



# Introduction

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The Cisco Building Broadband Service Manager (BBSM) is an Internet subscriber and session management system for building-centric networks.

BBSM enables service providers in hotels, apartments, offices, and other public areas to:

- Offer Internet-managed subscriber-access services to an end user
- Make it easy for the end user to understand and use Internet services
- Eliminate the need for end-user software
- Eliminate or reduce the need for reconfiguration when making the Internet connection
- Support multiple revenue streams, including advertising, value added, and fee-based schemes
- Support rapid product introduction and innovative product marketing

## BBSM Feature Summary

The BBSM Server runs on a Microsoft Windows 2000 platform and is available on a factory-installed server. A CD-ROM version is also available for installation on an existing server. BBSM offers:

- Policy-based Session Management
- True Plug-and-Play Access
- End User Control Features
- Portal Features
- Bandwidth Management
- Access Code Management
- Property Management System Interfaces (PMS)
- The ability to work with a variety of network equipment and wiring (Cable modems, DSL, Ethernet)
- Compatibility with Remote Access Dial-in User Service (RADIUS), credit card, or access code authentication
- Compatibility with corporate Virtual-Private-Network (VPN) protocols, Point-to-Point Tunneling Protocol (PPTP), and Layer 2 Tunneling Protocol (L2TP)
- Support for a variety of network topologies (per property or central office)
- Support for the management of multiple properties
- Specialized reporting tools

# User Groups

The installation process automatically creates two BBSM user groups, BBSM Operators and BBSM Reports. These user groups, along with the Windows 2000 Administrator's group, are reflected in the grouping of option categories on the BBSM Dashboard. See [Figure 1-1 on page 1-3](#).

The following groups provide security and allow access control of users to open, edit, and/or view the reports and run web applications.

- **BBSM Reports**

BBSM Reports is a user group that has access to only the Reporting Pages option on the BBSM Dashboard.

This group can open a Room Mapping Report and verify room and port, but cannot edit room mapping. This group cannot add, update, or delete an Access Code.

- **BBSM Operators**

BBSM Operators is a user group that can do everything a BBSM Reports user can do, plus all these options located in the BBSM Dashboard Operations group:

- Port Control
- Map Rooms
- Subscription Port Control
- Access Code Management
- Reporting Pages

This group can view all reports and web applications.




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**Note** *Reports* are BBSM database information that can only be read while *web applications* allow the user to view and change the database information.

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- **Administrators**

Administrators is a system group that is part of Windows 2000. This user group has full system permission and rights. Administrators can alter any BBSM configuration setting and has access to all BBSM Dashboard options.

For example, this group has access to the web applications and can:

- View all reports
- Add, update and delete Access Codes
- Edit room mapping

- **Printers**

When BBSM Web Printing is enabled, a group is created for each site that are part of the administrators group. This group is only used for installing printers.

# Starting a Configuration Session

BBSM can be accessed locally at the BBSM console and remotely over the Internet using Internet Explorer. This access is usually handled through the BBSM Dashboard (Figure 1-1). For convenience, an icon is located on the BBSM desktop.

Figure 1-1 BBSM Dashboard



## Note

BBSM server web pages are accessed on port 9488 instead of the default web server port 80. This is done by adding “:9488” after the BBSM server IP address or host name in the http request (for example, <http://10.10.10.50:9488/www>). If you are on the inside BBSM network, you must activate a session to get access to these pages.

## Remote Access

Follow this procedure for remotely accessing the BBSM Dashboard.



## Note

This procedure can be run from the Internet or from inside the BBSM network.

- Step 1 Open Internet Explorer. If necessary, activate a session.
- Step 2 Enter the following URL into the Address box of the Browser:
 

**`http://<IP_address>:9488/www`**

 where <IP\_address> is the remote BBSM Server IP address.
- Step 3 Enter **User Name** and **Password**. The BBSM Dashboard is displayed.

## Local Access

Follow this procedure for local access of the BBSM Dashboard from the BBSM console.

- Step 1** Double-click the **BBSM Dashboard** icon on the desktop. The BBSM Dashboard appears. The BBSM Dashboard can also be accessed by selecting **Start > BBSM Dashboard**.

## Selecting an Option

Click an option on the BBSM Dashboard to make a selection. The following is a list of options available under each category.

*Table 1-1 BBSM Dashboard Options*

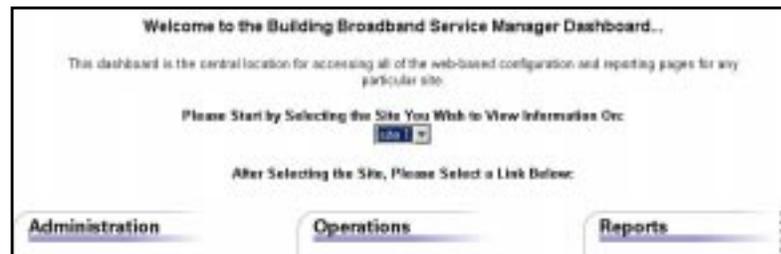
Administration	
<b>WEBconfig</b>	Use this option to access the web pages to configure BBSM. See <a href="#">Chapter 2, “Configuring the System.”</a>
<b>WEB PMS Test</b>	Use this option to access the BBSM PMS Test option. See the <a href="#">“Testing the PMS Interface”</a> section on page 5-5.
<b>WEBpatch</b>	Use this option to access WEBpatch. Use this utility to: <ul style="list-style-type: none"> <li>• Perform remote updating of the BBSM Server software</li> <li>• Obtain a listing containing:               <ul style="list-style-type: none"> <li>– all patches and service packs installed</li> <li>– product version and build assigned to each patch or service pack</li> <li>– a description of what the patch does</li> <li>– a description of patch dependencies</li> </ul> </li> </ul> For more information about the WEBpatch utility, see <a href="#">Chapter 11, “WEBpatch Utility.”</a>
Operations	
Port Control Form	Use this option to view the list of ports and edit per-port policies. See the <a href="#">“Port Control Web Pages”</a> section on page 4-10.
Map Rooms	Use this option to edit and map guest and meeting rooms to ports. See <a href="#">Chapter 3, “Room Mapping and Port Testing.”</a>
Subscription Port Control	Use this option to maintain ports associated with the Subscription access policy. See the <a href="#">“Subscription Port Control Port Test”</a> section on page 4-17.
Access Code Management	Use this option to generate, edit and delete access codes. See <a href="#">Chapter 8, “BBSM Access Code Management.”</a>
Reports	
Reporting Pages	Use this option to view usage, transaction history, active ports, access codes, room mappings, RADIUS data, and walled garden data. See <a href="#">“Reporting Pages”</a> section on page 4-1.

## Using the BBSM Dashboard with Multiple Sites

A BBSM Server configured for multiple sites displays a slightly different BBSM Dashboard screen. It is necessary to select the site before choosing a configuration option.

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- Step 1** Launch the BBSM Dashboard.
- Step 2** Select the appropriate site from a drop-down selection menu that appears in the upper portion of the BBSM Dashboard. See [Figure 1-2](#).

*Figure 1-2 BBSM Dashboard for Multiple Sites*



- Step 3** Click the appropriate option in the lower half of the Dashboard.
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## Navigation Buttons

Navigation buttons are used on most of the BBSM web pages and forms. Use these buttons to locate the appropriate information you want to see.

*Table 1-2 Navigation Button Definitions*

Button	List View page	Form View page
	<b>First</b> page in the list.	<b>First</b> record form.
	<b>Previous</b> page in the list.	<b>Previous</b> record form.
	<b>Next</b> page in the list.	<b>Next</b> record form.
	<b>Last</b> page in the list.	<b>Last</b> record form.

# The WEBconfig Program

When WEBconfig is selected from the BBSM Dashboard, the WEBconfig splash screen appears. The Port IP web page automatically appears after a few seconds or when you click the splash screen.

Use WEBconfig to configure your BBSM Server using the following configuration categories:

- Port IDs
- Server
- Sites
- Routers
- Switches
- Page Sets
- Port Map
- Port Tests
- Call Types
- RADIUS Servers
- Walled Garden

**Note**

For detailed descriptions of the functionality for each category, refer to [Table 2-1 on page 2-5](#). For complete details of all the options, see the [“Navigating the WEBconfig Pages” section on page 2-8](#).

WEBconfig displays the Port IPs screen first. From this screen, you can navigate to any page using the buttons at the top of each page. Working from left to right with the buttons, you are able to quickly configure the system. Once the initial system configuration is completed, select specific web pages to make additional changes. When configuring multiple sites, define the additional sites from the Sites screen.

## Network Types Supported

The BBSM system supports the following types of networks:

- **Bridged networks**

In a bridged network, a packet does not pass through a router from the client to the BBSM Server. Broadcast packets reach all computers on the bridged network. In order for some plug-and-play features to work, BBSM must use a bridged network. BBSM is the “router” that connects the bridged network to the Internet.

Bridged networks are supported by associating all switches with router number 0. All switches are on the BBSM Server internal network.

For bridged networks, you do not need to complete information for the Routers web page.

- **Fully routed networks**

In a routed network, a packet must pass through one or more routers from the client to the BBSM Server. BBSM does not have access to broadcast packets and does not support plug-and-play for these networks.

Fully routed networks are supported by associating all switches with routers other than router number 0. All switches are on networks attached to routers that are reachable through gateways on the BBSM Server internal network.

For routed networks, enter information about the routers within the BBSM internal network.

- **Mixed (bridged and routed) networks**

Mixed networks include a bridged network and one or more routed networks. Some switches are on the BBSM Server internal network and others can be reached through gateways on the internal network.

Use the Routers web page to configure routes to the switches and routes to the client computers (guests) attached to the switches.

The BBSM Server, which is the “router” all traffic must pass through before reaching the Internet, is assigned router number 0. This is predefined and always has an IP address of 127.0.0.1. It is a loopback address that the BBSM Server uses to communicate with itself.



Note

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Review installation requirements to determine the configuration applicable for your installation.

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## Configuration Sequence

The following procedure is a high level view of the configuration process for a BBSM system. You perform these steps on either a factory-installed or customer-installed BBSM Server.



Note

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For a customer-installed BBSM Server, refer to the *Cisco Building Broadband Service Manager and Director Installation Guide* for details on how to install the software.

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1. Launch WEBconfig from the BBSM Dashboard to define the system settings for the BBSM Server.
2. During the basic configuration, work from left to right on the WEBconfig button bar as you:
  - a. Define the settings that apply on the server level (IP addresses).
  - b. Configure the sites managed by the server.
  - c. Define the network components that make up the site (for example, switches, routers, or other equipment).
  - d. Generate a Port Map for each site in the network topology.
  - e. The Port Map contains artificial guest room numbers mapped to ports. This map is used to associate ports to actual room numbers throughout each building.
  - f. Modify individual ports to reflect any specific per-port settings.
3. Select the appropriate policy for each port or ports.
4. Configure any billing related systems for the system accounting policies. Refer to [Chapter 6, “Pricing and Page Set Management.”](#)
5. Configure BBSM for bandwidth allocation if appropriate. Refer to [Chapter 7, “Bandwidth Management.”](#)
6. Connect BBSM to a PMS if appropriate. Refer to [Chapter 5, “Making the Property Management System Connection.”](#)

7. Configure BBSM to allow control and management of access codes. Refer to [Chapter 8, “BBSM Access Code Management.”](#)
8. Configure BBSM for RADIUS accounting. Refer to [Chapter 9, “RADIUS Authentication, Authorization and Accounting.”](#)
9. Configure BBSM for port hopping. Refer to [Chapter 10, “BBSM Port Hopping.”](#)
10. Install any Service Packs or Patches using WEBpatch. Refer to [Chapter 11, “WEBpatch Utility.”](#)

**Caution**

In addition to the basic configuration detailed in Chapters 2 and 3, your system can require additional installation and configuration processes as explained in Chapters 4 through 11 of this manual. Be sure to complete the necessary procedures in those chapters before attempting to offer Internet service to end users.

## Access and Accounting Components

There are two components you must consider when defining your configuration:

- Access policy
- Accounting method

### Access Policy

An access policy is on a per-port basis, where a port allows an end user to connect to BBSM. It is through the selection of an access policy that the characteristics of a port connection are specified. In doing so, the end user's Internet experience is defined when they use BBSM by selecting an access policy.

BBSM includes default, built-in access policies as shown in the list that follows. Your web developer can add new access policies to the system using the BBSM Software Developer's Toolkit (SDK).

Access policies include:

- **Access Code**

To gain Internet access, the end user enters an Access Code created by an administrator.

The access code is valid for a finite time period as specified by the administrator. After the access code expires, the end user cannot activate a new session. Depending on the page set, the code can be exclusive, allowing only one end user at a time to use it, or it can be non-exclusive, allowing many users to use the code at the same time.

- **Block**

End User purchases Internet access in a block of time, specified in minutes.

If the end user terminates the session prior to the block expiration, unused minutes are forfeited. Otherwise, BBSM deactivates the session automatically at the end of the block.

- **Daily**

End User purchases time on a 24-hour basis. The 24-hour period is based on either a site-wide start time, or 24 hours from session start.

The Daily access policy includes a Welcome Back feature that allows the end user to return within a 24-hour period for another session at no additional charge. The Daily access policy can be configured by specifying such information as the session boundary (checkout time) and welcome back by MAC address or port.

- **Minute**

End User purchases time by the minute.

BBSM performs an accounting authorization when the user activates the session. If the authorization fails, BBSM deactivates the session. Otherwise, the end user incurs charges until they deactivate the session. BBSM calculates the duration and charges based on a per-minute rate.

- **RADIUS**

End User enters username and password to gain access to the Internet. These are authenticated through a RADIUS server. End User is then connected to the Internet.

You can control whether the BBSM Server will allow the same RADIUS username to activate multiple sessions.

- **Subscription**

End User pre-pays for an Internet subscription.

The subscription access policy allows the administrator to specify a date range per port during which the end user can have many sessions. At the end of the subscription, BBSM deactivates the session on the port and does not allow a new session. This access policy has an option that allows the end user to self-provision the subscription with payment through any accounting policy.

## Access Policy and Bandwidth

Table 1-3 shows access policies that enable bandwidth management.

*Table 1-3 Access Policies and Bandwidth*

Access Policy	Bandwidth Value
Access Code	Uses the bandwidth parameter from Access Code table.
Block	When session is activated, uses the web page to obtain the bandwidth value.
Daily	When session is activated, uses the web page to obtain the bandwidth value.
Minute	When session is activated, uses the web page to obtain the bandwidth value.
RADIUS	When present, uses the bandwidth parameter passed as a RADIUS attribute from the RADIUS server when the session activated and ignores the value in the Port map.  Alternately, the end user may select from a predefined bandwidth selection list on the web page when activating the session.  If the parameter is not present when session is activated, uses the value from the Port Map.
Subscription	Always uses the value from the Port Map.

**Note**

The value in the Port Map applies only to the Subscription policy and the RADIUS policy if no limit is passed to the BBSM Server as a RADIUS attribute from the RADIUS server or selected by the end user on the web page.

## Accounting Method

An accounting method is selected to tell BBSM how end users are to be billed for Internet services. Refer to [Chapter 6, “Pricing and Page Set Management,”](#) to learn how to define billing.

As part of the configuration process, Windows Notepad is used to customize BBSM pricing, bandwidth, or session information. This information is located as Active Server Page (ASP) files with an .asp extension in the c:\atcom\ekgnkm folder.

The accounting policies built-in are:

- ICS Credit Card
- Cruise Line
- Hotel Billing
- RADIUS Accounting

You can add new accounting methods to the system using the BBSM Software Developers Kit.

## Page Sets

A Page Set is a group of ASP files that allow you to define the end user experience from first impression through disconnect. A typical group of ASP pages or set of pages can contain the following:

- A connect page
- A connected page
- An authorization fail page
- A welcome back page

A Page Set allows you to associate an access policy and accounting method with a specific port. Different policies contain different sets of pages depending on the BBSM features for each port. When configuring ports, you can use one of the default Page Sets that comes with BBSM, additional sample Page Sets from the BBSM Software Developers Kit, or you can have your web developer create a set of pages of your own.

Sets of example pages have been shipped with BBSM for default policies such as the following:

- Hotel PMS
- Credit card
- Cruise line
- RADIUS
- Subscription

The set of default web pages can be used as they appear, or they can be customized by completely redefining the template pages.

Your web developer uses the default policies as template examples to create a policy to meet your specific service provider needs. The default web pages use a standard naming convention that combines an access policy and an accounting policy when forming the Page Set name.

When customizing a page set, use the Page Sets web page to configure the new page set to the system.

Page Sets are discussed further in [Chapter 2, “Configuring the System”](#) under “[The Page Sets Web Page](#)” section on [page 2-23](#), and in [Chapter 6, “Pricing and Page Set Management.”](#)

