



novascale bullion

novascale bullion Extended Memory System Release Bulletin TS 061.02

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1. Useful Information

This System Release Bulletin provides last-minute information, restrictions, known Issues and workarounds for your server.

IMPORTANT:

PLEASE CONSULT THE RELEASE NOTES PROVIDED ON THE RESOURCE AND DOCUMENTATION CD-ROM BEFORE PROCEEDING TO USE YOUR SERVER.

Please consult the Bull Support Web site for updated product information, documentation, tools and service offers:
<http://support.bull.com>

1.1 VMware ESXi

In monomodule configuration, the server is delivered with an embedded flash drive on which VMware ESXi is preloaded and installed. The server is configured to boot from this embedded flash drive.

In multimodule configuration, the server is delivered with a bootable USB key that contains the ESXi installer.

Please consult the VMware website for updated product information and documentation:
<http://www.vmware.com>

1.2 Default Usernames and Passwords

Be aware that the keyboard is set to US by default ("US Default")

	Username	Password
Server Hardware Console (SHC)	super	pass
VMware ESXi	root	bullion

1.3 Resources and Hardware Documentation

Resources and hardware documentation are supplied with the server on the *Resource and Documentation CD*.

2. Restrictions, Known Issues and Workarounds

2.1 Restrictions

Restriction #1

The passthrough feature is only available on the Emulex LPe12002 adapters when both ports are used by the same virtual machine

Note:

If the passthrough feature is activated on one port, it is automatically activated on the second port even if it is not used. The second port cannot be used by another virtual machine but it can be used by the same virtual machine.

Restriction #2

Intel Ethernet X520 Server adapters must not be used as VMDirectPath I/O passthrough devices inside UEFI Virtual Machines

Restriction #3

Problems may be encountered when PCIe adapters are re-allocated to different slots

Before re-allocating PCIe adapters, please consult your Customer Service Engineer or the "Getting Started Guide" reference 86 A1 45FH 02 available on the Resource and Documentation DVD ROM.

Restriction #4

In quadri-module configuration, PCIe slots 3, 4 and 5 and Ethernet controllers ETH2 and ETH3 on slave module 3 cannot be used

Restriction #5

The embedded Ethernet controller ports (located on the rear of the server drawers) are pre-configured to preserve sufficient resources on the PCIe boards and to comply with VMware limits.

Before any re-configuration, please consult your Customer Service Engineer or the "Getting Started Guide" reference 86 A1 45FH 02 available on the Resource and Documentation CD ROM.

Restriction #6

The iSCSI boot is possible only on a 4 socket server. If you have configured (from the BIOS setup) the Kawela 0 as PXE boot and the Kawela 1 as iSCSI boot, then the Ethernet ports to use are the following:

- ETH0 and ETH2 must be used for PXE boot
- ETH1 and ETH3 must be used for iSCSI boot

Restriction #7

If your configuration has 4 Intel X520 10 Gb NICs and more than 4 Emulex Lpe12002 HBA and if you have upgraded the ixgbe driver, you must not leave the VMDQ parameter of the ixgbe driver to the default value (8).

Restriction #8

The "power management settings" inside vSphere Client overrides the C-state limit parameter set in the BIOS via the ESXi that manages the vSphere Client. Do not use the "low power" policy when configuring the power management with vSphere Client on your ESXi server.

Restriction #9

VMware does not support configurations exceeding the limits described in the Configuration Maximums – VMware vSphere 5.5 document available on the VMware website:

<http://www.vmware.com/pdf/vsphere5/r55/vsphere-55-configuration-maximums.pdf>

Under ESXi 5.5 and later, do not mix more than eight 10Gb/s Ethernet ports with four 1Gb/s Ethernet ports. With ESXi versions prior to 5.5, do not mix more than six 10Gb/s Ethernet ports with four 1Gb/s Ethernet ports.

Restriction #10

If you are using ESXi version prior to 5.5 and your configuration has 4 Intel X520 10 Gb NICs and more than 4 Emulex Lpe12002 HBA and if you have updated the ixgbe driver from default, you must not leave the VMDQ parameter of the ixgbe driver to the default value (8).

See this KB : ESX/ESXi log messages: Out of interrupt vectors
<http://kb.vmware.com/kb/2050783>

Configuration Advice #1

C-State configuration in systems equipped with Westmere

For the systems equipped with **Westmere** processors, the **Max C-state** parameter is set to **C1** in the BIOS. **This setting shall not be changed.**

Configuration Advice #2

When using Intel Ethernet X520 Server adapters as VMDirectPath I/O passthrough devices, PCI 64 bits addressing must be disabled in BIOS

Device Manager > Advanced > Miscellaneous Configuration > PCI 64-Bit Resource

2.2 Known Issues, Tips and Workarounds

Issue #1

Loss of the correct Boot Order

Restore the required boot order (**VerbatimSTORE N GO**, by default):

1. Enter the BIOS interface by pressing **[Space]** when the **Hit [Space] for Boot Menu** message is displayed.
2. Select **Boot Manager > Boot Options** and press **[Enter]**.
3. Select **Change Boot Order** and press **[Enter]**.
4. Set first **VerbatimSTORE N GO** using the **[+ / -]** keys and press **[Enter]** to confirm.
5. Save changes by selecting **Commit Changes and Exit** and press **[Enter]**.
6. Return to the main menu by pressing **[Esc]** and exit the BIOS interface.

Issue #2

The server remains powered on after an OS shutdown

Power off the server:

1. Launch a web browser and enter the **SHC IP address**. The authentication page opens.
2. Use the default username (super) and password (pass) to complete the **Username** and **Password** fields and click **Log On**. Once you are authenticated, the **System Control** tab opens.
3. Click **Power > Power Management** to open the **Power Management** page.
4. Click **Force Power Off** to forcibly power off the server.
The server performs a power down sequence independently of the Operating System.

Issue #3

Numbering of vmnics may change under ESXi after updating BIOS or excluding a module.

Please see this VMware's KB for more information and solutions :

ESXi/ESX host loses network connectivity after adding new NICs or an upgrade

<http://kb.vmware.com/kb/2019871>

In order to avoid lost of connectivity after a module exclusion, it is possible to configure NIC teaming across modules.

Workaround #1

Failure to update firmware/boot code on Emulex LPe12002/LPe1250

Failure to update firmware/boot code of several Emulex Lpe12002/LPe1250 boards at once via One Command Manager vCenter plugin. The workaround is to use One Command Manager plugin in order to update firmware/boot board by board.

Workaround #2

Failure to install ESXi 5.5 on quadri-module with LPe12002

When trying to install ESXi 5.5 on a quadri-module server with seven (7) Emulex LPe12002 PCIe boards, you may experiment this error message :

vmkctl.HostException: Unable to load module /usr/lib/vmware/vmkmod/vmfs3: Failure or even a PSOD, both preventing to install ESXi 5.5.

This problem is due to lpfc driver not being able to handle so many LPe12002 boards correctly.

The workaround consists in temporarily reducing the number of LPe boards for ESXi installation, then configure ESXi to be able to handle more LPe boards.

1. Exclude the last bullion module from the platform to perform ESXi installation (assuming it contains at least one LPe board). This can be done via the Server Hardware Console > Maintenance tab > Maintenance Operations > Hardware exclusion. Server must be powered off to do so.
2. Once system is installed and booted for the first time, run the following under ESXi shell :
esxcli system settings kernel set -s=preferVmkernel -v=TRUE
This configures ESXi to use the legacy lpfc820 driver which handles numerous LPe12002 boards correctly.
3. Shutdown the server and re-include the last module from the platform
4. Server is now able to boot ESXi correctly with all LPe boards.

Tips #1

When the option "Inhibit the PHY Reset" of the shared Ethernet Controller is enabled, the PHY link for the Ethernet port is kept up throughout system resets.

This is useful when the server is reset and the BMC needs to keep connectivity for a manageability session (Serial over LAN, Drive redirection, WEB session, etc...).

Select this option if you experiment Remote Console or Virtual Media disconnection, especially during OS installation.

Tips #2

When using ESXi 5.5 and later, it is advised to use the following settings :

- Enable Hyper-Threading in the *Server Hardware Console*
- Set the value of "NUMA nodes per modules" parameter to 4 (using *BIOS > Device Manager > Advanced > Memory RAS configuration > Numa nodes per module*)