence Exchange System. ctxAuthFailureNotifyEnable controls whether or not this notification is sent.
ciscoCTXSysClusterNodeDown	1.3.6.1.4.1.9.9.758.0.9	This notification is sent when there is a network connectivity or probe monitor failure to a cluster node from the administration server. ctxClusterNodeAlarmNotifyEnable controls whether or not this notification is sent.
ciscoCTXSysClusterNodeUp	1.3.6.1.4.1.9.9.758.0.10	This notification is sent when the cluster node connectivity is restored or when the probe monitor is successful in monitoring the node after it had been down. ctxClusterNodeAlarmNotifyEnable controls whether or not this notification is sent.

Table D-4   *Trap Notification Objects of the CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB (continued)*

Notification Object	OID	Description
ciscoCTXSysResourceDown	1.3.6.1.4.1.9.9.758.0.11	This notification is sent when there is a network connectivity or probe monitor failure to the resource. This can be a SIP OPTION PING, XML-RPC, or network connectivity failure. The ctxNotifyMessage contains the failure details. ctxResourceAlarmNotifyEnable controls whether or not this notification is sent.
ciscoCTXSysResourceUp	1.3.6.1.4.1.9.9.758.0.12	This notification is sent when the resource connectivity is restored or when the probe monitor is successful in monitoring the resource after it had been down. ctxResourceAlarmNotifyEnable controls whether or not this notification is sent.
ciscoCTXSysResourceAllocFailure	1.3.6.1.4.1.9.9.758.0.13	This notification is sent when a resource allocation failure occurs. ctxResourceAlarmNotifyEnable controls whether or not this notification is sent.
ciscoCTXSysCallSetupFailure	1.3.6.1.4.1.9.9.758.0.14	This notification is sent when there is a call-setup or routing failure between the Cisco TelePresence Exchange System and a resource. The cause for the setup failure is detailed in ctxNotifyMessage. ctxCallFailureNotifyEnable controls whether or not this notification is sent.
ciscoCTXSysCallAbnormalDisconnect	1.3.6.1.4.1.9.9.758.0.15	This notification is sent when there is an abnormal call disconnect. The call disconnect reason is detailed in ctxNotifyMessage. ctxCallFailureNotifyEnable controls whether or not this notification is sent.
ciscoCTXSysErrorHistoryEvent	1.3.6.1.4.1.9.9.758.0.16	This notification is sent when a new ctxErrorHistoryEntry is created. If the event being logged does not have an organization name, then this varbind entry is an empty string value. ctxErrorHistoryEventNotifyEnable controls whether or not this notification is sent.

Read-Write Objects

Table D-5   Read-Write Objects of the CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB

Object	OID	Description
ctxStatusChangeNotifyEnable	1.3.6.1.4.1.9.9.758.1.5.2.1	This object specifies whether the status change traps should be enabled or disabled. Setting this to true enables the notifications. Setting this to false disables the notifications. Default is true (enabled). This object controls the generation of the following notifications: • ciscoCTXSysAdminServersStatusChg • ciscoCTXSysDatabaseServersStatusChg • ciscoCTXSysCallEnginesStatusChg • ciscoCTXSysResourceStatusChg • ciscoCTXSysSystemConfigStatusChg • ciscoCTXSysSystemBackupStatusChg
ctxLicenseAlarmNotifyEnable	1.3.6.1.4.1.9.9.758.1.5.2.2	This object specifies whether the license alarm traps should be enabled or disabled. Setting this to true enables the notifications. Setting this to FALSE disables the notifications. Default is true (enabled). This object controls the generation of the notification ciscoCTXSysLicenseFailure.
ctxAuthFailureNotifyEnable	1.3.6.1.4.1.9.9.758.1.5.2.3	This object specifies whether the authentication failure traps should be enabled or disabled. Setting this to true enables the notifications. Setting this to false disables the notifications. The default setting for authentication failures is false (disabled) in order to prevent unnecessary event flooding. This object controls the generation of the notification ciscoCTXSysUserAuthFailure.
ctxClusterNodeAlarmNotifyEnable	1.3.6.1.4.1.9.9.758.1.5.2.4	This object specifies whether the cluster node alarm traps should be enabled or disabled. Setting this to true enables the notifications. Setting this to false disables the notifications. Default is true (enabled). This object controls the generation of the following notifications: • ciscoCTXSysClusterNodeDown • ciscoCTXSysClusterNodeUp

Table D-5   Read-Write Objects of the CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB (continued)

Object	OID	Description
ctxResourceAlarmNotifyEnable	1.3.6.1.4.1.9.9.758.1.5.2.5	This object specifies whether the resource alarm traps should be enabled or disabled. Setting this to true enables the notifications. Setting this to false disables the notifications. Default is true (enabled). This object controls the generation of the following notifications: • ciscoCTXSysResourceDown • ciscoCTXSysResourceUp • ciscoCTXSysResourceAllocFailure
ctxCallFailureNotifyEnable	1.3.6.1.4.1.9.9.758.1.5.2.6	This object specifies whether the call failure traps should be enabled or disabled. Setting this to true enables the notifications. Setting this to false disables the notifications. Default is true (enabled). This object controls the generation of the following notifications: • ciscoCTXSysCallSetupFailure • ciscoCTXSysCallAbnormalDisconnect
ctxErrorHistoryEventNotifyEnable	1.3.6.1.4.1.9.9.758.1.5.2.7	This object specifies whether the error event history traps should be enabled or disabled. Setting this to true enables the notifications. Setting this to false disables the notifications. Notifications and other errors are logged in the error history table. Enabling this object may cause duplication of events that are already duplicates of other notifications. This may be the desired behavior of the management system. Use ctxErrorHistoryMaxSeverity to specify the maximum severity level to be logged and sent via a notification. Default is false (disabled). This object controls the generation of the notification ciscoCTXSysErrorHistoryEvent.
ctxErrorHistoryTableSize	1.3.6.1.4.1.9.9.758.1.4.1	This object specifies the maximum number of entries that the ctxErrorHistoryTable can contain. When the capacity of the ctxErrorHistoryTable is reached, the oldest entry in the table is deleted to accommodate a new entry. A value of '0' disables the history table. The default value is set to 100 entries.

Table D-5   Read-Write Objects of the CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB (continued)

Object	OID	Description
ctxErrorHistoryMaxSeverity	1.3.6.1.4.1.9.9.758.1.4.2	Defines the maximum severity of the event messages that the history table will contain. The default is notice(5), which can be changed by setting the object. Available options: • emergency(0) • alert(1) • critical(2) • error(3) • warning(4) • notice(5) • info(6) • debug(7)
ctxPeakHistMaxIntervals	1.3.6.1.4.1.9.9.758.1.3.4.1	This object specifies the number of time intervals that are kept in the history tables ctxPeakHistAllocTable and ctxPeakHistAllocPoolTable. The default is 96 intervals, which at the ctxPeakHistIntTime default of 15 minutes, stores peak values for 24 hours. A value of 0 will disable peak history tables from collecting data. The range is from 5 to 1440 intervals. Changing this value will reset and clear both ctxPeakHistAllocTable and ctxPeakHistAllocPoolTable table entries.
ctxPeakHistIntTime	1.3.6.1.4.1.9.9.758.1.3.4.2	This object specifies the time interval in minutes. The default is 15 minutes. The range is from 1 to 1440 minutes. Changing this value will reset and clear both ctxPeakHistAllocTable and ctxPeakHistAllocPoolTable table entries.

Configuration Tasks for the CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB

Configuration tasks are described in the following topics:

- Enabling or Disabling Traps from the CISCO-TELEPRESENCE-EXCHANGE-SYSTEM-MIB, page 26-10
- Adding a Cluster-Identifying VIP Address to SNMP Notifications, page 26-8