

# Cisco Building Broadband Service Manager Version 5.1

Cisco Building Broadband Service Manager (BBSM) is a service creation platform designed for hotels, apartments, office buildings, campuses, and other multi-tenant locations to deliver high-speed Internet access. Cisco BBSM is designed for seamless integration with Cisco access-layer LAN products to provide a complete solution that enables service providers or property owners to create, market and operate broadband access services.

Cisco BBSM provides plug-and-play access and allows customers to self-provision services reducing support requirements and increasing usage. Customizable portals

and advertising platforms allow property owners and service providers to generate incremental revenue. Cisco BBSM supports multiple authentication and billing options; including credit card, RADIUS, property management system and access codes through existing interfaces or open APIs. A comprehensive software developer's kit allows customization of BBSM to fit the unique needs of any business for branding, billing, reporting, access and other creative operational additions that may fit one's business needs. Cisco BBSM is available as a pre-loaded server appliance, or software only option.

**Figure 1** Cisco Building Broadband Service Manager Server



**Note:** Cisco BBSM enables service providers or property owners to create, market and operate broadband access services.



**Figure 2** Connect screens can be customized to provide a targeted end customer experience and create incremental revenue streams not only data, but voice, walled garden (advertising), e-commerce, etc.



### Key Features and Benefits

- **Access**—Cisco BBSM enables user access regardless of their network interface configurations. Computer users can connect to the network using interfaces configured for Dynamic Host Configuration Protocol (DHCP) or static IP addressing methods. This plug-and-play capability provides access to the greatest number of users.
- **Authentication**—Cisco BBSM supports multiple authentication methods. These methods include Remote Access Dial-In User Service (RADIUS) authentication to either local or remote RADIUS servers for subscription users or service subscribers, credit card authentication, access code authentication (especially for meeting rooms), and automated authentication based on known port location in a specific room.
- **Accounting**—Cisco BBSM accounts for usage and processes payment requests in multiple international currencies using multiple methods, including:
  - Direct posting of charges to a hotel property management system (PMS) for users connecting from guest rooms
  - Charge processing by a remote credit card processing service; this enables payment from any location on a property (ICS only)
  - Subscription users can authenticate and have their usage tracked via RADIUS and pay through offline methods
  - Per minute access can be pre-paid for via access codes. Credit card billing can be based on time-block increments. Additional bandwidth or future value-added services can be billed



- *Portal*—Cisco BBSM redirects all users through two steps during connection. First, they are directed to a Connect Screen, which explains the services available to them, including potentially multiple bandwidth and price options; Walled Garden free access areas, such as local sites, advertising, e-commerce, and/or weather; and a link to the property owner or service provider’s home page. Once users select and purchase service, they are directed to a portal page as their first location on the Internet. This provides a second branding and marketing opportunity. With the Walled Garden feature a property could allow free browsing (pre-authentication) of specified domains. The Cisco BBSM server includes a “transparent proxy” feature, which allows the service provider to force all Web requests to the Internet to go through the web proxy installed on the Cisco BBSM server—regardless of the client computers proxy configuration. When logging is turned on in the web proxy application, it allows the software to capture a list of Web sites visited. This information can be later mined to determine popular Web sites and potentially aide in Web site advertising sales, for example.
- *Network Buildout and Configuration*—Cisco BBSM includes multiple features designed to support network installation, configuration, and testing. These features are important to ensure effective deployment of broadband building networks.
- *Port Hopping*—Allows a user to transparently hop from wired port to wired port or wireless port to wireless port, providing user mobility within a site. Accurate per-minute accounting is maintained as a user associates to various wireless access points within a Cisco BBSM site.
- *Expanded Walled Garden Functionality*—Supports numerous walled garden entries, which are entered as an individual IP addresses or an entire subnet.
- *Maximum Sessions Limit*—Allows installations to assign a maximum number of concurrent sessions, thereby preventing the WAN link from becoming over-subscribed. If a user starts a session that exceeds the configured limit Cisco BBSM redirects the user to a “system busy” Web page that can be customized.
- *Cisco Building Broadband Service Director (BBSD)*—Is a server-based product for managing multiple Cisco BBSM servers in the field. BBSD allows a service provider or large property owner/ manager to centrally maintain, manage and report on multiple Cisco BBSM servers. Cisco BBSD provides a cost-effective way to manage an in-building Broadband service network.
- *Network printing*—Support for printing records for manual posting from the Cisco BBSM server (not a guestroom printing application).

Enhancements in version 5.1 include:

- *RADIUS Accounting Support*—Previously Cisco BBSM supported only RADIUS Authentication and Authorization. Version 5.1 adds RADIUS Accounting support, allowing Cisco BBSM to automatically transmit accounting records to a RADIUS server, and therefore qualifying BBSM as a true triple A product or AAA. By using the RADIUS NAS identifier combined with a RADIUS session ID, unique records can be tracked across multiple Cisco BBSM servers. The RADIUS Accounting feature enables service providers using Cisco BBSM to be compatible with popular roaming alliances such as IPASS or GRIC.

## Wireless Hotspots

Wi-Fi (802.11b) wireless hotspots are primary applications for the v5.1 release. Cisco BBSM provides subscriber membership using RADIUS authentication and authorization. Users that do not want to subscribe have a choice of other payment methods such as credit cards or access codes. When a RADIUS session is authorized, the Cisco BBSM tracks the length of the session in minutes while allowing the user to move between wireless access points in a site (see Port Hopping). When the user ends the session, Cisco BBSM records the transaction and sends it to the RADIUS accounting server for further processing.



## Tiered Service Offerings for Wireless Hotspots

The Cisco BBSM rate shaping feature has been extended to work with RADIUS accounting so that service providers can offer tiered service in wireless hotspots and other locations using a time-based pricing model. For example, the service provider can offer a maximum rate of 56Kbps at \$.05 per minute to cost-sensitive customers. For the customer requiring premium high-speed connectivity, the service provider can offer increased speed at a higher price per minute.

## Specifications

### Platforms

- BB-SM-Server-96—Cisco BBSM pre-loaded server with 96 port licenses
  - Microsoft Windows 2000 Server Operating System US English (included with BB-SM-SERVER-96 and BB-SM-BUNDLE-48=)
  - Microsoft ISA server
  - MSDE database
- For customer-provided servers, we recommend the following minimal hardware specifications:
  - Pentium processor (750MHz or greater)
  - Minimum 9Gb disk drive
  - Minimum 256MB memory
  - Ethernet 10/100 NIC card for External LAN (any vendor)
  - Internal NIC
    - 3Com—3C905B-TX and 3C905C-TXM
    - Intel—PRO/100+ PCI and MiniPCI
    - D-Link—DFE-550TX
  - RS 232 Serial Port for optional PMS connections

### Options

- Cisco BBSM Software Developers Kit (SDK) available for free download
- Keyview Pro must be purchased separately to enable network printing

## System Capabilities Summary

- Auto-configuration for Ethernet switches
- Switch discovery tool
- Hardware dependent port test—Cisco BBSM provides the ability to adjust the port test to match the network hardware used
- Port test report—Report lists current port test results, pass/fail and percent of packets passed
- IP Address change wizard
- Web-based configuration and administration and remote management
- Location Based Services—configure one access policy and Web splash page for the property or for each separate room in the property
- BBSM software developer's kit
- Network Hardware support includes:
  - Catalyst® 2900 LRE XL Switches
  - Catalyst 2900 XL Switches
  - Catalyst 2950 Switches
  - Catalyst 3500 Switches
  - Catalyst 4000 Switches—some configurations<sup>1</sup>
  - Catalyst 6500 Switches—some configurations<sup>1</sup>
  - Cisco Aironet® 350 Series Wireless LAN Products
  - Cisco Aironet 340 Series Wireless LAN Products
  - Cisco uBR7100 Series Universal Broadband Router
- Credit card interface, API and software developers kit
  - Existing interface to CyberSource ICS (International)
- Hotel billing system supported interfaces include:
  - Protocol Technologies (Bell HOBIC)
  - MSI (Bell HOBIC)
  - Promus 21 (Bell HOBIC)
  - Encore (Bell HOBIC)

1. Please reference Cisco BBSM Frequently Asked Questions (FAQs) for complete details



- GEAC/UX (Bell HOBIC)
- GuestView (Bell HOBIC)
- Hotel Information Systems (HIS) LIBICA uses HOBIC. Parent company is MAI
- LanMark (Bell HOBIC)
- Lodging Management System (LMS) from Inter-American Data (IAD) (Bell HOBIC)
- Logistics (Bell HOBIC)
- Fidelio v6.x and 7.x, Fidelio Express and Opera supported
- XIOX
- Hilton H.1, H.2
- User Security Administration (three levels of administration security)
- Web-based Templates for Accounting & Access Policies includes the following scenarios:
  - Daily 24 hour Hotel access
  - Access Codes for authentication
  - Block of time charging with credit card
  - Daily charging with credit card
  - Per minute charging with credit card
  - Subscription model using optional SSL entry for RADIUS authentication
  - Per-minute charging for subscribed users with RADIUS authentication and RADIUS accounting
  - Administrator sets activation date/time and end date/time for access for a port
  - User purchases multiple days of access on a port using credit card
- Plug and play access for both DHCP and static-IP configured PCs, including support for PCs with pre-configured proxy settings in their browser
- End-user self provisioning via a forced Web connect page
- Policy based session management on a per port or per site basis (supports different policy for various bridges connected to wireless access point)
  - Connect screen page and branding
  - Bandwidth offering(s)
  - Pricing
  - Billing method
  - Usage model—per minute, daily, block (limited), and subscription.
  - Forced portal (HTTP re-direct)
  - Advertising and e-commerce
- Identity based policy based on RADIUS attribute for bandwidth rate-shaping
- Walled garden and Internet portal support
- SMTP forwarding
- Network printers require purchase of Keyview Pro third-party product
- Virtual Private Network compatibility
- Web-based reporting
- Central deployment option to support multiple sites with single Cisco BBSM server
- Support for public space mobility
  - Moving within a site across wireless access points installed throughout a property
- Single/Multiple day billing options—configure discounted rates for multi-day purchase
- Max users per system limit—if the number of users will go beyond limit, new users are directed to a Web screen saying system is at full capacity
- Public space requirements
  - RADIUS authentication and authorization
  - RADIUS accounting—primary and secondary RADIUS accounting servers, usage information will include user name, start and end times, unique system and session ID



- Cisco Building Broadband Service Director—software for second server to:
  - Manage Cisco BBSM servers in the field individually or by groupings (for example, a hotel or apartment chain)
  - Backup/Restore Cisco BBSM server data in the field
  - Centralized operations and business reports
  - Push upgrade packages (does not execute them)
  - Manage and push Web pages to Cisco BBSM servers
  - Performance

### **Performance**

Cisco BBSM can support up to 45 Mbps (T3) of throughput and an estimated 1,000 concurrent users under average loads and 500 users under heavy loads. While there is no limit on the maximum number of connected ports, BBSM can support up to 1,200 ports within what is generally considered an optimal response time; beyond that- acceptable response time is based on the type and model of network equipment being used.

### **Management**

Web-based configuration and management.

### **Connectors and Cabling**

### **Dimensions and Weight (H x W x D)**

The BBSM server is:

- Height: 1.75 in. (1U)
- Width: 16.75 in.
- Depth: 22.00 in. including bezel
- 19 in. Rackmount Kit (ears & siderail mounts)

## **Ordering Information**

### **Description**

#### **BB-SM-SERVER-96**

Cisco BBSM pre-loaded server—Cisco BBSM pre-loaded on server ready to install in property. Includes Cisco BBSM 5.1 software base kit with 96 port licenses. CD, documentation, 96 port licenses, server and Microsoft software (Windows 2000 Server, ISA Server). One port license is required for every port (not user) connected to Cisco BBSM. Wireless access points require 6 port licenses. A Meeting room port supporting more than one user by means of a hub or switch requires a 24 port license.

#### **BB-SM-CD-96**

Cisco BBSM on CD with 96 port licenses—software only kit (does not include Microsoft Windows 2000 or ISA Server).

#### **BB-SM-BUNDLE-48=**

Cisco BBSM on CD with 48 port licenses (maximum expansion of 144 ports), Microsoft Windows 2000 Server, Microsoft ISA Server (BBSM Meeting Room not licensed)

#### **BB-SM-LIC-24**

Additional 24 port licenses for BB-SM-Server-96, BB-SM-CD-96 or BB-SM-Bundle-48=

#### **BB-SM-LIC-24=**

Additional 24 port licenses for BB-SM-Server-96, BB-SM-CD-96 or BB-SM-Bundle-48= if purchased after initial order.

#### **BB-SM-5.1-UPG=**

Cisco BBSM Upgrade 5.1, documentation, 96 port licenses, BBSD – for customers without a SAS or SASU contract, installed base customers may purchase this upgrade.



## Service and Support

Cisco Software Application Support (SAS) and Software Application Support plus Upgrades (SASU) are available for the BBSM software. SAS provides 24x7x365 technical support through Cisco TAC, access to Cisco.com for on-line technical assistance and software updates—maintenance and minor releases only. SASU provides all of the above plus major version software updates.

Cisco SMARTnet Advance Parts Replacement, Next Business Day is available for the BB-SM-SERVER-96. Cisco SAS or SASU must also be purchased to ensure complete hardware and software support for the BBSM solution. Customers providing their own server must obtain hardware support through their partner or vendor.

The Cisco Total Implementation Service Package (TIP) program is designed to ensure customer success by documenting best practices and providing templates, guidelines, and reference architectures for in-building deployments. Rapid deployment, ongoing support, and field maintenance can be provided by Building Broadband Partners or trained resellers.

## Software Developer's Kit

You may obtain the SDK software and documentation on the Web at: <http://www.cisco.com/warp/public/570/comlob/bbsm/index.html>

## Software Application Services

Product Part Number	SAS Part Number	SASU Part Number
BB-SM-CD-96	CON-SAS-BBSMCD96	CON-SAU-BBSMCD96
BB-SM-BUNDLE-48=	CON-SAS-BBSM-B48	CON-SAU-BBSM-B48
BB-SM-LIC-24 (BB-SM-LIC-24=)	CON-SAS-BBSMLIC24	CON-SAU-BBSMLIC24
BB-SM-SERVER-96	CON-SAS-BBSMCD96	CON-SAU-BBSMCD96

## SMARTnet Hardware Services

Product Part Number	SMARTnet Part Number
BB-SM-SERVER-96	CON-SNT-BBSMSVR

## Environmental Conditions and Power Requirements

<b>Operating Temperature</b>	+10°C to +35°C
	De-rated 0.5°C/1000 ft
	Altitude to 5,000 ft maximum
	Maximum rate of change of 10°C per hour
<b>Non-Operating Temperature</b>	-40°C to +70°C
<b>Non-operating Humidity</b>	95%, noncondensing @ 30°C
<b>Acoustic noise</b>	<48 dBA @28C +/- 2C
<b>Operating Shock</b>	No errors with a half sine wave of 2G (with 11-millisecond duration)
<b>Package shock</b>	Operational after a 24-inch free fall, although cosmetic damage may be present.
<b>ESD</b>	15kV per Intel Environmental test specification.



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