Preface

About This Preface

This preface describes the objectives, audience, organization, and conventions of this document, and explains how to find additional information on related products and services. It contains the following sections:

Document Objective

This document describes the information regarding the Cisco Unity Express Simple Network Management Protocol (SNMP) Management Information Base (MIB). The document contains tables for you to use when using the SNMP MIB to monitor your system.

Audience

The primary audience for this document is network operators and administrators who have experience in the following areas:

- Telecommunications network operations
- Data network operations

- SNMP operation
- MIB syntax
- Telecommunications hardware
- Data network hardware

In addition, the following audiences may find this document useful:

- Software and hardware installers
- Network designers

Document Organization

This document contains the chapters listed in Table 1.

Table 1 Document Organization

Chapter	Title	Description
Chapter 1	Cisco Unity Express SNMP MIB Support	This chapter includes a description of the Cisco Unity Express MIB. It also includes the following information: • Prerequisites for the CISCO-UNITY-EXPRESS-MIB • Restrictions for the CISCO-UNITY-EXPRESS-MIB • CISCO-UNITY-EXPRESS-MIB Objects

Document Conventions

Caution Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

Note Means *reader take note*. Notes contain helpful suggestions or references to materials not contained in this manual.

Tip Means *the following information might help you solve a problem*. The tips information might not be troubleshooting or even an action, but could be useful information, similar to a Timesaver.

Timesaver Means *the described action saves time*. You can save time by performing the action described in the paragraph.

Syntax Conventions

Syntax conventions used throughout this guide are shown in Table 2.

Table 2 Conventions

Convention	Meaning	Description/Comments
Boldface	Commands and keywords you enter as shown.	**offset-list**
Italics	Variables for which you supply values.	**command** *type interface* You replace the variable with the type of interface. In contexts that do not allow italics, such as online help, arguments are enclosed in angle brackets (< >).
Square brackets ([ ])	Optional elements.	**command** [abc] abc is optional (not required), but you can choose it.
Vertical bars (|)	Separated alternative elements.	**command** [abc | def] You can choose either abc or def, or neither, but not both.
Braces ({ })	Required choices.	**command** {abc | def} You must choose either abc or def, but not both.
Braces and vertical bars within square brackets ([{ | }])	A required choice within an optional element.	**command** [abc {def | ghi}] You have three options: nothing abc def abc ghi
Caret character (^)	Control key.	The key combinations ^D and Ctrl-D are equivalent: Both mean “hold down the Control key while you press the D key.” Keys are indicated in capital letters, but are not case sensitive.
A nonquoted set of characters	A string.	For example, when setting an SNMP community string to *public*, do not use quotation marks around the string; otherwise, the string will include the quotation marks.
`System prompts`	Denotes interactive sessions; indicates that the user enters commands at the prompt.	The system prompt indicates the current command mode. For example, the prompt `Router (config) #` indicates global configuration mode.

Table 2 Conventions (continued)

Convention	Meaning	Description/Comments
`Screen` font	Terminal sessions and information the system displays.	—
Angle brackets (< >)	Nonprinting characters such as passwords.	—
Exclamation point (!) at the beginning of a line	A comment line.	Comments are sometimes displayed by the Cisco IOS software.

Conventions used in the Cisco Unity Express system (such as in CLI commands) are shown in Table 3.

Table 3 Data Types

Data Type	Definition	Example

Integer	A series of decimal digits from the set of 0 through 9 that represents a positive integer. An integer may have one or more leading zero digits (0) to align the columns. Leading zeros are always valid as long as the number of digits is less than or equal to ten digits. Values of this type have a range of zero through 4294967295.	`123`
		`000123`
		`4200000000`

Signed integer	This data type has the same basic format as the integer but can be either positive or negative. When negative, it is preceded by the sign character (-). As with the integer data type, this data type can be as many as ten digits in length, not including the sign character. The value of this type has a range of minus 2147483647 through 2147483647.	`123`
		`-000123`
		`-21000000001`

Hexadecimal	A series of base-16 digits from the set of 0 through 9, a through f, or A through F. The hexadecimal number may have one or more leading zeros (0). For all hexadecimal values, the maximum size is 0xffffffff (eight hexadecimal digits).	`1f3` `01f3000`
Text	A series of alphanumeric characters from the ASCII character set, where defined. Tab, space, and double quote (“ ”) characters cannot be used. Text can be as many as 255 characters; however, it is recommended that you limit the text to no more than 32 characters for readability.	`EntityID` `LineSES_Threshold999`
String	A series of alphanumeric characters and white-space characters. A string is surrounded by double quotes (“ ”). Strings can be as many as 255 characters; however, it is recommended that you limit the strings to no more than 80 characters for readability.	`“This is a descriptive string.”`

Note Hexadecimal and integer fields in files may have different widths (number of characters) for column alignment.

Documentation Suite

Consult the following related documentation for information about Cisco Unity Express and the solutions it supports.

Obtaining Documentation

Cisco documentation and additional literature are available on Cisco.com. Cisco also provides several ways to obtain technical assistance and other technical resources. These sections explain how to obtain technical information from Cisco Systems.

Cisco.com

You can access the most current Cisco documentation at this URL:

http://www.cisco.com/techsupport

You can access the Cisco website at this URL:

http://www.cisco.com

You can access international Cisco websites at this URL:

http://www.cisco.com/public/countries_languages.shtml

Product Documentation DVD

Cisco documentation and additional literature are available in the Product Documentation DVD package, which may have shipped with your product. The Product Documentation DVD is updated regularly and may be more current than printed documentation.

The Product Documentation DVD is a comprehensive library of technical product documentation on portable media. The DVD enables you to access multiple versions of hardware and software installation, configuration, and command guides for Cisco products and to view technical documentation in HTML. With the DVD, you have access to the same documentation that is found on the Cisco website without being connected to the Internet. Certain products also have .pdf versions of the documentation available.

The Product Documentation DVD is available as a single unit or as a subscription. Registered Cisco.com users (Cisco direct customers) can order a Product Documentation DVD (product number DOC-DOCDVD=) from Cisco Marketplace at this URL:

http://www.cisco.com/go/marketplace/

Ordering Documentation

Beginning June 30, 2005, registered Cisco.com users may order Cisco documentation at the Product Documentation Store in the Cisco Marketplace at this URL:

http://www.cisco.com/go/marketplace/

Nonregistered Cisco.com users can order technical documentation from 8:00 a.m. to 5:00 p.m. (0800 to 1700) PDT by calling 1 866 463-3487 in the United States and Canada, or elsewhere by calling 011 408 519-5055. You can also order documentation by e-mail at tech-doc-store-mkpl@external.cisco.com or by fax at 1 408 519-5001 in the United States and Canada, or elsewhere at 011 408 519-5001.

Documentation Feedback

You can rate and provide feedback about Cisco technical documents by completing the online feedback form that appears with the technical documents on Cisco.com.

You can send comments about Cisco documentation to bug-doc@cisco.com.

You can submit comments by using the response card (if present) behind the front cover of your document or by writing to the following address:

Cisco Systems
Attn: Customer Document Ordering
170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Cisco Product Security Overview

Cisco provides a free online Security Vulnerability Policy portal at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

From this site, you can perform these tasks:

- Report security vulnerabilities in Cisco products.
- Obtain assistance with security incidents that involve Cisco products.
- Register to receive security information from Cisco.

A current list of security advisories and notices for Cisco products is available at this URL:

http://www.cisco.com/go/psirt

If you prefer to see advisories and notices as they are updated in real time, you can access a Product Security Incident Response Team Really Simple Syndication (PSIRT RSS) feed from this URL:

http://www.cisco.com/en/US/products/products_psirt_rss_feed.html

Reporting Security Problems in Cisco Products

Cisco is committed to delivering secure products. We test our products internally before we release them, and we strive to correct all vulnerabilities quickly. If you think that you might have identified a vulnerability in a Cisco product, contact PSIRT:

- Emergencies—security-alert@cisco.com

  An emergency is either a condition in which a system is under active attack or a condition for which a severe and urgent security vulnerability should be reported. All other conditions are considered nonemergencies.

- Nonemergencies—psirt@cisco.com

In an emergency, you can also reach PSIRT by telephone:

- 1 877 228-7302
- 1 408 525-6532

Tip We encourage you to use Pretty Good Privacy (PGP) or a compatible product to encrypt any sensitive information that you send to Cisco. PSIRT can work from encrypted information that is compatible with PGP versions 2.*x* through 8.*x*.

Never use a revoked or an expired encryption key. The correct public key to use in your correspondence with PSIRT is the one linked in the Contact Summary section of the Security Vulnerability Policy page at this URL:

http://www.cisco.com/en/US/products/products_security_vulnerability_policy.html

The link on this page has the current PGP key ID in use.

Obtaining Technical Assistance

Cisco Technical Support provides 24-hour-a-day award-winning technical assistance. The Cisco Technical Support & Documentation website on Cisco.com features extensive online support resources. In addition, if you have a valid Cisco service contract, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not have a valid Cisco service contract, contact your reseller.

Cisco Technical Support & Documentation Website

The Cisco Technical Support & Documentation website provides online documents and tools for troubleshooting and resolving technical issues with Cisco products and technologies. The website is available 24 hours a day, at this URL:

http://www.cisco.com/techsupport

Access to all tools on the Cisco Technical Support & Documentation website requires a Cisco.com user ID and password. If you have a valid service contract but do not have a user ID or password, you can register at this URL:

http://tools.cisco.com/RPF/register/register.do

Note Use the Cisco Product Identification (CPI) tool to locate your product serial number before submitting a web or phone request for service. You can access the CPI tool from the Cisco Technical Support & Documentation website by clicking the **Tools & Resources** link under Documentation & Tools. Choose **Cisco Product Identification Tool** from the Alphabetical Index drop-down list, or click the **Cisco Product Identification Tool** link under Alerts & RMAs. The CPI tool offers three search options: by product ID or model name; by tree view; or for certain products, by copying and pasting **show** command output. Search results show an illustration of your product with the serial number label location highlighted. Locate the serial number label on your product and record the information before placing a service call.

Submitting a Service Request

Using the online TAC Service Request Tool is the fastest way to open S3 and S4 service requests. (S3 and S4 service requests are those in which your network is minimally impaired or for which you require product information.) After you describe your situation, the TAC Service Request Tool provides recommended solutions. If your issue is not resolved using the recommended resources, your service request is assigned to a Cisco engineer. The TAC Service Request Tool is located at this URL:

http://www.cisco.com/techsupport/servicerequest

For S1 or S2 service requests or if you do not have Internet access, contact the Cisco TAC by telephone. (S1 or S2 service requests are those in which your production network is down or severely degraded.) Cisco engineers are assigned immediately to S1 and S2 service requests to help keep your business operations running smoothly.

To open a service request by telephone, use one of the following numbers:

Asia-Pacific: +61 2 8446 7411 (Australia: 1 800 805 227)
EMEA: +32 2 704 55 55
USA: 1 800 553-2447

For a complete list of Cisco TAC contacts, go to this URL:

http://www.cisco.com/techsupport/contacts

Definitions of Service Request Severity

To ensure that all service requests are reported in a standard format, Cisco has established severity definitions.

Severity 1 (S1)—Your network is “down,” or there is a critical impact to your business operations. You and Cisco will commit all necessary resources around the clock to resolve the situation.

Severity 2 (S2)—Operation of an existing network is severely degraded, or significant aspects of your business operation are negatively affected by inadequate performance of Cisco products. You and Cisco will commit full-time resources during normal business hours to resolve the situation.

Severity 3 (S3)—Operational performance of your network is impaired, but most business operations remain functional. You and Cisco will commit resources during normal business hours to restore service to satisfactory levels.

Severity 4 (S4)—You require information or assistance with Cisco product capabilities, installation, or configuration. There is little or no effect on your business operations.

Obtaining Additional Publications and Information

Information about Cisco products, technologies, and network solutions is available from various online and printed sources.

- Cisco Marketplace provides a variety of Cisco books, reference guides, documentation, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:

  http://www.cisco.com/go/marketplace/

- *Cisco Press* publishes a wide range of general networking, training and certification titles. Both new and experienced users will benefit from these publications. For current Cisco Press titles and other information, go to Cisco Press at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco Systems technical user magazine for maximizing Internet and networking investments. Each quarter, Packet delivers coverage of the latest industry trends, technology breakthroughs, and Cisco products and solutions, as well as network deployment and troubleshooting tips, configuration examples, customer case studies, certification and training information, and links to scores of in-depth online resources. You can access Packet magazine at this URL:

  http://www.cisco.com/packet

- *Internet Protocol Journal* is a quarterly journal published by Cisco Systems for engineering professionals involved in designing, developing, and operating public and private internets and intranets. You can access the Internet Protocol Journal at this URL:

  http://www.cisco.com/ipj

- Networking products offered by Cisco Systems, as well as customer support services, can be obtained at this URL:

  http://www.cisco.com/en/US/products/index.html

- Networking Professionals Connection is an interactive website for networking professionals to share questions, suggestions, and information about networking products and technologies with Cisco experts and other networking professionals. Join a discussion at this URL:

  http://www.cisco.com/discuss/networking

- World-class networking training is available from Cisco. You can view current offerings at this URL:

  http://www.cisco.com/en/US/learning/index.html

Summary History of Document Changes

Table 4 describes the document changes made after the initial release of the *Cisco Unity Express SNMP MIB Guide Release 2.2*.

Table 4 Summary History of Document Changes

Subject	Document Number and Change Date	Change Summary
—	OL-7961-01, January 12, 2006	Initial release

Cisco Unity Express SNMP MIB Support

Cisco Unity Express (CUE) integrates an SNMP agent and SNMP MIBs to monitor the health and to conduct performance monitoring, data collection, and trap management for Cisco Unity Express voice-mail and auto-attendant applications. Cisco Unity Express provides a voice-mail and auto-attendant solution for small branch offices, which typically have less than 200 users.

Cisco Unity Express functionality is provided by a network management Advanced Integration Module (AIM) card that is installed inside a router. The AIM allows the Cisco Unity Express functionality to be quickly added to supported routers. To operate, the AIM needs only IP connectivity and power from the router. CUE functionality is also supported on a network module (CUE-NM) and on the extended capacity network module (CUE-NM-EC).

By configuring SNMP to send notifications to one or more monitoring computers, the network management system (NMS) application can monitor multiple CUEs. Because notifications are event driven, they cause much less network traffic than using the SNMP GET operation repeatedly to poll a population of CUEs. The SNMP management interface provides visibility into the system through SNMP GET operations and sends SNMP v2c notifications to the NMS application when events occur.

Feature History of the Cisco CUE MIB Feature

Release	Modification
CUE 2.2	This feature was introduced.

Finding Support Information for Platforms and Cisco IOS Software Images

Use Cisco Feature Navigator to find information about platform support and Cisco IOS software image support. Access Cisco Feature Navigator at http://www.cisco.com/go/fn. You must have an account on Cisco.com. If you do not have an account or have forgotten your username or password, click **Cancel** at the login dialog box and follow the instructions that appear.

Contents

Prerequisites for the CISCO-UNITY-EXPRESS-MIB

Users of the CUE MIB should ensure the following prerequisites are met.

- Administrators of the CUE must be familiar with the Cisco command-line interface (CLI).
- Use a MIB browser to interact with the CISCO-UNITY-EXPRESS-MIB.
- Upload the CISCO-UNITY-EXPRESS-MIB to the NMS.
- Ensure the SNMP Agent provides SNMP v1 and SNMPv2c compliance.

Restrictions for the CISCO-UNITY-EXPRESS-MIB

CISCO-UNITY-EXPRESS-MIB support is restricted to the following Cisco routers in Cisco Unity Express Release 2.2.

- 2600XM
- 2691
- 2801
- 2811
- 2821
- 2851
- 3725
- 3745
- 3825
- 3845

Information About the CISCO-UNITY-EXPRESS-MIB

The CUE MIB provides configuration information and usage of the Cisco Unity voice mail system:

CISCO-UNITY-EXPRESS-MIB Structure

The CISCO-UNITY-EXPRESS-MIB is uniquely identified within the Cisco management (9) group by the number 420. Therefore, the CISCO-UNITY-EXPRESS-MIB is 1.3.6.1.4.1.9.9.420.

Objects in the CISCO-UNITY-EXPRESS-MIB can be identified by either of the following methods.

- The object identifier—1.3.6.1.4.1.9.9.420.<Cisco Unity Express MIB-variable>

or

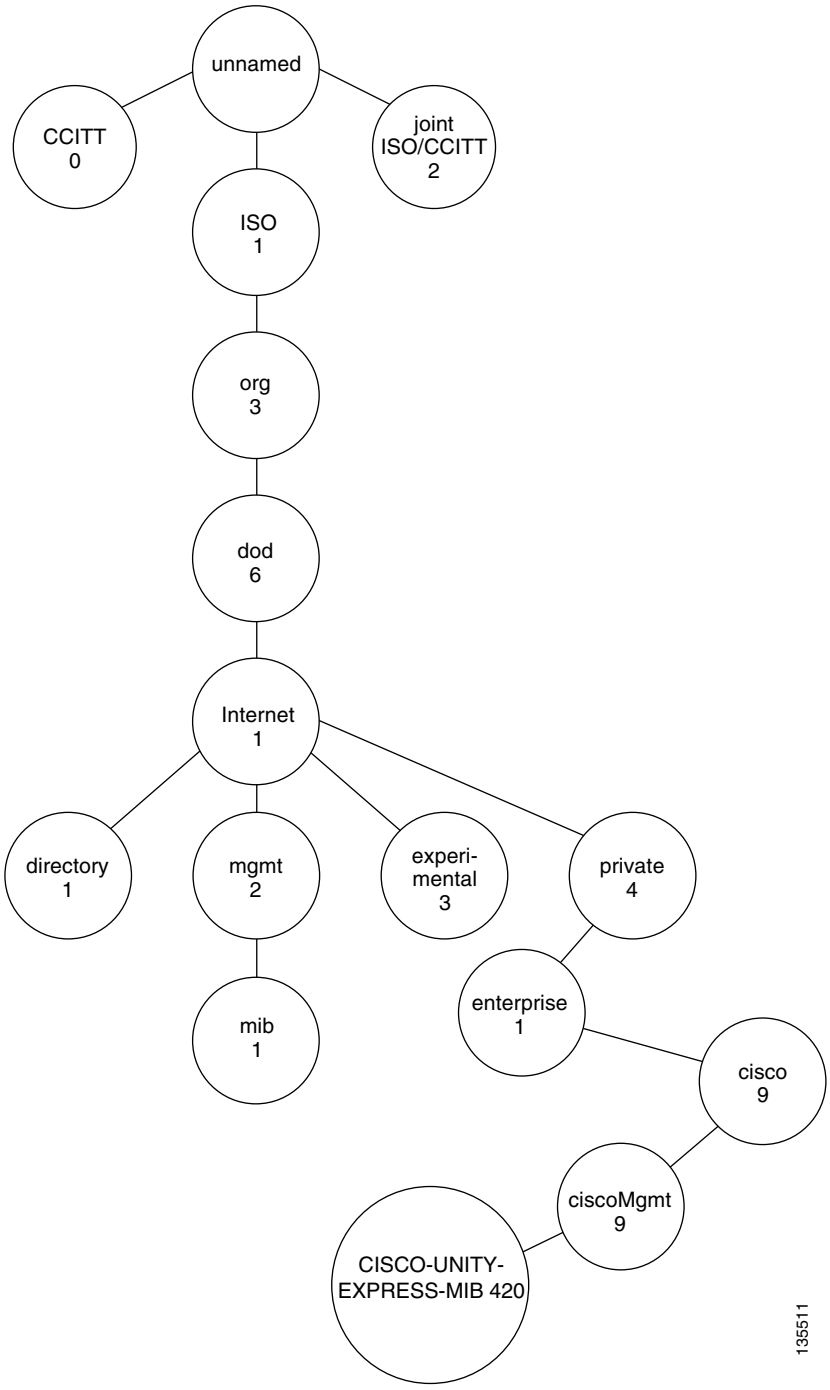
- The object name—iso(1).org(3).dod(6).internet(1).private(4).enterprise(1).cisco(9).ciscoMgmt(9).CISCO-UNITY-EXPRESS-MIB(420).<Cisco Unity Express MIB-variable>

Figure 1-1 shows the position of the CISCO-UNITY-EXPRESS-MIB in the Internet MIB hierarchy. The CISCO-UNITY-EXPRESS-MIB is part of the Cisco management (9) group, which is presented by private.enterprise.cisco.ciscoMgmt. And is shown graphically in Figure 1-1.

The CISCO-UNITY-EXPRESS-MIB uses definitions from the following MIBs:

- CISCO-SMI
- INET-ADDRESS-MIB
- SNMPv2-CONF
- SNMP-FRAMEWORK-MIB
- SNMPv2-SMI
- SNMPv2-TC

Figure 1-1 CISCO-UNITY-EXPRESS-MIB MIB Tree Structure



The CISCO-UNITY-EXPRESS-MIB structure is divided into the following groups:

- ciscoUnityExpressMIBNotifs
- ciscoUnityExpressMIBObjects
- ciscoUnityExpressMIBConform

The ciscoUnityExpressMIBObjects group is further divided into the following subgroups:

- cueSystem
- cueUsage
- cueSecurity
- cueNotif
- cueBackupRestore

CISCO-UNITY-EXPRESS-MIB Objects

This section contains the Cisco Unity Express MIB object. Table 1-1 lists the CISCO-UNITY-EXPRESS-MIB objects, the maximum access for each, and their descriptions. Table 1-5 on page 1-10 lists the CISCO-UNITY-EXPRESS-MIB object IDs (OIDs).

Table 1-1 CISCO-UNITY-EXPRESS-MIB Groupings and Objects

Group	Object	Max Access	Description
—	CISCO-UNITY-EXPRESS-MIB DEFINITIONS	—	This MIB allows management of Cisco Unity Express (CUE) features in Cisco IOS Release 12.4(2)T. The MIB Module for the management of the CUE service. CUE is a voice-mail service that runs in a Cisco router. CUE accepts connections from Cisco CallManager Express (CCME), or from Cisco CallManager (CCM).
—	-- CUE MIB Groups	—	The following are the CISCO-UNITY-EXPRESS-MIB groups: ciscoUnityExpressMIBNotifs ciscoUnityExpressMIBObjects ciscoUnityExpressMIBConform
—	-- CUE MIB Objects	—	The following are the CISCO-UNITY-EXPRESS-MIB objects: cueSystem cueUsage cueSecurity cueNotif cueBackupRestore

Cisco CUE MIB Object Groups

Table 1-2 lists the CISCO-UNITY-EXPRESS-MIB object name and the corresponding object ID mapping.

There are three CISCO-UNITY-EXPRESS-MIB groups listed in Table 1-2:

- ciscoUnityExpressMIBNotifs
- ciscoUnityExpressMIBObjects
- ciscoUnityExpressMIBConform

Table 1-2 CISCO-UNITY-EXPRESS-MIB Object ID Mapping

Object Name	Object ID
ciscoUnityExpressMIB	1.3.6.1.4.1.9.9.420
ciscoUnityExpressMIBNotifs	1.3.6.1.4.1.9.9.420.0
ciscoUnityExpressApplAlert	1.3.6.1.4.1.9.9.420.0.1
ciscoUnityExpressStorageAlert	1.3.6.1.4.1.9.9.420.0.2
ciscoUnityExpressSecurityAlert	1.3.6.1.4.1.9.9.420.0.3
ciscoUnityExpressCallMgrAlert	1.3.6.1.4.1.9.9.420.0.4
ciscoUnityExpressBackupAlert	1.3.6.1.4.1.9.9.420.0.6
ciscoUnityExpressNTPAlert	1.3.6.1.4.1.9.9.420.0.7
ciscoUnityExpressMIBObjects	1.3.6.1.4.1.9.9.420.1
cueSystem	1.3.6.1.4.1.9.9.420.1.1
cueSystemControl	1.3.6.1.4.1.9.9.420.1.1.1
cueShutdownRequest	1.3.6.1.4.1.9.9.420.1.1.1.1
cueSystemScalars	1.3.6.1.4.1.9.9.420.1.1.2
cueAVTNumber	1.3.6.1.4.1.9.9.420.1.1.2.1
cueVoicemailNumber	1.3.6.1.4.1.9.9.420.1.1.2.2
cueAANumber	1.3.6.1.4.1.9.9.420.1.1.2.3
cueHardwareModuleType	1.3.6.1.4.1.9.9.420.1.1.2.4
cueCallControlAgentType	1.3.6.1.4.1.9.9.420.1.1.2.5
cueSIPInfo	1.3.6.1.4.1.9.9.420.1.1.3
cueSIPGatewayName	1.3.6.1.4.1.9.9.420.1.1.3.1
cueSIPGatewayIPType	1.3.6.1.4.1.9.9.420.1.1.3.2
cueSIPGatewayIP	1.3.6.1.4.1.9.9.420.1.1.3.3
cueSIPPort	1.3.6.1.4.1.9.9.420.1.1.3.4
cueJTAPIInfo	1.3.6.1.4.1.9.9.420.1.1.4
cueJTAPIServerTable	1.3.6.1.4.1.9.9.420.1.1.4.1
cueJTAPIServerEntry	1.3.6.1.4.1.9.9.420.1.1.4.1.1
cueJTAPIServerIndex	1.3.6.1.4.1.9.9.420.1.1.4.1.1.1
cueJTAPIServerName	1.3.6.1.4.1.9.9.420.1.1.4.1.1.2
cueJTAPIServerIPType	1.3.6.1.4.1.9.9.420.1.1.4.1.1.3
cueJTAPIServerIP	1.3.6.1.4.1.9.9.420.1.1.4.1.1.4
cueJTAPISubsystemState	1.3.6.1.4.1.9.9.420.1.1.4.2
cueJTAPIUsername	1.3.6.1.4.1.9.9.420.1.1.4.3
cueJTAPISoftwareVersion	1.3.6.1.4.1.9.9.420.1.1.4.4
cueJTAPIPortsRegistered	1.3.6.1.4.1.9.9.420.1.1.4.5
cueSystemDefaults	1.3.6.1.4.1.9.9.420.1.1.5
cueDefaultMailboxSize	1.3.6.1.4.1.9.9.420.1.1.5.1

Table 1-2 CISCO-UNITY-EXPRESS-MIB Object ID Mapping (continued)

Object Name	Object ID
cueDefaultGreetingSize	1.3.6.1.4.1.9.9.420.1.1.5.2
cueDefaultMessageSizeMax	1.3.6.1.4.1.9.9.420.1.1.5.3
cueDefaultMessageExpiryTime	1.3.6.1.4.1.9.9.420.1.1.5.4
cueUsage	1.3.6.1.4.1.9.9.420.1.2
cueUsageScalars	1.3.6.1.4.1.9.9.420.1.2.1
cueLicensedPortsMax	1.3.6.1.4.1.9.9.420.1.2.1.1
cueActiveCalls	1.3.6.1.4.1.9.9.420.1.2.1.2
cuePersonalMailboxes	1.3.6.1.4.1.9.9.420.1.2.1.3
cueGeneralDeliveryMailboxes	1.3.6.1.4.1.9.9.420.1.2.1.4
cueOrphanedMailboxes	1.3.6.1.4.1.9.9.420.1.2.1.5
cueCapacityOfVoicemail	1.3.6.1.4.1.9.9.420.1.2.1.6
cueAllocatedCapacity	1.3.6.1.4.1.9.9.420.1.2.1.7
cueTotalTimeUsed	1.3.6.1.4.1.9.9.420.1.2.1.8
cuePercentTimeUsed	1.3.6.1.4.1.9.9.420.1.2.1.9
cueMessageTimeUsed	1.3.6.1.4.1.9.9.420.1.2.1.10
cueMessageCount	1.3.6.1.4.1.9.9.420.1.2.1.11
cueAverageMessageLength	1.3.6.1.4.1.9.9.420.1.2.1.12
cueGreetingTimeUsed	1.3.6.1.4.1.9.9.420.1.2.1.13
cueGreetingCount	1.3.6.1.4.1.9.9.420.1.2.1.14
cueAverageGreetingLength	1.3.6.1.4.1.9.9.420.1.2.1.15
cueMessagesLeft	1.3.6.1.4.1.9.9.420.1.2.1.16
cueMessagesRetrieved	1.3.6.1.4.1.9.9.420.1.2.1.17
cueMessagesDeleted	1.3.6.1.4.1.9.9.420.1.2.1.18
cueLicensedMailboxesMax	1.3.6.1.4.1.9.9.420.1.2.1.19
cueMailboxesAbove90PercentFull	1.3.6.1.4.1.9.9.420.1.2.1.20
cueMboxTable	1.3.6.1.4.1.9.9.420.1.2.2
cueMboxEntry	1.3.6.1.4.1.9.9.420.1.2.2.1
cueMboxIndex	1.3.6.1.4.1.9.9.420.1.2.2.1.1
cueMboxOwner	1.3.6.1.4.1.9.9.420.1.2.2.1.2
cueMboxPrimaryExtension	1.3.6.1.4.1.9.9.420.1.2.2.1.3
cueMboxType	1.3.6.1.4.1.9.9.420.1.2.2.1.4
cueMboxDescription	1.3.6.1.4.1.9.9.420.1.2.2.1.5
cueMboxSize	1.3.6.1.4.1.9.9.420.1.2.2.1.6
cueMboxTimeUsed	1.3.6.1.4.1.9.9.420.1.2.2.1.7
cueMboxPercentTimeUsed	1.3.6.1.4.1.9.9.420.1.2.2.1.8
cueMboxNumberOfMessages	1.3.6.1.4.1.9.9.420.1.2.2.1.9

Table 1-2 CISCO-UNITY-EXPRESS-MIB Object ID Mapping (continued)

Object Name	Object ID
cueMboxNumberOfNewMessages	1.3.6.1.4.1.9.9.420.1.2.2.1.10
cueMboxNumberOfSavedMessages	1.3.6.1.4.1.9.9.420.1.2.2.1.11
cueMboxMessageSizeMax	1.3.6.1.4.1.9.9.420.1.2.2.1.12
cueMboxMessageExpiryTime	1.3.6.1.4.1.9.9.420.1.2.2.1.13
cueMboxPlayTutorial	1.3.6.1.4.1.9.9.420.1.2.2.1.14
cueMboxGreetingType	1.3.6.1.4.1.9.9.420.1.2.2.1.15
cueMboxEnabled	1.3.6.1.4.1.9.9.420.1.2.2.1.16
cueMboxBusy	1.3.6.1.4.1.9.9.420.1.2.2.1.17
cueMboxMWIState	1.3.6.1.4.1.9.9.420.1.2.2.1.18
cueSecurity	1.3.6.1.4.1.9.9.420.1.3
cueLoginInfo	1.3.6.1.4.1.9.9.420.1.3.1
cueLoginAttempts	1.3.6.1.4.1.9.9.420.1.3.1.1
cueLoginUsernameFailures	1.3.6.1.4.1.9.9.420.1.3.1.2
cueLoginPasswordFailures	1.3.6.1.4.1.9.9.420.1.3.1.3
cuePINInfo	1.3.6.1.4.1.9.9.420.1.3.2
cuePINAttempts	1.3.6.1.4.1.9.9.420.1.3.2.1
cuePINResets	1.3.6.1.4.1.9.9.420.1.3.2.2
cuePINUidFailures	1.3.6.1.4.1.9.9.420.1.3.2.3
cuePINPasswordFailures	1.3.6.1.4.1.9.9.420.1.3.2.4
cueNotif	1.3.6.1.4.1.9.9.420.1.4
cueNotifConfig	1.3.6.1.4.1.9.9.420.1.4.1
cueNotifEnable	1.3.6.1.4.1.9.9.420.1.4.1.1
cueNotifInfo	1.3.6.1.4.1.9.9.420.1.4.2
cueNotifSeverity	1.3.6.1.4.1.9.9.420.1.4.2.1
cueNotifDate	1.3.6.1.4.1.9.9.420.1.4.2.2
cueNotifDescription	1.3.6.1.4.1.9.9.420.1.4.2.3
cueNotifDetail	1.3.6.1.4.1.9.9.420.1.4.2.4
cueNotifSecurity	1.3.6.1.4.1.9.9.420.1.4.3
cueLoginUsernameThresh	1.3.6.1.4.1.9.9.420.1.4.3.1
cueLoginPasswordThresh	1.3.6.1.4.1.9.9.420.1.4.3.2
cuePINUidThresh	1.3.6.1.4.1.9.9.420.1.4.3.3
cuePINPasswordThresh	1.3.6.1.4.1.9.9.420.1.4.3.4
cuePINResetThresh	1.3.6.1.4.1.9.9.420.1.4.3.5
cueBackupRestore	1.3.6.1.4.1.9.9.420.1.5
cueBRHistoryTable	1.3.6.1.4.1.9.9.420.1.5.1
cueBRHistoryEntry	1.3.6.1.4.1.9.9.420.1.5.1.1

Table 1-2 CISCO-UNITY-EXPRESS-MIB Object ID Mapping (continued)

Object Name	Object ID
cueBRHistoryIndex	1.3.6.1.4.1.9.9.420.1.5.1.1.1
cueBRHistoryOperation	1.3.6.1.4.1.9.9.420.1.5.1.1.2
cueBRHistoryDate	1.3.6.1.4.1.9.9.420.1.5.1.1.3
cueBRHistoryResult	1.3.6.1.4.1.9.9.420.1.5.1.1.4
ciscoUnityExpressMIBConform	1.3.6.1.4.1.9.9.420.2
ciscoUnityExpressMIBCompliances	1.3.6.1.4.1.9.9.420.2.1
ciscoUnityExpressMIBCompliance	1.3.6.1.4.1.9.9.420.2.1.1
ciscoUnityExpressMIBGroups	1.3.6.1.4.1.9.9.420.2.2
systemGroup	1.3.6.1.4.1.9.9.420.2.2.1
usageGroup	1.3.6.1.4.1.9.9.420.2.2.2
securityGroup	1.3.6.1.4.1.9.9.420.2.2.3
notifGroup	1.3.6.1.4.1.9.9.420.2.2.4
ciscoUnityExpressMIBNotificationsGroup	1.3.6.1.4.1.9.9.420.2.2.5
backupRestoreGroup	1.3.6.1.4.1.9.9.420.2.2.6

Table 1-3 Cisco Unity Express MIB Groups

Object Name	Object ID
ciscoUnityExpressMIBNotifs	1.3.6.1.4.1.9.9.420.0
ciscoUnityExpressMIBObjects	1.3.6.1.4.1.9.9.420.1
ciscoUnityExpressMIBConform	1.3.6.1.4.1.9.9.420.2

Table 1-4 Cisco Unity Express MIB Notification Objects

Object Name	Object ID
ciscoUnityExpressMIBNotifs	1.3.6.1.4.1.9.9.420.0
ciscoUnityExpressApplAlert	1.3.6.1.4.1.9.9.420.0.1
ciscoUnityExpressStorageAlert	1.3.6.1.4.1.9.9.420.0.2
ciscoUnityExpressCallMgrAlert	1.3.6.1.4.1.9.9.420.0.4
ciscoUnityExpressSecurityAlert	1.3.6.1.4.1.9.9.420.0.3
ciscoUnityExpressBackupAlert	1.3.6.1.4.1.9.9.420.0.6
ciscoUnityExpressNTPAlert	1.3.6.1.4.1.9.9.420.0.7

Table 1-5 Cisco Unity Express MIB Objects

Object Name	Object ID
ciscoUnityExpressMIBObjects	1.3.6.1.4.1.9.9.420.1
cueSystem	1.3.6.1.4.1.9.9.420.1.1
cueUsage	1.3.6.1.4.1.9.9.420.1.2
cueSecurity	1.3.6.1.4.1.9.9.420.1.3
cueNotif	1.3.6.1.4.1.9.9.420.1.4
cueBackupRestore	1.3.6.1.4.1.9.9.420.1.5

Table 1-6 Cisco Unity Express MIB Conformance Objects

Object Name	Object ID
ciscoUnityExpressMIBConform	1.3.6.1.4.1.9.9.420.2
ciscoUnityExpressMIBCompliances	1.3.6.1.4.1.9.9.420.2.1
ciscoUnityExpressMIBGroups	1.3.6.1.4.1.9.9.420.2.2

Cisco CUE MIB Alerts

Table 1-7 lists the CUE MIB alerts.

Table 1-7 CISCO-UNITY-EXPRESS-MIB Alerts

Trap Name	Severity	Date	Description	Detail
ciscoUnityExpressApplAlert	Info	<date>	Online Alert	<detail>
	Warning	<date>	Offline Alert	<detail>
	Info	<date>	Auto Attendant Enabled	<detail>
	Warning	<date>	Auto Attendant Disabled	<detail>
ciscoUnityExpressStorageAlert	Warning	<date>	Flash Wear Alert	<detail>
ciscoUnityExpressSecurityAlert	Warning	<date>	Login Security Alert	<detail>
	Warning	<date>	PIN Security Alert	<detail>
ciscoUnityExpressCallMgrAlert	Error	<date>	JTAPI Alert	<detail>
ciscoUnityExpressBackupAlert	Error	<date>	Backup Alert	<detail>
ciscoUnityExpressNTPAlert	Warning	<date>	NTP Alert	<detail>

Using Alerts

Using alerts allows more efficient use of network resources by reducing the number of messages sent and received by the NMS.

How to Use the CISCO-UNITY-EXPRESS-MIB

The following sections contain information regarding configuring and using the CISCO-UNITY-EXPRESS-MIB.

Note See the *Cisco Unity Express System Monitoring Guide Release 2.2* for a list of CLI commands for use with Cisco Unity Express.

The **snmp-server community string** command provides access control for SNMPv1 and SNMPv2c but also continues to provide backward compatibility between different versions. The previous version of this command did not have an option to create a community string that allows SNMP messages to execute a set operation on a MIB object. An **rw** or **ro** option has been introduced for this purpose. The SNMP agent is disabled by default, and a community string is not configured.

The following example enables the SNMP agent and assigns the community string *comaccess* to SNMP:

```
507-1(config)# snmp-server community comaccess ro
```

The preceding example defines a community string *comaccess* used as a password for authentication when you access the SNMP agent. Any SNMP message sent to the SNMP agent must have the "Community Name" field of the message match the community string defined here in order to be authenticated. Entering a community string enables the SNMP agent.

The following example disables the SNMP agent and removes the previously defined community string.

```
507-1(config)# no snmp-server community comaccess ro
```

Locating the CISCO-UNITY-EXPRESS-MIB

To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use Cisco MIB Locator found at the following URL:

http://tools.cisco.com/ITDIT/MIBS/servlet/index

If Cisco MIB Locator does not support the MIB information that you need, you can also obtain a list of supported MIBs and download MIBs from the Cisco MIBs page at the following URL:

http://www.cisco.com/public/sw-center/netmgmt/cmtk/mibs.shtml

To access Cisco MIB Locator, you must have an account on Cisco.com. If you have forgotten or lost your account information, send a blank e-mail to cco-locksmith@cisco.com. An automatic check will verify that your e-mail address is registered with Cisco.com. If the check is successful, account details with a new random password will be e-mailed to you. Qualified users can establish an account on Cisco.com by following the directions found at the following URL:

http://tools.cisco.com/RPF/register/register.do

Enabling the SNMP Agent

The SNMP agent for the CISCO-UNITY-EXPRESS-MIB is disabled by default.

To enable the SNMP agent for the CISCO-UNITY-EXPRESS-MIB, perform the following steps.

Prerequisites

Be sure the router platform is a supported router and the required MIBs are installed.

DETAILED STEPS

	Command or Action	Purpose
Step 1	telnet <ip> <port>, or session in from the router.	Telnet to the router identified by the specified IP address (represented as *xxx.xxx.xxx.xxx*).
Step 2	`User name:` `Password:`	Enter your user ID and password for the router.
Step 3	`Router#` **service-module service-engine 1/0 session**	Enters the CUE command environment.
Step 4	`se-10-0-0-0#` **config terminal**	Enters configuration terminal mode.
Step 5	`se-10-0-0-0 <config>#>` **enable**	Enters privileged EXEC mode.
Step 6	`se-10-0-0-0 <config>#` **snmp-server community <*password*> RO**	Enables the read-only (RO) community string, where <*password*> represents the read-only community/password string.
Step 7	`se-10-0-0-0 <config>#>` **snmp-server community <*password*> RW**	Enables the read-write (RW) community string, where <*password*> represents the read-write community/password string.
Step 8	`se-10-0-0-0 <config>#>` **write memory**	Writes the modified configuration to NVRAM, permanently saving the settings.
Step 9	`se-10-0-0-0 <config>#>` **exit**	Exits global configuration mode and returns to privileged EXEC mode.

Verifying the Enabling of the SNMP Agent

To verify that the SNMP agent has been enabled on a given network device, perform the following steps.

DETAILED STEPS

Step 1 Telnet to the target device.

Step 2 Display the running configuration on the device and examine the output for any displayed SNMP information:

Note If your CUE system is large, using the show running config command can take several minutes to display the SNMP information. As an alternative, you can use the show snmp configuration command to display only SNMP-related configuration information.

```
Router# show running-config
.
.
.
snmp-server community public RO
snmp-server community private RW
.
.
.
```

Any “snmp-server” statement appearing in the output that takes the form shown before verifies that SNMP has been enabled on the specified device.

Or alternately, use the following show snmp command to verify the SNMP agent is enabled.

```
se-10-30-20-100> show snmp configuration
Contact: Kaiser Souza
Location: SanJose
Community 1 RO: public
Community 1 RW: cue
Traps: enabled
Host Community 1: 1.3.69.100 pop
Host Community 2: 10.30.25.100 oo
cueShutdownRequest: disabled
se-10-30-20-100>
```

Configuring the MIB Browser to Read MIB Values

For the MIB browser to read the MIB values, configure the CUE using the following CLI commands.

MIB Browser Configuration

For the MIB browser to read the CUE MIB values, the browser must be configured.

Prerequisites

Be sure the router platform is a supported router and the required MIBs are installed.

SUMMARY STEPS

1. **enter password**
2. **end the configuration**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enter password** **Example:** `se-10-0-0-0 (config)# snmp-server community <password> RO`	Allows the use of a MIB browser to read MIB values, you must configure the CUE using CLI. • Where <password> can be any password you choose.
Step 2	**end configuration** **Example:** `se-10-0-0-0 (config)# end`	Ends the configuration mode.

Configuring the MIB Browser to Write MIB Values

For the MIB browser to write the MIB values, configure the CUE using the following CLI commands.

MIB Browser Configuration

For the MIB browser to write the CUE MIB values, the browser must be configured.

Prerequisites

Be sure the router platform is a supported router and the required MIBs are installed.

SUMMARY STEPS

1. **enter password**
2. **end the configuration**

DETAILED STEPS

	Command or Action	Purpose
Step 1	**enter password** **Example:** `se-10-0-0-0 (config)# snmp-server community <password> RW`	Allows the use of a MIB browser to write MIB values, you must configure the CUE using CLI. • Where <password> can be any password you choose.
Step 2	**end oonfiguration** **Example:** `se-10-0-0-0 (config)# end`	Ends the configuration mode.

What to Do Next

Begin monitoring your network.

Additional References

The following sections provide references related to the CISCO-UNITY-EXPRESS-MIB.

Related Documents

Related Topic	Document Title
List of CLI commands for use with CUE	*Cisco Unity Express System Monitoring Guide Release 2.2*

Related Topic	Document Title

Standards

Standard	Title
No new or modified standards are supported by this feature and support for existing standards has not been modified by this feature.	—

MIBs

MIB	MIBs Link
• CISCO-VOICE-CONNECTIVITY-MIB • CISCO-UNITY-EXPRESS-MIB • CISCO-PROCESS-MIB • IF-MIB • IP-MIB • SNMPv2-MIB • SYSAPPL-MIB	To locate and download MIBs for selected platforms, Cisco IOS releases, and feature sets, use the Cisco MIB Locator found at the following URL: http://www.cisco.com/go/mibs

RFCs

RFC	Title
No new or modified RFCs are supported by this feature and support for existing standards has not been modified by this feature.	—

Technical Assistance

Description	Link
The Cisco Technical Support website contains thousands of pages of searchable technical content, including links to products, technologies, solutions, technical tips, and tools. Registered Cisco.com users can log in from this page to access even more content.	http://www.cisco.com/techsupport

Command Reference

See the *Cisco Unity Express System Monitoring Guide Release 2.2* for a list of new and modified CLI commands.

Glossary

AA—Auto Attendant.

AIM—Advanced Integration Module.

CCM—Cisco CallManager.

CCME—Cisco CallManager Express.

CLI—Command Line Interface.

CUE—Cisco Unity Express.

CUE-NM—Cisco Unity Express Network Module.

CUE-NM-EC—Cisco Unity Express extended capacity network module.

JTAPI—Java Telephony Application Programming Interface.

MIB—Management Information Base.

NMS—Network Management System.

SIP—Session Initiation Protocol.

SNMP—Simple Network Management Protocol.

Note See *Internetworking Terms and Acronyms* for terms not included in this glossary.