

## Sun StorEdge™ L7 Decision Tree

The purpose of the Sun StorEdge L7 Decision Tree is to identify a logical sequence of events to troubleshoot a Sun StorEdge L7 autoloader based upon the error message displayed on the LCD. Since there are no Field Replaceable Unit (FRU) items available for servicing a StorEdge L7 autoloader, failure to successfully clear the error message after performing the steps outlined in this decision tree will result in autoloader replacement.

# Sun StorEdge L7 Decision Tree

**Legend:**

DP = Decision Point  
R= Response  
A= Action

## 1.0 LCD Blank

A blank LCD indicates a hardware problem with the LCD, cabling problems within the StorEdge L7 or power supply problems.

**DP1:** Check the green Power LED on the front panel of the StorEdge L7 to see if it is illuminated. Refer to Sun StorEdge L7 User's Guide -> Introduction -> Switches and Indicators -> Front Panel for the location of green Power LED.

**R1:** Green Power LED is not illuminated.

**DP2:** Check to see if the autoloader fan is spinning.

**R2:** Fan is not spinning.

**DP3:** Check the AC power cord for proper connection.

**R3:** AC power cord is properly connected.

**A3:** Press the POWER button on the front panel of the StorEdge L7.

**DP4:** Check to see if the LCD is still blank.

**R4:** LCD is still blank.

**DP5:** Try a different AC power cord.

**R5:** Second cord works.

**A5:** Replace the failing power cord.

**R5:** Second cord does not work.

**R5:** Replace the autoloader.

**R4:** LCD is no longer blank.

**A4:** Continue normal autoloader operation.

**R3:** AC power cord is not properly connected.

**A3:** Reseat the AC power cord.

**A3:** Press the POWER button on the front panel of the StorEdge L7.

**R2:** Fan is spinning.

**A2:** Replace the autoloader.

**R1:** Green Power LED is illuminated.

**A1:** Replace the autoloader.

## 2.0 SERIAL RCV

This error message indicates the autoloader has encountered an inter-processor communication error. Troubleshooting should begin with cycling power to the autoloader.

**Note:** When powering off the autoloader, the POWER button on the front panel of the autoloader must be pressed and held for 2 seconds.

**DP1:** Check to see if the error message is still present after cycling autoloader power.

- R1:** Error message is still present.
- A1:** Replace the autoloader.
- R1:** Error message no longer present.
- A1:** Continue normal autoloader operation.

## 3.0 CPU RX ERR

This error message indicates the motion CPU is not ready to receive. Troubleshooting should begin with cycling power to the autoloader.

**Note:** When powering off the autoloader, the POWER button on the front panel of the autoloader must be pressed and held for 2 seconds.

**DP1:** Check to see if the error message is still present after cycling autoloader power.

- R1:** Error message is still present.
- A1:** Replace the autoloader.
- R1:** Error message no longer present.
- A1:** Continue normal autoloader operation.

## 4.0 CPU TX ERR

This error message indicates the motion CPU is not ready to transmit. Troubleshooting should begin with cycling power to the autoloader.

**Note:** When powering off the autoloader, the POWER button on the front panel of the autoloader must be pressed and held for 2 seconds.

**DP1:** Check to see if the error message is still present after cycling autoloader power.

- R1:** Error message is still present.
- A1:** Replace the autoloader.
- R1:** Error message no longer present.
- A1:** Continue normal autoloader operation.

## 5.0 HALT

This error message indicates the motion CPU has been halted by a low ACT line. Troubleshooting should begin with cycling power to the autoloader.

**Note:** When powering off the autoloader, the POWER button on the front panel of the autoloader must be pressed and held for 2 seconds.

**DP1:** Check to see if the error message is still present after cycling autoloader power.

- R1:** Error message is still present.
- A1:** Replace the autoloader.
- R1:** Error message no longer present.
- A1:** Continue normal autoloader operation.

## 6.0 NVM SELECT

This error message indicates an NVRAM selection failure. Troubleshooting should begin with cycling power to the autoloader.

**Note:** When powering off the autoloader, the POWER button on the front panel of the autoloader must be pressed and held for 2 seconds.

**DP1:** Check to see if the error message is still present after cycling autoloader power.

**R1:** Error message is still present.

**A1:** Replace the autoloader.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.

## 7.0 NVM WRITE

This error message indicates an NVRAM write failure. Troubleshooting should begin with cycling power to the autoloader.

**Note:** When powering off the autoloader, the POWER button on the front panel of the autoloader must be pressed and held for 2 seconds.

**DP1:** Check to see if the error message is still present after cycling autoloader power.

**R1:** Error message is still present.

**A1:** Replace the autoloader.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.

## 8.0 CAM LIMIT

This error message indicates a cam limit has been reached without tripping a sensor. Troubleshooting should begin with cycling power to the autoloader.

**Note:** When powering off the autoloader, the POWER button on the front panel of the autoloader must be pressed and held for 2 seconds.

**DP1:** Check to see if the error message is still present after cycling autoloader power.

**R1:** Error message is still present.

**A1:** Replace the autoloader.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.

## 9.0 JAW SENSOR

This error message indicates a jaw sensor has been tripped. Troubleshooting should begin with cycling power to the autoloader.

**Note:** When powering off the autoloader, the POWER button on the front panel of the autoloader must be pressed and held for 2 seconds.

**DP1:** Check to see if the error message is still present after cycling autoloader power.

**R1:** Error message is still present.

**A1:** Replace the autoloader.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.

## 10.0 SRC EMPTY

This error message indicates the autoloader attempted to get a tape from a selectable storage slot but the tape is no longer there. A user manually removing a tape from the selected storage slot prior to the autoloader getting to the tape can cause this error. Troubleshooting should begin by confirming if the tape was manually removed during the autoloader operation, and if confirmed, manually replacing the tape to the selected storage slot and retrying the autoloader operation. An obstructed slot sensor (dust, lint, etc. blocking the slot sensor) can also cause this error, as the autoloader will attempt to get a tape that isn't really there. Troubleshooting should continue with confirming the storage slot is empty, and if confirmed, using compressed error to remove dust/debris from the slot sensor.

**DP1:** Check to see if the user manually removed the tape during the autoloader operation.

**R1:** User manually removed the tape from the selected storage slot.

**A1:** Replace the tape to the selected storage slot.

**A1:** Retry the autoloader move operation.

**DP2:** Check to see if the error message is still present.

**R2:** Error message is still present.

**A2:** Replace the autoloader.

**R2:** Error message no longer present.

**A2:** Continue normal autoloader operation.

**R1:** User did not manually remove the tape from the selected storage slot.

**A1:** Power down the autoloader.

**A1:** Remove all tapes from the autoloader.

**A1:** Use compressed error to clean all tape slot sensors.

**A1:** Replace all tapes.

**A1:** Power up the autoloader and retry the autoloader move operation.

**DP2:** Check to see if the error message is still present.

**R2:** Error message is still present.

**A2:** Replace the autoloader.

**R2:** Error message no longer present.

**A2:** Continue normal autoloader operation.

## 11.0 dEST FULL

This error message indicates the autoloader attempted to place a tape to a selectable storage slot but the storage slot is now full. A user manually placing a tape to the selected storage slot prior to the autoloader placing its tape can cause this error. Troubleshooting should begin with confirming if the tape was manually placed during the autoloader operation, and if confirmed, manually removing the tape from the storage slot and retrying the autoloader operation.

**DP1:** Check to see if the user manually placed a tape during the autoloader operation.

**R1:** User manually placed a tape to the selected storage slot.

**A1:** Remove the tape from the selected storage slot.

**A1:** Retry the autoloader move operation.

**DP2:** Check to see if the error message is still present.

**R2:** Error message is still present.

**A2:** Replace the autoloader.

**R2:** Error message no longer present.

**A2:** Continue normal autoloader operation.

**R1:** User did not manually place a tape to the selected storage slot.

**A1:** Power down the autoloader.

**A1:** Remove all tapes from the autoloader.

**A1:** Use compressed error to clean all tape slot sensors.

**A1:** Replace all tapes.

**A1:** Power up the autoloader and retry the autoloader move operation.

**DP2:** Check to see if the error message is still present.

**R2:** Error message is still present.

**A2:** Replace the autoloader.

**R2:** Error message no longer present.

**A2:** Continue normal autoloader operation.

## 12.0 REAR TAPE

This error message indicates the autoloader's rear tape sensor was not tripped during a tape move operation. The autoloader's front and rear tape sensors are used to detect tape location during a tape move operation and to confirm the tape has cleared the picker path. Troubleshooting should begin with retrying the move operation.

**DP1:** Check to see if the error message is still present after retrying the autoloader move operation.

**R1:** Error message is still present.

**A1:** Cycle power to the autoloader.

**A1:** Retry the autoloader move operation.

**DP2:** Check to see if the error message is still present.

**R2:** Error message is still present.

**A2:** Power down the autoloader.

**A2:** Remove all tapes from the autoloader.

**A2:** Use compressed error to clean all tape slot sensors.

**A2:** Replace all tapes.

**A2:** Power up the autoloader and retry the autoloader move operation.

**DP3:** Check to see if the error message is still present.

**R3:** Error message is still present.

**A3:** Replace the autoloader.

**R3:** Error message no longer present.

**A3:** Continue normal autoloader operation.

**R2:** Error message no longer present.

**A2:** Continue normal autoloader operation.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.

## 13.0 FRONT TAPE

This error message indicates the autoloader's front tape sensor was not tripped during a tape move operation. The autoloader's front and rear tape sensors are used to detect tape location during a tape move operation and to confirm the tape has cleared the picker path. Troubleshooting should begin with retrying the move operation.

**DP1:** Check to see if the error message is still present after retrying the autoloader move operation.

**R1:** Error message is still present.

**A1:** Cycle power to the autoloader.

**A1:** Retry the autoloader move operation.

**DP2:** Check to see if the error message is still present.

**R2:** Error message is still present.

**A2:** Power down the autoloader.

**A2:** Remove all tapes from the autoloader.

**A2:** Use compressed error to clean all tape slot sensors.

**A2:** Replace all tapes.

**A2:** Power up the autoloader and retry the autoloader move operation.

**DP3:** Check to see if the error message is still present.

**R3:** Error message is still present.

**A3:** Replace the autoloader.

**R3:** Error message no longer present.

**A3:** Continue normal autoloader operation.

**R2:** Error message no longer present.

**A2:** Continue normal autoloader operation.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.

## 14.0 REAR SLOT

This error message indicates a rear slot sensor was not tripped after a tape move to a rear storage slot. A defective rear slot sensor can cause this error. Troubleshooting should begin with retrying the move operation to the same rear slot. An obstructed rear slot sensor (dust, lint, etc. blocking the slot sensor) can also cause this error. Troubleshooting should continue with using compressed error to remove dust/debris from the slot sensor.

**DP1:** Check to see if the error message is still present after retrying the tape move operation.

**R1:** Error message is still present.

**A1:** Power down the autoloader.

**A1:** Remove all tapes from the autoloader.

**A1:** Use compressed error to clean all tape slot sensors.

**A1:** Replace all tapes.

**A1:** Power up the autoloader and retry the autoloader move operation.

**DP2:** Check to see if the error message is still present.

**R2:** Error message is still present.

**A2:** Replace the autoloader.

**R2:** Error message no longer present.

**A2:** Continue normal autoloader operation.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.

## 15.0 FRONT SLOT

This error message indicates a front slot sensor was not tripped after a tape move to a front storage slot. A defective front slot sensor can cause this error. Troubleshooting should begin with retrying the move operation to the same front slot. An obstructed front slot sensor (dust, lint, etc. blocking the slot sensor) can also cause this error. Troubleshooting should continue with using compressed error to remove dust/debris from the slot sensor.

**DP1:** Check to see if the error message is still present after retrying the tape move operation.

**R1:** Error message is still present.

**A1:** Power down the autoloader.

**A1:** Remove all tapes from the autoloader.

**A1:** Use compressed error to clean all tape slot sensors.

**A1:** Replace all tapes.

**A1:** Power up the autoloader and retry the autoloader move operation.

**DP2:** Check to see if the error message is still present.

**R2:** Error message is still present.

**A2:** Replace the autoloader.

**R2:** Error message no longer present.

**A2:** Continue normal autoloader operation.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.

## 16.0 PCKR FULL

This error message indicates the autoloader's picker contains a tape that needs to be returned to its storage location. A tape in the picker at power down, followed by a power up, is the most likely cause of this error. Troubleshooting should begin with cycling power to the autoloader and ejecting the tape in the picker to its storage location. For instructions on ejecting a tape from the picker via the front panel, refer to Sun StorEdge L7 User's Guide -> Operation and Maintenance -> Autoloader Modes -> Mode 4 – EJECT PCKR.

**DP1:** Check to see if the error message is still present after cycling autoloader power and retrying the picker eject operation.

**R1:** Error message is still present.

**A1:** Power down the autoloader.

**A1:** Manually remove the tape from the picker.

**A1:** Inspect the tape and picker and remove any debris (tape, labels, etc.) that may be preventing the tape from ejecting from the picker.

**A1:** Replace the tape that was removed from the picker.

**A1:** Power up the autoloader and perform a tape move with the same tape.

**DP2:** Check to see if an error message is still present after performing a tape move with the same tape.

**R2:** Error message still present.

**A2:** Power down the autoloader and manually remove the tape.

**A2:** Power up the autoloader and repeat a tape move operation with another tape.

**DP3:** Check to see if an error message is still present after performing a tape move with a different tape.

**R3:** Error message still present.

**A3:** Replace the autoloader.

**R3:** Error message no longer present.

**A3:** Replace the defective tape and continue normal autoloader operation.

**R2:** Error message no longer present.

**R2:** Continue normal autoloader operation.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.

## 17.0 PCKR EMPTY

This error message indicates the autoloader attempted to perform an EJECT PCKR operation (reference Sun StorEdge L7 User's Guide -> Operation and Maintenance -> Autoloader Modes -> Mode 4 – EJECT PCKR) with no tape present in the picker. The PCKR EMPTY error message will appear on the LCD for approximately 25 seconds. The error message can be cleared prior to 25 seconds by pressing the MODE button on the front panel of the autoloader to return the autoloader to LdR REAdY status.

## 18.0 dRIVE EJCT

This error message indicates the autoloader failed to eject a tape from a drive. Troubleshooting should begin with retrying the drive eject operation. For instructions on ejecting a tape from a drive via the front panel, refer to Sun StorEdge L7 User's Guide -> Operation and Maintenance -> Autoloader Modes -> Mode 1B – EJECT DRV.

**DP1:** Check to see if the error message is still present after retrying the drive eject operation.

**R1:** Error message is still present.

**A1:** Cycle power to the autoloader.

**A1:** Retry the drive eject operation.

**DP2:** Check to see if the error message is still present after retrying the drive eject operation.

**R2:** Error message still present.

**A2:** Replace the autoloader.

**R2:** Error message no longer present.

**R2:** Continue normal autoloader operation.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.



## 19.0 dRIVE LOAd

This error message indicates the autoloader failed to load a tape into a drive. Troubleshooting should begin with retrying the drive load operation. For instructions on loading a tape to a drive via the front panel, refer to Sun StorEdge L7 User's Guide -> Operation and Maintenance -> Autoloader Modes -> Mode 1A – LOAD DRV.

**DP1:** Check to see if the error message is still present after retrying the drive load operation.

**R1:** Error message is still present.

**A1:** Cycle power to the autoloader.

**A1:** Retry the drive load operation.

**DP2:** Check to see if the error message is still present after retrying the drive load operation.

**R2:** Error message still present.

**A2:** Replace the autoloader.

**R2:** Error message no longer present.

**R2:** Continue normal autoloader operation.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.

## 20.0 dRIVE UNLd

This error message indicates the autoloader failed to eject a tape from a drive due to the drive not being logically unloaded. Troubleshooting should begin with retrying the drive eject operation. For instructions on ejecting a tape from a drive via the front panel, refer to Sun StorEdge L7 User's Guide -> Operation and Maintenance -> Autoloader Modes -> Mode 1B – EJECT DRV.

**DP1:** Check to see if the error message is still present after retrying the drive eject operation.

**R1:** Error message is still present.

**A1:** Cycle power to the autoloader.

**A1:** Retry the drive eject operation.

**DP2:** Check to see if the error message is still present after retrying the drive eject operation.

**R2:** Error message still present.

**A2:** Replace the autoloader.

**R2:** Error message no longer present.

**R2:** Continue normal autoloader operation.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.

## 21.0 dRIVE HNdL

This error message indicates the autoloader failed to eject a tape from or load a tape to a drive due to a drive 'operate handle' timeout. Troubleshooting should begin with retrying the drive eject or drive load operation. For instructions on ejecting a tape from a drive via the front panel, refer to Sun StorEdge L7 User's Guide -> Operation and Maintenance -> Autoloader Modes -> Mode 1B – EJECT DRV. For instructions on loading a tape to a drive via the front panel, refer to Sun StorEdge L7 User's Guide -> Operation and Maintenance -> Autoloader Modes -> Mode 1A – LOAD DRV.

**DP1:** Check to see if the error message is still present after retrying the drive eject or drive load operation.

**R1:** Error message is still present.

**A1:** Cycle power to the autoloader.

**A1:** Retry the drive eject or drive load operation.

**DP2:** Check to see if the error message is still present after retrying the drive eject or drive load operation.

**R2:** Error message still present.

**A2:** Replace the autoloader.

**R2:** Error message no longer present.

**R2:** Continue normal autoloader operation.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.

## 22.0 dRIVE BUSY

This error message indicates the autoloader failed to eject a tape from a drive due to a 'drive busy'. Troubleshooting should begin with retrying the drive eject operation after allowing sufficient time for the drive to finish its current operation. For instructions on ejecting a tape from a drive via the front panel, refer to Sun StorEdge L7 User's Guide -> Operation and Maintenance -> Autoloader Modes -> Mode 1B – EJECT DRV.

**DP1:** Check to see if the error message is still present after retrying the drive eject operation.

**R1:** Error message is still present.

**A1:** Power down the autoloader.

**A1:** Disconnect the SCSI cable from the rear of the autoloader.

**A1:** Power up the autoloader.

**DP2:** Check to see if error message is still present.

**R2:** Error message still present.

**A2:** Replace the autoloader.

**R2:** Error message no longer present.

**A2:** Retry the drive eject operation.

**DP3:** Check to see if the drive eject operation was successful.

**R3:** Drive eject successful.

**A3:** Power down autoloader.

**A3:** Reconnect SCSI cable.

**A3:** Power up autoloader and continue normal autoloader operation.

**R3:** Drive eject not successful.

**A3:** Replace the autoloader.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.

## 23.0 dRIVE PGRM

This error message indicates a problem was encountered during a drive firmware upgrade. For specific instructions on upgrading drive firmware, refer to Sun StorEdge L7 User's Guide -> Troubleshooting and Diagnostics -> Using the Diagnostic Menu -> Upgrade Drive Firmware. Troubleshooting should begin with verifying the tape used for the drive firmware upgrade is a valid FUP tape and not a data or cleaning tape.

**DP1:** Check to see if the error message is still present after verifying the tape used for the drive firmware upgrade is a valid FUP tape and retrying the firmware upgrade process.

**R1:** Error message is still present.

**A1:** Contact Technical Support for assistance.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.

## 24.0 dRIVE dOOR

This error message indicates the autoloader failed to eject a tape from or load a tape to a drive due to a drive door stepper motor limit being reached. Troubleshooting should begin with retrying the drive eject or drive load operation. For instructions on ejecting a tape from a drive via the front panel, refer to Sun StorEdge L7 User's Guide -> Operation and Maintenance -> Autoloader Modes -> Mode 1B – EJECT DRV. For instructions on loading a tape to a drive via the front panel, refer to Sun StorEdge L7 User's Guide -> Operation and Maintenance -> Autoloader Modes -> Mode 1A – LOAD DRV.

**DP1:** Check to see if the error message is still present after retrying the drive eject or drive load operation.

**R1:** Error message is still present.

**A1:** Cycle power to the autoloader.

**A1:** Retry the drive eject or drive load operation.

**DP2:** Check to see if the error message is still present after retrying the drive eject or drive load operation.

**R2:** Error message still present.

**A2:** Replace the autoloader.

**R2:** Error message no longer present.

**R2:** Continue normal autoloader operation.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.

## 25.0 CT FAILED

This error message indicates a cleaning tape failed to clean a drive. Troubleshooting should begin with ejecting the cleaning tape from the drive and loading a new or known good cleaning tape. For instructions on ejecting and loading cleaning media via the front panel, refer to Sun StorEdge L7 User's Guide -> Operation and Maintenance -> Normal Maintenance -> Cleaning the Drive Head or Sun StorEdge L7 User's Guide -> Troubleshooting and Diagnostics -> Using the Diagnostic Menu -> Clean Drive.

**DP1:** Check to see if the error message is still present after retrying the drive cleaning operation with a new or known good cleaning tape.

**R1:** Error message is still present.

**A1:** Replace the autoloader.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.

## 26.0 dRIVE POST

This error message indicates the drive failed to complete its Power On Self Test (POST). A dRIVE POST error can occur if any of the following errors occur during the StorEdge L7 POST:

- CT FAILED – Cleaning tape failed to clean drive.
- dRIVE BUSY – Drive busy, cannot unload tape.
- dRIVE dOOR – Drive door stepper motor limit.
- dRIVE EJCT – Drive failed to eject medium.
- dRIVE HNdL – Drive 'Operate Handle' timeout.
- dRIVE LOAd – Unable to load medium into the drive.
- dRIVE PGRM – Attempt to set drive parameters failed.
- dRIVE UNLd – Drive not logically unloaded.

Troubleshooting should begin with cycling power to the autoloader.

**Note:** When powering off the autoloader, the POWER button on the front panel of the autoloader must be pressed and held for 2 seconds.

**DP1:** Check to see if the error message is still present after cycling autoloader power.

**R1:** Error message is still present.

**A1:** Refer to the errors listed above for specific actions to perform.

**R1:** Error message no longer present.

**A1:** Continue normal autoloader operation.

## 27.0 ROBOT POST

This error message indicates the robotics failed to complete its Power On Self Test (POST). A ROBOT POST error can occur if any errors other than those listed under dRIVE POST occur during the StorEdge L7 POST. Troubleshooting should begin with visually inspecting the autoloader to identify any obvious mechanically stuck components or foreign material that may be present. Mechanically stuck components include items such as a cartridge stuck in the picker, a rear storage slot, a front storage slot, or a drive. Remove any foreign material or stuck component that is present.

**DP1:** Check the Picker path for obstructions.

**R1:** Picker path obstruction not found.

**A1:** Cycle power to the autoloader.

**DP2:** Check to see if the error message is still present after cycling library power.

**R2:** Error message is still present.

**A2:** Replace the autoloader.

**R2:** Error message no longer present.

**A2:** Continue normal autoloader operation.

**R1:** Picker path obstruction found.

**A1:** Clear obstruction.