

Avamar Data Store Gen4, Gen4S, and Gen4T

Site Prep Technical Specifications

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REV 15

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CHAPTER 1

Packing Materials

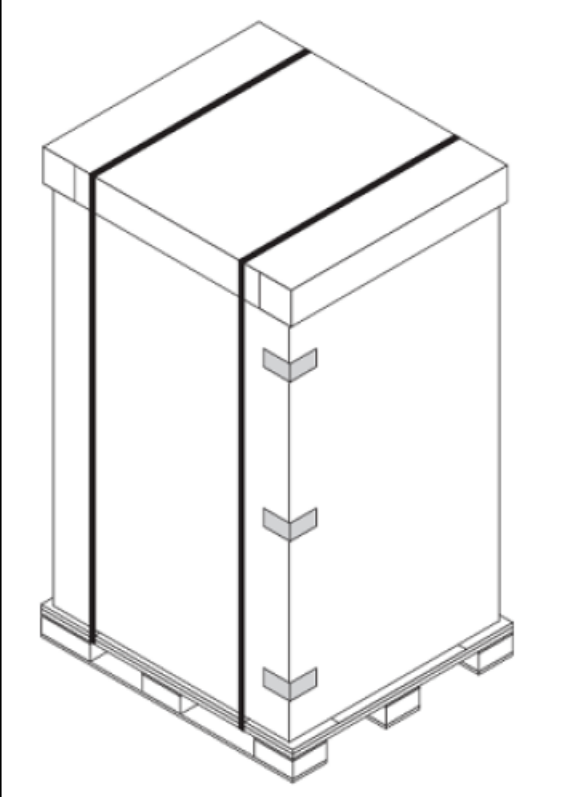


This chapter includes the following topics:

- [Required Tools](#).....6
- [Dimensions and Clearance](#).....7

Required Tools

The following tools are required when receiving an Avamar Data Store (ADS):

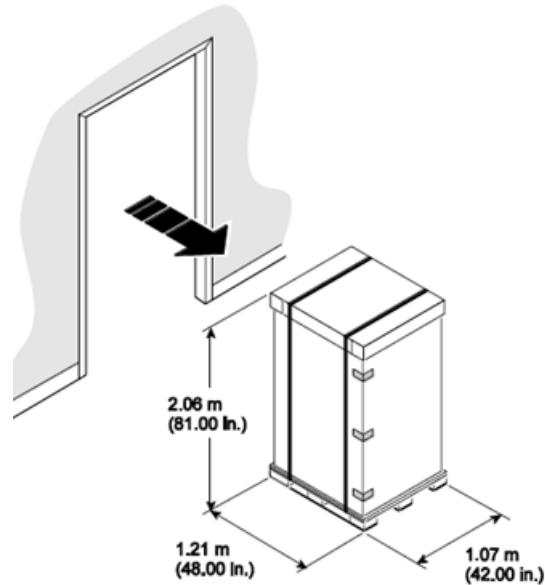
Figure 1 Required Tools

	
	Scissors
	
Mechanical Lift OR Pallet Jack	

Dimensions and Clearance

Make certain that your doorways and elevators are wide enough and tall enough to accommodate the shipping pallet and cabinet.

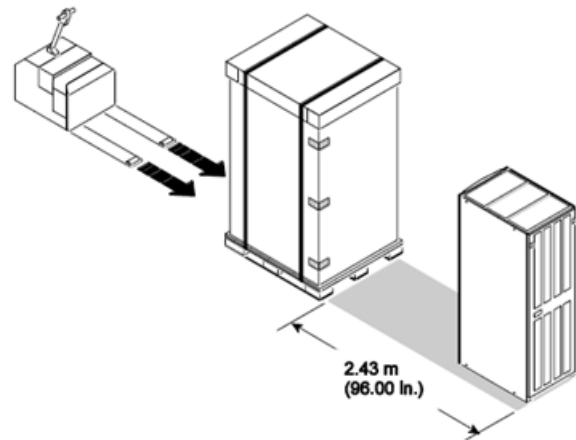
Figure 2 Pallet Dimensions



Use a mechanical lift or pallet jack to position the packaged cabinet in its final location.

Leave approximately 2.43 meters (8 feet) of clearance at the back of the cabinet to unload the unit and roll it off the pallet.

Figure 3 Unloading Clearance



CHAPTER 2

EMC Titan Rack

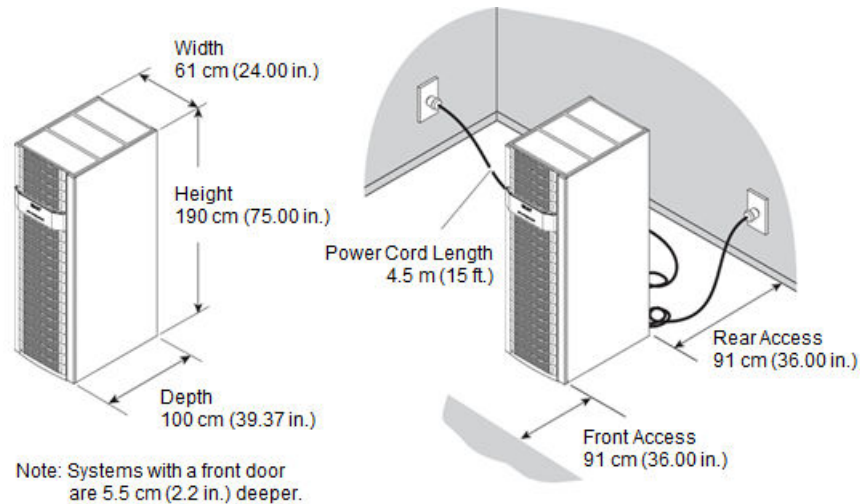
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EMC Titan Rack

This EMC cabinet ventilates from front to back. You must provide adequate clearance to service and cool the system. Depending on component-specific connections within the cabinet, the available power cord length may be somewhat shorter than the 15-foot standard.

Figure 4 Titan Rack Dimensions and Clearances



If you intend to secure the optional stabilizer brackets to the site floor, prepare the location for the mounting bolts. The additional brackets help to prevent the cabinet from tipping while you service cantilevered levels, or from rolling during minor seismic events.

The brackets provide three levels of protection for stabilizing the unit:

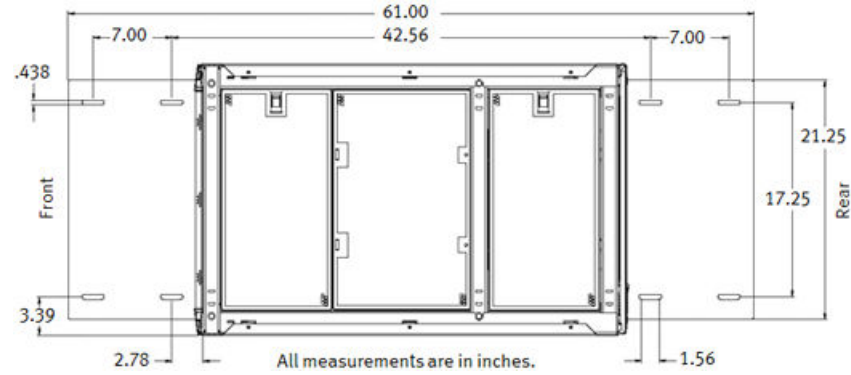
- Anti-tip bracket
- Anti-move bracket
- Seismic restraint bracket

Use the following information to order stabilizing brackets.

Anti-tip bracket

Use the anti-tip bracket to provide an extra measure of anti-tip security. One or two kits may be used. For cabinets with components that slide, EMC recommends that you use two kits.

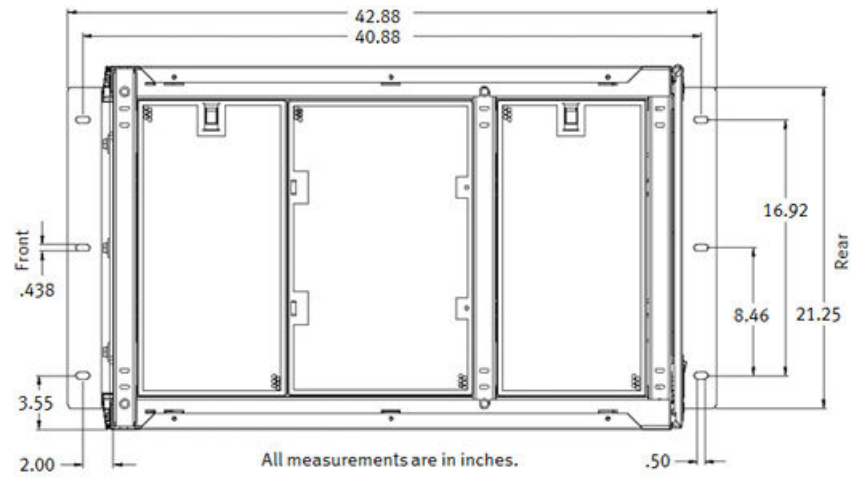
Figure 5 Anti-Tip Bracket



Anti-move bracket

Use the anti-move bracket to fasten the unit to the floor permanently.

Figure 6 Anti-Move Bracket



Seismic restraint bracket

Use the seismic restraint bracket to provide the highest protection from moving or tipping.

Figure 7 Seismic Restraint Bracket

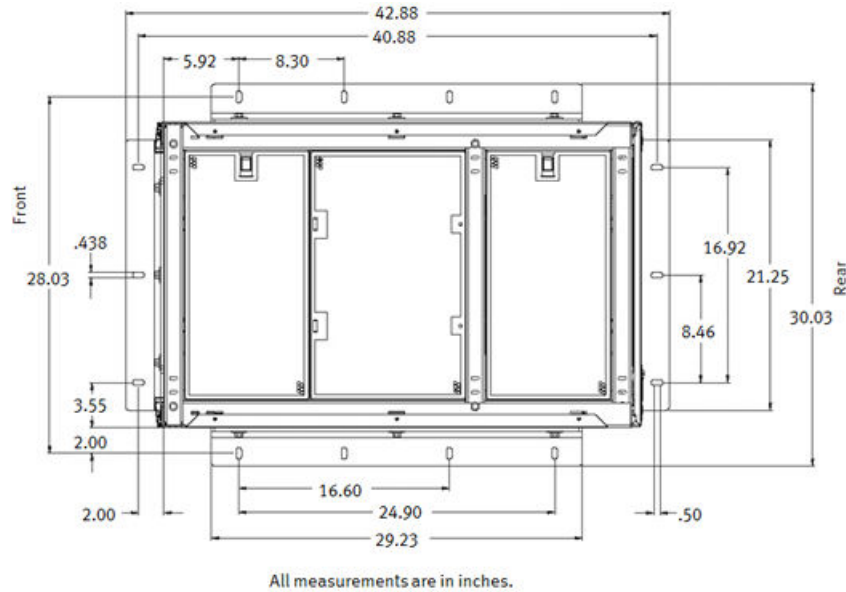


Table 1 Kit Descriptions

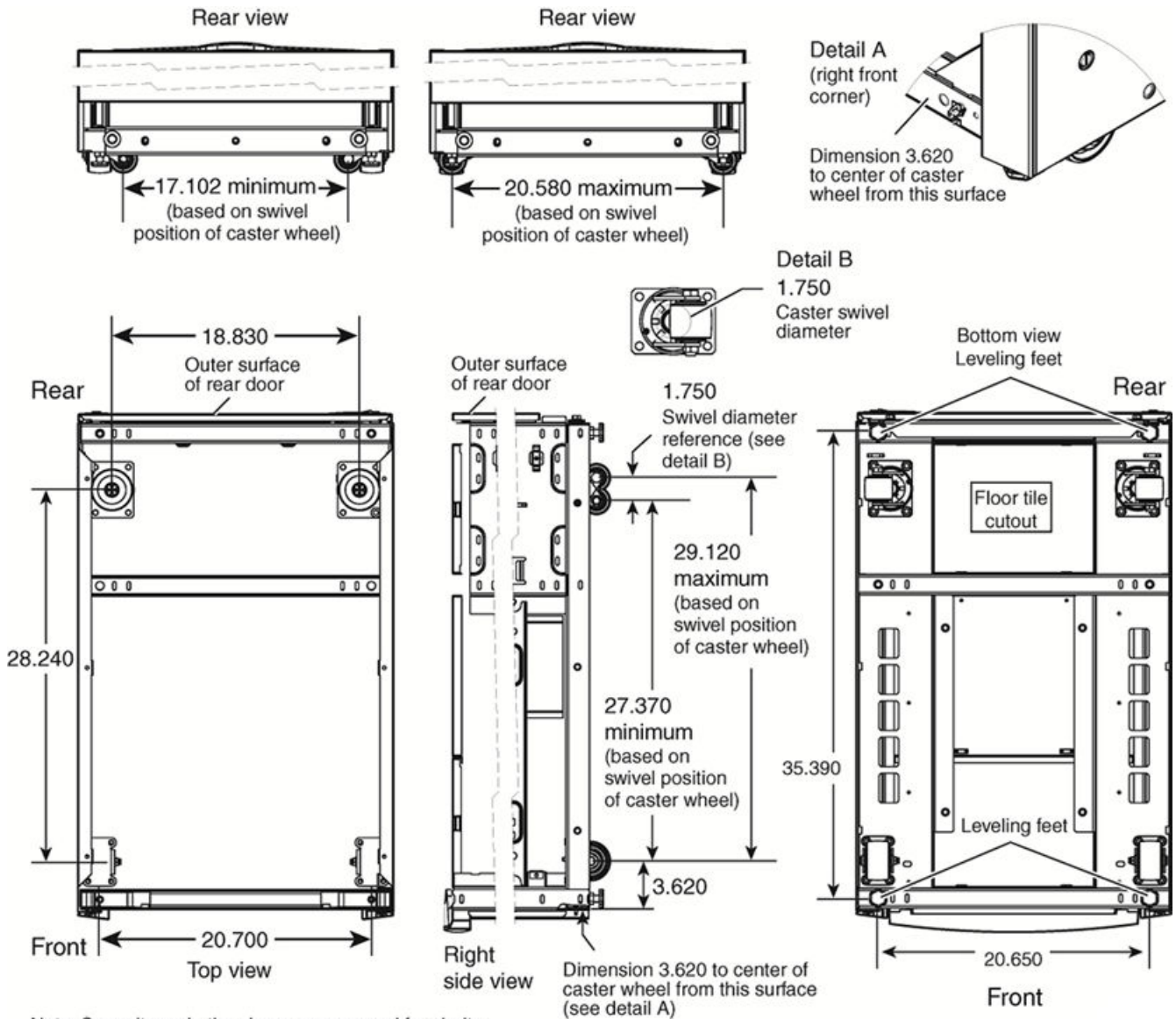
Kit Name	Model Number	Additional Information
Anti-tip kit	AVM-40UC-SECURE1	Order 2/rack
Anti-move kit	AVM-40UC-SECURE2	Order 1/rack
Seismic restraint kit	AVM-40UC-SEISMIC	Order 1/rack

Cabinet

The cabinet bottom includes four caster wheels. The front wheels are fixed while the two rear casters swivel in a 1.75-inch diameter.

The swivel position of the caster wheels determines the load-bearing points on the site floor, but does not affect the cabinet footprint. Once you have positioned, leveled, and stabilized the cabinet, the four leveling feet determine the final load-bearing points on the site floor.

Figure 8 Cabinet Positioning Information



Note: Some items in the views are removed for clarity.
All measurements are in inches.

When the cabinet is centered over two typical 24 in. (60.96 cm) by 24 in. (60.96 cm) floor tiles:

- Cutouts should be 8 in. (20.32 cm) by 6 in. (15.24 cm).
- Cutouts should be centered on the tiles, 9 in. (22.86 cm) from the front and rear and 8 in. (20.32 cm) from the sides.

Rack Notes

Consider the following:

- Frame floor clearance: 1.5"/3.8 cm. minimum
- Levelers: 0.25"/0.64 cm
- Leveler floor clearance: 1.0"/2.5 cm. minimum

- The four leveling legs and the four casters are capable of supporting 2600 lbs/1182 kg total weight at maximum capacity.
- A fully configured cabinet sits on at least two floor tiles. Each floor tile must support 1600 lbs/728 kg.
- The rack shipping package weight is 275 lbs/124.6 kg, which must be added to all equipment weight to determine total shipping weight.

Table 2 EMC Titan Rack Dimensions

Parameter	Dimensions
Pallet dimensions (in./cm)	
• Width	42 / 107
• Length	48 / 121
Rack (in./cm)	
• Height	75 / 190
• Width	24 / 61
• Depth	39.37 / 100
Rack weight (lb/kg)	
• Empty	409 / 185.5
• Installed maximum	Up to 2600 / 1182
Service area (in./cm)	
• Front	36 / 91
• Rear	36 / 91
• Top	18 / 45.7
Raised floor	Not required

Single-Phase Power

For each customer's installation configuration, use the individual model values on the following pages or the EMC Power Calculator (<http://PowerCalculator.emc.com>) to calculate the power and thermal dissipation details for the specific Avamar configuration.

For high availability (HA), the left and right sides of the cabinet must receive power from separate branch feed circuits. The outlet plug pattern balances power systems in the cabinet between the two HA power distribution systems. It also balances power draw between the branches within each HA power distribution system. Do not modify the outlet plug pattern.

Power Specifications

The following specifications apply to single-phase powered cabinets:

Table 3 Single-Phase Power Specifications

Parameter	Value	
	N. America / Japan	International
Maximum power consumption per cabinet	5,945 VA	
Maximum heat dissipation per cabinet	18,892 BTU/hr	
Input voltage	200–240 V _{AC}	220–240 V _{AC}
Frequency	50–60 Hz	
Branch circuits per cabinet	4x 30A	4x 32A
User-supplied power receptacle ^a	<ul style="list-style-type: none"> • L6-30R or • RS 9C33U0 	<ul style="list-style-type: none"> • IEC-309-332R6 (International) ^b • IEC 60309-332C6W (International) ^c • Clipsal 56CSC332 (Australia/NZ)
	Quantity 4/cabinet	Quantity 4/cabinet
EMC rack power cord plug	<ul style="list-style-type: none"> • L6-30P or • RS 3750DP 	<ul style="list-style-type: none"> • IEC-309-332P6 (International) ^b • IEC 60309-332P6W (International) ^c • Clipsal 56PA332 Right Angle (Australia/NZ)
	Quantity 4/cabinet	Quantity 4/cabinet

- a. For mating connectors, equivalent models other than the brand specified here may be supplied from the user's vendor of choice, provided the mating connector matches the physical and electrical specifications of the power cord plug.
- b. Gen4 and Gen4S only

Table 3 Single-Phase Power Specifications (continued)

c. Gen4T only

For single-phase power, ADS cabinets are configured with two HA power distribution systems. Each HA power distribution system consists of a pair of power distribution units (PDUs) connected to separate branch circuits, for a total requirement of four branch circuits per cabinet. This arrangement is called a PWR4 configuration.

If you are certain that the total power draw of the cabinet does not exceed 4800 VA, you may power the cabinet using a single HA power distribution system, for a total requirement of two branch circuits per cabinet. This arrangement is called a PWR2 configuration.

Instructions for converting between the PWR4 and PWR2 configurations are provided on the following pages. After you complete this task, care must be taken to evaluate the system power requirements before any upgrade, expansion, or node replacement activities. If the new system power requirements exceed the 4800 VA limit, you must convert the cabinet back to a PWR4 configuration before continuing with the activity.

If you do not have the required cables, contact EMC to make appropriate arrangements.

For Gen4T systems, the following table provides general guidance on the maximum number of active storage nodes supported by a PWR2 configuration. The table assumes that the multi-node server contains one utility node and one inactive spare storage node.

Table 4 PWR2 Configuration

Node type	Maximum number of active Gen4T storage nodes
M2400	12
M1200	15
M600	16

Power Cords and Connectors

Power cords and connectors depend on the type that are ordered with the system, and must match the supply receptacles at the site.

Table 5 Single-Phase Power Cord Connectors






Power cord connector	Operating voltage and frequency	Service type	Site
 NEMA L6-30P	<ul style="list-style-type: none"> 200–240 V_{AC} 50/60 Hz 	30-amp service	<ul style="list-style-type: none"> North America Japan

Table 5 Single-Phase Power Cord Connectors (continued)

Power cord connector	Operating voltage and frequency	Service type	Site
 RS 3750DP	<ul style="list-style-type: none"> • 200–240 V_{AC} • 50/60 Hz 	30-amp service	<ul style="list-style-type: none"> • North America • Japan
 IEC-309-332P6	<ul style="list-style-type: none"> • 220–240 V_{AC} • 50/60 Hz 	32-amp service	International
 IEC 60309-332P6W	<ul style="list-style-type: none"> • 220–240 V_{AC} • 50/60 Hz 	32-amp service	International
 56PA332 right angle	<ul style="list-style-type: none"> • 240 V_{AC} • 50/60 Hz 	32-amp service	<ul style="list-style-type: none"> • Australia • NZ

Converting between PWR4 and PWR2 configurations (Gen4/Gen4S)

Procedure

- To convert a PWR4 configuration to a PWR2 configuration, complete the following substeps:
 - Disconnect the upper PDUs from the upper power distribution panels (PDPs).
 - Connect the upper PDUs to the lower PDPs.
 - Retain the unused set of power cables.
- To convert a PWR2 configuration to a PWR4 configuration, complete the following substeps:
 - Disconnect the upper PDUs from the lower PDPs.
 - Connect the upper PDUs to the upper PDPs.
 - Using the retained power cables, connect the upper PDPs to additional branch circuits.

Converting between PWR4 and PWR2 configurations (Gen4T)

Before you begin

NOTICE

Each upper and lower PDU contains one jumper cable between the J1 and P2 connectors on the top and bottom halves of the PDU (a total of four). Do not remove these jumper cables.

Converting to a PWR2 configuration requires two additional jumper cables. If you do not have these additional jumper cables, order two of model number **AVM-P-XC-CBLJUMP-1**.

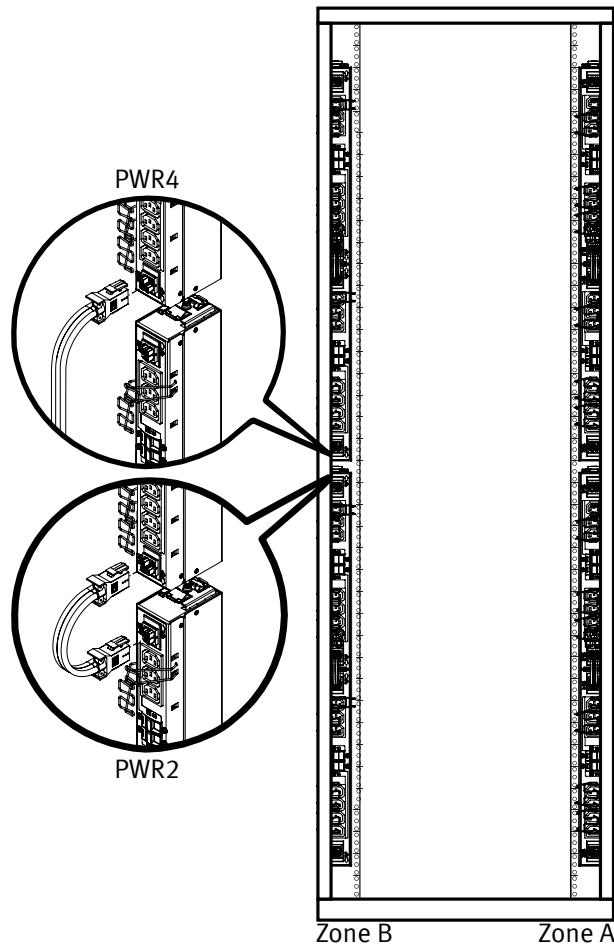
The individual jumper cables are labeled with EMC part number 038-004-186. Model number **AVM-P-XC-CBLJUMP-1** includes one jumper cable.

Procedure

1. To convert a PWR4 configuration to a PWR2 configuration, complete the following substeps:
 - a. Disconnect the branch circuit cables from the upper left and upper right PDUs.

Retain the unused set of branch circuit cables for future use.
 - b. Install the jumper cables to connect each upper PDU to the corresponding lower PDU.

Figure 9 Installing jumper cables



2. To convert a PWR2 configuration to a PWR4 configuration, complete the following substeps:
 - a. Locate the unused set of branch circuit cables.
 - b. Remove the jumper cables that connect each upper PDU to the corresponding lower PDU.
Retain the jumper cables for future use.
 - c. Connect the branch circuit cables to the upper left and upper right PDUs, and to additional branch circuits.

Three-Phase Power

For HA, the left and right sides of the cabinet must receive power from separate branch feed circuits. Depending on the configuration, an imbalance of AC input currents may exist on the three-phase power source feeding the cabinet. The customer's electrician must be alerted to this possible condition to balance the phase-by-phase loading conditions within the customer's data center.

For each customer's installation configuration, use the individual model values on the following pages or the EMC Power Calculator (<http://PowerCalculator.emc.com>) to

calculate the power and thermal dissipation details for the specific Avamar configuration.

Power Specifications

The following specifications apply to three-phase powered cabinets:

Table 6 Three-Phase Power Specifications





Parameter	Value	
	Wye	Delta
Maximum power consumption per cabinet	5,945 VA	
Maximum heat dissipation per cabinet	18,892 BTU/hr	
Input voltage	220–240 V _{AC}	200–240 V _{AC}
Frequency	50–60 Hz	
Connection	5-wire connection (3L+N+G)	4-wire connection (3L+G)
Branch circuits per cabinet	2x 32A	2x 50A
User-supplied power receptacle ^a	<ul style="list-style-type: none"> • Hubbell C530C6S • ABL Sursum K52S30A 	<ul style="list-style-type: none"> • Hubbell CS-8364L • RS 9C54U2
	Quantity 2/cabinet	Quantity 2/cabinet
EMC rack power cord plug	<ul style="list-style-type: none"> • Hubbell C530P6S • ABL Sursum S52S30A • Flying leads 	<ul style="list-style-type: none"> • Hubbell CS-8365L • RS 9P54U2
	Quantity 2/cabinet	Quantity 2/cabinet

- a. For mating connectors, equivalent models other than the brand specified here may be supplied from the user's vendor of choice, provided the mating connector matches the physical and electrical specifications of the power cord plug.

Power Cords and Connectors

Power cords and connectors depend on the type that are ordered with the system, and must match the supply receptacles at the site.

Table 7 Three-Phase Power Cord Connectors

Power cord connector	Operating voltage and frequency	Service type
 Hubbell C530P6S	<ul style="list-style-type: none"> • 220–240 V_{AC} • 50/60 Hz 	Wye
 ABL Sursum S52S30A	<ul style="list-style-type: none"> • 220–240 V_{AC} • 50/60 Hz 	Wye
 Hubbell CS-8365L	<ul style="list-style-type: none"> • 200–240 V_{AC} • 50/60 Hz 	Delta
 RS 9P54U2	<ul style="list-style-type: none"> • 200–240 V_{AC} • 50/60 Hz 	Delta

CHAPTER 3

Avamar Server

This chapter includes the following topics:

- [Regulatory Specifications](#)..... 24
- [Environmental Specifications](#)..... 24
- [Individual Comm Module and Server Specifications](#)..... 26

Regulatory Specifications

Table 8 Applicable Regulatory Specifications

Type	Specification
Regulatory models	The Avamar system components are separate enclosures in separate sales models.
	All stand-alone enclosures have been tested and certified for compliance with the international environmental and safety specifications listed below. Each enclosure is marked to indicate such compliance and certification as required.
Safety agency compliance/certifications	<ul style="list-style-type: none"> • CSA 22.2 60950-1 2nd Edition – Safety of Information Technology Equipment • EN 60950-1 2nd Edition – Safety of Information Technology Equipment, including electrical business equipment • UL 60950-1 2nd Edition – Safety of Information Technology Equipment, including electrical business equipment • IEC 60950-1 2nd Edition – Safety of Information Technology Equipment
EMI/EMS compliance/certifications standards	<ul style="list-style-type: none"> • FCC Part 15 Class A, Radio Frequency Device Requirements • ICES-003 Class A, Interference-Causing Equipments Standard Digital Apparatus • CE Marking, European EMC Directive • VCCI Class A, Voluntary Control Council for Interference • AS/NZS CISPR22 Class A, Electromagnetic Interference – Limits & Methods of Measurement of ITE • CNS13438 - BSMI EMC Requirements • KCC - RRA EMC

Environmental Specifications

Table 9 Applicable Environmental Specifications

Parameter	Specification Limits
Service area (in./cm)	
<ul style="list-style-type: none"> • Front • Rear • Top 	<p>36 / 91</p> <p>36 / 91</p> <p>18 / 45.7</p>
Humidity, operational and non-condensing	20–80% worst case

Table 9 Applicable Environmental Specifications (continued)

Parameter	Specification Limits
	40–55% recommended
Humidity, non-operational and non-condensing	10–90% worst case
Altitude (ft/m) max, operational	10,000 / 3,000
Altitude (ft/m) max, non-operational	25,000 / 7,600
Temperature, operational (°F/°C)	50–95 / 10–35 The ambient temperature specification is measured at the front bezel inlet. The site must have air conditioning of the correct size and placement to maintain the specified ambient temperature range. The air conditioning must be able to handle the BTU requirements of the ADS systems.
Temperature, non-operational (°F/°C)	-40–149 / -40–65
Acoustic noise level	See the EMC Power Calculator at http://PowerCalculator.emc.com for all details of your specific Avamar system configuration.

Air Quality Requirements

EMC products are designed to be consistent with the requirements of the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) Environmental Standard Handbook and the most current revision of Thermal Guidelines for Data Processing Environments, Second Edition, ASHRAE 2009b.

Some systems are best suited for Class 1 datacom environments, which consist of tightly controlled environmental parameters, including temperature, dew point, relative humidity, and air quality. These facilities house mission-critical equipment and are typically fault-tolerant, including the air conditioners.

The data center should maintain a cleanliness level as identified in ISO 14664-1, Class 8 for particulate dust and pollution control. The air entering the data center should be filtered with a MERV 11 filter or better. The air within the data center should be continuously filtered with a MERV 8 or better filtration system. Also, efforts should be maintained to prevent conductive particles, such as zinc whiskers, from entering the facility.

The allowable relative humidity level is 20–80% non-condensing. However, the recommended operating environment range is 40–55%. For data centers with gaseous contamination, such as high sulfur content, lower temperatures and humidity are recommended to minimize the risk of hardware corrosion and degradation. In general, the humidity fluctuations within the data center should be minimized. EMC also recommends that the data center be positively pressured and have air curtains on entry ways to prevent outside air contaminants and humidity from entering the facility.

For facilities below 40% relative humidity, EMC recommends grounding straps when contacting the equipment to avoid the risk of electrostatic discharge (ESD), which can harm electronic equipment.

As part of an ongoing monitoring process for the corrosiveness of the environment, EMC recommends copper and silver coupons (per ISA 71.04–1985, Section 6.1 Reactivity), placed in air streams representative of the data center. The monthly reactivity rate of the coupons should be less than 300 Angstroms. When monitored reactivity rate exceeds recommended levels, the coupon should be analyzed for material species and a corrective mitigation process put in place.

Individual Comm Module and Server Specifications

Table 10 ADS Gen4 – Individual Comm Module and Server Specifications

Model Specifications (Notes 1, 2, 3, 4, & 7)	7.8TB Storage Node	Media Access Node	1.3TB Storage Node	2.6TB Storage Node	3.9TB Storage Node	Utility & Small Accelerator Node	Large Accelerator Node	Comms Complex (Note 5)
Model names	AVM1NSTG7FG4 AVM1NSTG7MG4	AVM1NMAFG4 (Note 8)	AVM1NSTG1FG4	AVM1NSTG2FG4	AVM1NSTG3FG4 AVM1NSTG3MG4	AVM1NUTILFG4 AVM1NUTILMG4	AVM1NLGACCFG4	(2 × AVMSWITCHG4) + AVMSWKITG4
Pallet width (in/cm)	24.63 / 62.5	24.63 / 62.5	24.38 / 62	24.38 / 62	24.38 / 62	24.38 / 62	24.38 / 62	n/a
Pallet length (in/cm)	37.88 / 96.2	37.88 / 96.2	36.25 / 92.1	36.25 / 92.1	36.25 / 92.1	36.25 / 92.1	36.25 / 92.1	n/a
Pallet height (in/cm)	12.88 / 32.7	12.88 / 32.7	12.63 / 32.1	12.63 / 32.1	12.63 / 32.1	12.63 / 32.1	12.63 / 32.1	n/a
Height (Rack units - U)	2U	2U	2U	2U	2U	2U	2U	3U
Depth (in/cm)	26.8 / 68.1	26.8 / 68.1	26.8 / 68.1	26.8 / 68.1	26.8 / 68.1	26.8 / 68.1	26.8 / 68.1	10.0 / 25.4
Weight (lb/kg) ^a	62 / 28.2	62 / 28.2	54.85 / 25.7	58.8 / 26.7	62.75 / 28.5	54.85 / 24.9	56.5 / 25.7	24.1 / 11.1
Input voltage (V _{AC})	100–240							
Frequency (Hz)	50–60							
Current @100V _{AC} (A _{rms}) ^b	3.0	3.4	2.0	2.3	2.6	1.7	3.1	0.88
Current @200V _{AC} (A _{rms})	1.5	1.7	1.0	1.15	1.3	0.85	1.55	0.44
Power consumption (VA)	300	340	200	230	260	170	310	88
Thermal dissipation (BTU/hr)	960	1090	670	760	860	540	1,050	180
IEC 320-C13 power outlets for HA	2							

Table 10 ADS Gen4 – Individual Comm Module and Server Specifications (continued)

Model Specifications (Notes 1, 2, 3, 4, & 7)	7.8TB Storage Node	Media Access Node	1.3TB Storage Node	2.6TB Storage Node	3.9TB Storage Node	Utility & Small Accelerator Node	Large Accelerator Node	Comms Complex (Note 5)
In-rush/surge current	Under typical line conditions and over the entire system ambient operating range, the inrush current may reach 55 A per power supply for 10 ms or less							Surge current max 1 A (safety)
EMC universal 4-post rack rail kits (Note 4)	Qty 1: 100-580-079 or 100-563-392		Qty 1: 100-580-076				Full install kit Qty 1: 106-580-013 Rail kit only Qty 1: 100-580-529	
Telco rail kits (Note 6)	Not Available		Qty 1: 106-562-045 for field install in 19 in. 2-post racks - not NEBS compliant				Qty 1: 100-580-597	

- a. Listed weight is for server or comm complex including comm modules, rails, bezel, and cabling in the models as applicable.
- b. Operating maximum numbers. See the EMC Power Calculator at <http://PowerCalculator.emc.com> for all details of your specific Avamar system configuration.

Gen4 Notes:

1. Field models (end in "FG4") drop ship from integrator with complete install kits that include rails, power cords, and so forth.
2. Field models ship with IEC 320 data center rack power cords.
3. If the customer wants to plug servers and comm modules directly into 110 V_{AC} wall plugs, geography-specific wall-to-unit power cords may be purchased through EMC to replace the standard 200–240 V_{AC} EMC rack power cords.

EMC rack power distribution does not support 100–120 V_{AC} distribution, only 200–240 V_{AC} distribution.

If the customer wants 110 V_{AC} power distribution, the customer must take responsibility to purchase and manage the third party power distribution. In this case, the salesperson must order one wall power cord model of the correct type from the correct geography for each server and comm module.

Wall power cords and other option models may ship from EMC manufacturing while the server drop ships from the integrator. Orders must have the appropriate flags checked to "ship complete" and "merge in transit" if all deliverables are to arrive at the customer simultaneously.

4. For the 7.8TB node, ADS Gen4 uses a universal rail kit for field or factory install. Rack rail snaps to rack. Server rail snaps to server. Server snaps into rack. One safety shipping screw in the front (captive) and back per rail. For all other nodes, ADS Gen4 uses a different universal rail kit for field or factory install.

Rack rail snaps to rack. Server rail snaps to server. Server snaps into rack. One safety shipping screw (captive) in the front per rail. Rail kits support round or square hole NEMA rails. The 4-post rack may be EMC Titan or a customer 4-post rack that is compliant with EIA RS310 for 19 in. rackmount equipment. Mounting holes must be either 0.281 in. in diameter or 0.375 sq. non-tapped.

Rail depth supported from 18–34 in. A 2 in. clearance for product bezels required in front of EIA rails and 30 in. clearance required behind front EIA rails for EMC equipment and cable routing. Inlet and exhaust areas of EMC equipment should not be restricted. Any panels or doors in front of them should have at least 50% open area.

5. Each server requires two comm modules (2 × AVMSWITCHG4) and one 3U comm module install kit (AVMSWKITG4). Install kit has an optional 1U filler to close off the odd U space.
6. The 2-post Telco rack must be 19 in. There are no Telco rails for the 7.8TB node (too heavy). Avamar Telco options kits are shipped in addition to standard install kits. Avamar Telco mounting option kits are not NEBS compliant.
7. All storage capacities that are listed in the node names are approximate values.
8. Fibre Channel cables are not included with the Media Access Node model. Customer must have them available at the time of the implementation at the customer site.

Table 11 ADS Gen4S – Individual Comm Module and Server Specifications

Model Specifications (Notes 1, 2, 3)	M2400 Storage Node	M1200 Storage Node	M600 Storage Node	S2400/Avamar Business Edition	Media Access Node (Notes 5, 6)	Utility Node	Accelerator Nodes	Comms Complex (Note 4)
Server part numbers and comms complex models	100-580-642-xx 100-580-742-xx	100-580-643-xx 100-580-743-xx	100-580-644-xx 100-580-744-xx	100-580-682-xx 100-580-782-xx	100-580-646-xx 100-580-746-xx	100-580-640-xx 100-580-740-xx	100-580-641-xx 100-580-741-xx 100-580-841-xx	2 x AVMCOMG4S + 1 x AVMCOMKITG4S
Pallet width (in/cm)	23.625 / 60	23.625 / 60	23.625 / 60	23.625 / 60	23.625 / 60	23.625 / 60	23.625 / 60	n/a
Pallet length (in/cm)	38.5 / 97.8	38.5 / 97.8	38.5 / 97.8	38.5 / 97.8	38.5 / 97.8	37.5 / 95.25	37.5 / 95.25	n/a
Pallet height (in/cm)	12.625 / 32.07	12.625 / 32.07	12.625 / 32.07	12.625 / 32.07	12.625 / 32.07	10.875 / 27.62	10.875 / 27.62	n/a
Height (Rack units - U)	2U	2U	2U	2U	2U	1U	1U	3U
Depth (in/cm)	27.87 / 70.78	27.87 / 70.78	27.87 / 70.78	27.87 / 70.78	27.87 / 70.78	27.93 / 70.94	27.93 / 70.94	10.0 / 25.4
Weight (lb/kg) ^a	65 / 29.5	53 / 24.1	50 / 22.7	57 / 25.9	66 / 30	41 / 18.6	40 / 18.2	24.1 / 11.1
Input voltage (V _{AC})	100–240							
Frequency (Hz)	50–60							
Current @100V _{AC} (A _{rms}) ^b	2.9	2.3	1.9	2.35	2.95	1.25	2.05	0.88
Current @200V _{AC} (A _{rms})	1.45	1.15	0.95	1.18	1.48	0.63	1.03	0.44
Power consumption (VA)	290	230	190	235	295	125	205	88
Thermal dissipation (BTU/hr)	990	790	650	810	1010	430	700	180
IEC 320-C13 power outlets for HA	2							

Table 11 ADS Gen4S – Individual Comm Module and Server Specifications (continued)

Model Specifications (Notes 1, 2, 3)	M2400 Storage Node	M1200 Storage Node	M600 Storage Node	S2400/Avamar Business Edition	Media Access Node (Notes 5, 6)	Utility Node	Accelerator Nodes	Comms Complex (Note 4)
In-rush/surge current	Under typical line conditions and over the entire system ambient operating range, the inrush current may reach 55 A per power supply for 10 ms or less							Surge current max 1 A (safety)
EMC universal 4-post rack rail kits (Note 3)	Qty 1: 100-564-319 or 100-564-117							Full install kit Qty 1: 106-580-017 Rail kit only Qty 1: 100-580-529
Telco rail kits	Not Available							Qty 1: 100-580-597

- a. Listed weight is for server or comm complex including comm modules, rails, bezel, and cabling in the models as applicable.
- b. Operating maximum numbers. See the EMC Power Calculator at <http://PowerCalculator.emc.com> for all details of your specific Avamar system configuration.

Gen4S Notes:

1. Field install units ship with IEC 320 data center rack power cords.
2. If the customer wants to plug servers and comm modules directly into 110 V_{AC} wall plugs, geography-specific wall-to-unit power cords may be purchased through EMC to replace the standard 200–240 V_{AC} EMC rack power cords.

EMC rack power distribution does not support 100–120 V_{AC} distribution, only 200–240 V_{AC} distribution.

If the customer wants 110 V_{AC} power distribution, the customer must take responsibility to purchase and manage the third party power distribution. In this case, salesperson must order one wall power cord model of the correct type from the correct geography for each server and comm module.

Wall power cords and other option models may ship from EMC manufacturing while the server drop ships from the integrator. Orders must have the appropriate flags checked to "ship complete" and "merge in transit" if all deliverables are to arrive at the customer simultaneously.

3. ADS Gen4S uses a universal rail kit for field or factory install for 1U or 2U servers. Rack rail snaps to rack. Server rail snaps to server. Server snaps into rack. One safety shipping screw in the front and in the back per rail.

Rail kits support round or square hole NEMA rails. The 4-post rack may be EMC Titan or a customer 4-post rack that is compliant with EIA RS310 for 19 in. rackmount equipment. Mounting holes must be either 0.281 in. in diameter or 0.375 sq. non-tapped.

Rail depth supported 18–34 in. A 2 in. clearance for product bezels required in front of EIA rails and 30 in. clearance required behind front EIA rails for EMC equipment and cable routing.

Inlet and exhaust areas of EMC equipment should not be restricted. Any panels or doors in front of them should have at least 50% open area.

4. Each server requires two comm modules (2 x AVMCOMG4S) and one 3U comm module install kit (AVMCOMKITG4S).
5. Fibre Channel cables are not included with the Media Access Node model. Customer must have them available at the time of the implementation at the customer site.
6. Media Access Nodes support 1 GbE (RJ45) or 10 GbE (SFP+ SR or LR optical or Twinax). 10 GbE does not include SFP+ GBICs or cabling.

Only Intel supported GBICs or Twinax cables are supported as reference sell. For more information, reference <http://www.intel.com/support/network/adapter/pro100/sb/CS-030612.htm> using the BDTA product code.

Table 12 ADS Gen4T – Individual Comm Module and Server Specifications

Model Specifications (Notes 1, 2, 3, 4)	M2400 Storage Node	M1200 Storage Node	M600 Storage Node	S2400/Avamar Business Edition	Utility Node	Accelerator Node	Comms Complex (Note 5)
Server part numbers and comms complex models	100-580-203-02	100-580-202-01	100-580-207-02	100-580-208-05	100-580-201-01	100-580-205-01	2x (AVMCOMG4TM or AVMCOMG4TF) + AVMCOMKIT4T
Pallet width (in/cm)	31.5 / 80	31.5 / 80	31.5 / 80	31.5 / 80	31.5 / 80	31.5 / 80	n/a
Pallet length (in/cm)	40 / 101.6	40 / 101.6	40 / 101.6	40 / 101.6	40 / 101.6	40 / 101.6	n/a
Pallet height (in/cm)	19.25 / 48.9	19.25 / 48.9	19.25 / 48.9	19.25 / 48.9	19.25 / 48.9	19.25 / 48.9	n/a
Height (Rack units - U)	2U	2U	2U	2U	2U	2U	3U
Depth (in/cm)	34.5 / 87.7	34.5 / 87.7	34.5 / 87.7	34.5 / 87.7	34.5 / 87.7	34.5 / 87.7	10.0 / 25.4
Weight (lb/kg) ^a	80 / 36.4	71 / 32.3	68 / 30.9	74 / 50.5	65 / 29.5	65 / 29.5	24.1 / 11.1
Input voltage (V _{AC})	100–240						
Frequency (Hz)	50–60						
Current @100V _{AC} (A _{rms}) ^b	3.34	2.73	2.55	2.96	2.37	2.44	0.94
Current @200V _{AC} (A _{rms}) ^b	1.67	1.37	1.28	1.48	1.19	1.22	0.47
Power consumption (VA) ^b	334	273	255	296	237	244	94
Thermal dissipation (BTU/hr) ^b	1061	846	781	928	716	737	143
IEC 320-C13 power outlets for HA	2						
In-rush/surge current	Under typical line conditions and over the entire system ambient operating range, the inrush current may reach 30 A per power supply for 10 ms or less						Surge current max 1 A (safety)
EMC universal 4-post rack rail kits (Note 3)	Qty 1: 150-011-027						Full install kit Qty 1: AVMCOMKIT4T Rail kit only Qty 1: 106-580-027-00
Telco rail kits	Not Available						Qty 1: 100-580-597

a. Listed weight is for server or comm complex including comm modules, rails, bezel, and cabling in the models as applicable.

b. Operating maximum numbers. See the EMC Power Calculator at <http://PowerCalculator.emc.com> for all details of your specific Avamar system configuration.

Gen4T Notes:

1. Field install units ship with IEC 320 data center rack power cords.
2. If the customer wants to plug servers and comm modules directly into 110 V_{AC} wall plugs, geography-specific wall-to-unit power cords may be purchased through EMC to replace the standard 200–240 V_{AC} EMC rack power cords.

EMC rack power distribution does not support 100–120 V_{AC} distribution, only 200–240 V_{AC} distribution.

If the customer wants 110 V_{AC} power distribution, the customer must take responsibility to purchase and manage the third party power distribution. In this case, the salesperson must order one wall power cord model of the correct type from the correct geography for each server and comm module.

Wall power cords and other option models may ship from EMC manufacturing while the server drop ships from the integrator. Orders must have the appropriate flags checked to "ship complete" and "merge in transit" if all deliverables are to arrive at the customer simultaneously.

3. ADS Gen4T uses a universal rail kit for field or factory install for all nodes. The 4-post rack may be EMC Titan or a customer 4-post rack that is compliant with the EIA-320D standard for 19 in. rackmount equipment. The rail kit fits the following EIA rail mounting holes: 0.375 in. square holes, 7.1 mm diameter holes, M5 threaded holes, M6 threaded holes, 12-24 threaded holes, and 10-32 threaded holes.

Both the front and the rear ends of the rail kit contain threaded posts that include installed caps. The caps fit square and round hole unthreaded racks. The rail kit caps are removed from the front and rear ends of the rail kit to support threaded racks. Large flat-headed M4 screws are installed through the rail into the rail kit to secure the rail kit to the rack.

The rail kit accommodates rail depths of 23.75–36 in. as measured from the mounting surfaces of the rails. A 2 in. clearance for product bezels is required in front of the rails and a 34 in. clearance is required behind the front EIA rails for EMC equipment and cable routing.

Inlet and exhaust areas of EMC equipment should not be restricted. Any panels or doors in front of them should have at least 50% open area.

4. All nodes support 10 GbE (RJ45 or SFP+ optical/Twinax), depending on the type of SLIC installed.
5. Each server requires two comm modules (2 × AVMCOMG4T) and one 3U comm module install kit (AVMCOMKITG4T).