



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Air Traffic Organization Policy

ORDER
JO 6180.10D

Effective Date:
07/06/2011

SUBJ: Maintenance of the Weather Message Switching Center Replacement (WMSCR) System

1. PURPOSE.

This handbook provides guidance and prescribes technical standards, tolerances, and procedures applicable to the maintenance and inspection of the Weather Message Switching Center Replacement (WMSCR) system. It also provides information on special methods and techniques that enable maintenance personnel to achieve optimum performance from the equipment. This information augments information available in instruction books and other handbooks, and complements the latest edition of Order 6000.15, General Maintenance Handbook for National Airspace System (NAS) facilities.

2. DISTRIBUTION.

This directive is distributed to selected Technical Operations Services (TOS) offices having the following facilities/equipment: WMSCR.

3. CANCELLATION.

This order cancels Order 6180.10C, Maintenance of the Weather Message Switching Center Replacement (WMSCR) System, dated 12/8/10.

4. EXPLANATION OF CHANGES.

This Maintenance Technical Handbook (MTHB) implements Configuration Control Decision (CCD), N33636, Updates to JO 6180.10, Maintenance of the Weather Message Switching Center Replacement (WMSCR) System. This revision accommodates the following modifications: SSM-NAD-102, Network Management Transition Project, and SSM-WMSCR-088, Network Management Transition, which moved the data communications path for Network Management traffic from the National Airspace Data Interchange Network (NADIN) Packet Switched Network (PSN) Frame Relay services to the NAS operational Internet Protocol (IP) network. These modifications removed the need for the routers in the WMSCR rack. The move from SLC to ZLC required installing the equipment in a shorter rack. The line printer is no longer used.

5. MAINTENANCE AND MODIFICATION PROCEDURE.

a. Order 6000.15, this handbook, applicable equipment instruction books, and other applicable handbooks must be consulted and used together by the maintenance technician in all duties and activities for the maintenance of WMSCR related facilities and equipment. These documents must be considered collectively as the single official source of maintenance policy and direction authorized by TOS. References located in the appropriate paragraphs of this handbook entitled Chapter 3, Standards and Tolerances, Chapter 4, Periodic Maintenance, and Chapter 5, Maintenance Procedures, indicate to the user whether this handbook and/or the equipment instruction book must be consulted for a particular standard, key inspection element or performance parameter, performance check, maintenance tasks, or maintenance procedure.

b. The latest edition of Order 6032.1, National Airspace System Modification Program, contains comprehensive direction concerning the development, authorization, implementation, and recording of modifications to facilities, systems, and equipment in commissioned status. It supersedes all instructions published in earlier editions of maintenance technical handbooks and related directives.

6. RECOMMENDATIONS FOR IMPROVEMENT.

This handbook is under configuration management control as defined in the latest edition of Order 1800.66, Configuration Management Policy, and NAS–MD–001, National Airspace System Master Configuration Index. Any changes to the baseline document or requests for deviation from national standards must be processed through the National Change Proposal (NCP) process. A copy of the NAS Change Proposal form (FAA 1800–2) is provided in the back of this handbook for the convenience of handbook users.



Mary Bonsall
Acting Director, Safety and Operations Support

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CHAPTER 1. GENERAL INFORMATION AND REQUIREMENTS

100. OBJECTIVE.

This handbook provides the necessary guidance, to be used in conjunction with information available in instruction books and other handbooks, for the proper maintenance of the Weather Message Switching Center Replacement (WMSCR) system.

101. SAFETY.

Personnel ought to observe all pertinent safety precautions and Electrostatic Discharge (ESD) handling procedures when working on the equipment. Refer to Order 6000.15 for guidance.

102. AIRCRAFT ACCIDENT.

a. After receiving word that an aircraft accident has occurred within the service area of the facility for which they are responsible, cognizant TOS personnel must take the following minimum actions:

(1) Check the Facilities Maintenance Log, FAA Form 6030–1, and/or the WMSCR Automated Logging System to determine the status of the system at the time of the accident.

(2) Record on the Technical Performance Record (TPR), FAA Form 6000–8, all data as found and any other system parameters considered necessary to establish the operational capability of the system.

(3) Review the Facilities Maintenance Log and the TPR and compile all data pertinent to the accident.

(4) Certify entries on FAA Form 6030–1 and/or the WMSCR Automated Logging System and the TPR. In all cases, have another electronics technician or the supervisor certify the entry, including the date and time of entry.

b. See the latest edition of Order 8020.11, Aircraft Accident and Incident Notification, Investigating, and Reporting.

103. RESPONSIBILITIES ASSOCIATED WITH FACILITY SHUTDOWN.

a. The TOS is charged with providing needed services for maximum facility utilization. System performance assurance (the assurance that all facilities continue to perform within system standards with maximum reliability) is essential to Air Traffic (AT) personnel, since Air Traffic Control (ATC) procedures are based on the assumption that all facilities are available.

b. Technicians must familiarize themselves with AT procedures and the requirements of rerouting traffic on shutdown of each facility. ATC problems resulting from shutdown must be carefully considered by maintenance personnel so that they are aware of the reasons for minimizing both scheduled and unscheduled outages. Such awareness of AT problems includes a general knowledge of needed altitudes, the loss of fixes, the reduction in the availability of alternate route scheduling, and an increase in handling and changes in flight plans. This awareness is required as part of the technician's overall background information.

c. When a problem occurs and second-level maintenance support is required, contact the Flight Service and Weather Engineering Team via the Federal Aviation Administration (FAA) Operation Control Center (OCC) Help Desk at (866) 432–2622. Notify them of the system affected (WMSCR) and provide a general description of the problem.

104. FLIGHT INSPECTION.

No flight inspections are required to maintain WMSCR.

105. TECHNICAL INSPECTION.

Formal inspections are among the more effective management controls for assuring the required quality level of maintenance work and of equipment and system performance. See Order 6000.15, and the latest edition of Order JO 6040.6, National Airspace System Technical Evaluation Program, for further details.

106. PERIODIC MAINTENANCE.

Maintenance personnel must follow the tasks and schedules provided in Chapter 4, Periodic Maintenance, which includes the minimum essential preventive maintenance activities and the frequency with which they must be performed to meet the minimum performance standards for WMSCR. When replacing Line Replaceable Units (LRU), record bar codes in accordance with the Bar Code System User Manual, 184609.

107. CERTIFICATION REQUIREMENTS.

Refer to Order 6000.15, for general guidance on the certification of systems, subsystems, and equipment.

108. AUTOMATION SERVICE REPORTING TERMINOLOGY.

This paragraph conveys common definitions for use by TOS headquarters and field personnel in reporting facility performance at an FAA national level. Computer service interruptions and other equipment deficiencies have not been uniformly reported, and local data has not consistently agreed with national performance reports. Various reporting facilities have sometimes used the same reporting terms in different ways. These facilities have reported scheduled startover or outages that others would have reported as unscheduled. Therefore, to ensure that all automation service interruptions are reported and interruption data can be correlated, definitions in the latest edition of Order JO 6040.15, National Airspace Performance Reporting System, must be used.

109. REFERENCES.

The following list of publications were used in preparing this handbook:

- a. Order 1800.66, Configuration Management Policy
- b. Order 6000.15, General Maintenance Handbook for National Airspace System (NAS) Facilities
- c. Order 6032.1, National Airspace System Modification Program
- d. Order JO 6040.6, National Airspace System Technical Evaluation Program
- e. Order JO 6040.15, National Airspace Performance Reporting System
- f. Order 8020.11, Aircraft Accident and Incident Notification, Investigation, and Reporting
- g. TI 6030.1, User's Manual for the Maintenance Management System (MMS)
- h. TI 6180.11, Weather Message Switching Center Replacement (WMSCR) Sustainment System Operations Manual
- i. 184609, Bar Code System User Manual
- j. Vendor Manuals:
 - (1) Himalaya Cluster Switch Hardware Installation and Support Guide
 - (2) Introduction to Networking for Compaq NonStop Himalaya S-series Servers
 - (3) Introduction to NonStop Operations Management
 - (4) Introduction to Tandem X.25 Capabilities

- (5) NonStop S-Series Hardware Support Guide
- (6) NonStop S-Series Operations Guide
- (7) NonStop S-Series Server Description Manual
- (8) Cisco 2600 Router
- (9) Inter Network Analyzer
- (10) HP Proliant DL 320 Server
- (11) HP Procurve Hub 10/100
- (12) HP TFT 5600 RMK
- (13) HP Laserjet 4200 Printer

- (14) HP Compaq d530 USDT
- (15) HP 1730 Monitor
- (16) Symmetricom Model XLI Time and Frequency System
- (17) OSM Users Guide 527274-015
- (18) HP Modular Power Dist.
- (19) Tape 5258 Acc
- (20) Modems Multitech MT5634ZBA

k. Department of Transportation, 49 CFR Subtitle A, Part 15 — Protection of Sensitive Security Information

110.–199. RESERVED.

CHAPTER 2. TECHNICAL CHARACTERISTICS

200. SYSTEM INTRODUCTION.

a. The WMSCR system consists of a Tandem S-series server and peripheral equipment, which serves as the interface between the NAS and the national meteorological center of the National Weather Service (NWS), the Aeronautical Fixed Telecommunications Network (AFTN) of the International Civil Aeronautical Organization (ICAO). The WMSCR system collects and processes alphanumeric weather data and Notice to Airmen (NOTAM) information for distribution to users within the NAS. In addition, it has a graphic data distribution capability. The WMSCR system consists of two redundant nodes at the National Enterprise Management Center (NEMC) sites in Salt Lake City, Utah and in Atlanta, Georgia. These two nodes operate in a primary/backup mode, where either node can provide weather and NOTAM information to all WMSCR users. The WMSCR system is a continuous, 24 hours per day, 7 days per week operation. The WMSCR system data interface to the National Weather Service Telecommunications Gateway (NWSTG) is via the National Airspace Data Interchange Network (NADIN) system.

b. A repertoire of network user services has been established to provide a uniform set of procedures to serve NADIN users. This repertoire allows the services to be provided as the inventory of users is expanded.

c. The principal flow of weather data is from the NWSTG through the WMSCR system to the network users.

d. The flow of NOTAM data is principally from the United States NOTAM System Rehost (USNSR) processor to the WMSCR system for storage and distribution.

e. Figure 2–1, Relationship of Major WMSCR Components, illustrates key parts of the WMSCR hardware.

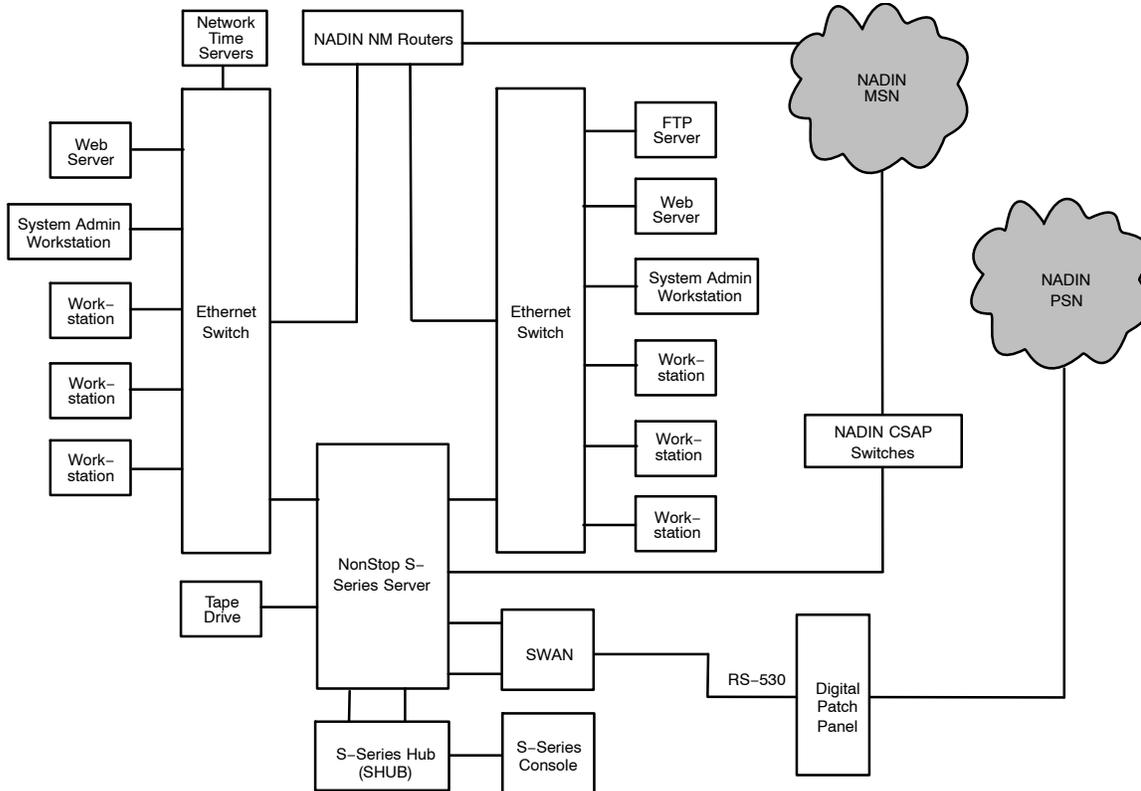


FIGURE 2–1. RELATIONSHIP OF MAJOR WMSCR COMPONENTS

201. MAIN SYSTEM COMPONENTS.

- a. The WMSCR system consists of two joined cabinets as Figure 2–2, WMSCR Cabinets, shows.

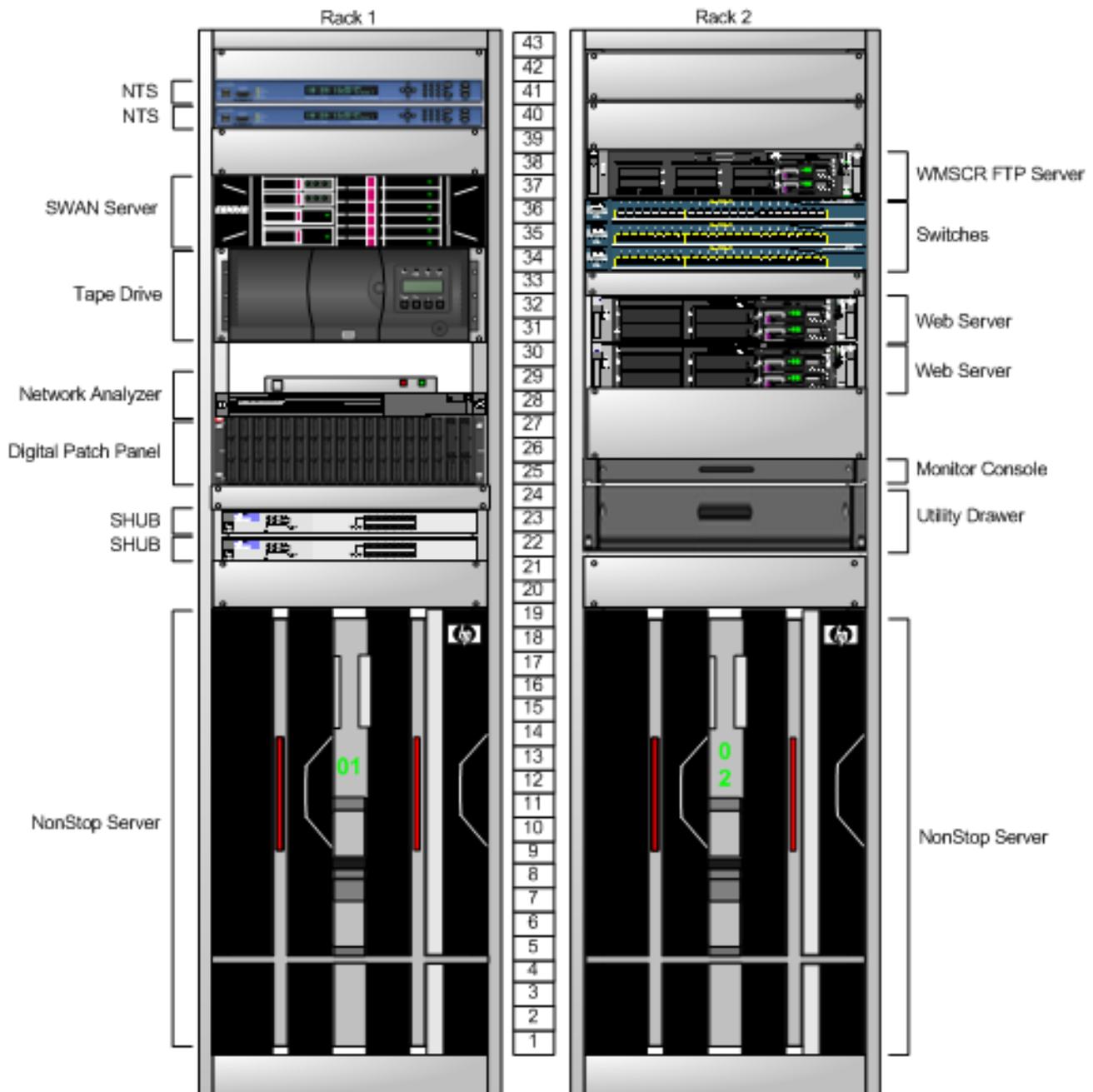


FIGURE 2–2. WMSCR CABINETS

b. The primary hardware components of the WMSCR system are:

(1) **Himalaya S-Series Server.** The NonStop Himalaya S-series server consists of a Tandem (HP) model U21037-003 with Small Computer System Interface (SCSI) disk array. Refer to Figure 2-3, Himalaya S-Series.

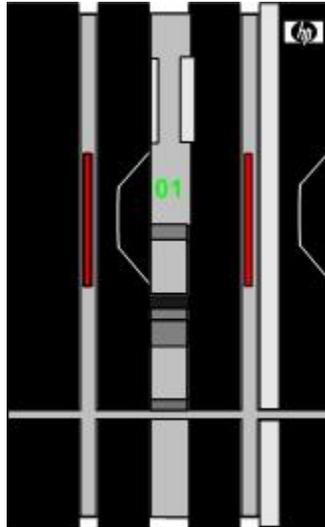


FIGURE 2-3. HIMALAYA S-SERIES

(2) **Digital Linear Tape (DLT) Tape Drive.** The tape subsystem consists of a DLT model 5258ACL DLT drive. Refer to Figure 2-4, DLT Model 5258ACL.



FIGURE 2-4. DLT MODEL 5258ACL

(3) **ServerNet Wide Area Network (SWAN) Concentrator.** The SWAN concentrator consists of a Compaq model 3881 computer. The SWAN connects WMSCR to NADIN through an X.25 interface. Refer to Figure 2–5, SWAN.



FIGURE 2–5. SWAN

(4) **S-Series Hub (SHUB).** The SHUB consists of a J3294A HP Procurve 10/100 Hub 12, which handles a 10–Megabit (Mb) Ethernet connection between the NonStop server and one or more system consoles. Refer to Figure 2–6, SHUB.

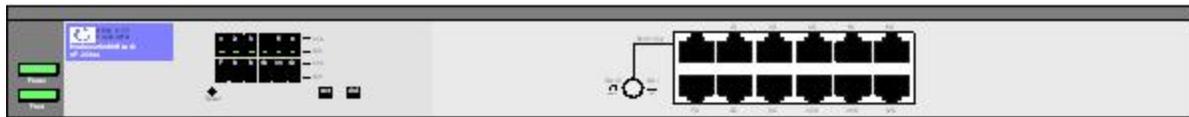


FIGURE 2–6. SHUB

(5) **Web Servers.** The Web servers are two HP Proliant DL380 Personal Computer (PC)-compatible computers. Refer to Figure 2–7, Proliant DL380 Web Servers.



FIGURE 2–7. PROLIANT DL380 WEB SERVERS

(6) **FTP Server.** The File Transfer Protocol (FTP) server is an HP Proliant DL385 server. Refer to Figure 2–8, Proliant DL385 FTP Server.



FIGURE 2–8. PROLIANT DL385 FTP SERVER

(7) **Time Server.** Also known as the Coded Time Source (CTS), the time server consists of a Symmetricom model XLi Time and Frequency System with Global Positioning System (GPS) Receiver option card, up to 200 feet of type RG-59 coaxial cable, and GPS antenna. The CTS provides Universal Time Coordinate (UTC) to synchronize subsystem clocks within WMSCR. Refer to Figure 2-9, Symmetricom Model XLi Time and Frequency System.



FIGURE 2-9. SYMMETRICOM MODEL XLi TIME AND FREQUENCY SYSTEM

(8) **Intelligent Fast Ethernet Switch.** WMSCR has two Cisco Catalyst 2950 switches operating at 100 Mb per second (Mbps). A third switch serves as a spare and is not active. They are configured between the NonStop server and other devices including workstations, printers, time server, and Web servers. Refer to Figure 2-10, Cisco Catalyst 2950 Switches.



FIGURE 2-10. CISCO CATALYST 2950 SWITCHES

(9) **A Digital Patch Panel.** The digital patch panel connects between the SWAN to the NADIN PSN. The digital patch panel also offers an interface to monitor digital data flow between WMSCR and remote locations.

202. FUNCTIONAL DESCRIPTION.

a. Processing Equipment. The hardware, operating system, and application software of the Himalaya S-series server work together to meet the requirements of online transaction processing, such as fault tolerance, system expandability, high performance, and effective networking. Each node is part of a Transmission Control Protocol/Internet Protocol (TCP/IP) network. Also included is a console subsystem including a tape drive and interface, and an Ethernet port.

(1) The hardware architecture is designed to achieve fault tolerance for Tandem online transaction processing applications. The hardware is designed to provide two forms of continuous availability when an individual component fails:

- (a) Continuous execution of processes
- (b) Continued access to databases

(2) The system achieves fault tolerance for user and system processes by running programs as process pairs in different processors. The primary process executes actively in one processor while the backup process

remains in a wait state in another processor. At critical points, the primary process sends checkpoint messages over the dual ServerNet fabrics to the backup process.

(3) If the processor that is executing the primary process fails, the backup process in the healthy processor takes over where the primary process left off. It resumes execution of the work from the last valid checkpoint and accesses the same database on disk that the primary process had been using.

(4) The system achieves fault tolerance for the user's database by ensuring that data transfers between processes and storage devices can take place over two separate and independent paths. In this way, if a component in one of the paths fails, the system can use the other path to access the database. As a result, the failure of a single component does not prevent access to the database, just as the failure of a single processor does not halt the execution processes.

(5) The specific mechanisms used by the system to provide two separate data paths include dual-ported ServerNet adapters (either on the ServerNet side or on the peripheral side) and mirrored disks. Mirrored disks contain identical copies of the database. Although both disks are always in use for optimum efficiency, if one of these disks fails, the process can continue accessing only the other disk.

(6) In the NonStop system, each processor (sometimes called a Central Processing Unit (CPU)) is an autonomous computer in its own right, each having its own memory and operating system software. The ServerNet fabrics make it possible for all the processors in the system to communicate with each other and to cooperate in executing applications. Each processor is a ServerNet node, in this architecture, and each has a ServerNet node ID.

(a) **Tandem Himalaya S-Series NonStop Server.** The hardware architecture of the Himalaya S-series server consists of multiple processors that communicate with each other over dual ServerNet fabrics. The choice of the word fabric is significant, contrasting completely with the notion of a bus. Whereas a bus is conceived as a straight line set of parallel conductors having a start point and an end point, a fabric is a complex web of links between electronic routers that provide a large number of possible paths from one point to another. Input/Output (I/O) components also tap into the ServerNet fabrics. Quite commonly, this tapping into the ServerNet fabrics occurs through ServerNet adapters. A special kind of ServerNet adapter, called the multifunction I/O board, provides ServerNet interfacing for the most commonly used peripherals. The ServerNet adapters handle all I/O devices such as disk drives, tape drives, and workstations. The entire system is easily networked with other NonStop systems because all systems use the same message system.

(b) **DLT Tape Drive.** The 5258ACL drive is a high-performance, high-capacity, streaming cartridge tape product designed for use on midrange and high-end computing systems. Using data compression and compaction, the 5258ACL drive features 10 cartridges, each with a formatted capacity of 70 Gigabytes (GB) and a sustained user data transfer rate of 10 Mbps. The 5258ACL drive is a 5-1/4 inch form factor, half-inch tape drive. The design includes a quad-channel read/write head, Digital Lempel-Ziv (DLZ) high-efficiency data compression, and tape mark directory to maximize data throughput and minimize data access time. The control panel has a 4-line by 20-character backlit Liquid Crystal Display (LCD), four Light Emitting Diode (LED) indicators, and four buttons. This enables the operator to navigate through the menu to select and display operating modes, device status, diagnostic and maintenance functions, device history and error statistics, and system configuration. The 5258ACL drive accepts the DLT tape IV cartridge for up to 35.0-GB non-compressed or 70-GB compressed capacity; the DLT tape IIIxt cartridge for up to 15.0-GB non-compressed or 40-GB compressed capacity; or the DLT tape III cartridge for up to 10-GB non-compressed or 20-GB compressed capacity. The actual amount of data stored in the compression mode depends on the data type. The tape media can endure 500,000 passes and has a shelf life of 30 years.

(c) **SWAN Concentrator.** The Compaq model 3881 SWAN II connects the X.25 interface of the NADIN PSN to the NonStop server. SWAN concentrators provide Wide Area Network (WAN) and serial device connectivity to S-series servers via Ethernet ports and appropriate communications software. The SWAN concentrator contains multiple independent Communications Line Interface Processors (CLIP), each supporting two lines. Each SWAN line can support different line types, such as asynchronous, byte-synchronous, or bit-synchronous transmissions, independent of the other lines.

(d) **SHUB, TCP/IP Ethernet 10 Mbps.** The SHUB handles a 10-Mbps Ethernet connection between the NonStop server and one or more system consoles.

(e) **Web Servers.** The HP Proliant DL380 Web servers provide an HTML interface between the workstations and the application software.

(f) **WMSCR FTP Server.** The HP Proliant DL385 TFP server provides an interface between the WMSCR database and external FTP client systems.

(g) **Intelligent Fast Ethernet Switches.** The Cisco Catalyst 2950 switches connect the NonStop server with external devices including workstations, printers, and Web servers. The Cisco Catalyst 2950 switch is an unmanaged, 24-port switch with 10/100 auto-sensing per port and 2 open transceiver slots for GB or 100Base-FX uplinks.

(h) **Time Server.** Also known as the CTS, the time server consists of a Symmetricom model XLi Time and Frequency System with GPS Receiver option card, up to 200 feet of type RG-59 coaxial cable, and GPS antenna. The Time Server is used to calibrate the system clock with UTC. The WMSCR rack contains an inactive backup time server.

b. Communications Equipment. Each node uses a SHUB, Web servers, Ethernet switches, and a SWAN concentrator to communicate with other nodes. A communications subsystem consists of one or more subsystem processes and various other subsystem components running in the NonStop system, and possibly a protocol module running on a SWAN concentrator.

203.–299. RESERVED.

CHAPTER 3. STANDARDS AND TOLERANCES

300. GENERAL.

This chapter prescribes the standards and tolerances for the WMSCR system, as defined and described in Order 6000.15. All key performance parameters and/or key inspection elements are clearly identified by an arrow (→) placed to the left of the applicable item.

a. The definition of the following terms apply to this chapter as follows:

(1) **Standard.** The optimum value assigned to an essential parameter of the system; and must be compatible with the system as a whole and the design capability of the equipment involved.

(2) **Initial Tolerance/Limit.** The maximum deviation from the standard value of the parameter, or the range, which is permissible when the system or equipment is accepted for use in the NAS at the time of initial commissioning, or after any readjustments, modifications, or modernization.

(3) **Operating Tolerance/Limit.** The maximum deviation from the standard value of the parameter, or the range, within which a system or an equipment can continue to operate on a commissioned basis without adjustment or corrective maintenance and beyond which remedial action by maintenance personnel is mandatory.

b. The standards and tolerances prescribed herein are based on system requirements/specifications under which the equipment is manufactured, use of standard test equipment, and standard test procedures. Systems standards and tolerances apply to the system taken as a whole. Equipment standards might, in certain special instances, be listed; however, in general, equipment standards are found in individual instruction books or modification instructions, where the standards and tolerances shown in equipment instruction books and other material are in conflict with those contained herein, the criteria contained in this handbook apply.

STANDARDS AND TOLERANCES

<i>Parameter</i>	<i>Reference Paragraph</i>	<i>Standard</i>	<i>Tolerance/Limit</i>	
			<i>Initial</i>	<i>Operating</i>
301. WMSCR SYSTEM.				
a. Input Voltage.....		2 Phase	+/- 3% (3 V ac)	Same as initial
(1) Phase A.		120 V ac	116.4 to 123.6 V ac Steady State	Same as initial
(2) Phase B.		120 V ac	116.4 to 123.6 V ac Steady State	Same as initial
b. Input Frequency.		60 Hz	+/-0.5 Hz	Same as initial
c. Temperature.....				
(1) Ambient Air.	Par. 551	Max 38°C Min 8°C	Same as standard	Same as standard
(2) Exhaust Air.	Par. 551	Max 38°C Min 8°C	Same as standard	Same as standard
d. S-Series Server.				
(1) X Fabric	Par. 502	Successful — no fault execution	Same as standard	Same as standard
(2) Y Fabric.....	Par. 502	Successful — no fault execution	Same as standard	Same as standard
e. Disk System.	Par. 503	Successful — no fault execution	Same as standard	Same as standard
f. Application Software.	Par. 504	Successful — no fault execution	Same as standard	Same as standard
g. HP Proliant Servers.	Par. 505	Successful — no fault execution	Same as standard	Same as standard
h. Time Server.	Par. 506	Successful — no fault execution	Same as standard	Same as standard
i. SWAN	Par. 507	Successful — no fault execution	Same as standard	Same as standard
j. Ethernet Switches. ...	Par. 508	Successful — no fault execution	Same as standard	Same as standard
k. SHUB.	Par. 509	Successful — no fault execution	Same as standard	Same as standard

STANDARDS AND TOLERANCES (Continued)

Parameter	Reference Paragraph	Standard	Tolerance/Limit	
			Initial	Operating
l. Workstations.	Par. 577	Successful — no fault execution	Same as standard	Same as standard
m. Laser Printer.	Par. 550	Successful — no fault execution	Same as standard	Same as standard
n. Cooling and Air. Circulation.	Par. 551	Successful — no fault execution	Same as standard	Same as standard
o. Review Audit Log. ...	Par. 552	Successful — no fault execution	Same as standard	Same as standard
302. MAGNETIC TAPE SUBSYSTEM.				
Environmental Specifications for Tape Cartridges.				
a. Operating Storage ... Temperature.	Par. 551	Max 38°C Min 8°C	Same as standard	Same as standard
(1) Empty.	Par. 551	Max 72°C Min N/A	Same as standard	Same as standard
(2) With data.	Par. 551	Max 55°C Min N/A	Same as standard	Same as standard
b. Operating Transport Temperature	Par. 551		Same as standard	Same as standard
(1) Empty.	Par. 551	10°C to 40°C	Same as standard	Same as standard
(2) With data.	Par. 551	16°C to 32°C	Same as standard	Same as standard
c. Operating Relative ... Humidity	Par. 551	18°C to 28°C	Same as standard	Same as standard
d. Operating Relative ... Humidity	Par. 551	-23°C to 48°C	Same as standard	Same as standard
303. ANTIVIRUS SOFTWARE.	Par. 553	Successful — no fault execution	Same as standard	Same as standard
304.-399. RESERVED.				

CHAPTER 4. PERIODIC MAINTENANCE

400. GENERAL.

This chapter establishes all the maintenance activities that are required for WMSCR on a periodic basis and the schedules for their accomplishment. This chapter is divided into two sections. The first section identifies the performance checks (i.e., tests, measurements, and observations) of normal operating controls and functions, which are necessary to determine whether operation is within established tolerance/limits. The second section identifies other tasks that are necessary to prevent deterioration and/or ensure reliable operation. Refer to Order 6000.15, for additional guidance.

Section 1. PERFORMANCE CHECKS

<i>Performance Checks</i>	<i>Reference Paragraph</i>	
	<i>Standards & Tolerances</i>	<i>Maintenance Procedures</i>
401. DAILY.		
Check Processor Multifunction (PMF)	301d	502e(4)
Customer Replaceable Unit (CRU).		
402. WEEKLY.		
Processor Subsystem.		
Verify processors.	301d	502e(3)
a. X Fabric.	301d(1)	
b. Y Fabric.	301d(2)	
c. SWAN.	301i	
403. MONTHLY.		
WMSCR System.		
a. S-Series Server.	301d	Par. 502e(1) and (2)
b. Disk System.	301e	Par. 503
c. Application Software.	301f	Par. 504
d. HP Proliant Servers.	301g	Par. 505
e. Time Server.	301h	Par. 506
f. SWAN	301i	Par. 507
g. Ethernet Switches.	301j	Par. 508
h. SHUB.	301k	Par. 509
i. Workstations.	301l	Par. 577
404.-449. RESERVED.		

Section 2. OTHER MAINTENANCE TASKS

<i>Maintenance Tasks</i>	<i>Reference Paragraph</i>	
	<i>Standards & Tolerances</i>	<i>Maintenance Procedures</i>
450. DAILY. None.		
451. WEEKLY. Antivirus Software Verify Antivirus Software Operation	Par. 303	Par. 553
452. MONTHLY. a. Peripheral Subsystem. (1) Check print quality on printer and clean as necessary. (2) Check cooling fans and air grille. Clean if dust or dirt visible. b. Review Audit Log. Print out previous month user access log or verification.	301m 301n 301o 301o	Par. 550 Par. 551 Par. 552 Par. 552
453. QUARTERLY. None.		
454. SEMIANNUALLY. None.		
455. ANNUALLY. None.		
456.-499. RESERVED.		

CHAPTER 5. MAINTENANCE PROCEDURES

500. GENERAL.

This chapter establishes the procedures for accomplishing the various essential maintenance activities that are required for WMSCR equipment on either a periodic or incidental basis. The chapter is divided into three sections. The first section describes the procedures to be used in making the performance checks listed in chapter 4, section 1. The second section describes the procedures for doing the tasks listed in chapter 4, section 2. The third section describes the procedures for doing special tasks, usually nonscheduled and not listed in chapter 4. The procedures contained herein supplement those found in the equipment instruction books.

501. FAA FORM 6000 SERIES ENTRIES.

Order 6000.15 contains guidance and detailed instructions for field utilization of FAA Form 6000 series as applicable to WMSCR. Entries must be made in accordance with the instructions published in Order 6000.15.

Section 1. PERFORMANCE CHECK PROCEDURES

502. S–SERIES SERVER.

a. Object. To determine that the operating system is functioning correctly and that all hardware is operational.

b. Discussion. This procedure provides the capability to review system errors, significant events, and relevant system occurrences that have been detected and recorded in an error log file by a set of routines.

c. Test Equipment Required. None.

d. Conditions. This procedure can be performed at any time.

e. Detailed Procedure.

(1) Launch OSM.

(a) At the Tandem console, select **Start>Programs>HP OSM>OSM Service Connection**.

(b) From the list of OSM Service Connections on the left, select a link for the system to be accessed.

(c) Within the logon window, log on as a privileged user and enter the appropriate password. OSM Service Application is launched in a secondary Internet Explorer browser window. Close the OSM Service Connection window in the background at this time if you want.

(d) Maximize the OSM Service Application window.

(2) Check System Events.

(a) On the OSM Service Application toolbar, click on the **Tools** icon and select **Event Viewer** to launch the OSM Event Viewer.

(b) Log on as a privileged user and enter the appropriate password.

(c) Maximize the OSM Service Application window.

(d) In the OSM Event Viewer main window, enter the form data as shown in Figure 5–1, OSM Event Viewer, using time values to cover the time period of interest (one month).

(e) Click on the Show Events button to extract the event data from the system logs.

(f) Once the event search is complete, verify that no abnormal conditions exist. In the event of any abnormal conditions, investigate the cause and resolve the issue or contact second-level support through the FAA OCC Help Desk (reference paragraph 103c).

(g) Close the EMS Events window.

(h) Close the OSM Event Viewer window.

(i) From the OSM Service Connection menu, select **File > Close**. When the confirmation window is displayed, click **OK**.

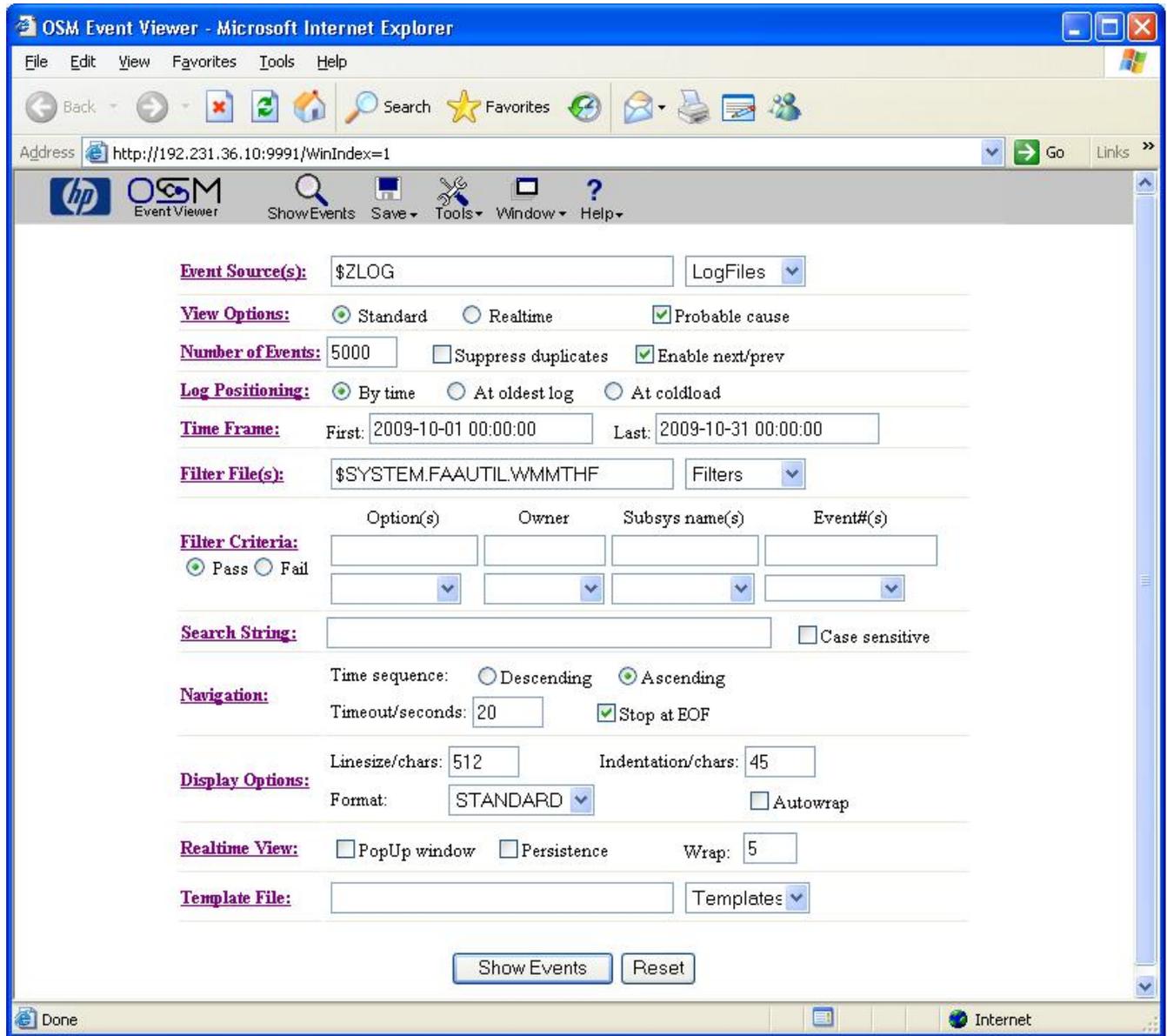


FIGURE 5–1. OSM EVENT VIEWER

(3) Verifying Processor.

- (a) At the Tandem console, select **Start>Programs>HP OSM>OSM Service Connection**.
- (b) From the list of OSM Service Connections on the left, select a link for the system to be accessed.
- (c) Within the logon window, log on as a privileged user and enter the appropriate password. OSM Service Application is launched in a secondary Internet Explorer browser window. You have the option to close the OSM Service Connection window at this time.
- (d) Maximize the OSM Service Application window.
- (e) Verify that the following subsystems listed below do not display any abnormal conditions.

- 1 Internal_SvNet_X_Fabric
- 2 Internal_SvNet_Y_Fabric
- 3 GRP-1
- 4 GRP-2
- 5 SWAN

Select each subsystem in the left viewing pane. Detailed information (i.e., Alarms and Attributes) is shown in the lower-right viewing pane. In the case of any alarm condition (Amber or Red Indication), expand the tree (if possible) for that subsystem in the left viewing pane to reveal the next level of detail. Select the individual component, and verify that component's attributes and alarm condition in the lower-right viewing pane.

- (f) From the OSM Service Connection menu, select **File > Close**. When the confirmation window is displayed, click **OK**.
- (g) Verify that no abnormal conditions exist for the previous two tests. In the event of abnormal conditions, investigate the cause, then resolve or contact second-level support through the FAA OCC Help Desk (reference paragraph 103c).

(4) Verify PMF CRUs.

- (a) At the Tandem console, select **Start>Programs>HP OSM>OSM Service Connection**.
- (b) From the list of OSM Service Connections on the left, select a link for the system to be accessed.
- (c) Within the logon window, log on as a privileged user and enter the appropriate password. OSM Service Application is launched in a secondary Internet Explorer browser window. Close the OSM Service Connection window in the background at that this time if you want.

NOTE: Maximize window (Management window).

- (d) In the component tree in the left viewing pane, double-click on the **Group 1 (2)** icon to expand the component tree as shown in Figure 5-2, Front and Rear View, Graphical Component Tree Viewing Pane, Select PMF.

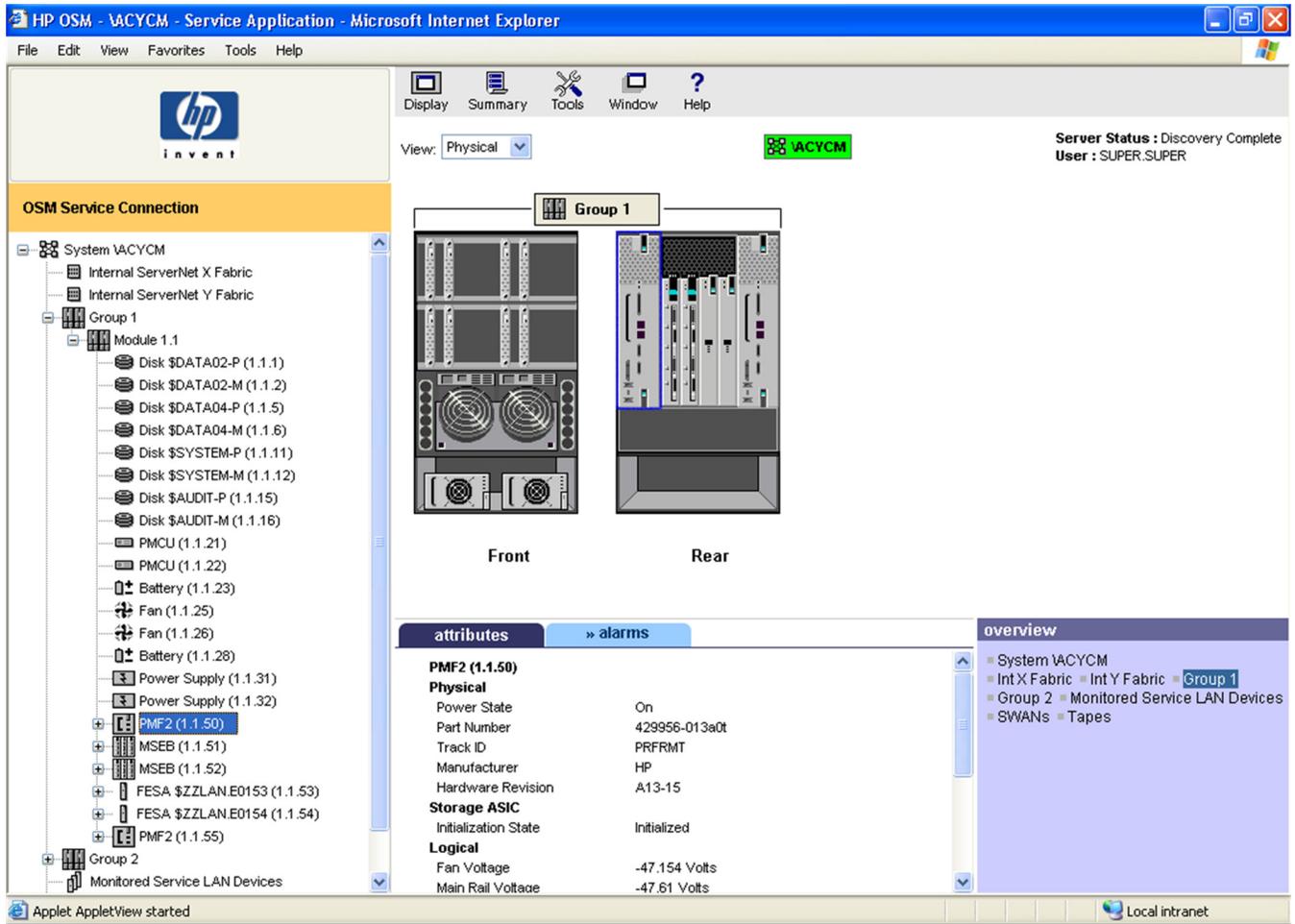


FIGURE 5–2. FRONT AND REAR VIEW, GRAPHICAL COMPONENT TREE VIEWING PANE, SELECT PMF

(e) In the left viewing pane, double-click to expand the PMF2 (1.1.50) tree as shown in Figure 5–3, Front and Rear View, Graphical Component Tree Viewing Pane — Expand Tree.

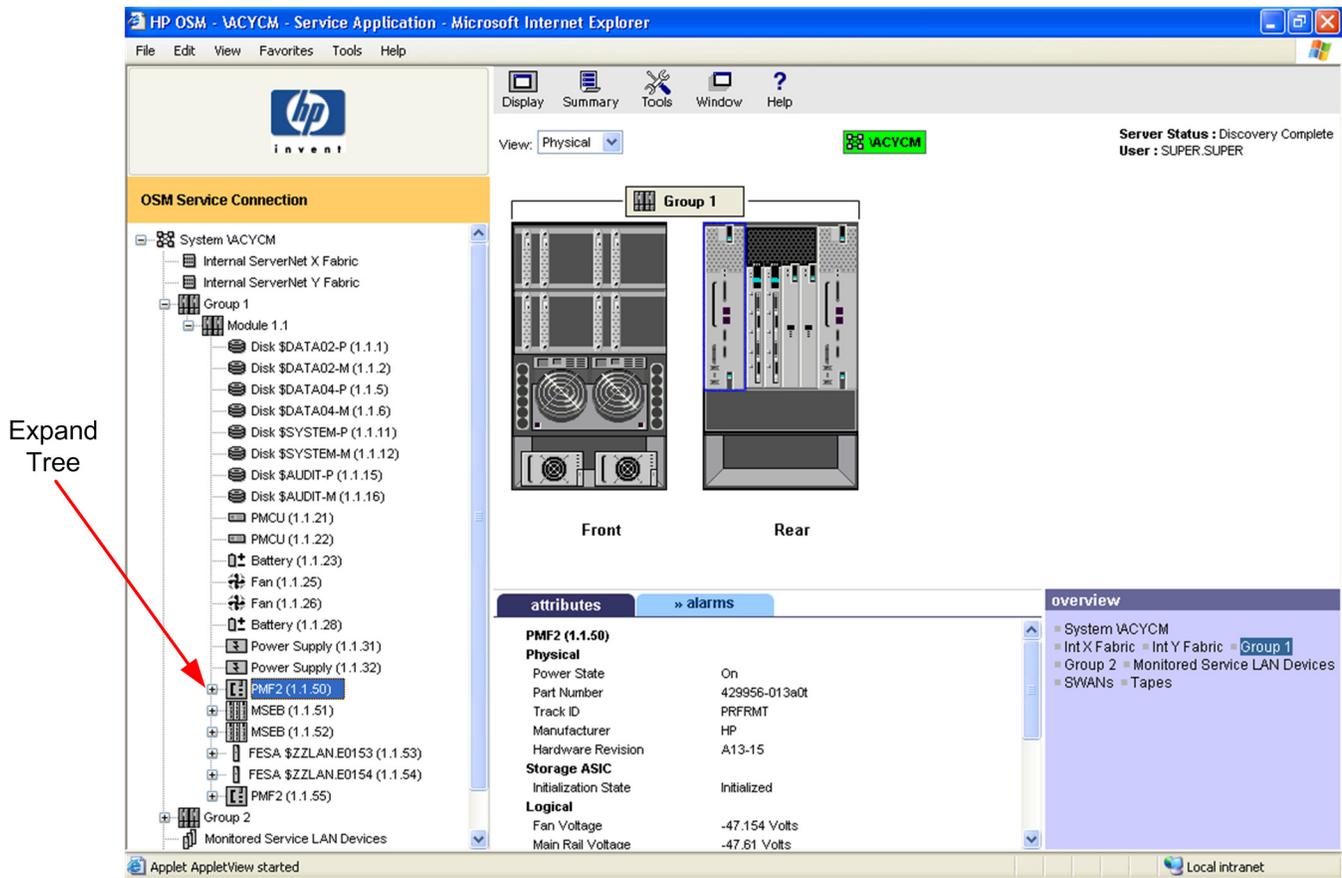


FIGURE 5–3. FRONT AND REAR VIEW, GRAPHICAL COMPONENT TREE VIEWING PANE — EXPAND TREE

(f) Once expanded, select Processor 0 (1). Refer to Figure 5–4, Front and Rear View, Graphical Component Tree Viewing Pane Select Processor.

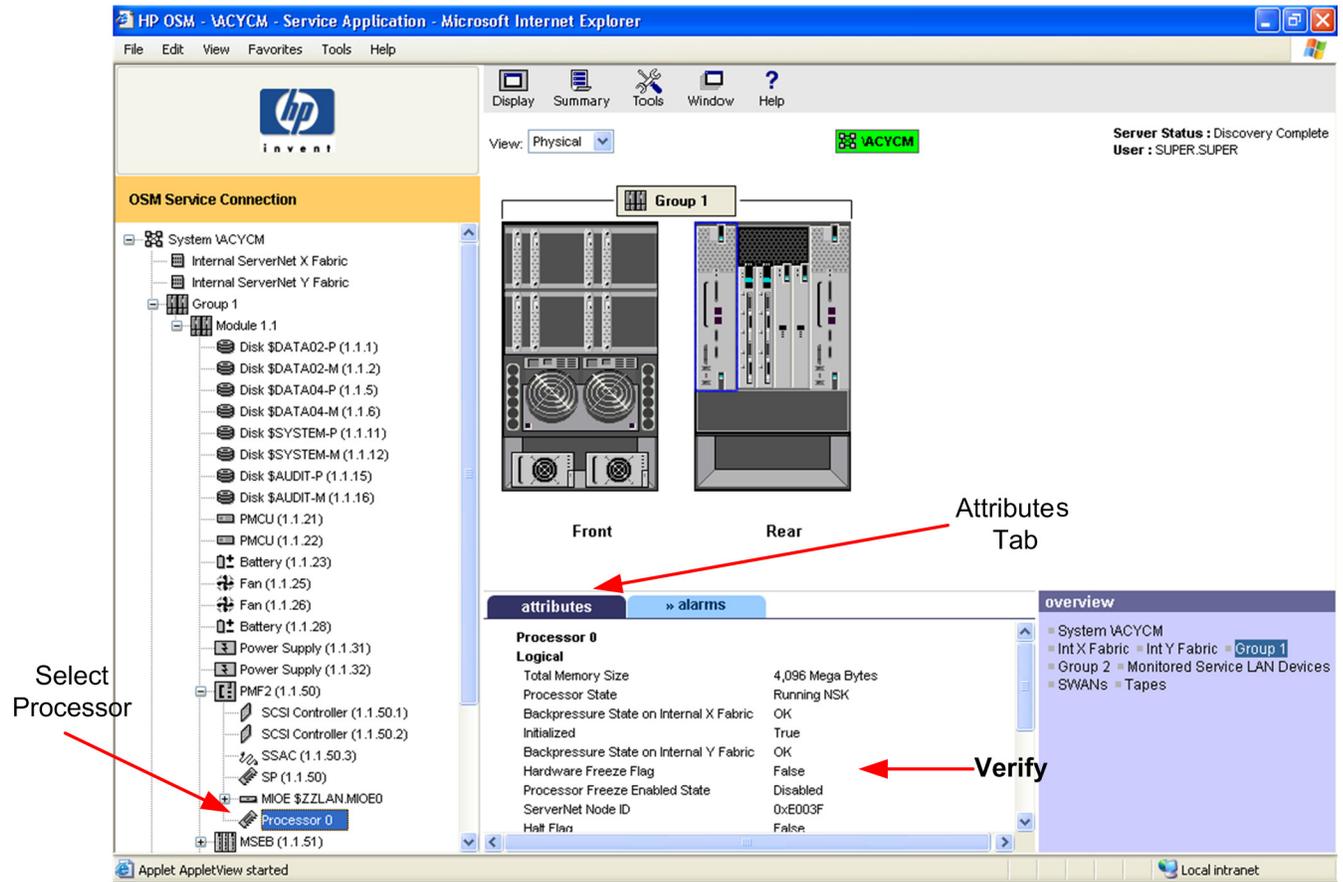


FIGURE 5–4. FRONT AND REAR VIEW, GRAPHICAL COMPONENT TREE VIEWING PANE SELECT PROCESSOR

(g) In the lower-right viewing pane, ensure the **Attributes** tab is selected. In the Attribute Name column, find **Processor State** and **Service State**. Verify that under the Attribute Value column, the **Processor State** is Running NSK.

(h) Repeat steps (e) through (g) for Group 2 PMF2 (2.1.50) CPU 2 and (2.1.55) CPU 3.

(i) Close the Management window by clicking the **X** in the upper-right corner.

(j) Select **File**, then select **EXIT**. Another window pop up stating “**Logging off will terminate the current session**” appears. Select **YES**.

503. DISK SYSTEM.

- a. **Object.** To verify all paths to disk drives are functioning properly.
- b. **Discussion.** This procedure uses the Outside View utility to access the system via the command interpreter.
- c. **Test Equipment Required.** None.
- d. **Conditions.** Perform this procedure only when there is no critical system activity occurring.
- e. **Detailed Procedure.**
 - (1) From the desktop of the Specialist Workstation, select and open **Outside View32**.
 - (2) Select **File**, then **New Session**. The **Session Settings** dialog box appears.
 - (3) Ensure each of the session settings in the **Categories** list (located in the left viewing pane) closely resembles figures 5–5 through 5–13.
 - (4) It is permissible to alter the session settings to customize the user environment. If the user chooses to customize these settings, it is advisable to save the session for future use (see step (16) of this paragraph).

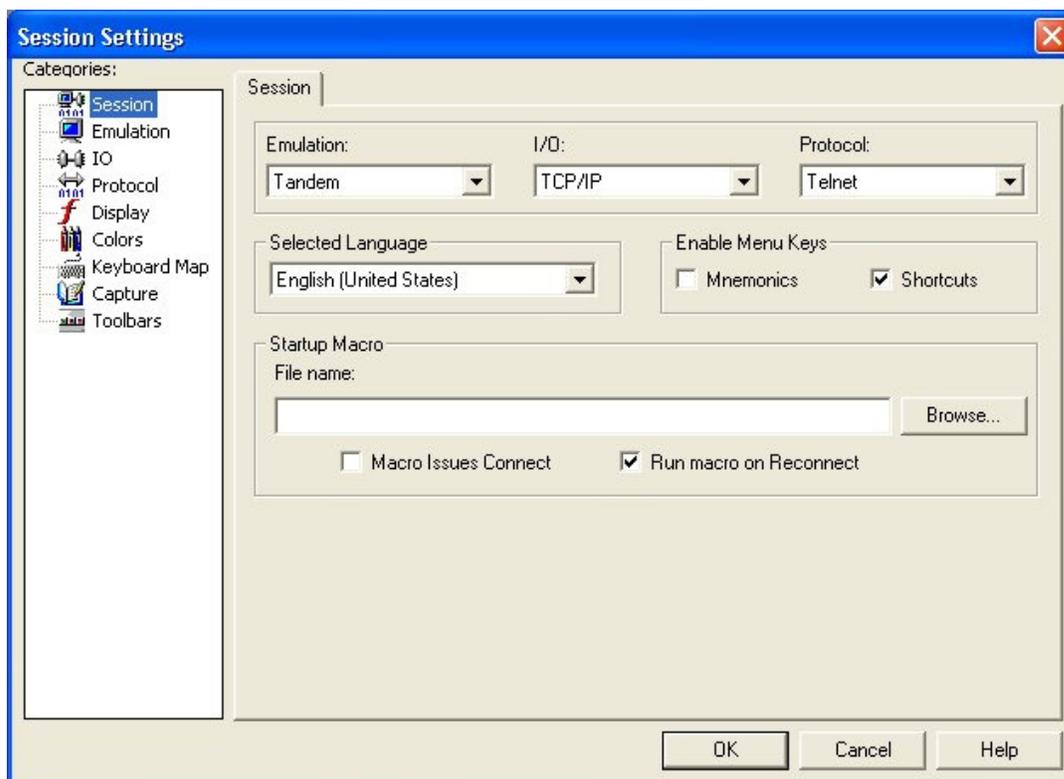


FIGURE 5–5. OUTSIDE VIEW32 SESSION SETTINGS

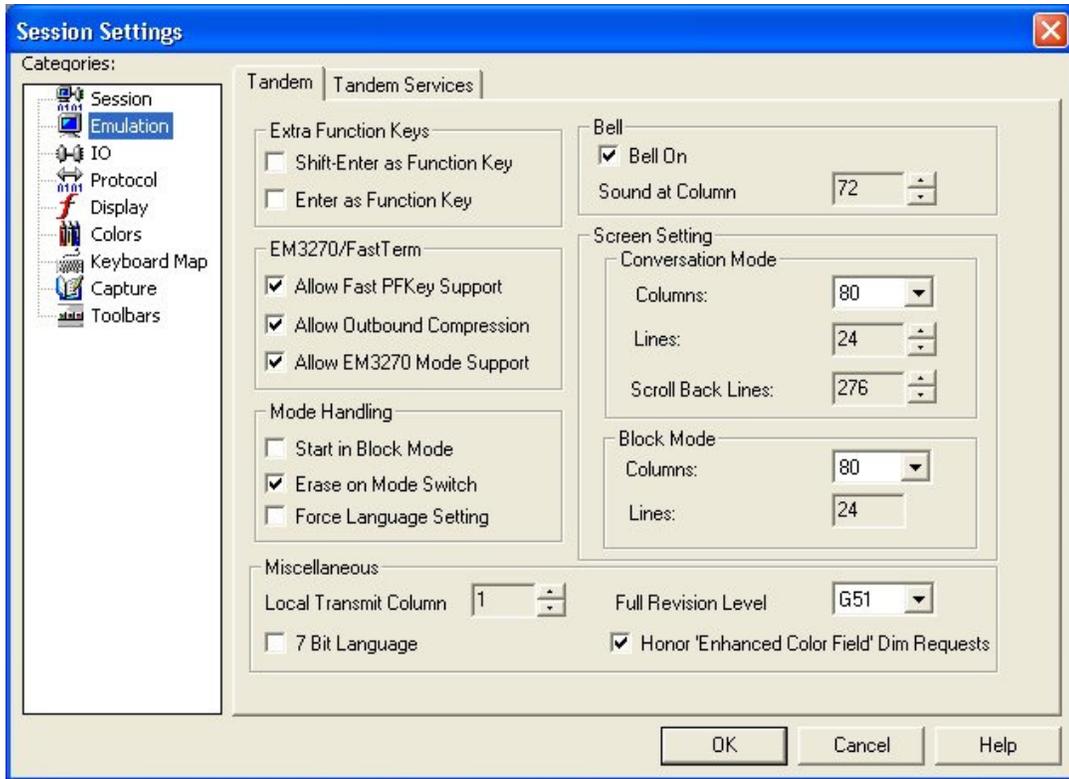


FIGURE 5-6. OUTSIDE VIEW32 EMULATION SETTINGS

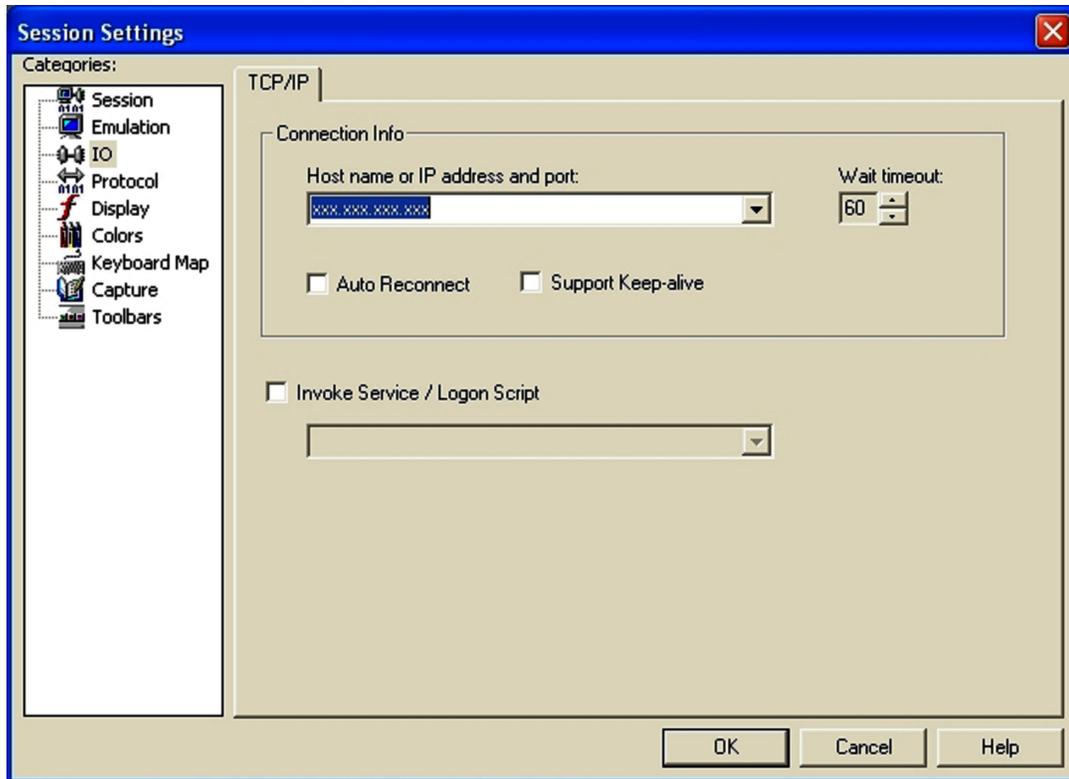


FIGURE 5-7. OUTSIDE VIEW32 IO SETTINGS

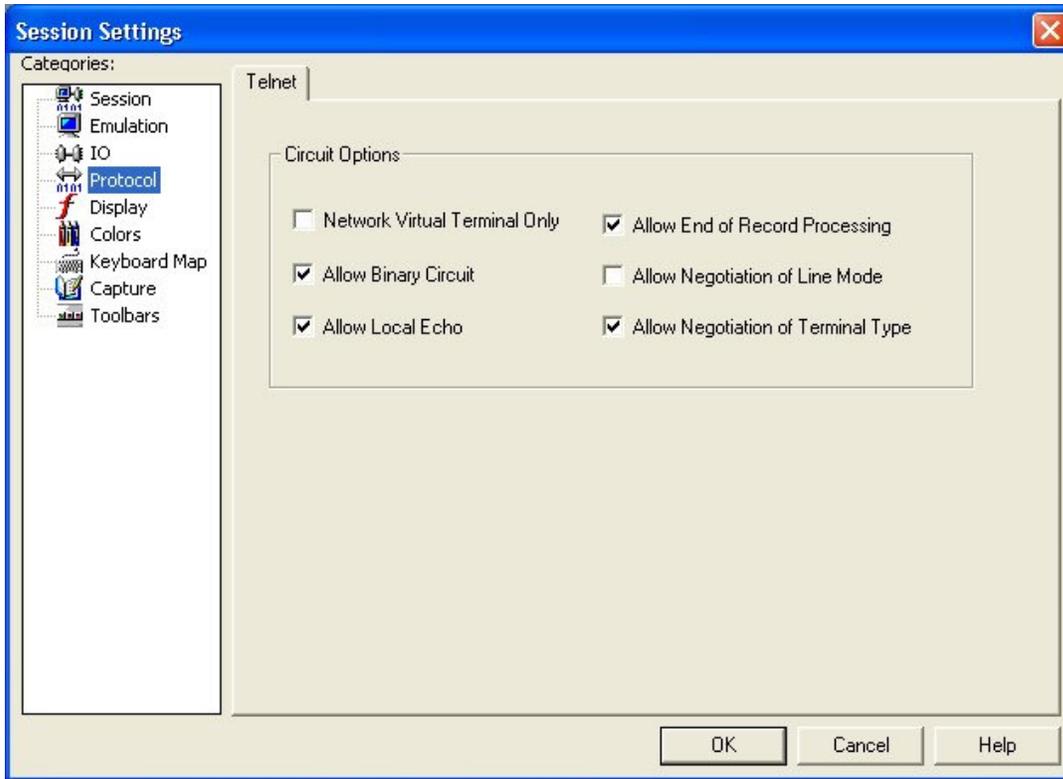


FIGURE 5–8. OUTSIDE VIEW32 PROTOCOL SETTINGS

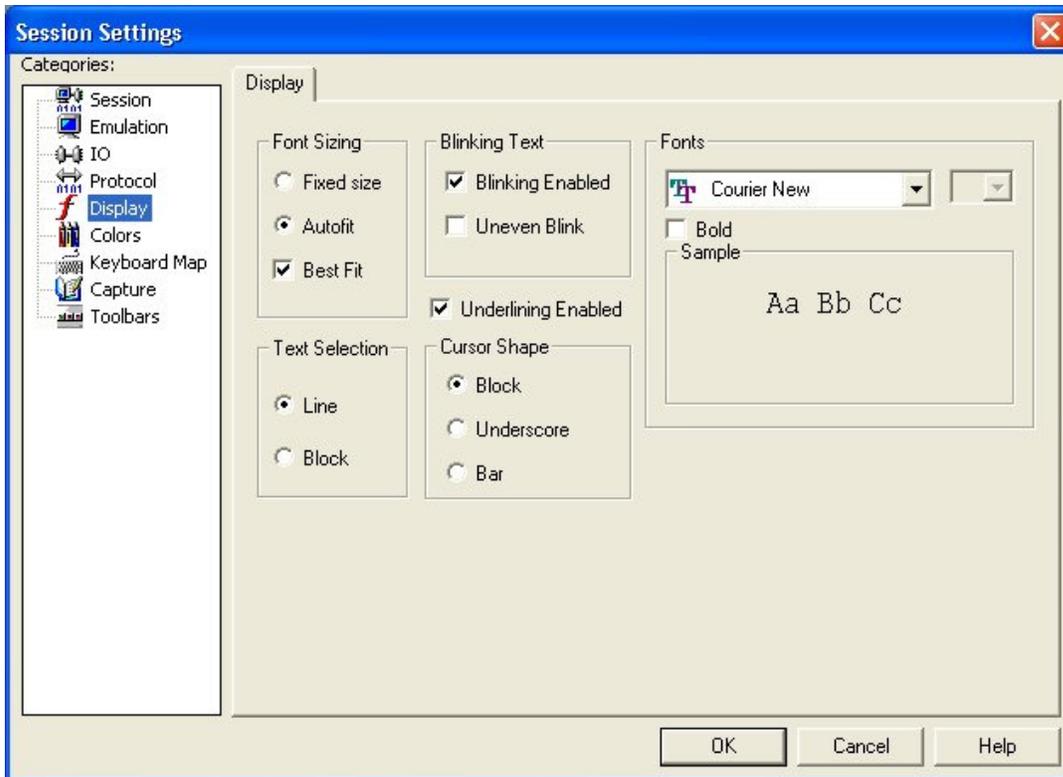


FIGURE 5–9. OUTSIDE VIEW32 DISPLAY SETTINGS

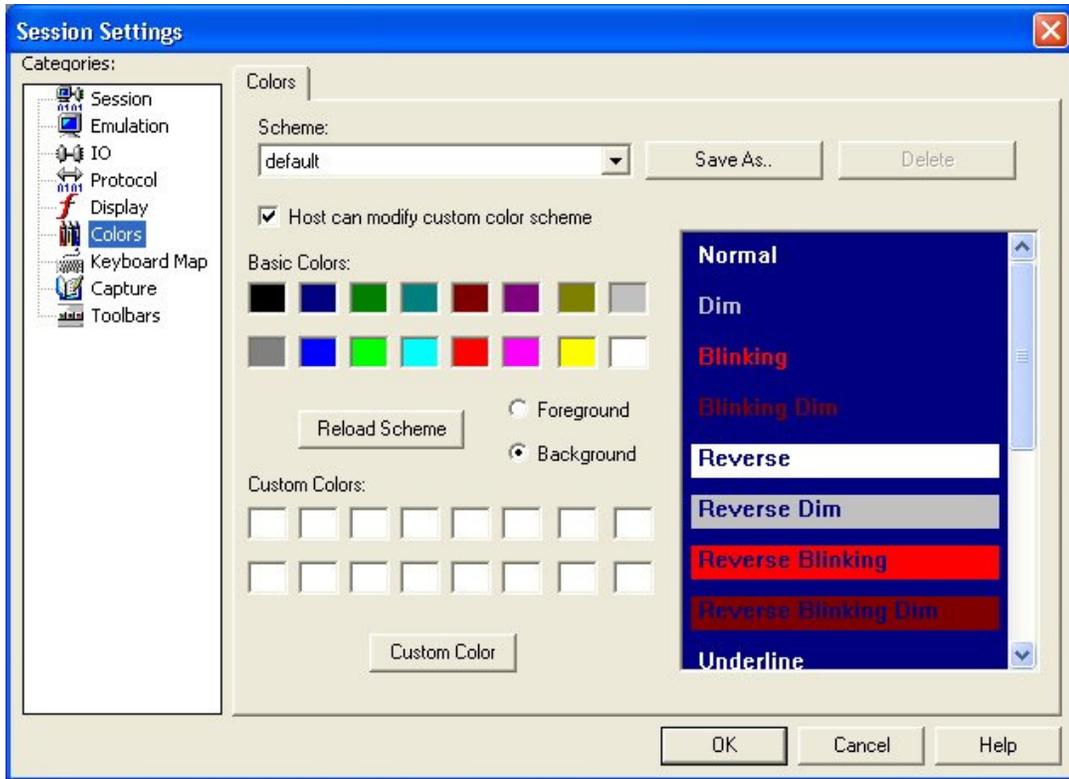


FIGURE 5–10. OUTSIDE VIEW32 COLOR SETTINGS

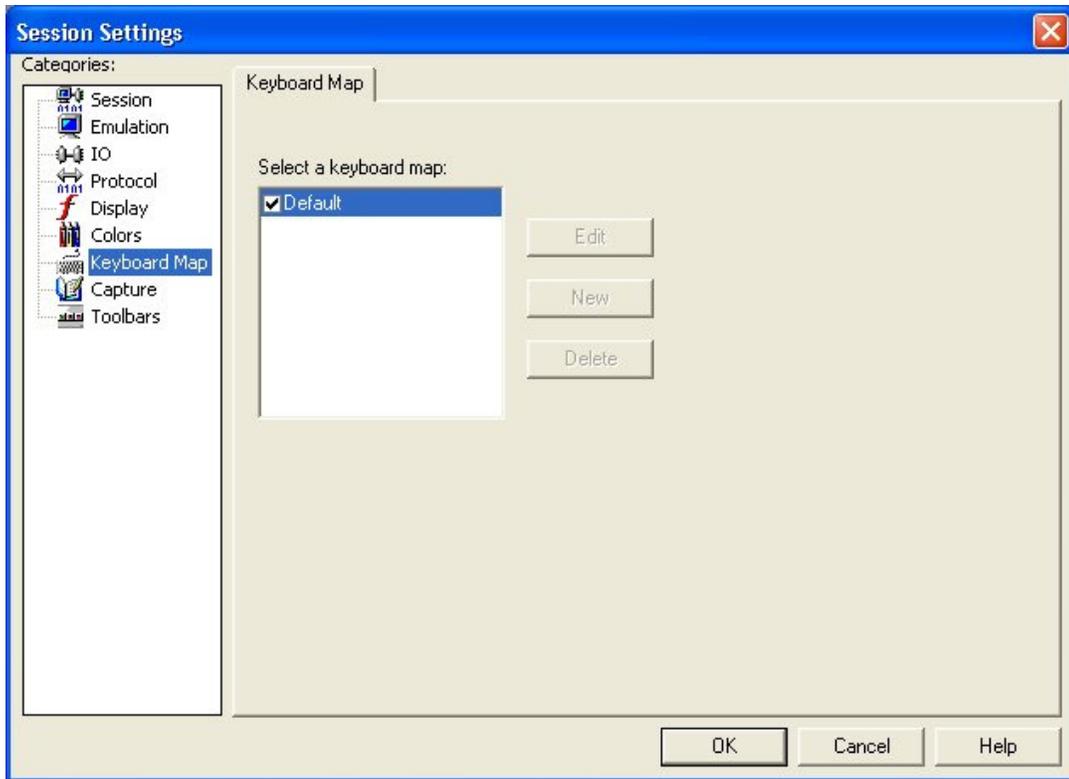


FIGURE 5–11. OUTSIDE VIEW32 KEYBOARD MAP SETTINGS

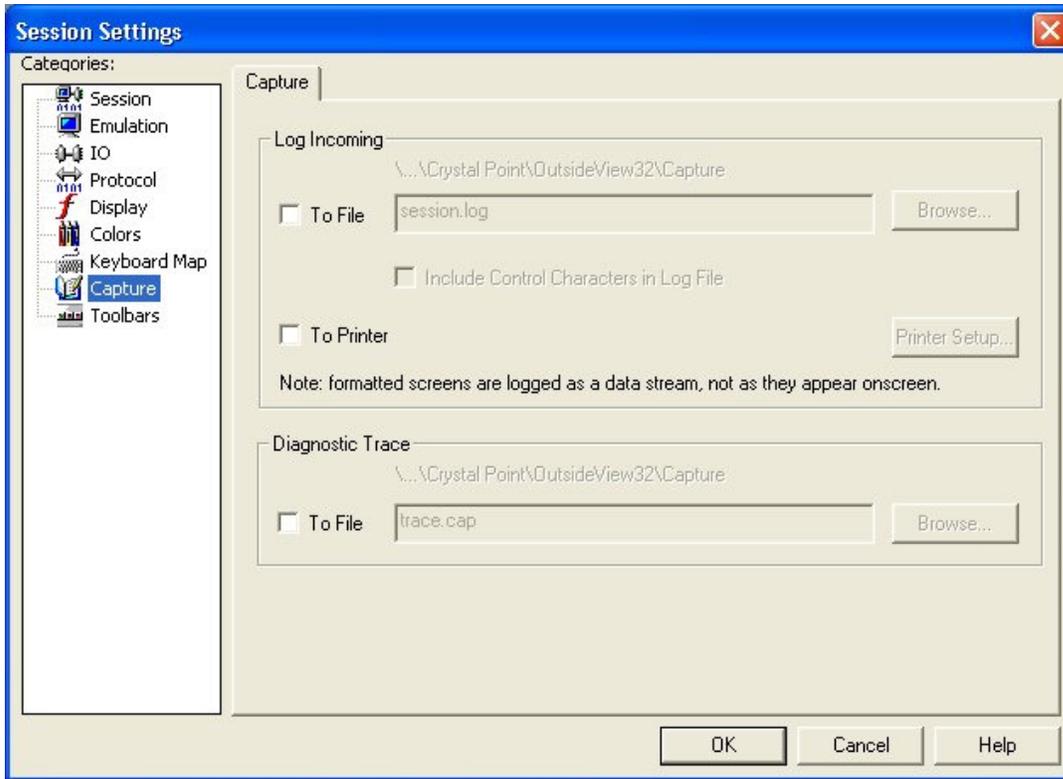


FIGURE 5–12. OUTSIDE VIEW32 CAPTURE SETTINGS

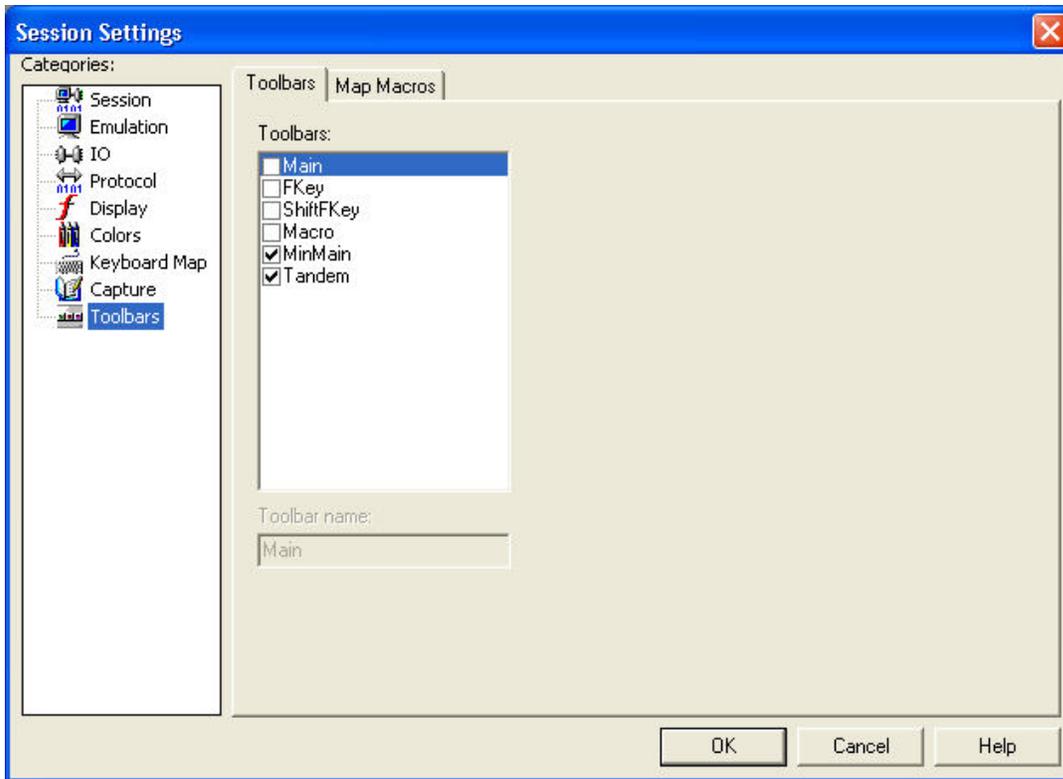


FIGURE 5–13. OUTSIDE VIEW32 TOOLBARS SETTINGS

(5) Click **OK**. The session opens displaying a screen similar to Figure 5–14, Outside View32 Main Screen.

(6) At the prompt, enter **TACL**, then press **ENTER**.

(7) At the **TACL 1>** prompt, log on as a privileged user, enter the appropriate password, and press **ENTER**. A screen resembling Figure 5–15, Outside View32 Screen After Initial Logon, displays.

NOTE: If the user requires access to a different Tandem on the WMSCR network, then a new session should be established as Section 503e, steps (2) through (7), describe.

(8) Type **TACLMENU**, press **ENTER** when prompted. There is a slight delay. Eventually a screen similar to Figure 5–16, Outside View32 TACL Main Menu, displays.

(9) Choose option (#) to exit TACL prompt and press **ENTER**. When asked “**Is this what you want**”, key in **Y** for Yes Exit to TACL Menu. Refer to Figure 5–17, Outside View32 Screen after TACL Menu Exit and Logoff.

(10) At the prompt, enter **SYSINFO** then press **ENTER**. A screen similar to Figure 5–18, Outside View32 System Info Screen, displays.

(11) At the prompt, enter **SCF** to invoke the Subsystem Control Facility (SCF).

(12) At the prompt, enter:

INFO DISK \$*,BAD

and press **ENTER**. It might be necessary to enter **Y** when prompted for More Text as the information scrolls down the screen.

(13) Evaluate the results to determine if there are any abnormal conditions. In the event of abnormal conditions, investigate the cause, then resolve or contact second-level support through the FAA OCC Help Desk (reference paragraph 103c).

(14) Exit SCF by entering **EXIT** at the prompt.

(15) Log off the session by entering:

LOGOFF at the prompt.

(16) If any sessions settings were customized during the session setup, save the session by selecting **FILE**, then **SAVE SESSION AS**. Provide a generic but descriptive filename for the session, and then select **SAVE**. The saved session can now be selected the next time OutsideView is opened.

(17) Select **FILE** and then **EXIT Outside View32**.

(18) When asked “**Would you like to save this current workspace**” select **NO**.

(19) When asked “**Would you like to save this Tandem #**” select **NO**.

(20) Log off the workstation.

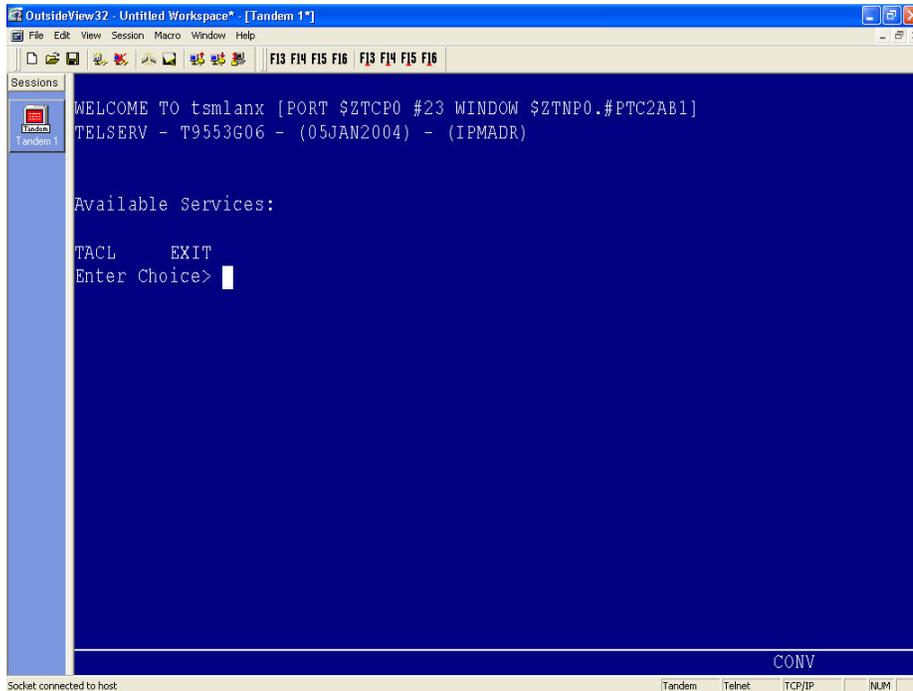


FIGURE 5-14. OUTSIDE VIEW32 MAIN SCREEN

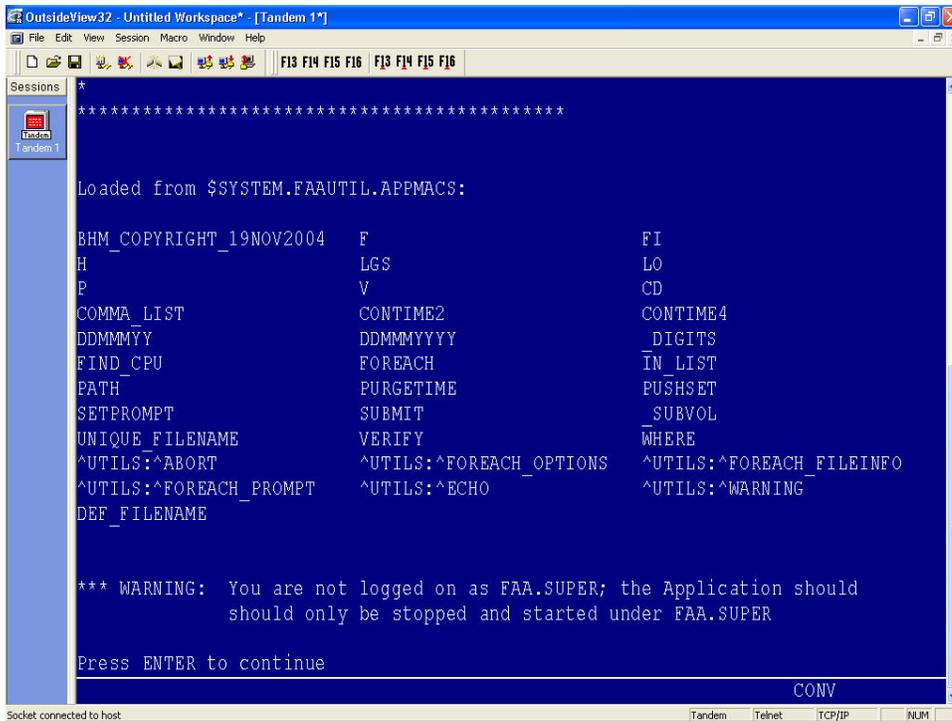


FIGURE 5-15. OUTSIDE VIEW32 SCREEN AFTER INITIAL LOGON

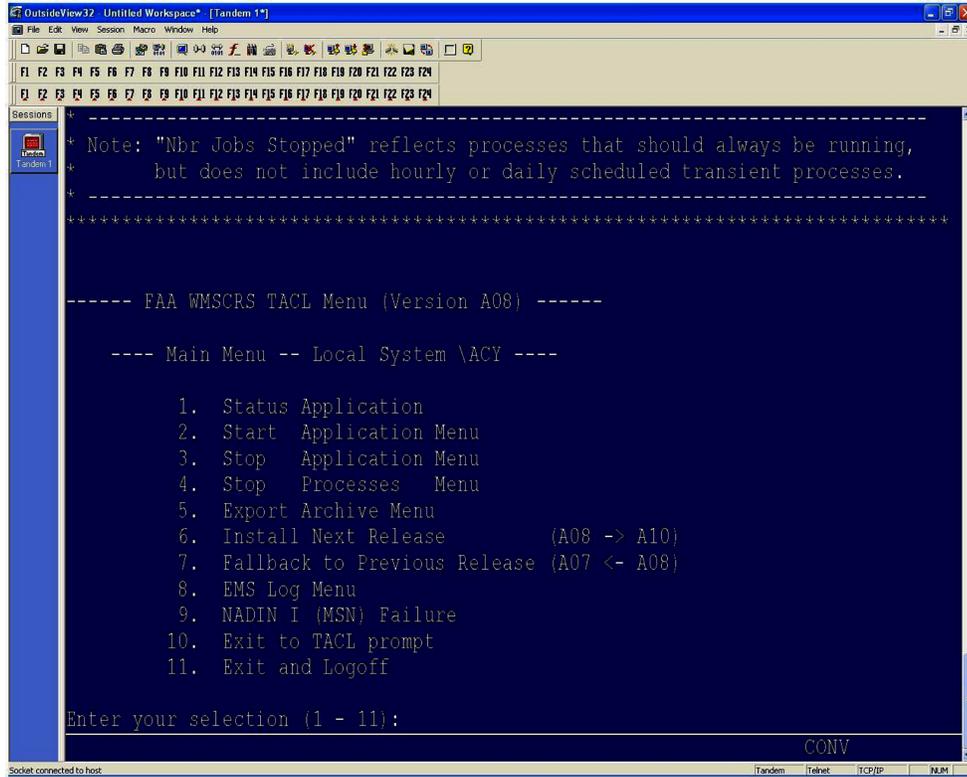


FIGURE 5-16. OUTSIDE VIEW32 TACL MAIN MENU

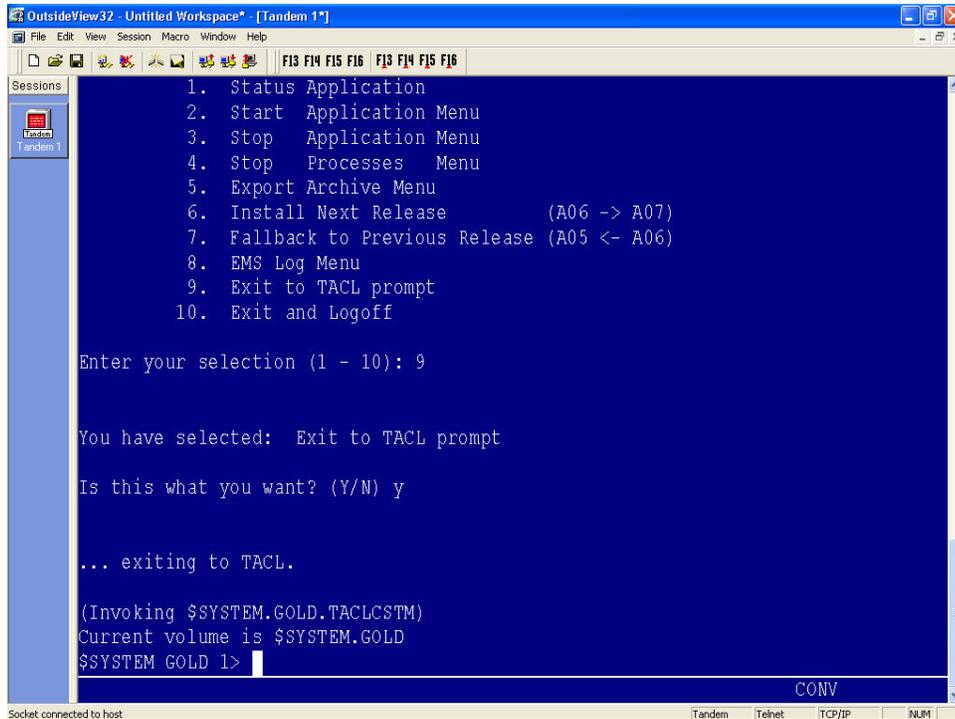


FIGURE 5-17. OUTSIDE VIEW32 SCREEN AFTER TACL MENU EXIT AND LOGOFF

```

SYSINFO - T9268D37 - (07 AUG 2003) SYSTEM \ACY Date 28 Oct 2004, 19:00:08
Copyright 2003 Hewlett-Packard Development Company, L.P.

      System name      \ACY
EXPAND node number    253
      Current SYSnn    SYS03
      System number    051793
      Software release ID  G06.22

$SYSTEM GOLD 2>

```

FIGURE 5–18. OUTSIDE VIEW32 SYSTEM INFO SCREEN

504. APPLICATION SOFTWARE.

a. Object. To determine that the application software is functioning correctly and that all associated hardware is operational.

b. Discussion. This procedure provides the capability to review system errors, significant events, and relevant application software occurrences that have been detected.

c. Test Equipment Required. None.

d. Conditions. This procedure can be performed at any time.

e. Detailed Procedure.

- (1) From the desktop of the Specialist Workstation, select and open **Outside View32**.
- (2) Select **File** and **New Session**. At the Session Settings, click **OK**. At the **TCP/IP** tab, select the proper selection and click **OK**.
- (3) At the prompt, type **TACL** to get the TACL prompt.
- (4) At the prompt, log on as a privileged user and enter the appropriate password.
- (5) At the TACL prompt, type **TACLMENU**. See Figure 5–19, Outside View32 TACL Main Menu Screen.
- (6) Select **# Status Application** and **ENTER**.
- (7) Enter **Y** when asked “**Is this what you want?**”
- (8) The system scans the processes (this takes a few minutes).
- (9) Scroll down to the Application Status. See Figure 5–20, Outside View32 TACL Application Status Screen.
- (10) The correct indication is: All processes that should be running on the **PRIMARY NODE** are running, and some processes are running on the **SECONDARY NODE**.
- (11) Press **Enter** and the system returns to the TACLMENU. See figure 5–19.
- (12) Enter **#** to **Exit** and **Logoff**.

505. HP PROLIANT SERVERS.

- a. **Object.** To determine that the HP Proliant servers are operational.
- b. **Discussion.** This procedure provides the capability to ensure that the HP Proliant servers are operational. The HP Proliant servers are the web servers, and the WMSCR FTP server.
- c. **Test Equipment Required.** None.
- d. **Conditions.** This procedure can be performed at any time.
- e. **Detailed Procedure.**

(1) At the front of each Proliant server, verify that the LEDs are illuminated, Figure 5–21, Proliant DL380 Web Server, Front Panel Right Side, shows an example of the LED locations.

(2) In the event of abnormal conditions, investigate the cause, then resolve or contact second-level support through the FAA OCC Help Desk (reference paragraph 103c).

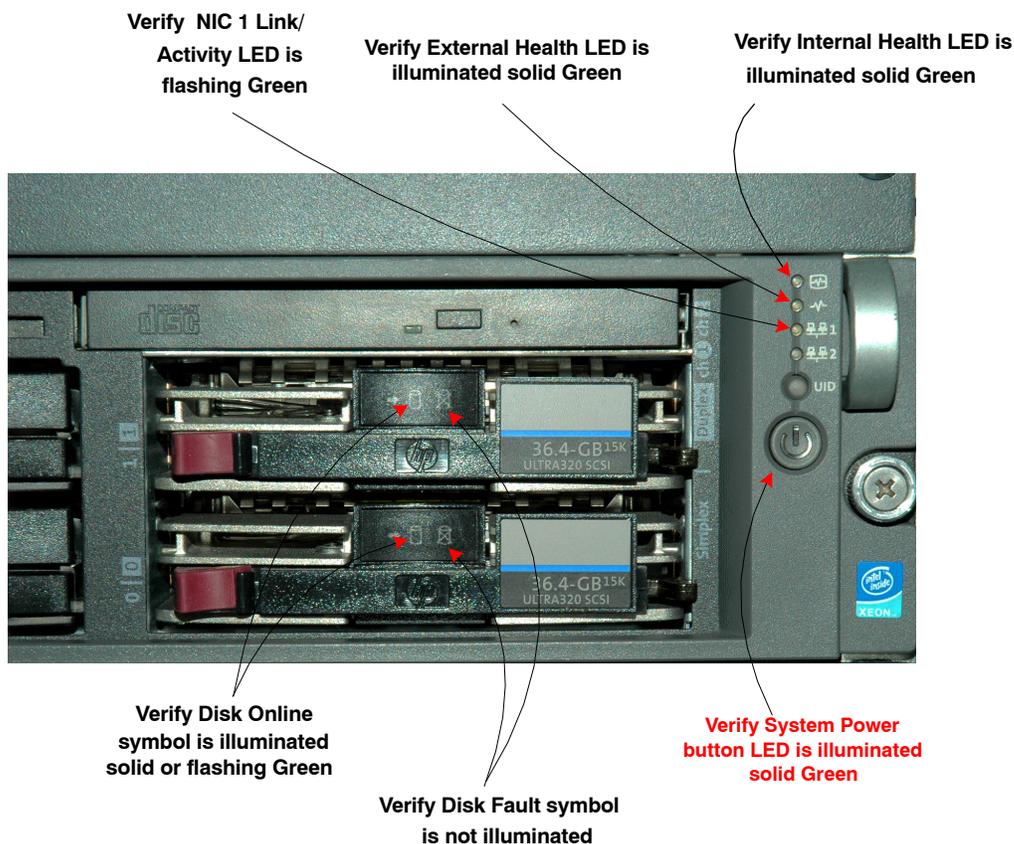


FIGURE 5–21. PROLIANT DL380 WEB SERVER, FRONT PANEL RIGHT SIDE

506. TIME SERVER.

a. Object. To determine that the overall system configuration is functioning correctly and that all associated hardware is operational.

b. Discussion. This procedure proves that the timer server is receiving calibrated time data. This device consists of the Symmetricom XLi Time and Frequency System with GPS Receiver option card. The Reference Source Input consists of a GPS antenna, coaxial cable, and GPS receiver option card.

c. Test Equipment Required. None.

d. Conditions. This procedure can be performed at any time.

e. Detailed Procedure.

(1) On the front panel display, verify that the word “LOCKED” appears in the top-left corner. If the Status Display does not display the expected information with words such as UNLOCKED or FAULT, a problem within the unit or in the reference source input exists. (See Figure 5–22, Symmetricom XLi Time and Frequency System, Display Panel.)

NOTE: The **STATUS** button might need to be pressed one or more times for the desired information to be displayed. (See Figure 5–23, Symmetricom XLi Time and Frequency System, Front Panel Buttons.)

(2) In the event of abnormal conditions, investigate the cause, then resolve or contact second-level support through the FAA OCC Help Desk (reference paragraph 103c).

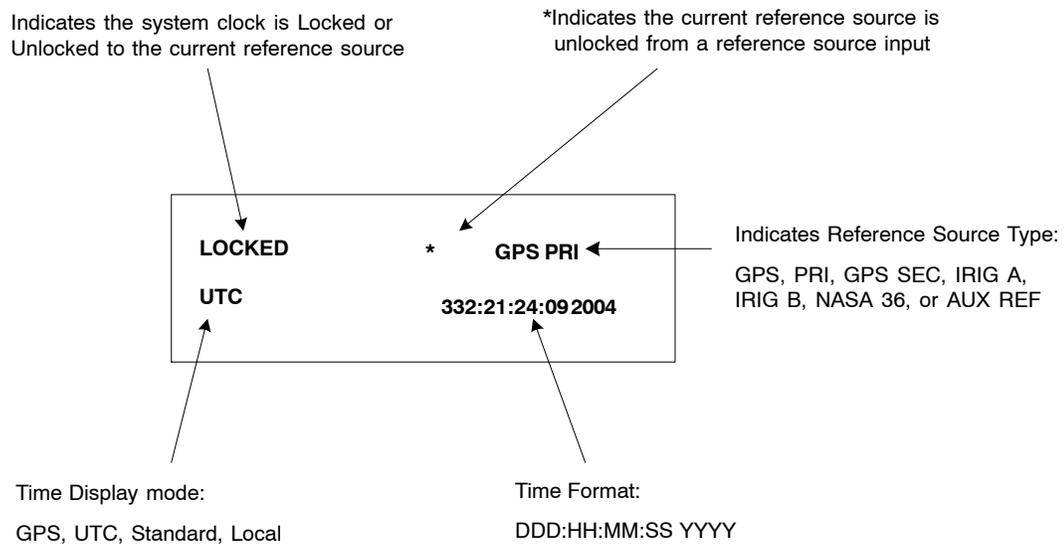


FIGURE 5–22. SYMMETRICOM XLI TIME AND FREQUENCY SYSTEM, DISPLAY PANEL



FIGURE 5–23. SYMMETRICOM XLI TIME AND FREQUENCY SYSTEM, FRONT PANEL BUTTONS

507. SWAN.

- a. **Object.** To determine that the SWAN is functioning correctly.
- b. **Discussion.** This procedure provides the capability to confirm that the SWAN is operating normally.
- c. **Test Equipment Required.** None.
- d. **Conditions.** This procedure can be performed at any time.
- e. **Detailed Procedure.**
 - (1) At the front of the Compaq 3881, verify the LEDs are illuminated as illustrated in Figure 5–24, Compaq 3881 SWAN Local Area Network (LAN) and Power Modules, and Figure 5–25, Compaq 3881 SWAN WAN Modules.
 - (2) In the event of abnormal conditions, investigate the cause, then resolve or contact second-level support through the FAA OCC Help Desk (reference paragraph 103c).

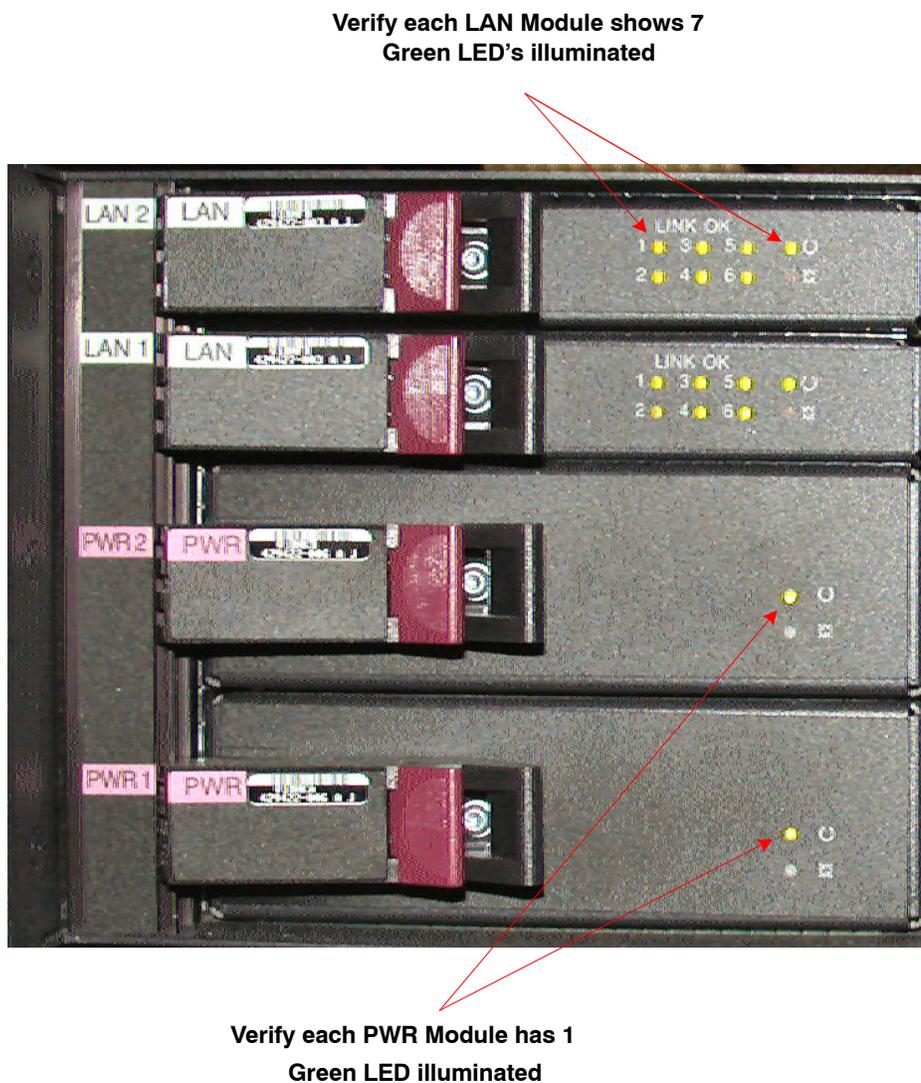


FIGURE 5–24. COMPAQ 3881 SWAN LAN AND POWER MODULES



Verify each WAN Module has 1
Green LED illuminated

FIGURE 5–25. COMPAQ 3881 SWAN WAN MODULES

508. ETHERNET SWITCHES.

- a. **Object.** To determine that the Ethernet switches are operational.
- b. **Discussion.** This procedure provides the capability to ensure that the Ethernet switches are operational.
- c. **Test Equipment Required.** None.
- d. **Conditions.** This procedure can be performed at any time.
- e. **Detailed Procedure.**

(1) Verify that each Cisco Catalyst 2950 Switch displays the illuminated LEDs on the front panel, as illustrated in Figure 5–26, Cisco Catalyst 2950 Switch, Front Panel.

(2) In the event of abnormal conditions, investigate the cause, then resolve or contact second-level support through the FAA OCC Help Desk (reference paragraph 103c).

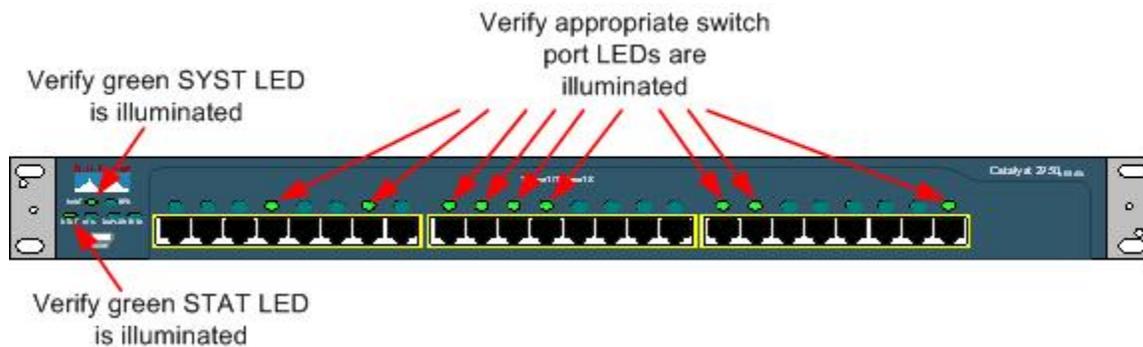


FIGURE 5–26. CISCO CATALYST 2950 SWITCH, FRONT PANEL

509. SHUB.

- a. **Object.** To determine that the SHUB is functioning correctly.
- b. **Discussion.** This procedure provides the capability to ensure that the SHUB is operational.
- c. **Test Equipment Required.** None.
- d. **Conditions.** This procedure can be performed at any time.
- e. **Detailed Procedure.**

(1) Verify that each HP Procurve Switch 10/100 (SHUB) displays the illuminated LEDs on the front panel, as illustrated in Figure 5–27, Procurve Switch 10/100 SHUB, Front Panel.

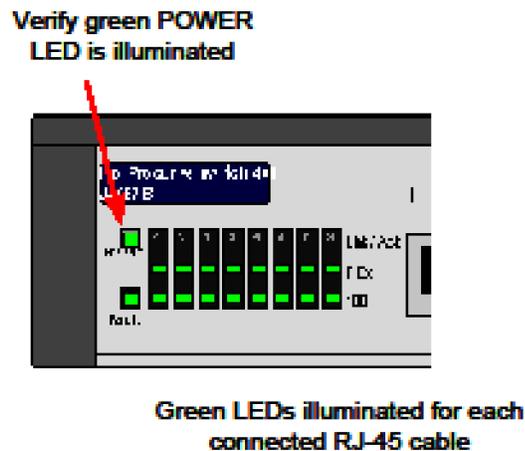


FIGURE 5–27. PROCURVE SWITCH 10/100 SHUB, FRONT PANEL

(2) In the event of abnormal conditions, investigate the cause, then resolve or contact second-level support through the FAA OCC Help Desk (reference paragraph 103c).

510.–549. RESERVED.

Section 2. OTHER MAINTENANCE TASK PROCEDURES

550. LASER PRINTER.

- a. **Object.** To determine that the Laser printer is functioning correctly.
- b. **Discussion.** This procedure provides the capability to ensure that the printer is operational.
- c. **Test Equipment Required.** None.
- d. **Conditions.** This procedure can be performed at any time.
- e. **Detailed Procedure.**

NOTE: Visually inspect the printer's rear grille(s) for dust or debris. If dust buildup is visible, clean the grille with cotton (or similar) cloth. Take care to ensure that no loose debris remains on the grille since it could be drawn into the printer components when cleaning is complete.

- (1) At the Specialist Workstation, select **Start>Printers and Faxes**.
- (2) Select the appropriate printer and highlight it with a single click.
- (3) Right-click and select **Properties**.
- (4) Initiate a printer test page printout for the printer being tested by selecting **Print Test Page**.
- (5) Review the printout to confirm print is clear and accurate.
- (6) Click **OK** to exit window.
- (7) Click **X** in upper-right corner to close both windows and log off the workstation.
- (8) In the event of abnormal conditions, investigate the cause, then resolve or contact second-level support through the FAA OCC Help Desk (reference paragraph 103c).

551. COOLING AND AIR CIRCULATION.

- a. **Object.** To determine that the ac power, control panels, and major logic modules are operational.
- b. **Discussion.** This procedure provides the capability to ensure that cooling and air circulation are within acceptable limits. It further describes minor routine cleaning.
- c. **Test Equipment Required.** None.
- d. **Conditions.** This procedure can be performed at any time.
- e. **Detailed Procedure.**

(1) Visually inspect the NonStop Server front grille for dust and debris. If dust buildup is visible, open the NonStop Server side door using the provided 4-mm allen key. Clean the front grille with a cotton (or similar) cloth. Take care to ensure that no loose debris remains on the grille since it could be drawn into the server components when cleaning is complete.

- (2) At the Tandem console, select **Start>Programs>HP OSM>OSM Service Connection**.
- (3) From the list of OSM Service Connections on the left, select a link for the system to be accessed.
- (4) Within the logon window, log on as a privileged user and enter the appropriate password. OSM Service Application is launched in a secondary Internet Explorer browser window. Close the OSM Service Connection window in the background.

(5) Maximize the OSM Service Application window.

(6) In the component tree in the left viewing pane, double-click on the **Group 1 (2)** icon to expand the component tree.

(7) Select **PMCU (1.1.21)**.

(8) In the right viewing pane, ensure the **Attributes** tab is selected. In the Attribute Name column, find Temperature (C). Verify that the Temperature reading is between the Minimum and the Maximum limits under the Attribute Value column. Refer to Figure 5–28, Front and Rear View, Graphical Component Tree Viewing Pane.

NOTE: Repeat steps (5) through (8) of this paragraph for PMCU 1.1.22 of Group 1. ■

(9) In the event of abnormal conditions, investigate the cause, then resolve or contact environmental maintenance personnel.

(10) Repeat steps (5) through (8) of this paragraph for the Group 2 PMCUs. ■

(11) In the component tree in the left viewing pane, double-click on the **Group 1 (2)** icon to expand the component tree.

(12) Select **Fan (1.1.25)**.

(13) In the right viewing pane, ensure the **Attributes** tab is selected. In the Attribute Name column, find Rotations Per Minute. Verify that the under the Attribute Value column, the Fan speed reading is between the Minimum and Maximum limits. Refer to Figure 5–29, Front and Rear View, Graphical Component Tree Viewing Pane.

NOTE: Repeat steps (11) through (13) of this paragraph for Fan 1.1.26 of Group 1.

(14) In the event of abnormal conditions, investigate the cause, then resolve or contact environmental maintenance personnel.

(15) Repeat steps (11) through (14) of this paragraph for Group 2 Fans.

(16) Close the **Management** window by clicking the **X** in the upper-right corner.

(17) From the OSM Service Connection menu, select **File > Close**. When the confirmation window is displayed click **OK**.

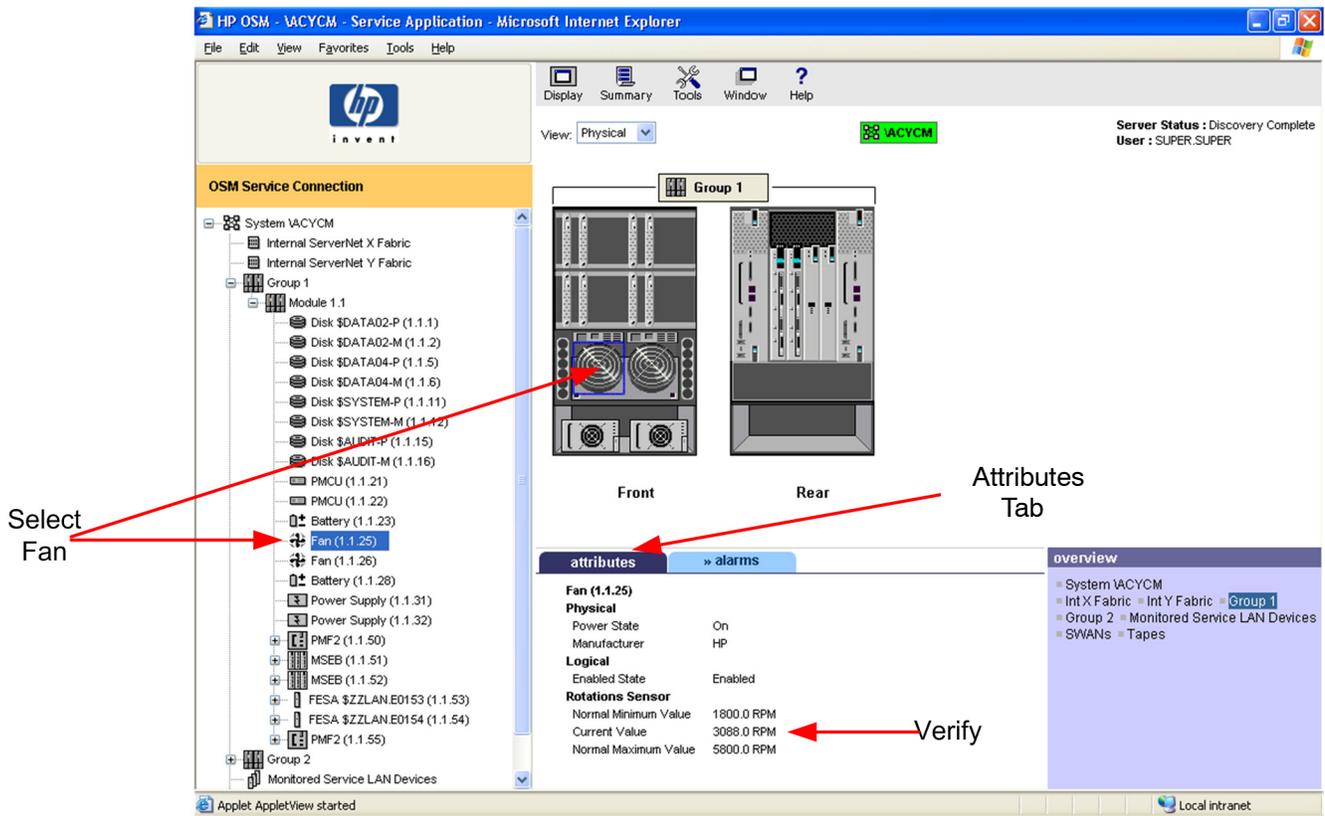


FIGURE 5–28. FRONT AND REAR VIEW, GRAPHICAL COMPONENT TREE VIEWING PANE

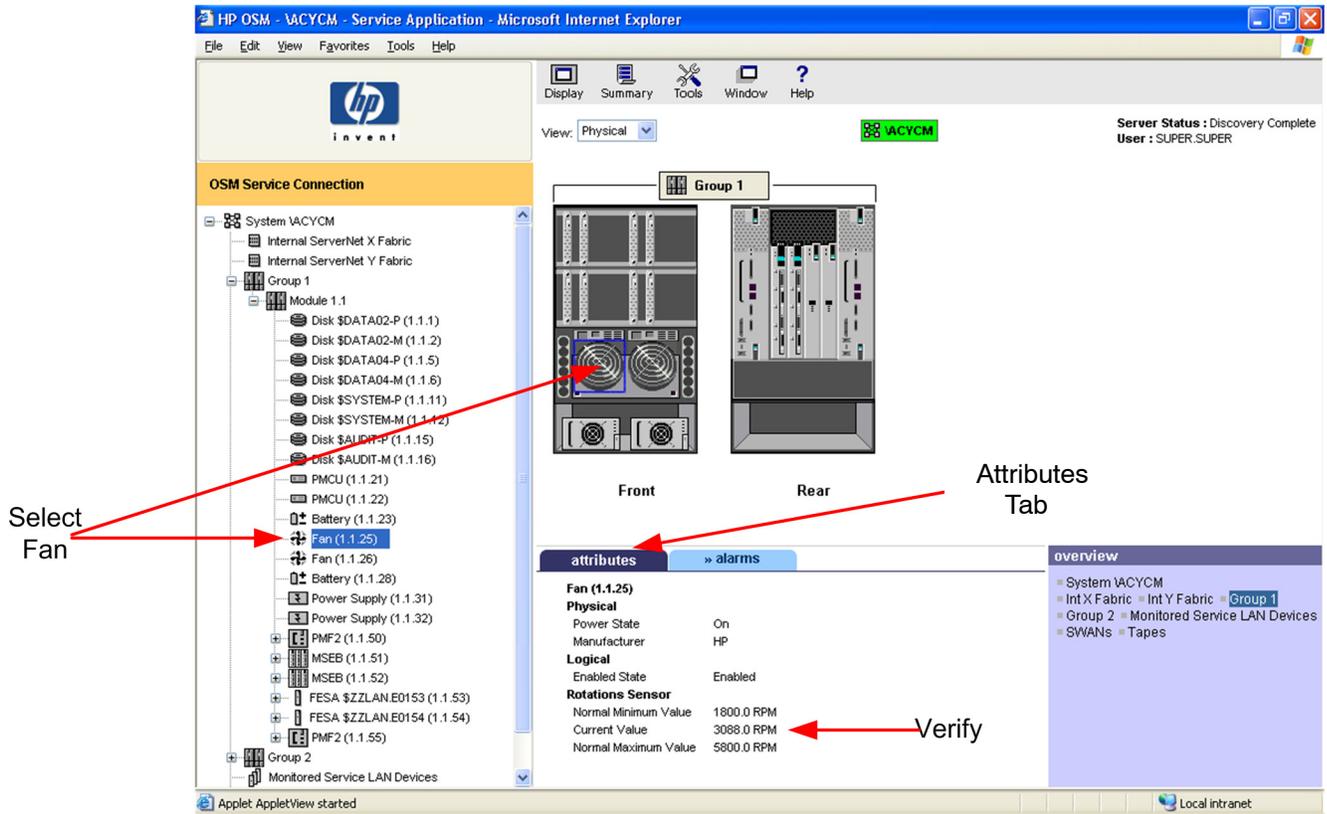


FIGURE 5–29. FRONT AND REAR VIEW, GRAPHICAL COMPONENT TREE VIEWING PANE

552. REVIEW AUDIT LOG.

- a. **Object.** To verify the system users are authorized to access the system and that they are allowed to perform specified functions.
- b. **Discussion.** This procedure uses the Outside View utility to access the system via the command interpreter.
- c. **Test Equipment Required.** None.
- d. **Conditions.** Perform this procedure only when there is no critical system activity occurring.
- e. **Detailed Procedure.**
 - (1) From the desktop of the Specialist Workstation, select and open **Outside View32**.
 - (2) Select **File** and **New Session**. At the Session Settings, click **OK**. At the **TCP/IP** tab, select the proper site and click **OK**.
 - (3) At the prompt, type **TACL** to get the TACL prompt.
 - (4) At the prompt, log on as a privileged user and enter the appropriate password.
 - (5) At the prompt, type **CMONMENU**. A screen similar to Figure 5–30, Tandem CMON User Transactions Menu, displays.

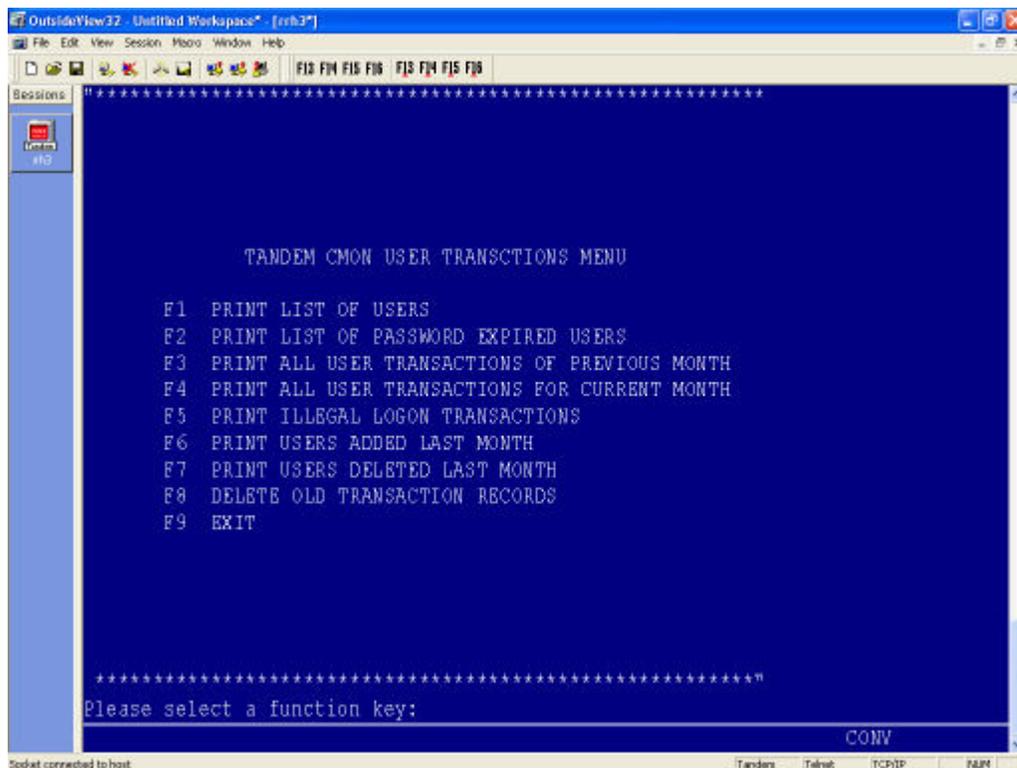


FIGURE 5–30. TANDEM CMON USER TRANSACTIONS MENU

- (6) Press **F5** to initiate a printout of all illegal logon transactions for the previous month.
- (7) When the print job is complete, press **F9** to exit the CMON application.

(8) All unverified or unexplained Illegal Logon Attempts must be carefully scrutinized. All abnormalities must be handled in accordance with local user access security procedures.

(9) Log off the session by entering **LOGOFF** at the prompt.

(10) Select **File**, then select **EXIT**. Another window displays indicating that logging off terminates the current session. Select **YES**.

(11) Log off the workstation.

553. ANTIVIRUS SOFTWARE.

a. **Object.** To verify that the antivirus software is operating properly.

b. **Discussion.** Use the icon to access VirusScan Console.

c. **Test Equipment Required.** None.

d. **Conditions.** This procedure can be performed at any time.

(1) At the desktop, right-click on the VirusScan icon on the lower task bar.

(2) Select VirusScan Console.

(3) Verify that the task On-Access Scanner is in the Enabled status in the VirusScan Console window.

(4) Click **X** in the upper-right corner to close the window.

554.–575. RESERVED.

Section 3. SPECIAL MAINTENANCE TASK PROCEDURES

576. VERIFY SYSTEM.

a. Object. To determine that the operating system is functioning correctly and that all hardware is operational.

b. Discussion. This procedure provides the capability to review system errors, significant events, and relevant system occurrences that have been detected and recorded in an error log file by a set of routines.

c. Test Equipment Required. None.

d. Conditions. This procedure can be performed at any time.

e. Detailed Procedure.

(1) At the Tandem console, select **Start>Programs>HP SP Tool>SP Tool**. Within the Compaq logon window, log on as a privileged user and enter the appropriate password.

(2) Select **SYSTEM**, then **VERIFY SYSTEM**.

(3) The **Enclosure Range** dialog box displays. Ensure the **All Enclosures** check box is checked.

(4) Click on **OK** to begin the Verify System routine. Once completed, if no errors are encountered, a message similar to the following displays:

SP Tool: Verify System completed: <Date> at <Time>.

(5) Within the HP SP Tool window, select **ServerNet**, then **Path Test**.

(6) The **Enclosure Range** dialog box appears. Ensure the **All Enclosures** check box is checked.

(7) Click on **OK** to begin the Path Test routine. Once completed, if no errors are encountered, a message similar to the following displays:

SP Tool: Path Test completed: <Date> at <Time>.

(8) Within the HP SP Tool window, select **Power Environment**, then **Check ESC**.

(9) The **Enclosure Range** dialog box appears. Ensure the **All Enclosures** check box is checked.

(10) Click on **OK** to begin the ESC Check routine. Once completed, if no errors are encountered, a message similar to the following displays:

SP Tool: Check ESC Values completed: <Date> at <Time>.

(11) Within the HP SP Tool window, select **Power Environment**, then **PS Check**.

(12) The **CRU Address** dialog box appears. The default **Group** number is supposed to be 1. The default **Slot** number is supposed to be 50.

(13) Click on **OK** to begin the PS Check routine. Once completed, if no errors are encountered, a message similar to the following displays:

SP Tool: PS Check completed: <Date> at <Time>.

NOTE: Change Group number to **2** and repeat steps (12) and (13) of this paragraph.

(14) Within the HP SP Tool window, select **Power Environment**, then **Dump Vegas CPLD**.

(15) The **CRU Address** dialog box appears. The default **Group** number is supposed to be 1. The default **Slot** number is supposed to be 50.

NOTE: Repeat steps (14) and (15) for Slot 55.

(16) Click on **OK** to begin the Dump Vegas CPLD routine. Once completed, if no errors are encountered a message similar to the following displays:

SP Tool: Vegas CPLD Dump completed: <Date> at <Time>.

Change Group number to **2** and repeat steps (14) and (16) of this paragraph.

(17) Click on **EXIT** to log off and to close the HP SP Tool window.

(18) Verify that no abnormal conditions exist for the previous two tests. In the event of abnormal conditions, investigate the cause, then resolve or contact second-level support through the FAA OCC Help Desk (reference paragraph 103c).

577. WORKSTATIONS.

- a. **Object.** To determine that the ac power, control panels, and major logic modules are operational.
- b. **Discussion.** This procedure provides the capability to ensure that workstations are operational.
- c. **Test Equipment Required.** None.
- d. **Conditions.** This procedure can be performed at any time.
- e. **Detailed Procedure.**

(1) At the Specialist Workstation, select the **SLC/ATL A or B**.

(2) Select site (Atlanta or Salt Lake City) and at the prompt, log on as a privileged user and enter the appropriate password.

(3) Select **System Specialist Interface>Circuits>Circuit Monitor**.

(4) Within the **Circuit Monitor Criteria** box, select by: **Work Group Name** and in the Work Group Name, select: **Appropriate Goup Name** then click **Search**.

(5) Verify in the top-left corner under Circuits — Circuit Monitor that it states: **Read Successful**.

(6) Verify within the **Bulletins** box the message states, "**There are no unacknowledged bulletins**".

(7) Verify within the **Circuit Monitor Results** box that there are no alarms in the **Alarm** section.

(8) In the event of abnormal conditions, investigate the cause, then resolve or contact second-level support through the FAA OCC Help Desk (reference paragraph 103c).

(9) Select **Logoff** in upper-right corner.

(10) The Logoff confirmation displays. Select **OK**.

(11) Click the **X** in both windows and log off of the workstation.

578.–599. RESERVED.

CHAPTER 6. FLIGHT INSPECTIONS

600.-699. RESERVED.

CHAPTER 7. MISCELLANEOUS

700. GLOSSARY.

AFTN	Aeronautical Feed Telecommunications Network
AT	Air Traffic
ATC	Air Traffic Control
C	Celsius
CCD	Configuration Control Decision
CLIP	Communications Line Interface Processor
CM	Configuration Management
CPU	Central Processing Unit
CRU	Customer Replaceable Unit
CTS	Coded Time Source
DLT	Digital Linear Tape
DLZ	Digital Lempel-Ziv
ESD	Electrostatic Discharge
FAA	Federal Aviation Administration
FTP	File Transfer Protocol
GB	Gigabytes
GPS	Global Positioning System
Hz	Hertz
I/O	Input/Output
ICAO	International Civil Aviation Organization
IP	Internet Protocol
LAN	Local Area Network

LCD	Liquid Crystal Display
LED	Light Emitting Diode
LRU	Line Replaceable Unit
Mb	Megabits
Mbps	Megabits per second
MMS	Maintenance Management System
MTHB	Maintenace Technical Handbook
NADIN	National Airspace Data Interchange Network
NAS	National Airspace System
NCP	National Change Proposal
NEMC	National Enterprise Management Center
NOTAM	Notice(s) to Airmen
NWS	National Weather Service
NWSTG	National Weather Service Telecommunications Gateway
OCC	Operation Control Center
OS	Operating System
OSM	Open System Management — A graphical client or server software component used to manage or service NonStop S-series servers.
PC	Personal Computer
PMF	Processor Multifunction
PSN	Packet Switched Network
SCF	Subsystem Control Facility
SCSI	Small Computer System Interface
SHUB	S–Series Hub
SWAN	ServerNet Wide Area Network
TCP	Transmission Control Protocol
TOS	Technical Operations Services
TPR	Technical Performance Record

USNSR United States NOTAM System Rehost
UTC Universal Time Coordinate
V Volt
V ac Volts alternating current
WAN Wide Area Network
WMSCR Weather Message Switching Center Replacement

701.-799. RESERVED.

CASE FILE/ NAS CHANGE PROPOSAL				Page 1 of _____
(PLEASE TYPE OR PRINT NEATLY)				
1. Case File Number	2. For CM Use	Case File Received Date	NCP Issuance Date	NCP Number
3. Scope of Change <input type="checkbox"/> Local <input type="checkbox"/> National <input type="checkbox"/> Test	4. Reason For Change <input type="checkbox"/> Safety <input type="checkbox"/> Technical Upgrade <input type="checkbox"/> Systems Interface <input type="checkbox"/> Requirements Change <input type="checkbox"/> Design Error <input type="checkbox"/> Parts Unavailability <input type="checkbox"/> Baseline <input type="checkbox"/> Other			
5. Priority <input type="checkbox"/> Normal <input type="checkbox"/> Time-Critical <input type="checkbox"/> Urgent	6. Justification of Time Critical/Urgent Priority		7. Supplemental Change Form <input type="checkbox"/> ECR/ECP <input type="checkbox"/> TES <input type="checkbox"/> N/A 7a. Supplemental Change No. _____ 7b. Supplemental Change Initiation Date _____	
8. Case File Originator	9. Originator's Organization	10. Telephone Number	11. Case File Initiation Date	
12. Type of Document Affected <input type="checkbox"/> CPFS <input type="checkbox"/> SPEC <input type="checkbox"/> MTBK <input type="checkbox"/> _____ <input type="checkbox"/> TI <input type="checkbox"/> DWG <input type="checkbox"/> IRD/ICD			13. Baseline Document Number(s)	
14. CI Subsystem Designator		15. FA Type		16. CI Component Designator
17. Facility Identifier (FACID)	18. Facility Code (FACCODE)	19. Cost Center Code	20. Software System Version	
21. Title				
22. Description: (a) identification of problem, (b) proposed change, (c) interface impact, (d) cost estimate (e) funding source (f) benefits/risks, (g) Schedule (h) Other (e.g. logistics, quality, etc.)				
(a)				
(b)				
(c)				
(d)				
(e)				
(f)				
(g)				
(h)				

Blocks 1 through 22 are to be completed by originator and/or the NCP coordinator. If a block is not applicable, write n/a. Attach additional sheets if necessary. See current revision of NAS-MD-001 for detailed completion instructions.

23. Name and Title of Originator's Immediate Supervisor (Type/Print Clearly)	Signature	Date
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24. Facility/SMO Review (AT/AF)					25. Regional Review				
Name	Routing Symbol	Date	Concur	Non-Concur	Name	Routing Symbol	Date	Concur	Non-Concur

Recommend Approval **Disapprove**
(Enter into CM/STAT. Forward to Prescreening) (Return to Originator)

Routing Symbol	Signature	Routing Symbol	Signature
Date		Date	
Routing Symbol	Signature	Routing Symbol	Signature
Date		Date	

24a. Comments (Attach additional sheets if necessary)	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:15%;">Routing Symbol</td> <td style="width:40%;">Signature/Configuration Mgr/NCP Coordinator/Reg Exec Sec</td> </tr> <tr> <td>Date</td> <td> </td> </tr> </table> 25a. Comments (Attach additional sheets if necessary)	Routing Symbol	Signature/Configuration Mgr/NCP Coordinator/Reg Exec Sec	Date	
Routing Symbol	Signature/Configuration Mgr/NCP Coordinator/Reg Exec Sec				
Date					

26. PRESCREENING

Prescreening Office _____

Prescreening Comments:

(Attach additional sheets if necessary)

Reviewers	Routing Symbol	Date	Concur	Non-Concur	<input type="checkbox"/> Recommend Approval <input type="checkbox"/> New Requirement	<input type="checkbox"/> Recommend Disapproval <small>(Return original to originating office through the Regional NCP Coordinator)</small>
Recommended Must Evaluators				Date	Signature	

27. For Internal Configuration Management Use Only