



Release Notes for Cisco Extensible Provisioning and Operations Manager (EPOM), Version 4.4(1)

March, 2005

Cisco Extensible Provisioning and Operations Manager (Cisco EPOM) is a web-based application for real-time provisioning of the Cisco BTS 10200 Softswitch that allows authorized users to show, add, modify, delete and check the status of Cisco BTS 10200 components.

Provisioning tasks in Cisco EPOM generally match tasks done by using the Cisco BTS 10200 Softswitch CLI or MAC interface, but the tasks are done through a web-browser interface. Common multistep procedures are simplified by being grouped into tasks that are done by task wizards.

Authorized Cisco EPOM administrators set up and manage the Cisco EPOM server software and perform Cisco EPOM user administration and network setup tasks.

Please read this entire document prior to using the Cisco Extensible Provisioning and Operations Manager (EPOM) as it contains pertinent information about the History of Software Releases, using the software, troubleshooting, and relevant



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bug fixes. This document is intended to provide up-to-date or late-breaking information about the current release of the Cisco Extensible Provisioning and Operations Manager, Version 4.4(1) from Cisco Systems, Inc.

These release notes provide:

- [New Features, page 2](#)
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New Features

Cisco EPOM, Version 4.4(1) includes:

- Updates to support BTS 4.4.1
- Added Check Boxes for all edit page, user can now selectively edit the interested field. All mandatory records will be sent automatically along with the edited field.
- Fixed the following bugs and issues
 - No bugs and issues were found in EPOM 4.4(1)

[Table 1](#) lists new commands and tokens included in Cisco EPOM 4.4(1)



Note

BTS logins optiuser and ciscouser do not have sufficient privilege to operate on **Sync** (Verb)

Table 1 *New Commands and Tokens in Cisco EPOM 4.4(1)*

Command and Token	Verbs	Table	Remarks
activity_summary	<ul style="list-style-type: none"> • report 	Performance under reports	
alarm	<ul style="list-style-type: none"> • ack • clear • show 	Alarm	
alarm_log	<ul style="list-style-type: none"> • show 	Alarm	
alarm_repor	<ul style="list-style-type: none"> • subscribe • unsubscribe 	Alarm	Gives a CAD exception for both the Verbs
all_ss7_cics_audit	<ul style="list-style-type: none"> • audit 	Others	
Annc	<ul style="list-style-type: none"> • add • audit • change • delete • shows • sync 	Office Provisioning	
Application	<ul style="list-style-type: none"> • change • status • control • show 	Keep Alive Mode Status	
Bdms	<ul style="list-style-type: none"> • control • status 	Keep Alive Mode Status	
billing_cdb	<ul style="list-style-type: none"> • change • show 	Billing	

Table 1 *New Commands and Tokens in Cisco EPOM 4.4(1)*

Command and Token	Verbs	Table	Remarks
billing_file	<ul style="list-style-type: none"> • report 	Performance under Reports	
call_trace_summary	<ul style="list-style-type: none"> • report 	Performance under Reports	
call_type	<ul style="list-style-type: none"> • show 	Routing	
Cmdpar	<ul style="list-style-type: none"> • add • change • delete • show 	Others	BTS logins optiuser and ciscouser do not have sufficient privileges to operate on this noun.
command_alias	<ul style="list-style-type: none"> • change • show • add 	Others	BTS logins optiuser and ciscouser do not have sufficient privileges to operate on this noun
command_level	<ul style="list-style-type: none"> • change • show 	Security	
ctx_grp	<ul style="list-style-type: none"> • add • delete 	Centrex	
ctx_sub	<ul style="list-style-type: none"> • add • delete 	Centrex	
Ctxg	<ul style="list-style-type: none"> • add • audit • change • delete • show • sync 	Centrex	

Table 1 *New Commands and Tokens in Cisco EPOM 4.4(1)*

Command and Token	Verbs	Table	Remarks
Database	<ul style="list-style-type: none"> • audit • download 	Db	
db_license	<ul style="list-style-type: none"> • add • change • delete • show 	Db	
db_route	<ul style="list-style-type: none"> • show 	Db	BTS logins optiuser and ciscouser do not have sufficient privileges to operate on this noun
db_size	<ul style="list-style-type: none"> • add • delete • change • show 	Db	
db_usage	<ul style="list-style-type: none"> • change • show 	Db	
debug_report	<ul style="list-style-type: none"> • subscribe • unsubscribe 	Others	
element_manager	<ul style="list-style-type: none"> • control • status 	Keep Alive Mode Status	
Ems	<ul style="list-style-type: none"> • change • show 	Others	

Table 1 *New Commands and Tokens in Cisco EPOM 4.4(1)*

Command and Token	Verbs	Table	Remarks
Ess	<ul style="list-style-type: none"> • add • audit • change • delete • show • sync 	Others	BTS logins optiuser and ciscouser do not have sufficient privileges to operate on this noun
event_log	<ul style="list-style-type: none"> • show 	Alarms & Events	
event_prov	<ul style="list-style-type: none"> • change • show 	Alarms & Events	
event_queue	<ul style="list-style-type: none"> • delete • show 	Others	
event_report	<ul style="list-style-type: none"> • subscribe • unsubscribe 	Alarms & Events	Gives a CAD exception for both the Verbs
ind_sub	<ul style="list-style-type: none"> • add • delete • show 	Others	
mlh_grp	<ul style="list-style-type: none"> • add • delete 	Call-Agent	
Nod	<ul style="list-style-type: none"> • show 	Call Agent	
Node	<ul style="list-style-type: none"> • change • control • report • show • status 	Administration Maintenance	
Process	<ul style="list-style-type: none"> • status 	Others	

Table 1 *New Commands and Tokens in Cisco EPOM 4.4(1)*

Command and Token	Verbs	Table	Remarks
queue_throttle	<ul style="list-style-type: none"> • change • show 	Transactions	
report_properties	<ul style="list-style-type: none"> • change • show 	Others	
Rgw	<ul style="list-style-type: none"> • add • change • delete • show • control • diag • status 	Others	
security_summary	<ul style="list-style-type: none"> • report 	Performance under Reports	
serving_domain_name	<ul style="list-style-type: none"> • add • audit • change • delete • show • sync 	Session Initiation Protocol	
Session	<ul style="list-style-type: none"> • block • change • show • stop • unblock 	Others	

Table 1 *New Commands and Tokens in Cisco EPOM 4.4(1)*

Command and Token	Verbs	Table	Remarks
special_call_type	<ul style="list-style-type: none"> • add • audit • change • delete • show • sync 	Routing	
ss7_trace	<ul style="list-style-type: none"> • start • stop 	Others	
Sub	<ul style="list-style-type: none"> • add • audit • change • delete • show • sync 	Subscriber Provisioning	
sub_feature_data	<ul style="list-style-type: none"> • add • audit • change • delete • show • sync 	Subscriber Provisioning	

Table 1 *New Commands and Tokens in Cisco EPOM 4.4(1)*

Command and Token	Verbs	Table	Remarks
sub_profile	<ul style="list-style-type: none"> • add • audit • change • delete • show • sync 	Subscriber Provisioning	
sup_config	<ul style="list-style-type: none"> • change • show 	Administration Maintenance	
System	<ul style="list-style-type: none"> • control • status 	Others	
system_health	<ul style="list-style-type: none"> • report 	Others	
Tgw	<ul style="list-style-type: none"> • add • change • delete • show • control • diag • status 	Others	
transaction_queue	<ul style="list-style-type: none"> • delete • show 	Transactions	
trigger_detection_point	<ul style="list-style-type: none"> • show 	Feature & Services	
trigger_id	<ul style="list-style-type: none"> • show 	Feature & Services	

Table 1 *New Commands and Tokens in Cisco EPOM 4.4(1)*

Command and Token	Verbs	Table	Remarks
tt	<ul style="list-style-type: none"> • control • equip • reset • status • unequip 	Trunk Group	
v_commandparameter	<ul style="list-style-type: none"> • show 	Others	
v_commandtable	<ul style="list-style-type: none"> • show 	Others	
var_alias	<ul style="list-style-type: none"> • add • change • delete • show 	Others	
var_default	<ul style="list-style-type: none"> • add • change • delete • show 	Office Table	
Wiretap	<ul style="list-style-type: none"> • add • audit • change • delete • show • sync 	Others	

Table 1 *New Commands and Tokens in Cisco EPOM 4.4(1)*

Command and Token	Verbs	Table	Remarks
ocb_profile_id	<ul style="list-style-type: none"> • add • change • delete • show • audit • Sync 	Ocb	
ocb_k_value	<ul style="list-style-type: none"> • show • add • delete • sync • audit 	Ocb	
Cdp	<ul style="list-style-type: none"> • add • audit • change • delete • show • sync 	Feature	
feature_config	<ul style="list-style-type: none"> • add • audit • change • delete • show • sync 	Feature	
feature_config_base	<ul style="list-style-type: none"> • show 	Feature	
feature_config_base_pos_val	<ul style="list-style-type: none"> • show 	Feature	

Table 1 *New Commands and Tokens in Cisco EPOM 4.4(1)*

Command and Token	Verbs	Table	Remarks
history	<ul style="list-style-type: none"> report show 	History	
lidx	<ul style="list-style-type: none"> query 	Others	
line	<ul style="list-style-type: none"> translate 	Others	
lnp	<ul style="list-style-type: none"> query 	Others	
measurement_prov	<ul style="list-style-type: none"> change show 	Others	
Timezone	<ul style="list-style-type: none"> show 	Others	
toll_free	<ul style="list-style-type: none"> query 	Routing	

History of Software Releases

This section describes changes to the previous versions of Cisco EPOM.

Cisco EPOM 4.4(0)

Cisco EPOM, Version 4.4(0) includes:

- Updates to support BTS 4.4.0
- Added Check Boxes for all edit page, user can now selectively edit the interested field. All mandatory records will be sent automatically along with the edited field.
- Added Online Corba Cache management to EPOM 4.4(0)
- Added SSL support for Corba communication between EPOM and BTS
- Added login authentication via external RADIUS Server
- Added bts_import to secure ftp BTS config files to BTS Sever
- Fixed the following bugs and issues:
 - CSCec47989— EPOM In-Service script generator giving unnecessary commands.

- CSCec38926— EPOM Getting Started Guide needs correction for XML Tree
- CSCec14791— EPOM displays BTS passwords on the GUI and in trace.log
- CSCdy77914 — failure should be returned when tech_prefix_grp_id is blank for h323
- CSCdy44895 — EPOM states MySQL is stopped though it is running
- CSCdy50098 — EPOM export fail to export billing-acct-addr

[Table 2](#) lists new commands and tokens included in Cisco EPOM 4.4(0).

Table 2 *New Commands and Tokens in Cisco EPOM 4.4(0)*

Command and Token	Table
network_element	OfficeTables
measurement_ain_tools_summary	Performance under reports
measurement_call_tools_summary	Performance under reports
measurement_pct_tools_summary	Performance under reports
audio_segment	Others
audio_seq	Others
ivr_script_profile	Others
language	Others

Cisco EPOM 4.2(0)1

Cisco EPOM, Version 4.2(0)1 includes:

- Updates to support BTS 4.2.0
- Fixes for the following bugs and issues:
 - CSCef36632—Audit button not included.
 - CSCef36634—Sync button not included.
 - CSCef39417—Tech_prefix, cannot be added from h323_gw_provisioning Provisioning Flow.

Table 3 lists new commands and tokens included in Cisco EPOM 4.2(0)1.

Table 3 New Commands and Tokens in Cisco EPOM 4.2(0)1

Command and Token	Table
ani_screening	Tandem
ani_screening_profile	Tandem
ca_config_base	OfficeTables
ca_config_base_pos_val	OfficeTables
dn2gn	Subscriber
ems	
h323_term	H323
h323_term_profile	H323
lnp_profile	
macro	

Cisco EPOM 1.5(4)

Cisco EPOM, Version 1.5(4) includes fixes for the following bugs and issues:

- CSCed42461—Fixed EPOM/OpenOrb Memory Leak.
- CSCee94342—Upgraded Tomcat to version 4.1.29, fixed HTTPS CLOSE_WAIT bug.
- CSCee94411—Fixed EPOM start/stop scripts to forcefully stop tomcat/mysql, if they are not stopped properly.
- CSCee94351—Fixed BTS commands' Navigation Tree issue, where Navigation Tree does not contain any BTS commands.
- CSCee94417—Fixed EPOM/BTS corba communication break.
- CSCee94424—Fixed Navigation Tree issue, where JavaScript is rendered in page.
- CSCee94540—Fixed Sun JVM Garbage Collection parameters.

Cisco EPOM 1.5(3)

Cisco EPOM, Version 1.5(3) Patch Level 01 includes fixes for the following bugs and issues:

- Updates to support BTS 4.2.0
- CSCec77691—Newly created Groups can be seen in Domain Details, Edit GUI directly after adding them.
- Groups with Permission None can also be seen in Domain Details, Edit GUI.
- Groups with Permission None, will not be displayed as Read/Only when Group Permission Edit is invoked from the Domain Edit GUI.
- CSCec77377—Each snmptrapdest row entry can be deleted from the associated delete url towards its extreme right.
- CSCec77714—While assigning navigational trees to Groups, proceed according to the procedure in the following example:
 1. Assume that a group is being assigned a navigational tree named newtree.
 2. After creating the newtree.xml, change the tag `<tree name="default">` to `<tree name="newtree.xml">` just like the file name.
 3. The location of this file on the EPOM server is:
`/opt/CSCOepom/tomcat/webapps/ROOT/xml/bts/navigation/`
- CSCec42188—Details, Delete etc of Services from Feature/Services will show the correct entry and not the first one. Perform the following tasks on BTS 10200 server:
 1. Log into BTS server as oracle
 2. Invoke sqlplus with oamp userid and oamp password (or other id/passwd if you have changed this).
 3. Issue the sql statement: “update command parameter set required='add,change,delete', pos_vals='[0_16]', input_label='Id', parser='TextParser' where noun='service' and var_name='id'”;
 4. Commit
 5. Exit the sqlplus.
 6. pkill cis3
 7. epom stop/start

Cisco EPOM 1.5(2)

Cisco EPOM, Version 1.5(2) Patch Level 00 includes the fixes for the following bugs and issues:

- CSCdz07844—Some EPOM BTS disaster recovery commands out of order
 - Updated the export.xml file that identifies the BTS items to be exported in the correct order.
 - Fixed placement of intl_dial_plan_profile
 - Added carrier and feature tables to the change list
- CSCec00474—MySQL server fails to start during install

Cisco EPOM 1.5(1)

Cisco EPOM, Version 1.5(1) Patch Level 00 is an FCS release.

Cisco EPOM 1.5(1.B)

Cisco EPOM, Version 1.5(1.B) fixed the bts_export exception.

Cisco EPOM 1.5(1.A)

Cisco EPOM, Version 1.5(1.A) included:

- Updates to replace Borland Visibroker ORB with OpenOrb Corba interface.
- Updates to support BTS 3.5.

Cisco EPOM 1.3(1)

Cisco EPOM, Version 1.3(1) included updates to support BTS 3.3.

Cisco EPOM 1.1(1)

Cisco EPOM, Version 1.1(1) is the initial EPOM version to support BTS 3.2.

Product Documentation

Table 4 describes the product documentation that is available for EPOM 4.4(1)



Note

We sometimes update the printed and electronic documentation after original publication. Therefore, you should also review the documentation on Cisco.com for any updates.

Table 4 Product Documentation

Document Title	Available Formats
<i>Release Notes for Cisco Extensible Provisioning and Operations Manager, Version 4.4 (1)</i>	<ul style="list-style-type: none"> On Cisco.com at this URL: http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/epom/index.htm
<i>Cisco Extensible Provisioning and Operations Manager Getting Started Guide, Version 4.4 (1)</i>	<ul style="list-style-type: none"> On Cisco.com at this URL: http://www.cisco.com/univercd/cc/td/doc/product/rtrmgmt/epom/index.htm

Installation Requirements

This section presents several requirements that must be met to support installation of Cisco EPOM 4.4(1).

Cisco EPOM Server Requirements

Platform requirements for Cisco EPOM 4.4(1) are:

Cisco EPOM Server supporting 5 simultaneous clients and 5 BTS servers

- Sun workstation (440 MHz or more)
- 1 GB MB RAM
- 2 GB disk space
- Sun Solaris 8 operating system

Cisco EPOM Server supporting 20 simultaneous clients and 10 BTS servers

- Sun Ultra-60 workstation (440 MHz or faster, dual processor)
- 2 GB RAM
- 4 GB disk space
- Sun Solaris 8 operating system

Cisco EPOM Default Port Assignments

The Cisco EPOM default port assignments are:

- MySQL port is 3310
- Tomcat non-secure port is 8080
- Tomcat secure port is 443
- Tomcat shutdown port is 8041

Cisco EPOM Client Requirements

For Windows

- Microsoft Internet Explorer, Version 5.5 or later
- Netscape 6.2 or later

For Solaris

- Mozilla 1.1 or higher (You can download this from <http://www.sun.com/software/solaris/browser>)

Known Bugs and Resolved Problems

[Table 5](#) describes problems known to exist in this release; [Table 6](#) describes problems resolved in EPOM 4.4(1).

**Note**

To obtain more information about known problems, access the Cisco Software Bug Toolkit at <http://www.cisco.com/cgi-bin/Support/Bugtool/home.pl>. (You will be prompted to log into Cisco.com.)

Table 5 Known Bugs in EPOM 4.4(1)

Bug ID	Summary	Explanation
CSCeg58661	report_properties - Details operation shows blank screen.	<p>When you click on <i>report_properties</i> under Others component group, all the <i>report_properties</i> components are displayed.</p> <p>But in EPOM, Details are not displayed for the selected component of <i>report_properties</i>.</p> <p>In CLI, Show verb takes only <i>report_properties</i> as an argument.</p> <p>Either the Details hyperlink should be removed from EPOM</p> <p>or</p> <p>Details of the selected entry should be displayed for <i>report_properties</i>.</p>
CSCeg58723	cdp - ADD operation failed when a value is specified for fname.	<p>Addition of cdp fails if a value is specified for fname.</p> <p>Following error message is displayed on EPOM screen.</p> <pre>Failure: ORA-20001: Cannot have Feature Name ORA-06512: at "OPTICALL.TRIG_CUSTOM_DIAL_PLAN_1", line 17 ORA-04088: error during execution of trigger "OPTICALL.TRIG_CUSTOM_DIAL_PLAN_1"</pre>
CSCeg58704	Subscribe and unsubscribe option not working in alarm_report.	_

Bug ID	Summary	Explanation
CSCeg58707	Search operation in application displays no values for the record.	–
CSCeg58724	Add operation fails in ctx_grp and ctx_sub.	–
CSCeg58726	Search operation for No license in db_usage fails.	–
CSCeg58727	Control operation accepts invalid parameter in element_manager	–
CSCeg58732	Edit operation for Ems fails	–
CSCeg58734	Multiple selection of components in event_log and event_prov fails	–
CSCeg58735	Subscribe and unsubscribe operation fail for event_report	–
CSCeg58737	Add operation fails in mlh_grp and ind_sub	–

Table 6 Resolved Problems in EPOM 4.4(1)

Bug ID	Summary	Additional Information
CSCeg58697	Details operation for event_log failed	–
CSCeg58718	sub_id not displayed in call_trace_summary	–

The following anomalies have been identified in the operation of Cisco EPOM 4.4(1):

- There is a known issue with usage of bts_export command of Cisco BTS 10200 softswitch. Under certain conditions, mostly when the database size is relatively large, the data exported is found to be inconsistent, resulting in missing, duplicated and altered records. Due to this, EPOM's data export feature does not work reliably at this time. This issue will be resolved as quickly as possible.

- Due to a limitation in OpenOrb, the machine where EPOM is installed must be able to resolve the hostname of the BTS EMS servers that EPOM is referencing. In a DNS environment, this is typically a non-issue. If EPOM cannot resolve the hostname of the BTS EMS server, the Corba communication will fail. A simple workaround is to insert hostname entries in to the `/etc/hosts` file
- There is a time delay in accessing JSP pages for the first time as the Tomcat Webservice is compiling the pages.
- There is a time delay in the first access of a BTS-10200 EMS server as the command table of the EMS server is queried to determine the supported command set.
- There is a time delay in creating an online Corba cache pool for respective BTS inventories once EPOM is restarted
- `bts_export` utility does not include the user's password for `user_auth` noun, but contains only the HA1 parameters. The password field should not come in `bts_export` exported cli file as it is not displayed in the BTS show operation. The password needs to be saved in a text file and then you would need to manually append the `”;password=saved_password”` to each `user_auth` cli generated by `bts_export`.
- Some times you would see some exception. That happens if user try to send only update as `--UNSET--` value along with mandatory attributes., which is not likely scenario. From EPOM side the behavior is same as previous releases.

Getting Help

Relevant documents on EPOM are available at the following urls.

- Overview of EPOM—
http://www.cisco.com/en/US/products/sw/netmgtsw/ps5506/products_getting_started_guide_chapter09186a00802c24e1.html
- Installation documentation—
http://www.cisco.com/en/US/products/sw/netmgtsw/ps5506/products_getting_started_guide_chapter09186a00802c24d8.html
- Setting up EPOM—

http://www.cisco.com/en/US/products/sw/netmgtsw/ps5506/products_getting_started_guide_chapter09186a00802c2589.html

- Configuring Cisco BTS 10200 Components—
http://www.cisco.com/en/US/products/sw/netmgtsw/ps5506/products_getting_started_guide_chapter09186a00802c2509.html
- Cisco EPOM Flow Provisioning—
http://www.cisco.com/en/US/products/sw/netmgtsw/ps5506/products_getting_started_guide_chapter09186a00802c24fd.html
- Managing EPOM—
http://www.cisco.com/en/US/products/sw/netmgtsw/ps5506/products_getting_started_guide_chapter09186a00802c2518.html
- Viewing and Exporting Reports with Cisco EPOM—
http://www.cisco.com/en/US/products/sw/netmgtsw/ps5506/products_getting_started_guide_chapter09186a00802c250a.html
- Advanced EPOM Usage—
http://www.cisco.com/en/US/products/sw/netmgtsw/ps5506/products_getting_started_guide_chapter09186a00802c24cf.html
- Trouble Shooting EPOM—
http://www.cisco.com/en/US/products/sw/netmgtsw/ps5506/products_getting_started_guide_chapter09186a00802c256b.html

Obtaining Documentation

Cisco provides several ways to obtain documentation, 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 on the World Wide Web at this URL:

<http://www.cisco.com/univercd/home/home.htm>

You can access the Cisco website at this URL:

<http://www.cisco.com>

International Cisco websites can be accessed from this URL:

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

Documentation CD-ROM

Cisco documentation and additional literature are available in a Cisco Documentation CD-ROM package, which may have shipped with your product. The Documentation CD-ROM is updated regularly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual or quarterly subscription.

Registered Cisco.com users can order a single Documentation CD-ROM (product number DOC-CONDOCCD=) through the Cisco Ordering tool:

http://www.cisco.com/en/US/partner/ordering/ordering_place_order_ordering_tool_launch.html

All users can order monthly or quarterly subscriptions through the online Subscription Store:

<http://www.cisco.com/go/subscription>

Ordering Documentation

You can find instructions for ordering documentation at this URL:

http://www.cisco.com/univercd/cc/td/doc/es_inpk/pdi.htm

You can order Cisco documentation in these ways:

- Registered Cisco.com users (Cisco direct customers) can order Cisco product documentation from the Networking Products MarketPlace:

<http://www.cisco.com/en/US/partner/ordering/index.shtml>

- Nonregistered Cisco.com users can order documentation through a local account representative by calling Cisco Systems Corporate Headquarters (California, U.S.A.) at 408 526-7208 or, elsewhere in North America, by calling 800 553-NETS (6387).

Documentation Feedback

You can submit comments electronically on Cisco.com. On the Cisco Documentation home page, click **Feedback** at the top of the page.

You can e-mail your comments 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.

Obtaining Technical Assistance

For all customers, partners, resellers, and distributors who hold valid Cisco service contracts, Cisco Technical Support provides 24-hour-a-day, award-winning technical assistance. The Cisco Technical Support Website on Cisco.com features extensive online support resources. In addition, Cisco Technical Assistance Center (TAC) engineers provide telephone support. If you do not hold a valid Cisco service contract, contact your reseller.

Cisco Technical Support Website

The Cisco Technical Support 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, 365 days a year at this URL:

<http://www.cisco.com/techsupport>

Access to all tools on the Cisco Technical Support 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>

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 automatically provides recommended solutions. If your issue is not resolved using the recommended resources, your service request will be assigned to a Cisco TAC 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 TAC 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, and logo merchandise. Visit Cisco Marketplace, the company store, at this URL:
<http://www.cisco.com/go/marketplace/>
- The Cisco *Product Catalog* describes the networking products offered by Cisco Systems, as well as ordering and customer support services. Access the Cisco Product Catalog at this URL:
<http://cisco.com/univercd/cc/td/doc/pcat/>
- *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>
- *iQ Magazine* is the quarterly publication from Cisco Systems designed to help growing companies learn how they can use technology to increase revenue, streamline their business, and expand services. The publication

identifies the challenges facing these companies and the technologies to help solve them, using real-world case studies and business strategies to help readers make sound technology investment decisions. You can access iQ Magazine at this URL:

<http://www.cisco.com/go/iqmagazine>

- *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>

- 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>

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