Altos | R

R380 F3

The Altos R380 F3 is a robust two-socket 2U system that is ideal for almost any application. This dynamic system can function as a head node, for virtualization purposes, or as a storage system for your HPC (High-Performance Computing) and technical computing environments. Extremely expandable and highly efficient, this system is a powerful core for your most demanding data-center needs.

Extremely powerful

The R380 F3 supports up to two Intel® Xeon® E5-2600 v3 product family processors, and high-performance DDR4 memory occupying twenty-four DIMM slots. There is no shortage of storage capability with up to twelve 3.5" or twenty-four 2.5" front-accessible, hot-swap hard drives, two 2.5" internal drive bays and two 2.5" rear-accessible hot-swap drive bay options. Hard drives can be configured in 12Gb/s SAS RAID and SAS HBA for increased performance and data availability.

Highly efficient

As with all Acer rack servers, the R380 F3 uses only 80 PLUS-certified power supplies. This server can be equipped with up to two 750 W or 1100 W 80 PLUS Platinum-level power supplies. Combine this with Load Reduced DIMM memory modules and the latest power-saving chipset technologies, this system delivers maximum performance with minimum power-draw. Six managed, hot-swappable fans keep the system running cool at all times.

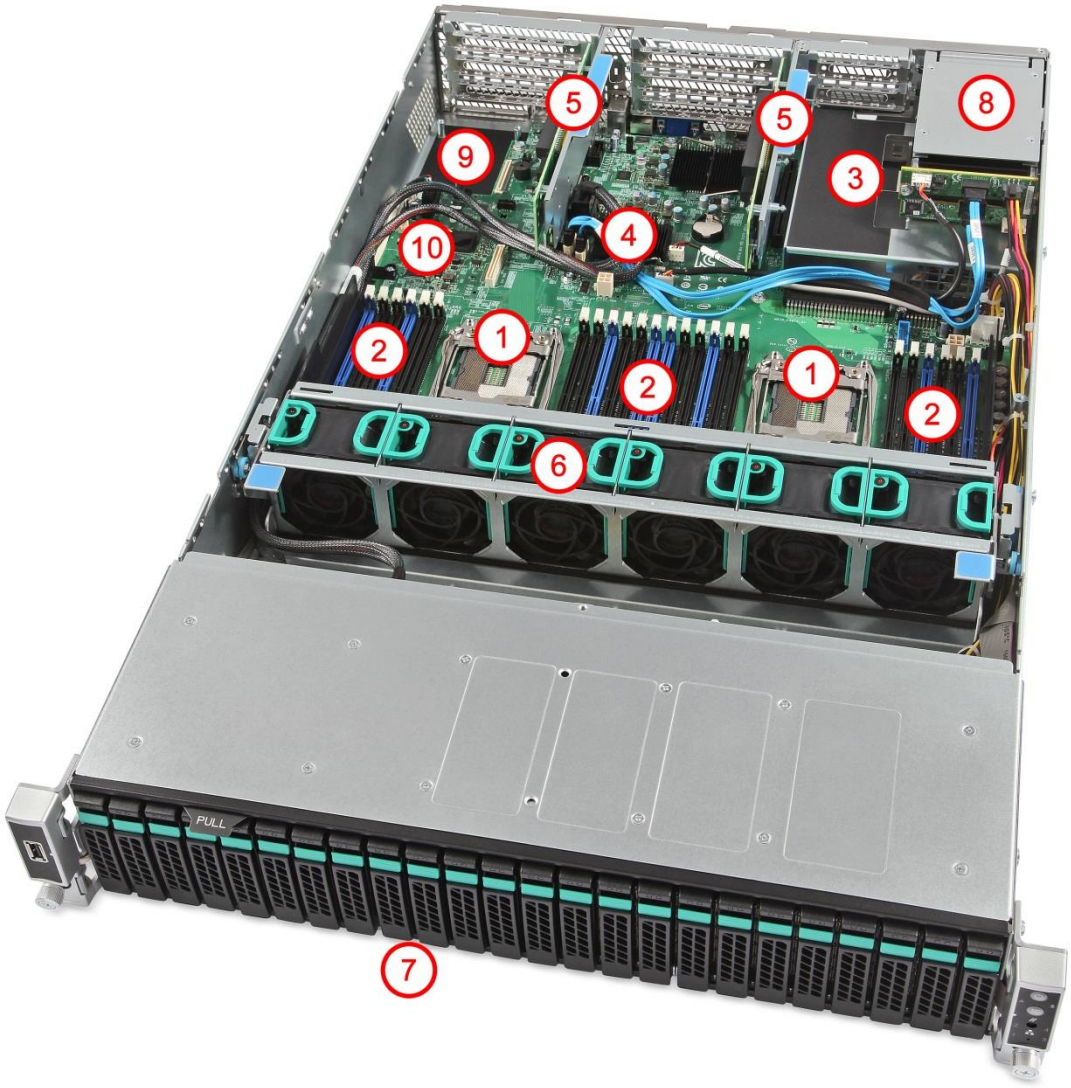
Flexible and robust I/O

Qualified to work in any environment, this system has dual 10 Gigabit or Gigabit Ethernet connectors onboard. It also has up to 7 PCIe 3.0 slots and 1 PCIe 2.0 slot, maximizing your expansion options. In addition, dedicated I/O module and SAS module slots save customers valuable PCIe expansion. Users can rest assured the R380 F3 will keep up in any high-performance scenario.

Altos R380 F3 Specifications

Product views

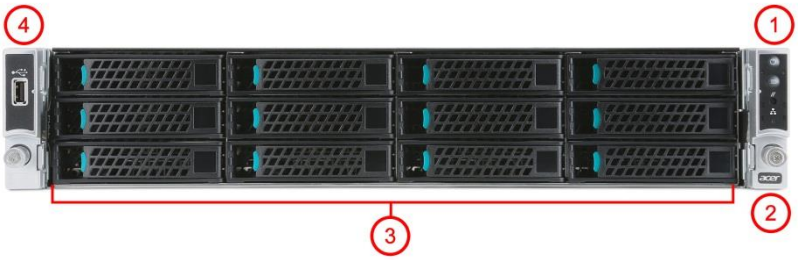
Internal view



1. 2 x Intel® Xeon® E5-2600 v3 family processors
2. 24 x DDR4 ECC Registered/Load Reduced DIMMs
3. 2 x 750 W / 1100 W Platinum-level AC or 2 x 750 W Gold-level DC power supplies (1+0/1+1 redundant, hot-swappable)
4. Onboard SATA RAID connections
5. 7 x PCIe 3.0 and 1 x PCIe 2.0 slots across three risers
6. Hot-swappable redundant system fans
7. Hot-swappable drive bays (front)
8. Hot-swappable 2.5” SSD drive bays (rear, optional)
9. 1 x I/O module
10. 1 x SAS RAID module

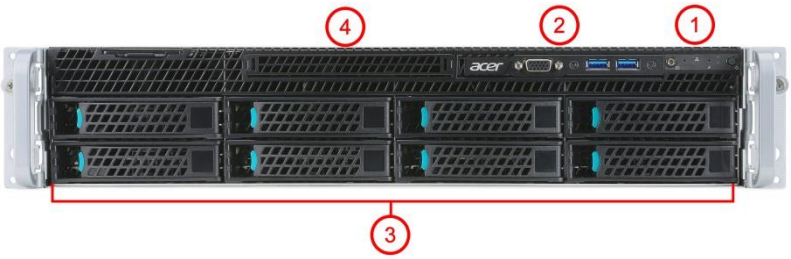
Front Views

Front I/O (12 x 3.5”)



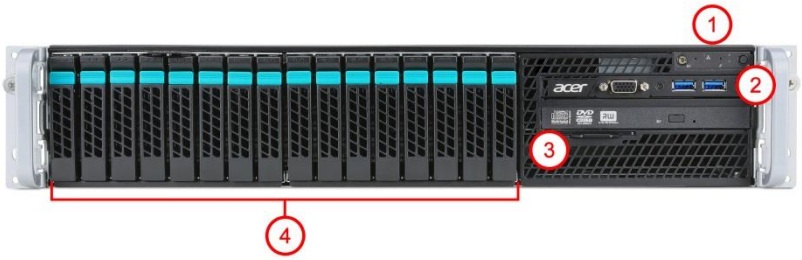
1. Power button, LED indicators: power, HDD activity, LAN, system ID
2. Rack locking screw
3. Up to 12 x 3.5” SATA / SAS HDDs or 2.5” SSDs
4. Front USB 2.0

Front I/O (8 x 3.5”)



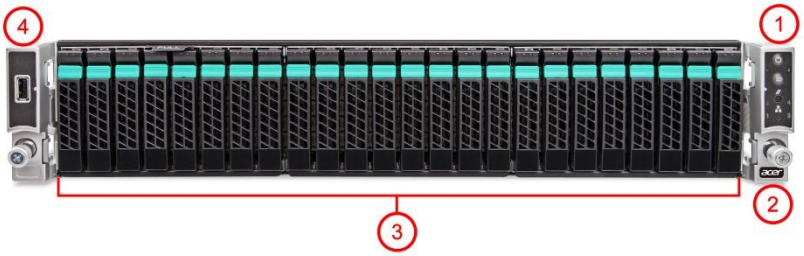
1. Power button, LED indicators: power, HDD activity, LAN, system ID
2. Front VGA and 2 x USB 3.0
3. Up to 8 x 3.5” SATA / SAS HDDs or 2.5” SSDs
4. Optional slimline optical drive

Front I/O (16 x 2.5”)



1. Power button, LED indicators: power, HDD activity, LAN, system ID
2. Front VGA and 2 x USB 3.0
3. Optional slimline optical drive
4. Up to 16 x 2.5” SATA / SAS HDDs and SSDs (with an option to replace four hard drives with four PCIe SFF/NVMe SSDs)

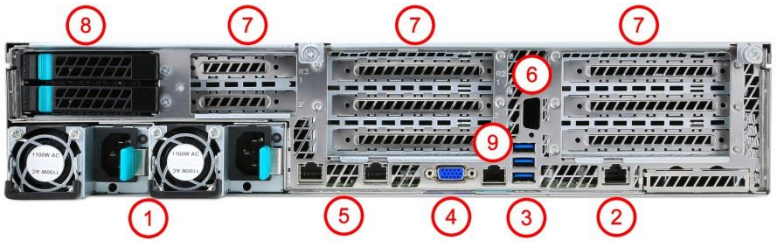
Front I/O (24 x 2.5")



1. Power button, LED indicators: power, HDD activity, LAN, system ID
2. Rack locking screw
3. Up to 24 x 2.5" SATA / SAS HDDs and SSDs (with an option to replace four hard drives with four PCIe SFF/NVMe SSDs)
4. Front USB 2.0

Rear View

Rear I/O



1. 2 x 750 W / 1100 W 80 PLUS Platinum-level AC or
   2 x 750 W 80 PLUS Gold-level DC power supplies (1+0/1+1 redundant, hot-swappable)
2. Management port (RJ-45)
3. 3 x USB 3.0 ports
4. Video port
5. 2 x Gigabit or 10Gigabit LAN ports (RJ-45)
6. Serial Port B (optional)
7. PCIe expansion via riser cards
8. 2 x 2.5" SSDs (hot-swappable, optional)
9. Serial Port A (RJ-45)

Product Specifications

What's New

- New Intel® Xeon® E5-2600 v3 processors
- DDR4 memory
- Rear-accessible, hot-swappable drive bays
- Supports four PCIe SFF/NVMe SSDs
- USB 3.0 ports
- Dual-port 10 Gigabit Ethernet on board
- Smart Server Manager with improved management functionality

Processors and Chipset

- Up to two Intel® Xeon® E5-2600 v3 family processors
- Chipset: Intel® C612

Memory

- 24 x DDR4 Registered / Load Reduced DIMMs

Network Controllers

- Dual-port Ethernet controller
- Intel® X540 (10GbE) or Intel I350 (1GbE)

Storage

- Hard disk form factor: 3.5” or 2.5”
- Type: SAS / SATA / SSD with hot-plug capability
- Front: up to 12 x 3.5” or 24 x 2.5” hard drives or SSDs (with an option to replace four hard drives with four PCIe SFF/NVMe SSDs)
- Rear: up to 2 x 2.5” SSDs (optional)
- Internal: up to 2 x 2.5” SSDs (optional)
- Slimline optical drive (optional)

Storage Controllers

- Intel® C612 chipset with 10 x 6 Gb/s SATA ports
  - 2 x single port SATA connectors
  - 2 x 4-port mini SAS HD connectors
  - 1 x eUSB 2x5 pin connector for 2mm low profile eUSB SSDs
- Intel RSTe 4.1 embedded software SATA RAID
- Intel Embedded Server RAID Technology 2 (ESRT2) 1.41 with optional RAID 5 key support
- Optional Hardware SAS RAID with RAID 0, 1, 5, 6, 10, 50, 60 support

Expansion slots

- Three riser slots provide:
  - Riser slot 1:
    - 3-slot riser card: 2 x PCIe® 3.0 ×8 (x16 connector) and 1 x PCIe® 3.0 ×8 (x8 connector), or
    - 2-slot riser card: 1 x PCIe 3.0 x16 (x16 connector) and 1 x PCIe 3.0 x 8 (x8 connector)
  - Riser slot 2:
    - 3-slot riser card: 2 x PCIe® 3.0 ×8 (x16 connector) and 1 x PCIe® 3.0 ×8 (x8 connector), or
    - 2-slot riser card: 1 x PCIe 3.0 x16 (x16 connector) and 1 x PCIe 3.0 x 8 (x8 connector)
  - Riser slot 3:
    - 2-slot riser card: 1 x PCIe 3.0 ×8 (x8 connector) and 1 x PCIe 2.0 x 4 (x8 connector)
- 1 x I/O module expansion slot
- 1 x SAS RAID module expansion slot

Management

- Acer Smart Server Manager
- Embedded BMC controller with IPMI 2.0 compatibility
- System ID LED buttons, System Health LED
- Smart Console remote monitoring and optional KVM over IP management to OS level
- Optional Local Control Panel

BIOS

- UEFI BIOS
- SMBIOS 2.0

Deployment/Serviceability

- BIOS Update Tool
- IPMI Firmware Update Tool

Operating Systems

- Windows Server 2012 R2
- Red Hat Enterprise Linux 6.5
- SUSE Linux Enterprise Server 11 SP3
- VMware ESXi™ 5.5

Graphics

- Integrated 2D video controller
- 16 MB DDR3 memory

Chassis/Form Factor

- 2U rack-optimized

Power Supply

- 1+0/1+1 redundant, hot-swappable power supply units. Three power supply options:
  - 750 W 80 PLUS® Platinum-certified AC power supply
  - 1100 W 80 PLUS® Platinum-certified AC power supply
  - 750 W 80 PLUS® Gold-certified DC power supply

Security

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

Regulatory Compliant Standards

EMC

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

Safety

- MET
- CB

Environmental Specifications

Dimensions	750 W SKU	439 (W) x 769 (D) x 89 (H) mm (17.25 x 30.25 x 3.5 inches)
	1100 W SKU	439 (W) x 793.8 (D) x 89 (H) mm (17.25 x 31.25 x 3.5 inches)
System inlet temperature	Operating	10° - 35° C (50° - 95° F)
	Non-operating	-40° - 70° C (-40° - 158° F)
Relative humidity	Non-operating	50 - 90 %
Acoustics	Idle	
	LWAd	< 7.0 BA
	Operating	
	LWAd	< 7.0 BA
Power	Rated Steady –state power	750 W or 110 W

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.

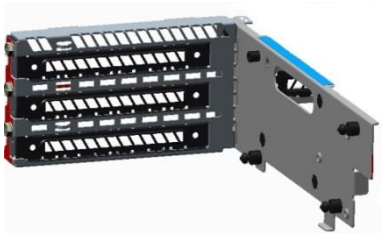
Riser Slot	Riser Card Type	Location	Connector	Type	Bus Width[1]	Voltage	CPU[2]	Add-in Card Form Factor
1	3-slot Riser Card	Top Slot	x16	PCIe® Gen3	x8	3.3V	1	Full height/Full length
		Middle Slot	x16	PCIe® Gen3	x8	3.3V	1	Full height/Full length
		Bottom Slot	x8	PCIe® Gen3	x8	3.3V	1	Full height/Half length
	2-slot Riser Card	Top Slot	x16	PCIe® Gen3	x16	3.3V	1	Full height/Full length
		Bottom Slot	x8	PCIe® Gen3	x8	3.3V	2	Full height/Half length
2	3-slot Riser Card	Top Slot	x16	PCIe® Gen3	x8	3.3V	2	Full height/Full length
		Middle Slot	x16	PCIe® Gen3	x8	3.3V	2	Full height/Full length
		Bottom Slot	x8	PCIe® Gen3	x8	3.3V	2	Full height/Half length
	2-slot Riser Card	Top Slot	x16	PCIe® Gen3	x16	3.3V	2	Full height/Full length
		Bottom Slot	x8	PCIe® Gen3	x8	3.3V	2	Full height/Half length
3	Low profile Riser Card	Top Slot	x8	PCIe® Gen2	x4	3.3V	2	Low-profile
		Bottom Slot	x8	PCIe® Gen3	x8	3.3V	2	Low-profile

NOTE:

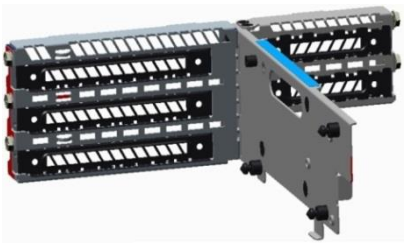
1. Indicates the number of physical electrical lanes running to a PCIe® connector.
2. CPU 2 indicates that a second CPU is required to access that specific PCIe® slot.
3. If only one CPU is used:
   It is not possible to use more than the top two slots on a 3-slot riser card or the top slot on a 2-slot riser card (in riser slot 1).
   Riser slot 2 and Riser slot 3 cannot be used.

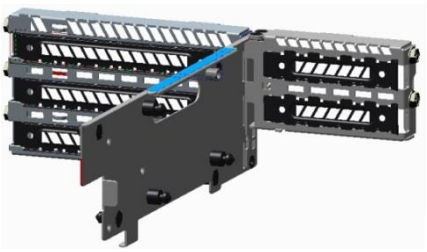
Two riser card assemblies are used, one for slot 1, and a butterfly configuration for slots 2 and 3.

- Riser slot 1



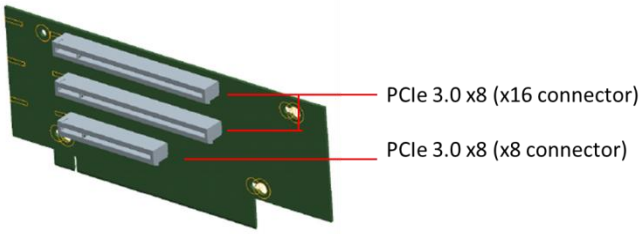
- Riser slots 2 and 3

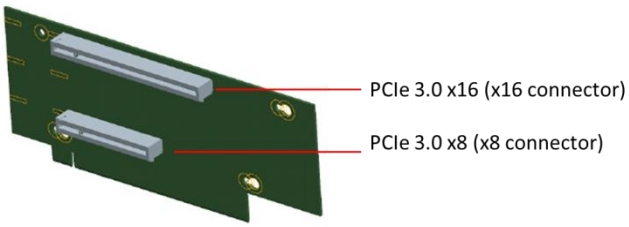




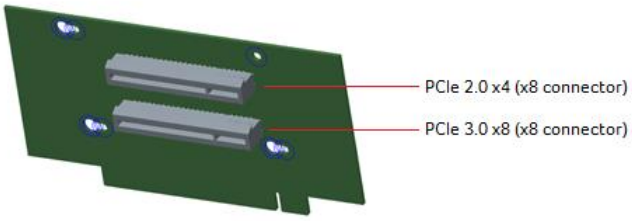
Riser card options below, up to three can be installed

- Riser slots 1 and 2





- Riser slot 3



Onboard storage specifications

Item	Description
Controller	Intel® C612 Platform Controller Hub
Simultaneous drive transfer channels	10 onboard SATA ports • AHCI SATA controller: 4 x SATA ports from the Mini SAS HD connector and 2 x SATA ports on the server board • AHCI sSATA controller: 4 x SATA ports from the Mini SAS HD connector on the server board.
Max throughput per channel	6 Gb/s
Data transfer method	• Non-RAID mode • RAID mode
Drive type supported	Serial ATA
RAID levels support	Default: Intel ESRT2 SATA RAID 0, 1, 5, 10 (RAID 5 requires key) or Intel RSTe software SATA RAID 0, 1, 5, 10 (Windows OS support only)
RAID function support	• Supports multiple logical volumes • Setup through ROM based Array Configuration Utility Installation scripting support
RAID OS support	• Windows Server 2012 R2 • Red Hat Enterprise Linux 6.5 • SuSE Linux Enterprise Server 11
Additional features	• NCQ (Native Command Queuing) • AHCI (Advanced Host Controller Interface)

Onboard LAN specifications

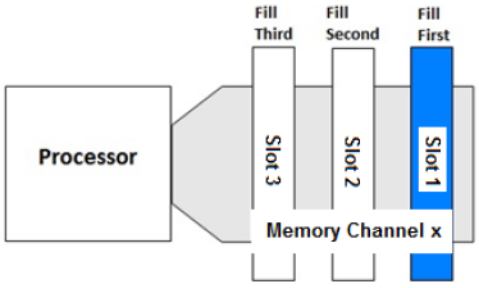
Item	Description
Controller	Dual-port Intel® I350 Ethernet Controller (1GbE) or Dual-port Intel X540 Ethernet Controller (10GbE)
Network interface	10Base-T / 100Base-TX / 1000Base-T / 10GBase-T
Compatibility standards	• IEEE 802.3 Ethernet interface for 10BASE-T • IEEE 802.3ab Ethernet interface for 1000BASE-T • IEEE 802.3u Ethernet interface for 100BASE-TX • IEEE 802.3an Ethernet interface for 10GBASE-T

Item	Description
Manageability	• NC-SI, SMBus • PXE, iSCSI boot
Virtualization acceleration	• Virtual Machine Device Queues (VMDq) • PCI-SIG SR-IOV implementation
Connector	RJ-45
Supported cable type	X540 (10GbE): CAT-6/CAT-6A I350 (1GbE): CAT-5/CAT-5e

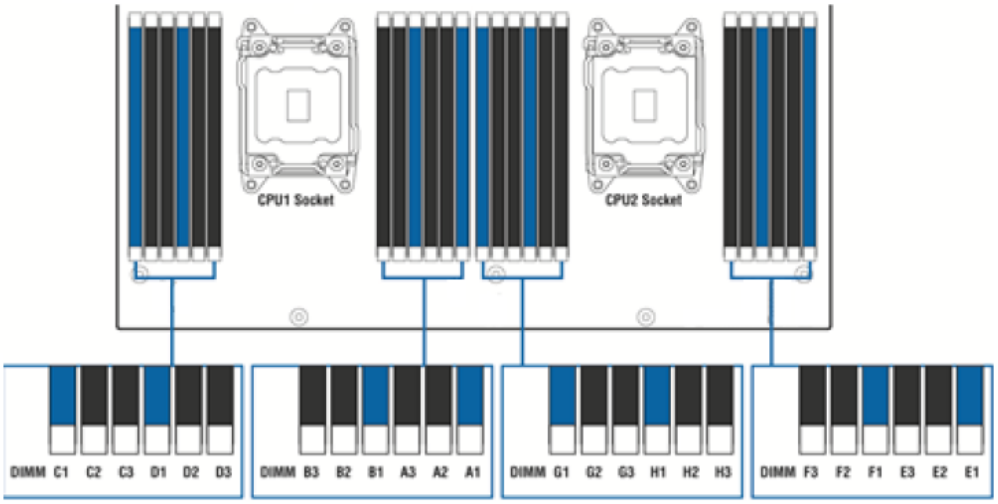
Memory specifications and population

Item	Description
Supported memory types	• Registered DDR4 1600 / 1866 / 2133 MHz • Load Reduced DDR4 1600 / 2133 MHz • ECC-enabled • Integrated on-die thermal sensors (TROD) **NOTE:** Acer does not qualify mixed memory configurations of memory type, capacity or make.
Population	• Farthest fill first rule on any channel (populate blue slot / Slot 1 first) • Install DIMMs in order (CPU-1: Channels A, B, C and D; CPU-2: Channels E, F, G and H) • Only remove DIMM blanks when populating memory in that slot • Maximum of 8 ranks can be installed on any one channel • Do not mix DIMM types (RDIMM or LRDIMM) and frequencies or latencies within or across CPUs Population per CPU by DIMM type listed below. **NOTE**: Support for 16 / 32 / 64 GB DIMMs may vary by regional availability. A CPU must be populated for memory to be read.

Memory support and population



Processor Socket 1												Processor Socket 2											
(0) Channel A			(1) Channel B			(2) Channel C			(3) Channel D			(0) Channel E			(1) Channel F			(2) Channel G			(3) Channel H		
A1	A2	A3	**B1**	B2	B3	**C1**	C2	C3	**D1**	D2	D3	**E1**	E2	E3	**F1**	F2	F3	**G1**	G2	G3	**H1**	H2	H3



Type	Ranks Per DIMM and Data Width	DIMM Capacity (GB)		Speed (MT/s); Voltage (V); Slot per Channel (SPC) and DIMM per Channel (DPC)		
				3 Slots per Channel		
				1 DPC	2 DPC	3 DPC
		4 Gb	8 Gb	1.2V	1.2V	1.2V
RDIMM	SRx4	8GB	16GB	2133	1866	1600
RDIMM	SRx8	4GB	8GB	2133	1866	1600
RDIMM	DRx8	8GB	16GB	2133	1866	1600
RDIMM	DRx4	16GB	32GB	2133	1866	1600
LRDIMM	QRx4	32GB	64GB	2133	2133	1600

Independent mode:

- Also known as performance mode, each DDR channel is addressed individually via burst lengths of 8 bytes.
- All CPUs support SECDED ECC with x8 DRAMs.
- All CPUs support SDDC with x4 DRAMs.

Lockstep mode:

- Also known as RAS mode, each pair of channels shares a Write Push Logic unit to enable lockstep.
- Channels are paired together as a domain. For CPU1, channels A and B, and channels C and D. For CPU2, channels E and F, and channels G and H.
- All CPUs support SDDC with x4 or x8 DRAMs.

Memory RAS mode:

- RAS mode that require matching populations.
- Same slot position across channels must hold the same DIMM type (ranks, banks, rows and column)

Intra-Socket Memory 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 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.

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.

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 2R×4 PC4-14900R xx xx xxx

1. Density
   - 1 GB, 2 GB, 4 GB, 8 GB, 16 GB, 32 GB
2. Rank
   - 1R = Single Rank
   - 2R = Dual Rank
   - 4R = Quad Rank
3. Bit Organization
   - This platform supports ×4 and ×8
   - Note: It's not recommend to mix DIMM with different bit organization in one system
4. Speed
   - PC4 – 12800 => DDR4-1600
   - PC4 – 14900 => DDR4-1866
   - PC4 – 17000 => DDR4-2133

Graphics Specifications

Emulex Pilot-III Server Management Controller
Memory: 16 MB dedicated

Main Features

- Integrated Graphics Core with 2D Hardware accelerator
- DDR-3 memory interface with 16MB memory
- Supports all display resolutions up to 1600 x 1200 16bpp @ 60 Hz
- High speed Integrated 24-bit RAMDAC
- Single lane PCIe host interface running a Gen1 speed

Supported video modes

2D Mode	2D Video Mode Support			
	8 bpp	16 bpp	24 bpp	32 bpp
640x480	X	X	X	X
800x600	X	X	X	X
1024x768	X	X	X	X
1152x864	X	X	X	X
1280x1024	X	X	X	X
1600x1200**	X	X		

Power specifications

750 W / 1100 W AC Platinum-certified power supply

Efficiency

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

Power factor

Output power	10% load	20% load	50% load	100% load
Power factor	>0.65	>0.80	>0.90	>0.95

AC input voltage range

Parameter	Min	rated	Max	Start up Vac	Power off Vac
110 Vac	90 Vrms	100-127 Vrms	140 Vrms	85 Vac ± 4 Vac	75 Vac ± 5 Vac
220 Vac	180 Vrms	200-240 Vrms	264 Vrms		
Frequency	47 Hz	50/60 Hz	63 Hz		

AC line holdup time

	Loading	Holdup time
750 W	70%	12 msec
1100 W	70%	10 msec

AC Line Inrush

Shall not exceed 55 A peak

750 W DC Gold-certified power supply

Efficiency

Loading	100%	50%	20%	10%
Minimum efficiency	88%	92%	88%	80%

DC input voltage

Parameter	Min	Rated	VMax
DC voltage	-40.5 Vdc	-48 Vdc / -60 Vdc	-75 Vdc
Input current	24A		12.5A

DC holdup time

Loading	Holdup time
70%	0.2 msec

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

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

Available options

Processors (up to 2)

Intel® Xeon® processor (Fourteen Core)

- E5-2697 v3 (35 MB L3 cache, 2.6 GHz, DDR4 2133/1866/1600 MHz, 145 W)
- E5-2695 v3 (35 MB L3 cache, 2.3 GHz, DDR4 2133/1866/1600 MHz, 120 W)

Intel® Xeon® processor (Twelve Core)

- E5-2690 v3 (30 MB L3 cache, 2.6 GHz, DDR4 2133/1866/1600 MHz, 135 W)
- E5-2680 v3 (30 MB L3 cache, 2.5 GHz, DDR4 2133/1866/1600 MHz, 120 W)
- E5-2670 v3 (30 MB L3 cache, 2.3 GHz, DDR4 2133/1866/1600 MHz, 120 W)
- E5-2650L v3 (30 MB L3 cache, 1.8 GHz, DDR4 2133/1866/1600 MHz, 65 W)

Intel® Xeon® processor (Ten Core)

- E5-2660 v3 (25 MB L3 cache, 2.6 GHz, DDR4 2133/1866/1600 MHz, 105 W)
- E5-2650 v3 (25 MB L3 cache, 2.3 GHz, DDR4 2133/1866/1600 MHz, 105 W)

Intel® Xeon® processor (Eight Core)

- E5-2640 v3 (20 MB L3 cache, 2.6 GHz, DDR4 1866/1600 MHz, 90 W)
- E5-2630 v3 (20 MB L3 cache, 2.4 GHz, DDR4 1866/1600 MHz, 85 W)
- E5-2630L v3 (20 MB L3 cache, 2.0 GHz, DDR4 1866/1600 MHz, 55 W)

Intel® Xeon® processor (Six Core)

- E5-2643 v3 (20 MB L3 cache, 3.4 GHz, DDR4 2133/1866/1600 MHz, 135 W)
- E5-2620 v3 (15 MB L3 cache, 2.4 GHz, DDR4 1866/1600 MHz, 85 W)
- E5-2609 v3 (15 MB L3 cache, 2.9 GHz, DDR4 1600 MHz, 85 W)
- E5-2603 v3 (15 MB L3 cache, 1.6 GHz, DDR4 1600 MHz, 85 W)

Intel® Xeon® processor (Quad Core)

- E5-2637 v3 (15 MB L3 cache, 3.5 GHz, DDR4 2133/1866/1600 MHz, 135 W)

Memory

Memory type	Registered / Load Reduced DDR4 ECC memory
Capacities	8 / 16 GB DIMMs Registered 32 GB DIMMs Load Reduced
DIMM number	24
Max memory	768GB (LRDIMM) or 384 GB (RDIMM)

Note: 32GB LRDIMM availability may vary by region.

Hard drives

Type	Interface, bandwidth	Capacities (RPM)
Enterprise SATA 3.5”	6 Gb/s	500 GB (7.2K) 1 TB (7.2K) 2 TB (7.2K) 3 TB (7.2K) 4 TB (7.2K) 6 TB (7.2K)
Enterprise SAS 3.5”	6 Gb/s	1 TB (7.2K) 2 TB (7.2K) 3 TB (7.2K) 4 TB (7.2K) 6 TB (7.2K)
Enterprise SAS, 2.5”	6 Gb/s	300 GB (15K) 300 GB (10K) 450 GB (15K) 450 GB (10K) 600 GB (15K) 600 GB (10K) 900 GB (10K) 1.2 TB (10K) 1.8 TB (10K)

Optical drive

Type	Slimline Super-Multi

RAID support upgrades

Model	Port number	RAID support
ESRT2 SW SATA RAID 5 Activation Key Intel® RAID SSD Cache with Fast Path I/O		0, 1, 5, 10
8-port 12Gb SAS RAID Module (LSI 3108 ROC, 1GB DDR3, supports Super-capacitor Module)	8 internal ports	0, 1, 5, 6, 10, 50, 60
4-port 12Gb SAS RAID Module (LSI 3108 ROC, 1GB DDR3, supports Super-capacitor Module)	4 internal ports	0, 1, 5, 6, 10, 50, 60
8-port 12Gb SAS Entry Level RAID Module (LSI 3008)	8 internal ports	0, 1, 1E, 10, JBOD mode
8-port (external) 12Gb SAS RAID Card (LSI 3108 ROC, 1GB DDR3, supports Super-capacitor Module)	8 external ports	0, 1, 5, 6, 10, 50, 60
4-port (internal)/4-port (external) 12Gb SAS RAID Card (LIS 3108 ROC, 1GB DDR3, supports Super-capacitor Module)	4 internal ports + 4 external ports	0, 1, 5, 6, 10, 50, 60
8-port 12Gb SAS RAID Card (LSI 3108 ROC, 1GB DDR3, supports Super-capacitor Module)	8 internal ports	0, 1, 5, 6, 10, 50, 60
4-port 12Gb SAS RAID Card (LSI 3108 ROC, 1GB DDR3, supports Super-capacitor Module)	4 internal ports	0, 1, 5, 6, 10, 50, 60

Ethernet network cards and I/O modules

Model	Port number	Bandwidth
Intel® Ethernet Server Adapter I350-T2	2 (RJ-45)	1 Gb/s
Intel® Ethernet Converged Network Adapter X540-T1	1 (RJ-45)	10 Gb/s
Intel® Ethernet Converged Network Adapter X540-T2	2 (RJ-45)	10 Gb/s
Intel® Ethernet Converged Network Adapter X520-DA2*	2 (SFP+)	10 Gb/s
Intel® Ethernet Converged Network Adapter X520-SR1*	1	10 Gb/s
Intel® Ethernet Converged Network Adapter X520-SR2*	2	10 Gb/s
Intel® Ethernet Converged Network Adapter X520-LR1*	1	10 Gb/s
Ethernet I/O Module Intel® I350-AE4 GbE	4 (RJ-45)	1 Gb/s
Ethernet I/O Module Intel® X540-BT2 10GbE	2 (RJ-45)	10 Gb/s
Intel® 82599EB Ethernet I/O Module	2 (SFP+)	10 Gb/s
Intel® XL710-QDA1 Ethernet I/O Module*	1 (QSFP+)	40 Gb/s
Intel® XL710-QDA2 Ethernet I/O Module*	2 (QSFP+)	40 Gb/s

*__Note__: Intel's 10GbE and 40GbE cards vary in terms of their connector type.
__Note__: All cards marked (I/O module) indicate the card is inserted in the I/O module connector on the node. It does not use the standard PCIe slot

InfiniBand

Model	Port number	Bandwidth
FDR InfiniBand* ConnectX-3* I/O Module (Single Port)	1 (FDR)	56 Gb/s
FDR InfiniBand* ConnectX-3* I/O Module (Dual Port)	2 (FDR)	56 Gb/s

Note: All cards marked (I/O module) indicate the card is inserted in the I/O module connector on the node. It does not use the standard PCIe slot

Management module

Model	Function
Remote Management Module Activation Key	Enables remote iKVM
Local Control Panel	Enhances the manageability

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.

NOTE: Extension warranty services may vary by country. Please contact Acer authorized resellers for more information.