

5350/Flex Appliance Pre-Deployment Requirements

This document provides details that will assist with the completion of the Veritas Appliance Services Pre-Deployment Questionnaire (PDQ). Completing the PDQ will minimize confusions and/or delays during the installation and configuration process.

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Appliance hardware:

- Appliance and Storage Shelf boxes should remain unopened and stored in the same location, preferably the data center. If the cardboard is not allowed in the data center then please document where the equipment will be located on the day of installation, under "Site Access Requirements".

Temperature control:

- Flex/5350 Appliance Node:
 - Based on American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) A2 Standards and Guidelines.
 - Operating temperature (+10°C to +35°C) (+50°F to +95°F).
 - Non-operating temperature (-25°C to +70°C) (-14°F to +158°F).
 - Operating humidity of Appliance (20% RH to 80% RH).
 - Non-operating humidity (8% RH to 90% RH)
- 5U84 Storage Shelf:
 - Operating temperature (+5°C to 35°C (De-rate at 5°C above 2,133m (7,000')) (+41°F to +95°F)
 - Non-operating temperature (-40°C to +70°C) (-40°F to +158°F)
 - Operating humidity (20% RH to 80%RH non-condensing).
 - Non-operating humidity (5% RH to 100% RH non-condensing).

AC/Power:

- Flex/5350 Appliance Node:
 - AC Power Cable Specifications:
 - IEC-60320-C14 to IEC-60320-C13, 10A/250V, Black, 4ft

Figure 3-1 AC power cable - Veritas 5340 Appliance Appliance



A AC power connector (IEC-60320-C14) to an external power supply such as a Power Distribution Unit (PDU) on a rack.

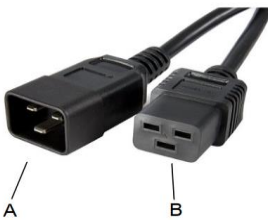
B AC power connector (IEC-60320-C13) to an appliance.

Cable rating: 15A 250V

Note: If your power distribution unit is not compatible with the IEC-60320-C14 plug, Veritas recommends that you purchase your power cable locally. Make sure the power cable meets the indicated power rating.

- AC Power Requirements:
 - 110 VAC – 220 VAC at 3.1 A
- Power Consumption:
 - Typical power consumption - 300 watts
 - Maximum power consumption – 600 watts
- 5U84 Primary Storage Shelf / 5U84 Expansion Storage Shelf:
 - Specification: IEC-60320-C20 to IEC-60320-C19, 20A/250V, Black, 4ft

Figure 3-2 AC power cable - Veritas 5U84 Primary Storage Shelf / Expansion Storage Shelf



A AC power connector (IEC-60320-C20) to an external power supply such as a Power Distribution Unit (PDU) on a rack.

B AC power connector (IEC-60320-C19) to storage shelf.

Cable rating: 20A 250V

Note: If your power distribution unit is not compatible with the IEC-60320-C20 plug, Veritas recommends that you purchase your power cable locally. Make sure the power cable meets the indicated power rating.

- Power Consumption for each Storage shelf:
 - Typical power consumption – 1000 watts
 - Maximum power consumption – 1300 watts
- AC Power Requirements:
 - 200 VAC – 240 VAC at 6.67 A
- Typical power consumption with a maximum of four external storage shelves - 4,300 watts
- Maximum power consumption with a maximum of four external storage shelves - 5,800 watts

Rack Mounting Equipment:

- Install Appliance and Storage shelves in an EIA standard rack that is 19 inch (48.26 cm) wide and at a minimum of 36.75 inches deep for the equipment length. However, this does not include the cables when connected, so Veritas recommends at least 39.37 inches (100 cm) to give space for the cabling.

Note: 1 inch = 2.54 cm

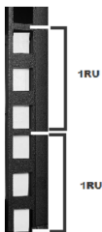
- From the inside of the front post to the inside of the rear post the rails measure 713mm to 884mm (28in to 34.8in). Be sure that your rack accommodates this distance. Allow extra space to accommodate power strips, power cords, and other cables.
- Appliance rails are extensible to 36" (914mm). This distance is the maximum depth allowed between rack posts. If the distance between the rack posts is longer than 36" (914mm) the rails and the appliance cannot be properly installed.
- For the systems that include one or more Expansion Shelves, install those units first followed by the Primary Shelf. Always load hardware into a rack from the bottom to ensure personal safety and proper weight distribution of equipment.

- Appliance Compute Node:
 - Each node is two (2) rack units (RUs) high (2RUs).
 - Flex multi-node deployments require a total of 4RUs for a two (2)-node cluster (2RUs each).
- 5U84 Storage Shelf:
 - Primary Storage and Expansion Storage Shelves are five (5) Rack Units (5RUs) high.
 - The 5U84 storage shelf is longer than a standard IEC-compliant rack. Be sure that your rack cabinet and Power Distribution Units accommodate the length of the storage shelves. Due to the additional length, the rack-based PDU hardware may need to be installed on the outside of the rack to accommodate the storage shelves.
 - The storage shelf rails measure 71.3cm to 88.4cm (28" to 34.8") in length. Be sure that your rack accommodates this distance from the inside of the front post to the inside of the rear post. Plan for additional space to accommodate power strips, power cords, and other cables.

Note: Both Primary and Expansion shelves are larger than other models.

- Height: 22.23cm (8.75") (approximately 5U - shelf, overall)
- Width: 48.26cm (19") (across the mounting flange)
- Length/depth: 93.35cm (36.75") (from rear of the front flanges to the rear extremity of the chassis)

- One (1) Rack Unit (RU) equals three (3) holes = 1.75 inches.



- Below are examples of FLEX configurations with their Rack unit requirements:

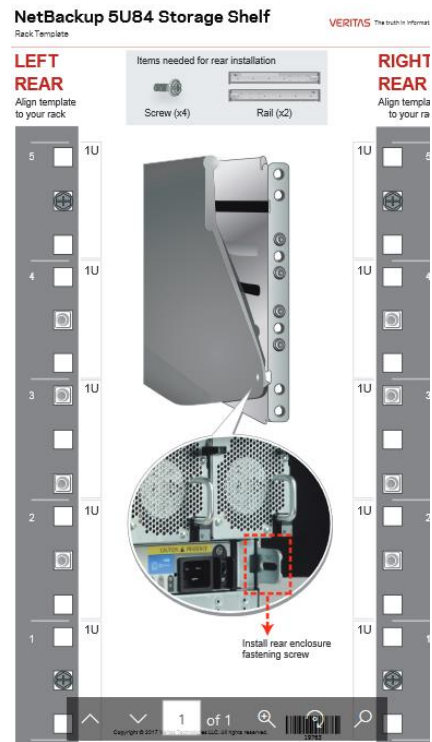
- Two compute nodes (2RU each) and one storage shelf (5RU) require 9RUs of height in the rack.
 - Two compute nodes (2RU each) and two storage shelves (5RU each) require 14RUs of height in the rack.
 - Two compute nodes (2RU each) and three storage shelves (5RU each) require 19RUs of height in the rack.
 - Two compute nodes (2RU each) and four storage shelves (5RU each) require 24RUs of height in the rack.
- Rack holes **must not** be threaded but have cutouts in front and back of rack to secure rails with either Snap-in cage nuts or pins along with screws.



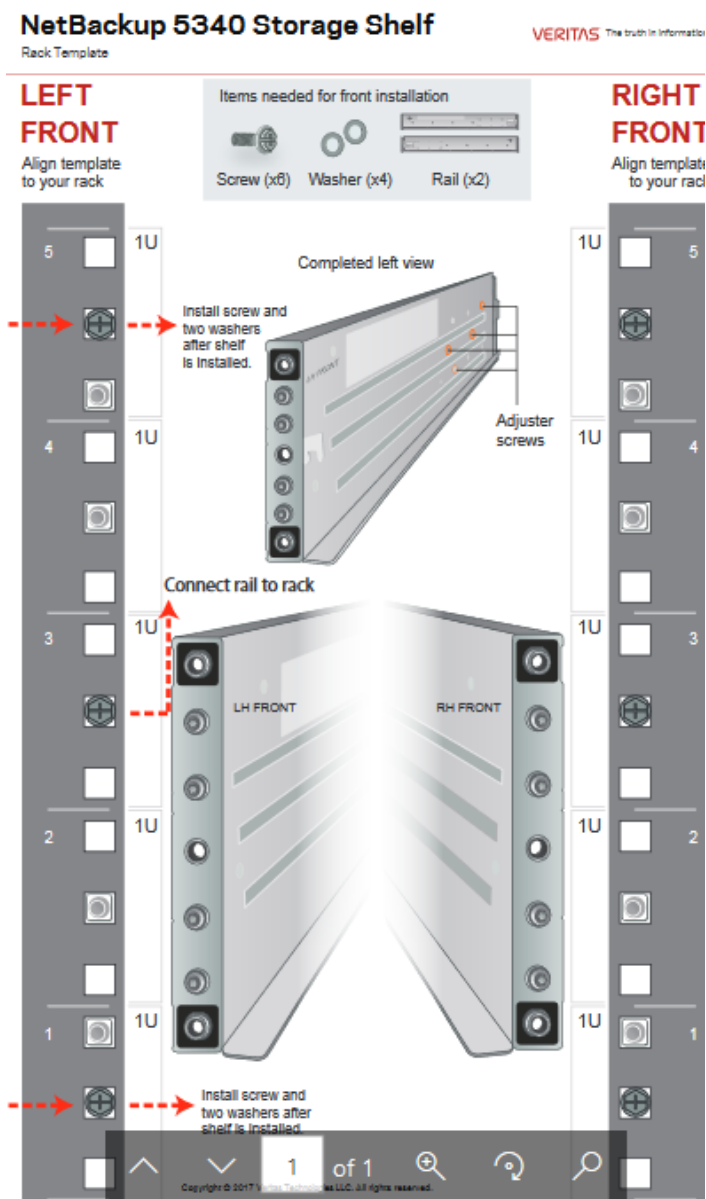
Warning: A storage shelf without disk drives weighs up to 61.65kg (135.72lbs). To avoid potential equipment damage and personal injury, do not install disk drives into the storage shelves before mounting them into the rack. The added weight of the disk drives hinders the safe install of the storage shelves. The shelf comes with lifting straps to assist with removing the shelf from the shipping container. Use a mechanical lift or three people to raise the shelf into position. The rear of the shelf is heavier than the front of the shelf.

Warning: Storage shelves are heavier than the appliances. Veritas recommends installing the Storage Shelves at the bottom of the rack, below the appliance.

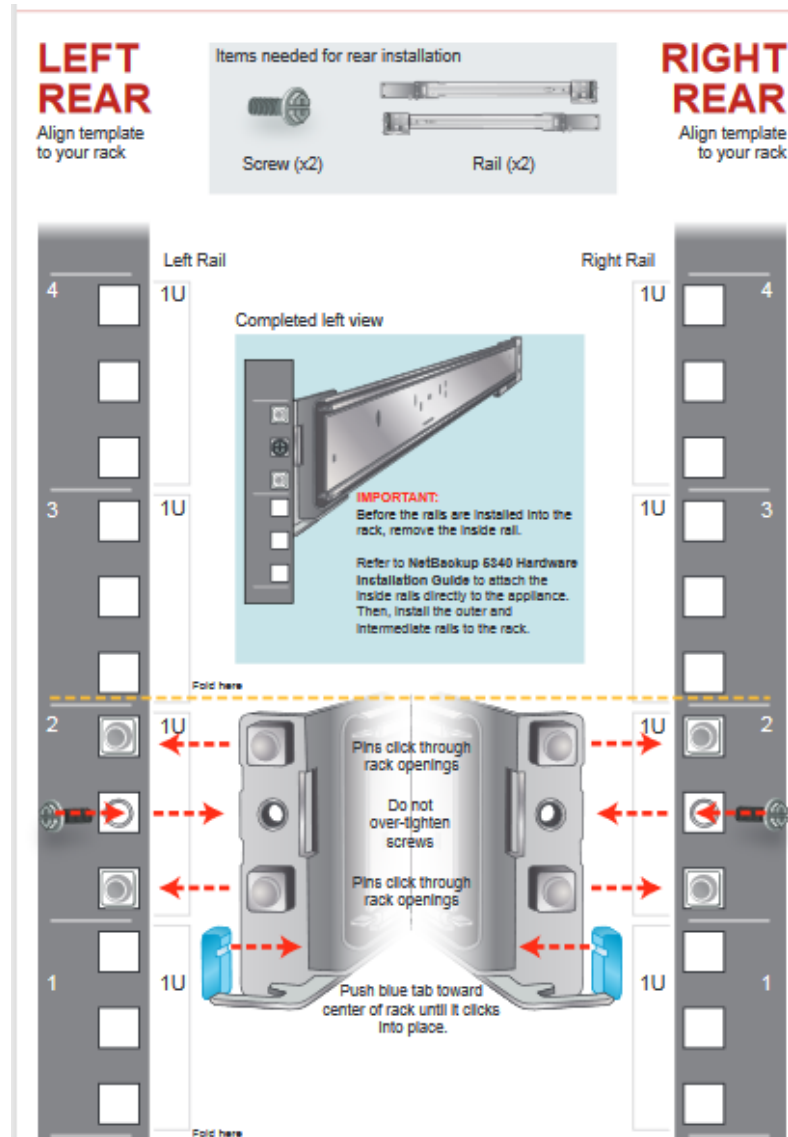
- 5U84 Storage Shelf (Primary and Expansion):
 - Rear View



- Front View - The front of each rail includes four pins that insert into the rear of the front rack post. One screw fits into the middle hole of the middle RU.



- Appliance compute node:
 - Rear View



▪ Front View

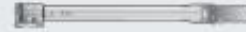
LEFT FRONT

Align template to your rack

Items needed for front installation



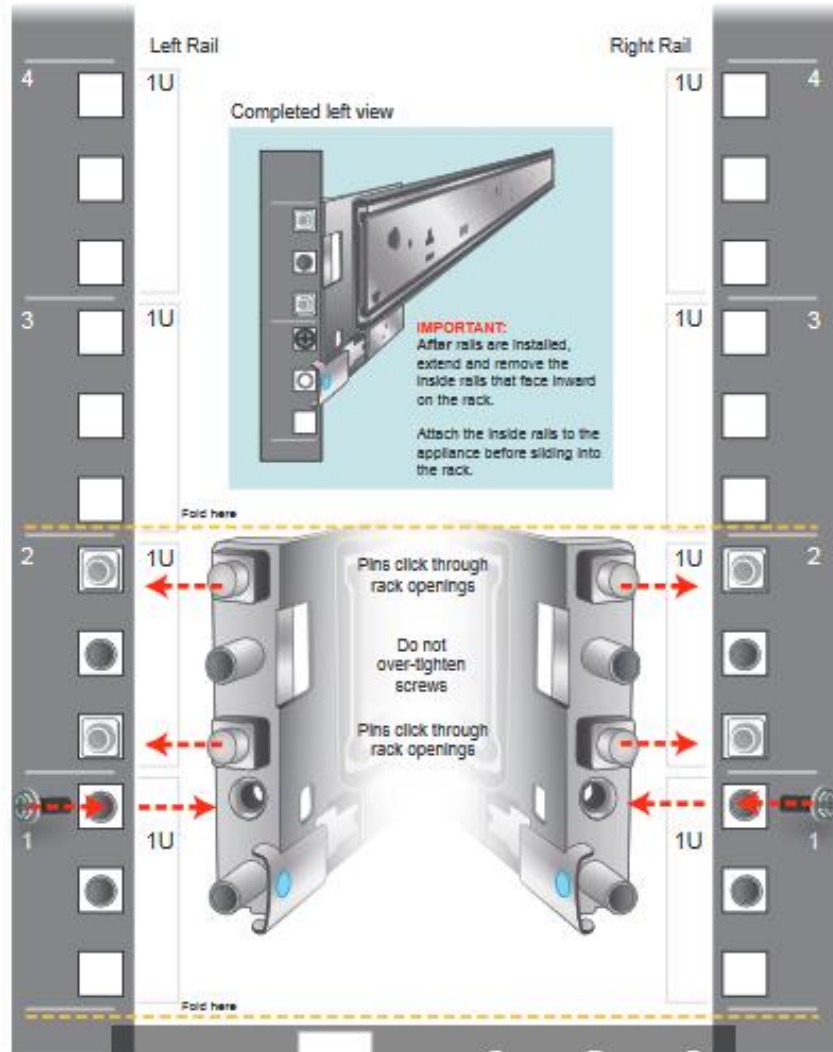
Screw (x2)



Rail (x2)

RIGHT FRONT

Align template to your rack



Cabling:

- Customer must provide the below items:
 - 1-Gb Network Cables:
 - One (1) cable for the IPMI Network Interface.
 - For FLEX Dual Node system, you will need another cable for secondary node.
 - 1-Gb Interfaces:
 - For NBU, additional cables to support any other 1-Gb interfaces, as per customer's network requirements.
 - For FLEX, you will need cables for Public Management Network -Host 1/Eth0 and Host 0/Eth1.
 - Single node, total of two (2) cables.
 - Dual node, total of four (4) cables.
 - For FLEX Dual Node, cables will be shipped with secondary Appliance for connections between nodes in Privnic1/Eth2 and Privnic0/Eth3 ports.
 - 10-Gb Network Cables, as needed, to support customer's 10-Gb network requirements.
- Appliance will be shipped with:
 - Two (2) power cables.
- Primary Storage Shelf will be shipped with:
 - Two (2) power cables.
 - Four (4) SAS-3 cables for connections between Node and Primary storage shelf.
- Each Expansion Storage Shelf will be shipped with:
 - Two (2) power cables.

- Two (2) SAS-3 cables for additional connections between storage shelves.
- The Fiber-optic and SAS-3 cable are only 1-meter (3.28 feet) long.
 - SAS-3 two (2) meter (6.56 feet) cable can be ordered separately, as needed.

Note: Field Services Tech will require direction from customer on where to plug in cables for Power Supply Units (PSUs), Network Interfaces, and Non-Appliance Fiber connections.

Network connectors:

- The following types of connectors are provided by Veritas:
 - The Mellanox ConnectX-4 Lx EN Ethernet card supports both optical (short wave and long wave optics) and copper (twinax) traffic at 10Gbps Ethernet line rate speeds.

Local Appliance Connection:

- To configure IPMI, Field Technician will require one of the following from the customer:
 - Crash Cart (VGA Monitor and USB Keyboard)
 - KVM cable, if a KVM has been setup
 - Laptop

Management device:

- In order to perform a hardware check after the installation or to configure the Appliance, the Veritas Advanced Services Engineer (ASE) will need to do a remote session with the customer to access the appliance remotely.
- For a list of Network ports required for communication between the Appliance and the Management device, see the:
 -

- **Required Ports** section of this document.
- If the IPMI port is connected to a managed switch port, it is recommended that you configure the switch port to auto-negotiation.
- Verify the remote management port auto-negotiates its link speed to one (1) Gbps.
- If you have a private internal network, remember to configure the settings accordingly in your network address translation (NAT).
- The remote management port must be configured as a DHCP or static address.

Monitoring:

- Call Home Feature:
 - The Call Home feature is designed to alert you and Veritas in the event of a hardware alert. Call Home uploads hardware and software information to a secure Veritas server once an alert is detected. This information may be used by Veritas to proactively open a support case with Technical Support. A Technical Support Engineer will contact you for further diagnosis such as gathering the DataCollect logs and to arrange for replacement of the reported component, if needed.
 - The collected hardware information includes the appliance and any configured enclosures. Although this feature is enabled by default, only basic information such as appliance model and serial number are sent to Veritas. To take full advantage of this feature, Veritas recommends completing and maintaining the additional technical contact information. Having up-to-date contact information will allow Veritas support to expedite the resolution of the detected hardware event.
 - When Call Home is enabled and a hardware event occurs, the following information is uploaded:
 - Power supply wattage
 - CPU voltage
 - an RPM
 - Disk status

- Critical temperatures
- When Call Home is disabled and a hardware event occurs, the appliance only generates a local alert by email to notify you of the hardware failure. Additional information on configuring email notifications may be found in the appliance documents below.
https://www.veritas.com/support/en_US/article.000068536
- The appliance uses the HTTPS protocol and port 443 to connect to the Veritas AutoSupport server.
- Call Home Registration will not complete successfully, if Call Home is not functioning properly.
- Refer to "[Veritas AutoSupport infrastructure update for Call Home endpoints](#)" for Callhome Endpoints.
- SMTP configuration is for alerting your internal teams/contacts to any hardware or software issues affecting the appliance. You must either:
 - Configure your mail server to allow the appliance to use it as a mail relay.
 - Or
 - Create an account for the appliance on your mail server and supply login credentials.

Necessary software:

- The following pieces of software will be necessary over the course of the engagement and should be downloaded (and installed if applicable) on the management device:
 - The Intelligent Platform Management Interface (IPMI) also referred to as Veritas Remote Manager. You can use the remote manager to log on to the Appliance CLISH.
 - Before you use the Remote Management interface, the following prerequisites must be met:
 - A supported Web browser (see [Web browsers supported by Appliance](#)).

- There are two console options that allow you to remotely control the appliance:
 - Primary – iKVM over HTML5. Not other software needed.
 - Secondary - A JViewer application will open to enable you to remotely monitor and control the appliance. This application requires the latest Java Runtime Environment (JRE).
- [Putty](#) or another SSH client. This will be a helpful tool; you can use copy and paste, whereas IPMI you cannot. In addition, Putty has a little better performance than IPMI. IPMI is required, at first, for hardware checks and to configure the first interface then Putty utility can access Appliance.
- A workstation capable of mounting a CIFS or NFS share to the appliance and/or a Workstation capable of SCP connections from the appliance. This will be needed to transfer files, e.g., Emergency Engineering Binaries (EEBs), Patches, Firmware updates, Datacollect logs, and ASR utility output.
- Appliance Software version:
 - For NBU, If the Appliance is not at the required customer requested software version, then the appliance will need to be re-imaged to proper version prior to configuring the appliance.
 - 5350 Supports NetBackup Appliance software release 4.0 (revised) and above

Warning: If the new appliance will be a Media server then the new appliance version cannot be higher than the Master server's version.

 - For FLEX, Appliance needs be at latest FLEX software version.
 - 5350 Supports FLEX Appliance 2.0.1 and above.
 - There are two ways to acquire the software needed to re-image the appliance.
 - You can download the ISO image via Licensing Portal. In order to download the software, you will need a MyVeritas.com account and this account must be a member of the Licensing Portal account for the entitlement you wish to deploy.
 - [ISO downloads](#)

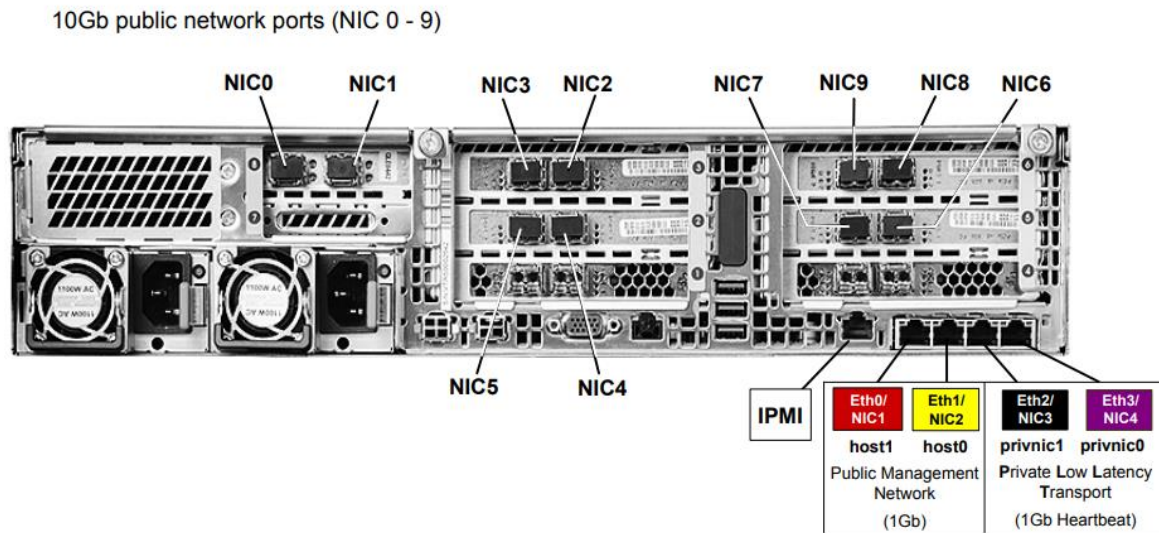
- Recommend to download at least one day prior to scheduled event, due to the length of time needed to down software.
- **Depending on the availability of USBs**, you can make a request with the Veritas Project Manager to order a USB key with the appropriate target version. However, the target version must be a supported version for that particular Appliance model.

Note: Our third party vendor (NCR) manages and maintains the stocked for our USBs.
- Note: Flex supports Netbackup Master and Media server instances at 8.1 and above.
[Veritas applications and versions that Flex Appliance supports](#)
- Please register Appliances at our Veritas Website: <https://netInsights.veritas.com>
 - Registering your appliance is a vital step in allowing Veritas the ability to help maximize availability of your appliance and provide proactive monitoring support. Registration provides Veritas with accurate contact details and site-specific information, which aids in expediting support, field services, and customer notification of failures.
 - Registration also ensures that you receive product updates and other important information about your appliance.
 - Although Veritas recommends that you enable Call Home for an improved support experience, you can register your appliance without enabling Call Home.

Network/DNS:



Network ports on the rear panel of the compute node are shown in the following diagram.



- [Interfaces \(Product Description Guide on Page 33\)](#)
 - IPMI –
 - Remote management purposes.
 - Verify the remote management port auto-negotiates its link speed to one (1) Gbps.
 - The remote management port must be configured as a DHCP or static address.

- If you have a private internal network, remember to configure the settings accordingly in your network address translation (NAT).
- Eth0/NIC1 –
 - 5350 Only –
 - Option for initial configuration of appliance.
 - For use as an administrative network that **does not** provide any backup data transfer.
 - Veritas does not support forming a NIC bond using Eth0/NIC1 with other Eth/NIC ports.
 - Flex Only –
 - host1 (mgmt0 bond) - copper/RJ45 connector
- Eth1/NIC2 –
 - 5350 Only –
 - For general use
 - Flex Only –
 - Host0 (mgmt0 bond) - copper/RJ45 connector
- Eth2/NIC3 –
 - 5350 Only –
 - For general use
 - Flex Only (privnic1) –
 - Private Low latency transport port that is used for inter-communications between the two (2) Appliance compute nodes.
- Eth3/NIC4 –

- 5350 Only –
 - For general use
 - Flex Only (privnic0) –
 - Private Low latency transport port that is used for inter-communications between the two (2) Appliance compute nodes.
- Eth4/NIC5 –
 - 5350 Only –
 - 10-GbE port for general network use.
- Eth5/NIC6 –
 - 10-GbE port for general network use.
- NIC ports 0 – 9:
 - Flex only –
 - 10-GbE for general network use.
- NetBackup appliances do not support configuring two IP addresses that belong to the same subnet. The appliance runs on the Linux operating system and this type of networking is a current limitation. Each bond that you create must use an IP address that belongs to a different subnet.
- The network switch or switches need to be configured prior to configuring the appliance network interfaces.

Required Ports:

- About the NetBackup Appliance firewall:

Port	Protocol	Usage
22	TCP	SSH
111	TCP/UDP	Sunrpc, Portmapper
137	UDP	NetBIOS Name Service (Samba)

138	UDP	NetBIOS Datagram Service (Samba)
139	TCP	NetBIOS Session Service (Samba)
162	TCP/UDP	SNMP
443	TCP	HTTPS
445	TCP	Samba
867	TCP	NFS mount
2049	TCP/UDP	NFS
20048	UDP	<code>mountd</code>
27017	TCP/UDP	Mongo

Note:

This port opens only when you add the partner node to complete the high availability (HA) setup or when you remove a node from the HA setup. After a node is added or removed, the port is closed.

- Before appliance initial configuration, ensure the following ports are open:
- After appliance initial configuration, ensure the following ports are open:

1025-5000	TCP	Veritas NDMP, <code>SERVER_PORT_WINDOW</code>
1556	TCP	Veritas PBX
5637	TCP/UDP	NetBackup Cloud Storage Server Configuration, Deduplication to Cloud
7394	TCP	Veritas Granular Restore Technology (GRT)
8443	TCP	NetBackup VMware
10000	TCP/UDP	Veritas NDMP agent
10082	TCP/UDP	MSDP, Deduplication Engine (<code>spoold</code>), HA, Migration
10102	TCP/UDP	MSDP, Deduplication Manager (<code>spad</code>), HA, Migration
13701-13723	TCP	Veritas Granular Restore Technology (GRT)
13720	TCP	Support for 271 media role configuration
13724	TCP	<code>vnetd</code>
13781	TCP	RabbitMQ
13782	TCP	Veritas <code>vnet_async</code>

- Flex –

- If a firewall exists between the master server and the new instance, open the following ports on the master server to allow communication:
 - 13724 – VNETD
 - 13720 – BPRD
 - 1556 – PBX

- If the Master server is a NetBackup Appliance that uses TCP, open the following ports:
 - 443
 - 5900
 - 7578

- Make sure that the following ports are open if a firewall exists between the appliance and the network:
 - 22 – (SSH) must be allowed to each node
 - 443 – (HTTPS) must be allowed to the Flex Appliance Console

References:

- [Veritas Flex Appliance Getting Started Guide and Administration Guide](#)
- [Veritas Flex/5350 Appliance Product Description](#)
- [Veritas Flex/5350 Appliance Hardware Installation Guide](#)
- [How to identify supported applications and usage information for Flex Appliance](#)
- [Veritas NetBackup Appliance Security Guide - Page 80 About NetBackup Appliance Ports](#)
- [Veritas NetBackup Appliance Security Guides](#)
- [Veritas AutoSupport infrastructure update for Call Home endpoints](#)
- [Veritas Appliance AutoSupport Reference Guide](#)
- [Veritas NetBackup Network Ports Reference Guide - 9.1](#)
- [Veritas NetBackup Appliance Commands Reference Guide](#)