



OST Plug-in Installation Instructions

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OST Plug-in and Compatibility Information

The Quantum OST 2.9.1, 3.x.x, and 10.0 plug-ins are based on Veritas OpenStorage API specification Version 9.4.2 and 11.1. The following components are required for OST operation with the DXi-Series:

- Veritas NetBackup 7.5 or later or Backup Exec 2014 or later.
- Veritas NetBackup 52xx Appliance version 2.6.1 or later.
- Veritas NetBackup 53xx Appliance version 2.6.1 or later.
- Quantum OST Plug-in (downloaded separately through the remote management console or from the Quantum Service and Support Web site).

OST 10.0 Plug-ins

The Quantum 10.0 plug-in contains support for **Windows 2016 64-bit**.

Windows Support

The Quantum OST 10.0 plug-in contains support for the following Windows operating systems:

- Windows 2008 R2 64-bit
- Windows 2012 64-bit
- Windows 2012 R2 64-bit.
- Windows 2016 64-bit

Linux Support

The Quantum OST 10.0 plug-in contains support for the following Linux operating systems:

- RedHat Linux 6 x86 64-bit
- RedHat Linux 7 x86 64-bit
- SUSE11 Linux x86 64-bit
- SUSE12 Linux x86 64-bit

Veritas NetBackup 52xx/53xx Appliance

The Quantum OST 10.0 plug-in contains support for the Veritas Netback 52xx/53xx Appliances:

- Veritas NBU 52xx/53xx Appliance SUSE (2.6.x)
- Veritas NBU 52xx/53xx Appliance RedHat Linux (2.7.1 or later)

For additional configuration requirements, see [OST Plug-in Support on page 4](#)

General Guidelines

The following list provides general guidelines for OST Plug-ins:

- A host can only have a single OST plug-in installed at a time. (Multiple hosts with different installed plug-in versions are supported.)
- It is required to use the 2.9.1 or later OST plug-in with a 1.4.x DXi system in order to coexist with a 2.x DXi system or initiate an optimized duplication to a 2.x DXi system.
- Refer to the release notes for your DXi version for more information on replication, OST, and optimized duplication compatibility.

OST Data Encryption

DXi Software supports encrypting OST data using AES (Advanced Encryption Standard) and TLS (Transport Layer Security) with AES.

DXi 3.0.x and below Software

DXi 3.0.x and below Software requires the certificate and key files to be installed on the DXi and media servers if **TLS with AES 256** encryption is selected.

DXi Accent data encryption options are available at **Configuration > OST > Accent** page on the DXi.

You must install the required certificate and key files on the DXi and on the media servers:

- Certificate File
- Private Key File
- Certificate Authority File
- (Optional) Rejection List File

Default certificate and key files are included with the OST Plug-in, however, Quantum recommends installing your own certificate files. Instructions for installing the files on the media server are included with the respective plug-in installation instructions below. To install the certificate and key files on a DXi, see the section “Data Encryption” in the *User’s Guide* for your DXi system.

DXi 3.1.x and above Software

DXi 3.1.x and above Software requires the certificate and key files to be installed on the DXi and media servers if any encryption method is selected (**AES 128**, **AES 256**, or **TLS with AES 256**).

OST and DXi Accent data encryption options are available at **Configuration > System > Security > Data Encryption** page on the DXi.

i Note: You can install new certificate and key files at any time, as long as there are no active network connections between the OST media server and the DXi.

i Note: For DXi 3.x Software, all OST data streams will be encrypted if any type of encryption option (**AES 128**, **AES 256**, **TLS with AES 256**) is selected. If no encryption option is selected, neither DXi Accent or OST data will be encrypted.

OST Plug-in Support

OST Plug-in support is available for the DXi4000, DXi4700-NAS, DXi4700 Multi-Protocol, DXi6700, DXi690x, and DXi8500

OST Plug-ins are available for the following operating systems:

- [Windows 32-bit below](#)
- [Windows 64-bit on the next page](#)
- [Linux on page 6](#)
- [Unix on page 9](#)

OST Plug-ins are available for the following appliances:

- [Veritas NetBackup 52xx/53xx Appliance \(SUSE\) on page 12](#)
- [Veritas NetBackup 52xx/53xx Appliance \(RedHat\) on page 13](#)

Windows 32-bit

File Name:	QuantumOSTPluginWin32-3.1.1-2936.msi
Current Plug-in Version:	3.1.1
DXi Software Version Supported:	2.1.3 or higher

Platform	NBU 7.6	NBU 7.7	NBU 8.0	NBU 8.1	BUE 2014	BUE 15	BUE 16	BUE 20	DXi Accent	Accelerator
Windows 2003 R2 32-bit	No	No	No	No	Yes	Yes	No	No	Yes ¹	No
Windows 2008 R2 32-bit	No	No	No	No	Yes	Yes	No	No	Yes ¹	No

NBU - Veritas NetBackup

BUE - Veritas Backup Exec

1. DXi Accent cannot be used simultaneously with Accelerator on DXi Software 3.2.6 and below.

Windows 64-bit

File Name:	QuantumOSTPluginWinX64-3.1.2-3219.msi
Current Plug-in Version:	3.1.2
DXi Software Version Supported:	2.1.3 or higher

Platform	NBU 7.6	NBU 7.7	NBU 8.0	NBU 8.1	BUE 2014	BUE 15	BUE 16	BUE 20	DXi Accent	Accelerator
Windows 2003 R2 64-bit	Yes	Yes	No	No	Yes	Yes	No	No	Yes ¹	Yes ²

NBU - Veritas NetBackup

BUE - Veritas Backup Exec

1. DXi Accent cannot be used simultaneously with Accelerator on DXi Software 3.2.6 and below.

2. Supported in the following configurations: DXi690x, DXi4700-NAS, or DXi4700 Multi-Protocol systems, DXi 3.1.x and above Software, NetBackup 7.5 or higher).

File Name:	QuantumOSTPluginWinX64-10.0.0-3321.msi
Current Plug-in Version:	10.0
DXi Software Version Supported:	2.1.3 or higher

Platform	NBU 7.6	NBU 7.7	NBU 8.0	NBU 8.1	BUE 2014	BUE 15	BUE 16	BUE 20	DXi Accent	Accelerator
Windows 2008 R2 64-bit	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes ¹	Yes ²
Windows 2012	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes ¹	Yes ²
Windows 2012 R2 64-bit	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes ¹	Yes ²

Platform	NBU 7.6	NBU 7.7	NBU 8.0	NBU 8.1	BUE 2014	BUE 15	BUE 16	BUE 20	DXi Accent	Accelerator
Windows 2016 64-bit	No ³	No ³	Yes	Yes	No	No	Yes	Yes	Yes ¹	Yes ²

NBU - Veritas NetBackup

BUE - Veritas Backup Exec

1. DXi Accent cannot be used simultaneously with Accelerator on DXi Software 3.2.6 and below.

2. Supported in the following configurations: DXi690x, DXi4700-NAS, or DXi4700 Multi-Protocol systems, DXi 3.1.x and above Software, NetBackup 7.5 or higher).

3. Not supported by Veritas.

Linux

The following Linux OST Plug-ins are available:

- [RedHat Linux 5 below](#)
- [RedHat Linux 6 on the next page](#)
- [RedHat Linux 7 on the next page](#)
- [SUSE10 on page 8](#)
- [SUSE11 on page 8](#)
- [SUSE12 on page 9](#)

RedHat Linux 5

File Name:	QuantumOSTPluginlinuxR_x86_64-3.1.1-2936.tar
Current Plug-in Version:	3.1.1
DXi Software Version Supported:	2.1.3 or higher

Platform	NBU 7.6	NBU 7.7	NBU 8.0	NBU 8.1	BUE 2014	BUE 15	BUE 16	BUE 20	DXi Accent	Accelerator
RedHat Linux 5 x86 64-bit	Yes	Yes	No	No	No	No	No	No	Yes ¹	Yes ¹

NBU - Veritas NetBackup

BUE - Veritas Backup Exec

1. DXi Accent cannot be used simultaneously with Accelerator on DXi Software 3.2.6 and below.

2. Supported in the following configurations: DXi690x, DXi4700-NAS, or DXi4700 Multi-Protocol systems, DXi 3.1.x and above Software, NetBackup 7.5 or higher).

RedHat Linux 6

File Name:	QuantumOSTPluginlinuxR_x86_64-10.0.0-3321.tar
Current Plug-in Version:	10.0
DXi Software Version Supported:	2.1.3 or higher

Platform	NBU 7.6	NBU 7.7	NBU 8.0	NBU 8.1	BUE 2014	BUE 15	BUE 16	BUE 20	DXi Accent	Accelerator
RedHat Linux 6 x86 64-bit	Yes	Yes	Yes	Yes	No	No	No	No	Yes ¹	Yes ²

NBU - Veritas NetBackup

BUE - Veritas Backup Exec

1. DXi Accent cannot be used simultaneously with Accelerator on DXi Software 3.2.6 and below.

2. Supported in the following configurations: DXi690x, DXi4700-NAS, or DXi4700 Multi-Protocol systems, DXi 3.1.x and above Software, NetBackup 7.5 or higher).

RedHat Linux 7

File Name:	QuantumOSTPluginlinuxR_x86_64-10.0.0-3221.tar
Current Plug-in Version:	10.0
DXi Software Version Supported:	2.1.3 or higher

Platform	NBU 7.6	NBU 7.7	NBU 8.0	NBU 8.1	BUE 2014	BUE 15	BUE 16	BUE 20	DXi Accent	Accelerator
RedHat Linux 7 x86 64-bit	Yes	Yes	Yes	Yes	No	No	No	No	Yes ¹	Yes ²

NBU - Veritas NetBackup

BUE - Veritas Backup Exec

1. DXi Accent cannot be used simultaneously with Accelerator on DXi Software 3.2.6 and below.

2. Supported in the following configurations: DXi690x, DXi4700-NAS, or DXi4700 Multi-Protocol systems, DXi 3.1.x and above Software, NetBackup 7.5 or higher).

SUSE10

File Name:	QuantumOSTPluginS10_x86_64-2.9.1-2778.tar
Current Plug-in Version:	2.9.1
DXi Software Version Supported:	1.4.x or higher

Platform	NBU 7.6	NBU 7.7	NBU 8.0	NBU 8.1	BUE 2014	BUE 15	BUE 16	BUE 20	DXi Accent	Accelerator
SUSE10 Linux x86 64-bit	Yes	Yes	No	No	No	No	No	No	No	No

NBU - Veritas NetBackup
BUE - Veritas Backup Exec

SUSE11

File Name:	QuantumOSTPluginlinuxS_x86_64-10.0.0-3321.tar
Current Plug-in Version:	10.0
DXi Software Version Supported:	2.1.3 or higher

Platform	NBU 7.6	NBU 7.7	NBU 8.0	NBU 8.1	BUE 2014	BUE 15	BUE 16	BUE 20	DXi Accent	Accelerator
SUSE11 Linux x86 64-bit	Yes	Yes	Yes	Yes	No	No	No	No	Yes ¹	Yes ²

NBU - Veritas NetBackup
BUE - Veritas Backup Exec

- DXi Accent cannot be used simultaneously with Accelerator on DXi Software 3.2.6 and below.
- Supported in the following configurations: DXi690x, DXi4700-NAS, or DXi4700 Multi-Protocol systems, DXi 3.1.x and above Software, NetBackup 7.5 or higher).

SUSE12

File Name:	QuantumOSTPluginlinuxS_x86_64-10.0.0-3321.tar
Current Plug-in Version:	10.0
DXi Software Version Supported:	2.1.3 or higher

Platform	NBU 7.6	NBU 7.7	NBU 8.0	NBU 8.1	BUE 2014	BUE 15	BUE 16	BUE 20	DXi Accent	Accelerator
SUSE12 Linux x86 64-bit	Yes	Yes	Yes	Yes	No	No	No	No	Yes ¹	Yes ²

NBU - Veritas NetBackup
BUE - Veritas Backup Exec

- DXi Accent cannot be used simultaneously with Accelerator on DXi Software 3.2.6 and below.
- Supported in the following configurations: DXi690x, DXi4700-NAS, or DXi4700 Multi-Protocol systems, DXi 3.1.x and above Software, NetBackup 7.5 or higher).

Unix

The following Unix OST Plug-ins are available:

- [Solaris 10 and Solaris 11 \(x86\) on the next page](#)
- [Solaris 10 and Solaris 11 \(SPARC\) on the next page](#)
- [HP-UX on page 11](#)
- [IBM AIX on page 11](#)

Solaris 10 and Solaris 11 (x86)

File Name:	QuantumOSTPluginsolaris_x86_64-2.9.1-2778.tar
Current Plug-in Version:	2.9.1
DXi Software Version Supported:	1.4.x or higher

Platform	NBU 7.6	NBU 7.7	NBU 8.0	NBU 8.1	BUE 2014	BUE 15	BUE 16	BUE 20	DXi Accent	Accelerator
Solaris 10 and Solaris 11 x86 64-bit	Yes	Yes	Yes	Yes	No	No	No	No	No	No

NBU - Veritas NetBackup
BUE - Veritas Backup Exec

Solaris 10 and Solaris 11 (SPARC)

File Name:	QuantumOSTPluginsolaris_64-2.9.1-2778.tar
Current Plug-in Version:	2.9.1
DXi Software Version Supported:	1.4.x or higher

Platform	NBU 7.6	NBU 7.7	NBU 8.0	NBU 8.1	BUE 2014	BUE 15	BUE 16	BUE 20	DXi Accent	Accelerator
Solaris 10 and Solaris 11 SPARC 64-bit	Yes	Yes	Yes	Yes	No	No	No	No	No	No

NBU - Veritas NetBackup
BUE - Veritas Backup Exec

HP-UX

File Name:	QuantumOSTPluginhpia64_64-2.9.1-2778.tar
Current Plug-in Version:	2.9.1
DXi Software Version Supported:	1.4.x or higher

Platform	NBU 7.6	NBU 7.7	NBU 8.0	NBU 8.1	BUE 2014	BUE 15	BUE 16	BUE 20	DXi Accent	Accelerator
HP-UX 11i v3 IA-644 ¹	Yes	Yes	Yes	Yes	No	No	No	No	No	No

NBU - Veritas NetBackup
BUE - Veritas Backup Exec
 1. PA-RISC not supported.

IBM AIX

File Name:	QuantumOSTPluginaixPowerPC64_64-2.9.1-2778.tar
Current Plug-in Version:	2.9.1
DXi Software Version Supported:	1.4.x or higher

Platform	NBU 7.6	NBU 7.7	NBU 8.0	NBU 8.1	BUE 2014	BUE 15	BUE 16	BUE 20	DXi Accent	Accelerator
IBM AIX 6.1/7.1/7.2 Power 64-bit	Yes	Yes	Yes	Yes	No	No	No	No	No	No

NBU - Veritas NetBackup
BUE - Veritas Backup Exec

Veritas NetBackup 52xx/53xx Appliance (SUSE)

File Name:	Quantum_10.0.0-3321_OST_suse_64.tar.gz
Current Plug-in Version:	10.0
DXi Software Version Supported:	2.1.3 or higher

Platform	NBU 7.6	NBU 7.7	NBU 8.0	NBU 8.1	BUE 2014	BUE 15	BUE 16	BUE 20	DXi Accent	Accelerator
Veritas NetBackup 52xx Appliance SUSE (2.6.1 or later)	Yes	Yes	Yes	Yes	No	No	No	No	Yes ¹	Yes ²
Veritas NetBackup 53xx Appliance SUSE (2.6.1 or later)	Yes	Yes	Yes	Yes	No	No	No	No	Yes ¹	Yes ²

1. DXi Accent cannot be used simultaneously with Accelerator on DXi Software 3.2.6 and below.
2. Supported in the following configurations: DXi690x, DXi4700-NAS, or DXi4700 Multi-Protocol systems, DXi 3.1.x and above Software, NetBackup 7.5 or higher).

NBU - Veritas NetBackup
BUE - Veritas Backup Exec

Veritas NetBackup 52xx/53xx Appliance (RedHat)

File Name:	Quantum_10.0.0-3321_OST_redhat_64.tar.gz
Current Plug-in Version:	10.0
DXi Software Version Supported:	2.1.3 or higher

Platform	NBU 7.6	NBU 7.7	NBU 8.0	NBU 8.1	BUE 2014	BUE 15	BUE 16	BUE 20	DXi Accent	Accelerator
Veritas NetBackup 52xx Appliance RHLX (2.7.1 or later)	Yes	Yes	Yes	Yes	No	No	No	No	Yes ¹	Yes ²
Veritas NetBackup 53xx Appliance RHLX (2.7.1 or later)	Yes	Yes	Yes	Yes	No	No	No	No	Yes ¹	Yes ²

1. DXi Accent cannot be used simultaneously with Accelerator on DXi Software 3.2.6 and below.
2. Supported in the following configurations: DXi690x, DXi4700-NAS, or DXi4700 Multi-Protocol systems, DXi 3.1.2 and above Software, NetBackup 7.6 or higher).

NBU - Veritas NetBackup
BUE - Veritas Backup Exec

NetBackup Accelerator

NetBackup Accelerator is supported in the following configuration:

- DXi690x, DXi4700-NAS, and DXi4700 Multi-Protocol only
- DXi Software 3.1.x and above
- NetBackup device mappings file version 1.122 or higher
- OST Plug-in 3.0.x and above
- NetBackup 7.5 and higher.
- RedHat Linux x86 64-bit, Windows 64-bit, and SUSE11/12 platforms only

For more information on using NetBackup Accelerator, see the *DXi-Series Configuration and Best Practices Guide for NetBackup* (6-67850) at www.quantum.com/serviceandsupport.

NetBackup Device Mapping File

NetBackup Accelerator requires NetBackup mapping file version 1.122 or higher. Please verify your current version of the mapping file before using NetBackup Accelerator.

To download the latest version of the mapping file:

1. Go to www.netbackup.com/compatibility
2. In the **NetBackup Device Mapping Files** row, select the link for your operating system.
3. A knowledge base article appears that contains installation instructions and an archive file of the device mappings.
4. Download the archive file (.tar or .zip)
5. Follow the instructions in the Readme.txt file to update the device mappings.

i Note: When upgrading to a new version of NetBackup, the mapping file will be replaced. Please verify that the new mapping file is 1.122 or higher.

Installing the OST Plug-in

To install the OST Plug-in, follow the appropriate section below for your platform:

- [Install the OST Plug-in for RedHat Linux 64-bit](#)
- [Install the OST Plug-in for SUSE Linux 64-bit on the next page](#)
- [Install the OST Plug-in for Solaris \(SPARC 64-bit and x86 64-bit\)](#)
- [Install the OST Plug-in for HP-UX 11i 64-bit](#)
- [Install the OST Plug-in for IBM AIX Power 64-bit](#)
- [Install the OST Plug-in for Windows 2003/2008/2012/2016](#)
- [Install the OST Plug-in on NetBackup 52xx Appliance \(2.6.x and later\)](#)

Install the OST Plug-in for RedHat Linux 64-bit

If older OST plug-ins are already installed, you must uninstall them first. For uninstallation steps, see [Uninstalling the OST Plug-in on page 22](#).

To install the plug-in:

1. Stop the NetBackup processes.
2. Create a temporary directory, such as `/usr/tmp/qtplugins`.
3. Move or download **QuantumOSTPluginxR_x86.64.tar** to `/usr/tmp/qtplugins`.
4. Untar the files using `/bin/tar QuantumOSTPluginlinuxR_x86.64.tar`
5. Move the plug-in using:

```
mv libstspiQuantum.so /usr/opensv/lib/ost-plugins/  
mv libstspiQuantumMT.so /usr/opensv/lib/ost-plugins/
```
6. Move the configuration file using
`/bin/mkdir -p /usr/Quantum; /bin/mv QuantumPlugin.conf /usr/Quantum`
7. Certificate files for encryption must be installed when any method of encryption is used. Move the certificate files using the following commands:

i Note: It is recommended that custom certificate files be installed to provide maximum encryption security. Use of the default certificate files provided by Quantum is not recommended.

```
/bin/mv cacert.pem /usr/Quantum
```

```
/bin/mv cert.pem /usr/Quantum
```

```
/bin/mv key.pem /usr/Quantum
```

-
- i Note:** The certificate files should be the same as the certificate files installed on the DXi using the **Configuration > System > Security > Data Encryption** (DXi Software 3.1.0 or above) or **Configuration > OST > Accent** (DXi Software 3.0.x or below) page. If there are existing certificate files under the **/usr/Quantum/** directory, retain a copy of them for future use.

- (Optional) Delete the temporary directory created in step 2. In this example it is **rm -rf usr/tmp/qtplugins**
- Restart the NetBackup processes to initiate backups and restores.

The OST Plug-in is installed. For additional information on OST configuration, see the *Quantum DXi-Series NetBackup and Backup Exec OST Configuration Guide* (6-67079).

Install the OST Plug-in for SUSE Linux 64-bit

If older OST plug-ins are already installed, you must uninstall them first. For un-installation steps, see [Uninstalling the OST Plug-in on page 22](#).

To install the plug-in:

- Stop the NetBackup processes.
- Create a temporary directory, such as **/usr/tmp/qtplugins**.
- Move or download **QuantumOSTPluginlinuxR_x86.64.tar** to **/usr/tmp/qtplugins**.
- Untar the files using **/bin/tar xvf QuantumOSTPluginlinuxS_x86.64.tar**
- Move the plug-in using:

```
mv libstspiQuantum.so /usr/opensv/lib/ost-plugins/
```

```
mv libstspiQuantumMT.so /usr/opensv/lib/ost-plugins/
```

- Move the configuration file using **/bin/mkdir -p /usr/Quantum; /bin/mv QuantumPlugin.conf /usr/Quantum**
- Certificate files for encryption must be installed when any method of encryption is used. Move the certificate files using the following commands:

-
- i Note:** It is recommended that custom certificate files be installed to provide maximum encryption security. Use of the default certificate files provided by Quantum is not recommended.

```
/bin/mv cacert.pem /usr/Quantum
```

```
/bin/mv cert.pem /usr/Quantum
```

```
/bin/mv key.pem /usr/Quantum
```

i Note: The certificate files should be the same as the certificate files installed on the DXi using the **Configuration > System > Security > Data Encryption** (DXi Software 3.1.0 or above) or **Configuration > OST > Accent** (DXi Software 3.0.x or below) page. If there are existing certificate files under the `/usr/Quantum/` directory, retain a copy of them for future use.

8. (Optional) Delete the temporary directory created in step 2. In this example it is `rm -rf /usr/tmp/qtplugins`
9. Restart the NetBackup processes to initiate backups and restores.

The OST Plug-in is installed. For additional information on OST configuration, see the *Quantum DXi-Series NetBackup and Backup Exec OST Configuration Guide* (6-67079).

Install the OST Plug-in for Solaris (SPARC 64-bit and x86 64-bit)

If older OST plug-ins are already installed, you must uninstall them first. For un-installation steps, see [Uninstalling the OST Plug-in on page 22](#).

i Note: If you are using the 2.9.1 plug-in or later, you must use Solaris 10 2009 or later. For the Solaris10 SPARC plug-in, make sure that the host is running Solaris10 update 7 (2009) or later.

64-bit Solaris SPARC Plug-in Special Instructions

For the 64-bit Solaris SPARC plug-in, the 64-bit gcc3 run-time libraries must be installed before installing the OST plug-in. Solaris10 includes the gcc3 libraries, but you must create a soft link for the OST plug-in to locate them.

To create a soft link to the gcc3 libraries:

1. Create the directory where the plug-in expects to locate the gcc3 libraries:
`mkdir -p /opt/csw/gcc3/lib/64`
2. Verify that the installed gcc3 libraries are (ELF) 64-bit:
`file /usr/sfw/lib/sparcv9/libgcc_s.so.1`
You should see “ELF 64-bit” or “64-bit” in the output.
3. Create a soft link between the plug-in directory and the gcc3 libraries:
`ln -s /usr/sfw/lib/sparcv9/libgcc_s.so.1 /opt/csw/gcc3/lib/64/libgcc_s.so.1`

Install the OST Plug-in

To install the plug-in:

1. Stop the NetBackup processes.
2. Create a temporary directory, such as `/usr/tmp/qtplugins`.

3. Move to the temporary directory created in step 2. In this example it is **/usr/tmp/qtplugins**.
4. Untar the files using **/bin/tar xvf QuantumOSTPluginsolaris_x86.64.tar**
5. Move the plug-in using:

```
mv libstspiQuantum.so /usr/opensv/lib/ost-plugins/
```

```
mv libstspiQuantumMT.so /usr/opensv/lib/ost-plugins/
```

6. Move the configuration file using
/bin/mkdir -p /usr/Quantum; /bin/mv QuantumPlugin.conf /usr/Quantum
7. Certificate files for encryption must be installed when any method of encryption is used. Move the certificate files using the following commands:

i Note: It is recommended that custom certificate files be installed to provide maximum encryption security. Use of the default certificate files provided by Quantum is not recommended.

```
/bin/mv cacert.pem /usr/Quantum
```

```
/bin/mv cert.pem /usr/Quantum
```

```
/bin/mv key.pem /usr/Quantum
```

i Note: The certificate files should be the same as the certificate files installed on the DXi using the **Configuration > System > Security > Data Encryption** (DXi Software 3.1.0 or above) or **Configuration > OST > Accent** (DXi Software 3.0.x or below) page. If there are existing certificate files under the **/usr/Quantum/** directory, retain a copy of them for future use.

8. Create a script in **/etc/init.d** called **tcp_options** and add the following lines to it (different for Solaris 10 and Solaris 11):

- For Solaris 10, use the following script:

```
#!/bin/sh
```

```
# adjust the TCP buffer size so 'setsockopt(...)' from the plug-in  
# works properly
```

```
/usr/sbin/ndd -set /dev/tcp tcp_max_buf 8388608
```

```
# These are the values that we used for Solaris 10 tcp options to get  
# maximum performance. Your environment may need different tcp  
# options in order to obtain maximum performance. Please consult your  
# Solaris 10 administrator manual about how to set these options for  
# your environment.
```

```
/usr/sbin/ndd -set /dev/tcp tcp_xmit_hiwat 4194304
```

```
/usr/sbin/ndd -set /dev/tcp tcp_recv_hiwat 4194304
```

```
/usr/sbin/ndd -set /dev/tcp tcp_wscale_always 1
```

```
/usr/sbin/ndd -set /dev/tcp tcp_tstamp_if_wscale 1
```

- For Solaris 11, use the following script:

```
#!/bin/sh

# adjust the TCP buffer size so 'setsockopt(...)' from the plug-in
# works properly

/usr/sbin/ipadm set-prop -p max_buf=8388608 tcp

# These are the values that we used for Solaris 11 tcp options to get
# maximum performance. Your environment may need different tcp
# options in order to obtain maximum performance. Please consult your
# Solaris 11 administrator manual about how to set these options for
# your environment.

/usr/sbin/ipadm set-prop -p send_buf =1048576 tcp

/usr/sbin/ipadm set-prop -p recv_buf =1048576 tcp

/usr/sbin/ipadm set-prop -p _wscale_always=1 tcp

/usr/sbin/ipadm set-prop -p _tstamp_if_wscales=1 tcp
```

9. Ensure that your script is executable:

```
chmod a+x /etc/init.d/tcp_options
```

10. Link the startup script from the appropriate directory for your run level so the settings are persistent across reboots. In this case we used:

```
ln -s /etc/init.d/tcp_options /etc/rc3.d/S20tcp_options
```

11. Reboot your system.

12. After the reboot, check that the TCP settings are persistent. For example, for checking **tcp_max_buf** you would type **ndd /dev/tcp tcp_max_buf**.

13. (Optional) Delete the temporary directory created in step 2. In this example it is **rm -rf /usr/tmp/qtplugins**

14. Restart the NBU processes to initiate backups and restores.

The OST Plug-in is installed. For additional information on OST configuration, see the *Quantum DXi-Series NetBackup and Backup Exec OST Configuration Guide* (6-67079).

Install the OST Plug-in for HP-UX 11i 64-bit

If older OST plug-ins are already installed, you must uninstall them first. For un-installation steps, see [Uninstalling the OST Plug-in on page 22](#).

i Note: OST plug-ins for HP-UX 11i 64-bit platform are present in the **QuantumOSTPluginHPUX11iv3_Ianium.64.tar** file.

To install the plug-in:

1. Stop the NetBackup processes.
2. Create a temporary directory, such as **/usr/tmp/qtplugins**.
3. Move to the temporary directory created in step 2. In this example it is **/usr/tmp/qtplugins**.
4. Untar the files using **/bin/tar xvf QuantumOSTPluginHPUX11iv3 Itanium.64.tar**
5. Move the plug-in using:

```
mv libstspiQuantum.so /usr/opensv/lib/ost-plugins/  
mv libstspiQuantumMT.so /usr/opensv/lib/ost-plugins/
```
6. Move the configuration file using
/bin/mkdir -p /usr/Quantum; /bin/mv QuantumPlugin.conf /usr/Quantum
7. Certificate files for encryption must be installed when any method of encryption is used. Move the certificate files using the following commands:

i Note: It is recommended that custom certificate files be installed to provide maximum encryption security. Use of the default certificate files provided by Quantum is not recommended.

```
/bin/mv cacert.pem /usr/Quantum
```

```
/bin/mv cert.pem /usr/Quantum
```

```
/bin/mv key.pem /usr/Quantum
```

i Note: The certificate files should be the same as the certificate files installed on the DXi using the **Configuration > System > Security > Data Encryption** (DXi Software 3.1.0 or above) or **Configuration > OST > Accent** (DXi Software 3.0.x or below) page. If there are existing certificate files under the **/usr/Quantum/** directory, retain a copy of them for future use.

8. (Optional) Delete the temporary directory created in step 2. In this example it is **rm -rf /usr/tmp/qtplugins**
9. Restart the NetBackup processes to initiate backups and restores.

The OST Plug-in is installed. For additional information on OST configuration, see the *Quantum DXi-Series NetBackup and Backup Exec OST Configuration Guide* (6-67079).

Install the OST Plug-in for IBM AIX Power 64-bit

If older OST plug-ins are already installed, you must uninstall them first. For un-installation steps, see [Uninstalling the OST Plug-in on page 22](#).

i Note: OST plug-ins for IBM AIX Power 64-bit platform are present in the **QuantumOSTPluginaixPowerPC64.64.tar** file.

To install the plug-in:

1. Stop the NetBackup processes.

2. Create a temporary directory, such as **/usr/tmp/qtplugins**.
3. Move to the temporary directory created in step 2. In this example it is **/usr/tmp/qtplugins**.
4. Untar the files using **/bin/tar xvf QuantumOSTPluginaixPowerPC64.64.tar**
5. Move the plug-in using:

```
mv libstspiQuantum.so /usr/opensv/lib/ost-plugins/  
mv libstspiQuantumMT.so /usr/opensv/lib/ost-plugins/
```
6. Move the configuration file using
/bin/mkdir -p /usr/Quantum; /bin/mv QuantumPlugin.conf /usr/Quantum
7. Certificate files for encryption must be installed when any method of encryption is used. Move the certificate files using the following commands:

i Note: It is recommended that custom certificate files be installed to provide maximum encryption security. Use of the default certificate files provided by Quantum is not recommended.

```
/bin/mv cacert.pem /usr/Quantum
```

```
/bin/mv cert.pem /usr/Quantum
```

```
/bin/mv key.pem /usr/Quantum
```

i Note: The certificate files should be the same as the certificate files installed on the DXi using the **Configuration > System > Security > Data Encryption** (DXi Software 3.1.0 or above) or **Configuration > OST > Accent** (DXi Software 3.0.x or below) page. If there are existing certificate files under the **/usr/Quantum/** directory, retain a copy of them for future use.

8. (Optional) Delete the temporary directory created in step 2. In this example it is **rm -rf /usr/tmp/qtplugins**
9. Restart the NetBackup processes to initiate backups and restores.

The OST Plug-in is installed. For additional information on OST configuration, see the *Quantum DXi-Series NetBackup and Backup Exec OST Configuration Guide (6-67079)*.

Install the OST Plug-in for Windows 2003/2008/2012/2016

If older OST plug-ins are already installed, you must uninstall them first. For uninstallation steps, see [Uninstalling the OST Plug-in on the next page](#).

i Note: Installing a new plug-in on Windows overwrites the existing **C:\libstspiQuantum.ini** configuration file. If you have made custom changes to the original file, please make a copy of the file prior to installing the new plug-in.

After installing the plug-in, you must manually reconfigure your custom settings in the new plug-in **.ini** file. You can use the older **.ini** file as a reference to do this. However, do *not* overwrite the new plug-in **.ini** file with the older file.

1. Run **QuantumOSTPluginWinX32.msi** (32-bit) or **QuantumOSTPluginWinX64.msi** (64-bit). Follow the instructions given by the installation wizard to complete the installation.
2. During installation, the Quantum default certificate files are installed on the DXi in the **%WINDIR\Quantum** directory. These files are needed if the **TLS with AES 256** encryption option for Accent is enabled on the DXi.

If you want to use custom certificates, first make a backup of the default certificates located in the **%WINDIR\Quantum** directory. Then copy the custom certificates into this directory.

For more information, see the section “DXi Accent” in the *User’s Guide* for your DXi system.

The OST Plug-in is installed. For additional information on OST configuration, see the *Quantum DXi-Series NetBackup and Backup Exec OST Configuration Guide* (6-67079).

-
- i Note:** Uninstalling the OST Plug-in removes the existing certificates, and installing a new OST Plug-in installs the factory default certificates. Before uninstalling the plug-in, make a copy of any custom certificates in the **%WINDIR\Quantum** directory, then restore the custom certificates to this location after installing a new plug-in.

Install the OST Plug-in on NetBackup 52xx/53xx Appliance (2.6.1 and later)

If older OST plug-ins are already installed, you must uninstall them first. For uninstallation steps, see [Uninstalling the OST Plug-in below](#).

To install an OST plug-in on a Veritas NetBackup™ 52xx/53xx Appliance, please refer to the *Veritas NetBackup™ Appliance Administrators Guide* at https://www.veritas.com/support/en_US.html

Uninstalling the OST Plug-in

To uninstall the OST Plug-in, follow the appropriate section below for your platform:

- [Uninstall Linux, Solaris, HP-UX, or AIX OST Plug-in](#)
- [Uninstall Windows OST Plug-in](#)
- [Uninstall NetBackup 52xx Appliance Plug-in](#)

Uninstall Linux, Solaris, HP-UX, or AIX OST Plug-in

To uninstall the OST Plug-in:

1. Wait until all NetBackup jobs are finished and then stop the NetBackup processes (See *NetBackup Administrator Guide* for stopping and starting NetBackup processes).

2. Remove older plug-ins by running following command:

```
/bin/rm /usr/opensv/lib/ost-plugins/libstspiQuantum*
```

```
/bin/rm /usr/Quantum/QuantumPlugin.conf
```

```
/bin/rm /usr/Quantum/*.pem
```

Uninstall the Windows OST Plug-in

(This is the Drop-down text)

To uninstall the OST Plug-in, refer to the following sections:

- [NetBackup below](#)
- [Backup Exec below](#)

NetBackup

1. Wait until all the NetBackup jobs are finished, then stop NetBackup processes.
2. Go to **Start > Control Panel > Add/Remove Programs** and select **Quantum OST Plug-in for Windows**.
3. Click **Remove** to start the un-installation process.

Backup Exec

1. Wait until all the Backup Exec jobs are finished, then stop the Backup Exec services by going to **Tools > Backup Exec Services > Stop all services**.
2. Then remove the OST Plug-in from your server by going to **Start > Control Panel > Add/Remove Programs** and select **Quantum OST Plug-in for Windows**.
3. Click **Remove** to start the un-installation process.

Uninstall NetBackup 52xx/53xx Appliance Plug-in

To uninstall an OST plug-in on a Veritas NetBackup™ 52xx/53xx Appliance, please refer to the *Veritas NetBackup™ Appliance Administrators Guide* at https://www.veritas.com/support/en_US.html.

Usage

See the backup application users guide for information on how to use the OST Plug-in.

Troubleshooting

For troubleshooting information, refer to the following sections:

- [All Platforms](#)
- [Linux, Solaris, HP-UX, or AIX](#)
- [Windows](#)

All Platforms

If ingest rates on the DXi are slower than expected, check the disk performance on the media server. Slow disk read performance on the media server can cause slow data ingest on the DXi. Items that can affect the speed of disk reads on the media server include the I/O bus, the device bus, the disk controller, and the head stack assembly.

Linux, Solaris, HP-UX, or AIX

The Quantum OST plug-in maintains logs for troubleshooting purposes in `/var/log/ost/client`. For additional information on OST logging, see the *Quantum DXi-Series OST Configuration Guide* for Veritas NetBackup (or Backup Exec).

NetBackup Performance Issues

Semaphore Tuning Values

A Master server and Media server running NetBackup on Linux/Solaris/HP-UX/AIX platforms may encounter performance issues if OS resource limitations are below recommended semaphore tuning values. To review the recommended minimum values, please refer to Veritas support article at https://www.veritas.com/support/en_US/article.TECH203066.

Caching Issues

A server running NetBackup on Linux/Solaris/HP-UX/AIX platforms may encounter caching issues with Media Server Deduplication (MSDP) configurations. To clean up the NetBackup cache, please refer to Veritas support article at https://www.veritas.com/support/en_US/article.TECH150431.

Additional Troubleshooting Information for Solaris

On Solaris platforms, NetBackup may report the following error when attempting to load the Quantum OST plug-in:

```
13:50:00.947 [24176] <2> bpstsinfo/DPSPROXY DEBUG: stslog=STH_ESERROR: dpsProxy:
libsts openp() 11/10/25 13:49:57: stsm_open_module /usr/opensv/lib/ost-
plugins/libstspiQuantumMT.so failed err 2060048 platerr 2: ld.so.1: bpstsinfo:
fatal: libstdc++.so.6: open failed: No such file or directory
```

Cause

The Quantum OST Plug-in expects the gcc runtime library at one of the locations revealed by its search path and does not find it there.

```
ldd -s /usr/opensv/lib/ost-plugins/libstspiQuantumMT.so (search
path=/opt/csw/gcc3/lib/64:/lib/64:/opt/csw/lib/sparcv9 (RPATH from file
/usr/opensv/lib/ost-plugins/libstspiQuantum.so)
```

This means either the gcc runtime package is not installed at all or it is not installed at one the locations in the search path.

Resolution

To resolve the problem:

1. Do one of the following steps:
 - Install the gcc 3 64-bit runtime library package gcc3rt as described in this installation guide (see).
 - If the gcc runtime libraries are installed using different procedure than those described in this installation guide, then make sure they are installed at one of the locations under RPATH as revealed by the **ldd -s** output shown above.

2. Ensure that the gcc runtime library is searchable by the plug-in by running the following command

```
ldd -s /usr/opensv/lib/ost-plugins/libstspiQuantumMT.so
```

All the runtime libraries should be resolved in the output.

Windows

The `%WINDIR%\libstspiQuantum*.log` files contain messages that aid in troubleshooting an issue. See the *Quantum DXi-Series OST Configuration Guide* for Veritas NetBackup (or Backup Exec) or the backup application users guide for more information on OST plug-in logging.

Synthetic Full Backups

When attempting to perform an optimized synthetic full backup using NetBackup, a normal synthetic full backup occurs instead. During a normal synthetic full backup, all data is read back to the media server, resulting in a longer backup window.

This issue usually occurs with existing storage servers and disk pools.

Make sure the storage server and disk pools are correctly configured for optimized synthetic full backups. To do this, run the following commands on the media server:

```
nbdevconfig -changests -stype Quantum -storage_server <ss_name> -setattribute
OptimizedImage
```

```
nbdevconfig -changedp -stype Quantum -dp <dp_name> -setattribute OptimizedImage
```

To verify the configuration, run the following commands and make sure they return the flag **OptimizedImage**:

```
nbdevquery -liststs -U
```

```
nbdevquery -listdp -U
```

For more information, see the following Veritas online support article:

https://www.veritas.com/support/en_US/article.TECH77767

Additional Troubleshooting Information for Windows

On Windows platforms, a remote write failure error may occur during OST backups. If this error occurs, it means multiple streams cannot be opened, and only a single connection can be used to write data to the DXi.

To correct this problem, refer to the following information:

- [Configuring OST Plug-in TCP Settings below](#)
- [Configuring Windows Registry Settings below](#)

Configuring OST Plug-in TCP Settings

To correct the problem, configure the OST Plug-in TCP Settings to use the system default values:

1. On the media server, open the following file in WordPad or another text editor:

```
C:\Windows\libstspiQuantum.ini
```

2. In the file, un-comment the following lines and set each value to zero:

```
TCP_RCVBUF=0
```

```
TCP_SNDBUF=0
```

3. Save and close the file.
4. Restart the backup application services and run the backups again.

Configuring Windows Registry Settings

The following error may also occur:

```
ERROR - 20110816 15:23:29 3760  
3564..\..\lib\stspiQuantum\util.cpp:281..\..\xcomm.c:678 sendmsg failed - errno:  
10060, errmsg: A connection attempt failed because the connected party did not  
properly respond after a period of time, or established connection failed because  
connected host has failed to respond.
```

The following Microsoft technical bulletin provides information for resolving the error:

<http://support.microsoft.com/kb/q191143/>

-
- i Note:** Make sure to review the **Important** information in the technical bulletin regarding problems that might occur if the registry is incorrectly modified.

To correct the problem, configure Windows registry settings:

1. On the media server, start Registry Editor (**Regedt32.exe**) and navigate to the following sub key:
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters
2. Select **Edit > Add Value**, and then add a new sub key using the following values:

-
- i Note:** The **TcpMaxDataRetransmissions** sub key is not present in the registry by default. Adding this sub key will reduce the number of timeouts by allowing more time for connections to complete.

- **Value Name:** TcpMaxDataRetransmissions
 - **Value Type:** REG_DWORD - Number
 - **Valid Range:** 0 - 0xFFFFFFFF
 - **Default Value:** 5 Decimal
 - **New Value:** 10 Decimal
3. Click **OK**.
 4. Exit Registry Editor.
 5. Reboot the media server.

Contacting Quantum

More information about this product is available on the Service and Support website. The Service and Support Website contains a collection of information, including answers to frequently asked questions (FAQs).

For further assistance, or if training is desired, contact Quantum:

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For worldwide support:

<http://www.quantum.com/serviceandsupport/get-help/index.aspx#contact-support>

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OST Plug-in Release Notes

The following sections contain information about resolved and known issues in Quantum OST Plug-in 2.9.1 and 3.1.1:

The following issues are resolved in the Quantum OST Plug-in 3.1.1.

Bug Number	SR Number	Description
43861	3577984	OST Accent and synthetic backup regression in 3.0.0 and above OST plugins.

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