

## Your Virtual Connect Article regarding Firmware Update Process

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Hello Rakhesh. I hope you don't mind me reaching out to you directly. Yes, I do work for Hewlett-Packard (soon to be Hewlett-Packard Enterprise), and I'm a Pre-Sales Global SME around our BladeSystem products, which include HP Virtual Connect. I'm reaching out to you to discuss something you blogged about regarding Virtual Connect Firmware update process, and hope to quell some misinformation. You noted:

*Notice the bit about the reboots above? That's when network connectivity can be lost. On page 12 the [document](#) talks about how network outages can be avoided via redundant configuration and NIC bonding **but then on page 13 it clarifies that because the reboot is a graceful one there is a possibility that there could be a 20 second network outage because the blade hardware (and the OS running on it) might not be notified that the VC module is down.** You see, something called the SmartLink and DCC protocol are responsible for informing the blades that the VC modules are down and so the NICs they map to are down – and so they should fail over to another NIC using the backup VC – but because the firmware is being upgraded the SmartLink and DCC protocol are unavailable, no one informs the blades. So it only when the OS in the blades realize that it has lost network connectivity and must take corrective action, does the OS fail over to using the backup NIC – leading to a potential 20 second outage.*

On page 13 of the document you link to, it clearly states (emphasis is mine):

**“In VC firmware v3.18 and earlier there was the potential for a network outage of up to ~20 sec due to a physical link on the NICs staying up even though the forwarding path was being blocked by VC during graceful module shutdown for firmware activation. Both VCSU v1.6.0 and VC v3.30 resolved this issue by forcing the physical link down on all VC Enet module interfaces prior to activating firmware for the module. “**

When we introduced VCSU 1.6.0 and Virtual Connect 3.30 Firmware, downlink ports are put into a “Link Down State”, so that will trigger the NIC on the server side to report the link is down (i.e. “cable unplugged.”)

SmartLink is not in the equation here, as the Virtual Connect downlink port is physically being programmed as such.

SmartLink is a technology we implemented within Virtual Connect to help with Uplink Port state tracking. Meaning, if all Uplink Ports associated with a given Virtual Connect Ethernet Network, all associated Downlink Ports and Server Connections will be put into a “down” state. That way as to not “black hole” North/South traffic.

As long as you are following these rules, you should never experience a 20 second network outage:

- Use VCSU 1.6.0 or newer
- Virtual Connect 3.30 or newer firmware
- NIC Teaming is properly setup on the host (LACP, Mode 4, Switch-Assisted are not supported with Virtual Connect)
- HBA MPIO software is properly installed and configured

I hope this helps clear up any confusion on this matter.

Regards,

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