StorNext 3.5.1 Upgrade Guide

Introduction

This document provides information about upgrading to StorNext 3.5.1 from a previous version. Instructions are provided for metadata controllers (MDCs) running both StorNext File System (SNFS) and StorNext Storage Manager (SNSM), as well as for MDCs running SNFS only.

> **Note:** Quantum supports upgrades only from the previous two major releases of StorNext. For example, you can upgrade to StorNext 3.5.1 from version 3.1 or 3.0, but not from version 2.8 or earlier.

For upgrade procedures, or to learn how to contact Quantum for assistance, see the following sections:

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Getting Ready to Upgrade

This section includes important information about upgrading to StorNext 3.5.1. Review the following sections before upgrading:

- Upgrade Guidelines
- Converting a Metadata Controller Running IRIX
- Upgrading HA Systems
- Upgrading the Client Software

Upgrade Guidelines

Before upgrading StorNext, review the following upgrade guidelines:

- Before upgrading, make sure there is no I/O activity. On the StorNext home page, the number of store candidates should be 0. For tape drives, make sure no media is mounted and no read/write operations are being performed. If there is I/O activity, wait for the I/O activity to complete before upgrading. If you attempt to perform an upgrade during a period of high activity, the upgrade may fail.

- Before upgrading, Quantum recommends reviewing system configuration settings and performing a backup procedure to back up StorNext configuration files.

- Before upgrading, Quantum recommends storing all files. (If you do not store files prior to upgrading, Quantum recommends running a rebuild policy after the upgrade.)

- Before upgrading, Quantum recommends making sure all tape drives are at approved firmware levels. After upgrading, you may not be able to use drives that are not running an approved firmware version.

- Because the metadata dump format changed starting in StorNext 3.0, a metadata dump is automatically performed during the upgrade process. Depending on the size of the file system, this can extend the time required to complete the upgrade.

- After upgrading, your StorNext license remains valid. You do not need to request a new licence if the system ID does not change.

Converting a Metadata Controller Running IRIX

Starting with release 3.0.2, StorNext does not support metadata controllers running the SGI IRIX operating system. To upgrade to StorNext 3.5.1 from a release earlier than 3.0.2, MDCs running IRIX must be converted to a supported operating system. This conversion must be performed by Quantum Professional Services. For more information, or to schedule an IRIX conversion, contact the Quantum Technical Assistance Center (see Contacting Quantum on page 17).

Upgrading HA Systems

Upgrades for MDCs running in a High Availability (HA) Failover environment must be performed by Quantum Professional Services. If your system is running with failover enabled, contact the Quantum Technical Assistance Center (see Contacting Quantum on page 17).

Upgrading the Client Software

To upgrade to the StorNext 3.5.1 client software on Linux and Unix systems, install the new client software package. There is no need to uninstall previous versions of the client software. For more information about installing the client software on Linux and Unix, see the *StorNext 3.5.1 Installation Guide*.

To upgrade to the StorNext 3.5.1 client software on Windows, follow the procedure in Upgrading SNFS on Windows on page 9.

Running the Pre-Installation Script

The StorNext pre-installation script (**snPreInstall**) is included on the StorNext installation CD. When you run **snPreInstall**, you are prompted for information about your system. The pre-installation script uses this information to estimate the amount of local disk space required for SNFS and SNSM support directories. In addition, the script recommends the optimal locations for support directories.

StorNext uses five directories to store application support information. These directories are stored locally on the metadata controller, except for the **Backup** directory, which is stored on the managed file system.

The StorNext support directories are described in Table 1.

Table 1   StorNext Support
Directories

Support Directory	Description
Database /adic/database	Records information about where and how data files are stored.
Journal /adic/database_jnl	Records changes made to the database.
Mapping /adic/mapping_dir	Contains index information that enables quick searches on the file system.
Metadata /adic/database_meta	Stores metadata dumps (backups of file metadata).
Backup /backup	Contains configuration files and support data required for disaster recovery.

Before You Begin

Before running the pre-installation script, be prepared to answer the following questions:

- Is this an upgrade installation?
- What local file systems can be used to store support information?
- What version of StorNext will be installed?
- What is the maximum number of directories expected (in millions)?
- What is the maximum number of files expected (in millions)?
- How many copies will be stored for each file?
- How many versions will be retained for each file?

Note:	Keep in mind that storage needs typically grow rapidly. Consider increasing the maximum number of expected directories and files by a factor of 2.5x to ensure room for future growth.

Note:	The pre-installation script ignores unmounted file systems. Before running **snPreInstall**, be sure to mount all local file systems that will hold StorNext support information.

Running snPreInstall

To run the pre-installation script, use the StorNext installation CD.

1 Log on to the MDC as root.

2 Mount the StorNext installation CD and change to the CD root directory.

3 List the installation directories on the CD. At the command prompt, type:

ls -l

4 Identify the correct installation directory for your operating system and hardware platform, and then change to that directory.

For example, for Red Hat Linux 5 running on an x86 64-bit platform, change to the **RedHat50AS_26x86_64** directory.

5 Run the script. At the command prompt, type:

./snPreInstall

The pre-installation script runs (figure 1).

Figure 1 Pre-Installation Script

```
-----------------------------------------------------------------
This script will determine the disk space requirements for
performing a StorNext install/upgrade. It will then report
whether or not the local system has the required disk space
for the operation. Output will be one of these four types:

   RECOMMEND: A recommendation of how to set up the
              StorNext directories on your system.
   NOTE:      An advisory message indicating that the system
              can run with the given configuration, at the
              desired capacity, but the configuration
              is not optimal.
   SPACE:     Due to space issues the system cannot be
              configured to run at the desired capacity
              without adding more disk space.
   Aborting:  An error has occured, or invalid input has been
              provided, and no further analysis can be done.

The script will exit with one of these values:
   0 - disk space fine, ok to proceed with install/upgrade
   1 - disk space available, but not optimal file system layout
   2 - disk space not available for install/upgrade
   3 - invalid args etc. kept script from completing normally


-----------------------------------------------------------------
Are you upgrading ?? [y/<n>]:
```

6 Follow the onscreen instructions, and answer each question when prompted.

The script outputs results based on the information you entered.

Interpreting snPreInstall Output

After you enter all requested information, the pre-installation script outputs the following results:

- Estimated disk space required for each support directory.

- Recommended file system location for each support directory.

> **Tech Tip:** For optimal performance, each support directory (other than the **Backup** directory) should be located on its own local file system, and each local file system should reside on a separate physical hard disk in the MDC.

There are three types of directory recommendations, as indicated by the text preceding the recommendation. The three types of recommendations are described in Table 2.

Table 2 Pre-Installation Script Recommendation Types

Type	Description
RECOMMEND	The suggested directory locations will result in optimal system performance.

Type	Description
NOTE	The suggested directory locations are valid but system performance will not be optimal.
SPACE	Additional hard disk space is required to store the required support directories.

The pre-installation script bases directory location recommendations on the following criteria:

- To aid disaster recovery, the **Database** and **Journal** directories should be located on different file systems.

- For optimal performance, the **Metadata** directory should not be located on the same file system as (in order of priority) the **Journal**, **Database**, or **Mapping** directory.

> **Note:** Do not change the location of support directories manually. Instead, use the installation script to specify the location for support directories. For more information, see Upgrading to StorNext 3.5.1 (SNFS and SNSM) or Upgrading to StorNext 3.5.1 (SNFS Only).

Upgrading to StorNext 3.5.1 (SNFS and SNSM)

Use the StorNext installation script to upgrade to StorNext 3.5.1 on a metadata controller running StorNext Storage Manager and StorNext File System. To launch the script, use the correct StorNext installation CD for your operating system.

1 Log on to the MDC as root.

2 Mount the StorNext installation CD and change to the CD root directory.

> **Note:** When you mount a CD in a Red Hat 4 or 5 system, CDs are mounted by default with a noexec (non-executable) option which prevents you from proceeding with the installation.
>
> For Red Hat users only, before proceeding you must remount the CD by typing mount -o remount, exec ...

3 List the installation directories on the CD. At the command prompt, type:

ls -l

4 Identify the correct installation directory for your operating system and hardware platform, and then change to that directory.

For example, for Red Hat Linux 5 running on an x86 64-bit platform, change to the **RedHat50AS_26x86_64** directory.

5 Run the script with the -upgrade option. At the command prompt, type:

./install.stornext -upgrade

The installation script runs (figure 2).

Figure 2 StorNext Installation
Script

```
        StorNext Upgrade 3.5.1(6013) MAIN MENU

        1) Installation Configuration
        2) Upgrade stornext
        3) Show Status
        4) Quit

Enter your choice <2>:
```

6 On the Upgrade Menu, type 2 and press **<Enter>**.

The StorNext installation script runs and displays the current progress of the upgrade.

> **Note:** To customize the installation, select option 1 on the Upgrade Menu. For more information about changing configuration options, see the *StorNext 3.5.1 Installation Guide*.

7 When the upgrade is complete, press **<Enter>** to return to the Main Menu.

8 To exit the installation script, type 4 and press **<Enter>**.

9 Run a rebuild policy.

> **Note:** Backups are run on some operating systems immediately following the upgrade procedure. Other operating systems run the backup after the next reboot. These backups trigger a metadata dump that (depending on the number of files and the type of hardware) can cause backups to take several hours.

Upgrading to StorNext 3.5.1 (SNFS Only)

To upgrade to StorNext 3.5.1 on a metadata controller running StorNext File System (without Storage Manager), use the appropriate method for your operating system:

- Upgrading SNFS on Linux and Unix
- Upgrading SNFS on Windows

Upgrading SNFS on Linux and Unix

Use the SNFS installation script to upgrade to StorNext 3.5.1 on a metadata controller running StorNext File System (without Storage Manager). To launch the script, use the correct StorNext installation CD for your operating system.

1 Log on to the MDC as root.

2 Mount the StorNext installation CD and change to the CD root directory.

> **Note:** When you mount a CD in a Red Hat 4 or 5 system, CDs are mounted by default with a noexec (non-executable) option which prevents you from proceeding with the installation.
>
> For Red Hat users only, before proceeding you must remount the CD by typing mount -o remount, exec ...

3 List the installation directories on the CD. At the command prompt, type:

ls -l

4 Identify the correct installation directory for your operating system and hardware platform, and then change to that directory.

For example, for Red Hat Linux 5 running on an x86 64-bit platform, change to the **RedHat50AS_26x86_64** directory.

5 Run the script with the -upgrade option. At the command prompt, type:

./install.snfs -upgrade

The installation script runs ([figure 3](#)).

Figure 3 SNFS Installation Script

```
        Snfs Upgrade 3.5.1(6013) MAIN MENU

        1) Installation Configuration
        2) Upgrade snfs
        3) Show Status
        4) Quit

Enter your choice <2>:
```

6 On the Upgrade Menu, type 2 and press **<Enter>**.

The SNFS installation script runs and displays the current progress of the upgrade.

> **Note:** To customize the installation, select option 1 on the Upgrade Menu. For more information about changing configuration options, see the *StorNext 3.5.1 Installation Guide*.

7 When the upgrade is complete, press **<Enter>** to return to the Main Menu.

8 To exit the installation script, type 4 and press **<Enter>**.

Upgrading SNFS on Windows

The StorNext setup wizard guides you through the process of upgrading StorNext File System on a metadata controller running Windows 2003 Server. (The installation wizard also installs the client software on the MDC.)

If you are upgrading to StorNext 3.5.1 from a version of StorNext prior to version 3.0, you must remove any previously installed versions before installing StorNext 3.5.1. (See Removing a Previous Version of StorNext).

When you are ready, use the setup wizard to upgrade StorNext (see Running the Setup Wizard).

(Optional) After upgrading, restore the previous client configuration (see Restoring a Previous Client Configuration on page 14).

Note:	You must log on as an Administrator to install StorNext.

Removing a Previous Version of StorNext

If a previous version of StorNext older than version 3.0 exists on the system, you must remove it before installing the new version. If you are upgrading from a version of StorNext newer than version 3.0, the old client configuration is retained so there is no need to restore the old configuration.

1 Insert the StorNext installation CD.

2 Browse to the root directory of the installation CD and double-click the file **SnfsSetup64.exe** (64-bit systems).

The **StorNext Installation** window appears (figure 4).

Figure 4 StorNext Installation Window: Remove StorNext

3 Click **Remove StorNext**.

A dialog box appears informing you that the current client configuration has been saved.

4 Note the name and location of the saved configuration file, and then click **OK**.

5 If prompted, click **Yes** to continue, and then click **OK** to finish the removal.

6 When the removal is complete, click **Yes** to reboot the system.

Note:	After installing the new version of StorNext, you can restore the saved client configuration (see Restoring a Previous Client Configuration on page 14).

Running the Setup Wizard

To launch the setup wizard, use the correct StorNext installation CD for your operating system.

1 Insert the StorNext installation CD.

2 Browse to the root directory of the installation CD and double-click the file **SnfsSetup64.exe** (64-bit systems).

The **StorNext Installation** window appears (figure 5).

Figure 5 StorNext Installation
Window: Install StorNext

3 Click **Install StorNext** to begin installation.
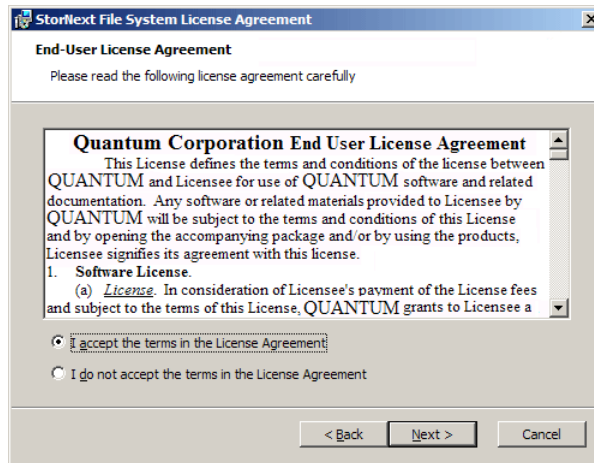
The StorNext setup wizard appears (figure 6).

Figure 6 SNFS Setup:
Welcome
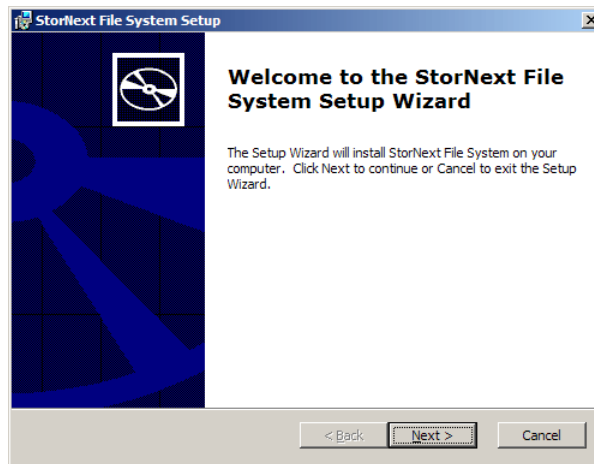
4 Click **Next** to continue.
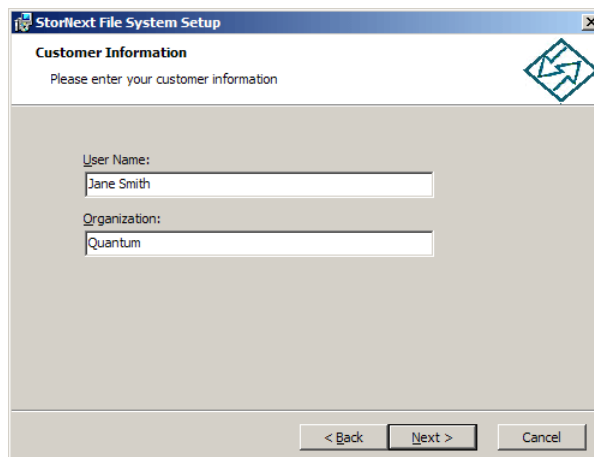
The **License Agreement** window appears (figure 7).

Figure 7 SNFS Setup: End-User License Agreement

5 Click the option to accept the license agreement, and then click **Next** to continue.
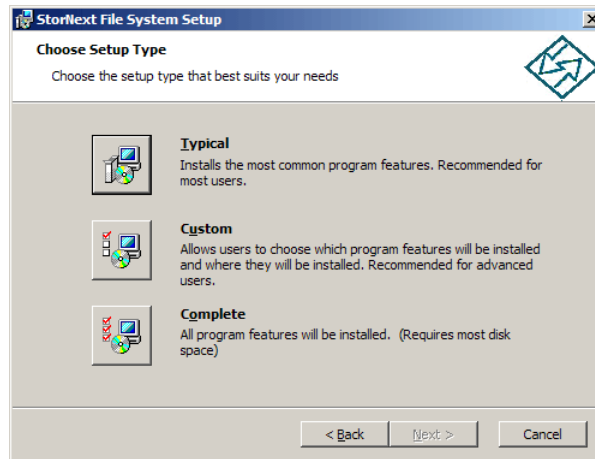
The **Customer Information** window appears (figure 8).

Figure 8 SNFS Setup: Customer Information

6 Type your name and the name of your company or organization in the boxes, and then click **Next** to continue.

The **Choose Setup Type** window appears (figure 9).

Figure 9 SNFS Setup: Choose Setup Type

7 Click an installation option:

- **Typical:** (Recommended) Installs StorNext File System, client software, and help files in the default location (**C:\Program Files\StorNext**).

- **Custom:** Lets you choose which components to install and specify an installation location. When ready, click **Next**.

- **Complete:** Same as a typical installation.
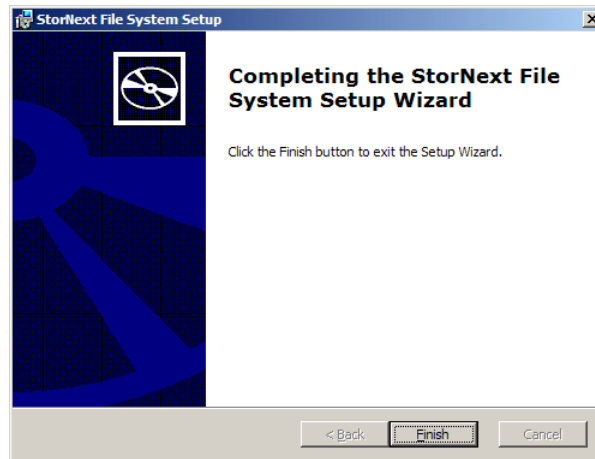
The **Ready to Install** window appears (figure 10).

Figure 10 SNFS Setup: Ready to Install
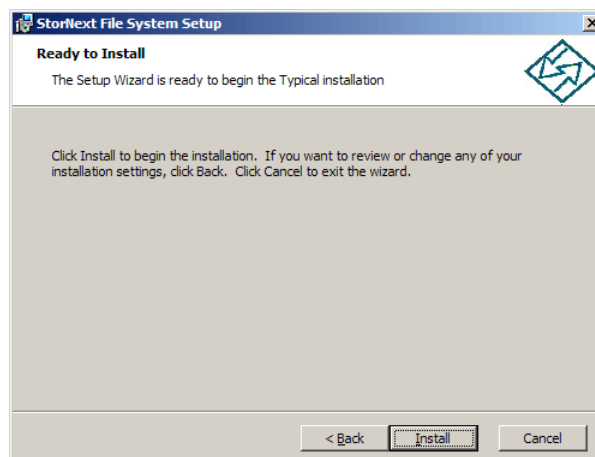
8 Click **Install** to continue.

Wait while the setup wizard installs StorNext. When installation is complete, the **Finish** window appears (figure 11).

Figure 11 SNFS Setup: Finish

9 Click **Finish** to close the setup wizard.

10 On the **StorNext Installation** window, click **Exit**.

You are prompted to reboot the system.

11 Click **Yes** to reboot.

Restoring a Previous Client Configuration

If you saved a client configuration file (for example, when removing a previous version of StorNext), you can import it after installing StorNext. This configures StorNext using the same settings as the previous installation.

1 Insert the StorNext installation CD.

2 Browse to the root directory of the installation CD and double-click the file **SnfsSetup64.exe** (64-bit systems).
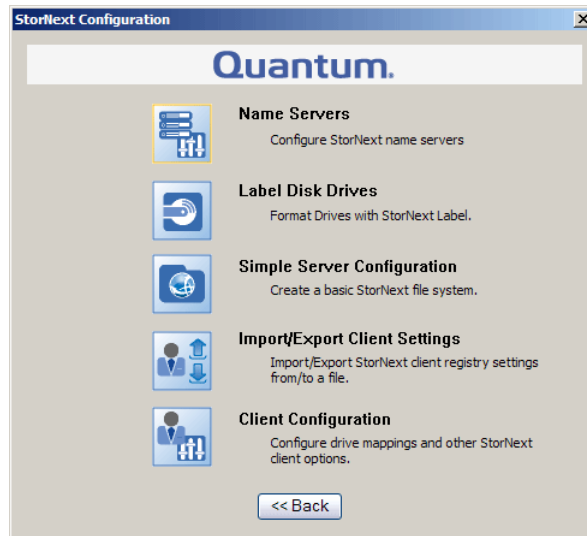
The **StorNext Installation** window appears (figure 12).

Figure 12 StorNext Installation Window: Configure StorNext
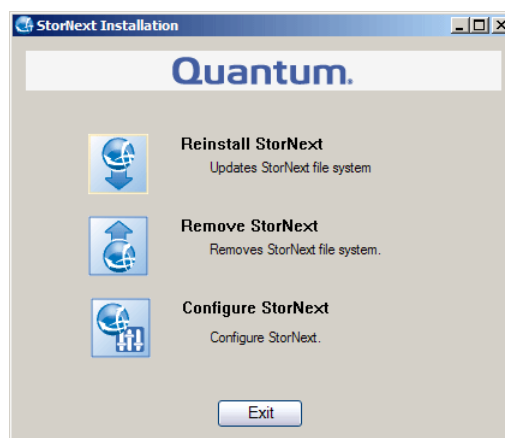
3 Click **Configure StorNext**.

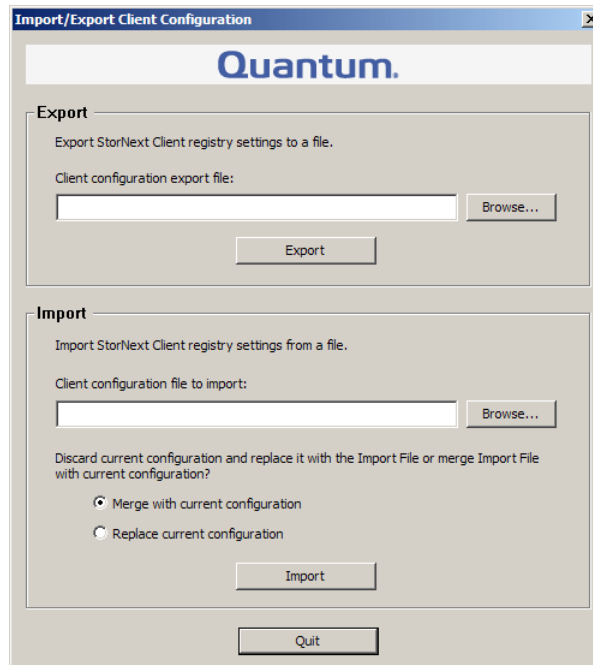The **StorNext Configuration** window appears (figure 13).

Figure 13 StorNext
Configuration Window

4 Click **Import/Export Client Settings**.

The **Import/Export Client Configuration** window appears (figure 14).

Figure 14 Import/Export Client
Configuration Window

5 Under **Import**, click **Browse**. Locate the client configuration (***.reg**) file to import, and then click **Open**.

Client configuration files saved during removal of a previous version of StorNext are located in one the following directories:

- **C:\SNFS\config**

- **C:\Program Files\StorNext\config**

6 Click an option for handling current configuration settings:

- **Merge with current configuration:** The imported configuration is merged with the current configuration settings.

- **Replace current configuration:** The imported configuration overwrites the current configuration settings.

7 Click **Import**, and then click **Yes** to confirm.

A message appears informing you the configuration settings were successfully added to the registry.

8 Click **OK**, and then click **Quit** to close the **Import/Export Client Configuration** window.

Contacting Quantum

More information about this product is available on the Quantum Service and Support website at www.quantum.com/ServiceandSupport. The Quantum Service and Support website contains a collection of information, including answers to frequently asked questions (FAQs). You can also access software, firmware, and drivers through this site.

To request a software upgrade, visit www.quantum.com/ServiceandSupport/Upgrade/Index.aspx. For further assistance, or if training is desired, contact the Quantum Technical Assistance Center:

North America	+1 800-284-5101 Option 5
EMEA	00800 9999 3822
Online Service and Support	www.quantum.com/OSR
World Wide Web	www.quantum.com/ServiceandSupport

(Local numbers for specific countries are listed on the Quantum Service and Support Website.)