Release Notes for Broadband Access Center for Cable Release 2.5

September 17, 2003

These release notes are for release 2.5 of Cisco Broadband Access Center for Cable, which introduces support for the PacketCable voice technology.

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Introduction

The Broadband Access Center for Cable (BAC) product is a high-speed provisioning application that is easy to install, configure, and maintain. It provides a simple and easy way to deploy high-speed data and PacketCable voice technology services. With this product release, all integration is done through a Java-based provisioning API and pregenerated static configuration files are used to define the desired levels of service.

This provisioning API allows easy integration into an existing operations support system (OSS) environment.

Related Documentation

This release of the BAC product is supported by these related guides:

- *Broadband Access Center for Cable Installation Guide*
- *Broadband Access Center for Cable Administrator's Guide*
- *Cisco Content Engine 500 Series Hardware Installation Guide*
- *Cisco Network Registrar User's Guide*
- *Cisco Network Registrar CLI Reference*

System Components

The BAC comprises these major components:

- The regional distribution unit (RDU), which is software that you install on your server(s).
- The device provisioning engine (DPE), which is software that comes pre-installed on rack mountable hardware known as the Device Provisioning Engine 590.
- An application program interface (API) with which you can integrate BAC with other OSS and billing systems.
- An administrator's user interface from which you can monitor and manage various devices.
- A sample user interface (SUI) with which you can demonstrate BAC's power and flexibility.

System Requirements

You must have the Solaris 8 operating system and Network Registrar installed on your system to successfully use the BAC software. Broadband Access Center for Cable includes the required Network Registrar version.

Note Although the minimum Network Registrar version supported is 5.5.4, Cisco recommends that you use Network Registrar version 6.0.

Hardware Considerations

The minimum hardware requirements needed to support both a lab and a fully deployed network are completely described in the *Cisco Broadband Access Center for Cable Installation Guide.*

Note Processing capacity, disk storage, and memory requirements depend on the size of the network deployment and the amount of log information needed.

Device Provisioning Engine 590

The device provisioning engine 590 (DPE) must be installed in either a 19- or 23-inch, two or four post Telco equipment rack. All installation and connection issues are discussed in the 500 Series installation guide that accompanies this product.

Bugs

For information on BAC for Cable bugs, see the BACC25_BugList.html file in the docs/ subdirectory of the BAC CD-ROM or electronic distribution.

Known Software Problems

Table 1 identifies software issues that are known to exist in this release of BAC.

Table 1 Broadband Access Center for Cable Known Software Problems

Number	Description	Resolution
CSCdw59975	The BatchStatus.isSystemError() call does not work effectively.	This API method always returns FALSE. An application using the BAC 2.5 API client should not rely on this API method to determine the type of error.
CSCdy21950	The PACEConnection timeout is too long. When you use the PACEConnection Factory.getInstance API call with an unreachable IP address, it takes a long time to get a timeout error. This timeout can be as much as four minutes or more.	To avoid this situation, ensure that you only use reachable IP addresses when using the API.

Table 1 Broadband Access Center for Cable Known Software Problems (Continued)

Number	Description	Resolution
CSCdy23082	The uninstallation program should provide additional manual steps at end. The BAC 2.5 uninstallation program only removes components installed by the BAC 2.5 installation program. Directories containing non-BAC 2.5 files, are not automatically removed. The installation program does not prompt you with a warning about which directories are still present after uninstalling the BAC 2.5 product.	Prior to uninstalling BAC 2.5, you must examine the <BPR_HOME>/bpr_definitions.sh file to make note of the directory locations defined for the BAC 2.5 components. After running the BAC 2.5 uninstallation program, check these directories for files that may still be present.
CSCdy41718	Option 43 is missing from the PacketCable template XML options. Options 43 and 43.8 are not directly supported in a PacketCable template by BAC 2.5. This option is used to specify vendor-specific data in the eMTA configuration file, and is a proposed addition to the PacketCable Provisioning Specification.	This can be done but it is a somewhat involved process. If you need to use this feature please contact the BAC Deployment Team for more information.
CSCdy45374	Console errors are displayed before a lab installation is complete. Error messages are sometimes displayed during a console lab installation. These error messages indicate that the DPE cannot connect to the RDU.	These error messages are displayed because the syslog is configured to output to the console. To correct this problem, either disable the syslog or reconfigure it to output to a file. Refer to the syslog commands found in the *Cisco Broadband Access Center for Cable Administrator's Guide* for instructions.
CSCdy76007	The RDU shuts down hard when system is rebooted.	The RDU, which operates in a Solaris environment, does not shut down satisfactorily when a Solaris **reboot** command is issued. The preferred command to bring down the system is **shutdown**. **Caution** Do not use the **reboot** command before shutting down the RDU.
CSCdz21339	KDC multiprocessor support.	Do not install the KDC component on anything but a single processor Solaris host device.

Table 1 Broadband Access Center for Cable Known Software Problems (Continued)

Number	Description	Resolution
CSCdz42836	The RDU cannot use more than 4 GB of RAM. The RDU process only has 32 bit JVM support. Consequently, a maximum of 4 GB of RAM is used.	There is no resolution to this issue. If you attempt to run the RDU on a machine with more than 4 GB of memory, the RDU will limit itself to using 4 GB of memory.
CSCdz80685	The MTA may be marked as *provisioned* in the user interface even if provisioning has failed.	Do not assume that a PacketCable device in the Provisioned state in BAC 2.5 is actually active on the network. The BAC 2.5 user interface and the API, identify the status as PROVISIONED for some devices that have never received a valid configuration. BAC 2.5 uses the term *provisioned* in reference to a device in the BAC RDU database, that was modified by either the API or administrators user interface, and was detected at least once (by BAC) on the network. This terminology is intended to differentiate between a device that was edited in the RDU database and a device that was automatically given the current BAC Technology Defaults. However, the term *provisioned* for a PacketCable device implies that a PacketCable device has received a configuration file and has validated that configuration file. An application that wishes to detect that a PacketCable device sent an MTA-25 SNMPv3 *success* INFORM, indicating that the device accepted the PacketCable configuration, should register for the appropriate BAC PacketCable status events at the RDU.

Table 1 Broadband Access Center for Cable Known Software Problems (Continued)

Number	Description	Resolution
CSCea12180	The RDU allows changes to be made to a class of service that triggers regeneration errors. The BAC 2.5 API correctly detects an invalid DHCP configuration applied to a single device. However, if the same invalid change is applied to a BAC class of service, it triggers the Configuration Regeneration Service to run in the background. Even though there are errors, the batch is allowed to succeed, because it is impractical to keep the API client waiting until all configurations are regenerated. Such changes will potentially result in a large number of configuration generation errors in the rdu.log.	Any application using BAC 2.5 should be carefully constructed to avoid assigning invalid DHCP options to a BAC class of service. An application using BAC 2.5 could be structured to use naming conventions that reflect the intended technology for the class of service objects in BAC. It could also perform simple validations to avoid such mistakes as allowing a PacketCable DHCP option to be applied to a class of service for another technology. **Note** Use the Audit Log and the rdu.log to diagnose these errors.
CSCea28485	The BAC agent may display incorrect error messages when the KDC starts. The bprAgent is configured to immediately start the KDC after a successful installation. The KDC will continuously fail to start until it is configured with a license and valid PacketCable certificates. This information is found in the KDC log file. If the bprAgent is allowed to continue in this mode of operation, and if the KDC is not configured properly, the bprAgent will eventually slow the rate of attempts and the agent will go into a sleep mode. This only happens for a few minutes and, while the bprAgent is in this mode, commands to the bprAgent will generate the incorrect error messages.	Once you have configured the KDC with valid license and PacketCable certificates, the bprAgent will successfully start the KDC after a few minutes. It is not necessary to issue additional bprAgent commands.
CSCea28547	DPE registers disabled interface with RDU. A DPE will register a disabled interface with the RDU, provided that provisioning has been enabled on that interface. When the disabled interface is registered, the Network Registrar extensions will attempt to use that interface. When there is no response from the interface, Network Registrar extensions keep checking until the interface responds.	Do not attempt to enable provisioning on a disabled interface.

Table 1 Broadband Access Center for Cable Known Software Problems (Continued)

Number	Description	Resolution
CSCea28911	Wrong RDU-FQDN causes DPE to crash. If you specify an incorrect FQDN, the DPE will crash after a restart. The DPE will continue attempting to restart.	Ensure that the DPE being configured is set up to correctly DNS-resolve the RDU FQDN being entered.
CSCea34325	PacketCable enable fails even though FQDN has been set.	It is important to configure a DPE for PacketCable in the order specified in the *Cisco Broadband Access Center for Cable Administrator's Guide*. Omitting configuration commands, or failing to reload the DPE after certain configuration commands are entered, can result in the DPE being placed into an inconsistent state. It is while in this condition, that the current command may fail even though the DPE state indicates that the command should be accepted. If this happens, refer to the *Cisco Broadband Access Center for Cable Administrator's Guide* and redo the entire procedure as described. **Note** You must use the **dpe reload** command for any command that require a reload for configuration changes to take affect.
CSCea34419	DPE reload fails with NullPointerException in appliance shell. The **dpe reload** command may fail if you attempt to reload a new DPE before you completely configured the DPE.	When configuring network parameters at a DPE, you must complete the network configuration before attempting a DPE reload. A partially configured DPE will attempt to connect to other BAC components, and will fail to start up properly. Refer to the *Cisco Broadband Access Center for Cable Administrator's Guide* for the minimum required network parameters.
CSCdx94939	Eliminate case sensitivity for provisioning group names. Provisioning group names are case sensitive. Using the incorrect case, when entering the provisioning group name, may lead to difficulty or confusion during configuration.	Verify all provisioning group names when they are created and ensure that you use the correct case when subsequent entries become necessary. **Note** You must use lowercase text for all names.

Table 1 Broadband Access Center for Cable Known Software Problems (Continued)

Number	Description	Resolution
CSCea50499	DPE stays in populating state during a BPR 2.0.x to BAC 2.5 migration. A BPR 2.0.3 database may contain eMTA devices which were provisioned as ordinary DOCSIS 1.1 cable modems. The voice portion of these devices cannot be provisioned with BPR 2.0.3. After the upgrade to BAC 2.5, PacketCable cable modems are classified as PacketCable technology, and BAC 2.5 will not generate new configurations for these devices until PacketCable is enabled for the provisioning group.	For a DPE stuck in populating state, after an upgrade from BPR 2.0.3 to BAC 2.5, check the RDU log files for instances of PacketCable devices. Either enable PacketCable, at the provisioning group for the DPE, or remove the devices from the network. You must also delete the devices from the RDU until the newly upgraded installation is configured to support PacketCable.
CSCea42034	KDC core dump after running with a sustained load on the KDC. **Note** While undergoing test with a heavy simulation load, the KDC has exhibited a tendency to periodically core dump.	This is a harmless issue as the KDC is stateless, and the bprAgent restarts it within a few seconds.

Converting DPR Client Class and Selection Tags to BAC DHCP Criteria

This section is of use to those who are currently using the Device Provisioning Registrar (DPR) product and want to start using the Broadband Access Center for Cable (BAC) product. Before doing this, you must define new DHCP criteria in BAC that matches the corresponding DPR client classes.

Note Although this description covers DOCSIS modems, it is applicable to all of the devices supported by BAC.

Two Device Provisioning Registrar API calls, Provisioning.addDOCSISModem() and Provisioning.changeDOCSISModemClientClass() API, have a parameter called clientClass. This parameter represents the Network Registrar client-class to which the device, in this case a modem, belongs. These parameters are used to select a scope from within Network Registrar.

The BAC API also has these two API calls. However, BAC cannot directly accept the client class name as a parameter. BAC expects a DHCP criteria name, and associates the device with the DHCP criteria specified. The client-class or selection tags specified in the DHCP criteria is used to select a Network Registrar scope.

Note Cisco recommends that you define DHCP criterias with the same names as the previously used client classes. This will ensure backward compatibility with the Device Provisioning Registrar.

To convert the selection tags to DHCP criteria, you must define a new DHCP criteria from within BAC, using the selection tag name from DPR. You must also insert an inclusion selection tag in BAC using the same name as that which exists in DPR.

Note For additional information on adding DHCP criteria, refer to the *Broadband Access Center for Cable Administrator's Guide*.

Option 122 and 177 Support for Client Configuration of DHCP

Note DHCP option 177 is the default setting for BAC for Cable, release 2.5.

BAC for Cable can provision devices requesting DHCP option 122 although this ability is, by default, disabled and must be manually enabled. Once enabled however, BAC for Cable returns either option 177 or option 122, depending on what the client device requests.

Enabling Option 122 Support

To enable option 122:

Step 1 Locate, and open these property files for any provisioning group for which the PacketCable voice technology has been enabled:

- <BPR_HOME>/rdu/conf/rdu.properties
- <BPR_HOME>/cnr_ep/conf/cnr_ep.properties

Step 2 Insert this line into the property files:

```
/pktcbl/option-122/processing/enable=enabled
```

Note Modify the property file at both Network Registrar servers in each failover pair.

Step 3 Restart the Network Registrar servers, and the RDU.

Note If your network contains devices that use the deprecated DHCP option 177, contact your Cisco support representative about managing the upgrade of these devices to use option 122.

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 web sites 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 monthly and may be more current than printed documentation. The CD-ROM package is available as a single unit or through an annual subscription.

Registered Cisco.com users can order the Documentation CD-ROM (product number DOC-CONDOCCD=) 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_inpck/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

- Registered Cisco.com users can order the Documentation CD-ROM (Customer Order Number DOC-CONDOCCD=) through the online Subscription Store:

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

- 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 your comments by mail by using the response card behind the front cover of your document or by writing to the following address:

Cisco Systems
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170 West Tasman Drive
San Jose, CA 95134-9883

We appreciate your comments.

Obtaining Technical Assistance

Cisco provides Cisco.com, which includes the Cisco Technical Assistance Center (TAC) Website, as a starting point for all technical assistance. Customers and partners can obtain online documentation, troubleshooting tips, and sample configurations from the Cisco TAC website. Cisco.com registered users have complete access to the technical support resources on the Cisco TAC website, including TAC tools and utilities.

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http://www.cisco.com

Technical Assistance Center

The Cisco TAC is available to all customers who need technical assistance with a Cisco product, technology, or solution. Two levels of support are available: the Cisco TAC website and the Cisco TAC Escalation Center. The avenue of support that you choose depends on the priority of the problem and the conditions stated in service contracts, when applicable.

We categorize Cisco TAC inquiries according to urgency:

- Priority level 4 (P4)—You need information or assistance concerning Cisco product capabilities, product installation, or basic product configuration.
- Priority level 3 (P3)—Your network performance is degraded. Network functionality is noticeably impaired, but most business operations continue.
- Priority level 2 (P2)—Your production network is severely degraded, affecting significant aspects of business operations. No workaround is available.

- Priority level 1 (P1)—Your production network is down, and a critical impact to business operations will occur if service is not restored quickly. No workaround is available.

Cisco TAC Website

You can use the Cisco TAC website to resolve P3 and P4 issues yourself, saving both cost and time. The site provides around-the-clock access to online tools, knowledge bases, and software. To access the Cisco TAC website, go to this URL:

http://www.cisco.com/tac

All customers, partners, and resellers who have a valid Cisco service contract have complete access to the technical support resources on the Cisco TAC website. Some services on the Cisco TAC website require a Cisco.com login ID and password. If you have a valid service contract but do not have a login ID or password, go to this URL to register:

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

If you are a Cisco.com registered user, and you cannot resolve your technical issues by using the Cisco TAC website, you can open a case online at this URL:

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

If you have Internet access, we recommend that you open P3 and P4 cases through the Cisco TAC website so that you can describe the situation in your own words and attach any necessary files.

Cisco TAC Escalation Center

The Cisco TAC Escalation Center addresses priority level 1 or priority level 2 issues. These classifications are assigned when severe network degradation significantly impacts business operations. When you contact the TAC Escalation Center with a P1 or P2 problem, a Cisco TAC engineer automatically opens a case.

To obtain a directory of toll-free Cisco TAC telephone numbers for your country, go to this URL:

http://www.cisco.com/warp/public/687/Directory/DirTAC.shtml

Before calling, please check with your network operations center to determine the level of Cisco support services to which your company is entitled: for example, SMARTnet, SMARTnet Onsite, or Network Supported Accounts (NSA). When you call the center, please have available your service agreement number and your product serial number.

Obtaining Additional Publications and Information

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

- 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://www.cisco.com/en/US/products/products_catalog_links_launch.html

- Cisco Press publishes a wide range of networking publications. Cisco suggests these titles for new and experienced users: *Internetworking Terms and Acronyms Dictionary, Internetworking Technology Handbook, Internetworking Troubleshooting Guide,* and the *Internetworking Design Guide.* For current Cisco Press titles and other information, go to Cisco Press online at this URL:

  http://www.ciscopress.com

- *Packet* magazine is the Cisco monthly periodical that provides industry professionals with the latest information about the field of networking. You can access *Packet* magazine at this URL:

  http://www.cisco.com/en/US/about/ac123/ac114/about_cisco_packet_magazine.html

- *iQ Magazine* is the Cisco monthly periodical that provides business leaders and decision makers with the latest information about the networking industry. You can access *iQ Magazine* at this URL:

  http://business.cisco.com/prod/tree.taf%3fasset_id=44699&public_view=true&kbns=1.html

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

  http://www.cisco.com/en/US/about/ac123/ac147/about_cisco_the_internet_protocol_journal.html

- Training—Cisco offers world-class networking training, with current offerings in network training listed at this URL:

  http://www.cisco.com/en/US/learning/le31/learning_recommended_training_list.html

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