IBM BladeCenter HT ac and dc model chassis accommodates BladeCenter blade servers for telecommunications environments and new options

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At a glance

BladeCenter HT models are designed specifically for telecommunications network infrastructures and other rugged environments.

**BladeCenter HT 8740-1Rx dc-powered features:**

- Rack-optimized 12 U modular enclosure holding 12 blade servers
- Two hot-swap dc power supplies with redundant configuration
- Four hot-swap fan modules and a media tray with light path diagnostics, two front access USB ports, and optional compact flash memory module support
- Advanced Management Module (AMM)
- Ability to integrate storage and Ethernet networking
- New serial port for direct serial connection to installed blades

**BladeCenter HT 8750-1Rx ac-powered features:**

- Rack-optimized 12 U modular enclosure holding 12 blade servers
- Two hot-swap ac power supplies with redundant configuration
- Four hot-swap fan modules and a media tray with light path diagnostics, two front access USB ports, and optional compact flash memory module support
- Advanced Management Module (AMM)
- Ability to integrate storage and Ethernet networking
- New serial port for direct serial connection to installed blades

Both BladeCenter HT chassis support BladeCenter HS20, HS21, JS20, JS21, LS20, and LS21/41 blades. Certified testing by Underwriters Laboratories of the BladeCenter HT chassis is in progress, and when complete the BladeCenter HT chassis will be covered under a UL certified NEBS Level 3/ETSI test report, which will be available for review with customers. BladeCenter HT configurations will be NEBS3/ETSI certified (planned).

Overview

The BladeCenter® HT models are high-performance blade platforms for critical network applications to the telecommunications industry. They contain the telecommunications infrastructures that require networking equipment to support ac and dc power environments.

The IBM BladeCenter family, leveraging the best of telecom and IT, brings a powerful set of capabilities to the carrier environment, including
the ability to flexibly deploy the same solution in either a datacenter or a central office environment without change. This powerful paradigm shift means service providers can now standardize on a single architecture across their business, driving down TCO and OPEX expense.

BladeCenter HT extends this value to network equipment and telecom service providers by supporting high speed connectivity (over 1 Terabyte of aggregate throughput on the backplane) and supports the high performance blade servers, featuring Dual and Quad core processors from Intel®, AMD, and IBM, and a complete management solution. Certified testing by Underwriters Laboratories of the BladeCenter HT chassis is in progress, and when complete the BladeCenter HT chassis will be covered under a UL certified NEBS Level 3/ETSI test report, which will be available for review with customers. IBM BladeCenter HT sets the bar for both one of the lowest cost per server and among the highest performance per server in the Telco industry.

BladeCenter HT brings significant new capabilities to IBM’s broad ecosystem of hundreds of NGN applications already being deployed on BladeCenter. A key example of this ecosystem is the introduction of the Nortel 10 Gb Ethernet Switch Module for BladeCenter, which delivers 10 Gb to each blade server deployed in the BladeCenter H or BladeCenter HT chassis, and six 10 Gb Ethernet uplinks. This capability helps greatly reduce the cost of implementing IPTV and other high bandwidth NGN applications.

**IBM BladeCenter HT chassis**

- Rack-optimized, 12 U modular design enclosure holds up to 12 blade servers
- A high-availability, redundant midplane supports all current and is planned to support all future IBM blades
- The chassis includes:
  - Two hot-swap, redundant power modules and support for two additional redundant (optional) power modules
  - Four hot-swap, redundant fan modules (each with two fans)
- BladeCenter Advanced Management Module (AMM) gives you control over the solutions at the chassis level — simplifying installation
- IBM Director and Remote Deployment Manager™ makes it easy to install and manage
- Built-in media tray is customer serviceable and includes light path diagnostics, two front USB inputs, and optional compact flash drive support

The BladeCenter HT chassis can handle rack-dense two-socket and four-socket BladeCenter servers, and is ideal for central office and other rugged environments.

**IBM services and support**

- ServerProven® compatibility testing and Web support
- Warranty: Three years, customer replaceable unit (CRU) and on-site service¹, limited warranty²; optional warranty service upgrades available

**Key prerequisites**

- BladeCenter HS20, HS21, JS20, JS21, LS20, and LS21/41 blades
- PC connect to Management Module
- Monitor, keyboard, mouse, and rack
- Appropriate power source

**Planned availability date**

June 15, 2007:

- IBM BladeCenter HT chassis 8740 and 8750
- IBM BladeCenter HT Options
Related options BladeCenter HT

- IBM BladeCenter HT dc Power Supply Module (42C5279)
- IBM BladeCenter HT ac Power Supply Module (42C5280)
- IBM BladeCenter HT 2-Post Rack Mount Kit (42C5281)
- IBM BladeCenter HT 4-Post Rack Mount Kit (42C5284)
- IBM BladeCenter HT Advanced Mgmt Module Interposer (42C5315)
- IBM BladeCenter HT Interposer for Gb Switch and Bridge Bays (42C5300)
- IBM BladeCenter HT Interposer for Gb Switch and Bridge Bays with Interswitch Links (ISL) (42C5301)
- IBM BladeCenter HT Interposer for HS Switch Bay (42C5302)
- IBM BladeCenter HT Redundant Media Tray (42C5305)
- IBM BladeCenter HT Compact Flash 1 GB (42C5307)
- IBM BladeCenter HT Compact Flash 4 GB (42C5310)
- IBM BladeCenter HT Bezel (includes Filter and Cable Management Collar) (42C5278)
- IBM BladeCenter HT Filter (4 pack) (42C5316)

**dc Power Supply Option — (42C5279)**

This power supply option contains two hot-swap -48V to -60V power supplies to provide both power and redundancy to your IBM BladeCenter HT. Two hot-swap, redundant power modules are standard and support the population of BladeCenter HT blade bays 1 through 6 and IO Module bays 1 through 4. This Power Supply Module option is required to support installation of blade servers in BladeCenter HT blade bays 7 through 12 and IO Module bays 7 through 10. BladeCenter HT customers must use power supplies of identical wattages to provide power redundancy and should not mix power supplies of different wattages.

Features and benefits:

- This option can help protect your data from power disruptions that cause downtime and reduced availability.

**ac Power Supply Option — (42C5280)**

This power supply option contains two hot-swap 200-240V power supplies to provide both power and redundancy to your IBM BladeCenter HT. Two 2.8m (nine foot) IEC309 C19 to C20 rack cables, making it easy to attach to a supported 200 to 240V power distribution unit. BladeCenter HT supports four power modules. Two hot-swap, redundant power modules are standard and support the population of BladeCenter HT blade bays 1 through 6 and IO Module bays 1 through 4. This Power Supply Module option is required to support installation of blade servers in BladeCenter HT blade bays 7 through 12 and IO Module bays 7 through 10. BladeCenter HT customers must use power supplies of identical rating to provide power redundancy and should not mix power supplies of different ratings.

Features and benefits:

- This option can help protect your data from power disruptions that cause downtime and reduced availability.
- The power supplies have a single IEC 309 C19 input (16 amp). This option includes two 2.8m (nine foot) C19 to C20 cables, making it easy to attach the power supplies to a DPI® High-Density PDU or a DPI Front-end PDU.

**2Post Rack Mount Kit — (42C5281)**

This mounting kit is specially designed to support the deployment of BladeCenter HT chassis in a standard telecommunications 42 U tall, 2 post rack deployed in telecommunications Central
Offices. BladeCenter HT, with a compact chassis, requires different mounting rails and support frames than those deployed to support the BladeCenter chassis or rack enterprise rack mount servers in data centers with 2Post racks.

Feature benefits:
- Configuration flexibility
- Minimize investment in rack infrastructure

**4Post Rack Mount Kit — (42C5284)**

This mounting kit is uniquely designed to support the shipment of BladeCenter HT chassis in a standard 42 U telecommunications rack (that is, ship in rack kit). BladeCenter HT, with a compact chassis, requires different mounting rails and frames than those deployed to support the BladeCenter T chassis or rack enterprise rack mount servers in data centers with 4Posts.

Feature benefits:
- Configuration flexibility
- Minimize investment in rack infrastructure

**Advanced Management Module Interposer — (42C5315)**

An extender (connection link) between the Advanced Management Module and the BladeCenter HT midplane maintains the internal fabric and signaling between the two. One of these interposers comes standard with the BCHT chassis, but this option must be ordered if a redundant AMM is deployed in BCHT.

**Note:** Note that the BladeCenter Advanced Management Module is the AMM supported in the BCHT chassis.

Feature benefits:
- Enhanced reliability

**Interposer for Gb Switch and Bridge Bays — (42C5300)**

An extender (connection link) between the Gb Switch/Bridge Bays and the BladeCenter HT midplane maintains the internal fabric and signaling between the two. One of these interposers must be ordered for each Ethernet/network switch or Pass Thru module deployed with the BCHT chassis.

**Note:** Note that all of the existing Ethernet/network switches (Nortel, Cisco) are supported in the BCHT chassis.

Feature benefits:
- Enhanced reliability

**Interposer for Gb Switch/Bridge Bays with Interswitch Links (ISL) — (42C5301)**

BladeCenter HT provides support for internal links between redundant pairs of switch modules. These inter-switch links (or ISLs) provide the ability to establish load balancing or high-speed communications between switch pairs without consuming valuable external ports. The internal links are provided via optional switch interposers, or extenders, which are installed behind the switch module and provide a connection link between the Gb Switch/Bridge Bays and the BladeCenter HT midplane, which maintains the internal fabric and signaling between the two in the BladeCenter HT I/O module bay. Two of these interposer options must be ordered per switch pair, one for each of the switch or Pass Thru modules deployed with the BCHT chassis.

**Inter-switch links may not be applicable to all BladeCenter switch modules, consult your WW product team for advice before ordering this option.**

Feature benefits:
- Increased network connectivity
- Enhanced reliability
Interposer for HS (High Speed) Switch Bays — (42C5302)

An extender (connection link) between the high speed switch bays and the BladeCenter HT midplane, which maintains the internal fabric and signaling between the two. One of these interposers must be ordered for each high speed switch module deployed with the BCHT chassis.

Feature benefits:

• Enhanced reliability

Redundant Media Tray — (42C5305)

A customer serviceable, half-blade design media tray directly wired to the BladeCenter HT midplane can be removed without impacting operation of the chassis. This tray includes two external USB connectors and full Light Path Diagnostics and also supports optional 1 GB and 4 GB Compact Flash drive options typically used for local boot of operating system in a telecommunications environment.

Note: No optical (CD/DVD) drives are integrated into this tray.

Feature benefits:

• Enhanced reliability
• Configuration flexibility

1 GB Compact Flash Option — (42C5307)

This optional 1 GB compact flash module is a media tray option and supports the boot of an operating system from any blade server housed inside the BladeCenter HT chassis. It provides flash based storage (non-rotating media) capable of meeting NEBS/ETSI certification as required in thermally challenged telecommunications environments.

Feature benefits:

• Configuration flexibility
• Improved reliability

4 GB Compact Flash Option — (42C5310)

This optional 4 GB compact flash module is a media tray option and supports the boot of an operating system from any blade server housed inside the BladeCenter HT chassis. It provides flash based storage (non-rotating media) capable of meeting NEBS/ETSI certification as required in thermally challenged telecommunications environments.

Feature benefits:

• Configuration flexibility
• Improved reliability

Bezel (includes Filter and Cable Mgmt. Collar) — (42C5278)

This 90 mm deep bezel, which houses a customer replaceable filter and cable management arm to simplify cable routing, attaches to the front of the BladeCenter HT chassis and supports the deployment of I/O cabling inside the chassis envelope to maintain operational integrity of the system. The in process NEBS/ETSI test of the BladeCenter HT chassis includes this bezel.

Feature benefits:

• Improved reliability
• Configuration simplicity
Filters (4 pack) — (42C5316)

A pack of 4 customer replaceable filters are easily deployed inside the IBM BladeCenter HT Bezel. Typically, a filter should be replaced every 3-4 months to keep external contaminants, such as dust and airborne particles, from impacting the operational integrity of the BladeCenter HT chassis.

Feature benefits:

• Improved reliability

BladeCenter HT Network Applications

The IBM BladeCenter HT contain dual ac or dc power supplies designed specifically for the telecommunications network infrastructure.

Up to twelve blades per chassis can be supported:

• Ethernet connectivity via blades and switch options
• Integrated systems manager (Director)

The IBM BladeCenter HT are well-suited, but not limited to, the following BladeCenter T applications:

Network management and security:

• Network management engine
• Internet cache engine
• RSA encryption
• Gateways
• Intrusion detection

Network infrastructure:

• Softswitch
• Unified messaging
• Gateway/Gatekeeper/SS7 solutions
• VOIP services and processing
• Gateways
• Voice portals
• IP translation database

Standard BladeCenter HT configurations

<table>
<thead>
<tr>
<th>Model</th>
<th>Power supply</th>
<th>Fan</th>
<th>Management</th>
</tr>
</thead>
<tbody>
<tr>
<td>8740-1Rx</td>
<td>2x dc HS</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>8750-1Rx</td>
<td>2x ac HS</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

Standard functions include:

• 12 U form factor
• Two hot-swap power supplies, optional to four
• External diskette/DVD/CD drive support via USB

Function and expansion capacity

The IBM BladeCenter HT packs substantial function and storage capacity into a 12 U, 19-inch rack-drawer package. It supports easy installation of blades, adapters, switches, and
management modules.

Features include:

- Rack-optimized design for 19.5-inch wide, industry-standard rack cabinets
- ac and dc worldwide power supplies support:
  - Auto restart to minimize operator intervention after temporary power outage
  - Two -48 V dc or 220 V ac (nominal) power sources for greater fault tolerance
  - Maximum configurations
- Four variable-speed fan modules

**Systems management and support tools**

For additional information regarding systems management features and support tools and programs for the BladeCenter LS21, refer to Hardware Announcement ZG06-0646, dated August 15, 2006. For the BladeCenter HS21, refer to Hardware Announcement ZG06-0940, dated November 14, 2006.

**Product positioning**

The BladeCenter HT is a compact, twelve-server blade chassis designed for high-density server installations for telecommunications use. This chassis with ac or dc power supplies is a low-cost, high performance, high-availability solution for telecommunications networks environments.

The BladeCenter HT chassis is positioned for expansion, capacity, redundancy, and carrier-grade NEBS level 3/ETSI compliance in dc models. The BladeCenter HT offers high levels of performance when using the two-socket blades or the four-socket blades. It is a cost-effective, scalable solution to satisfy most telecommunications environments.

**Reference information**

1. With respect to on-site service, IBM sends a technician after attempting to diagnose and resolve the problem remotely.

2. For information on the IBM Statement of Limited Warranty, contact your IBM representative or reseller. Copies are available upon request.

**Reference sell**

IBM will reference sell products with BladeCenter HT from vendors who are participants in the IBM SeverProven program. Visit the ServerProven Web site for details about compatibility.

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