

III. INSTALLATION PROCEDURES

This T50e library procedure has been customized for the Federal Bureau of Prisons, based on their environmental requirements. It is not intended to replace Spectra Logic's formal documentation, but more to serve as a guide for the multiple T50e tape libraries that will be installed at various locations around the country.

Prior to beginning the installation:

Review the Quickstart Guide

<http://www.spectralogic.com/index.cfm?fuseaction=home.displayFile&DocID=2437>

and Rack-mount Guide

<http://www.spectralogic.com/index.cfm?fuseaction=home.displayFile&DocID=2438>

This guide assumes that each T50e tape library was delivered with the following components:

- 1x Spectra T50e tape library with the following options:
 - 1x half height LTO-5 tape drive with fibre channel interface
 - 10 slot media capacity license
 - Redundant power supply
- 1x 10 meter LC to LC fibre cable
- 40x LTO-4 tape cartridges
- 1x LTO cleaning cartridge

- BOP Should make available or provide the following for each site:
 - Rack or Desktop space to install the unit
 - 1X RJ-45 Cable and Network connectivity
 - Master Encryption Key and Passphrase for importing the key into the library
 - Your customer/contract number
 - IP address, Subnet Mask, Gateway and SMTP address information
 - Standard hand tools
 - Voltmeter
 - Level

- Spectra Logic has provided BOP a location to download a copy of the IBM tape device drivers and the Tape Diagnostic Tool (ITDT) which should be loaded on each Windows Master Backup Server during the library installation. This SW can be downloaded here: <ftp://spectralogic.com/supportupload/BOP/>
- Since all BOP T50e tape libraries will share encryption keys, a copy of the master crypto key should be available at the time of installation on USB or available via a volume share for RLC upload, which is referenced in this document.

Please refer to the T50e Users Manual, rack mount guide or T50e Quickstart Guide for additional information pertaining to each step of the installation. These documents can be found and downloaded at <http://www.spectrallogic.com/index.cfm?fuseaction=support.product&CatID=1887&P=234>.

Physical T50e Installation

1. Remove the T50e, rackmount kit, and components from their shipping material and verify the following components
 - a. T50e tape library
 - b. Rack mount kit
 - c. 1x LTO-5 tape drive
 - d. Redundant Power Supply
 - e. 1x fibre cable
 - f. Plastic binder with documentation, USB drive, and stylus
2. At the rear of the T50e, slide out the Product ID tag, and write down the serial number of the tape library, which will be required for product registration, and is also necessary when contacting Spectra Technical Support for assistance.
3. Remove the picker shipping key on the top center of the library. Place in the holder at the rear of the library.
4. Install the rack mount kit into your data cabinet (ensure the level of the rack kit prior to sliding the library into the rails within the cabinet.) The manual can be found here: <http://www.spectrallogic.com/index.cfm?fuseaction=home.displayFile&DocID=2437>
5. Install the library into the data cabinet.
6. Remove the shipping lock as described in the Quickstart guide found here: <http://www.spectrallogic.com/index.cfm?fuseaction=home.displayFile&DocID=2437>
7. Install the redundant power supply as per pg.3 of the Power supply installation or replacement document located here: <http://www.spectrallogic.com/index.cfm?fuseaction=home.displayFile&DocID=2440>
8. Install the tape drive into its slot as per the Quickstart guide listed in step 6 above.
9. Remove the rubber LC port cover from the tape drive, and connect the orange fibre cable between the library and your fibre switch or master backup server as required.
10. Connect an Ethernet cable between the library and your network. The T50e runs at 10/100 full duplex. (Gigabit Ethernet is not supported).
11. Plug the USB drive supplied with the library into one of the USB ports in the back of the library.

12. Use a Voltmeter or get facilities management to verify 100 Volts A/C to 127 Volts A/C at the power source and connect the power cords, the plug in the power cords to the unit, then the socket.
13. Press and hold for 1-3 seconds the power button on the front of the library to power up. During initialization, license keys and configuration information pertaining to your purchase will be loaded from the USB drive into the library configuration.
14. While the library is initializing, place the stylus into its holder on the side of the GUI screen.
15. Library initialization will take approximately 10 minutes. When initialization is complete, the BlueScale Login screen will appear on the GUI, asking for login information. Refer to the Quickstart guide for screenshot.

Logical T50e Configuration

1. Login to the library GUI as “su” with no password. Make sure to select the login button on the screen.
2. If a message screen appears, review messages and “delete all” if messages indicate components “appeared unexpectedly”. If there are not any other messages then proceed.
3. If no messages are present after login, the screen should prompt for creation of a partition. Execute automatic partition creation which automatically uses all available library resources to create a partition, or step through manual partition creation. Don’t save library configuration at the completion of this step. If there were system messages, select the **Menu → Configuration → Partitions** to reach this screen.
4. Load media into the library as follows and described in the Quickstart guide. (Remember not to place a tape in the mail slot).
 - a. On the GUI, select **Menu → General → Import/Export → Bulk Load**, then hit ‘continue’.
 - b. Slide the lower left Magazine out
 - c. load media into slots 1-9
 - d. load a cleaning tape into slot 10
 - e. Slide the magazine back into the library and select “stop loading” on the GUI. The library will inventory all the media imported into the library.
 - f. After bulk load is complete, select **Menu → General → Inventory** to verify that all pieces of media were properly inventoried. Verify all the Tapes have a valid barcode and that none of the slots, including the EE slot are marked as “full”.
5. Select **Menu → Configuration → More Options → Network**. Select Static IP, and enter your IP address, subnet mask, and gateway information. Most additional configurations can now be performed using a computer that is on the same subnet or is routed to the tape library using the Remote Library Controller (RLC)

6. Using either the library GUI or RLC, complete other logical library configurations as follows:
 - a. **Select Menu → Configuration → Option Keys**, verify the following license keys are installed. If they are not present, work with the Central office or contact Spectra Logic as appropriate.
 - i. Encryption Standard License
 - ii. BlueScale Software Support License
 - iii. Feature License, View Non-MLM Tapes
 - iv. Capacity License: 10 Slots
 - b. **Select Menu → Configuration → Mail Users**, configure email recipients, and SMTP information. Test each user to make sure email is operating properly. (*Note: autosupport@spectralogic.com cannot be tested at this time*).
 - c. **Select Menu → Configuration → Settings**, add library hostname and select Autoconfiguration Save)
 - d. **Select Menu → Configuration → More Options → Date & Time**, correct any inaccurate date or time settings.
 - e. **Select Menu → Maintenance → AutoSupport**. Select the **Manage Profile**, and configure your autosupport profile(s) which will vary based on the location of your site and who administers it.
 - i. Ensure that Critical Alarms is set
 - ii. You may need to contact Spectra regarding your customer number. If you don't have your customer ID number at this time, use any 6-digit number as placeholder until you obtain the correct number.
 - iii. Set **Log forwarding = on**
 - iv. Configure **Alarms → Critical alarms Handling = active** to desired recipients.
 - v. Configure mail recipients for receipt of an autosupport file upon issuance. You can select as many email address as you desire, but at least one should be selected per profile.
 - f. Select **Menu → Maintenance → MLM → Discover Media**. This will start the process of Pre-scanning of the media and update the MLM database with information from the cartridge memory on each LTO cartridge.
 - g. After the Discover Media is completed, select **Menu → General → MLM** to check the contents of the MLM database to make sure that the database has been populated with information from each tape.
 - h. Select **Menu → Security → Edit Users**. Add users with the appropriate privileges.
 - i. SU has unlimited control of the library
 - ii. Administrator is like SU, except cannot create additional users or administer Encryption
 - iii. Operator can only add/remove media to the T50e, and can move media via the Inventory tab.

Host Server and Fibre Switch Configuration

1. Ensure that the T50e and tape drive are visible on the fibre switch. Perform zoning of the switch if required. (The server port of the master backup server, Linux media servers, and tape library should be zoned with no other components. Do not mix disk drives and tape drives thru the same HBA's on the host.)
2. Review Windows Device Manager on the Windows 2003 Backup server connected to the library. The library will be identified as Unknown Media Changer, and the tape drive will be visible as LTO tape drive within a "tape Drives" tab or the "Unknown tab".
 - a. The Linux media servers should need no additional drivers
3. Install the latest IBM tape Drive Drivers on the windows backup server. The latest tape drive drivers have been provided by Spectra Logic. Note: The zipped IBM drivers must be expanded into a folder and run from within that folder. **Do not attempt to load the drivers from within the zipped file.** Run the **non-exclusive** installation package. **Do not attempt to load the drivers thru Windows, only run the installation executables in the IBM driver directory.**
4. Re-check the Windows Device Manager to ensure that the tape drive drivers loaded correctly. There should be 5 tabs visible within the driver properties, and the driver version will be listed. Verify the driver creator is IBM and that the version matches what was installed.
5. Bring the Syncsort backup software online.
 - a. Configure the T50e within Syncsort.
 - b. Inventory the software and compare against the inventory of the T50e. Select **Menu → General → Inventory.**
 - c. Run a test backup and restore to test library operation and connectivity.
6. IBM's Tape Diagnostic Tool (ITDT) should be loaded on the server for the purpose of updating drive firmware, running tape drive diagnostics, and collecting tape drive logs. ITDT was provided by Spectra Logic or can be downloaded from IBM's web site.
7. Backup the T50e tape library configuration to the USB drive delivered with the unit and email to the administrator(s) as desired. (remember to remove the USB drive from the USB port)
 - a. Select **Menu → Maintenance → Utilities → Save Library Configuration → USB**

Encryption Configuration

BlueScale Standard Encryption was purchased with each T50e tape library. The following steps will assist in configuring and activating Encryption on the T50e. For further information, please refer to the Spectra Logic BlueScale Encryption User Manual.

For these steps, it is assumed that an encryption key was created on another Spectra Logic tape library and is either on a shared volume, accessible via RLC import, or on a USB drive.

1. Select **Menu → Security → Encryption**, Select “OK”, as there is no password during the initial setup.
 - a. If an encryption user password is desired at this time, select “Configure”, otherwise ignore this step for later.
 - b. Select “Import Key”. Select USB or RLC as required. Select the encryption moniker on the USB drive, or browse to the encryption moniker on the network share.
 - c. Enter the pass phrase that was used to backup the crypto key. The key will then import into the T50e.
2. If it is desired to be activated at this time, Select **Menu → Configuration → Partition**, and step through the pages to the Encryption page, and select the “Enable Encryption” option. Continue stepping through the pages, save and exit. All data written to the T50e will now be encrypted.
3. Perform a Test Backup.
4. Perform a Test Restore.

Note on BlueScale Firmware Package Updates

Each T50e tape library was delivered with the latest BlueScale operating system at the time this document was written, and should not require any updates at this time.

Since the T50e will not be allowed to directly access the internet for downloading firmware packages, a proxy may be configured. Instructions to configure this option can be found within the T50e Users Manual on pages 88-89. Alternatively, BlueScale firmware package updates can be performed by downloading revisions to the Spectra USB drive from a local PC. The USB drive can now be plugged into the library and updates performed by Selecting **Menu → Maintenance → Package Update**

Please refer to the following documents for additional information pertaining to the installation and configuration of the Spectra Logic T50e tape libraries:

Spectra Logic T50e Users Manual

Spectra Logic T50e Quickstart Guide

Spectra Logic Training CD

BlueScale Encryption User Manual