IBM TS3000 and TS4500 System Console

Maintenance Information

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Note

Before using this information and the product it supports, read the information in “Safety and environmental notices” on page xi and “Notices” on page 261.

This 38th edition applies to version 8.2.x of the IBM TS3000 and TS4500 System Console and to all subsequent releases and modifications until otherwise indicated in new editions.

This edition replaces the 37th edition.

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Safety and environmental notices

Review the safety notices, environmental notices, and electronic emission notices for the IBM® TS3000 and TS4500 system consoles before you install and use the products.

Safety notices

Observe the safety notices when using this product. These safety notices contain danger and caution notices. These notices are sometimes accompanied by symbols that represent the severity of the safety condition.

Most danger or caution notices contain a reference number (Dxxx or Cxxx). Use the reference number to check the translation in the *IBM Systems Safety Notices*, G229-9054 manual.

The sections that follow define each type of safety notice and give examples.

Danger notice

A danger notice calls attention to a situation that is potentially lethal or extremely hazardous to people. A lightning bolt symbol always accompanies a danger notice to represent a dangerous electrical condition. A sample danger notice follows:

DANGER: An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the devices that attach to the system. It is the responsibility of the customer to ensure that the outlet is correctly wired and grounded to prevent an electrical shock. *(D004)*

Caution notice

A caution notice calls attention to a situation that is potentially hazardous to people because of some existing condition, or to a potentially dangerous situation that might develop because of some unsafe practice. A caution notice can be accompanied by one of several symbols:

If the symbol is...	It means...
	A generally hazardous condition not represented by other safety symbols.
 Class II	This product contains a Class II laser. Do not stare into the beam. (*C029*) Laser symbols are always accompanied by the classification of the laser as defined by the U. S. Department of Health and Human Services (for example, Class I, Class II, and so forth).
	A hazardous condition due to mechanical movement in or around the product.

If the symbol is...	It means...
	This part or unit is heavy but has a weight smaller than 18 kg (39.7 lb). Use care when lifting, removing, or installing this part or unit. (*C008*)

Sample caution notices follow:

Caution

The battery is a lithium ion battery. To avoid possible explosion, do not burn. Exchange only with the IBM-approved part. Recycle or discard the battery as instructed by local regulations. In the United States, IBM has a process for the collection of this battery. For information, call 1-800-426-4333. Have the IBM part number for the battery unit available when you call. (*C007*)

Caution

The system contains circuit cards, assemblies, or both that contain lead solder. To avoid the release of lead (Pb) into the environment, do not burn. Discard the circuit card as instructed by local regulations. (*C014*)

Caution

When removing the Modular Refrigeration Unit (MRU), immediately remove any oil residue from the MRU support shelf, floor, and any other area to prevent injuries because of slips or falls. Do not use refrigerant lines or connectors to lift, move, or remove the MRU. Use handholds as instructed by service procedures. (*C016*)

Caution

Do not connect an IBM control unit directly to a public optical network. The customer must use an additional connectivity device between an IBM control unit optical adapter (that is, Fibre, ESCON, FICON®) and an external public network . Use a device such as a patch panel, a router, or a switch. You do not need an additional connectivity device for optical fibre connectivity that does not pass through a public network.

Environmental notices

This publication contains all the required environmental notices for IBM Systems products in English and other languages.

The *IBM Systems Environmental Notices and User Guide* (ftp://public.dhe.ibm.com/systems/support/warranty/envnotices/environmental_notices_and_user_guide.pdf), Z125-5823 document includes statements on limitations, product information, product recycling and disposal, battery information, flat panel display, refrigeration, and water-cooling systems, external power supplies, and safety data sheets.

To view a PDF file, you need Adobe Reader. You can download it at no charge from the Adobe web site (get.adobe.com/reader/).

About this book

This document provides maintenance information for the TS3000 system console (TSSC) and the TS4500 integrated management console (IMC).

Who should use this book

This publication is for IBM service personnel who intend to install, remove, diagnose, repair, or test the TS3000 or TS4500 system console. This publication is intended for use by IBM service personnel only.

Summary of changes

Technical changes in this edition are identified with a vertical bar (|) in the left margin of the page. This release supports version 8.2.x

Changes include:

- New system console model 7040, see "Feature Codes" on page 7 and Chapter 5, "Parts Listings," on page 237.
- Miscellaneous editorial changes.

Changes in version 8.2 included:

- Procedures for configuring Remote Support Settings and ECuRep Offload Settings, see "Configuring Call Home Settings Electronic Customer Care" on page 87
- Proxy password limitations, see Table 13 on page 100
- Updates to Offload User Files menu, see "Offloading User Files" on page 149
- Miscellaneous editorial changes.

Publications and related information

Product guides, other IBM publications, and websites that contain information that relates to the IBM TS3000 and TS4500 system console.

To ensure that you have the latest publications, visit the IBM Publications Center (http://www.ibm.com/e-business/linkweb/publications/servlet/pbi.wss).

IBM TS7700 information

Additional information related to the IBM TS7700 is available in the following publications:

- All online product documentation is now available in IBM Knowledge Center (http://www.ibm.com/support/knowledgecenter).
- *IBM TS7720 Installation Roadmap*
- *IBM TS7720 Tape Attach Installation Roadmap*
- *IBM TS7740 Installation Roadmap*
- *IBM TS7760/TS7760 Tape Attach Installation Roadmap*
- *Systems Safety Notices*, G229-9054

IBM TS4500 information

Additional information related to the IBM TS4500 tape library is available in the following publications:

- All online product documentation is now available in IBM Knowledge Center (http://www.ibm.com/support/knowledgecenter).
- *IBM TS4500 Introduction and Planning Guide*, SC27-5990

IBM TS3500 information

Additional information related to the IBM TS3500 tape library is available in the following publications:

- All online product documentation is now available in IBM Knowledge Center (http://www.ibm.com/support/knowledgecenter).
- *IBM TS3500 with ALMS Introduction and Planning Guide*, GA32-0593
- *IBM TS3500 with ALMS Operator Guide*, GA32-0594
- *IBM TS3500 SCSI Reference*, GA32-0561
- *IBM TS3500 Maintenance Information*

IBM 3494 Automated Tape Library information

Additional information related to the IBM 3494 Automated Tape Library is available in the following publications:

- *IBM 3494 Tape Library Operator's Guide*, GA32-0449
- *IBM 3494 Tape Library Operator's Quick Reference*, GX35-5049
- *IBM 3494 Tape Library Operator's Introduction and Planning Guide*, GA32-0448
- *IBM 3494 Tape Library Maintenance Information*

IBM 3953 information

Additional information related to the IBM 3953 is available in the following publications:

- *IBM System Storage 3953 Tape System Introduction and Planning Guide*, GA32-0557
- *IBM System Storage 3953 Library Manager L05 Operator Guide*, GA32-0558
- *IBM 3953 Installation Road Map*

IBM 3592-C07 Tape Controller

Additional information related to the IBM 3592-C07 Tape Controller is available in the following publications:

- All online product documentation is now available in IBM Knowledge Center (http://www.ibm.com/support/knowledgecenter).
- *IBM 3592-C07 Installation Roadmap Guide*, GA32-0557

IBM 3592-C06 Tape Controller

Additional information related to the IBM 3592-C06 Tape Controller is available in the following publications:

- *IBM System Storage TS1120 Tape Controller, 3592 C06 Maintenance Information, IBM 3592 Model C06 (MI)*
- *IBM System Storage 3592 Tape Drives and TS1120 Controller Operator Guide 3592 Models J1A, E05, E06, EU6, E07, J70 and C06 (Op Guide)*
- *IBM System Storage 3592 Tape Drives and TS1120 Controller Introduction and Planning Guide 3592 Models J1A, E05, E06, EU6, E07, J70 and C06 (IPG)*

IBM TS1120, TS1130, TS1140, and TS1150 Tape Drives

Additional information related to the IBM TS1120, TS1130, and TS1140, and TS1150 is available in the following publications:

- All online product documentation is now available in IBM Knowledge Center (http://www.ibm.com/support/knowledgecenter).
- *IBM 3592 Tape Drives and TS1120 Controller Introduction and Planning Guide*
- *IBM TS1120, TS1130, TS1140, and TS1150 Tape Drives Maintenance Information*

IBM System p (AIX) information

See "Related websites" for access to the latest System p information and publications.

IBM 7133 SSA Disk Subsystem information

Additional information related to the 7133 SSA Disk Subsystem and software is available in the following publications:

- *7133 SSA Disk Subsystem: Operator Guide*, GA33-3259
- *7133 SSA Disk Subsystem: Service Guide*, SY33-0185
- *7133 Models D40 and T40 Serial Disk Systems: Service Guide*, GY33-0192
- *7133 Models D40 and T40 Serial Disk Systems: D40 Installation Guide*, GA33-3279
- *7133 Models 010 and 020 SSA Disk Subsystem Installation Guide*, GA33-3260
- *Adapters, Devices, and Cable Information for Micro Channel Bus Systems*, SA23-2764
- *SSA Adapters: User's Guide and Maintenance Information*, SA33-3272

Device Drivers information

Additional information related to device drivers is available in the following publication:

- *IBM Tape Device Drivers Installation and User's Guide*, GC27-2130

Related websites

View these websites to get more information about the TS3000 and TS4500 system console.

Table 1. TS3000 and TS4500 system console related websites

Title	Description
IBM website (ibm.com)	Find more information about IBM products and services.
IBM Support Portal website (www.ibm.com/storage/support)	Find support-related information such as downloads, documentation, troubleshooting, and service requests and PMRs.
IBM Directory of Worldwide Contacts website (www.ibm.com/planetwide)	Find contact information for general inquiries, technical support, and hardware and software support by country.

Ordering IBM publications

The IBM Publications Center is a worldwide central repository for IBM product publications and marketing material.

The IBM Publications Center website (http://www.ibm.com/shop/publications/order/) offers customized search functions to help you find the publications that you need. Some publications are

available for you to view or download at no charge. You can also order publications. The IBM Publications Center website displays prices in your local currency.

Sending comments

Your feedback is important in helping to provide the most accurate and highest quality information.

To submit any comments about this publication or any other IBM storage product documentation:

Send your comments by email to starpubs@us.ibm.com. Be sure to include the following information:

- Exact publication title and version
- Publication form number (for example, GA32-1234-00)
- Page, table, or illustration numbers that you are commenting on
- A detailed description of any information that should be changed

Chapter 1. Maintenance Starting Point

Complete this task before starting any maintenance activity.

Attention: Some system console keyboards include an integral USB port. Do not use this USB port while using the system console.

This document provides maintenance information for the TS3000 system console (TSSC) and the TS4500 integrated management console (IMC). The TSSC is orderable as a rackmount feature of several products while the IMC comes standard with a TS4500 tape library (integrated under the tape library end cover). Hereafter, the term “system console” will be used generically to cover either of these two packaging options.

Before beginning any maintenance activity using the system console, you must determine the microcode (code) level of the system console.

1. Go to the System Console Login screen to view the system console code level. See Figure 1.
2. Refer to the system console documentation for your symptom or reason.

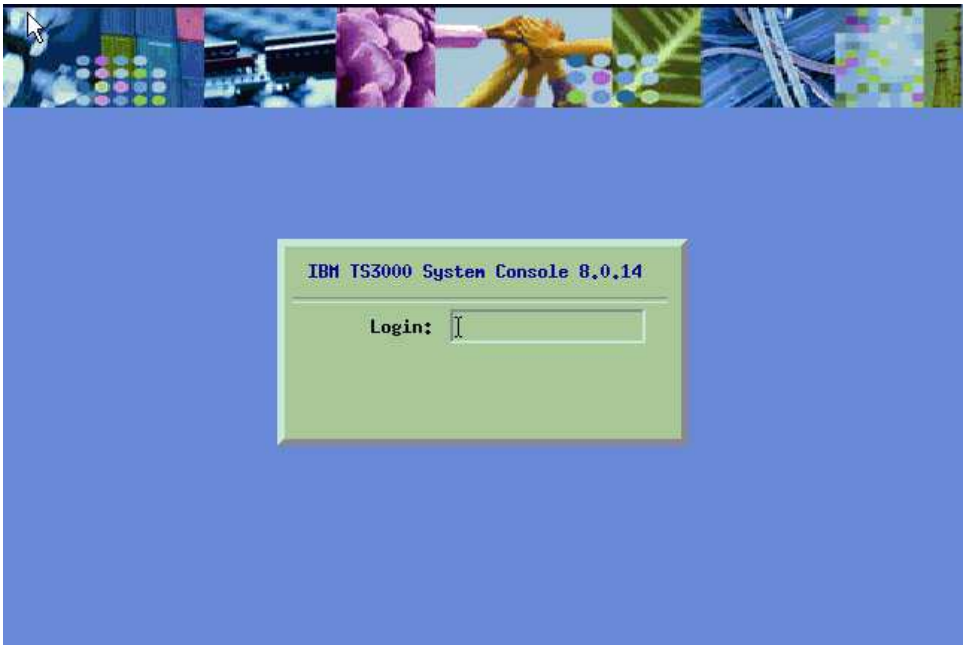

Figure 1. System Console Login screen

Quick Reference Table

Table 2. Maintenance Starting Point - Quick Reference Table

If you are here to . . .	. . . then go to this section:
Install new TSSC	"Installing the TSSC" on page 19
Configure remote system	"Tape System Call Home Setup for VTS, VTC, and Tape Controllers" on page 34 "Tape System Setup for 3494 ATL (Library Manager) or 3953 Enterprise Library Controller" on page 39
Configure system console	"Configuration" on page 49
Authenticate login (password broadcast)	"Login Options" on page 50
Upgrade system console code	"System Console Code Upgrade" on page 181
Rebuild hard drive	"System Console Code Load/Hard Drive Rebuild" on page 191
Repair the system console	"System Console Repair" on page 233
Restore configuration data	"Restoring Configuration Data" on page 106
Setup for remote data monitoring	"Setup for Remote Data Monitoring (VTS, VTC, A60, J70, C06)" on page 116 **– – OR – –** "Setup for Remote Data Monitoring (3494 ATL or 3953 Enterprise Library Controller)" on page 120
Connect to an attached tape system	"Connect to Attached Tape System" on page 121
Access system remotely	"Remote Access Using NetTerm" on page 138
Broadcast control unit code	"Remote Code Broadcast By Using the Web Interface" on page 127 **– – OR – –** "Updating TS7700 Microcode" on page 197
Broadcast tape drive code	"Tape Drive Code Broadcast From Web Interface" on page 135
Set date and time	"Setting the Console Date and Time" on page 109

Notes:
- If you are here to isolate or repair a PC problem, refer to the Maintenance Information (MI) for your PC. A softcopy of the MI for the PC can be found on the Documents CD which shipped with the system console.
- For the latest system console information, go to the PFE website https://tucln01.ibm.com/tape/tapetec.nsf/pages/TSSCinfo

Console Configuration Utility Screen Menu Tree

Table 3 provides a graphic view of the relationship of Console Configuration Utility screen menu items. These items appear on the screen shown in Figure 65 on page 53.

Table 3. Console Configuration Utility Screen Menu Items

Function Name	Screen Selection and Location
Attached Systems	Figure 66 on page 54
Backup/Restore • Backup Console Configuration Data • Restore Console Configuration Data	 • Figure 123 on page 104 • Figure 125 on page 107
Call Home Queue	Figure 175 on page 142
Call Home Settings • General Settings • Location Settings • Phone Settings • Machine Settings • Disposition Settings • SNMP Settings • AOS Settings • Remote Support Settings • ECuRep Offload Settings	 • Figure 110 on page 88 • Figure 112 on page 91 • Figure 113 on page 92 • Figure 114 on page 93 • Figure 115 on page 93 • Figure 116 on page 94 • Figure 117 on page 95 • Figure 118 on page 96 • Figure 119 on page 97
Console Settings • IP Settings • RSYSLOG Settings • Custom Firewall Settings	 • Figure 95 on page 71 • Figure 107 on page 84 • Figure 108 on page 86
Console Status • Console Message File • Test RETAIN Connection • Console VPD • Test ECC Connectivity	 • Figure 220 on page 174 • Figure 130 on page 111 • Figure 224 on page 176 • Figure 132 on page 112
Console Time	Figure 127 on page 109
Fix Acquisition	"Fix Acquisition" on page 227
Modem Transmission	Query Modem Transmission (not shown)
Network Information	(Not shown)
Offload User Files	Figure 185 on page 150
PE Packages • System Console PE Package • Subsystem Log Retrieval	 • Figure 212 on page 169 • Figure 214 on page 170
System Interfaces	Figure 250 on page 214
System tools	• "Remote Code Broadcast By Using the Web Interface" on page 127 • "Tape Drive Code Broadcast From Web Interface" on page 135 • "Managing the InfoCenter from web interface" on page 217 • "Applying a patch using the Web Interface" on page 224

Chapter 2. Installation

Introduction

The system console can provide remote support for as many as 43 attached tape systems. Remote support capabilities of the system console, in conjunction with tape systems, include:

- Call Home problem reporting capability with staged, error-specific Data Gathering for support
- Call-in capability with authenticated access including file transfer and multiple connections with attached systems
- Automatic wellness checking for attached systems
- Automatic download and storage of tape tools and codes images

The data that is gathered during the call home process is available for IBM support personnel on the RMSS Call Home database at:

`https://callhomedata.tucson.ibm.com`

Additionally, the system console provides a convenient focal point for local service activities within the data center. The system console is attached via 1 Gb/s Ethernet to each tape system. Many tape system service functions can be performed at the console. The system console provides the following local service tool applications:

- Ability to connect to multiple tape systems and simultaneously perform multiple service tasks from the system console
- Graphical user interface for tape system and tape drive service diagnostic utilities
- Ability to broadcast control unit and tape drive code images to tape systems for subsequent activation from the system console
- Diagnostic tools for verifying communications with IBM RETAIN
- Graphical user interface for configuring, backing up, and restoring system console settings

The TSSC is available as feature code 2725 for use with the 3592-C07, 3952-F05/F06, and 3584 L23/L53. The TSSC is available as FC 2724 for use with the 3958 DD5 and 3958 AP1.

The system console in the TS4500 tape library is part of the integrated management console (IMC). Similar in function to the TSSC, the IMC comes preinstalled with the system console code. The system console code enables the IMC to provide service capabilities, such as broadband call home.

Overview

The following sections provide an overview of the TSSC and IMC.

TSSC overview

Use Figure 2 with Table 4 as a representation of a potential connection scheme for the TSSC.

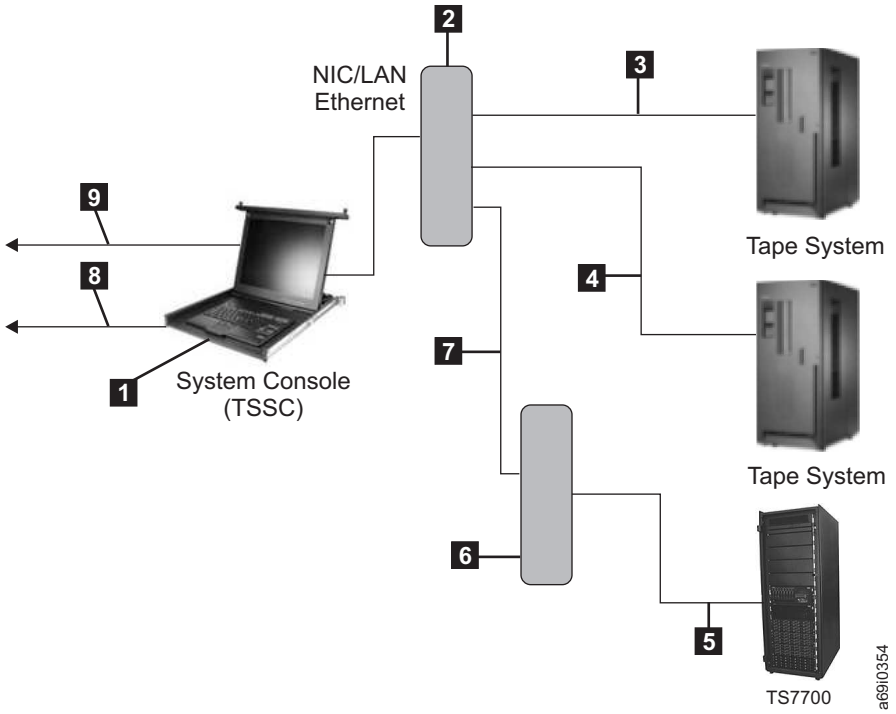

Figure 2. TSSC Connection Diagram. Use with Table 4

Table 4. TSSC Components. Use with Figure 2.

1. Serial connector
2. Ethernet switch FC 2704/2722/2732
3. Cable supplied with FC 2704/2722/2732
4. Cable supplied with FC 2715
5. Cable supplied with FC 2714
6. Ethernet expansion FC 2714
7. Cable supplied with FC 2714
8. Second modem FC 2716 (not on all RMSS products)
9. Customer supplied Ethernet connection

1Gb/s can use CAT 5e or CAT 6, 10Gb/s will need CAT 6.

Note: Outbound modems can be replaced with high-speed internet connections.

IMC overview

The integrated management console (IMC) is a built-in platform for tools that are used to manage the TS4500 tape library.

The IMC, which includes an LCD screen, keyboard with touchpad, and a tiny PC, can be mounted on either end of the TS4500 tape library. A library controller card and power source is required within that end frame or within the adjacent frame.

The TS4500 management GUI runs on a web browser in kiosk mode on the IMC. Kiosk mode means that the menu bar, address bar, and stop and reload buttons of the browser are disabled. In addition, it is not possible to use bookmarks or multiple browser windows.

Feature Codes

Table 5 shows the current TSSC and IMC feature codes for each supported product.

Table 5. Current TSSC and IMC feature codes

3958 AP1	**3958 DD5**	**3592 C07**	**3952 F0x**	**3584 Lxx**	**3584 Lx5**
FC 2702 16-port switch	FC 2704 26-port switch	FC 2704 26-port switch	FC 2704 26-port switch	FC 2704 26-port switch	FC 2704 26-port switch
FC 2724 TSSC server	FC 2725 TSSC server	FC 2725 TSSC server	FC 2725 TSSC server	FC 2725 TSSC server	
FC 2734 External USB Modem	FC 2748 Optical Drive	FC 2748 Optical Drive	FC 2748 Optical Drive	FC 2748 Optical Drive	FC 2735 IMC non-broadband Call Home
FC 5512 Display/Keybd/ Mouse	FC 5512 Display/Keybd/ Mouse	FC 5512 Display/Keybd/ Mouse	FC 5512 Display/Keybd/ Mouse	FC 5512 Display/Keybd/ Mouse	FC 9735 IMC broadband Call Home

For system console network connections, refer to the following figures. The server that you received might be one of the following types.

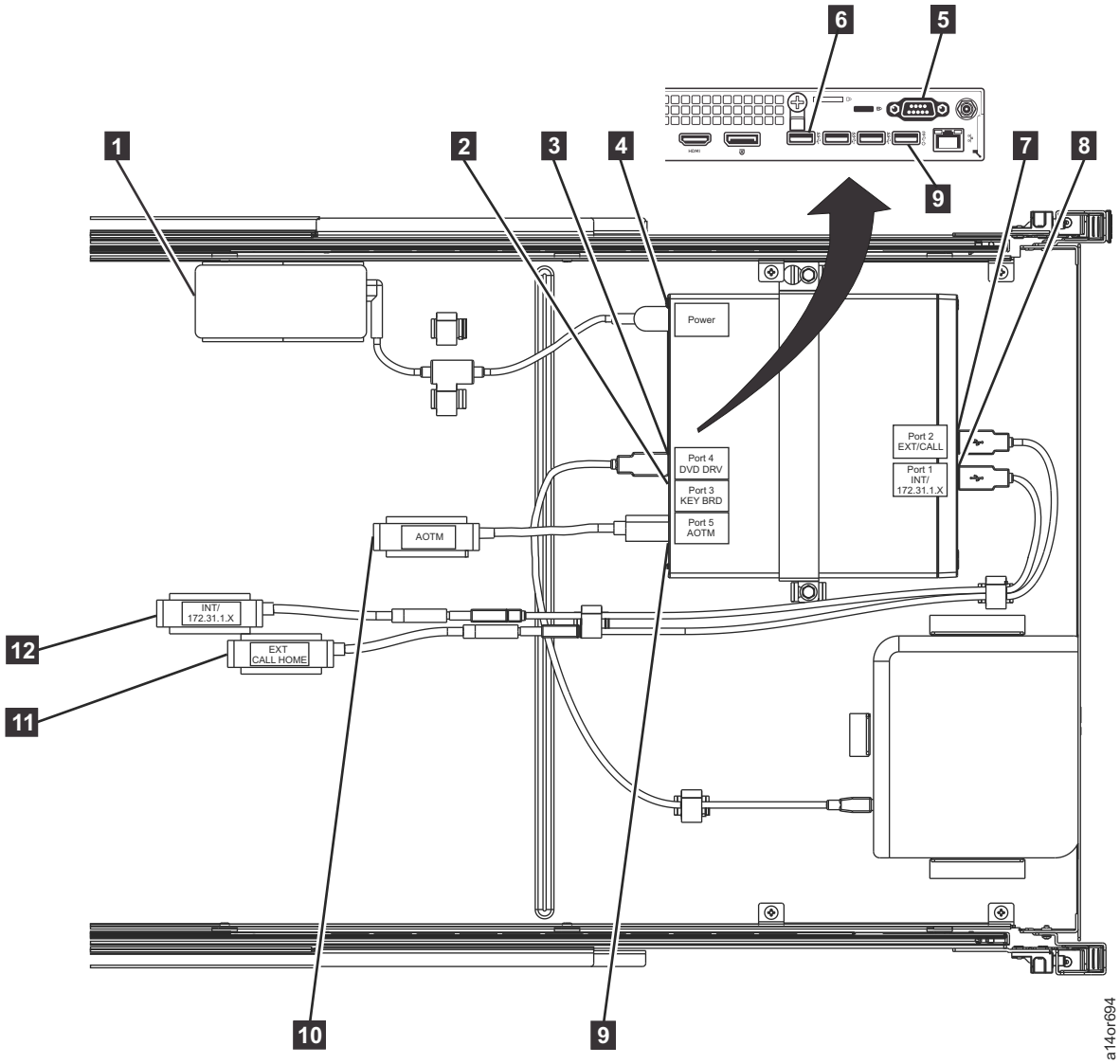

Figure 3. Network Connection Diagram – Model 7040 (FC 2725)

1 Power brick
2 Port 3 to USB Keyboard/mouse
3 Port 4 to USB optical drive
4 Power connector to power brick
5 Video connector
6 USB to serial cable adapter (for attached subsystem)
7 Port 2 to Ethernet adapter (EXT CALL HOME)
8 Port 1 to Ethernet adapter (INT/172.31.1.X)
9 Port 5 to Ethernet adapter (AOTM)
10 Ethernet for AOTM
11 Ethernet for broadband call home/remote support
12 Ethernet for attached subsystem (INT/172.31.1.X)

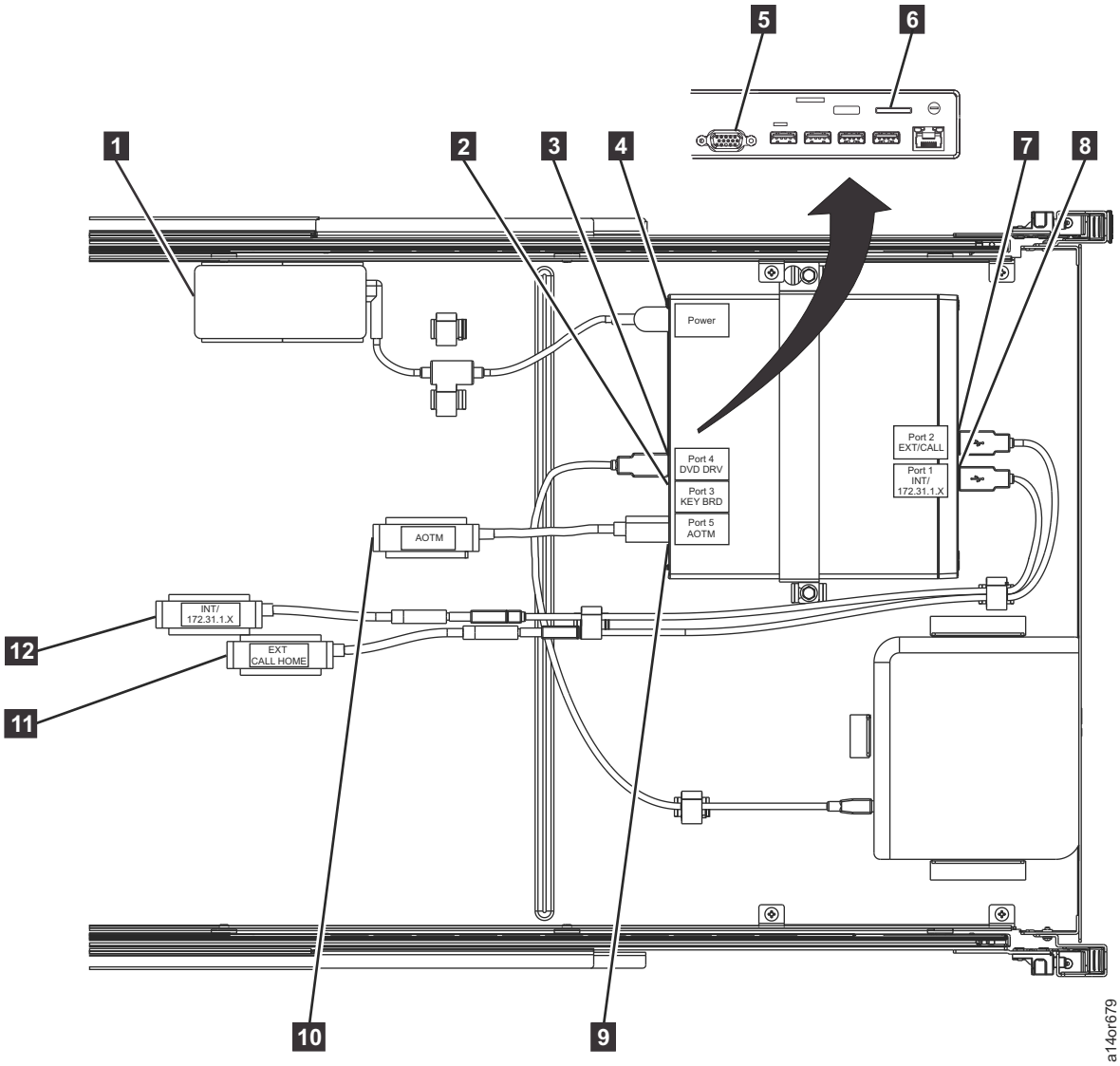

Figure 4. Network Connection Diagram – Model 9020 (FC 2725)

1 Power brick
2 Port 3 to USB Keyboard/mouse
3 Port 4 to USB optical drive
4 Power connector to power brick
5 Video connector
6 Serial port to serial cable adapter (for attached subsystem)
7 Port 2 to Ethernet adapter (EXT CALL HOME)
8 Port 1 to Ethernet adapter (INT/172.31.1.X)
9 Port 5 to Ethernet adapter (AOTM)
10 Ethernet for AOTM
11 Ethernet for broadband call home/remote support
12 Ethernet for attached subsystem (INT/172.31.1.X)

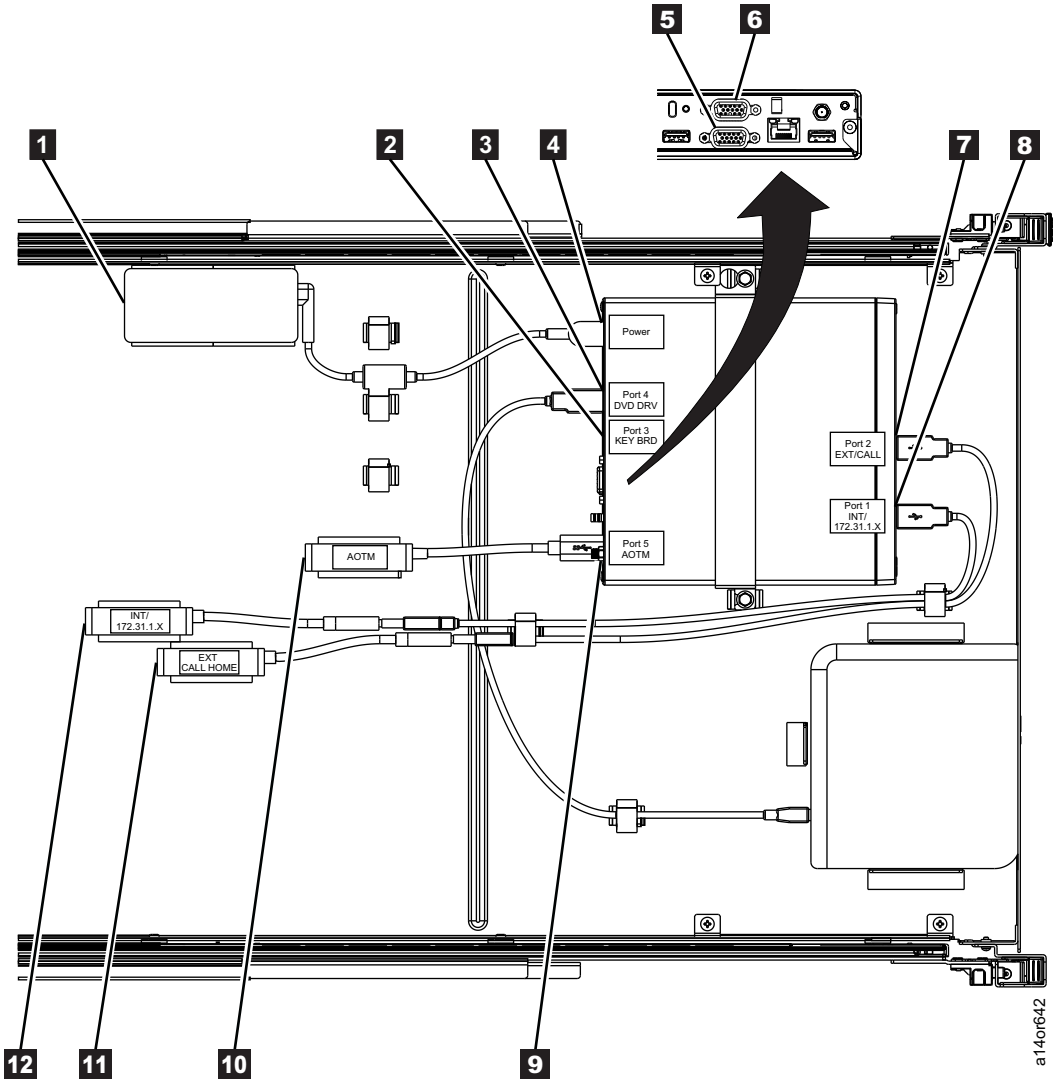

Figure 5. Network Connection Diagram – Model M93p (FC 2725)

1 Power brick
2 Port 3 to USB Keyboard/mouse
3 Port 4 to USB optical drive
4 Power connector to power brick
5 Video connector
6 Serial port to attached subsystem
7 Port 2 to Ethernet adapter (EXT CALL HOME)
8 Port 1 to Ethernet adapter (INT/172.31.1.X)
9 Port 5 to Ethernet adapter (AOTM)
10 Ethernet for AOTM
11 Ethernet for broadband call home/remote support
12 Ethernet for attached subsystem (INT/172.31.1.X)

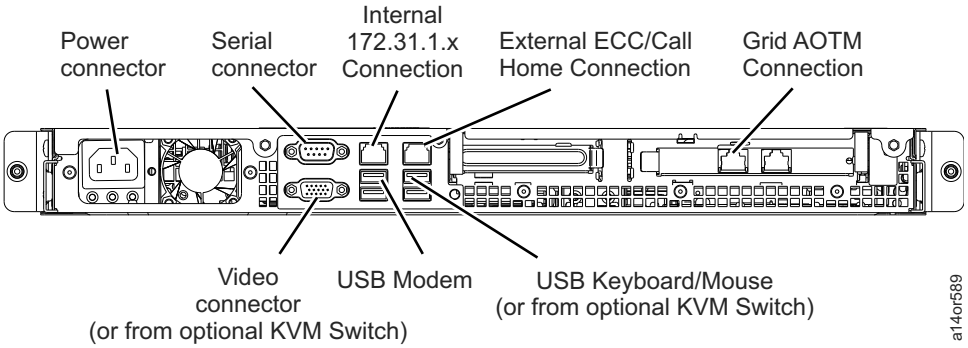

Figure 6. Network Connection Diagram – x3250 M4, Type 2583 (FC 2704, FC 2724)

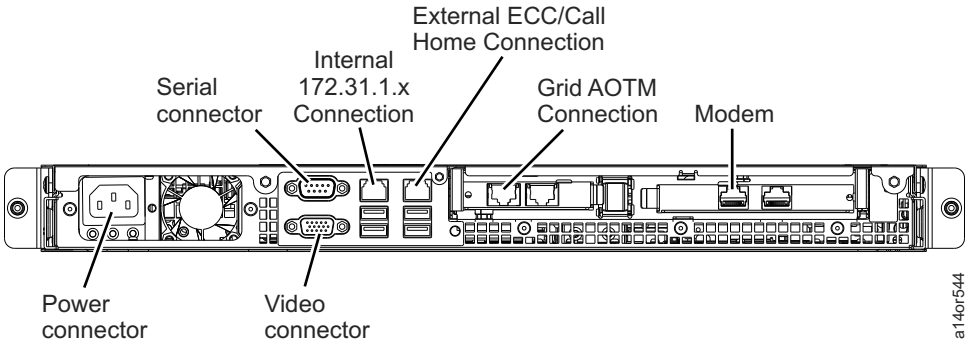

Figure 7. Network Connection Diagram – x3250 M3, Type 4252 Model PCJ (FC 2722, FC 2732)

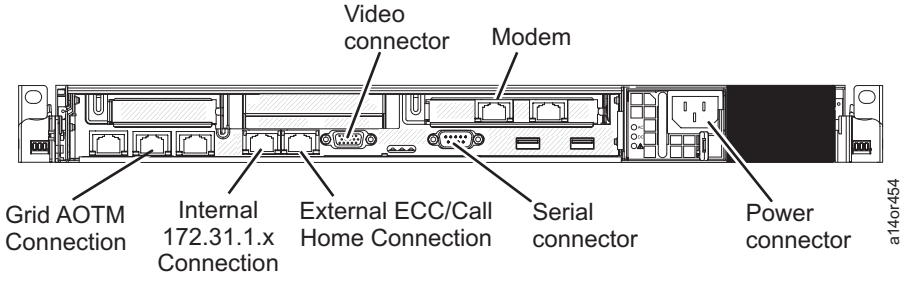

Figure 8. Network Connection Diagram – x3550 M2, Type 7946-PAR (FC 2722, FC 2732)

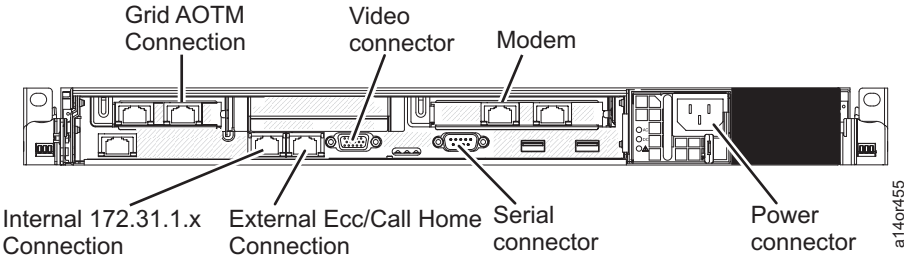

Figure 9. Network Connection Diagram – x3550 M2, Type 7946-PAR (FC 2722, FC 2732)

Note: The model 7040 server is part of the TS4500 integrated management console (IMC) and does not have a feature code.

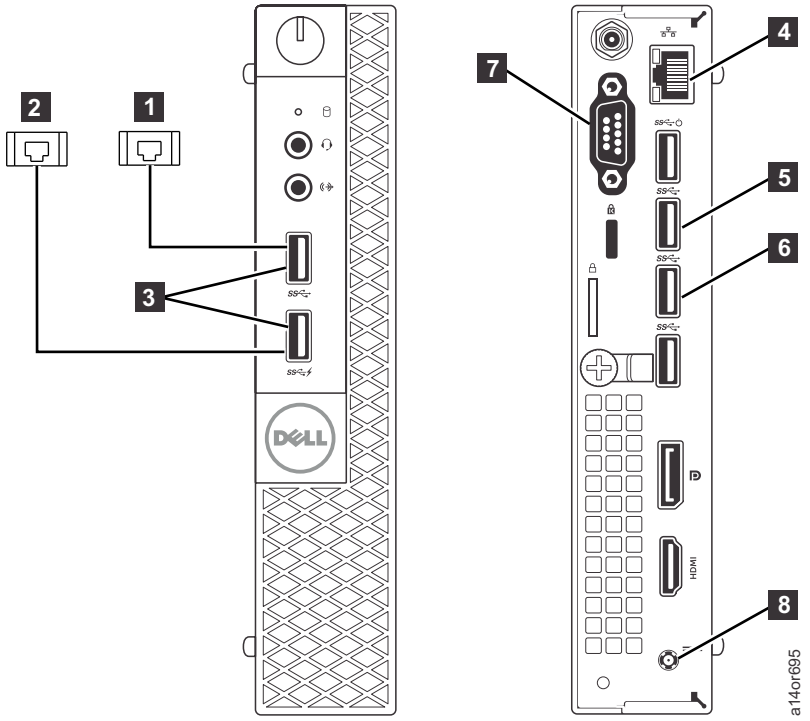

Figure 10. Network Connection Diagram – Model 7040 (TS4500 IMC)

1. Ethernet for attached subsystem (direct or switch)
2. Ethernet for broadband call home/remote support
3. USB to Ethernet adapter
4. Ethernet for local kiosk
5. USB Keyboard/mouse
6. USB to optical drive
7. Video connector
8. Power connector to power adapter

Note: The model 9020 server is part of the TS4500 integrated management console (IMC) and does not have a feature code.

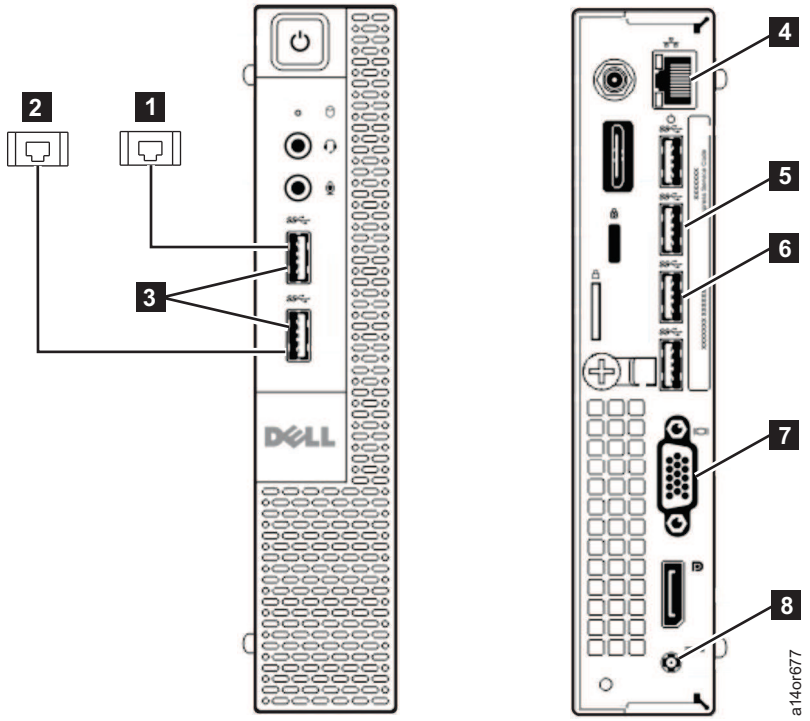

Figure 11. Network Connection Diagram – Model 9020 (TS4500 IMC)

1. Ethernet for attached subsystem (direct or switch)
2. Ethernet for broadband call home/remote support
3. USB to Ethernet adapter
4. Ethernet for local kiosk
5. USB Keyboard/mouse
6. Optional USB modem or temporary DVD drive
7. Video connector
8. Power connector to power adapter

Note: The model M93p server is part of the TS4500 integrated management console (IMC) and does not have a feature code.

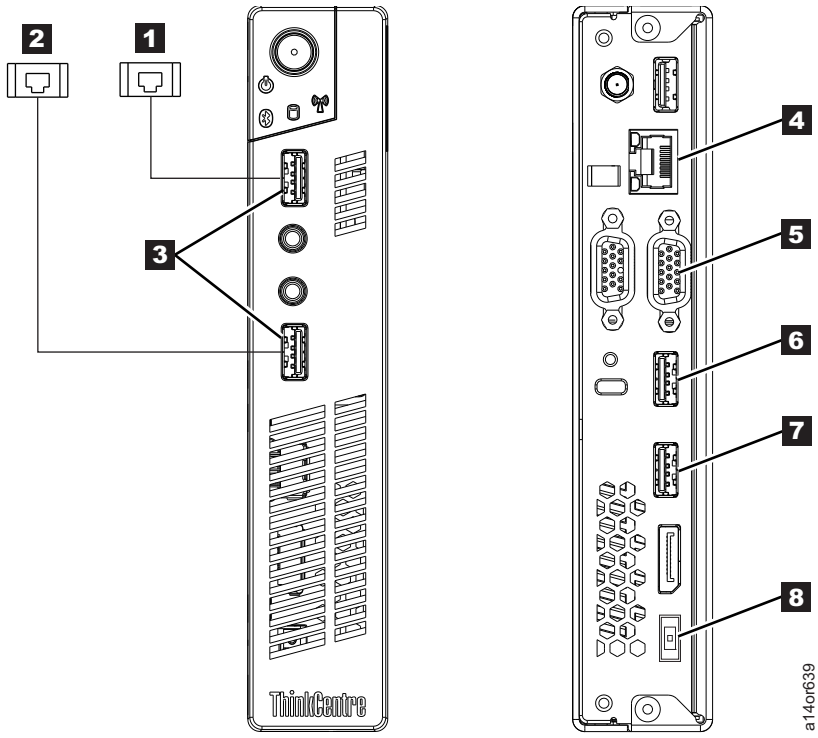

Figure 12. Network Connection Diagram – Model M93p (TS4500 IMC)

1. Ethernet for attached subsystem (direct or switch)
2. Ethernet for broadband call home/remote support
3. USB to Ethernet adapter
4. Ethernet for local kiosk
5. Video connector
6. USB Keyboard/mouse
7. Optional USB modem or temporary DVD drive
8. Power connector to power adapter

FC 2704 (26-port Ethernet switch/rackmount)
This feature provides a 26-port Ethernet switch and attachment cable for connection to a TS3000 system console (TSSC).

FC 2715 (Cable Attachment/Console Attachment)
This cable attachment (console attachment) feature drives a single 15.2 m (50 ft) Ethernet cable for downstream-attached tape systems.

For an IBM 7588, you will be shipped a 4-port card and an Ethernet cable.

FC 2725, TS3000 System Console Rackmount
This feature provides the enhanced rack-mountable TSSC 1U server and an Ethernet cable for connection to the rackmount switch. This feature is an enhanced replacement of the IBM TS3000 System Console for Service (FC 2722, 2724, 2730, or 2732).

Note: The external Ethernet network cable is provided by the customer. 1 Gb/s can use CAT 5e or CAT 6, 10 Gb/s will need CAT 6.

FC 2748, Optical Drive
This feature provides an optical drive for use with the TS3000 system console.

FC 2735, USB Modem and Optical Drive
This feature allows the customer choice of broadband call home, modem call home, or no call home to be configured for the library (must choose between FCs 2735/9735 when ordering plant

Lx5). This feature provides a USB modem and optical drive for use with the integrated management console (IMC). The optical drive is required for IMC code updates in the event that broadband call home is not configured.

FC 5512, KVM Display/Keyboard/Mouse
This feature provides a KVM Display/Keyboard/Mouse and mounting hardware to be plant installed in the frame or delivered for installation in a rack.

FC 9735, IMC broadband Call Home
This feature indicates the customer will allow broadband Call Home, so no additional remote service tools are required.

**** Feature Codes (Withdrawn) ****

FC 2714 (LAN Attachment Expansion / Console Expansion)
The LAN Attachment Expansion (Console Expansion) feature is required when additional LAN ports are required. Uplink ports are used to connect the network switches.

Note: This feature also can be used on a 3953 Enterprise Library Controller, so you can use an existing FC 2720 as the system console.

FC 2716 (Second Modem) (not available for 3953)
The Second Modem feature enables simultaneous, inbound and outbound communication (when two analog lines are provided) with the system console. The feature includes an MT5600 BA external modem and a serial cable.

Notes:
- The Second Modem feature requires two analog telephone lines for simultaneous inbound and outbound communication. The system can be configured to operate with one modem.
- When two modems are installed, the modem on COM1 can be configured to be the inbound modem, and the modem on COM2 can be configured to be the outbound modem. If only one modem is installed, it must be installed on COM1. It will be used for inbound and outbound communication.

FC 2717 (3592 A60 Attachment)
This feature enables the system console to be attached to one or more A60s via a Net Interface Card added to the A60.

Note: The A60 must be at code level 1.16.x.xx or above in order to attach to the system console.

FC 2718
This feature has been replaced by FC 2721.

FC 2719 (Console Upgrade)
This feature provides a memory upgrade to 2.14 GB (2 GiB) of total RAM and a second Ethernet card for the system console to allow redundant connections into the service network, and to allow broadband call home capability. This feature only applies to system consoles shipped with FCs 2718, 2720, and 2721.

Note: This feature code is required for TS7700 attachment.

FC 2720 (System Console)
This feature includes the listed hardware that is required to support the system console (see FC 2721 for 3953 Enterprise Library Controller).

Note: An existing FC 2720 can be used with the 3953 Enterprise Library Controller, if you select FC 2714 for the 3953.

FC 2721 (System Console - for 3953 Enterprise Library Controller only)

This feature code is similar to feature code 2720, but is for the 3953 Enterprise Library Controller. Use the Ethernet port that is identified as 'Internal Ethernet Connector' in the following figures.

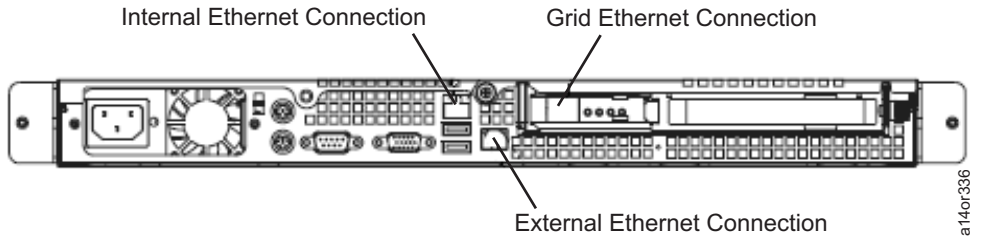

Figure 13. Network Connection Diagram – 8836 (3953 Only) (FC 2718, FC 2719)

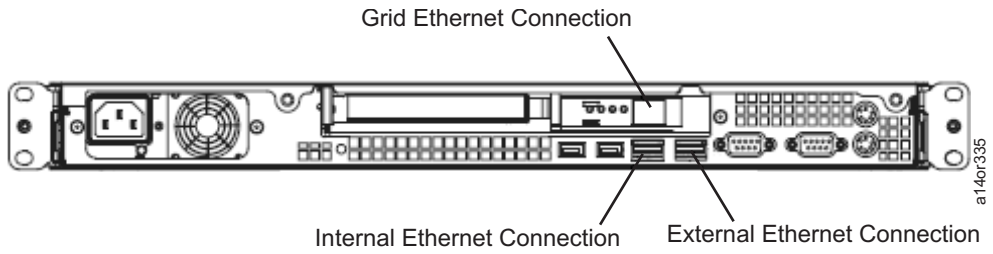

Figure 14. Network Connection Diagram – 8849 (FC 2719, FC 2721)

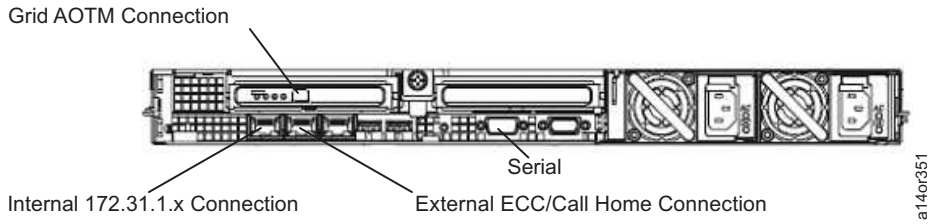

Figure 15. Network Connection Diagram – 7978 (FC 2719, FC 2721)

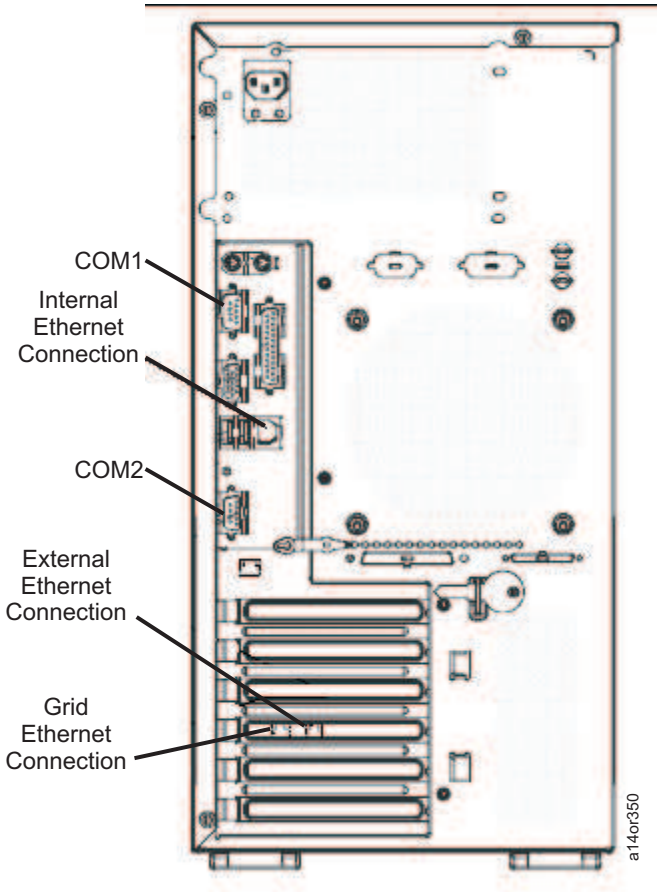

Figure 16. Network Connection Diagram – 8482, 8485 (FC 2719, FC 2720)

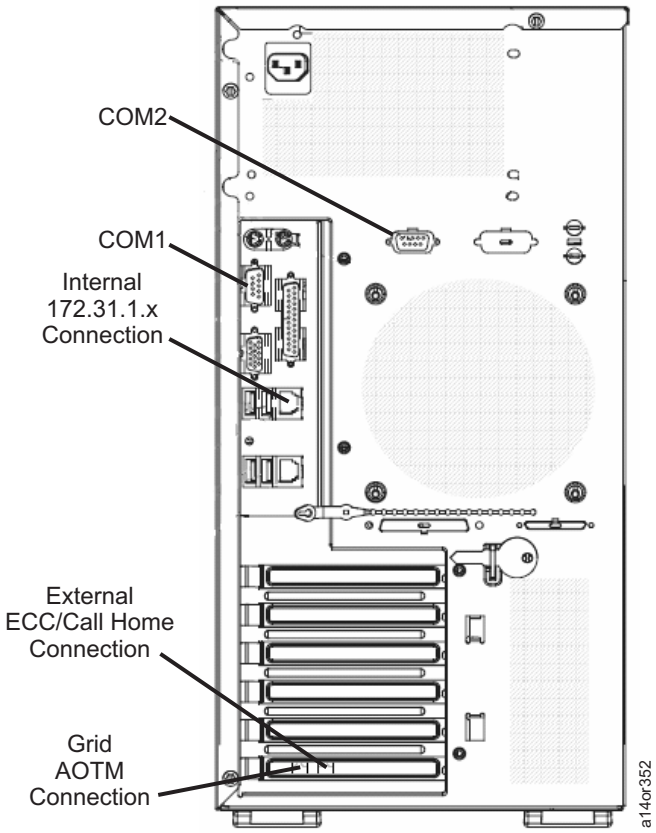

Figure 17. Network Connection Diagram – 4362 (FC 2719, FC 2720)

FC 2722 (Rackmount TS3000 System Console. Available via Factory or MES)
This feature provides the enhanced rack-mountable TS3000 system console, an Ethernet switch, an Ethernet cable, KVM cable, and connectors for connection of one machine to an IBM supplied internal modem to enable remote enhanced service. This feature is an enhanced replacement of the IBM TS3000 System Console for Service (FC 2721). Includes console upgrade previously provided as FC 2719 (Memory upgrade to 4 GB total RAM and a second Ethernet card for the system console to allow redundant connections into the service network). This feature applies to 3958, 3593, and 3592 machine types.

Note: The external Ethernet network cable is provided by the customer. 1Gb/s can use CAT 5e or CAT 6, 10Gb/s will need CAT 6.

FC 2724, TS3000 System Console Rackmount
This feature provides the enhanced rack-mountable TS3000 system console and an Ethernet cable for connection of one machine to an IBM supplied modem.

Note: The external Ethernet network cable is provided by the customer. 1 Gb/s can use CAT 5e or CAT 6, 10 Gb/s will need CAT 6.

FC 2732 (Rackmount TS3000 System Console. Available via Factory or MES)
This feature provides the enhanced rack-mountable TS3000 system console, an Ethernet switch, an Ethernet cable, KVM cables, console kit, and connectors for connection of one machine to an IBM supplied internal or USB modem to enable remote enhanced service. This feature is an enhanced replacement of the IBM TS3000 System Console for Service (FC 2730). It includes console upgrade previously provided as FC 2719 (Memory upgrade to 4 GB total RAM and a second Ethernet card for the Service Console to allow redundant connections into the service network). This feature applies to 3958, 3593, and 3592 machine types.

Note: The external Ethernet network cable is provided by the customer. 1Gb/s can use CAT 5e or CAT 6, 10Gb/s will need CAT 6.

FC 2733 (TS3000 System Console Internal Modem)
This feature provides an internal modem and customer phone line (wall) adapter based on country order.

FC 2734, TS3000 System Console USB modem
This feature provides a USB modem for use with FC 2724.

Installing the TSSC

Attention: These instructions are for installing a TSSC. The IMC comes preinstalled in a TS4500 tape library (integrated under the tape library end cover).

Ensure that the prerequisites in Table 6 have been met before you begin the installation.

Table 6. Installation prerequisites

Prerequisites	Notes
Analog telephone lines - two preferred, one minimum (3953 allows only one)	Note the modem telephone numbers for the Console Configuration Sheet
One Ethernet connection	This connection is used for high-speed, call home functionality, and is not required if a modem exists
A USB storage device, or a CD (model dependent)	For activities such as, backing up configuration files, offloading user files (recommended, but not required)
Completed Console Configuration Sheet	See Table 8 on page 21
Accessible area for installation and placement	Adequate space and location for installation, access, and operation

Note: If you are performing an MES for FC 2725 and FC 2748, or if you are installing the FC 2725 and FC 2748 into a customer's rack, see the installation instructions provided with the TSSC server.

Important: For FC 2724 (server model x3250) only. If you encounter a problem with the System Console DVD during installation, the internal red sata cable might not be seated correctly on the system board.

The following is a **summary** of the steps you take to install the TSSC.

TSSC Setup
1. Unpack and install the TSSC using the installation instructions provided with the TSSC.
2. Install the Ethernet switch and connect to the TSSC.
3. Power on the TSSC.

Tape System Setup and Configuration.
1. Complete network connection to tape system for TSSC attachment.
2. Perform software configuration on tape systems for TSSC attachment.

TSSC Configuration
1. Login to the TSSC.
2. Add information for attached systems.
3. Configure call home settings.
4. Backup configuration settings (recommended, but not required).
5. Set console date and time.

6. Test network connection to tape systems.
7. Test modem connection to RETAIN.
8. Log out of the TSSC.

Test Tape System Configuration

1. Perform test call home notification.

Completing Installation

1. Proceed with the physical layout and installation of the TSSC in a central location at the customer's site. Power cords are supplied in the ship group with the feature to satisfy the various country power requirements. Ensure that power feeds are available for the components (basic, wall-outlet power is sufficient).
2. Before you configure any attached systems at the TSSC, ensure that you have:
   - Chosen subsystem IP addresses
   - Completed a Console Configuration Sheet (see Table 8 on page 21)

   Keep the completed Console Configuration Sheet near the TSSC. Table 7 provides a sample of a completed Console Configuration Sheet.

Table 7. Console Configuration Sheet – Sample

IP Address	Attached System Type/Model	Serial No.	Hostname	Modem Tel. No.
172.31.1.1	TSSC	N/A	tssnet1	202–555–1111
172.31.1.2	3494 B20	13AAA10	VTS1	202–555–1111
172.31.1.3	3494 B20	13ABC11	VTS2	202–555–1112
172.31.1.45	3592 J70	13ABC12	3592CU40	202–555–1113
...	...	...	...	...

IP addresses in the form 172.31.1.x (where 'x' is 2 - 253) can be assigned to tape subsystems. The IP address choice must conform to the following guidelines:

- Assign IP addresses by using the subnet 172.31.1.x; otherwise TCP/IP communication with the console will not work.
- IP addresses must be unique and must not be duplicated between subsystems. Entry fields on subsystems might be pre-filled with suggested, default values. You must change these values when more than one library complex is connected to the System Console.
- When connecting multiple subsystems with default IP address settings to the TSSC network, connect and configure the systems one-at-a-time to prevent the possibility of duplicating IP addresses, which would create network errors. Refer to the maintenance information for each tape system for specific recommendations.
- The TSSC supports attachment of as many as 43 systems using as many as three Ethernet hubs or switches for attachment.

  Note: The Ethernet hubs restrict the network traffic to 10 MB. Suggest replacing all Ethernet HUBs with Ethernet Switches.
- The maximum, total (cumulative), cable length for connection between the TSSC and any subsystem is 100 m (300 ft).

Use the Console Configuration Sheet in Table 8 on page 21 to choose and pre-assign IP addresses for attached tape systems. Consider making a photocopy of this blank configuration sheet, then filling-in the fields.

Note: Keep a current copy of the filled-in Console Configuration Sheet (Table 8 on page 21) in an accessible location for future reference and modification. You can use this sheet to retrieve subsystem information following a system failure.

Table 8. Console Configuration Sheet – Actual. Copy this table, and use that copy to fill in this information.

IP Address	Attached System Type/Model	Serial No.	Host Name	Modem Tel. No.
172.31.1.1	TSSC		tssnet1	Modem1 Modem2
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				
172.31.1.___				

3. After installing the TSSC components using the supplied installation instructions, verify all cable connections.

- For TSSC FC 2725, refer to Figure 18.
- For TSSC FC 2724, refer to Figure 19 on page 23.

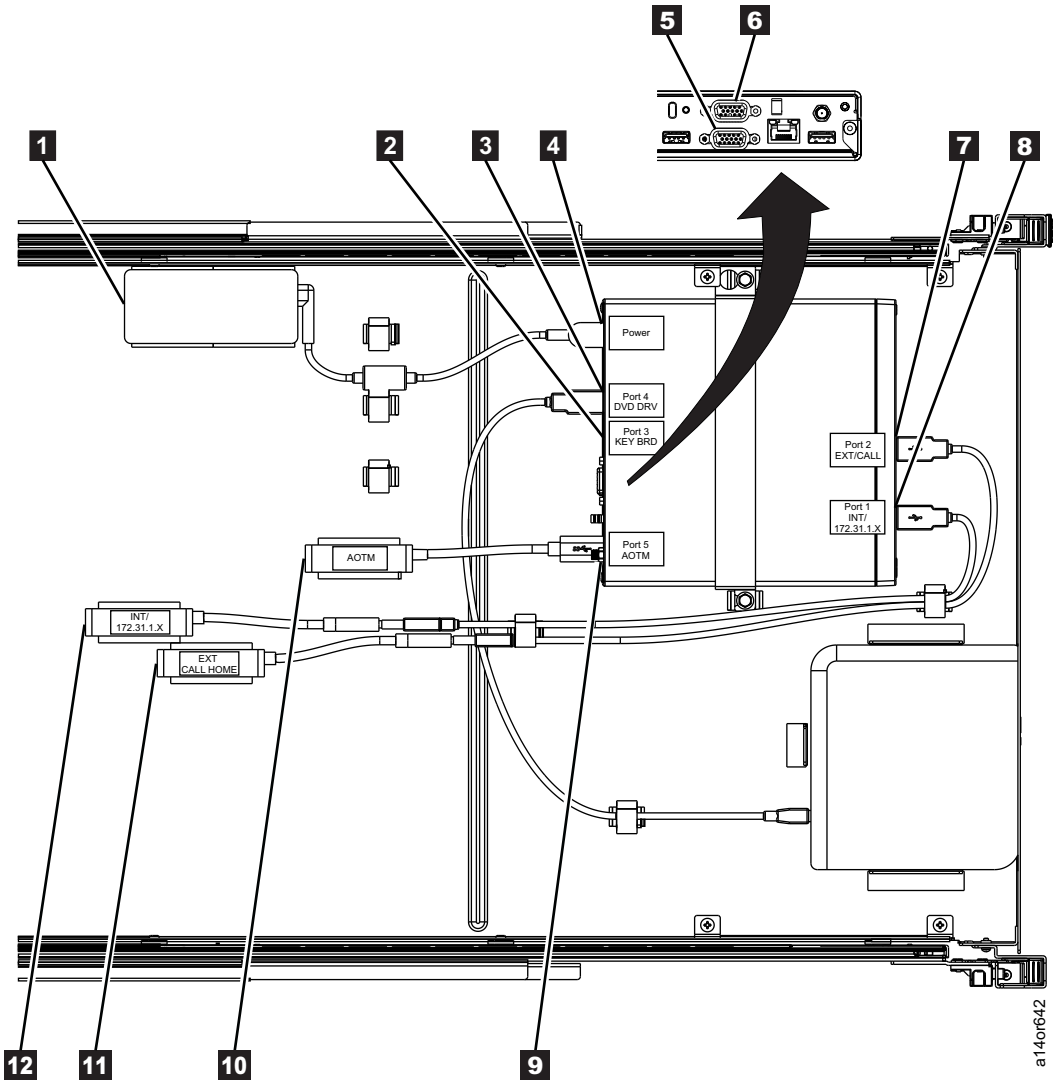

Figure 18. Cabling for the TSSC server, FC 2725

1 Power brick
2 Port 3 to USB Keyboard/mouse
3 Port 4 to USB optical drive
4 Power connector to power brick
5 Video connector
6 Serial port to attached subsystem
7 Port 2 to Ethernet adapter (EXT CALL HOME)
8 Port 1 to Ethernet adapter (INT/172.31.1.X)
9 Port 5 to Ethernet adapter (AOTM)
10 Ethernet for AOTM
11 Ethernet for broadband call home/remote support
12 Ethernet for attached subsystem (INT/172.31.1.X)

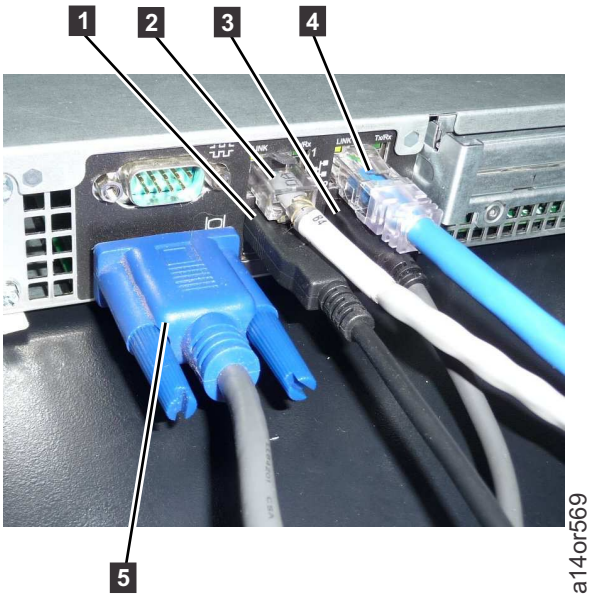

Figure 19. Cables plugged into the TSSC server, FC 2724

1. USB Modem
2. TSSC Internal LAN
3. USB Keyboard/Mouse (or from optional KVM Switch)
4. TSSC External LAN (1Gb/s can use CAT 5e or CAT 6, 10Gb/s will need CAT 6)
5. Video Cable (or from optional KVM Switch)

Powering on the TSSC (model 7040, 9020 or M93p)

__ 1. Locate the power button access hole **1** on the front of the TSSC tray. See Figure 20.

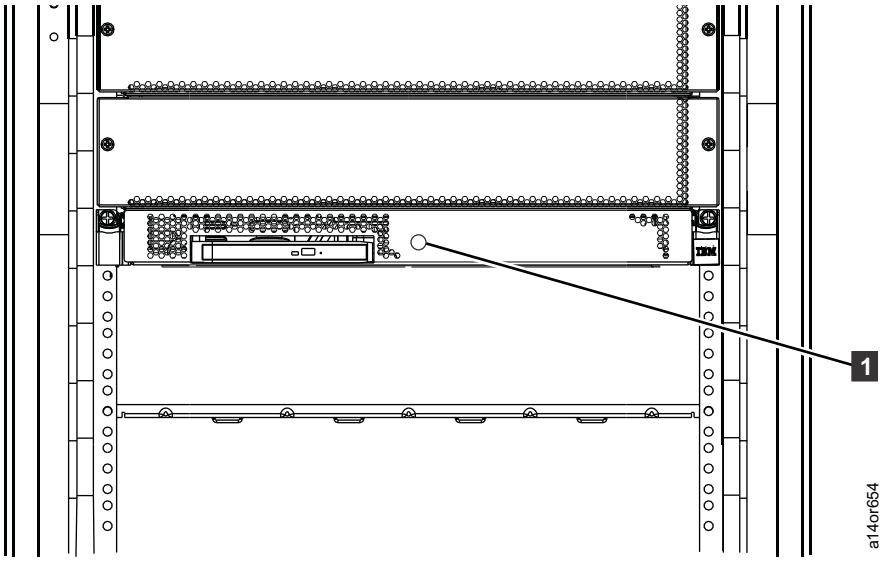

Figure 20. Power button access hole

__ 2. Power on the TSSC server by pressing the power button **1** . See Figure 21 or Figure 22 on page 25 depending on your server type.

Note: A pen or pencil can be used to press the power button.

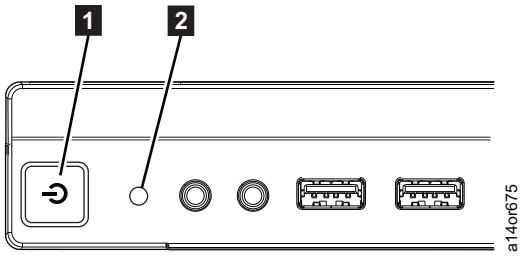

Figure 21. Model 7040/9020 power button

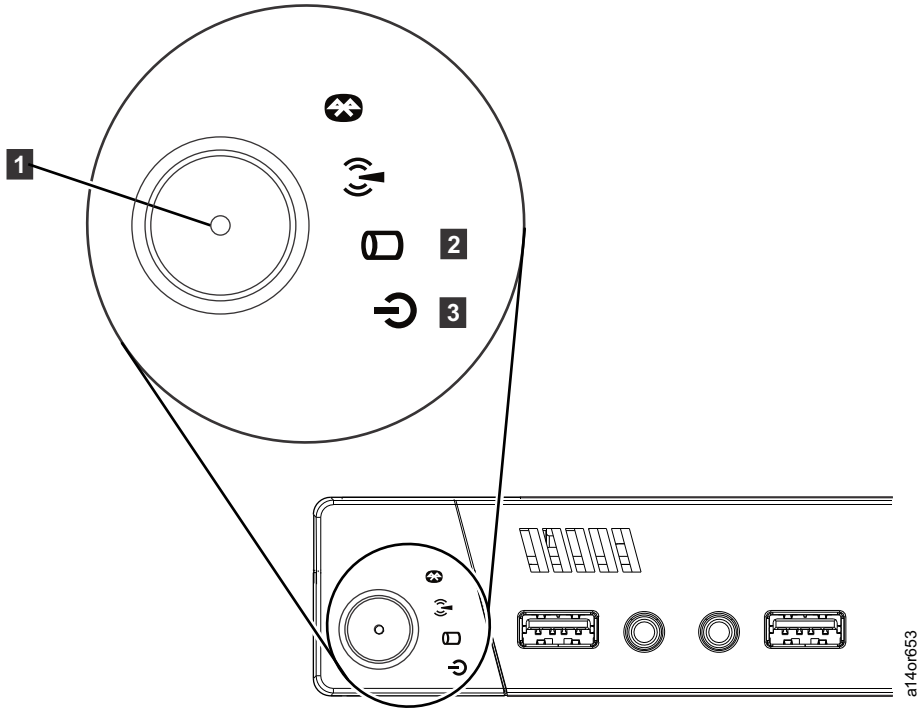

Figure 22. Model M93p power button

After pressing the power button **1**, the green LEDs **2** and **3** will show activity.

Tape System Call Home Setup for IBM TS7700

Note: TS7700 attachment requires feature code 2725 (or an earlier FC 2722, 2724, 2730 or 2732). See "Feature Codes" on page 7 for details about feature code content.

1. From EBTERM or NetTerm login, at the **IBM TS7700 Maintenance** menu, select **Subsystem Configuration Menus**.

```
               IBM TS7700 Maintenance

Move cursor to desired item and press Enter.

    System Checkout Menus
    SIM, Error Log, Diagnostics, Trace/Dump Menus
    Utility Menus
    Microcode Maintenance Menus
    Subsystem Configuration Menus
    Removal/Replacement Menus
    3957-Vxx Online/Offline Menus
    3957-Vxx Shutdown and Restart Menus
    PFE/Support Tools Menus
    TS7700 GRID Menus


F1=Help             F2=Refresh          F3=Cancel           F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 23. IBM TS7700 Maintenance menu

2. Select **Call Home / Remote Services Menus**, and press **Enter**.

```
Move cursor to desired item and press Enter.

  Display Hardware Vital Product Data (lscfg)
  Adapter Slot Identification
  Set Date/Time Menus
  Customer Network Configuration Menus
  Show / Change TS7700 Vital Product Data
  Customer Configurations Menus
  Call Home / Remote Services Menus


F1=Help             F2=Refresh          F3=Cancel           F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 24. Subsystem Configuration Menus

3. Select **Set Service Console (TSSC) Customer Network Configuration**, and press **Enter**.

```
                    Call Home / Remote Services Menu

Move cursor to desired item and press Enter.

  Set Service Console (TSSC) Customer Network Configuration
  Change / Show Call Home / Remote Services
  Change / Show Call Home Filters
  Send Test Notification Menu
  Remote Data Monitoring
  View Call Home Log
  Reset Call Home Daemon
  Reset Call Home Blackout Period
  View MRPD Data
  Configure Network Port for Remote Connection


F1=Help             F2=Refresh          F3=Cancel           F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 25. Call Home / Remote Services Menu

4. Select **Enter the Service Console IP Address**.

```
                    Set Service Console (TSSC) Customer Network Configuration

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

[TOP]                                                [Entry Fields]

   NOTICE: TSSC IPs must be in IPv4 format
   because the TSSC only supports IPv4 addresses.
   TSSC IPs cannot be disabled.

*  Enter the Service Console IP Address:           [172.31.1.1]
   NOTE: This is the IP Address for the TSSC
   that will be attached to this TS7700. The
   values displayed are either the default
   values or the current IP that is configured.

*  Enter the Service Console Hostname:                [blimpie]

[MORE. . .14]


F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Reset            F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 26. Set Service Console (TSSC) Customer Network Configuration Menu

5. At Figure 26, verify that the Service Console IP address is set to the IP address (defaults to 172.31.1.1).
6. At Figure 26, verify that the TS7700 IP address is set to the IP address 172.31.1.x. The 'x' is replaced with the IP address that you designated for this subsystem.

   Note: For the TS7700, the last octet of this IP address must be in an increment of 10, between 10 and 240 (that is 10, 20 ... 230, 240). The router configuration uses this entire octet for TSSC configuration. All ten of these addresses must not be used by another subsystem that is connected to the TSSC.
7. Press **F3** to return to Figure 25. Select **Change / Show Call Home / Remote Services**. Figure 27 on page 28 is displayed.

```
                    Change / Show Call Home / Remote Services

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                                    [Entry Fields]
* Enable Serious and Acute SIMs to Call Home?                       yes
* LM Customer Initiated Call Home Allowed Frequency                 disabled
* Enable Paging?                                                    no
* Customer Business/Company Name"                                   [IBM]
* Customer Location                                                 [TUCSON]
  Remote Phone Number 1 (call home) :                               [18005551234]
  Remote Phone Number 2 (call home) :                               []
  Callback Phone Number [modem]                                     []
  Customer Phone Number [voice]                                     []
  Customer Offshift Phone Number                                    []


F1=Help            F2=Refresh         F3=Cancel          F4=List
F5=Reset           F6=Command         F7=Edit            F8=Image
F9=Shell           F10=Exit           Enter=Do
```

Figure 27. Change / Show Call Home / Remote Services Menu

8. At Figure 27, verify that Serious and Acute SIMs to Call Home is enabled. If it is not enabled, highlight the text, and press **F4**. Move the cursor to **yes**, and press **Enter**.
9. Press **F3** to return to Figure 25 on page 27. Select **Remote Data Monitoring**. Figure 28 is displayed.

```
                      Remote Data Monitoring

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                                  [Entry Fields]
* Change / Show Call Home Heartbeat Interval                        3 days
* Error Initiated Call Home Data Gathering                        Enabled
* Timeout Period Between Successive Data Call Homes                [24]
    (In hours between 1 and 99)


F1=Help            F2=Refresh         F3=Cancel          F4=List
F5=Reset           F6=Command         F7=Edit            F8=Image
F9=Shell           F10=Exit           Enter=Do
```

Figure 28. Call Home – Remote Data Monitoring Menu

10. At Figure 28, verify that Call Home Data Gathering is enabled. If it is not enabled, highlight the text, and press **F4**. Move the cursor to **Enabled**, and press **Enter**.
11. Press **F3** to return to Figure 25 on page 27. If more attached subsystems need configuration, exit the EBTERM or NetTerm session and connect the net subsystem.
12. Return to step 2 on page 26 and configure all attached systems before you continue to step 13.
13. The TS7700 configuration is complete. Leave the screen active.
    - Go to "Setting Up Autonomic Ownership Takeover Manager" on page 29 if you want to set up the autonomic takeover manager, then return here.

      – – AND – –
    - Go to "Tape System Call Home Setup for VTS, VTC, and Tape Controllers" on page 34.

      – – OR – –
    - "Tape System Setup for 3494 ATL (Library Manager) or 3953 Enterprise Library Controller" on page 39, if necessary.

Setting Up Autonomic Ownership Takeover Manager

The Autonomic Ownership Takeover Manager (AOTM) allows the TSSC to create a temporary communication path around a failing communication path in a multiple IBM TS7700 configuration to determine the health of the remote system. This activity is performed independently of human intervention. This activity is similar to actions taken by an operator who intervenes to reestablish communications by taking over ownership of the complex (or grid), or multiple clusters. But AOTM is done automatically by a TSSC, without a request being made by an operator.

See Figure 29. A complex (or grid) can be defined as multiple clusters. The preferred minimum configuration of a cluster contains one of each of the following:

- Two TS7700s
- Two TSSCs (one connected to each TS7700)
- Two grid switches (one supporting each TS7700 and TSSC pair)

Note: AOTM is also with one TSSC between two TS7700s, with the minimum configuration of the following:

- Two TS7700s
- One TSSC (connected to each TS7700)

Notes:

- The Grid Network Interface should only be used for TS7700 peer-to-peer networks with the AOTM function. Unless previously mentioned, other uses are not supported.
- No connection is made directly between any two TSSCs, but TSSCs are connected through the grid switches.
- A problem with the kernel has been observed when two network interfaces within a host are configured on the same subnet. When this is the case, the kernel occasionally routes network traffic to the wrong network interface card. In order to avoid this issue, beginning in system console code level 7.4, the TSSC will automatically reconfigure Grid/AOTM traffic to be routed through the External interface when the External and Grid interfaces are on the same subnet.

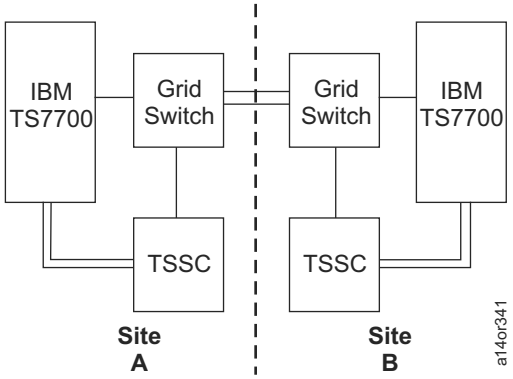

Figure 29. Autonomic Ownership Takeover Manager (AOTM) Layout. This is one example of how a customer might have a complex with physically-separated clusters at multiple, separate sites, such as in multiple cities or in multiple states.

1. On both clusters, configure the local TSSC Grid IP address. From the SMIT menu **IBM TS7700 Maintenance**, select **TS7700 GRID Menus** > **TS7700 GRID Configuration Menus** > **Autonomic Ownership Takeover Manager Menus** > **Set Local GRID TSSC IP**. Press **Enter**. You see Figure 30 on page 30.

```
                      Set Local GRID TSSC IP

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                     [Entry fields]
Enter the Local GRID TSSC IP address:    (10.11.110.40)


F1=Help             F2=Refresh          F3=Cancel
F8=Image            F10=Exit            Enter=Do
/=Find
```

Figure 30. Setting Local Grid TSSC IP Address

2. In the Entry Fields field, type the TSSC Grid IP address to which the cluster's local TSSC is configured (10.11.110.40, in this example). Press **Enter**.
3. Press **F3** twice to return to the **IBM TS7700 Maintenance** menu, and select **Configure Autonomic Ownership Takeover Manager to a Remote Cluster**.

   Note: The remainder of these steps apply to the failing cluster from which you want to take over volumes.
4. Press **Enter**. Figure 31 displays.

```
                      Select a remote cluster

Move cursor to desired item and press Enter.

 # Select the Remote Cluster from the list below
 #
 # Remote Cluster
 #- - - - - - - - - - - - - -
 1 - VEA


F1=Help             F2=Refresh          F3=Cancel
F8=Image            F10=Exit            Enter=Do
/=Find
```

Figure 31. Selecting a Remote Cluster. For this example, the cluster name is 'VEA.'

5. Move the cursor to the desired cluster, and press **Enter**. Figure 32 displays.

```
                      Configure Autonomic Ownership-Takeover To a Remote Cluster

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                     [Entry fields]
* Remote Cluster ID:              0
 Enter the Autonomic Takeover Setting:      [enabled]

*
 Enter the Takeover Mode:      WOT
*
 Enter the minutes for the Grace Period:     [25]
 Enter the minutes for the Retry Period:     [5]

F1=Help             F2=Refresh          F3=Cancel          F4=List
F5=REset            F6=Command          F7=Edit            F8=Image
F9=Shell            F10=Exit            Enter=Do
/=Find
```

Figure 32. Configuring AOTM To Remote Cluster

6. Add information in the appropriate fields, depicted in Figure 32:

Remote Cluster ID
Set to the ID that you chose in Figure 31 on page 30. (**0** in this example.) The default which appears in this field (0 or 1) depends on the cluster from which you are initiating this configuration.

Enter the Autonomic Takeover Setting
Set to Enabled or Disabled. (**enabled** in this example.)

Enter the Takeover Mode
Set to Read only takeover (ROT) or Write-enabled ownership takeover (WOT). ROT allows the local cluster to read (but not write to) volumes in the remote cluster. WOT allows the local cluster to read from and write to any volumes that it takes over from the remote cluster.

Enter the minutes for the Grace Period
Set the number of minutes before the local cluster takes over the volumes of the remote cluster.

Enter the minutes for the Retry Period
Set the number of minutes to wait before a retry of the takeover of the volumes occurs.

7. Press **Enter**. You see Figure 33.

```
                              ARE YOU SURE?

    Continue may delete information you may want
    to keep.  This is your last chance to stop
    before continuing.
     Press Enter to continue.
     Press Cancel to return to the application.

F1=Help             F2=Refresh          F3=Cancel
F8=Image            F10=Exit            Enter=Do
/=Find
```

Figure 33. Warning Message for Processing AOTM To a Remote Cluster

8. Press **Enter**. You see Figure 34.

```
                              COMMAND STATUS

 Command: OK       stndout:  yes     stderr:  no

 Before command completion, additional instructions may appear below.

 Autonomic takeover configured successfully


F1=Help       F2=Refresh      F3=Cancel      F4=List
F5=Reset      F6=Command      F7=Edit        F8=Image
F9=Shell      F10=Exit        Enter=Do
```

Figure 34. Processing AOTM To a Remote Cluster

9. Press **F3** until you are returned to the main menu for the TS7700 Service Terminal.

Verify the TSSC Firewall settings:

10. Click the **Custom Firewall Settings** link at the top of the Console Settings page.
11. Verify the HTTP entry is properly set for the Grid interface. You should see the Grid entries configured to allow HTTP connections, both in and out, as seen in the figure below. If either of them are set to drop, change it to allow by selecting the option in the leftmost column.

◉	○	Grid	IN	HTTP	80
◉	○	Grid	OUT	HTTP	80

ts77h850

Figure 35. TSSC Firewall Settings

Notes:
- If the customer's network is configured to run AOTM over the same network as the TSSC's external adapter, you will need to repeat this step for the external firewall entries.
- It is recommended as best practice to use different sub-networks for External and Grid adapter to improve the reliability of the communication.

12. Once the settings have been verified, click **Update Firewall Settings**. You will see a message stating the firewall settings have been successfully configured.
13. Close the open window.
14. To test the AOTM, go to "Testing Autonomic Ownership Takeover Connectivity to a Remote Cluster."

Testing Autonomic Ownership Takeover Connectivity to a Remote Cluster

This information provides a procedure for testing autonomic ownership takeover connectivity to a remote cluster.

The activity described in this section is a continuation of "Setting Up Autonomic Ownership Takeover Manager" on page 29. Your cluster should have been set up to allow the Autonomic Ownership Takeover Manager (AOTM) before you perform these steps.

1. From the SMIT menu **IBM TS7700 Maintenance**, select **TS7700 GRID Menus** > **TS7700 GRID Configuration Menus** > **Autonomic Ownership Takeover Manager Menus** > **Test Autonomic Ownership Takeover Manager to a Remote Cluster**. Press **Enter**. You see Figure 36.

```
                        Select a remote cluster

Move cursor to desired item and press Enter.

 # Select the Remote Cluster from the list below
 #
 # Remote Cluster
 #- - - - - - - - - - - - - -
 0 - VEA


F1=Help             F2=Refresh          F3=Cancel
F8=Image            F10=Exit            Enter=Do
/=Find
```

Figure 36. Initiating Remote AOTM Cluster Test. For this example, the cluster name is 'VEA.'

2. Move the cursor to the desired cluster (VEA in this example), and press **Enter**. Figure 37 on page 33 displays.

```
                    Test Autonomic Ownership-Takeover To a Remote Cluster

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                     [Entry fields]
* Remote Cluster ID:                0
 Local Cluster IP:               [ 1]


F1=Help       F2=Refresh      F3=Cancel      F4=List
F5=Reset      F6=Command      F7=Edit        F8=Image
F9=Shell      F10=Exit        Enter=Do
```

Figure 37. Testing AOTM Connectivity To Remote Cluster

3. Add information in the appropriate fields, depicted in Figure 37.
   Remote Cluster ID
   This is the same setting that you chose in Figure 31 on page 30 ('0' in this example).
   Local Cluster IP
   This field contains a default setting, which you cannot change.
4. Press **Enter**. You see Figure 38.

```
                              ARE YOU SURE?

    Continue may delete information you may want
    to keep.  This is your last chance to stop
    before continuing.
     Press Enter to continue.
     Press Cancel to return to the application.

F1=Help             F2=Refresh          F3=Cancel
F8=Image            F10=Exit            Enter=Do
/=Find
```

Figure 38. Verifying AOTM Change

5. Press **Enter** to start the test, or press **Cancel** to return to the application. If you press Enter, you see Figure 39.

```
                              COMMAND STATUS

 Command: OK      stndout:  yes     stderr:  no

 Before command completion, additional instructions may appear below.

 Local TSSC Connection: Successsful
 Remote TSSC Connection: Successsful
 Remote Node connection: Successsful
 Remote node state: online

Based on the conditions above, will ownership takeover occur?  false

F1=Help       F2=Refresh     F3=Cancel     F6=Command
F8=Image      F9=Shell       F10=Exit      /=Find
n=Find Next
```

Figure 39. Processing AOTM Changes

Notes: In the Figure 39 field "Based on the conditions above, will ownership takeover occur?"

false The local cluster is **not** taking control of the remote cluster's volume.

true The local cluster **has** ownership and **is** taking control of the remote cluster's volume.

AOTM testing is complete.

Tape System Call Home Setup for VTS, VTC, and Tape Controllers

Attention: Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, "Maintenance Starting Point," on page 1 to determine the system console code level.

1. From EBTERM or NetTerm, perform the following:
   a. Make the following selections from one of these screens:
      - IBM Virtual Tape Server (B10/B20 VTS) Maintenance
      - 3590 Subsystem Maintenance
      - 3592 Subsystem Maintenance
   b. Select **Subsystem Configuration**, and press **Enter**.
   c. Select **Call Home / Remote Services Menu**, and press **Enter**. Figure 40 displays.

```
  Change / Show Call Home / Remote Services

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                      [Entry Fields]
* Enable Serious and Acute SIMs to Call Home?         Yes                    +
* LM Customer Initiated Call Home Allowed Frequency   disabled               +
* Enable Paging?                                      no                     +
  Customer Business/Company Name:                     []
* Remote Phone Number 1 (call home):                  []
  Remote Phone Number 2 (call home):                  []
  Callback Phone Number (modem)                       []
  Customer Phone Number (voice)                       []
  Customer Offshift Phone Number                      []









F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Reset            F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do

Ensure Enable Serious and Acute SIMs to Call Home? is set to yes.
```

Figure 40. VTS,VTC, A60 , J70 & C06 Call Home / Remote Services Menu – Switch Call Home Selection

Note: Ensure that the Console Configuration Sheet (Table 8 on page 21) was completed before you perform the following steps.

2. At Figure 40, on Models VTS, VTC, A60 & J70, select **Switch Call Home / Remote Services to/from System Console**, and press **Enter**. Figure 41 on page 35 displays.

```
                Switch Call Home / Remote Service to/from System Console

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                      [Entry Fields]
* Switch Call Home/Remote Services to/from Console/WTI              +
     System Console
  IBM System Console TCPIP Address (dotted decimal):       [172.31.1.1]
  IBM              System Console Hostname:                     []

F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Reset            F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 41. Switch Call Home/Remote Services to/from System Console

```
 Change / Show Modem Configuration

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                        [Entry Fields]
  Name of Modem Set:                                   MultiTech MT5600BA     +
* Dialer Phone System:                                 tone                   +
* Cancel the call if not connected within (seconds): [45]                    #
* Number of consecutive retries to connect:          [1]                     #

  Name of Expander Set:                                WTI APS 16 or MDS 16   +
  Expander port for modem:                             1                      +
  Expander port for this Control Unit:                 2                      +









F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Reset            F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do

VTS,VTC, A60, J70 & C6 Call Home / Remote Services Menu -> Change / Show Modem Configuration.
When the WTI is selected also select the Change / Show Modem Configuration and set as needed.
```

Figure 42. Change / Show Modem Configuration

Note: In Figure 43 on page 36 Change this controllers IP and hostname as needed.

Note: If you change the hostname from the default “tssnet1”, it must conform to the following guideline: A “name” (Net, Host, Gateway, or Domain name) is a text string up to 63 characters that contains only ASCII letters a-z (case-insensitive), digits (0-9), and hyphen (-).

```
Subsystem Configuration Menus -> Show / Change TSSC Connection
                     Show / Change Direct TSSC Connection

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                      [Entry Fields]
* Enter this controllers IP address on TSSC network: [172.31.1.xxx]

* Enter the Service Console IP Address:              [172.31.1.1]
   NOTE: This is the IP Address for the TSSC
   that will be attached to this Control Unit.
   The values displayed are either the default
   values or the current IP that is configured.

* Enter the Service Console Hostname (TSSC):         []









F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Reset            F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 43. 3592-C07 - Subsystem Configuration Menus - Show / Change TSSC Connection

Enable call home using the following screen:

```
Subsystem Configuration Menus -> Call Home / Remote Services Menu
                       Call Home / Remote Services Menu

Move cursor to desired item and press Enter.

  Change / Show Call Home / Remote Services
  Remove Files from Call Home Send Queue
  Change / Show Call Home Filters
  Send Test Notification Menus
  Remote Data Monitoring
  View Call Home Log
  View Call Home SNMP trap Log









F1=Help             F2=Refresh          F3=Cancel           F8=Image
F9=Shell            F10=Exit            Enter=Do

Select:  Change / Show Call Home / Remote Services

Note: Ensure Change / Show Call Home / Remote Services is set to yes.

Fill in the appropriate phone numbers.
```

Figure 44. Enable Call Home

```
Change / Show Call Home / Remote Services

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                        [Entry Fields]
* Enable Serious and Acute SIMs to Call Home?         yes                    +
  Customer Business/Company Name:                    [ Company Name]
  Remote Phone Number 1 (call home):                 [1-zzz-xxx.yyyy]
  Remote Phone Number 2 (call home):                 [1-zzz-xxx,yyyy]
  Callback Phone Number (modem)                      [1-zzz-xxx-yyyy]
  Customer Phone Number (voice)                      [1-zzz-xxx-yyyy]
  Customer Offshift Phone Number                     [1-zzz-xxx-yyyy]









F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Reset            F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 45. 3592-C07 Subsystem Configuration Menus -> Call Home / Remote Services Menu

3. At Figure 41 on page 35 and Figure 43 on page 36, verify that the IBM System Console IP Address is set to the IP address (defaults to 172.31.1.1). Press **F4** for the pop up menu displayed in Figure 46. Select **Console Call Home/Remote Services thru System Console**, and press **Enter** twice.

```
                 Switch Call Home / Remote Service to/from System Console

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                        [Entry Fields]
* Switch Call Home/Remote Services to/from         Console           +
     IBM System Console
  IBM System Console TCPIP Address (dotted decimal):       [172.31.1.1]
  IBM System Console Hostname:                    []


  lqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
  x               Switch Call Home/Remote Services to/from System Console    x
  x                                                                          x
  x Move cursor to desired item and press Enter.                             x
  x                                                                          x
  x   WTI    Call Home/Remote Services thru WTI Switch Modem                 x
  x   Console Call Home/Remote Services thru System Console             x
  x                                                                          x
  x F1=Help                F2=Refresh             F3=Cancel                  x
  x F8=Image               F10=Exit               Enter=Do                   x
F5  /=Find                 n=Find Next                                       x
F9 lqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
```

Figure 46. Models VTS, VTC, A60 , J70 & C06 - Switch Call Home / Remote Services to/from System Console – IP Address

Attention:
- Step 4, step 5, and step 6 on page 39 apply to tape systems without SMC router WAN port connectivity.
- If your installation uses an SMC router for WAN port connectivity, do not use steps 4, 5, and 6 on page 39, but refer to the product's maintenance information for instructions to configure the SMC router WAN and LAN IP addresses for connection to the system console. You must set the router configuration before proceeding. Continue at step 7 on page 39 after configuring the router WAN/LAN ports.

4. **This step only applies to 3590 A60:** Select **IBM System Console TCP/IP Configuration**, and press **Enter**. Select the presented Ethernet adapter. Figure 48 appears.

   Attention: Select the illustrated line item **only at Figure 47**. No other menu display items are applicable for this process.

```
                        Call Home / Remote Services Menu

Move cursor to desired item and press Enter.

    IBM System Console TCPIP Configuration
    lqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
  x                      Available Network Interfaces                      x
  x                                                                        x
  x Move cursor to desired item and press Enter.                           x
  x                                                                        x
  x en1                                                                    x
  x                                                                        x
  x F1=Help               F2=Refresh              F3=Cancel                x
  x F8=Image              F10=Exit                Enter=Do                 x
F1  /=Find                n=Find Next                                      x
F9 lqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
```

Figure 47. Call Home / Remote Services Menu

```
                        Minimum Configuration & Startup

 To Delete existing configuration data, please use Further Configuration menus

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                        [Entry Fields]
* HOSTNAME                                           [VTS13AAA00]
* Internet ADDRESS (dotted decimal)                  [172.31.1.2]
  Network MASK (dotted decimal)                      [255.255.255.0]
* Network INTERFACE                                   en1
  NAMESERVER
           Internet ADDRESS (dotted decimal)         []
           DOMAIN Name                               []
  Default GATEWAY Address                            []
  (dotted decimal or symbolic name)
  Your CABLE Type                                     N/A                   +
  START Now                                           yes                   +

F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Reset            F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 48. Minimum Configuration and Startup Menu

5. **This step only applies to 3590 A60:** Use Figure 48 as a reference to help you add the following information:
   - **A descriptive host name.** This will be the name used to identify the tape system in the customer's environment.

- **An Internet ADDRESS of the form 172.31.1.x** (see Table 8 on page 21 for the value 'x'). It is important that no two internet addresses are set alike in the local Ethernet network. It is essential that the internet addresses are assigned using the network 172.31.1.x, otherwise TCP/IP communication with the console will not work.
- **A Network Mask of 255.255.255.0.** The Network Mask will be the same for each tape system.
- Change the START Now setting to **yes**.

Press **Enter**. Press **F3** to return to **Call Home / Remote Services Menu** displayed at Figure 40 on page 34.

6. Press **F3** twice to return to **Call Home / Remote Services Menu**. If more attached subsystems need configuration, exit the EBTERM/NetTerm session and connect to the next subsystem.
7. Return to step 1 on page 34, and configure all attached tape systems before continuing to step 8.
8. VTS, VTC, and tape controller configuration is complete at this point. **Leave the screen active**. Continue to "Tape System Setup for 3494 ATL (Library Manager) or 3953 Enterprise Library Controller" if necessary, then continue to "Configuration" on page 49 to perform system console configuration.

Tape System Setup for 3494 ATL (Library Manager) or 3953 Enterprise Library Controller

Attention: Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, "Maintenance Starting Point," on page 1 to determine the system console code level.

TSSC For 3494, Version 3.0.0 and above

For 3953, Version 3.2.0 and above

IBM 3494 ATL Models L12, L14, L22

Code Version 529 and above (LM531 and above for 3953), using a 7581 PC. If you are using a 7588 PC, you must have FC 2715 installed, which will provide a 4-port Ethernet adapter, if one is not installed.

Notes:

- Either FC 5219 or FC 5220 must have been installed to enable the 3494 Specialist.
- The customer (usually an administrator) must authorize enabling the 3494 Specialist.

1. See Figure 49 on page 40. Ensure that an Ethernet connection has been completed between the 3494 ATL or 3953 SBC card port 1 (lower port) and a port on one of the TSSC Ethernet switches. The Ethernet cable should plug into the bottom port (Item 1 in Figure 49 on page 40). The SBC card is in slot 3 of the 7581.

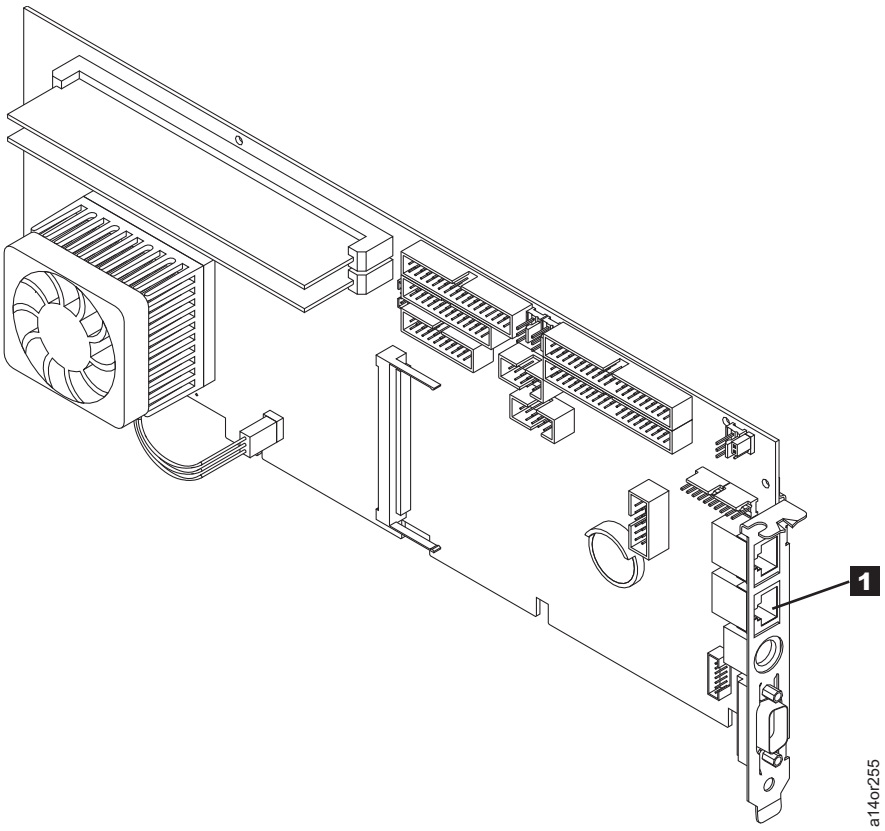

Figure 49. Plug Ethernet cable here (3494). Notice Item 1.

2. Ensure that the TSSC server is listed in the command process window. Use **Ctrl** + **Esc** to view the window list. See Figure 50.

Figure 50. Command Process Window List – Example. The text on your screen might differ with various levels of code or with different machine model numbers.

Notes:

- If the TSSC server is not included in the list depicted in Figure 50, you can start the TSSC server by typing **tsmcstrt** from a command line.
- You can stop the TSSC server. Right-click **TSMC Server** from the Figure 50, then click the **Close** button in the dialog box.
- You can restart the TSSC server by stopping it, then starting it.

- If the “tsmcstrt” fails to start the “TSSC server” window, the OS/2 device drivers may not be installed on the 3494 ATL or the 3953. Shutdown the 3494 ATL or the 3953, and open a service window. Run “tsmcinst”. This loads the necessary OS/2 device drivers. Once loaded, the 3494 ATL or the 3953 must be rebooted.

3. Use the 3494 ATL or 3953 menu commands **Service** > **Manage Master Console** to view the dialog box for setting any 3494 ATL or 3953 IP address or addresses. See Figure 51.

   Configure the IP address of the 3494 ATL or 3953 for the TSSC network. The default addressing scheme uses the subnet 172.31.1.x. The specific address must not be in use elsewhere on the TSSC network.

   Note: You must configure the library manager before you configure the TSSC.

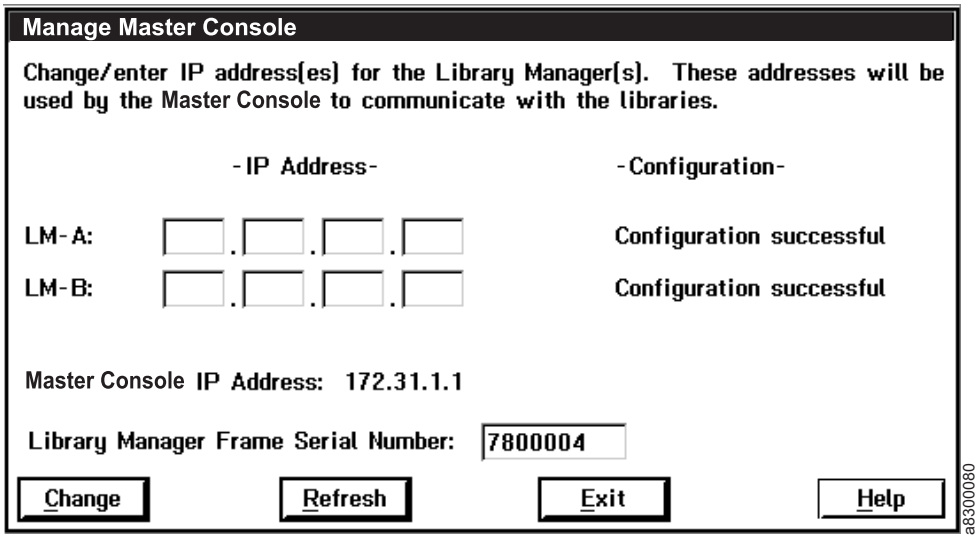

Figure 51. Manage System Console Dialog Box. The Library Manager Frame Serial Number must be the 3953 F05 base frame number or the 3494 LXX frame serial number. The text on your screen might differ with various levels of code or with different machine model numbers.

4. Change the default IP addresses in the entry box to be IP addresses that are unique to the TSSC network. Click **Change**. After the address is successfully set, Configuration Successful is indicated in the Configuration column. Click **Exit** when complete.
5. Ensure that Call Home is enabled on the 3494 ATL or 3953. Use the 3494 ATL or 3953 menu commands **Utilities** > **Enable/Disable Functions** > **LM Call Home** > **Enable** to enable Call Home on the LM.
6. In order to use the TSSC “Connect to Attached Systems” tool to access the 3494 ATL or 3953, you must enable Service Access. Use the 3494 ATL or 3953 menu commands **Commands** > **Service Access** > **Enable Service Access**. This will enable both the Telnet services and the FTP services for the 3494 ATL or the 3953. “Service” is enabled if it appears unhighlighted (grayed-out) on the menu.

   Notes:
   - Either FC 5219 or FC 5220 must have been installed to enable the 3494 Specialist. Though these feature codes are 3494-only, they are included in the 3953 F05 base frame.
   - The customer administrator must authorize enabling Service Access.
   - The TSSC tool “Connect to Attached Systems” will be unable to connect with this 3494 ATL or 3953 if Service Access is disabled.
   - TSSC FTP access to this 3494 ATL or 3953 will be unable to connect, if Service Access is disabled.
   - If the TSSC tool “Connect to Attached Systems” is unable to connect to a subsystem, the connection terminal screen disappears without presenting a login prompt. No error message will be displayed.
   - The customer administrator must authorize enabling the 3494 Specialist.

7. In order to view the 3494 or 3953 Specialist from the TSSC, you must enable the 3494/3953 Specialist. Use the 3494 ATL or 3953 Menu Commands: > **Utilities** > **Enable/Disable Functions** > **3494 Specialist** > **Activate**. You might be asked for a User ID and Password. The default User ID is "service" and the default password is "service".
8. After the 3494 or 3953 Specialist is enabled, wait for the hour glass icon on your screen to disappear, then select **Commands** > **Specialist (Web Server)** > **Settings** from the 3494 ATL or 3953 menu.
9. Either click **All Yes** or select **Yes** for each function you want to manage by using the 3494 or 3953 Specialist. Ensure that "Manage TSSC" is set to "Yes" to manage the TSSC configuration via the 3494 or 3953 Specialist. Figure 52 appears. Ask the customer administrator for any settings that need to be changed on this screen from Yes to No, and check the No box for those settings.

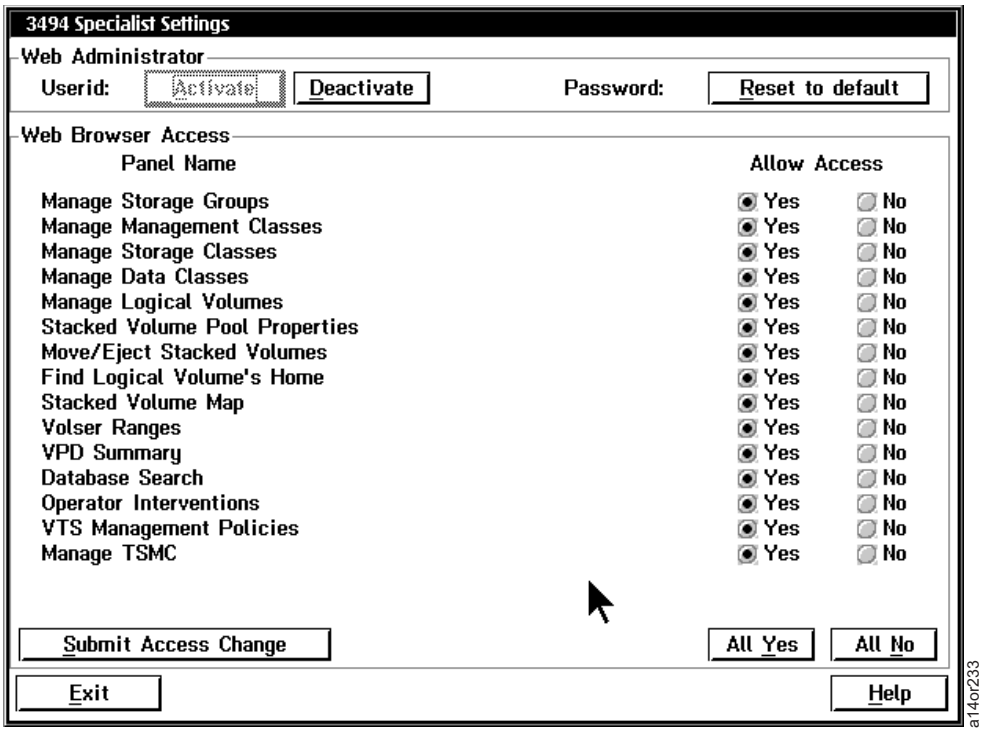

Figure 52. 3494 ATL or 3953 Specialist Settings. The text on your screen might differ with various levels of code or with different machine model numbers.

10. Click **Submit Access Change** to change the Web Browser Access attributes. Wait for the message "Web browser access was successfully changed."

    Notes:
    - The customer administrator must authorize enabling the 3494 or the 3953 Specialist.
    - No browser will be able to display the 3494 or 3953 Specialist, if the Specialist is not activated.
11. Return to the beginning of this procedure, and perform steps 1 on page 39 through 6 on page 41 for each 3494 ATL that you will attach to the TSSC.

This completes the configuration of the 3494 ATL or 3953 for the TSSC attachment. Continue at "Test Call Home Notification for 3494 ATL or 3953 Enterprise Library Controller" on page 115, or go to "Configuration" on page 49 if you do not intend to test the call home notification.

Using 3494 ATL or 3953 Enterprise Library Controller Web Specialist to Change TSSC Settings

This section provides supplemental information. You do not need this information to complete the setup for a 3494 ATL or 3953. You can, however, use the 3494 ATL or 3953 Web Specialist to change certain

TSSC settings on the 3494 ATL or 3953. You can access and enable the 3494 or 3953 Web Specialist by using a browser on the customer's network (common approach).

Figure 53. 3494 ATL or 3953 Web Specialist - Welcome Page

After you access the 3494 ATL or 3953 Web Specialist, you will see the Figure 53. A number of work items are listed on the left side of the screen.

1. Select **Service library manager**, then select **Administer call home**. This menu contains the tasks that are relevant for the TSSC and call home. You may want to perform some or all of these actions. From this menu you can select (in any order):

   Test interface
   Test network interface to TSSC or send a test call home record (see "Test Interface")

   Configure settings
   Enable or disable problem call home or data call home activity (see "Configure Settings" on page 44)

   Flush queue
   Clears 3494 ATL or 3953 call home entries from the TSSC call home queue (see "Flush Queue" on page 45)

   Set heartbeat
   Set the time interval of the heartbeat call home action (see "Set Heartbeat" on page 45)

   Configure interface parameters
   Configure IP addresses for the LM and the TSSC. Set the hostname alias of the LM on the TSSC network (see "Configure Interface Parameters" on page 46)

2. Wait for the message "The Action Completed Successfully" which indicates that the test of the interface or the test call home was successful.

Test Interface

1. From the "Administer call home" list on the Web Specialist screen (Figure 53), click **Test interface** to see the options shown in Figure 54 on page 44. If you are prompted for a username and password, use the default values of **service** for the username and **service** for the password. These values can be changed by the 3494 ATL system administrator.

   From this screen (Figure 54 on page 44), you can test the (network) interface between the LM and the TSSC (from the perspective of the LM).

   Test Interface
   Tests the (network) interface between the LM and the TSSC (from the perspective of the LM)

Test Call Home

Causes a test call-home record to be sent from the LM via the TSSC

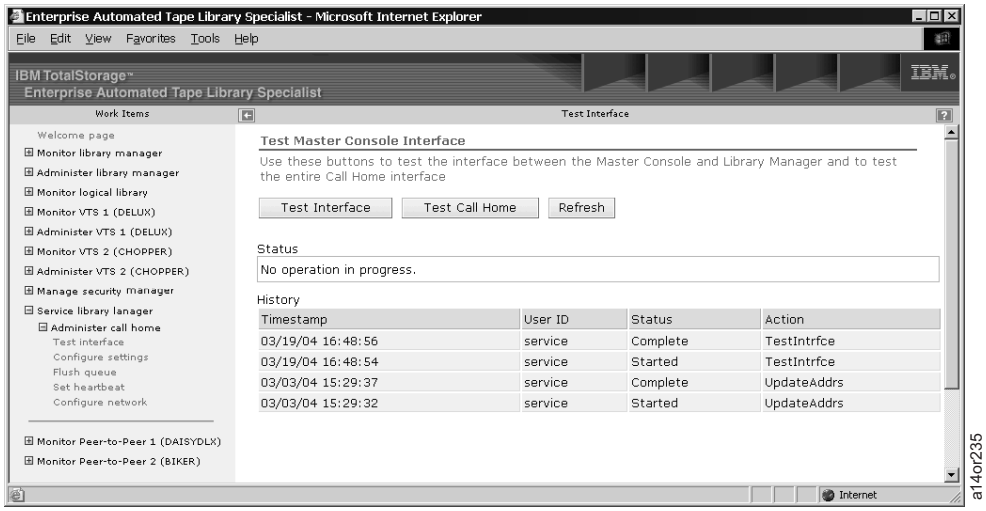

Figure 54. 3494 ATL Web Specialist - Test Interface

2. Wait for the message "The Action Completed Successfully," which indicates that the interface test was successful.

Configure Settings

1. From the “Administer call home” list on the Web Specialist screen (Figure 53 on page 43), click **Configure settings** to see Figure 55. If you are prompted for a userid and password, use the default values of **service** for the userid and **service** for the password. These values can be changed by the 3494 ATL system administrator.
2. Call home communication is a default action that you must choose to disable. To disable call home, click **Send diagnostic data with Call Home**, select the **Disabled** button, click **Save Call Home Settings**.

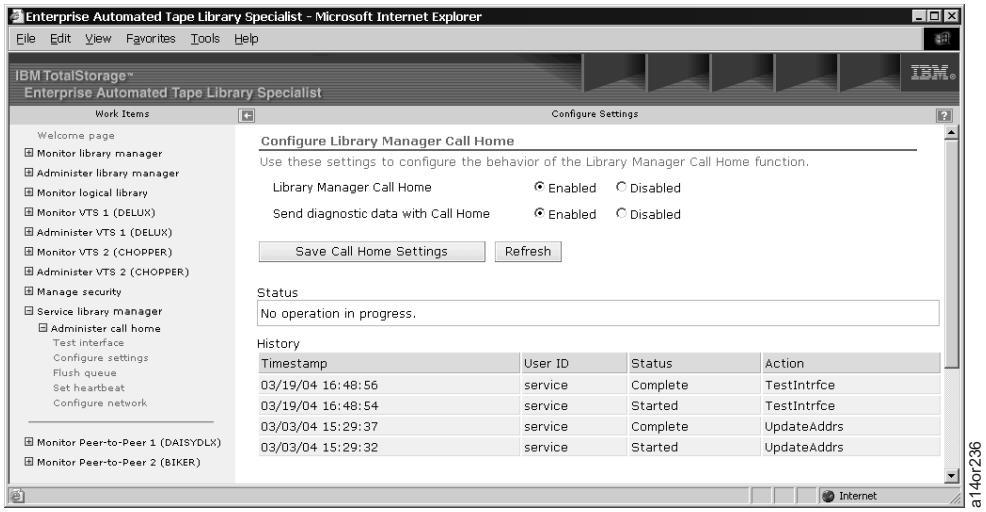

Figure 55. 3494 ATL Web Specialist - Configure Settings

3. Wait for the message “The Action Completed Successfully,” which indicates that the call home settings were saved.

Flush Queue

Note: This function requires that the 3494 ATL be successfully attached to the TSSC. See "Adding Attached System Information" on page 52.

1. From the "Administer call home" list on the Web Specialist screen (Figure 53 on page 43), click **Flush queue** to see Figure 56. If you are prompted for a userid and password, use the default values of **service** for the userid and **service** for the password. These values can be changed by the 3494 ATL system administrator.

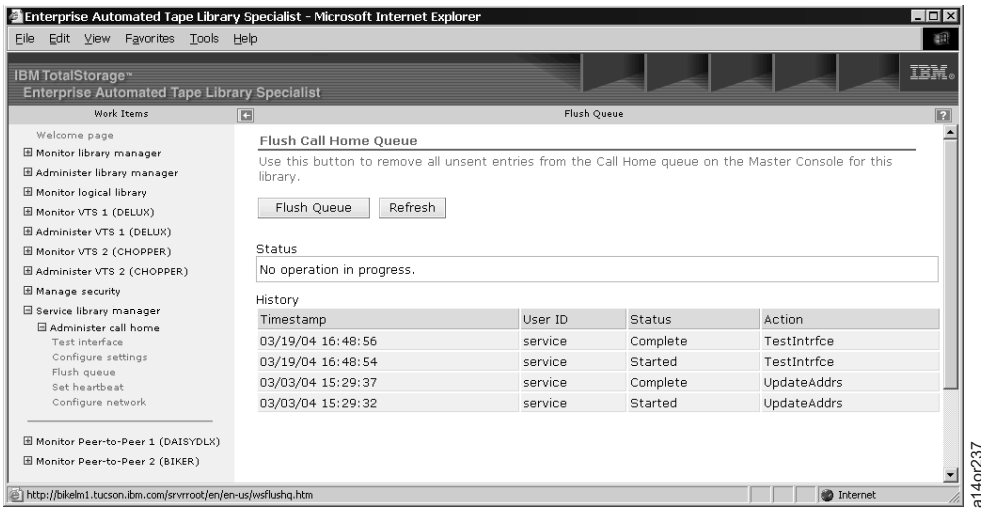

Figure 56. 3494 ATL Web Specialist - Flush Queue

2. Click **Flush Queue** to delete (flush) all the call home records on the TSSC that are associated with this 3494 ATL. All other call home records in the TSSC's call home queue will remain in the queue.
3. Wait for the message "The Action Completed Successfully," which indicates that the TSSC queue settings were deleted.

Set Heartbeat

The Heartbeat Interval Setting is the elapsed time between sending heartbeat call home records.

A heartbeat call home record is verification that the 3494 ATL is operating properly. A heartbeat call home record which does not arrive at its expected interval indicates a problem.

1. From the "Administer call home" list on the Web Specialist screen (Figure 53 on page 43), click **Set Heartbeat** to see Figure 57 on page 46. If you are prompted for a userid and password, use the default values of **service** for the userid and **service** for the password. These values can be changed by the 3494 ATL system administrator.

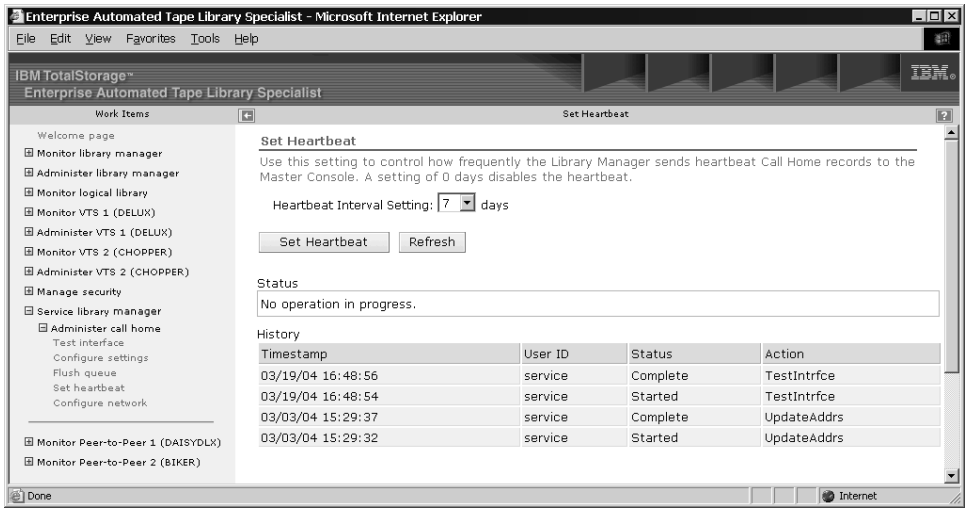

Figure 57. 3494 ATL Web Specialist - Set Heartbeat

2. From the drop-down box, select the number of the Heartbeat Interval Setting days between 1 and 28 days, then click **Set Heartbeat**. Set the Heartbeat Interval Setting to 0 to disable heartbeat call home activity.
3. Wait for the message "The Action Completed Successfully," which indicates that the new heartbeat interval was set.

Configure Interface Parameters

You can use this option to set the IP address and hostname alias of the 3494 ATL on the TSSC network. This option informs the 3494 ATL of the IP Address of the TSSC. You also can use this option to set the IP addresses and hostname aliases for both 3494 accessors when the 3494 ATL is part of a high availability (HA) dual accessor complex.

This task most commonly will be used to reset the hostname alias for the 3494 ATL on the TSSC network for system identification.

1. From the "Administer call home" list on the Web Specialist screen (Figure 53 on page 43), click **Configure Interface Parameters** to see Figure 58 on page 47. If you are prompted for a userid and password, use the default values of **service** for the userid and **service** for the password. These values can be changed by the 3494 ATL system administrator.

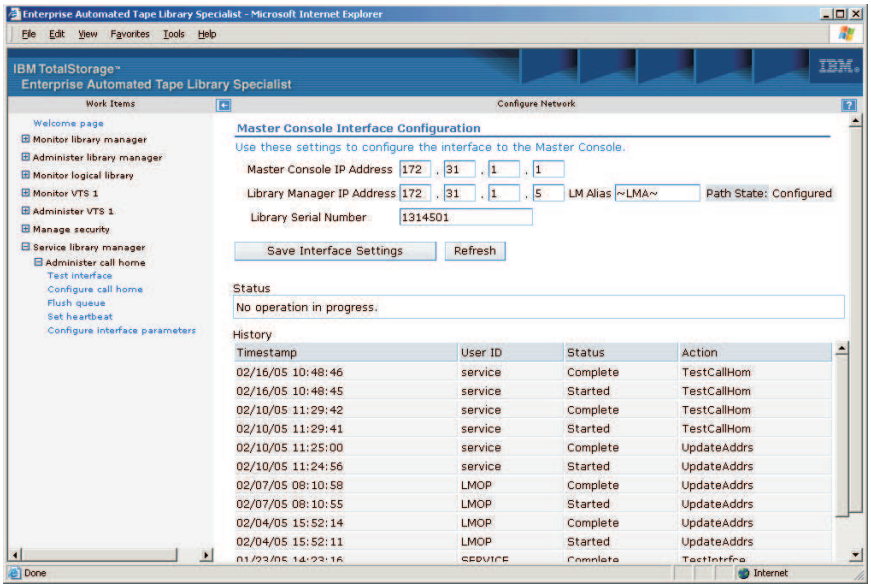

Figure 58. 3494 ATL Web Specialist - Configure Interface Parameters

2. Enter the appropriate values for the IP Addresses and hostnames, then click **Save Network Settings** to update the network information.
3. Wait for the message "The Action Completed Successfully," which indicates that the new heartbeat interval was set.

Note: Avoid changing the TSSC's IP address from the default value of 172.31.1.1. If you must change the TSSC's IP address, change it first on the TSSC. Then change to the new IP address setting on each tape system on the TSSC network.

Tape System Call Home Setup for 3584 Tape Library

You can use CETool to configure the TS3500 tape library for Call Home, see "Using CETool to configure for Call Home." You can use the TS4500 management GUI to configure the TS4500 tape library for Call Home, see "Using the TS4500 management GUI to configure for Call Home" on page 49.

Before you configure the tape library for Call Home, ask the customer to provide the information that is required in Table 12 on page 98.

Using CETool to configure for Call Home

Follow this procedure to configure the TS3500 for Call Home via the TSSC.

Notes:
- CETool is a tool that is run externally from a workstation that is directly connected to a TS3500. CETool is not run from the TSSC.
- Use CETool version 3.10 or later for this procedure.
- For more information about using CETool, refer to the *TS3500 Maintenance Information* manual.

1. Start the CETool program.
2. Double-click the CETool icon on your desktop.
3. When the CETool screen displays, click Configure Remote Service. You see Figure 59 on page 48.

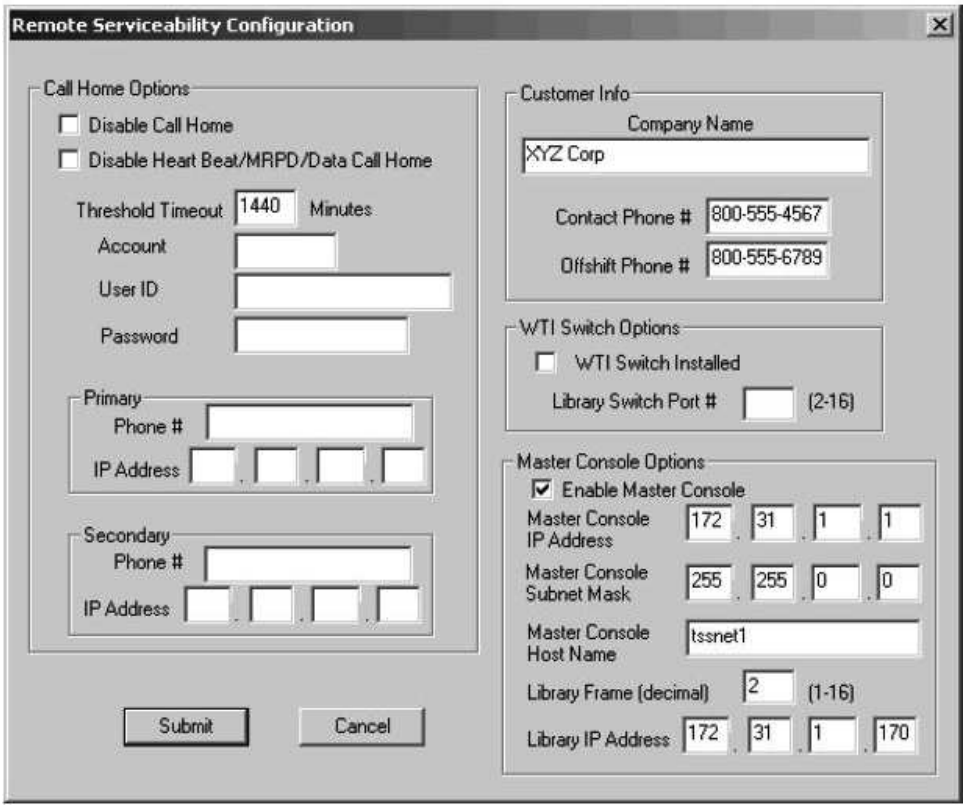

Figure 59. Remote Serviceability via System Console

4. At the Remote Serviceability Configuration screen, ensure that the Disable Call Home check box is **not** checked.
5. Ensure that the Disable Heart Beat /MRPD/Data Call Home check box is **not** checked.
6. Ensure that the Threshold Timeout field is set to 1440 minutes.
7. Enter the customer phone number in the Contact Phone # field.
8. Enter the customer offshift phone number in the Offshift Phone # field.
9. In the Master Console Options area, set the following fields:
   a. Select **Enable Master Console**.
   b. Set the Master Console IP Address field to **172.31.1.1**. This is the default IP address for the TSSC.
   c. Set the Master Console Subnet Mask field to **255.255.0.0**.
   d. Set the Master Console Host Name field to the host name of the TSSC.
   e. Determine the TS3500 frame number for the model Dxx frame containing the Ethernet-capable MCP or MCA that is used for the connection to the TSSC. Type that number in the Library Frame (decimal) field.

      Notes:

      - The Lxx frame is always frame 1, even if an HA1 frame (Service Bay A) is attached.
      - Typically the two-character display on the MCP or the MCA will be flashing 00 and the frame number.

   f. Set the Library IP Address to 172.31.1.170. This is the default IP address for a TS3500 that is attached to a TSSC. If you have more than one TS3500 attached to a single TSSC, increment the last number for each additional library. As an example, the first library would have an IP address of 172.31.1.17**0**, the second library would have an IP address of 172.31.1.17**1**, the third library would have an IP address of 172.31.1.17**2**, and so forth.

10. Select **Submit**.
11. Click **Configure Remote Service** again, and review the configuration data that you entered. Verify that all the data you entered is correct. Exit the CETool program. The TS3500 should now be configured to call home via the TSSC.
12. To verify that the TS3500 is configured to call home via the TSSC, initiate a test call home. At the TS3500 operator panel, click **Menu**, and select **Service** > **Tests/Tools** > **Diagnostics** > **Call Home**.

Using the TS4500 management GUI to configure for Call Home

The default method that is used by the TS4500 tape library for remote support (Call Home) is a broadband connection that uses the Electronic Customer Care (ECC) Call Home function through the IMC. If preferred, you can order feature code 2735 (IMC Non-broadband Call Home) to use a direct modem connection.

Follow this procedure to configure the TS4500 for Call Home via the IMC.

1. Log in to the TS4500 management GUI using the SSR service account and password.
2. From the System page, select **Settings** > **Service**.
3. Ensure that the **Master Console** check box and **Heartbeat call home** check box are selected.
4. Input the values that are provided by the customer and select **Apply**. See Figure 60.

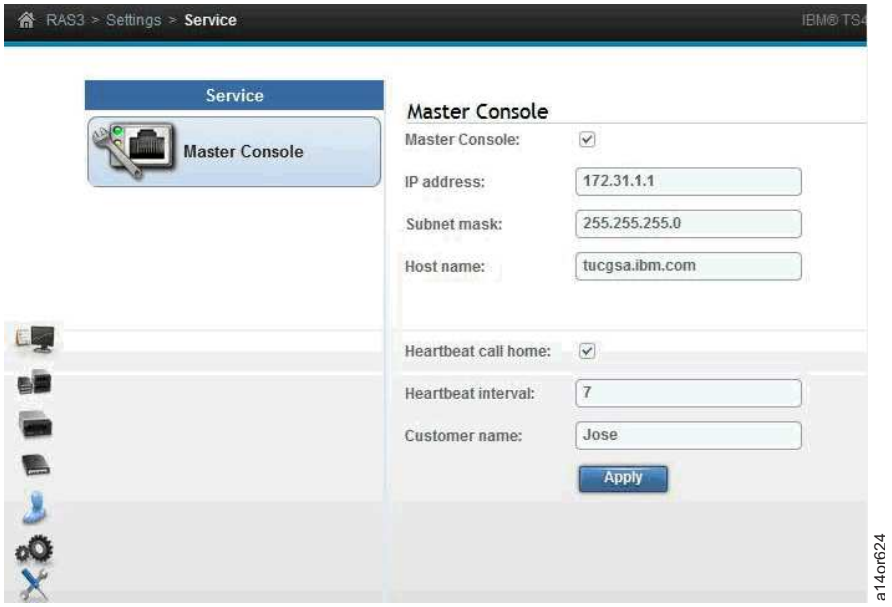

Figure 60. TS4500 IMC Call Home configuration menu

5. To verify that the TS4500 is configured to call home via the IMC, send a test call home.
   a. From the main page, select **Actions** > **Send Test Call Home**.
   b. In the window that displays, select the check box **Add a drive log to the call home test record**, and then click **Send**. The IMC sends the data files to RETAIN.
   c. Verify that the test worked by either accessing RETAIN directly, or by contacting your local support center to find out whether a RETAIN record was opened, indicating that the test was successful. The call home test record will show, **URC = ACCA (Call Home Test)**.

Configuration

Before you begin system console configuration, you must accommodate the following items:

- Attached subsystems should be configured for system console operation. All physical cabling connections should be complete. Subsystem IP addresses should be known, available, and documented on a Console Configuration Sheet (see Table 8 on page 21).
- Have available the telephone number of the analog lines that are attached to the system console modems, as well as tone/pulse and dial out prefix information, and 7-digit, 10-digit, or other local dialing conventions.
- Complete the Console Configuration Sheet (see Table 8 on page 21).

User Login

The system console is ready for user login when you see the System Console Login screen, represented in Figure 61 (microcode level might vary). Two login options are available.

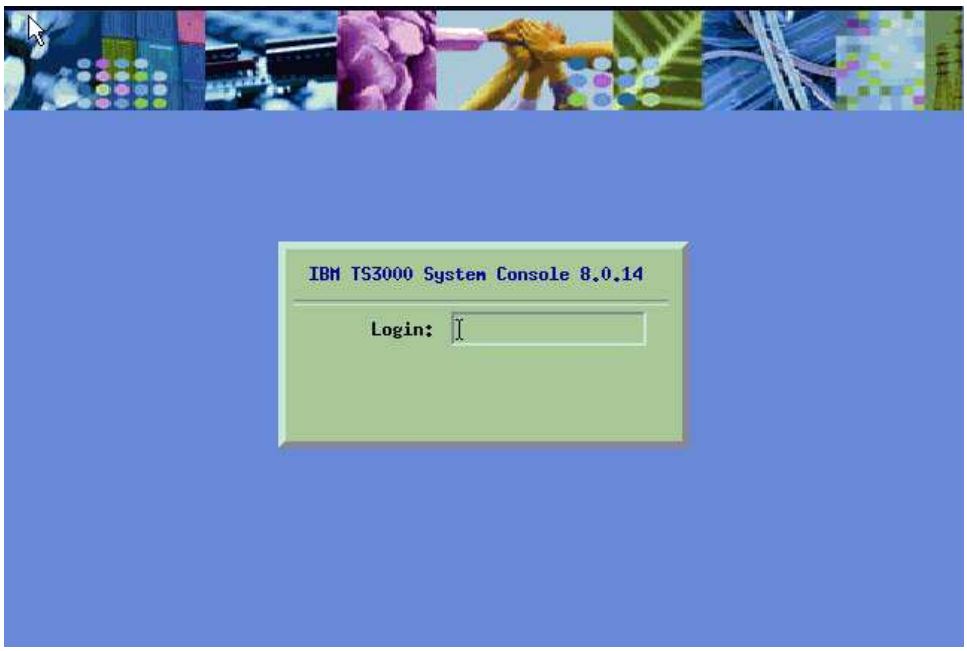

Figure 61. System Console Login screen

Login Options

There are two ways to login to the system console:

- Non-Authenticated
- Authenticated

Non-Authenticated:
For a non-authenticated login, at the System Console Login screen (Figure 61), in the **Login** field type `service` and press Enter. In the **Password** field type `service` and press Enter. This type of login provides access to all console configuration and service tools. This login and password are not valid for subsequent logins to any attached system. Non-authenticated logins are not available for remote access (see "Remote Access Using NetTerm" on page 138).

Authenticated:

Note: If not already done, contact IBM Support for access to the IBM Authentication Server and to be placed on the distribution list for the system console authentication user passwords.

Follow these steps to login to the system console. IBM Support provides your level of authorized access and your personal authentication ID for accessing system consoles and tape systems.

1. At the System Console Login screen (Figure 61 on page 50), in the **Login** field type `Service` (case sensitive) and press Enter. In the **Password** field, type `ibm2serv` (case sensitive) and press Enter.
2. At the prompt "Please enter your Authentication Id", enter your personal authentication ID that was provided by IBM Support. Figure 62 depicts a typical authentication session:

```
Group:  Service   (<- Your level of authorized access)
 Creating user jdoe    (<- Your Authentication ID)
 Account expires on: 07/02/02
 6792-22U-:78-KA5XBA1:1:4:1920:jdoe
 Changing password for user jdoe
 New password:
 Retype new password:
 passwd: all authentication tokens updated successfully
 Initiating broadcast to... vts1
 Initiating broadcast to... vts2
 Initiating broadcast to... vts3
 Initiating broadcast to... vts4
 Waiting for completion...
 vts1: Ok
 vts2: Ok
 vts3: Could not execute remote command
 vts4: Ok

 Please logout and log back in with jdoe and password abc1zyxw(<- New Password)

 Press [c] to continue.
```

Figure 62. Authentication Menu – Sample

3. After successfully creating a user ID and password, the system attempts to copy them to all tape systems attached to the console **(making it possible to login to each device with the same user id and password)**. It is possible that the attempt to copy the user id/password will not be successful. This process will always fail on VTS/VTC systems with code levels below 2.26, and for all attached 3494 ATLs.

   Note: When the process of copying your userid/password to attached tape system is not successful, you must either authenticate separately for these systems (VTS code level 2.26 or above, A60 code level 1.16 or above, any 3592 J70, A60, or C06), or login by using previous access methods (VTS code level 2.25 and below, all 3494 ATL).

   The following is a list of possible responses to the process of attempting to copy user id/password to attached tape systems. Responses other than "Ok" are not successful responses.

   - Ok
   - Process timed out
   - System subroutine failure
   - Could not create socket
   - Could not establish connection
   - Could not send data
   - Invalid /etc/hosts file
   - Invalid request
   - Could not validate client
   - Could not send data file
   - Could not receive data file
   - Could not execute remote command

   Notes:

   - **Make a note of your password!** If you lose your password, you must authenticate again. Also, you are able to use your password to log in to attached subsystems (if broadcast was successful).

- Verify the results that appear following “Waiting for completion”. This indicates the success of copying your password to systems that are attached to the console.
- Your userid and password will be valid for the time indicated on the console, and all systems that indicate “Ok” after “Waiting for completion”.
- The “Waiting for completion” process should take no longer than 5 minutes before timing out. During the “Waiting for completion” process, you can skip the results of the broadcast by simultaneously pressing **Ctrl + C**. If you press **Ctrl + C**, you are NOT notified of a failed username broadcast.

4. Enter `c` to continue. You are returned to the System Console Login Screen.
5. Login to the console using the ID and password posted on the screen. The System Console Main Menu shown in Figure 63 appears.

   In system console code level 8.0.x , a Service Summary panel will appear. The Service Summary panel displays the following information:

   - AOS Status
   - ECC/Call Home Status
   - Miscellaneous Messages
   - Recent PMRs
   - Recent Failed Call Homes
   - Recent VTD_Exec Downloads

   Note: Some inaccurate information might display if the Console Settings and Call Home Settings have not been configured.

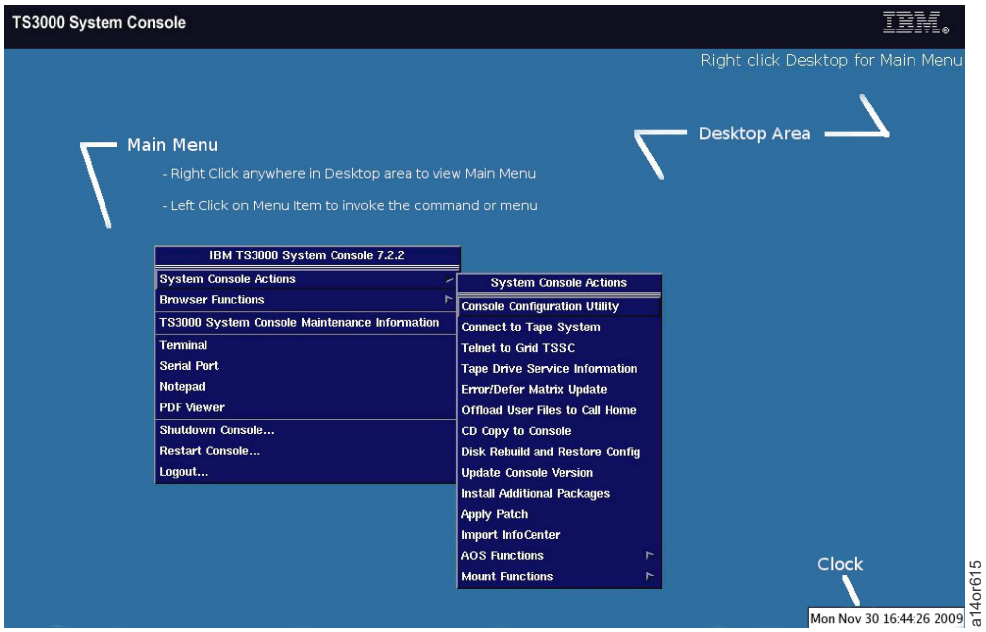

Figure 63. System Console Main Menu. Notice that the System Console Main Menu appears after you right-click inside the Desktop Area.

Adding Attached System Information

1. Right-click from anywhere in the Desktop to view the Main Menu that is shown in Figure 63.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**. You see the Username and password screen that is shown in Figure 64 on page 53.

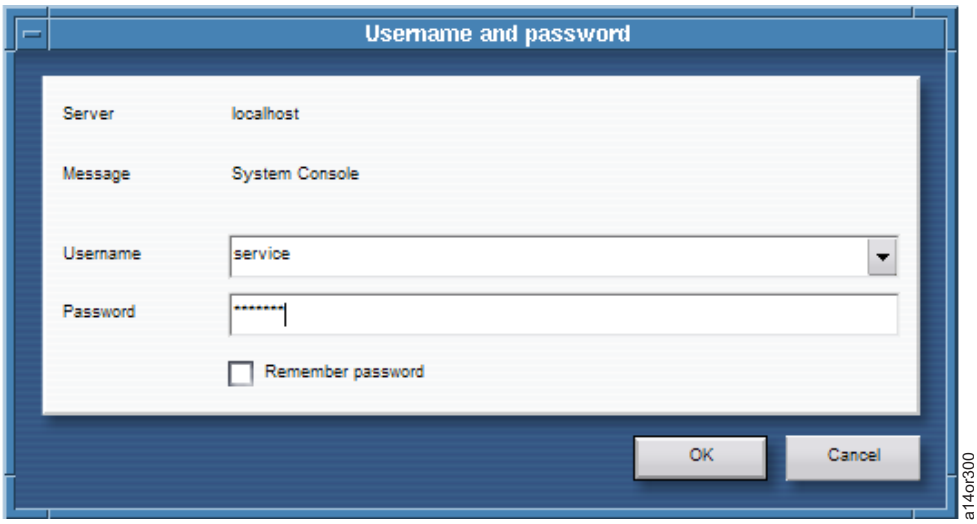

Figure 64. Login Username and Password Screen

3. Type **service** in the Username field, type **service** in the Password field, then click **OK** to start the Console Configuration application. You see the Console Configuration Utility screen that is shown in Figure 65.

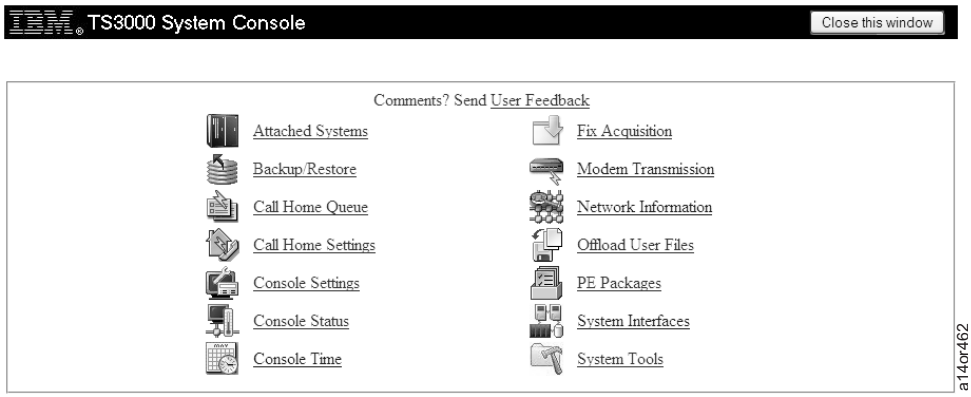

Figure 65. Console Configuration Utility Screen

4. Click **Attached Systems**. You see the screen that is shown in Figure 66 on page 54.

   Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to add or manage attached systems (**TSSC Menus** > **Attached Systems** > **Add Attached System**). Refer to "RAS Menus" on page 177.

5. To add a new system, enter the system IP address in the input fields next to Add System, and click **Add System**. A warning dialog box appears, informing you that it might take several minutes. Click **OK**.

   You can select numerous systems by using the check boxes to the left of the attached systems.
   - Use the Delete Selected, Edit Selected, and Query Selected buttons to work with the list of systems.
   - Use the Query All button to query all currently attached systems.

   If the application can establish contact with the attached system, the Device-Model, Serial Number, Host Name, and Subnet Mask fields are filled in automatically. Otherwise, these fields are filled in with "NA."

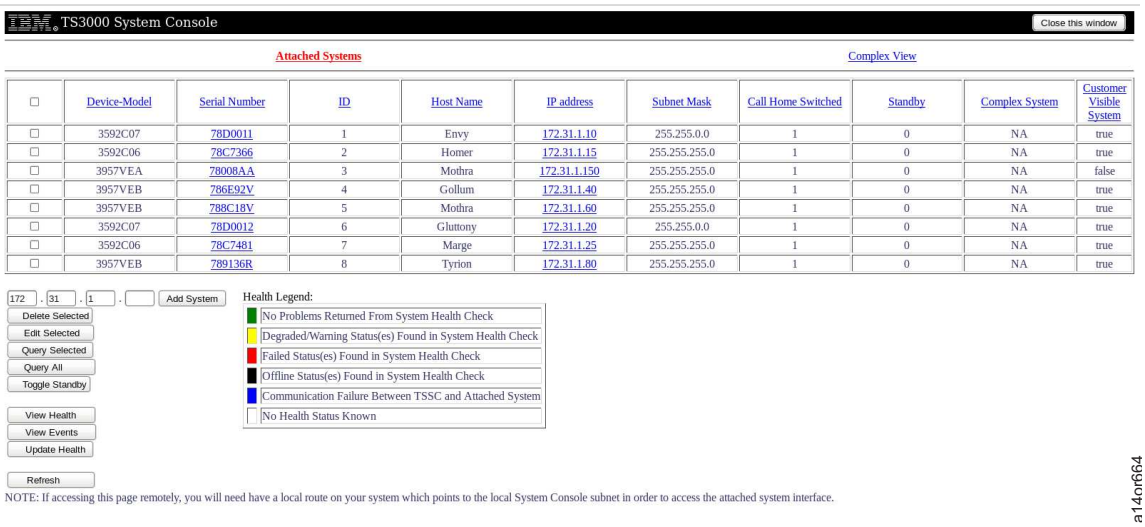

Figure 66. Add System Screen

6. You can set the system console to periodically check for responses from attached systems (see Step 13 on page 92).

   Call home records will not be sent for systems that are marked as Standby.

   To set a system as Standby or to change a Standby setting, select the appropriate system by using the check boxes to the left of the attached systems. The numeral '1' in the Standby column indicates that the system is in standby mode. A '0' in the Standby column indicates that the system is not in standby mode.

   After you select the appropriate systems, you can toggle between the two settings by repeatedly pressing the button that is labeled Toggle Standby.
7. When querying many systems at one time, it can take from several minutes to as long as an hour for the attached system data to be retrieved. If you have a 3958-AP1 or 3958-DE2 configuration, continue at step 4 in "Adding a Complex System." If all systems have been added, click **Close this window** to close the screen.

   Note: After you add an attached DS6000 system, you must log out and log back in again to have access to the system console DS6000 menu options.

   Note: In system console code 7.4.x and later, the "Attached Systems" menu differs from the TSSC Web GUI and the Customer Web GUI. Systems that are attached might not be present and will need to be added in the Customer Web GUI. Refer to Figure 236 on page 206.

Adding a Complex System

Use this task to add a complex system if you have a 3958-AP1 or 3958-DE2 configuration.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
4. Click **Attached Systems**. You see the screen shown in Figure 66
5. Click the **Complex View** link in the upper right corner.
6. Select the type of Complex System you are adding from the drop down list, as shown in Figure 67 on page 55.

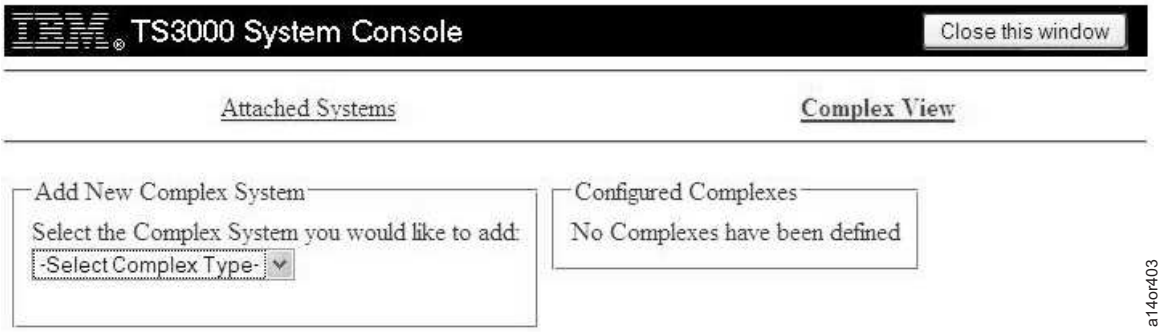

Figure 67. Complex System Screen.

7. Enter the serial number and host name of the complex system.
8. Enter the frame IP range for the complex system.

   Note: If the systems you are creating the complex for are 172.31.1.100 and 172.31.1.105, then enter 100 for the frame IP range. The TSSC will find the correct systems for creating the complex with, and add them to the complex. If the 3958-AP1 complex is a single 3958-AP1 cluster, it will only add the one system to the complex.
9. Click the **Add Complex** button, when the system is added correctly. You will see a message confirming the complex system was added successfully; the screen will return with the new system shown on the right.

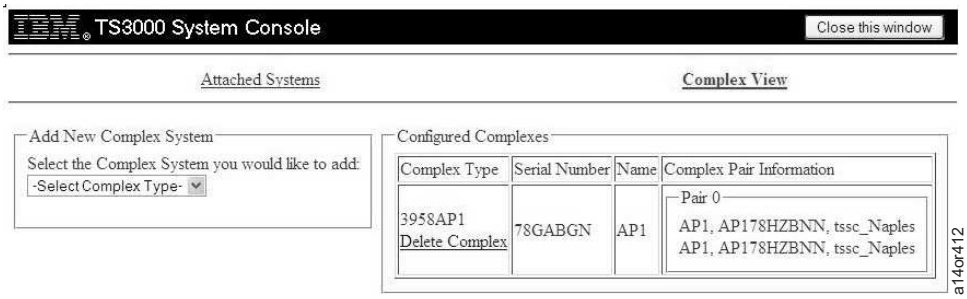

Figure 68. Add New Complex System Screen - 1.

10. To delete a complex system click the **Delete Complex** link below the Complex Type.

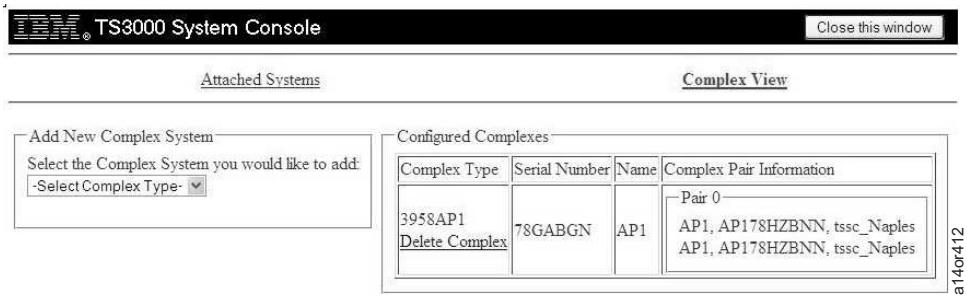

Figure 69. Add New Complex System Screen - 2.

11. When all systems have been added, click **Close this window** to close the screen.

Adding a 3584 Model SC1 Complex System

Use the following procedures to add a 3584 model SC1 shuttle complex system.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
4. Click **Attached Systems**.
5. Click the **Complex View** link in the upper right corner. You see the screen that is shown in Figure 70.
6. Under **-Select Complex Type-** select **3584 Complex** from the drop-down list.

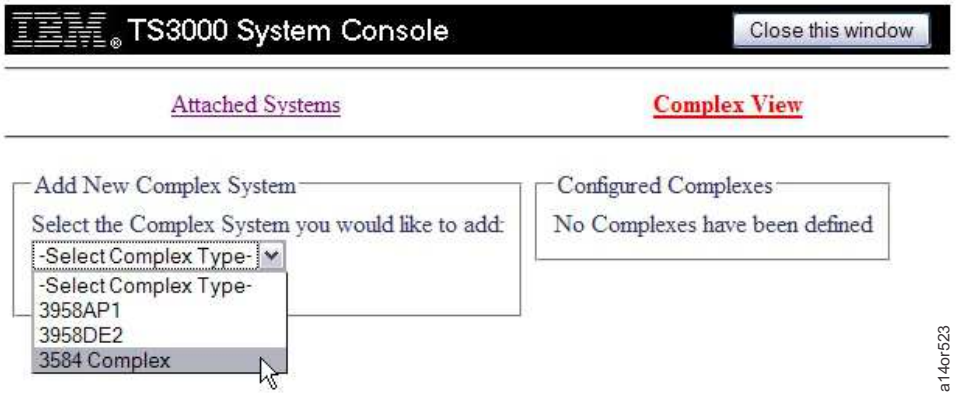

Figure 70. 3584 Complex Screen.

7. Enter a **3584 Complex Name** and click **Add Complex**.

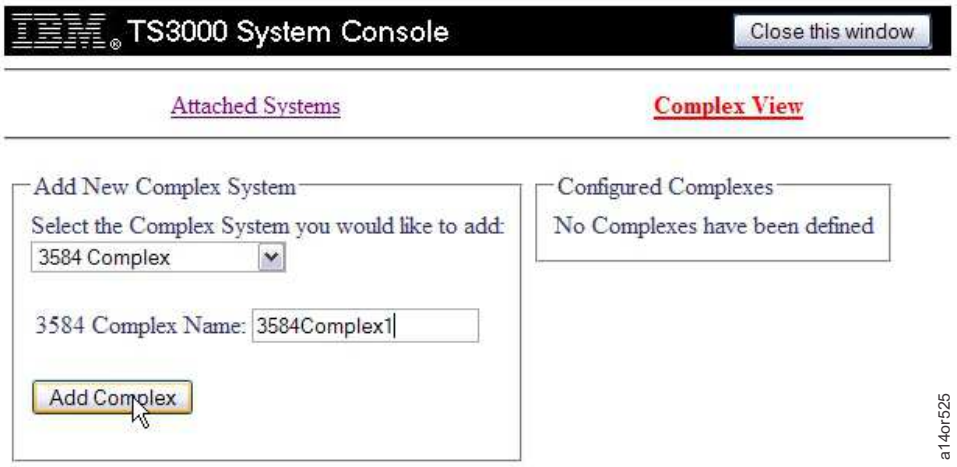

Figure 71. Add Complex Screen

The following screen will be displayed showing the complex just added.

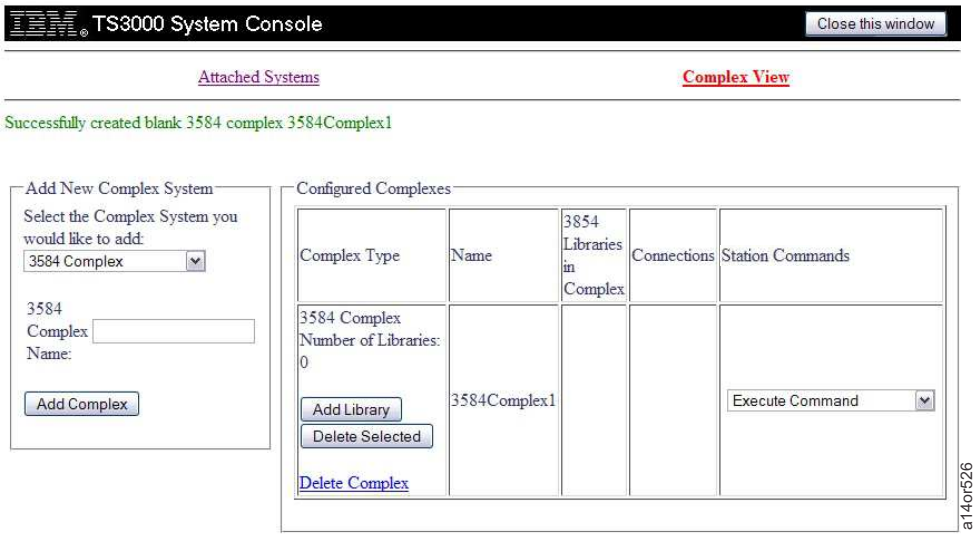

Figure 72. 3584 Complex Added.

8. Click **Add Library**.

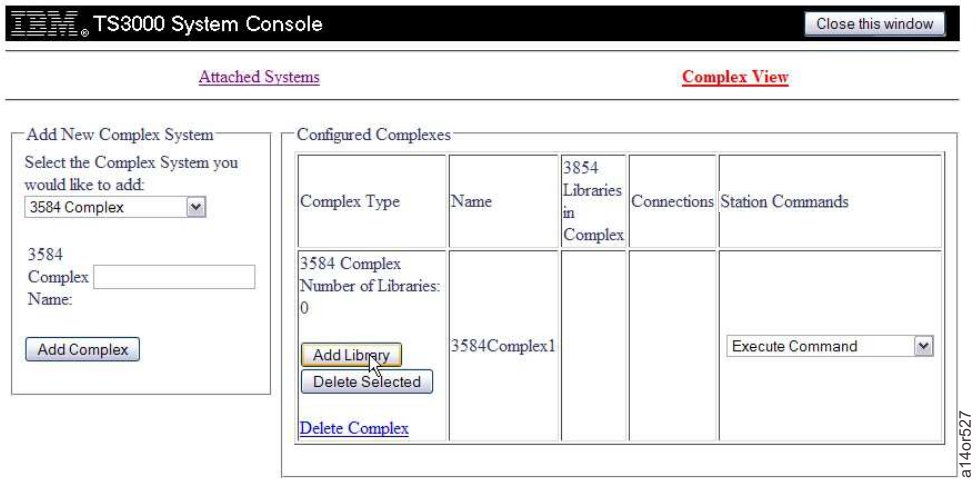

Figure 73. Add Library.

9. Under "Add Library to 3584 Complex" click on the **Select 3584** drop-down box and select the first library in the shuttle span. Click **Apply**.

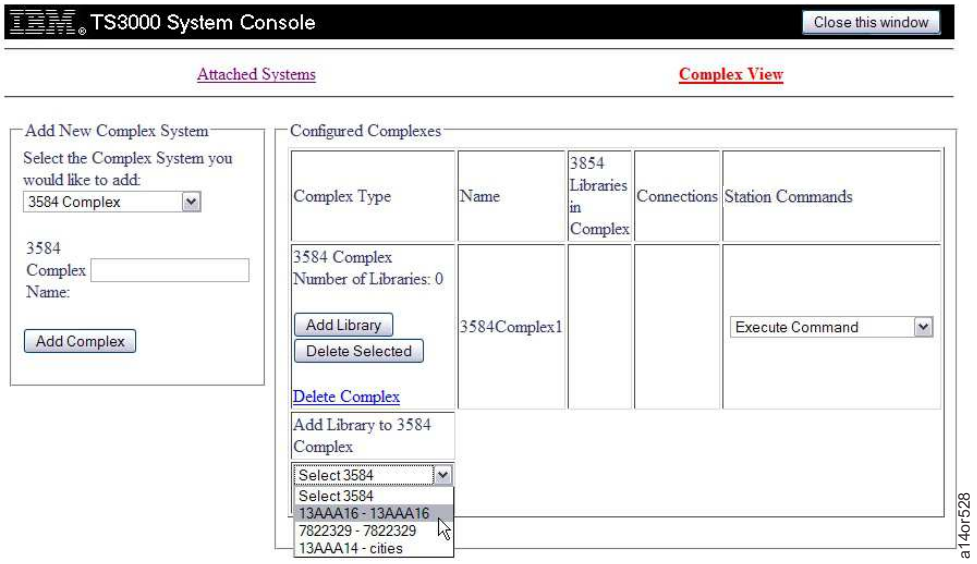

Figure 74. Add Library to 3584 Complex.

10. The following screen shows the added library.

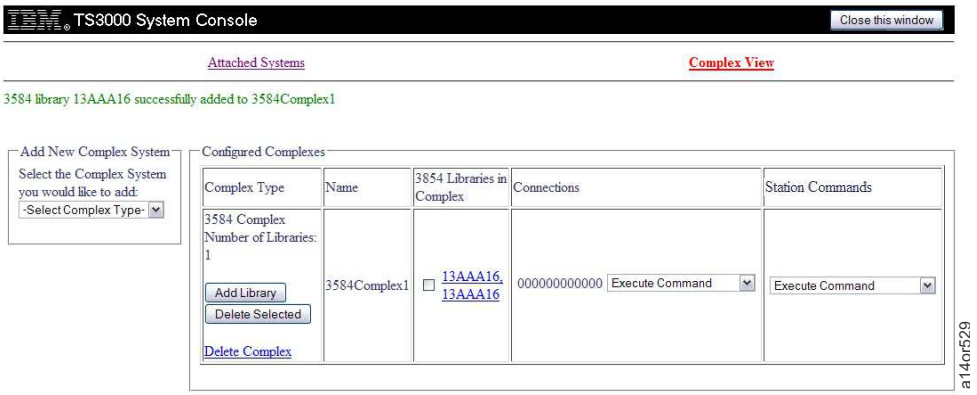

Figure 75. Add Library.

11. Select **Add Library** to add the next 3584 library in the shuttle span. The screen now shows TWO libraries.

    Note: To delete a library, select a box under "3584 Libraries in Complex" and click **Delete Selected**.

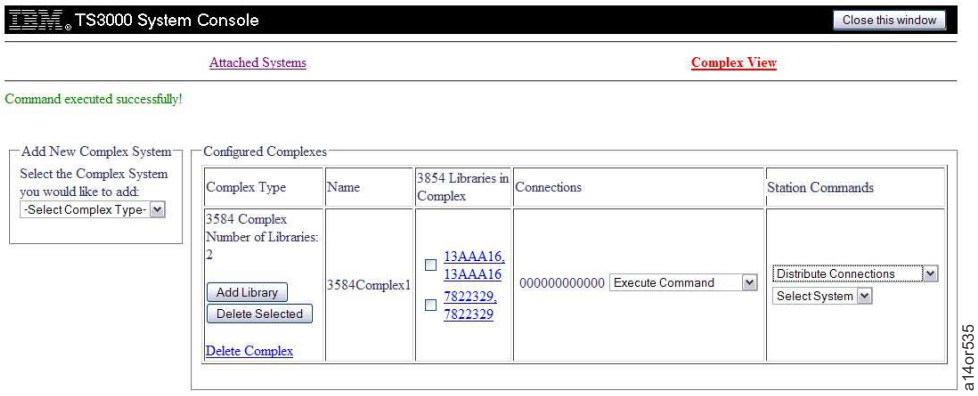

Figure 76. Add Second Library in Shuttle Span.

12. Click on the serial number of each library in the "3584 Libraries in Complex" column to bring up the Web Specialist for each library. Select **Library** > **Shuttle Stations**. Verify that the shuttle stations are assigned to the correct logical library for each library.
13. See the following screen. In the "Station Commands" box, use the **Execute Command** drop-down box to select **Discover Connections**.

    Note: The Discover Connections command is a process where the shuttle car moves and discovers all the stations in a shuttle connection. It then sends the data gathered to all other libraries in the shuttle span.

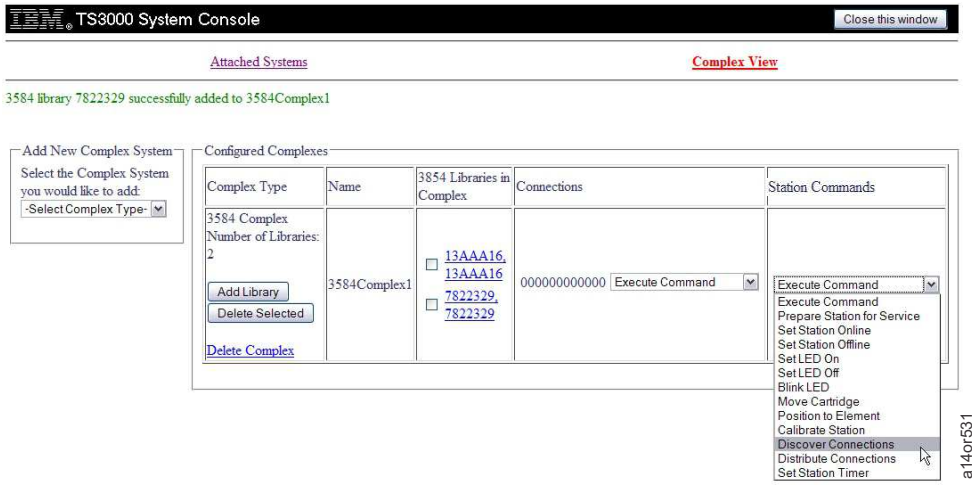

Figure 77. Discover Connections.

14. In the “Station Commands” box, under the **Select System** drop-down box, select the IP address of the library where the shuttle car is currently located.

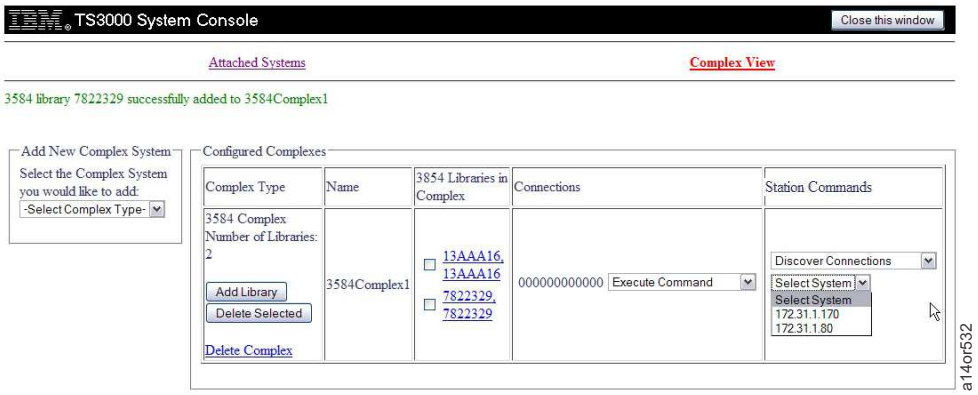

Figure 78. Select System Where Car Located.

15. See the following two screens. Under **Select Station** drop-down box, select the station number. In the following example the station is located in frame 3. Service Bays are **NOT** included in the frame count.
16. Click **Execute** and **OK**.

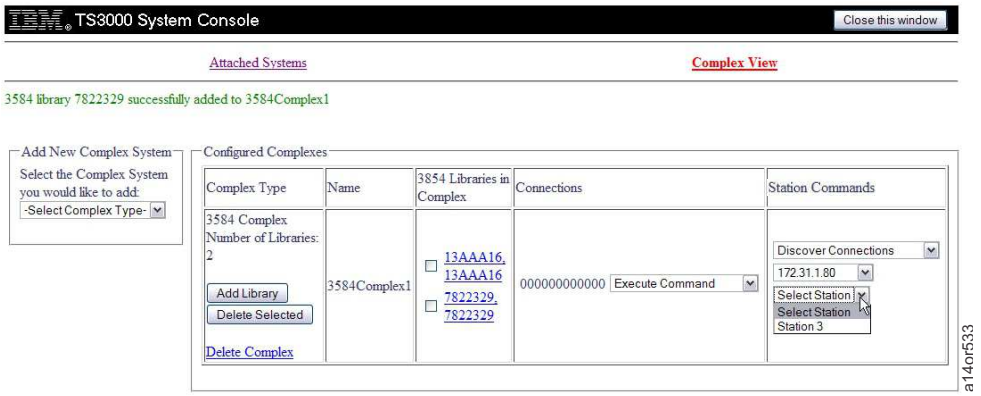

Figure 79. Select Station.

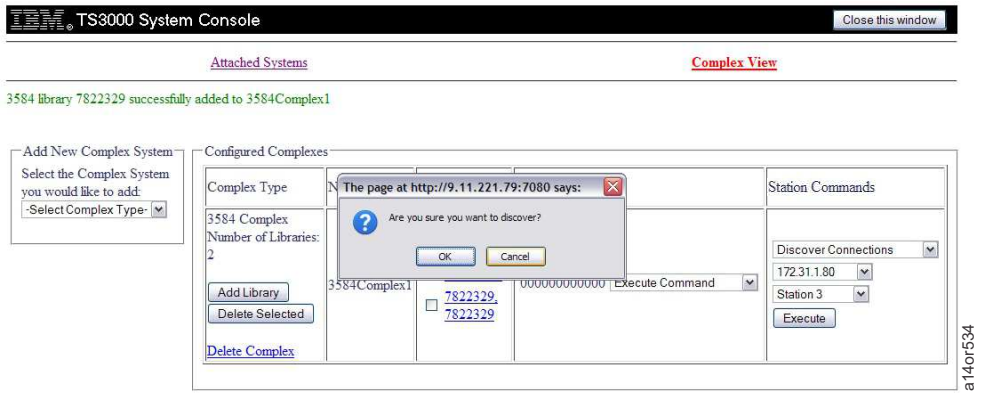

Figure 80. Execute Select Station.

17. See the following screen. In the "Station Commands" box, use the **Execute Command** drop-down box to select **Distribute Connections**.

    Note: The Distribute Connections command is a process where the shuttle car sends the data from the Discover process to each library in the shuttle span.

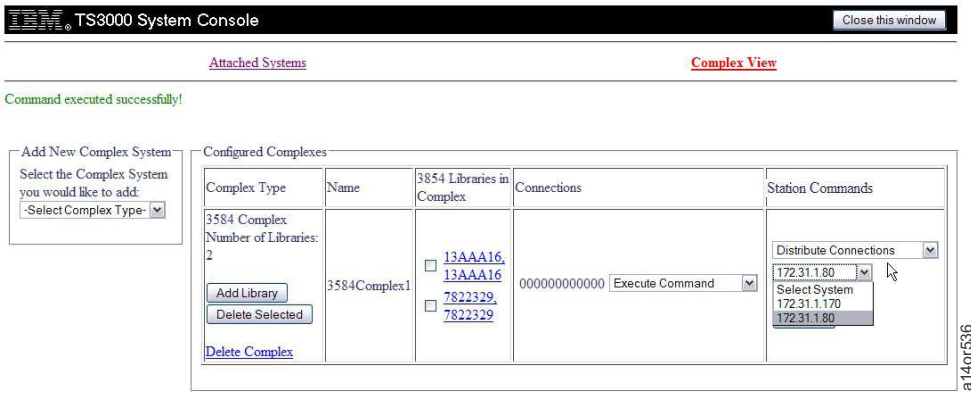

Figure 81. Distribute Connections - Select Next Library in Shuttle String.

18. In the "Station Commands" box, under the **Select System** drop-down box, select the IP address of the library where the shuttle car is currently located.
19. See the following screens. Under **Select Station** drop-down box, select the station number. In the example below the station is located in frame 3. Service Bays are **NOT** included in the frame count.
20. Click **Execute** and **OK**.

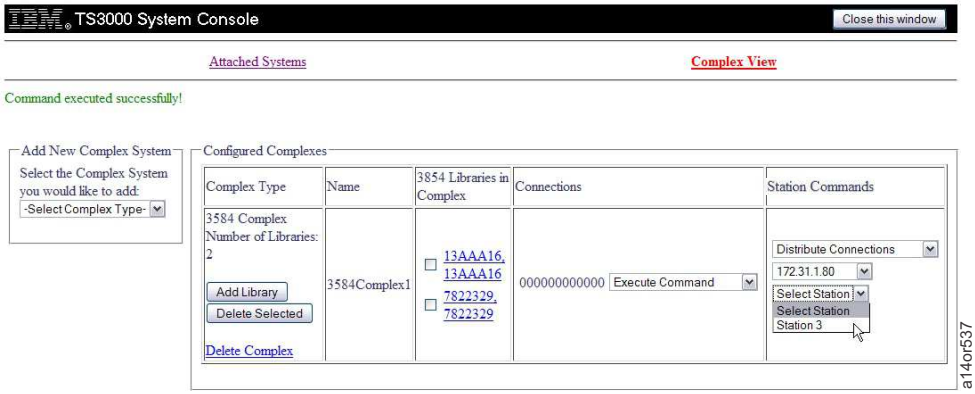

Figure 82. Select Station.

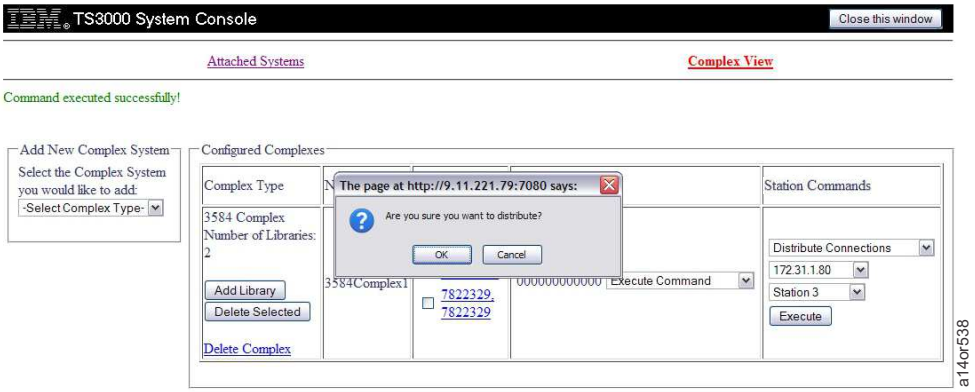

Figure 83. Select Station - Execute.

21. Repeat steps 13 on page 59 through 20 on page 61 for each shuttle span.
22. Ask the customer to run a host discovery command (SCS). The shuttle map is now created.
23. See the following screens. Go to the Web User Interface of each library in the span. Click **Shuttle View X** where 'X' is the selected library, and verify the configuration is correct.

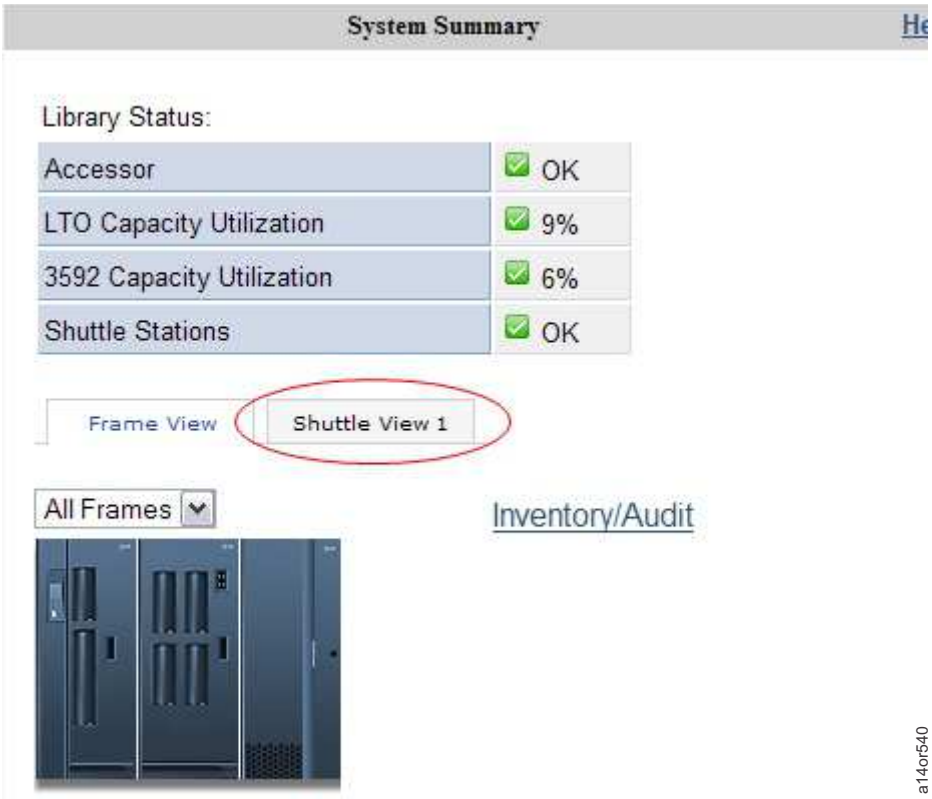

Figure 84. Web UI Shuttle View.

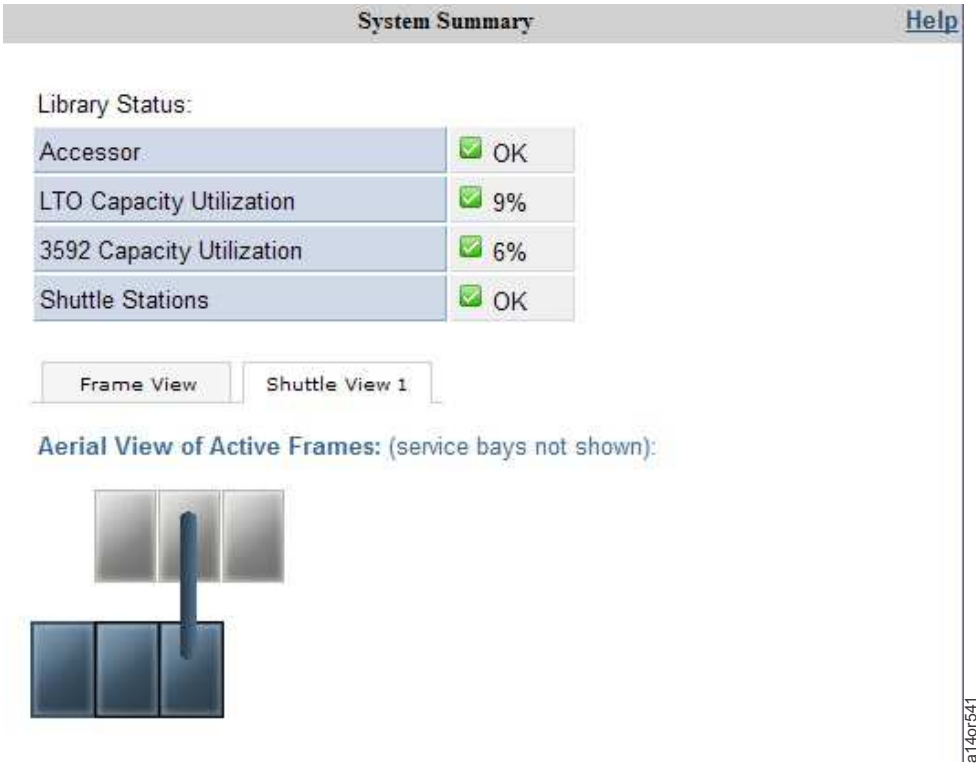

Figure 85. Web UI Shuttle View.

24. If the configuration and connections are good, this verifies that the host discovery was successful.
25. Under **Connections**, use the **Execute Command** drop-down box to select **Connection Verify** which will retrieve and move a diagnostic cartridge to each station in the connection. Do this for each span in the complex. Connection Verify commands can be run concurrently.

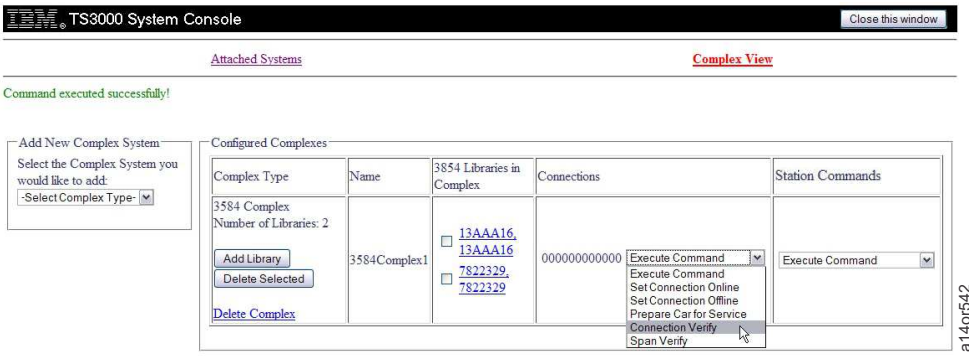

Figure 86. Connection Verify.

26. Under **Connections**, use the **Execute Command** drop-down box to select **View/Set Connection Serial**. Type in the serial number of the connection on the label located on the base station (where the agency label is located) and click **Update**.
27. Do the previous step for each connection in the complex.

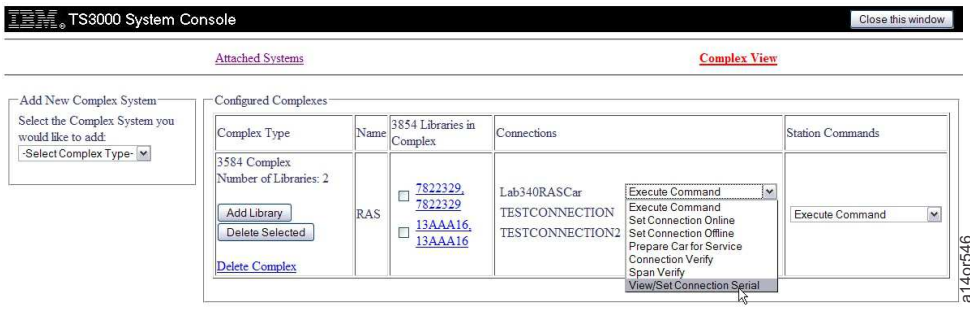

Figure 87. View/Set Connection Serial.

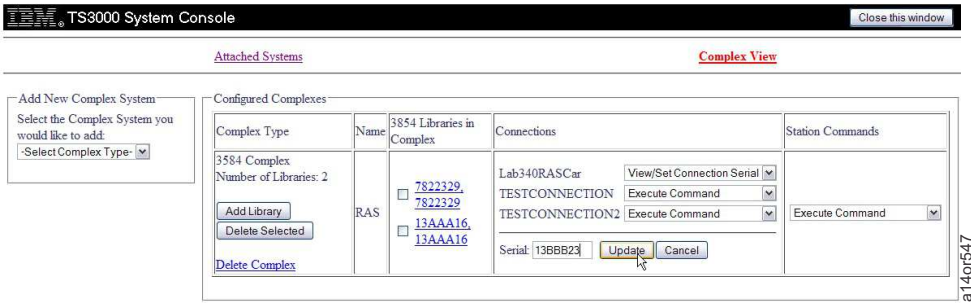

Figure 88. Connection Serial Number.

28. When completed, click **Close this window** to close the screen.
29. After successful completion, turn the system over to the customer.
30. Go back to the Shuttle Feature Code install instructions to complete the installation.

Installing the DS6000 Graphical User Interface

Use this procedure to install the DS6000 graphical user interface (GUI). Perform this procedure only if you are attaching a TS7740 (3957) with a 3956 CC6 to the TSSC.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **Browser Functions** > **DS6000 GUI Functions** > **Install GUI**. A terminal window appears, and prompts you to insert the DS6000 Graphical User Interface CD-ROM.

   Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to install the GUI. Refer to "RAS Menus" on page 177. The **RAS Menu** will execute the same functions as the system console version. The same screen shown in Figure 89 appears if the RAS Menu option is selected (**TSSC Menus** > **External GUI Options** > **DS6000 GUI Options** > **Install DS6000 GUI**).

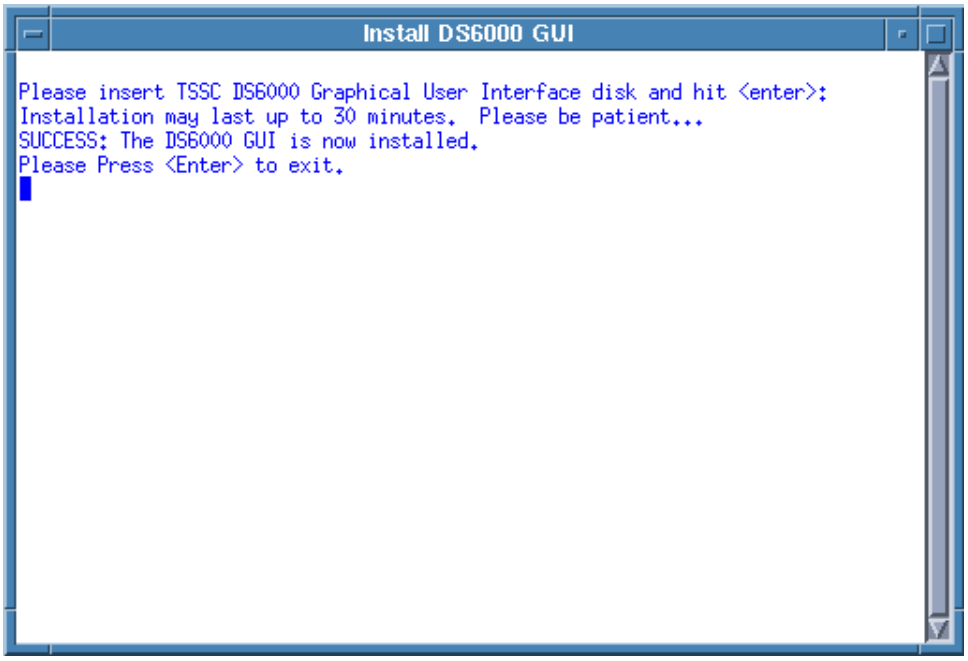

Figure 89. Install DS6000 GUI

3. Insert the CD-ROM, and press **Enter**. Installation of the GUI begins. The installation can take up to 30 minutes to complete.
4. The message "SUCCESS" displays when the installation is complete. Remove the CD-ROM from the TSSC.

   Note: After you add an attached DS6000 system, you must log out and log back in again to have access to the TSSC DS6000 menu options.

Installing the Storage Manager graphical user interface

Use this procedure to install the Storage Manager graphical user interface (GUI).

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **Browser Functions** > **Storage Manager GUI Functions** > **Install GUI**.

   Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to install the GUI. Refer to "RAS Menus" on page 177. The **RAS Menu** will execute the same functions as the system console version. (**TSSC Menus** > **External GUI Options** > **Storage Manager Options** > **Install Storage Manager**)
3. Insert the CD labeled *Storage Manager Graphical User Interface* into the DVD drive on the system console.
4. Wait for the drive LED light to stop flashing. Then, press **Enter** to start the installation process.

   Note: Installing the Storage Manager GUI can take up to 30 minutes.
5. Select the **Language** and click **OK**.
6. Wait for the DS Manager to be configured, then click **Next**.
7. Select **Next** at the Copyright Statement screen.
8. Select **I Accept** on the License Agreement screen and select **Next**.

   Notes:
   - Wait until the process completes, it might take up to 5 minutes for the License Agreement to display. When the process completes, the buttons are enabled.
   - After this step, you might be presented with an Overwrite Warning screen. Press **OK** to continue.
9. Select **Typical (Full Installation)** on the Select Installation Type screen and select **Next**.
10. Select **Install** on the Pre-Installation Summary screen.
11. Select **Done** on the Install Complete screen.
12. When the screen displays `SUCCESS: The DS Storage Manager GUI is now installed`, the installation is complete. Remove the CD from the system console.
13. Press **Enter** to close the dialog box for **Install Storage Manager GUI**.

Installing the ProtecTIER Manager Graphical User Interface

Use this information to install the ProtecTIER Manager graphical user interface (GUI). Use this information only if you are installing a 3958 system to the TSSC.

To read about launching the GUI, see "Launching the ProtecTIER Manager Graphical User Interface" on page 213.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. Select **Browser Functions** > **ProtecTIER Functions** > **Install GUI**. You are prompted to insert the CD into the TSSC CD drive. Press **Enter**. Installation of the GUI begins.

   Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to install the GUI. Refer to "RAS Menus" on page 177. The **RAS Menu** will execute the same functions as the system console version. (**TSSC Menus** > **External GUI Options** > **ProtecTIER GUI Options** > **Install ProtecTIER GUI**)
3. You see the Introduction screen in Figure 90 on page 67. Click **Next**.

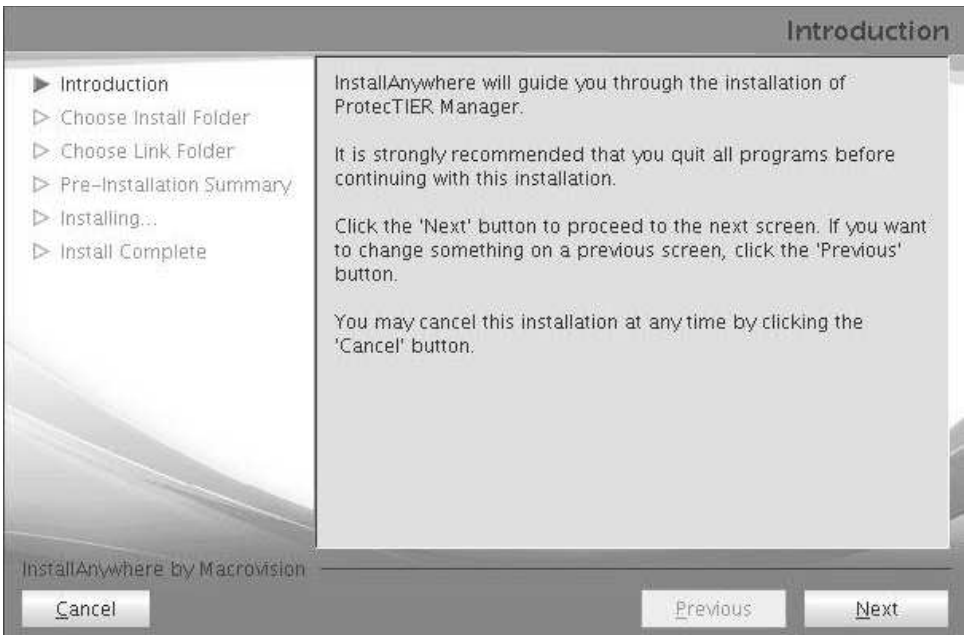

Figure 90. Introduction to ProtecTIER Manager InstallAnywhere Screen

4. Read and accept the terms that are depicted on the License screen (not shown). Select **I accept both the IBM and the non-IBM terms**, and click **Next**.
5. You see Figure 91. This screen shows you where the ProtecTIER Manager software will be installed.

Figure 91. Pre-Installation Summary Screen

6. Click **Install** to continue. You see an Installing ProtecTIER Manager screen (not shown).
7. When the installation successfully completes, you see an Install Complete screen (not shown). Click **Done**.

Upgrading the ProtecTIER Manager Graphical User Interface

Use this information to upgrade the ProtecTIER Manager graphical user interface (GUI). Use this information only if you are installing a 3958 machine to the TSSC.

To read about launching the GUI, see "Launching the ProtecTIER Manager Graphical User Interface" on page 213.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. Select **Browser Functions** > **ProtecTIER Functions** > **Upgrade GUI**.

   Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to upgrade the GUI (**TSSC Menus** > **External GUI Options** > **ProtecTIER GUI Options** > **Upgrade ProtecTIER GUI**). Refer to "RAS Menus" on page 177.
3. You are informed that the existing version of ProtecTIER Manager will be uninstalled before updating. Continue by typing **y** and press **Enter**.
4. The uninstall program launches and you see the Uninstall ProtecTIER Manager window that is shown in Figure 92. Click **Uninstall**.

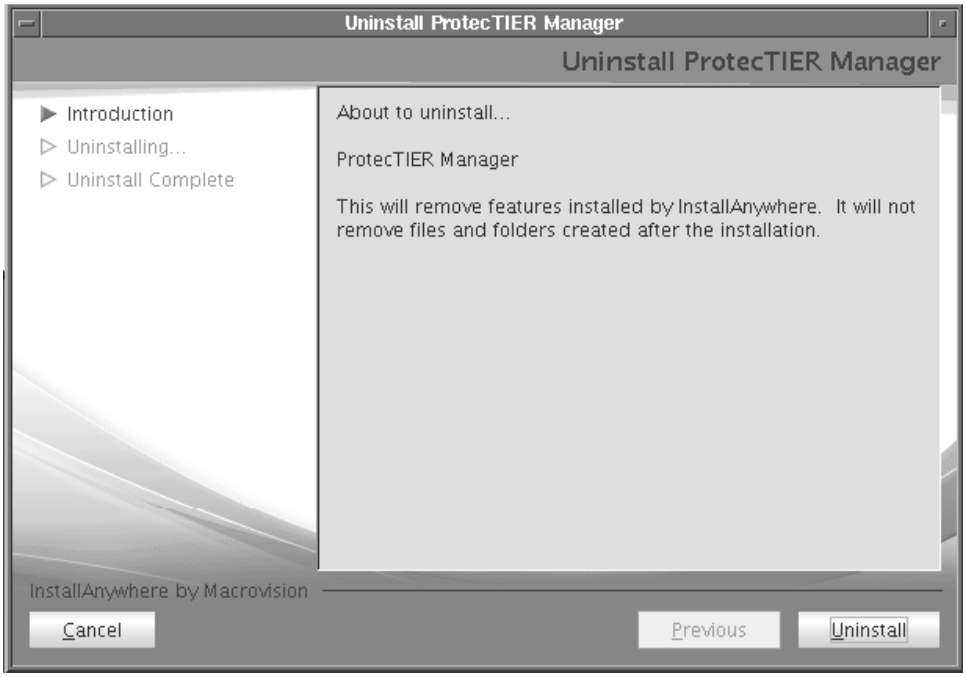

Figure 92. Uninstall ProtecTIER Manager Window

5. A message is displayed stating that all items were successfully uninstalled. Click **Done** to close this window.
6. When prompted to insert the ProtecTIER Manager Graphical User Interface disk, insert the CD and press **Enter**.
7. You see Figure 93 on page 69. Click **Next**.

Figure 93. Introduction Screen

8. Read and accept the terms that are depicted on the License screen (not shown). Select **I accept both the IBM and the non-IBM terms**, and click **Next**.
9. You see Figure 94. This screen shows you where the ProtecTIER Manager software will be installed.

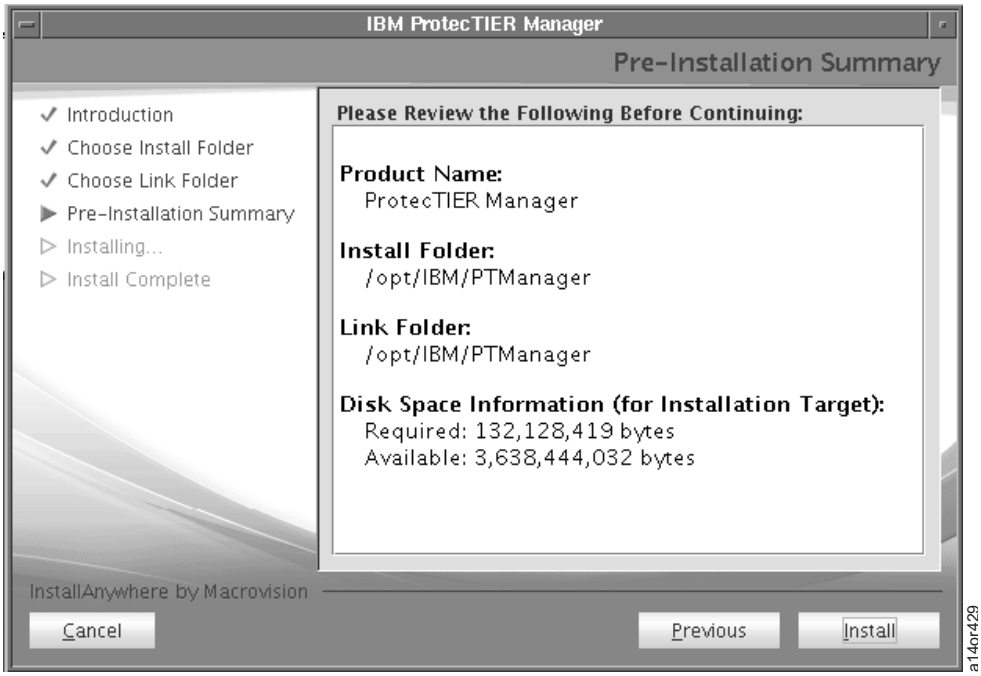

Figure 94. Pre-Installation Summary Screen

10. Click **Install** to continue. You see an Installing ProtecTIER Manager screen (not shown).
11. When the installation successfully completes, you see an Install Complete screen (not shown). Click **Done**.

Console Settings

The TSSC system console comes pre-configured with the default IP address 172.31.1.1, subnet mask 255.255.0.0, and hostname 'tssnet1' on the Internal Network Interface. The IMC system console comes pre-configured with the default IP address 172.31.1.2, subnet mask 255.255.0.0, and hostname 'tssnet1' on the Internal Network Interface (see Figure 95 on page 71). This interface is used to communicate with the tape subsystems, as seen in Figure 2 on page 6. Normally, you do not need to change these settings, since the system console operates on a dedicated network.

Note: If you change the hostname from the default “tssnet1”, it must conform to the following guideline: A “name” (Net, Host, Gateway, or Domain name) is a text string up to 63 characters that contains only ASCII letters a-z (case-insensitive), digits (0-9), and hyphen (-).

The system console External and Grid Network Interfaces do not come pre-configured. You must use the Console Settings dialog box to set up these interfaces, if you are to use Ethernet call home method or Autonomic Ownership Takeover Manager function.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.

   Note: To log in remotely from another system console, you must obtain an Authentication ID (see “Login Options” on page 50). Launch your browser, and enter the system console location into the Address field. Enter your Authentication ID into the Username field and your password into the Password field. Click **OK** to start the Console Configuration utility.
4. Click **Console Settings**. You see Figure 95 on page 71.

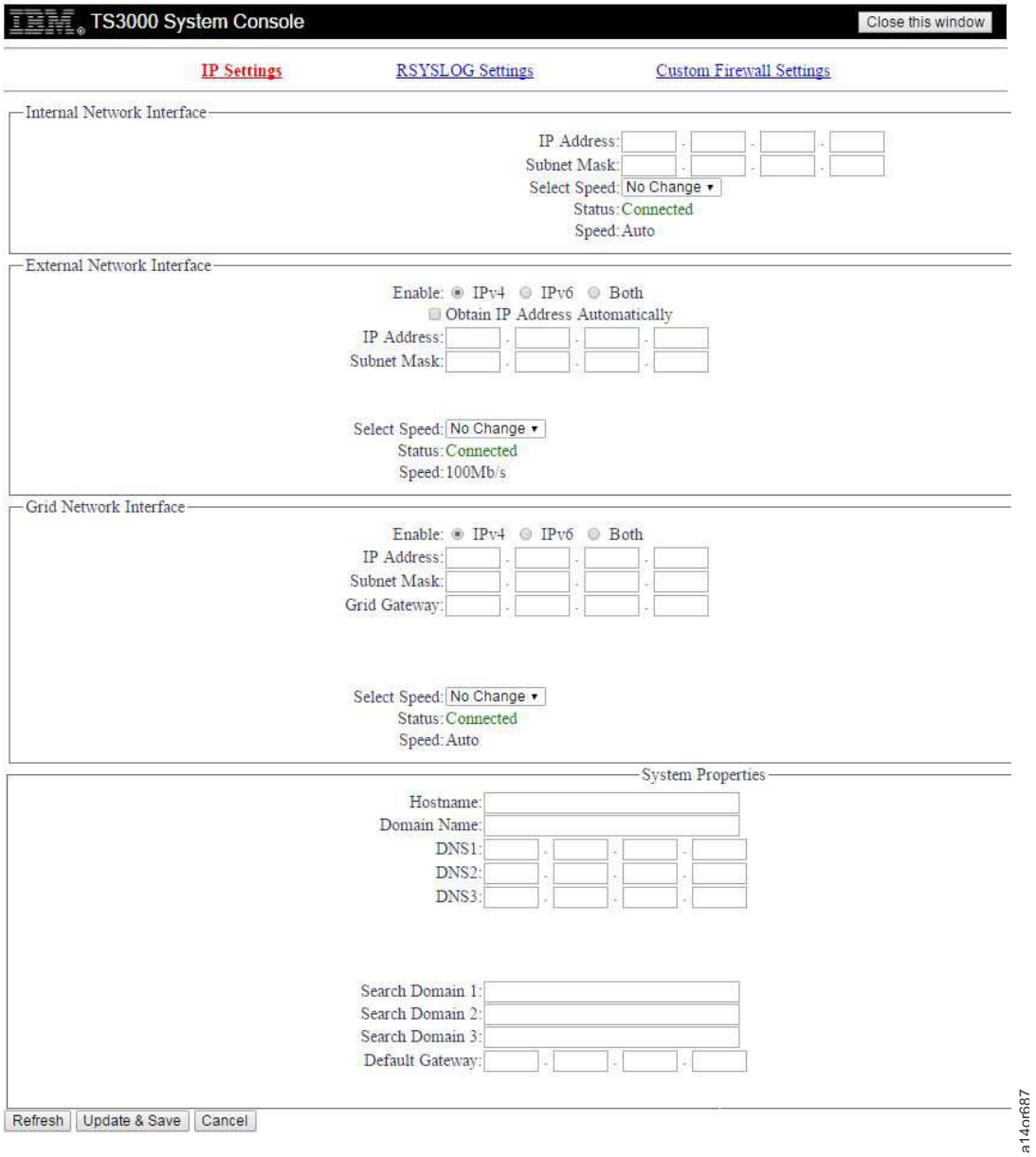

Figure 95. Console Settings

5. You can change the entries by typing new values in the indicated fields. If you must change the hostname or the internal IP address of the system console, you must also change this information on each tape system that is attached to the system console. See "Tape System Call Home Setup for VTS, VTC, and Tape Controllers" on page 34 or "Using 3494 ATL or 3953 Enterprise Library Controller Web Specialist to Change TSSC Settings" on page 42 to perform these additional tasks.

   Note: See "Feature Codes" on page 7 to locate external ports for Grid and External Network Interfaces.

   - All network interface entries display their status as either **Connected** or **Disconnected**. These designations signify whether the TSSC sees a working connection at each interface, and they can be used to help troubleshoot connectivity problems.

6. If you plan to set up Autonomic Ownership Takeover Manager (AOTM) for the TS7700, contact your network administrator to obtain an unused Grid IP address . To set up AOTM, connect your Grid

network to the Grid Network Interface that is located in the back of your server. See Figure 13 on page 16, Figure 15 on page 16, and Figure 17 on page 18 for locations.

Use "Setting Up Autonomic Ownership Takeover Manager" on page 29 to enter the connection settings. Return here after you set up and AOTM.

Note: The Grid Network Interface should be used only for TS7700 peer-to-peer networks with the AOTM function. Unless previously mentioned, other uses are not supported.

7. If you selected the Ethernet or Autoselect call home methods, contact your network administrator to obtain an internet connection. To set up the broadband interface, connect the internet connection to the External Ethernet Interface that is located in the back of your server. See Figure 13 on page 16, Figure 15 on page 16, or Figure 17 on page 18 for location. Enter the information for this interface into the External Network Interface input area that is depicted in Figure 95 on page 71.

   Notes:

   - The External Network Interface should be used only for call home purposes. Unless previously mentioned, other uses are not supported.
   - When you set up the External Network Interface, you might have to enter a default gateway setting. Obtain this setting from your network administrator, and enter the address into the Default Gateway input area of Figure 95 on page 71.
   - After you enter an address, you can test the interface by pinging another location on the customer network. Click **Network Information** from the screen in Figure 65 on page 53 for this option.
   - The External and Grid networks can both be assigned IPv6 addresses. This can be done manually through DHCP (if a DHCPv6 server is running on the network) or by using IPv6 Stateless Auto-configuration.
   - If IPv6 is enabled for External, the IPv6 DNS and IPv6 Default Gateway entries appear in System Properties.
   - Selecting IPv4 hides these entries if they are not being used. Selecting IPv6 hides the IPv4 entries.
   - The Internal, External, and Grid network speeds can be set independent of each other. The possible speed settings are:
     - 100 Mbs
     - 1000 Mbs
     - Auto (Turns on auto negotiation)

     Setting a specific speed requires the connection target to support the same speed. Otherwise, the system automatically reverts to auto negotiation.

8. Click **Update & Save**.

Security Settings

Use this page to create, modify, delete, and assign authentication policies. There are two types of policies for authentication, System Storage™ Productivity Center or native LDAP using Microsoft Active Directory (MSAD). LDAP use is dictated by the customer's environment, so you must collect the pertinent information from the customer when creating policies and logging in to the TSSC.

Notes:

- Only the customer user, and users with administration role, have access to modify Security Settings, Roles Management, and SSL Certificates.
- For system console code levels earlier than 8.1.x, you must log in locally to have access to the Security Settings, Roles Management, and SSL Certificates menu options.

Use this information to update Security settings.

1. Right-click from anywhere in the Desktop to view the Main Menu.

2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Use the customer user or a user with administration role to have access to these settings.
4. Select **Console Settings** > **Security Settings**. You see the screen that is shown in Figure 97 on page 74.

Policy Name

The name of the policy that defines the authentication settings. The policy name is a unique value that is composed of one to 50 Unicode characters. Blank spaces and special characters are not allowed.

Primary Server URL

The primary URL for the Storage Authentication Service. The value in this field is composed of one to 254 Unicode characters and takes one of the following formats:

```
https://<server_address>:secure_port/TokenService/services/Trust
ldaps://<server_address>:secure_port
ldap://<server_address>:port
```

Note: If this value is a Domain Name Server (DNS) address, you must activate and configure a DNS server on the **Console Settings** > **IP Settings** page.

Enter values for any of the optional fields you want to define:

Alternate Server URL

The alternate URL for the Storage Authentication Service if the primary URL cannot be accessed. The value in this field is composed of one to 254 Unicode characters and takes one of the following formats:

```
https://<server_address>:secure_port/TokenService/services/Trust
ldaps://<server_address>:secure_port
ldap://<server_address>:port
```

Notelist:

The server address value in the Primary or Alternate Server URL can be an IP or DNS address. Valid IP formats include:

IPv4

Is 32 bits long, consists of four decimal numbers, each ranging from 0 to 255, separated by periods, like:

```
98.104.120.12
```

IPv6

Is a 128-bit long hexadecimal value enclosed by brackets and separated into 16-bit fields by colons, like:

```
[3afa:1910:2535:3:110:e8ef:ef41:91cf]
```

Leading zeros can be omitted in each field so that :0003: can be written as :3:. A double colon (::) can be used once per address to replace multiple fields of zeros. For example,

```
[3afa:0:0:0:200:2535:e8ef:91cf]
can be written as:
[3afa::200:2535:e8ef:91cf]
```

If the Primary or Alternate Server URL uses the https protocol, a certificate for that address must be defined on the SSL Certificates page or retrieved with the Retrieve Certificates.

Policy Scope

Select the scope of the policy as follows:

- **Remote:** The authentication policy will apply only on remote access
- **Local:** The authentication policy will apply only on local access (Login directly on the system console)
- **Both:** The authentication policy will apply to both local and remote accounts

Figure 96. Policy Scope

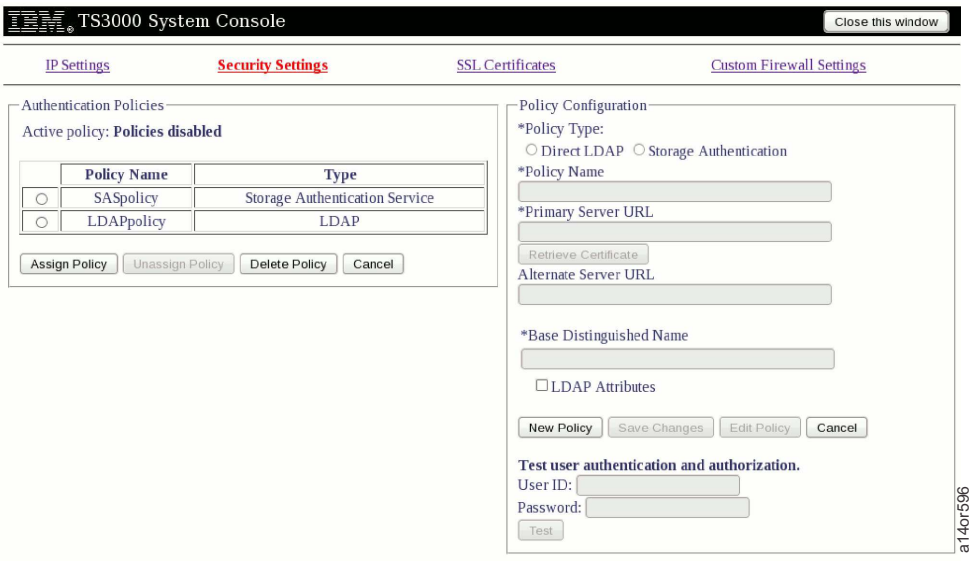

Figure 97. Security Settings

Creating a Storage Authentication Service (SAS) policy or Direct LDAP policy:

1. Click **New Policy** in the Policy Configuration panel to enable the configuration fields.
2. Select the policy type **SAS** or **Direct LDAP**.
3. Enter values for the following required fields:

Server Authentication

Values in the following fields are required if WebSphere® Application Server security is enabled on the WebSphere Application Server hosting the Authentication Service.

User ID

The user name that is used with HTTP basic authentication for authenticating to the Storage Authentication Service. This field supports a maximum length of 254 Unicode characters.

Password

The password that is used with HTTP basic authentication for authenticating to the Storage Authentication Service. This field supports a maximum length of 254 Unicode characters.

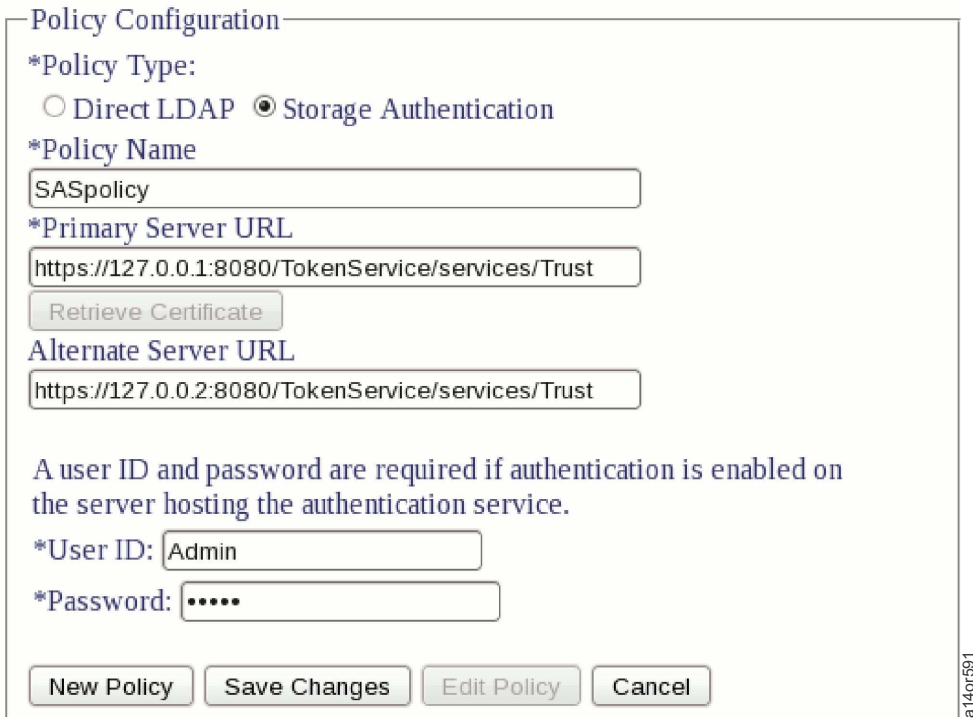

Figure 98. Creating Storage Authentication Policy

Direct LDAP

Values in the following fields are required.

User Distinguished Name

The user distinguished name that is used to authenticate to the LDAP authentication service. This field supports a maximum length of 254 Unicode characters. For example,

```
CN=Administrator,CN=users,DC=mycompany,DC=com
```

If you selected Add Direct LDAP Policy in Step 2, enter values for LDAP Attributes:

Base Distinguish Name

The LDAP distinguished name (DN) that uniquely identifies a set of entries in a realm. This field is required but blank by default. The value in this field is composed of one to 254 Unicode characters.

Username Attribute

The attribute name that is used for the username during authentication. This field is required and contains the value uid by default. The value in this field is composed of one to 61 Unicode characters.

Group Member Attribute

The attribute name that is used to identify group members. This field is optional and contains the value member by default. This field can contain up to 61 Unicode characters.

Group Name Attribute

The attribute name that is used to identify the group during authorization. This field is optional and contains the value cn by default. This field can contain up to 61 Unicode characters.

Username filter

Used to filter and verify validity of an entered username. This field is optional and contains the value (uid={0}) by default. This field can contain up to 254 Unicode characters.

Group Name filter

Used to filter and verify validity of an entered group name. This field is optional and contains the value (cn={0}) by default. This field can contain up to 254 Unicode characters.

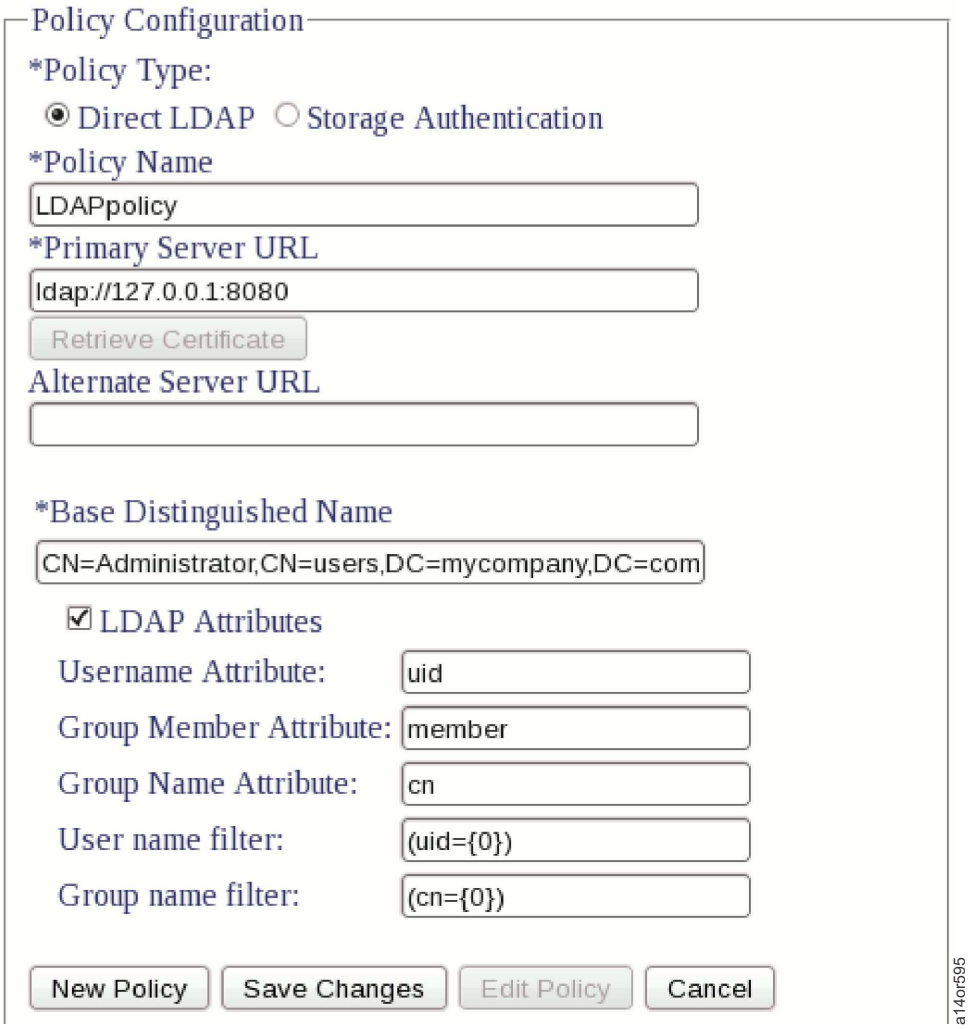

Figure 99. Creating LDAP Policy

Note: These fields depend on the customer's individual network configuration. Consult with the customer to collect the necessary values.

4. Click **Save Changes** to save the policy.

5. To retrieve the certificate, click **Retrieve Certificate**. To confirm that it was successful, select the **SSL Certificates** tab at the top of the page.

Note: The Retrieve Certificate option retrieves certificates for both the primary and alternate server.

Edit Policy

1. In the Authentication Policies panel (Figure 100 on page 78) select the policy to be edited.
2. Click **Edit Policy**, the fields are enabled in the Policy Configuration panel.
3. Make the changes.
4. Click **Save Changes**.

Figure 100. Policies Panel

Notes:

- If the URL changed, it is necessary to Retrieve another Certificate.
- If the policy name changed, a new policy is created.
- You are required to reenter the Authentication Password to save any changes that are made to SAS policies.
- Every time a policy is edited, it must be retested before it can be assigned as the active policy.

Test Policy

This section is to test policies that are already saved. With this function, you can verify that the configuration of the policy is correct.

1. Enter a valid user and password.
2. Click **Test**.

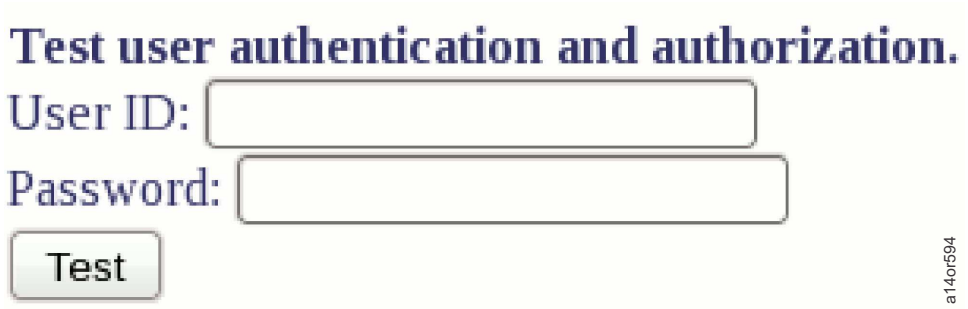

Figure 101. Test Policy

Notes:

- This function is only available on policies already saved.
- Before assigning a policy, the policy should be tested to guarantee a correct login.

Assign Policy

1. In the Authentication Policies panel (Figure 100) select the policy.
2. Test the policy to make sure that it is correctly configured.
3. Click **Assign Policy** in the Authentication Policies panel.

Notes:

- If the Policy has not been tested, you will not be able to assign the policy.
- Only one policy can be active at a time.

Delete Policy

1. In the Authentication Policies panel (Figure 100 on page 78) select the policy to delete.
2. Click **Delete Policy**.

Note: When LDAP authentication is enabled, remote and local access is controlled by the LDAP server. Service access requires the user to authenticate through the normal service login and then authenticate again by using the IBM service representative Direct LDAP Policy.

System Storage Productivity Center and Tivoli Storage Productivity Center

You can use the System Storage Productivity Center (SSPC), a server operating with the Tivoli® Storage Productivity Center (TPC) software, as an LDAP proxy to enforce Access Controls on the TSSC.

Native LDAP

You can use a Microsoft Active Directory (MSAD) Lightweight Directory Access Protocol (LDAP) server directly to centrally manage access controls on the TSSC.

SSL Certificates

Use this page to display, add, and delete SSL Certificates.

If any SSL certificates have been retrieved, they are displayed in a table as shown in Figure 102.

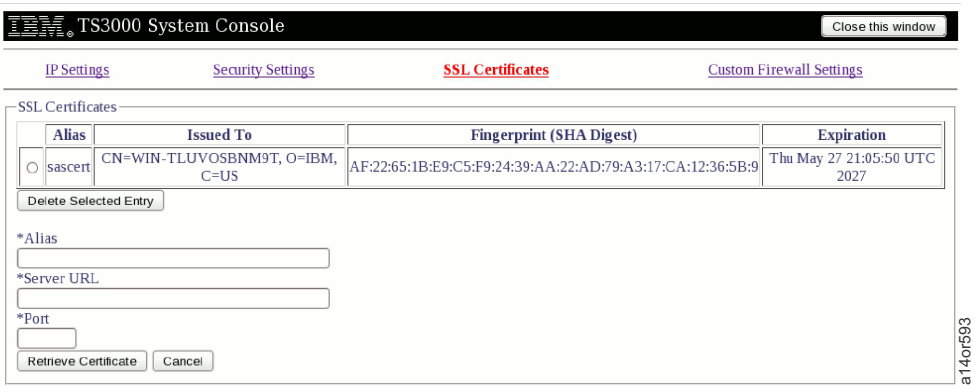

Figure 102. SSL Certificates Page

Add SSL Certificate

1. Enter an Alias for the Certificate.
2. Type the URL.
3. Type the port.
4. Click **Retrieve Certificate**.

Delete SSL Certificate

1. Select an SSL Certificate.
2. Click **Delete Selected Entry**.

Managing Roles

Use this section to review the system defined roles (Customer, Service, and Administrator). Also, it is possible to customize the user-defined roles, each role has its description, role name, and a set of the system console permissions, as shown in Figure 103. The Security Roles section is used to select one of the eight roles (three system roles and five custom roles). When a selection is made, the settings for that role are displayed in the Role Settings section. The system roles have fixed settings and it is not possible to change these settings. The remaining five roles can be customized.

Roles Management Location

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type your credentials, then click **OK**.
4. Click **Console Settings.**
5. Click the **Roles Management** tab.

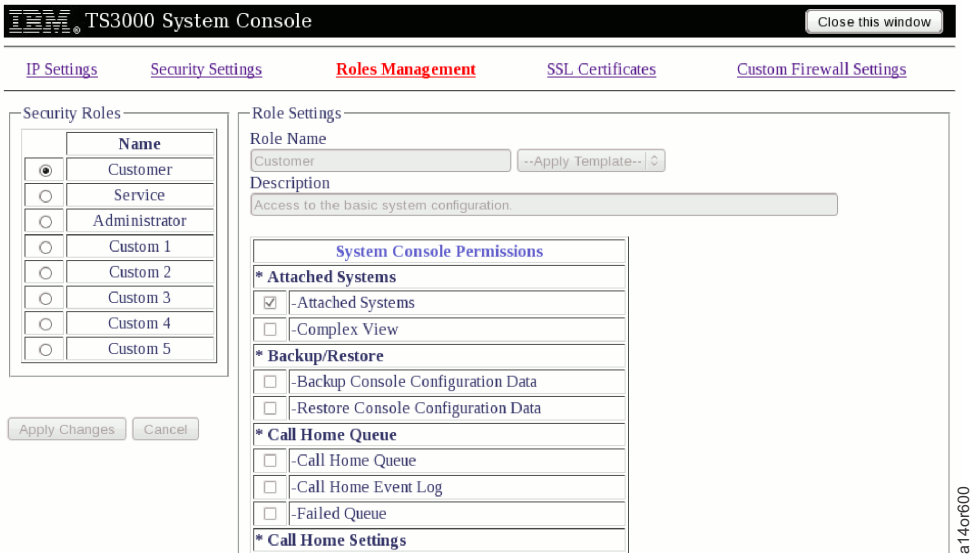

Figure 103. Role Management

Customize role

1. Go to the **Roles Management** page as described in the previous section.
2. Select one of the custom roles.
3. Assign the role name and description.
4. Mark the system console permissions for this role, optionally by selecting a role in the **Apply Template** drop box, you can copy the permissions of one of the system roles.

5. Click **Apply Changes** for the changes to take effect. A message shows if the changes were applied successfully. See Figure 104.
6. To cancel the changes click **Cancel**.

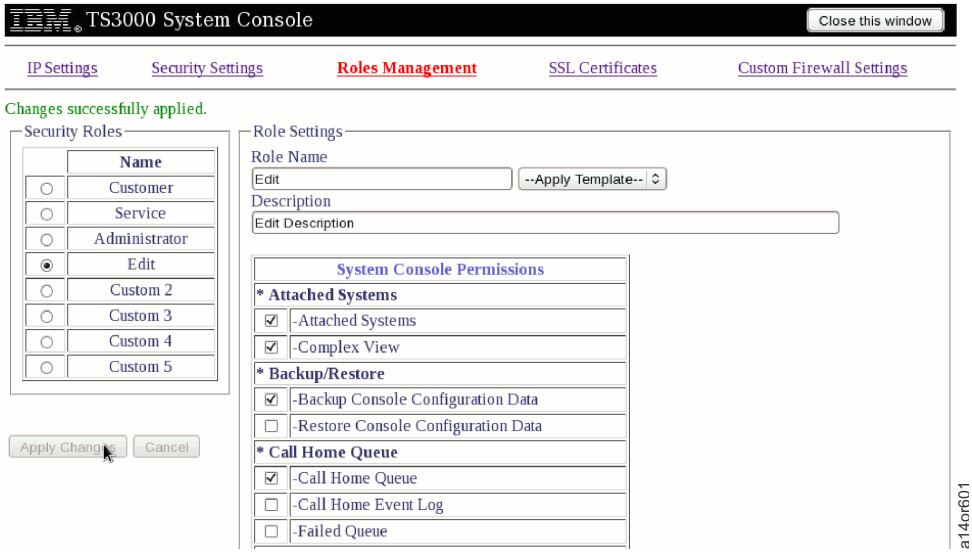

Figure 104. Customize Role

Authentication Service Users/Groups

Authentication Service Users/Groups Location is part of the Security Settings. You can manage the users/groups access for each of the defined policies. After the policy is defined, you can add the users and groups that have access through the policy, and define a role for that user/group. Only the user/group defined in the active policy have access to the pages defined by its role.

Authentication Service Users/Groups Location

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type your credentials, then click **OK**.
4. Click **Console Settings**.
5. Click the **Security Settings** tab. See Figure 105 on page 82.

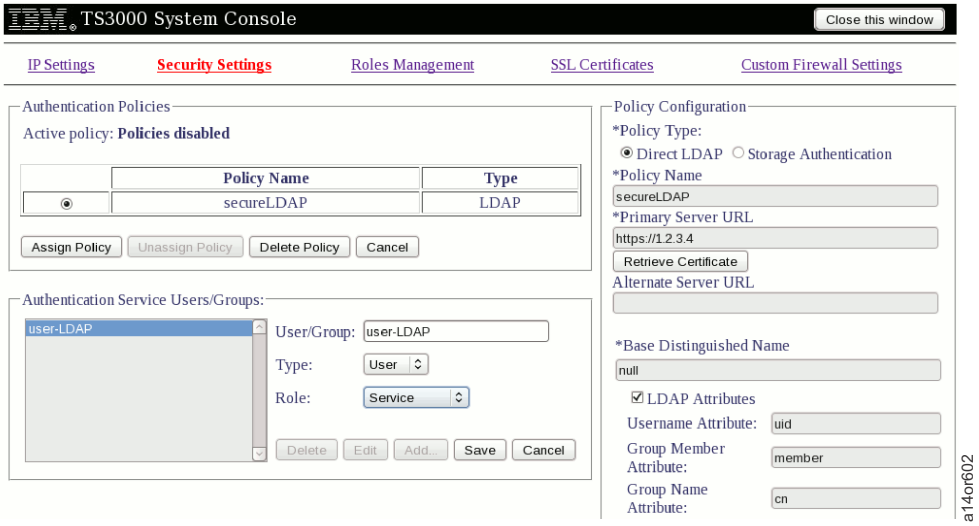

Figure 105. Authentication Service Users/Groups

Manage Authentication Service Users/Groups

There are some restrictions before you can manage the Authentication Service Users/Groups for the Authentication Policies: It is not possible to add two identical entries, and the policy must exist. If you delete the policy, all the entries in the Authentication Service Users/Groups are deleted with it.

1. Go to the **Security Settings** page as described in the previous section.
2. Select one of the Authentication Policies to show the current list of users and groups.
3. To show the details of any of the listed user/group, select it from the list in the left. The Name, Type, and Role are shown in the right.
4. To manage the authentication service users and roles you can use any of the following functions:
   - **Deletion:** Select the wanted entry from the list on the right and click **Delete**.
   - **Edition:** Select the wanted entry from the list on the right and click **Edit**. Then, edit the entry and click **Save**. A message shows if the changes were applied successfully. See Figure 106 on page 83.
   - **Addition:** Click **Add**. Enter the name of the User/Group and select the Type and designed Role, then click **Save**. A message shows if the changes were applied successfully. See Figure 106 on page 83.
5. To cancel the Edition or Addition procedures click **Cancel**.

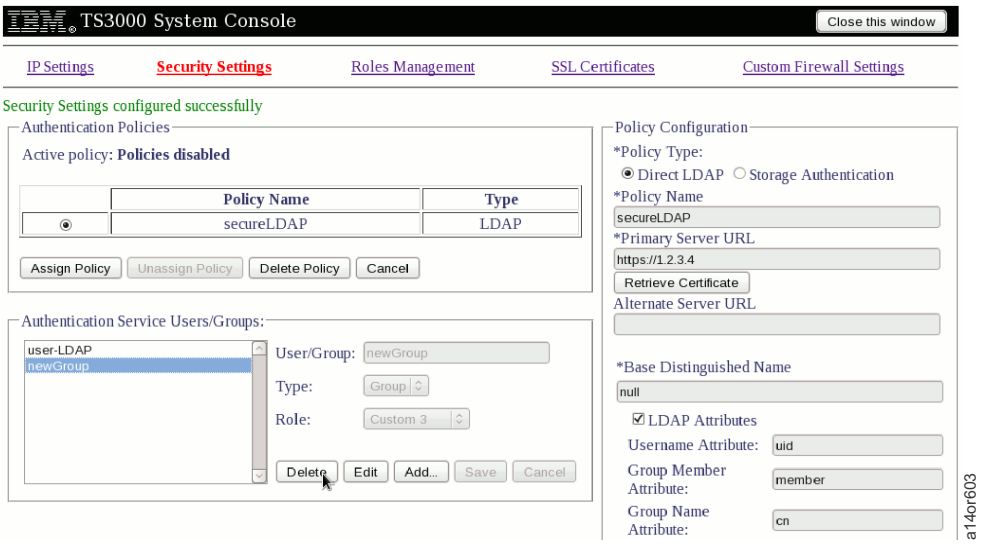

Figure 106. Manage Authentication Service Users/Groups

Configuring RSYSLOG Settings

Use this information to configure the RSYSLOG settings to sync with the customer syslog server and to download log files.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
4. Select **Console Settings** > **RSYSLOG Settings**. You see the screen that is shown in Figure 107 on page 84.

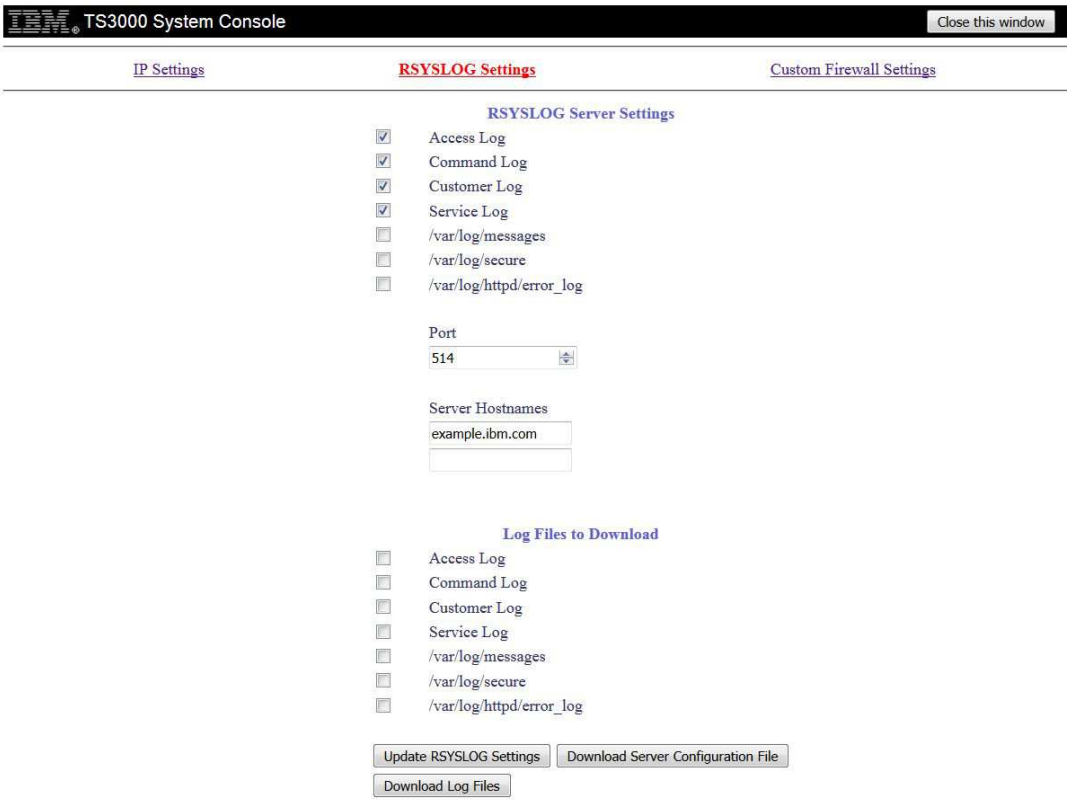

Figure 107. RSYSLOG Settings screen

5. To sync with the syslog server:
   a. In the RSYSLOG Server Settings area, select the log files that you want to send or synchronize to the server.
   b. In the Port field, enter the port number of the server.
   c. In the Server Hostnames field, enter the hostname or IP address of the syslog server.
   d. Then, select **Update RSYSLOG Settings**.
   e. Select **Download Server Configuration File** and either copy the file to the log server or copy its settings to the server's configuration file.
6. To download any of the log files that are listed in the Log Files to Download area, select the file, then select **Download Log Files**.

Customizing Firewall Settings

Attention:

- Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, "Maintenance Starting Point," on page 1 to determine the code level.
- You must request and receive permission from the customer each time that you update firewall properties.

Use this information to update the firewall settings.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.

4. Select **Console Settings** > **Custom Firewall Settings**. You see the screen shown in Figure 108 on page 86.

   Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to update firewall settings (**TSSC Menus** > **Network Settings** > **View and Update Firewall Settings**). Refer to "RAS Menus" on page 177.

Accept	Drop	Interface	Direction	Port Name	Port Number
○	◉	External	IN	FTP	21
○	◉	External	IN	HTTP	80
○	◉	External	IN	HTTPS	443
◉	○	External	IN	PING	ICMP
○	◉	External	IN	SSH	22
○	◉	External	IN	SSHTUNNEL	9088
○	◉	External	IN	TELNET	23
○	◉	External	IN	TSSCGUI	7080
◉	○	External	OUT	DNS	53
○	◉	External	OUT	FTP	21
◉	○	External	OUT	HTTP	80
○	◉	External	OUT	HTTPPROXY	8080
◉	○	External	OUT	HTTPS	443
◉	○	External	OUT	PING	ICMP
○	◉	External	OUT	SNMPTRAP	162
○	◉	External	OUT	SSH	22
○	◉	External	OUT	SSHTUNNEL	9088
○	◉	External	OUT	TELNET	23
○	◉	External	OUT	TSSCGUI	7080
◉	○	Grid	IN	COMM	9666
○	◉	Grid	IN	FTP	21
◉	○	Grid	IN	HTTP	80
◉	○	Grid	IN	HTTPS	443
◉	○	Grid	IN	PING	ICMP
◉	○	Grid	IN	SSH	22
○	◉	Grid	IN	TELNET	23
○	◉	Grid	IN	TSSCGUI	7080
◉	○	Grid	OUT	COMM	9666
○	◉	Grid	OUT	FTP	21
◉	○	Grid	OUT	HTTP	80
◉	○	Grid	OUT	HTTPS	443
◉	○	Grid	OUT	PING	ICMP
◉	○	Grid	OUT	SSH	22
○	◉	Grid	OUT	TELNET	23
○	◉	Grid	OUT	TSSCGUI	7080

Add/Modify Custom Rules

Accept	Drop	Interface	Direction	Port Number
◉	○	External	IN	

Cancel | Update Firewall Settings | Restore Defaults | Clear User-Defined Rules

a14or669

Figure 108. Customize Firewall Settings

5. Click the radio button in the Accept column to authorize a port or in the Drop column to disallow a port name. You can add custom rules at the bottom, specifying the values, then click **Update Firewall Settings** after you have made all of your selections. To modify a custom rule, enter the information for the custom rule, change whether to Accept or Drop, and click **Update Firewall Settings**.

Updating the IP Whitelist

Attention:

- Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, "Maintenance Starting Point," on page 1 to determine the code level.
- You must request and receive permission from the customer each time that you update IP whitelist settings.

The IP whitelist defines a set of IP addresses that are allowed to access the system console on any port. If the list is empty or has not yet been synced to the system IP tables, IP addresses are not filtered. If the list is populated and has been synced to the system IP tables, only the IP addresses in the list will be allowed to access the system console. Take great care in setting the IP whitelist to include all addresses prior to synchronization that need to access the system console. For example, if you are using AOS to edit the IP whitelist and do not include the IP addresses of the AOS broker, you will be locked out of using the system console until a local user edits the list to include the AOS broker's IP address.

Use this information to update the IP whitelist.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
4. Select **Console Settings** > **IP Whitelist**. You see the screen shown in Figure 109.

Figure 109. Update IP whitelist settings

5. Type in the addresses that you want to allow system console access. When the list is satisfactory, click **Sync List With IP Tables** to enforce access to the system console by only the addresses on the list.

Configuring Call Home Settings Electronic Customer Care

1. Before you start to configure the Call Home settings, ask the customer to provide the information that is required in Table 12 on page 98.
2. Right-click from anywhere in the Desktop to view the Main Menu.
3. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
4. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
5. Select **Call Home Settings**. You see the screen that is shown in Figure 110 on page 88.

   Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to configure Call Home settings (**TSSC Menus** > **Call Home Functions**). Refer to "RAS Menus" on page 177.

Note: In the following steps, for any changes that are made to other than *Delay Call Home, Unlock Call Home, or Reset Modem*, you must scroll down, if necessary, and click **Apply**.

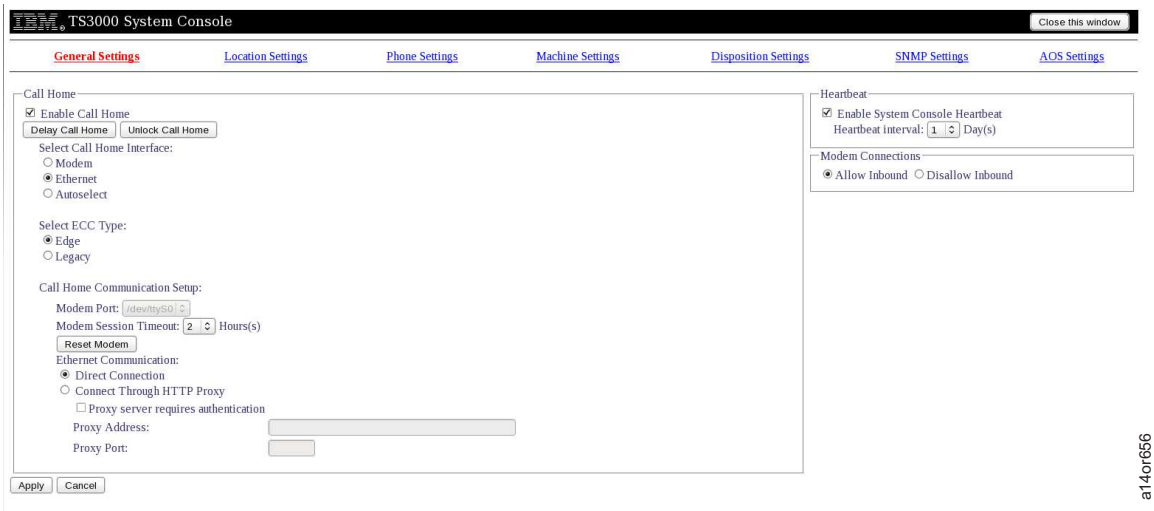

Figure 110. General Settings Screen (Call Home and Heartbeat)

6. Select an interface to be used for call home. See Figure 110.
   - Modem
     - If you select the modem call home interface, the Modem Port selection box under Call Home Communication Setup enables.
     - If you select the modem port by using the Modem Port selection box: Select "/dev/ttyS0" ("/dev/ttyS0" is the serial port COM1 and "/dev/ttyS1" is serial port COM2, as labeled on the back of the system console).

       OR

       If the system console has two modems and has two analog telephone lines that are attached, in the Modem Port display, select "/dev/ttyS1" as the Call Home Modem Port.

     Notes:
     - Using this method disables all broadband call home.
     - If "/dev/ttyS1" is selected but unavailable, no call home activity takes place on the console and no warning or error messages are given.
     - When two modems are installed, the modem on COM1 can be configured to be the inbound modem, and the modem on COM2 can be configured to be the outbound modem. If only one modem is installed, it must be installed on COM1, and it is used for inbound and outbound communication.
     - Call Homes that are present in the Call Home Queue are sent home every 5 minutes to ensure that the modem line is not always in use.
   - Ethernet:
     - If you select the Ethernet call home interface, the Ethernet Communication section enables, under the Call Home Communication Setup.
     - Select a method for broadband call home based on the customer's network configuration:
       - Direct Communication implies there is not an HTTP proxy between the configured system console and the outside network to IBM. Selecting this method requires no further setup.
       - Connect Through HTTP Proxy implies there is a customer HTTP Proxy server that the customer requires all call home traffic to go through. When you select this option, enter the Proxy IP Address and Proxy Port. If necessary, enter any required proxy server username and password. Refer to Table 12 on page 98. For proxy password limitations, see Table 13 on page 100.

Notes:
- Using this method disables all modem call home transmission (outbound only).
- Ensure that the External Network Interface was set up in Console Settings.
- Obtain the IP Address, Subnet Mask, and Default Gateway from the customer.
- Port 443 (HTTPS) must be free for outbound traffic. You can verify this with the customer if a firewall is present.
- If ECC is locked due to too many failed tries, you can clear the lock by clicking **Unlock Call Home** as shown in Figure 111.
- Call Homes are sent home back-to-back until the Call Home queue is empty.

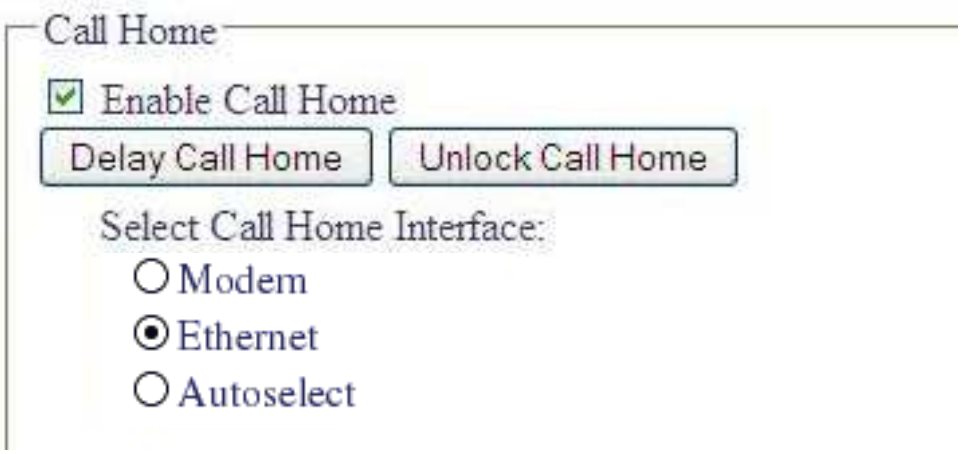

Figure 111. Unlock Call Home

- Autoselect
  - If you select Autoselect call home interface, the system console first attempts to call home over the Ethernet. If an Ethernet interface failure is encountered, call home is attempted over the modem. Both Modem Port and Ethernet Connection sections should become enabled below.
  - Select a modem port and Ethernet Communication settings, as described in Modem and Ethernet section above.
- For system console code levels 7.4.x or later, select the ECC type: Edge or Legacy.

  Note: Edge is only available with system console code level 7.4.x + additional patch.

Notes:

- ECC type "Edge" is compliant with National Institute of Standards and Technology (NIST) ciphers. Refer to Table 10 for URLs.
- If a 3958DD1/DD3/DD4/AP1 is attached, add the values that you recorded in the note in Step 11 on page 91 into the fields of Figure 116 on page 94.
- To determine whether you need to check the Enable Software Problem Call Home box in Figure 116 on page 94, contact your next level of support. They can help you to determine if this option is available in your region.
- If you are uncertain whether you need to check the Enable Software Problem Call Home box in Figure 116 on page 94, your next level of support can help you to determine whether this option is available in your region.
- If you selected Autoselect or Ethernet, the call home code connects the TSSC to one of the following URLs.
- Call Homes that are present in the Call Home Queue are sent home every 5 minutes to ensure that the modem line is not always in use.

Table 9. URL Table for Legacy ECC

Hostname	IP	Ports	Description
eccgw01.boulder.ibm.com	207.25.252.197	443	ECC transaction gateway
eccgw02.rochester.ibm.com	129.42.160.51	443	ECC transaction gateway
www.ecurep.ibm.com	192.109.81.20	443	File upload for status reporting and problem reporting.
www6.software.ibm.com	170.225.15.41	443	File upload for status reporting and problem reporting. Proxy to testcase.boulder.ibm.com
www-945.ibm.com	129.42.26.224	443	Problem reporting server v4
www-945.ibm.com	129.42.42.224	443	Problem reporting server v4
www-945.ibm.com	129.42.50.224	443	Problem reporting server v4
www.ibm.com	129.42.56.216	443	Service provider file (CCF) download
www.ibm.com	129.42.58.216	443	Service provider file (CCF) download
www.ibm.com	129.42.60.216	443	Service provider file (CCF) download
www-03.ibm.com	204.146.30.17	443	Service provider file (CCF) download

Table 10. URL Table for Edge ECC

Hostname	IP	Ports	Description
esupport.ibm.com	129.42.54.189	443	ECC transaction gateway
esupport.ibm.com	129.42.56.189	443	ECC transaction gateway
esupport.ibm.com	129.42.60.189	443	ECC transaction gateway
www6.software.ibm.com	170.225.15.41	443	File upload of files larger than 250 MB.
Notes: • It is recommended customers open 129.42.0.0/18 for convenience. • The IPs are not pingable. Use the following link to verify a connection https://esupport.ibm.com/eccedge/gateway/services/projects/ecc/iepd/services/ProblemReport			

7. Ensure that the customer's network is properly configured for ECC functionality.
8. If you want to enable the system console heartbeat, check **Enable System Console Heartbeat**, then select the day interval (usually set to **3**). The interval is the number of days between heartbeats. Select **Apply**.

   If Software Problem Call Home is disabled, the call home packages are deposited in the /var/enc/SWCH directory. You might need to know this if your next level of support requests that you locate the call home package.
9. You can disallow inbound modem connections by selecting the **Disallow Inbound** option in the **Modem Connections** section and click **Apply**. This allows outbound connectivity through the modem for call home while ignoring any incoming calls. To allow incoming calls, select the **Allow Inbound** option and click **Apply**.
10. From the top menu, select **Location Settings**. Figure 112 appears.

    Note: This screen has an 'Override tape system location settings' check box. If this box is **NOT** checked, the information on this screen is **NOT** sent along with all Call Home records sent to the TSSC from attached systems. If this box **IS** checked, information on this screen can be changed and sent with all Call Home records from attached systems. These changes are also sent back to any attached 3957 and 3592 remote systems. Therefore, it is unnecessary to update this information in those remote systems.

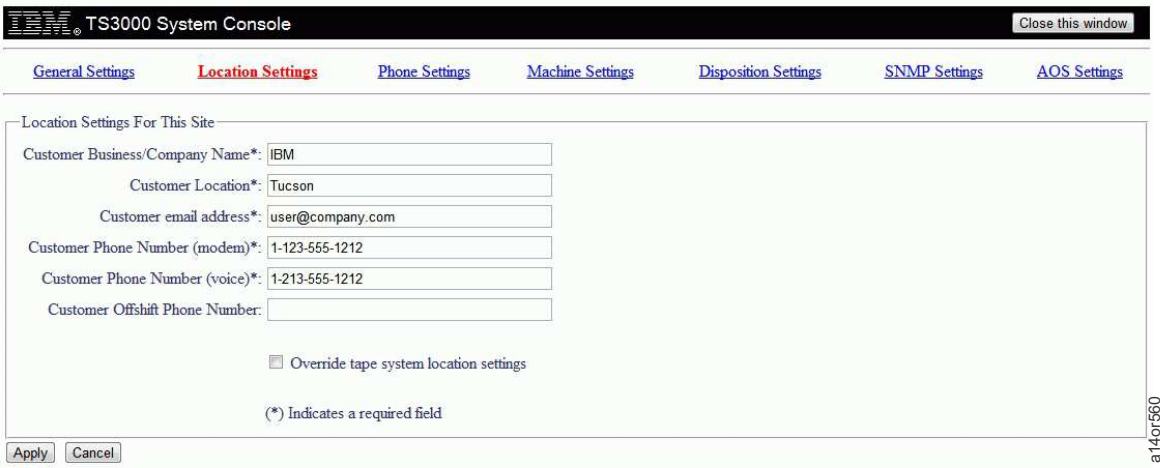

Figure 112. Site Location Settings Screen

Note: The Customer Business/Company Name added in Location Settings For This Site cannot contain any blank spaces.
Enter the information into the input areas of the Location Settings For This Site. The fields that require you to enter information are denoted by an asterisk. Select **Apply**.

11. From the top menu, click **Phone Settings**. Figure 113 on page 92 appears.

    Note: If you selected the Ethernet option for Call Home, the Phone Settings are not required, and the screen is not available.

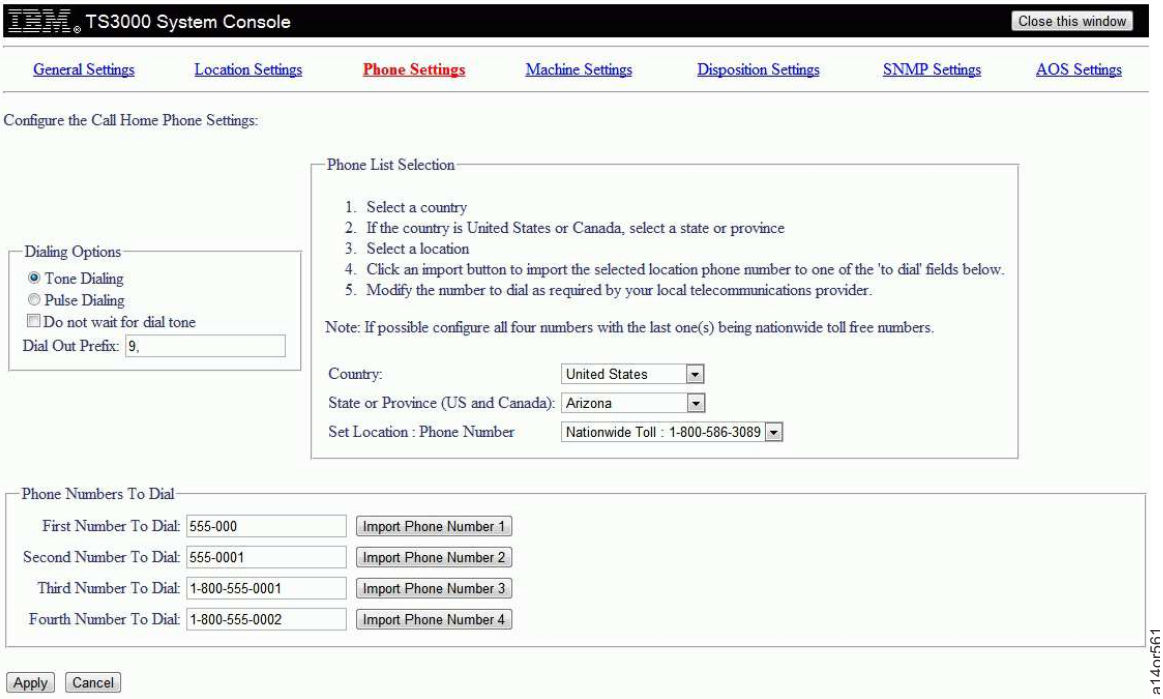

Figure 113. Call Home Phone Settings Screen

12. Choose one of the Dialing Options.

    Note: The input areas in the Phone Numbers To Dial fields are limited. If a dial-out prefix such as '9' is needed to get to a dialing network, put the prefix number in the field that is labeled Dial Out Prefix.

    In the Phone List Selection area, select a country, select a state or province (US and Canada only), and select a location for the Location: Phone Number input area from one of the Phone Numbers To Dial fields.

    Enter information in the Phone Numbers To Dial fields. (Remove the area code if the system console will be placing a seven-digit call.)

    Select **Apply**.

13. From the top menu, select **Machine Settings**. You see the Machine Settings screen in Figure 114 on page 93.

    Enter information into the Machine Settings input areas. Enter a four-digit Machine Type (such as 3494), a three-digit model (such as B20), and a Machine Serial Number, such as the example shown '1370806' for one of the attached systems. The machine serial number, entered as a seven-character alphanumeric, **with no dashes**, is developed from the first two digits and last five digits of the actual machine number. For example, 13-0070806 would be entered as 1370806.

    Note: For TSSCs with 3958-DE2 or 3958-AP1 complexes that are attached, the complex's information can be entered into the **Machine Settings** section.

    The system console periodically checks for responses from attached tape systems. If a system fails to respond, the following choices are available:

    - Create and Send a Problem Report to RETAIN
    - Create an Entry in the Console Log (only)
    - Do nothing

The default selection is "Create and Send a Problem Report to RETAIN." However, either of the other choices is available for selection from this window by clicking the appropriate button located next to the wanted selection.

Mark any standby systems in the attached systems page to avoid the transmission of unnecessary call home records(see Step 6 on page 54). Make a selection from the Response Check for Attached Systems choices. Select **Apply**.

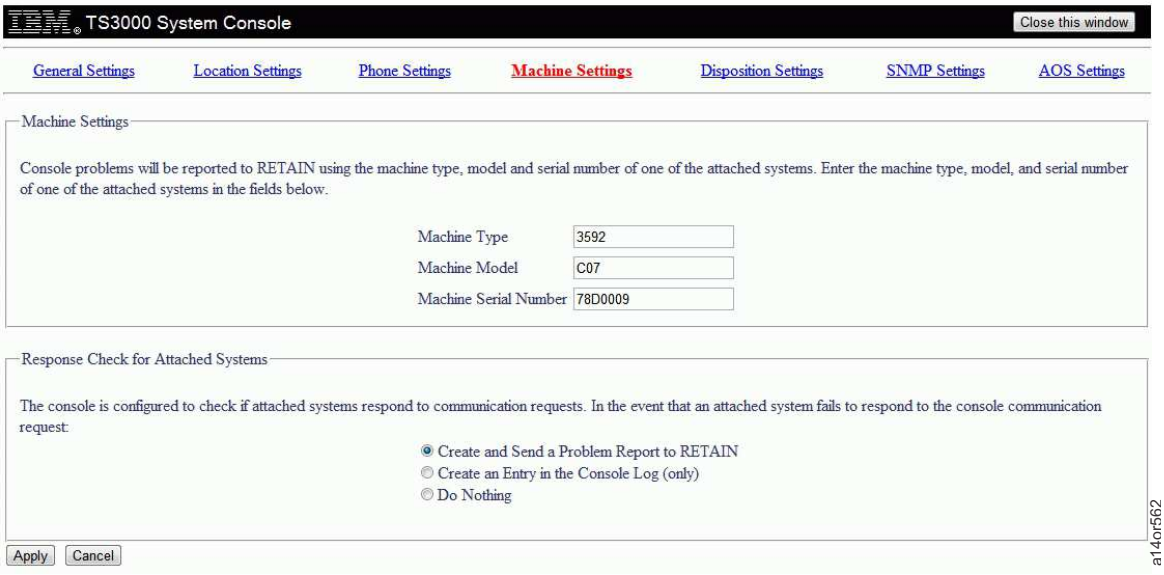

Figure 114. Machine Settings Screen

14. From the top menu, select **Disposition Settings** to develop, specify, or change a schedule for when you would like Disposition Code 2 records to be sent to the IBM server. The Disposition Settings screen in Figure 115 appears. In the Weekdays and the Weekends fields, choose on what days of the week and during what time periods you would like notices to be sent. Select **Apply**.

    A Disposition Code 2 problem record is typically a lower severity problem, which should be sent during normal business hours. The system console defaults to sending these records from 0900 to 1500 Monday through Friday.

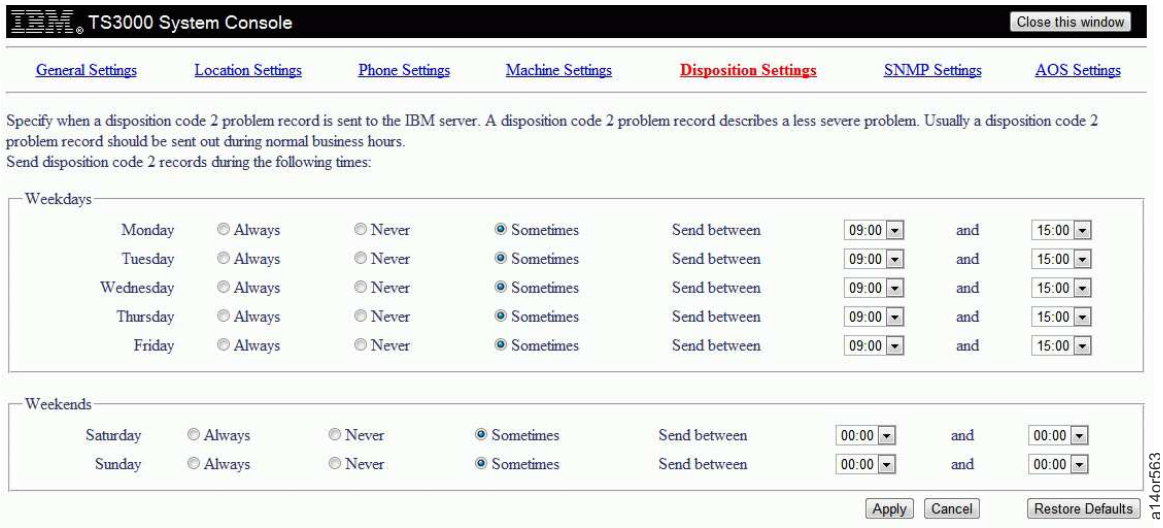

Figure 115. Disposition Settings Screen

15. Select **Apply** to enable the new disposition information, or if you want to return to the defaults select **Restore Defaults**.

    Note: Before you end the installation, ensure that you test the call home setup.

16. From the top menu, select **SNMP Settings** to request to set up SNMP trap alerts. The two options for sending traps are:
    a. Send Traps for Call Home Failures - This option alerts the customer that the TSSC was unable to call home for 1 of 3 reasons: the failing machine is not entitled for call home, the file already is present in ECC, and the system is not attached to the TSSC.
    b. Send traps for Login/Logout - This option alerts the customer when a remote user logs in to the TSSC.

       After you set the trap types, the Community, IP or Hostname, and Port need to be updated.
    c. Select SNMP version, 1, 2c, or 3. The default value is 1.
    d. The value for the Community field needs to match what is set in the customer's SNMP manager. The default value is set to **public**.
    e. The value for the IP or Hostname field represents the destination server that hosts the SNMP manager. The default value is set to **localhost**.
    f. The value for the Port field represents the port that the customer's SNMP manager is listening on. The default value is set to **162**.

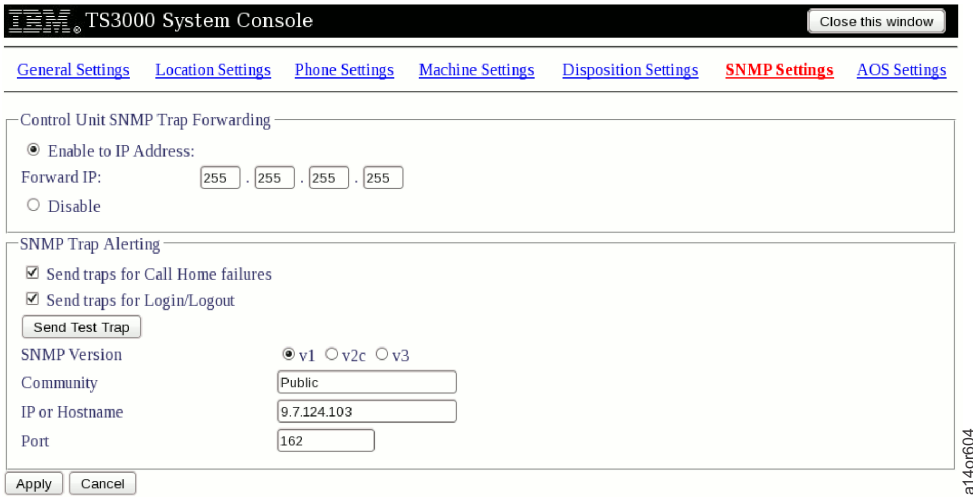

Figure 116. SNMP Settings screen

17. To test the SNMP settings, click the **Send Test Trap** button to send an SNMP trap to the configured recipient.
18. To configure Assist-on-Site (AOS), click the **AOS Settings** link at the top of the page. See Figure 117 on page 95.

    Note: AOS 3.3 client can access only servers with AOS 3.3 and earlier. AOS 4.0 client can access only servers with AOS 4.0 and later. (System console code level 7.4.x or later)

    - To **Start**, **Stop**, or **Restart** the AOS service, click the corresponding button in the **AOS Configuration** section.
    - If you want to enable AOS Lights Out (unattended mode), place a check mark next to **Enable AOS Lights Out** and click **Apply**. If you want Lights On (attended mode), clear the box next to **Enable AOS Lights Out** and click **Apply**.

- If a customer is not using DNS, place a check mark next to **Enable No-DNS mode**. You are prompted to enter the IP address of the AOS relay server. If the IP address is not known, click **Default** to populate the field with the last known IP address. Click **Apply**.
- Connect Through HTTP Proxy implies there is a customer HTTP Proxy server that the customer requires all call home traffic to go through. When you select this option, enter the Proxy IP Address and Proxy Port. If necessary, enter any required proxy server username and password. Refer to Table 12 on page 98. For proxy password limitations, see Table 13 on page 100.
- You can add and delete AOS port forwarding targets in the **Manage Port Forwarding** section.

  Note: Port forwarding on the same port (for example, port 80) to different machines is allowed, if each entry has a different alias name.
- To add a new port forwarding entry:
  - Enter an Alias for the port forwarding target in the field under **Alias**
  - Enter the Hostname or IP address of the port forwarding target in the field under **Host Target**
  - Enter the destination port in the field under **Port**

  Click **Add** to save these entries.
- To delete a port forwarding entry, place a check mark next to one or more entries in the port forwarding target list. Click **Delete Selected Entries** to remove these port forwarding targets.

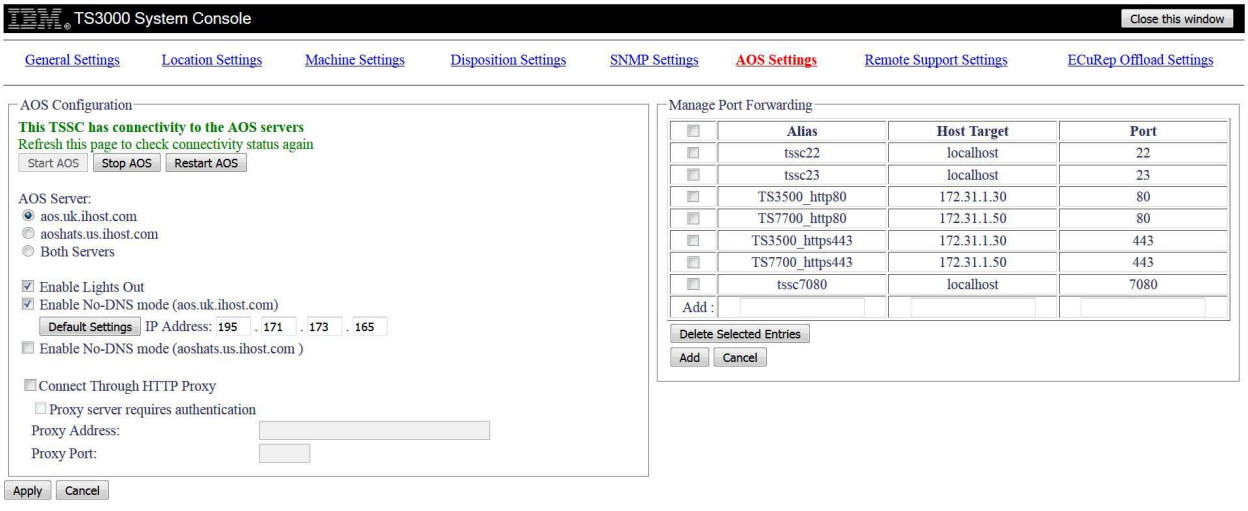

Figure 117. AOS Settings Screen

19. To configure the Remote Support Settings, click the **Remote Support Settings** link at the top of the page. See Figure 118 on page 96.
    - To **Start** or **Stop** a connection with the remote support center click the corresponding buttons in the **Status** section.
    - **Remote Support Configuration:**
      - To enable debugging features in the log, place a check mark next to **Enable debug**.

        Note: Enable debugging if requested by support center personnel.
      - If required, enter the Field Password to connect to the system, or to generate a random Field Password, click **Generate Field Password**.

        Note: The defined or generated password must be available for remote support personnel in order to be able to connect to the TSSC. The password should be defined per customer requirements, or left blank.

- Enter the idle timeout period (in minutes) in the Connection timeout field.

- **Server Settings:**
  - In the Support Center String field, enter the IP or hostname and port (<IP or hostname>:<port #>) for each remote support center. Refer to Table 11.
  - To use a proxy server, place a check mark next to **Enable Proxy**.
  - In the Proxy String field, enter the IP or hostname and port (<IP or hostname>:<port #>) for each proxy server.
- Select **Apply changes** to accept any changes that were made.
- Select **Reset config** to reset the configuration to the installation defaults.
- Select **View log file** to view the Remote Support Settings log file.

Table 11. Remote support center server information

Hostname	IP	Ports	Description
y03lcxapp002.ahe.boulder.ibm.com	204.146.30.139	22	remote support center server
y01lcxapp002.ahe.pok.ibm.com	129.33.206.139	22	remote support center server
sc-rsc-front2.haifa.il.ibm.com	195.110.41.141	22	remote support center server
sc-rsc-front3.haifa.il.ibm.com	195.110.41.142	22	remote support center server

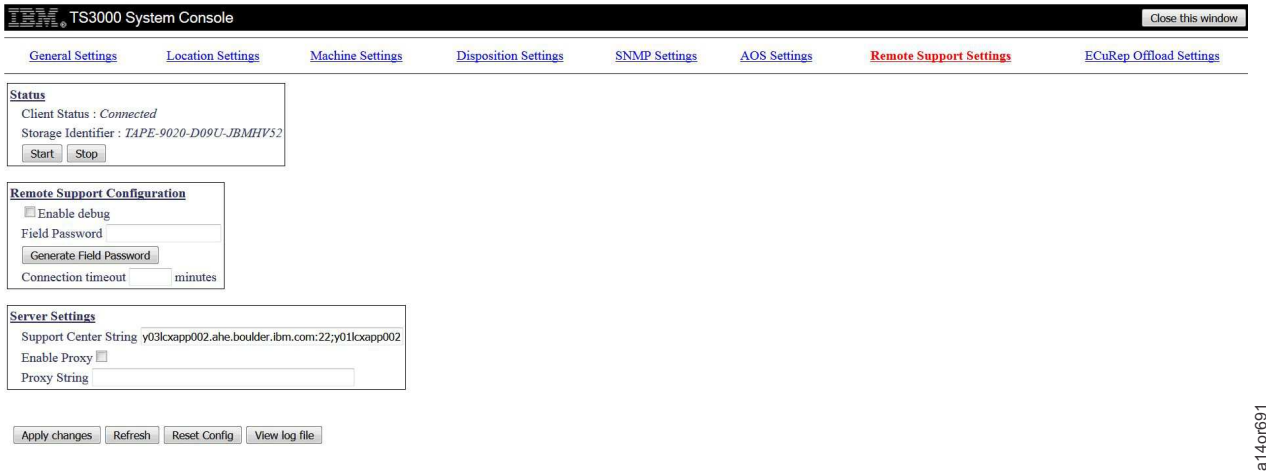

Figure 118. Remote Support Settings screen

20. To configure the ECuRep settings, click the **ECuRep Offload Settings** link at the top of the page. See Figure 119 on page 97.
    - To set the default ECuRep server, select the server closest to your location and click **Set ECuRep Location**.

      Note: The ECuRep Americas server is preselected by default.
    - To test connectivity to the server, click **ECuRep Connection Test**.

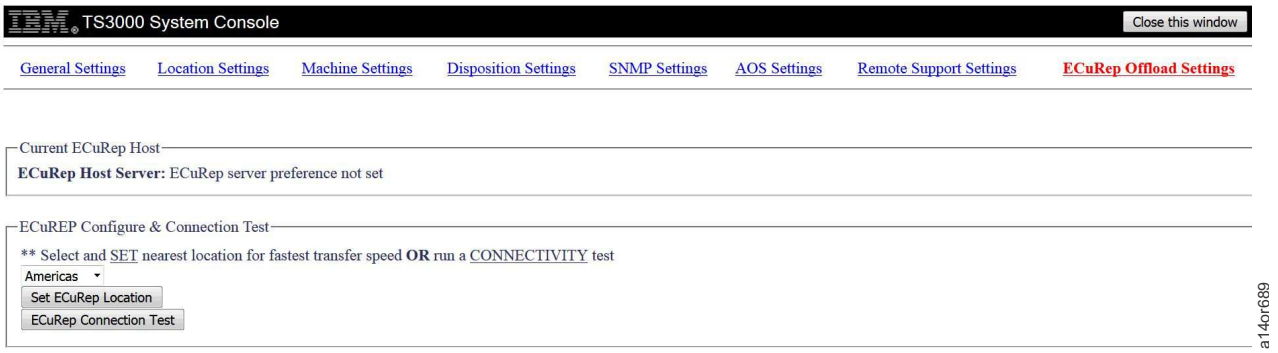

Figure 119. ECuRep Offload Settings Screen

System Console remote support information

Use this section to have the customer collect and record information required to set up Call Home on the system console.

Ask the customer to provide values for each of the fields defined in Table 12. Required information incudes:

- Call Home modem number
- Call Home Ethernet IP, subnet, and gateway
- Remote Support Ethernet IP, subnet, and gateway
- Customer name
- Customer contact information

Table 12. System console remote support information

Field	Value	Notes
Customer Company Name		This value will be sent out with the Call Home records.
Customer Location		This is the customer's location.
Customer email address		This is the customer's email address.
Customer Phone Number (modem)		This is the telephone number assigned to the analog phone line for Call Home.
Customer Phone Number (voice)		This is the phone number that IBM contacts when Call Home indicates a failure.
Customer OffShift Phone Number		This is the alternate phone number that IBM contacts when Call Home indicates a failure.

Table 12. System console remote support information (continued)

Field	Value	Notes
IP Address (for optional Ethernet Call Home)		This is an optional (but strongly recommended) IP address on the customer network that will allow the system console to Call Home using a high speed connection through the customer network to the Internet. Ports 443 (https) and 80 (http) on this IP address must be free for outbound traffic through the customer network to the Internet. **Note:** The modem is still needed for Call In (remote support) unless the broadband method for dial in is used (Assist On-Site).Call Home through an Ethernet connection greatly improves the speed of the data transfer, making the data available to support personnel more quickly. Call Home through an Ethernet connection is only used for Call Home (outbound). IBM recommends enabling Call Home to improve data collection when a problem occurs. Call Home through an Ethernet connection provides better throughput and lower cost than Call Home through a modem connection. The following list provides the IP addresses that Legacy ECC Broadband Call Home needs to get through the firewall: • eccgw01.boulder.ibm.com (207.25.252.197) • eccgw02.rochester.ibm.com (129.42.160.51) • www.ecurep.ibm.com (192.109.81.20) • www6.software.ibm.com (170.225.15.41) • www-945.ibm.com (129.42.26.224) • www-945.ibm.com (129.42.42.224) • www-945.ibm.com (129.42.50.224) • www.ibm.com (129.42.56.216) • www.ibm.com (129.42.58.216) • www.ibm.com (129.42.60.216) • www-03.ibm.com (204.146.30.17) The following list provides the IP addresses that Edge ECC Broadband Call Home needs to get through the firewall: • esupport.ibm.com (129.42.54.189) • esupport.ibm.com (129.42.56.189) • esupport.ibm.com (129.42.60.189) • www6.software.ibm.com (170.225.15.41)
Subnet Mask (for optional Ethernet Call Home)		This is the subnet mask associated with the IP Address (for optional Ethernet Call Home)
Gateway (for optional Ethernet Call Home)		This is the gateway associated with the IP Address (for optional Ethernet Call Home)
ECC Proxy Address		The IP address of the server, if an HTTP proxy server is being used with Ethernet Call Home.

Table 12. System console remote support information (continued)

Field	Value	Notes
ECC Proxy Port		The proxy server port for use with Ethernet Call Home.
ECC (optional) authentication credentials		If the proxy server requires authentication, provide the following: • username • password
AOS Address		This is an IP address used by the Assist-On-Site (AOS) tool that allows remote desktop connections over the External broadband Ethernet adapter to the TSSC. It utilizes the same network as broadband call home and will work on either HTTP or HTTPS. The AOS daemon will allow outbound connections only. It will establish connections by periodically connecting to the AOS servers to determine if remote access is needed. If so, the daemon will establish the connection and the remote user will have desktop access to the TSSC. The following list provides the IP addresses that AOS needs to get through the firewall: • aos.us.ihost.com (72.15.208.234) • aosrelay1.us.ihost.com (72.15.223.60) • aoshats.us.ihost.com (72.15.223.62) • aos.uk.ihost.com (195.171.173.165)
AOS Proxy Address		The IP address of the server, if an HTTP proxy server is being used with AOS.
AOS Proxy Port		The proxy server port for use with AOS.
AOS (optional) authentication credentials		If the proxy server requires authentication, provide the following: • username • password See Table 13

Table 13. Proxy password limitations

Some special characters are not allowed in proxy passwords on the TSSC, and others must be explicitly escaped by preceding them with a backslash character '\'. For example, if your proxy password is pass#word, you would enter the text as pass\#word. The allowable characters differ in a few instances depending on whether you enter them through the Console Configuration Utility GUI or through the RAS menu. Refer to the following chart for characters that are not allowed or must be escaped.

Table 13. Proxy password limitations (continued)

CHARACTER	ENABLE VIA GUI	ENABLE VIA RAS MENU
~	OK	OK
`	not allowed	OK
!	requires \!	requires \!
@	not allowed	not allowed
#	requires \#	requires \#
$	OK	OK
%	OK	OK
^	OK	OK
&	OK	OK
*	OK	OK
(	OK	OK
)	OK	OK
_	OK	OK
-	OK	OK
+	OK	OK
=	OK	OK
[	OK	OK
]	OK	OK
{	OK	OK
}	OK	OK
|	OK	OK
\	requires \\	requires \\
:	OK, but display cuts	off everything after :
;	OK	OK
"	OK	OK
'	OK	OK
<	OK	OK
>	OK	OK
,	OK	OK
.	OK	OK
?	OK	OK
/	not allowed	not allowed

Initializing the TSSC Serial Port for connection to local devices

Complete this task to initialize a serial port on the TSSC.

Use this procedure to initialize a serial port on the TSSC. You use the serial port to set the baud rate (or 'data transmission speed').

1. Attach to the TSSC the null modem adapter and serial cable that shipped with the TSSC.
2. Set the TSSC serial port baud rate for the serial connection by using one of the following procedures.
   - "Setting Baud Rate for TSSC Serial Port from TSSC"

     – – OR – –
   - "Setting Baud Rate for TSSC Serial Port from Remote Connection" on page 103

Setting Baud Rate for TSSC Serial Port from TSSC

Complete this task to set the baud rate for a TSSC serial port from the TSSC.

Perform the following steps to set the baud rate for a TSSC serial port:

1. After logging in to the TSSC, from the TSSC desktop, right-click on the desktop to see Figure 120 on page 102.

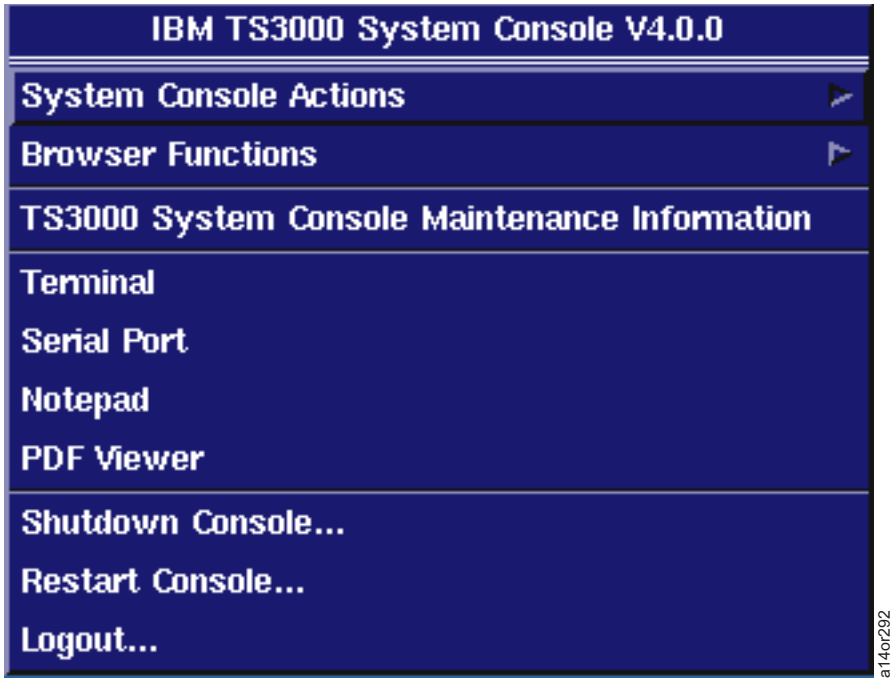

Figure 120. Serial Port Selection on TSSC Screen

2. Select **Serial Port**. You see Figure 121. Type the number of the port speed (baud rate) for the device to which you will be connecting. The message 'Connected' appears. Press **Enter**.

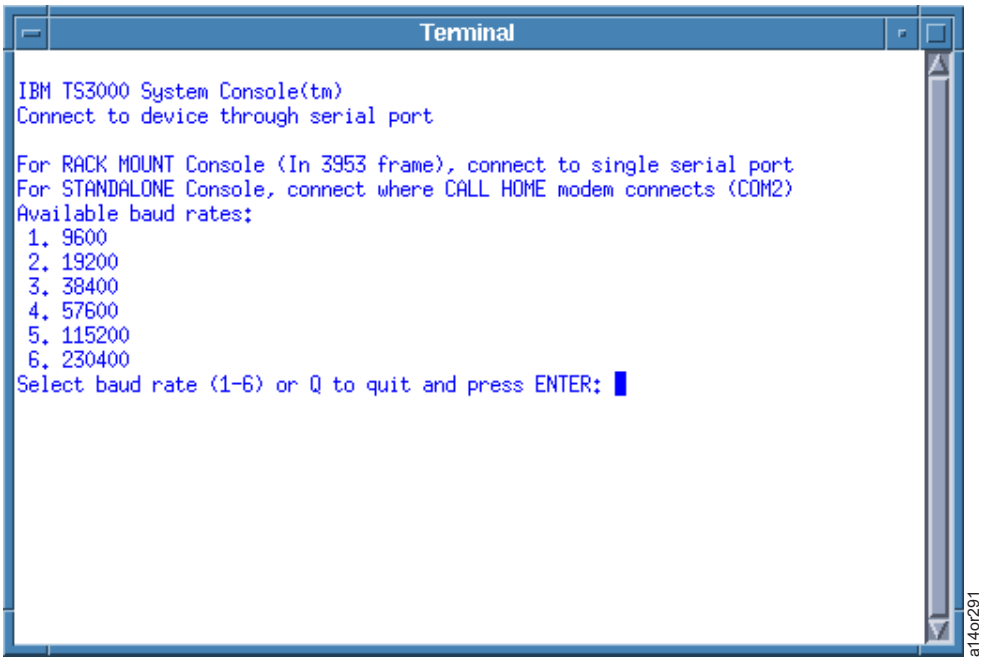

Figure 121. Baud Rate Screen - From TSSC

Notes:

- You may need to try various baud rates if 19200 (**2**) does not work for your application.

- After you have completed setting the baud rate, if unexpected characters appear while you are typing, you may have set a baud rate that is not correct for your device. Refer to the documentation for the device to which you have connected, and confirm that you are using the correct baud rate for your device.
- Use the ~. command to end the connection from the TSSC serial port at any time.

Setting Baud Rate for TSSC Serial Port from Remote Connection

Complete this task to set the baud rate for a TSSC serial port from a remote connection.

Use this procedure to set the baud rate (transmission speed) for a TSSC serial port from a remote connection. You may need to try various baud rates if 19200 (**2**) does not work for your application.

1. After logging in to the TSSC, at the command line enter the **serialport** command, on the prompt line, and press **Enter**.

```
raselmc: ~ # serialport
```

   The baud rate screen depicted in Figure 122 appears.

```
IBM TS3000 System Console
Connect to device through serial port
For RACK MOUNT Console (In 3953 frame), connect to single serial port
For STANDALONE Console, connect where CALL HOME modem connects (COM2)
Available baud rates:
 1. 9600
 2. 19200
 3. 38400
 4. 57600
 5. 115200
 6. 230400
Select baud rate (1-6) or Q to quit and press ENTER:
```

Figure 122. Baud Rate Screen - From Remote Connection

2. At the prompt, type the number (from the list) for the port speed for the device to which you will be connecting. The message 'Connected' appears. Press **Enter**. The baud rate is now set.

   Notes:
   - After you have completed setting the baud rate, if unexpected characters appear while you are typing, you may have set a baud rate that is not correct for your device. Refer to the documentation for the device to which you have connected, and confirm that you are using the correct baud rate for your device.
   - Use the ~. command to end the connection from the TSSC serial port at any time.

Backing Up Configuration Data

Complete this task to back up configuration data.

Note: It is recommended, but not required, that you back up configuration data.

1. The system console configuration is complete. You can now backup your configuration settings if you need to re-image the hard disk drive or load a new version of software. You will need a USB storage device, or a CD for this procedure. Use this procedure when reconfiguring the following:
   - Attached systems
   - Call Home settings

   Notes:
   - You can store multiple configurations by using unique backup names. Follow the convention for backup configuration names of <host name>-<machine type>-<serial number>.tgz when you create a unique name.

- Model 8849: The 306 m does not contain a floppy diskette drive. A USB device is the only option.
- USB devices must support USB storage standards.

2. Right-click from anywhere in the Desktop to view the Main Menu.
3. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
4. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
5. Click **Backup/Restore**. You see the screen shown in Figure 123.

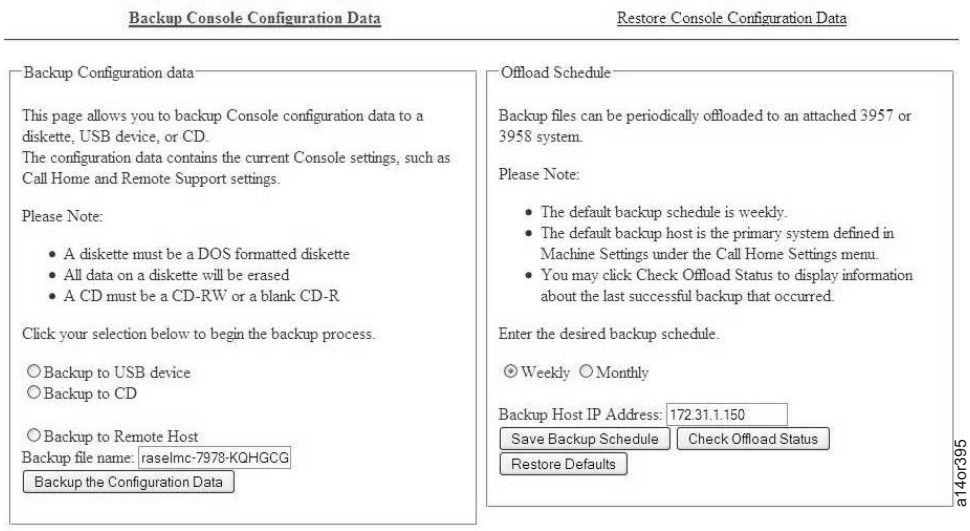

Figure 123. Backup Configuration Data Screen. The options you see on this screen are model dependent.

6. Click **Backup Console Configuration Data**. You see the Restore Console Configuration Data screen, which is similar to the Backup Configuration Data screen.
7. Click **Backup to USB device** to backup the console configuration to a USB device.

   – – OR – –

   Click **Backup to CD** to backup the console configuration to a CD.

   – – OR – –

   Click **Backup to Remote Host** to backup the console configuration to an attached host. You will need to be attached to a 3957, 3958, 3592, or TS7700. You are shown a box into which you enter the IP address of the system you want to back up to. You can do this with all 3958s or TS7700s, but only with 3957's with code at V8.5 or higher and 3592's with code levels at 1.23.1.54 or higher.

   Notes:

   - Record the IP address of the remote host that you backed up to. You might need this when you perform a Restore in Step 7 on page 107.

     Remote host IP address:

     _____ . _____ . _____ . _____
   - If you changed the hostname to something other than tssnet1, record the new host name here.

     Remote hostname (if you changed it from tssnet1):

     _____

If you change the hostname from the default “tssnet1”, it must conform to the following guideline: A “name” (Net, Host, Gateway, or Domain name) is a text string up to 63 characters that contains only ASCII letters a-z (case-insensitive), digits (0-9), and hyphen (-).

8. A dialog box appears, requesting that you perform one of the following steps.
   - Insert a CD.

     – – OR – –
   - Plug in a USB storage device.

   | **Note:** To connect a USB device to the TSSC model 7040, 9020 or M93p, you must disconnect the DVD optical drive plugged into Port 4 (if one is connected). Then, plug the USB device into Port 4. Refer to Figure 3 on page 8, Figure 4 on page 9 or Figure 5 on page 10 for port locations.
9. Click **OK**. A message appears which informs you of the success of the procedure.
10. | Click **OK**. If a USB storage device was connected to Port 4 on the 7040, 9020 or M93p, then remove the USB storage device and reconnect the DVD optical drive into Port 4 (if one is connected).

    Note: If you have SNMP Trap Forwarding enabled for the 3958-DD1, collect and manually record the IP addresses as a backup. You might need this address information for a later procedure:
    a. On the Backup Console Configuration screen, click **Close This Window**.
    b. From the home page, click **Call Home Settings** > **SNMP Settings**.
    c. Record the IP addresses which you can acquire from the DS4000 Forwarding IP and RSA IP fields.

       DS4000 _____ . _____ . _____ . _____

       RSA IP _____ . _____ . _____ . _____
11. Click **Close this window** to exit the Backup screen.

Scheduling Configuration Backups

Note: This procedure works only with 3958's, 3957's with microcode levels higher than V8.5, 3592-C06, and (Enterprise Control Units in 3958-DE2) with microcode levels higher than 1.23.1.54.

- 3957 backups are stored in the `/vtd_hydlog/tsscBRConfig/` directory
- 3958 backups are stored in the `/opt/ras/persist/` directory
- 3592 backups are stored in the `/var/adm/ras/` directory.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
4. Select **Backup/Restore**. You see Figure 124 on page 106.

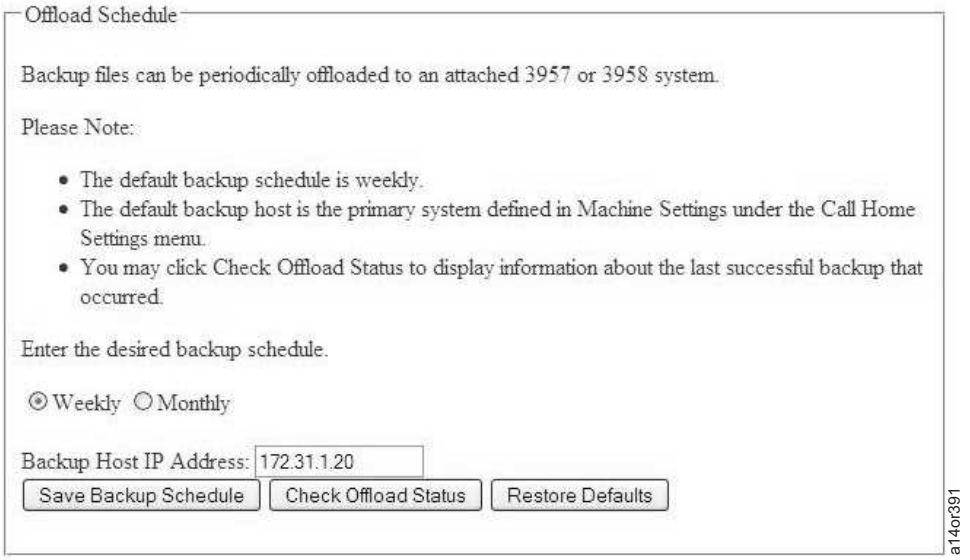

Figure 124. Offload Schedule screen

5. Select one of the following options:

   Weekly to request a weekly backup (default)

   – – OR – –

   Monthly to request a monthly backup

   If you do not want to reschedule configuration backups, go to Step 8.
6. Choose the host system that you want to back up to, or the Backup Host IP Address defaults to the IP address of the main attached system.
7. Select **Save Backup Schedule**. You are prompted with a confirmation screen. Click **OK** to continue.
8. If you want to determine when the last offload was performed, select **Check Offload Status**. The screen refreshes. In the upper left corner, you see a message like:

```
Last offload was performed on Wed Feb 13 11:25:28 UTC 2008
Files were offloaded to: 172.31.1.150
```

9. To reset to the default schedule, select **Restore Defaults**.

   Note: The default backup host is the primary system that is defined in Machine Settings, under the submenu Call Home Settings.

Restoring Configuration Data

Attention: Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, “Maintenance Starting Point,” on page 1 to determine the system console code level.

Notes:
- Perform this procedure **ONLY if it is necessary to restore Console Configuration Data**.
- Restoration of configuration data from system console code level V1.x.x to a system with V3.x.x or V4.x.x will not work. It will be necessary to reconfigure the console settings manually.

1. Log in to the system console using one of the login options in “User Login” on page 50.
2. Right-click from anywhere in the Desktop to view the Main Menu.
3. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
4. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.

Notes:

- To login remotely from another system console, you must obtain an Authentication ID (see "Login Options" on page 50). Launch your browser, and enter the system console location into the **Address** field. Enter your Authentication ID into the **Username** field and your password into the **Password** field. Click **OK** to start the Console Configuration utility.
- If you are restoring configuration from a remote system, and the hostname of the system console is not going to remain tssnet1, use the hostname that you recorded in step 7 on page 104. Also, you need to reattach the subsystem that you want to retrieve the backup from. To reattach the subsystem, see "Adding Attached System Information" on page 52.

5. Click **Backup/Restore**. You see Figure 123 on page 104.
6. Click **Restore Console Configuration Data**. You see the screen shown in Figure 125.
7. Select **Restore from CD** or **Restore from USB device**. Confirm that the CD is inserted in the drive or that the USB device is attached.

| **Note:** To connect a USB device to the TSSC model 7040, 9020 or M93p, you must disconnect the DVD optical drive plugged into Port 4 (if one is connected). Then, plug the USB device into Port 4. Refer to Figure 3 on page 8, Figure 4 on page 9 or Figure 5 on page 10 for port locations.

– – OR – –

If you are restoring configuration data to the default settings, select **Restore to factory defaults**.

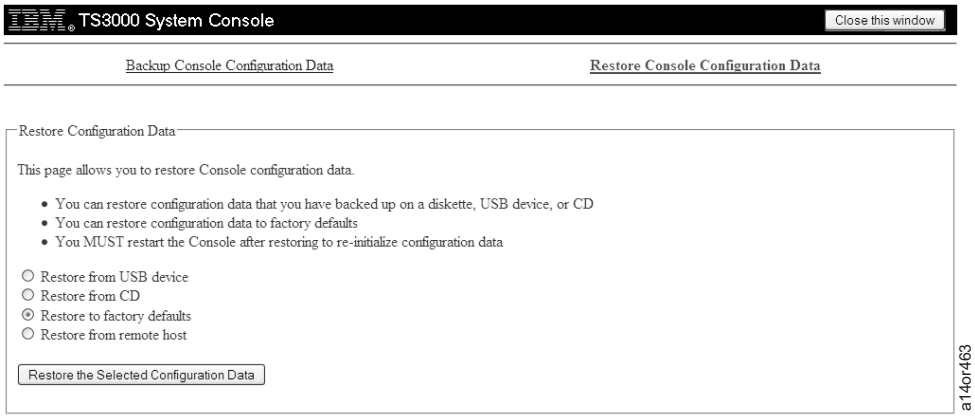

Figure 125. Restore Configuration Data Screen

– – OR – –

If you are restoring configuration data from a remote host, select **Restore from remote host**. You can use the default remote host IP address or you can type in a different address, such as the one you would have recorded in Step 7 on page 104.

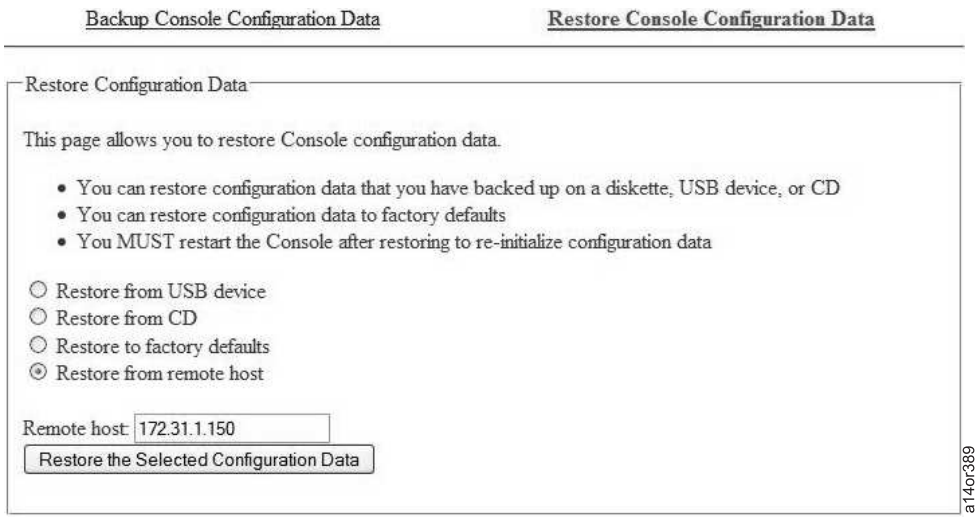

Figure 126. Restore Remote Host. In the Remote host field, add the IP address that you recorded in Step 7 on page 104.

8. In the Remote host input area, type the host IP address that you recorded in Step 7 on page 104.
9. Click **Restore the Selected Configuration Data** to begin the Restore. Another dialog box appears, which informs you of the success of the previous operation, and informs you that the system console must be rebooted to complete the restore operation.

   Note: If a USB storage device was connected to Port 4 on the 7040, 9020 or M93p, then remove the USB storage device and reconnect the DVD optical drive into Port 4 (if one is connected).

   Note: When you select **OK** to continue, the system console reboots without further warning!

   However, to close any open applications and reboot the system manually, select **Cancel**. Your new configuration settings are not fully in effect until the system console reboots. Remove the CD if you installed one.
10. If you chose Cancel as is mentioned in Step 9, you need to perform the following steps to reboot the system console:
    a. Click **Close this window** to close the Restore Console Configuration Data screen.
    b. Click **File** > **Exit** to exit the browser.
    c. Right-click from anywhere in the Desktop to view the Main Menu.
    d. Select **Restart Console**. The restored configuration data is available after the system console restarts.
11. If you collected and recorded the SNMP Trap Forwarding IP addresses in Step 10 on page 105, as a backup for the 3958 configuration:
    a. After the system reboots, from the Main Menu, select **System Console Actions** > **Console Configuration Utility** > **Call Home Settings** > **SNMP Settings**.
    b. Into the boxes, enter the IP addresses that you collected and recorded in Step 10 on page 105.
    c. Click **Apply**.

Restoring Configuration Data from a Remote Host

If the operating system was reinstalled from scratch, then the system console configuration can be recovered by adding the Remote host IP address to the attached systems and then recovering the system console configuration from that remote host.

1. Log in to the system console using one of the login options in "User Login" on page 50.
2. Right-click from anywhere in the Desktop to view the Main Menu.

3. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
4. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
5. Select **Attached Systems**.
6. Add the Remote host IP address and click **Add System**. A warning dialog box appears, informing you that it may take several minutes. Click **OK** to close the window.
7. From the Main Menu, select **Backup/Restore** > **Restore Console Configuration Data** > **Restore from remote host**.
8. In the Remote host input area, type the host IP address (172.31.1.xx).
9. Click **Restore the Selected Configuration Data** to begin the Restore.
10. Select **OK** to reboot the system and complete the restore with the configuration data.

Setting the Console Date and Time

Complete this task to set the date and time on the system console.

Note: If the TSSC is connected to a 3958-DE2 complex and you have replaced the system planar board, first remove the Internal Ethernet cable from the back of the TSSC. Use the time on the lower ProtecTIER server as the TSSC time for NTP Server re-syncing. After you update the time on the TSSC, you can reconnect the Internal Ethernet cable, and then start the NTP server.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, type **service** in the Password field, then click **OK** to start the Console Configuration application.

   Note: To login remotely from another system console, you must obtain an Authentication ID. Launch your browser, and enter the system console location into the Address field. Enter your Authentication ID into the Username field and your password into the Password field. Click **OK** to start the Console Configuration utility.
4. Click **Console Time**. The screen in Figure 127 appears.

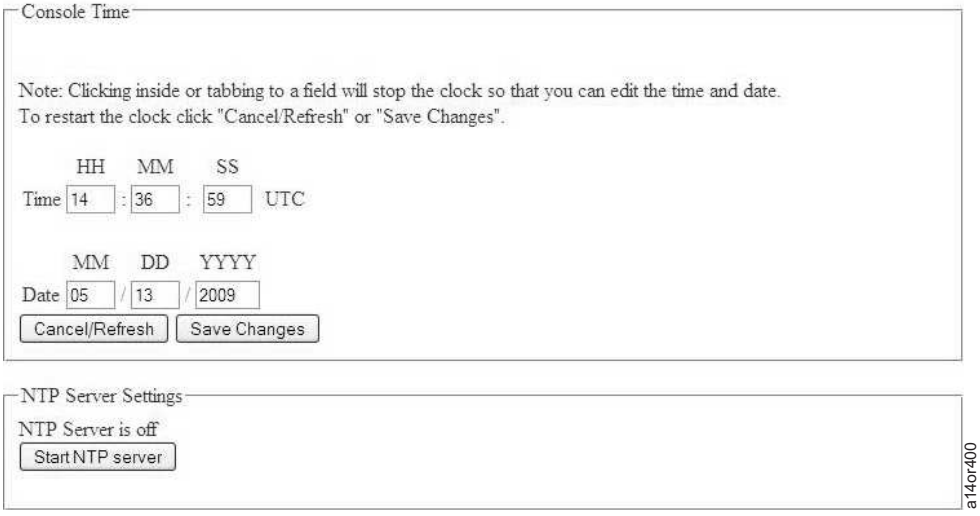

Figure 127. Console Time and Date

5. See Figure 128 on page 110. If you need to change the system clock on the system console, you must first ensure the NTP server is stopped. To do this, click **Stop NTP server**.
6. Enter the correct values in the Time and Date fields.

7. Click **Save Changes** when you are finished.
8. See Figure 129. To start the NTP server, click **Start NTP server**.

   Note: It might be necessary to log out and log in again to refresh the date and time indicator on the desktop application bar. It is also possible that the screen saver might be invoked when resetting the time.

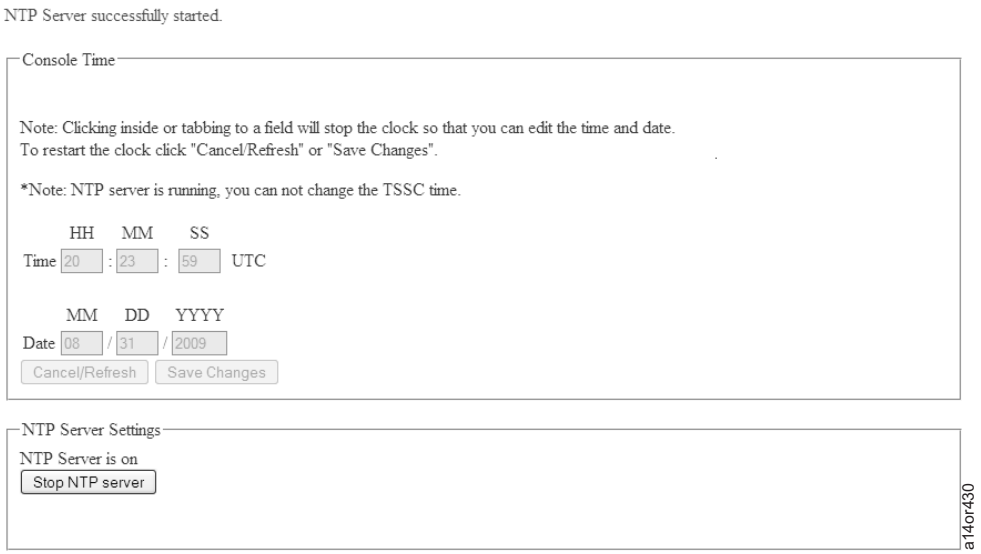

Figure 128. Stop NTP Server screen

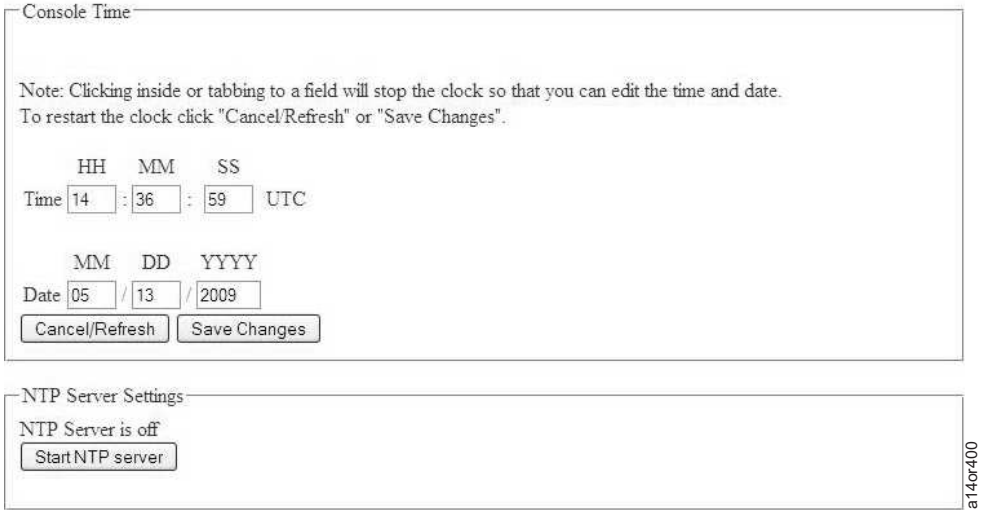

Figure 129. Start NTP Server screen

Test RETAIN Connection - During Installation

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.

   Note: To login remotely from another system console, you must obtain an Authentication ID (see "Login Options" on page 50). Launch your browser, and enter the system console location into the

Address field. Enter your Authentication ID into the Username field and your password into the Password field. Click **OK** to start the Console Configuration Utility.

4. Click **Console Status**. The Test RETAIN Connection screen shown in Figure 130 appears.

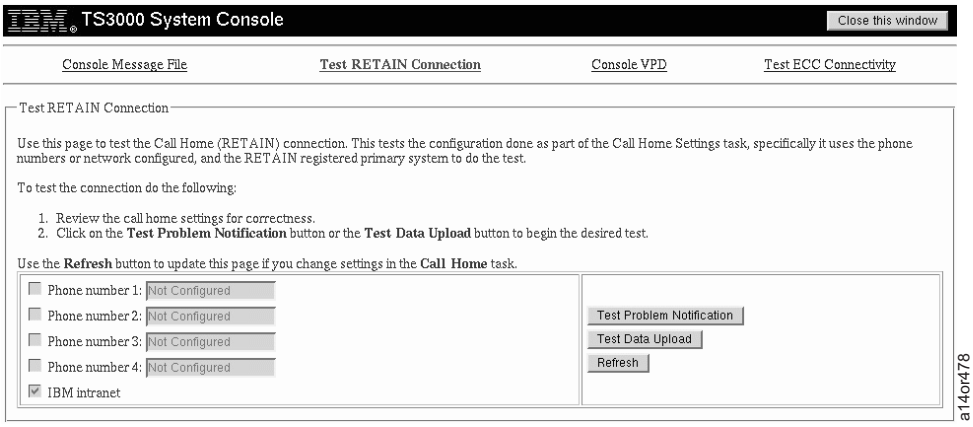

Figure 130. Test RETAIN Connection Request Screen - During Installation

5. Click **Test RETAIN Connection**.
6. Click one of the configured telephone numbers.
7. Click **Test Problem Notification** in the right panel to test the PMR path, or click **Test Data Upload** to test the data upload path. Details of the results of the test appear in the screen shown in Figure 131. If you changed a telephone number, click **Refresh** to refresh the display, then again perform Step 7.

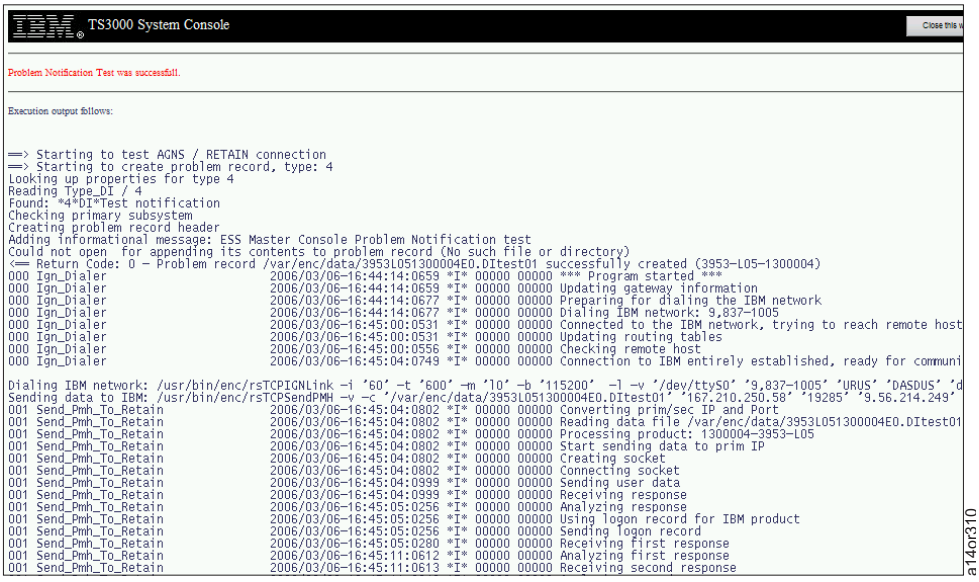

Figure 131. Test RETAIN Connection Results Screen - During Installation

Test Electronic Customer Care (ECC) Connectivity

This feature can be used to assist in both setting up and troubleshooting problems with ECC call home.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.

4. Click **Console Status**.
5. Click the **Test ECC Connectivity** link at the top of the page. You see the screen shown in Figure 132.

   Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to test ECC connectivity (**TSSC Menus** > **Call Home Functions** > **Call Home Options** > **Test ECC Connectivity**). Refer to "RAS Menus" on page 177.

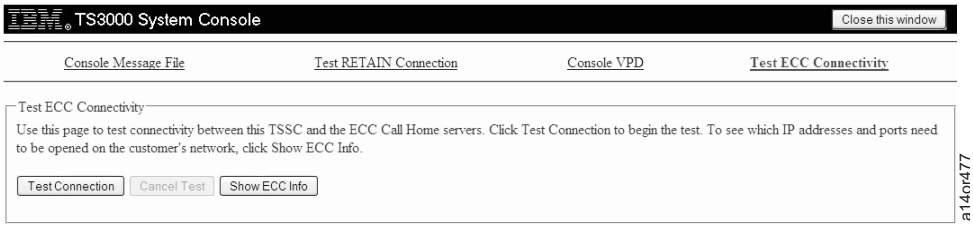

Figure 132. Test ECC Connectivity Screen

6. To test connectivity to the ECC servers, click the **Test Connection** button. The test will begin immediately, and you should see the results of the test on the screen.

   Note: If any of the tests report "NOT OK", the listed IP address and port will need to be opened through the customers firewall in order to gain access to the ECC service. Go to "Verifying accessibility of broadband call home servers" on page 113 and verify the accessibility of the ECC call home servers through the customers network.

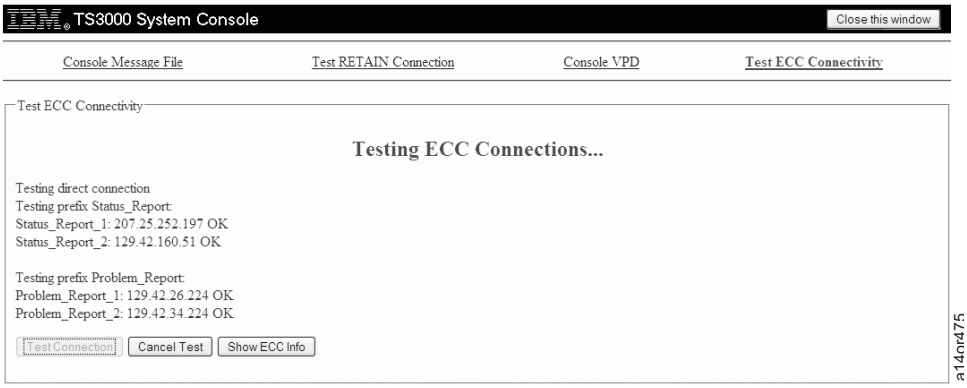

Figure 133. ECC Test in progress showing successful connections being made

7. To cancel the connectivity test, click **Cancel Test** while the test is active.
8. If you want to see the current IP address and ports used by ECC, click **Show ECC Info**. You see results similar to the following image.

   Note: All IP addresses and ports must be allowed through a customers network in order to use all ECC features.

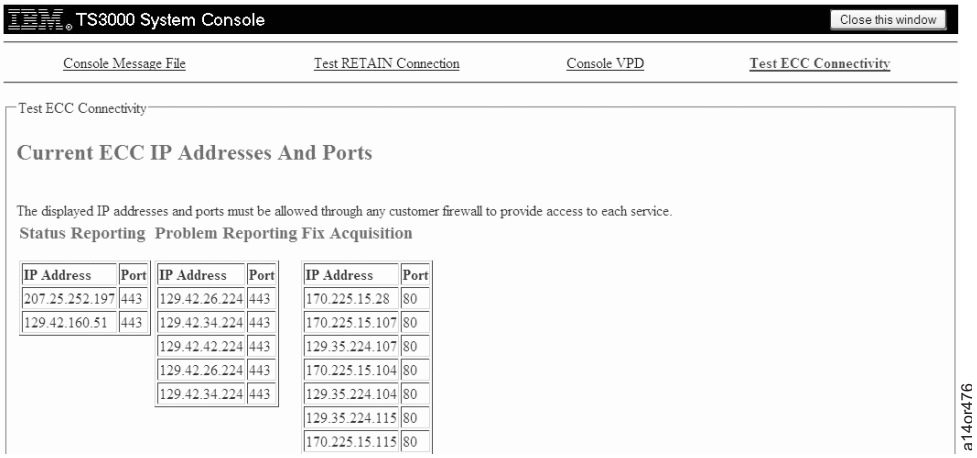

Figure 134. Sample output showing ECC IP addresses and ports

Verifying accessibility of broadband call home servers

Broadband call home might fail to open PMRs in RETAIN or to offload data files to DP&R Call Home database when access to all required call home servers is not allowed.

Use this procedure to verify the accessibility of the call home servers through the customers network.

1. If not already logged in, log in as **service**.
2. Right-click from anywhere in the Desktop to view the Main Menu.
3. Open the terminal console by selecting **Terminal** from the main menu.
4. If ECC is configured for Legacy ECC, then enter the following commands and review the response to verify the expected result from the various Legacy ECC call home servers.

   curl -v <https://hostname> for example, **curl -v https://eccgw01.boulder.ibm.com/**
   curl -v -k <https://IP address> for example, **curl -v -k https://207.25.252.197/**

   Note: This should be performed for all 7 unique hostnames and 11 unique IP addresses listed in Table 9 on page 90.
   The expected response is HTML code that identifies the responding server as an IBM system.
5. If ECC is configured for Edge ECC , then enter the following commands and review the response to verify the expected result from the Edge ECC call home servers.

   curl -v <https://hostname> for example, **curl -v https://esupport.ibm.com/**
   curl -v -k <https://IP address> for example, **curl -v -k https://129.42.54.189/**

   Note: This should be performed for both unique hostnames and 4 unique IP addresses listed in Table 10 on page 90.
   The expected response for the esupport server is a response indicating “esupport.ibm.com”, and the file upload server will reply with HTML code that identifies the server as an IBM system.

Possible error indications:

- The curl command might never result in a response and require a `Ctrl+C` keystroke to terminate the attempt.

```
[slehmann@rasdevtssc45 ~]$ curl -v -k https://207.42.160.51/
 ^C
 [slehmann@rasdevtssc45 ~]$
```

This result is typically a sign that the customer hasn't properly allowed connectivity between the system console and affected ECC server.

- The curl command might result in a response indicating that the hostname couldn't be resolved.

```
[slehmann@rasdevtssc45 ~]$ curl -v https://eccgw01.boulder.ibm.com/
 curl: (6) Couldn't resolve host 'eccgw01.boulder.ibm.com'
```

This result is typically a sign that the customer doesn't allow DNS resolution. Many customer do not allow name resolution in their network, therefore such result might be expected.

- The curl command might result in a response indicating that access to the requested website is prohibited.

```
<!-- W3DB content start -->
<h1><strong><rcol style='color:red'>Access to this web site was blocked per XXX Policy
</rcol></strong></h1>
<br>
<p style='width:80%;'>The requested web site at <b>eccgw01.boulder.ibm.com</b>
 is categorized as <b>Insecure</b>.
<br><br>
Use of web sites in this category may expose XXX to risk of system compromise and data loss.<br>
```

This result is typically a sign that the customer hasn't properly allowed connectivity between the system console and affected ECC server, or that the customer proxy does not deem the server trustworthy based on default packet inspection rules.

Logging Out of the System Console

After you complete your current task on the system console, you should log out of the system console.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. Click **Logout**. You are logged out of this console session.

You can use the **Shutdown Console** menu item if you need to log out and halt the system console. You would use this if you needed to physically power OFF the system console at the end of the shutdown process. Use the **Restart Console** menu item to reboot the system console. You also can use the **Shutdown** and **Restart** buttons, located in the lower left corner of the System Console Login screen, to halt or reboot the system console without logging in.

Test Call Home for 3494 VTS, VTC, 3590 A60, 3592 J70, and 3592 C06

1. Return to the tape system's Call Home / Remote Service Menu at the Library Manager EBTERM Service Screen (if available). To test a call home through the TSSC, select **Send Test Notification Menu**, as shown at Figure 135 on page 115. Press **Enter**. Figure 136 on page 115 displays.

   Attention: Select the illustrated line item **only at Figure 135 on page 115**. No other menu display items are applicable for this process.

```
                      Call Home / Remote Services Menu

Move cursor to desired item and press Enter.

   Send Test Notification Menu

 F1=Help             F2=Refresh          F3=Cancel           F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 135. Call Home / Remote Services Menu – Send Test Notification Menu

2. At Figure 136, select **Service Notification (via modem)**. Press **Enter**. Figure 137 displays.

```
                        Send Test Notification Menu

Move cursor to desired item and press Enter.

  Service Notification (via modem)
  Pager Notification (via Pager)

F1=Help             F2=Refresh          F3=Cancel           F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 136. Send Test Notification Menu – Service Notification

3. Verify that the following message is received, and verify that the Test Message was received in RETAIN.

```
Service Notification Test Result: Test message was queued successfully.

Start waiting for queue program (rsCHDaemon) to receive the Test message (qname=
DI_Vycia).
Press Ctlr-C anytime to cancel test .
11: 418, Tue Jul 10 14:32:37 2001, waittime=131 seconds, send delay after the di
splayed time..........
```

Figure 137. Send Notification Test Result Menu – Waiting

Test Call Home Notification for 3494 ATL or 3953 Enterprise Library Controller

Note: This function requires that the 3494 ATL or 3953 be successfully attached to the TSSC. See "Adding Attached System Information" on page 52.

This procedure requires that you previously performed "Tape System Setup for 3494 ATL (Library Manager) or 3953 Enterprise Library Controller" on page 39.

1. To test call home through the TSSC, use the 3494 ATL or the 3953 menu commands **Commands** > **Call Home** to view the Call Home Dialog box (see Figure 138 on page 116).

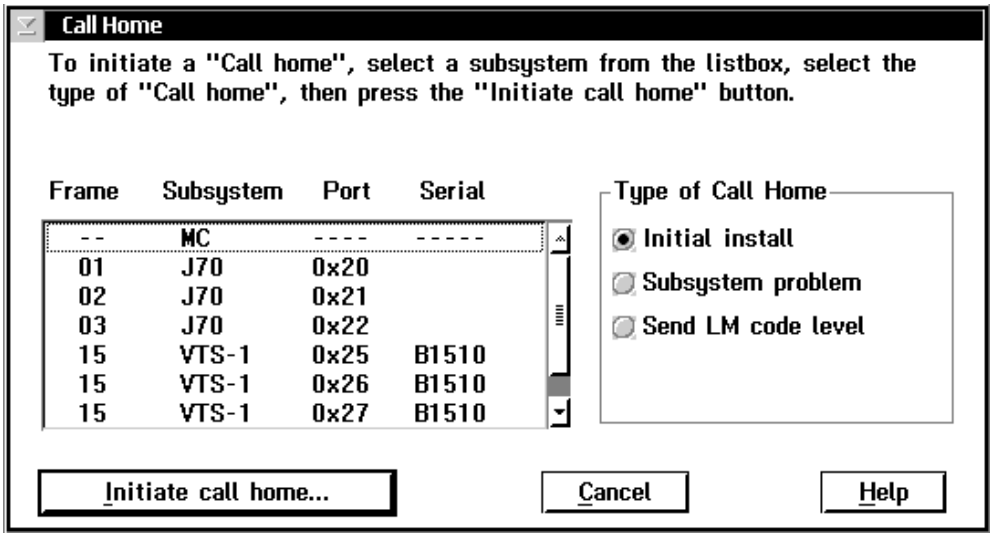

Figure 138. Call Home Dialog Box

2. Highlight the line containing 'MC' in the Subsystem column. Click **Subsystem problem** > **Initiate call home**. After the call home is created, a dialog box appears which indicates that the call home was successfully created and sent to the TSSC. The call home package should be available for viewing within two or three minutes by using the TSSC's Queue Management tool (see "Call Home Queue Management" on page 142).

   After the TSSC sends the package to RETAIN, the PMR number is available by viewing the Call Home Log tool. To verify the record, log into the RETAIN system and search for the PMR, or search for records from the type, model, and serial number of the 3494 ATL or the 3953.

Setup for Remote Data Monitoring (VTS, VTC, A60, J70, C06)

Perform this procedure ONLY if **Remote Data Monitoring** is to be activated.

1. From the tape system Maintenance menu, select **Subsystem Configuration**, and press **Enter**.
2. At Figure 139, select **Call Home / Remote Services Menu**, and press **Enter**.

   Attention: Select the illustrated line item only **at Figure 139**. No other menu display items are applicable for this process.

   Note: To activate Remote Data Monitoring, ensure that the Call Home/Remote Services are set through the TSSC. See step 2 on page 34 and step 3 on page 37.

```
                        Subsystem Configuration

Move cursor to desired item and press Enter.

    Call Home / Remote Services Menu

F1=Help             F2=Refresh          F3=Cancel           F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 139. Subsystem Configuration Menu – Call Home / Remote Services Menu

3. At Figure 140 on page 117, select **Remote Data Monitoring**, and press **Enter**. Figure 141 on page 117 displays.

   Attention: Select the illustrated line item only **at Figure 140 on page 117**. No other menu display items are applicable for this process.

```
                     Call Home / Remote Services Menu

Move cursor to desired item and press Enter.


  Remote Data Monitoring

F1=Help             F2=Refresh          F3=Cancel           F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 140. Call Home / Remote Services Menu – Remote Data Monitoring

4. At Figure 141, select **Change / Show Call Home Heartbeat Interval**, and press **Enter**.

   Attention: Select the illustrated line item only **at Figure 141**. No other menu display items are applicable for this process.

```
                           Remote Data Monitoring

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                    [Entry Fields]
* Change / Show Call Home Heartbeat Interval          Disabled                  +
* Error Initiated Call Home Data Gathering            Disabled                 +
* Timeout Period Between Successive Data Call Homes  [24]                      #
    (In hours between 1 and 99)

F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Reset            F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 141. Remote Data Monitoring Menu – Change / Show Call Home Heartbeat Interval

5. In the example in Figure 142 on page 118, **7 days** is selected. Press **Enter**. Figure 143 on page 118 displays.

   Note: The Change / Show Call Home Heartbeat Interval option allows the user to select how often a heartbeat is sent home. A heartbeat consists of Machine Reportable Product Data (MRPD), such as installed features and code levels, and the output of a health check program like VTS Checkout. The frequency of these heartbeats can be between 1 and 15 days. The heartbeat can be disabled.

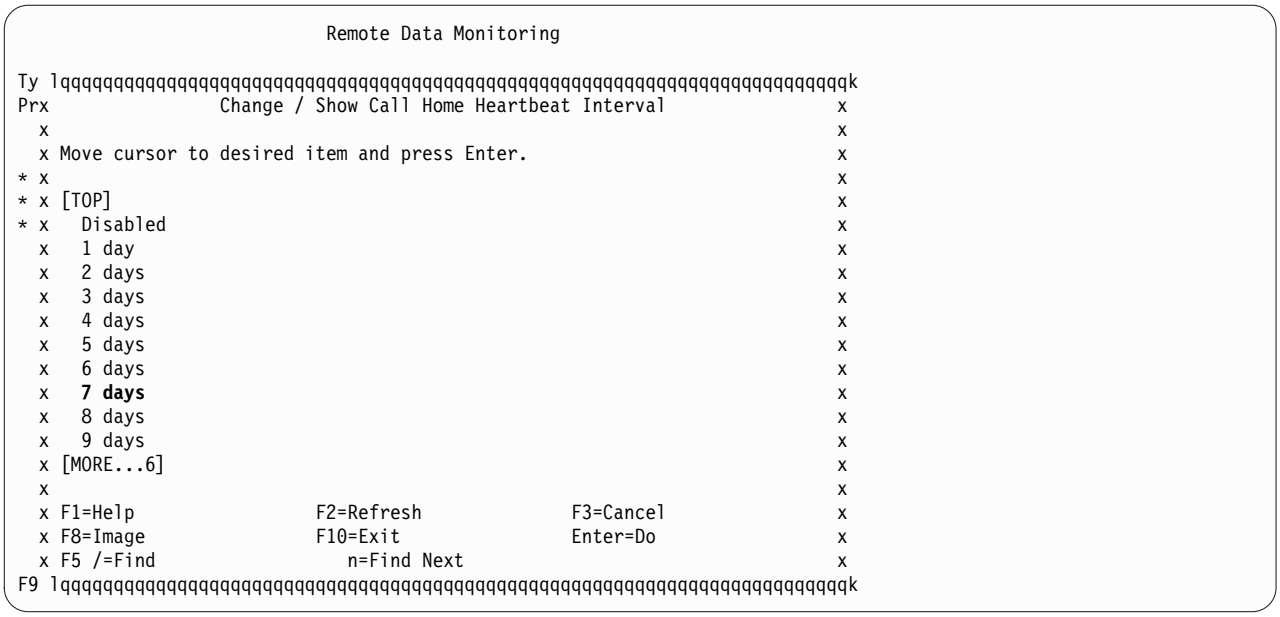

Figure 142. Remote Data Monitoring Menu

6. At Figure 143, select *** Error Initiated Call Home Data Gathering**, and press **F4** to display the list of options shown in Figure 144 on page 119.

   Note: The Error Initiated Call Home Data Gathering option allows the user to enable or disable data gathering when a call home occurs. If enabled, data collection and diagnostic programs are run whenever a call home event occurs, and the collected output is sent to the Support Center. The data that is collected contains information that will help in determining what caused the problem leading to the call home. If disabled, no data collection will occur when a call home event occurs.

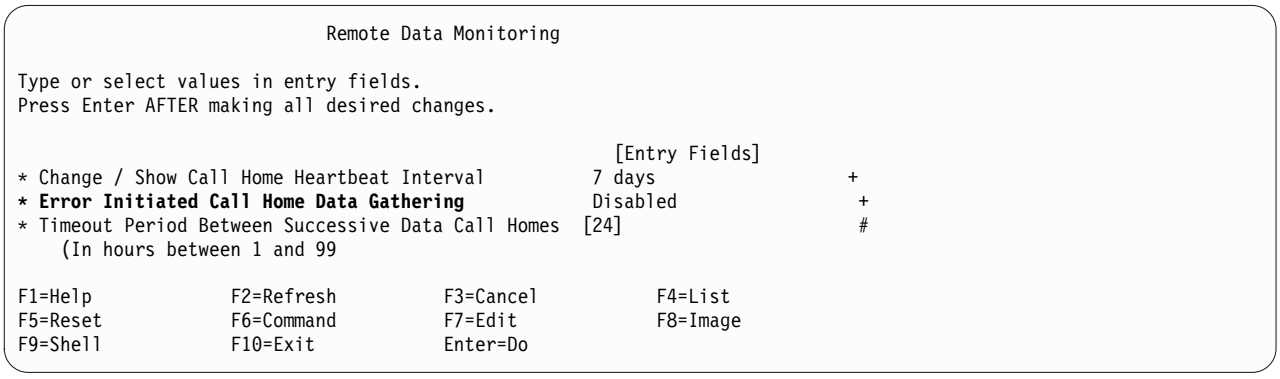

Figure 143. Remote Data Monitoring Menu – Error Initiated Call Home Data Gathering Disabled

```
                              Remote Data Monitoring

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                        [Entry Fields]
* Change / Show Call Home Heartbeat Interval          7 days               +
* Error Initiated Call Home Data Gathering            Disabled            +
* Timeout Period Between Successive Data Call Homes  [24]                   #
    (In hours between 1 and 99)


   lqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
  x                 Error Initiated Call Home Data Gathering                 x
  x                                                                          x
  x Move cursor to desired item and press Enter.                             x
  x                                                                          x
  x   Disabled                                                               x
  x   Enabled                                                                x
  x                                                                          x
  x F1=Help                 F2=Refresh              F3=Cancel                x
  xF1 F8=Image                F10=Exit                Enter=Do               x
  xF5 /=Find                  n=Find Next                                    x
F9 lqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqqk
```

Figure 144. Remote Data Monitoring Menu – Error Initiated Call Home Data Gathering Results

7. Select **Enabled**, and press **Enter**. Figure 145 appears with the selected values displayed.

```
                              Remote Data Monitoring

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                        [Entry Fields]
* Change / Show Call Home Heartbeat Interval          7 days               +
* Error Initiated Call Home Data Gathering            Enabled              +
* Timeout Period Between Successive Data Call Homes  [24]                   #
    (In hours between 1 and 99)

F1=Help             F2=Refresh          F3=Cancel           F4=List
F5=Reset            F6=Command          F7=Edit             F8=Image
F9=Shell            F10=Exit            Enter=Do
```

Figure 145. Remote Data Monitoring Menu – Error Initiated Call Home Data Gathering Enabled

Note: The Timeout Period Between Successive Data Call Homes option allows the user to select the minimum time between successive Error Initiated Call Home Data Gatherings. The user can select any number of hours between 01 and 99 hours (leading zero is required). As an example, assume that the user has chosen 24 hours. If a call home event occurs, extra data gathering will be performed, and the 24-hour clock begins timing. If another Call Home event occurs before the 24 hours has expired, no extra data gathering will be performed, even if that option is enabled. If a call home event occurs after the 24-hour period and Error Initiated Call Home Data Gathering is enabled, the extra data gathering will occur and the time-out period will begin again.

8. At Figure 145, press **Enter**. A COMMAND STATUS screen (Figure 146 on page 120) displays showing that a command is running.

```
                                COMMAND STATUS

Command: running       stdout: yes           stderr: no

Before command completion, additional instructions may appear below.

The values have been successfully changed
```

Figure 146. COMMAND STATUS Screen – Running

9. The Command Status screen (Figure 146) displays for as long as five minutes. It is normal for there to be no response for this period of time. **DO NOT press any keys** while the command is running.
10. When the execution of the command is complete, the screen shown in Figure 147 displays. "OK" appears in the "Command" field.

```
                                COMMAND STATUS

Command: OK       stdout: yes           stderr: no

Before command completion, additional instructions may appear below.

The values have been successfully changed
```

Figure 147. COMMAND STATUS Screen – OK

11. Press **F3** twice to return to the “Call Home / Remote Services Menu”.

Setup for Remote Data Monitoring (3494 ATL or 3953 Enterprise Library Controller)

Attention: Many procedures in this book are code specific. Before starting any procedure, go to Chapter 1, “Maintenance Starting Point,” on page 1 to determine the code level.

See “Set Heartbeat” on page 45.

Chapter 3. Procedures

Service Tools

Connect to Attached Tape System

After you complete the system console configuration, the tool to establish connections to attached systems is automatically enabled.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Connect to Tape System**. You see the screen shown in Figure 148.

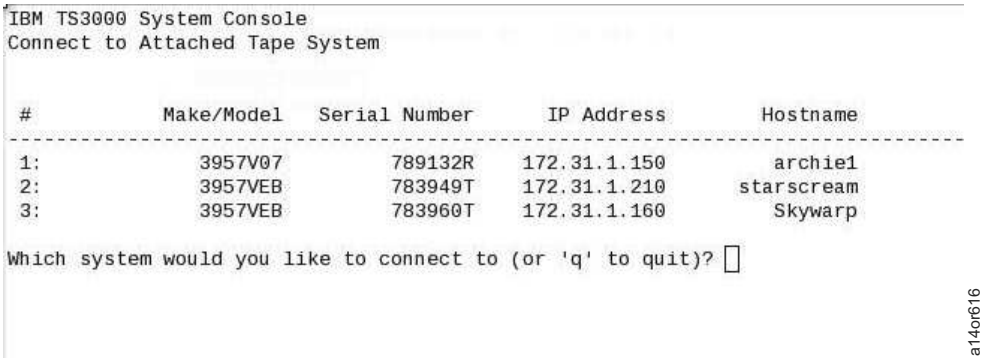

Figure 148. Connect to Attached Tape System – Selecting

3. Enter the number of the system you want to connect to, and press **Enter**.
4. When you have a successful connection, you see the screen shown in Figure 149.

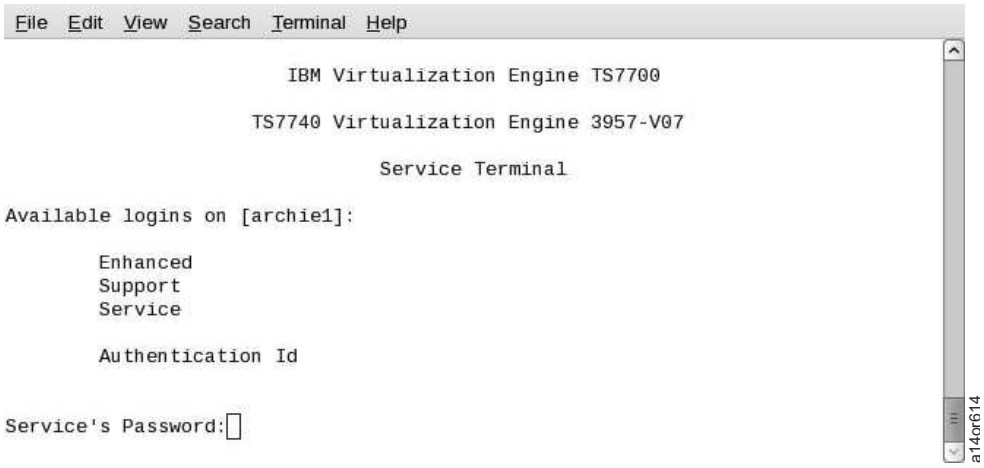

Figure 149. Connect to Attached Tape System – Connection Successful

Notes:

- Login to the system by using the established security procedures for that device. If your ID and password were successfully propagated, they can be used to log in.
- You can establish as many connections at one time, as necessary.
- You can establish multiple connections with a single system.

- If the function keys (F3, F4, F10, and so forth) do not work as intended in the SMIT screens, use ESC+3, ESC+4, ESC+0 key sequences instead.
- The connection screen must be a minimum of 80 columns by 25 lines in order for SMIT screens to display properly. To change the size of the screen, click and drag the lower right corner of the screen.
- If a communication attempt with an attached system fails, the screen disappears from the desktop, and no error message displays.

Telnet to Grid TSSC

Use this procedure to connect to another TSSC within the Grid network.

1. Right-click from anywhere in the Desktop to view the Main Menu shown in Figure 63 on page 52.
2. From the Main Menu, select **System Console Actions** > **Telnet to Grid TSSC**. You see the screen shown in Figure 150. Information about each Grid system as it is available, including IP address, hostname, and location are displayed.

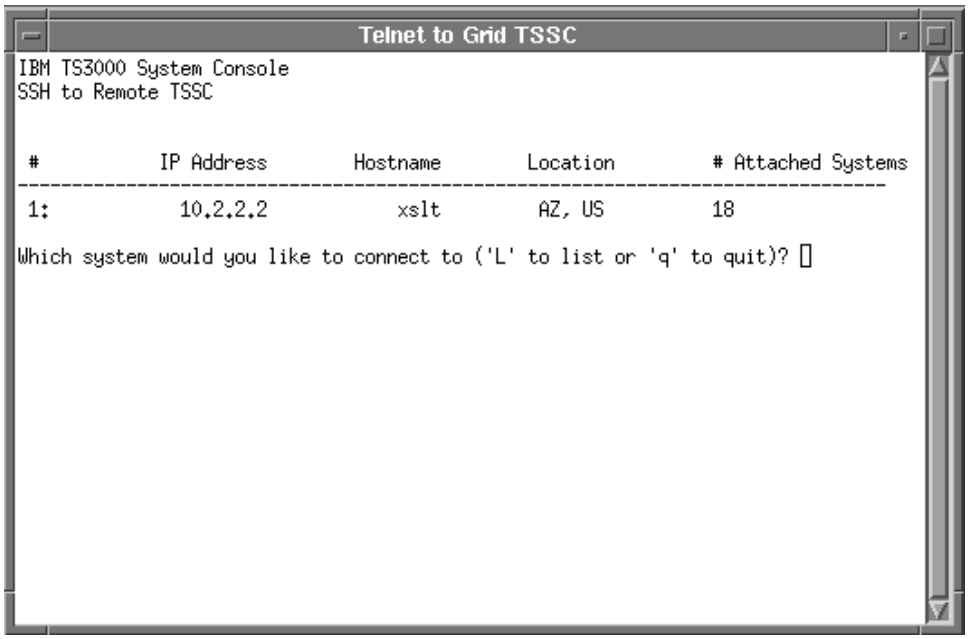

Figure 150. Telnet to Grid TSSC

3. To connect to a system, press its corresponding list number. To see attached system information about a particular system, press **L**. Press **q** to exit this application.
4. If you would like to see attached system information for a particular system, press L. You are prompted to enter the system number. Attached System information looks like the following example:

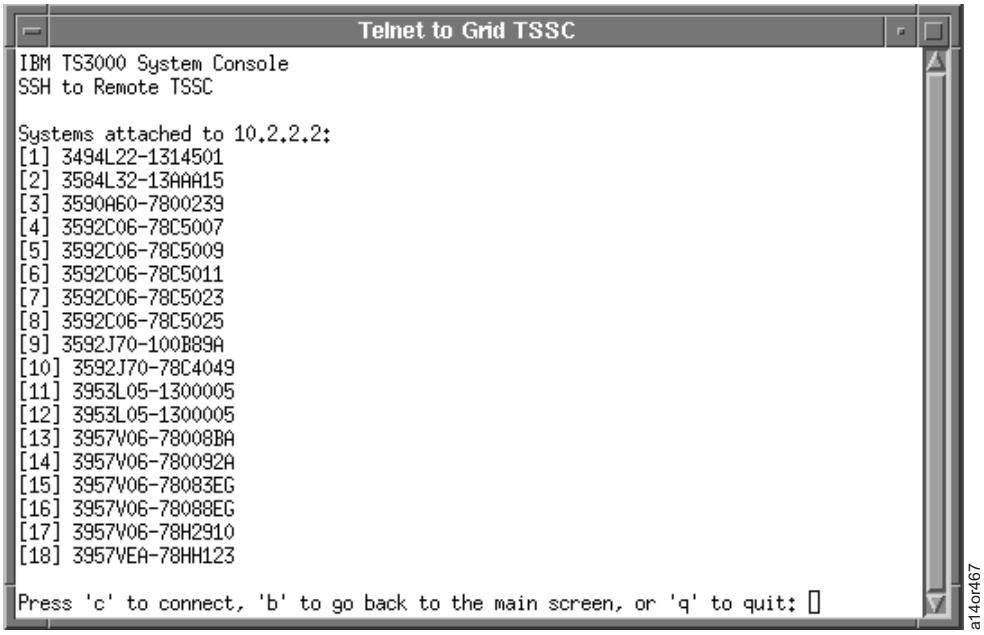

Figure 151. Attached Systems List

5. After you view the Attached Systems, you can connect to the selected TSSC by pressing **c**. Pressing **b** takes you back to the main screen.

Tape System Service Information (VTS, VTC, A60, J70, C06) - [Code Level Below V5.3]

Attention: Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, "Maintenance Starting Point," on page 1 to determine the system console code level.

After you complete the system console configuration, the tool to update and review service information for attached systems is automatically enabled.

1. Right-click from anywhere in the Desktop to view the Main Menu shown in Figure 63 on page 52.
2. Select **System Console Actions** > **Tape System Service Information**. You see the Tape System Service Information screen shown in Figure 152 on page 124.

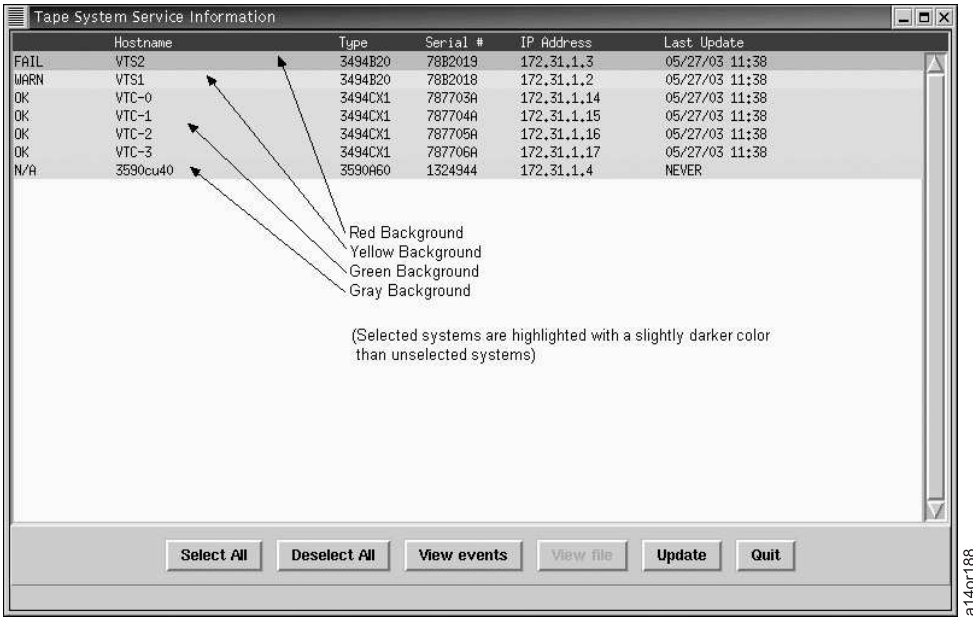

Figure 152. Tape System Service Information – Main Screen

3. The Tape System Service Information screen, as depicted in Figure 152, shows a summary of the status of the systems that are attached to the system console as of the date and time that are included in the Last Update column. The system listing is sorted in descending order of status severity. The background color scheme provides this information:
   - Red Background - A Failure has occurred
   - Yellow Background - A Warning has occurred
   - Green Background - No Failures or Warnings have occurred
   - Gray (or White) Background - No status has ever been reported to the system console
4. Tape System Service Information status is NOT run automatically. It is performed by selecting any number of systems in the listing and then clicking the **Update** button. Systems may be selected individually by pointing to the system list entry and clicking the left mouse button once. (Clicking the entry again deselects the system.) Alternatively, you can select all of the systems on the list by clicking **Select All** (or deselect by clicking **Deselect All**).
5. As the system console receives service information from the selected tape systems during the update process, the selected systems become deselected (un-highlighted), the date and time of last update is changed to the current date and time, and the new status is indicated by the background color of the system entry listing and the STATUS column (located on the left side).

   Note: The update process can be lengthy for a large number of attached systems. However, this tool will time-out at ten minutes for unresponsive systems and return control to the user. The tool is normally unresponsive during the Update process and may appear to be locked up if attached systems are not responding.
6. The Tape System Service Information may be reviewed at various levels of detail. The main screen shows a one-line status summary for each system attached to the console. Selecting one or more of the systems in the listing and clicking **View Events** results in a listing of the specific service events that resulted in the failure or warning status, as shown in Figure 153 on page 125.

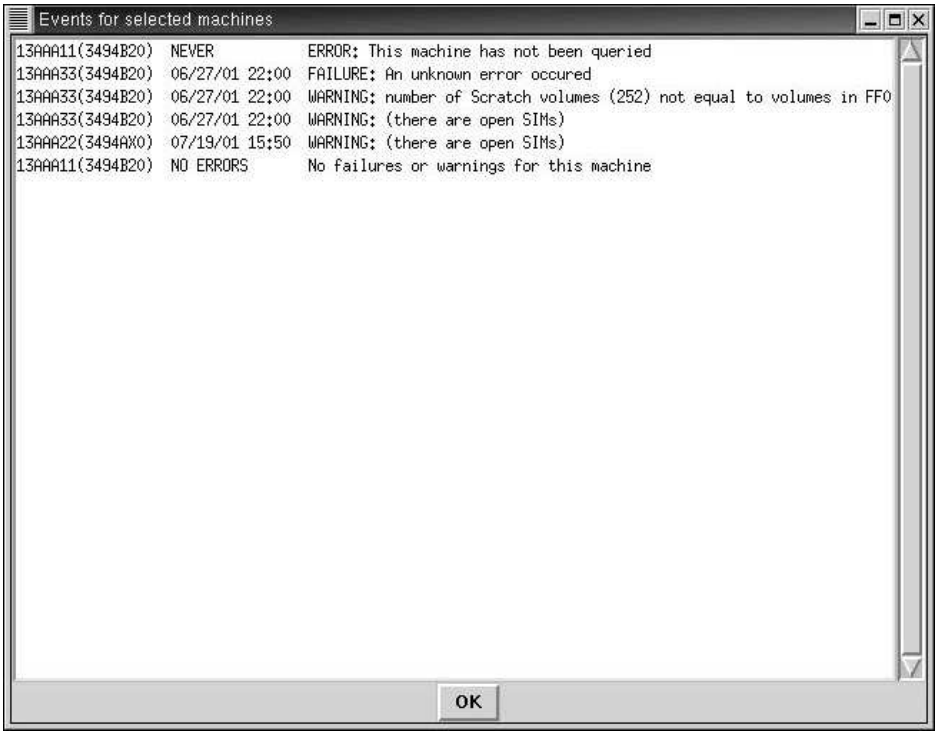

Figure 153. Tape System Service Information – Events

7. Double-clicking one of the events shown in Figure 153 results in the full details of the event, as shown in Figure 154.

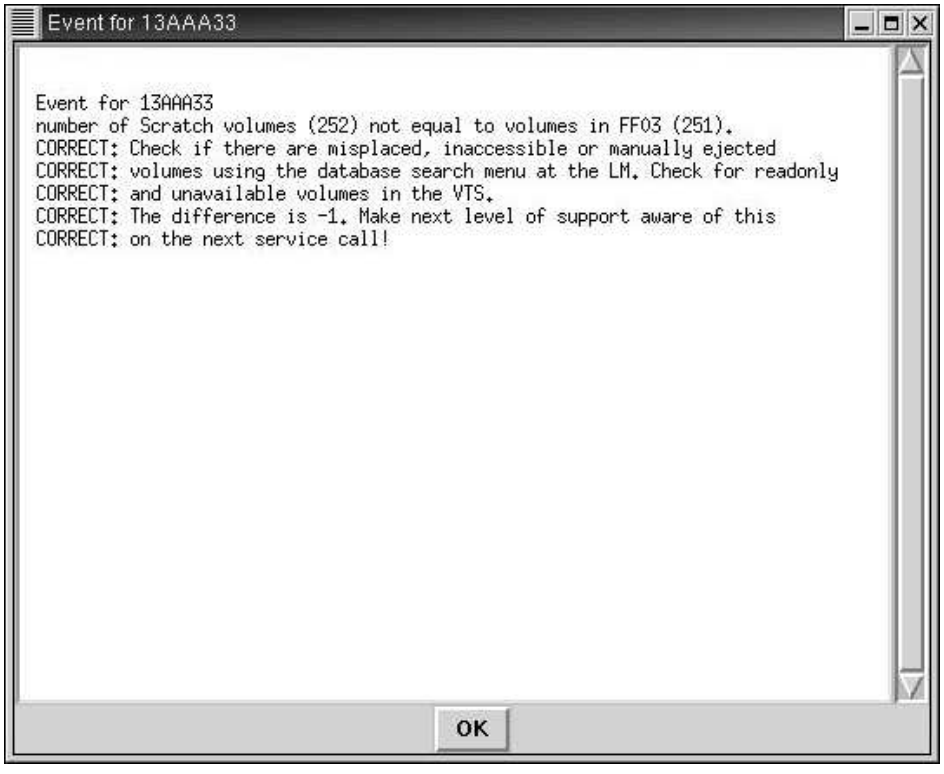

Figure 154. Tape System Service Information – Event Detail

You also can view the contents of the entire service status file for an attached system by selecting it at the Tape System Service Information main screen (Figure 152 on page 124) and clicking **View File**.

Note: The Tape System Service Information tool remotely invokes rdm_bc_check (Models B10, B18, B20) or rdm_gm_check (tape subsystem control units) service diagnostic programs and then presents the results to the system console as a local convenience. No modification of the results of the diagnostic programs is performed by the console, and the service programs remain available for direct invocation on the attached systems with proper user access.

8. From the Main Screen in Figure 152 on page 124, select **Quit** to quit.

Creating Attached Subsystems List

Use this procedure to create a list of all the subsystems that the system console is attached to.

1. Right-click from anywhere in the Desktop to view the Main Menu shown in Figure 63 on page 52.
2. Select **System Console Actions** > **Console Configuration Utility**. Login, as required.
3. Select **Attached Subsystems**. You see Figure 155. You can sort the list by clicking on a column heading.

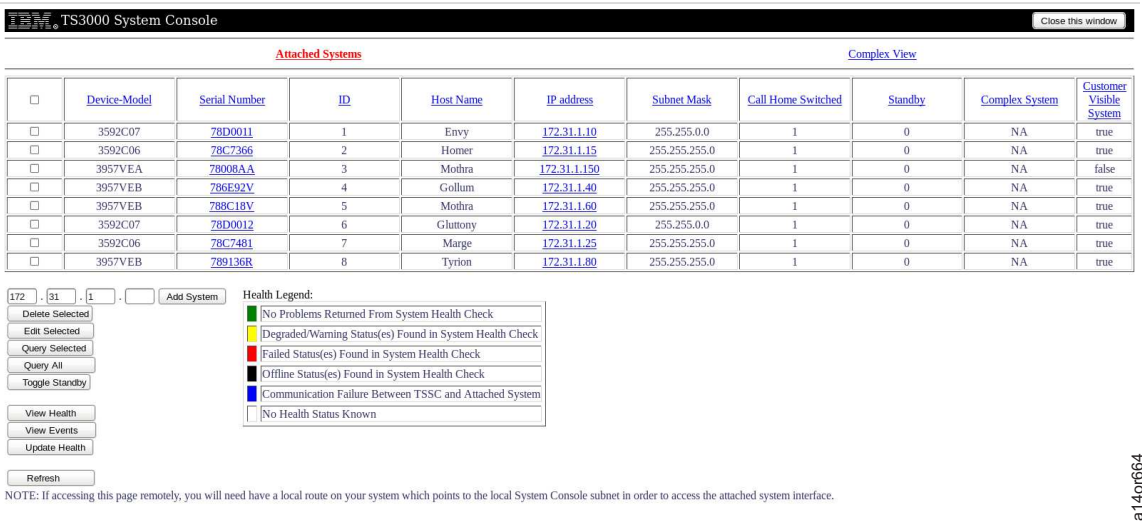

Figure 155. Attached Subsystems List Screen. Use with Table 14.

Table 14. Color Indications for Health Check. Use with Figure 155.

Health Legend Color	**Health Legend Indication**
Green	No problems returned from system health check
Yellow	Degraded/warning statuses found in system health check
Red	Failed statuses found in system health check
Black	Offline statuses found in system health check
Blue	Communication failure between TSSC and attached system
White	No health status known

4. You can use one group of buttons to perform Delete, Edit, and Query operations on the list of attached subsystems. You also can use another set of buttons to interrogate the system console for the following operations. Click on any quantity of attached subsystems and select one of the button titles. You see a screen like Figure 156 on page 127 with one of these reports:

Note: These choices are not available for a 3584 or a 3494L.

View Health

Returns information about the machines you choose

View Events

Returns event information on any machines for which a problem has been logged

Update Health

Performs another machine health check

Refresh

Refreshes the information and the color scheme in Table 14 on page 126 to reflect your most recent activity

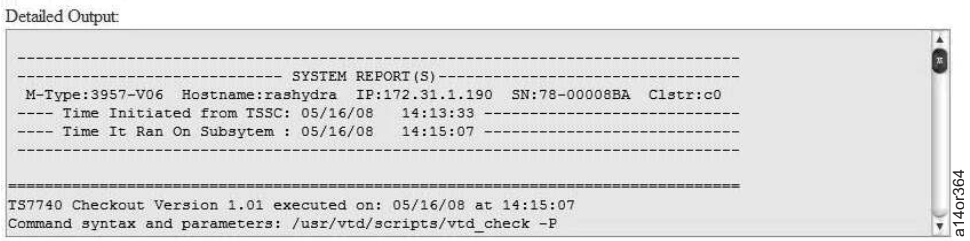

Figure 156. Health and Events Report Screen Example.

5. View the properties of the Attached system by selecting the hyperlinked serial number. This will display all of the properties of that attached system. To go back to the list of the attached systems, click the **Attached Systems** link at the top of the screen.

Remote Code Broadcast By Using the Web Interface

Attention: Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, "Maintenance Starting Point," on page 1 to determine the system console code level.

The code level requirements are:

TSSC System console code version 5.3.x and above

IBM TS7700
TSSC must be a hardware model 8485 (x206m) or 8849 (x306m). Code versions 8.5.xx.xx and lower. For higher code levels, refer to "Updating TS7700 Microcode" on page 197.

IBM 3494 Virtual Tape Server and Virtual Tape Controller
Code version 2.26.xx.xx and above

IBM 3590 A60 Tape Controller
Code version 1.16.xx.xx and above

IBM 3592 J70 Tape Controller
Code version 1.17.xx.xx and above

IBM 3592 C06 Tape Controller
Code version 1.20.x.x and above

IBM 3592 C07 Tape Controller
Code version 1.25.x.xx and above

IBM 3494 ATL (L12, L14, L22)
Not currently operational

You can use the web interface to copy control unit code from a source CD that you place in the CD drive of the TSSC. You then can broadcast this code to another device.

1. Right-click from anywhere in the Desktop to view the Main Menu shown in Figure 63 on page 52.

2. Select **System Console Actions** > **Console Configuration Utility**. Type **service** in the Username field, **service** in the Password field, then click **OK**.
3. Select **System Tools** > **Remote Code Broadcast**. You see the screen shown in Figure 157.

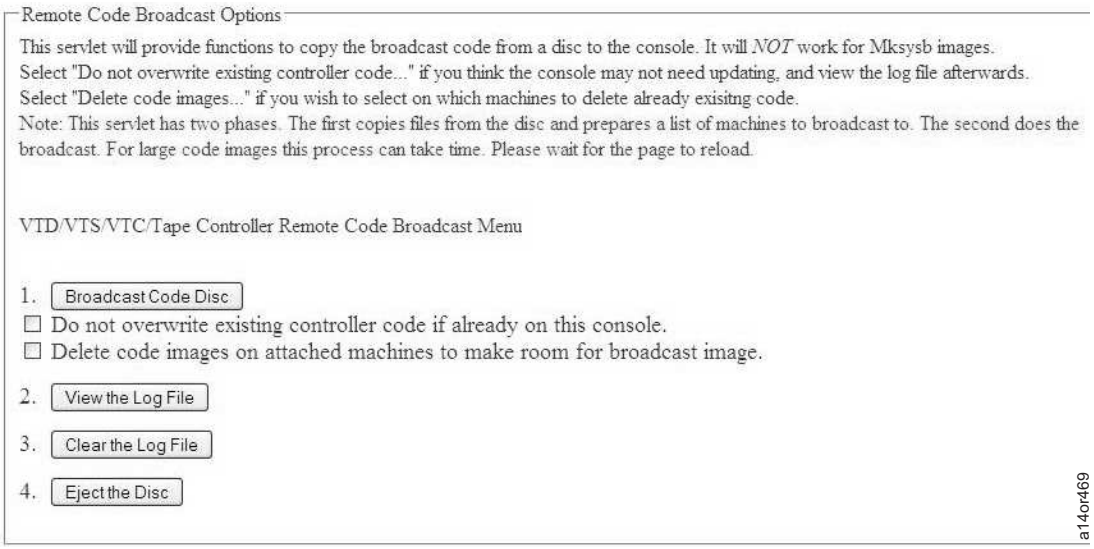

Figure 157. Remote Code Broadcast Options

4. Insert the disc which has the code you wish to broadcast into the optical disc drive of the TSSC.
5. Select one of the options for Broadcast Code Disc, then select **Broadcast Code CD**.

   Do not overwrite existing controller code if already on this console

   Select this option if you previously broadcast code to a system using the code disc that you just inserted into the drive. This eliminates the time it takes to load code from the disc.

   Note: If the image copy failed, select **View the Log File**. Retry **Broadcast Code Disc** after you determine the cause.

   Delete code images on attached machines to make room for broadcast image

   Select this option to choose which images you want to delete from the target system. A list displays. To add an image to the target system, ensure that the target system has no more than one image.

   Note: If you selected "Delete code images on attached machines to make room for broadcast image" the screen reloads and refreshes the list of images to delete. Select the images you want to delete. Type in the numbers of the images that you wish to delete. Separate the numbers by spaces (for example, “0 1 4 5”). Select **Submit Choices**.
6. When the code copy completes, a message appears, and prompts you to select which system to broadcast the code image to. You see a box entitled “Systems for Code Broadcast” at the bottom of the screen.

   This box contains a list of the attached systems that can be broadcast to. Table 15 on page 130 lists the possible status conditions you might anticipate.

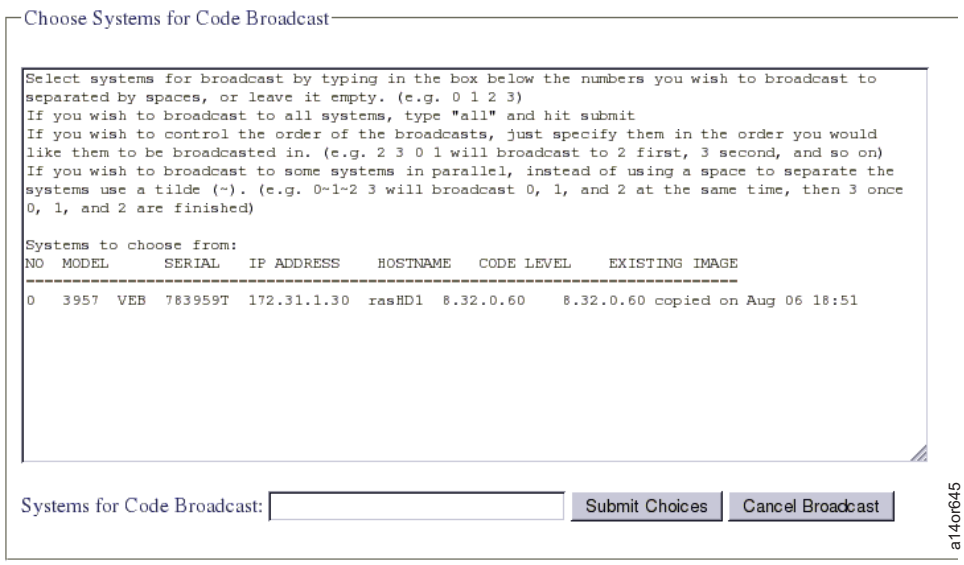

Figure 158. Choose Systems for Code Broadcast

7. Select the systems to which you want to broadcast a code image. In the "Systems for Code Broadcast" column, type the numbers of the systems, separated by spaces. Leave this field blank if you do not want to broadcast a code image, or you can select the **Cancel** button. Click on **Submit Choices**.

   Notes:
   - This can take as long as five minutes per system.
   - Figure 157 on page 128 provides an example, which depicts that the code broadcast will fail because the attached control units are “Unavailable.”
   - If an error occurs, select **View the Log File** from Figure 157 on page 128 to check the log file to determine the failure.
   - If the status is 2+ IMGS (which indicates "2 or more images") on the attached system you wish to broadcast to, the image is not broadcast unless you select the “Delete images...” option depicted in Figure 157 on page 128, and you remove the images from the target system.
8. You also can use the following additional options which are depicted in Figure 157 on page 128:
   - Option 2: After you select the systems to broadcast and the page reloads, you see a status message at the top of the screen. Use option 2 “View the Log File” to see the details of the broadcast. This log lists the code that was successfully broadcast and the code that was successfully finalized. If an error occurred, the log file will specify where the load failed. Figure 159 on page 130 shows you a sample of status in a log file.

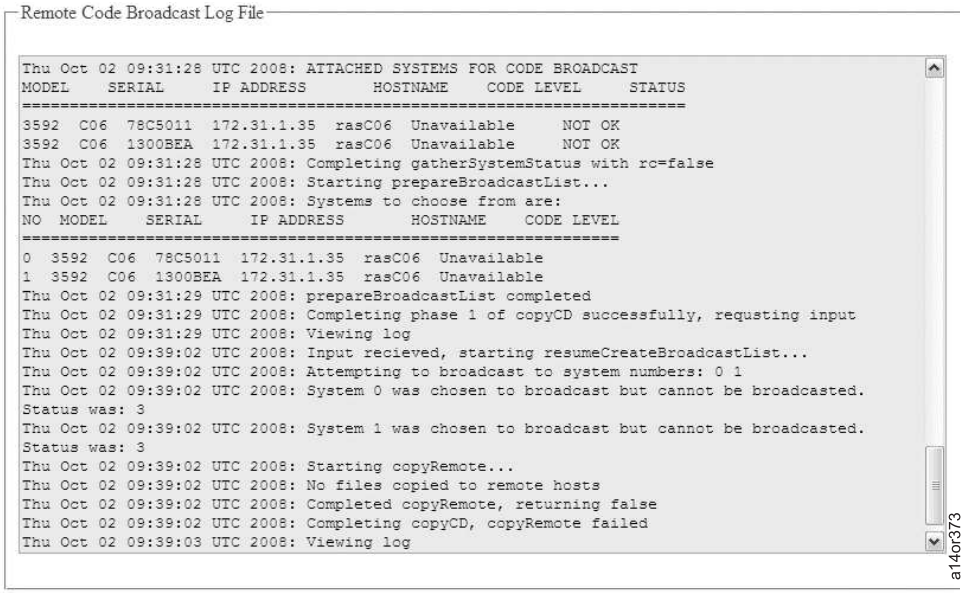

Figure 159. Remote Code Broadcast Log File. See Table 15 for a list of the possible status messages.

Table 15. Code Load Status Messages - From Web Interface. See Figure 159 for an example of broadcast status.

Status	**Meaning**
OK	OK to copy code to attached system
NO DIR	No temporary directory exists on attached system to copy code into
PREV VER	The temporary directory on the attached system is not empty
NO COMM	Unable to communicate with attached system (possibly due to downlevel code on attached system or bad physical connection)
NO SPACE	Insufficient space on attached system for copying code
NO SPC 1	Insufficient space on attached system's gdc file system for copying code
NO SPC 2	Insufficient space on attached system's usr file system for copying code
NO SPC 3	Insufficient space on attached system's gdc and usr file systems for copying code
2+ IMGS	There are two or more code images on the attached system (will not broadcast code unless you remove images by using the "Delete code images..." option.
NOT OK	Unspecified error condition has occurred

- Option 3, “Clear the Log File,” deletes the log file and clears this screen. Use this when the previous log file is irrelevant. Only use this option if you no longer need the old log file for reference to an error.
- Option 4, “Eject the CD,” should be used when the disc is no longer in use or when you are attempting to copy the code from the disc for a second time. If the program reports that there is an error mounting the disc, remove and insert the disc again.

Tape Drive Service Information

Attention: Many procedures in this book are code specific. Before starting any procedure, go to Chapter 1, "Maintenance Starting Point," on page 1 to determine the code level. The code level requirements are:

System Console
Code Version 3.0.0 and above

IBM 3494 Virtual Tape Server and Virtual Tape Controller
Code Version 2.28.700.xx and above

IBM 3590 A60 Tape Controller
Code Version 1.16.5.xx and above

IBM 3592 J70 Tape Controller
Code Version 1.17.xx.xx and above

IBM 3592 C06 Tape Controller
Code Version 1.20.x.x and above

IBM 3592 C07 Tape Controller
Code Version 1.25.x.xx and above

IBM 3494 ATL (L12, L14, L22)
Not currently operational

1. See Figure 160. After you complete the System Console configuration, the tool to update and review tape drive service information for attached systems is automatically enabled. Right click from anywhere in the Desktop to view the Main Menu shown in Figure 63 on page 52.
2. Select **System Console Action** > **Tape Drive Service Information**.

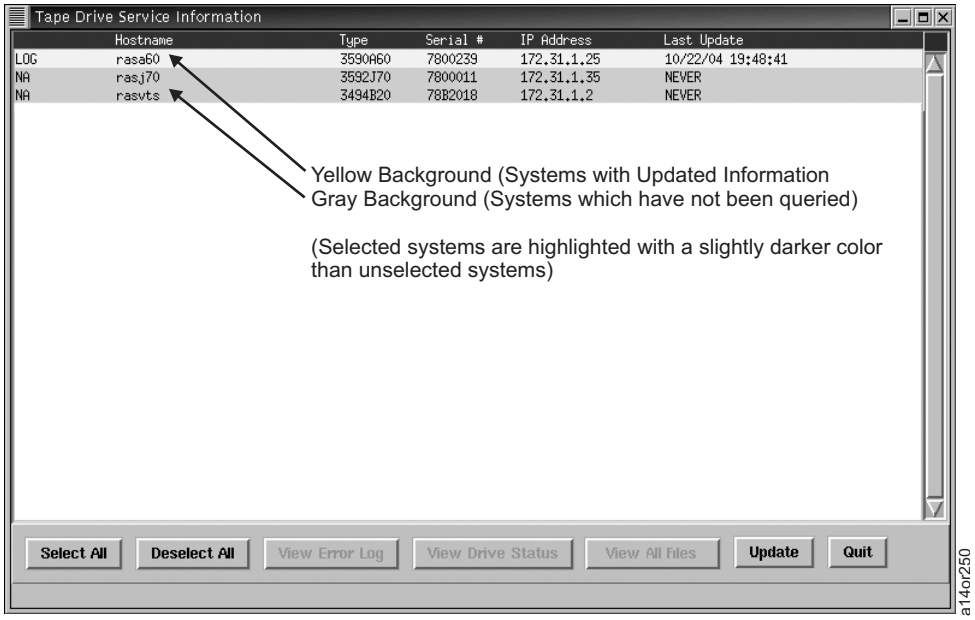

Figure 160. Tape Drive Service Information – Main Screen

3. The Figure 160 lists all systems attached to the System Console which might have tape drive information available. The Main Screen shows a summary of the update status of the systems attached to the System Console as of the DATE and TIME INDICATED in the right column. The systems listed are highlighted according to the following color scheme:

Yellow Background
Tape drive information for this system has been updated

Gray (or White) Background
No tape drive information has ever been reported to the System Console

4. Tape Drive Service Information is NOT run automatically. It is performed by selecting any number of systems in the listing and then clicking **Update**. You can select individual systems by pointing to the system list entry and clicking the left mouse button once. (Click the entry again to deselect the system.) Alternatively, you can select all of the systems on the list by clicking **Select All** (or deselect by clicking **Deselect All**).
5. As the System Console receives service information from the selected tape systems during the update process, the selected systems become deselected (un-highlighted), the date and time of last update is changed to the current time, and the new status is indicated by the background color of the system entry listing.

   Note: The update process can be lengthy with a large number of attached systems. However, this tool will time-out after ten minutes for unresponsive systems and return control to the user. The tool is normally unresponsive during the Update process and may appear to be locked up if attached systems are not responding.
6. The Control Unit Tape Drive Service Information Files (code level V3.1.0 and above) show the following information for each attached tape system, following a successful update (see Figure 163 on page 134 and Figure 164 on page 134):
   - Control Unit Error Log showing tape drive entries (see Figure 161)
   - Control Unit Tape Drive Status (see Figure 162 on page 133)

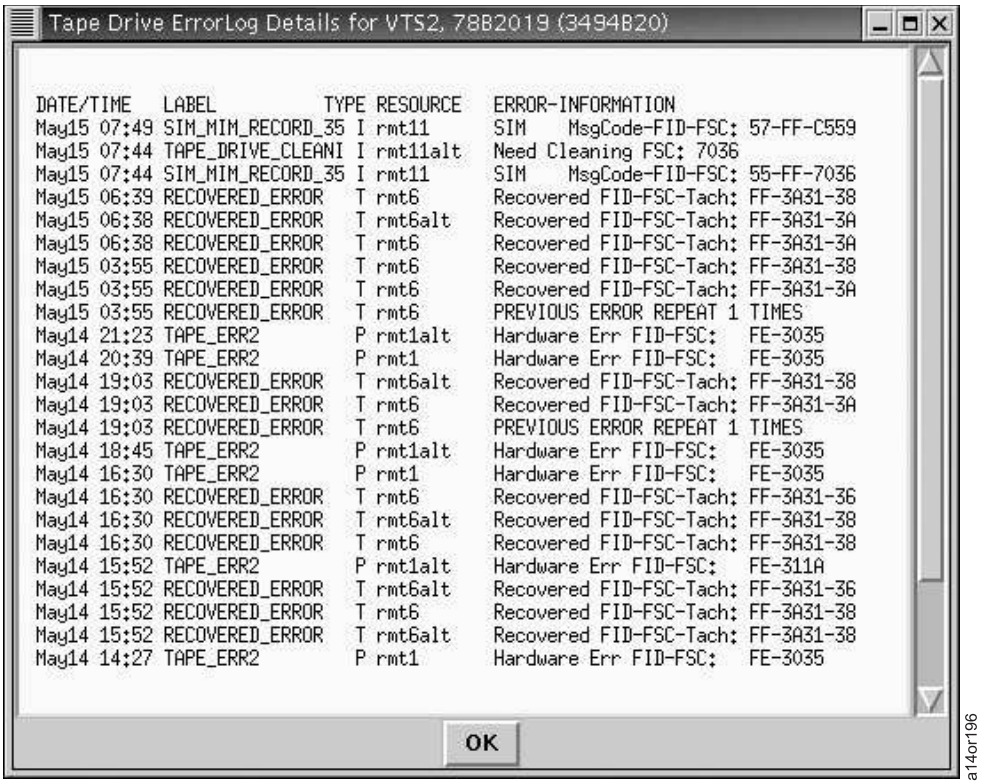

Figure 161. Tape Drive Service Information – Tape Drive Error Log Details Screen

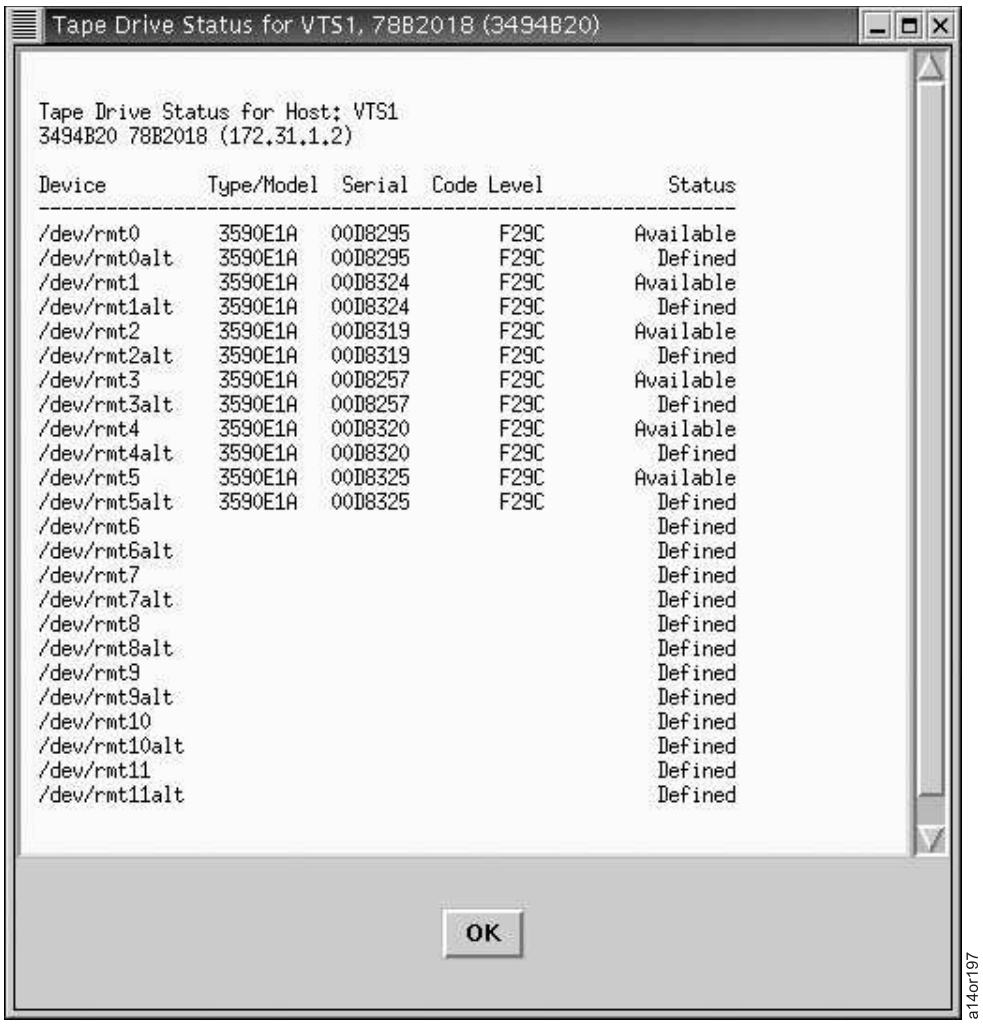

Figure 162. Tape Drive Service Information – Tape Drive Status Screen

Figure 163. View Tape Drive Service Information – Code Level V3.1.0 or Above

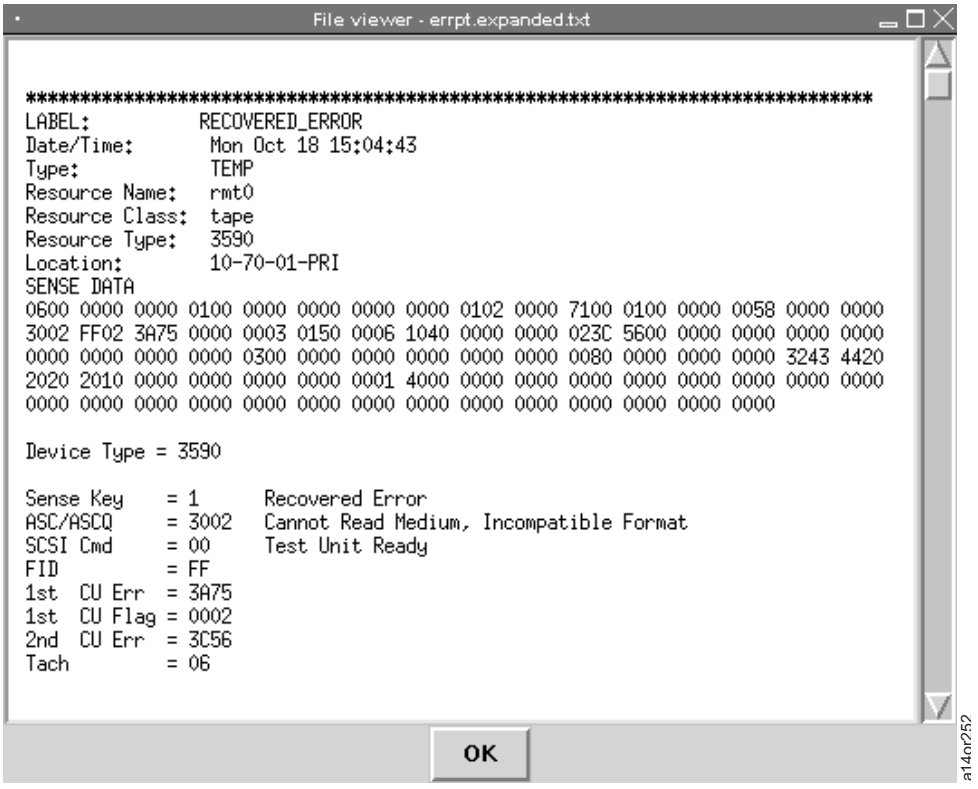

Figure 164. File Viewer Showing a File Generated by Tape Drive Service Information – Code Level V3.1.0 or Above

7. Each report may be viewed by selecting one of the systems listed on the Main Screen (Figure 160 on page 131), then clicking **View Error Log** or **View Drive Status**. Systems may be selected by pointing to the system list entry, and clicking the left mouse button once. (Clicking the entry a second time deselects the system.)

   For code level V3.1.0 and above, you can use the additional action **View All Files**. This action allows you to view all drive service information returned by a tape system. You also can find additional formatted or unformatted error information in these files.
8. From the Main Screen in Figure 160 on page 131, select **Quit** to quit.

Tape Drive Code Broadcast From Web Interface

Attention: Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, "Maintenance Starting Point," on page 1 to determine the system console code level.

The code level requirements are:

TSSC System console code version 5.3.x and above

IBM TS7700
TSSC must be a hardware model 8485 (x206m) or 8849 (x306m)

IBM 3494 Virtual Tape Server and Virtual Tape Controller
Code version 2.26.xx.xx and above

IBM 3590 A60 Tape Controller
Code version 1.16.xx.xx and above

IBM 3592 J70 Tape Controller
Code version 1.17.xx.xx and above

IBM 3592 C06 Tape Controller
Code version 1.20.x.x and above

IBM 3592 C07 Tape Controller
Code version 1.25.x.xx and above

IBM 3494 ATL (L12, L14, L22)
Not currently operational

1. Right-click from anywhere in the Desktop to view the Main Menu shown in Figure 63 on page 52.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**. Type **service** in the Username field, type **service** in the Password field, then click **OK**.
3. Select **System Tools** > **Drive Code Broadcast**. You see Figure 165.

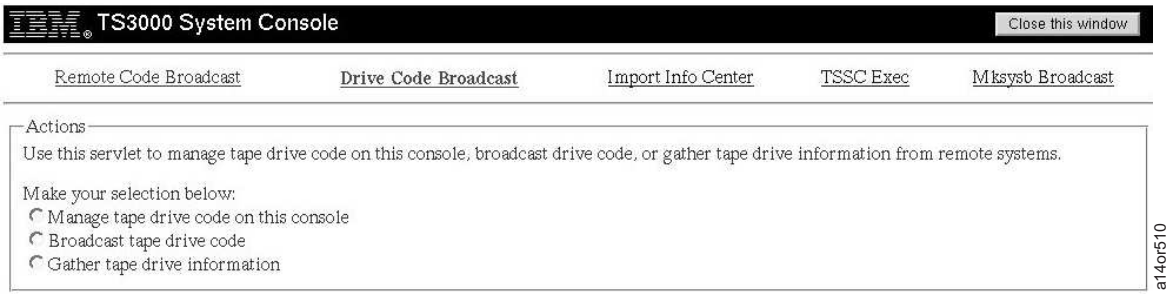

Figure 165. Drive Code Broadcast Web Interface

4. Select the **Manage tape drive code on this console** option under **Actions** to view tape drive code currently on the TSSC. From this screen you can add new code to the console or delete existing code.
5. To add code, click on the **Add new tape drive code to this console** button. You will be prompted to insert a CD-ROM containing tape drive code into the optical disc drive. Once the disc has been

inserted into the console, click **OK** to continue. If a valid drive code CD was inserted, you will see a listing of the drive code on the disc, similar to Figure 166. Check the box next to each entry you want to copy to the console and click **Copy selected code to console**. If you don't want to copy any code from this disc to the console, click the **Cancel** button.

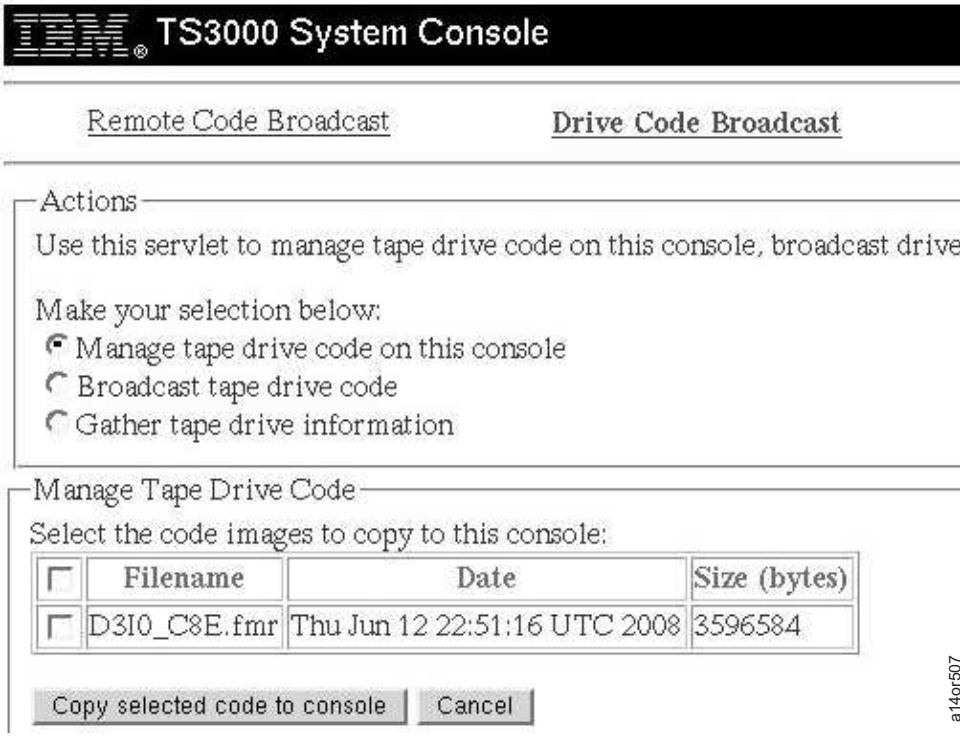

Figure 166. Drive code listing. You can copy selected drive code to the console.

Note: The drive code will be copied into the following directory on the TSSC `/var/enc/tapedrivecode/`

6. Similarly, to delete existing code, place a check mark next to the code images you wish to delete. Click the **Delete selected code** button and you will be prompted to verify the delete operation. Click **OK** to continue deleting the selected drive code or **Cancel** to return to the previous screen.
7. See Figure 167 on page 137. To broadcast tape drive code to systems attached to this console, select the **Broadcast tape drive code** option under **Actions**. The display will change to show the existing code on this console and all valid broadcast targets attached to this TSSC. (Optionally, you will also see other TSSCs connected over the Grid network.) Place a check mark next to each code image to broadcast and each target system that should receive the broadcast. You must select at least one image and one attached system. Once your selections have been made, click the **Broadcast Selected Code** button. You will be prompted to verify the operation, so click **OK** to continue the broadcast or **Cancel** to return to the previous screen. The broadcast may take several minutes to complete depending on how many target systems were selected. Once the broadcast has finished, you will see a message displaying the status of each individual broadcast.

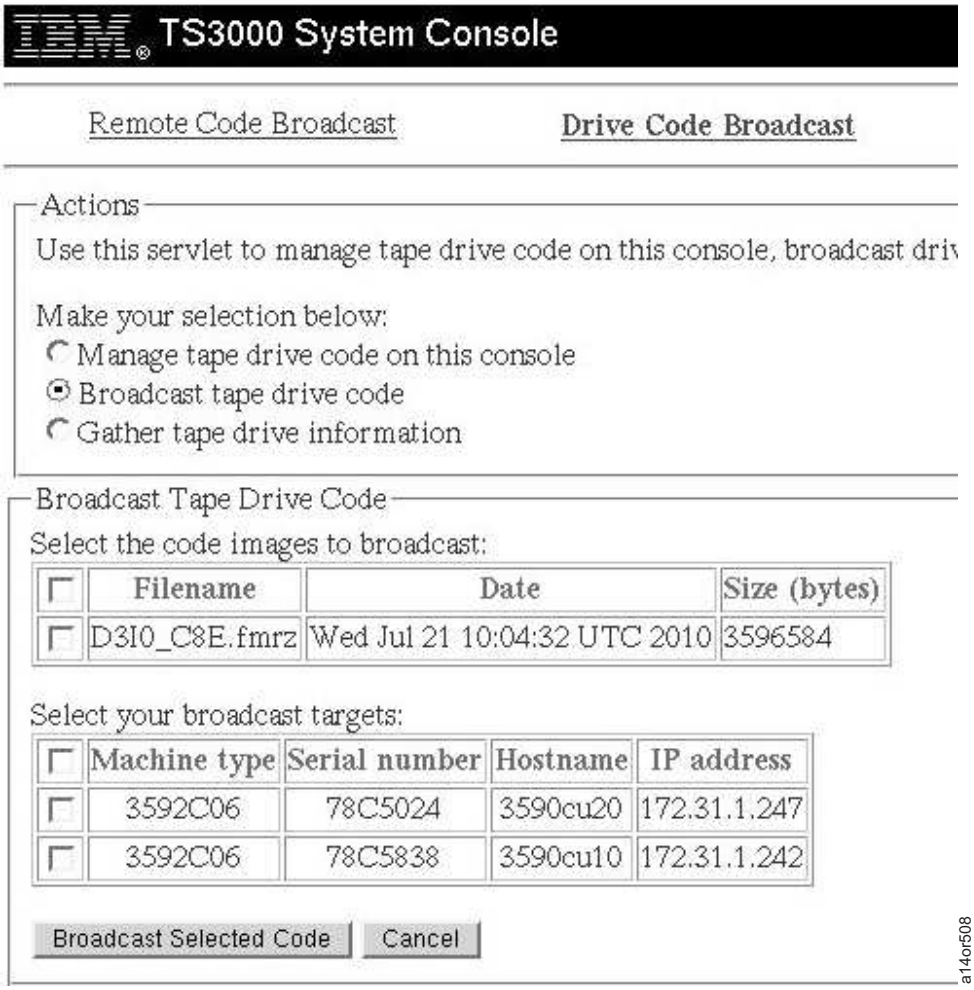

Figure 167. The broadcast screen will display all available code images and valid broadcast targets.

8. See Figure 168 on page 138. You may gather tape drive information from attached systems by selecting the **Gather tape drive information** option under **Actions**. The display will show all valid attached systems. Place a check mark next to each system for which you would like to see tape drive information. Once your selections have been made, click the **Gather information from selected systems** button. You will be prompted before information is gathered. Click **OK** to continue or **Cancel** to end this process. Clicking OK will proceed with the gathering process. It may take several minutes depending on the number of systems selected. Once finished, the screen will display tape drive information for the selected systems.

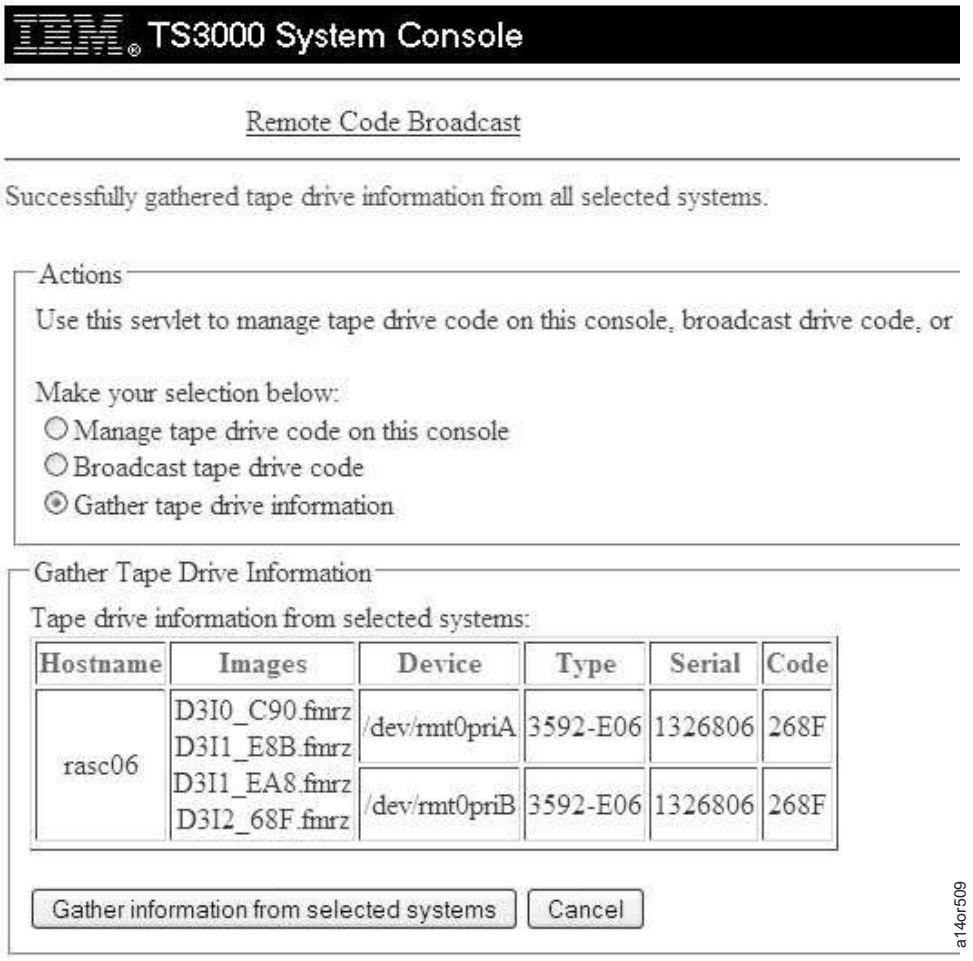

Figure 168. Display showing tape drive information for a selected system

Remote Access Using NetTerm

When using a workstation or notebook (laptop) computer with a modem, it is first necessary to establish a connection to the system console modem. The following instructions apply for using the NetTerm tool. (Other tools also can be used.)

Configure NetTerm for Accessing a System Console's Modem

1. From the Phone Directory window, click **OK**.
2. Start the NetTerm program.
3. From the NetTerm Start-up Window tool bar, select **File**.
4. From the File pop-up list, select **Phone Directory**.
5. From the Phone Directory window, select **Modem Test**.
6. From the Phone Directory window, modify the following fields to the values listed:

```
Field          Entry
 Name          (select a name with which you are comfortable. An example would be Customer name.)
Phone Number of Modem (from Configuration Sheet-Select modem attached to COM1-ttyS0)
Emulation      IBM_3151
Keys           IBM_3151
```

7. From the Phone Directory window, verify that the Connection field has **Modem** selected.

8. From the Phone Directory window, click **Modem Settings**. This will bring up a Communications Setup window.
9. From the Communications Setup window, click **Modems**. This will bring up a Select Modem window.
10. From the Select Modem window, click **Default**. You can be returned to the Phone Directory window or the Communications Setup window. To return to:
    - Phone Directory window, go to Step 11.
    - Communications Setup window, go to Step 12.
11. From the Phone Directory window, click **Modem Settings** to bring up the Communications Setup window.
12. From the Communications Setup window, modify the following fields to the values listed:

```
Field          Entry
Port:          xxxx (Select the port for your PC/Laptop modem)
Baud Rate:     56000
Data Bits:     8
Parity:        None
Stop bits:     1
Modem Initialize command-Accept Default:AT E1 V1 M1 Q0 &B1 &C1 &D2 &H1 &R2 &NO &K1 S11=50 S7=60


Control Settings (click on box to change)
DTR/DSR        box unchecked
RTS/CTS        box checked
XON/OFF        box unchecked
Tone Dialing   box checked
Direct Line    box unchecked
Ignore Carrier box unchecked

Use TAPI       box unchecked
```

13. After making the changes to the Communications Setup window, click **OK**. You will be returned to the Phone Directory window.
14. From the Phone Directory window, click **Desktop**.
15. From the Desktop window, change the following settings:
    a. Click on the **Autowrap** box to place a check mark (✓) in that box.
    b. Click on the **Exit NetTerm on disconnect** box to remove the check mark from that box.
16. From the Desktop window, click **OK**. You will be returned back to the phone Directory window.
17. From the Phone Directory window, click **Color**.
18. From the Screen Colors window, click on the **Allow Graphics rendition code of 0 to reset colors to default** to place a check mark (✓) in that box.
19. From the Screen Colors window, click **OK**. You will be returned to the Phone Directory window.
20. From the Phone Directory window, click **Add**.

    Note: The Phone Directory entry **(the name for this activity that you selected in Step 6 on page 138)** may not be displayed in the phone directory list until you exit and restart the NetTerm program.
21. From the Phone Directory window, click **OK**.

Connecting to a System Console's Modem

1. From the NetTerm main menu, select **File**.
2. Select **Phone Directory**.
3. Select the Phone Directory Entry established for this console (entry previously created in Step 6 on page 138).
4. Select **Connect**.

Note: If the LAN network is down, have the service representative or the customer administrator install the 30.5-m (100-ft) serial cable that was shipped with the IBM 3953. It attaches to the S0 port (S1 port on IBM 3953).

```
CONNECT 33600

IBM TS3000 System Console Version 4.0.0-121905 Level: gint-1021

raselmc.storage.tucson.ibm.com login:
```

Figure 169. Enter Password Screen

5. Login to the system console as user **Service** (this login is case-sensitive) Use the password provided from IBM Support to begin the authentication process. Enter your Authentication ID when prompted. This will be your unique userid also provided by IBM Support.

```
3.0.0
=
tssnet1 login: Service
Password:
Last login: Tue Apr  2 15:32:20 on ttyS0


Please enter your Authentication ID:  jdoe

Group: Service
userdel: user jdoe does not exist
Creating user jdoe
Account expires on: 05/25/04
Changing password for user jdoe
New password:
Retype new password:
passwd: all authentication tokens updated successfully
Initiating broadcast to... vts1
Initiating broadcast to... vts2
Initiating broadcast to... vts3
Initiating broadcast to... vts4
Waiting for completion...
vts1: Ok
vts2: Ok
vts3: Could not execute remote command
vts4: Ok
Continue with the following key code.

Key: en7260wv93Lzg577XXLR7A2X2UxBhl55bv8fjy1o5me?l

Press [c] to continue.
c
Exiting
```

Figure 170. Connect to System Console Modem Screen

Notes:

- This process attempts to copy your userid and password to attached VTS, VTC, or Tape Controller systems. This process may not complete successfully on all attached systems.
- Note the results after "Waiting for completion..." This indicates the success of copying your password to systems attached to the console.
- Your userid and password will be valid for the time indicated on the console and for all systems that indicate **"Ok"** after "Waiting for completion..."
- The "Waiting for completion..." process should not take longer than five minutes before timing out.
- For systems which do not respond with "Ok", you will need to either perform a separate authentication, or login using methods from previous code levels.

- See “Login Options” on page 50 (Authenticated) for more information about systems that do not respond "Ok".

6. Use the mouse to highlight the line containing the "Key ..." string. From the NetTerm main menu, select **Edit** --> **Copy** to place the key on the clipboard. Enter **c**, and press **Enter** to continue and to exit the session.

   Note: Access to an IBM Authentication Server is required to perform the following step.

7. Using the key that was generated in Step 6, login to the IBM Authentication Server to retrieve your authentication password. When requested, use the NetTerm main menu commands **Edit** --> **Paste** to provide the key to the authentication server.

```
UserId is jdoe,  AccessLvl is Service
Please enter Key Code.

Key: en7260wv93Lzg577XXLR7A2X2UxBhl55bv8fjy1o5me?l
Key: en7260wv93Lzg577XXLR7A2X2UxBhl55bv8fjy1o5me?l

Hello jdoe  Please login using password: abcd321
```

Figure 171. Userid Screen

8. Make a note of your password from the IBM Authentication Server. Continue logging in to the system console. Your password will be valid for as long as twenty-four hours.

   Note: Do not use a Copy/Paste keyboard function to enter your password for system console login.

9. Login to the system console, by using your unique userid and the password that were provided by the IBM Authentication server.

```
IBM TS3000 System Console Version 4.0.0-121905 Level: gint-1021


raselmc.storage.tucson.ibm.com login: jdoe
Password:
COLOR NETTERM
jdoe@raselmc:">
```

Figure 172. Enter Password Screen

10. From the command prompt, you may perform console tasks or you may alternatively communicate with tape systems that are attached to the system console.

    Note: It is possible that the keyboard function keys (F1, F2, and so forth) and the Backspace/Delete keys will not work as they should. When this happens, enter the following command at the command prompt **`export TERM=vt100`**. If the function keys still do not work as they should, use the combination Esc+xx , where xx is the number of the function key.

11. To use Telnet to connect to systems that are attached to the system console, issue the **`Connect to Attached Tape System`** command, and enter the number of the system to which you would like to connect (see Figure 173 on page 142). You can use the command **`Connect to Attached Tape System-?`** to view the choices for reordering the list.

```
IBM TS3000 System Console
Connect to Attached Tape System


 #           Make/Model   Serial Number      IP Address        Hostname
-------------------------------------------------------------------------------
 1:             3494B20         78B2018      172.31.1.40        rasvts
 2:             3494L22         1314501       172.31.1.5         "LMA"
 3:             3590A60         7000239      172.31.1.26        rasa60
 4:             3592J70         100B89A      172.31.1.36        rasj70
 5:             3953L05         1300004      172.31.1.11         "LMA"
 6:             3953L05         1300004      172.31.1.12         "LMB"


Which system would you like to connect to (or 'q' to quit)?
```

Figure 173. Choose System Prompt

You can login with your userid and password to any of the attached systems that responded with "Waiting for completion" –> "Ok" in Step 5 on page 140, above. See "Authenticated" in "Login Options" on page 50 for information on how to login to systems that did not respond "Ok".

12. To logoff from the system console, type **exit** at the command prompt, and press **Enter**.

```
[jdoe@tssnet1 jdoe]# exit
logout
```

Figure 174. Logout

13. From the NetTerm main screen, select **File**, then **Exit** to close the NetTerm tool.

Call Home Queue Management

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
4. Click **Call Home Queue**. You see Figure 175. The various call home record types (in the "Type" column) are described in Table 16 on page 143.

   Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to manage Call Home queues (**TSSC Menus** > **Call Home Functions** > **Call Home Queue Options**). Refer to "RAS Menus" on page 177.

Figure 175. Call Home Queue Management - Main Screen

Table 16. Call Home Record Types. From the Type column in Figure 175 on page 142.

Type	Description
DC	Data Call Home (Binary)
DI	Information - EC Install, Call Home Test
DT	Dump/Trace (Binary)
EC	EC Activation
HB	Heartbeat MRPD
IS	Install
PB	Problem Record
PE	PE Package (Binary)
PG	Problem Page
PI	Proactive / Warning
PT	Pager Test
RI	Close Problem
RL	Remote Dial-In
SW	Software Problem Record

The Queue Management tool offers the following capabilities:

- View current entries in Call Home queue on the system console
- Delete or Change priority of entries
- View details of specific entries
- Offload individual packages immediately
- Offload Call Home Entries to CD or USB

5. To Delete or Force Delete a Call Home Queue Entry, select the entry by clicking the check box next to the corresponding entry. Click **Delete Selected Entries**. To Show Details for a Call Home Queue Entry, select the entry by clicking the check box next to the corresponding entry.
6. Click **Show Selected Entry Details**. Figure 176 on page 144 displays.

Note: For DC and PE packages, the TSSC provides the following features:

- To download a specific file from the call home package, click the **Data Package** link. This allows you to extract the files from the package, but will not affect the contents of the package when the call home file is offloaded.
- Below the package's header information you see a listing of all of the packages in the call home file.

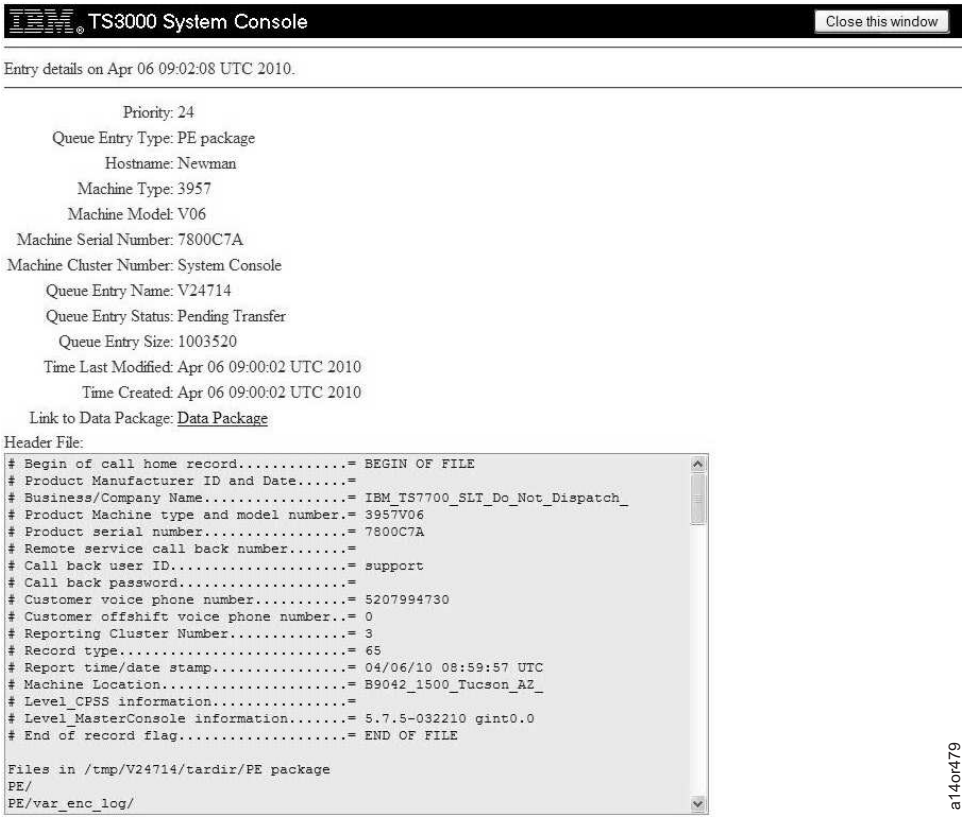

Figure 176. Call Home Queue Management – Call Home Queue Entry Details

7. To refresh the Call Home Queue listing table, select **Refresh Queue**.
8. To offload a Call Home Queue Entry to CD or USB, select the entry by clicking the check box next to the corresponding entry.
9. Select **Offload Selected Entries to CD**. Figure 177 displays.

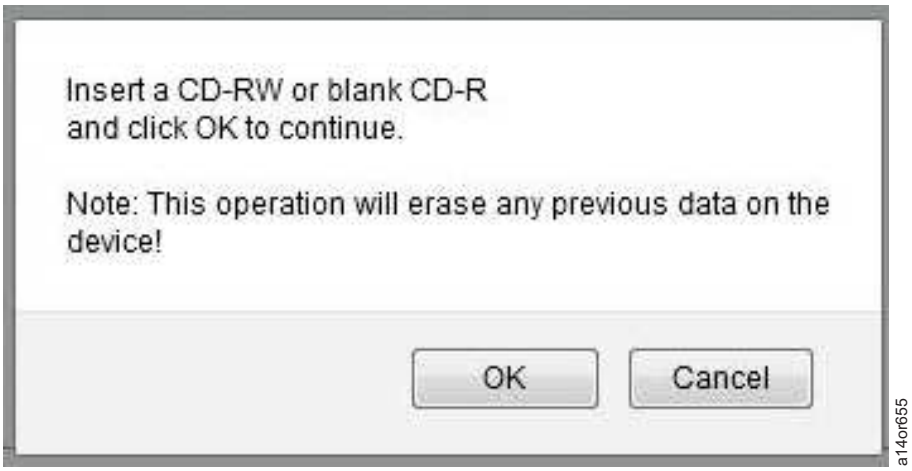

Figure 177. Call Home Queue Management – Offload Queue Entry to CD

10. Click **OK**.

11. To offload an individual package immediately, select the check box next to the package you want offloaded and click **Send Call Home Now**. The page returns with a message to confirm the completed action.

Failed Queue Management

You can use the system console to view the Failed Queue Management screens.

1. Right-click from anywhere in the Desktop.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, type **service** in the Password field, then click **OK** to start the Console Configuration application.
4. Click **Call Home Queue**.
5. Click **Failed Queue** at the top of the page. You see the screen shown in Figure 178.

   Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to manage failed Call Home queues (**TSSC Menus** > **Call Home Functions** > **Failed Call Home Queue Options**). Refer to "RAS Menus" on page 177.

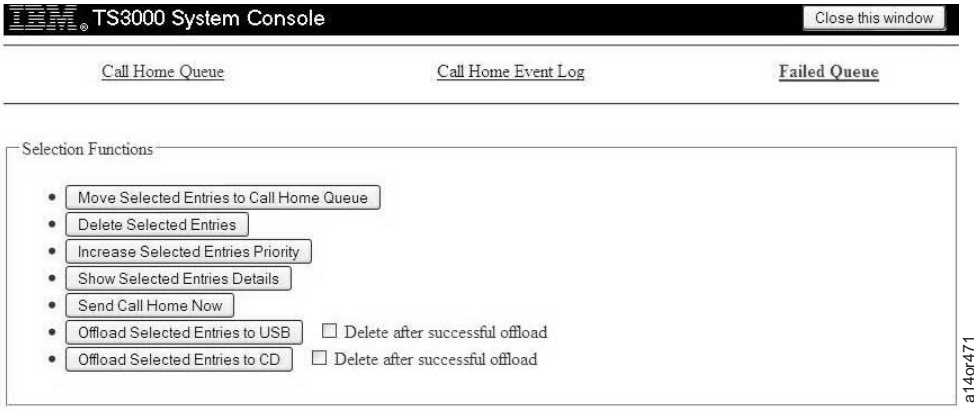

Figure 178. Call Home Queue Screen

   This screen shows the Failed Queue interface. The Failed Queue Management tool offers the following capabilities:

   a. View Call Home entries that have failed on the system console.
   b. Return a failed queue entry back to the active Call Home queue.
   c. Delete failed queue entries.
   d. Offload individual packages immediately
   e. View the details and associated log files of failed queue entries.
   f. Offload failed Call Home entries.

6. To Delete or Force Delete a Failed Call Home Queue Entry, select the entry by clicking on the check box next to the corresponding entry. Click **Delete Selected Entries**.
7. To Show Details for a Failed Call Home Queue Entry, select the entry by clicking the checkbox next to the corresponding entry. Click **Show Selected Entry Details**. See the following figure.

   Note: For DC and PE packages, the system console will provide the following features:

   - To download a specific file from the call home package, click on the **Data Package** link. This will allow you to extract the files from the package, but will not affect the contents of the package when the call home file is offloaded.
   - Below the package's header information you will see a listing of all of the packages in the call home file.

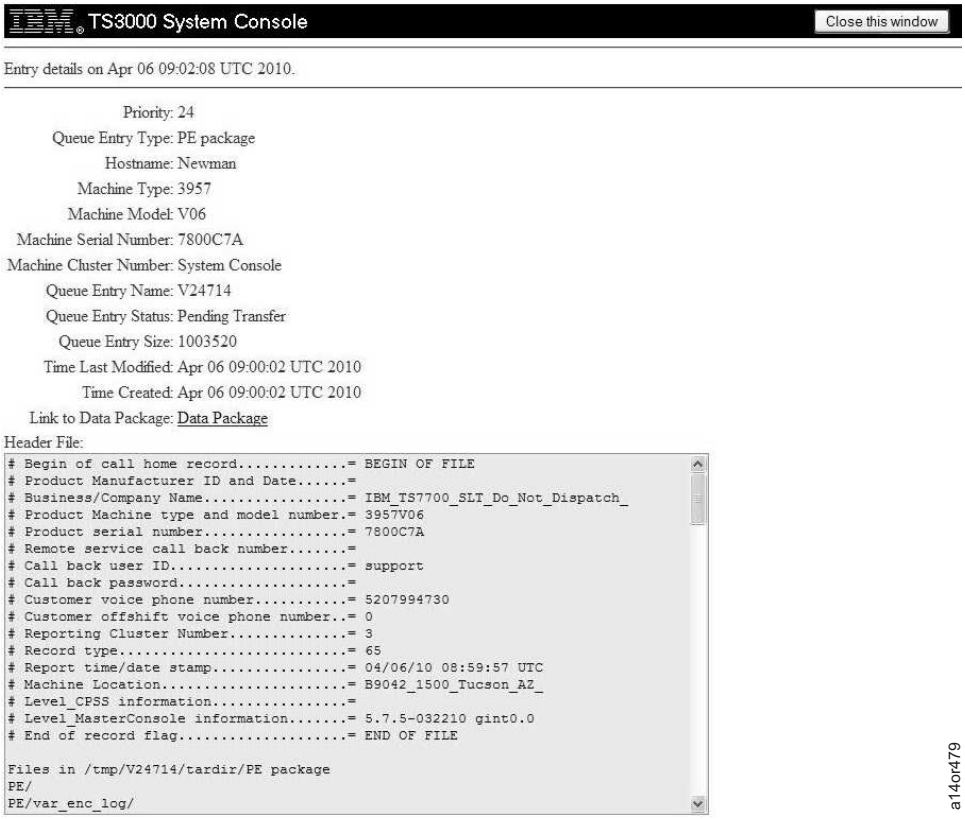

Figure 179. Call Home Queue Management - Call Home Queue Entry Details

8. To refresh the Failed Call Home Queue listing table, select **Refresh Queue**.
9. To offload a Failed Call Home Queue Entry to CD or USB, select the entry by clicking the check box next to the corresponding entry.
10. Select **Offload Selected Entries to CD**. The following figure is displayed.

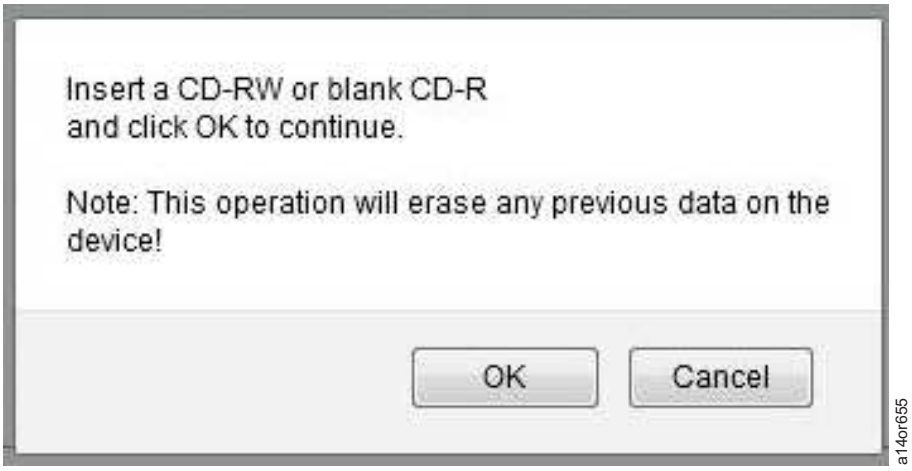

Figure 180. Call Home Queue Management - Offload Queue Entry to CD

11. Click **OK**.

12. To view the log for a specific Failed Call Home entry, click **view** in the Log File column for the corresponding entry. The following screen will be displayed at the bottom of the page.
13. To Offload an individual package immediately, select the check box next to the package you want offloaded and click the **Send Call Home Now** button. The page will return with a message to confirm the completed action.

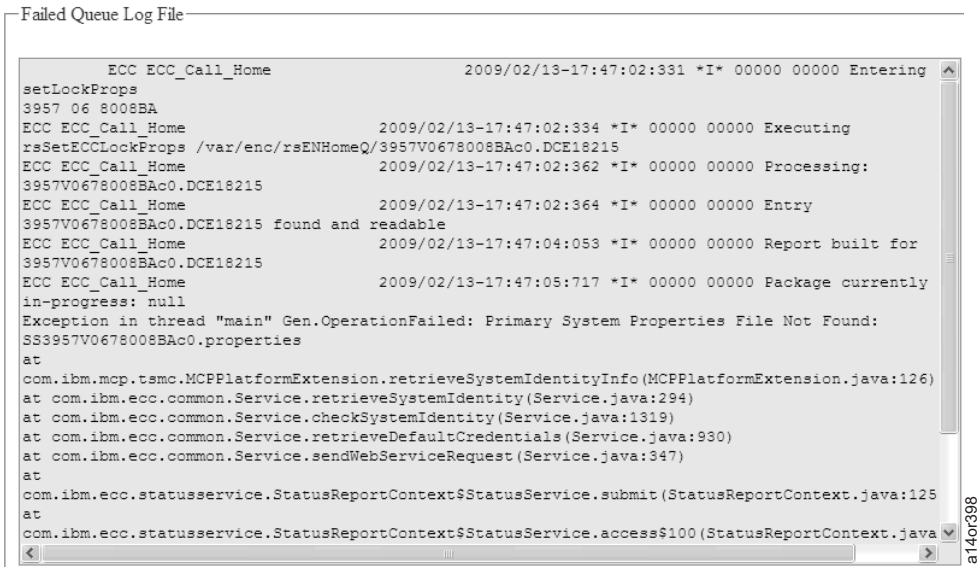

Figure 181. Failed Queue Log File

Note: There are generally three cases to look for in the log file to determine why a particular call home failed.

a. If you see a message stating the "Primary System Properties File Not Found," this means the system attempting to call home is not attached to the system console. The system must be attached to the system console before it can call home. When the machine is attached, this package can be moved back to the Call Home Queue.
b. For logs containing "Failing Machine Type: [####] Serial: [#######] is NOT REGISTERED in the [CCPF] system," the attached machine is no longer under warranty and cannot call home. The next line of support should be contacted if further help is required.
c. The last case will say that a "Duplicate file is in testcase." This means this call home package has already been called home, and this copy can be discarded.

Call Home Event Log

You can use the system console to view the Call Home Event Log and see the history of Call Home packages that have been sent by the system console.

1. Right-click from anywhere in the Desktop.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, type **service** in the Password field, then click **OK** to start the Console Configuration application.
4. Click **Call Home Queue**.
5. Click **Call Home Event Log** at the top of the page. You see the screen shown in Figure 182 on page 148.

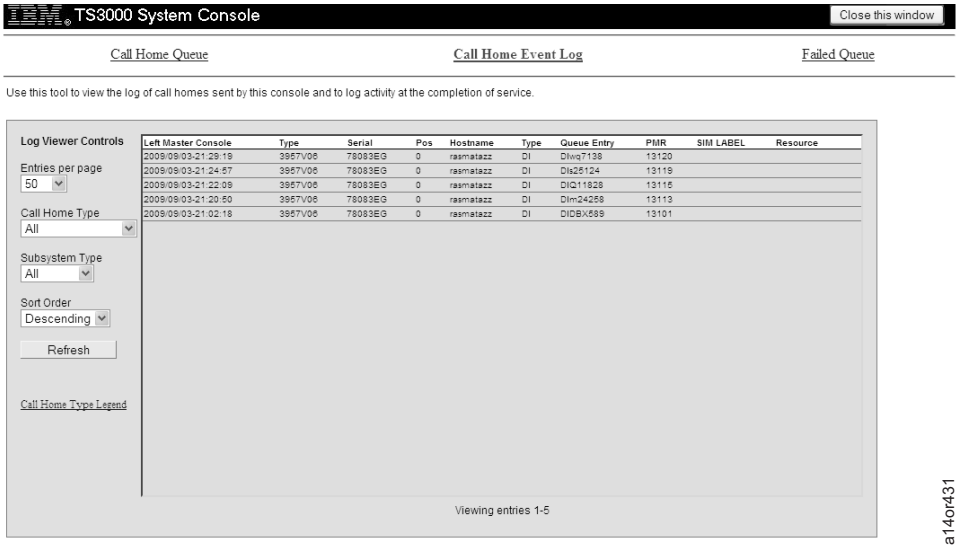

Figure 182. Call Home Event Log.

6. You can use the Log Viewer Controls to sort the event log entries. Sort categories include the following:
   a. Number of entries per page
   b. Type of Call Home package
   c. Subsystem Type
7. Certain Call Home packages offer detailed information in addition to what is displayed in the event log. When additional information is available, a **Detail** link will be displayed in the far right column. See the following figure.

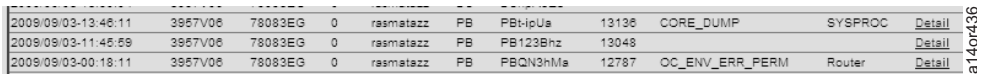

Figure 183. Call Home Event Log entries showing the Detail link

8. Clicking the **Detail** link brings up another window with additional event information as shown in the following figure.

Call Home Queue Entry PBt-ipUa	
Hostname	rasmatazz
System Type	3957V06
Serial Number	78083EG
Rack Position	0
PMR Number	13136
Data Record Locator	e78-083EGp003092009203540204005O
SIM Details	
RC/RQC Index	3
Message Modifier	2204
Message Data	00 00 00
SIM Identifier	4
Unit Identifier	600
Refcodes	e000 8082 0000
Label	CORE_DUMP
Identifier	A924A5FC
Resource Name	SYSPROC

Figure 184. Detailed Event Log Information

Offloading User Files

You can use the system console to offload user files by various means. For example, for user **service**, the directory would be /home/service/offload. If you are logging on remotely, you can use the browser to download the files onto your system.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
4. Select **Offload User Files**. You see Figure 185 on page 150. The directory setting defaults to your user's offload directory. For the user **service**, you are prompted for the directory you want to download the data. The suggested directory is "/home/service/offload." You can change to a different directory by adding another name in the "Specify a different offload directory" field, and clicking **Refresh** next to that input area. You can also change directories by clicking a directory name in the file list field.

   Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to offload user files (**TSSC Menus** > **Log Collection Tools** > **Offload user files**). Refer to “RAS Menus” on page 177.

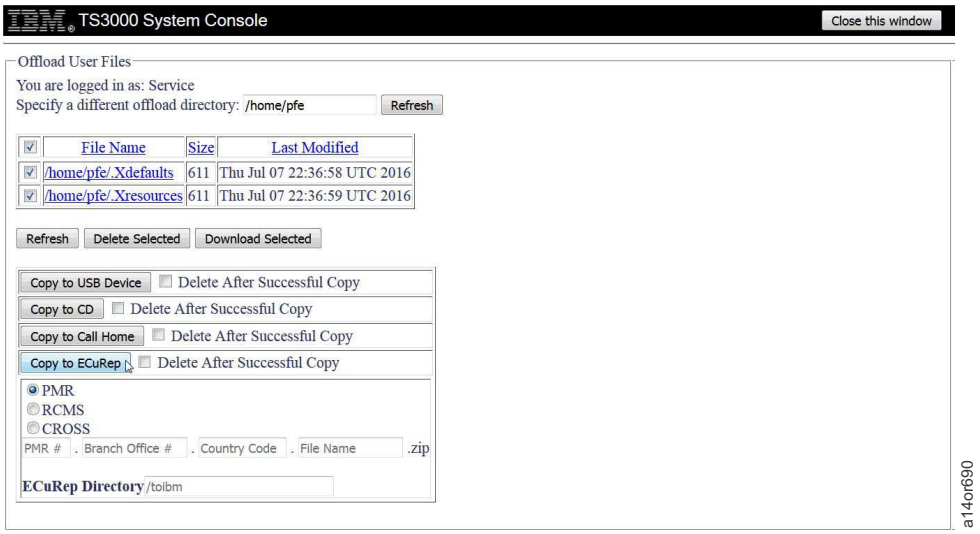

Figure 185. Offload User Files menu example

5. Click the check boxes next to the file names to select individual files, or click the box next to the heading "File Name" to select all the files. You can click **Refresh** underneath the list to clear from the check boxes all the choices that you made.

   Note: Your hardware platform determines the options that are available on this menu. Only those options that are available for your server type appear in the list.
6. Ensure that you have installed the media you are going to offload files to. Use Table 17 to determine the media type or the method you are going to use to offload user files.

Table 17. "Offload User Files" Options

Menu Option	Purpose
Copy to USB Device	Copies files to the media type you select
Copy to CD	
Copy to Call Home	Packages files in a data call home and places them in a Call Home queue for transmission
Copy to ECuRep	Copies files to the ECuRep server. Hover over Copy to ECuRep to see the following selections: PMR RCMS CROSS 1. Enter the information for the selected offload type. 2. Enter the ECuRep Directory location. 3. Click Copy to ECuRep
Delete Selected	Deletes files from the directory **Warning:** Do not delete files that are vital to system console function.
Download Selected	Compresses files into a file called ServiceOffloadBundle.zip. **Notes:** • You also may save a single, raw file by clicking on the filename, or right-clicking the filename and selecting "Save target as." You will be prompted with a download box. If you rename this file, do not allow in any blank spaces in the title you give it. • Download Selected compresses the files into a smaller package to lessen the transmission time. This is used primarily by IBM Support.
Refresh	Refresh the screen (Figure 185)

Note: Select **Delete After Successful Copy** if you want to remove the files that you are copying from the listing after you copy them.

7. You see a confirmation box. Ensure that you read all the text in the confirmation box. Click **OK** to copy the files.
8. If you are logged in remotely, you can offload the files directly to your hard drive by clicking on the filename in the table.

Starting and Stopping Automated Log Collector

Automated Log Collector (ALC) is used to gather log data associated with specific 3584 errors.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. Select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK**.
4. Select **PE Packages** > **Subsystem Log Retrieval**. You will see the following screen.

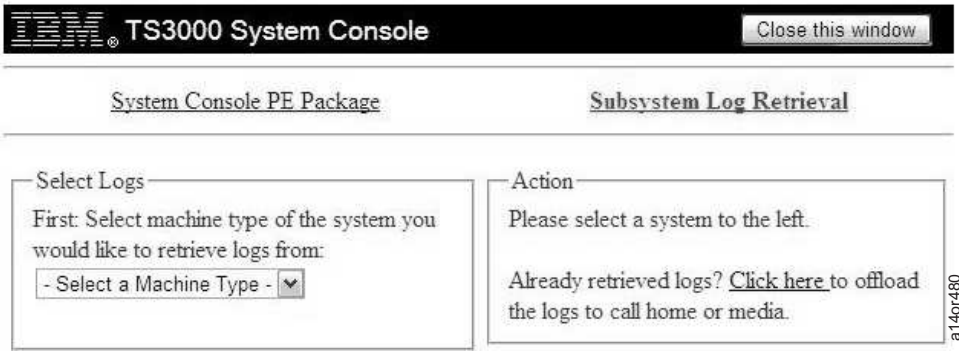

Figure 186. Subsystem Log Retrieval

5. In the "Select Logs" section, use the drop-down to select a 3584.

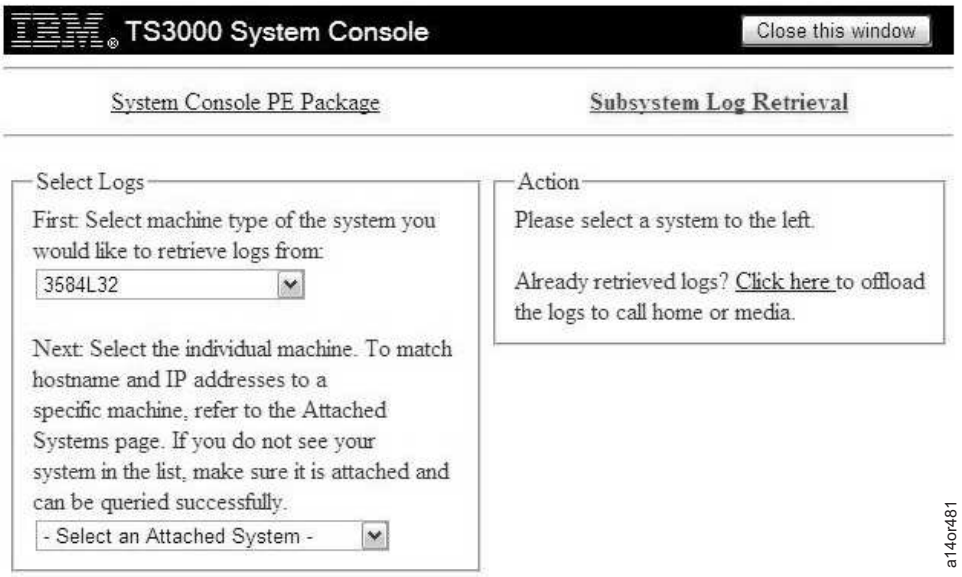

Figure 187. Select Logs

6. From the new drop-down that appeared, select an attached system.

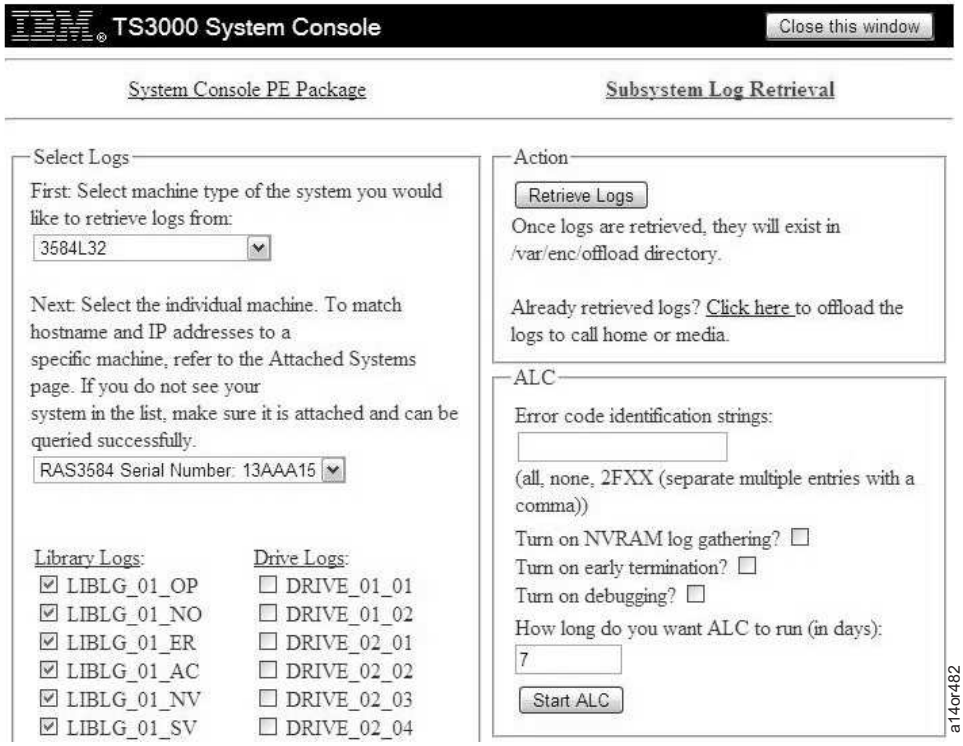

Figure 188. Select Attached System

7. In the error code identification strings text box type the error codes you want ALC to check for. You can type **all** (which will include all error codes for log gathering), **none** (which will not gather logs for any error code), or **a list of comma-separated 4 digit hexadecimal numbers** (an X may be used as a wildcard and will match any number in its position).

   If you want to turn on NVRAM log gathering, early termination, or debugging, simply check the check box next to the options you want.

   Then input how many days you want ALC to run. Don't try to run ALC forever, and run only under the guidance and direction of a PFE.
8. Then click **Start ALC**.

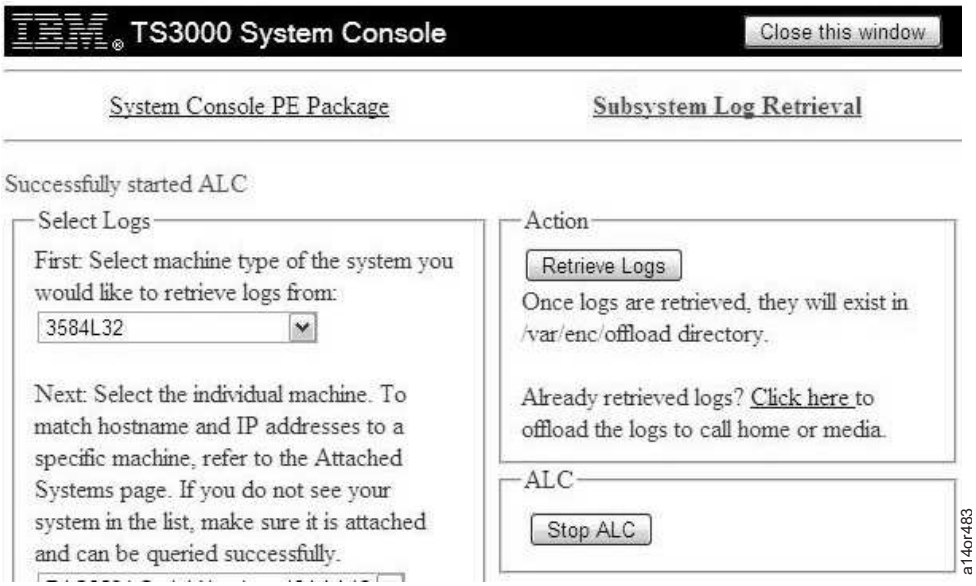

Figure 189. Successfully Started ALC

ALC has been successfully started on your selected 3584 library.
Every heartbeat error found by ALC will be called home.

Stop ALC from the Web Interface

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. Select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK**.
4. Select **PE Packages** > **Subsystem Log Retrieval**. You will see the following screen.

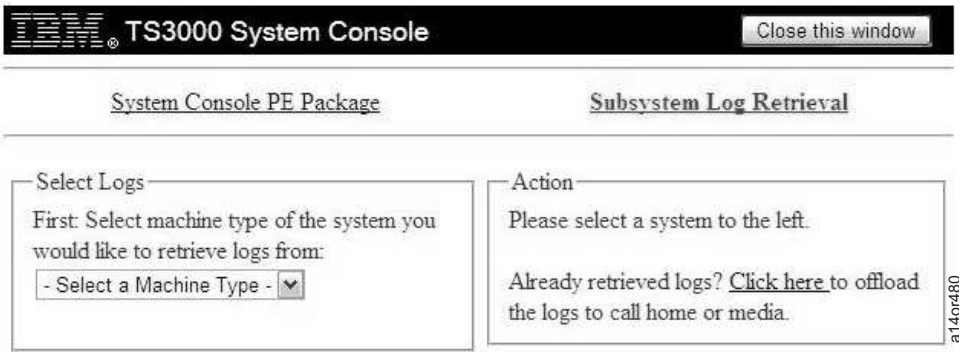

Figure 190. Subsystem Log Retrieval

5. In the “Select Logs” section, use the drop-down to select a 3584.

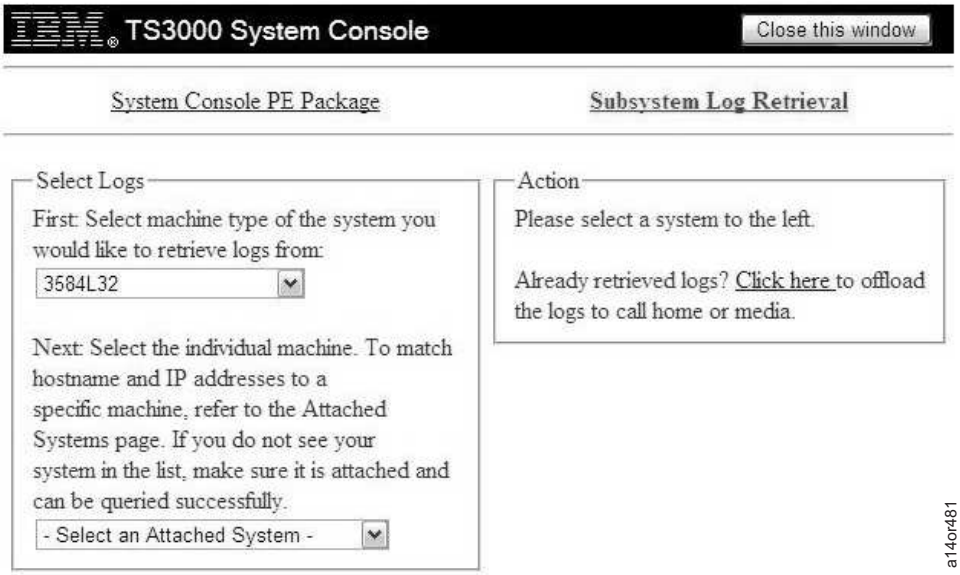

Figure 191. Select Logs

6. From the new drop-down that appeared, select an attached system.

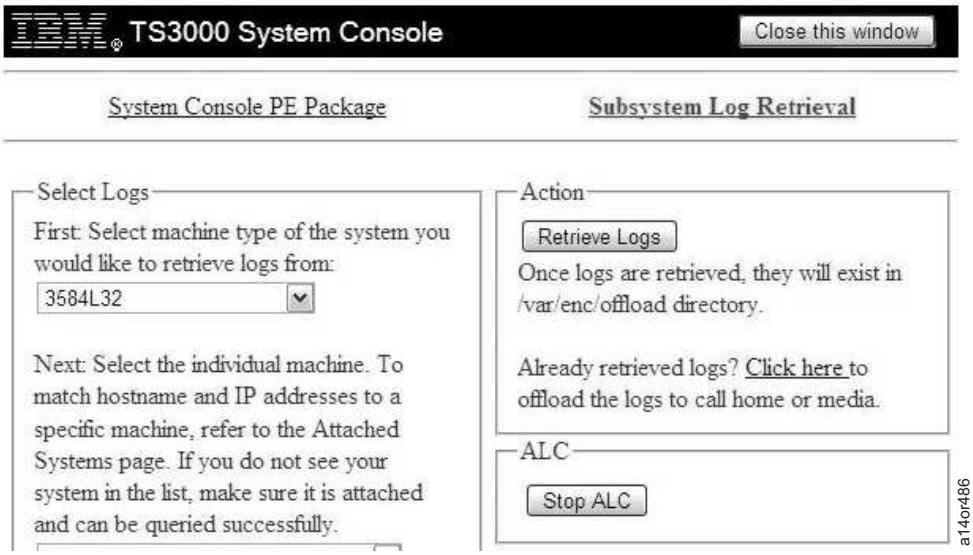

Figure 192. Select Attached System

7. Click **Stop ALC**.

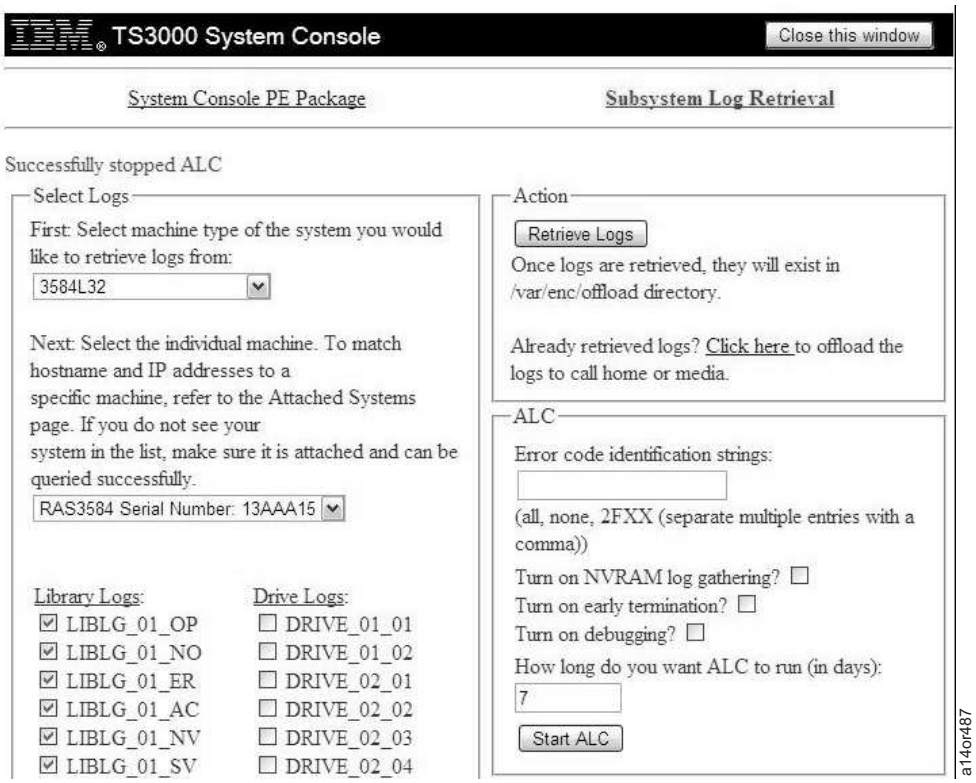

Figure 193. Successfully Stopped ALC

ALC has been stopped on the selected 3584 library.

Start ALC from the Command Line

1. Log into the system console. See Figure 63 on page 52.
2. Click anywhere on the desktop, select **Browser Functions** > **Launch ALC Manager**. You will see the following screen.

   Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to manage ALC (**TSSC Menus** > **3584 Options** > **Manage ALC**). Refer to "RAS Menus" on page 177.

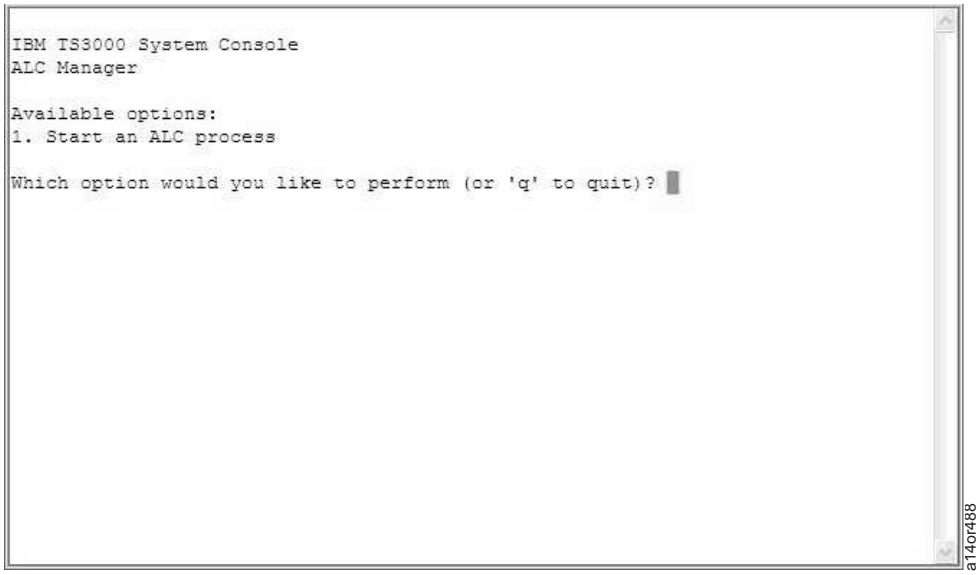

Figure 194. Start an ALC Process

Note: If there are 3584s to start ALC against, the option "Start an ALC process" will appear.

3. To start ALC press the **corresponding number** next to "Start an ALC process" then press **Enter**.

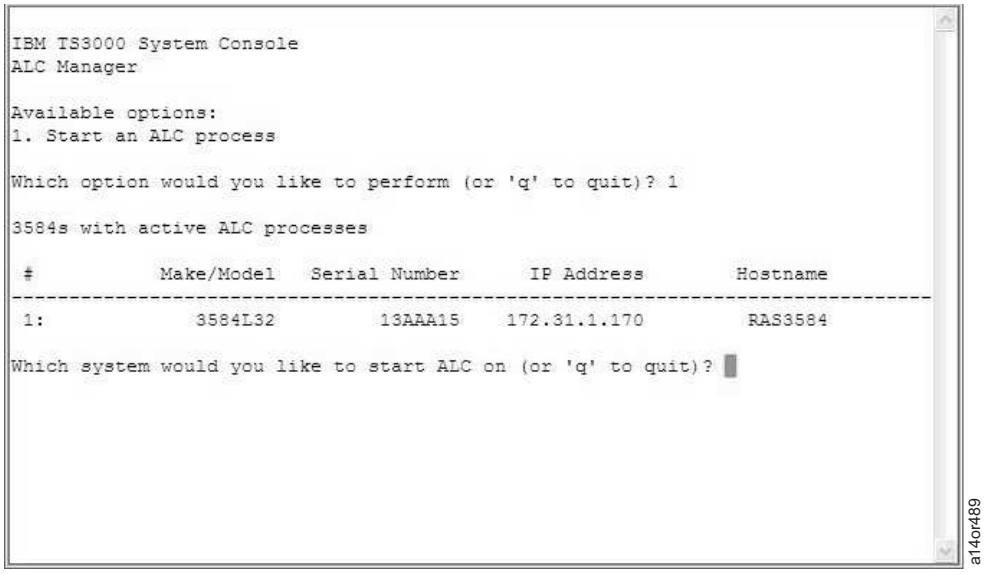

Figure 195. Start an ALC Process

A list of attached 3584 libraries appear. Libraries that already have ALC running will not show up here.

4. Find the 3584 you want to start ALC against from the list. Press the **corresponding number**, then press **Enter**.

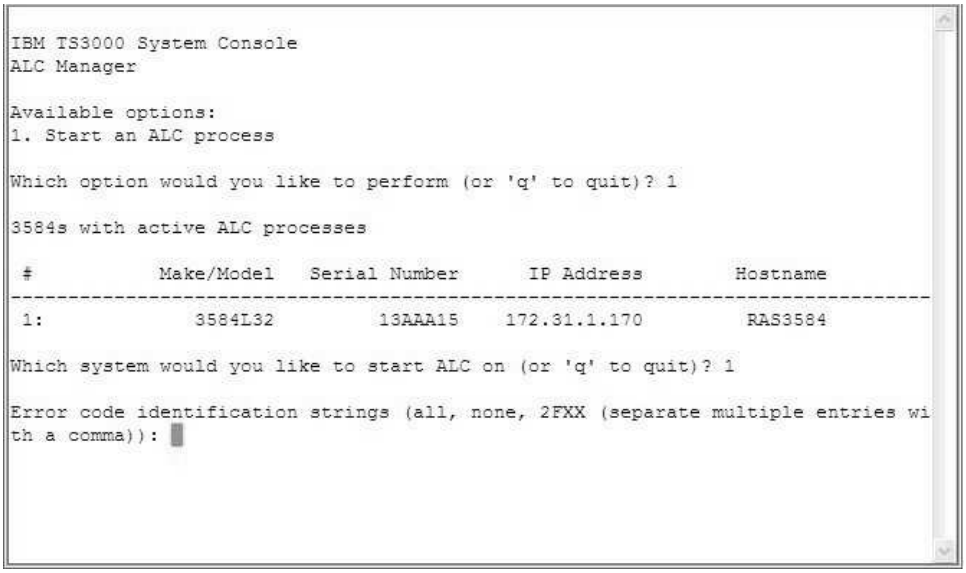

Figure 196. Start an ALC Process

The script will now ask for the error code identification strings to define which error codes to check for.

5. Type **all** (which will include all error codes for log gathering), **none** (which will not gather logs for any error code), or **a list of comma separated 4 digit hexadecimal numbers** (an X may be used as a wildcard and will match any number in its position), then press **Enter**.

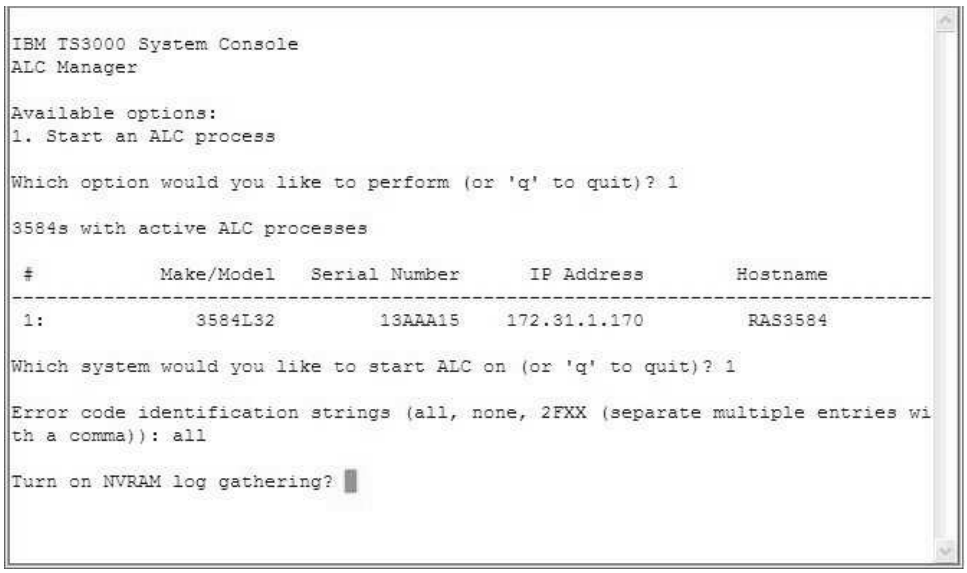

Figure 197. Start an ALC Process

You will now be asked if you want to turn on NVRAM log gathering.

6. Type **Yes** or **No**, then press **Enter**.

```
IBM TS3000 System Console
ALC Manager

Available options:
1. Start an ALC process

Which option would you like to perform (or 'q' to quit)? 1

3584s with active ALC processes

 #           Make/Model   Serial Number      IP Address        Hostname
-------------------------------------------------------------------------------
 1:             3584L32         13AAA15    172.31.1.170         RAS3584

Which system would you like to start ALC on (or 'q' to quit)? 1

Error code identification strings (all, none, 2FXX (separate multiple entries wi
th a comma)): all

Turn on NVRAM log gathering? No

Turn on early termination?
```

a14or492

Figure 198. Start an ALC Process

You now will be asked to turn on early termination.

7. Type **Yes** or **No**, then press **Enter**.

```
IBM TS3000 System Console
ALC Manager

Available options:
1. Start an ALC process

Which option would you like to perform (or 'q' to quit)? 1

3584s with active ALC processes

 #           Make/Model   Serial Number      IP Address        Hostname
-------------------------------------------------------------------------------
 1:             3584L32         13AAA15    172.31.1.170         RAS3584

Which system would you like to start ALC on (or 'q' to quit)? 1

Error code identification strings (all, none, 2FXX (separate multiple entries wi
th a comma)): all

Turn on NVRAM log gathering? No

Turn on early termination? No

Turn on debugging?
```

a14or493

Figure 199. Start an ALC Process

Next, you will be asked to turn on debugging.

8. Type **Yes** or **No**, then press **Enter**.

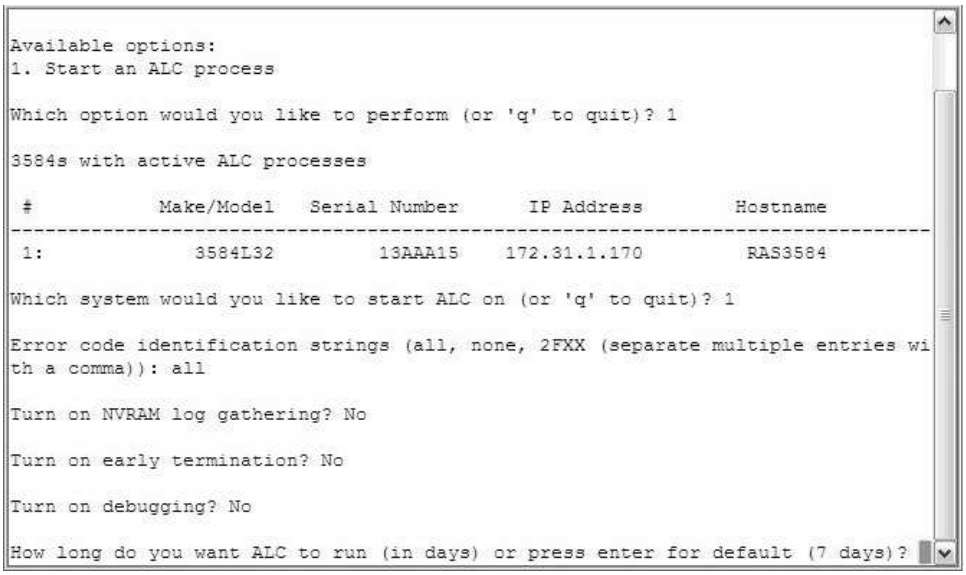

Figure 200. Start an ALC Process

Finally, you will be asked how long you want ALC to run.

9. Type a number greater than zero. Don't try to run ALC forever, and run only under the guidance and direction of a PFE.

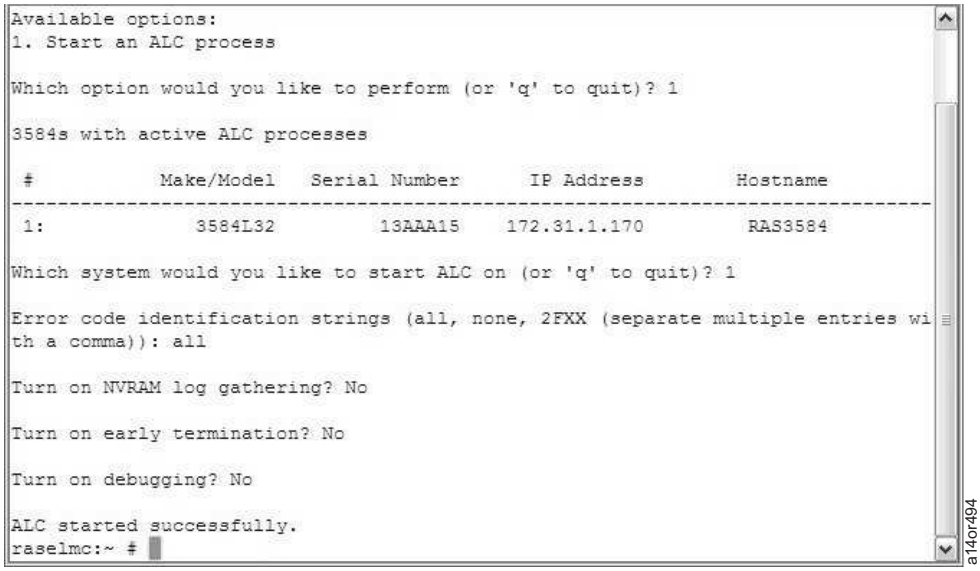

Figure 201. Start an ALC Process

ALC will now start.

Every heartbeat error found by ALC will be called home.

Stop ALC from the Command Line

1. Log into the system console. See Figure 63 on page 52.
2. Click anywhere on the desktop, select **Browser Functions** > **Launch ALC Manager**. You see the following screen.

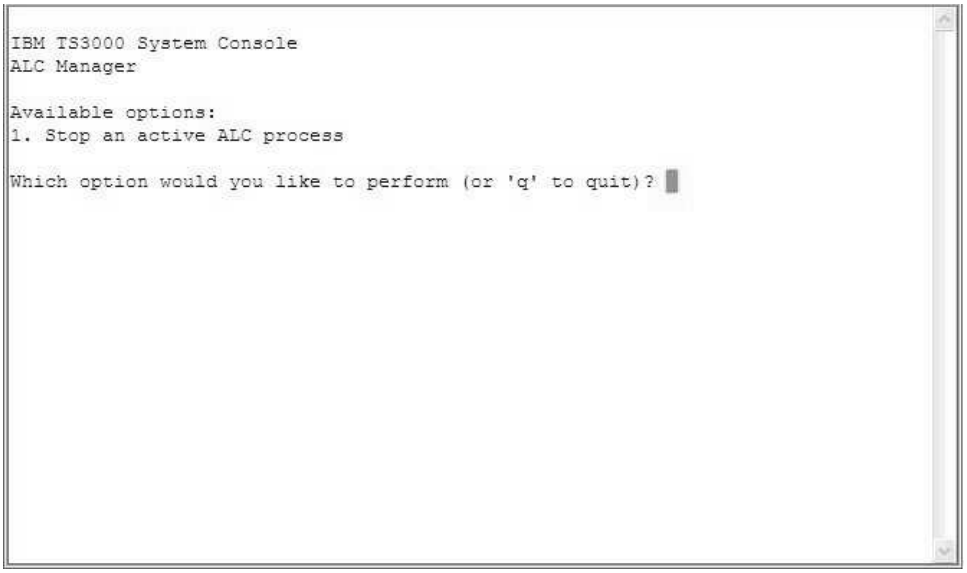

Figure 202. Stop an ALC Process

Note: If there are ALC processes running, you will be given the option to stop them.

3. To continue, press **the corresponding number** next to "Stop an active ALC process", then press **Enter**.

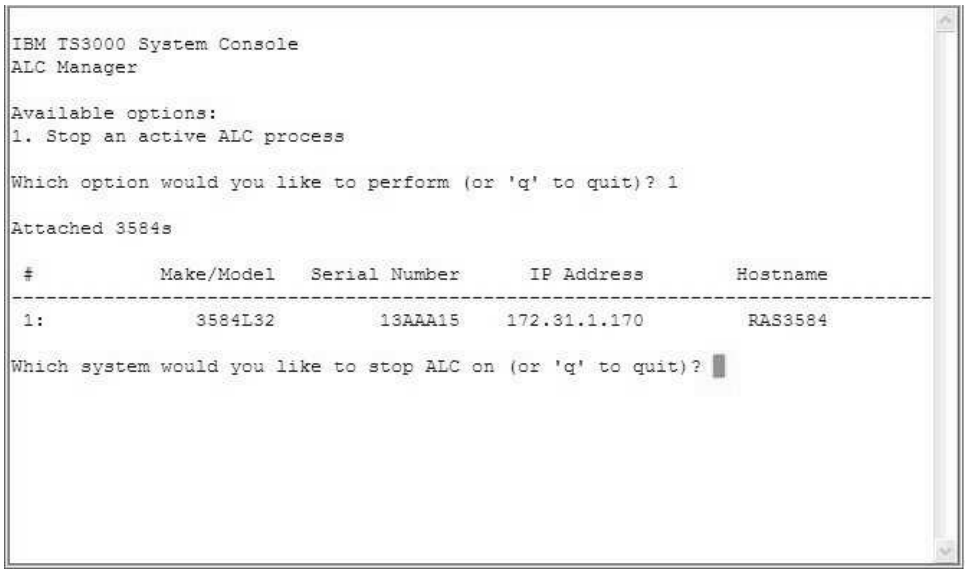

Figure 203. Stop an ALC Process

A list of 3584s with ALC running against them appear.

4. To stop ALC on one of the 3584s press **the corresponding number** of the desired library and **Enter**.

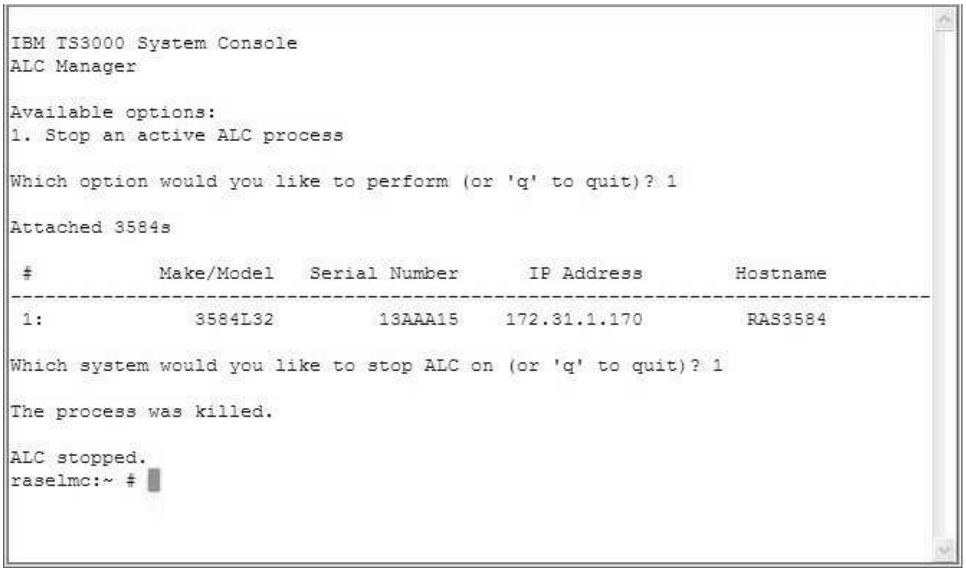

Figure 204. Stop an ALC Process

ALC has now stopped collecting logs against that 3584 library.

Configuring Assist On-Site

Assist On-Site (AOS) is a tool that allows remote desktop connections over the External broadband Ethernet adapter to the TSSC.

Note: AOS 3.3 client can only access servers with AOS 3.3 and earlier. AOS 4.0 client can only access servers with AOS 4.0 and later. (System console code level 7.4.x or later)

Note: A DNS is required for AOS to find the AOS servers. To establish connection to a DNS, see section "Console Settings" on page 70. Outbound traffic needs to be enabled to the following ports as shown in Table 18 or Table 19. If a customer is not using a DNS, go to "AOS Settings" and place a check mark next to **Enable No-DNS mode**. You will be prompted to enter the IP address of the AOS relay server. If this is not known, click **Default** to populate the field with the last known IP address. Then, click **Apply**.

Table 18. TSSC AOS version 3.3 and earlier

Hostname	IP Address	Port	Description
aos.us.ihost.com	72.15.208.234	80, 8200[1)]	Main AOS Server
aosrelay1.us.ihost.com	72.15.223.60	80, 443, 8200[1)]	Americas Relay
[1)] Port 8200 optional only			

Table 19. TSSC AOS version 4.0

Hostname	IP Address	Port	Description
aos.uk.ihost.com	195.171.173.165	443	UK AOS Broker
aoshats.us.ihost.com[1)]	72.15.223.62	443	US AOS Broker
[1)] Requires a minimum of TSSC code v7.5.3 + "TSSC 7.5.x AOS 4.0 proxy patch"			

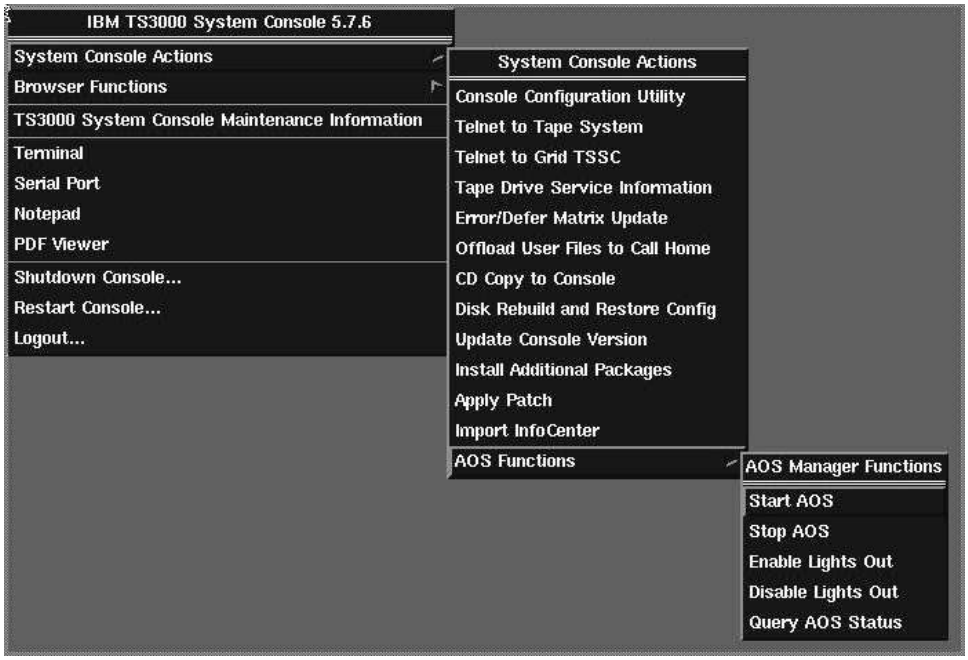

Figure 205. AOS Manager Functions

Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to manage AOS settings (**TSSC Menus** > **AOS Settings**). Refer to "RAS Menus" on page 177.

To Enable AOS Lights Out:

Right-click the desktop, select **System Console Actions** > **AOS Functions** > **Enable Lights Out**.

This will enable AOS to allow for remote access without the need to confirm the remote takeover of the TSSC.

To Disable AOS Lights Out:

Right-click the desktop, select **System Console Actions** > **AOS Functions** > **Disable Lights Out**.

This will set AOS to require local confirmation of the remote takeover TSSC.

To Start AOS:

Right-click the desktop, select **System Console Actions** > **AOS Functions** > **Start AOS**.

This will launch the AOS daemon and will enable AOS to run and establish connections based on the AOS settings on the TSSC.

To Stop AOS:

Right-click the desktop, select **System Console Actions** > **AOS Functions** > **Stop AOS**.

This will stop the AOS daemon from making any new connections. Any sessions currently in progress will not be stopped. The remote user or a local user will be required to stop any established connections if there are any.

To Query AOS:

Right-click the desktop, select **System Console Actions** > **AOS Functions** > **Query AOS Status**.

The function will show you the current AOS settings on the TSSC. The query command checks the following settings:

– If Lights out is enabled or disabled

– If AOS is running or not

– The customer name that will be presented by the AOS client for establishing a connection to this TSSC. AOS currently reports the hostname of the TSSC.

Note: If your TSSC is set to the default tssnet1, it will be very difficult to find your TSSC in the AOS client. We strongly suggest updating the hostname to a unique hostname.

If you change the hostname from the default “tssnet1”, it must conform to the following guideline: A “name” (Net, Host, Gateway, or Domain name) is a text string up to 63 characters that contains only ASCII letters a-z (case-insensitive), digits (0-9), and hyphen (-).

– The AOS customer number. All TSSC's customer number is 1010000, and this field is not configurable.

– Tests connectivity to the AOS site, and if it is not successful, the script displays the reason for not being able to connect to the URL.

Note: A DNS server is required for AOS to find the appropriate IP for establishing the connection with the AOS server. To set a DNS server, see section “Console Settings” on page 70. If a customer is not using a DNS, go to “AOS Settings” and place a check mark next to **Enable No-DNS mode**. You will be prompted to enter the IP address of the AOS relay server. If this is not known, click **Default** to populate the field with the last known IP address. Then, click **Apply**.

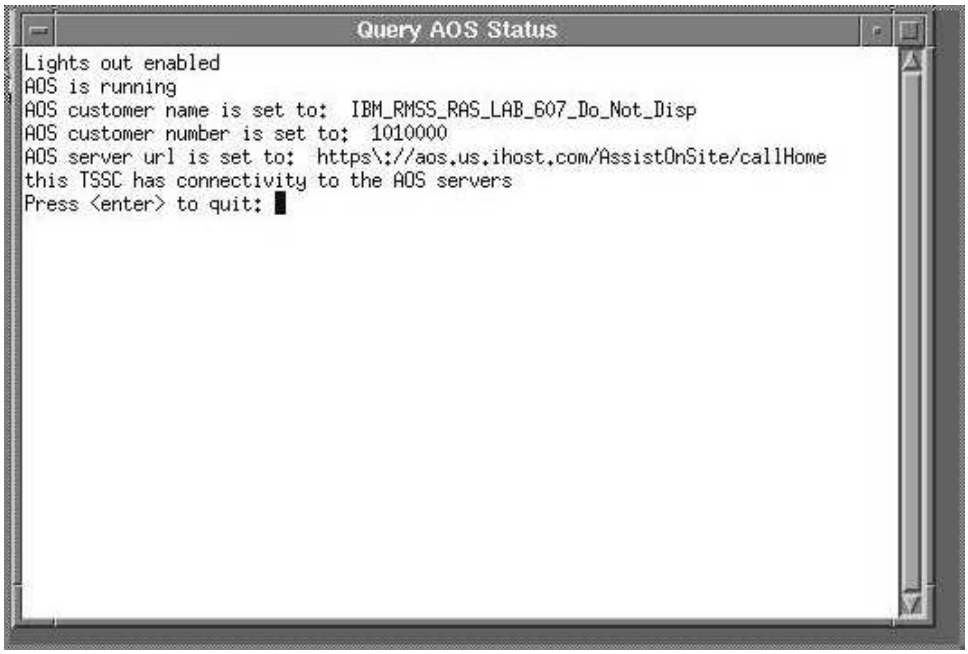

Figure 206. AOS Manager Functions

To Configure a Proxy Server:

1. Right-click the desktop, select **System Console Actions** > **AOS Functions** > **Configure Proxy Server**.
   This function will allow you to configure a proxy server for use with AOS Lights Out.
   You will be prompted for three pieces of information. This information is all provided by the customer.

   – the proxy server hostname (or IP address)
   – the proxy server port
   – the (optional) authentication credentials.

   Note: For proxy password limitations see Table 13 on page 100.

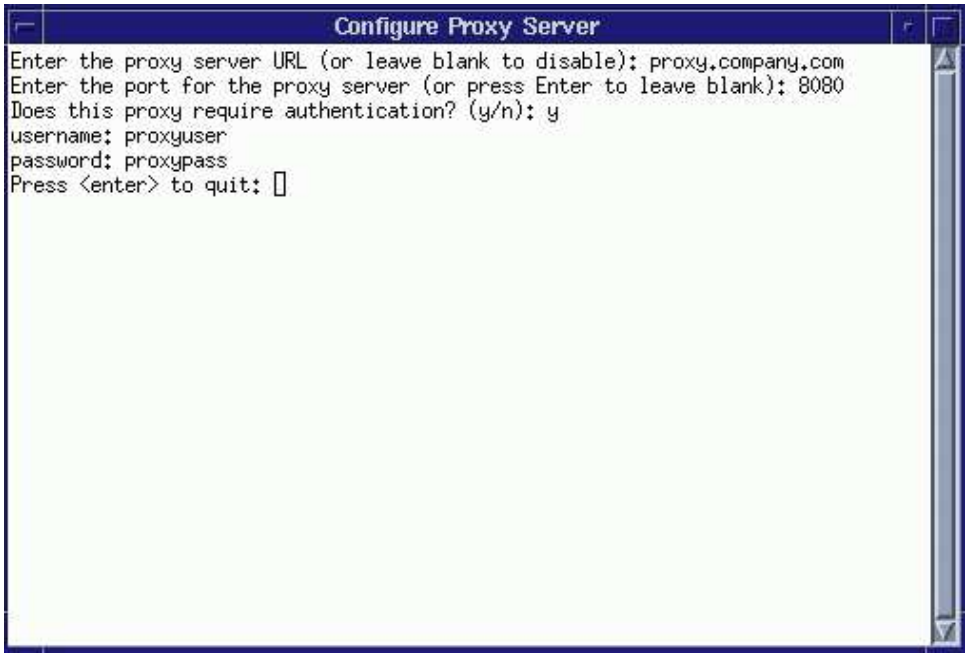

Figure 207. Proxy Example

To Configure Port Forwarding:

1. Right-click the desktop, select **System Console Actions** > **AOS Functions** > **Manage Port Forwarding**.

Figure 208. Manage Port Forwarding Interface

You will see an interface like Figure 208. There are three possible actions to take:

1. To add a port forwarding target, press **a** and then **Enter**.

   You will be prompted for a port forwarding hostname. This is the target to receive the forwarded traffic. For example, if you want to forward traffic back to the TSSC itself, enter **localhost**, or if you want to forward traffic to a machine at 172.31.1.10, enter that address.

   Next, you will be prompted for the port to be forwarded. This port will depend on the traffic you wish to forward. Some common choices can be found in the following table:

Port	Service
22	SSH
23	Telnet
7080	TSSC Web GUI

   Press **Enter** to save your new entry.

2. To remove a port forwarding target, press **r** and press **Enter**.

   You will be asked to enter a number corresponding to the entry you wish to delete.

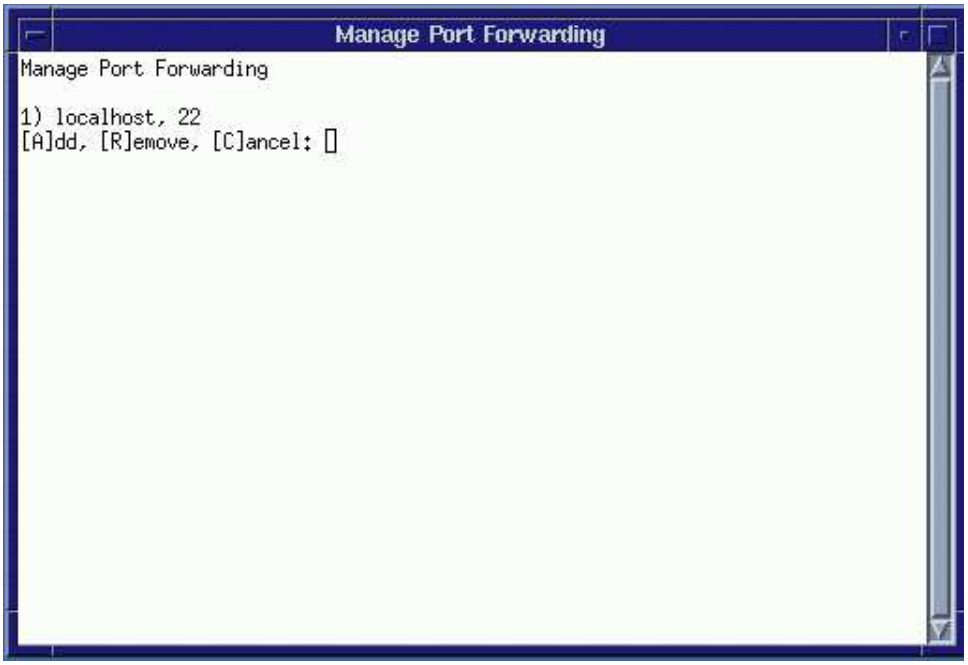

Figure 209. Port Forwarding Target List

For example, to delete the entry corresponding to *localhost, 22* choose 1 (see Figure 209) .

Enter the entry to delete and press **Enter**.

3. To simply cancel without making any changes, press **c** and then **Enter**.

Offloading User Files to Call Home Database (For Remote Users)

In addition to offloading files to various media types, you can offload larger files, files for later use, and files requested by your next level of support to be sent to the RMSS Call Home Database: `https://callhomedata.tucson.ibm.com`. The files must reside in the user's offload directory. For example, for the user "service" the directory would be /home/service/offload. Subdirectories will not be included.

Note: Files that you offload to the Call Home Database use the same call home path as normal call homes. Call Home Setup must be complete in order to use this function. See “Configuring Call Home Settings Electronic Customer Care” on page 87 for more information on Call Home Setup.

1. From the main menu, select **System Console Actions** > **Offload User Files to Call Home**. If you are using a dial-in session, issue the command **offloadpkg**. File offload begins. The window depicted in Figure 210 on page 167 appears.

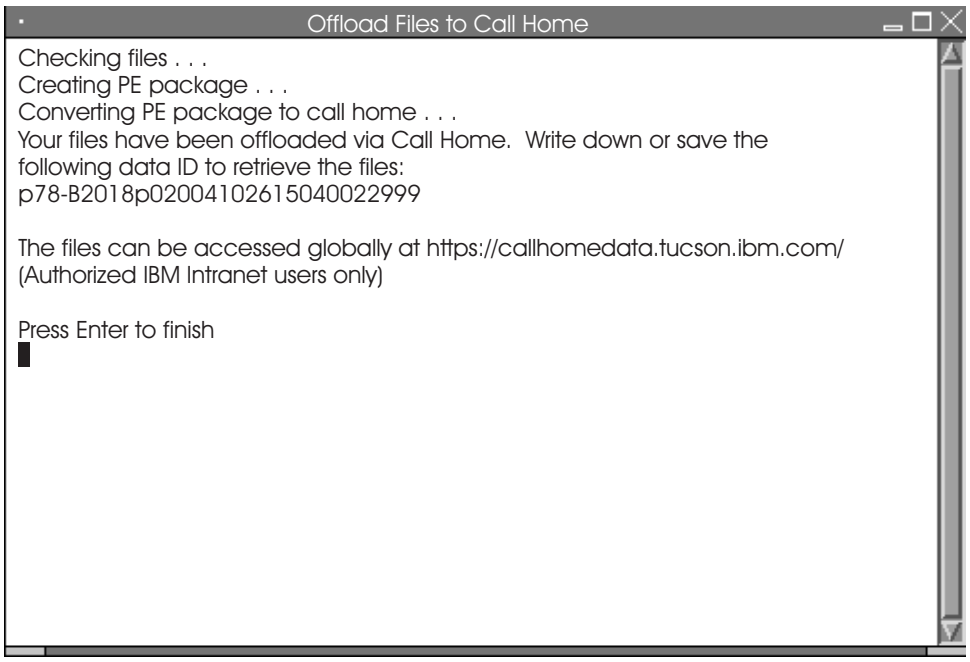

Figure 210. Offload Files to Call Home

Notes:

- If the user's files exceed 10 MB, a warning displays that includes a prompt to abort. Before you offload files larger than 10 MB, consider that this may delay other call home activity on this system console. Additionally, if subdirectories are found in the user's offload directory, a warning displays reminding the user that subdirectories are not included. The user may choose to abort at this warning and move the files if the files within subdirectories are desired to be included.
- An attempt to offload user files will fail if there are no files to be found in the user's offload directory.

2. See Figure 210. A data ID is assigned to the user's files. This data ID must be entered to retrieve the files on the RMSS Call Home Database. Make note of this ID for future reference. If the ID is lost, the user's files can still be found by locating call homes from the system console's Primary System on the Call Home Database. The Primary System is set in Call Home Setup (see "Configuring Call Home Settings Electronic Customer Care" on page 87). To assist in recording the ID, note that the ID always takes the form described in the following example.

```
Example Data ID: p78-B2018p02004102615040022999
p78-B2018p02004102615040022999
  p - The first character in the data ID is always a p
 p78-B2018p02004102615040022999
  78-B2018 - The serial number of the Primary System, with a dash (-) in the 3rd position
 p78-B2018p02004102615040022999
  p0 - A p followed by position in frame (always 0 except for when a VTC is the primary system)
 p78-B2018p02004102615040022999
  20041026 - The date in the form YYYYMMDD
 p78-B2018p02004102615040022999
  150400 - The time (24-hr) in the form HHMMSS
 p78-B2018p02004102615040022999
  22999 - These digits, usually the process ID of the Offload Files program, uniquely identify this call home
```

Figure 211. Data ID Sample

You can use the above information to confirm that you have correctly noted (for later use) a data ID.

3. The user's files are sent using a special call home package. Because this package must propagate through the normal call home path it can take a few minutes to arrive at the Call Home Database. Once it arrives, you can locate it by using the data ID given.

4. Once loaded on the Call Home Database, the user's files will appear as a regular call home, arriving from the system console's Primary System, as set in Call Home Setup (see “Configuring Call Home Settings Electronic Customer Care” on page 87).
5. To locate the offloaded data that is on the Call Home Database, use a web browser on the IBM intranet to go to the address: `https://callhomedata.tucson.ibm.com/`
6. From the left-side of the menu, choose **Single System**.
7. At the Call Home ID prompt, enter the data ID that appeared while files were unloading.
8. Click **Look Up Call Home Data ID**.
9. After the call home has been loaded, scroll down to the Files section to find the file you offloaded from the system console. You can use a web browser to download these files by clicking on the filename.

Console PE Package

Note: For 3956 CC6 (DS6000) PE Package creation, refer to "problem determination DS6000" in IBM Knowledge Center (http://www.ibm.com/support/knowledgecenter).

You can use the system console to create a Product Engineering (PE) package, then send that package to IBM RETAIN by using the call home path. You derive this PE package from console events log files and trace files which reside on the system console. Use the console creation tool to tailor the PE package to specific requirements, and to investigate and diagnose system console problems.

Note: The console PE packages will be sent to RETAIN via Call Home automatically.

1. Right-click from anywhere in the Desktop to view the Main Menu shown in Figure 63 on page 52).
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**. You see login prompt shown in Figure 64 on page 53.
3. Type **service** in the Username field, type **service** in the Password field, then click **OK** to start the Console Configuration application. You see the Console Configuration Application screen shown in Figure 65 on page 53.
4. Click the **PE Packages** icon. You see Figure 212 on page 169.

   Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to create a PE package (**TSSC Menus** > **Log Collection Tools** > **PE Package**). Refer to “RAS Menus” on page 177.

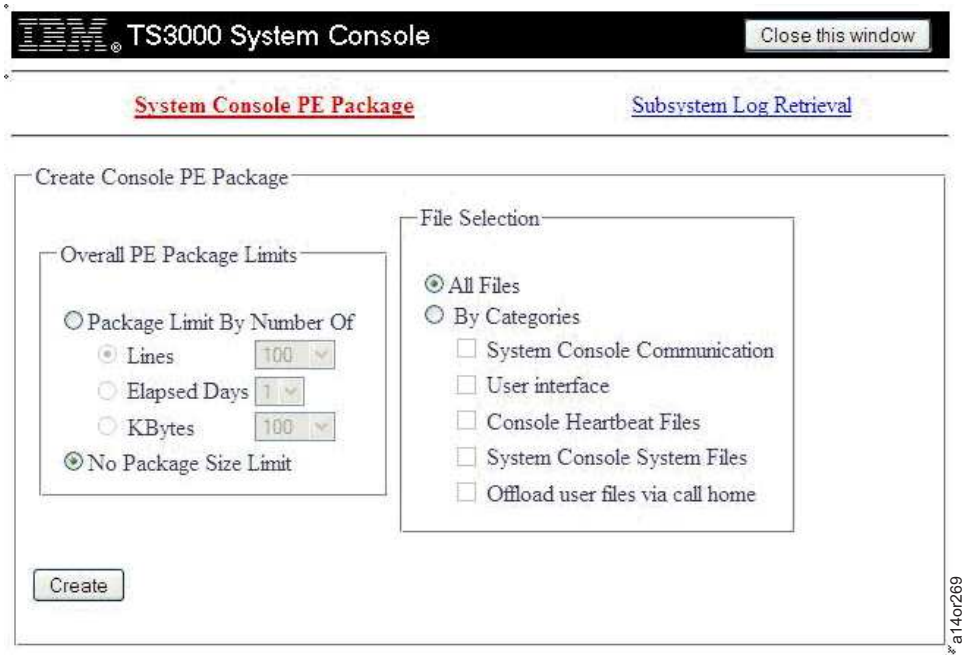

Figure 212. Create Console PE Package Menu

5. Choose one of the selections in the **Overall PE Package Limits** box.
   - Lines - Number of lines
   - Elapsed Days - Number of days
   - KBytes - Size of package

   – – OR – –
   - No Package Size Limit - Accepts any size
6. Choose one of the selections in the **File Selection** box.
   - All files - Include all the files

   – – OR – –
   - By Category - Choose those which apply to your installation
7. Click on the **Create** button. If the PE package has been created, a successful message will be displayed.

   Note: Select **Put PE package in /home/service/offload** to store the PE package in the service folder, otherwise the PE package will be offloaded to Call Home.

   Note: Verify that the System Console PE package is present in the Call Home Queue.

   If there are no files for the category that you selected an error message will be displayed. For example:

   PE package could not be created because the “Offload user files via call home” option was selected and there are no files in any of the directories listed in /var/enc/config/User.category.

   The **/var/enc/config/User.category** file lists the directory **$HOME/offload**. Verify that the offload directory located in your home directory is not empty

Retrieving Subsystem Logs

Complete this task to retrieve subsystem logs.

1. Right click from anywhere in the Desktop to view the Main Menu.

2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**
3. Type **service** in the Username field, type **service** in the Password field, then click **OK** to start the Console Configuration application. You see the Console Configuration Application screen shown in Figure 214.
4. Click the **PE Packages** icon. You see Figure 213.

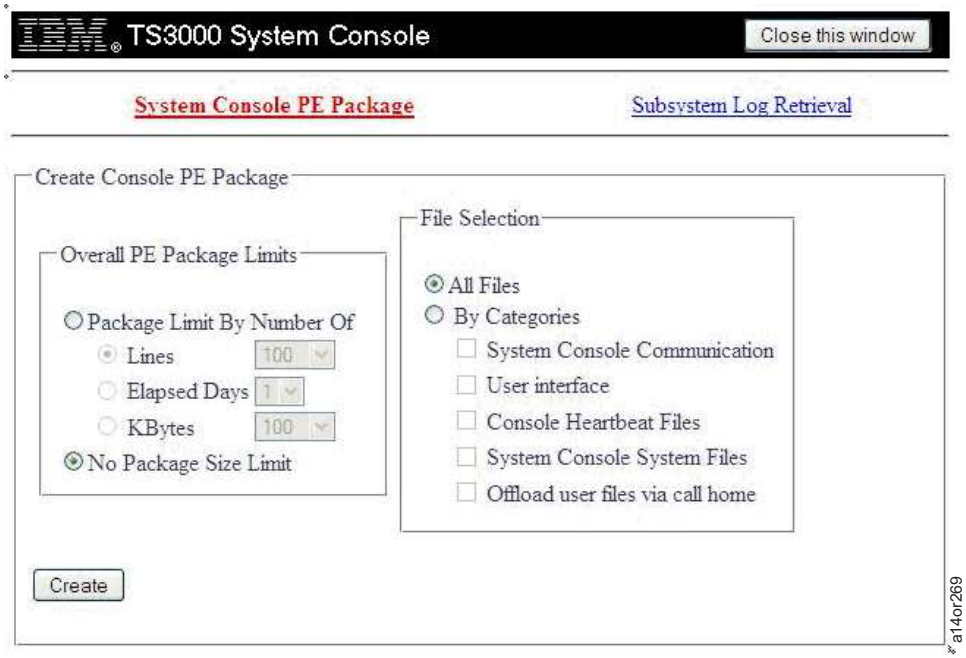

Figure 213. Create Console PE Package Menu

5. Click the **Subsystem Log Retrieval** tab at the top of the page. You see Figure 214. Follow the instructions in the Select Logs box to select an attached system from which you would like to retrieve logs.

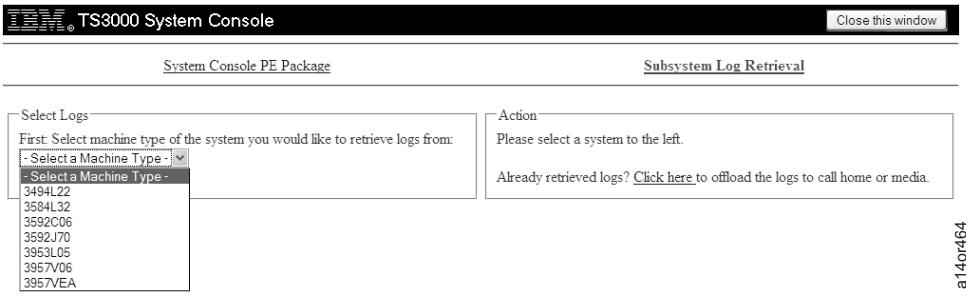

Figure 214. Subsystem Log Retrieval Menu

Notes:

- The list you see will contain only those subsystems which are eligible for log retrieval through the system console.
- Some early levels of subsystem code do not support Subsystem Log Retrieval.
- If you do not see your system listed, verify that it is attached and can be queried successfully from the attached systems page.

After you have selected your desired subsystem, you see one of the following options:

- **3957 -** A getlogs options menu displays. All selections are optional. You may specify a start time, including month, day, and hour for which to gather logs. All logs will be gathered from this time

forward. You also may specify one or more components to gather logs from as well as a specific file you would like to gather.

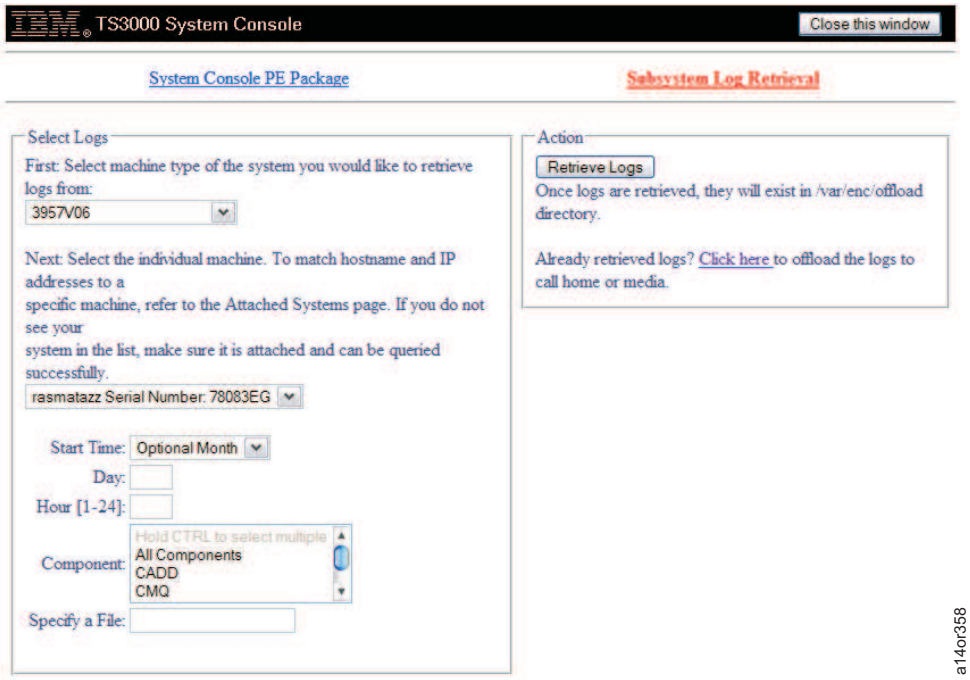

Figure 215. Retrieve Log - 3957 Menu

- **3592 -** A minimal getlogs menu displays. All selections are optional. You may specify a start time, including month, day, and hour for which to gather logs. All logs will be gathered from this time forward. You also may specify a specific file you would like to gather.

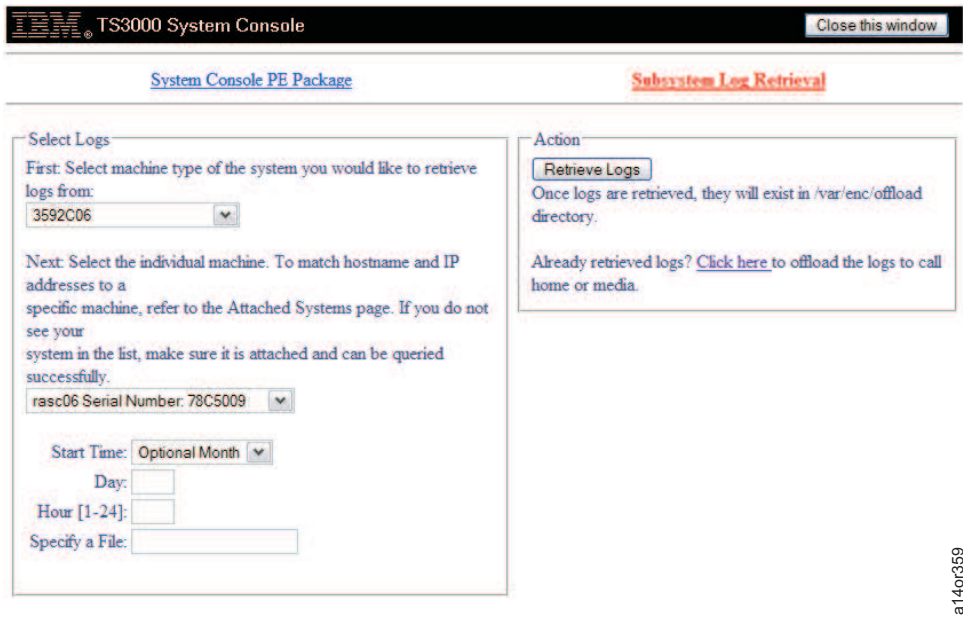

Figure 216. Retrieve Log - 3592 Menu

- **Library Manager -** A savelogs options menu displays. All selections are REQUIRED. You must specify a start time and an end time, including year, month, day, and hour. You must specify at

least one log type. You can specify multiple log types.

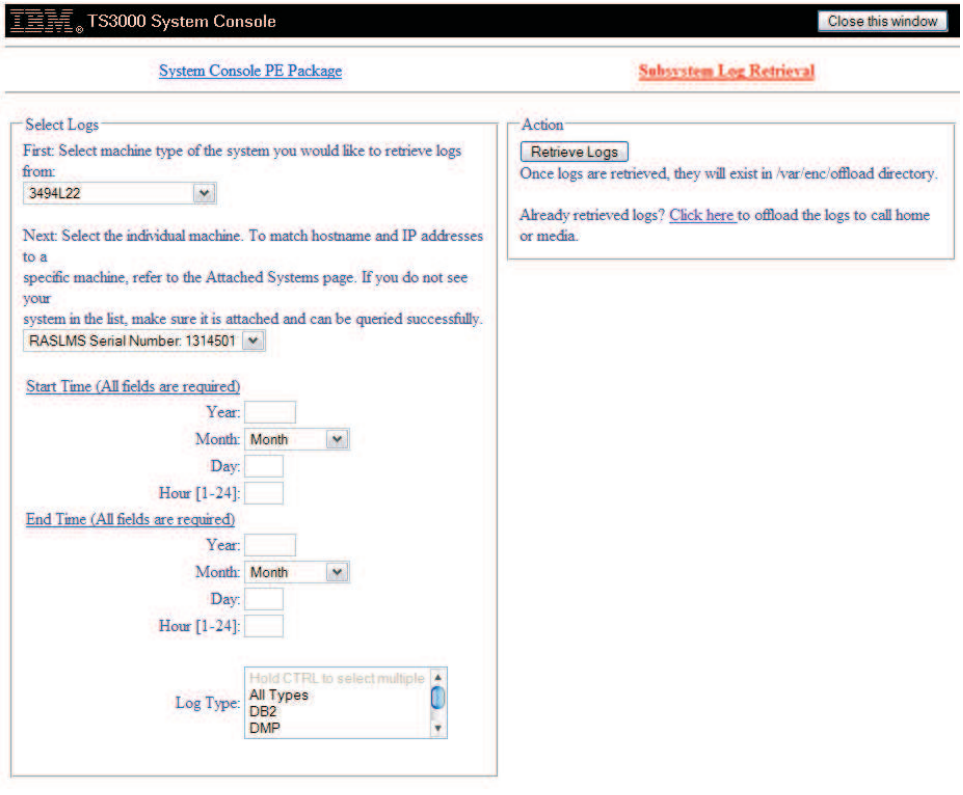

Figure 217. Retrieve Log - Library Manager

- **3584 -** After you select an individual 3584, the system console will query the library for the list of logs that are available for download. When the log query is successful, the available logs display for you to select. Select the logs you would like to retrieve.

  Note: The system console uses HTTP sessions to gather the 3584 logs. If gathering the log takes excessive time between queries, the session will expire. Refresh the page to open a new session.

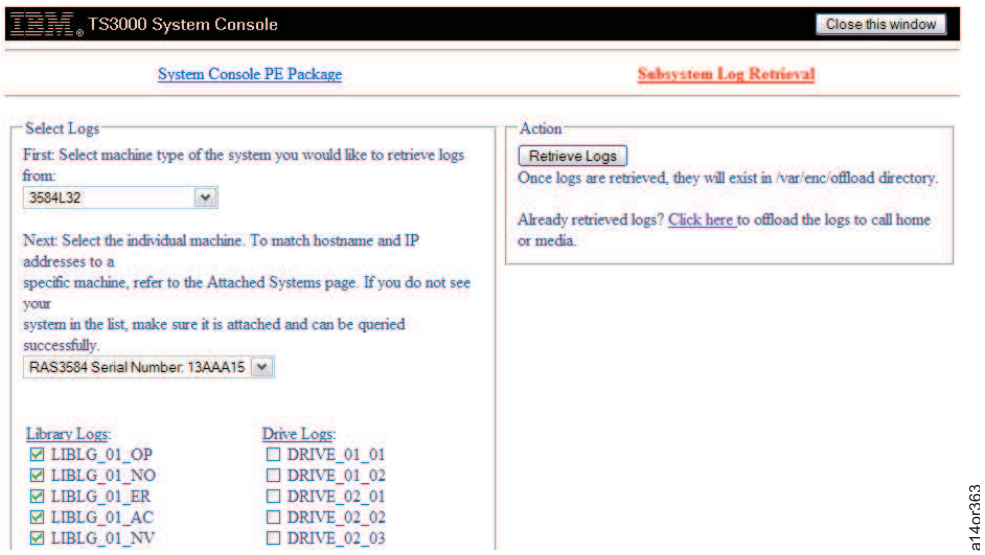

Figure 218. Retrieve Log - 3584

- **3958 -** You will be prompted for a start time and day, the components you want to retrieve, and the package size. You must select either a component or you must specify a filename.

  Note: The "Big" option is not available in TSSC v 5.8 and higher with ProtecTIER RAS levels 7121 and higher.

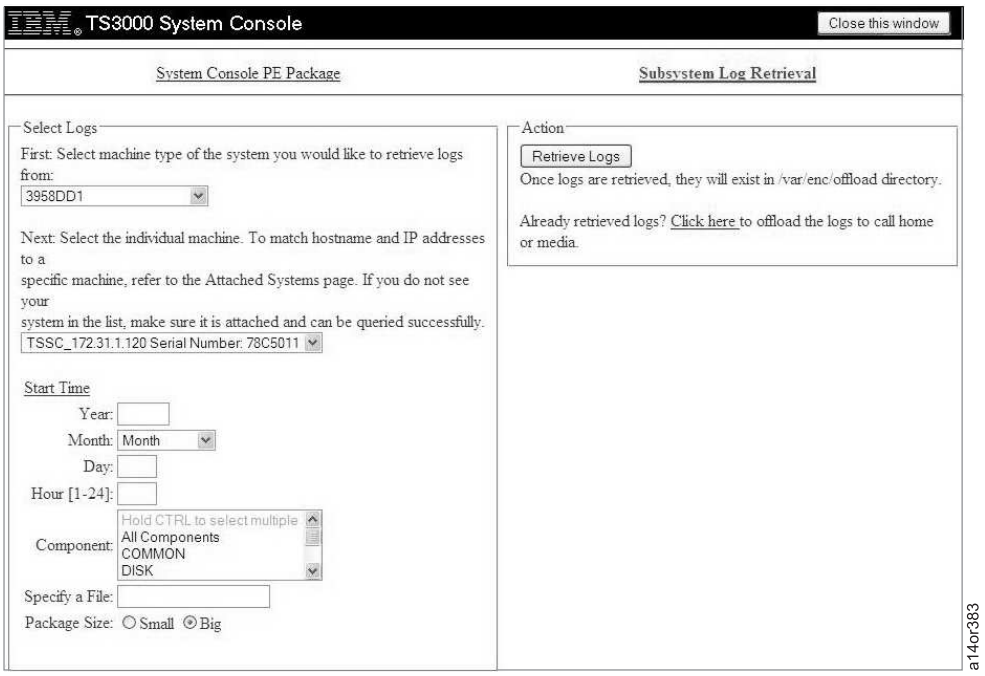

Figure 219. Retrieve Log - 3958

6. After you have selected a means of retrieving a log, click **Retrieve Logs** in the Action box. system console gathers your logs. You see a message when your request is fulfilled. The logs are gathered and are placed in the /var/enc/offload directory.
7. Click on **Click here** to offload the logs you gathered.

Console Status

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
4. To login from the system console, type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.

   – – OR – –

   To login remotely (from another system console), you must obtain an authentication ID (see "Login Options" on page 50 for information on obtaining an ID). Launch your browser.

   a. Enter the system console location into the Address field.
   b. Type your Authentication ID into the Username field, and your password into the Password field. Click **OK** to start the Console Configuration utility. You see Figure 65 on page 53.
5. Click **Console Status**. You see Figure 220.

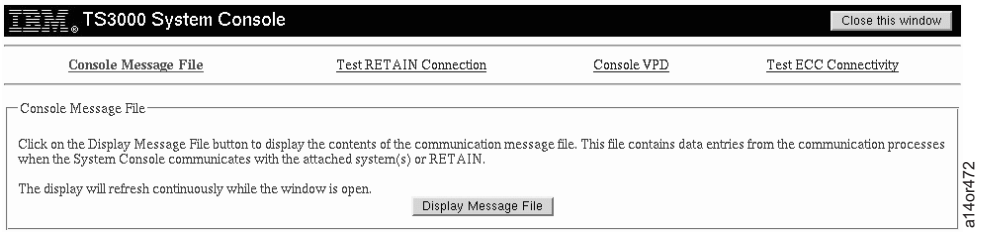

Figure 220. Console Message File Screen

6. Use Table 20 to determine the path that you want to follow.

Table 20. Console Status Tool Function

Function	Description
Console Message File	• Displays the contents of the communication message file • Provides a "Find..." tool for searching the file for a specific word or phrase See "Console Message File."
Test RETAIN Connection	Tests the telecommunication path between the system console and RETAIN (see "Test RETAIN Connection - As a Service Procedure" on page 175)
Console VPD	Displays Vital Product Data (VPD) information for the system console (see "Console VPD" on page 176)
Test ECC Connectivity	Test communication path between the system console and Electronic Customer Care. This can also be used to show ECC configuration information. (See "Test Electronic Customer Care (ECC) Connectivity" on page 111).

Console Message File

1. From the Console Message File screen shown in Figure 220, select **Console Message File**.
2. Click **Display Message File** to view the message file. You see Figure 221 on page 175.

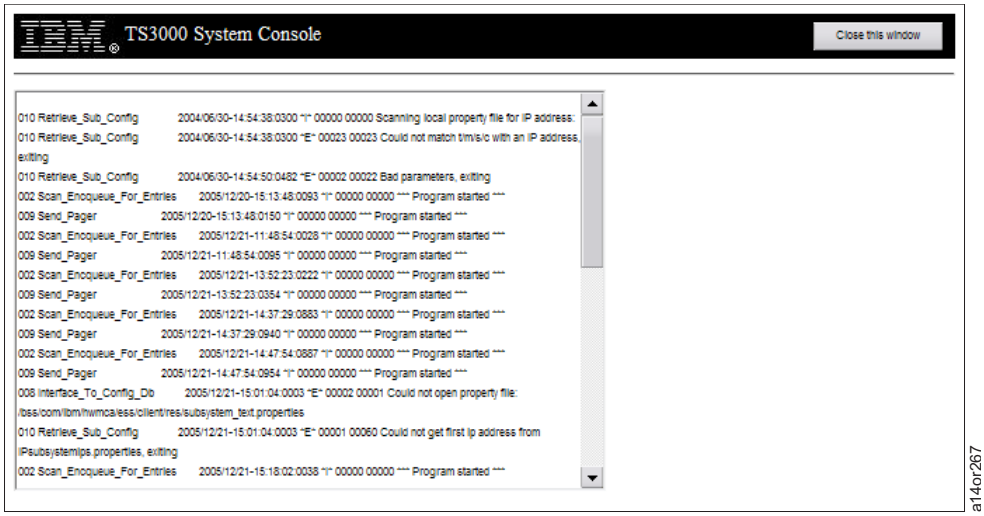

Figure 221. Message File Screen

Test RETAIN Connection - As a Service Procedure

1. From the Console Message File screen shown in Figure 220 on page 174, select **Test RETAIN Connection**. You see Figure 222.

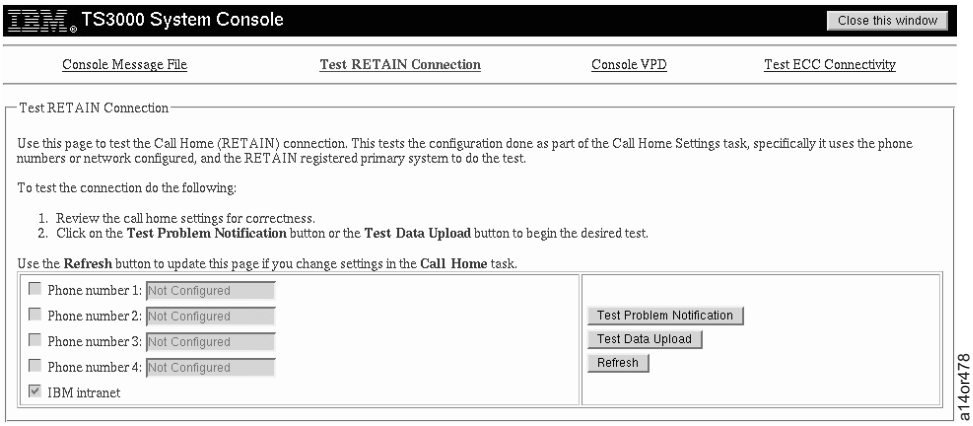

Figure 222. Test RETAIN Connection Request Screen - As a Service Procedure

2. Select the test you want to run from the list on this menu. You see Figure 223 on page 176.

   Note: "Test Problem Notification" performs a test Call Home and opens a PMR. "Test Data Upload" performs a test Call Home and sends a data package to the DP&R Call Home database.

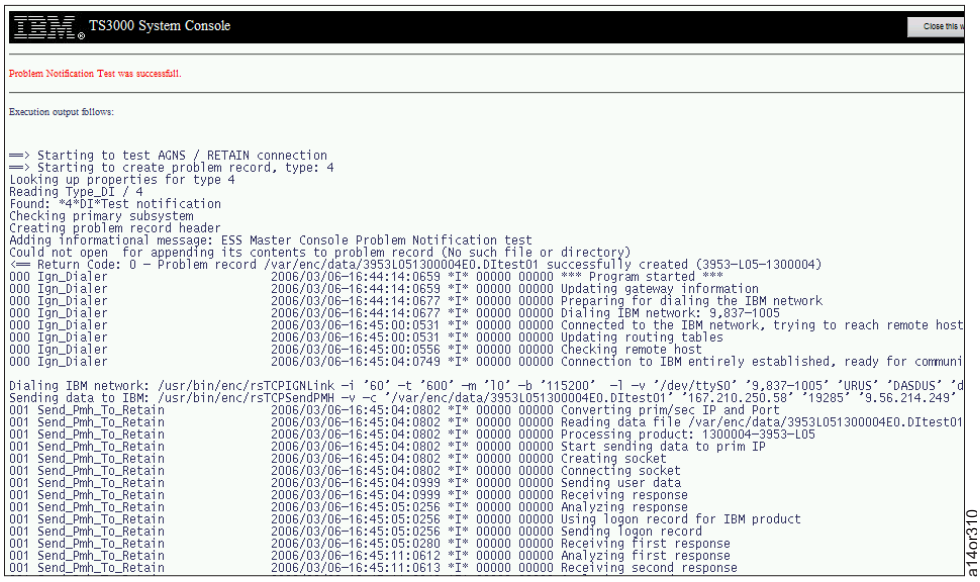

Figure 223. Test RETAIN Connection Results Screen - As a Service Procedure

3. Select **Close This Window** after you have performed your choice of tests.
4. If there is a problem with either of the tests, go to "Verifying accessibility of broadband call home servers" on page 113 and verify the accessibility of the ECC call home servers through the customers network.

Console VPD

From the Console Message File screen shown in Figure 220 on page 174, select **Console VPD**. You see Figure 224. The VPD information is listed in the System Console Product Information box.

Note: For model 9020 only:

- The Serial Number shown matches the Service Tag number located on the hardware.
- The Machine Type - Model shown does not match the Reg Model and Reg Type shown on the hardware.

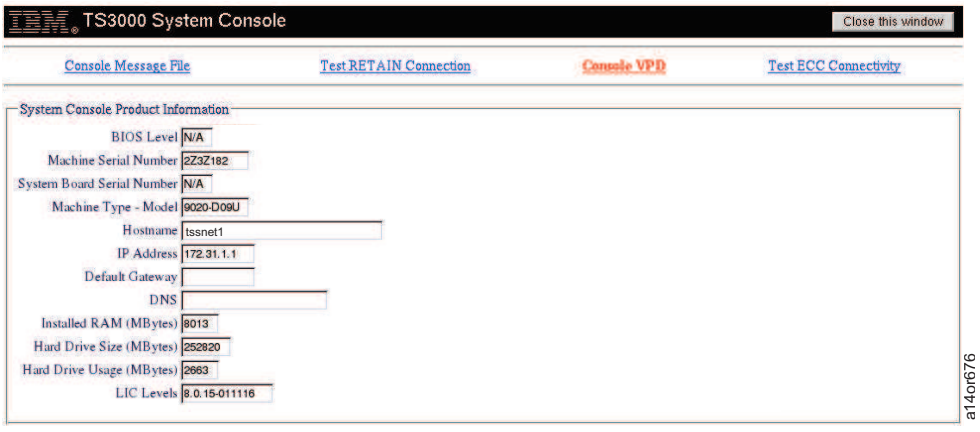

Figure 224. Console VPD Screen

RAS Menus

The RAS Menu system is a comprehensive tool used to enhance remote support capabilities from the command line. It is an interactive, menu-driven tool that provides the same service functionality as the web interface.

To launch the menu, enter the command `rsRasMenu` from the command line. The TSSC Menu will appear, see Figure 225.

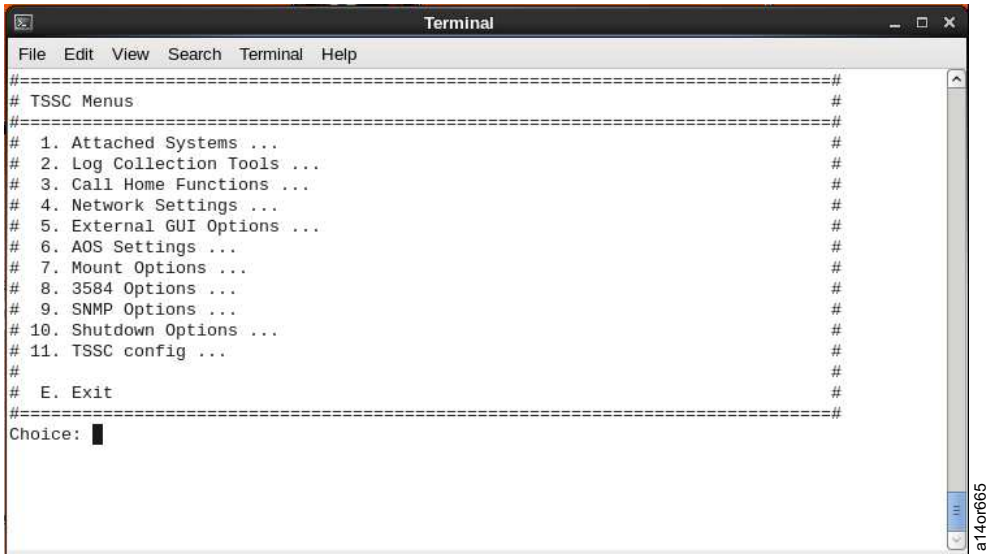

Figure 225. The top-level menu as displayed in a terminal window

The following menu tree outlines the available RAS Menu options.

TSSC Menus

1. Attached Systems
    1. Connect to Attached Tape System
    2. Connect to Remote TSSC in Grid
    3. Add Attached System
    4. Query one Attached System
    5. Query all Attached Systems
    6. Update and View Health of an Attached System
    7. Query Standby Mode
    8. Enable Standby Mode
    9. Disable Standby Mode
    10. Delete Attached System
    11. Download Control Unit Configuration
    12. View Control Unit Configuration
2. Log Collection Tools
    1. Offload user files
    2. Get 3584 Logs
    3. PE Package
3. Call Home Functions
    1. Call Home Options
        __ 1. Configure Call Home Values
        __ 2. Unlock ECC
        __ 3. Test ECC Connectivity
        __ 4. Delay Call Home for 2 hours
    2. Call Home Queue Options
        __ 1. View Call Home Queue
        __ 2. Send Call Home Now
    3. Failed Call Home Queue Options
        __ 1. View Failed Queue
        __ 2. View Failed Call Home Log
        __ 3. Move Failed Call Home to Home Queue
        __ 4. Send Failed Call Home Now
    4. Software Call Home Queue Options
        __ 1. View Software Queue
        __ 2. Move Software Call Home to Home Queue
        __ 3. Send Software Call Home Now
    5. Modem Transmission
        __ 1. Query Modem Transmission
        __ 2. Cancel Modem Transmission
    6. Incoming Modem Connections
        __ 1. Allow Inbound
        __ 2. Disallow Inbound
        __ 3. Check current setting

4. Network Settings
    1. View All Adapter Values
    2. View Specific Adapter Values
    3. Run TCP Dump
    4. View Route Table
    5. View and Update Firewall Settings
    6. Add/Change Internal Network Alias IP Address
    7. Remove Internal Network Alias IP Address
5. External GUI
    1. Storage Manager Options
    __ 1. Install Storage Manager
    2. DS6000 GUI Options
    __ 1. Install DS6000 GUI
    __ 2. Reset DS6000 Password
    3. ProtecTIER GUI Options
    __ 1. Install ProtecTIER GUI
    __ 2. Upgrade ProtecTIER GUI
6. AOS Settings
    1. Check AOS status
    2. Enable Lights Out
    3. Enable Lights On
    4. Start AOS Processes
    5. End AOS Processes
    6. Restart AOS Processes
    7. Configure Proxy Server
    8. Manage Port Forwarding
    9. Enable Debug Trace
    10. Disable Debug Trace
7. Mount Options
    1. Mount USB Device
    2. Mount CDROM
    3. Unmount USB Device
    4. Unmount CDROM
8. 3584 Options
    1. Start TSR
    2. Stop TSR
    3. Manage ALC
    4. Manage SRC Firmware
9. SNMP Options
    1. Enable SNMP Trap Alerts
    2. Disable SNMP Trap Alerts
    3. Enable Control Unit SNMP Trap Forwarding
    4. Disable Control Unit SNMP Trap Forwarding
    5. Enable ProtecTIER SNMP Trap Forwarding
    6. Disable ProtecTIER SNMP Trap Forwarding

10. Shutdown Options
    1. Restart TSSC
    2. Shut Down TSSC
11. TSSC config
    1. Display TSSC Status
    __ 1. Directory Size
    __ 2. Modem Detected
    __ 3. AOS Active
    2. Test RETAIN Connection
    __ 1. Test Problem Notification
    __ 2. Test Data Upload
    3. Check TSSC Health
    __ 1. Check Disk Space
    __ 2. Start Disk Space Monitor
    __ 3. Stop Disk Space Monitor
    4. Print TSSC Machine Type-Model and Serial Number
    5. List installed TSSC patches
    6. Backup TSSC Configuration
    __ 1. CD
    __ 2. USB
    __ 3. Attached System

Local access

To access the RAS menu system locally:

1. Right click from anywhere in the Desktop to view the Main Menu shown in Figure 63 on page 52.
2. From the main menu, select the **Terminal** entry.
3. Enter the command `rsRasMenu` to open the RAS menus. The interactive menu system will display in the terminal as seen in "RAS Menus" on page 177.
4. The main menu is broken down into categories. Make a selection by entering the number next to any top-level menu entry. You will be taken to submenus that correspond to your selection.
5. You may exit the menus at any time by pressing **E**. To navigate back to the previous menu, enter **B** when prompted.

Remote access

To access the RAS menu system remotely:

1. Connect to the target TSSC via an SSH session or modem.
2. Authenticate as a Service or Enhanced RMSS user and log in to the TSSC.
3. Once logged in at the command line, enter the `rsRasMenu` command. The interactive menu system will be displayed as seen in "RAS Menus" on page 177.
4. The main menu is broken down into categories. Make a selection by entering the number next to any top-level menu entry. You will be taken to submenus that correspond to your selection.
5. You may exit the menus at any time by pressing **E**. To navigate back to the previous menu, enter **B** when prompted.

Taking Console Screen Captures

1. To take a screen capture of the system console, press the **Print Screen** button on the console keyboard.

- It is sometimes useful to delay the screen capture command. If you would like to initiate a delayed screen capture press **Shift + PrintScreen** on the console keyboard. This will capture the screen five seconds later.

2. Screen captures will be placed in the offload directory of the currently logged in user. For example, if the service user is logged in, this would be `/home/service/offload`.

   Note: Console screen captures will be stored in `/home/localGUI/offload` when taken in KIOSK mode.
3. To offload these screen captures, see "Offloading User Files" on page 149.

System Console Code Upgrade

Note: Use service code ECA 910 to account for all time and travel associated with upgrading system console code.

| To upgrade system console code in models 7040, 9020, M93p, or M4 use one of the following methods:

| 1. "System Console Code Upgrade Through DVD Drive (for models 7040, 9020, M93p, or M4)" on page 182 (new install - recommended for 7.3.x or later)
| 2. "System Console Code Upgrade Through Broadband Connection or USB Drive (models 7040, 9020, M93p, or M4)" on page 183 (for 7.3.x or later)
| 3. "System Console Code Upgrade Through USB Flash Drive for Clean Installation (models 7040, 9020, M93p, or M4)" on page 186
| 4. "System Recovery Menu (Including Clean Install for models 7040, 9020, M93p, or M4)" on page 188
5. "System Console Code Upgrade to Hard Drive that is Scratch or Installed With Code Earlier Than 7.3.15 (for models 9020, M93p, or M4)" on page 190 (for earlier than 7.3.15)

To upgrade system console code in machine types 4252, 4362, 7978, 7946, 8485, 8836, or 8849 use one of the following methods:

1. "System Console Code Load/Hard Drive Rebuild" on page 191 (new install - recommended for 7.3.x or later)
2. "Disk Rebuild and Restore Configuration" on page 193
3. "System Console Code Update" on page 195 (method is phased out starting with 7.2.x)

Refer to Table 21 for the system console code level recommended for each machine type.

Table 21. Recommended system console code levels

Feature Code (Model, Machine Type)	Date Withdrawn	Recommended Code Level
FC 2725 / IMC (Dell 7040)	N/A	Latest code available per the PFE website https://tucln01.ibm.com/tape/tapetec.nsf/pages/TSSCinfo
FC 2725 / IMC (Dell Optiplex 9020)	N/A	Latest code available per the PFE website https://tucln01.ibm.com/tape/tapetec.nsf/pages/TSSCinfo
FC 2725 / IMC (M93p, M/T 10AA)	N/A	Latest code available per the PFE website https://tucln01.ibm.com/tape/tapetec.nsf/pages/TSSCinfo
FC 2724 (x3250 M4, M/T 2583)	12/5/2014	Latest code available per the PFE website https://tucln01.ibm.com/tape/tapetec.nsf/pages/TSSCinfo
FC 2732 (x3550 M2, M/T 4252) (x3250 M3, M/T 7946)	7/27/2012	Latest code available per the PFE website https://tucln01.ibm.com/tape/tapetec.nsf/pages/TSSCinfo
FC 2722 - ELC Only (x3550 M2, M/T 4252) (x3250 M3, M/T 7946)	8/31/2012	Latest code available per the PFE website https://tucln01.ibm.com/tape/tapetec.nsf/pages/TSSCinfo

Table 21. Recommended system console code levels (continued)

Feature Code (Model, Machine Type)	Date Withdrawn	Recommended Code Level
FC 2730 (M/T 8849)	1/15/2010	Latest code available per the PFE website https://tucln01.ibm.com/tape/tapetec.nsf/pages/TSSCinfo
FC 2721 (M/T 7978, 8849)	1/15/2010	Latest code available per the PFE website https://tucln01.ibm.com/tape/tapetec.nsf/pages/TSSCinfo
FC 2720 – Desktop (M/T 4362, 6579, 6792, 8482, 8485)	10/31/2008	5.12.8
FC 2718 (M/T 8836)	6/16/2006	5.12.8

System Console Code Upgrade Through DVD Drive (for models 7040, 9020, M93p, or M4)

You can use this method to upgrade system console code using the DVD drive from a minimum level of 7.3.15 for the IMC, or 7.4.x for the TSSC. This procedure is supported for models 7040, 9020, M93p, or M4.

Attention: Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, "Maintenance Starting Point," on page 1 to determine the system console code level.

Note: The patch is required for system console code levels 7.3.x, 7.4.x, 7.5.x and 8.0.x.

1. Press **Ctrl** + **Alt** + **Delete** on the system console keyboard. **This operation is required in case of KIOSK mode (IMC).**
2. Log in as **service**.
3. Insert the System Console Product Recovery Disc into the system console DVD drive.
4. Right-click any place on the screen to access the context menus.
5. Open the terminal console by choosing **Terminal** from the pull down menu.
6. Enter `sudo rsStaticUpdate.sh` command, as in the following example. The current configuration will be backed up to the `/persist` directory. It will be restored automatically.

```
[service@tssnet1 ~]# sudo rsStaticUpdate.sh
System Static Update
Backing up current configuration...
```

7. Enter `DVD` for the DVD method of update.

```
Please choose update method [CD|DVD|HD|USB|quit] :DVD
```

8. At the next prompt, enter `Y`.

   Note: The installation alternates between BANK0 and BANK1, so either bank may be shown in the prompt text.

```
updated system will be installed to BANK1
If you choose 'N',rsStaticUpdate.sh would be aborted
OK? [Y|N] :Y
```

9. Press **Enter**.

```
checking system version...
```

Note: This step can take a few minutes.

```
Version information of inserted CD:
Version:7
Release:4
Modification:14

Version information of current system:
Version:7
Release:3
Modification:15
```

10. At the next prompt, enter `Y`.

```
If you choose 'N',rsStaticUpdate.sh would be aborted
OK? [Y|N] :Y
```

11. At the next prompt, enter `Y`. The code installation takes about 30 minutes. Follow the prompts on the screen. Warning messages might indicate that the installation will erase everything on the device. Enter `Y`.

```
If you choose 'N' or other keys, rsStaticUpdate.sh would be aborted
If you choose 'Y',system would be rebooted and continue this installation
OK? [Y|N] :Y
```

12. When the code copy is complete, the system prompts the user to enter Y to reboot. Type `Y` and press **Enter**. The system console will reboot.
13. After the system console reboots, when the BANK0/BANK1/UPDATEIMG select screen appears, select the **UPDATEIMG** option for code upgrade. If no selection is made, the system console will boot up normally.
14. The installation process will prompt for a Y or N to install the code. Type `Y` and press **Enter**. Remove the DVD from the DVD drive.
15. After the reboot, DHCP will configure the IP addresses.
16. Wait for the reboot process to complete. When the reboot has completed, the monitor will display the service login. The system console code upgrade is complete.

    Note: The system might reboot multiple times during the upgrade process, even after successful login.
17. If you used the command `sudo rsStaticUpdate.sh` in step 6 on page 182, the configuration data is restored automatically. If you used the command `sudo rsStaticUpdate.sh -n` you must restore the configuration data manually. See "Restoring Configuration Data" on page 106.
18. Verify the system console configuration settings. Go to "Verifying settings after upgrading system console code" on page 196.

System Console Code Upgrade Through Broadband Connection or USB Drive (models 7040, 9020, M93p, or M4)

You can use the broadband connection or a USB drive to upgrade system console code from a minimum level of 7.3.15 for the IMC, or 7.4.x for the TSSC. This procedure is supported for models 7040, 9020, M93p, or M4.

This is not the standard method of installing the system console code, and is intended as a convenience for exceptional cases when an ISO image is available, such as interim service releases. Using physical DVDs is still the standard method for install. Also note that broadband/USB installations are not intended to be done remotely. There will still be local prompts at installation bootup that require answers by a local user.

Attention: Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, "Maintenance Starting Point," on page 1 to determine the system console code level.

Note: The patch is required for system console code levels 7.3.x, 7.4.x, 7.5.x and 8.0.x.

1. Press **Ctrl** + **Alt** + **Delete** on the system console keyboard. **This operation is required in case of KIOSK mode (IMC).**
2. Log in as **service**.
3. Copy the ISO files to the system console.
   a. Using broadband connection: Download the ISO files to the `/updatepkg` directory through the broadband connection. You can use secure copy protocol (SCP) or other ftp method to retrieve the files. If you are prompted for a login for service@tssnet1, use **service** and password **service**. Note that there are two image files for each system console code upgrade, which match the image files used with a DVD upgrade. Download both ISO image files.

      ```
      [service@tssnet1 ~]$ ls /updatepkg/
      tsV7_4_8-2.iso  tsV7_4_8.attr  tsV7_4_8.md5
      tsV7_4_8-2.attr  tsV7_4_8-2.md5  tsV7_4_8.iso
      ```

   b. Using USB: Mount the USB device using "Mount/Unmount USB or CD-ROM" on page 231. Open a terminal and copy the ISO files to the `/updatepkg` directory.

      Example:
      List the files on the USB - `ls /media/usb/tsV*`
      Copy both files : `cp /media/usb/tsV7_4_8* /updatepkg`

      Note: Before proceeding with the system console code upgrade, remove all external USB flash drives connected to the system console.
   c. When the copy is complete, unmount the USB device, see "Mount/Unmount USB or CD-ROM" on page 231. Remove the USB device from the system console.

      Attention: If the system console boots up with a black screen and "Missing Operating System" message at the top, double check that all USB devices have been removed. Then reboot the system console.
4. Right-click any place on the screen to access the context menus.
5. Open the terminal console by choosing **Terminal** from the pull down menu.
6. Enter `sudo rsStaticUpdate.sh` command, as in the following example. The current configuration will be backed up to the `/persist` directory. It will be restored automatically.

   ```
   [service@tssnet1 ~]# sudo rsStaticUpdate.sh
   System Static Update
   Backing up current configuration...
   ```

7. Enter `HD` for the broadband method of update.

   ```
   Please choose update method [CD|DVD|HD|USB|quit] :HD
   ```

8. At the next prompt, enter `Y`.

   Note: The installation alternates between BANK0 and BANK1, so either bank may be shown in the prompt text.

   ```
   updated system will be installed to BANK1
   If you choose 'N',rsStaticUpdate.sh would be aborted
   OK? [Y|N] :Y
   ```

9. At the next prompt, choose the desired package (for example, 1 in the following screen).

```
Select First ISO file for update
creating attribute file for /updatepkg/tsV7_4_8.iso...
creating attribute file for /updatepkg/tsV7_4_8-2.iso...
1)  /updatepkg/tsV7_4_8.iso(7.4.8,DISK1)
Type number [Current Version: 7.4.7] >1
```

10. At the next prompt, enter `Y`.

```
file=/updatepkg/tsV7_4_8.iso(7.4.8,DISK1)
OK? [Y|N] :Y
```

11. At the next prompt, choose the desired package (for example, 1 in the following screen).

```
Select Second ISO file for update
1)  /updatepkg/tsV7_4_8-2.iso(7.4.8,DISK2)
Type number [Current Version: 7.4.7] > 1
```

12. At the next prompt, enter `Y`.

```
file=/updatepkg/tsV7_4_8-2.iso(7.4.8,DISK2)
OK? [Y|N] :Y
```

13. At the next prompt, enter `Y`.

```
First ISO file  :/updatepkg/tsV7_4_8.iso
Second ISO file :/updatepkg/tsV7_4_8-2.iso
OK? [Y|N] :Y
checking system version...
```

14. At the next prompt, enter `Y`.

```
Version information of first ISO:
Version:7
Release:4
Modification:8

Version information of second ISO:
Version:7
Release:4
Modification:8

If you choose 'N',rsStaticUpdate.sh would be aborted
OK? [Y|N] :Y
```

15. At the next prompt, enter `Y`.

```
If you choose 'N' or other keys, rsStaticUpdate.sh would be aborted
If you choose 'Y',system would be rebooted and continue this installation
OK? [Y|N] :Y
```

16. The code installation will take about 30 minutes. Follow the prompts on the screen. Warning messages might indicate that the installation will erase everything on the device. Enter `Y`. The process will automatically switch to and install the second ISO image file after the first is installed.
17. When the installation is complete, the system will reboot.
18. After the reboot, DHCP will configure the IP addresses.
19. Wait for the reboot process to complete. When the reboot has completed, the monitor will display the service login. The system console code upgrade is complete.
20. If you used the command `sudo rsStaticUpdate.sh` in step 6 on page 184, the configuration data is restored automatically. If you used the command `sudo rsStaticUpdate.sh -n` you must restore the configuration data manually. See “Restoring Configuration Data” on page 106.

21. Verify the system console configuration settings. Go to "Verifying settings after upgrading system console code" on page 196.

System Console Code Upgrade Through USB Flash Drive for Clean Installation (models 7040, 9020, M93p, or M4)

You can use a USB flash drive to upgrade system console code from a minimum level of 7.3.15 for the IMC or TSSC. This procedure is supported for models 7040, 9020, M93p, or M4.

This is not the standard method of installing the system console code, and is intended as a convenience for exceptional cases when an ISO image is available, such as interim service releases. Using physical DVDs is still the standard method for install. Also, updating by USB flash drive requires creating the media from the DVD ISO file first. ('-u' option is required) Size of 4 GB media minimum is required.

Attention: Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, "Maintenance Starting Point," on page 1 to determine the system console code level.

Note: The patch is required for system console code levels 7.3.x, 7.4.x, 7.5.x and 8.0.x.

1. Press **Ctrl** + **Alt** + **Delete** on the system console keyboard. **This operation is required in case of KIOSK mode (IMC).**
2. Log in as **service**.
3. Copy the ISO files to the system console.
   a. Using broadband connection: Download the ISO files to the `/updatepkg` directory through the broadband connection. You can use secure copy protocol (SCP) or other ftp method to retrieve the files. If you are prompted for a login for service@tssnet1, use **service** and password **service**. Note that there is an image file for the system console code upgrade, which matches the image file used with a DVD upgrade. Download an ISO image file.

      ```
      [service@tssnet1 ~]$ ls /updatepkg/
      tsV8_1_14.attr tsV8_1_14.md5 tsV8_1_14.iso
      ```

   b. Using USB: Mount the USB device using "Mount/Unmount USB or CD-ROM" on page 231. Open a terminal and copy the ISO files to the `/updatepkg` directory.

      Example:
      List the files on the USB - `ls /media/usb/tsV*`
      Copy both files : `cp /media/usb/tsV8_1_1* /updatepkg`

      Note: Before proceeding with the system console code upgrade, remove this external USB flash drive connected to the system console. Another blank USB flash drive (more than 4 GB) is required for this installation media.
   c. When the copy is complete, unmount the USB device, see "Mount/Unmount USB or CD-ROM" on page 231. Remove the USB device from the system console.

      Attention: If the system console boots up with a black screen and "Missing Operating System" message at the top, double check that all USB devices have been removed. Then reboot the system console.
4. Right-click any place on the screen to access the context menus.
5. Open the terminal console by choosing **Terminal** from the pull down menu.

   Note: Updating by USB flash drive requires creating the media from the DVD ISO file first. Size of 4 GB media minimum is required.
6. Enter `sudo rsStaticUpdate.sh -u` as in the following example.

```
[service@tssnet1 ~]# sudo rsStaticUpdate.sh -u
System Static Update
Backing up current configuration...
Generating USB image from CD images...
################################################
### Create USB installation media for TSSC/IMC ###
################################################
```

7. At the next two prompts, enter `Y`.

```
Select First ISO file for update
1) /updatepkg/tsV8_1_14.iso(8.1.14,DISK1)
Type number [Current Version: 8.0.15] >
file=/updatepkg/tsV8_1_14.iso(8.1.14,DISKD)
OK? [Y|N] :y
ISO file  :/updatepkg/tsV8_1_14.iso
OK? [Y|N] :y
checking system version...
extract exportroot...
```

8. Follow the on screen instructions. When prompted, insert the USB flash drive. Then, enter `Y` to continue.

```
insert USB memory stick. (CAUTION! ALL OF USB WILL BE DELETED)
OK? [Y|N] :Y
deleting all partitions...
1+0 records in
1+0 records out
512 bytes (512 B) copied, 0.00952361 s, 53.8 kB/s
creating master boot record...
1+0 records in
1+0 records out
440 bytes (440 B) copied, 0.0339667 s, 13.0 kB/s
creating DOS partitions...
Checking that no-one is using this disk right now ...
OK
....
`/updatepkg/usbimg/syslinux.cfg' -> `/media/usb/syslinux.cfg'
`/updatepkg/usbimg/upgradeMatrix.pl' -> `/media/usb/upgradeMatrix.pl'
unmount usb media...
```

9. Enter `sudo rsStaticUpdate.sh` without '-u' option to start the update process. (Where, by adding '-f n' option, a clean install can be available.)

```
[service@tssnet1 ~]# sudo rsStaticUpdate.sh
System Static Update
Backing up current configuration...
```

10. Enter `USB` for the USB method of update.

```
Please choose update method [CD|DVD|HD|USB|quit] :USB
```

11. At the next prompt, enter `Y`.

```
updated system will be installed to BANK0
If you choose 'N',rsStaticUpdate.sh would be aborted
OK? [Y|N] :Y
```

12. At the next prompt, enter `Y`.

```
checking system version...
`/mnt/isotmp1/kernel_u' -> `/updateimg/kernel_u'
...
Version information of inserted USB:
Version:8
Release:1
Modification:14

Version information of current system:
Version:8
Release:0
Modification:15

If you choose 'N',rsStaticUpdate.sh would be aborted
OK? [Y|N] :Y
```

13. At the next prompt, enter `Y`.

```
If you choose 'N' or other keys, rsStaticUpdate.sh would be aborted
If you choose 'Y',system would be rebooted and continue this installation
OK? [Y|N] :Y
```

Note: The files under the `/persist` directory are stored into the second partition of the USB flash drive. Then, they will be restored into the `/persist` directory in case of a clean install.

14. The code installation will take about 30 minutes. Follow the prompts on the screen. Warning messages might indicate that the installation will erase everything on the device. Enter `Y`.
15. When the installation is complete, the system will reboot.
16. After the reboot, DHCP will configure the IP addresses.
17. Wait for the reboot process to complete. When the reboot has completed, the monitor will display the service login. The system console code upgrade is complete.
18. If you used the command `sudo rsStaticUpdate.sh` in step 9 on page 187, the configuration data is restored automatically. If you used the command `sudo rsStaticUpdate.sh -n` you must restore the configuration data manually. See “Restoring Configuration Data” on page 106.
19. Verify the system console configuration settings. Go to “Verifying settings after upgrading system console code” on page 196.

System Recovery Menu (Including Clean Install for models 7040, 9020, M93p, or M4)

You can use the System Recovery Menu to choose a boot partition, reinstall system console code, or do a clean install.

Note: This is not the standard method of installing the system console code. Using “System Console Code Upgrade Through DVD Drive (for models 7040, 9020, M93p, or M4)” on page 182 is the standard method for install.

Attention: Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, “Maintenance Starting Point,” on page 1 to determine the system console code level.

If the system is booted from the "System Console Product Recovery Disc 1", the initial program code checks a certain file that indicates if the installed code is 7.3.15 or later. If the installed code is 7.3.15 or later and this booting operation is not a process of the upgrade operation started by rsStaticUpdate.sh (in “System Console Code Upgrade Through DVD Drive (for models 7040, 9020, M93p, or M4)” on page 182) the system recovery menu will appear, as shown in the following example.

```
##############################################
# system recovery menu
##############################################
Please choose recovery action
B: Choose Boot Partition [BANK0|BANK1] - No installation occurs.
R: Reinstall Console Code on [BANK0|BANK1] Forcibly
N: Clean Install - Delete all partitions and install newly.
Q: Quit and Poweroff - Media will be ejected automatically.
Enter [B|R|N|Q]:
```

You can use the "B: Choose Boot Partition [BANK0|BANK1]" menu for switching back to another bank (previous code version should be installed) after upgrading a system console code.

If B is chosen:

```
Enter [B|R|N|Q]:B
Choose Boot Partition [BANK0|BANK1]

Please choose bank
b0: BANK0
b1: BANK1
Q:  Quit and Poweroff - Media will be ejected automatically.
Enter [b0|b1|Q]:b0
system will boot from BANK0
```

You can use the "R: Reinstall Console Code on [BANK0|BANK1] Forcibly" menu to install system console code to either bank0 or bank1 instead of the procedure described in "System Console Code Upgrade Through DVD Drive (for models 7040, 9020, M93p, or M4)" on page 182. But, "System Console Code Upgrade Through DVD Drive (for models 7040, 9020, M93p, or M4)" on page 182 is the standard method for install.

If R is chosen:

```
Enter [B|R|N|Q]:R
R: Reinstall Console Code on [BANK0|BANK1] Forcibly
Please choose bank
b0: BANK0
b1: BANK1
Q:  Quit and Poweroff - Media will be ejected automatically.
Enter [b0|b1|Q]:b0
install system to BANK0 by CD media
please prepare CD media
```

You can use the"N: Clean Install" menu to delete all partitions including a persistent partition for configuration files and install system console code. Usually this menu option should not be used.

Note: All partitions will be deleted. Therefore backing up the system console configuration files to USB or CD is required.
If N is chosen:

```
Enter [B|R|N|Q]:N
Delete All Partitions and Install Again
DO YOU REALY DELETE ALL PARTITIONS? [Yes] :Yes
Deleted all partitions
install system to BANK0 by CD media
Please prepare CD media
```

You can use the "Q: Quit and Poweroff" menu to exit the System Recovery Menu and power off the system.

If Q is chosen:

```
Enter [B|R|N|Q]:Q
Please Press <Enter> to exit.  Installation aborted. System will shutdown. Press enter to continue.
```

System Console Code Upgrade to Hard Drive that is Scratch or Installed With Code Earlier Than 7.3.15 (for models 9020, M93p, or M4)

Attention:

- Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, "Maintenance Starting Point," on page 1 to determine the system console code level.
- Rebuilding the hard disk drive will permanently destroy any local data present on the drive. Using the Product Recovery CD-ROM will return the system console to its "as shipped" state.

Note: After you use this procedure, you will need to reload some software packages if you have TS7700s in the Attached Systems list. Some examples of affected packages might include:

- "Installing the DS6000 Graphical User Interface" on page 65
- "Installing the Storage Manager graphical user interface" on page 66
- "Importing InfoCenter From CD-ROM" on page 219

1. If the existing system console code is earlier than 7.3.15, then backup the system console configuration files to USB or CD before you re-image the hard drive. See "Backing Up Configuration Data" on page 103.

   Note: If you update your system console code and do not restore the configuration from a previous backup file, you must configure the system console manually, as you would a newly-installed system console. This includes setting up attached systems, entering IP configurations, and setting up Call Home. If using AOTM, you must set up your configuration on the TS7700 so that required routes get set up on the system console.

   Note: Before proceeding with the system console code upgrade, remove all external USB flash drives connected to the system console.
2. Place the System Console Product Recovery Disc 1 CD-ROM in the DVD drive.
3. Log out of the system console by right-clicking the desktop area and choosing **Logout**. Click **OK**.
4. After returning to the login screen, click **Restart** in the lower left area of the screen, and click **Ok** when prompted to restart.

   If the existing system console code is earlier than 7.3.15, the following screen appears after the system console reboots (with the CD-ROM in place in the DVD drive).

   ```
   Backup your System Console configuration before installing the Console code or it will be lost!
   This will install the Console onto BANK0 which will erase everything on that device.
   If you didn't backup current configurations, you need to backup them.
   Disk rebuild/restore functionality does not present the option to restore when moving to this release.
   Configuration will be completely wiped.
   Continue? ('yes' or 'no')
   ```
5. Type **yes** and press **Enter** to start the hard drive re-image process.
6. When prompted, remove the Product Recovery Disc 1 from the DVD drive and insert the Product Recovery Disc 2. Wait for the light on the drive to stop blinking, then press **Enter**.

   ```
   Insert the Product Recovery Disc 2 and wait for the light on the drive to stop blinking.
   Press Enter to continue
   ```
7. You can monitor the progress of the installation from the screen. When the installation is complete, the system console will reboot automatically. Remove the CD-ROM from the DVD drive.

8. After the reboot, DHCP will configure the IP addresses.
9. Wait for the reboot process to complete. When the reboot has completed, the monitor will display the service login. The system console code upgrade is complete.
10. If you backed up the configuration, restore it now. See “Restoring Configuration Data” on page 106.
11. If you do not restore the configuration from a previous backup file, you must configure the system console manually, as you would a newly-installed system console. This includes setting up attached systems, entering IP configurations, and setting up Call Home. If using AOTM, you must set up your configuration on the TS7700 so that required routes get set up on the system console. See “Setting Up Autonomic Ownership Takeover Manager” on page 29.
12. Verify the system console configuration settings. Go to “Verifying settings after upgrading system console code” on page 196.

System Console Code Load/Hard Drive Rebuild

Attention:

- Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, “Maintenance Starting Point,” on page 1 to determine the system console code level.
- Rebuilding the hard disk drive will permanently destroy any local data present on the drive. Using the Product Recovery CD-ROM will return the system console to its "as shipped" state.
- Do not load or attempt to use the Product Recovery CD-ROM on any machine type other than 4252, 4362, 7978, 7946, 8485, 8836, or 8849. If you use the Product Recovery CD-ROM on any other machine type, the installation will fail and that machine will be unusable.

Notes:

- Backup the system console configuration files before you re-image the hard drive. See “Backing Up Configuration Data” on page 103 and “Restoring Configuration Data” on page 106).
- Do not attempt to restore configuration settings from a V1.x.x system console onto a V3.x.x or later system console. The files are incompatible. V2.x.x files are compatible with V3.x.x or later.
- After you use this procedure, you will need to reload some software packages if you have TS7700s in the Attached Systems list. Some examples of affected packages might include:
  - “Installing the DS6000 Graphical User Interface” on page 65
  - “Installing the Storage Manager graphical user interface” on page 66
  - “Importing InfoCenter From CD-ROM” on page 219

1. If this is an existing system console that is being upgraded, then backup the system console configuration files to USB or CD before you re-image the hard drive. See “Backing Up Configuration Data” on page 103.

   Note: If you update your system console code and do not restore the configuration from a previous backup file, you must configure the system console manually, as you would a newly-installed system console. This includes setting up attached systems, entering IP configurations, and setting up Call Home. If using AOTM, you must set up your configuration on the TS7700 so that required routes get set up on the system console.

   Note: Before proceeding with the TSSC code upgrade, remove all external USB flash drives connected to the TSSC.
2. Place the System Console Product Recovery Disc 1 CD-ROM in the CD Drive.
3. Log out of the system console by right-clicking the desktop area and choosing **Logout**. Click **OK**.
4. After returning to the login screen, click **Restart** in the lower left area of the screen, and click **Ok** when prompted to restart.

   If you are upgrading a model M3 server, or earlier, the prompt in Figure 226 on page 192 appears after the system console reboots (with the CD-ROM in place in the CD drive).

```
This will install the Console onto /dev/sda which will erase everything on that device.
Continue? ('yes' or 'no')
Abort
```

Figure 226. Pre-Installation Menu

Type **y** (or **yes**) and press **Enter** to start the hard drive re-image process.

5. When prompted, remove the Product Recovery Disc 1 from the CD drive and insert the Product Recovery Disc 2. Wait for the light on the drive to stop blinking, then press **Enter**. See Figure 227.

```
Insert the Product Recovery Disc 2 and wait for the light on the drive to stop blinking.
Press Enter to continue
```

Figure 227. Insert Disc 2 screen

6. You can monitor the progress of the installation from the screen. After the re-image is complete, the system console will reboot automatically. Remove the CD-ROM from the CD drive.

   Notes:
   - This procedure can take as long as 15 minutes to complete.
   - You must be present at the completion of a reboot or the re-image will restart automatically. If you are not present to remove the CD-ROM from the CD drive tray, the tray will retract into the CD drive and the installation will start again. At the confirmation screen, type **no**, and press **Enter**. Remove the CD-ROM from the CD drive, and allow the reboot to occur.
7. After initial reboot, the software will discover the machine type and model number of the computer, automatically configure the appropriate drivers and settings, and automatically reboot the system console. During the second boot-up, the start up background and text might look slightly different. The second boot will produce the login screen shown in Figure 61 on page 50. If the software determines that the machine type is not 4252, 4362, 7978, 7946, 8485, 8836, or 8849, a warning message will display on the screen and the system console will halt. This will continue each time the system console is powered on. Similar symptoms occur after software installation if the system console is unable to determine its machine type and model.

   Note: If a product with a machine type of 4252, 4362, 7978, 7946, 8485, 8836, or 8849 reports a different machine type during an installation, the BIOS might have been corrupted. Reboot the server, and make the appropriate selection during the reboot to enter BIOS setup. In the BIOS, check the machine type that is configured. If the machine type does not match the specific server, you should reinstall the system BIOS. Refer to the server documentation to reinstall the BIOS and to set the correct machine type.
8. If you backed up the configuration, restore it now. See “Restoring Configuration Data” on page 106.
9. If you do not restore the configuration from a previous backup file, you must configure the system console manually, as you would a newly-installed system console. This includes setting up attached systems, entering IP configurations, and setting up Call Home. If using AOTM, you must set up your configuration on the TS7700 so that required routes get set up on the system console. See “Setting Up Autonomic Ownership Takeover Manager” on page 29.
10. Verify the system console configuration settings. Go to “Verifying settings after upgrading system console code” on page 196.

Disk Rebuild and Restore Configuration

Attention:

- Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, "Maintenance Starting Point," on page 1 to determine the system console code level.
- Rebuilding the hard disk drive will permanently destroy any local data present on the drive. Using this feature will reinstall the system console while preserving all existing settings.

Notes:

- Backup the Console configuration files before you re-image the hard drive. See "Backing Up Configuration Data" on page 103.
- Do not attempt to restore configuration settings from a V1.x.x system console onto a V3.x.x or higher system console. The files are incompatible. V2.x.x files are compatible with V3.x.x or higher.
- After you use this procedure, you will need to reload some software packages if you have TS7700s in the Attached Systems list. Some examples of affected packages might include:
  - "Installing the DS6000 Graphical User Interface" on page 65
  - "Installing the Storage Manager graphical user interface" on page 66
  - "Importing InfoCenter From CD-ROM" on page 219

Note: Before proceeding with the TSSC code upgrade, remove all external USB flash drives connected to the TSSC.

1. Verify that the hostname of the system console does not contain any unsupported characters such as the underscore "_". See "Console Settings" on page 70.
2. Verify that the Customer Business/Company Name does not contain any blank spaces. Select **System Console Actions** > **Console Configuration Utility** > **Location Settings**. See "Configuring Call Home Settings Electronic Customer Care" on page 87.
3. Right-click from anywhere in the Desktop to view the Main Menu.
4. From the Main Menu, select **System Console Actions** > **Disk Rebuild and Restore Config**. You will see Figure 228.

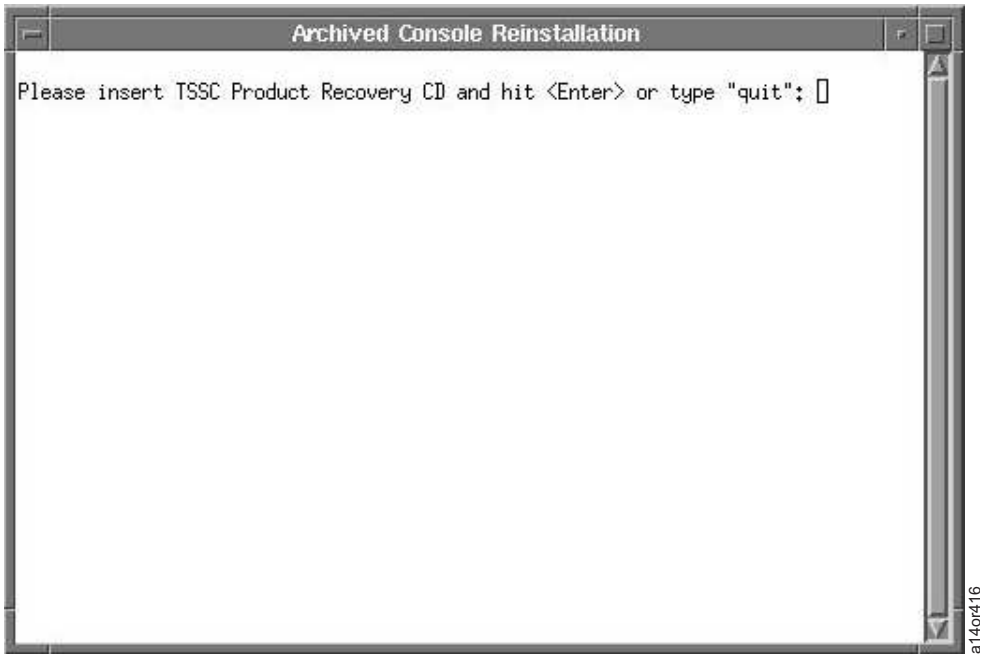

Figure 228. Prompt for TSSC Product Recovery CD.

5. Place the System Console Product Recovery Disc 1 CD-ROM in the CD drive and press **Enter**. The current system console code level and the system console code level on the CD-ROM will be displayed then the system console will reboot.
6. When prompted, type **y** (or **yes**) and press **Enter** to start the hard drive re-image process.
7. When prompted, remove the Product Recovery Disc 1 from the CD drive and insert the Product Recovery Disc 2. Wait for the light on the drive to stop blinking, then press **Enter**.
8. After several minutes the installation will complete and you will be brought back to the login screen. After the re-image is complete, the system console will reboot automatically. Remove the CD-ROM from the CD drive.
9. Verify the system console configuration settings. Go to "Verifying settings after upgrading system console code" on page 196.

System Console Code Update

Attention: Starting with 7.2.x system console code level, this method is no longer used. The recommended method to upgrade to 7.2.x or higher is to do a “System Console Code Load/Hard Drive Rebuild” on page 191.

Use this procedure to upgrade the system console code version to a higher level. This procedure cannot be used for all system console code levels. If upgrades are not supported, the update process will prompt you for “System Console Code Load/Hard Drive Rebuild” on page 191 if you are updating from 5.7.8 and higher.

Refer to the following table to determine whether a system console code update will work.

Table 22. System Console Code Upgrade Table

Release Levels		
From:	To:	Update Available?
< 5.12.x	5.12.x or higher	No
5.11.5	5.11.23	Yes
< 5.11.5	5.11.23	No
<5.11.5	5.11.5	No
< 5.10.X	5.10.X	No
< 5.9.X	5.9.X	No
< 5.8.X	5.8.X	No
< 5.7.X	5.7.X	No
5.5.22	5.5.28 - 5.6.5	Yes
< 5.5.22	5.5.22 - 5.5.28	No
< 5.5.12	5.5.12	No
5.3.7 - 5.4.11	5.3.7 - 5.4.11	Yes
< 5.3.7	5.3.7 - 5.4.11	No
5.0 - 5.2.11	5.0 - 5.2.11	Yes
< 5.0	5.0 - 5.2.11	No

1. Right-click from anywhere in the Desktop to view the Main Menu, shown in Figure 63 on page 52.
2. From the Main Menu, select **System Console Actions** > **Update Console Version**. A Terminal screen appears and requests you to insert the TSSC Product Recovery CD.
3. Insert the CD labeled "IBM System Console Product Recovery CD." Press **Enter**.

   Note: You can use this procedure only to upgrade to a later version of system console code. To reload this level of system console code or to load an earlier version of system console code, use the procedure in “System Console Code Load/Hard Drive Rebuild” on page 191.
   The tool will compare the system console code version on the CD with the version on the system console. The tool will inform you that the versions are compatible for upgrade, and that the upgrade will begin. If the levels are not compatible for upgrade, the tool will prompt you to perform a “System Console Code Load/Hard Drive Rebuild” on page 191. The update process can take as long as 15 minutes.
4. After a successful upgrade, right-click on the desktop of the main menu to logout.
5. Select **Logout**. You are returned to the login screen seen in Figure 1 on page 1. This screen displays the new system console code level.
6. Click the **Restart** button to restart the system console. After the system console restarts, you are returned to this same login screen. The system console code upgrade is complete.

Verifying settings after upgrading system console code

After upgrading system console code and restoring configuration data, perform the following steps to verify that the settings are configured properly.

External interface and Grid/AOTM interface in same subnet

If the TSSC is configured for AOTM, verify whether External and Grid/AOTM network interfaces use the same subnet and require additional configuration. If AOTM is not used, skip to step 11.

1. Log in as **service**.
2. Right-click from anywhere in the Desktop to view the Main Menu.
3. Open the terminal console by selecting **Terminal** from the main menu.
4. Type `ifconfig` and press Enter. The following screen displays.

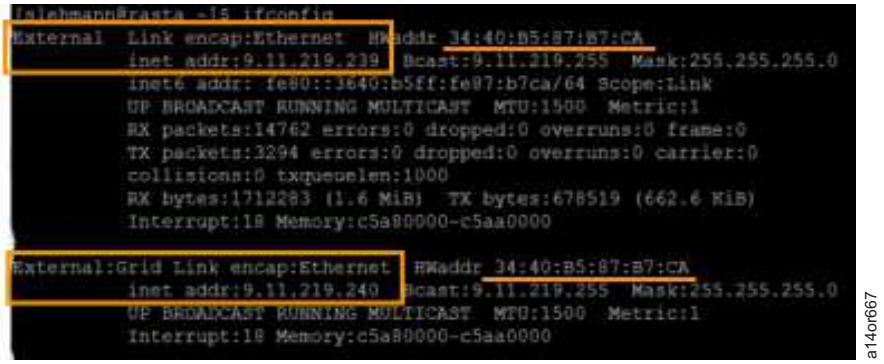

Figure 229. Network interface screen

5. If the grid adapter is shown as External:Grid and the hardware addresses are the same, no action is required. Skip to step 11. If the grid adapter is not shown as External:Grid, continue to step 6.
6. Right-click from anywhere in the Desktop to view the Main Menu.
7. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
8. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
9. Click **Console Settings**. The Console Settings screen is displayed, see Figure 95 on page 71.
10. Perform the following substeps to force the required reconfigure of the network configuration.
    a. Temporarily modify the Grid IP address to an IP address that is not in the same subnet, for example 192.168.10.10, and click **Save changes**.
    b. Reenter the original Grid IP address, the one that is in the same subnet, and click **Save changes**.
    c. Rerun the ifconfig check as shown in steps 3 and 5 If the grid adapter is shown as External:Grid and the hardware addresses are the same, the reconfiguration is complete.

Validating Call Home

11. Verify that the values for Call Home are correct by going through the steps in "Configuring Call Home Settings Electronic Customer Care" on page 87 and selecting **Apply** in the various screens. This ensures that any name or value restrictions are properly enforced.
12. Perform a test Call Home to ensure that Call Home is working. Verify that a PMR is opened and that data is properly sent to the DP&R Call Home database. Refer to "Test RETAIN Connection - As a Service Procedure" on page 175.

Validating remote service

If the TSSC is configured for remote support through Assist On-Site (AOS), verify proper functionality. If AOS is not used, skip to step 14 on page 197.

13. If the customer is using AOS for inbound service traffic, go to "Configuring Assist On-Site" on page 161 and validate that AOS is set up correctly.

    Note: It is recommended to contact support center such that they can verify that remote access is functional.

Validating system console configuration

14. Verify that the values for system console configuration are correct by going through the steps in "Console Settings" on page 70 and selecting **Apply** in the various screens. This ensures that any name or value restrictions are properly enforced.

Updating TS7700 Microcode

You can use the Mksysb Broadcast option from the web interface to update the TS7700 microcode.

Note: This process keeps only one version of the mksysb images. If you have a previous level on the 3957 and system console, this process removes it before it downloads the new version.

Attention: Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, "Maintenance Starting Point," on page 1 to determine the system console code level.

The code level requirements are:

System Console:

System console code version 5.5.20 and higher. A DVD drive is required for this process.

3957 - 8.6.x and higher

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Action** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK**.
4. Select **System Tools** > **Mksysb Broadcast**. The following screen displays.

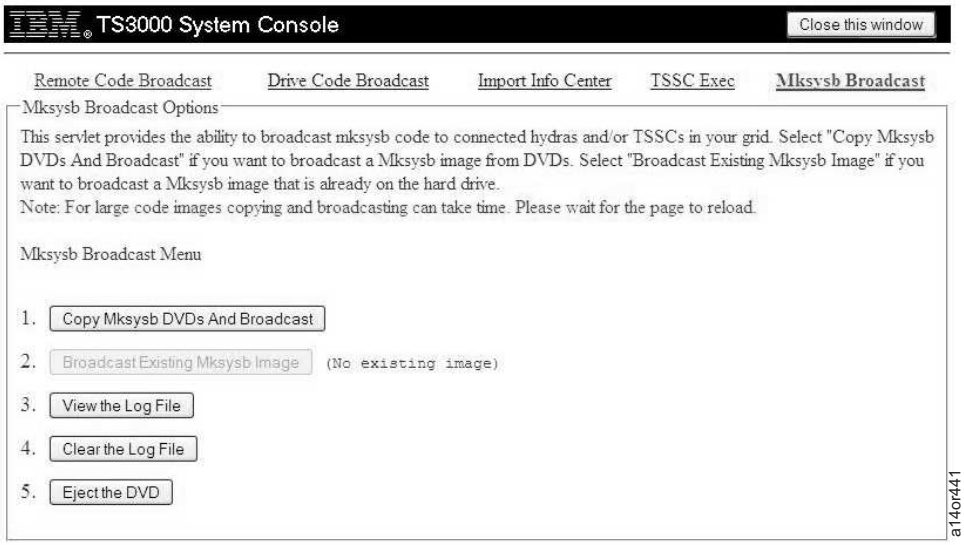

Figure 230. Mksysb Broadcast Screen

If you have already downloaded an image that you want to broadcast, skip to step 8, otherwise, continue to the next step.

5. Select the **Copy Mksysb DVDs And Broadcast** button. This prompts you to enter the first DVD and select **OK**. Once you insert the first DVD, select **OK** to continue. The process of downloading the first disk can take up to 20 minutes.
6. When the download is complete, you are prompted to insert the second DVD and continue:

Figure 231. Mksysb Broadcast Screen - DVD Copy OK

The continue button is located above the log output. Remove the first DVD, insert the second DVD, and press the **Continue** button as shown in the following screen. If you want to cancel this process, press the **Cancel Copy** button, and you return to the initial screen.

Figure 232. DVD Copy for Mksysb Broadcast

7. When the download of the second DVD is complete, a success message, *"Broadcast list created successfully. Please select machines to broadcast to"* will display.
8. Below the logs, you are able to select which machines you can broadcast this new mksysb image to.

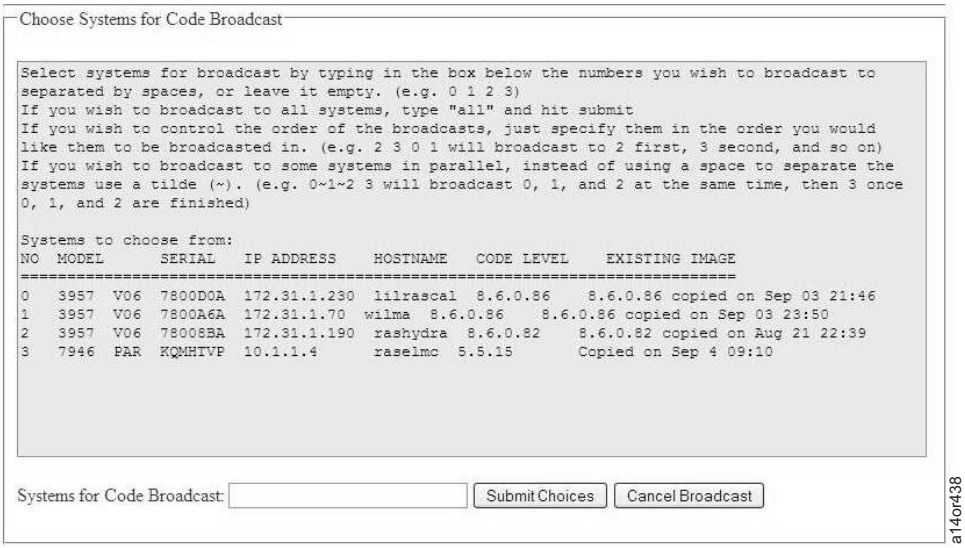

Figure 233. Choose Systems for Code Broadcast

9. When submitting your systems for broadcasting you can send to an attached 3957-V06/V07 and 3957-VEA/VEBs, as well as other system consoles with 5.5.20 or higher system console code levels in the same AOTM network. The list of available systems are presented as shown in the previous screen. The screen presents the Machine Type, Model, Manufacturing Code and Serial number, Local IP address, Hostname, Code Level, and if the system has a copy of a mksysb image already present as well as the date and time the file was sent.

   Note: The 3957 keeps only one level of mksysb on the machine at a time.

   Select systems for broadcast by typing the numbers in the box you want to broadcast to (separated by spaces) or leave it empty (for example 0 1 2 3).

   - If you want to broadcast to all systems, type "all" and press submit
   - If you want to control the order of the broadcasts, specify them in the order you would like them to be broadcast. (for example 2 3 0 1 will broadcast to 2 first, 3 second, 0 third, and 1 fourth)
   - If you want to broadcast to some systems in parallel, then instead of using a space to separate the systems use a tilde (~). For example 0~1~2 3 will broadcast 0, 1, and 2 at the same time. Then 3 will broadcast as soon as 0, 1, and 2 have finished.

   When the image broadcasting is complete, the screen will return and will present logs of the transactions.
10. Select **System Tools** > **Mksysb Broadcast**. See Figure 230 on page 197. Make the appropriate selection(s) as follows:
    - Select **3. View the Log File**
    - Select **4. Clear the Log File**
    - Select **5. Eject the DVD**

Updating TS7700 Cache Controller Microcode

Note: Before you begin this procedure, you must obtain the CD-ROM that includes the latest level of the DS6000 microcode and the SEA.jar file. You should receive a CD-ROM whenever there is an update to the DS6000 microcode.

Use this procedure to update the TS7700 Cache Controller microcode.

1. Ensure that you close all TSSC browser sessions. From the TSSC menu, click **File** > **Close**.

2. Insert the microcode CD-ROM into the CD drive of the TSSC.
3. Right click from anywhere in the Desktop, and select **System Console Actions** > **CD Copy to Console**. You see Figure 234.

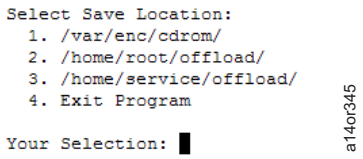

Figure 234. Select Save Location Screen

4. At the command prompt (Your Selection), type **1** to select **/var/enc/cdrom**. Press **Enter**. Expect a delay as the CD drive copies information from the CD-ROM. This can take as long as 15 minutes to complete. You will see Figure 235 when the copy is complete.

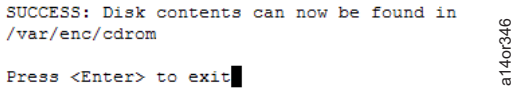

Figure 235. TS7700 Cache Microcode Copy Complete Screen

Note: If the directory has an existing microcode image installed, you will be prompted to overwrite that existing image with the new image. Select **Yes** to continue.

5. Right click the desktop of the TSSC, and select **Browser Functions** > **DS6000 Functions** > **Launch GUI**. This action invokes the TS7700 Cache Controller graphical user interface.
6. Login by typing the username **admin** and the password **ibm2serv**.
7. From the left hand navigation menu, select **Real Time Manager** > **Manage Hardware** > **Storage Units**. You must wait for several minutes while the system builds the list of storage devices.
8. If you found in the list, the TS7700 Cache Controller onto which you want to install the DS6000 microcode, go to Step 10.

   – – OR – –

   If you did **not** find the TS7700 Cache Controller onto which you want to install the DS6000 microcode, go to "Launching the DS6000 Graphical User Interface" on page 209 to add the TS7700 Cache Controller to the TS7700. Return here to Step 9.
9. Click **Refresh** to highlight the TS7700 Cache Controller in the list.
10. Click the check box to select the TS7700 Cache Controller on which you want to upgrade the microcode.
11. In the drop-down menu for Select Action, select **Apply Firmware Update**.
12. Ensure that the drop-down box for Apply Firmware Update Real Time is set to **Concurrent**.
13. Click **Select a file**.
14. Select the file directory, or type the file directory path to where you downloaded the SEA.jar file in Step 2 through Step 5. As shown in this example, you would scroll to (or type) the directory name **/var/enc/cdrom**.
15. Click **Open**, then click **OK**. This action copies the SEA.jar file to the TS7700 Cache Controller.
16. Scroll to and click **Transfer File**. The microcode is copied to the TS7700 Cache Controller. This task can take as long as fifteen minutes to complete.
17. Click **Activate** after the Transfer File task completes. This Activate task can take as long as 1.5 hours to complete.

System console management GUI

IBM service personnel and the customer (usually an administrator) can use the System console management GUI for the following purposes:

- Change the system console display language
- Perform tape drive code updates
- Launch library manager and Peer-to-Peer VTS specialists
- Administer users

Online help is available from the System console management GUI by clicking the **(?) Help** icon that is in the upper right of each screen. Online help is provided by using Eclipse technology. For more information, access the website at http://www.eclipse.org.

Customer access to System console management GUI

The customer user (usually an administrator) can log in to the system console using the following steps.

1. At the System Console Login screen, in the **Login** field type *customer* and press Enter. In the **Password** field, type *customer* and press Enter.
2. At the Authentication Required window, enter the **User Name** *customer* and **Password** *customer*, then click **OK**.The System console management GUI Welcome Page is displayed.

Notes:

- A customer user can add users, delete users, or change passwords for any users in the customer group who use the Administer Users tools.
- The 'customer' userid cannot be deleted.
- Anytime a customer user exits the System console management GUI by closing the browser, the customer user is logged out of the system console.
- A customer user cannot make changes to the user ids for service users, but service users can make changes to customer group users.

Updating tape drive code using the System console management GUI

Attention: Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, “Maintenance Starting Point,” on page 1 to determine the system console code level.

The code level requirements are:

System Console
Code version 2.5.0 and above

IBM 3494 Virtual Tape Server
Code version 2.30.xx.xx and above

IBM 3590 A60 Tape Controller
Code version 1.16.7.xx and above

IBM 3592 J70 Tape Controller
Code version 1.17.4.xx and above

IBM 3592 C06 Tape Controller
Code version 1.20.x.x and above

IBM 3592 C07 Tape Controller
Code version 1.25.x.xx and above

IBM 3494 ATL (L12, L14, L22)
Not currently operational

1. Ensure that the tape drives that are attached to 3590 A60 and 3592 tape controllers are varied offline at the host before attempting a microcode update.

2. Launch the System console management GUI by selecting **Main Menu** > **Browser Functions** > **System Console Specialist**.
3. From the left navigation area, click **Update Drive Code**. A screen appears which allows you to filter which drives are displayed and are available for updating.
4. Select the drive types you want to display, and select the sorting preference. Click **Submit**. A page displays which presents the controllers that meet the selected criteria and that are currently available for a code update.
5. Select drives to update by clicking the small plus sign next to the Controller Type column of the controller that contains the drives to update. This expands the entry in the table for that controller, listing the available drives. The current code level is displayed in the Current Code Level column. Select a new code level from the Available Code Levels column.
6. Once all wanted code level updates are selected, proceed with the update by clicking **Update Code**.
7. Verify that the microcode level update is complete by viewing the History table. This table will show when each code update has started and when it has completed. It also will indicate if the process has failed. It will be necessary to refresh the page periodically to view the status of the operation. Clicking an entry in the History table displays details for the entry. See Table 23 for control unit error codes and see Table 24 on page 203 for single tape drive error codes.
8. Click **Refresh** to refresh the status. You can click on an entry in the History table to obtain more information about it.
9. Vary online all drives that are attached to 3590 A60 and 3592 control units which were previously varied offline.

Note: Consult with your next level of support for questions and/or direction on code levels to apply to tape drives.

Table 23. Control Unit Error Codes

This error code...	...informs you that...
0	Code update process is completed and all code updates are complete
22	Code update process is completed with some incomplete code updates
23	Code update process is completed with errors
24	Could not receive codeloadstatus file from subsystem. Code update process completed
1	Code activation is currently in progress on the specified subsystem
2	Subsystem code activation function did not receive the code update request file
3	rsENDriveCodeLoad.pl -L already running on system console
4	Could not retrieve configuration for the subsystem with specified IP address
5	Specified subsystem does not support code updates through the system console
6	No requested images are available on system console
7	Error creating drive code package
8	Error creating drive code update request file
9	Subsystem does not have enough storage space available for code transfer
10	Communications error prevented a command from being sent to the subsystem
11	Incorrect arguments sent to subsystem drivecodecheck program
12	Warning: the subsystem could not remove the temporary archive file
13	Code image extraction failed on subsystem
14	Code image permissions change failed on subsystem.
15	Code image archive not received on subsystem
16	Subsystem command execution failed for an unknown reason

Table 23. Control Unit Error Codes (continued)

17	Lost process synchronization between system console and subsystem
18	Status of code update is unknown. fork() call to launch drive code update command failed
19	Multiple status update failures while waiting for drive code update process
20	Code update process did not return, status of code update unknown
21	Code update process returned with unexpected failure code

Table 24. Single Drive Error Codes

This error code...	**...informs you that...**
25	Unable to communicate with drive
26	Device is open and in use (for example, not offline)
27	Device has no more internal memory
28	Device rejected command, incompatible or corrupted microcode file
29	Non-tape drive error when loading drive code
30	Code update process has been started

Launching Specialists

1. Launch the System console management GUI by selecting **Main Menu** > **Browser Functions** > **System Console Specialist**.
2. From the left navigation area, click **Launch Specialists**. A screen appears, which displays links to Specialist user interfaces for library managers and peer-to-peer Virtual Tape Server controllers that are attached to the system console.
3. Click the link of the Specialist user interface that you want to launch.

Notes:

- If unique hostname aliases have not been assigned to library managers, all of the displayed names will be the same for the library manager specialists. The IP address displays in the bottom status bar of the browser.
- Web specialists for tape systems are optimized for certain Microsoft Windows-based web browsers. You might receive a warning message that states this when you attempt to display the tape system specialist. The tape system specialists display and operate by using the system console's browser. However, it is possible that some functions might not display or operate correctly. Discontinue using the system console's browser for tape system specialists if this occurs.
- The specialists must be operational on the tape systems in order to view them on the system console. Refer to the Maintenance Information manual for the appropriate tape system for activating and configuring its web specialist.

Administer Users

Launch the System console management GUI by selecting **Main Menu** > **Browser Functions** > **System Console Specialist**. In the left navigation area, click **Administer Users**. A screen displays with options to add users, delete users, or change user passwords.

Adding a User

To add a user to the customer group, under the **Add User** heading:

1. Enter a new user id in the **User ID** field (8-character maximum).
2. Enter a password in the **New Password** field and repeat the password in the **Confirm New Password** field. (8-character maximum).
3. Click **Add**.

Deleting a User

To delete a user from the customer group, under the **Delete User** heading:

1. Select a user ID from the User ID drop-down list.
2. Click **Delete**.

Changing a User Password

To change a user's password, under the **Change User Password** heading:

1. Select a user ID from the User ID drop-down list.
2. Enter a password in the **New Password** field and repeat the password in the **Confirm New Password** field.
3. Click **Change**.

Remote Customer Access to System Console

The customer user (usually an administrator) can access the system console remotely through a web browser.

The customer can use the remote access for the following purposes:
- Update drive code
- Launch specialists
- Administer users
- SNMP trap forwarding
- AOS settings
- Modem connections
- Attached systems
- Audit Logs
- Firewall Settings
- IP Whitelist
- Test Call Home
- Call Home Settings
- Security Settings
- Remote support center
- Backup Restore

Refer to the following table for a list of supported browsers.

Table 25. Supported browsers

Browser	**Version supported**
Microsoft Edge	25.x
Microsoft Internet Explorer	9, 10 or 11
Mozilla Firefox	24.0, 24.x ESR, 31.0, 31.x ESR, 38.0, 38.x ESR or higher
Chrome	Chrome 39.x or Chrome 42.x

To connect to the system console through a web browser, perform the following steps:

1. In the address bar of a supported browser, enter **http://** followed by the system console IP address or host name, followed by **/wi/en/en-us/index.htm**.
   For example, `http://<IP ADDRESS>/wi/en/en-us/index.htm`
   or `http://<HOSTNAME>/wi/en/en-us/index.htm`.
2. Press the **Enter** key on your keyboard or the **Go** button on your web browser.
3. At the Authentication Required window, enter the **User Name** *customer* and **Password** *customer*, then click **OK**. The System console management GUI Welcome Page is displayed.

Note: In system console code 7.4.x and later, the "Attached Systems" menu differs from the service login of the System console management GUI and the customer login of the System console management GUI. Systems attached might not be present and will need to be added by logging in as "customer". See Figure 236 on page 206

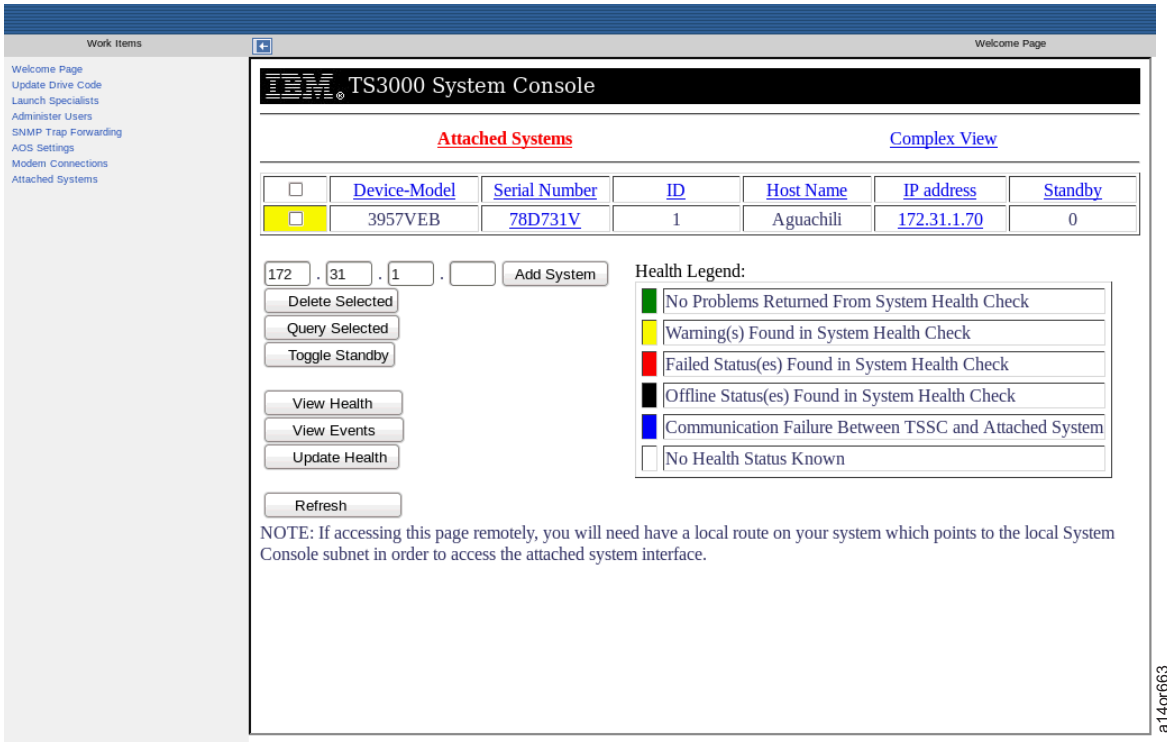

Figure 236. Add System Screen - customer login to System console management GUI

Error or Defer Matrix Updates

Occasionally, updates become available for the Error Call Home and Deferred Call Home capabilities of attached subsystems. You can use the system console to broadcast and activate these updates to attached subsystems or to remove previously-applied updates. Do not manually download the updates. The system console will automatically download these updates as they become available.

Attention: Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, “Maintenance Starting Point,” on page 1 to determine the system console code level.

The code level requirements are:

System Console
Code version 3.2.0 and above

IBM 3494 Virtual Tape Server and Virtual Tape Controller
Code version 2.32.xx.xx and above

IBM 3592 J70 Tape Controller
Code version 1.19.xx.xx and above

IBM 3592 C06 Tape Controller
Code version 1.20.x.x and above

IBM 3592 C07 Tape Controller
Code version 1.25.x.xx and above

Broadcast and Activate Updates

1. Right-click from anywhere in the Desktop to view the Main Menu.

2. Select **System Console Actions** > **Error/Defer Matrix Updates** to start the Error and Defer Matrix updates tool. The dialog window in Figure 237 displays. This tool enables copying error/defer matrix updates at the system console to attached VTS, VTC, or tape controller systems over the local network.

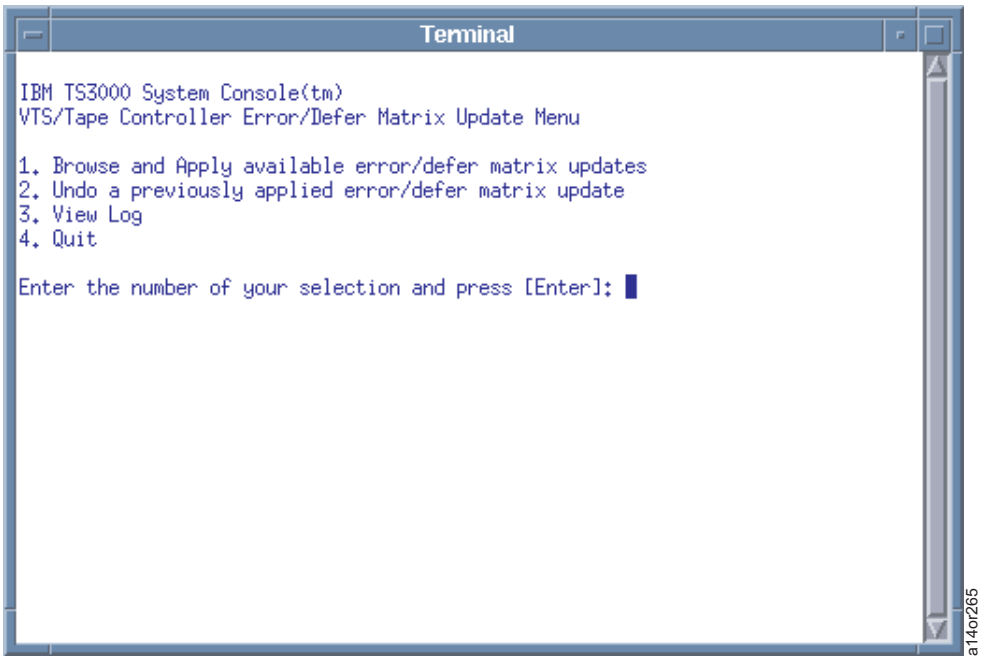

Figure 237. VTS, VTC, or Tape Controller Error or Defer Matrix Update Menu

3. Type **1** to select 'Browse and Apply available error/defer matrix updates,' and press **Enter** to display Figure 238.

```
IBM TS3000 System Console(tm)
VTS/Tape Controller Error/Defer Matrix Update Menu

1. Browse and Apply available error/defer matrix updates
2. Undo a previously applied error/defer matrix update
3. View Log
4. Quit

Enter the number of your selection and press [Enter]: 1
Reading files...

#       Update name     Date            Compatibility
-------------------------------------------------------------------------------
[1]     FID80B9         3/18/2005       3494-B20
                                        3494-B10

Select error/defer matrix update to activate
Enter selection or just press [Enter] when complete:
```

Figure 238. Error or Defer Matrix Update Menu

4. Enter the number of the update you wish to apply or remove, and press **Enter**. A description of the update displays (Figure 239 on page 208). Read the description of the update. To apply the update, type **y** at the prompt, and press **Enter**.

```
Enter selection or just press [Enter] when complete:
1
Selection:
FID80B9
# Filename: FID80B9
# Compatibility: 3494-B20 3494-B10
# Created: 3/18/2005
#
# Defer call home for SIMs with refcode1 of
# 60B9.
#

Please read the update description above.
Are you sure you want to use this update? [y/N]
y
```

Figure 239. Error or Defer Matrix Menu - Apply Update

5. A list of compatible subsystems appears (Figure 240). Only subsystems that are compatible with the selected update are shown. Select any subsystems for which you want to activate this update by typing their numbers into the input area of the screen ('**1**' in this example). Press **Enter**.

```
Select compatible systems to activate matrix update.
Only compatible systems are shown.
NO    MODEL   SERIAL    HOSTNAME       IP ADDRESS  SELECT
============================================================
 1  3494B10  78B1510    raselvts     172.31.1.150      No

Enter selections (or de-selections) separated by spaces (ex: 1 3 5 7)
or press [Enter] when complete:
1
```

Figure 240. Error or Defer Matrix Menu - Compatible Systems

6. When you have finished selecting systems, with your cursor in an inactive area on the screen (on a blank line), press **Enter**. The update will be broadcast to each system, 'Yes' will replace 'No,' and the status of the update will be shown as 'complete.' See Figure 241.

```
Select compatible systems to activate matrix update.
Only compatible systems are shown.
NO    MODEL   SERIAL    HOSTNAME       IP ADDRESS  SELECT
============================================================
 1  3494B10  78B1510    raselvts     172.31.1.150     Yes

Enter selections (or de-selections) separated by spaces (ex: 1 3 5 7)
or press [Enter] when complete:

Applying changes to raselvts...complete
```

Figure 241. Error or Defer Matrix Menu - Systems Selection Broadcast

Remove Previously-Applied Updates

This utility also can remove previously applied error and defer matrix updates. Removing or attempting to remove an update from a system that did not have the update has no effect.

7. To remove an update, select **2** from the main menu. A list of available updates appears, as shown in Figure 242 on page 209.

```
IBM TS3000 System Console(tm)
VTS/Tape Controller Error/Defer Matrix Update Menu

1. Browse and Apply available error/defer matrix updates
2. Undo a previously applied error/defer matrix update
3. View Log
4. Quit

Enter the number of your selection and press [Enter]: 2
PLEASE NOTE: You are deactivating an error matrix update.  This action will
have no effect on systems that never had the update applied.
Reading files...

#       Update name     Date            Compatibility
-------------------------------------------------------------------------------
[1]     FID80B9         3/18/2005       3494-B20
                                        3494-B10

Select error/defer matrix update to DEACTIVATE
Enter selection or just press [Enter] when complete:
```

Figure 242. Error or Defer Matrix Menu - Available Updates

8. Repeat Step 4 on page 207 through Step 6 on page 208 to remove an update.

Launching the DS6000 Graphical User Interface

Use this procedure to launch the DS6000 graphical user interface (GUI). To read about installing the GUI, see "Installing the DS6000 Graphical User Interface" on page 65.

Attention: Many procedures in this book are code specific. Before starting any procedure, go to Chapter 1, "Maintenance Starting Point," on page 1 to determine the code level.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **Browser Functions** > **DS6000 Functions** > **Launch GUI**. You see the browser window in Figure 243.

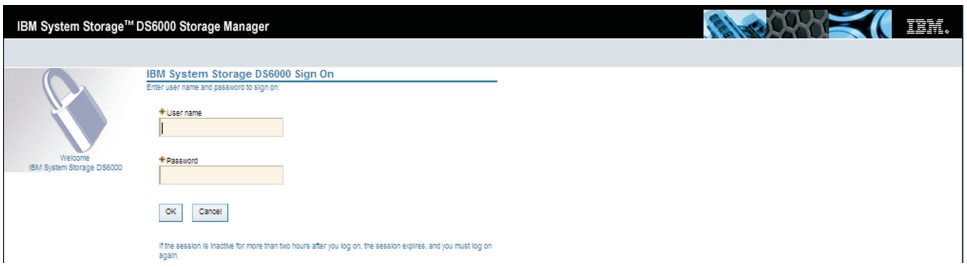

Figure 243. DS6000 GUI Login Username and Password Screen

3. At the login screen, enter the username "admin" and the password "ibm2serv".

   Note: If an excess quantity of failed user-authentication attempts occurred, the GUI will lock out users who attempt to login. If this occurs, return to the system console desktop screen. Right-click to bring up the main menu. Select **Browser Functions** > **DS6000 Functions** > **Reset GUI Password**. You will see Figure 244 on page 210, which provides status on the password reset.

   Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to reset the DS6000 password (**TSSC Menus** > **External GUI** > **DS6000 GUI Options** > **Reset DS6000 Password**). Refer to "RAS Menus" on page 177.

Figure 244. Reset DS6000 GUI Password Screen

When the reset has completed, press **Enter**. Return to Step 2 on page 209 to continue.

4. Once the DS6000 GUI is launched, Figure 245 displays.

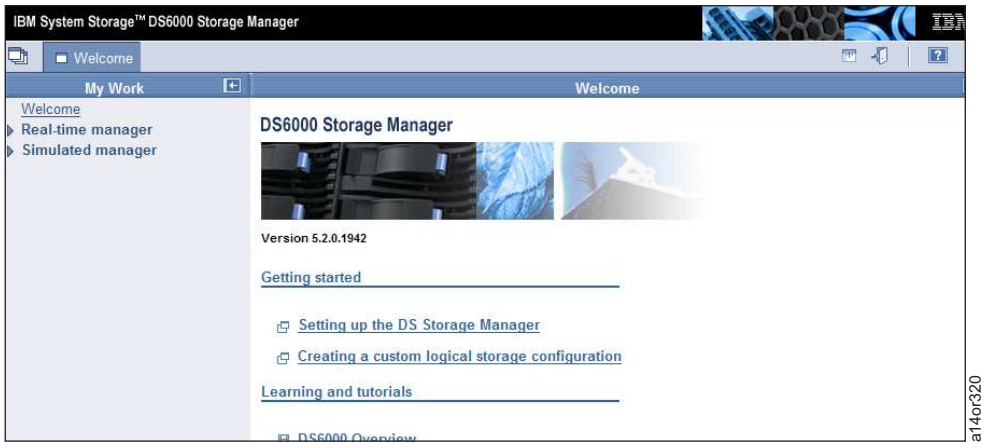

Figure 245. Storage Manager Welcome Screen

5. To set up communication with a TS7700 cache subsystem, from the Welcome column in the left frame, click on **Real-time manager**.
6. From the resulting list (not shown), select **Manage hardware**, then select **Storage complexes** from that resulting list. Figure 246 on page 211 displays.

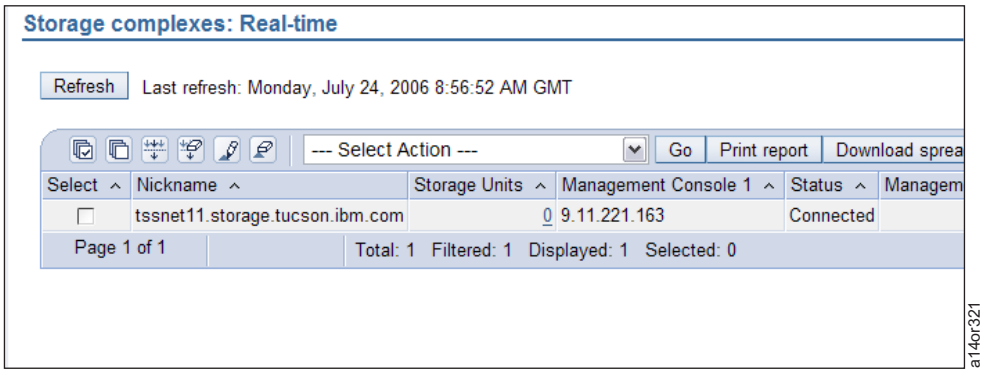

Figure 246. Storage Complexes : Real-time Screen

7. Click on **Select Action**, and from the resulting drop-down menu select **Add Storage Complex**. Click **Go**. Figure 247 displays.

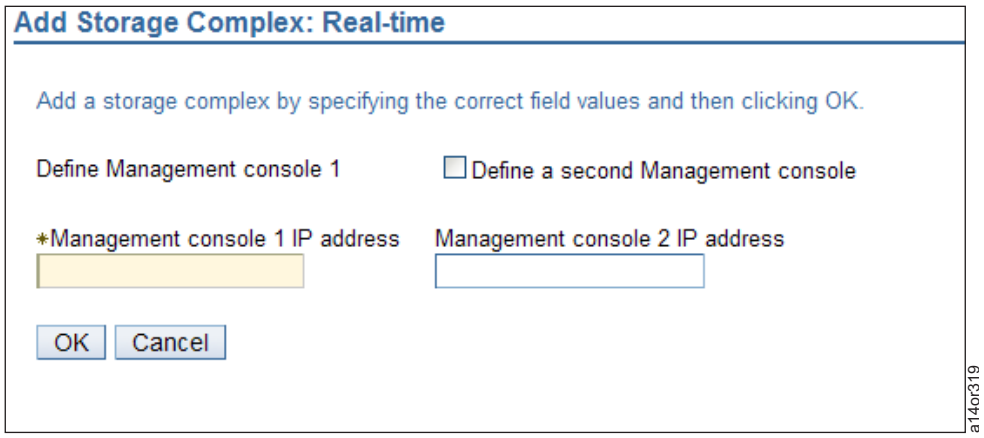

Figure 247. Add Storage Complex Screen

8. Enter into the "Management console 1 IP address" field the TS7700 IP address that was used for TSSC attachment. This address should be in the form '172.31.1.x'. Select **OK**. This returns you to Figure 246. Your storage complex should now be listed. For all further DS6000 service information including firmware upgrade, refer to IBM Knowledge Center (http://www.ibm.com/support/knowledgecenter).

Launching the Storage Manager Graphical User Interface

Use this procedure to launch the Storage Manager graphical user interface (GUI). To read about installing the GUI, see “Installing the Storage Manager graphical user interface” on page 66.

Attention: Many procedures in this book are code-specific. Before starting any procedure, go to Chapter 1, “Maintenance Starting Point,” on page 1 to determine the code level.

1. If you are not already logged in to the TSSC, login. In the **Login** field type `service` and press Enter. In the **Password** field type `service` and press Enter.
2. Right-click from anywhere in the Desktop to view the Main Menu.
3. From the Main Menu, select **Browser Functions** > **Storage Manager GUI Functions** > **Launch GUI**. You see the browser window in Figure 248 on page 212.

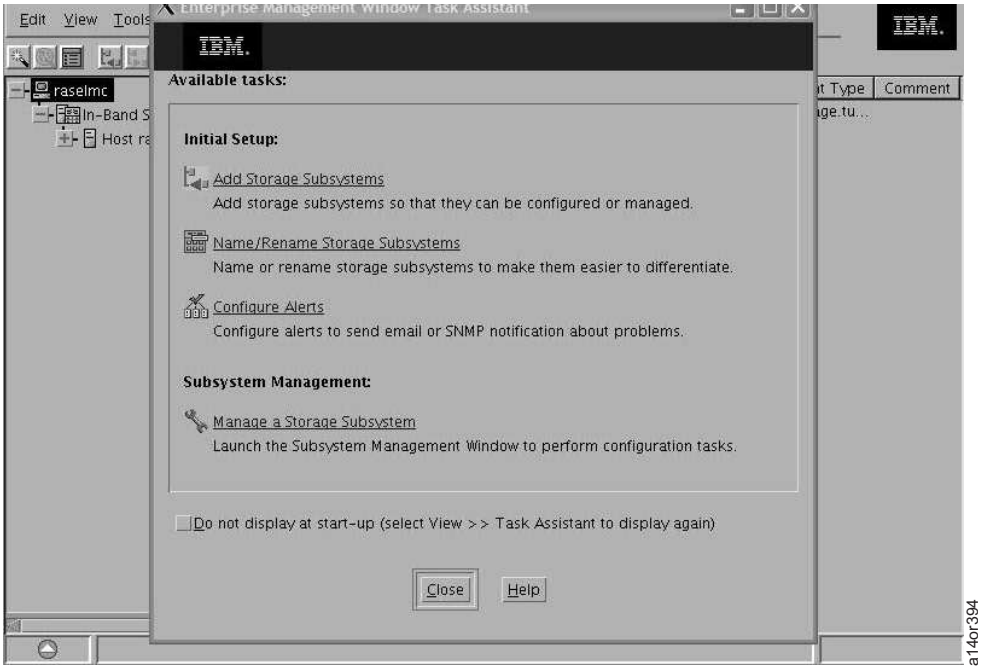

Figure 248. Storage Manager GUI Initial Screen

4. From the Enterprise Management Window Tape Assistant screen, select **Add Storage Subsystems** to add a storage subsystem.
5. If you just installed this GUI for the **first time**, or want to add another subsystem, perform the following. If not, go to Step **8**. From the Select Addition Method screen, choose one of these options:
   - **Automatic** - to interrogate for storage subsystems and to add storage subsystems that are with in the local subnetwork. Go to Step**6**

     - - OR - -
   - **Manual** - to add a storage subsystem that is outside the local subnetwork. Go to Step **7**
6. From the Automatic Discovery screen, select **OK** to begin an automatic discovery of storage subsystems on the local subnetwork, or select **Cancel** to discontinue. When this is completed, go to Step **8**.
7. Select **Additional Method** > **Manual** and press **OK**.
   a. From the dialog box for **Add Storage Subsystem - Manual**, select the radio button for **In-band management**, then type the TCP/IP address for the TS7700 in the field for **Host (DNS/Network name, IPv4 address, or IPv6 address)**.

      Note: The address that you type should be 172.31.1.xxx that is listed in Table 26 on page 213.
   b. Click **Add**.
   c. If you add a storage subsystem successfully, you see a dialog box that says: *The specified host was added successfully*.
   d. If you have more than one storage subsystem to add, click **Yes**, otherwise click **No**.
8. From the navigation for **IBM System Storage Manager**, select **Devices**.
9. Verify that the status is optimal. If so, exit. If not, contact the next level of support.
10. Return to the procedure that sent you here.

Table 26. TSSC IP Addresses

Field	Value	Notes
Service Console (TSSC) IP address	172.31.1.1	IP address of the Service Console (TSSC).
Service Console (TSSC) Hostname	tssnet1	This is the recommended hostname for the Service Console (TSSC).
3957-Vxx IP address on the Service Console (TSSC) Network	172.31.1.xx	This is the recommended IP address for the first TS7720 attached to a Service Console. The last octet of this IP address must be in an increment of 10 between 10 and 240 (that is. 10, 20 ... 230, 240). The TS7720 router configuration will utilize this and the following 9 IP addresses (example: .150 - .159) so no other device should be set to an IP address in this range.
Subnet Mask on the Service Console (TSSC) Network	255.255.0.0	

Launching the ProtecTIER Manager Graphical User Interface

Use this information to launch the ProtecTIER Manager graphical user interface (GUI). To read about installing the GUI, see "Installing the ProtecTIER Manager Graphical User Interface" on page 66.

Attention: Many procedures in this book are code specific. Before starting any procedure, go to Chapter 1, "Maintenance Starting Point," on page 1 to determine the code level.

1. Right-click from anywhere in the Desktop to view the Main Menu shown in Figure 63 on page 52.
2. From the Main Menu, select **Browser Functions** > **ProtecTIER Functions** > **Launch GUI**.
3. Refer to the TS7650 User's Guide (3958 family) for additional launching instructions.

Accessing Subsystem Interfaces

Use this procedure to access available subsystem web interfaces including Specialists and the IBM TS7700 Management Interface.

1. Right-click from anywhere in the Desktop to view the Main Menu shown in Figure 63 on page 52.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**. You see the login prompt shown in Figure 64 on page 53.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application. You see the Main Configuration screen shown in Figure 249 on page 214.

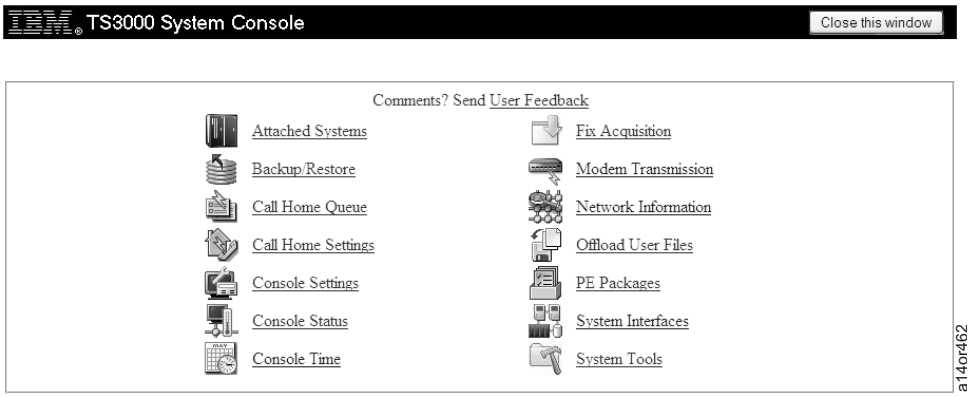

Figure 249. Main Configuration Screen

4. Select **System Interfaces**. You see the screen shown in Figure 250.

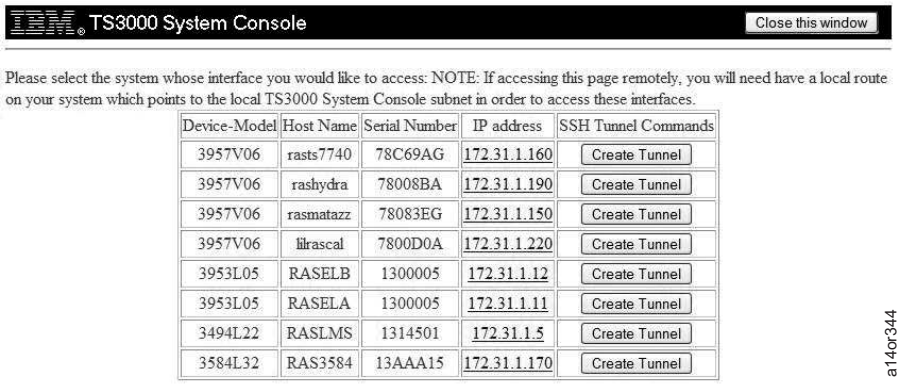

Figure 250. System Selection Screen

5. Click on the system you would like to connect to. This opens a browser tab that is connected to the system you selected. The tab contains either the Specialist or the TS7700 Management Interface for the system you selected. Refer to the documentation that applies to your selected system for more help.

   Note: If you see the following message and are using system console code level 7.4.x you can disregard the message.

```
The version of the browser you are using is not supported. You must use one of the
following supported browsers: Firefox 13.0, Firefox 17.0, Firefox 17.x ESR, Firefox 19.x,
Firefox 24.0, Firefox 24.x ESR, Internet Explorer 9, or Internet Explorer 10. If you use
an unsupported browser version some pages might not display correctly.
```

Managing IBM Knowledge Center

The following sections detail the procedures you can use to manage IBM Knowledge Center.

Note: With system console code v8.1 IBM Knowledge Center is used for most products. Information Centers are still used with earlier system console code levels and some older products. Make sure to use the correct IBM Knowledge Center or Information Center based on the attached product.

For procedures you can use to manage Information Centers, see “Managing Information Centers” on page 217.

Managing the IBM Knowledge Center from web interface

You can use the web interface to add the IBM Knowledge Center, to launch the IBM Knowledge Center, or to delete an IBM Knowledge Center level from the system console.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
4. Select **System Tools** > **Manage IBM Knowledge Center**. You see Figure 251.

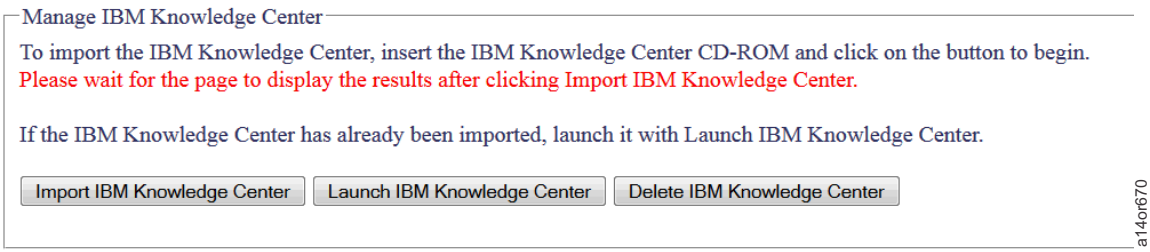

Figure 251. Manage IBM Knowledge Center from web interface

5. To import the IBM Knowledge Center from a CD-ROM, insert the CD-ROM into the CD drive of the system console, and click **Import IBM Knowledge Center**. After the import completes, the CD ejects. The page displays at the top if it was a success or if an error occurred.
6. To launch the IBM Knowledge Center, from the Manage IBM Knowledge Center screen, click **Launch IBM Knowledge Center**. A new window opens in your browser which points to the IBM Knowledge Center.
7. To delete a level of IBM Knowledge Center, from the Manage IBM Knowledge Center screen, click **Delete IBM Knowledge Center**. If there is at least one level of IBM Knowledge Center installed it will be displayed in a box similar to the one shown in Figure 252.

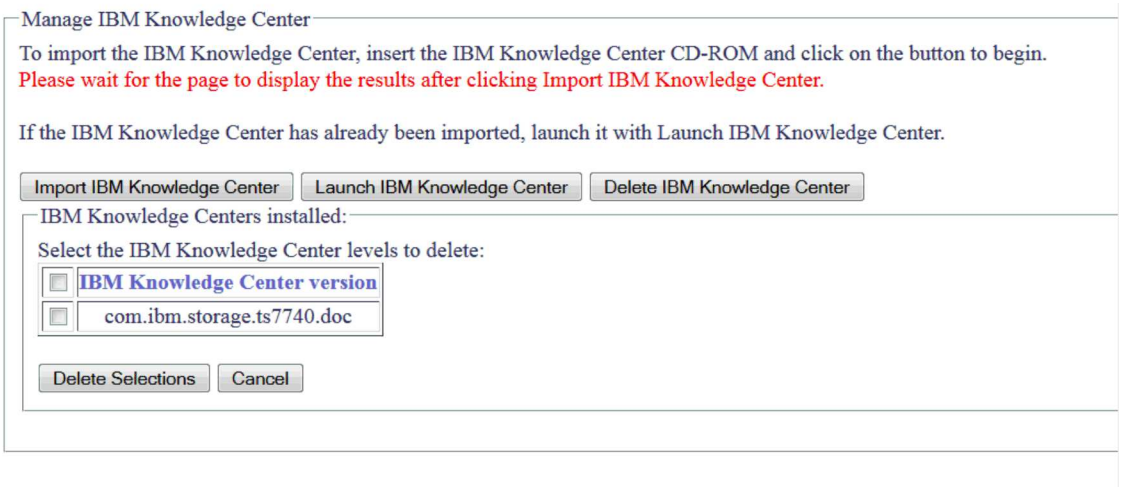

Figure 252. IBM Knowledge Center versions installed

8. In the IBM Knowledge Centers installed area, select the versions you want to delete and click **Delete Selections** to confirm.

Importing IBM Knowledge Center from CD-ROM

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Import IBM Knowledge Center**.

   Note: Authentication login will display the menus slightly different.

   Select Browser Function > **Import IBM Knowledge Center**

   The terminal screen shown in Figure 253 appears, and prompts you to insert the IBM Knowledge Center CD.

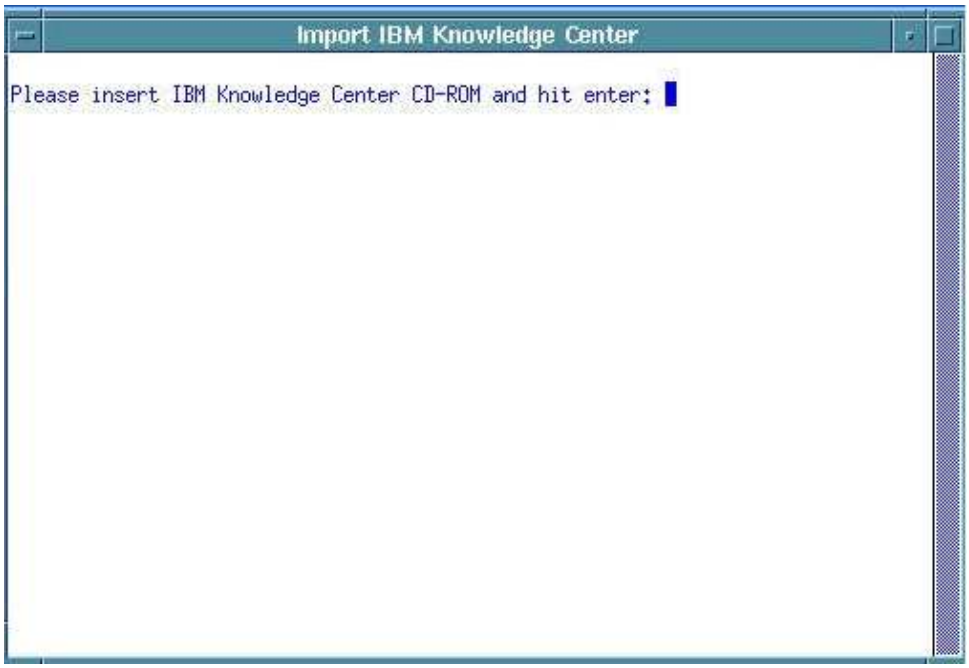

Figure 253. Insert IBM Knowledge Center CD Screen

3. Insert the IBM Knowledge Center CD-ROM for the desired product, and press **Enter**. You see the imported Eclipse plugins and features. Eclipse restarts.
4. You can now launch the IBM Knowledge Center. Go to "Launching IBM Knowledge Center."

Launching IBM Knowledge Center

Use this procedure to launch IBM Knowledge Center. To read about installing IBM Knowledge Center, see "Importing IBM Knowledge Center from CD-ROM."

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **Browser Functions** > **Launch IBM Knowledge Center**. A browser window appears, as seen in Figure 254 on page 217. This can take as long as 15 seconds to open.

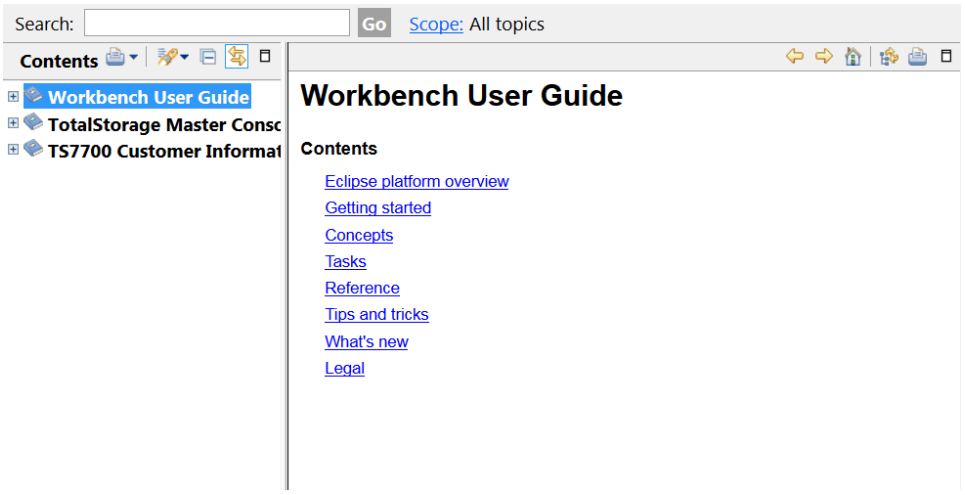

Figure 254. Launching IBM Knowledge Center window.

3. You will see any imported IBM Knowledge Center topics in the column on the left. You can select your appropriate topic or use the search box to navigate through the information.

Deleting IBM Knowledge Center

Use this procedure to delete an IBM Knowledge Center level.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **Browser Functions** > **Delete IBM Knowledge Center**. A terminal screen appears displaying the different IBM Knowledge Center levels that are installed. (If there are no IBM Knowledge Centers installed, a message indicating this is displayed). You can select the IBM Knowledge Center to delete by entering the number of the IBM Knowledge Center displayed on the screen.

Managing Information Centers

The following sections detail the procedures you can use to manage Information Centers.

Note: With system console code v8.1 IBM Knowledge Center is used for most products. Information Centers are still used with earlier system console code levels and some older products. Make sure to use the correct IBM Knowledge Center or Information Center based on the attached product.

For procedures you can use to manage IBM Knowledge Center, see "Managing IBM Knowledge Center" on page 214.

Managing the InfoCenter from web interface

You can use the web interface as an alternate way to add the Information Center (InfoCenter), to launch the InfoCenter, or to delete an InfoCenter level from the system console.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
4. Select **System Tools** > **Manage InfoCenter**. You see Figure 255 on page 218.

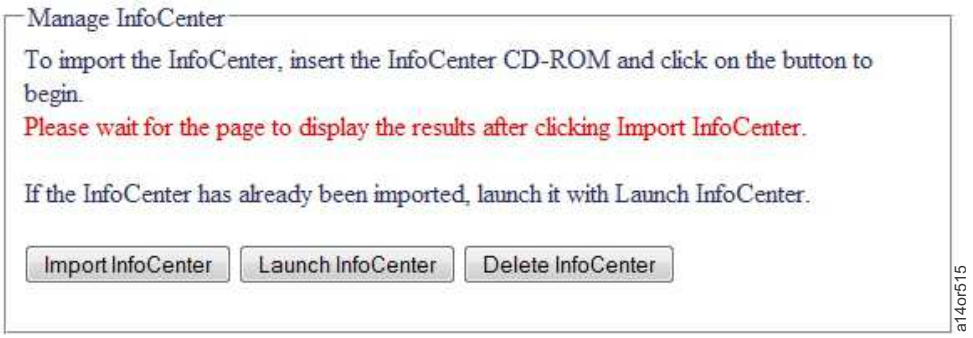

Figure 255. Manage InfoCenter from Web Interface

5. To import the InfoCenter from a CD-ROM, insert the CD-ROM into the CD drive of the system console, and click **Import InfoCenter**. After the import completes, the CD ejects. The page displays at the top if it was a success or if an error occurred.
6. To launch the InfoCenter, from the Manage InfoCenter screen, click **Launch InfoCenter**. A new window opens in your browser which points to the InfoCenter.
7. To delete a level of InfoCenter, from the Manage InfoCenter screen, click **Delete InfoCenter**. If there is at least one level of InfoCenter installed it will be displayed in a box similar to the one shown in Figure 256.

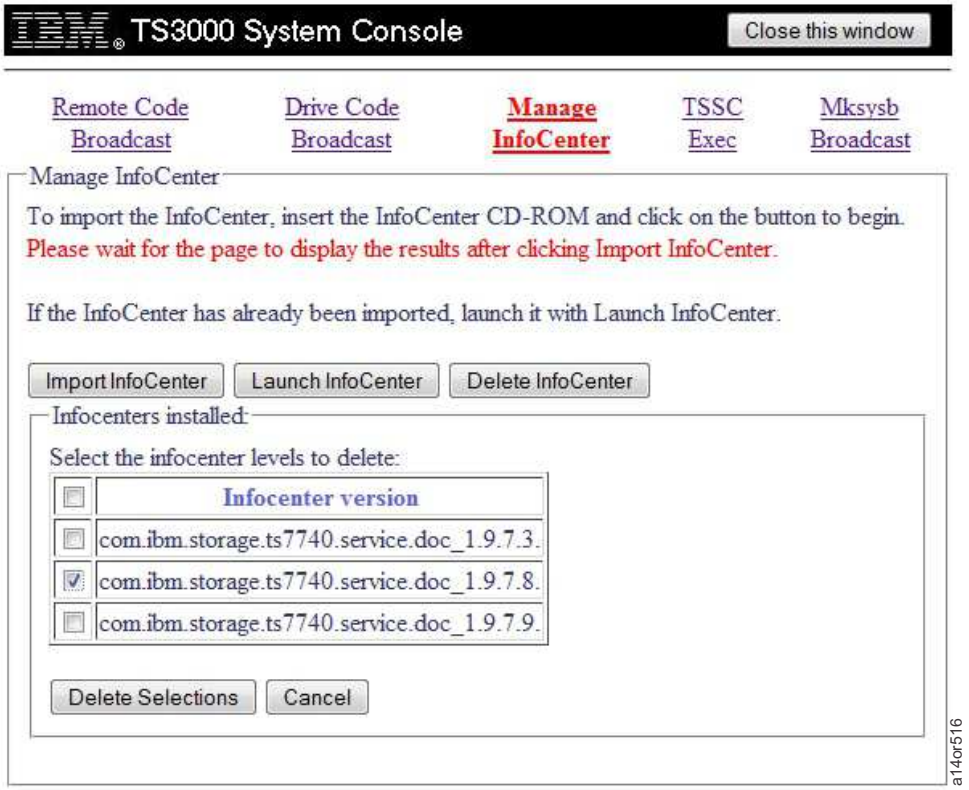

Figure 256. Different InfoCenter levels installed

8. From this box select the InfoCenter Levels you want to delete and click **Delete Selections** to confirm.

Importing InfoCenter From CD-ROM

1. Right click from anywhere in the Desktop to view the Main Menu shown in Figure 63 on page 52.
2. From the Main Menu, select **System Console Actions** > **Import InfoCenter**.

   Note: Authentication login will display the menus slightly different.

   Select Browser Function > **Import InfoCenter**

   The Terminal screen shown in Figure 257 appears, and asks you to insert the InfoCenter CD.

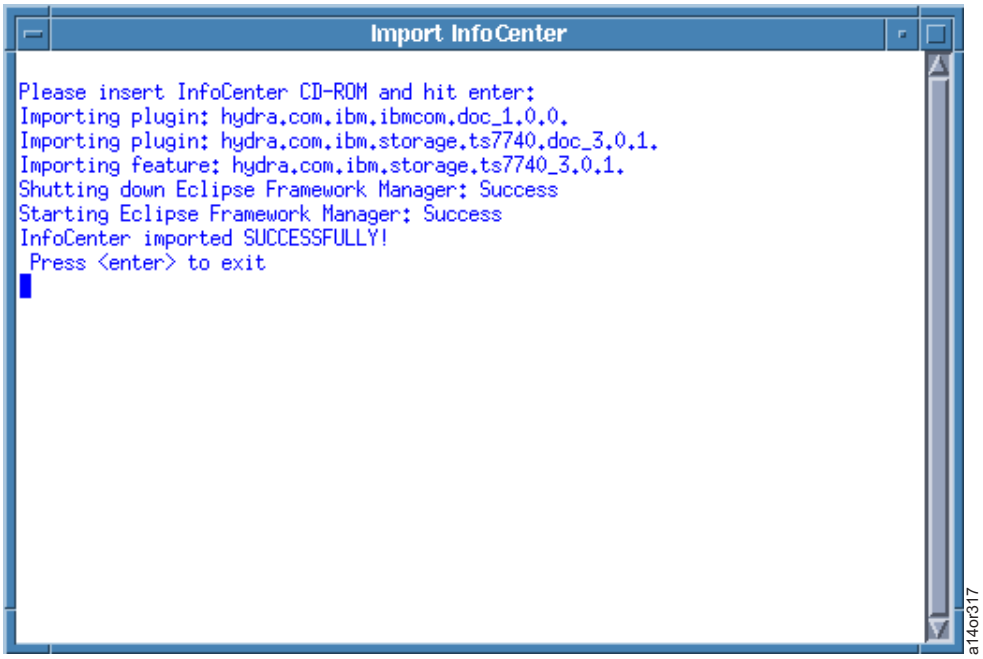

Figure 257. Insert InfoCenter CD Screen

3. Insert the InfoCenter CD-ROM for the desired product, and press **Enter**. You will see the imported Eclipse plugins and features. Eclipse restarts.
4. You may now Launch the InfoCenter. The imported information appears. Go to "Launching InfoCenter."

Launching InfoCenter

Use this procedure to launch the InfoCenter. To read about installing the InfoCenter, see "Importing InfoCenter From CD-ROM."

1. Right click from anywhere in the Desktop to view the Main Menu shown in Figure 63 on page 52.
2. From the Main Menu, select **Browser Functions** > **Launch InfoCenter**. A browser window appears, as seen in Figure 258 on page 220. This can take as long as 15 seconds to open.

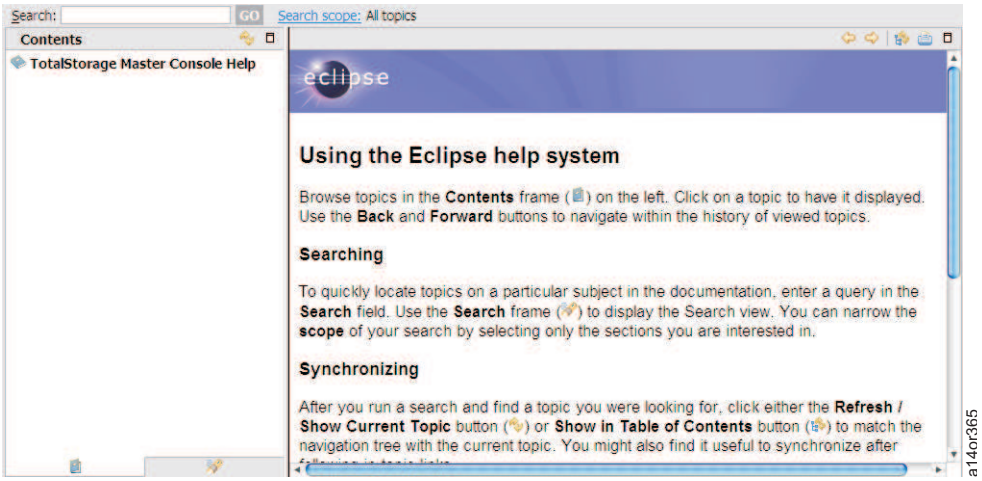

Figure 258. Launching InfoCenter Window. Though not shown here, your selection will appear below "TotalStorage Master Console Help."

3. You should see the TSSC InfoCenter topics, as well as any imported InfoCenter in the column to the left. You may select your appropriate topic or use the search box to navigate through the help information.

Delete InfoCenter

Use this procedure to delete an InfoCenter level.

1. Right click from anywhere in the Desktop to view the Main Menu shown in Figure 63 on page 52.
2. From the Main Menu, select **Browser Functions** > **Delete InfoCenter**. A Terminal screen appears displaying the different InfoCenter levels that are installed. (If there are no InfoCenter installed, a message indicating this will be displayed). The user can select the Infocenter to delete by entering the number of InfoCenter displayed on screen.

Resetting the Modem

Attention: Many procedures in this book are code specific. Before starting any procedure, go to Chapter 1, “Maintenance Starting Point,” on page 1 to determine the code level.

If your modem is hung after you dial in, you can use this information to reset the modem.

Note: Some modems have internal locks which prevent a software reset. If you are unsuccessful using the procedure, you might need to power cycle the modem. Consult the modem documentation for procedures.

1. Right click from anywhere in the Desktop to view the Main Menu shown in Figure 63 on page 52.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility** > **Call Home Settings**. You see the screen shown in Figure 259 on page 221.

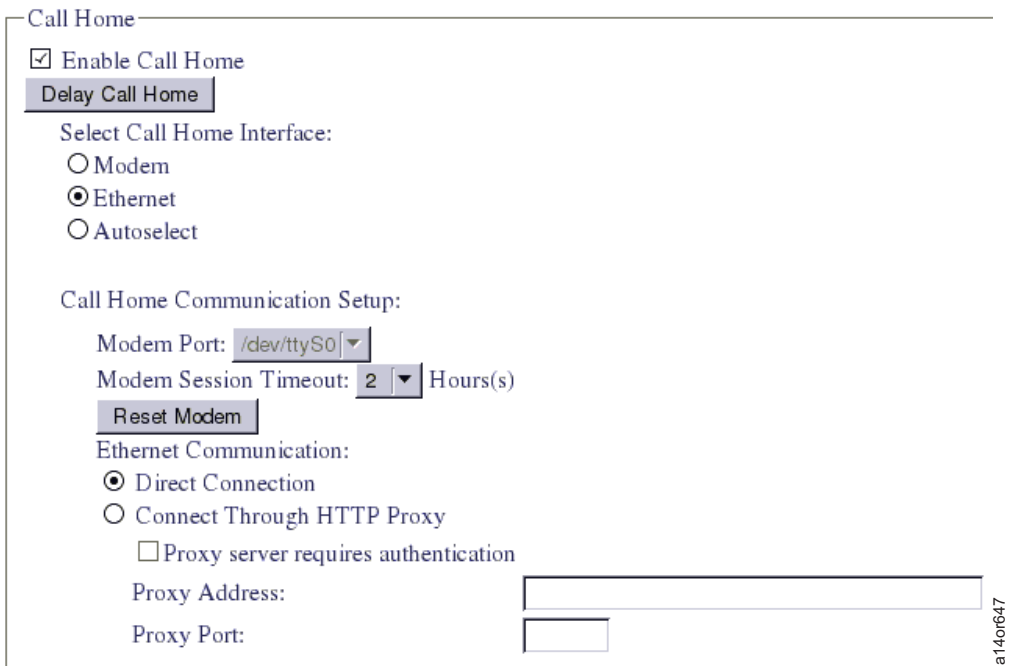

Figure 259. Modem Reset Settings

3. Under Call Home Communication Setup on this screen, select the Modem Port from the list. Click **Reset Modem**.

Opening SSH Tunnel

Notes:
- Use this only when directed by your next level of support.
- This function may not be available for all levels of TS7700 code.
- To use this function to remotely access any of the interfaces that are listed, you need a local route on your system that points to the local TSSC.
- This function will create a tunnel to one of the attached systems Management Interface via a web browser using “http://localhost” with the corresponding port.

Your Support contact might ask you to open a tunnel so that they can gain access. Use this procedure to open a Secure SHell (SSH) tunnel to access one of the attached subsystems from a remote location.

1. Right click from anywhere in the Desktop to view the Main Menu shown in Figure 63 on page 52.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility** > **System Interfaces**. You see the screen shown in Figure 260 on page 222

Tunnel open to 172.31.1.12

Device-Model	Host Name	Serial Number	IP address	SSH Tunnel Commands
3957V06	rasts7740	78C69AG	172.31.1.160	Create Tunnel
3957V06	rashydra	78008BA	172.31.1.190	Create Tunnel
3957V06	rasmatazz	78083EG	172.31.1.150	Create Tunnel
3957V06	lilrascal	7800D0A	172.31.1.220	Create Tunnel
3953L05	RASELB	1300005	172.31.1.12	Close Tunnel
3953L05	RASELA	1300005	172.31.1.11	Create Tunnel
3494L22	RASLMS	1314501	172.31.1.5	Create Tunnel
3584L32	RAS3584	13AAA15	172.31.1.170	Create Tunnel

a14or354

Figure 260. SSH Tunnel Settings

3. Click **Create Tunnel** next to the system to which you want to open a tunnel. You are granting system access to a Support person.
4. After you and Support are satisfied with your activity, click **Close Tunnel** to release the connection.

   Note: If you do not close this tunnel, it will close automatically after four hours regardless of any current operating status. You will need to reopen the tunnel to continue your activity.

Sending User Feedback

Use this information to send a comment to an IBM support group about the system console. For comments about this MI, see “Sending comments” on page xvi.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility** > **User Feedback**. Enter information into the User Name, User email address, and Comments fields.

   Note: Do not add or allow spaces in the username.
3. Click **Send Comments**. This will create and send a PE package. You can review your comments in a file entitled "`userFeedback(firstnamelastname).(timestamp).txt`" that is located in the `/var/enc/log/feedback` directory.

Applying a System Console Patch (TSSC/IMC)

You can apply a patch to the system console by using menu options from the desktop menu, remotely by using the command line interface (CLI), or from the web interface. The following sections detail the methods that you can use to apply a system console patch.

Applying a patch using the Desktop or CLI

You can apply a patch locally using the desktop menus, or remotely using the command line interface (CLI).

Applying a patch locally using a CD-ROM

1. Burn the image `PatchName.iso` to a CD-ROM.

   Note: The `.iso` name might be different depending on the package type.

2. Log into the system console.
3. Right-click from anywhere in the desktop to view the Main Menu.
4. If you have multiple patches to install, then repeat steps 5 through 10 for each patch.
5. From the Main Menu, select **System Console Actions** > **Apply Patch**.
6. When prompted for the location to load the patch from, select **Option 1. CD-ROM**.
7. When prompted, insert the CD-ROM and press Enter.
8. The script presents the patch's information and prompts you to continue, press **y**, then **Enter**. The patch is applied and the following output confirms the successful application of the patch:

   ```
   /dev/cdrom/PatchName.iso Installed Successfully!
   ```
9. The script might require the user to reboot or log out and log back into the system console in order for the patch to be installed properly. The package will display a message if it is needed.
10. Press **Enter** to complete the procedure.

Applying a patch locally using a USB drive

1. Copy the `PatchName.IMG` file on to a USB drive.

   Note: The `.IMG` name might be different depending on the package type.
2. Log into the system console.
3. Right-click from anywhere in the desktop to view the Main Menu.
4. If you have multiple patches to install, then repeat steps 5 through 11 for each patch.
5. From the Main Menu, select **System Console Actions** > **Apply Patch**.
6. When prompted for the location to load the patch from, select **Option 2. USB Device**.
7. Insert the USB drive into any available USB port on the system console.

   Note: To connect a USB device to the TSSC model 7040, 9020 or M93p, you must disconnect the DVD optical drive plugged into Port 4 (if one is connected). Then, plug the USB device into Port 4. Refer to Figure 3 on page 8, Figure 4 on page 9 or Figure 5 on page 10 for port locations.
8. Press **Enter** to start the patch process.
9. The script presents a summary of the number of patches on the USB device and the will prompt you on which patch you would like to install. Enter **n** and press **Enter** if the patch displayed is not the one you want to install. Press **y**, then **Enter** on the patch that you do want to install.
10. The script might require the user to reboot or log out and log back into the system console in order for the patch to be installed properly. The package will display a message if it is needed.
11. Press **Enter** to complete the procedure.

Applying a patch remotely

1. FTP the `PatchName.IMG` file to the `/home/<userid>/` directory.

   Note: The `.IMG` name might be different depending on the package type.
2. From the system console CLI, run **`sudo rsTSSCPFE_EXEC.sh`**.
3. When prompted for the location to load the patch from, select **Option 3. /home/<userid>**.
4. The script presents the patch's information and prompts you to continue. Press **y**, then **Enter**. The patch is applied and is confirmed with a successful message.
5. The script might require the user to reboot or log out and log back into the system console in order for the patch to be installed properly. The package will display a message if it is needed.
6. Press **Enter** to complete the procedure.

Applying a patch using the Web Interface

You can add patches to the system console from the web interface. This web interface allows an alternative way to add a patch to the system console, other than using the desktop menu or CLI.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
4. Select the **System Tools** link.
5. Select the option at the top for TSSC Exec. You see Figure 261

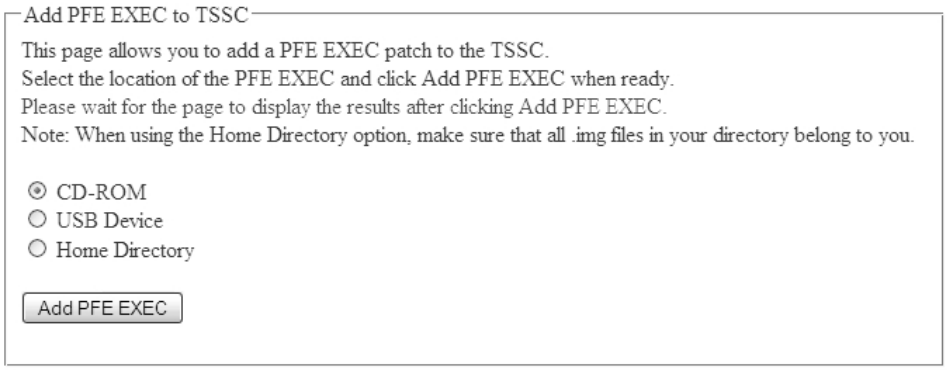

Figure 261. Adding PFE Exec from web interface

6. If you want to use a CD-ROM that has the patch:
   a. Insert the CD-ROM that has the patch on it.
   b. Select **CD-ROM** > **Add PFE EXEC**.

   – – OR – –
7. If you want to use a USB device that has the patch on it:
   a. Plug in a USB device that has the patch on it.

      Note: To connect a USB device to the TSSC model 7040, 9020 or M93p, you must disconnect the DVD optical drive plugged into Port 4 (if one is connected). Then, plug the USB device into Port 4. Refer to Figure 3 on page 8, Figure 4 on page 9 or Figure 5 on page 10 for port locations.
   b. Select **USB Device** > **Add PFE EXEC**.

   – – OR – –
8. You also can add the patch if it is in your Home Directory.
   a. If you know that the patch is in your Home Directory, select **Home Directory** > **Add PFE EXEC**.
9. You see the window in Figure 262 on page 225, which prompts you to verify that the PFE EXEC patch is on the selected media. Select **OK**.

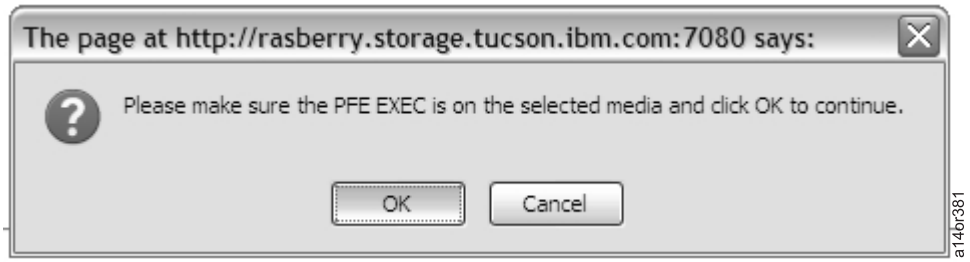

Figure 262. PFE Exec Patch

10. A box showing the available PFE EXEC patches on the selected media is displayed:

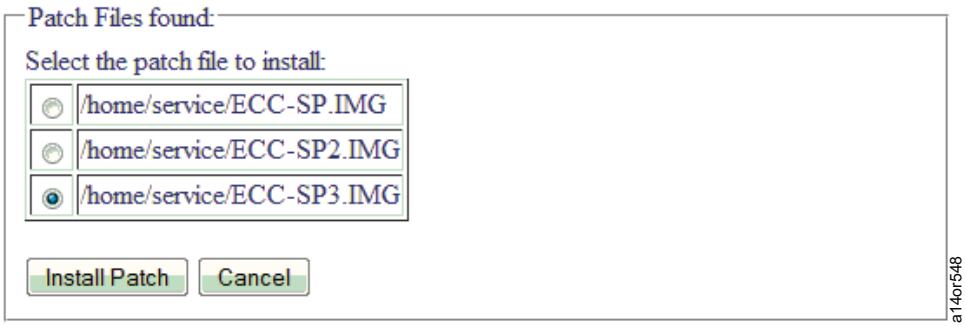

Figure 263. Multiple patch options

11. Select the wanted patch and click **Install Patch**.
12. The process proceeds, then the page reloads. A message appears above the text that is depicted in Figure 261 on page 224, noting the success or providing an error message.

Setting 3958 and 3592 SNMP Trap Forwarding

Note: To use this procedure to forward SNMP traps to the customer's network, you must obtain the IP address from the customer.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility** > **Call Home Settings** > **SNMP Settings**.

   Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to manage SNMP traps (**TSSC Menus** > **SNMP Options**). Refer to “RAS Menus” on page 177.
3. You see a box for ProtecTIER SNMP Trap Forwarding if a 3958 is attached, and a box for Control Unit SNMP Trap Forwarding if a 3592 is attached. You see one of the following screens:

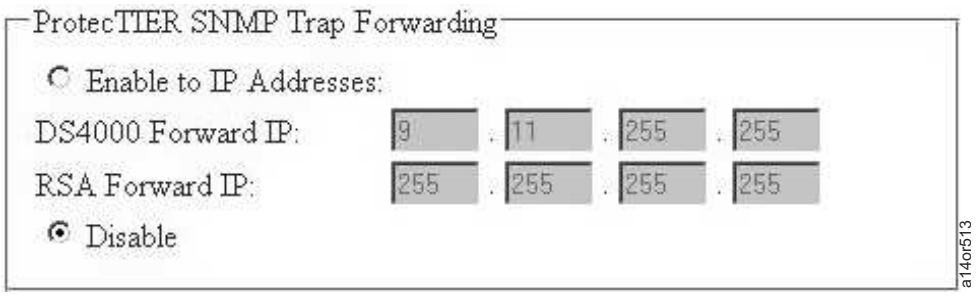

Figure 264. Enabling ProtecTIER SNMP Trap Forwarding

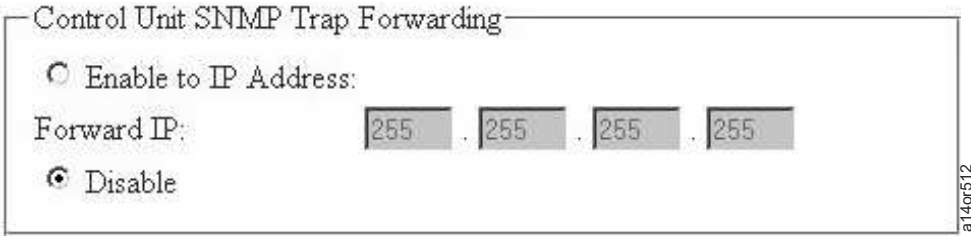

Figure 265. Enabling Control Unit SNMP Trap Forwarding

4. Select **Enable to IP Address**. This allows you to enter the IP address into the fields on this screen.
5. Enter the IP address to which you want to forward SNMP traps. Select **Apply**.

   Note: Select **Disable** to stop sending traps to the customers network.

Tape System Reporter

Note: The Tape System Reporter (TSR) is a tool developed by the 3584 team that gathers statistical information about the usage of the 3584 libraries that are attached to the TSSC. TSR data is sent to the Call Home Database when the TSSC performs a Heartbeat call home. See Figure 110 on page 88.

Starting TSR

1. Log in to the TSSC.
2. Right-click from anywhere in the Desktop to view the Main Menu.
3. From the Main Menu, select **Browser Functions** > **TSR Functions** > **Start TSR**.

   Note: If TSR is running when a backup and restore is issued, TSR will restart. Also, when the TSSC reboots, TSR will restart.

   Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to start TSR (**TSSC Menus** > **3584 Options** > **Start TSR**). Refer to "RAS Menus" on page 177.

Stopping TSR

1. Log in to the TSSC.
2. Right-click from anywhere in the Desktop to view the Main Menu.
3. From the Main Menu, select **Browser Functions** > **TSR Functions** > **Stop TSR**.

Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to stop TSR (**TSSC Menus** > **3584 Options** > **Stop TSR**). Refer to "RAS Menus" on page 177.

Fix Acquisition

Use this feature to find and download system and microcode updates for IBM Tape Storage devices.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**. You see the login prompt.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
4. Select **Fix Acquisition**. You see Figure 266.

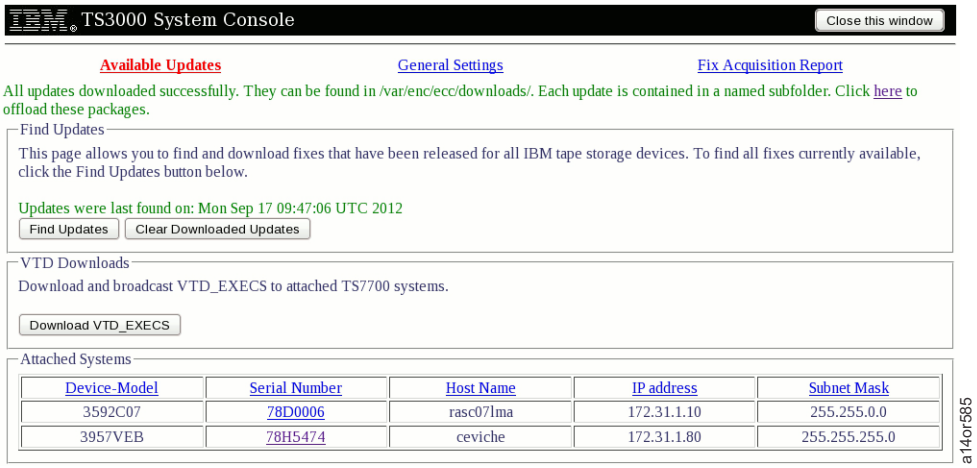

Figure 266. Fix Acquisition Main Menu

5. To find all available updates, click **Find Updates**. Once the updates have been found, they will be displayed on a screen similar Figure 267 on page 228.

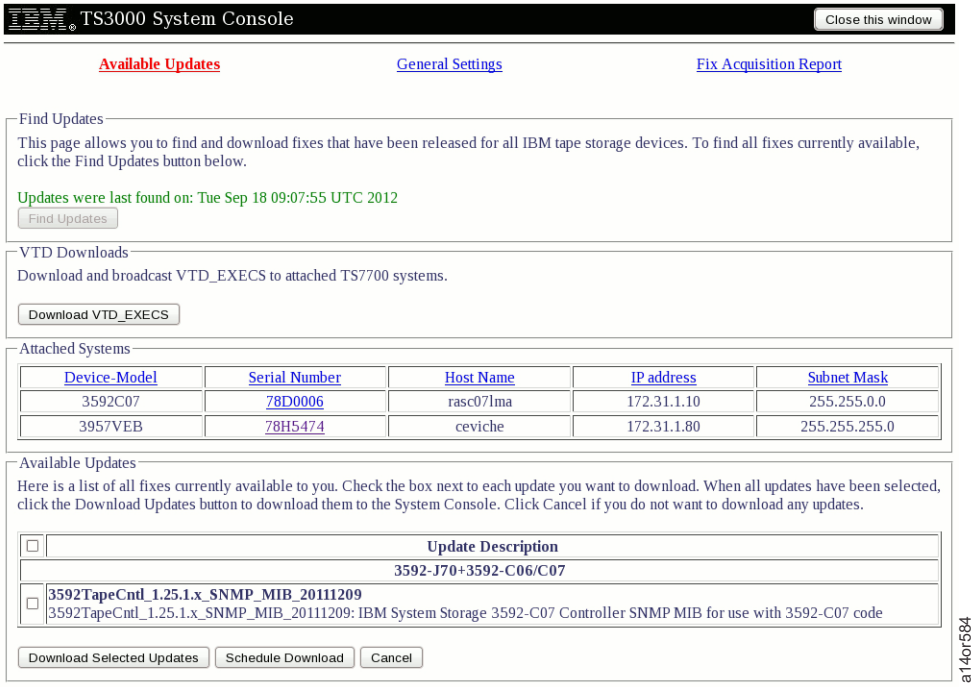

Figure 267. Fix Acquisition Updates

6. Place a check in the box next to each update you want to download. When the download selections have been made, click **Download Selected Updates** to continue. If you want to exit without downloading any updates, click **Cancel** .

   Once all updates have been downloaded, you will see a success message.

   - All downloaded updates can be found in the `/var/enc/ecc/downloads` folder. Each update is placed in its own unique subdirectory.
   - The system console can be used to offload these packages, see "Offloading User Files" on page 149.

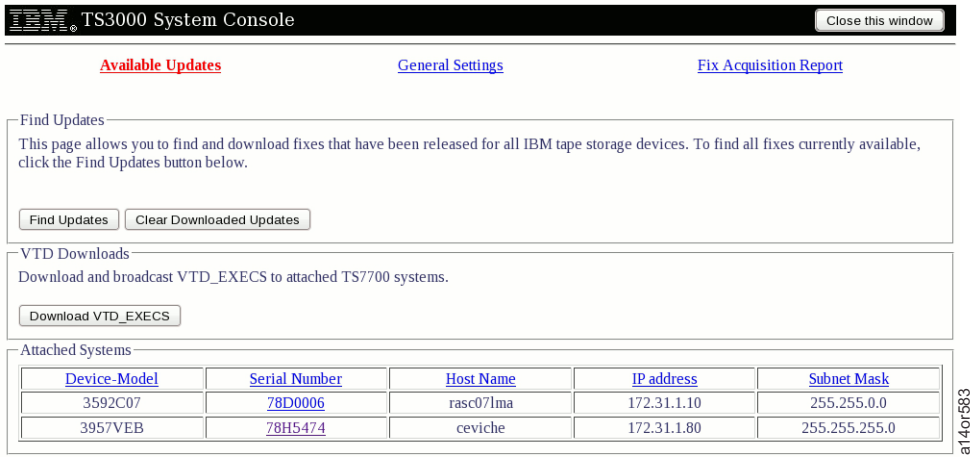

Figure 268. Fix Acquisition Success

7. To delete previously downloaded updates from the system console, click **Clear Downloaded Updates**, as shown in Figure 266 on page 227.

VTD Downloads

This section is available only if a TS7700 system is attached. The TSSC will query Fix Central for any applicable VTD_EXECs, and they will be downloaded and broadcasted to all appropriate machines.

1. Right-click anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**. You see the login prompt.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
4. Select **Fix Acquisition**.
5. Click **Download VTD_EXECS**.
   Once the process has completed, you will see a success message.

Figure 269. Fix Acquisition VTD Downloads

Installed VTD_EXECS

Use this section to query the attached TS7700 systems to know the installed vtd_execs. This feature is compatible with TS7700 systems with microcode level 8.3 and later.

Authentication Service Users/Groups Location

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**. You see the login prompt.
3. Type your credentials, then click **OK**.
4. Select **Fix Acquisition**.
5. Click **Installed VTD_EXECS**. See Figure 270.

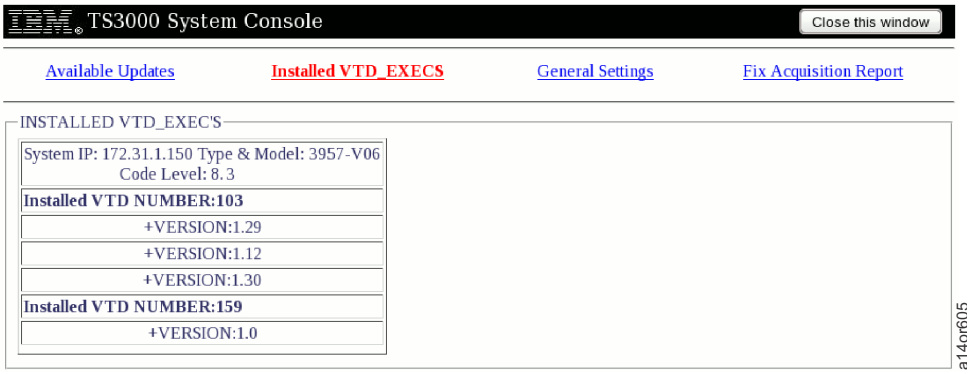

Figure 270. Installed VTD_EXECS

Fix Acquisitions General Settings

Use this settings page to enable and set the interval of the auto VTD_EXEC downloads. The interval is the number of days between checks for VTD_EXEC packages on Fix Central.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**. You see the login prompt.

3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
4. Select **Fix Acquisition**, then click **General Settings**. You see the following screen:

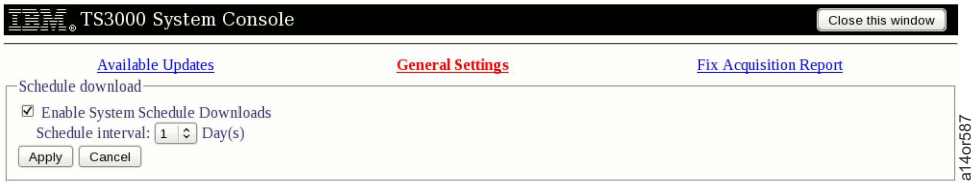

Figure 271. Fix Acquisition General Settings

5. Select **Enable System Schedule Downloads** to activate the auto VTD_EXEC downloads feature.
6. Set the Schedule Interval and click **Apply** for changes to take effect.

Fix Acquisition Report

You can view the results of manual and scheduled VTD_EXEC downloads.

1. Right-click from anywhere in the Desktop to view the Main Menu.
2. From the Main Menu, select **System Console Actions** > **Console Configuration Utility**. You see the login prompt.
3. Type **service** in the Username field, **service** in the Password field, then click **OK** to start the Console Configuration application.
4. Select **Fix Acquisition**, then click **Fix Acquisition Report**. You see the following screen:

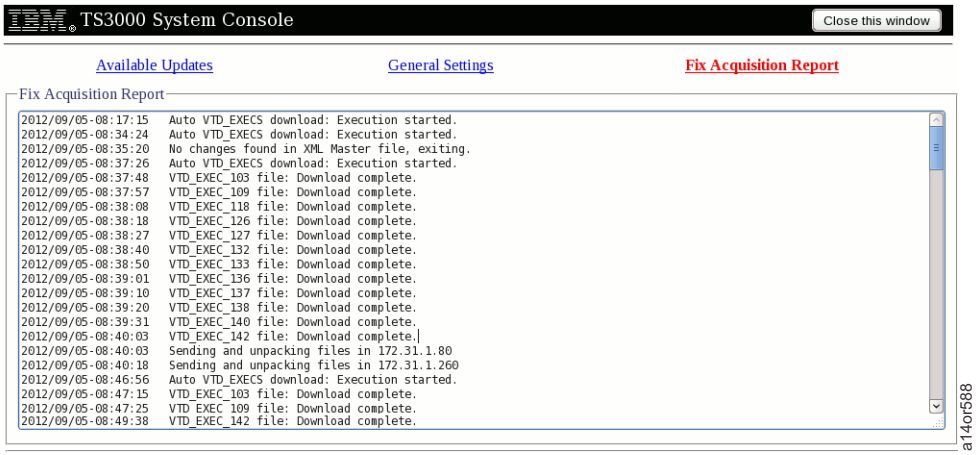

Figure 272. Fix Acquisition Report

Mount/Unmount USB or CD-ROM

To mount and unmount a USB device or CD-ROM, perform the following steps.

1. Ensure the desired USB device is connected to the system console, or a usable disk is inserted in the CD-ROM drive.

   Note: To connect a USB device to the TSSC model 7040, 9020 or M93p, you must disconnect the DVD optical drive plugged into Port 4 (if one is connected). Then, plug the USB device into Port 4. Refer to Figure 3 on page 8, Figure 4 on page 9 or Figure 5 on page 10 for port locations.
2. Right-click from anywhere in the Desktop to view the Main Menu.
3. From the Main Menu, select **System Console Actions** > **Mount Functions**.
4. If a USB device has been connected and needs to be mounted, select **Mount USB**. If a disk was inserted and needs to be accessed, select **Mount CD-ROM**. Select **Unmount USB** or **Unmount CD-ROM** if the USB device or CD-ROM is no longer in use.

   Note: The menu-driven command line tool **RAS Menu** can be used as an alternative method to mount or unmount a USB device or CD-ROM (**TSSC Menus** > **Mount Options**). Refer to "RAS Menus" on page 177.

Mount/Unmount USB or CD-ROM Remotely

A user can mount and unmount USB devices and CD-ROMs remotely through the command line.

1. To mount a USB device remotely type **rsMount.sh usb** and press Enter.
2. To unmount a USB device remotely type **sudo rsUnmount.sh usb** and press Enter.
3. To mount a CD-ROM remotely type **rsMount.sh cd** and press Enter.
4. To unmount a CD-ROM remotely type **sudo rsUnmount.sh cd** and press Enter.

Chapter 4. Repair/Troubleshooting

System Console Repair

In most cases, the standard procedures for PC repair apply for the system console. The IBM TS3000 and TS4500 System Console Documentation CD contains the file XXXXSVC.PDF (the XXXX represents the PC Type, that is, 6579, 6792, 8480, 8482, 8836, or 8849) which is the Hardware Maintenance Information for the earlier model PCs.

The later model PC documents are named differently. Use the following table to select the PDF document that is needed.

PDF name	Model/Type	Description
m83m93p_hmm.pdf	ThinkCentre M93p	Hardware Maintenance Manual
00D3170.pdf	x3250 M4 Type 2583	Problem Determination and Service Guide
81Y6119.pdf	x3250 M3 Types 4251, 4252, and 4261	Problem Determination and Service Guide
59Y7404.pdf	x3550 M2 Type 7946	Problem Determination and Service Guide
7978SVC.pdf	x3550 Type 7978	Problem Determination and Service Guide

This system console MI details repair and replacement procedures for the system console, and does not address PC repair.

There are three procedures which will require additional attention:

- **Hard Disk Drive Replacement:** When replacing the hard disk drive, replace it with at least a (30 GB) drive. After replacing the hard disk drive, follow the procedure outlined in “System Console Code Load/Hard Drive Rebuild” on page 191 to install the system console code (Model 8482 requires (80 GB) serial ATA HDD; see Chapter 5, “Parts Listings,” on page 237).
- **Planar Replacement:** When replacing the system planar, transfer the microprocessor and memory modules from the removed system planar to the new system planar [at least 268 MB (256 MiB) of RAM is required]. It also is important to reset the BIOS settings for Console Date/Time and Drive Selection Startup Sequence, as outlined in Table 27 on page 234.

  It might be necessary to download the BIOS for a new planar upon installation. For downloadable files for your machine type and model, see the IBM Support Portal (http://www.ibm.com/support/us).
- **Lithium Battery Replacement:**

  For instructions on removing or replacing the M93p lithium coin cell battery, see the Lenovo Support website (http://support.lenovo.com/en_US/detail.page?DocID=PD027402).

  When replacing the lithium coin cell battery in the PC, or when replacing the M93p PC, refer to the following notice.

  Statement 2

  

  CAUTION:
  When replacing the lithium coin cell battery, use an equivalent type battery recommended by the manufacturer. The battery contains lithium and can explode if not properly used, handled, or disposed of.

  Do not:

– **Throw or immerse into water**
– **Heat to more than 100°C (212°F)**
– **Repair or disassemble**

Dispose of the battery as required by local ordinances or regulations.

Troubleshooting the System Console

Attention: Many procedures in this document are code specific. Before starting any procedure, go to Chapter 1, "Maintenance Starting Point," on page 1 to determine the system console code level.

Table 27. Troubleshooting

You are here for this reason	Perform this action
User interface "Lock Up" (mouse/menu items inoperative)	Simultaneously press the **Alt**, **Ctrl**, and **Backspace** keys to end the session and return to the login screen.
External modems connected and powered ON but cannot be detected, and call home does not function	Use the reset modem function in call home settings to reset the firmware settings for external modems. See "Configuring Call Home Settings Electronic Customer Care" on page 87 for instructions.
Simultaneously pressing the Alt + Ctrl + Backspace keys does not properly end session	(Only to be done as a last resort; can result in loss of data) Disconnect the power cord, wait 10 seconds, reconnect the power cord, and power ON the system console.
Review hardware maintenance manual for IBM PC	Insert the Product Recovery CD-ROM into a computer with Adobe Acrobat Reader (version 4.0 or later). Open the file on the CD-ROM entitled XXXXSVC.PDF (the XXXX represents the PC Type, such as 6579, 6792, 8480, or 8482). **Attention:** Do not attempt to install the Product Recovery CD-ROM into any machine other than a system console. You will cause permanent and unrecoverable damage to that other machine.
Perform the procedure to set console date and time. (See also "Setting the Console Date and Time" on page 109.)	1. Power OFF the system console for at least 10 seconds. 2. During power-up initialization, press **F1** to enter the BIOS Configuration/Setup Utility. Power ON the system console. 3. Use the Up/Down keyboard arrow keys to navigate to Date/Time, then press **Enter**. 4. Enter the correct time of day HH:MM:SS (HH is 00 to 24; use the arrow keys to navigate). 5. Enter the correct date MM:DD:YYYY. 6. Press ESC when finished. 7. Use the down arrow to select Save Settings. Press **Enter** to continue. 8. Use the down arrow to select Exit Setup. Select **Yes** to exit the Setup Utility. Normal reboot should now occur.

Table 27. Troubleshooting (continued)

You are here for this reason	Perform this action
Perform the procedure to reset the proper drive selection startup sequence. In the event of a planar replacement, it will be necessary to reset the boot-up sequence to **Floppy Drive** > **CD-ROM** > **Hard Disk Drive** in order for the TSSC to boot the CD-ROM, if present.	1. During power-up initialization, press **F1** to enter the BIOS Configuration/Setup Utility. Power ON the system console. 2. Use the Up/Down keyboard arrow keys to navigate to **Start Options**, then press **Enter**. 3. Press **Enter** again to set the Startup Sequence. 4. Use the arrow keys to navigate and to set the following: • [Diskette Drive 0] • [CD-ROM] • [Hard Disk 0] • [Disabled] Automatic Power On Startup Sequence 5. Press the **Esc** key twice when finished. 6. Use the Down arrow key to select **Save Settings**. Press **Enter** to continue. 7. Use the Down arrow key to select to Exit Setup. Select **Yes** to exit the Setup Utility. Normal reboot should now occur.

Table 27. Troubleshooting (continued)

You are here for this reason	Perform this action
If the IMC does not start up from a device such as the USB-DVD as expected, perform the procedure to access the BIOS and set the boot sequence on the M93p.	**Selecting a startup device** If the IMC does not start up from a device such as the USB-DVD as expected, do one of the following to select the startup device you want. Selecting a temporary startup device Use this procedure to select a temporary startup device. **Note:** Not all discs and hard disk drives are bootable. 1. Turn off your computer. 2. Repeatedly press and release the **F12** key when turning on the computer. When the Startup Device Menu window displays, release the **F12** key. 3. Select the desired startup device and press **Enter**. The computer will start up from the device you selected. **Note:** Selecting a startup device from the Startup Device Menu window does not permanently change the startup sequence. Selecting or changing the startup device sequence To view or permanently change the configured startup device sequence, do the following: 1. Start the Setup Utility program. a. Make sure your computer is turned off. b. Repeatedly press and release the **F1** key when turning on the computer. When you hear multiple beeps or see a logo screen, release the **F1** key. **Note:** If a Power-On Password or an Administrator Password has been set, the Setup Utility program menu will not be displayed until you type the correct password. 2. From the Setup Utility program main menu, select **Startup**. 3. Make sure that CSM is enabled. 4. Select the devices for the Primary Boot Sequence, the Automatic Boot Sequence, and the Error Boot Sequence. Read the information displayed on the right side of the screen. • USB CDROM • SATA1 (internal drive) • USB HDD • USB FDD • USB KEY • Other Device • Network 1 5. Press **F10** to save changes and exit the Setup Utility program.

Chapter 5. Parts Listings

The topics in this section provide parts listings for current and previous system console servers.

Refer to the following list to locate field replaceable unit (FRU) information for your specific system console server model.

- "TS3000 Model 7040 FRU List" on page 238
- "TS3000 Model 9020 FRU List" on page 239
- "TS4500 IMC Model 7040 FRU List" on page 240
- "TS4500 IMC Model 9020 FRU List" on page 241
- "TS3000 Model M93p FRU List" on page 242
- "TS4500 IMC Model M93p FRU List" on page 243
- "Model x3250 (M4) Type 2583 FRU List" on page 244
- "Model x3250 (M3) Type 4252 Model PCJ FRU List" on page 246
- "Model x3550 (M2) Type 7946 FRU List" on page 248
- "Model x3550 (type 7978) FRU List" on page 251
- "Model x3200 FRU List" on page 253
- "Model 306m FRU List" on page 255
- "Model 206m FRU List" on page 257

For additional information related specifically to the PC, insert the IBM TS3000 and TS4500 System Console Documentation CD in a Windows PC or notebook with Adobe Acrobat Reader (version 4.0 or later). The CD contains the file XXXXSVC.PDF (the XXXX represents the PC Type, that is, 6579, 6792, 8480, 8482, 8836, or 8849) which is the Hardware Maintenance Information for the earlier model PCs.

The later model PC documents are named differently. Use the following table to select the PDF document that is needed.

PDF name	Model/Type	Description
N/A	Dell model 9020/7040	N/A
m83m93p_hmm.pdf	ThinkCentre M93p	Hardware Maintenance Manual
00D3170.pdf	x3250 M4 Type 2583	Problem Determination and Service Guide
81Y6119.pdf	x3250 M3 Types 4251, 4252, and 4261	Problem Determination and Service Guide
59Y7404.pdf	x3550 M2 Type 7946	Problem Determination and Service Guide
7978SVC.pdf	x3550 Type 7978	Problem Determination and Service Guide

TS3000 Model 7040 FRU List

Table 28 lists the part numbers and descriptions of the FRUs associated with the TS3000 system console (TSSC) model 7040.

Table 28. TS3000 model 7040 FRU list

FRU Part Number	Description
00FL300	Keyboard
12X4665	Ethernet Cable, 3.2 M, TSSC (Qty 2)
12X4666	Ethernet Cable, 3.2 M (Qty 3)
2727450	Cable, 18 in. Extension USB 3.0 to USB 3.0 (Qty 3)
00VJ907	DELL Model 7040 PC
00VJ987	DELL 7040 Power Brick
35P2709	USB to Ethernet Adapter (Qty 3)
38L6308	Monitor, rackmount
38L6344	Cable, Serial Port, 3.2 M
38L6965	Cable, DVD Drive USB A to USB B, 3.0, 18 in.
39M5546	PC AC/DC Power
49Y4831	Cable Management Arm
69Y5085	Slide Set, Left-Right
95P9229	Optical Drive, DVD

Figure 273 shows the TSSC server model 7040 and tray assembly, which might differ slightly from your hardware.

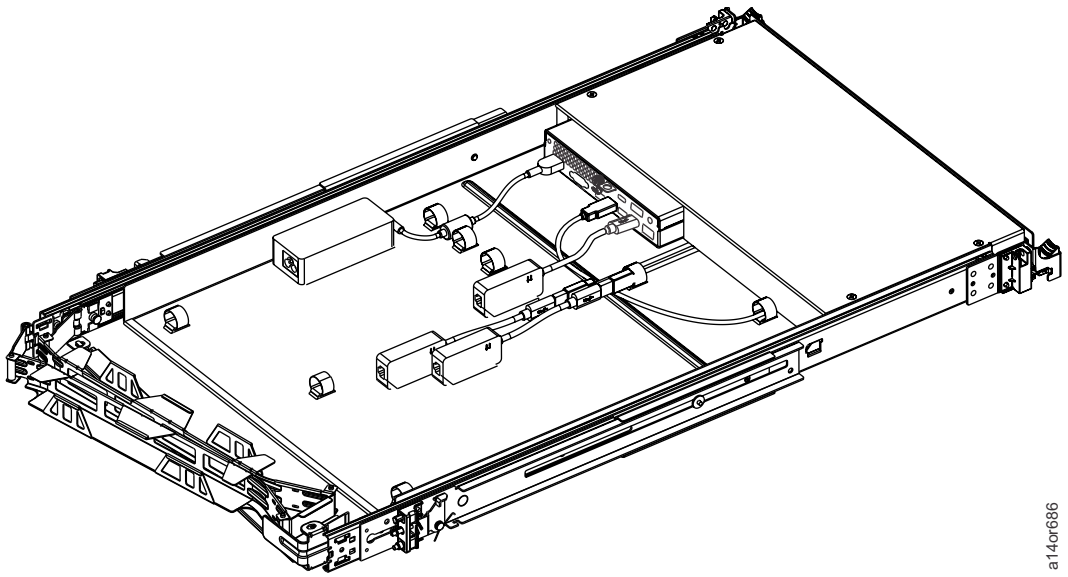

Figure 273. TSSC tray assembly

TS3000 Model 9020 FRU List

Table 29 lists the part numbers and descriptions of the FRUs associated with the TS3000 system console (TSSC) model 9020.

Table 29. TS3000 model 9020 FRU list

FRU Part Number	Description
00FL300	Keyboard
12X4665	Ethernet Cable, 3.2 M, TSSC (Qty 2)
12X4666	Ethernet Cable, 3.2 M (Qty 3)
2727450	Cable, 18 in. Extension USB 3.0 to USB 3.0 (Qty 3)
2726146	DELL Model 9020 PC
2726147	DELL 9020 Power Brick
35P2709	USB to Ethernet Adapter (Qty 3)
38L6308	Monitor, rackmount
38L6344	Cable, Serial Port, 3.2 M
38L6554	Video (VGA) 18 in. Extension (TS7700 only)
38L6965	Cable, DVD Drive USB A to USB B, 3.0, 18 in.
39M5546	PC AC/DC Power
49Y4831	Cable Management Arm
69Y5085	Slide Set, Left-Right
95P9229	Optical Drive, DVD

Figure 274 shows the TSSC server model 9020 and tray assembly, which might differ slightly from your hardware.

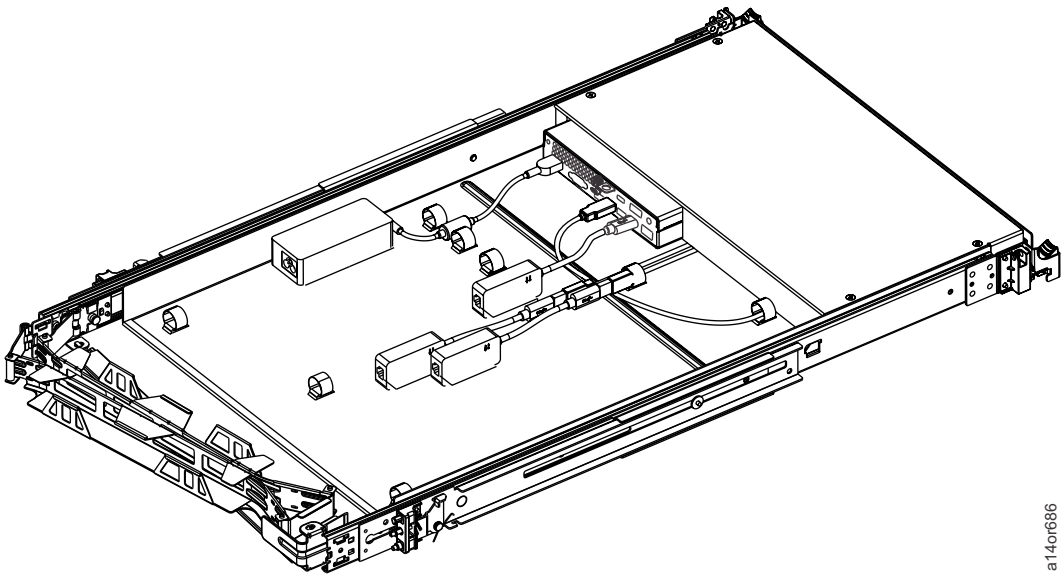

Figure 274. TSSC tray assembly

TS4500 IMC Model 7040 FRU List

Table 30 lists the part numbers and descriptions of the FRUs associated with the TS4500 IMC model 7040.

Table 30. TS4500 IMC model 7040 FRU list

FRU Part Number	Description
12X4665	Cable, 3.2 m Ethernet - IMC
12X5154	IMC Keyboard
00VJ907	DELL Model 7040 PC
00VJ987	DELL 7040 Power Brick
00VJ489	Dell 7040 PC VGA 4 FT Cable
2726179	IMC Monitor/Mounting Asm
35P2251	Optical Drive, DVD
35P2709	USB to Ethernet Dongle
38L6965	Cable, DVD Drive USB A to USB B, 3.0, 18 in.
39M5546	Power Cable, IMC
95P9290	Keyboard Tray Latch
98Y3992	USB Modem

Figure 275 shows the model 7040, which might differ slightly from your hardware.

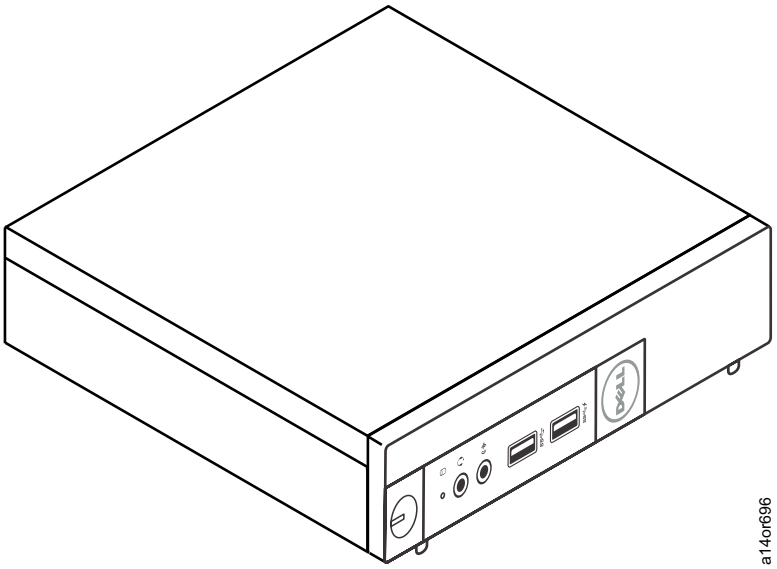

Figure 275. Model 7040 front view

TS4500 IMC Model 9020 FRU List

Table 31 lists the part numbers and descriptions of the FRUs associated with the TS4500 IMC model 9020.

Table 31. TS4500 IMC model 9020 FRU list

FRU Part Number	Description
12X4665	Cable, 3.2 m Ethernet - IMC
12X5154	IMC Keyboard
2726146	DELL Model 9020 PC
2726147	DELL 9020 Power Brick
2726179	IMC Monitor/Mounting Asm
35P2251	Optical Drive, DVD
35P2709	USB to Ethernet Dongle
38L6965	Cable, DVD Drive USB A to USB B, 3.0, 18 in.
39M5546	Power Cable, IMC
95P9290	Keyboard Tray Latch
98Y3992	USB Modem

Figure 276 shows the model 9020, which might differ slightly from your hardware.

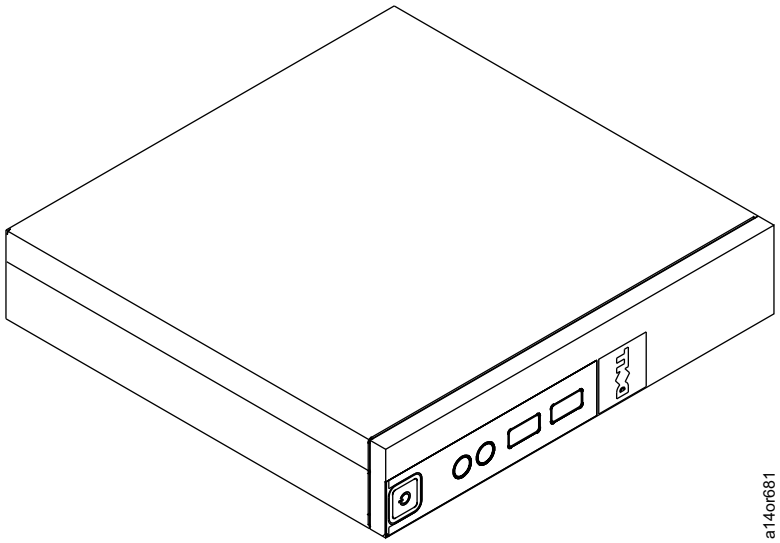

Figure 276. Model 9020 front view

TS3000 Model M93p FRU List

Table 32 lists the part numbers and descriptions of the FRUs associated with the TS3000 system console (TSSC) model M93p.

Table 32. TS3000 model M93p FRU list

FRU Part Number	Description
00FL300	Keyboard
12X4665	Ethernet Cable, 3.2 M, TSSC (Qty 2)
12X4666	Ethernet Cable, 3.2 M (Qty 3)
12X5155	M93p Power Brick
38L6619	Cable, 18 in. Extension USB 3.0 to USB 3.0 (Qty 3)
2727462	M93p PC w/Serial Port
35P2709	USB to Ethernet Adapter (Qty 3)
38L6308	Monitor, rackmount
38L6344	Cable, Serial Port, 3.2 M
38L6355	Cable, DVD Drive USB A to USB B, 3.0, 18 in.
38L6554	Video (VGA) 18 in. Extension (TS7700 only)
39M5546	PC AC/DC Power
49Y4831	Cable Management Arm
69Y5085	Slide Set, Left-Right
95P9229	Optical Drive, DVD

Figure 277 shows the TSSC server model M93p and tray assembly, which might differ slightly from your hardware.

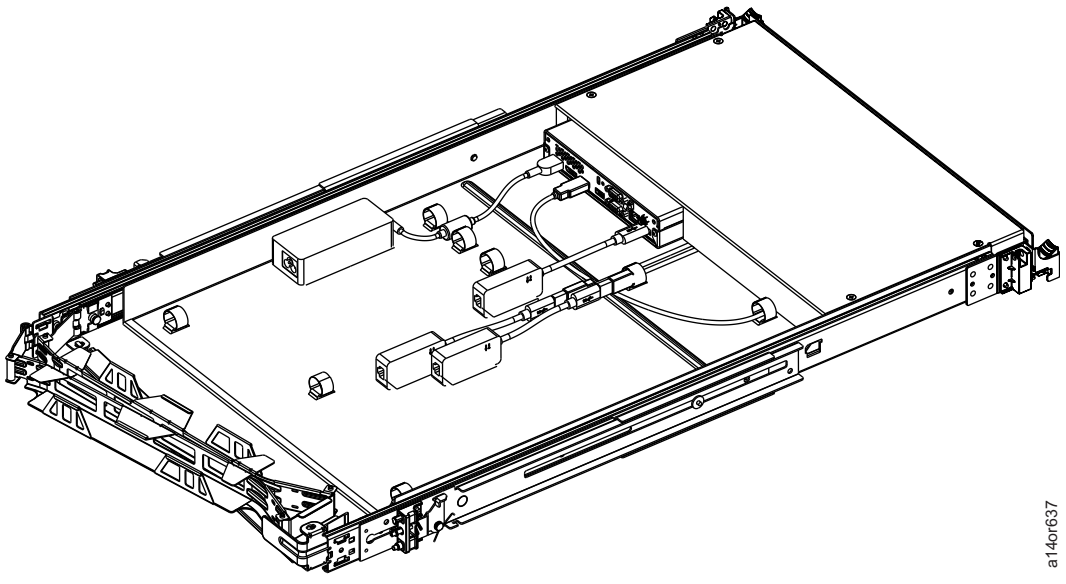

Figure 277. TSSC tray assembly

TS4500 IMC Model M93p FRU List

Table 33 lists the part numbers and descriptions of the FRUs associated with the TS4500 IMC model M93p.

Table 33. TS4500 IMC model M93p FRU list

FRU Part Number	Description
12X4664	Tiny PC (M93p)
12X4665	Cable, 3.2 m Ethernet - IMC
12X5154	IMC Keyboard
12X5155	Tiny PC Power Brick
35P2251	Optical Drive, DVD
35P2709	USB to Ethernet Dongle
39M5546	Power Cable, IMC
95P2984	IMC Monitor/Mounting Asm
95P9290	Keyboard Tray Latch
98Y3992	USB Modem

Figure 278 and Figure 279 show the M93p, which might differ slightly from your hardware.

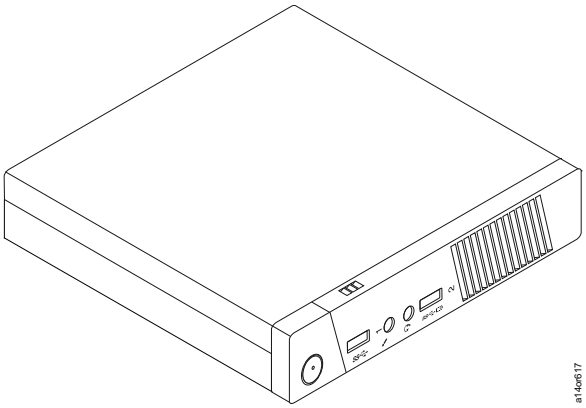

Figure 278. M93p front view

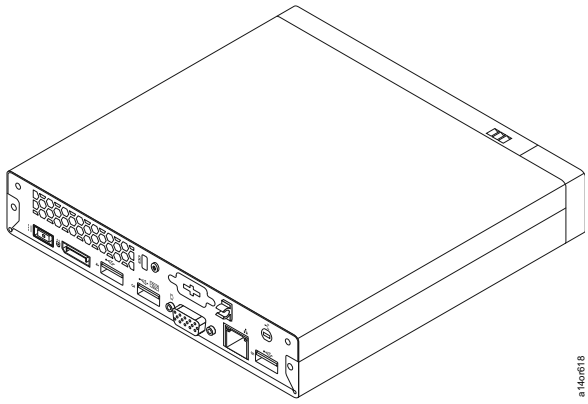

Figure 279. M93p rear view

Model x3250 (M4) Type 2583 FRU List

Table 34 lists the part numbers and descriptions of the components of the x3250 (M4) type 2583.

Table 34. Model x3250 M4 FRU list

Ref #	Part Number	Description
1	81Y7455	Top cover
2	81Y7457	PCI-E riser card assembly
3	81Y7453	DIMM air baffle
4	44T1575	Memory, 4 GB RDIMM
5	81Y6301	Power supply, 300 Watt, fixed, non-redundant
6	81Y7456	Chassis
7	43W7753	Hard disk drive, simple-swap, 3.5-inch SATA II, 250 GB **Note:** Order this part number if your server currently has a 250 GB Hard Disk Drive.
7	39M4517	Hard disk drive, 500 GB Hard Disk Drive **Note:** Order this part number if your server currently has a 500 GB Hard Disk Drive.
8	39M4343	Filler panel, 3.5-inch simple-swap hard disk drive
9	81Y7458	Front bezel
10	90Y5298	Operator information panel assembly
11	44W3256	Drive, CD R/W - DVD R/W
12	81Y7454	System fan
13	00D8551	System planer board
14	81Y7506	Microprocessor 2.6 GHz
15	81Y7495	Heat sink
	• 98Y3992 • 33F8354 • 81Y7494 • 81Y7463 • 81Y7464 • 39M4351 • 81Y7459 • 24P1121 • 81Y7507 • 49Y7947 • 39M5508 • 59Y3229 • 81Y7508 • 81Y7509 • 81Y7461	• USB Modem • Battery, 3.0 volt • PCI riser card • Cable, front USB and operator information panel • Cable, backplate, 3.5-inch simple-swap, SATA (2 cables) • Bracket, EAR • Misc Parts Kit • 1U tool-less kit • Service label • Dual Port Ethernet Adapter • Power Cord, 2 meter • Cable, Odd SATA • Label, CRU/FRU • Label, HDD Installation • Cage, HDD

Figure 280 shows the major components of the x3250 (M4) type 2583, which might differ slightly from your hardware.

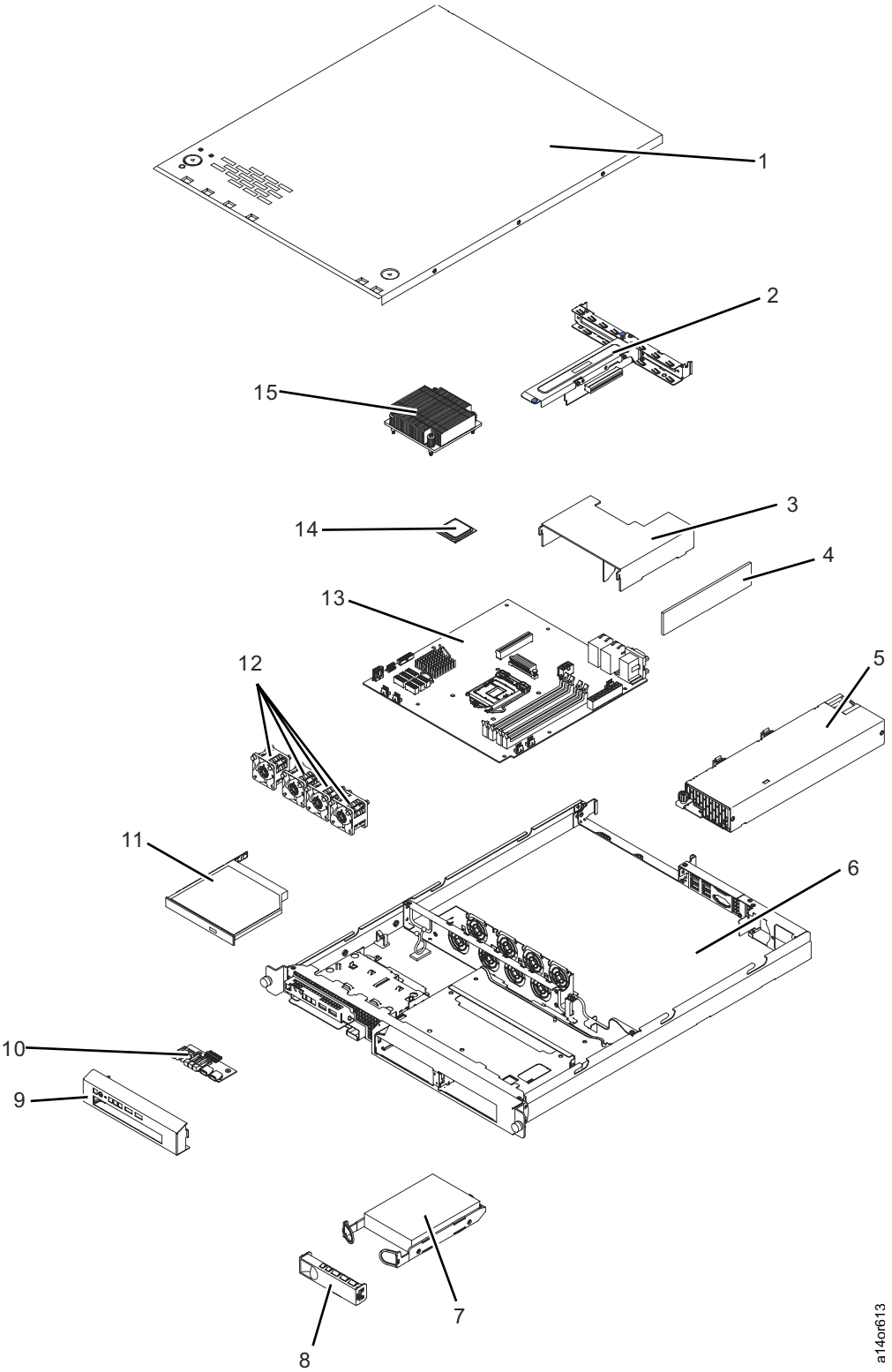

Figure 280. x3250 M4, type 2583 FRUs

Model x3250 (M3) Type 4252 Model PCJ FRU List

Table 35 lists the part numbers and descriptions of the components of the x3250 (M3) type 4252 model PCJ.

Table 35. Model x3250 M3 FRU list

Ref #	Part Number	Description
1	59Y3223	Top cover (All models)
2	46C6796	PCI-E short riser card (located below sheet metal cover shown in drawing)
	49Y4675	PCI-E long riser card (located below sheet metal cover shown in drawing)
	45D3866	Modem (contained within riser card)
3	46C6798	DIMM air baffle
4	44T1573	Memory, 2 GB dual-rank PC3-10600R-999 DDR3 ECC UDIMM
5	49Y4663	Power supply, 351 Watt, non-redundant
6	59Y3225	Low case assembly
7	39M4511or 39M4529	250 GB Hard Disk Drive **Note:** Order this part number if your server currently has a 250 GB Hard Disk Drive.
7	39M4517	500 GB Hard Disk Drive **Note:** Order this part number if your server currently has a 500 GB Hard Disk Drive.
8	39M4343	DASD filler
9	59Y3220	Front bezel
10	44W3256	CD-RW/DVD-RW drive
11	46C6797	Operator information panel assembly
12	59Y3212	System fan
13	81Y6747	System board
14	49Y4645	Microprocessor, Celeron G1101 2.26 GHz, 1066MHz-2MB, 2C (model 22x)
15	59Y3221	Heat sink
	• 39M4351 • 59Y3229 • 59Y3228 • 59Y3230 • 39M5508 • 59Y3226 • 59Y3215 • 49Y7947 • 24P1121 • 33F8354 • 90Y6074 • 39M4374	• Rack ear bracket • Cable, SATA optical drive • Cable, front operator panel • Cable, 3.5-inch simple-swap SATA (models 22x, 32x, and C2x) • Power Cord, 2 meter • 3.5" DASD cage • Labels, system service • NetXtreme II 1000 Express Dual Port Ethernet Adapter • 1U tool-less kit • Battery, 3.0 volt • Misc Parts Kit (screws, brackets, and bezels) • Misc Parts Kit (screws, baffle, bezels, spring, key)

Figure 281 shows the major components of the x3250 (M3) type 4252 model PCJ, which might differ slightly from your hardware.

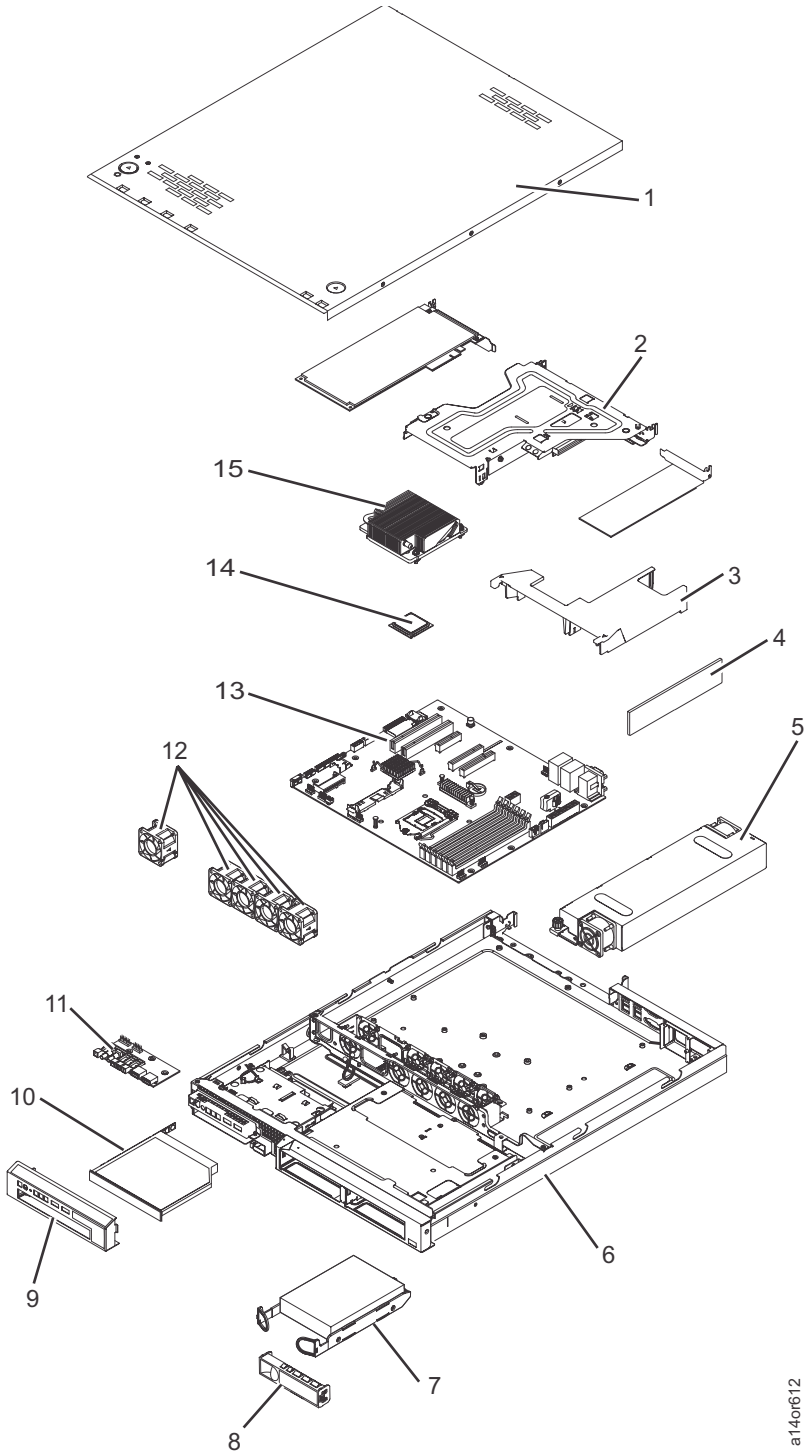

Figure 281. x3250 M3, 4252 Model PCJ FRUs

Model x3550 (M2) Type 7946 FRU List

Table 36 lists the part numbers and descriptions of the components of the x3550 M2 type 7946.

Table 36. Model x3550 M2 FRU list

Ref #	Part Number	Description
1	43V7066	PCI Express riser card, x16, assembly
2	49Y1443	Memory, 2 GB DDR3
3	39Y7201	Power supply 675W
4	44W3255	CD-RW/DVD drive
5	44E4372	Operator information panel assembly
6	43W7538	Hard disk drive, 2.5-inch, hot-swap 146GB 10K
7	43V6929	Fan, hot-swap 40 mm
8	69Y4507	System board
11	44E5177	3637 Dual-Core Intel Nehalem-EP Processor 1.86GHz/4MB 80W
	33F8354	Battery, 3.0V
	43V6914	Cable, SATA DVD
	43V6920	Cable, USB/video
	43V6922	Cable, SAS signal, 200 mm
	49Y4850	Cable, SAS signal, 300 mm
	43V6922	Cable, SAS signal, 120 mm
	43V7023	Cable, 70 mm
	43V7023	Cable, hard disk drive configuration
	46C4148	Cable, SAS backplane power
	46C4139	Cable, OP Panel
	39M5508	Power Cord, 2 meter
	45D3866	Modem, Internal (FC 2733)

Table 36. Model x3550 M2 FRU list (continued)

Ref #	Part Number	Description
	• 39Y6127 • 43V6938 • 43V6939 • 69Y4509 • 43V6931 • 43V6933 • 43V7067 • 43V7071 • 69Y4507 • 44T2248 • 46C6799 • 46C6977 • 49Y4812 • 49Y4813 • 69Y4506 • 49Y4815 • 69Y5085 • 49Y4821 • 49Y4817 • 49Y4818 • 49Y4820 • 49Y4822 • 49Y4823 • 49Y4852	• Ethernet Adapter, 1 GB dual-ported PCI • Rear I/O Bracket • Bracket, riser card: low profile • Ethernet daughter card, 2 port 1 GB • Air baffle kit • Top cover • SAS riser card • Backplane, SAS HDD • System board • Filler, HS HDD • Label Kit • Labels, system service • Label, chassis • Chassis asm • Miscellaneous parts kit • Rack latch kit • Slide Rail Kit • Power supply bay filler • Cable management arm • Bezel, front • Heatsink • CPU retention module • Cover, Safety 240VA • SAS Card Retention

Figure 282 shows the major components of the x3550 M2 type 7946, which might differ slightly from your hardware.

Note: Additional FRUs and locations are shown on the inside of the top cover.

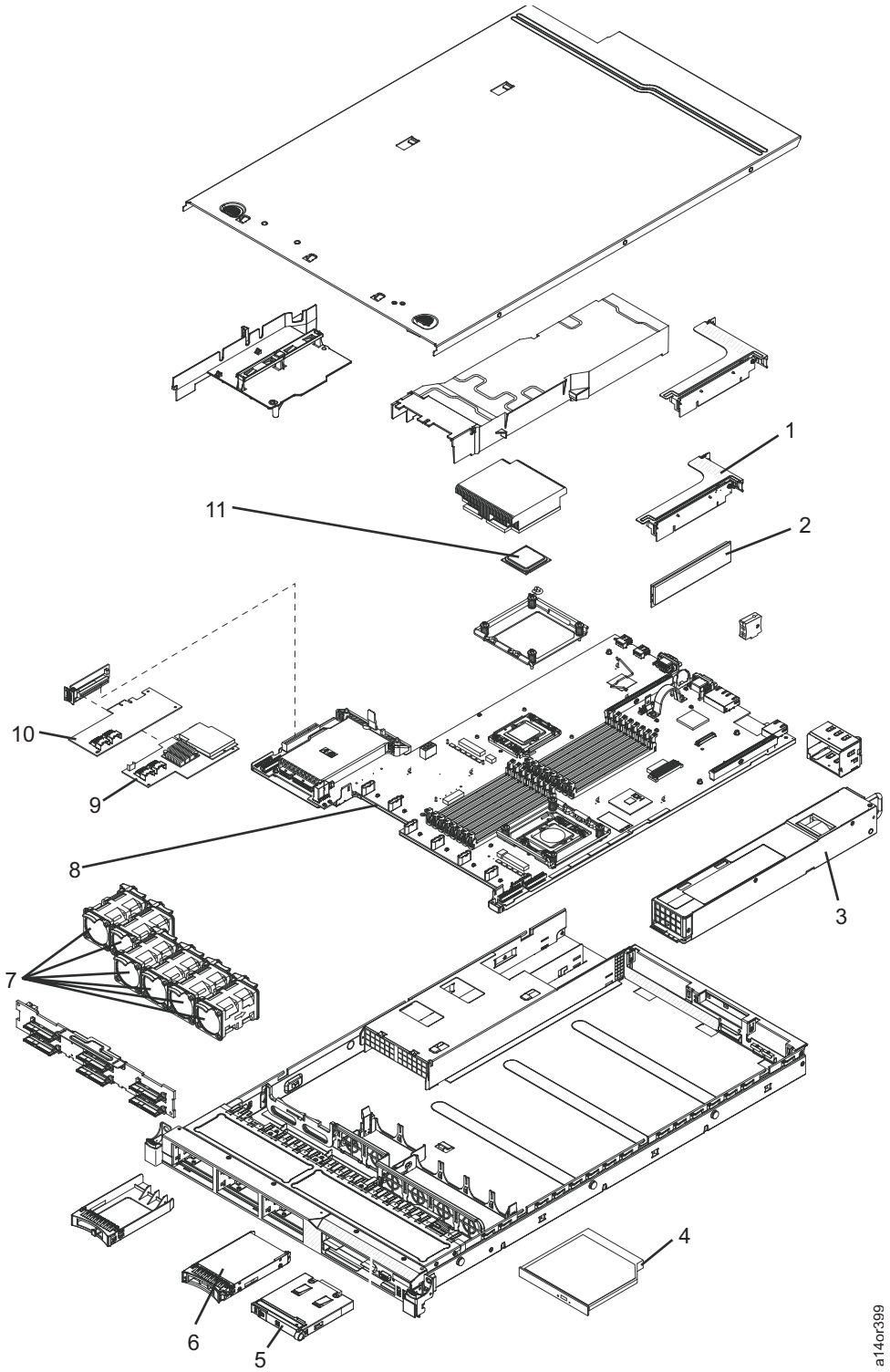

Figure 282. Model x3550 M2 type 7946 FRUs

Model x3550 (type 7978) FRU List

Table 37 lists the part numbers and descriptions of the components of the x3550 type 7978.

Table 37. Model x3550 (type 7978) FRU list

Part Number	Description
00Y5627	FC Adapter
10N8499	Internal Modem
25R8864	SATA Tray
26K8058	Cable, front panel USB
26K8060	Power cable, SATA, with backplate (46x, G6x)
26K8080	Miscellaneous parts kit
26K8083	Fan assembly unit (dual-fans)
32R2820	Service label, 3.5-inch SATA (models 46x, G6x)
32R2823	Simple-swap SATA disk drive cage, 3.5-inch
32R2883	PCI Express riser card
33F8354	Battery, 3.0 volt
39M5377	Power cable, rack – 2.8M
39M5781	Memory, 512 MB PC2-5300 ECC
39Y7189	AC Power supply, 670 W
39Y9418	Service label, right fan door
39Y9420	Air baffles
39Y9423	Heat sink assembly
39Y9507	Media bezel assembly, with front video cable
39Y9510	Slide kit
39Y9522	Chassis assembly
39Y9530	Cable management arm assembly, 1U
39Y9545	PCI-X riser card
41Y9292	Thermal grease kit
42C3983	CD-RW/DVD drive interposer card
42C4231	Microprocessor, 1.6 GHz with heat sink
43V4869	Service label, CRU/FRU
43V7057	Power backplane
43W0609	Top cover assembly
43W0625	Operator information panel assembly
43W4585	DVD-ROM Slim Combo
60Y0861	SATA Planar

Figure 283 shows the major components of the x3550 type 7978, which might differ slightly from your hardware.

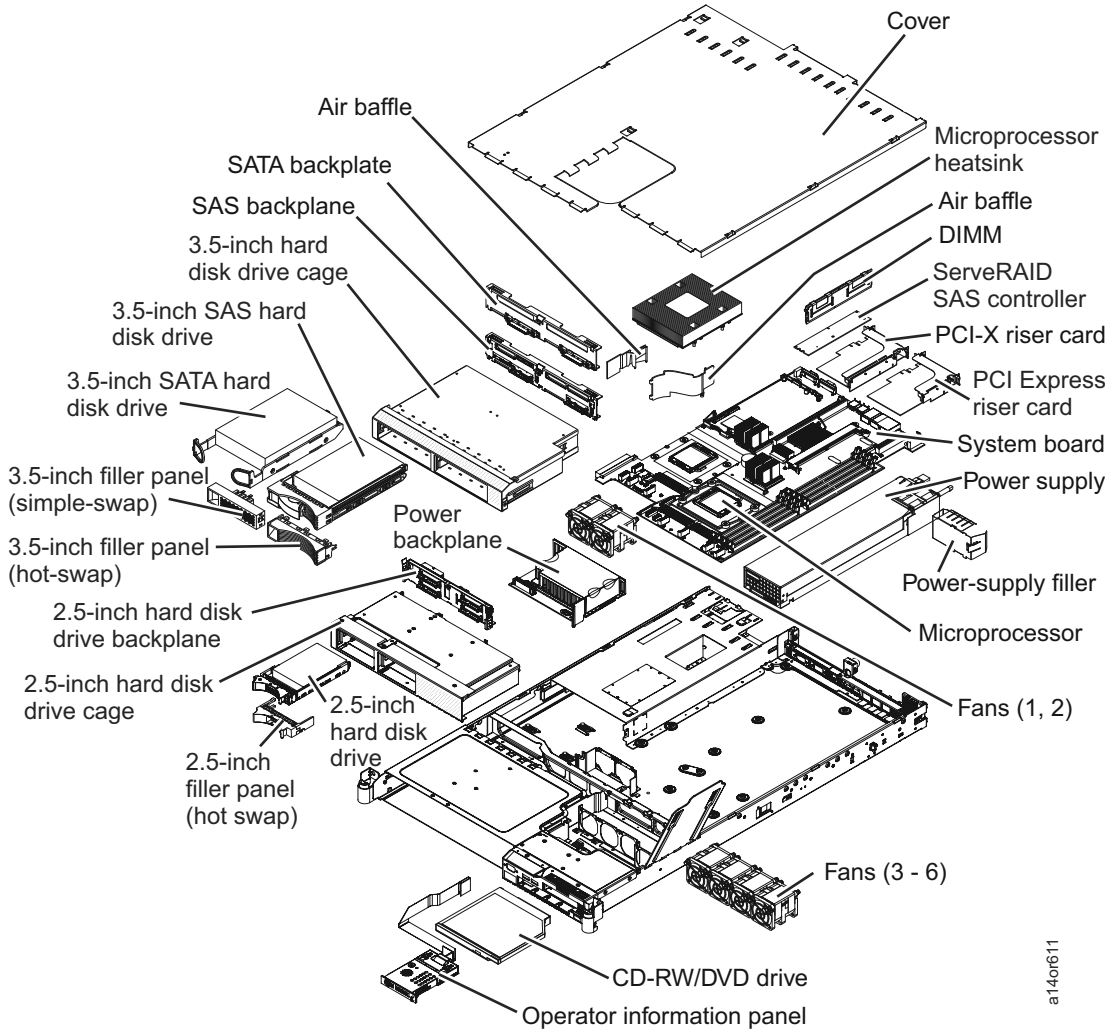

Figure 283. Model x3550 (type 7978) FRUs

Model x3200 FRU List

Table 38 lists the part numbers and descriptions of the components of the model x3200.

Table 38. Model x3200 FRU list

Part Number	Description
13N2413	Panel mount cable assembly, SATA
13N2450	CD/DVD-ROM bezel kit
13N2466	Cable, IDE signal
13N2985	Feet
13N2993	Retention bracket, PCI
13N2997	EMC shield kit
25R8829	System fan, rear
25R8836	Side cover with lock
25R8842	Hard disk drive backplate
25R8843	EMC I/O shield
25R8859	Access panel
25R8864	Tray
25R8873	Retention module (for fan sink)
26K7340	Front USB connector assembly (cable)
39M4503	Hard disk drive, SATA, 80 GB, fixed/simple-swap, with tray
39R9369	Kit, Retainer (for optical and diskette drives)
39Y7297	401W Power Supply
39Y9773	Miscellaneous hardware kit
39Y9783	C2 switch
39Y9860	Hard disk drive duct assembly (for part number 42C8910)
39Y9875	Mouse, optical, 2-button
41Y2725	Memory, 512 MB 533/667 MHz PC2-4200/5300 ECC
41Y3903	Hot-swap drive label
42C0060	Keyboard, US
42C1053	Cable, serial port 2
42C1279	SAS/SATA controller
42C1458	Microprocessor, 3.4 GHz
42C7507	Hard disk drive duct assembly
42C7509	PSU adapter bracket
42C8910	Hard disk drive cage, 3.5 in. drives
42C8912	Bezel, upper
42C8913	Bezel, lower
42C8916	Chassis assembly
43W0417	System service label
43W4575	Half High COMBO
43W4982	Planer Motherboard
43W4986	System board I/O shield

Table 38. Model x3200 FRU list (continued)

Part Number	Description
46M6608	Fan Heat Sink
73P5109	PRO/1000 Adapter

Figure 284 shows the major components of the model x3200, which might differ slightly from your hardware.

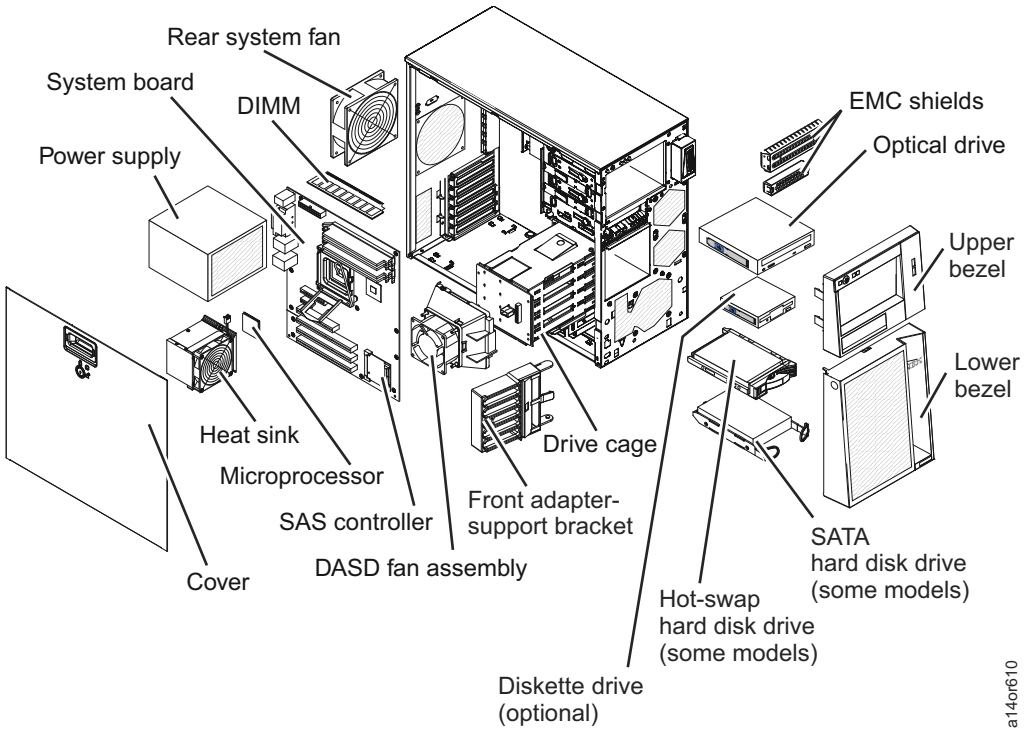

Figure 284. Model x3200 FRUs

Model 306m FRU List

Table 39 lists the part numbers and descriptions of the components of the model 306m.

Table 39. Model 306m FRU list

Part Number	Description
10N8499	Internal Modem
24P1121	Kit, 1U, toolless
25R8864	SATA Tray
26K5427	CD/DVD drive, 24X
30R5151	Memory, 512 MB PC4200 ECC
39M3541	CD-RW/DVD drive, 24X
39M4322	Fan (40 mm)
39M4338	PCI-X riser card
39M4343	Simple-swap filler panel (SATA only)
39M4347	SATA simple-swap hard disk drive back panel
39M4348	System service label
39M4350	Operator information panel assembly
39M4354	CD/DVD interposer board
39M4355	Front Bezel
39M4356	Heat-sink assembly
39M4359	Top-Cover
39M4360	Heat-sink assembly
39M4363	Heat-sink assembly
39M4374	Misc Parts Kit
39M4503	Hard disk drive, 80 GB, SS SATA
39M5081	Power Cord 2.8M
39M6266	Cable, operator information panel
39M6267	Cable, IDE, for CD/DVD interposer card
39M6276	Cable, SATA (simple-swap)
39M6289	Microprocessor, 3.2 GHz 2M
39M6296	Air baffle
39M6449	CRU/FRU Label
39Y6081	Card, NetXtreme1Ktxg
39Y6095	Card, NetXtreme1Ktxg
39Y7295	Power Supply, 350W
39Y9888	Label, hard disk drive caution
42C8945	Cable, SATA (hot-swap)
44T2054	Planer Board

Figure 285 shows the major components of the model 306m, which might differ slightly from your hardware.

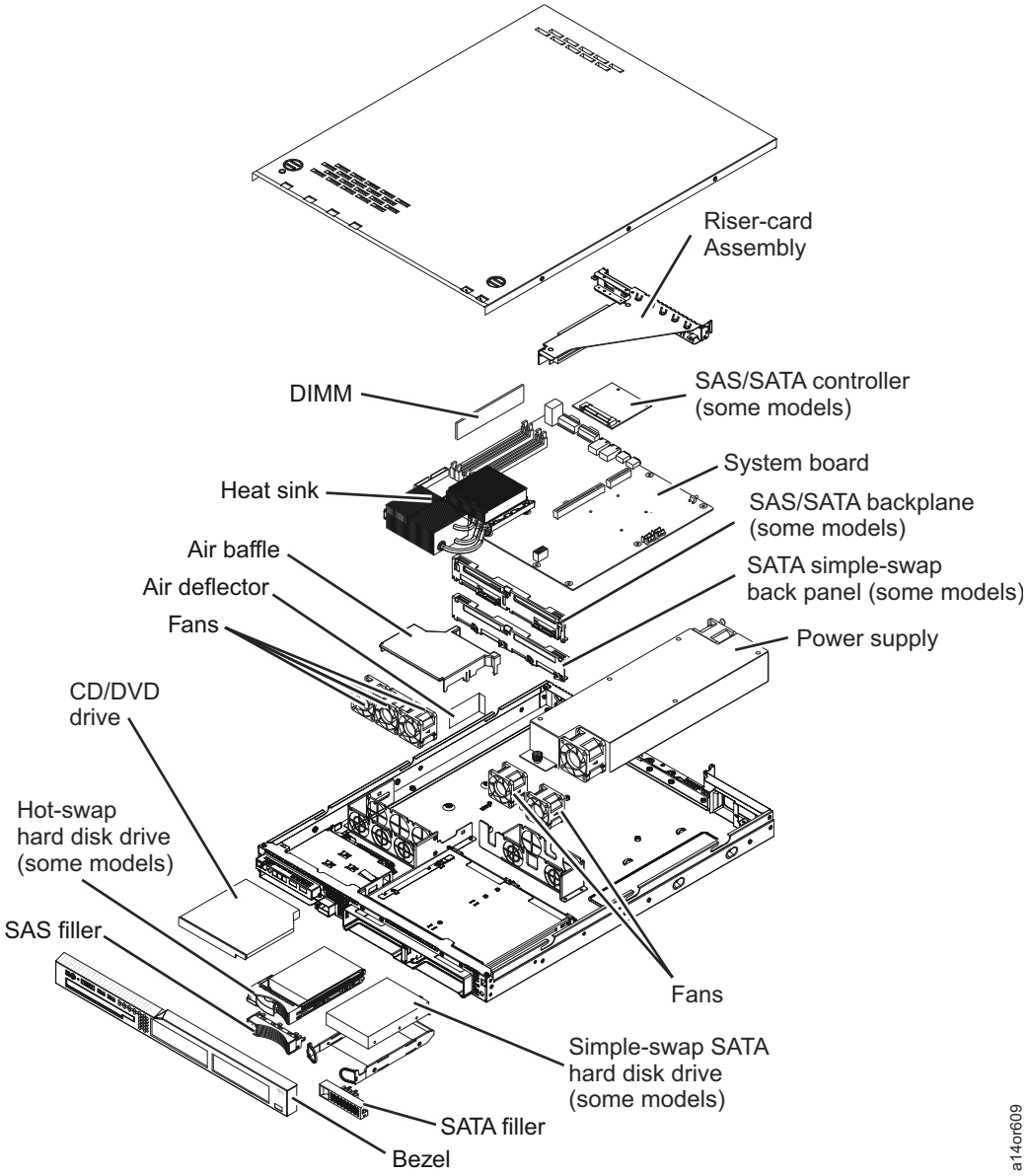

Figure 285. Model 306m FRUs

Model 206m FRU List

Table 40 lists the part numbers and descriptions of the components of the model 206m.

Table 40. Model 206m FRU list

Part Number	Description
13N2413	Cable, panel mount
13N2450	CD/DVD-ROM Bezel kit
13N2466	Cable, IDE signal
13N2985	Foot
13N2993	Front adapter-retention bracket
13N2997	EMC shield kit
25R8822	Bezel, lower
25R8829	System fan, rear
25R8834	Chassis assembly, non-redundant power supply
25R8835	Bezel, upper
25R8836	Cover, side
25R8838	Hard disk drive cage
25R8841	System service label
25R8842	Backplate, simple-swap
25R8843	EMC I/O shield
25R8857	Bezel, diskette drive
25R8859	Panel, access
25R8864	Tray
25R8866	Front-panel assembly
25R8873	Retention module, fan sink
26K6096	Front USB connector assembly
30R5151	Memory, 512 MB 533/667 MHz PC2-4200 ECC
33P3343	Diskette drive
39M4473	Microprocessor, 800/3.2 GHz – 2 MB
39M4503	Hard disk drive, SATA, 80 GB, fixed/simple-swap, with tray
39R9369	Retainer, device
39Y7297	Power Supply 401W
39Y7321	Power Supply 401W
39Y7330	Power Supply 401W
39Y9728	FDD Cable
39Y9773	Mic Hardware
41Y3903	Hot-swap drive label
42C0953	CD-RW drive, 48x
43W4575	DVD Half High COMBO
43X1420	Software Pack
44E7983	Microsoft Windows 2003
44R5488	Jaguar Planar

Table 40. Model 206m FRU list (continued)

Part Number	Description
46M6608	Heat Sink
73P5109	Adapter, PRO/1000 GT DP

Figure 286 shows the major components of the model 206m, which might differ slightly from your hardware.

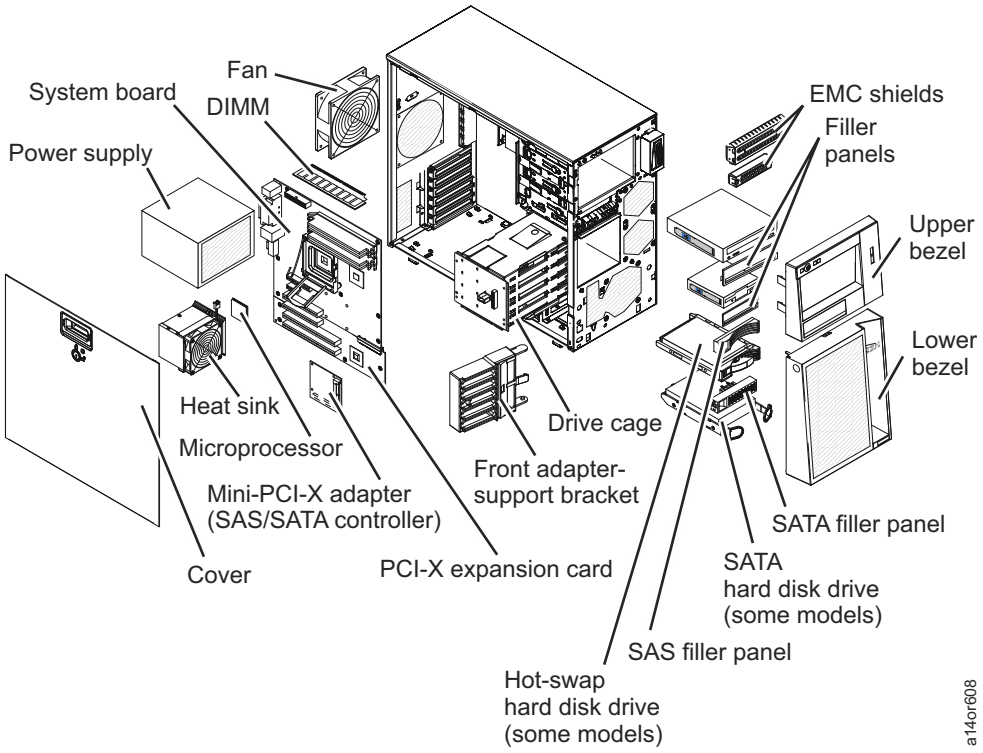

Figure 286. Model 206m FRUs

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Dieses Produkt entspricht den Schutzanforderungen der EU-Richtlinie 2014/30/EU zur Angleichung der Rechtsvorschriften über die elektromagnetische Verträglichkeit in den EU-Mitgliedsstaaten und hält die Grenzwerte der EN 55022/ EN 55032 Klasse B ein. Um dieses sicherzustellen, sind die Geräte wie in den Handbüchern beschrieben zu installieren und zu betreiben. Des Weiteren dürfen auch nur von der IBM empfohlene Kabel angeschlossen werden. IBM übernimmt keine Verantwortung für die Einhaltung der Schutzanforderungen, wenn das Produkt ohne Zustimmung von IBM verändert bzw. wenn Erweiterungskomponenten von Fremdherstellern ohne Empfehlung von IBM gesteckt/eingebaut werden.

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Zulassungsbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) (bzw. der EMC Richtlinie 2014/30/EU) für Geräte der Klasse B

Dieses Gerät ist berechtigt, in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

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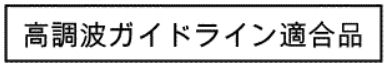

jjieta1

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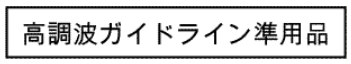

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rusemi

Glossary

This glossary defines the special terms, abbreviations, and acronyms used in this publication and other related publications.

This glossary defines the special terms, abbreviations, and acronyms used in this publication and other related publications. If you do not find the term you are looking for, see the *IBM Glossary of Computing Terms* located at the following website: http://www.ibm.com/ibm/terminology.

A

AIX, advanced interactive executive
IBM's implementation of the UNIX operating system. The RS/6000 system, among others, runs the AIX operating system.

AOTM
Autonomic Ownership Takeover Manager

ATL Automated Tape Library

attention (notice)
A word for calling attention to the possibility of danger to a program, device, or system, or to data. Contrast with *caution* and *danger*

authentication
The process of recognizing a user through a valid combination of User ID and password.

local authentication
Each machine maintains an internal database of User IDs, with corresponding passwords and roles.

Storage Authentication Service policy authentication
A Role-Based Access Control method of authentication that uses LDAP to create a central repository for storage and management of User IDs, passwords, and roles.

B

baud A unit of signaling speed equal to the number of discrete conditions or signal events per second.In asynchronous transmission, the unit of modulation rate corresponding to one unit interval per second; that is, if the duration of that unit interval is 20 milliseconds, the modulation rate is 50 baud. Also see *baud rate*.

baud rate
In remote communications, the transmission rate that is synonymous with signal events. The baud rate, or signal change rate, is usually expressed in bits per second. Stated another way, the baud rate is a measure of how many times per second a signal changes or could change.

BIOS, Basic Input/Output System
The code that controls basic hardware operations, such as interactions with diskette drives, hard disk drives, and the keyboard.

C

Call Home
A communication link established between a product and a service provider. The product can use this link to place a call to IBM or to another service provider when it requires service. With access to the machine, service personnel can perform service tasks, such as viewing error and problem logs or initiating trace and dump retrievals.

caution (notice)
A word to call attention to possible personal harm to people. Contrast with *attention* and *danger*

CD-ROM, compact-disc read-only memory
High-capacity read-only memory in the form of an optically read compact disc.

CE, customer engineer
Synonymous with field engineer and service representative.

CLI, command line interface
A type of computer interface in which the input command is a string of text characters.

cluster
A group of computers and other resources that operate together as a single system.

cluster family
A group of clusters all configured with the same family value in vital product data (VPD).

concurrent
Refers to diagnostic, maintenance, or replacement procedures that can be performed on a system without interrupting customer applications

controller
A device that coordinates and controls the operation of one or more input/output devices (such as workstations) and synchronizes the operation of such devices with the operation of the system as a whole.

control unit
A device that provides the interface between a system and one or more tape drives.

Synonymous with controller

D

danger (notice)
A word to call attention to possible lethal harm to people. Contrast with *attention* and *caution*.

data Any representations such as characters or analog quantities to which meaning is or might be assigned.

E

EBTERM
Terminal emulator for OS/2

ELC Enterprise Library Controller

error log
A data set or file in a product or system where error information is stored for later access.

error log
A data set or file in a product or system where error information is stored for later access.

F

FBM Field Bill of Material

FC, feature code
A feature code is a method IBM uses to announce that a single use functional update to the microcode of an installed controller is available. New microcode levels might be required when adding new functions.

FC, Fibre Channel
A serial data transfer architecture developed by a consortium of computer and mass storage device manufacturers, and standardized by American National Standards Institute (ANSI).

FCC Federal Communications Commission

FE, field engineer
Synonymous with customer engineer or service representative

file A named set of records stored or processed as a unit. Also referred to as a data set.

file system
A collection of files and certain attributes associated with those files.

In the hierarchical file system, the underlying system support that manages I/O operations to files and controls the format of information on the storage media. A file system allows applications to create and manage files on storage devices and to perform I/O operations to those files.

The collection of files and file management structures on a physical or logical mass storage device, such as a diskette or minidisc.

FRU, field replaceable unit
An assembly that is replaced in its entirety when any one of its components fails.

FTP File transfer protocol

G

GUI, graphical user interface
A type of computer interface that presents a visual metaphor of a real-world scene, often of a desktop, by combining high-resolution graphics, pointing devices, menu bars and other menus, overlapping windows, icons and the object-action relationship.

grid A series of clusters connected to one another by means of TCP/IP to form a disaster recovery solution where logical volume attributes and data are replicated across the clusters to ensure the continuation of production work

grid network
The TCP/IP infrastructure connecting a grid

H

Host A single host from a host group that represents a computer attached to the disk subsystem.

I

ID Identification

Identifier

identifier (ID)
In programming languages, a lexical unit that names a language object; for example, the names of variables, arrays, records, labels, or procedures. An identifier usually consists of a letter optionally followed by letters, digits, or other characters.

One or more characters used to identify or name a data element and possibly to indicate certain properties of that data element

A sequence of bits or characters that identifies a program, device, or system to another program, device, or system

IMC, integrated management console
With the TS4500 tape library, a built-in platform for tools that are used to manage the library.

interface
A shared boundary. Examples include a hardware component to link two devices or a portion of storage or registers accessed by two or more computer programs.

intervention required
Manual action is needed.

I/O, input/output
Data provided to the computer or data resulting from computer processing.

IOA, input/output adapter
A functional unit or a part of an I/O controller that connects devices to an I/O processor.

For devices, the electrical circuits on a logic card that connect one device to another.

IOP, input/output processor
A functional unit or the part of an I/O controller that processes programmed instructions and controls one or more input/output devices or adapters.

IP, Internet Protocol
A protocol that routes data through a network or interconnected networks. This protocol acts as an intermediary between the higher protocol layers and the physical network.

IPL, initial program load
The process that loads the system programs from the system auxiliary storage, checks the system hardware, and prepares the system for user operations.

L

LAN, local area network
A computer network within a limited area.

LDAP, Lightweight Directory Access Protocol
A standard protocol for authenticating users and authorizing access to resources, typically used to grant access levels to directories on disk.

LED Light emitting diode

LM Library manager

M

MB, megabyte
For processor storage, real and virtual storage, and channel volume, 2 to the 20th power or 1 048 576 bytes. For disk storage capacity and communications volume, 1 000 000 bytes.

Mbps Megabits per second

MES, miscellaneous equipment specification
An equipment installation or upgrade that is performed on site by an IBM Service Representative.

microcode
One or more microinstructions.

A code, representing the instructions of an instruction set, implemented in a part of storage that is not program-addressable.

To design, write, and test one or more microinstructions.

See also *microprogram*.

mm, millimeter
One thousandth of a meter; 0.04 inch.

MRPD
machine reportable product data

N

N/A not applicable

NetTerm
NetTerm is a configurable terminal emulator designed for Internet and intranet connections.

NTP, Network Time Protocol
A protocol that synchronizes the clocks of computers in a network.

NVRAM, non-volatile random-access memory
Random access memory (storage) that retains its contents after the electrical power to the machine is shut off. A specific part of NVRAM is set aside for use by the system read-only storage for the boot device list.

NVS, non-volatile storage
A storage device whose contents are not lost when power is cut off.

O

offline
Pertaining to the operation of a functional unit that is not attached to a controlling device such as a mainframe or a control unit. Contrast with *online*.

online Pertaining to the operation of a functional unit that is attached to a controlling device such as a mainframe or a control unit. Contrast with *offline*.

P

PCI, Peripheral Component Interconnect
A local bus for personal computers that provides a high-speed data path between the processor and attached devices.

PDF, Portable Document Format
A standard specified by Adobe Systems, Incorporated, for the electronic distribution of documents. PDF files are compact; can be distributed globally via e-mail, the Web, intranets, or CD-ROM; and can be viewed with the Acrobat Reader.

PE Product Engineering

port A physical connection for communication between systems or components.

PMR, problem management record
A PMR number is assigned by *RETAIN*. This number is returned to the system console when a problem is successfully opened in RETAIN. In conjunction with a Branch Office number, this uniquely identifies a problem event for tracking through the RETAIN process

R

RAM, random access memory
A memory system to which data is entered and from which data is retrieved in a non-sequential manner.

RAS, reliability, availability, and serviceability
A combination of design methodologies, system policies, and intrinsic capabilities that, taken together, balance improved hardware availability with the costs required to achieve it. Reliability is the degree to which the hardware remains free of faults. Availability is the

ability of the system to continue operating despite predicted or experienced faults. Serviceability is how efficiently and nondisruptively broken hardware can be fixed.

RETAIN
IBM Remote Technical Assistance Information Network

IBM Employees use this online system to help resolve customer problems with IBM products. The system contains records about reported problems and the solutions (or fixes) that are developed for those problems. RETAIN also holds records of the hardware and software owned by each IBM customer.

RMSS Removable Media Storage Solutions sector of IBM

RSA, Remote Supervisor Adapter
An IBM service processor that is built into some System x servers and available as an optional adapter for use with others. When used as a gateway service processor, the RSA can communicate with all service processors on the Advanced System Management (ASM) interconnect.

S

SAS, serial-attached SCSI
A data-transfer technology that moves data to and from computer storage devices. Serial-attached SCSI uses a point-to-point serial protocol, which replaces the traditional, parallel SCSI bus technology.

SATA, Serial Advanced Technology Attachment.
A standard for connecting storage devices such as hard drives and CD-ROM drives to computer systems that is based on serial signaling technology.

SBC system controller board

SCSI, Small Computer System Interface
An ANSI-standard electronic interface that allows personal computers to communicate with peripheral hardware, such as disk drives, tape drives, CD-ROM drives, printers, and scanners faster and more flexibly than previous interfaces.

SIM, service information message
A message, generated by a storage subsystem, that is the result of error event location and analysis. A SIM indicates that some service action is required.

SMIT, System Management Interface Tool
An interface tool of the AIX operating system for installing, maintaining, configuring, and diagnosing tasks.

SNMP, Simple Network Management Protocol
SNMP is used to monitor network-attached devices.

SR, service representative
Synonymous with *field engineer* and *customer engineer*.

subsystem
A secondary or subordinate system, usually capable of operating independently of, or asynchronously with, a controlling system

T

tape controller
A device that provides the interface between a system and one or more tape drives. Synonymous with *control unit*

TCP/IP, Transmission Control Protocol/Internet Protocol
With regard to a tape library, the protocol used for the LAN communication path between the mainframe and the Library Manager

TSMC, TotalStorage Master Console
Original name of the TS3000 System Console (TSSC)

TSSC TS3000 System Console

U

USB, Universal Serial Bus
A Plug-and-Play (Intel standard) interface between a computer and add-on devices (such as keyboards and printers). USB allows a user to add a new device to a computer without having to add an adapter card or to turn the computer off.

UTC Coordinated Universal Time

utility Utility program

utility program
A computer program used for general support of the processes of a computer; for instance, a diagnostic program

V

Virtual volume
Data storage on DDMs that shows the same characteristics to a host application as a physical tape volume and contains data written or read through a virtual tape drive

VPD, vital product data
The information contained within a component that requires nonvolatile storage used by functional areas of the component, and information required for manufacturing, RAS, and engineering.

VTC Virtual Tape Controller

VTS Virtual Tape Server

W

WAN, wide area network
A network that provides communication services between devices in a geographic area larger than that served by a local area network (LAN) or a metropolitan area network.

WEEE European Union's Waste Electrical and Electronic Equipment standards directive

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