CHAPTER 1

Overview

This chapter gives an overview of Cisco Broadband Access Center (Cisco BAC), and describes the factors that you must consider before installing Cisco BAC.

This chapter describes:

Product Overview

Cisco BAC is a distributed and scalable application that automates the tasks of provisioning and managing cable devices in a broadband service provider network. It provides a simple and easy way to deploy high-speed data, voice technology, and home networking devices. The application interfaces with Cisco Network Registrar, which includes a high-speed DHCP for IP address management and a Domain Name System (DNS) server.

Cisco BAC can be scaled to suit networks of virtually any size. It also offers high availability, made possible by the product's distributed architecture with centralized management.

Cisco BAC enables you to provision and manage cable modems compliant with the DOCSIS 3.0 specification. With IP version 6 (IPv6) being a significant feature of DOCSIS 3.0, this release supports DHCPv6 and DNSv6.

Cisco BAC can be run on a Solaris operating system as a non-root user.

For optimum performance and reliability of the Cisco BAC database, ZFS file system has been introduced. For details on ZFS, see File-System Block Size, page 2-6.

Operating System Requirements

For Solaris, you must install Cisco BAC on a Sun SPARC platform running the Solaris 10 operating system with at least 4 GB of memory. We recommend that you use a Sun SPARC multiprocessor platform.

Note Before installing Cisco BAC, download and install the recommended Solaris patches from the Sun Microsystems support site.
Cisco BAC ships with the required JRE version 1.6.0_23, which resides in the *BPR_HOME/jre* directory.

You must also download and install the Java Platform Standard Edition (Java SE) cluster patches recommended by Sun Microsystems to install Cisco BAC on a system that runs Solaris 10, see Table 1-1.

Table 1-1 Java Standard Edition Cluster Patches for Solaris 10

Patch	Description
120900-04	Libzonecfg patch
121133-02	Zones library and zones utility patch
119254-44	Install and patch utilities patch, for more information, see Chapter 3, "Installation of Broadband Access Center on Solaris"
118918-24	Solaris crypto framework patch
119042-10	Svccfg and svcprop patch
119578-30	FMA patch
118833-36	Kernel patch

For Linux, you must install Cisco BAC on Red Hat Enterprise Linux 5.3 (2.6.18 or higher) using x86 and 64 bit hardware system with at least 4 GB of memory. The selinux should be disabled.

Cisco Network Registrar Requirements

Note If you are not installing Cisco BAC extensions on CNR, you do not need to install CNR.

Before installing Cisco BAC extensions, be aware of these CNR requirements:

- You must install CNR 7.1.2.1 with Cisco BAC 4.1.0.1.
- You must install a CNR DHCP server on a computer running Solaris 10.
- In a failover deployment of Cisco BAC, you must configure two redundant DHCP servers for failover.
- After you install Cisco BAC, ensure that CNR scopes are configured to reflect failover capability and the topology of the network on which Cisco BAC is installed. For information on configuring failover on CNR servers, see the *User Guide for Cisco Network Registrar, 7.1*.

Cisco BAC Components at a Glance

A Cisco BAC installation requires:

- A Regional Distribution Unit (RDU)

  The RDU is the primary server in a Cisco BAC deployment. It contains the central Cisco BAC database and is the sole entry point for processing requests from the API.

- One or more Device Provisioning Engines (DPEs)

  A DPE caches provisioning information and configuration requests, including the transfer of configuration files to devices. It is the major component of the provisioning group, handling all device interactions with the RDU.

  The DPE is integrated with the CNR DHCP server to control the assignment of IP addresses. Multiple DPEs can communicate with a single DHCP server.

  Note This release of Cisco BAC does not support installing the DPE on a hardware appliance.

- A Key Distribution Center (KDC)

  The KDC, along with the DPE registration service, handles the authentication of all voice technology media terminal adapters (MTAs).

  Note The KDC is required only when configuring a system to support voice technology operations using PacketCable.

  For performance reasons, install the KDC on a separate server.

- One or more CNR servers

  CNR provides the DHCP and DNS functionality. Implementing DNS Update within CNR increases the number of servers you need to deploy.

Type of Installation

This guide describes the individual component installation, which installs one or more components of Cisco BAC: the RDU, one or more DPEs, CNR extensions, and the KDC. For detailed procedures on installing components in the interactive or non-interactive modes, see Chapter 3, “Installation of Broadband Access Center on Solaris.” or Chapter 4, “Installation of Broadband Access Center on Linux.”

Note This release does not feature a lab installation, but you can perform its equivalent by installing all Cisco BAC components on a single machine. To perform such an installation, we recommend that you have at least 500 MB of disk space available.