



Intel® Server  
Blade Chassis  
Product Brief

## Can I add more servers and simplify my data center?

Yes. The Intel® Server Blade Chassis  
integrates complex components  
and eliminates cables to simplify data  
center management.



The Intel® Server Blade Chassis forms the  
foundation for powerful and flexible blade  
computing solutions that help contain data  
center costs while enabling business agility.

## Expand Data Center Capability

As the number of servers in your data center grows, so do your deployment and management headaches. In fact, with traditional pedestal and rack servers, data center staffing costs increase dramatically as your data center grows. Now, the Intel® Server Blade Chassis lets you add servers to your data center while actually decreasing deployment and service work. Blade computing introduces a new data center paradigm where many ultra-thin compute blades share centralized resources such as power supplies, fans and network switches in a single chassis. The Intel® Server Blade Chassis is an example of state-of-the-art blade engineering that allows you to greatly expand computing power while reducing management resources.



### A Look Inside

The Intel® Server Blade Chassis is a highly redundant, flexible, and easy-to-service chassis that holds up to 14 dual processor (DP) server blades or 7 multiple processor (MP) server blades (28 processors) in a 7U space—twice the density of rack-mounted servers. The cost of this high-density chassis is amortized over as many as 14 servers, reducing overall infrastructure and support costs.

- **Hot-plug compute blades**, management modules, and network switches
- **Media tray** supports shared floppy and CDROM drives, USB port
- **Longevity** to support current and future compute and networking technologies
- **Flexibility** to adapt to your storage needs

### Built To Manage

No matter how you configure it, the Intel® Server Blade Chassis was built for efficient operation. The system includes a management module that monitors temperatures and controls fan speeds to maintain an optimum operating environment. The chassis accommodates up to two management modules for redundancy.

The Intel® Server Blade Chassis offers higher density—14 dual processor blades per 7U chassis—than traditional pedestal and rack-mount servers.

Greatly expand computing power while reducing management resources with the Intel Server Blade Chassis



### Features

Tool-less, hot-plug compute blades, management modules, and network switches

Redundant components and network paths

Midplane that provides connection between individual compute blades and shared resources

Deployment flexibility across processor number and type, as well as network fabric, and storage

### Benefits

Fast, easy serviceability and lower support costs

High availability for uninterrupted server uptime

Elimination of up to 100 cables for a full rack of servers, simplifying maintenance and reducing data center clutter

Configures to meet a wide range of data center needs

# Intel® Server Blade Chassis lowers service costs by eliminating cabling, consolidating infrastructure and simplifying management

## Dramatically Lower Service Costs

The Intel® Server Blade Chassis is engineered top-to-bottom and front-to-back for easy serviceability. On the front of the chassis are 14 server blade slots that accommodate current and future Intel compute blades. These blades slide in and out with no tools or cables. One floppy and one CD-ROM drive reside in a front-panel media tray that also removes easily without tools.

On the back of the chassis are shared components: power supplies, blowers, switches, and management modules, all of which are hot-plug/hot-swap components that can be removed quickly without tools. Even the midplane, which connects the compute blades with the shared resources, can be accessed by simply removing two thumbscrews.

Cabling in the Intel® Server Blade Chassis is almost nonexistent, thanks to the use of a mid-plane to provide network, power, and KVM (keyboard-video-mouse) connections between individual blades and shared components.

## Configure to Meet Multiple Needs

The Intel® Server Blade Chassis forms the backbone of a flexible blade server solution. The chassis enables redundancy at almost any level—power supplies, blowers, management modules, and Ethernet/Fibre Channel switches—to meet the availability and connectivity requirements of almost any environment. Plus, the Intel® Server Blade Chassis will accommodate the future 4-way Intel server compute blade containing Intel® Xeon™ processors MP, giving you increased longevity and improved ROI from the same chassis.

## Extreme Availability

There are virtually no single points of failure in the Intel® Server Blade Chassis. All critical components such as power supplies, blowers, network switches, and management modules have redundancy options and tool-less hot-plug/hot-swap capability, which allows you to swap out failed components within a minute. Even the system midplane is redundant, with all circuitry duplicated and redundant bus support for all power and communications.



### Front Panel

- 1 Front-panel LEDs
- 2 CD-ROM drive
- 3 Diskette drive
- 4 Processor blades
- 5 USB port



### Rear Panel

- 1 4 switch module slots
  - 2 Ethernet switches
  - 2 expansion switches
- 2 2 management module slots
- 3 4 hot-swap power supply slots
- 4 2 hot-swap blowers

# Intel® Server Chassis SBCE Specifications

## Media Tray (on front)

Diskette drive	1.44 MB
CD-ROM drive	IDE
Universal Serial Bus	(USB) v1.1 port
Front system	LED panel

## Module Bays (on rear)

Four hot-swap 220-volt power-module bays
Two hot-plug management module bays
Four hot-plug switch-module bays
Two hot-swap blower bays

## Blade Bays (on front)

14 hot-plug blade bays
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## Redundant Cooling

Two redundant variable-speed hot-swap blowers, 325 cubic ft per min (CFM), front to back airflow

## Front Panel LEDs

Power-on LED	When this green LED is lit, power is present to the SBCE unit
Location LED	When this blue LED is lit or flashing, it has been turned on by the system administrator, to aid in visually locating the SBCE unit.
Over-temperature LED	When this amber LED is lit, the temperature in the SBCE unit exceeds the temp limits or a blade server reports an over-temp condition
Information LED	When this amber LED is lit, a noncritical event has occurred that requires attention
System-error LED	When this amber LED is lit, it indicates that a system error has occurred

## Power Modules

Standard	Two 1400-watt or greater (200-240VAC) hot-swap power modules; both power modules provide redundancy to each other
Maximum	Four Power modules 1 and 2 supply 12V to all switch and management modules and to blade bays 1 through 6 Power modules 3 and 4 supply 12V to blade bays 7 through 14 Power modules 1 and 2 provide redundancy to each other Power modules 3 and 4 provide redundancy to each other

## Switch Modules

Standard	Standard
Maximum	Two hot-plug 1 Gbit Ethernet four-port switch modules and two hot-plug switch modules of another network-communication standard, such as Fibre Channel

## Management Module

Redundant hot-plug management modules provide the following features:

System	Management functions for the SBCE system
Video Port	Analog
Keyboard Port	PS2
Mouse Port	PS2
Remote Management Connection	10/100 Mb Ethernet

## Upgradeable Microcode

Management Module	Firmware
Ethernet Switch Module	Firmware
Blade Server Service Processor	Firmware

## Security Features

Remote Connection	Login password
Remote Management Access	Secure socket layer (SSL) security

## Predictive Failure Analysis (PFA) Alerts

Blowers	
Blade	Dependent features

## Size

Height	304.2mm (12 in. or 7U)
Depth	711.2mm (28")
Width	444 mm (17.5")
Weight	124.73 kg. (275 lbs.) fully configured with modules and blades 44.91 kg. (99 lbs.) fully configured without blades

## Acoustical Noise Emissions

Without Acoustics Module Option	Sound power, idle: 7.4 bels maximum Sound power, operating: 7.4 bels maximum
With Acoustics Module Option	Sound power, idle: 6.9 bels maximum Sound power, operating: 6.9 bels maximum

## Environment

Air Temperature	Operating (system): 10°C to 35°C (50°F to 95°F); 0 to 914m (2998.69 ft) altitude Operating (system): 10°C to 32°C (50°F to 89.6°F); 914m to 2134m (2998.69 ft. to 7000 ft.) altitude Non-operating (system): -40° to +60°C (-40° to +140°F)
Humidity	Operating: 8% to 80% Non-operating: 8% to 80%

## Electrical Input

Sine-wave input (50-60Hz single phase) required	Minimum: 200 volts AC Maximum: 240 volts AC
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## Heat Output

Approximate Heat Output (BTUs per hour)	Minimum configuration: 1365 BTU/hour (400 watts) Maximum configuration: 9622 BTU/hour (2860 watts)
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## Safety Compliance

USA:	UL 60950 – 3rd Edition/CSA 22.2. No. 60950
Canada:	cUL certified – 3rd Edition/CSA 22.2. No. 60950 – for Canada (product bears the single cUL mark for U.S. and Canada)
Europe:	Low Voltage Directive, 73/23/EEC TUV/GS to EN60950 2nd Edition with Amendments, A1 = A2 + A3 + A4
International:	TUV/CB to IEC 60950 3rd Edition TUV/CB - EN60 950 2nd Edition + Amd 1-4 TUV/CB - EMKO-TSE (74-SEC) 207/94
Australian/New Zealand:	CB Report to IEC 60950, 3rd Edition plus international deviations

## Electromagnetic Compatibility (EMC)

USA:	FCC CFR 47 Part 2 and 15, Verified Class A Limit
Canada:	IC ICES-003 Class A Limit
Europe:	EMC Directive, 89/336/EEC EN55022, Class A Limit, Radiated & Conducted Emissions EN55024 ITE Specific Immunity Standard EN61000-4-2 ESD Immunity (Level 2 Contact Discharge, Level 3 Air Discharge) EN61000-4-3 Radiated Immunity (Level 2) EN61000-4-4 Electrical Fast Transient (Level 2) EN61000-4-5 AC Surge EN61000-4-6 Conducted RF EN61000-4-8 Power Frequency Magnetic Fields EN61000-4-11 Voltage Dips and Interrupts EN61000-3-2 Limit for Harmonic Current Emissions EN61000-3-3 Voltage Flicker
Japan:	VCCI Class A ITE (CISPR 22, Class A Limit) IEC 1000-3-2 Limit for Harmonic Current Emissions
Australia/New Zealand:	CB Report to IEC 60950, 3rd Edition plus international deviation
Taiwan:	BSMI Approval
Korea:	RRL Approval
Russia:	GOST Approved
International:	CISPR 22, Class A Limit

For the most current product information on the Intel® Enterprise Blade Server Family, visit:  
[www.intel.com/go/enterpriseblades](http://www.intel.com/go/enterpriseblades)



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