DATA SHEET

CISCO BROADBAND ACCESS CENTER 2.7

PRODUCT OVERVIEW

Cisco® Broadband Access Center (BAC) is a distributed, scalable application allowing for automated flow-through provisioning of subscriber services and management of subscriber devices. Cisco BAC provides a centralized and automated platform for service providers to control and configure residential home gateways and the IP devices behind the gateways.

Cisco BAC automatically recognizes devices, assigns the appropriate class of service, dynamically creates and generates device configuration files, and activates subscribers. Cisco BAC provides a single device management platform to support multiple technologies including DOCSIS®, PacketCable™, CableHome™, satellite, and Session Initiation Protocol (SIP).

As service provider infrastructures increase rapidly in size and complexity, management systems that simplify the task of operating the network and its services become more essential. Cisco BAC addresses this need by automating the configuration and provisioning of subscriber devices based on the service provider's business policies. Cisco BAC allows service providers to implement either or both of the following workflow models:

- **Preprovisioning**—Devices are assigned to subscribers and recorded in advance in the provisioning application. When subscribers plug them in, Cisco BAC automatically assigns the appropriate service level and activates them.
- **Autoprovisioning**—When subscribers self-register for service, subscriber devices are captured and recorded in the provisioning application. Subscribers are required to register for service before Cisco BAC configures the device and activates the service.

Cisco BAC is a fast, secure, and scalable system for provisioning tiered services on devices. It is designed for:

- **Reliability**—Cisco BAC provides high reliability and high availability supporting autonomous headends, multiple distributed device provisioning engines (DPEs), each of which includes its own data-caching repository, a Trivial File Transfer Protocol (TFTP) server, and a time-of-day (ToD) server. During central server outages or communication problems, Cisco BAC provides continued service to existing registered subscribers.
- **Scalability and performance**—Cisco BAC can support millions of devices in distributed deployments. Cisco BAC uses multiple distributed device management and caching engines to balance processing of device requests. A single DPE can support as many as 1 million devices. These DPEs can be combined in groups to provide redundancy and load sharing. Cisco BAC includes a central component called a regional distribution unit (RDU) to manage service requests and modifications. A single RDU server in conjunction with the appropriate number of DPE groups can support as many as 35 million devices with a sustained rate of hundreds of thousands of new devices a day.
- **Integration with current systems**—Cisco BAC integrates with existing service provider systems, such as billing systems, operations support systems (OSSs), and other customer management systems, through a Java provisioning API. It can also notify interested applications of certain events within the system through an event-notification registration procedure.
- **Extendable technology support**—Cisco BAC supports DOCSIS cable modems and set-top boxes for high-speed data provisioning, PacketCable voice provisioning of media termination adapters (MTAs), DOCSIS cable modems, CableHome devices, SIP ATAs, and SIP Voice Gateways. It also can be extended to support other Dynamic Host Configuration Protocol (DHCP)-based devices, including non-DOCSIS cable modems.

KEY FEATURES AND BENEFITS

Table 1 outlines the features and benefits of Cisco BAC.

Table 1. Cisco Broadband Access Center Features and Benefits

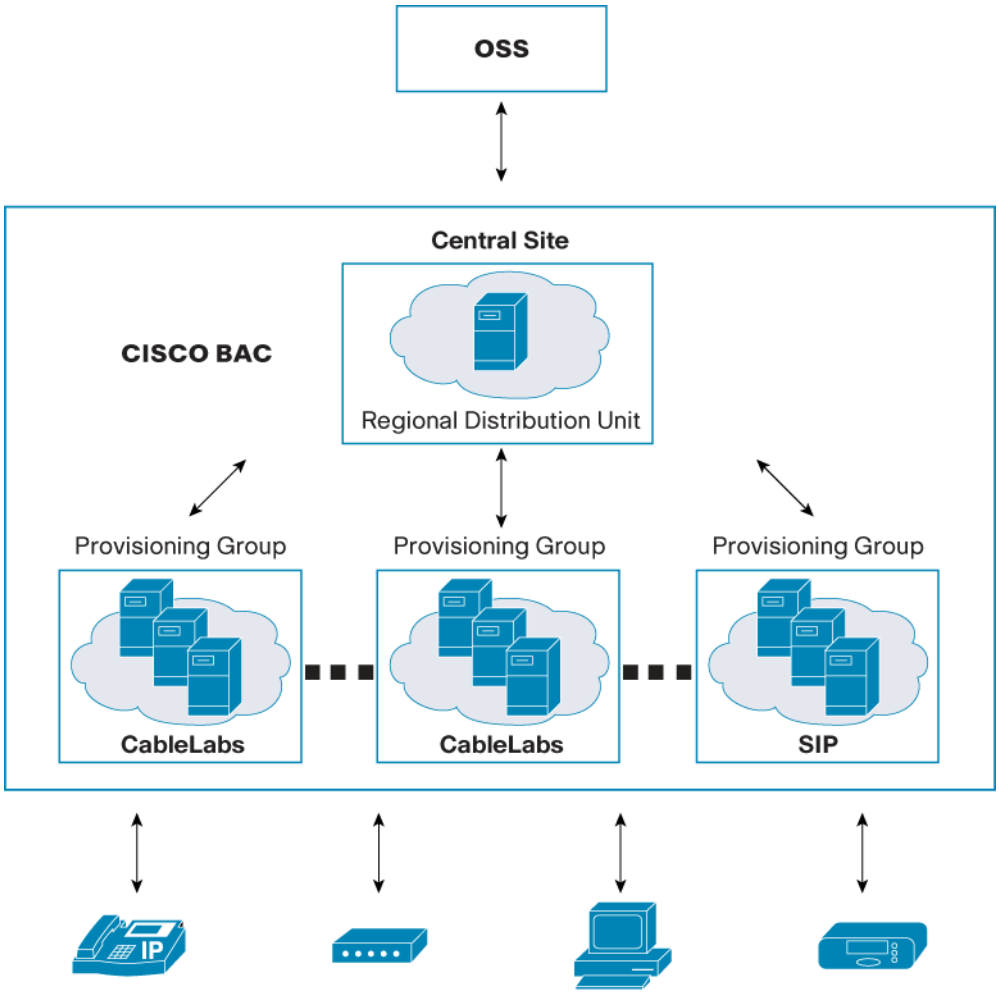
Feature	Benefit
Embedded High-Performance Database, Optimized for Device Provisioning	Ensures high-performance service request management and device provisioning and minimum service delay; no additional external database needed
Integrated Kerberos Protocol Server (KDC) for PacketCable Voice Service Provisioning	Provides a single platform with all the necessary security components for PacketCable provisioning
Java-Based Provisioning API	Provides easy integration to customer OSS, billing, or workflow and mediation software
Distributed Device Management Servers	Offers true scalability with a simple way to extend provisioning to additional subscribers and new markets; dramatically simplifies capacity upgrade and maintenance costs and complexity
Distributed Architecture	Offers true scalability, failover, and high reliability and provides an easy way to manage a growing subscriber base while ensuring minimum subscriber service disruption
Technology Extensions	Provides an easy means to extend this single platform to provision new devices and technologies to meet changing network and subscriber requirements
PacketCable-Compliant	Supports PacketCable v1.0 and 1.1 for complete end-to-end IP voice service provisioning and meets all PacketCable security specifications
DOCSIS 1.0 and 1.1, And 2.0 Support	Easily extends to take advantage of advanced features of DOCSIS 1.1 and DOCSIS 2.0
Dynamic DOCSIS File Generation	Offers a means to build unique DOCSIS files for individual subscriber devices to meet needs of tiered service provisioning and true IP voice requirements
Media Gateway Control Protocol (MGCP) Support	Provides a means to deploy voice services promptly
Safe Failover	High uptime and service reliability through DPE and DHCP failover as well as TFTP redundancy

PRODUCT SPECIFICATIONS

Cisco Broadband Access Center 2.7 uses a distributed architecture for provisioning services on broadband devices. Figure 1 illustrates the components of the Cisco BAC 2.7 solution, which include the following:

- **Provisioning API**—A flow-through provisioning interface used to integrate the Cisco BAC system with service providers' client programs, such as workflow applications and billing systems. Integration is implemented through a Java client library that service providers' client programs use to drive tiered-service selection and to trigger device activation on their networks. The client library reduces the need to develop integration code and facilitates integration with Web-based user interfaces.
- **Cisco Regional Distribution Unit (RDU)**—The primary server in the Cisco BAC system. It performs the following functions:
  - Manages the generation of all configurations
  - Maintains the authoritative database
  - Represents the central point through which all API requests must pass
  - Supports external clients, OSSs, and other provisioning functions through the provisioning API
- **Cisco Device Provisioning Engine (DPE)**—The Cisco DPE server that manages device configurations and which also contains TFTP and ToD servers. The Cisco DPE manages the following:
  - Last-step, device-configuration, file handling
  - Communication of the configuration files through an embedded TFTP server
  - Embedded ToD server
  - Integration with Cisco CNS Network Registrar®
  - Cached-device configuration and provisioning information
- **Cisco CNS Network Registrar**—A software product that includes the protocol servers to provide IP addresses, configuration parameters, and Domain Name System (DNS) names to devices, based on network and service policies. Cisco BAC relies upon the Cisco CNS Network Registrar DHCP server for IP address assignment, DNS, device detection, and load distribution among Cisco DPE servers.

Figure 1. Cisco BAC Architecture



PLATFORM SUPPORT AND SYSTEM REQUIREMENTS

The Cisco BAC RDU and DPE components are supported on the Sun Solaris 8 and 9 operating systems, SPARC. A typical recommended configuration of the Cisco BAC RDU installation is a SunV210 Class workstation, 1 GHz, with 2 GB of RAM and an 18-GB hard drive. This supports up to 1 million devices. The DPEs require a similar configuration. Cisco Network Registrar® requires a Sun Netra T-1 workstation with 512 MB of RAM and a 5-GB hard drive.

FOR MORE INFORMATION

For additional product information, visit http://www.cisco.com/en/US/products/sw/netmgtsw/ps529/index.html or contact your local account representative.

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