

IBM[®] eServer[™] BladeCenter[™] HS20 type 8832 Pre-Installation Job Aid

This job aid provides a checklist for the installation and implementation of the IBM eServer BladeCenter HS20 Blade Server Type 8832 (blade server) with the applicable Avaya hosting solution.

Refer to [Table 1](#) for definitions of some terms used in this job aid.

Note:

The IBM BladeCenter *type 8677* houses the blade server *type 8832*. This job aid makes reference to both *types* of IBM equipment.

Table 1: Terms used in this job aid

Term	Definition
Service Provider	A company that uses the Avaya solution to host a telecommunications service, such as internet protocol telephony, for sale to enterprises (end-users).
end-users	Enterprises that purchase a subscription for the hosted service from a Service Provider.
blade server type 8832	The media server used in the Avaya solution. You can install up to 14 blade servers into one IBM eServer BladeCenter type 8677 (BladeCenter unit). Each blade server hosts the service for one end-user.
BladeCenter type 8677	The chassis that houses up to 14 blade servers and provides power, management, and communication for all blades. Note: The BladeCenter type 8677 is a non-NEBS (Network Equipment Building Standard) compliant chassis.

Pre-installation checklist

The checklist provides an overview of a blade server installation in an Avaya hosting environment. You can use the checklist as a planning aid to determine what, when, where, and how to perform the actions required for successful installation.

1. Obtain the applicable IBM, Avaya, and third party documentation.

See [Required information](#) on page 14

2. Verify that the Service Provider’s hosting center meets environmental specifications.

Avaya performs one initial site survey of the Service Provider’s hosting center. The site survey identifies any problems that may require correction prior to installation. Review the site survey and the environmental specifications in [Table 2](#) to ensure that the site meets specifications. You can also use the site survey and [Table 2](#) to help the Service Provider bring their site into compliance.

Table 2: Environmental specifications

BladeCenter unit:	at Altitude:	Room temperature	Humidity
ON	0 to 914 m (0 to 3000 ft)	10° to 35°C (50° to 90°F)	8% to 80%
ON	914 m to 2134 m (3000 ft to 7000 ft)	10° to 32°C (50° to 89.6°F)	8% to 80%
OFF	N/A	-40° to 60° C (-40° to 140° F)	5% to 80%

3. Be familiar with the BladeCenter specifications.

Table 3: BladeCenter specifications

Component	Dimensions English (in)	Metric (mm)	Us (Height in rack)	Weight (Lb./kg)
BladeCenter	12h x 28d x 17.5w	304.2h x 711.2d x 444w	7	Fully configured with modules and blades. Approximately 240 lbs (108.86 kg) Fully configured without blades. Approximately 99 lbs (44.91 kg)

4. Check that the Service Provider's network supports the hosted service.
 - Avaya Global Services — Network Consulting performs a network readiness assessment on the network of each end-user who purchases the hosted service (IP telephony for example) from the Service Provider. Based on this assessment, Avaya prepares a Customer Infrastructure Readiness Survey (CRIS) that determines whether the end-user's network is capable of supporting the service. Avaya reports any issues that the end-user should correct prior to activation of IP telephony.
 - Avaya also assists in the creation of a Solution Design plan. The Solution Design plan specifies an end-users call flows, dial plans, call center vectors, call center skills and application requirements. The plan ensures that the Service Provider's hosting system meets the end-users business requirements.
5. Before going on site, make sure the Service Provider has a building management LAN and a call control network set up and running. A network administrator must be available the day of the installation.
6. Obtain the license file and authentication file from RFA at, <http://rfa.avaya.com>. You will need the following information to obtain the license file:
 - SAP order number
 - PC-LAN configuration: The serial number of the G700 Media Gateway
 - C-LAN configuration: The serial number for the reference IPSI

Note:

You must be authenticated to use RFA. For more information on how to use RFA refer to the RFA Users Guide located on the RFA Information page at, <http://rfa.avaya.com>.

7. Download Communication Manager software patches:
 - Download these files from the Avaya Support web site <http://support.avaya.com>; click **Software and Firmware Downloads**.

Note:

You will be shipped the latest blade server BIOS, IBM Director Server software, Management Module firmware, and Ethernet switch module firmware. Use the software and firmware that was shipped for the installation.

 **Important:**

Do not upgrade the blade server BIOS or the IBM Director Server software without direction from Avaya services.

8. Ensure that all of the hardware listed in [Table 4](#) is at the hosting center.

Table 4: List of hardware for installing the blade server

Comcode	Description	Included	Optional	Quantity	FRU
700304629	IBM eServer BladeCenter — Enterprise (P/N 86772XX)	Yes		1	Yes
700304637	IBM eServer Blade HS20 - 2.4GHz/533, 2x256MB, 0B (P/N 88329TX)	Yes		1 to 14	Yes
700304645	IBM eServer BladeCenter 1800W power supply modules (two power supplies come with the base chassis and two come with the option part (13N0570)	Yes		4	Yes
700304652	IBM eServer BladeCenter 4 port Gig Ethernet switch modules	Yes		2	Yes
700304686	blade server 40GB 5400 RPM ATA - 100 hard disk drive	Yes		1 per blade server	Yes
700304660	IBM eServer BladeCenter blower modules	Yes		2	Yes
700304678	IBM eServer BladeCenter management module	Yes		1	Yes
N/A	A PDU supplied by the Service Provider	No	No	1	Yes
N/A	Keyboard, video monitor and mouse provided by the Service Provider	No		1 each	Yes
N/A	IBM Director server	No		1	Yes
N/A	Avaya Communication Manager release 2.1.1 or later CD	Yes			Yes
N/A	Avaya documentation CD	Yes			Yes
N/A	<i>IBM eServer BladeCenter Type 8677 Documentation CD</i>	Yes			Yes

9. Collect data for the installation using the IBM worksheets:

- *IBM eServer BladeCenter Type 8677 Planning and Installation Guide* provides a set of worksheets for planning the installation of the BladeCenter. It is recommended that you obtain this document and complete the appropriate worksheets prior to beginning the installation of the BladeCenter. Use the following subsections in the *IBM eServer BladeCenter Type 8677 Planning and Installation Guide* to plan the physical installation of IBM equipment.
 - “Appendix A” in *IBM eServer BladeCenter Type 8677 Planning and Installation Guide* provides the hardware installation worksheets. Read [Table 5](#) for a description of each worksheet.

Table 5: BladeCenter installation planning worksheets

Worksheet:	Helps you plan the...
Blade server	function, position and configuration of each blade server in the BladeCenter unit.
BladeCenter	position, weight, and configuration of the BladeCenter unit.
Rack	number of racks, mounting kits, and Power Distribution Units (PDUs) required for the installation.
Cabling	external network cables required to attach to the management module and Ethernet switch modules.
Power	AC power and power cord requirements

- “Appendix B” in *IBM eServer BladeCenter Type 8677 Planning and Installation Guide* provides a set of worksheets for planning the configuration of blade servers, the management module and the Ethernet switch modules. Read [Table 6](#) for descriptions of each configuration worksheet.

Table 6: BladeCenter configuration planning worksheets 1 of 2

Configuration Worksheet:	Helps you plan the...
Management module	Configuration of the management module including login IDs, IP addresses and other information required to configure the management module.

1 of 2

Table 6: BladeCenter configuration planning worksheets 2 of 2

Configuration Worksheet:	Helps you plan the...
Ethernet switch module	Configuration of each Ethernet switch module. You will need to complete two worksheets, one for each switch. The worksheets will help you collect information on switch settings, port settings and other data requested when you configure a Ethernet switch module.
Blade server	Configuration of all blade servers housed in a BladeCenter unit. The worksheet lets you specify the IDE controller, Ethernet controller, and the boot sequence for each blade. If required, the worksheet lets you specify the operating system and applications running on each blade.

2 of 2

10. Collect the following information:

a. Blade server: Each blade server requires the following:

- Host name
- Two IP addresses. One IP address is needed for eth0 and one IP address for eth1. Eth0 is used for the management LAN while eth1 is used for the control network.
- One subnet mask
- Default gateway
- Product ID

Note:

Avaya Installation Wizard (AIW) and the Electronic Program Worksheet (EPW) are not supported on a blade server installation.

b. Management Module:

- External Network Interface (eth0): The external interface is used for remote management and the console port. You will need the following information only if DHCP is disabled.
- IP address for the management module. The default IP address for the management module is 192.168.70.125.
- Subnet mask: The subnet mask must contain four integers from 0 to 255, separated by periods, with no spaces. The default subnet mask for the management module is 255.255.255.0.
- IP address for the Network Gateway router

- Internal Network Interface (eth1): The internal interface communicates with the Ethernet switch module.

c. The Processor C-LAN configuration:

- G700 Media Gateway
 - MAC address
 - Host Name
 - IP address
 - Default gateway
 - SNMP Community Access String
 - SNMP Trap Destinations

Note:

Use the Gateway Installation Wizard (GIW) to install the G700 Media Gateway.

- G350 Media Gateway:
 - MAC address
 - Host name
 - Primary Management Interface (PMI) IP address: The PMI is the processor on the G350 motherboard. The PMI performs gateway functions and Voice Over IP (VOIP) resource assignments. You will need one IP address for each G350 in your configuration.
 - Default gateway
 - SNMP Community Access String: Identify if this will be read only, read write, or trap. If this information is left blank the current gateway settings will be used
 - SNMP Trap Destinations

Note:

Use the Gateway Installation Wizard (GIW) to install the G350 Media Gateway.

d. The C-LAN configuration: You will need an IP address for each:

- C-LAN
- IPSI
- Media processor

Note:

You will also need subnet mask and gateway if applicable.

e. Ethernet switch module:

- The Ethernet switch module has an internal Ethernet path to the management module and four external ports. One external port on the Ethernet switch module in bay 1 (eth0) connects to the management LAN. One external port on the Ethernet switch module in bay 2 (eth1) connects to the control network LAN. There will only be one connection from each Ethernet switch module to their perspective LANs.
- Each Ethernet switch module has a default IP address for the internal communication path to the management module. The default IP address is determined by the bay in which the Ethernet switch module is installed. See [Table 7](#) for default IP address information. You will need an IP address for the internal Ethernet path only if you wish to change the default address.

Table 7: Default Ethernet switch module IP addresses

Bay number	Default IP address
bay 1	192.168.70.127
bay 2	192.168.70.128
bay 3	192.168.70.129
bay 4	192.168.70.130

- f. UPS: The UPS is an optional device that provides emergency power backup to the BladeCenter. If this configuration includes a UPS collect the following:
- UPS IP address
 - SNMP (read) string
 - SNMP (write) string
- g. Domain Name Server (DNS): Most corporate networks have one or more domain name service (DNS) servers that associate an IP address with the name of a device. When the DNS is administered with the names of the Avaya blade servers, you can access the servers by name as well as IP address.
- Collect the IP addresses of each of the DNS servers. The blade server checks the DNS servers for name-to-IP address resolution in the order in which you enter the IP addresses of the servers.
- h. Domain name search order: Collect the names of the domains that the blade server will search, in order, if a user enters an unqualified or incomplete name, such as a host name only without the associated domain name. Use only as many domains as you need to limit the search. The purpose is to limit the search to as few LAN segments as possible without searching the entire World-Wide Web.

11. Service Provider: Install hosting center equipment (AC power, rack cabinet, PDU, and UPS).
- a. Rack considerations: The BladeCenter unit mounts in a 4-post data rack. The Service Provider is responsible for providing a sturdy 4-post data rack built to the EIA 310D (or equivalent) standards. The 4-post data rack must be installed, secured, and grounded per local code and rack specifications *before* the equipment is mounted in it. Review the following IBM documentation, and any documents provided with the rack cabinet supplied by the Service Provider, for safety and cabling information:

Note:

It is not necessary that you procure a rack from IBM. You may use any rack built to EIA 310A or equivalent standards. The IBM documents listed below provide additional guidelines on how to install the BladeCenter into a rack.

- IBM Rack Installation Instructions
 - IBM eServer BladeCenter Type 8677 Planning and Installation Guide
- b. The 4-post rack must meet the following requirements:
- The rack mounting flanges must have holes and clearances built to EIA 310D or equivalent standards.
 - The rack must have slotted not threaded holes.
 - The rack must have a front to rear spacing of 698.50 mm (27.5 in) to 723.90 mm (28.5 in).
 - If the rack you are using has doors, install your BladeCenter unit only in a rack cabinet with perforated front and rear doors.
 - The rack must meet the following physical requirements:
 - Minimum depth of 70 mm (2.76 in.) between the front mounting flange and inside of the front door
 - Minimum depth of 157 mm (6.18 in.) between the rear mounting flange and inside of the rear door
 - Minimum depth of 559 mm (22 in.) and maximum depth of 762 mm (30 in.) between the front and rear mounting flanges.
 - Must be able to hold the total weight of the BladeCenter unit with all blade servers installed, and power distribution units and power cables
 - Must be stabilized so that the rack does not become unstable when fully loaded
- c. Before installing devices in the assembled rack cabinet, ensure that:
- If a UPS is being installed, the rail kits required to support the very heavy UPS is installed on the rack or available for installation.
 - The Service Provider has provided AC power to the rack
 - Three or more people are available to install the BladeCenter unit into the rack cabinet

- You have removed all blade servers from the BladeCenter unit before attempting to install the unit into the rack cabinet
 - There is no unused U space within the BladeCenter unit. Insert blank filler panels to prevent recirculation of warm air
 - You install devices starting from the bottom of the rack cabinet
 - You install the heaviest devices in the bottom of the rack cabinet
 - You do not extend more than one device out of the rack cabinet at the same time
 - You remove the rack doors and side panels to provide easier access during installation
- d. Power considerations: Connect the BladeCenter unit to a 220-volt PDU or to a properly grounded 220-volt power outlet. Do not overload the power outlet when installing multiple devices in the rack cabinet.

⚠ Important:

The Service Provider is responsible for providing a PDU as part of the rack assembly. The BladeCenter comes with 4 x 2.5m/8.2ft, 100-240V IEC 320-C19 to IEC 320-C20 power cables. The PDU must be capable of terminating this type of power cable. If dual power supplies are installed in the BladeCenter, Avaya recommends redundant PDUs and redundant power sources.

Refer to “Power considerations” in Chapter 4 of the *IBM eServer BladeCenter Type 8677 Planning and Installation Guide*. “Power considerations” helps you determine the number of BladeCenter power supply modules and PDUs required to provide adequate power for your installation. “Power considerations” also provides a section on “Wall and floor power drop requirements” to help you determine the proper type of AC power connector to use.

- e. Installing the equipment in the rack: Use the table below to locate the documentation required to install the following components in a rack:
- UPS (optional)
 - Ethernet switch (optional)
 - PDU

Refer to the documents listed in [Table 8](#) for information installing equipment in the rack.

Table 8: Documents for installing equipment in the rack

Refer to...	Obtain from:
Quick Start for Hardware Installation: <i>IBM eServer BladeCenter HS20 Blade Server Type 8832</i>	Avaya Support web site (http://support.avaya.com)
<i>Installing IBM BladeCenter HS20 Blade Server Type 8832</i>	Avaya Support web site (http://support.avaya.com)

12. Install the IBM eServer BladeCenter type 8677 and all modules.

Table 9: Documents for installing the BladeCenter and modules

Refer to...	Obtain from:
Quick Start for Hardware Installation: <i>IBM eServer BladeCenter HS20 Blade Server Type 8832</i>	Avaya Support web site (http://support.avaya.com)
<i>Installing IBM BladeCenter HS20 Blade Server Type 8832</i>	Avaya Support web site (http://support.avaya.com)

13. Configure the management module and the Ethernet switch modules.

Refer to *Installing IBM BladeCenter HS20 Blade Server Type 8832* to configure the following BladeCenter modules:

- Management module
- Ethernet switch module

14. Install IBM Director onto the x305 or x306 server.

Note:

By default, Avaya installs IBM Director on a server and ships the server to the Service Provider. Optionally, a Service Provider can choose to integrate the applicable Avaya hosting solution into their existing Director environment. The Service Provider is responsible for this integration if they choose this option.

Follow the instructions provided in [Downloading IBM Documentation](#) on page 14 to download the *IBM Director x.x Installation and Configuration Guide* (where *x.x* is the release of Director that you are installing). Use the *Director Installation and Configuration Guide* to install IBM Director onto the server.

The server where you install IBM Director must meet the following minimum specifications:

Table 10: Minimum system requirements for IBM Director

	IBM Director Server	IBM Director Console
Microprocessor speed	Pentium 300+ MHz	Pentium 300+ MHz
Memory RAM	256 MB (512 MB recommended)	128 MB
Disk space	316 MB	168 MB
Display	At least 256 colors	At least 256 colors

 **Important:**

IBM Director Console can only work with its same version of Director Server. For example, IBM Director Console 4.2 only works with Director Server 4.2.

15. Cable the Director server to the BladeCenter unit.

Refer to *Installing IBM BladeCenter HS20 Blade Server Type 8832*.

16. Install the first blade server.

Refer to *Installing IBM BladeCenter HS20 Blade Server Type 8832* and use the procedure to install a blade server into the BladeCenter unit.

17. Update firmware and software:

Table 11: BladeCenter firmware and software updates

Upgrade:	Go to:
Management module	IBM web site at: http://www.ibm.com
Ethernet switch module	IBM web site at: http://www.ibm.com
Blade BIOS	Avaya web site at: http://support.avaya.com
IBM Director	Avaya web site at: http://www.support.avaya.com

18. Install Avaya Communication Manager 2.1.1 or later on the first blade server.

Refer to *Installing IBM BladeCenter HS20 Blade Server Type 8832* and use the procedure to install Communications Manager on the blade server.

19. Install any additional blade servers.

- a. After installing Communications Manager on a blade server, change the IP address on that blade server.
- b. Repeat 16 through 19 until you have installed and configured all blade servers to be used at the site.

20. Install Avaya hardware at the hosting center.

Avaya BladeCenter supports two configurations, C-LAN, and processor C-LAN. Refer to the documentation that supports your configuration:

- The C-LAN configuration: Consists of the Avaya G650 media gateways equipped with C-LAN, IPSI, and media processor circuit packs. Refer to the following document located on the Avaya documentation CD:
 - *Installing the Avaya G650 Media Gateway (03-300144)*
- The processor C-LAN configuration: Consists of the Avaya G700 and G350 Media Gateways. Refer to the following documents located on the Avaya documentation CD:
 - *Installation and Upgrades for Avaya G700 Media Gateway and Avaya S8300 Media Server (555-245-104)*
 - *Installation of the G350 Media Gateway (555-234-100)*

21. Install and configure the NAT (Network Address Translation) device.

22. Install and configure Avaya Secure Services Gateway (SSG) onto a server.

The management module on the BladeCenter unit sends BladeCenter alarms to IBM Director. IBM Director sends alarms to the SSG. Avaya Communication Manager sends alarms to the SSG. The SSG must be installed and configured to forward IBM Director alarms and Avaya Communication Manager alarms to the appropriate work center for resolution.

23. Turn off the TTR-LEV MO.

Use this step **only** if you have PC-LAN configuration running Communication Manager 2.1.1. This step is not needed for C-LAN configurations or for systems running Communication Manager 3.0 and later.

Refer to the *Installing IBM BladeCenter HS20 Blade Server Type 8832* document for instructions on how to turn the TTR-LEV MO off.

Note:

Disabling the TTR-LEV MO requires init, dadmin, or inads logins. If you do not have access to init, dadmin, or inads, call you local Avaya remote servicing center for assistance.

24. Download and save translations to each blade server.

Refer to Chapter 6 of *Installing IBM BladeCenter HS20 Blade Server Type 8832* for instructions.

25. Register and test *BladeCenter* alarms to Avaya.

Refer to Chapter 3 of *Installing IBM BladeCenter HS20 Blade Server Type 8832* for instructions.

26. Test all components.

Refer to *Installing IBM BladeCenter HS20 Blade Server Type 8832* for testing instructions.

Required information

Use the table below for web links and references designed to help you locate the latest IBM, Avaya, and vendor documentation.

Table 12: Documentation web site locations

For:	Use documentation CD or click on	then follow:
Avaya products	http://support.avaya.com	Downloading Avaya documentation on page 15
IBM products	http://www.ibm.com/pc/support	Downloading IBM Documentation on page 14

Note:

The following instructions are correct as of the date of publication. a vendor may, however, change the name or location of a web site without notice.

Downloading IBM Documentation

This job aid takes advantage of IBM's latest documentation by referring you to the IBM web site: <http://www.ibm.com/pc/support>. Use the following steps to download documentation from the web site.

1. Go to <http://www.ibm.com/pc/support>.
2. In the **Learn** section, click **Online publications**.
3. On the **Online publications** page, in the **Brand** list, select:
 - **Servers** if you are looking for blade server or BladeCenter documentation
or
 - **Systems management** if you are looking for Director documentation.
4. In the **Family** list, select:
 - **BladeCenter HS20** if you are looking for blade server or BladeCenter documentation
or
 - **IBM Director x.x** where **x.x** equals version of Director that you are using.
5. Click **Continue**.

The web page displays a list of documents.

6. Locate the document you are looking for in the list, or search for the document using the document title.

Downloading Avaya documentation

To download the latest version of this documentation:

1. Access the Avaya Support Web site at <http://support.avaya.com>.
2. Under **Support** click **Documentation**.
3. From the menu on the left, select **Communications Systems**.
4. Scroll down to find the product and latest release number.
5. Click the release number to view the list of titles.
6. Click on the title that you want.
7. Click one of the following options:
 - **HTML Format** to download the book in HTML format.
 - **PDF Format** to download the book in regular PDF format.
 - **ZIP Format** to download the book in zipped PDF format.

Connecting to the BladeCenter unit

Refer to Chapter 3 of *Installing IBM eServer BladeCenter HS20 Type 8832* for instructions on how to:

- Connect your laptop to the management module to configure the management module and the Ethernet switch module
- Start the management and configuration program

Services laptop specifications

The computer used for accessing the BladeCenter must have the following minimum specifications:

- Windows 2000 or later operating system
- 256-MB RAM
- 40-MB available disk space

- Network interface card (NIC) with a 10/100 BaseT Ethernet interface
- 10/100 BaseT Ethernet, category 5, cross-connect cable with an RJ45 connector on each end (MDI to MDI-X)
- CD-ROM drive

Configure a new network connection

Use the procedure below to configure a new network connection.

Note:

Write down the original settings in case you need to change them back.

Windows 2000 and XP instructions

Windows 2000 and XP instructions:

1. Right-click the **My Network Places** icon on your desktop, and select **Properties** to display the **Network and Dial-up Connections** window.

Windows 2000 or XP should have automatically detected the Ethernet card in your system and created a LAN connection for you. More than one connection may appear.

2. Right-click on the correct **Local Area Connection** > **Properties** to display the **Local Area Connection Properties** dialog box.

3. Select **Internet Protocol (TCP/IP)**.

4. Click **Properties** to display the **Internet Protocol (TCP/IP) Properties** dialog box.

5. On the **General** tab, select **Use the following IP address**. Enter the following:

- **IP address: 192.168.70.100**
- **Subnet mask: 255.255.255.0**

Note:

Make a note of any IP addresses or other entries that you have to clear. You may need to restore them later to connect to another network.

6. Select **Use the following DNS server addresses**. The entries for Preferred DNS server and Alternate DNS server should both be blank.

7. Click **Advanced** at the bottom of the dialog box to display the **Advanced TCP/IP Settings** dialog box.

8. Click the **DNS** tab. Make sure no DNS server is administered (the address field should be blank).

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