



**FAQ ID – F10135**

## **Title: Windows GridStack™ troubleshooting quick Guide**

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### **Goal(s):**

1. How to query the system information on windows OS?
2. How to check what is the HCA type?
3. How to check what is the HCA firmware version?
4. How to verify the HCA port status?
5. How to check what are the installed protocols?
6. What to do when the interfaces are not coming up?
7. How to read the HCA counters from the local machine?
8. How to verify the application is running on WSD or IPOIB
9. How to check your application is running on WSD?
10. What to do when getting mthca event in the system event viewer?
11. How to recover a system after blue-screen in case it keeps crashing?
12. How to overcome installation/upgrade problem in which the driver and the IB interface are not loading

### **Solution description or Fix**

Make sure your Hardware and software meets the following requirements:

#### Hardware:

- Supported platforms:
  - x86\_64 (AMD64 or EM64T)
  - IA32 (with version 2.1 or higher)
- PCI-X (133MHz) or PCI-Ex (8X)
- 

#### InfiniBand Equipment

- Switch version as listed in release notes , if you are running with code **lower than 3.4.x please upgrade your switch version**
- HCA firmware as listed in release notes, if you running with different HCA firmware please upgrade / downgrade to the required firmware

#### Software:

- Windows server 2003 or 2003 CCS addition SP1
- .NET framework with OS compatible build (64bit or 32bit)

- WSD patch from Windows web site:  
<http://support.microsoft.com/?kbid=910481>
- Make sure to download the correct patch file according to your OS. build (32bit or 64bit)
- Stability problem will occur when WSD patch not installed

## 1. How to query the windows OS system information?

- From the Windows desktop choose ◊ Start menu ◊ All programs ◊ Accessories ◊ System Tools ◊ System Information
- To export the system information from to a text file chooses export option from file menu, assign a file name and save.

## 2. How to check what is the firmware version on HCA using vstat and flint:

- Use the **vstat.exe** utility to verify the HCA status and firmware version.
- Use the **Flint.exe** utility to check the HCA type
- The **vstat.exe** and **Flint.exe** utilities are located under \Program Files (x86)\Voltaire\WinIB\bin> for 64-bit machines, and \Program Files\Voltaire\WinIB\bin> for 32-bit machines.

### ○ **Flint.exe** utility

To run flint.exe run the following commands from command line

- mst status (Will display the HCA reading devices that are available)
- Flint -d mt23100\_pciconf0 q (will read the information from the HCA)
- Look at the board ID for HCA type identification

```

C:\Program Files (x86)\Voltaire\WinIB\bin>mst status
Found 2 devices:
  mt23100_pciconf0
  mt23100_pci_cr0

C:\Program Files (x86)\Voltaire\WinIB\bin>flint -d mt23100_pciconf0 q
Image type:      Failsafe
I.S. Version:    1
Chip Revision:   01
GUID Des:        Node          Port1          Port2          Sys image
GUIDs:          0008f1040396107c 0008f1040396107d 0008f1040396107e 0008f1040396
107f
Board ID:        ULT-SAN <ULT0010020001>
USD:             ULT-SAN
PSID:            ULT0010020001

C:\Program Files (x86)\Voltaire\WinIB\bin>_

```

### ○ **vstat.exe** utility

- go to the voltaire bin directory and run vstat from command line
- Look at the firmware version
- Make sure you port state is ACTIVE
- Run vmstat.exe -v for verbose mode

```
C:\Program Files (x86)\Voltaire\WinIB\bin>vstat.exe
hca_idx=0
pci_location={BUS=NA,DEV/FUNC=NA}
vendor_id=0x02c9
vendor part id=0x6278
hw ver=0xa0
fw_ver=4.06.0002
PSID=
num_phys_ports=2
  port=1
  port_state=PORT_DOWN (1)
  sm_lid=0x0000
  port_lid=0x0000
  port_lmc=0x0
  max_mtu=2048 (4)

  port=2
  port_state=PORT_ACTIVE (4)
  sm_lid=0x0001
  port_lid=0x0006
  port_lmc=0x0
  max_mtu=2048 (4)
```

## 5. How to verify what are the installed protocols:

- In a command line window change directory to \Program File (x86)\Voltaire]WinIB\bin or \Program Files\Voltaire\WinIB\bin> for 32-bit machines.
- Run the command **installsp.exe -l**
- The following output will show:
  - , the MSAFD and RSVP are TCP and UDP based protocols (IPoIB).
  - The "OpenIB Winsock Direct for InfiniBand" is a WSD protocol (InfiniBand socket based protocol)

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 5.2.3790]
(C) Copyright 1985-2003 Microsoft Corp.

C:\Documents and Settings\Administrator>cd \
C:\>cd "Program Files (x86)\Voltaire\WinIB\bin"

C:\Program Files (x86)\Voltaire\WinIB\bin>installsp.exe -l
0000001003 - MSAFD Tcpip [TCP/IP]
0000001004 - MSAFD Tcpip [UDP/IP]
0000001005 - MSAFD Tcpip [RAW/IP]
0000001001 - RSVP UDP Service Provider
0000001002 - RSVP TCP Service Provider
0000001014 - OpenIB Winsock Direct for InfiniBand
C:\Program Files (x86)\Voltaire\WinIB\bin>
```

## 6. What to do when the interfaces are not coming up

- Check the HCA for physical link if no physical line make sure the HCA is connected to a switch and switch SM is enabled, refer to switch user manual for SM mode status.
- Check/replace the cable
- Check that switch version and upgrade to latest rev
- Check HCA firmware and upgrade to certified rev
- Uninstall and reinstall driver from windows "add remove program" and from the Hardware device manager

## 7. How to read the HCA counters from the local machine?

To get the HCA counters, use the command vstat with -c flag as the following example:

```
vstat -c
```

```
hca_idx=0
pci_location={BUS=NA,DEV/FUNC=NA}
vendor_id=0x08f1
vendor_part_id=0x6278
hw_ver=0xa0
fw_ver=4.07.0600
PSID=VLT0020010001
node_guid=0008:f104:0396:fb04
num_phys_ports=2
  port=1
  port_state=PORT_ACTIVE (4)
  sm_lid=0x0001
  port_lid=0x0006
  port_lmc=0x0
  max_mtu=2048 (4)

  port=2
  port_state=PORT_DOWN (1)
  sm_lid=0x0000
  port_lid=0x0000
  port_lmc=0x0
  max_mtu=2048 (4)
```

```
port counters for port 1
```

```
link_error_recovery_counter 0x0
link_down_counter 0x0
port_rcv_errors 0x0
port_rcv_remote_physical_errors 0x0
port_rcv_switch_relay_errors 0x0
port_xmit_discard 0x10
port_xmit_constraint_errors 0x0
port_rcv_constraint_errors 0x0
vl15_dropped 0x0
```

port_rcv_data	0xffffffff
port_xmit_data	0xffffffff
port_rcv_pkts	0x5d79948
port_xmit_pkts	0x3f24dd5

port counters for port 2

link_error_recovery_counter	0x0
link_down_counter	0x0
port_rcv_errors	0x0
port_rcv_remote_physical_errors	0x0
port_rcv_switch_relay_errors	0x0
port_xmit_discard	0x0
port_xmit_constraint_errors	0x0
port_rcv_constraint_errors	0x0
vl15_dropped	0x0
port_rcv_data	0x0
port_xmit_data	0x0
port_rcv_pkts	0x0
port_xmit_pkts	0x0

## 8. How to verify the application is running on WSD or IPOIB

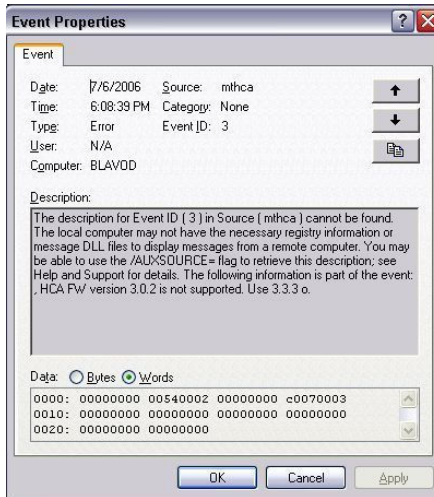
- Open task manager and select network tab
- Run the application
- Look at the network performance charts for the Infiniband interface
  - If you see network traffic that means your application is running on IPOIB
  - If no there is no network traffic on the performance monitor while the application is running that means it runs over WSD
- Open WSD performance counter – refer to windows GridStack™ the user manual

## 9. What to do when my application is not working on WSD

- Run vstat command and verify the HCA is running with the latest firmware
- Disable WSD and run the application on IPOIB
  - To disable WSD run the command **installsp.exe -r**
  - To restore WSD run the command **installsp.exe -i**
- Open WSD logs
- Run different app on WSD to test that WSD is functional. We recommend to use the iperf benchmark

## 10. What to do when getting mthca event in the system event viewer

Event	What to do
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- Run mst start from the bin directory see if the HCA is recognized
- Check run vstat.exe check the firmware version
- Upgrade firmware – refer to use manual for firmware upgrade procedure

## 11. How to recover a system after blue-screen in case it keeps crashing?

In case the system crashed (blue-screen) and crashes again after the next reboot use the following procedure to recover the machine:

- 1) boot the machine at Windows Safe-Mode
- 2) Delete the file: C:\WINDOWS\system32\drivers\IPoIB.sys and reboot the machine to Norman mode
- 3) Remove the Voltaire GridStack installation (from add remove programs)
- 4) Re-install the Voltaire GridStack.

## 12. How to overcome installation/upgrade problem in which the driver and the IB interface are not loading

In case of installing or upgrading the Windows GridStack version and the driver or the IB interface does not load/show up, follow the following procedure:

- 1) un-install the Voltaire GridStack package from add-remove programs menu
- 2) remove or rename the Voltaire directory under Program File or Program Files (x86) directories
- 3) reboot the machine
- 4) Install the driver again.

**Voltaire products documentations web link:**

<http://www.voltaire.com/support.htm>