Known Issues

Third Party Hardware and Software

October 2017

This guide lists all Known Issues or special considerations when using certain Third Party Hardware or Software that may affect performance, access or generally give unexpected results under certain conditions when used with SANsymphony or other DataCore Software products.

‘Known issues’ for DataCore Software’s own products can be found in the relevant software’s own release notes which are all available from the DataCore Support website.

Unless explicitly indicated, all known issues listed here affect only the DataCore Server.
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Changes made to this document

The most recent version of this document is available from here:
http://datacore.custhelp.com/app/answers/detail/a_id/838

All changes since June 2017

Added
Storage Arrays and Controllers – All Storage
Smart Array in P2xx, P4xx, P7xx, P8xx and Proliant Servers
Update to Smart Array Firmware Version 5.04 to Correct Intermittent Controller Lockup Issues.
http://h20000.www2.hp.com/… Doc ID a00007847en_us

Previous changes made to this document
Please see page 29.
Disclaimer

DataCore Software cannot be held responsible for any incorrect information regarding third party products or assumptions made that DataCore Software has direct communication with any of the third party vendors regarding any of the issues listed here. DataCore Software always recommend that users contact the third party vendor directly to see if there are any updates or fixes since they were documented here.

DataCore always recommend that the latest software drivers, firmware and/or BIOS are used on any SAN component (unless of course they are listed here as not working as expected).

A few of the issues documented here were discovered during DataCore’s own testing but most have been reported by end users and then subsequently confirmed by the third party Vendor.

‘Known issues’ for DataCore Software's own products can be found in the relevant Software Component’s release notes available from the DataCore Support website.
The DataCore Server's hardware settings

Not every server vendor or server model will have the following settings either available or configurable; and it is very likely that some of these settings will differ between server models from the same server vendor.

Refer to the Recommended BIOS settings on a DataCore Server:
http://datacore.custhelp.com/app/answers/detail/a_id/1467

Always refer to your server vendor for advice if you are unsure.

BIOS settings for the DataCore Server

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Turbo Boost (Intel)</td>
<td>This feature should be disabled/turned off as it will cause performance degradation.</td>
</tr>
<tr>
<td>Processor ‘States’ (aka C-states)</td>
<td>This feature should be disabled/turned off (as appropriate to your Server Hardware) as they may cause performance degradation.</td>
</tr>
<tr>
<td>PowerNow Technology (AMD)</td>
<td>Set the high performance mode in the BIOS to Optimized or it could affect overall IO performance. May require a reboot.</td>
</tr>
<tr>
<td>Automatic Server Recovery (ASR)</td>
<td>The normal working behavior of some DataCore drivers may cause ASR to be triggered. This feature should be disabled in the BIOS.</td>
</tr>
<tr>
<td>IPMI Watchdog Timer (IBM)</td>
<td>The normal working behavior of some DataCore drivers may cause the Watchdog Timer to be triggered. This feature should be disabled in the BIOS.</td>
</tr>
<tr>
<td>Unified Extensible Firmware Interface (UEFI) (IBM)</td>
<td>IBM Unified Extensible Firmware Interface (UEFI) based systems configured with Host Bus Adapters (HBAs) and a Logical Unit Number (LUN) larger than 2 Terabytes (2,147,483,648 kilobyte) may have data consistency errors. The symptoms vary depending on how an application logs data consistency errors. Please See: <a href="http://www-947.ibm.com/support/entry/portal/docdisplay?lndocid=MIGR-5084554">http://www-947.ibm.com/support/entry/portal/docdisplay?lndocid=MIGR-5084554</a></td>
</tr>
</tbody>
</table>
Converged Network Adaptors

**Hewlett-Packard**

| HP CN1000Q Dual Port CNA | **Affects the DataCore Server and the Host:** Firmware version must be at least 4.8.22. From HP's own advisories: “... to prevent the loss and recovery of Ethernet connectivity, or adapter unresponsiveness requiring a reboot to recover, from occurring.” |
# Fibre Channel host bus adaptors

## Agilent Technologies

| All | Not supported as Mirror or Front End Port Roles. Use the vendor’s own recommended HBA driver (and failover software) as a native Back End connection to the Storage. |

## ATTO Technology

| All | Not supported as Mirror or Front End Port Roles. Use the vendor’s own recommended HBA driver (and failover software) as a native Back End connection to the Storage. |

## Brocade

| All | Not supported as Mirror or Front End Port Roles. Use the vendor’s own recommended HBA driver (and failover software) as a native Back End connection to the Storage. |

## Emulex Corporation

| General | Any direct connections to other DataCore Server Emulex HBAs (i.e. not using a switch) should have the ‘Loop only’ connection mode set. Do not enable Third Party Process Logout (TPRLO) on Host FE connections. |
| Lpe1200x | Use Firmware Version 2.01a12 or greater to avoid a crash during the Install (or Update) of the DataCore Emulex Fibre Channel Driver on a DataCore Server. |
| All 16GB HBA Models | All Emulex 16GB HBAs are not currently supported using the DataCore Fibre Channel Driver. These HBAs can still be used with a native (i.e. non-DataCore) driver as a connection to a Storage Array. **Important:** Customers already using the DataCore Emulex Fibre Channel driver will continue to be supported but they must not use the firmware that is included with any version 11.x Emulex driver package. Use only the firmware that is provided with the most current version 10.x Emulex driver package. |

## Hewlett-Packard

| FC2142SR | Not supported as Mirror or Front End Port Roles. Use the vendor’s own recommended HBA driver (and failover software) as a native Back End connection to the Storage. |
| HP SN1000E | Not supported as Mirror or Front End Port Roles. Use the vendor’s own recommended HBA driver (and failover software) as a native Back End connection to the Storage. |
### LSI Corporation

| All | Not supported as Mirror or Front End Port Roles. Use the vendor's own recommended HBA driver (and failover software) as a native Back End connection to the Storage. |

### QLogic

| All 16 GB HBAs | If using the native QLogic Driver as backend connection to Storage do not use driver version 9.1.17.21 with firmware older than 08.03.00 as in some cases this may cause a Storage Array to panic. |

**Affects the DataCore Server (SANsymphony-V 10.0 PSP 4 update 1 or earlier):**

16GB Fibre Channel HBAs using the DataCore fibre channel driver must have their 'Data rate mode' set to 8GB if they are directly connected to other 16 or 32GB HBAs that are also using the DataCore fibre channel driver (e.g. DataCore Server Mirror Ports connected without using a fibre channel switch). Fix the speed via the 'Settings/Advanced Options' in the DataCore Console. See the online help: [http://www.datacore.com/SSV-webhelp/Modifying_Fibre_Channel_Port_Settings.htm](http://www.datacore.com/SSV-webhelp/Modifying_Fibre_Channel_Port_Settings.htm) for instructions.
# ISCSI host bus adaptors

**Mellanox Technologies**

| ConnectX – InfiniBand Adapter Cards with PCI Express 2.0 | **Affects the DataCore Server and the Host:**  
Do not use Firmware Versions prior to 2.8.0600. *Congestion Notification Packet may cause HCA to stall under extreme conditions* and *The ConnectX-2 PCIe transmitter may stop transmitting for a short period during software reset* (both fixed in 2.9.1000). Includes both single and dual-port models.  
While not specifically an ‘ISCSI Host Bus Adaptor’ it is recognized by the DataCore Server software as a DataCore iSCSI target driver candidate for FE and/or MR port connections. |
## Network interface cards (NICs)

### Emulex Corporation

<table>
<thead>
<tr>
<th>NIC Model</th>
<th>Issue Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oce11102-NX and Oce10102-NX 10 Gigabit Server Adapters</td>
<td>Disable ‘TCP Chimney Offload’ otherwise the DataCore Server Software may not be able to be stopped (i.e. for maintenance, updates etc.). Use the command: \texttt{l1ets hint tcp set global chimney=disabled}</td>
<td>See: <a href="http://support.microsoft.com/kb/951037">http://support.microsoft.com/kb/951037</a> for more information.</td>
</tr>
</tbody>
</table>

### Hewlett Packard

<table>
<thead>
<tr>
<th>NIC Model</th>
<th>Issue Description</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC375* Gigabit Server Adapters</td>
<td><strong>Affects the DataCore Server and the Host when using iSCSI:</strong> DataCore are recommending that the latest driver and firmware versions always be used with these Adaptors (on both the DataCore and the Host servers) when using them for iSCSI connections; or be on, at the very minimum, driver version 5.3.27.606 and Firmware: 4.0.0.19 (9 Sep 2014). Note: this is a rebranded QLogic Network Interface Adaptor</td>
<td></td>
</tr>
<tr>
<td>NC382i Dual Port Multifunction Gigabit Adapters</td>
<td><strong>Affects the DataCore Server and the Host when using iSCSI:</strong> DataCore are recommending that the latest driver and firmware versions always be used with these Adaptors (on both the DataCore and the Host servers) when using them for iSCSI connections.</td>
<td></td>
</tr>
<tr>
<td>NC522m Dual Port 10GbE Multifunction BL-c Adapter</td>
<td>Disable TCP Chimney Offload otherwise the DataCore Server Software may not be able to be stopped (i.e. for maintenance, updates etc.). Use the command: \texttt{l1ets hint tcp set global chimney=disabled}</td>
<td>See: <a href="http://support.microsoft.com/kb/951037">http://support.microsoft.com/kb/951037</a> for more information.</td>
</tr>
<tr>
<td>NC525SFP Dual Port 10GbE Server Adapter</td>
<td><strong>Affects the DataCore Server and the Host when using iSCSI:</strong> Firmware version must be at least 4.0.585. From HP’s own advisories: “… to prevent the loss and recovery of Ethernet connectivity, or adapter unresponsiveness requiring a reboot to recover, from occurring.” See: HP’s own advisory: [<a href="http://h20000.www2.hp.com/">http://h20000.www2.hp.com/</a>... Doc ID c02964542](<a href="http://h20000.www2.hp.com/">http://h20000.www2.hp.com/</a>... Doc ID c02964542)</td>
<td>Certain HP NC-Series Network Adapters May Experience Very Slow Bandwidth During Large File Transfers. See: HP’s own advisory: [<a href="http://h20000.www2.hp.com/">http://h20000.www2.hp.com/</a>... Doc ID c03734205](<a href="http://h20000.www2.hp.com/">http://h20000.www2.hp.com/</a>... Doc ID c03734205)</td>
</tr>
<tr>
<td>NC5235FP Dual Port 10GbE Server Adapter</td>
<td><strong>Affects the DataCore Server and the Host when using iSCSI:</strong> Firmware version must be at least 4.0.585. From HP’s own advisories: “… to prevent the loss and recovery of Ethernet connectivity, or adapter unresponsiveness requiring a reboot to recover, from occurring.” See: HP’s own advisory: [<a href="http://h20000.www2.hp.com/">http://h20000.www2.hp.com/</a>... Doc ID c02964542](<a href="http://h20000.www2.hp.com/">http://h20000.www2.hp.com/</a>... Doc ID c02964542)</td>
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</tr>
<tr>
<td>NC510* 10 Gigabit Server Adapter</td>
<td>Not supported by HP on Windows 2008 Servers, therefore do not work on DataCore Servers. See: HP’s own advisory: [<a href="http://h20000.www2.hp.com/">http://h20000.www2.hp.com/</a>... Doc ID c01507703](<a href="http://h20000.www2.hp.com/">http://h20000.www2.hp.com/</a>... Doc ID c01507703)</td>
<td></td>
</tr>
<tr>
<td>NC512m Dual Port 10GbE Multifunction Adapter</td>
<td></td>
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</tr>
</tbody>
</table>
### IBM

| 49y4250 and 49y7950 10 Gigabit Server Adapters | Disable *TCP Chimney Offload* otherwise the DataCore Server Software may not be able to be stopped (i.e. for maintenance, updates etc.). Use the command:  

```bash
12ets hint tcp set global chimney=disabled
```

See: [http://support.microsoft.com/kb/951037](http://support.microsoft.com/kb/951037) for more information.

A reboot may be required.

### Intel Corporation

| x710 family | **Affects the DataCore Server and the Host when using iSCSI:**  

DataCore have had reports by customers using NICs from the Intel x710 family behaving erratically under load – the symptom being continuous disconnect/reconnect between the Target and Initiator - when used for iSCSI connections to or from a DataCore Server.

Reports were based on rebranded Intel NICs (e.g. as provided by HP, Dell etc.) using the most current drivers that were supported by those third parties as of February 2017. Later drivers were available directly from Intel but these could not be applied to the rebranded NICs, so it is still unclear if this erratic behaviour has been resolved by later Intel drivers or not.

At this time DataCore are recommending to avoid NICs using the x710 chipset if at all possible. |

### QLogic

| QLE3042 | **Affects the DataCore Server and the Host when using iSCSI:**  

These are OEMed by HP as *NC375* adapters (see Hewlett-Packard section above) |

| QLE3044 | **Affects the DataCore Server and the Host when using iSCSI:**  

These are OEMed by HP as *NC523SFP Adapter* (see Hewlett-Packard section above) |
## Storage Arrays and controllers

### All Storage

For general recommendations about storage connected to the DataCore Server, please refer to ‘Storage Hardware Guideline for use with DataCore Servers’: [http://datacore.custhelp.com/app/answers/detail/a_id/1302](http://datacore.custhelp.com/app/answers/detail/a_id/1302)

| On re-formatting and re-creating previously broken RAID sets | Some storage array manufacturers allow for ‘broken’ and unusable RAID sets to be re-built without actually removing any previously written data from the disks (zeroing blocks). The name of this function is different for each manufacturer but may be something like ‘Force RAID Set Healthy’, ‘Mark Disk as Healthy’ etc. Always rebuild any broken RAID sets, or RAID sets that have been removed without properly deleting the Disk Pool it came from in the SANsymphony Console, such that all the block-level data is completely destroyed and the RAID set is rebuilt ‘as new’.

If SANsymphony is able to read a previous Disk Pool catalog from any Physical Disk seen by the DataCore Server, this can lead to behavior such as Disk Pools that have previously been removed re-appearing unexpectedly which in turn can lead to potentially incorrect recoveries for Virtual Disks whose storage sources have not yet been replaced; or ‘foreign’ Disk Pools suddenly appearing that then cannot be removed from within the SANsymphony Console by normal means. |
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<tbody>
<tr>
<td><strong>512b, 512(e)b and 4Kbyte sector support</strong></td>
<td>SANsymphony 10.0 PSP5 and later includes native support for Advanced Format Disks (AFD) on 4KByte sector format. See: <a href="http://www.datacore.com/SSV-webhelp/4KB_Sector_Support.htm">http://www.datacore.com/SSV-webhelp/4KB_Sector_Support.htm</a> Earlier versions of SANsymphony do not support 4Kbyte sectors, although Advanced Format 512e (also known as ‘512 emulation’) can be used instead. Please refer to your disk manufacturer for more details.</td>
</tr>
</tbody>
</table>
| **DataCore Servers that boot from Serial Attached SCSI (SAS)** | **Affects the DataCore Server (Windows 2012 R2 only):**

“Fix restart problems after you install update rollup 2919355 in Windows Server 2012 R2”.

See: [https://support.microsoft.com/kb/2966870](https://support.microsoft.com/kb/2966870) |

### Areca

| **ARC-188x** | Use Firmware versions 1.51 2012-12-24 or greater. Earlier versions (including pre-December 2012 versions of 1.51) may cause the DataCore Server to become unresponsive or unable to boot up. |

### Cisco Systems Inc.

| **Unified Computing Systems (UCS)** | Storage disks greater than 4TB may only be formatted using ‘4K Sectors’; this is not currently supported in any version of SANsymphony before 10.0 PSP 5.

For earlier versions of SANsymphony-V, use multiple physical disks that are 4TB (or smaller) and format using either 512bytes or Advanced Format 512e (also known as ‘512 emulation’) instead. Please refer to your disk manufacturer for more details. |
### Dell Inc.

<table>
<thead>
<tr>
<th>Array Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MD 36xx FC</strong></td>
<td>This is an ‘Active/Passive’ array. Requires Dell-approved drivers and Multi-Pathing software for Back-End (BE), multi-path failover to work correctly.</td>
</tr>
<tr>
<td><strong>MD 38xx FC</strong></td>
<td>This is an ‘Active/Passive’ array. Requires Dell-approved drivers and Multi-Pathing software for Back-End (BE), multi-path failover to work correctly.</td>
</tr>
</tbody>
</table>
| **RealSSD (Micron)** | A minimum Support Pack version of 145.07.xx with firmware version 218 or higher is required. Earlier versions are known to cause significant performance issues.  
*Note: For OEM’s the ‘xx’ value in the Support Pack versioning denotes a specific OEM vendor (e.g. 145.07.00 denotes ‘Micron’, 145.07.08 denotes ‘Dell’ etc.).* |

### EMC Corporation

<table>
<thead>
<tr>
<th>Array Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Clariion AX150</strong></td>
<td>May Require EMC-approved drivers (and so EMC-approved Multi-Pathing software) for Back-End connections to detect Storage LUNs.</td>
</tr>
<tr>
<td><strong>Clariion AX4</strong></td>
<td>May Require EMC-approved drivers (and so EMC-approved Multi-Pathing software) for Back-End connections to detect Storage LUNs.</td>
</tr>
</tbody>
</table>

### Fusion-io

| General | **Affects the DataCore Server (SANsymphony 10.0 PSP2 onwards):** Creating a SANsymphony Deduplication Pool using Fusion-io disk devices that are running on ‘old’ drivers may cause the Deduplication Console to become unresponsive.  
The Deduplication Pool creation process involves calling the Windows ‘Get-Disk’ PowerShell command to enumerate all the Physical Disk Devices that are currently seen by the DataCore Server that are used in the Disk Pool. The Get-Disk command fails when trying to query the Fusion-io disk device and goes into an endless loop, the Deduplication Pool Creation process will never complete. Upgrading the Fusion-io Devices to the most recent driver firmware will allow the Windows Get-Disk command to work as expected.  
*Note: DataCore cannot say exactly on which specific, older driver versions of Fusion-io this issue occurs; only that it was reported with version 2.3.11.183 and that after upgrading to the most current driver version available at the time – 3.2.10.1509 –the problem was resolved. We suggest running the ‘Get-Disk’ command directly on the Fusion-io Disk Device on DataCore Server before trying to create a Deduplication Pool to see if the command completes properly. Also refer to the SANsymphony Online Help:*  
## Fusion-io (continued)

<table>
<thead>
<tr>
<th>Affects the DataCore Server (SANsymphony 9.x only): SANsymphony-V 9.0 PSP4 Update 4 and earlier will not display any Vendor, Product, Serial Number or Unique Identifier information under the Info tab in the SANsymphony Console for Fusion-io storage devices (all entries will report as ‘UNKNOWN’). This has no functional impact. Refer to the SANsymphony Online Help: <a href="http://www.datacore.com/SSV-Webhelp/Physical_Disk_Details.htm">http://www.datacore.com/SSV-Webhelp/Physical_Disk_Details.htm</a></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ioDrive/Duo/Octal/Cache</strong> The DataCore Server Software may make IO WRITE requests sizes anywhere between 512 bytes and 1 Megabyte. Therefore, when calculating the Maximum RAM Requirements for the Fusion-io VSL software, DataCore recommends setting the Average Written Block Size (bytes) to 512. This may require an appropriate reduction in DataCore Cache usage (so as not to completely exhaust the available physical memory available to the operating system) depending on how much additional RAM the VSL software needs with this setting. Refer to the VSL Release Notes and <a href="http://www.datacore.com/SSV-Webhelp/Changing_Cache_Size.htm">http://www.datacore.com/SSV-Webhelp/Changing_Cache_Size.htm</a> for more information.</td>
</tr>
<tr>
<td><strong>When used with Dell PowerEdge Servers</strong> Please see the section ‘(Other) Third-party Hardware Dell – Dell Remote Access Controller (iDRAC)’ on page 27.</td>
</tr>
</tbody>
</table>
### Hewlett-Packard

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<th>Storage Arrays and controllers</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>EVA 8000/8100/4000</strong></td>
<td>Do not use Firmware Version 6.22, as this causes intermittent loss of LUNs.</td>
</tr>
</tbody>
</table>
| **MSA 1040/2040**             | From HP: Virtual pool is read-only due to multiple failures and rare race condition. [http://h20000.www2.hp.com/… Doc ID c05158553](http://h20000.www2.hp.com/… Doc ID c05158553).  
  DataCore recommend applying HP's Storage Controller Firmware GL220P008 as this includes a fix for the issue stated above and that causes LUNs presented to SANsymphony to become unavailable for WRITE I/O this will causing Disk Pools to go offline. |
| **P440AR**                    | Driver Version 63.12.0.64 appears to give poor performance. Use Driver Version 63.12.0.64 (A) or later. Please contact HP directly for more information. |
| **SAS Hardware (General)**    | Firmware Upgrade Required for Specific SAS Hard Drive Models to Prevent a Rare Data Compare Issue:  
  Note: It is possible that the nature of these seemingly similar advisories means that there may be other, different HP SAS hardware that DataCore have not been informed of that have their own descriptions. If in doubt, please contact HP directly. |
## IBM

<table>
<thead>
<tr>
<th>Model</th>
<th>Issue Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS3400 and DS3500</td>
<td>May need to have <em>LNXAVT</em> (formerly known as <em>ADT/AVT</em>) enabled to be a truly Active/Active storage array when using the DataCore Server Back End (BE) driver on Fibre Channel connections. Please refer to IBM’s own Storage Array documentation. Testing is strongly advised.</td>
</tr>
<tr>
<td>DS4100</td>
<td>May Require IBM-approved drivers (and so IBM-approved Multi-Pathing software) for Back-End (BE) connections to detect Storage LUNs.</td>
</tr>
<tr>
<td>ServeRAID M5100e Series (SSD)</td>
<td>When using the <em>Performance Accelerator for IBM System x</em> with <em>MegaRAID FastPath</em> enabled it has shown poor performance under high load. DataCore strongly recommend ‘high workload’ testing before putting into production.</td>
</tr>
</tbody>
</table>

## LSI Corporation

<table>
<thead>
<tr>
<th>Model</th>
<th>Issue Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nytro WarpDrive</td>
<td>May ship from the factory with identical NAA disk identifiers. This will cause physically different SSDs, in different DataCore Servers that occupy the same Server Group, to appear as a single, shared Physical Disk. Refer to the ‘Unique identifier’ entry: <a href="http://www.datacore.com/SSV-Webhelp/Physical_Disk_Details.htm">http://www.datacore.com/SSV-Webhelp/Physical_Disk_Details.htm</a> Reformat the SSD using LSI’s own disk utility to generate a new NAA. Refer to LSI directly for instructions on how to do this.</td>
</tr>
</tbody>
</table>

## Micron Technology Inc.

<table>
<thead>
<tr>
<th>Model</th>
<th>Issue Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RealSSD</td>
<td>A minimum Support Pack version of 145.07.xx with firmware version 218 or higher is required. Earlier versions are known to cause significant performance issues. <em>Note: For OEM's the 'xx' value in the Support Pack versioning denotes a specific OEM vendor (e.g. 145.07.00 denotes 'Micron', 145.07.08 denotes 'Dell' etc.).</em></td>
</tr>
</tbody>
</table>
### NetApp

**E Series (All)**

This Storage Array cannot be used for SANsymphony Multi-Path Array (SMPA) configurations.

It also requires NetApp’s own DSM driver as well as NetApp-approved HBA and Switch firmware – as indicated on their own Interoperability Matrix Tool – for all SANsymphony Back-End (BE) connections. Do not use SANsymphony’s BE (Fibre Channel) driver. See the document ‘Managing Fibre Channel Drivers in a DataCore Server’ from here: [http://datacore.custhelp.com/app/answers/detail/a_id/1547](http://datacore.custhelp.com/app/answers/detail/a_id/1547) for instructions on how to change the BE Fibre Channel driver on a DataCore Server.

### Netgear

**ReadyNAS 3100**

There have been reports that connections to this storage array have showed poor performance under high load. DataCore strongly recommend ‘high workload’ testing before putting into production.

### Solid State Disks (SSDs) – All manufacturers

**NMVe SSDs**

These are not supported on any version of SANsymphony before 10.0 PSP1 Update 1 or greater.

### OCZ Storage Solutions

**Z-Drive 4500**

Only use firmware 3.22e or higher

**Z-Drive R4 R Series**

Previous firmware versions are known to cause serious problems with Disk Pool and/or data access. The firmware release notes are available from: [http://ocz.com/enterprise/download/release-note/zdrive_4500_3.22e.html](http://ocz.com/enterprise/download/release-note/zdrive_4500_3.22e.html)

### PureStorage

**FlashArray (all Series)**

Requires controller firmware version 3.40 or later to use DataCore’s Backend Failover. Please note that even with the later versions of the controller firmware DataCore’s Backend Failover will not use any of the Storage Array’s ALUA capabilities.

For all versions before 3.40 (or to use the array’s ALUA capabilities regardless) please use Microsoft’s own MPIO. This will mean that DataCore’s Back End driver cannot be installed on any Fibre Channel connections to this array, use the Storage Vendor’s preferred driver instead.

### Skyera

**skyHawk**

Using Firmware versions *before* v1.0 may cause in an unexpected loss of the array’s own Disk Configuration resulting in failure of Storage Sources using those Physical Disks.
### Transtec

| Provigo         | If using firmware releases 3.5 or 3.7; go into the Storage Management Software > Advanced Options > Performance Options and set ‘Overload Management’ to ‘Disabled’ for lowest latency |

### Violin Memory

| PCIe Flash Memory Cards | May ship from the factory with identical NAA disk identifiers. This will cause physically different Flash Memory Cards, in different DataCore Servers that occupy the same Server Group, to appear as a single, shared Physical Disk.  
See the ‘Unique identifier’ section in the SANsymphony Help: http://www.datacore.com/SSV-Webhelp/Physical_Disk_Details.htm  
Refer to Violin Memory directly for instructions on how reformat the card to generate a new NAA. |

### X-IO

| ISE1          | Avoid using firmware versions 1.7.3 to 1.7.9 which have a problem where IO will stall and cause the DataCore Server to crash. This was corrected in Firmware version 1.7.20 and higher.  
These arrays are no longer supported with any controller firmware as storage for SANsymphony Shared Multipath Arrays (SMPA). If you are using an ISE1 as an SMPA storage array, please contact X-IO directly.  
Also see: Qualified Shared Multi-port Arrays (SMPA) http://datacore.custhelp.com/app/answers/detail/a_id/1485 |

| ISE2          | Older controller firmware that had previously been marked as ‘passed’ when used as storage for SANsymphony Shared Multipath Arrays (SMPA) has been found to not handle Persistent Reservations correctly under extreme load.  
Please upgrade to Controller Firmware 2.8.3 or later.  
Also see: Qualified Shared Multi-port Arrays (SMPA) http://datacore.custhelp.com/app/answers/detail/a_id/1485 |
**Switches (Fibre Channel and FCoE)**

### All Switch Manufacturers

| Registered State Change Notification (RSCN) settings | Registered State Change Notification (RSCN) must be enabled on all switch ports that the DataCore Servers are connected to (e.g. all Host ports, Storage Array connections and DataCore Server Mirror Ports). The IO StreamGuard function (which disables RSCNs) must be disabled (to re-enable RSCNs).

The RSCN Event Timeout setting must also be the same across all DataCore Server, Host and Storage Array controller ports. Please refer to the Switch Vendor’s documentation on how to do this. |
|----------------------------------------------------|

### Brocade

#### All Switches (8Gb and 16GB)

- **Affects the DataCore Server and the Host:**
  - DataCore recommend not using FOS v7.4.1.
  - DEFECT000578406
  - Fibre channel ports may not login after a DataCore Server, switch reboot or after any other ‘significant’ disruption on the fibre channel links. A fix from Brocade is in 7.4.1a.

- **Affects the DataCore Server and the Host:**
  - DataCore recommend a minimum FOS v6.4.3e. State Change Registration (SCR) value is not properly registered in the switch’s own name server table – Brocade defect DEFECT000284472 – fixed in FOS v6.4.1a onwards.

  Host Front End (FE) and/or DataCore Mirror (MR) connections may not login after a DataCore Server or switch reboot, or after any other ‘significant’ disruption on the fibre channel links. Remote Ports in the DataCore Server UI will show as logged out – Brocade defect DEFECT000429695 – fixed in FOS v6.4.3e, 7.0.2d, 7.1.1 and 7.2.0a

#### 16GB Switches only

- **Affects the DataCore Server and Host (SANsymphony-V 9.x, 10.0 and 10.0 Update 1):**
  - DataCore have had reported to them that, for a very small number of environments, where 16GB Host ports are logged in to 16GB DataCore QLogic Front End ports or where 16GB DataCore QLogic Mirror ports are logged in to other 16GB DataCore QLogic Mirror ports that they have had unexpected log-outs from their Fibre Channel Target connection, and that they then remain logged out because of Switch Buffer Credit exhaustion.

  *Whilst there was no specific Brocade or QLogic issue reported to DataCore, we have found that upgrading the switch’s FOS to v7.3.0a or greater and using SANsymphony-V 10.0 PSP 1 or later – where a newer version of the DataCore QLogic Firmware was included – this problem no longer occurs. Therefore the recommendation is that you update both the Switch FOS and the SANsymphony software as appropriate.*

  *N.B. For users that experience this problem and cannot immediately upgrade either the switch or the SANsymphony software, setting the switch port speed globally back down to 8GB (i.e. for any FC HBAs connected to it) seemed to alleviate the problem and provide a temporary workaround until an upgrade is possible, when the speed can be set back to 16GB.*
### Brocade (continued)

| **8GB Switches only** | Switches may observe loss of connectivity on ports and/or trunked *Inter Switch Links* (ISL) – Brocade defect DEFECT000324848 – fixed in FOS v6.4.1a and 7.0.0. |

**Affects the DataCore Server and the Host:**

When using a mixture of HBA speeds in an 8GB switch (i.e. 2GB, 4GB and/or 8GB HBAs) the port’s *fillword* setting may need to be changed. Otherwise symptoms such as intermittent, random switch port log-outs will occur. More general errors may also be reported on the switches (usually indicated by `er_enc_out` and/or `er_bad_os`).

- Do not use FOS versions earlier than 6.2.0c.
- FOS versions between 6.2.0c and 6.3.1 the *fillword* on all ports should be set to mode 0 (zero).
- For FOS v. 6.3.1a onwards mode 3 should be used for all 8GB HBAs mode 0 (zero) for all 2GB or 4GB HBA connections.

Use the `portcfgshow` command to check the current *fillword* setting. For example:

```
admin> portcfgshow 1/0
Area Number: 0
Speed Level: AUTO(HW)
Fill Word: 3(A-A then SW I-A)
AL_PA Offset 13: OFF
```

To change the mode for a port, use `portCfGFillWord PortNumber Mode`. Always refer to Brocade’s documentation in case the syntax or output of the command as used in the example above has changed.

**Important:** Changing the fillword is disruptive (as the port has is temporarily disabled and re-enabled while the change takes place) but there should be no need to stop the DataCore Server or the SANsymphony software. Care should be taken though to avoid potential double failures DataCore Mirror (MR) and Host Front End (FE) connections from by making one port change at a time and then making sure that the port connection has been re-established, using the SANsymphony Console, before proceeding to the next one.

See the ‘Fibre Channel Port Details’ section in the SANsymphony Help: `http://www.datacore.com/SSV-Webhelp/Server_Port_Details.htm`

**Note:** This fillword change does not apply to 16GB Switches. DataCore recommend a *minimum* FOS v6.4.3e because of other, more significant Brocade Defect reports (see previous page).
### Cisco Systems Inc.

<table>
<thead>
<tr>
<th>MDS 9000 Series</th>
<th>DataCore Servers Front-End, Back-End or Mirror ports connected to these switches must have <strong>unique FC Area IDs</strong> configured. Please refer to the appropriate documentation for your switch from here: <a href="http://www.cisco.com/c/en/us/td/docs/switches/datacenter/mds9000/sw/4_1/configuration/guides/cli_4_1/clibook/domn.html">http://www.cisco.com/c/en/us/td/docs/switches/datacenter/mds9000/sw/4_1/configuration/guides/cli_4_1/clibook/domn.html</a> See the section ‘About Unique Area FC IDs for HBAs’.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nexus 5000 Series</td>
<td>DataCore Servers Front-End, Back-End or Mirror ports connected to these switches must have <strong>unique FC Area IDs</strong> configured. Please refer to the appropriate documentation for your switch (Configuring Unique Area FC IDs for an HBA) from here: [<a href="http://www.cisco.com/c/en/us/td/docs">http://www.cisco.com/c/en/us/td/docs</a> switches/datacenter/nexus5000/sw/san_switching/421_n1_1/b_Cisco_n5k_nxos_sanswitching_config_guide_rel421_n1_1/Cisco_n5k_nxos_sanswitching_config_guide_rel421_n1_1_chapter4.html](<a href="http://www.cisco.com/c/en/us/td/docs">http://www.cisco.com/c/en/us/td/docs</a> switches/datacenter/nexus5000/sw/san_switching/421_n1_1/b_Cisco_n5k_nxos_sanswitching_config_guide_rel421_n1_1/Cisco_n5k_nxos_sanswitching_config_guide_rel421_n1_1_chapter4.html) See the section ‘About Unique Area FC IDs for HBAs’.</td>
</tr>
<tr>
<td>McData</td>
<td>DataCore Servers Front-End, Back-End or Mirror ports connected to these switches set the ‘Connection Mode’ to ‘Point to Point only’ and the ‘Data Rate’ to ‘Auto’. On the Switch, fix the data rate for all ports on the switch to match the HBA speed connected to it. Refer to: <a href="http://www.datacore.com/SSV-Webhelp/Server_Port_Details.htm#Fibre_Channel_Port_Tabs">http://www.datacore.com/SSV-Webhelp/Server_Port_Details.htm#Fibre_Channel_Port_Tabs</a></td>
</tr>
</tbody>
</table>
Third Party software

Anti-Virus Software (any)

| General | Exclude all DataCore installation folders (.../Program Files/DataCore/...) and all Replication buffers.  
| **Note:** DataCore do not explicitly qualify Anti-Virus software, so like any third party software installed on a DataCore Server, care should be taken so as to not use up the remaining system memory and resources which may then lead to an unstable system. |

Adaptec

| maxView Storage Manager | Use version v1.07.21229 (15 Dec 2014) or later.  
| | Earlier versions used with DataCore Servers that have active iSCSI connections will prevent Adaptec RAID controllers from being discovered and SANsymphony configured Tasks from sending Emails. |

Broadcom

| Broadcom Advanced Server Program (BASP) | The virtual adapter may change its MAC Address if there are interruptions within the TCP/IP network. This will disable the original iSCSI target device on the DataCore Server that was previously using the MAC address.  
| NetXtreme II BCM57xxx | **Affects the DataCore Server and the Host:** Disable the NIC’s own ‘iSCSI HBA initiator’ feature if using any DataCore Server iSCSI functions – Front End, Mirroring or Back End port roles – as it will interfere with them.  
| | **Note:** Even if not using iSCSI (e.g. this NIC is just used for out of band communication between DataCore Servers), DataCore still recommend that this feature be disabled; as the DataCore Server software will always attempt to install the DataCore iSCSI Target Driver on any NIC (regardless if iSCSI is needed or not) and this may generate unexpected, if benign, error messages. |

Citrix XenServer

Please refer to the ‘Known Issues’ section in the document:

**The Host Server – Citrix XenServer Configuration Guide**

[http://datacore.custhelp.com/app/answers/detail/a_id/1561](http://datacore.custhelp.com/app/answers/detail/a_id/1561)
# Hewlett Packard

<table>
<thead>
<tr>
<th>Insight Management (WBEM)</th>
<th>When the WBEM ‘feature’ is enabled to start automatically after a restart of the DataCore Server, it has been seen to add a delay of anywhere up to 20 minutes before the startup of DataCore Executive service and so the SANsymphony Software. WBEM feature should ideally be disabled (or removed) but could theoretically be set to start manually allowing the DataCore Executive service to start first and the user can then start the WBEM feature. Please consult HP’s documentation, or contact HP support for details on how to do this. Another method is to change the DataCore Executive service startup type from ‘Automatic’ to ‘Automatic (Delayed Start)’. This forces the DataCore Executive service to wait for all the other ‘Automatic’ services to start before it does. This can still cause a relatively long delay although tests show that it should be less than if left as ‘Automatic’.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Affects the DataCore Server and the Host (Windows 2012 or 2012 R2):</strong></td>
<td>HP recommends upgrading to HP Insight Management Agents for Windows Server x64 Editions Version 10.0.0.0 (or later). See: “HP ProLiant Servers – Systems Running Microsoft Windows Server 2012 or 2012 R2 May Experience a Memory Leak Up To 5 Mb/ Hour for Some NIC Teaming Configurations.” See HP’s own advisory: [<a href="http://h20000.www2.hp.com/%E2%80%A6">http://h20000.www2.hp.com/…</a> Doc ID c04209163](<a href="http://h20000.www2.hp.com/%E2%80%A6">http://h20000.www2.hp.com/…</a> Doc ID c04209163)</td>
</tr>
<tr>
<td><strong>When upgrading from SANsymphony 7 or SANmelody 3:</strong></td>
<td>When making a Hot or Cold upgrade to SANsymphony-V 8.x, the delay caused by WBEM will prevent the upgrade from completing properly – as ‘post installation tasks’ after the software has been upgraded, but before the reboot – will not be able to complete in a timely manner. If you do experience this, do not attempt to ‘fix’ anything or cancel out of the upgrade leave the DataCore Server alone and contact Customer Support for help.</td>
</tr>
<tr>
<td>Storage Works</td>
<td>HP’s cpqfcac.sys driver must be removed from the Windows Operating system before installing SANsymphony where Fibre Channel, Back End ports are connected to HP storage arrays.</td>
</tr>
</tbody>
</table>
### Microsoft Corporation

| The DataCore Server Operating System | Affects the DataCore Server (Windows 2012 or 2012 R2):  
A regression was introduced in a Windows update issued in March 2017 causing TCP Port 'exhaustion' when the Microsoft iSCSI initiator cannot connect to an iSCSI Target because it is offline or no longer connected. For example when using iSCSI Mirrors  
This will cause either an "Insufficient winsock resources available to complete socket connection initiation" error in the DataCore Management Console when trying to login to a DataCore Server Group, or the DataCore Server may be unavailable for remote access (via RDP) or other network based logins including Replication connections.  
DataCore have been informed by Microsoft that they will release a fix in a future rollup. In the meantime, any users that have applied any Windows Updates since March 2017 please contact Microsoft directly to see if a Hotfix is available. |
|-------------------------------------|-----------------------------------------------------|
| The Host Operating System           | Affects the Host  
Please also refer to the ‘Known Issues’ section in the document:  
**The Host Server – Microsoft Windows Configuration Guide**  
http://datacore.custhelp.com/app/answers/detail/a_id/1560 |
| BitLocker Drive Encryption          | Disable this feature as it prevents SANsymphony’s Disk Pool driver from functioning properly. |
| UPS Services                        | Use Microsoft’s own native UPS driver (not third party drivers) to allow SANsymphony-V to detect UPS states properly.  
| Windows Management Instrumentation (WMI) | “The "Win32_Service" WMI class leaks memory in Windows Server 2008 R2 ....”  
Please apply the hotfix: [http://support.microsoft.com/kb/981314](http://support.microsoft.com/kb/981314) |
| Windows 2008 R2 (all) Power Savings Settings | “Slow Performance on Windows Server 2008 R2 when using the “Balanced” Power Plan”. This should be set to ‘High Performance’ to ensure all the CPUs in the DataCore Server are available all the time.  
See: [http://support.microsoft.com/kb/2207548](http://support.microsoft.com/kb/2207548) |
| Windows 2008 R2 SP1 Convenience rollup update for Windows Server 2008 R2 SP1 | A new Ethernet virtual Network Interface Card (vNIC) may be created with default settings in place of the previously existing vNIC, causing networking issues. Any custom settings on the previous vNIC are still persisted in the registry but unused. See: [https://support.microsoft.com/en-us/kb/3125574](https://support.microsoft.com/en-us/kb/3125574) |

### Symantec

| Network Threat Protection | Disable this feature as it can affect overall performance. |
Veeam Software

<table>
<thead>
<tr>
<th>Backup Management Suite</th>
<th>Affects the Host Server:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Use Veeam Backup &amp; Replication 7.0 Patch 4 or greater.</td>
</tr>
</tbody>
</table>

The DataCore’s VSS Hardware Provider cannot be selected by the ‘Resource Owner’ of a Microsoft Cluster when using Cluster Shared Volumes (CSVs). The ‘Resource Owner’ cannot backup its own CSVs using DataCore’s VSS. Nodes that are not designated however are still able to use the DataCore VSS hardware provider as normal.


VMware ESXi

Please refer to the ‘Known Issues’ section in the document:

The Host Server – VMware ESXi Configuration Guide

[http://datacore.custhelp.com/app/answers/detail/a_id/1556](http://datacore.custhelp.com/app/answers/detail/a_id/1556)
(Other) Third Party hardware

### Allied TeleSyn

<table>
<thead>
<tr>
<th>Device</th>
<th>Issue Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gigabit Media Converter MC1000 series</td>
<td>Do not use ‘Smart Missing Link’ (SML) Mode Status.</td>
</tr>
</tbody>
</table>

### Dell

<table>
<thead>
<tr>
<th>Device</th>
<th>Issue Description</th>
</tr>
</thead>
</table>
| Dell Remote Access Controller (iDRAC)       | Fan Offset settings for PowerEdge servers are lost after a power failure when using firmware versions from 2.15.10.10 up to and including 2.21.21.21.  
This is pertinent when using Fusion-io SSDs in a PowerEdge Server as the Fan Offset should be changed to 'Medium'. |

### Fujitsu

**Important note:** These do not apply to the Fujitsu-DataCore Storage Virtualization Appliance (SVA) appliance. See: [http://datacore.custhelp.com/app/answers/detail/a_id/1593](http://datacore.custhelp.com/app/answers/detail/a_id/1593) (login required) for more information about the SVA.

<table>
<thead>
<tr>
<th>Device</th>
<th>Issue Description</th>
</tr>
</thead>
</table>
| Primergy Servers                           | Older version of the ‘Fujitsu Server Agent’ caused a problem with Microsoft’s Windows Management Instrumentation (WMI) affecting the DataCore Servers which encounter timeouts and connection problems when trying to open the SANsymphony-V Console and/or when trying to connect to other DataCore Servers in the same Server Group. Please use the most current version of Fujitsu's Server Agents (as of writing it is 7.10.14).  
**Affects the DataCore Server (SANsymphony-V10.0 PSP2 or greater):**  
The Fujitsu ServerView Server Control service can prevent the DataCore Executive service from starting up immediately after any reboot of the DataCore Server for up to 20 minutes; this will prevent SANsymphony-V from being able to start. Change the Fujitsu ServerView Server Control service’s ‘Startup Type’ from ‘Automatic’ to ‘Automatic (Delayed Start)’ to allow the DataCore Executive service to start up as normal. |
### IBM

| System x3550 | Non-Maskable Interrupt (NMI) and Peripheral Component Interconnect (PCI) errors may occur on System x3550 M2 and System x3650 M2 when removing or connecting the Ethernet cable into the Ethernet ports. See IBM’s own advisory: [http://www-947.ibm.com/... Doc ID MIGR-5084146](http://www-947.ibm.com/... Doc ID MIGR-5084146) |
| System x3650 | Non-Maskable Interrupt (NMI) and Peripheral Component Interconnect (PCI) errors may occur on System x3550 M2 and System x3650 M2 when removing or connecting the Ethernet cable into the Ethernet ports. See IBM’s own advisory: [http://www-947.ibm.com/... Doc ID MIGR-5084146](http://www-947.ibm.com/... Doc ID MIGR-5084146) |

### Hewlett Packard

| HP c-Class BladeSystem | **Affects the DataCore Server and the Host:**  
HP c-Class BladeSystem - Server Blades May Sporadically Lose SAN Connections Through HP Virtual Connect FlexFabric Modules.  
| ProLiant Servers | **Affects the DataCore Server and the Host:**  
System ROM Upgrade required to Prevent Unpredictable System Behavior in ProLiant Servers Configured with Intel Xeon 7500-Series or Intel Xeon E7-Series Processors. See: HP’s own advisory: [http://h20000.www2.hp.com/... Doc ID c03346558](http://h20000.www2.hp.com/... Doc ID c03346558) |
| HP Virtual Connect | **A pause flood detection on VC uplink ports results in poor performance and/or an FCoE outage. Generic parity errors are fixed for the HP VC FlexFabric-20/40 F8 Module.**  
HP Virtual Connect Version 4.45 corrects these issues. See HP’s own release notes: [http://h20564.www2.hpe.com/... Do c04731344](http://h20564.www2.hpe.com/... Do c04731344) |
Previous Changes

2017

June

Added
Switches (Fibre Channel and FCoE) - All Switch Manufacturers
Registered State Change Notification (RSCN) settings

Fibre Channel Host Bus Adaptors – Emulex Corporation
All 16GB HBA Models

Third Party Software – Microsoft Corporation
The DataCore Server Operating System - Windows 2012 or 2012 R2
A regression was introduced in a Windows update issued in March 2017 that causes TCP Port 'exhaustion'. Please see the entry for more information.

Updated
Storage Arrays and Controllers – All Storage
512b, 512(e)b and 4Kbyte sector support.

Removed
Switches (Fibre Channel and FCoE) – McData, QLogic, Brocade etc.
Registered State Change Notification (RSCN) settings.
These duplicate entries have all been removed and a single entry, under 'All Switch Manufacturers', has been added – see 'Added' above.

Fibre Channel Host Bus Adaptors – Emulex Corporation
LP1150, Lpe1150 and Lpe111 - These HBAs could not take the DataCore Fibre Channel Driver and are documented as 'Discontinued' by Emulex.

April

(Re)moved
XenServer
"If using QLogic QLA405x/406x iSCSI HBAs, use QLogic’s Firmware revision 3.01.49 or greater ...”
This has been moved to the 'Known Issues' section in the 'The Host Server – Citrix XenServer Configuration Guide'. http://datacore.custhelp.com/app/answers/detail/a_id/1561

Converged Network Adaptors - QLogic’s Dual-Port, 10Gbps Ethernet-to-PCIe Converged Network Adaptor (CNA)
For VMware ESX Hosts disable (a) select a LUN to Boot from, and (b) the adapter BIOS.
This has been moved to the 'Known Issues' section in the 'The Host Server - VMware ESXi Configuration Guide'. http://datacore.custhelp.com/app/answers/detail/a_id/1556

Third Party Software – Microsoft Corporation
Offloaded Data Transfers (ODX)
Only supported with or SANsymphony-V 9.0 PSP4 and later. For earlier versions of SANsymphony-V, ODX must be disabled on the Host. Please refer to http://technet.microsoft.com/en-us/library/jj200627.aspx

Fibre Channel host bus adaptors - QLogic - All 2 or 4 GB HBAs
Do not use driver versions 9.0.1.12 or 9.0.2.11 as they may cause unexpected disconnections...

Fibre Channel host bus adaptors - QLogic - 16GB HBAs
Do not use driver version 9.1.17.21 with firmware older than 08.03.00 when connecting to DataCore Server Front-end ports ...

These 3 issues have been moved to the 'Known Issues' section in the 'The Host Server - Microsoft Windows Configuration Guide'. http://datacore.custhelp.com/app/answers/detail/a_id/1560

March
Added
Network Interface Cards – Intel x710 Family
Affects the DataCore Server and the Host when using iSCSI:
DataCore have had reports by customers using NICs from the Intel x710 family behaving erratically under load – the symptom being continuous disconnect/reconnect between the Target and Initiator - when used for iSCSI connections to or from a DataCore Server. Reports were based on rebranded Intel NICs (e.g. as provided by HP, Dell etc.) using the most current drivers that were supported by those third parties as of February 2017. Later drivers were available directly from Intel but these could not be applied to the rebranded NICs, so it is still unclear if this erratic behaviour has been resolved by later Intel drivers or not. At this time DataCore are recommending to avoid any NICs using Intel’s x710 chipset.

Updated
Storage Arrays and controllers - HP P440AR
Affects the DataCore Server:
Driver Version 63.12.0.64 appears to give poor performance; use Driver Version '63.12.0.64 (A)' or later. Please contact HP directly for more information.
Previously there had been no later driver than '63.12.0.64'

February
Added
Storage Arrays and controllers
Hewlett Packard – MSA 1040/2040
From HP: Virtual pool is read-only due to multiple failures and rare race condition.
DataCore recommend applying HP’s Storage Controller Firmware GL220P008.

2016

October
Added
Third Party software
Microsoft Corporation
Windows 2008 R2 SP1 - Convenience rollup update for Windows Server 2008 R2 SP1

September
Updated
Storage Arrays and controllers
Cisco Systems Inc. - Unified Computing Systems (UCS)
This entry previously stated: "Storage disks greater than 4TB may only be formatted using ‘4K Sectors’; this is not currently supported by SANsymphony...". Disks using 4K sectors are now supported in SANsymphony 10.0 PSP5 and greater. The entry has been changed to reflect that.

June
Added
Storage Arrays and controllers
Hewlett Packard - HP Smart Array P2xx, P4xx, P7xx and P8xx
Controllers Configured with One or More Spare Drives and Firmware Version 6.40 (or Earlier) May Halt with "Lockup Code = 0xAB" Around 64, 128, or 256 Days.

Fibre Channel host bus adaptors
QLogic
Affects the DataCore Server – SANsymphony-V 10.0 PSP 4 update 1 or earlier:
16GB Fibre Channel HBAs using the DataCore fibre channel driver must have their 'Data rate mode' set to 8GB if they are directly connected to other 16 or 32GB HBAs that are also using the DataCore fibre channel driver.

May
Added
Storage Arrays and controllers
Hewlett Packard P440AR
Driver Version 63.12.0.64 appears to give poor performance.

Fibre Channel host bus adaptors
All QLogic 16GB HBAs
Do not use driver version 9.1.17.21 with firmware older than 08.03.00.

March
Updated
Switches (Fibre Channel & FCoE)
Brocade - All Switches (8GB and 16GB)
DataCore recommend not using FOS v7.4.1. DEFECT000578406

February
Added
(Other) Third Party Hardware
Hewlett Packard - HP Virtual Connect
A pause flood detection on VC uplink ports results in poor performance and/or an FCoE outage. Generic parity errors are fixed for the HP VC FlexFabric-20/40 F8 Module.

January
Added
Storage Arrays and Controllers
General (All)
SANsymphony-V 9.x and 10.x do not, currently, support block sizes on physical disks greater than 512bytes although Advanced Format 512e (also known as '512 emulation') can be used instead.

Fusion-io
When used with Dell PowerEdge Servers: please see the section '(Other) Third-party Hardware Dell - Dell Remote Access Controller (iDRAC)' on page 27.

NVM Express (NMVe) SSDs
Not supported with SANsymphony-V 9.x, 10.0 and 10.0 (no PSP) update 1. Use SANsymphony-V 10.0 PSP1 Update 1 or greater.

Switches (Fibre Channel & FCoE)
Brocade — All Switches (8Gb and 16GB)
DataCore recommend not using FOS v7.4.1. Please use FOS v7.3.1d.

(Other) Third-party Hardware
**Dell - Dell Remote Access Controller (iDRAC)**
Fan Offset settings for PowerEdge servers are lost after a power failure when using firmware versions from 2.15.10.10 up to and including 2.21.21.21.

**Removed**
**Storage Arrays and Controllers**
EUROstor — ES-2100 iSCSI,
Texas Memory Systems — RAMSAN-70,
Virident Systems Inc. — FlashMAX
Dell Inc. — NVM Express SSDs
These have all been removed as they are now covered by the new, added section 'Storage Arrays and Controllers — NVM Express (NMVe) SSDs' entry.

**December**
**Added**
**Storage Arrays and Controllers**
Micron Technology Inc. - RealSSD
A minimum Support Pack version of 145.07.xx with firmware version 218 or higher is required.

Dell Inc. – RealSSD (Micron)
A minimum Support Pack version of 145.07.xx with firmware version 218 or higher is required.

**Updated**
**Hewlett Packard – ProLiant Servers**
HP ProLiant Server
May 'Blue Screen' if Configured With an HP Smart Array Controller with Windows Server 2012 and Windows 2012 R2.

**HP ProLiant Gen9 Server**
The Server May Stop Responding and Will Display Power-On Self-Test (POST) Error Messages on Reboot When Running Smart Array Controllers and/or Host Bus Adapters

**September**
**Added**
**(Other) Third-Party Hardware**
Fujitsu – Primergy Servers
SANsymphony-V10.0 PSP2 or greater): The Fujitsu ServerView Server Control service can prevent the DataCore Executive service from starting up immediately after any reboot of the DataCore Server for up to 20 minutes

**Updated**
**All Storage Arrays**
NetApp – E Series (All)
This Storage Array cannot be used for SANsymphony-V Multi-Path Array (SMPA) configurations.

**August**
**Added**
**Storage Arrays and Controllers**
Virident Systems Inc. – General
SANsymphony-V is not able to display any the Serial Number information under the Info tab of the SANsymphony-V management console
(Other) Third-Party Hardware
Fujitsu – Primergy Servers
Older version of the ‘Fujitsu Server Agent’ caused a problem with Microsoft’s Windows Management Instrumentation (WMI) affecting the DataCore Servers which encounter timeouts and connection problems when trying to open the SANsymphony-V Management Console.

June
Added
Storage Arrays and Controllers
Fusion-io – General
Creating a SANsymphony-V Deduplication Pool using Fusion-io disk devices that are running on ‘old’ drivers may cause the Deduplication Console to become unresponsive.

May
Updated
General Server BIOS settings
Intel – Turbo Boost
Previously there were number of specific chipsets listed as examples, these examples have been removed as the information may also apply to later models not necessarily listed here.

February
Added
Storage Arrays and Controllers:
Dell Inc. – MD 38xx FC
This is an ‘Active/Passive’ array and requires both Dell-approved drivers and Multi-Pathing software for Back-End (BE) failover to work correctly.

Dell Inc. – NVM Express SSDs
Use SANsymphony-V 10.0 PSP1 Update 1 or greater.

Network Interface Cards
Hewlett Packard - NC382i Dual Port Multifunction Gigabit Adapters
DataCore are recommending that the latest driver and firmware versions always be used with these Adaptors

Updated
Network Interface Cards
Hewlett Packard - NC375* Gigabit Server Adapters
DataCore are recommending that the latest driver and firmware versions always be used with these Adaptors

Storage Arrays and Controllers
Fusion-io – General
SANsymphony-V 9.0 PSP4 Update 4 and earlier will not display any Vendor, Product, Serial Number or Unique Identifier

Switches (Fibre Channel & FCoE)
Brocade, QLogic, Cisco and McData
Added note to state that the RSCN Events Timeout should be the same across all ports that are connected to or from a DataCore Server.

Third Party Software
Hewlett Packard - Insight Management
HP recommends upgrading to HP Insight Management Agents for Windows Server x64 Editions Version 10.0.0.0 (or later).
January

**Added**

**Switches (Fibre Channel & FCoE)**

*Brocade – 16GB Switches*

Added note about a possible ‘Buffer Credit’ exhaustion issue for some environments with 16GB QLogic HBAs.

**Third Party Software**

*Adaptec – maxView Storage Manager*

Use version v1.07.21229 (15 Dec 2014) or later.

*Microsoft Corporation*

Windows 2012 R2 Servers that boot from SAS storage controllers

“Fix restart problems after you install update rollup 2919355 in Windows Server 2012 R2”.

**Removed**

**Third Party Software**

*Microsoft Corporation*

Removed note about very old QLogic Driver versions that are no longer available for Download (9.0.1.12 or 9.0.2.11).

2014 and earlier

**November**

**Added**

*(Other) Third Party Hardware*

*IBM – System x3550 and x3650*

Non-Maskable Interrupt (NMI) and Peripheral Component Interconnect (PCI) errors may occur when removing or connecting the Ethernet cable into the Ethernet ports.

**Storage Arrays and Controllers**

*ServeRAID M and MR10 Series SAS Controller*


**Updated**

**Third Party Software:**

All issues regarding the VMware ESX Host Operating system have now been moved to the 'Host Configuration Guide – VMware ESX' FAQ please see: [http://datacore.custhelp.com/app/answers/detail/a_id/1556](http://datacore.custhelp.com/app/answers/detail/a_id/1556)

**September**

**Added**

*(Other) Third Party Hardware*

*Hewlett Packard - ProLiant Servers*

Agentless Management Service (AMS) for Windows Server may consume excessive amounts of system memory. A System ROM Upgrade is required to Prevent Unpredictable system behavior with Intel Xeon 7500-Series or Intel Xeon E7-Series Processors; includes URL to HP’s own advisories.

*IBM – System x3550 and x3650*

Non-Maskable Interrupt (NMI) and Peripheral Component Interconnect (PCI) errors may occur when removing or connecting the Ethernet cable into the Ethernet ports.
**Updated**

**Network Interface Cards**

*Hewlett Packard: NC375* Gigabit Server Adapters
*NC522m Dual Port 10GbE Multifunction BL-c Adapter*
*NC522SFP Dual Port 10GbE Server Adapter*
*NC523SFP Dual Port 10GbE Server Adapter*

No new technical information added as such, but a URL now exists to point to the advisory already mentioned (HP Document ID: c02964542) – users are recommended to re-check to make sure this does not affect their current DataCore Server or Hosts.

**Switches (Fibre Channel & FCoE)**

*Cisco MDS 9000 and Nexus 5000 Series*

Updated the URLs to Cisco’s own documentation for the information regarding ‘Unique Area FC IDs for HBAs’ for each of the switch models.

**August**

**Added**

**Third Party Software**

*Hewlett Packard*

HP ProLiant Agentless Management Service (AMS)

**(Other) Third Party Hardware**

*HP c-Class BladeSystem*

**Updated**

**General**

Removed all references and known issues that are specific to SANsymphony 7.

**July**

**Updated**

**Fibre Channel Host Bus Adaptors**

*LPe1200x*

Typo with firmware version. Should have said “Use Firmware Version 2.01a12 or greater ...” instead of “Use Firmware Version 2.10a12 or greater ...”

**Storage Arrays and Controllers**

*Skyera – skyHawk*

Using Firmware versions before v1.0 may cause in an unexpected loss of the array’s own Disk Configuration resulting in failure of Storage Sources using those Physical Disks.

**Switches (Fibre Channel & FCoE)**

*Brocade*

Added note about ‘disabling’ RSCN suppression (so as to ‘enable’ RSCN) as this was not clear. *Note: The layout for this section has been reordered so that it is clearer with regard to each firmware version’s different ‘known issues’. No new information has been added.*

**Third Party Software Veeam Software**

“*The DataCore’s VSS Hardware Provider cannot be selected by the ‘Resource Owner’ of a Microsoft Cluster when using Cluster Shared Volumes (CSVs). ...*”. There is now an official fix for this issue here [http://www.veeam.com/kb1891](http://www.veeam.com/kb1891) please refer to Veeam for more information.

**May**
Added

Storage Arrays and Controllers

PureStorage - FlashArray (all Series)
These require controller firmware version 3.40 or later to use DataCore’s Backend Failover. Please note that even with the later versions of the controller firmware; DataCore’s Backend Failover will not use any of the Storage Array’s ALUA capabilities. For all versions before 3.40 (or to use the array’s ALUA capabilities regardless) please use Microsoft’s own MPIO.

Updated

Fibre Channel Host Bus Adaptors

Emulex
LP12004: Removed the previous statement about Hosts having to have Firmware version 2.70a5 or greater – this was erroneous. However, for any Emulex 1200x Fibre Channel HBA in a DataCore Server that needs to or is already, using the DataCore Driver, use Firmware Version 2.10a12 (or greater) to avoid a crash during a new Install or an Update from a previous version of SANsymphony-V.

Third Party Software

Veeam Software
Backup Management Suite: Added Veeam’s own Knowledge base article link regarding “Hardware provider is missing in Veeam Backup and Replication user interface” – relevant to the existing issue documented.

April

Added

Storage Arrays and Controllers

FusionIO – General
Added note about Physical Disk devices not showing any Identification and Usage information in the SANsymphony-V Management Console.

Updated

DataCore Server Hardware Settings

General BIOS Settings
Added URL to the ‘Recommended BIOS settings on a DataCore Server’ FAQ.

March

Added

Storage Arrays and Controllers

All Storage Arrays
Some storage array manufacturers allow ‘failed’ RAID sets to become healthy without actually rebuilding the entire RAID properly (zeroing blocks as well as rebuilding parity). The name of this feature is different for each manufacturer but may be called something like ‘Force RAID Set Healthy’, ‘Mark Disk as Healthy’ or similar. If this feature is used and the Disk Pool catalog is still intact, the SANsymphony-V software will allow the Disk Pool to come online as if there was no RAID failure and only log recoveries will take place. This will lead to data on the mirror partner not being synchronized properly and so create an inconsistent mirrored Virtual Disk. Always rebuild any failed RAID sets so that all the block data is completely destroyed and the RAID set is rebuilt ‘as new’.

Third Party Software

Veeam Software
Backup Management Suite: The DataCore’s VSS Hardware Provider cannot be selected by the ‘Resource Owner’ of a Microsoft Cluster when using Cluster Shared Volumes (CSVs) and so cannot backup its own CSVs using DataCore’s VSS. Cluster Nodes that are not designated ‘Resource Owners’ can however use the DataCore VSS hardware provider as normal to back-up their own CSVs.

Updated
Switches (Fibre Channel & FCoE)

Brocade – All Switches
The following was previously only reported for 16GB Switches: “Host Front End (FE) and/or DataCore Mirror (MR) connections may not login after a reboot or after any significant disruption on the fibre channel link. Remote Ports in the DataCore Server UI will show as logged out. Applies to Brocade DEFECT000429695 and fixes were planned in firmware versions: 6.4.3e, 7.0.2d, 7.1.1 and 7.2.” However, it also applies to 8GB switches too and so has been moved to the ‘All Switches’ section.

February

Added
Storage Arrays and Controllers
Skyera - skyHawk

Updated
Storage Arrays and Controllers
X-I0
A typo in the firmware version was corrected; 1.7.19 should have read 1.7.9.

Third Party Software

Broadcom
NetXtreme II BCM57xxx now refers to affecting the Host as well as the DataCore Server.

VMware
ESX 4.1 and 5.x: Software iSCSI Port Binding is not supported.

January

Added
Storage Arrays and Controllers
Hewlett Packard
Storage Systems (General)

Updated
Third Party Software
Microsoft Corporation
Offloaded Data Transfers (ODX). This is now supported with SANsymphony-V 9.0 PSP 4.

December 2013

Added
Storage Arrays and Controllers
Hewlett Packard
SAS Hardware (General)

Violin Memory
PCIe Flash Memory Cards

Removed
Storage Arrays and Controllers
Xyratex
This entry was actually referring to an old (circa 2009) Xyratex Technical Support Bulletin describing a workaround for a specific VMware ESX 3.5 bug (SR# 1133918351) when using specific storage array models (F5402E, F5412E, F6412E, F5404E) with a specific level of array firmware (2.4.x), when the Overload Management (Target Queue Management) feature was enabled on the arrays. This ‘known issue’ would therefore apply only to DataCore Servers running inside VMware ESX 3.5 Virtual Machines; where the ESX Hosts were using those specific Xyratex
arrays. Due to the age of the version of ESX being referenced, and the specific set of circumstances that this ‘issue’ would apply to, DataCore feel this issue is now redundant and so it has been removed. All users with these arrays connected to physical DataCore Servers should re-enable the Overload Management (Target Queue Management) feature and refer to Xyratex for instructions on how to do this.

**Updated**
**Switches (Fibre Channel & FCoE)**
*Brocade*
16GB Switches
Added a note to say that the ‘fillword issue’ (reported in the 8GB Switch entry), does not apply to 16GB switches.

**Third Party Software**
*NetXtreme II BCM57xxx*
Reworded the issue, the technical detail has not changed but is now less ambiguous.

**November 2013**
**Updated**
**Switches (Fibre Channel & FCoE)**
*Brocade – 16GB Switches*
Typographical error corrected: “Applies to Brocade DEFECT00042965 and fixes were planned ...” should have said “Applies to Brocade DEFECT000429695 and fixes were planned ...”.

**October 2013**
**Added**
**ISCSI Host Bus Adaptors**
*Mellanox Technologies*
ConnectX - InfiniBand Adapter Cards

**Storage Arrays and Controllers**
*IBM*
ServeRAID M5100e Series (SSD) and Netgear – ReadyNAS 3100

**Updated**
**Storage Arrays and Controllers**
*Virident Systems Inc.*
FlashMAX
Updated the notes to remove the implication that the SSD’s block size was configurable when it has been reported to DataCore that it is not.

**Switches (Fibre Channel & FCoE)**
*Cisco MD 9000 and Nexus 5000 switches*
Updated the URLs referred to as the previous URL was pointing to out-of-date documentation.

**Third Party Software**
*Hewlett Packard*
Insight Management (WBEM)
Updated the notes with the method of setting the DataCore Executive service to use the ‘Automatic (Delayed Start)’ (as a workaround).

**August 2013**
**Added**
**Converged Network Adaptors**
*QLogic*
Dual-Port, 10Gbps Ethernet-to-PCIe CNA when used on VMware ESX Hosts
Hewlett-Packard CN1000Q Dual Port CAN

Third Party Software
Added general entries for Anti-Virus Software on the DataCore Server and iSCSI Software Drivers on the Host (for any Operating System).

Updated
All issues are now listed based on the type of component (instead of the Vendor). Simplified many of the existing entries to avoid duplication in other DataCore documentation (i.e. Technical Bulletins and Qualified Lists).

Fibre Channel Host Bus Adaptors
More extensive list of those HBAs that can be used in a DataCore Server but only as Back-End connections to storage arrays using the HBA vendor’s own drivers.

Network Interface Cards
Emulex
Split the Emulex NIC models and their equivalent OEM IBM models into separate entries.

Hewlett-Packard
Firmware versions for some Hewlett-Packard NICs based on updated HP Advisories “... to prevent the loss and recovery of Ethernet connectivity, or adapter unresponsiveness requiring a reboot to recover, from occurring.”
NC375x was previously listed needing to be 4.0.556 is now 4.0.585. NC522x was previously listed needing to be 4.7.17.926 (which was wrong) is now 4.0.585. NC523x was previously listed needing to be 4.8.22 is now 4.9.81

Removed
All references to Storage Arrays that do not support SANsymphony-V’s Shared Multi Port Array (SMPA) feature as they now appear in a separate document.

July 2013
Added
Network Interface Cards
Hewlett-Packard
HP NC522SFP.
Updated HP NC55* SFP. Updated NetApp. Updated Cisco MDS 9000. Removed HP EVA 6400 (included HSV400) as this is now supported with SMPA.

June 2013
Updated
IBM DS3xxx. Added LSI Corporation Nytro WarpDrive. Added Dell EqualLogic PS4000.

Removed
SUN Microsystems and all Linux entries as the information is now too old to be considered relevant to current versions of DataCore Software or Vendor’s own requirements.

May 2013
Updated
HP EVA 6400 (included HSV400). Now included Storage Array Controller Firmware levels for all Shared Multi-Port Array (SMPA) entries where applicable.

Removed
APC Powerchute
The issue previously documented was a memory leak caused by older versions of Java and not specific to APC Powershute at all.

All references to SANmelody as this is now an ‘End of Life’ product.

April 2013
Added
Fujitsu
HP EVA 6000
Infotrend

Virident Systems Inc.

Updated
3Ware
Brocade
FusionIO
Hitachi

Hewlett-Packard
HP NC375*
HP NC523SFP

QLogic
QLE3044 NIC

Microsoft Corporation
UPS and Windows 2012 ODX

February 2013
Added
Dell Compellent SC30, SC40 & DS3524
IBM DS3524.

January 2013
Added
N-Tec
ICEBOX-R

Areca
ARC-188x

IBM
XIV

NetApp
E5400

December 2012
Added
Hitachi
AMS2500

Promise Technology Inc.
VTrak
E830

Updated
Hewlett-Packard
HP Insight Management WBEM

APC Powerchute
Microsoft Corporation
WMI (Win32_Service)

November 2012
Updated
Cisco
MDS 9000 Series

October 2012
Added
Texas Memory Systems

July 2012
Updated
VMware
‘vStorage APIs for Array Integration (VAAI)’ for ESX 5.x.

Trend Micro
OfficeScan

June 2012
Updated
Hewlett-Packard
HP Insight Management WBEM

April 2012
Added
Hewlett-Packard
HP NC523SFP Dual Port 10GbE Server Adapter

EMC
Clariion AX4

Updated
Hewlett-Packard
HP Insight Management WBEM.

March 2012
Added
Hewlett-Packard
HP NC552SFP 10Gb NIC

IBM
49y4250 OCE10102-N-X and 49y7950 OCE11102-N-X 10Gb NICs
Microsoft Corporation
Windows 2008 Power Saving Mode
BitLocker Drive Encryption

Updated
Hewlett-Packard
HP NC375* (QLE3044), NIC.

Allied Telesyn
Corrected entry for Gigabit Ethernet Media Converter MC1000 series (the 'mode' stated previously was incorrect)

January 2012
Added
Allied Telesyn
Gigabit Ethernet Media Converter MC1000 series

Trend Micro
OfficeScan

APC Powerchute.

Updated
Microsoft Corporation
UPS Services

December 2011
Added
VMware
ESX 5.x

Emulex
LP1250 HBA

Updated
Hewlett-Packard
HP Insight Management WBEM

November 2011
Added
Hewlett-Packard
HP NC375* (QLE3044), HP NC510* and HP NC512m NICs

QLogic - General
Note about setting QLogic FC HBAs to ‘Loop Only’ mode in certain cases of Host Ports shown as ‘logged out’.

QLogic - HBA
QLE220

October 2011
Added
Fusion IO

Updated
Known Issues – Third Party Hardware & Software

Disclaimer (page 2)

Brocade
Note in Brocade HBAs that only QLogic HBAs can be a Front End port.

Emulex
HBAs to not use TPRLO.

VMware
All VMware 'Known issues' that were in Technical Bulletin #5x are now in this document.

Removed
All references to 'End of Life’ SANsymphony and SANmelody versions that are no longer supported as of July 31 2011.

July 2011
Updated
AMD
Brocade
Emulex
Intel
Microsoft Corporation