Encryption and Using Q-EKM on the Scalar i2000

Purpose of This Document

The Scalar i2000 i6.1 release supports the licensable Quantum Encryption Key Manager (Q-EKM) application in conjunction with supporting LTO-4 tape media encryption using the IBM LTO-4 Fibre Channel drives. The Scalar i2000 user documentation was not updated for the i6.1 release. This document describes the new Q-EKM menu options on Scalar i2000 library.

For more information about installing and configuring the Q-EKM server and Q-EKM best practices, see the *Quantum Encryption Key Manager User's Guide* (6-01847-01).

Supporting Encryption

The Scalar i2000 library supports encrypting LTO-4 tape media using IBM LTO-4 Fibre Channel drives only. All IBM LTO-4 FC drives are encryption-capable, but to use the Q-EKM software application, you must purchase a Q-EKM license and provide a server or servers on which to install Q-EKM. Q-EKM does not currently support encryption on other tape drive types or manufacturer brands, even if they are assigned to a partition selected for encryption.

Configuring the Encryption Settings

Encryption on the Scalar i2000 tape library is enabled by partition only. The default setting for encryption-capable drives permits external application-managed encryption support on all encryption-capable tape drives and media within a partition.

You cannot select individual drives for encryption; you must select an entire partition to be encrypted. If you encrypt a partition, all encryption-capable tape drives are enabled for encryption, and all data written to supported media is encrypted. Non encryption-capable tape drives will not be enabled for encryption, and non-supported media will not be encrypted.

You can only configure the encryption settings through the **Partitions > Modify** functionality.

> **Note:** In order for Q-EKM to work properly, you must upgrade both your library and tape drive firmware to the latest released versions. For instructions on performing the firmware upgrades, see the *Scalar i2000 User's Guide*.

Using Q-EKM to Manage Encryption

Q-EKM is an optional, licensed Java software program that generates, protects, stores, and manages the encryption keys. These keys are used by the LTO-4 tape drives to encrypt the information being written to tape media and read from tape media. Policy control and keys pass through the library-to-drive interface; therefore encryption is transparent. Q-EKM was designed to generate and communicate encryption keys for LTO-4 drives in Quantum libraries across the customer's environment.

If you choose to purchase and use the licensed Q-EKM application, you must supply a server on which to install EKM. Professional Q-EKM integration must be performed by Quantum or Quantum authorized service personnel. For more information, contact the Quantum Technical Assistance Center at www.quantum.com/support.

> **Note:** Prior to configuring Q-EKM on the Scalar i2000 library, Quantum recommends installing and configuring the Q-EKM server or servers first.

Setting Up Q-EKM on the Scalar i2000

Setting up Q-EKM on the Scalar i2000 consists of the following steps:

Step 1: Enabling the Q-EKM License Key

1 From the menu bar, click **Setup > Licenses**.

   The **Licenses** dialog box appears.
   This dialog box lists the licensed features for your library, including their status, expiration date, and quantity.

2 To enable a license key, in the **Enter License Key** box, type the appropriate license key.

   You do not need to highlight the feature before you enter a license key. License keys are not case sensitive and all inclusive. For example, J2BGL-22622-52C22 can be entered as j2bgl-22622-52c22.

3 Click **OK**.

Step 2: Configuring the Q-EKM Server

Server settings are only used when a partition's encryption method is set to "Enable Library Managed." For more information on partitions, see the *Scalar i2000 User's Guide* (6-00421-11).

> **Note:** In order to synchronize properly, the TCP/IP and SSL ports on the primary and secondary Q-EKM servers must be set to the same values. Synchronization causes the entire configuration properties files of the primary server to overwrite the configuration files on the secondary server. Because the TCP/IP and SSL ports are listed in the configuration properties files, the primary and secondary servers must use the same TCP/IP and SSL port settings. Make sure the libraries that access these servers have their Q-EKM port configuration settings set correctly.

1 From the menu bar, click **Setup > EKM Servers**.
   The **EKM Servers** dialog box appears.

2 In the **Primary EKM Server** text box, type the host IP address.

3 In the **Primary port number** text box, type the port number for the primary EKM server. The default port is 3801.

4 Optionally, in the **Secondary EKM Server** text box, you can provide the IP address of a secondary EKM server.

> **Note:** If you do not plan to use a secondary server, you may type a zero IP address, 0.0.0.0, into the **Secondary EKM Server** text box, or you may leave this text box blank.

5 If you configured a secondary server, enter the port number for the secondary server into the **Secondary port number** text box.

6 Click **OK**.
   An **Operation in progress** dialog box appears, indicating the settings are being modified. Upon successful completion, the system returns to the main console.

Step 3: Configuring the Partition Encryption Settings

You can only configure the Q-EKM settings through the **Modify Partitions** process**.** You must create the partition first, then go to **Modify Partitions** to view and change the Q-EKM options. For more information on creating and modifying partitions, see either the *Scalar i2000 online Help* or the *Scalar i2000 User's Guide*.

Encryption on the Scalar i2000 tape library is enabled by partition only. You cannot select individual drives for encryption; you must select an entire partition to be encrypted. If you encrypt a partition, all encryption-capable tape drives are enabled for encryption, and all data written to supported media is encrypted. Non encryption-capable tape drives will not be enabled for encryption, and non-supported media will not be encrypted.

1 In the **Partitions** dialog box, select the partition you want to modify.
   The **Partitions — Step 1:Choose Partition Properties** dialog box appears.

2 In the **EKM** drop-down list, select the appropriate encryption option.
The encryption method that you select will apply to all encryption-capable tape drives and media in that partition.

Encryption Method	Description
Unsupported	Means that no tape drives in that partition support encryption. If "Unsupported" is shown, it is greyed out and you are unable to change the selection.
Allow Application Managed	This is the default setting if you have encryption-capable tape drives in the partition. This option should remain selected *unless* you are connecting the library to an external Q-EKM server. This option allows an external application to provide encryption support to all encryption-capable tape drives and media within the partition. The library will NOT communicate with the Q-EKM server on this partition. **Note:** If you want an application to manage encryption, you must specifically configure the application to do so.
Enable Library Managed	Enables encryption support via a connected Q-EKM server for all encryption-capable tape drives and media assigned to the partition.

3 If there are no other changes to your partition, click **Next.**
For more information on partitions, see the online Help or the *Scalar i2000 User's Guide* (6-00421-11).