

FLEX 5260 Appliance

Pre-Deployment Requirements

This document provides details that will assist with the completion of the Appliance Deployment Planner (ADP) questionnaire. Completing the questionnaire 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 cardboard material is not allowed, in the data center, then please document where the equipment will be located on the day of Installation, under item #5 - "Site Information".

Temperature control:

- FLEX 5260 Compute Node Environmental Specifications:
 - Appliance and Storage Operating temperature of Appliance: (10°C to 35°C) or (50°F to 95°F).
 - Non-operating temperature: (-40°C to +70°C) or (-40° F to +158°F).
 - Operating humidity (Relative): (20% to 80% RH).
 - Non-operating humidity: (8% to 90% RH).

AC/Power:

- FLEX 5260 Appliance and Veritas 2U12 65TB Storage Shelf:
 - Appliance AC Power Cable Specification:
 - IEC-60320-C14 to IEC-60320-C13, 10A/250V, Black, 4 ft

Figure 3-1 AC power cable



- The IEC-60320-C14 plugs into a Power Distribution Unit.
- The IEC-60320-C13 plugs into an appliance or storage shelf power supply.

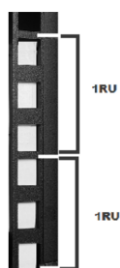
Note: If your power distribution unit is not compatible with the IEC-60320-C14 plug, then Veritas recommends that you purchase your power cable locally. Make sure the power cable meets or exceeds the indicated power rating.

- FLEX 5260 Appliance:
 - AC Power Requirements:
 - 110 VAC at 6.2 A
 - 220 VAC at 3.2 A
 - Power Consumption:
 - Typical – 400 watts
 - Maximum - 1000 watts
- Veritas 2U12 65TB Storage Shelf:
 - AC Power Requirements:
 - 100V – 127 VAC
 - 200V – 240 VAC
 - Power Consumption based on each shelf:
 - Typical – 256 watts
 - Maximum – 480 watts
- The units require a standard EIA 19-inch rack with dual Power Distribution Units (PDUs).

Rack Mounting Equipment:

- Dimensions (IEC rack compliant)
 - Height: 8.89cm (3.5") (approximately 2U)

- Width: 48.26cm (19")
 - Depth: 79.38cm (31.25")
 - The rack rails that are provided for the 5260 Appliance compute node are extensible to 32" (820mm).
 - The minimum distance or depth allowed between the rack posts is 24.6" (623mm).
 - The maximum distance or depth allowed between the rack posts is 37" (942mm). If the distance between rack posts is longer than 37" (942mm), the rails and the appliance cannot be properly installed.
 - There must be a minimum depth of 30 inches (76 cm) between the front of the rack and the rear of the rack.
- With dual Power Distribution Units (PDUs) with 120VAC or 220VAC power supplies.
 - Rack Units (RU):
 - FLEX 5260 Appliance and Storage Shelf are both 2RU high.
 - Each rack unit (RU) is 44.50 mm (1.752 inches) in height.
 - One (1) Rack Unit (RU) equals three (3) holes.



- Determining Rack space needed:

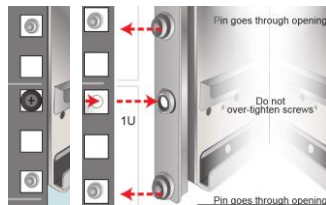
Example: If you were installing one (1) Appliance and four (4) Storage Shelves that would be $2RU \times 5 = 10RU$, you would need 10RUs of rack space to install all five (5) pieces of equipment.

- 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.

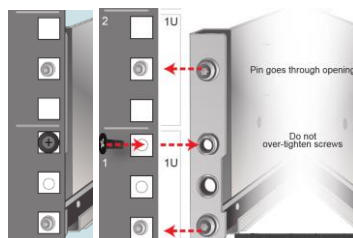


- Storage Shelf - Front and rear cut-outs are used for inserting rail (left and right) pins with screw.

- Rear View

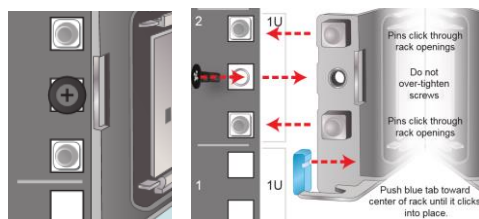


- Front View

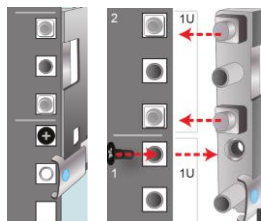


- Appliance - Front and rear cut-outs are used for inserting rail (left and right) pins with screw.

- Rear View



- Front View



- Storage Shelves:

- Up to Six (6) storage shelves.
- FLEX 5260 Appliance support up to six 2U12 storage shelves.

Table 2-1 Usable storage capacities - Veritas 5260 Appliance and Veritas 2U12 65.5TiB/72TB Storage Shelves

Appliance only	Storage shelf capacity	Appliance and one storage shelf	Appliance and two storage shelves	Appliance and three storage shelves	Appliance and four storage shelves	Appliance and five storage shelves	Appliance and six storage shelves
10TB (9.1TiB)	72TB (65.5TiB)	82TB (74.6 TiB)	154TB (140.1 TiB)	226TB (205.6 TiB)	298TB (271.1TiB)	370TB (336.6TiB)	442TB (402.1TiB)
40TB* (36.4TiB)	72TB (65.5TiB)	112TB (101.9TiB)	184TB (167.4TiB)	256TB (232.9TiB)	328TB (292.4TiB)	400TB (363.9TiB)	472TB (429.4TiB)

Note: Usable storage capacities are rounded values. Veritas calculates these values from the raw storage capacities of the various Veritas 5260 Appliance-only configurations. The raw capacity of the Veritas 2U12 65.5TiB/72TB Storage Shelf is 65.5 tebibyte. To determine the exact usable capacities of each configuration, use the following formulas: <appliance-only capacity> + 65.5 = exact usable capacity

* You can add up to six Storage Shelves to an existing Veritas 5260 Appliance with internal storage capacities of 9.1TiB or 36.4TiB. However, before you place the system into a production environment, you must migrate all MSDP data from the appliance to the first external storage shelf. After you migrate the MSDP data, the system's usable storage space may fluctuate, depending on how much actual storage space the MSDP data pool uses.

A 256GB memory upgrade kit is available for purchase when adding the first 2U12 65.5TiB/72TB Storage Shelf, which replaces all existing DIMM modules in the appliance. Contact your Veritas account representative for details.

Note: Spanning MSDP data across both Veritas 5260 Appliance internal storage and a storage shelf is not recommended as it may result in degraded performance.

Warning: Failure to migrate MSDP data after you connect a storage shelf may result in degraded appliance throughput performance.

- Storage shelves are heavier than the appliances. Storage shelves should be installed at the bottom of the rack, below the appliance.

Cabling:

- FLEX 5260 four I/O Configurations:

Note: PCI card configuration will vary depending on I/O configuration purchased

Figure 1-7 Flex 5260 Model A

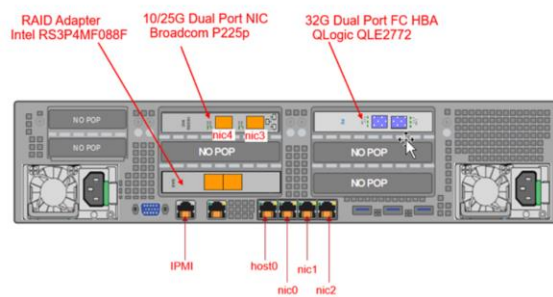


Figure 1-8 Flex 5260 Model B

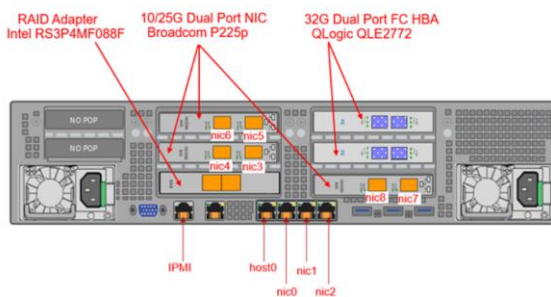


Figure 1-9 Flex 5260 Model C

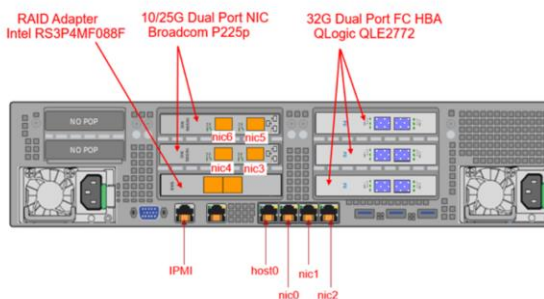
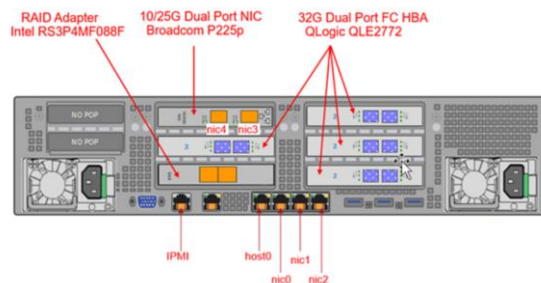


Figure 1-10 Flex 5260 Model D



- Customer must provide the below items:
 - 1-Gb/s network copper cables –
 - The remote management (IPMI) port. Used to connect to the Veritas Remote Management Interface.
 - Eth0/Host0, used to connect to the Flex Appliance Node and Console.
 - Additionally, the following 1 Gb ports, if needed. Used for FLEX Application Instances (containers).
 - Eth1/NIC0
 - Eth2/NIC1
 - Eth3/NIC2
 - Ethernet network interfaces require RJ45 Cat 6 cables.
 - 25-10GbE network fiber cables
 - Two to eight 25-10Gb Ethernet ports as needed. Used for the FLEX Application Instances (Containers).
 - Multi-mode Fiber Cable for PCI Card interfaces.
 - **Note:** Veritas does not support forming a NIC bond using host0/Eth0 with other eth/NIC ports.
- 7 Flex Appliance (host0):
 A 10 GbE port copper connector that you can connect to an administrative network to manage the appliance system. It is bonded during initial configuration as a standalone bond mgmt0.
- Fiber-Channel cables for client and device connections, as required by customer.
 - KVM cable.
 - Appliance will include two power cables.
 - Each storage shelf will include:
 - Two (2) power cables.

- Two (2) SAS-3 cables for connections between compute node and storage shelf or connections between each storage shelf.
- Each SAS-3 cable is 1 meter (3.28 feet) long. The 1-meter cable is long enough to connect an appliance to the fourth storage shelf when the recommended configuration is used.
- Longer SAS-3 cables are supported with the 2U12 Storage Shelf, if needed for the configuration. However, Veritas doesn't have them available, so you will need to purchase the longer SAS-3 cable/s.
 - Here is an example of one vendor who sells a 3 Meter SAS 3 cable (See CS-SASMINIHD2-003 for 3M Cable):
<https://cablesondemand.com/amphenol-cs-sasminihd2-003-3m-9-8-external-4x-hd-mini-sas-cable-4x-mini-sas-hd-sff-8644-to-4x-mini-sas-hd-sff-8644-passive-copper-cable-28-awg-12g-sas-3-0-ipass-hd-cs-sasminihd2-003>

Note: Field Services Techs will require direction from the customer on:

- Which PDU to plug in equipment's power supply cables.
- Which network cables will be plugged into which Appliance network interfaces.
- Which HBA Fiber connections will be plugged into which Appliance HBA cards and ports.

Network connectors:

- The following types of connectors are provided by Veritas:
 - Two 10/25 GBASE-SR Small Form-factor Pluggable (SFP) modules with Duplex LC connector.
- With FLEX 5260 and newer appliances the requirements are SFP28 form factor optics that support 850nm short wave.
 - Veritas recommends the following vendors:
 - Finisar
 - JDSU

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, which also helps with testing IPMI port locally.

Management device:

- To perform a hardware check after the installation or configuration of the Appliance, the Veritas Advanced Services Engineer (ASE) will need to do a Zoom session with customer to access the appliance remotely.
 - It is recommended to use the HTML5 iKVM option for Remote Management Console to connect with the Appliance.
 - Another connection option is to use the Java console. However, you would need to ensure the latest Java version software has been installed your Windows machine.
- 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:

- [Veritas Appliance AutoSupport Reference Guide](#)
- 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 and/or other 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 failure occurs, the following sequence of alerts occur:
 - The appliance uploads all the monitored hardware and software information to a Veritas server.
 - The appliance generates the following three kinds of email alerts to the configured email address:
 - An error message by email to notify you of the failure once an error is detected. A resolved message by email to inform you of any failure once an error is resolved.
 - A 24-hour summary by email to summarize all of the currently unresolved errors in the recent 24 hours.
 - Starting from software release 2.7.1, Veritas an email alert is sent if Veritas servers do not receive any Call Home data from your appliance for over 28 hours.
 - The appliance also generates an SNMP trap. Critical temperatures

- When Call Home is disabled and a failure occurs, the appliance only generates a local alert by email to notify you of the 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.
- Appliance registration should be done by signing in to the NetInsights portal (<https://netInsights.veritas.com>) with your Veritas Account Manager credentials.
- SMTP is for alerting your internal teams/contacts to any hardware or software issues affecting the appliance.
 - SMTP Port:
 - You can select one of the following options:
 - Port 25 to use Plain Text
 - Port 465 to use the SMTPS protocol
 - Port 587 to use the STARTTLS protocol
 - Custom port within the range of 1 to 65,535 The default SMTP port number is 25.
 - Encryption is disabled by default.
- The Simple Network Management Protocol (SNMP) enables you to monitor the appliance performance. You must have an existing SNMP manager before you can configure SNMP alerts.

Necessary software:

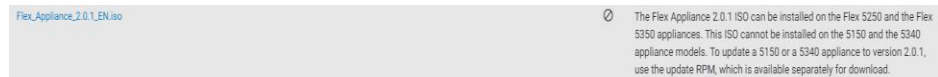
- The following software will be necessary over the course of the engagement and should be downloaded (and installed if applicable) on the management device:

- The Intelligent Platform Management Interface (IPMI) also referred to as Veritas Remote Manager. We use the Remote Manager Console to log on to the Appliance CLISH to check hardware health after installation and to begin appliance configurations.
 - Before you use the Remote Management interface, the following prerequisites must be met:
 - A supported Web browser (see [Web browsers supported by Appliance](#)).
 - A JViewer application or iKVM over HTML5 will enable you to remotely monitor and control the appliance.
 - The JViewer application requires the latest Java Runtime Environment (JRE).
- [Putty](#) or another SSH client will be a helpful tool in which you can use copy and paste, whereas IPMI you cannot. In addition, SSH has a little better performance than IPMI. IPMI is required, at first, for hardware checks during the Installation process and to configure the first network interface during the Configuration process.
- 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 ACR utility output.
- FLEX System –
 - **First**, depending on which FLEX operating system version your appliance comes with, we may need to update the FLEX operating software to the latest version. You can find out what version the appliance is coming in at through the VAS Project Manager (PM). VAS ASE will also verify your FLEX software version and update you on day of install.
 - This is subject to change depending on current FLEX software requirements.
 - [Link to Veritas FLEX software downloads](#)

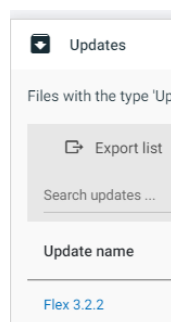
- You can use the dropdowns to select appropriate downloads for FLEX.



- To download software, you will have to login with your Veritas account and have the appropriate permissions.
- If you need to download the ISO for base FLEX software.
 - Once you are at the correct downloads then click on “Base and Upgrade Installers” dropdown and look for the appropriate ISO that supports appliance model and version and download.
 - Example – For 5260 FLEX you would download the below ISO.



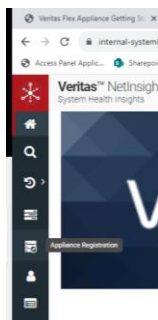
- Once you are at the correct downloads then click on “Updates” dropdown and look to see if there is an later version of FLEX software then appliance has currently installed. Download the latest FLEX O/S version, if necessary.
 - Example – latest version here is FLEX 3.2.2



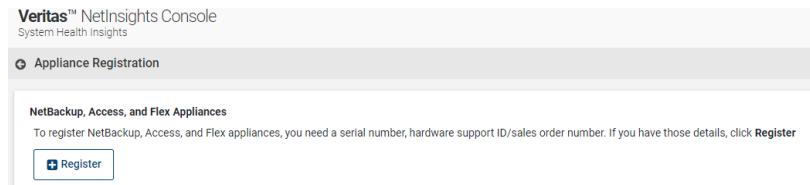
- Once you are at the correct downloads then click on “Base and Upgrade Installers” dropdown and look for the required Veritas FLEX NBU Software version and download.
- Registering your appliance is a vital step in allowing Veritas the ability to help maximize availability of your appliance and provide 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.
 - Please register Appliances at our Veritas NetInsights Website:
 - [NetInsights: Appliance Registration](#)
 - [Veritas System Health Insights User Guide](#)
 - NetInsights Console – Select “System Health Insights”



- On left panel, select “Appliance Registration”



- Click on “Register” button



- Fill in the appropriate fields



Network/DNS:

- Network switches need to be configured and ports enabled prior to the scheduled events with Veritas:
 - Installation day - IPMI and Host0/Eth0 network interfaces need to have active switch ports prior to installation day for testing of IPMI, Hardware health and possible re-imaging of Appliance to upgrade to latest FLEX version.
 - Configuration day - All other necessary network interfaces needed for configuring the appliance will need to be active to configure the FLEX system in a timely manner and to prevent possible rescheduling of event.
- Proper name resolution using DNS servers or hosts file entries are a **requirement** for the FLEX system to function properly.
 - Veritas recommends the use of DNS servers for name resolution for the best performance.
 - The Appliance should be registered with any DNS servers in the environment prior to day of event.
 - Forward and reverse DNS lookups of each Appliance need to be functional. Please test name resolution prior to day of scheduled event.

- VLAN information is only required if you are using VLAN tagging, and the appliance will be connected to a trunk port of the VLAN.
- IPMI –
 - For 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).
- Before the configuration, gather the following information. This all should be entered into the Pre-Deployment Requirements Questionnaire along with other items:
 - IPMI – IP address
 - Appliance Node –
 - IP Address (Also used for FLEX console)
 - Hostname (Also used for FLEX console)
 - Default gateway
 - Netmask
 - DNS server IP address or Host file entries, depending on which name resolution option chosen
 - DNS domain
 - (Optional) Search domain
 - NTP Server

Required Ports:

- RMM Ports (IPMI):
 If a firewall exists between the appliance and the remote devices that manage an appliance (like a laptop computer), open the following [ports](#):

80	HTTP
162	SNMP
443	HTTPS
623	Floppy/USB media
627	Secured Floppy/USB media
5120	CD
5124	Secured CD
5900	KVM
5902	Secured KVM

Note: If you have a private internal network, remember to configure the settings accordingly in your network address translation (NAT).

- About FLEX Appliance Ports:

Table: Inbound ports

Port	Service	Description
22	ssh	In-band management CLI Note: Port 22 is blocked for the Remote Management Module (RMM). You can enable SSH later. See Enabling SSH on the Remote Management Module .
443	HTTPS	In-band management GUI
2049	NFS	NFS
445		CIFS (for the Log/Install shares)

+ NetBackup Integrated storage manager

* Veritas Remote Management - Remote Console

Table: Outbound ports

Port	Service	Description
443	HTTPS	Call Home notifications to Veritas Download SDCS certificate
162**	SNMP	Download appliance updates
22	SFTP	Log uploads to Veritas
25	SMTP	Email alerts
389	LDAP	
636	LDAPS	
514	rsyslog	Log forwarding

** This port number can be changed within the appliance configuration to match the remote server.

References:

- [NetBackup Appliance Documentation Sets](#)
- [Services and Operations Readiness Tools \(SORT\) - Documentation](#)