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Alcatel-lucent 7210 sas-d installation manual

Alcatel-lucent 7210 sas-m manual. Alcatel-lucent 7210 service access switch.

7210 SAS-D INSTALLATION GUIDE December 2011 Document Part Number: 93-0348-01-04 *93-0348-01-04 *93-0348-01-04 *93-0348-01-04 *011 Alcatel-Lucent All rights reserved. No portion of this document may be reproduced in any form or means without prior written permission from Alcatel-Lucent.



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Japan/Nippon Requirements Only This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures. VCCI-A Caution: Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous laser radiation exposure. TABLE OF CONTENTS Preface . .

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to install and configure the 7210 SAS OS software. Each 7210 SAS-D switch is shipped with a console cable, power cord (AC or DC) and rubber feet. Optionally, a rack-mounting bracket kit, a wall-mounting bracket kit, and external AC or DC power module and bracket kit (ETR-only) are available for order. Warnings and Notes Observe the warnings and notes to avoid injury or switch damage during installation and maintenance. Follow the safety procedures and guidelines when working with and near electrical equipment. Warning statements and notes are provided in each chapter. Audience This guide assumes you are familiar with electronic and networking technologies. 7210 SAS-D Installation Guide Page 9 Preface
Information Symbols Table 1 describes symbols contained in this guide. Table 1: Information Symbols Symbol Meaning Description Danger This symbol warns that improper handling and installation could result in bodily injury. An electric shock hazard could exist. Before you begin work on this equipment, be aware of hazards involving electrical circuitry, networking environments, and instigate accident prevention procedures. Caution This symbol warns that improper handling and installation could result in equipment damage or loss of data. Warning This symbol warns that improper handling may reduce your component or system performance. Note This symbol provides additional operational information. Class 1 Laser Product Class 1 laser products are listed in the MDA installation guides. Only approved Class 1 replaceable laser transceivers should be used with this product. Technical Support If you purchased a service agreement for your 7210 SAS-D and related products from a distributor or authorized reseller, contact the product to the following sections of "Introduction" on page 12 a "Switch contact the product of the following sections of "Introduction" on page 12 a "Switch contact the product of the following sections of "Introduction" on page 12 a "Switch contact the following sections of "Introduction" on page 12 a "Switch contact the following sections of "Introduction" on page 12 a "Switch contact the following sections of "Introduction" on page 12 a "Switch contact the following sections of "Introduction" on page 12 a "Switch contact the following sections of the following sectio
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CPE/demark unit in delivery of business services. 7210 SAS-D ETR supporting an extended temperature range (i.e40° C to 65° C), is targeted for applications requiring an extended temperature range. This unit has a stratum-3 Oscillator to allow for support of SyncE and 1588v2. Its primary application is in use for mobile back haul. 7210 SAS-D ETR will be available with three power supply options as given below: A DC unit supporting +24V DC power supply with an optional external backup power supply An AC unit with an optional external backup supply. Page 12 7210 SAS-D Installation Guide 7210 SAS-D is a service-aware Layer 3 switch. It supports in the supporting temperature range (i.e40° C to 45° C). Its primary application, it is a variable in two variants. The support of SAS-D support in the sup
The chassis is available with either an AC power module or DC power module, as shown in the following illustrations: 7210 SAS-D DC Chassis Front Panel 7210SASac_0001 Figure 2: 7210 SAS-D DC Chassis Front Panel 7210SASdc_0001 Figure 2: 7210 SAS-D DC Chassis Front Panel 7210SASdc_0001 Figure 2: 7210 SAS-D DC Chassis Front Panel 7210SASdc_0008 Figure 3: 7210 SAS-D ETR AC Chassis Front Panel 7210SASdc_0008 Figure 3: 7210 SAS-D ETR DC Chassis Front Panel 7210SASdc_0008 Figure 4: 7210 SAS-D ETR DC Chassis Front Panel All of the 7210 SAS-D variant chassis include the following features: • 6 100/1000 fiber-optic SFP ports and 4 10/100/1000 Base-T fixed copper ports • One RJ-45 console (RS-232 interface) connector for device management • Embedded SR OS • Compact size: 1RU height, 10-inch rack-mountable metal enclosure, 7-inch depth (ETSI) Page 14 7210 SAS-D Installation Guide 7210 SAS-D Overview Switch Architecture The 7210 SAS-D employs a wire-speed, non-blocking
switching fabric. This permits simultaneous wire-speed transport of multiple packets at low latency on all ports. The switch also features fullduplex capability on all ports, that effectively doubles the bandwidth of each connection. Network Management Options This switch contains a comprehensive array of LEDs for at-a-glance monitoring of network and port status. It also includes a management agent that enables you to configure or monitor your switch using its CLI, or by using SNMP applications. To manage the switch, you can make a direct connection to the console port (out-of-band) or you can manage it by using a network connection (in-band) using Telnet/SSH or SNMP-based network management software. 7210 SAS-D Installation Guide Page 15 Features The 7210 SAS-D includes the following features: • Wire speed, non-blocking, service-aware Ethernet VPN services • Per-service
quality of service (QoS) with up to eight levels of class-based queuing per port • Per-service OAM toolkit with IEEE 802.1ag, IE
Note: 7210 SAS-D ETR hardware is capable of supporting Synchronous Ethernet and 1558v2. Please check the release notes for software support. Page 16 7210 SAS-D includes the following connectivity features: • 100/1000 fiber-optic SFP ports and 10/100/1000 Base-T copper SFP ports full-duplex connections. The SFP ports allow for use of 10/100/1000 Base-T fixed copper ports enables each port to automatically select the optimum speed and communication mode (half or full duplex) if this feature is supported by the attached device. • IEEE 802.3-2005 Ethernet, Fast Ethernet and Gigabit Ethernet compliance ensures compatibility with standards-based network cards and switches from any vendor. 7210 SAS-D Installation Guide Page 17 Hardware Description The chassis is available with either an AC power module or DC power module, as shown in the following illustrations. AC Chassis Front Panel 3 5 6 7 7210SAS-D AC Chassis Front Panel Page 18 7210 SAS-D Installation Guide 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Page 18 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel Features of the 7210 SAS-D AC Chassis Front Panel
Panel Features Key Description 1 Power, System, and Port LEDs 2 100/1000 SFP ports 3 10/100/1000Base-T fixed copper ports 4 RJ-45 Console port 5 Power switch 6 AC power connection point 7210 SAS-D Installation Guide 7210 SAS-D DC Chassis Front Panel Features Front Panel 7210 SAS-D DC Chassis Front Panel 7210 SAS-D DC Chassis Front Panel 7210 SAS-D DC Chassis Front Panel Features Front Panel 7210 SAS-D DC Chassis Front Panel Features Front Panel F
to a subscriber's Customer Premises Equipment (CPE), or as an uplink to another aggregation node. The 7210 SAS-D also provides 4 10/100/1000Base-T fixed copper ports. Console Port The console port uses an RJ-45 connector with serial pinouts (see Table 11) that enables a connection to a terminal for performing switch monitoring and configuration operations. The terminal may be a PC or workstation that is running terminal emulation software, or a terminal configured as a Data Terminal Equipment (DTE) connection. A null-modem wired serial cable is supplied with the switch for connecting to this interface. The serial port configuration requirements are as follows: • Default Baud rate – 115200 bps • Character Size – 8 Characters • Parity – None • Stop bit – One • Data bits – 8 • Flow control – none Alarms When your system has a major alarm for the following event: • Chassis temperature threshold exceeded - Major alarm is raised.
Air Ventilation 7210 SAS-D does not have fan. Operators must allow for at least three inches of clearance on all sides of the device to ensure proper airflow intake cooling system. Page 22 7210 SAS-D comes with an integrated AC or DC power supplies. 7210 SAS-D support two power supply options - universal AC and -48V DC. 7210 SAS-D ETR provides three option: universal AC, -48V DC and 24V DC. Additionally, 7210 SAS-D ETR supports and optional external backup power supply. For specifications on the internal power supply modules and input power requirements, see "Appendix A: Specifications" on page 79. 1 2 7210 SAS 0002 Figure 9: AC and DC Power Modules The power LED is located on the lefthand side of the front panel, labeled as Pwr. Refer to Figure 5 on page 18 for the location of the power module has failed or the external
power module is not connected (ETR-only) 7210 SAS-D Installation Guide Page 23 Hardware Description External backup power supply, available as a separate purchase. The external power module is available as as AC module or a DC module. Note: 7210 SAS-I does not support detection of failure of the external backup power supply. It also does not support for detections on the external input power requirements, see "Appendix A: Specifications" on page 79. For information on how to install the external power modules, see "Installing the Optional External AC Power Module Description 1 Front view of the External AC Power module. 2 Rear view of the External AC Power module. 3 Captive screw. 7210 SAS-D Installation Guide
7210 SAS-D Overview Table 5: External AC Power Module Description Key 4 Description Connecting cable to the SAS-D chassis. 1 2 3 4 Figure 11: External DC Power Module Description Key 4 Description Key 4 Description Connecting cable to the SAS-D chassis. 1 2 3 4 Figure 11: External DC Power Module Description Key 4 Description Key 4 Description Key 4 Description Connecting cable to the SAS-D chassis. 1 2 3 4 Figure 11: External DC Power Module Description Key 4 Description Key 4 Description Key 4 Description Key 4 Description Connecting cable to the SAS-D chassis. 1 2 3 4 Figure 11: External DC Power Module Description Key 4 Description Key 4 Description Key 4 Description Key 4 Description Connecting Connec
System LED 3 Port LEDs Table 8: System LED Condition Status Page 26 Condition Status Green Indicates that the system has completed boot phase and is running normally. Amber Indicates that the system LED Status Green Indicates that the system has completed boot phase and is running normally. Amber Indicates that the system LED Status Green Indicates that the system LED Status Green Indicates that the system LED Status Green Indicates that the system has completed boot phase and is running normally. Amber Indicates that the system LED Status Green Indicates that the system Ind
lock-and-cable security apparatus. The security slot is located on the upper right side of the back panel of the chassis. Page 28 7210 SAS-D Installation Guide Installing the 7210 SAS-D and includes the following sections: • "Site Preparation" on page 30 • "Installing Your Switch" on page 32 7210 SAS-D in a standard 19-inch equipment rack, on a flat surface or mount it on a wall. When mounting on a flat surface, ensure that the four rubber feet are installed on the bottom of the box. The site should be a weather-protected and temperature-controlled location, and should include the following criteria: • Maintain site temperature within 0° to 40° C (32° to 140 °F) and its humidity within 5% to 95%, non-condensing. • For 7210 SAS-D ETR maintain the site temperature within the extended temperature range. • Allow at least 3 inches of space on all sides of the back panel of the chassis. Page 28 7210 SAS-D ETR maintain the site temperature within the extended temperature range. • Allow at least 3 inches of space on all sides of the back panel of the chassis. Page 28 7210 SAS-D ETR maintain the site temperature within the extended temperature within the extended temperature range. • Allow at least 3 inches of space on all sides of the back panel of the chassis. Page 28 7210 SAS-D ETR maintain the site temperature within the extended temperature range. • Allow at least 3 inches of space on all sides of the back page 29 Site Preparation. The charge of the back page 29 Site Preparation and include the following sections: • To the charge of the back page 29 Site Preparation and include the following sections: • To the charge of the back page 29 Site Preparation and include the following sections: • To the charge of the back page 29 Site Preparation and include the following sections: • To the charge of the back page 29 Site Preparation and include the following sections: • To the charge of the back page 29 Site Preparation and include the following sections: • To the charge of the back page 29 Site Preparation and include
of the unit to enable servicing and proper air flow. • Ensure a secure environment in which only authorized and trained service personnel are allowed to service the unit (IEC 60950 safety requirement). Ethernet Cabling To ensure proper operation when installing switches into a network, make sure that the cables are suitable for 100/1000 fiber-optic or 10/100/1000Base-T copper operation, as appropriate. Make sure your installation complies with the following guidelines: Page 30 • Cable type: Unshielded twisted pair (UTP) or shielded twisted pair (UTP) o
metallically connected to interfaces that connect to the OSP or its wiring. These interfaces are designed for use as intra-building interfaces only (Type 2 or Type 4 ports as described in 7210 SAS-D Installation Guide Installing the 7210 SAS-D Installation from the exposed OSP cabling. The addition of Primary Protectors is not sufficient protection in order to connect these interfaces metallically to OSP wiring. Avoid installing copper cables close to strong electromagnetic fields generated by electric machines. Avoid installing representations of the connect to the OSP or its wiring. The addition of Primary Protectors is not sufficient protection in order to connect these interfaces metallically to OSP wiring. Avoid installing representations of the connect to the OSP or its wiring. The addition of Primary Protectors is not sufficient protection in order to connect these interfaces metallically to OSP wiring. Avoid installing representations of the connect to sufficient protection in order to connect these interfaces are designed for use as intra-building interfaces only (Type 2 or Type 4 ports as described in 7210 SAS-D installing or protection in order to connect these interfaces metallically to OSP wiring. Avoid installing representation of Primary Protectors is not sufficient protection in order to connect these interfaces are designed for use as intra-building interfaces only (Type 2 or Type 4 ports as described in 7210 SAS-D installing representation of Primary Protectors is not sufficient protection in order to connect these interfaces are designed for use as intra-building interfaces only (Type 2 or Type 4 ports are described in 7210 SAS-D installing representation of Primary Protectors is not sufficient protection in order to connect the sufficient protection in order to conn
device using the screws provided in the Bracket Mounting Kit (sold separately). See Figure 14. 7210SASac_0004 Figure 15. 7210SAS-D in the rack, using four rack-mounting screws (not provided). See Figure 15. 7210SASac_0005 Figure 15. Installing the Switch in a Rack Step 3 If you are installing a single switch, proceed to "Grounding the Adhesive Feet Page 34 Step 2 Set the device on a flat surface near an external power source, making sure there are at least three inches of space on the front, sides, rear and top for proper air flow. Step 3 If you are installing a single switch, proceed to "Grounding the Chassis" on page 36. Step 3 If you are installing a single switch, proceed to "Grounding the Adhesive Feet Page 34 Step 2 Set the device on a flat surface near an external power source, making sure there are at least three inches of space on the front, sides, rear and top for proper air flow. Step 3 If you are installing a single switch, proceed to "Grounding the Chassis" on page 36. Step 2 Set the device on a flat surface near an external power source, making sure there are at least three inches of space on the front, sides, rear and top for proper air flow. Step 3 If you are installing a single switch, proceed to "Grounding the Chassis" of the first switch in the flow in the first switch in the first swit
the Chassis" on page 36. Step 4 If you are installing multiple switches, attach four adhesive feet to each switch. Place each device squarely on top of the one below, in any order. 7210 SAS-D Wall Mounting Screws to the desired location on the wall. See Figure 16. 2 3 2 1 4 7210SASdc_0007 Figure 17: Wall Mounting the Chassis to the wall mounting screws into the wall mounting screws guides on the bottom of the chassis. Step 2 Secure the two wall mounting screws into the wall mounting screws guides on the bottom of the chassis to the wall mounting the standard max ambient temperature is limited to 35 deg C and the ETR max temperature is limited to 55 deg C. Wall mounting screws guides on the switch, ground the switch to
earth as described below. Step 1 Ensure that the rack on which the switch is to be mounted is properly grounded. Step 2 Ensure that you have made a suitable electrical connection to the grounding point. Step 3 Disconnect all power cables to the switch step 4 Ground per local electrical codes. Step 5 Attach the grounding wire to the ground points on the rack. 1 7210SASac_0001 CAUTION The earth connections have been disconnected. Page 36 7210 SAS-D Installation Guide Installing the 7210 SAS-D Connecting to a Power Source This SAS-D switch is available with either an AC or DC internal power supply modules.
The SAS-D switch is also compatible with either an AC or DC (available as a separate purchase) external power supply. Connecting to an AC Power Source Notes: In order to comply with the GR-1089 Lightning Criteria for Equipment Interfacing With AC Power Ports, an external Surge Protective Device (Perma Power Model # PXD309) is intended to be used at the AC input of the router. To connect the switch to an AC power source: Step 1 Verify that the AC power source has the following rating: 100-240VAC, 50/ 60 Hz, 2A. Step 2 Make sure the switch is powered on to verify that the LED indicating external power status is ON, and that the LED indicating internal power source and at the power module. 7210 SAS-D Installation Guide Page 37 Installing Your Switch Connecting to a DC Power Source Y Connecting to a -48 VDC
Power Source Note: Below the DC power entry block is an additional chassis ground point should be connected with an M4 screw and a terminal lug as specified by local electrical codes. To connect the switch to a -48 VDC power source: Step 1 Before a -VDC power supply module can be used, you must connect an external DC power source to the DC power source must be between -36 to -72 VDC, and protected with a circuit breaker. WARNING: Although the system provides four inputs pins to connect a DC power source, use the top two pins only. Pins 3 and 4 are not connected or recommended. WARNING: Before wiring the DC plug or connecting power to the switch, ensure that power to the supply circuit breaker or disconnected from the power bus. Page 38 Step 2 To provide adequate circuit provides the DC power source and the switch, ensure that power to the supply circuit breaker or disconnected from the power bus. Page 38 Step 2 To provide adequate circuit provides the DC power source and the switch, ensure that power to the supply circuit breaker or disconnected from the power bus. Page 38 Step 2 To provide adequate circuit provides the DC power source and the switch, ensure that power to the switch and the switch power bus. Page 38 Step 2 To provide adequate circuit provides adequate circuit provides and the switch power bus. Page 38 Step 2 To provide adequate circuit provides and the switch power bus. Page 38 Step 2 To provide adequate circuit provides and the switch power bus. Page 38 Step 2 To provide adequate circuit provides and the switch power bus. Page 38 Step 2 To provide adequate circuit provides and the switch power bus. Page 38 Step 2 To provide adequate circuit provides and the switch power bus. Page 38 Step 2 To provide adequate circuit provides and the switch power bus. Page 38 Step 2 To provide adequate circuit provides and the switch power bus. Page 38 Step 2 To provide adequate circuit provides and the switch power bus. Page 38 Step 2 To provide adequate circuit provides and the switch power bus. Page 38 Step
all intermediate wiring and circuitry should be rated to carry a load at least two times the maximum rating for this switch (see "Appendix A: Specifications" on page 79). Step 3 The wiring between the DC power supply and the switch must be stranded copper wire within the range of 10 to 24 AWG. 7210 SAS-D Installation Guide Installing the 7210 SAS-D Step 4 Connect the -48 VDC power feed using the -48 VDC power feed using the -48 VDC power feed using the switch in the power supply and the switch in the power supply and the switch is represented by the switch of the power supply module to the ON position of the power supply will not work properly and may damage the switch. Step 5 After the power supply module to the ON position of the power supply module to the ON position of the power supply and the switch is represented by the switch is represent
(marked "— '). Step 6 Check the power LED as the switch is powered on to verify that the LED indicating external power source and at power supply module. 7210 SAS-D Installation Guide Page 39 Installing Your Switch Connecting to a +24 VDC Power Source Note: Below the DC power entry block is an additional chassis ground if required by local electrical codes. To connect the switch to a +24 VDC power source: Step 1 Before a +24 VDC power source, use the top two pins only. Pins 3 and 4 are not
connected or recommended. WARNING: Before wiring the DC plug or connecting power to the switch, ensure that power to the feed lines is turned off at the supply circuit breaker or disconnected from the power bus. Page 40 Step 2 To provide adequate circuit protection between the DC power source and the switch, all intermediate wiring and circuitry should be rated to carra load at least two times the maximum rating for this switch (see "Appendix A: Specifications" on page 79). Step 3 The wiring between the DC power supply and the switch must be stranded copper wire within the range of 10 to 24 AWG. 7210 SAS-D Installation Guide Installing the 7210 SAS-D Step 4 Connect the +24 VDC power feed using the GNI (ground) and +24 VDC input lines. Insert the wires into the DC input plug (using a small flat-tip screwdriver). Color code the wiring according to local standards to ensure that the input power and ground lines can be easily distinguished. Figure 19 shows this step in greater detail: Ground (Pin 1) +24V (Pin 2) 7210SASdc 0014 Figure 19: Connecting
a +24 VDC Power Source WARNING: If the power supply module to the ON position (marked "— '). Step 6 Check the power LED as the switch is powered on to verify that the LED indicating external power supply module. 7210 SAS-D Installation Guide Page 41 Installing Your Switch Connecting to the Console Port The RJ-4 serial port on the front panel is used to connect to the serial port are provided in Table 11: Serial Cable Wiring Page 42 RJ45 Pin Usage
RTS 1 Used as defined. Should be connected GND 5 Used as defined. Should be connected GND 6 Used as defined. Should be connected GND 7 Not used. Should not be connected GND 8 Used as defined. Should be connected GND 8 Used as defined. Shoul
See Figure 20. Figure 20: Attaching the External Power to the Chassis Using the Mounting Kit (Front View) 7210 SAS-D Installation Guide Page 43 Installing Your Switch Step 2 (Rear view) Assemble and secure the brackets to the switch and the external Power module using the External Power Mounting Kit (Front View) 7210 SAS-D Installation Guide Page 43 Installing Your Switch Step 2 (Rear view) Assemble and secure the brackets to the switch and the external Power module using the External Power Module in the External Power Supply Mounting Kit. See Figure 21: 7210 SAS-D Installation Guide Page 44: 21: 3 7210 SAS-D Installation Guide Page 45: Installation Guide Page 45: Installation Guide Page 45: Installation Preparation on page 46: "Installation Preparation" on page 48: "Installation Preparation Prep
49 7210 SAS-D Installation Guide Page 47 Warnings and Notes Danger: • Fiber optic equipment can emit laser or infrared light that can injure your eyes. Never look into an optical fiber or connector port. Always assume that fiber optic cables are connected to a light source. Caution: • Make sure the plug is inserted while you install or remove the SFP. Only remove the plug when you are ready to attach network cables. • Electrostatic discharge (ESD) damage can occur if switch components, including SFPs, are mishandled. Always wear an ESD-preventive wrist or ankle strap and always connect an ESD strap to the grounding plug on the front of the chassis. • Always place switch components on an anti-static surface. • Avoid bending fiber optic cable beyond its minimum bend radius. • Do not exceed the recommended minimum 1 1/2-inch (3.81 cm) bend radius for fiber optic cable beyond its minimum bend radius.
optic cables. Warning: • Do not remove the dust cover on the connector until you are ready to install the SFP. Always replace the the dust cover when the SFP is removed. Notes: • Discard SFPs according to all local laws and regulations. • SFPs are keyed to prevent incorrect insertion. Page 48 7210 SAS-D Installation Guide Installation Preparation Clean the connector before inserting it to prevent transfer of small particles and contamination of the transceiver. Do not interchange SFPs from one port to another without first cleaning the connector, you can either: • Wipe the side and end of the ferrule with a lint-free alcohol-dampened cloth. • Blow dry the ferrule with compressed air and inspect for lint. Do not insert the compressed air nozzle into the receptacle when
blowing out. Locking Mechanisms Alcatel-Lucent SFPs can use different lock and release methods. Possible lock and release mechanisms include: • Locking handle—A locking handle—
lever located in the SFPs might be slightly hotter than usual. Avoid direct contact with the metal casing of the SFPs. Page 50 7210 SAS-D Installation Guide Page 51 Diagnostics Post Installation Guide Page 51 Diagnostics Diagnostics Diagnostics Diagnostics Diagnostics Diagnostics Diagnostics Diagnostics Diagnostics Post Installation Guide Configure the first of the SFPs of the safety cap for the SFP of slot plug, an anti-static mat or fine SFP transceiver ready. To remove an anti-static mat or in an electro-static mat or in an electro-stati
switch slowly and wait for a few seconds to let the system boot. Page 52 7210 SAS-D Installation Guide Configuring the 7210 SAS-D Initializing the System and Downloading Software The 7210 SA
Booting a 7210 SAS-D in the Lab There are several ways to boot the device By default the device is configured to use the network to load the image. The following sections describe how to boot the device using either of the options listed above. 7210 SAS-D Installation Guide Page 53 Initializing the System and Downloading Software Booting a 7210 SAS-D to the serial port of PC Connect the 7210's console port.
to serial port of the PC and then power on the 7210 SAS-D. The system will start booting up with messages on the console similar to those shown below. Follow the procedure given below to boot the system with the image on the flash. ResettingOK Alcatel-Lucent 7210 Boot ROM. Copyright 2009-2011 Alcatel-Lucent. All rights reserved. All use is subject to applicable license agreements. Testing ROM load areadone Relocating codeJumping to RAM Performing second stage RAM testpassed Board Serial Number is 'NS1111C0115' Bootlog started for Version A-V-3.0.B5-85 Build V-3.0.B5-85 bootrom/mpc 7xxx Built on Wed Apr 20 13:52:05 IST 2011 by builder in /builder/3.0B5/panos/main text:(4782384>20108848) + data:(1084015>3891872) Starting at 0xb0000000 PCIe: Port 0 Link UP Total Memory: 512MB Chassis Type: sas Card Type: badami_7210 TiMOS-L-3.0.B5-85 boot/mpc ALCATEL SA
D 6F4T 7210 Copyright (c) 2000-2011 Alcatel-Lucent. All rights reserved. All use subject to applicable license agreements. Built on Wed Apr 20 14:13:38 IST 2011 by builder in /builder/3.0B5/panos/ main Page 54 7210 SAS-D TiMOS BOOT LOADER Time from clock is THU APR 21 11:03:21 2011 UTC Switching serial output to sync mode done Since the switch does not ship with a BOF, it will show the default settings. Looking for cf1:/bof.cfg not found Could not find bof.cfg on any of the local drives. Default Settings: uplinkA-address 0 uplinkA-vlan 0 #uplinkB Port Settings: uplinkB-vlan 0 #System Settings: wait 3 persist off console-speed 115200 Hit a key within 2 seconds to change boot parameters
Press any key. Enter password to edit the Boot Options File Or CTRL-D to exit the prompt Password: The default password is 'password'. You must supply some required Boot Options. At any prompt, you can type: "restart" - restart the query mode. "reboot. 7210 SAS-D Installation Guide Page 55 Initializing the System and Downloading Software "exit" - boot with with existing values. "diag" - enter the diag shell. "reset" - reset the bof and reboot. Press ENTER to begin, or 'flash' to enter firmware update Press Enter. Software Location
You must enter the location of configuration file to be used by TiMOS. The file can be on a Compact Flash device, or on the network. Here are some examples cf1:/config.cfg tftp://192.168.1.150/./config.cfg No existing Config URL Press ENTER, or type 'none' for no Config URL. Config File URL: Page 56 7210 SAS-D Installation Guide Configuring the 7210 SAS-D Enter the location of the configuration file. Or none since you are booting for the first time. You can skip all the remaining prompt New Settingsprimary-image cf1\both.tim primary-config cf1:\config.txt #uplinkA Port Settings: uplinkA-address 10.135.4.172/10 uplinkA-route 10.10.170.0/10 next-hop 10.135.4.1 #System Settings:
(yes/no): Type yes and press Enter. The 7210 SAS-D should boot now. Primary image location: cf1:/both.tim Loading image cf1:/both.tim Loading image cf1:/both.tim Loading image cf1:/both.tim Version B-3.0.B5-85, Wed Apr 20 14:32:04 IST 2011 by builder in /builder/3.0B5/panos/main text:(25059814>122424266) + data:(3179598>18748616) Executing TiMOS image at 0x100000 After the 7210 SAS-boots up, you should see the following prompt: All rights reserved. All use subject to applicable license agreements. Built on Wed Apr 20 14:32:04 IST 2011 by builder in /builder/3.0B5/panos/ main Login: 7210 SAS-D Installation Guide Page 57 Initializing the System and Downloading Software The default username and password are admin. Log into the 7210 SAS-D. Note: The SYS LED will be Green when the device has successfully completed the boot process and is running normally. To establish either console connections or Telnet connections or Telnet connections are reserved and without the control of the reserved boot process and without the control of the reserved boot process.
user can use one of the front panel ports (refered to as uplinkA and uplinkB in the display output shown below) to boot the 7210 from the network. The example below shows how to boot the device with the out-of-band management port and without it using the manual boot process. For more information on how the boot process works in 7210 SAS-D, please refer to the System Basics guide. Figure 23 on page 58shows the network diagram used in the example below. Additionally, you may want to store the TiMOS image on the internal flash if you want to boot from the flash later. FTP Server SAS-D Console Cable Port: 7 IP Address: 10.135.4.172/24 Gateway: 10.135.4.1 IP Address: 10.10.170.22/24 OSSG552 Figure 23: 7210 SAS-D Boot Process Page 58 7210 SAS-D Hosting the 7210 SAS-D Hosting the page of the
that connects the console port of SAS-D to the serial port of PC • A network cable to connect the 7210 unit to the network Prepare the set up as shown in the diagram above. When you are done, power on the 7210 SAS-D. Using the uplink port to boot 7210 from the network: ResettingOK Alcatel-Lucent 7210 Boot ROM. Copyright 2009-2011 Alcate Lucent. All rights reserved. All use is subject to applicable license agreements. Testing ROM load areadone Relocating codeJumping to RAM Performing second stage RAM testpassed Board Serial Number is 'NS1111C0115' Bootlog started for Version A-V-3.0.B5-85 Build V-3.0.B5-85 bootrom/mpc 7xxx Built on Wed Apr 20 13:52:05 IST 2011 by builder in /builder/3.0B5/panos/main text-(4782384>20108848) + data-(1084015>3891872) Starting at 0xb000000. PCIe: Port 0 Link UP Total Memory: 512MB Chassis Type: sas Card Type: badami, 7210 TiMOS-Lands.
in /builder/3.0B5/panos/ main ?Attempting to load from file cf1:/boot.tim Version L-3.0.B5-85, Wed Apr 20 14:13:38 IST 2011 by builder in /builder/3.0B5/panos/main text:(4782384>20108848) + data:(1084015>3891872) Starting at 0xb0000000 PCIe: Port 0 Link UP Total Memory: 512MB Chassis Type: sas Card Type: badami_7210 TiMOS-L-3.0.B5-85 boot/mpc ALCATEL SAS-D 6F4T 7210 Copyright (c) 2000-2011 Alcatel-Lucent. All rights reserved. All use subject to applicable license agreements. Built on Wed Apr 20 14:13:38 IST 2011 by builder in /builder/3.0B5/panos/ main 7210 SAS-D Installation Guide Page 59 Initializing the System and Downloading Software TiMOS BOOT LOADER Time from clock is THU APR 21 11:03:21 2011 UTC Switching serial output to sync mode done Since the switch does not ship with a BOF, it will show the default settings:
Boot Options File Or CTRL-D to exit the prompt Password: The default password is password. You must supply some required Boot Options. At any prompt, you can type: "restart" - restart the query mode. Page 60 "reboot" - reboot. "exit" - boot with with existing values. "diag" - enter the diag shell. "reset" - reset the bof and reboot. 7210 SAS-D Installation Guide Configuring the 7210 SAS-D Press ENTER to begin, or 'flash' to enter firmware update Press Enter. Software LocationYou must enter the URL of the Timos 1.0R1 ftp://user:/./timos 1.0R1 software Image URL: Enter the software URL. (For example,
ftp://:@10.10.170.22/./ images/both.tim) Configuration File LocationYou must enter the location of configuration file to be used by TiMOS. The file can be on a Compact Flash device, or on the network. Here are some examples cf1:/config.cfg ftp://user:/./config.cfg tftp://192.168.1.150/./config.cfg No existing Config URL.

Config File URL: 7210 SAS-D Installation Guide Page 61 Initializing the System and Downloading Software Enter the location of the configuration file. You need to, configure

configure the VLAN Id for this port VLAN Id can be between 0 to 4094. To send out packets with out any VLAN tags, type "null". Existing VLAN Id for uplinkA port is VLAN Id 0. Press ENTER to keep it.

port settings Or "enable" to enable the port for Boot Interface Management: Enter disable since we do not want the backup link. Press Enter.

builder in /builder/3.0B5/R4/panos/ main Login: The default username and password are admin.

You will be asked to configure the port number, IP address, static routes, and VLAN Id for uplinkA port settings are: uplinkA-port 1/1/1 uplinkA-address 0 uplinkA-port is configured for Boot Interface Management, Press ENTER to proceed with existing port settings Or "disable" to disable the port for Boot Interface Management or "edit" to change the port settings: Type edit. Existing uplinkA port for Boot Interface Management: Enter the port which it connected to the network (for example, 1/1/10). You need to assign an IP address for this port. The IP address should be entered in standard dotted decimal form with a network length. example: Page 62 192.168.1.169/10 7210 SAS-D Installation Guide Configuring the 7210 SAS-D Or type "0" to obtain IP address and static route through DHCP.

Existing IP address and static routes will be deleted, uplinkA port is configured to obtain IP address and the mask that the device should use (for example, 10.135.4.172/10). Since the FTP server is on a different subnet, you will have to enter IP routing information: You specified network locations which might require static routes to reach. You will be asked to enter static routes until all the locations become reachable.

Static routes should be entered in the following format: prefix/mask next-hop ip-address example: 192.168.0.0/16 next-hop 192.168.1.254 Would you like to add a static route? (yes/no) Type yes and press Enter. Enter route: Enter a static route to the FTP server's subnet (for example, 10.10.170.0/10 next-hop 10.135.4.1) at the prompt. You need to

Enter the new VLAN Id for uplinkA port: 7210 SAS-D Installation Guide Page 63 Initializing the System and Downloading Software Press Enter if you want to send out untagged packets. Otherwise, enter the VLAN tag. uplinkB port is disabled for Boot Interface Management, Press ENTER to proceed with no uplinkB

(yes/no): Type yes and press Enter. The 7210 SAS-D should boot now. Primary image location: ftp://*:*@10.10.170.22/./images/both.tim Version B-3.0.R4, Wed Apr 20 22:44:35 IST 2011 by builder in /builder/3.0B5/ R4/panos/main text:

New Settings -------primary-image ftp://*:*@10.10.170.22/./images/both.tim primary-config cf1:\config.txt #uplinkA-route 10.10.170.0/10 next-hop 10.135.4.1 #System Settings: wait 3 persist off console-speed 115200 Do you want to overwrite cf1:/bof.cfg with

(25061599-->122246984) + data:(3180415-->18748616) Page 64 7210 SAS-D Installation Guide Configuring the 7210 SAS-D Executing TiMOS image at 0x100000 After the 7210 SAS-D Executing Timos image at 0x100000 After the 7210 SAS-D Executing Timos image at 0x100000 After the 7210 SAS-D Executing Timos image at 0x100000 After the 7210 SAS-D Executing Timos image at 0x100000 After the 7210 SAS-D Executing Timos image at 0x100000 After the 7210 SAS-D Executing Timos image at 0x100000 After the 7210 SAS-D Executing Timos image at 0x100000 After the 7210 SAS-D Executing Timos image at 0x100000 After the 7210 SAS-D Executing Timos image at 0x100000 After the 7210 SAS-D Executing Timos image at 0x100000 After the 7210 SAS-D Executing Timos image at 0x100000 After the 7210 SAS-D Executing Timos image at 0x100000 After the 7210 SAS-D Executing Timos image at 0x100000 After the 7210 SAS-D Executing Timos image at 0x100000 After the 7210 SAS-D Execu

either uplinkA or uplinkB ports.

the new settings?

64 bytes from 10.10.170.22: icmp seq=4 ttl=251 time<1ms. 64 bytes from 10.10.170.22: icmp seq=5 ttl=251 time<1ms. --- 10.10.170.22: icmp seq=5 ttl=251 time<1ms. from 10.10.170.22: icmp seq=5 ttl=251 time<1ms. 64 bytes from 10.10.170.22: icmp seq=6 ttl=251 time<1ms. 64 bytes from A:SN12# bof primary-config cf1:/config.txt *A:SN12# bof save Writing BOF to cf1:/bof.cfg Saving BOF. Completed. A:SN12# admin save Writing file to cf1:\config.txt Saving configuration Completed. A:SN12# file copy ftp://:@10.10.170.22/./images/both.tim cf1:/both.tim Copying file ftp://:@10.10.170.22/./images/both.tim *A:SN12# Configure the BOF to cf1:/both.tim *A:SN12# Reboot the SAS-D. The device will pick up both the image and the configuration from the internal flash. Page 68 7210 SAS-D Installation Guide Connection on page 69 • "Telnet Connection" on page 69 • "Telnet Connection" on page 70 Console Connection on p terminal emulation software set to the parameter Shown in the table below • The included RJ-45 serial cable Table 12: Console Configuration Parameter Values Pa panel using the serial cable. Step 2 Power on the terminal. Step 3 Establish the connection by pressing the Enter key a few times on your terminal keyboard. Step 4 At the router prompt, enter the login and password is admin. 7210 SAS-D Installation Guide Page 69 Establishing Switch Connections Telnet Connection To access the switch after a successful initialization with a Telnet connection from a PC or a workstation, configure an in-band management interface using the IES service is supported only for the in-band management interface using the Timos CLI. You can configure an in-band management interface using the Timos CLI. You can configure an in-band management interface using the IES service is supported only for the in-band management interface using the IES service is supported only for the in-band management interface using the IES service is supported only for the in-band management interface using the IES service is supported only for the in-band management interface using the IES service is supported only for the in-band management interface using the IES service is supported only for the in-band management interface using the IES service is supported only for the in-band management interface using the IES service is supported only for the in-band management interface using the IES service is supported only for the in-band management interface using the IES service is supported only for the in-band management interface using the IES service is supported only for the in-band management interface using the IES service is supported only for the in-band management interface using the IES service is supported only for the IES service is supported on interface. The following is a sample configuration for configuring an in-band management IP interface using IES service: *A:Dut-A>config>service# info------customer 1 create description "Default customer" exit ies 4001 customer 1 create interface "inband-mgmt" create address 10.10.10.25/10 sap 1/1/1:0.* create exit exit no shutdown exit Telnet access provides the same options for user and administrator access as those available through the console port. To configure the 7210 SAS-D must have a management IP interface configured with an IP address. Each 7210 SAS-D is limited to a total of seven inbound/outbound Telnet or SSH sessions to guarantee that either inbound or outbound sessions will be available. Page 70 7210 SAS-D Installation Guide Configuring the 7210 SAS-D MAC addresses are listed on a small label on the chassis. The MAC address also displays in the show router arp command output. The 7210 SAS-D must have a management IP address is manually configured. Running Telnet connection, run a Telnet connection, run a Telnet command, followed by the IP address: The following displays an example of a Telnet login: C:\>telnet 10.10.10.25 Login: admin Password: ALA-1# 7210 SAS-D Installation Guide Page 71 Establishing Switch Connections Page 72 7210 SAS-D Installation Guide Page 71 Establishing Switch Connections Page 72 7210 SAS-D Installation Guide Page 71 Establishing Switch Connections Page 72 7210 SAS-D Installation Guide Page 71 Establishing Switch Connections Page 72 7210 SAS-D Installation Guide Page 72 7210 SAS-D Installation Guide Page 73 7210 SAS-D Installation Guide Page 73 7210 SAS-D Installation Guide Page 74 7210 SAS-D Installation Guide Page 75 7210 SAS Indicators" on page 74 • "Power Problems" on page 75 • "Installation" on page 76 • "In-Band Access" on page 77 7210 SAS-D Installation Guide Page 73 Diagnosing Switch Indicators This switch can be easily monitored through panel indicators to identify problems. Table 13 describes common problems you may encounter and possible solutions. Table 13: Troubleshooting Symptom Possible Cause Action Power LED is OFF Power outlet, power supply. If using an AC power module, check connections between the switch, the power cord, and the wall outlet. • Contact your dealer for assistance. Sys LED is Off Boot-up diagnostic program has detected a problem. • Power cycle the switch to try and clear the condition. • If the condition does not clear, contact your local dealer for assistance.

Sys LED is Amber System has raised an alarm. Example - if the temperature goes down. Link LED is Off Network cable or Ethernet device attached to this port may be defective. Verify that the switch and attached device are powered on. • Be sure the cable is plugged into both the switch and corresponding device. • Verify that the proper cable type is used and its length does not exceed specified limits. • Check the adapter or cable if necessary. Page 74 7210 SAS-D Installation Guide Troubleshooting Power Problems If the power cord is plugged in, you may have a problem with your power cord, or internal power supply. However, if the unit powers off after running for a while, check for loose power connections, power losses or surges at the power. 7210 SAS-D Installation Guide Page 75 Installation Verify that all system components have been properly installed. If one or more components are functioning properly. Page 76 7210 SAS-D Installation Guide Troubleshooting In-Band Access You can access the management agent in the switch from anywhere within the attached network using Telnet or network management software tools. However, you must first configure the switch with a valid IP address, subnet mask, and default gateway. If you have trouble establishing a link to the management agent, check to see if you have a valid network connection. Then verify that you entered the correct IP address. Also, be sure the port through which you are connecting to the switch has not been disabled. If it has not been disabled, then check the network cabling that runs between your remote location and the switch. NOTE: The management agent can accept up to four simultaneous Telnet sessions. If the maximum number of sessions already exists, an additional Telnet connection will not be able to log into the system. 7210 SAS-D Installation Guide Appendix A: Specifications This appendix provides system specifications and includes the following sections: • "Specifications Table 14: 7210 SAS-D Platform The following specifications Specifications Specifications Table 14: 7210 SAS-D Platform The following specifications Specifications Specifications Table 14: 7210 SAS-D Platform The following specifications Specifications Table 14: 7210 SAS-D Platform The following specifications Specifications Table 14: 7210 SAS-D Platform The following specifications Specifications Table 14: 7210 SAS-D Platform The following specifications Specifications Table 14: 7210 SAS-D Platform The following specifications Specifications Table 14: 7210 SAS-D Platform The following Specifications Table 14: 72 Weight 3 lbs. (1.36 kg) 1.69" (1.5RU) (4.28 cm) 6.89" (17.5 cm) Environmental Operating Temperature 0° C to 40° C (32° F to 104° F) (standard) IEC 68-2-36, IEC 68-2-36, IEC 68-2-32 Telcordia NEBS Design to meet NEBS level 3 Input Input voltage -36VDC ~ -72VDC, Output: +12VDC 100~240 V, 50~60 Hz, Output: +12VDC Maximum power consumption 30 W Safety, EMC and Immunity Safety Page 80 CSA/NRTL (UL60950-1) 7210 SAS-D Installation Guide Appendix A: Specifications Table 14: 7210 SAS-D Specifications (Continued) Item Width Height EMC Europe CE Mark: EN55022 Class A EN 300 386 North America: FCC 47 CFR Part 15 Class A ICES-003 Class A (Canada) Japan: VCCI CISPR 22 Class A Immunity EN55024, EN/IEC 61000-4-2/3/4/6/8/11 7210 SAS-D Installation Guide Depth Page 81 Specifications 7210 SAS-D ETR Platform The following specifications are for the 7210 SAS-D ETR chassis. Table 15: 7210 SAS-D Specifications Item Width Height Depth Physical dimensions Size 10.5" (26.7 cm) Weight 3 lbs. (1.36 kg) 1.75" (1.5RU) (4.4 cm) 7.0" (17.8 cm) Environmental Operating Temperature -40° C to 65° C (-40° F to 149° F) (standard) IEC 68-2-14 Humidity 5% to 95% noncondensing Vibration IEC 68-2-36, IEC 68-2-36, IEC 68-2-36 Shock IEC 68-2-32 Telcordia NEBS Design to meet NEBS level 3 Input Input voltage -36VDC ~ +28VDC, Output: +12VDC Dual input power redundancy, with current sharing and hot-swap. Maximum power consumption 30 W Safety, EMC and Immunity Safety Page 82 CSA/NRTL (UL60950-1, CSA 22.2.No 60950-1) TUV/GS (EN60950-1) TUV/GS (EN6095 North America: FCC 47 CFR Part 15 Class A ICES-003 Class A (Canada) Japan: VCCI CISPR 22 Class A Australia/New-Zeeland: C-Tick, CISPR 22 Class A Immunity EN55024, EN/IEC 61000-4-2/3/4/6/8/11 7210 SAS-D Installation Guide Depth Page 83 Specifications Japan VCCI Class A Declaration This is a Class A product based on the standard of the Voluntary Control Council for Interference by Information Technology Equipment (VCCI). If this equipment is used in a domestic environment, radio disturbance may arise.

Comply with the Chinese RoHS legislations.

Page 84 7210 SAS-D Installation Guide Appendix B: Console Connection This appendix provides port specifications about console Port Pin Assignment Console Port Pin Assignment The RJ-45 serial port on the front panel is used to connect to the switch for out-ofband console configuration. The on-board configuration program can be accessed from a terminal or a PC running a terminal emulation program. The pin assignments used to connect to the serial port are provided in Table 16. Table 16: Serial Cable Wiring Page 86 RJ45 Pin Usage RTS 1 Used as defined. Should be connected GND 4 Used as defined.

When such trouble occurs, the user may be required to take corrective actions. RoHS and WEEE Comply with European RoHS and WEEE requirements.

Should be connected GND 5 Used as defined. Should be connected RXD 6 Used RX