

Acer AW2000h w/AW170h F2 Specifications



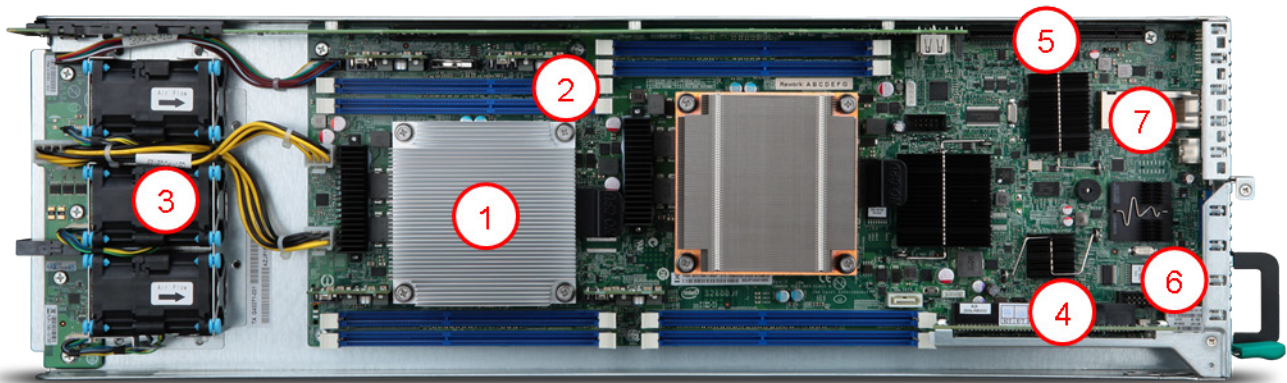
Product overview

The Acer AW2000h w/AW170h F2 provides first-class performance, innovative technology, high configurability, and comprehensive management features. The 2U rack-mountable form factor saves space and maximizes computing power, while ensuring future-proof, scale-out possibilities with four independent nodes and up to eight Intel® Xeon® processors. The AW2000h w/AW170h F2 is perfect for high performance computing, clustered virtual environments and cloud-use scenarios.



Product views

AW170h internal view – single node



Per node specs – up to 4 nodes total:

1. 2 x Intel® Xeon® E5-2600 family processors
2. 8 x DDR3 ECC registered / unbuffered DIMMs
3. System fans
4. 1 x PCIe expansion slot
5. 1 x I/O module or dedicated management port expansion slot
6. Dual-port Intel® i350 Ethernet Controller
7. Optional onboard QDR or FDR InfiniBand™ controller (available on AW170hq or AW170hf nodes)

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Front View – 3.5” configuration



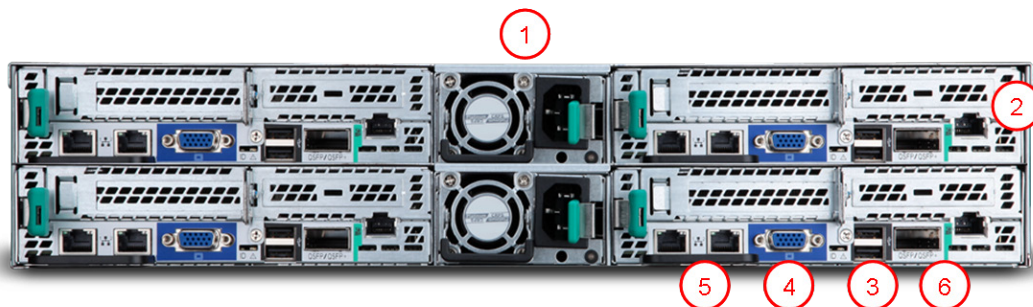
1. LED indicators: power, HDD activity, LAN
2. Power button
3. Up to 3 x 3.5” or 2.5” SATA / SAS HDDs per node

Front View – 2.5” configuration



1. LED indicators: power, HDD activity, LAN
2. Power button
3. Up to 4 x 2.5” SATA / SAS HDDs per node

Rear View



1. 2 x 1600W 80 PLUS Platinum-level (1+1 redundant, hot-swappable)
2. Optional Management port (RJ-45)
3. 2 x USB ports
4. Video port
5. 2 x Gigabit LAN ports (RJ-45)
6. Optional onboard QDR or FDR InfiniBand controller (available on AW170hq or AW170hf nodes)

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Product Specifications - per AW170h node

What's New?

- Intel® Xeon® E5-2600 v2 family processors
- Hot-pluggable/redundant power supply with 80 PLUS® Platinum-certified efficiency
- Smart Server Manager v1.2 with improved management functionality

Processors and Chipset

- Up to two Intel® Xeon® E5-2600 family processors
- Chipset: Intel® C602

Memory

- Up to 8 x DDR3 or DDR3L registered / unbuffered DIMMs

Network Controllers

- 1 x Dual-port Intel® i350 Ethernet controller

Storage

- Hard disk form factor: 2.5" or 3.5"
- Type: SAS / SATA / SSD with hot-plug capability
- 3.5" maximum capacity (per node):
 - Up to 12 TB SATA HDD (4 TB 3.5" x 3 HDDs)
 - Up to 6 TB SAS (2 TB 3.5" x 3 HDDs)
- 2.5" maximum capacity (per node):
 - Up to 4 TB SATA HDD (1 TB 2.5" x 4 HDDs)
 - Up to 3.6 TB SAS (900 GB 2.5" x 4 HDDs)

Storage Controllers

- Intel® 602 chipset with SCU (4 x 3 Gb/s SATA / SAS ports) with RAID 0, 1, 5, 10 support
- Optional hardware SAS RAID controller with RAID 0, 1, 10 or RAID 0, 1, 5, 10 support

Expansion slots

- 1 x PCIe® 3.0 x16 (x16 connector) (low-profile, half-length)
- 1 x I/O module connector or dedicated management port

Management

- Acer Smart Server Manager
- Embedded BMC controller with IMPI 2.0 compatibility
- System ID LED buttons, System Health LED
- Optional server management and KVM over IP remote management to OS level

BIOS

- UEFI BIOS
- SMBIOS 2.7

Deployment/Serviceability

- Acer Smart Setup
- BIOS Update Tool
- IPMI Firmware Update Tool

Operating Systems

- Windows Server® 2012 R2
- Windows Server® 2012
- Windows Server® 2008 R2 SP1 (includes Hyper-V™)
- Windows Server® 2008 (includes Hyper-V™)
- Red Hat Enterprise Linux 6
- Red Hat Enterprise Linux 5
- SUSE Linux Enterprise Server 11
- VMware ESXi™ 5

Input/output interface

Rear

- 2 x USB 2.0 ports
- 2 x Gigabit LAN port (RJ-45)
- Video port
- System ID LED
- Optional dedicated management port (RJ-45)
- Optional QDR or FDR InfiniBand port

Graphics

- BMC embedded controller
- 128 MB shared video memory
- 16 MB dedicated

Security

- Administrator/user password
- Power-on password
- Setup password
- Device boot control
- Optional TPM
- Secure command line interface (SSH)
- Secure browser interface (Secure socket layer - SSL support)
- Secure IPMI LAN interface (Authentication, Integrity, and Confidentiality algorithm)

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Product Specifications - per chassis

Input/output interface

Front

- One Power/off button
- LED indicators: power, HDD activity, LAN, ID and System status

Chassis/Form Factor

- 2U rack-optimized

Power Supply

- 2 x 1600 W 80 PLUS® Platinum-certified easy-swap power supply units (1+1 redundant, hot-swappable)

Regulatory Compliant Standards

EMC

- FCC (Class A)
- CE (Class A)
- BSMI (Class A)

Safety

- MET
- CB
- Nemko/GS
- CCC
- CEL

Environmental Specifications

Dimensions	438 (W) x 771 (D) x 87.9 (H) mm (17.24 x 30.35 x 3.46 inches)	
Weight	Maximum	38 kg (83.78 lbs.)
	Minimum (includes CPU, RAM, 2 x PSU, excludes HDD)	30 kg (66.14 lbs.)
System inlet temperature	Operating	10° - 35° C (50° - 95° F)
	Non-operating	-40° - 70° C (-40° - 158° F)
Relative humidity	Operating	50 - 90%
	Non-operating	50 - 90%
Acoustics	Idle	
	LWAd	6.9 BA
	Operating	
	LWAd	7.4 BA
Power	Rated steady-state power	1600 W
	BTU rating	2560 BTU/hr at 100 - 240 VAC

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Technical specifications

PCIe® specifications

The primary I/O bus for the main board is PCIe® Gen3. The following table lists the characteristics of the PCI-E bus segments. Details about each bus segment follow the table.

NOTE: The signaling bit rate of PCI Express is 8.0 Gbit/s one direction per lane for Gen 3.

Slot	CPU	Type	Bus width ¹	Voltage	Connector	Location	Length
1	1	PCIe Gen3	x16	3.3 V	x16	Riser	Low-profile, half length
2	1	PCIe Gen3	x16	3.3 V	x16	Riser	I/O module

NOTE:

1. Indicates the number of physical electrical lanes running to a PCIe® connector.

Slots are enumerated differently based on the operating system. Microsoft® operating systems enumerate Device ID by bus starting from the lowest bus to the highest.

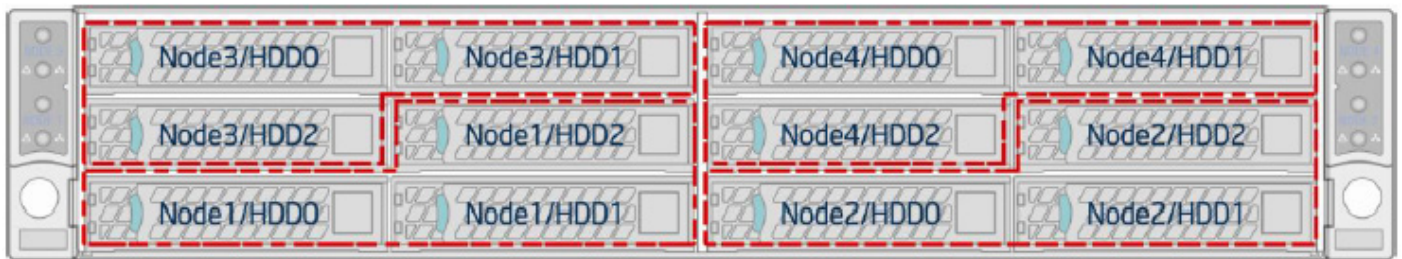
PCIe x16 low-profile expansion slot

Custom IO module expansion (PCIe x16)

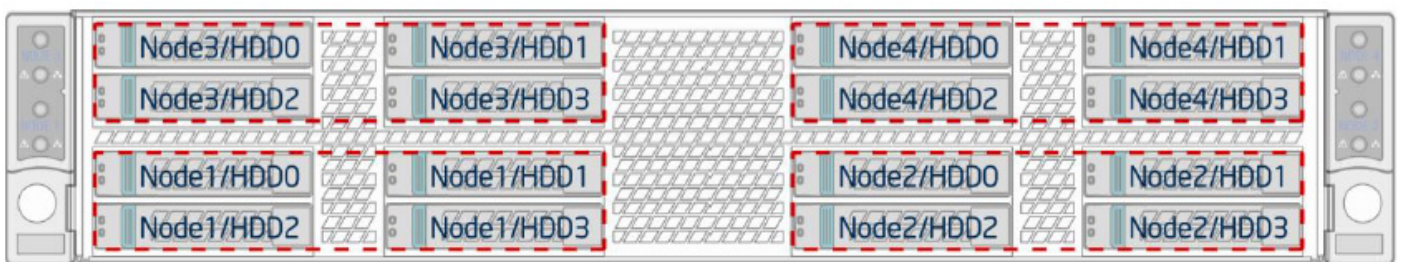


Disk population and node deployment

12 x 3.5" hard drives



16 x 2.5" hard drives



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Onboard storage specifications

Item	Description
Controller	Intel® 602 Platform Controller Hub
Simultaneous drive transfer channels	4 onboard SATA / SAS ports
Max throughput per channel	3 Gb/s 6 Gb/s via RAID module
Data transfer method	<ul style="list-style-type: none">• Non-RAID mode• RAID mode
Drive type supported	Serial ATA; Serial Attached SCSI (SAS)
RAID levels support	<ul style="list-style-type: none">• Default SATA RAID 0, 1, 10 (Intel software RAID)• Optional SAS RAID 0, 1, 10 (Intel and ESRT (LSI) software RAID)• Optional SATA RAID 0, 1, 5, 10 (ESRT (LSI) software RAID)• Optional SAS RAID 0, 1, 5, 10 (Intel and ESRT (LSI) software RAID)
RAID function support	NOTE: Intel software RAID only supports Windows OS <ul style="list-style-type: none">• Supports multiple logical volumes• Setup through ROM based Array Configuration Utility Installation scripting support
RAID OS support	<ul style="list-style-type: none">• Windows Server® 2012 R2• Windows Server® 2008 R2• Windows Server® 2008• Red Hat Enterprise Linux 5 / 6• SuSE Linux Enterprise Server 11• VMware ESXi™ 5
Additional features	NCQ (Native Command Queuing) AHCI (Advanced Host Controller Interface)

Onboard LAN specifications

Item	Description
Controller	Dual-port Intel® I350 Ethernet controller
Network interface	10Base-T / 100Base-TX / 1000Base-T
Compatibility standards	<ul style="list-style-type: none">• IEEE 802.3 Ethernet interface for 10BASE-T• IEEE 802.3ab Ethernet interface for 1000BASE-T• IEEE 802.3u Ethernet interface for 100BASE-TX
Manageability	<ul style="list-style-type: none">• NC-SI, SMBus• PXE, iSCSI boot
Virtualization acceleration	<ul style="list-style-type: none">• Virtual Machine Device Queues (VMDq)• PCI-SIG SR-IOV implementation
Connector	RJ-45
Supported cable type	Cat 5e and Cat 6e wire

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Memory specifications and population

Item	Description
Supported memory types	<ul style="list-style-type: none"> Registered DDR3 800 / 1066 / 1333 / 1600 / 1866 MHz Unbuffered DDR3 800 / 1066 / 1333 / 1600 / 1866 MHz Registered DDR3L 1066 / 1333 / 1600 MHz Unbuffered DDR3L 1066 / 1333 / 1600 MHz <p>NOTE: Acer does not qualify mixed memory configurations of memory type, capacity or make.</p> <p>Intel Xeon E5-2600 v2 series processors required for speeds of 1866 MHz</p>
Population	<p>Acer's validated memory populations are listed below.</p> <p>NOTE: Support for 16 GB DIMMs may vary by regional availability. 32 GB DIMMs can be offered for specific customer cases as well.</p>

Memory support and population

RDIMM support

Ranks Per DIMM & Data Width	Memory Capacity Per DIMM [1]			RDIMM Speed (MT / s) and Voltage Validated for Short Length PDG by Slot Per Channel (SPC) and DIMM Per Channel (DPC) [2,3,4]											
				1 Slot per Channel		2 Slots per Channel				3 Slots per Channel					
				1 DPC		1 DPC		2 DPC		1 DPC		2 DPC		3 DPC	
				1.35V	1.5V	1.35V	1.5V	1.35V	1.5V	1.35V	1.5V	1.35V	1.5V	1.35V	1.5V
SRx8	1GB	2GB	4GB	1066, 1333, 1600	1066, 1333, 1600, 1866	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600	800	800, 1066
DRx8	2GB	4GB	8GB	1066, 1333, 1600	1066, 1333, 1600, 1866	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600	800	800, 1066
SRx4	2GB	4GB	8GB	1066, 1333, 1600	1066, 1333, 1600, 1866	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600	800	800, 1066
DRx4	4GB	8GB	16GB	1066, 1333, 1600	1066, 1333, 1600, 1866	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600	800	800, 1066
QRx8	4GB	8GB	16GB	800	800, 1066	800	800, 1066	800	800	800	800, 1066	800	800		
QRx4	8GB	16GB	32GB	800	800, 1066	800	800, 1066	800	800	800	800, 1066	800	800		

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UDIMM support

Ranks Per DIMM & Data Width	Memory Capacity Per DIMM [1]			UDIMM Speed (MT / s) and Voltage Validated by Slot Per Channel (SPC) and DIMM Per Channel (DPC) [2,3,4]									
				1 Slot per Channel		2 Slots per Channel				3 Slots per Channel			
				1 DPC		1 DPC		2 DPC		1 DPC		2 DPC	
				1.35V	1.5V	1.35V	1.5V	1.35V	1.5V	1.35V	1.5V	1.35V	1.5V
SRx8 Non-ECC	1GB	2GB	4GB		1066, 1333, 1600, 1866		1066, 1333, 1600		1066, 1333, 1600		1066, 1333, 1600		1066, 1333, 1600
DRx8 Non-ECC	2GB	4GB	8GB		1066, 1333, 1600, 1866		1066, 1333, 1600		1066, 1333, 1600		1066, 1333, 1600		1066, 1333, 1600
SRx16 Non-ECC	512MB	1GB	2GB		1066, 1333, 1600, 1866		1066, 1333, 1600		1066, 1333, 1600		1066, 1333, 1600		1066, 1333, 1600
SRx8 ECC	1GB	2GB	4GB	1066, 1333, 1600	1066, 1333, 1600, 1866	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600
DRx8 ECC	2GB	4GB	8GB	1066, 1333, 1600	1066, 1333, 1600, 1866	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600	1066, 1333	1066, 1333, 1600

LRDIMM support

Ranks Per DIMM & Data Width	Memory Capacity Per DIMM [1,2]		LR-DIMM Speed (MT / s) and Voltage Validated by Slot Per Channel (SPC) and DIMM Per Channel (DPC) [3,4,5,6]											
			1 Slot per Channel		2 Slots per Channel				3 Slots per Channel					
			1 DPC		1 DPC		2 DPC		1 DPC		2 DPC		3 DPC	
			1.35V	1.5V	1.35V	1.5V	1.35V	1.5V	1.35V	1.5V	1.35V	1.5V	1.35V	1.5V
QRx4 (DDP) [7]	16GB	32GB	1066, 1333, 1600	1066, 1333, 1600, 1866	1066, 1333, 1600	1066, 1333, 1600	1066, 1333, 1600	1066, 1333, 1600	1066, 1333, 1600	1066, 1333, 1600	1066, 1333, 1600	1066, 1333, 1600	1066	1066
8Rx4 (QDP) [7]	32GB	64GB	1066	1066	1066	1066	1066	1066	1066	1066	1066	1066	1066	1066

Mirroring mode:

- For mirroring mode, the memory image in channel A is maintained the same as channel C and channel B is maintained the same as channel D. Therefore, the effective size of memory is reduced by at least one-half.
- The DIMM configuration in mirrored channels must be identical. Channel A & channel C with identical DIMMs and also channel B & channel D with identical DIMMs. The DIMM type, size, manufacturer should be the same.
- Same rule is applied to the CPU2
- 3 DIMM per channel is only supported by single rank and dual rank RDIMM.

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- For UDIMM and quad rank RDIMM, maximum two DIMMs per channel.

Lockstep mode:

- Channel A and channel B are paired and channel C and channel D are paired in lockstep mode.
- Lockstep mode is the only mode to support x8 SDDC.
- Lockstep channels must be populated identically. Channel A & channel B with identical DIMMs and also channel C & channel D with identical DIMMs. The DIMM type, size, manufacturer should be the same.
- Same rule is applied to the CPU2.
- 3 DIMM per channel is only supported by single rank and dual rank RDIMM.
- For UDIMM and quad rank RDIMM, maximum two DIMMs per channel.

Rank Sparing mode:

- An unused spare rank is reserved on each channel. The spare rank is used to copy the contents of a failing rank on the channel to keep a system working when a rank starts to fail. The reserved rank is not able to be used before the other rank fail.
- 3 DIMM per channel is only supported by single rank and dual rank RDIMM.
- For UDIMM and quad rank RDIMM, maximum two DIMMs per channel.
- For 1 DIMM per channel configuration, only quad rank RDIMM is supported for rank sparing.

Memory Identification

Generally, there are some memory information printed on the label of DIMM, but different vendor may have different format. For example:

4 GB 2Rx4 PC3-10600R xx xx xxx

1. Density

- 4 GB, 8 GB, 16 GB, 32 GB

2. Rank

- 1R = Single Rank
- 2R = Dual Rank
- 4R = Quad Rank

Note: if any quad rank DIMM is used, maximum only 2 DIMM per channel can be supported

3. Bit Organization

- This platform supports x4 and x8

Note: It's not recommended to mix DIMM with different bit organization in one system.

4. Speed

- PC3 – 6400 => DDR3-800
- PC3 – 8500 => DDR3-1066
- PC3 – 10600 => DDR3-1333
- PC3 – 12800 => DDR3-1600
- PC3 – 15000 => DDR3-1866

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Graphics Specifications

Emulex Pilot-III Server Management Controller

Memory: 16 MB dedicated, 128 MB shared

Main Features

- Integrated Graphics Core with 2D Hardware accelerator
- DDR-2/3 memory interface supports up to 256 MB of memory
- Supports all display resolutions up to 1600 x 1200 16bpp @ 60 Hz
- High speed Integrated 24-bit RAMDAC

Supported video modes

2D Mode	Refresh Rate (Hz)	2D Video Mode Support		
		8 bpp	16 bpp	32 bpp
640x480	60, 72, 75, 85, 90, 100, 120, 160, 200	Supported	Supported	Supported
800x600	60, 70, 72, 75, 85, 90, 100, 120, 160	Supported	Supported	Supported
1024x768	60, 70, 72, 75, 85, 90, 100	Supported	Supported	Supported
1152x864	43, 47, 60, 70, 75, 80, 85	Supported	Supported	Supported
1280x1024	60, 70, 74, 75	Supported	Supported	Supported
1600x1200**	60	Supported	Supported	Supported

Power specifications

Platinum-certified power supply (1600 W)

Parameter:	Min	Rated	Max	Start up Vac	Power off Vac
110 Vac:	90 Vrms	100-127 Vrms	85 Vac ± 4 Vac	85 Vac ± 4 Vac	70 Vac ± 5 Vac
220 Vac:	180 Vrms	200-240 Vrms	264 Vrms		
Frequency:	47 Hz	50/60 Hz	63 Hz		

AC input power factor

Output power:	10% load	20% load	50% load	100% load
Power factor:	>0.80	>0.90	>0.90	>0.95

Tested at 230 Vac, 50 Hz and 60Hz and 115VAC, 60 Hz

Efficiency

Loading:	100%	50%	20%	10%
Minimum efficiency:	91%	94%	90%	82%

AC Line Inrush

Shall not exceed 65 A peak

AC Line Dropout/ Holdup

Loading:	70%
Holdup time:	10.6 msec

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Acer server software utilities

Smart Console with optional iKVM management web console

Web-based management utility to simplify system management with embedded BMC, system monitoring and alerting, event handling, remote power control and KVM-over-IP. Smart Console is OS independent and offers virtual media through floppy, ODD, and removable disk.

Note: Function is available with an add-on RMM module via NIC1 or through the RMM and dedicated management port module.

Smart Server Manager v1.2

Offers 24-7 monitoring for system health and performance.

- Delivers proactive event management features including system event logging, event handling from e-mail and SNMP Trap (PET) alerting
- Monitors onboard hardware, operating systems and virtual machines
- Allows remote control from KVM and Power control
- Satisfies management in web-based UI, role-based administration, and automated management scripts
- Remote firmware deployment and scheduled updates
- Customizable BIOS settings and deployment to networked nodes
- Optional power-capping functionality for Acer servers with Intel® Xeon processors E3 or E5 families

Available options

Processors (up to 2)

Intel® Xeon® processor (Twelve Core)

- E5-2697 v2 (30 MB L3 cache, 2.7 GHz, DDR3 1866/1600/1333/1066 MHz, 130 W)*
- E5-2695 v2 (30 MB L3 cache, 2.4 GHz, DDR3 1866/1600/1333/1066 MHz, 115 W)

Intel® Xeon® processor (Ten Core)

- E5-2690 v2 (25 MB L3 cache, 3.0 GHz, DDR3 1866/1600/1333/1066 MHz, 130 W)
- E5-2680 v2 (25 MB L3 cache, 2.8 GHz, DDR3 1866/1600/1333/1066 MHz, 115 W)
- E5-2670 v2 (25 MB L3 cache, 2.5 GHz, DDR3 1866/1600/1333/1066 MHz, 115 W)
- E5-2660 v2 (25 MB L3 cache, 2.2 GHz, DDR3 1866/1600/1333/1066 MHz, 95 W)
- E5-2650L v2 (25 MB L3 cache, 1.7 GHz, DDR3 1866/1600/1333/1066 MHz, 70 W)

Intel® Xeon® processor (Eight Core)

- E5-2650 v2 (20 MB L3 cache, 2.6 GHz, DDR3 1866/1600/1333/1066 MHz, 95 W)
- E5-2640 v2 (20 MB L3 cache, 2.0 GHz, DDR3 1866/1600/1333/1066 MHz, 95 W)
- E5-2690 (20 MB L3 cache, 2.9 GHz, DDR3 1600/1333/1066 MHz, 135 W)
- E5-2680 (20 MB L3 cache, 2.7 GHz, DDR3 1600/1333/1066 MHz, 130 W)
- E5-2670 (20 MB L3 cache, 2.6 GHz, DDR3 1600/1333/1066 MHz, 115 W)
- E5-2665 (20 MB L3 cache, 2.4 GHz, DDR3 1600/1333/1066 MHz, 115 W)
- E5-2660 (20 MB L3 cache, 2.2 GHz, DDR3 1600/1333/1066 MHz, 95 W)
- E5-2650 (20 MB L3 cache, 2.0 GHz, DDR3 1600/1333/1066 MHz, 95 W)
- E5-2650L (20 MB L3 cache, 1.8 GHz, DDR3 1600/1333/1066 MHz, 70 W)

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Intel® Xeon® processor (Six Core)

- E5-2630 v2 (15 MB L3 cache, 2.6 GHz, DDR3 1866/1600/1333/1066 MHz, 80 W)
- E5-2630L v2 (15 MB L3 cache, 2.4 GHz, DDR3 1600/1333/1066 MHz, 60 W)
- E5-2620 v2 (15 MB L3 cache, 2.1 GHz, DDR3 1866/1600/1333/1066 MHz, 80 W)
- E5-2667 (15 MB L3 cache, 2.9 GHz, DDR3 1600/1333/1066 MHz, 130 W)
- E5-2640 (15 MB L3 cache, 2.5 GHz, DDR3 1333/1066 MHz, 95 W)
- E5-2630 (15 MB L3 cache, 2.3 GHz, DDR3 1333/1066 MHz, 95 W)
- E5-2620 (15 MB L3 cache, 2.0 GHz, DDR3 1333/1066 MHz, 95 W)
- E5-2630L (15 MB L3 cache, 2.0 GHz, DDR3 1333/1066 MHz, 60 W)

Intel® Xeon® processor (Quad Core)

- E5-2609 v2 (10 MB L3 cache, 2.5 GHz, DDR3 1866/1600/1333/1066 MHz, 80 W)
- E5-2603 v2 (10 MB L3 cache, 1.8 GHz, DDR3 1866/1600/1333/1066 MHz, 80 W)
- E5-2643 (10 MB L3 cache, 3.3 GHz, DDR3 1600/1333/1066 MHz, 130 W)
- E5-2609 (10 MB L3 cache, 2.4 GHz, DDR3 1066 MHz, 80 W)
- E5-2603 (10 MB L3 cache, 1.8 GHz, DDR3 1066 MHz, 80 W)

Intel® Xeon® processor (Dual Core)

- E5-2637 (5 MB L3 cache, 3.0 GHz, DDR3 1600/1333/1066 MHz, 80 W)

* **Note:** Thermal limitations may apply.

Memory

Memory type	Registered / Unbuffered DDR3 or DDR3L ECC memory
Capacities	2 / 4 / 8 / 16 / 32 GB DIMMs Registered 2 / 4 / 8 GB DIMMs Unbuffered
DIMM number	8
Max memory	256 GB (128 GB unbuffered)

Note: 16 GB DIMM availability may vary by region. 32 GB DIMMs can be offered for specific customer cases as well.

Note: 3 DIMM per channel is only supported by single rank and dual rank RDIMM. For UDIMM and quad rank RDIMM, maximum two DIMMs per channel.

Hard drives

Type	Interface, bandwidth	Capacities (RPM)
Enterprise Nearline SATA, 3.5" (7.2 K)	6 Gb/s	500 GB (7.2 K)
		1 TB (7.2 K)
		2 TB (7.2 K)
		3 TB (7.2 K)
Enterprise Nearline SAS, 3.5" (7.2 K)	6 Gb/s	4 TB (7.2 K)
		500 GB (7.2 K)
		1 TB (7.2 K)
Enterprise SAS, 3.5" (15 K)	6 Gb/s	2 TB (7.2 K)
		300 GB (15 K)
		450 GB (15 K)
		600 GB (15 K)

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SSD	6 Gb/s	80 GB
		100 GB
		120 GB
		160 GB
		200 GB
		240 GB
		300 GB
		400 GB
		480 GB
		600 GB
		800 GB

RAID cards

Model	Port number	RAID support
Intel® RAID C600 Upgrade Key RKSATA4R5 enables LSI SATA SW RAID 5, Black	4 internal ports	0, 1, 5, 10
Intel® RAID C600 Upgrade Key RKSAS4 activates 4 SAS ports, green	4 internal ports	RSTe 0, 1, 10 LSI 0, 1, 10
Intel® RAID C600 Upgrade Key RKSAS4R5 activates 4 SAS ports, yellow *	4 internal ports	0, 1, 5, 10
SAS Module: 4 Port SAS-2.1 version, Entry-level HW RAID/straight SAS, PCIe form factor	4 internal ports	0, 1, 10

Note: Additional bridge board with SAS cabling support required for HW RAID.

Ethernet network cards and I/O modules

Model	Port number	Bandwidth
Intel® I350-T2	2	1 Gb/s
Intel® I350-T4	4	1 Gb/s
Intel® 82599 10 Gigabit Ethernet Controller Dual SFP+ port 10GbE (IO module)	2	10 Gb/s
Intel® X540-T1 single RJ-45 port 10GBASE-T (IO module)	1	10 Gb/s
Intel® X540-T2 Dual RJ-45 port 10GBASE-T (IO module)	2	10 Gb/s
Intel® X540-T1 single RJ-45 port 10GBASE-T PCIe 2.1	1	10 Gb/s

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Intel® X540-T2 dual RJ-45 port 10GBASE-T PCIe 2.1	2	10 Gb/s
Intel® X520-DA2 server adapter*	2	10 Gb/s
Intel® X520-SR1 server adapter*	1	10 Gb/s
Intel® X520-SR2 server adapter*	2	10 Gb/s
Intel® X520-LR1 server adapter*	1	10 Gb/s

***Note:** Intel's 10 GbE cards vary in terms of their connector type. The X520-DA2 is a copper connector for lengths up to 7 M, while the X520-SR1/2 is an optical connection for cables up to 550 M. The X520-LR1 is for even longer cable lengths up to 10 km.

Note: All cards marked (IO module) indicate the card is inserted in the IO module on the right-hand side of the node. It does not use the standard, low-profile PCIe x16.

Fibre Channel HBAs

Model	Port number	Bandwidth
Qlogic® QLE2560	1	8 Gb/s
Qlogic® QLE2562	2	8 Gb/s

InfiniBand

Model	Port number	Bandwidth
Intel QLE7340	1	40 Gb/s
Mellanox Connect-X 3 FDR	1	56 Gb/s
Mellanox Connect-X 3 FDR	2	56 Gb/s
Mellanox Connect-X 3 QDR	1	40 Gb/s
onboard option		
Mellanox Connect-X 3 FDR onboard option	1	56 Gb/s

Management module

Model	Function	Management port
Remote Management Module lite	Enables remote iKVM	NIC1
Remote Management Module and dedicated management port	Enables remote iKVM and provides additional dedicated management port	Dedicated management port

Note: All cards marked (I/O module) indicate the card is inserted in the I/O module on the right-hand side of the node. It does not use the standard, low-profile PCIe x16.

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Service and support

Acer Servers offer a comprehensive service suite to take care of daily IT needs. Users can select the 3-year standard warranty or choose extended warranties and services.

In a continuing effort to improve the quality of our products, information in this document is subject to change without notice. Images shown are only representations of some of the configurations available for this model. Availability may vary depending on region.

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