

LAN Console

Installation, Configuration and Operation

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This manual was produced by
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Contents

1	Preface	1
1.1	Target group	3
1.2	Summary of contents	3
1.3	Notational conventions	4
2	Safety notes	5
3	Functionality	7
3.1	Functions supported	7
3.2	Architecture	8
4	LAN Console	9
4.1	Hardware	11
4.1.1	Power ratings	12
4.1.2	Environmental conditions	13
4.1.3	Standards	14
4.2	Startup and operation	14
4.2.1	Scope of Delivery	14
4.2.2	Unpacking and checking the delivery unit	14
4.2.3	Installing the LAN Console	15
4.3	Overview of connections	16
4.3.1	Connecting the keyboard	17
4.3.2	Connecting the mouse	17
4.3.3	Connecting devices with a serial or parallel interface	18
4.3.4	Connecting the monitor	18
4.3.5	Connecting the LAN Console to the power supply	19
4.4	Operating the LAN Console	21
4.4.1	Switching on/off the LAN Console	21
4.4.1.1	System unit is switched off	21
4.4.1.2	System unit is ready to operate	21
4.4.1.3	System unit is switched on	22
4.4.2	Indicators on the system unit	22
4.4.3	Pre-installation	23
4.4.4	Hard disk partitioning	23
4.4.5	First Booting	24
4.5	Installing the software packages	25
4.6	Starting WSA	28

Contents

5	Installing the RCA	29
5.1	Connecting the cables	29
5.1.1	LAN connection	30
5.1.2	Serial interface for connecting the console	30
5.1.3	Communication	30
5.1.4	Connections at the rear of the RCA	31
5.1.4.1	Connecting to the RM server	32
5.1.4.2	Connecting to the PRIMEPOWER (MR) server	33
5.2	Cable types	34
5.2.1	PRIMEPOWER 100N	34
5.2.2	RM and PRIMEPOWER 200-600	34
5.3	Technical specifications	35
5.3.1	Hardware	35
5.3.2	Power ratings	35
5.3.3	Environmental conditions	36
5.3.4	Dimensions and weights	36
5.3.5	Standards	37
5.4	Switching on the RCA	38
6	Configuration	39
6.1	Configuring the PRIMEPOWER (MR)	39
6.2	Configuring the LAN Console and RCA	40
6.2.1	Initial configuration of the LAN Console and RCA	42
6.2.1.1	Configuring the LAN Console	43
6.2.1.2	Configuring the RCA	45
6.2.2	New ports for the RCA	51
6.2.3	Another RCA connected to the LAN Console	52
6.2.4	Another LAN Console connected to the RCA	52
6.2.5	Modifying the LAN Console and RCA	52
6.2.5.1	Modifying the configuration entry for an RCA port	53
6.2.5.2	Modifying the RCA setup parameters	53
6.2.5.3	Removing a LAN Console	53
6.2.5.4	Removing an RCA	54
6.3	Teleservice	55
6.3.1	Installation and generation	56
6.3.1.1	Hardware installation	56
6.3.1.2	Software installation	57
6.3.2	Generating the software	57
6.3.2.1	Logging in	58
6.3.2.2	Selecting validated Teleservice modems	59
6.4	TeleCall	65
6.4.1	Installing Telecall	66
6.4.1.1	Preparations	66
6.4.1.2	Software installation on the LAN Console	66

Contents

6.4.1.3	Software installation on the RM	67
6.4.1.4	Software installation on the PRIMEPOWER (MR)	67
6.4.2	Generating the Telecall cluster	67
6.5	Remote boot und installation	71
6.5.1	setup_RM_server	72
6.5.2	bootpconf	75
6.5.3	add_RM_client	76
7	Operation	79
7.1	xscon call	79
7.2	Switching LAN Consoles	82
7.2.1	Planned switches	82
7.2.2	Switching because of problems	83
7.3	Diagnostics	83
7.3.1	Log files	83
7.3.2	Status informations for the rtty monitor	84
7.3.3	Configuration entries for the LAN Console	84
7.3.4	System information for the RCA	85
7.4	Error situations	86
7.4.1	No response from the RCA	86
7.4.2	Failure to establish a connection	86
7.4.3	Disrupted RCA - LAN Console connection	87
7.4.3.1	LAN connection disrupted	87
7.4.3.2	No output in console window	88
7.4.4	Invalid password for RCA setup	88
7.4.5	Incorrect remote call of RCA setup	88
8	Appendix	89
8.1	Access control	90
8.2	Language/Keyboard	91
8.3	Network	93
8.4	Ports	95
8.5	Mouse	96
8.6	Graphics/Screen	97
8.7	DPMS	98
8.8	Hosts/DNS	99
8.9	Sessions	102
8.10	Firmware update	103
8.11	System information	105
8.12	Exit	106
8.13	Restart	107

Contents

Glossary 109

Abbreviations 111

Related publications 115

Index 125

1 Preface

The LAN Console acts as a system console for one or more RM or PRIMEPOWER midrange servers. The server systems are connected to the LAN Console via the RCA (Remote Communication Adapter), a V.24/Ethernet converter located close to the system (max. 15m away) or in the system cabinets. The LAN Console can be connected at any point in the LAN, thus at a distance away from the systems being administered.

The LAN Console is based on a high-performance SPARC processor in a desktop model, which can also be installed and operated in a 19-inch rack using a rack mounting kit. It is released for the following products:

- RM300/400/600 with Reliant UNIX
- PRIMEPOWER 100N/200/400/600 (Midrange Server, MR) with Solaris
- PRIMEPOWER 800/1000/2000 (Enterprise Server, EP) with Solaris

This SPARC-based LAN Console can be used both as a central system console for midrange servers and as a system management console for enterprise servers.

Midrange Server

This includes the RM 300/400/600, ServerNode models and the PRIMEPOWER midrange server models 100N/200/400/600. Genuine LAN console software is used on the LAN Console for managing the server systems. The Remote Communication Adapter (RCA) can be used as a V.24/Ethernet converter.

Enterprise Server

This includes the PRIMEPOWER server models 800/1000/2000. The LAN Console is used as a system management console (SMC), which manages systems and system partitions with upgrade components. The SPARC-based LAN Console is a cost-effective alternative to an SMC on the basis of a PRIMEPOWER 200 system console. When used as an SMC, the LAN Console should be equipped with additional hardware. The SCS (System Console Software) software is used as well as the Console Connection Units (CCU) as V.24/Ethernet converters in the system cabinets. Use of the console as an SMC is not described in this manual, rather in the manual “PRIMEPOWER (Solaris): System Management Console”.

Throughout this manual, the name PRIMEPOWER (MR) always refers to the models 100N, 200, 400 and 600. If you have a GP7000 F midrange (M200/M400/M600) machine, all of the PRIMEPOWER (MR) information applies to your machine also, because the name GP7000F has been changed to PRIMEPOWER.

Mixed operation RM/PRIMEPOWER (MR and EP)

The midrange models referred to from both system families can be managed in mixed mode from a LAN Console with the *xscn* user interface. *xscn* and SCS (System Console Software) can be operated in parallel on a LAN console with the relevant hardware/software configuration.

It is not only possible to use the LAN Console in its console function but also for (network-based) system administration, configuration, diagnostics and software installation and distribution for one or more RM or PRIMEPOWER (MR) servers. Furthermore, multiple clustered RM or PRIMEPOWER (MR) servers can be configured, administered and monitored from one console.

The Teleservice connection for all networked RM or PRIMEPOWER (MR) servers is also handled via the LAN Console (Teleservice gateway) so only one line to the Service organization is needed for all networked RM or PRIMEPOWER (MR) servers.

When connected to a LAN (local area network), the console can be located at any point in the LAN, for example in another room or building. The distance is no longer restricted to 15 m max. The existing V.24 console interfacing has not been changed so that the console can be used both for existing and new RM or PRIMEPOWER (MR) servers.

The LAN Console product consists of a SPARC-based machine with the Solaris Version 8 operating system, the Solaris Desktop Media Kit, and the LAN console software (see "Installing the software packages" on page 25).

A Remote Communication Adapter (RCA) is needed to establish a connection from the LAN Console to the RM or PRIMEPOWER (MR) server's console port. Up to six RM or PRIMEPOWER (MR) servers can be connected to this RCA. Multiple RCAs can be installed. Up to 64 RM or PRIMEPOWER (MR) systems can be managed from the LAN Console.

RM and PRIMEPOWER (MR) servers can be operated in combination on an RCA.



The RCA and LAN Console must be ordered separately.

1.1 Target group

This manual is targeted at system administrators. Knowledge of Reliant UNIX and Solaris systems is required. If any problems occur with the RCA (Remote Communication Adapter) or the SPARC-based LAN Console during operation, please contact your local Service organization.



LAN Console and RCA are not SIDATA-compatible

The LAN Console and RCA do not support SIDATA, i.e. they must be installed and started up by a technician. System administrators are given instructions on setting them up and configuring them.

1.2 Summary of contents



Safety notes

It is essential to read the chapter “Safety notes” on page 5 **before** starting to work with the LAN Console. This chapter contains essential information for proper installation and handling of this device.

This manual describes how to install the LAN Console and the RCA, how to configure the system and how to operate the LAN Console.

The chapter “LAN Console” on page 9 tells you everything about installing the LAN Console and setting up the software from the CD-ROM.

The chapter “Installing the RCA” on page 29 presents the hardware of the RCA. It tells you how to install the device, cable it and start it up.


The chapter “Configuration” on page 39 explains the (initial) configuration of the RCA and LAN Console, how to set up Teleservice and TeleCall and remote boot/installation.

The chapter “Operation” on page 79 describes how to select RM systems with *xscon* and how to change a LAN Console.

The section “Diagnostics” on page 83 provides support for troubleshooting and diagnostics.




The “Appendix” on page 89 contains screen masks for setting up the RCA.

You will find other helpful information in the reference chapters “Glossary” on page 109, “Related publications” on page 115 and “Index” at the end of the manual.

 Please follow all instructions in the order they appear in this manual. You will avoid problems by doing so and get along faster. Always pay attention to the device-specific information that is supplied with the various devices.

1.3 Notational conventions

The following notational conventions are used in this manual:

Monospace	This indicates system output, e.g. text on a CRT or LCD screen (cathode ray tube / liquid crystal display).
Bold monospace font	This indicates user inputs in examples.
<i>Italics</i>	This indicates commands, file names, menu names and inputs in continuous text.
Bold	This indicates emphasis in the text.
	This indicates keys or key combinations in continuous text.
	This indicates additional information and tips.
 Title	This indicates information, which if not heeded may jeopardize your health, the functioning of your system or the security of your data.
►	This indicates a step that you have to do.
-->	This indicates the last possible solution to a problem or the last step in a flow chart.
●	This character and the one below
–	Symbolizes itemized lists.

2 Safety notes

This section gives advice on safety that you have to heed when using your LAN Console or RCA.

This device complies with the relevant safety regulations for information technology equipment including electrical machines for use in office environments. Please contact your local sales office or our Service organization if you are in doubt about whether the device can be installed in the environment you envisage. Also note the safety notes for RM and PRIMEPOWER (MR) and rack systems.



Radio Frequency Interference Statement

(see also the statements given in section “Standards” on page 14 and page 37).

- The following notice is for EU users only:
This is a product which meets class B of EN55022.
- The following notice is for USA users only:
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference.



Safety notes

- Only transport the device in its original packaging or in other suitable packaging, which will protect it against impact and jolts.
- Condensation may occur when the device is brought in from the cold to its site of installation. Wait until the device has reached a stable temperature and is absolutely dry before putting it into operation.
- Heed the ambient conditions given in the “Technical specifications” on page 35 before installing the device and putting it into operation.
- This device features a safety-tested power cable and may only be connected to a grounded socket.
- Make sure that the socket on the device or the mains socket on the housing installation are readily accessible.

Safety notes

- The ON/OFF button does not isolate the device from the mains voltage completely. To do this, you have to remove the plug from the mains socket.
- In the case of system units that do not have a main switch, the ON/OFF button does not disconnect the monitor socket from the mains supply. A monitor connected to this socket must always be switched off using its own ON/OFF button.
- Lay cables in such a way that there is no danger of people tripping over them and damaging them. When connecting the device, note the information given in the section "Connecting the cables" on page 29.
- Do not connect or disconnect communication cables during a thunderstorm.
- Make sure that no liquids penetrate the interior of the device (risk of electric shock, short-circuit).
- In cases of emergency (e.g. damage to the housing, controls or power cable, or penetration of liquid) turn the device off immediately, remove the mains plug and notify your sales office or our Service organization.
- This device may only be repaired by authorized personnel. Unauthorized opening of the housing and inadequate repairs may pose a considerable danger for users (electric shock, risk of ignition).

3 Functionality

This chapter describes the functionality of the LAN Console for RM and PRIMEPOWER (MR) servers.

3.1 Functions supported

The LAN Console supports the following functions:

1. It can be used for installation, configuration, administration, and cluster and diagnostics management of one or more connected RM or PRIMEPOWER (MR) servers.
2. It can be used as System Management Console (SMC) of PRIMEPOWER Enterprise Servers. This requires an upgrade of 128 MByte main memory, DAT drive, Combo controller and System Console Software (SCS), which are not part of the standard LAN Console.
3. Input and output take place on the keyboard and display of the LAN Console.
4. All functions of a character-oriented display, including IKDB (Internal Kernel Debugger) and BDM (Board Debug Monitor) or OBP (Open Boot Prom) Monitor and rebooting of a system can be carried out with the LAN Console.
5. The *xscon* tool is used to select and represent one or more consoles of RM and PRIMEPOWER (MR) servers.
6. RM and PRIMEPOWER (MR) servers can also be booted and installed remotely (via LAN).
7. Connection to Teleservice.
8. The LAN Console can be used **simultaneously** as a console on RM and PRIMEPOWER (MR) servers and with hardware/software upgrades as an SMC for the PRIMEPOWER Enterprise Server.
9. The LAN Console can be used as cluster console in high availability applications with RM and PRIMEPOWER (MR) Servers. This requires additional components such as a further ethernet controller and software, which are not part of the standard LAN Console. By default the LAN Console has two Fast Ethernet controllers (onboard). The console takes over the function of monitoring the system cluster as a whole and the function of system console for all connected RM and PRIMEPOWER systems.

10. The console can also be used as a computer system in its own right.

3.2 Architecture

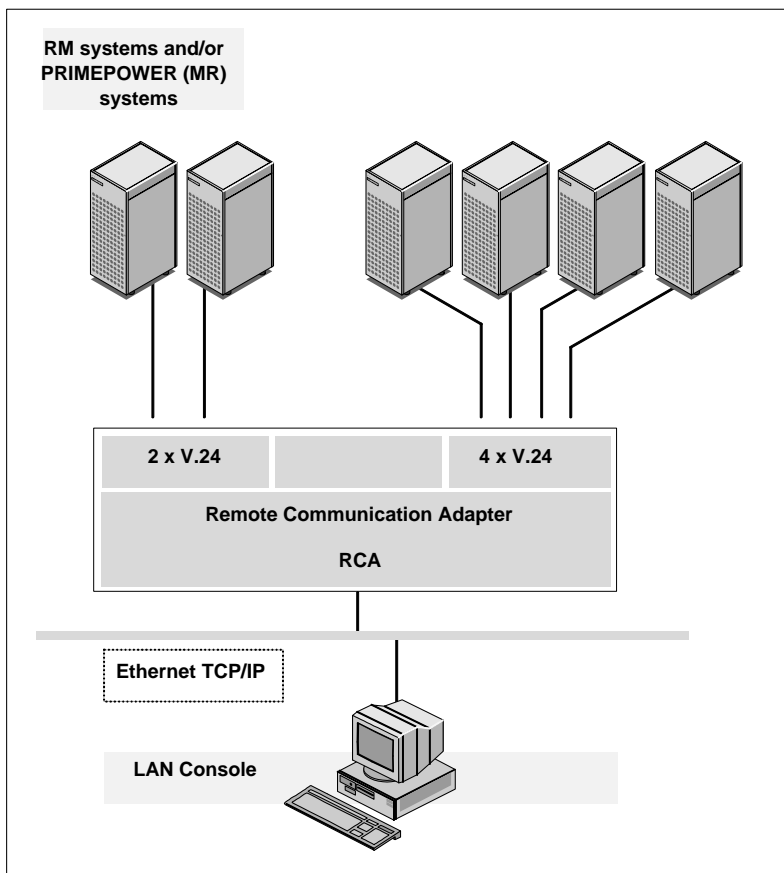


Figure 1: Architecture of the LAN Console

4 LAN Console

The LAN Console is based on a high-performance SPARC-based computer system running the Solaris 8 operating system. It is connected with the RCA (Remote Communication Adapter) via the LAN (TCP/IP).

The LAN Console can be used as a standalone system in desktop housing with a desktop monitor, standard PC keyboard (German/International) and 3-button mouse.

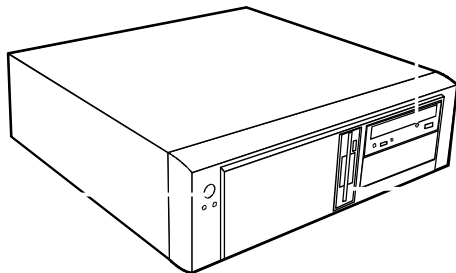


Figure 2: LAN Console as a standalone system

A mounting frame is provided for installing the LAN Console in a 19-inch rack (3.5 height units), as well as a pull-out rack console with fold-away TFT monitor (15"/35cm) and keyboard with trackball.

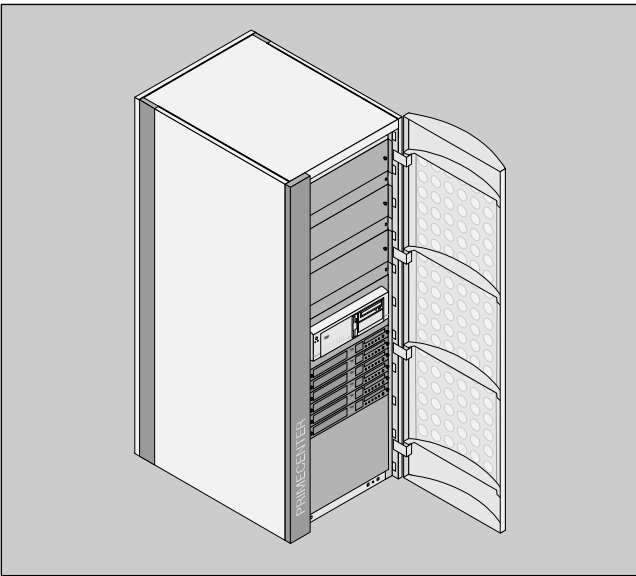


Figure 3: LAN Console rack module

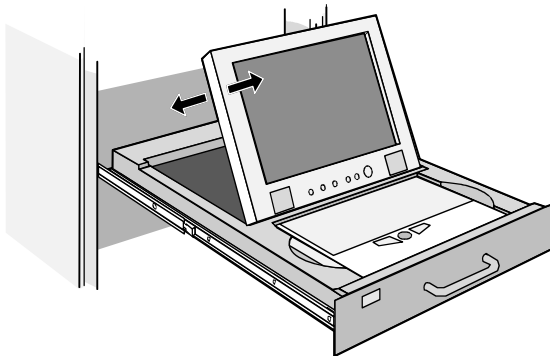


Figure 4: Fold-away monitor of LAN Console in the rack

The power supply is enabled when the monitor is tilted open. At the same time, a safety mechanism on the right hand side of the rack module prevents the rack being pushed back in while the monitor is tilted open.

4.1 Hardware

The LAN Console is provided with the following hardware:

Hardware elements	Configuration/Performance
Processor	500MHz UltraSparc IIe
Main memory	128 MByte (max. 2 GByte possible)
Graphics controller	Resolution of 1280x1024 pixels, 24-bit color, VGA port, VGA controller integrated on motherboard
DVD drive	12x DVD/40x CD-ROM or better
Diskette drive	1.44 MByte
2 x Fast-Ethernet onboard	2 x 10/100 Mbits/s
Hard disk	2 x 20 GByte
V.24 interface	COM1 and COM2, DB9 Connector COM2 for Teleservice
PS/2 interface	3-button mouse for X-Windows interface
PS/2 interface	Keyboard German/international
Audio on board	

Table 1: LAN Console hardware components

Upgrade to SMC
DAT drive DDS-4
Main memory extension 128 MByte (1x128 MByte module)
SCSI / Fast Ethernet Combo controller
System Console Software SCS (CD-ROM, license, documentation)

Table 2: Upgrade to SMC

4.1.1 Power ratings

Mains voltage range (switchable)	100V-125V/ 200V-240V
Rated frequency	50-60 Hz
Power consumption	approx. 60 W
Power factor cosφ	120V: >0.90 230V: >0.75

Table 3: Power ratings



Different mains voltages

Note the different mains voltages in Anglo-American countries. You will find details of this in the English language Operating Manual for the RM600 and PRIMEPOWER (MR) as well as in the general safety notes for RM/SR-2000 and GP7000F/PRIMEPOWER (MR) servers.

4.1.2 Environmental conditions

Environmental conditions for the LAN Console	
Climatic class Operation: (acc. to EN 60721-3-x)	3K3
– Temperature (°C):	5 – 40
– Relative humidity (%):	5 – 85
– Height above sea-level (m):	3000
Climatic class Transport: (acc. to EN 60721-3-2)	2K2
– Temperature (°C):	-25 – +60
– Relative humidity (%) at 30°C:	15 – 98
– Height above sea-level (m):	3000
Physically active substances (operation):	3M2
Physical environmental conditions:	
Operation	3M2
Transport	2M2
Required space for service activities	
– Minimum distance (mm)	
front:	1000
rear:	1000

Table 4: Environmental conditions

Dimensions and weight	Desktop housing	Rack module
Breadth (mm):	454	449 (with panel 482.6)
Depth (mm):	456	456
Height (mm):	138	138 (with panel 152)
Weight basic configuration (kg) ¹	11	11,2
Weight SMC (kg) ¹	12	12,2

Table 5: Dimensions and weight

¹ without documentation and media kit

4.1.3 Standards

Product safety	IEC60950; EN60950 UL60950; CSA60950-00 GS symbol
Immunity to radiation	EN55024
Radiated interference	EN 55022-B; EN 61000-3-2; EN 61000-3-3 FCC Class B
Approvals	GS symbol; cCSA _{US} ; CE; CB certificate

Table 6: Standards

4.2 Startup and operation

The LAN Console can be used as a central console for one or more RM or PRIMEPOWER- (MR) servers. Up to 64 RM or PRIMEPOWER (MR) servers can be administrated from one LAN Console.

**Warning**

Please refer to the chapter “Safety notes” on page 5.

4.2.1 Scope of Delivery

The product LAN Console only consists of the system unit. RCA, monitor, keyboard and mouse, the modem for teleservice and the requested cables are not part of the scope of delivery and have to be ordered separately.

4.2.2 Unpacking and checking the delivery unit

You should keep the original device packaging in case the device has to be transported.

- ▶ Unpack all the parts.
- ▶ Check the package contents for visible transport damage.
- ▶ Check that the delivery matches the details on the delivery note.

If you discover transport damage or inconsistencies between the packaging unit and the delivery note, inform your local sales office immediately.

4.2.3 Installing the LAN Console

**Warning**

Pay attention to the safety notes when installing the LAN Console.

The LAN Console should only be installed in a specially designated position. This can be checked from the diagrams on the next pages.

The device should not be subjected to any extreme environmental conditions (see “Environmental conditions” on page 13). It should be protected from dust, humidity and heat.

The must be at least 200 mm free space to the front and rear of the system unit, so that the unit is adequately ventilated. The fan areas on the monitor and system unit should not be covered.

Do not place any objects over 40 kg in weight on the system unit and do not stack several system units above one another.

We recommend you position the devices on a non-slip surface. Because different coatings and varnishes are used on furniture, it is entirely possible that the plastic feet on the device could damage the surface.

4.3 Overview of connections

The connections are located on the rear of the system unit.

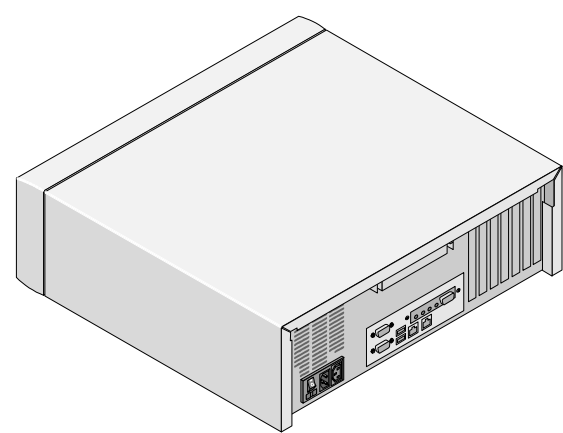


Figure 5: Rear of the LAN Console

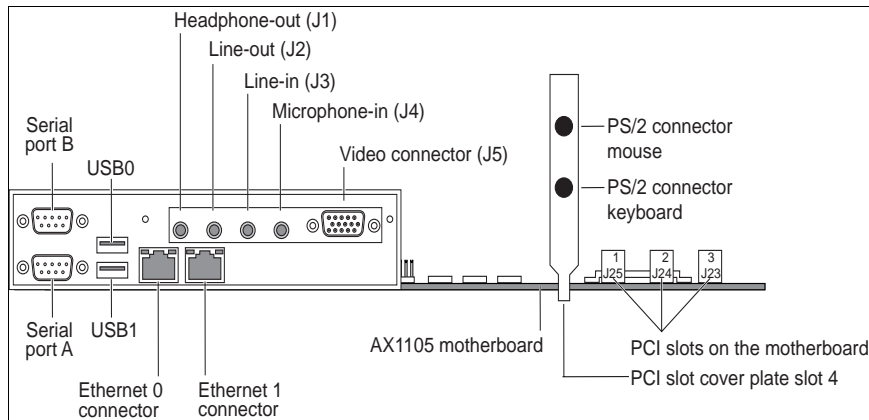


Figure 6: Connections on the rear of the LAN Console



Warning

The power plug must be pulled out!

The cables should neither be plugged in or unplugged during a thunderstorm (electrical shock).

Always unplug a cable by its plug. Do not pull on the cable itself (damage to plug or socket)!

i You have to install and configure special software (e.g. drivers) for some of the connected devices (see documentation for the connected device and for the operating system).

4.3.1 Connecting the keyboard

The keyboard is not part of the scope of delivery and has to be ordered separately.

i Only use the keyboard cable supplied.

- ▶ Insert the round plug of the keyboard cable into the keyboard port on the system unit.
- ▶ Insert the other plug for the keyboard cable into the socket on the underside of the keyboard.

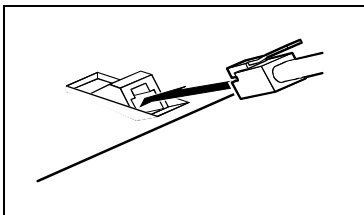


Figure 7: Keyboard connections

4.3.2 Connecting the mouse

- ▶ Connect the mouse to the mouse port.

4.3.3 Connecting devices with a serial or parallel interface

- ▶ Connect the data cable to the external device.
- ▶ Connect the data cable of the external device to the corresponding interface on the system unit.

i Most devices that you connect to the serial or parallel interface require special drivers. Many drivers are already included in your operating system. If the required driver is not on the hard disk, you have to install it from the diskette or CD, which was supplied with the device or with the application program.

4.3.4 Connecting the monitor

The monitor is not part of the scope of delivery and has to be ordered separately.

- ▶ Prepare the monitor as described in the Operating Manual for the monitor.
- ▶ Insert the data cable for the monitor into the monitor port on the system unit (video connector J5 as shown in figure 6).

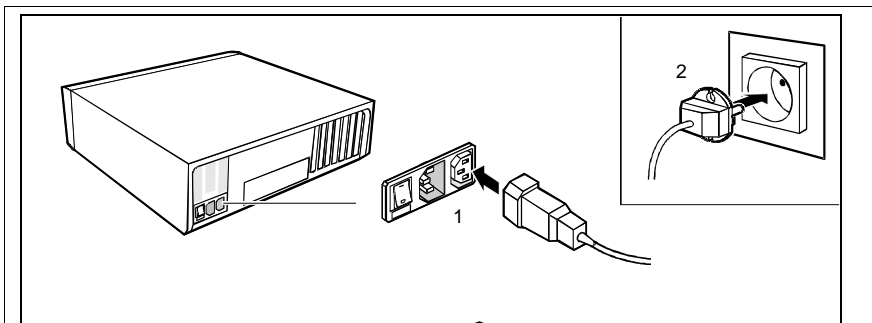


Figure 8: Monitor connection

- ▶ Connect the power cable for the monitor, depending on the plug, to the monitor socket on the system unit (1) or to the grounded power outlet (2).

**Warning**

You may only connect the power cable for the monitor to the monitor socket on the system unit if the power consumption of the monitor is less than 1.5 A (for 230 V) or 3 A (for 115 V). You will find the values for the monitor's power consumption in the technical data for the monitor itself or in the Operating Manual for the monitor.

On system units without a main switch, the ON/OFF button does not disconnect the monitor socket on the system unit from the mains. A monitor connected to the monitor socket must always be disconnected using its own ON/OFF button.

4.3.5 Connecting the LAN Console to the power supply

- Check the power supply setting.

**Warning**

The value displayed or indicated with the arrow must conform with the local power supply:

115 = 100 V to 125 V

230 = 200 V to 240 V

Changing the power supply when it is set incorrectly



Your LAN Console has a main switch on the rear of the system unit in addition to the ON/OFF button on the front. The power supply setting is found beneath this switch.

- Unscrew the plug-in element at the groove (1), rotate it and insert it back into place again.

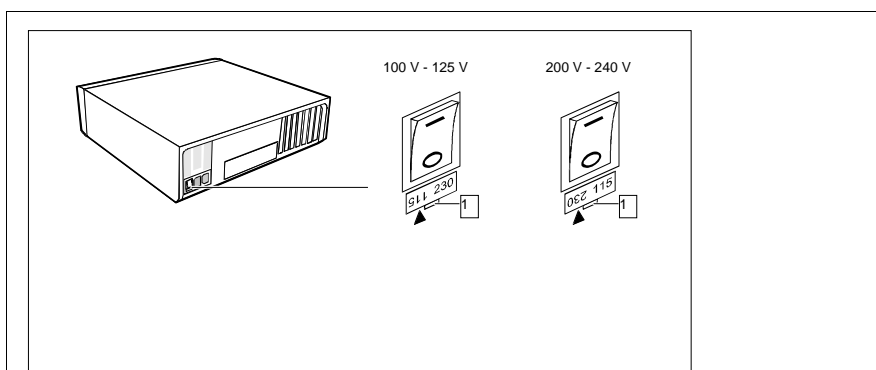


Figure 9: Setting the power supply
1= groove for inserting the screwdriver

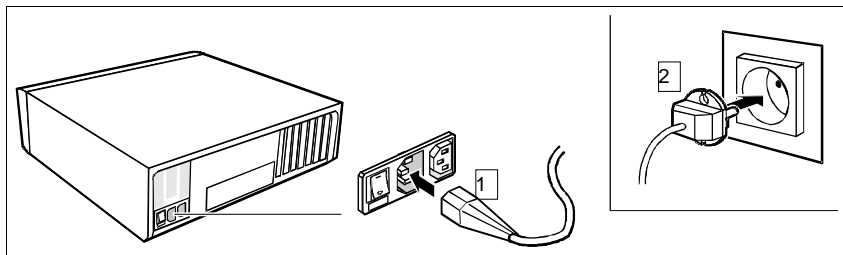


Figure 10: Connector on system unit

- Connect the power cable for the system unit to the system unit (1) and then to the earthed power outlet (2).

4.4 **Operating the LAN Console**

4.4.1 **Switching on/off the LAN Console**

The LAN Console also has a main switch on the rear of the system unit in addition to the ON/OFF button on the front.

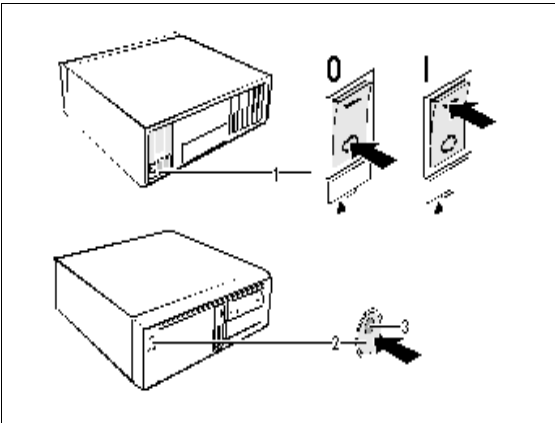


Figure 11: Switching on/off the LAN Console

1=Main switch	O= System unit is disabled
2=ON/OFF button	I= System unit is ready to operate
3=Power LED	

4.4.1.1 **System unit is switched off**

The main switch (1) is in position O, the power LED (3) is not lighting and the ON/OFF button (2) is not functional.

4.4.1.2 **System unit is ready to operate**

The main switch (1) is in position I and the power LED (3) is lighting orange. You can enable the system unit in this mode with the ON/OFF button (2). The “ready to operate” state corresponds to the “stand-by” status on a television. The power LED (3) is described in greater detail in the next section.

4.4.1.3 System unit is switched on

The main switch (1) is in position I and the power LED (3) is lighting green. The system unit can be switched to ready to operate status using the ON/OFF button (2). It is required that the ON/OFF button is pressed for 4 seconds.

4.4.2 Indicators on the system unit

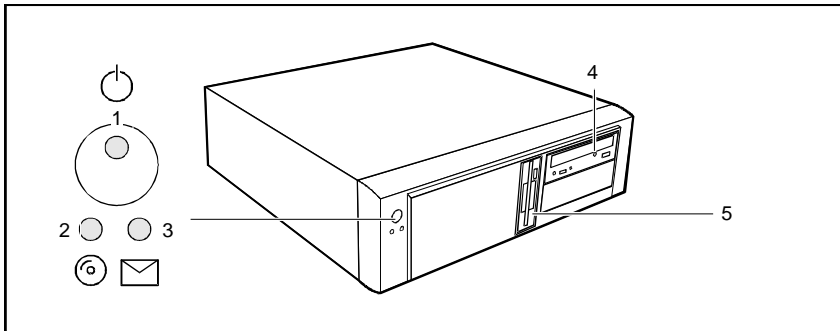


Figure 12: Free-standing LAN Console

1. Power LED

If the power LED is lighting green, the system unit is switched on.

2. Hard disk indicator

The indicator lights when the hard disk drive of the system unit is accessed.

3. Message indicator

This indicator is intended for future applications.

4. DVD-ROM indicator

The indicator lights when the DVD-ROM drive of the system unit is accessed. The CD must not be removed under any circumstances while the indicator is lighting.

5. Diskette indicator

The indicator lights when the diskette drive on the system unit is accessed. The diskette must not be removed under any circumstances while the indicator is lighting.

4.4.3 Pre-installation

The LAN Console is preinstalled as follows:

Component	Pre-installation
Operating system	Solaris 8 (Entire distribution plus OEM Support 64 bit) incl. DiskSuite, SUNVTS™
Teleservice	V4.0
Language	German (English is automatically installed as well)

Table 7: Pre-installation of the LAN Console

4.4.4 Hard disk partitioning

The following hard disk partitioning is predefined:

Partition	Directory	Hard disk partitioning 20 GByte
0	/(root)	overlap - (swap+partition 3 + partition 4) ≙ overlap - (swap + 20 MByte)
1	swap	512 MByte
2	overlap	Entire disk
3		10 MByte
4		10 MByte

Table 8: Hard disk arrangement

This hard disk arrangement allows use both as a LAN Console and as an SMC on PRIMEPOWER Enterprise Servers.



For a reinstallation, do not use the disk arrangement from the Solaris manual; use the arrangement proposed here instead. This will save you repartitioning when using the LAN Console as an SMC.

4.4.5 First Booting

Identification

When the system boots for the first time, parameters for identification like host name, network, time zone and root password are required.

Language setting

When the Solaris operating system has booted, a mask appears prompting the user name. The desired language can be chosen in the following menu:

Desktop Login --> Options --> Languages

Once you have entered the password, the CDE (Common Desktop Environment) is started.

All other parameters are set using the usual Solaris tools.

4.5 Installing the software packages

The software for the LAN Console requires a maximum of 10 Mbytes storage space.

The following software packages must be installed on the LAN Console:

- If the LAN Console is to be integrated into a WSA domain, the Supplement CD is required.
- The LAN Console software is stored on the Control CD (System management CD). The Control CD contains the following packages for the LAN Console:

Package
SMAWrtty (Communication)
SMAWxsco (Console mapping)
SMAWrins (Remote installation server)
SMAWtelx (Telecall gate)

Installation procedure:

- Insert the Control CD. The required packages are installed using the Webstart wizard.

The File Manager window opens automatically and shows the contents of the CD-ROM.

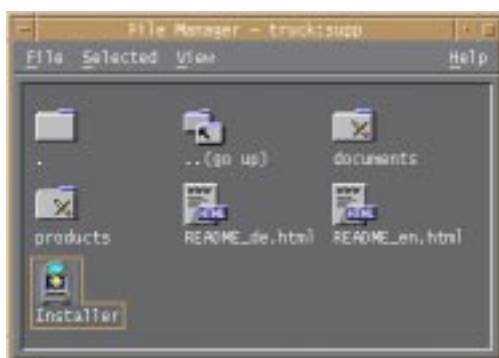


Figure 13: File Manager window for the Control CD

- Double-click *Installer* and then keep clicking the *Next* button until the following mask appears:

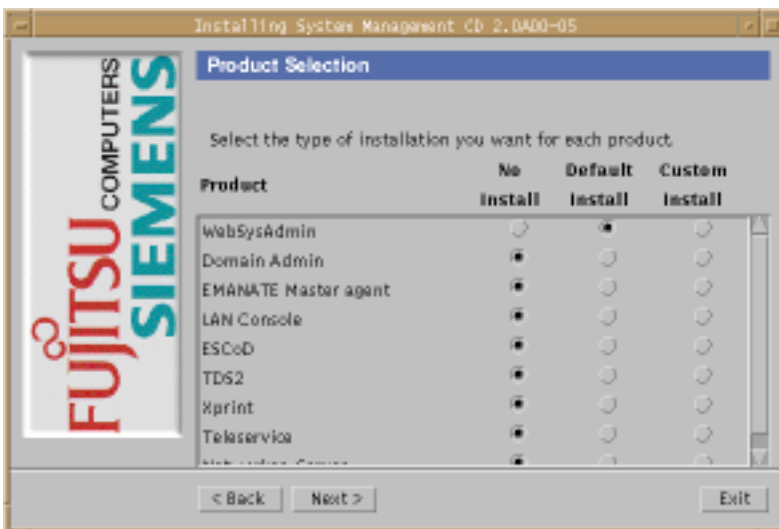


Figure 14: Installation mask for Control CD

- Choose the “LAN Console” product.
The following packages are installed in the directory `/opt/SMAW`:
 - SMAWrtty
 - SMAWrins
 - SMAWtelx
 - SMAWxsco

Where there are several systems to be administered by the LAN Console at the same time in one or more domains, the licensed „Domain Admin 2.0“ product must be installed (see manual WebSysAdmin / Domain Admin 2.0).

- Teleservice 4.0 (SMAWtssv) is already preinstalled.

i If you want to use the *Teleservice* component, check the default settings for the *useradd* command as described in the section “Software installation” on page 57.

The following Solaris packages are already preinstalled for the *SMAWxsco* package:

SUNWbnur	Networking UUCP Utilities	(Root)
SUNWbnuu	Networking UUCP Utilities	(User)
SUNWdhcsr	BOOTP/DHCP Server Services	(Root)
SUNWdhcsu	BOOTP/DHCP Server Services	(User)

For the components of the individual packages to function, it is assumed that the `/usr/openwin/bin` path is contained in the `PATH` environment variable. This path must be set for *root*.



Language settings:

Only the following country-specific language settings are supported:

- C (Generic US English; 8-bit)
- de (Euro German)

(setting as under “Pre-installation” on page 23).

If a language other than the default setting is used (e.g. `en_GB`), the following adaptation needs to be made (owner *root*):

```
# cd /usr/lib/locale/en_GB/LC_MESSAGES
# ln -s /opt/MAW/MAWxsco/locale/en_US/xscon `pwd`/xscon
```

4.6 Starting WSA

You can start *WebSysAdmin* either at the shell or desktop level:

- Starting at shell level

Start the user interface in **write mode** by entering the following at command level:

```
# /opt/SMAW/bin/wsa node name
```

The welcome screen then appears and you proceed as described (language setting, root password).

If you only want to invoke the user interface in **read mode**, enter the following:

```
# /opt/SMAW/bin/wsa -read only node name
```

A dialog box then appears and you proceed as described (user name, user password, language setting etc.).

- Starting at desktop level

You will find the *WSA* application on the desktop in the *Workspace Menu* under *Applications* -> *Application Manager* -> *System_Admin* -> *WebSysAdmin*.

5 Installing the RCA

A Remote Communication Adapter (RCA) is needed to connect the LAN Console to the RM and PRIMEPOWER (MR) servers that it is to monitor and operate. The existing V.24-based console interfacing concept for the RM/PRIMEPOWER (MR) has been retained. The LAN Console is based on SPARC/Solaris 8 and is connected to the LAN via TCP/IP (see figure “Architecture of the LAN Console” on page 8). The RCA may also be installed in a 19-inch rack (see chapter “LAN Console” on page 9).



RCA does not support SIDATA

The RCA does not support SIDATA and therefore has to be installed by our Service organization.

The safety aspects of this process are described in the chapter “Safety notes” on page 5.

5.1 Connecting the cables



V.24 and LAN cables are not included in the package automatically and have to be ordered separately. Refer to the “Cable types” on page 34 for order numbers.

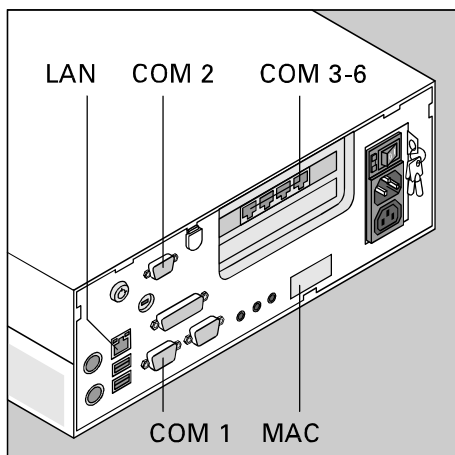


Figure 15: Connections on the rear of the device

5.1.1 LAN connection

The RCA has an Ethernet interface and six serial ports.

Simultaneous access to different host computers is enabled by the integrated TCP/IP software.

The connection complies with IEEE 802.3.

TCP/IP Ethernet

Connection: 10BaseT (twisted pair) / RJ45 connector

i

Transmission rate: 10 Mbit/s and 100 Mbit/s

5.1.2 Serial interface for connecting the console

COM 1-2 port: 9-pin module connector, D-SUB, male connector

COM 3-6 port: 8-pin RJ 45 connector

Note that the different ports also require different cable types (see the “Cable types” on page 34).

Transmission rate: 1.2 to 115.2 Kbit/s

Standard: RS-232C/V.24

5.1.3 Communication

Handshake	DTR, RTS/CTS
-----------	--------------

Table 9: Communication

5.1.4 Connections at the rear of the RCA

The following figure shows the cabling between the RCA and one or more RM or PRIMEPOWER (MR) servers:

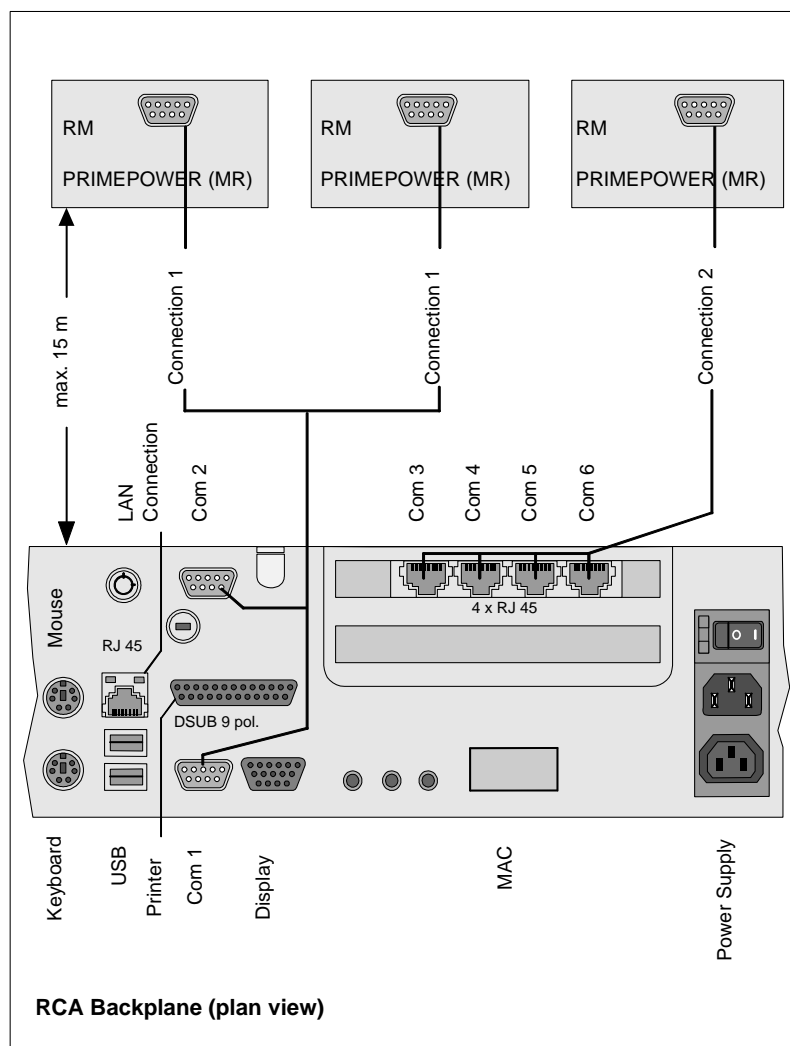


Figure 16: Cabling for the RCA

5.1.4.1 Connecting to the RM server

Do the following when you have placed the RCA system in a suitable position or installed it in the rack:

- ▶ Connect the RCA to the LAN
- ▶ Connect the COM port to the RM system with the corresponding cable as follows:

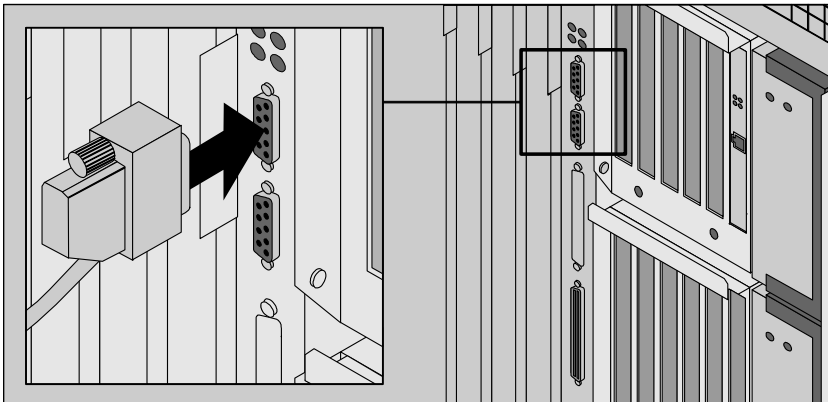


Figure 17: Connecting the RCA to the device backplane (here an RM600 E45 model)

- ▶ Connect the cable to the pins which are at the top of the HIOS or EHIOS basic controller.
- ▶ Attach the connector as shown.



Cables should not prevent the rear door being closed

When connecting the cables, always make sure that the rear door of the system cabinet can be closed again without difficulty.

- ▶ Secure the connector with its screw fasteners.

5.1.4.2 Connecting to the PRIMEPOWER (MR) server

Correspondingly, the cables are connected to serial port A on the backplane of the PRIMEPOWER (MR) server using one of the preinstalled adapters.

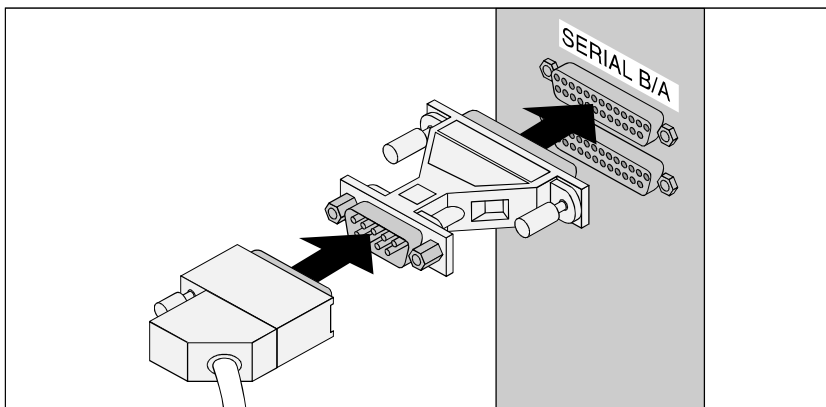


Figure 18: Connecting the RCA to the device backplane of a PRIMEPOWER (MR)

5.2 Cable types



Different cable types for COM1-2 and COM3-6

Note that different cable types are required for the COM1-2 (connection 1) and COM3-6 (connection 2) ports.

The following data cables (V.24) are needed to connect the RCA to the console interface of the RM or PRIMEPOWER (MR) server.

5.2.1 PRIMEPOWER 100N

Connection 1: COM 1-2 system connection; 25-pin DSUB female to 9-pin DSUB female.

Length	Product number
1.5 meters	D: GPRAC-KB004

Connection 2: COM 3 - 6 system connection; RJ45 (4-way I/O card to 25-pin DSUB female).

Length	Product number
2.0 meters	D: GPRAC-KB256

5.2.2 RM and PRIMEPOWER 200-600

Connection 1: COM 1-2 system connection; 9-pin DSUB female to 9-pin DSUB female.

Length	Product number	Delivery unit	Part no./reference no.
15 meters	D: KB004-M15	KB52190018	95929.00.02.7.16
3 meters	D: KB004-M3	KB52190015	55766.00.0.16

Connection 2: COM 3 - 6 system connection; RJ45 (4-way I/O card to 9-pin DSUB female).

Length	Product number	Delivery unit	Part no./reference no.
15 meters	D: KB256-M15	KB56161858	08000.02.8.16
5 meters	D: KB256-M5	KB56161857	08000.01.8.16

5.3 Technical specifications

The current RCA model can be ordered using the following numbers:

	Desktop	Rack module for PRIMEPOWER (MR)	Rack module for RM
Product no.	D:TXM10-RC21	D:GP70F-RC21	D:RM6T5-AL10
ITS ware- house no.	2063739		

Table 10: RCA order numbers

5.3.1 Hardware

CPU	Intel Celeron 400MHz
Memory	32 MB FLASH
Working memory	64 MB

Table 11: RCA technology

5.3.2 Power ratings

Mains voltage range (switchable)	100V-125V/ 200V-240V
Frequency	50-60 Hz
Power consumption	≤27 W

Table 12: Electrical ratings

5.3.3 Environmental conditions

Temperature	+15 °C bis +35 °C
Relative humidity	20% bis 75%

Table 13: Temperature

Requisite intake and exhaust air clearance for ensuring sufficient ventilation:

Left	min. 200 mm
Right	min. 200 mm
Rear	min. 200 mm

Table 14: Intake and exhaust air clearance

5.3.4 Dimensions and weights

Width	324 mm
Height	93 mm (with feet)
Depth	374 mm
Weight	6 kg

Table 15: Dimensions and weights

5.3.5 Standards

Ergonomics	ISO 9241(GS symbol)
Product safety	IEC60950/EN60950 UL 1950 / CSA 22.2 Nr.950 GS symbol
Immunity to radiation	EN 55022/B, EN 50082-1, EN 61000-3-2
Radiated interference	CE labeling acc. to EEC directive 89/336/EEC and 73/23/EEC FCC class A
Environment certificate	EPA-compliant

Table 16: Standards

5.4 Switching on the RCA

- ▶ You switch on the RCA with the main switch on the rear of the device. The RCA powers on in the mode that was last active when it was switched off with the main switch.
- ▶ When the power indicator is lighting orange, press the ON/OFF button on the front of the RCA. When the power indicator is lighting green, the RCA is started.

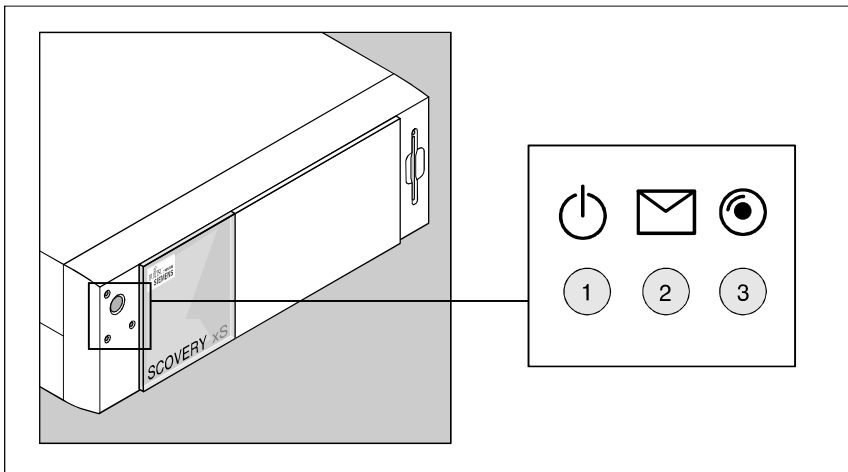


Figure 19: Front view of the RCA

1 Power LED

- lights green when the RCA is switched on.
- lights orange when the RCA is ready. In this mode the RCA uses very little energy and can be switched on using the ON/OFF button.
- does not light if the RCA has been switched off using the main switch at the rear.

2 Mail LED

Not supported

3 Disk LED

lights when the flash card on the RCA is accessed.

6 Configuration

In order to be able to configure the system, the LAN Console must have been connected to the RCA via a LAN and the RCA must have been connected to one or more RM or PRIMEPOWER (MR) servers via V.24 cabling (see figure “Connections on the rear of the device” on page 29).

From the LAN Console, the system administrator manages both the RCA and the console connections of the attached RM and PRIMEPOWER (MR) servers.

No further preparatory steps are required for RM systems but PRIMEPOWER (MR) servers have to be configured as described in the following sections.

6.1 Configuring the PRIMEPOWER (MR)

If you have connected your LAN Console to a PRIMEPOWER (MR) instead of a graphical console - including keyboard and mouse - you have to redirect all console inputs and outputs to serial port A. The console comes with an adapter already in place (25-pin --> 9-pin).

To do this, you first connect port A by means of a V.24 cable to the required port on the RCA in accordance with the description in the sections “Connecting the cables” on page 29 and “Cable types” on page 34 and the definition given in “Commands” on page 43, section *mklancon*.

The Solaris operating system detects which serial port is connected, i.e. no explicit reconfiguration is required.

The terminal type needs to be set for the console login:

- In the */etc/inittab* file, set the terminal type *xterm* in the entry for the console login:

```
....:/usr/lib/saf/ttymon -g ... -d /dev/console -T xterm
                                -l console
```

The line speed for the connected port of the RCA must be set to 9600 baud in the RCA setup routine, see section “Ports” in the Appendix.

6.2 Configuring the LAN Console and RCA

This section describes initial setup of the LAN Console, i.e. definition of console accesses to RM and PRIMEPOWER (MR) servers and initial configuration of the RCA.

For an existing LAN Console setup it also describes the addition of further console connections, configuration of an additional RCA and connection of another LAN Console to an RCA that has already been configured.

Furthermore, it briefly deals with possible changes to the configuration of the LAN Console and RCA.

Only the *root* user can carry out the configuration steps. The dialog language is English for the first steps and then it can be selected.

Error situations relating to configuration are described in the section “Diagnostics” on page 83.

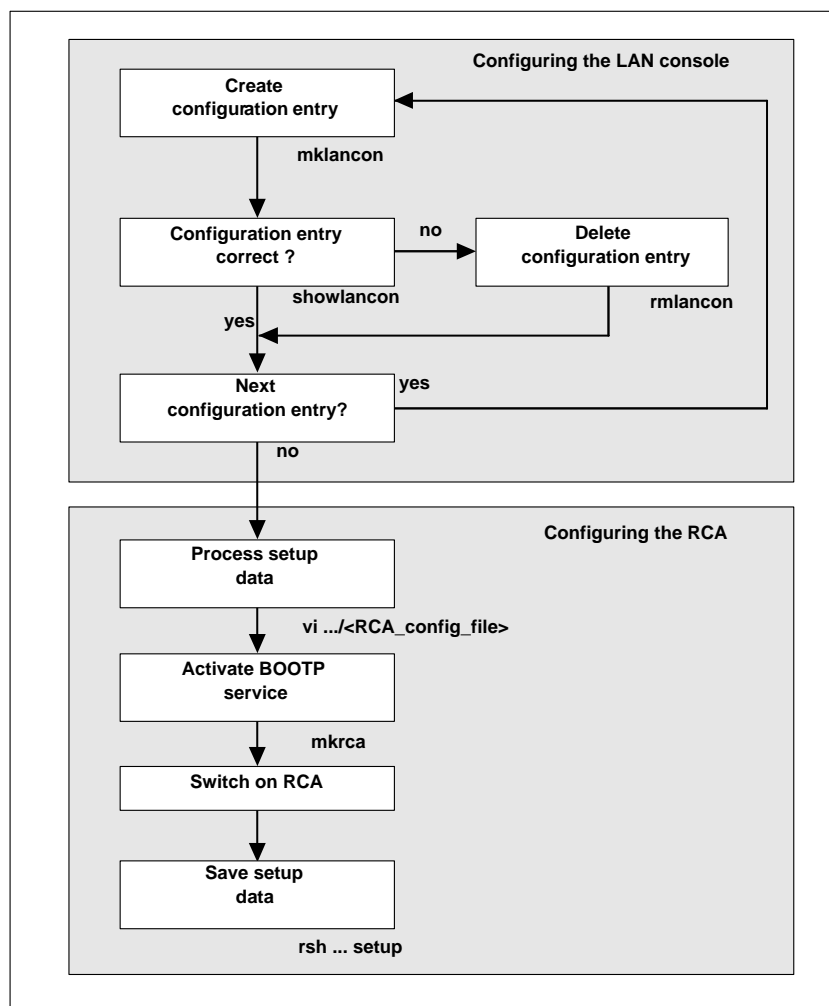


Figure 20: Configuring the LAN Console and the RCA

6.2.1 Initial configuration of the LAN Console and RCA

Initial configuration of the LAN Console and RCA takes place in two stages. In the first stage at least one console access to an RM or PRIMEPOWER (MR) server is defined for initial configuration of the LAN Console. In the second stage the configuration data for the RCA is created on the LAN Console and sent to the RCA via *bootp request*.

Before a LAN Console and RCA are configured for the first time it is necessary to take some action and obtain the required information:

- The network administrator must define the following in the LAN:
 - IP address of the RCA and LAN Console. The LAN Console must be accessible by network commands, e.g. *ping*.
 - System name of the RCA (notifying this system name to the DNS server (Domain Name Service) if applicable).
 - If the LAN Console and the RCA are located in different subnets, the gateway between them must pass the *bootp requests*. This has to be set beforehand in the router.
- Obtain the following information on the LAN:
 - Domain name
 - Subnet mask of the RCA
 - If a gateway has been set up: IP address of the gateway into the subnet of the RCA
 - IP address of the DNS server if one has been set up
- Ascertain the Ethernet address (MAC address) of the RCA

The MAC address is the hardware address that is used to access a device initially. The Ethernet address (MAC address) is shown on a sticker attached to the RCA housing.
- Define the allocation of RCA ports. The COM1-6 ports are mapped to port numbers 3001-3006:
 - Allocate the RCA ports to RM PRIMEPOWER (MR) servers.
 - Define a symbolic name and password for each RCA port/RM/PRIMEPOWER (MR) server allocation (see the section “Configuring the LAN Console” below for entering the password).

- Define a password for setup access to the RCA (see the section “BOOTP service for RCA” on page 48).

6.2.1.1 Configuring the LAN Console

The LAN Console can represent up to 64 consoles on RM or PRIMEPOWER (MR) servers. When configuring the LAN Console for the first time, you have to define the console access, called a configuration entry, to at least one RM or PRIMEPOWER (MR) server. This is done with the aid of the `/opt/MAWxsc/sbin/mklancon` script specifying the system name of the RCA (*RCA SystemName*), the RCA port number to be used (*RCA PortNumber*) and the console name (*ConsoleName*). The console name is the logical address of the RM or PRIMEPOWER (MR) server that is going to be administrated. It is advisable to use the system name of the RM or PRIMEPOWER (MR) server as the console name.

The `/opt/MAW/MAWxsc/sbin/showlancon` script checks the configuration entries that are created. Configuration entries can be removed with the aid of `/opt/MAW/MAWxsc/sbin/rmlancon`. If parameters for a configuration entry need to be changed, this entry has to be deleted and recreated with the new data.

Commands

For each of these commands there is a description which you can look up with “`man command name`”.

mklancon - Configuring a LAN Console

Syntax:

```
mklancon <RCA SystemName> <RCA PortNumber > <ConsoleName>
```

The command arguments determine the RCA port for which a configuration entry is generated.

RCA SystemName

The system name of the required RCA.

RCA PortNumber

A unique TCP/IP port number which is served by the RCA. The port number must range from 3001 to 3006.

ConsoleName

The symbolic system name that is going to be used. This name must not exist already. It has a maximum length of 11 characters and it must consist of alphanumeric characters only.

RCA system names should always be input in a uniform way, i.e. always either with or without a domain suffix (e.g. *utopia*, not *utopia.xxx.xxx.de*) in order to avoid ambiguities with the *rmlancon* and *showlancon* commands.

To execute the command, a password has to be assigned to the specified RCA port.

rmlancon - Deleting LAN Console configuration entries

Syntax:

```
rmlancon {<RCA SystemName > [<RCA PortNumber >]} |  
          -n <ConsoleName> | -a
```

RCA SystemName

All configuration entries belonging to the specified RCA are displayed and can be removed with “y”.

RCA PortNumber

If a configuration entry is found for the specified TCP/IP port number, which is served by the RCA, it is displayed and can be removed with “y”.

-n ConsoleName

The configuration entry belonging to the specified symbolic system name is output and can be removed with “y”.

-a

All configuration entries on the LAN Console are displayed and can be removed with “y”.

showlancon - Displaying specified configuration entries

Syntax:

```
showlancon {<RCA SystemName > [<RCA PortNumber >]} |  
           -n <ConsoleName> | -a
```

The command arguments determine which configuration entries are to be displayed.

RCA SystemName

All configuration entries belonging to the specified RCA are displayed.

RCA PortNumber

If a configuration entry is found for the specified TCP/IP port number, which is served by the RCA, it is displayed.

-n ConsoleName

The configuration entry belonging to the specified symbolic system name is output.

-a

All configuration entries on the LAN Console are displayed.

Finally the current state of the RTTY Monitor is displayed (e.g. NOTRUNNING). For more information on the RTTY Monitor see section “Status informations for the rtty monitor” on page 84).

6.2.1.2 Configuring the RCA

To be configured successfully, the RCA must be known in the LAN and be accessible on it, and all console connections (V.24 lines) from the RCA to the required RM or PRIMEPOWER (MR) servers must have been implemented.

The RCA is configured with *bootp request*. The state in which the RCA is shipped ensures that the necessary setup information is loaded from a boot server the first time the RCA is booted.

Since the RCA does not have a keyboard or display of its own, the LAN Console assumes the role of the boot server. The necessary setup data for the RCA has to be made available and the *BOOTP* service has to be activated on the LAN Console.

The RCA is thus configured in the following steps:

- Preparing the setup data
- Calling the *mkrca* script to activate the *BOOTP* services and prepare for configuration of the RCA
- Switching on the RCA

Preparing the setup data

The *SMAWxsco* package provides the */opt/SMAW/SMAWxsco/misc/setup.tpl* template file to determine the setup data.

- Copy this file to any work file.



Do not change the template file

The template file itself should not be modified so that it is available to configure other RCAs.

- Now fill the work file using an editor.

The information on the network and RCA listed at the beginning of section “Commands” on page 43 is needed for this. The RCA ports (TCP_PORT_300x) have to be selected in keeping with the configuration entries created under the section “Configuring the LAN Console” on page 43.

As described under “BOOTP service for RCA” on page 48, the content of the work file is analyzed by a shell and loaded, i.e. the entries must comply with the shell syntax rules (e.g. values must follow straight after the “=” character). Syntax and/or plausibility errors are reported and cause the script to terminate.



As usual in the shell, comments are preceded by “#”.

Template file /opt/SMAW/SMAWxsco/misc/setup.tpl

```
# Configuration Template for RCAs setup.ini
#
# fill in like:      KEY=value
# ethernet address:  6 2-digit hex values separated by a
#                   colon (00 - FF)
# ip address:       4 numeric values separated by a dot
#                   (0 - 255)
#
-----
#
#                   # RCAs network configuration
#
RCA_MAC=            # ethernet (HW) address of RCA
                    # (08:00:06:0a:f4:0b)
RCA_IP=             # ip address of RCA              (129.103.165.66)
RCA_Netmask=        # ip netmask of RCA              (255.255.255.0)
RCA_IP_Name=        # host name of RCA                (akkord)
RCA_Domain=         # domain suffix                  (pdb.siemens.de)
RCA_Gateways=       # no / yes (default no)          (0 | 1)
RCA_Use_DNS=        # no / yes (default no)          (0 | 1)
#
#
-----
#
#                   # if using gateways : address of 1st gateway
#
RCA_Gateway_IP=     # ip address of RCAs gateway (129.103.165.1)
#
#
-----
#
```

```

#           # if using DNS : addresses of the name server
#
DNS_IP1=    # ip address of name server 1   (129.103.145.11)
DNS_IP2=    # ip address of name server 2   (129.103.145.11)
DNS_IP3=    # ip address of name server 3   (129.103.145.11)
DNS_IP4=    # ip address of name server 4   (129.103.145.11)
DNS_IP5=    # ip address of name server 5   (129.103.145.11)
DNS_IP6=    # ip address of name server 6   (129.103.145.11)
#
#
-----
#
#           # determine which TCP/IP port
#           # should be served as a console
#
TCP_Port_3001= # no / yes (default no)      (0 | 1)
TCP_Port_3002= # no / yes (default no)      (0 | 1)
TCP_Port_3003= # no / yes (default no)      (0 | 1)
TCP_Port_3004= # no / yes (default no)      (0 | 1)
TCP_Port_3005= # no / yes (default no)      (0 | 1)
TCP_Port_3006= # no / yes (default no)      (0 | 1)
#
#

```

What has been described so far is a general overview of configuration. What follows is a step-by-step guide.

- The following entries have to be made in your work file (*RCA_config_file*):

Keyword # Comment (Example)

```

-----
RCA_MAC=    # ethernet (HW) address of RCA
              (08:00:06:0a:f4:0b)
RCA_IP=     # ip address of RCA
              (129.103.165.66)
RCA_Netmask= # ip netmask of RCA
              (255.255.255.0)
RCA_IP_Name= # host name of RCA
              (akkord)
RCA_Domain=  # domain suffix
              (pdb.siemens.de)
RCA_Gateways= # using gateways no / yes
              (0 | 1)
RCA_Use_DNS= # using DNS no / yes
              (0 | 1)

```

If gateways are used:

RCA_Gateway_IP= # ip address of RCAs gateway (129.103.165.1)

If DNS is used:

```

DNS_IP1=      # ip address of name server 1 (129.103.145.11)
DNS_IP2=      # ip address of name server 2 (129.103.145.11)
DNS_IP3=      # ip address of name server 3 (129.103.145.11)
DNS_IP4=      # ip address of name server 4 (129.103.145.11)
DNS_IP5=      # ip address of name server 5 (129.103.145.11)
DNS_IP6=      # ip address of name server 6 (129.103.145.11)

```

Which TCP/IP port is to be treated as a console:

```

TCP_Port_3001= # no / yes (default no)      (0 | 1)
TCP_Port_3002= # no / yes (default no)      (0 | 1)
TCP_Port_3003= # no / yes (default no)      (0 | 1)
TCP_Port_3004= # no / yes (default no)      (0 | 1)
TCP_Port_3005= # no / yes (default no)      (0 | 1)
TCP_Port_3006= # no / yes (default no)      (0 | 1)

```

The ethernet and IP addresses undergo a syntax check:

Ethernet: xx:xx:xx:xx:xx:xx xx = 2-position hex value

IP: x.x.x.x x = decimal value (0 <= x <= 255)

The configuration entries for gateways, DNS (Domain Name Service) and TCP ports are checked for 0/1. If no entry exists, "0" is taken as the default value. The names for the RCA host and the domain must contain a string.

If DNS is wanted for the RCA, then the IP addresses of the required DNS servers must also be entered.

If the RCA is going to be operated without DNS, then the IP address and host name of the LAN Console are determined automatically.

BOOTP service for RCA

The `/opt/SMAW/SMAWxsco/sbin/mkrca` script is used to activate the *BOOTP* service on the LAN Console and to prepare and store the setup data that is determined for the RCA as described under "Preparing the setup data" on page 45. *mkrca* uses tools from the *SMAWrins* package to activate the *BOOTP* service, i.e. to start the *DHCP* service in *BOOTP* mode.

The *mkrca* script uses the work file mentioned under "Template file `/opt/SMAW/SMAWxsco/misc/setup.tpl`" on page 46 for the call parameters.

mkrca - BOOTP configuration for RCA

Syntax:

```
mkrca <RCA_config_file>
```

The *RCA_config_file* command argument defines the file that the user copied from the template and filled by means of the setup template named 'setup.tpl'. The content is analyzed by a shell and loaded, i.e. the entries must comply with the shell syntax rules (e.g. values must follow straight after the "=" character). Syntax and/or plausibility errors are reported and cause the script to terminate.

If a *BOOTP* configuration already exists for the RCA in question, this results in an error termination. The password for RCA setup is requested in a dialog. The passwords for the TCP ports which have been declared as console access are read from the RTTY configuration if possible. If this is not possible, these are also requested in a dialog.

When all checks have been completed, the actual *BOOTP* entries are carried out in the *BOOTP* server for the RCA.

Now the RCA can be switched on and be supplied with the necessary network parameters by the LAN Console in its capacity as a *BOOTP* server.

Switching on the RCA

The supplied setup data is made available in the RCA when the device is switched on the first time.

After booting, the RCA must be addressable in the network by means of a *ping* command from the LAN Console.



The setup data that is transferred during the boot process must now be stored in the RCA in order to take effect after every reboot. When this data has been stored, it is not possible to reboot by loading the setup data from the boot server again because this facility is disabled when the data is generated with the *mkrcs* command.

The setup data is stored by calling the RCA setup routine remotely from the LAN Console:

```
rsh <RCA SystemName> setup -display
                        <LAN Console SystemName>:0
```

An error message is reported if the remote call is not input correctly (see the section "Incorrect remote call of RCA setup" on page 88).

The password for RCA setup is requested on the first screen page (see the chapter "BOOTP service for RCA" on page 48 and the section "Language/Keyboard" on page 91 in the appendix. Then you have to execute the *Save* function in the Exit dialog ("Exit" on page 106). Error situations are described in the section "Diagnostics" on page 83.

-  The *mkrca* command is used to define that screen texts are to be output in English for the RCA setup program. If German is required, this can be done via remote setup – on the first screen page after access control (see the section “Language/Keyboard” on page 91).
-  The RCA configuration parameters can be extended and changed conveniently with a remote setup using the X user interface (see “Appendix” on page 89).

The setup data that is stored on the boot server is still available when the RCA has been booted, i.e. if the RCA were to be rebooted without the setup data being stored, the data would be loaded again.

6.2.2 New ports for the RCA

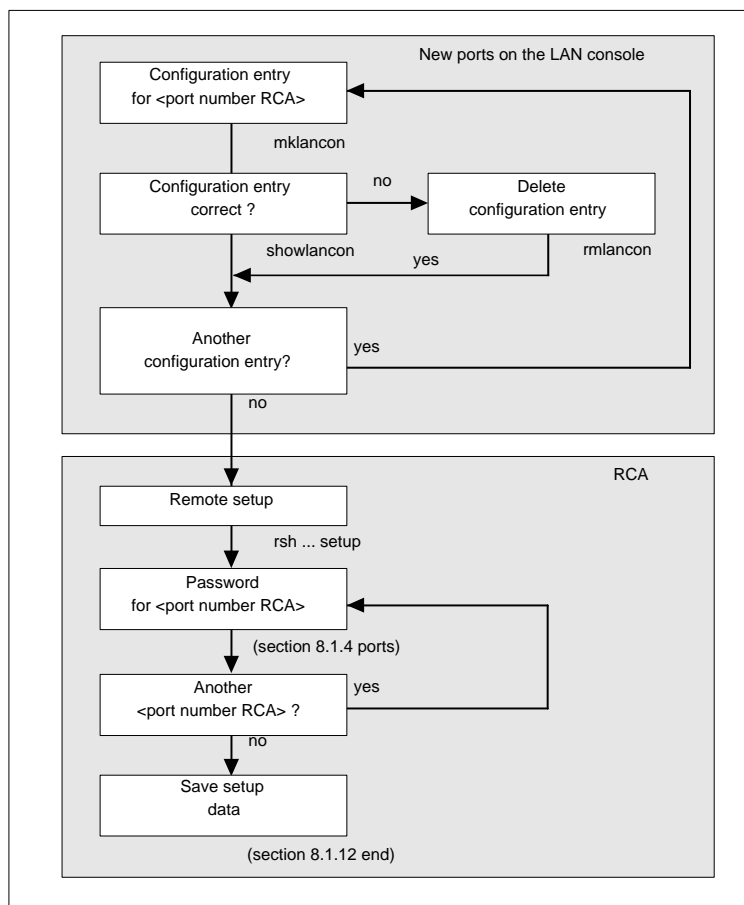


Figure 21: New ports for the RCA

Further configuration entries for an existing LAN Console are created by means of the `/opt/SMAW/SMAWxsco/sbin/mklancon` script - as shown in figure “Configuring the LAN Console and the RCA” on page 41 and “Commands” on page 43. A password has to be assigned in `mklancon` to the specified port for each new entry. This password has to be notified to the RCA by entering it under the

appropriate port number on the “Ports” screen page in the RCA setup routine. Port number 300x corresponds to COMx. See the section “Ports” on page 95 in the “Appendix”.

Existing configuration entries can be checked, removed and changed in the way described in the section “Configuring the LAN Console” on page 43.

6.2.3 Another RCA connected to the LAN Console

Another RCA is configured in basically the same way as described in the section “Initial configuration of the LAN Console and RCA” on page 42. First, at least one configuration entry should be created for the existing LAN Console using the new RCA as described under “Commands” on page 43 (*mklancon*).

The RCA is configured in keeping with the section “Configuring the RCA”. The network data and Ethernet address of the new RCA as well as the port numbers of the configuration entries created for this RCA are needed to do this as described in the section “Initial configuration of the LAN Console and RCA” on page 42.

Finally, the RCA has to be activated as described under “BOOTP service for RCA” on page 48 and “Switching on the RCA” on page 49.

6.2.4 Another LAN Console connected to the RCA

To configure another LAN Console connected to an existing RCA, all configuration entries for the existing LAN Console must also be created on the additional LAN Console with the same parameter settings. You can get the necessary information about existing configuration entries with the *showlancon* command. The entries on the new LAN Console are again created with *mklancon* - see the section “Configuring the LAN Console” on page 43.

If no DNS server has been entered for the RCA, a host entry has to be entered for the new LAN Console in the RCA setup - see the “Appendix” on page 89 and the section “Hosts/DNS”.

6.2.5 Modifying the LAN Console and RCA

The following sections outline the approach to modifying a configuration entry and the RCA setup changes that are relevant for the LAN Console. The steps for removing a LAN Console or RCA configuration are also outlined.

6.2.5.1 Modifying the configuration entry for an RCA port

- ▶ Remove the configuration entry with *rmlancon* and use *mklancon* to create the modified configuration entry.
- ▶ Change the port password in RCA setup if the password that you specify in *mklancon* does not match the one in the removed configuration entry.

6.2.5.2 Modifying the RCA setup parameters

Sample screens are given in the Appendix to this manual.

If you are using the LAN Console on a PRIMEPOWER (MR), the line speed for the connected port of the RCA must be set in the RCA setup to 9600 baud, see the section “Ports” in the Appendix.

6.2.5.3 Removing a LAN Console

- ▶ Delete all configuration entries, for example using
`/opt/SMAW/SMAWxsco/sbin/rmlancon -a`
- ▶ Remove any host entries for the LAN Console from every connected RCA;
- ▶ Disable the *BOOTP* service for every RCA (see the section “Diagnostics” on page 83), for example with

```
/opt/SMAW/SMAWrins/bin/add_RM_client -d <RCA SystemName>
```

If you are not working with DNS, the *RCA SystemName* will be removed from the *etc/hosts* file.

- ▶ Uninstall all software packages of the LAN Console product.

6.2.5.4 Removing an RCA

- ▶ As appropriate, remove the network data for all connected LAN Consoles or put it back into the state it was in upon delivery (see the section “Diagnostics” on page 83);
- ▶ In every connected LAN Console, delete all configuration entries for this RCA and disable the *BOOTP* service (see the section “Diagnostics” on page 83).

6.3 Teleservice

The LAN Console is the central point of Teleservice access to the networked (MR) servers that can be reached from the LAN Console.

Teleservice gives you rapid access to the Service organization and gives Service fast, selective access to your system where necessary.

The following is needed for Teleservice:

- High-speed modem with the necessary cabling and installation instructions
- A mains power supply (230V)
- A telephone connection (TAE) near the system
- The Teleservice software provided on the system management CD

Since multiple RM or PRIMEPOWER (MR) servers can be administrated from the LAN Console, fewer modems are required. The modem is not included with the LAN Console product.

The software comes with a detailed release notice that you can find under */opt/readme/telesv-d/fgm00*. There is also a HELP function for every menu item. A CHOICES function is available when there are several options. You can order a manual for the Teleservice software from your sales partner.



Preparatory work for Teleservice

Some preliminary work is needed before getting Teleservice started, but any user with some technical skill can do this with the aid of these instructions and the online help. Get in touch with the technician responsible for installing your system if you do not want to do this preliminary work yourself.

If you encounter a generation or registration problem in the course of installation, call your Service hotline and report your Teleservice problem (in Germany the number for the Siemens IT Service hotline is 0180/5-2202).

You can find out more about Teleservice on the Internet under http://its.siemens.de/lobs/its/its_sc/swserv/reliant/teleserv/teleserv_gr.htm.

6.3.1 Installation and generation

6.3.1.1 Hardware installation

The following hardware is needed for Teleservice:

- An ELSA high-speed modem
- A 9-pin serial cable
- A 25/9-pin adapter
- A telephone cable
- A plug-in power supply unit

With most systems it is sufficient to connect the modem and system with the serial cable. You should do this with the devices turned off. The following figure shows where the connectors are located at the rear of the modem. To avoid contact problems you should fasten the screws attached to the cable using a small screwdriver.

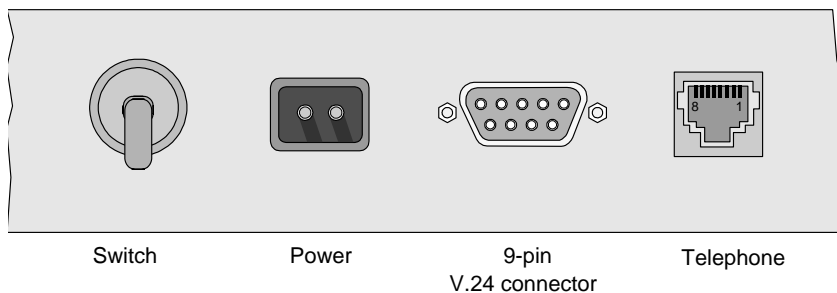


Figure 22: Rear of the modem

Use the Western <-> TAE cable for the modem/telephone connection. The Western connector is inserted in the modem and the TAE connector in the telephone connection socket. Note that the TAE connector will only fit in a TAE socket that has an N interface. A telephone is normally connected to an F interface and is coded differently. There are also TAE sockets to which a telephone and a modem can be connected. In this case, the modem is connected on the left and the telephone in the middle.

The modem has a low-voltage switch at the rear. Before connecting the plug-in power supply unit to the modem, make sure the low-voltage switch is off. Finally plug the power supply unit into a normal 230 V mains socket and turn the low-voltage switch on again.

6.3.1.2 Software installation

Before installing the Teleservice package, you have to check the following settings and change them if necessary:

- Check the default settings for the *useradd(1M)* command.

```
useradd -D
```

If the default setting for *basedir* points to */home* use

```
useradd -D -b /export/home
```

to change this to */export/home*

When you have finished these preparations, install the Teleservice package (*SMAWtssv*) from the system management CD using the *pkgadd* command.

6.3.2 Generating the software

The screens depicted in this section show a sample configuration. Since some screens depend on the parameters that have been input, the generation process may involve some different screen texts or different screens.

6.3.2.1 Logging in

- Log in under a user ID with root privileges and issue the *teleadm* command from the shell. You will see the following start screen:

WARNUNG:

TELESERVICE-SCL (Secure Communication Layer) ist noch nicht installiert. Wenn Sie Ihre Kommunikationsverbindungen abgesicherter betreiben wollen, sollten Sie obige Software installieren. Wenn Sie sich bei einer TOLC-Schweizer-Zentrale registrieren lassen wollen und die Verbindung mit SCL gefahren werden soll, müssen Sie es jetzt tun. Sie dürfen es jedoch nur tun, wenn strenge Kryptographie in Ihrem Land erlaubt ist!

Bitte fortfahren mit Eingabe von:

- 1: ohne SCL weitermachen und diese Meldung in Zukunft unterdrücken

- 2: Administration verlassen

- sonst: ohne SCL weitermachen

Eingabe: _

WARNUNG:

TELESERVICE-SCL (Secure Communication Layer) is not installed currently. If you don't want your connection to be secured, you should install the software mentioned above. If you want register yourself at a TOLC-Swiss Center and this connection will use SCL you have to install SCL now. You are only allowed to install SCL if strong cryptography is legally permitted in your country!

Please enter key:

- 1: continue without SCL and do not display this message next time

- 2: exit administration

- else: continue without SCL

- The Teleservice SCL is subject to optional contractual agreements. You should contact your sales partner if you would like to use it. The relevant service must first be set up so that the modem can be installed.
- From the first menu in the first window choose option d “Install Teleservice channel” and in the next menu, option a “Install/Modify service at Teleservice channel”. The physical properties are entered in the third window.

1 3 Install/Modify service at Teleservice channel [0]

a (A)

b (A)

c (A)

d (A)

e (A)

f (C)

g (A)

h (A)

i 2

j

>a

b (A)

c (C)

d (C)

e (A)

f (A)

g (A)

h (A)

i (A)

Device name of Teleservice Channel: /dev/term/b

Teleservice modem: Hise-m336tg 1

Phone number of local modem: 123456

Enter Prefix Code for ...

Local Public Network: 0

Long-Distance Network: 0

Reject incoming calls: no

Graphical administration (VNC): no

Parameter for registration (QLR) and autom. defect reporting (ADR)

Registration at Teleservice Center (QLR)

Administer connections to Teleservice Centers

Test Connection to a Teleservice Center

Show state of Teleservice-Channel

Fill out form and save your input by pressing <F8>.

HELP CHOICES SAVE CANCEL END-MENU EXIT

- ▶ The device name of the Teleservice channel should be already displayed. If you want to use a different port, you have to change this setting here.
- ▶ For the standard modem that is currently delivered, enter `elsa-ml336tq.1` or `elsa-ml56pro.1` depending on the modem. If you are using a different modem, note the validated Teleservice modems on the next page.
- ▶ Enter the call number under which your modem can be reached from your local telephone network. Enter the number without the area code.
- ▶ If the modem is connected to a private automatic branch exchange (PABX), enter the exchange code (outside line code) that you dial to make a local or long-distance call on the Teleservice connection. This is "0" on many PABXs. The fields are not filled in for direct connections to the public telephone network.
- ▶ Save these settings by choosing **SAVE**.

6.3.2.2 Selecting validated Teleservice modems

If you are connecting a different modem, the CHOICES function will show you a list of all validated modems and you can choose the right one. If there are several entries for one modem type, choose the one with the highest suffix. Select **ENTER** to exit the next screen.



- ▶ When window 2 "Install Teleservice channel" is opened again, choose option b "Install Modem for Teleservice channel".

```

3      Install modem for Teleservice channel      (00)

Teleservice modem:      elsa-m13361q.1
Device name of Teleservice Channel:      /dev/term/b

TTY Baud Rate:      38400
Connection between modem and telephone network:      pabx
Dialling method:      td
Guard tone:      none
Idle state modem mode:      off

d (A) Modem information of modem at Teleservice channel
e (A) Parameter for registration (OLR) and autom. defect reporting (ADR)
f (A) Registration at Teleservice Center (OLR)
g (A) Administer connections to Teleservice Centers
h (A) Test connection to a Teleservice Center
i (A) Show state of Teleservice-Channel

Fill out form and save your input by pressing <F8>.

HELP  CHANGES  SAVE  HEADONE  CANCEL  CRU-RENU  EXIT

```

- ▶ Set the channel speed to 38400.
- ▶ There are two options for connecting the modem to the telephone network. Enter *pabx* if the modem is operated via a PABX. Enter *pstn* if the modem is connected directly to the public telephone network.
- ▶ For the dialing method, you can enter *td* if the modem is going to operate with tone dialing or *pd* for pulse dialing.
- ▶ The *Guard tone* and *Idle state modem mode* items are taken from the parameter descriptions for your modem and normally do not need to be changed.
- ▶ Exit the menu by choosing SAVE.

The screen is then refreshed and the following messages are displayed (example):

```

Modem installation is running, please wait .....
Approved firmware revision:      xxxxxxxxxxxxxxxxxxxx
Actual firmware revision: xxxxxxxxxxxxxxxxxxxxxxxx..
.....
Done
Press ENTER to continue

```

- ▶ Confirm this prompt with the <ENTER> key.

This completes installation of your modem. Now you can continue with administration of the TELESERVICE channel.

- ▶ In window 2, first choose option b “*Parameter for registration (OLR) and autom. defect reporting (ADR)*”.

```

3 Parameter for registration (ULP) and autom. defect reporting (ADR) (t)
Ident. No.: SSF4400000
Company (abbrev.): company
Automatic Defect Reporting (ADR): no
Administrators mail address: root

Company, Address: company, full name
Contact person: Contact person
Phone / Fax: Phone / Faxnumber
Email: email address
Remark 1: REMARKS IF NECESSARY
Remark 2:
Remark 3:
Remark 4:
Remark 5:

1 (A) Show state of Teleservice-Channel
Fill out form and save your input by pressing <F3>.
HELP CHANGES SAVE CANCEL MAIN-MENU EXIT

```

Input is required for registration, which will be prompted at this point (you **must** fill in these fields including *Phone/Fax*).

- ▶ Enter the ident number of the computer. If technically feasible this will be already displayed. This number is unique and identifies you for all subsequent Teleservice activities. The ident number can be found on the nameplate on your system unit.
- ▶ Company (abbrev.): Enter a short name for the company and, if there is sufficient space, the location where you are based.
- ▶ The Automatic Defect Reporting (ADR) (*no*) and Administrator's mail address (*blank*) are preassigned default values for the *TeleCall* function. You will find further information on the topic of *TeleCall* on the Internet under http://its.siemens.de/lobs/its/its_sc/swserv/reliant/tele-call/telecall_gr.htm or by calling your Service hotline (0180/5-2202 in Germany) and quoting the keyword *TeleCall*.
- ▶ Contact person: Here you enter the name(s) of one or more of your employees who can be contacted about the system if a connection cannot be established some time. Their phone and fax numbers are also helpful.
- ▶ Additional information (see example) can be entered under *Remark*.

Once you have filled in the form, save the settings with the **SAVE** option. Window 2 appears "*Install Teleservice channel*". Choose "**f**" for registration and confirm the initial registration for Index 0.

The screenshot shows two overlapping windows from a Siemens IT Service software interface.

The background window is titled "TELESERVICE-Help" and contains a menu with the following options:

- a [A] Connect to Center Info
- b [A] Operate Teleservice s
- c [A] Common adjustments
- >d [A] Install Teleservice c
- e [A] Install and administe
- f [C] Remote operating with
- g [A] Analyze log files
- h [A] Manage database
- i [A] Backup/restore database
- j [A] Informations

The foreground window is titled "3 Register at Teleservice Center (ULM) [E]" and contains a list of options:

- >a [A] First Time Registration
- 1 [A] First Time Registration
- 2 [A] First Time Registration
- 3 [A] First Time Registration
- 4 [A] First Time Registration
- 5 [A] First Time Registration

Below this list, there is a section titled "Registration [not registered]" with the following fields:

- Telephone number: far 0+D-5
- Modem mode: 000

At the bottom of the foreground window, there is a button labeled "reporting [ADR]".

Below the windows, there is a text prompt: "Fill out form and save your input by pressing <F3>." and a row of buttons: "HELP", "CHOICES", "SAVE", "CANCEL", "END-HELP", and "EXIT".

Parameters are entered in this window, which can be used to contact one of the Siemens IT Service TELESERVICE centers in Frankfurt, Munich or Paderborn. Normally you will choose the center that is closest to you. There may be exceptions if projects are supported by a specific TELESERVICE center.

- Enter *far* under Telephone number if the Teleservice center does not lie in your local telephone network. The parameter *near* may apply for you if you are in the Frankfurt, Munich or Paderborn local public network. This field is only shown in advance if *pabx* was entered for "Connection between modem and telephone network".
- A further parameter required is the phone number for contacting the relevant Teleservice center. A symbolic name can be used here or you can also enter the number directly. A symbolic name is converted by the software. If the number changes, the assignment can be changed by the center. The following symbolic names and numbers apply presently for the Teleservice centers:

Frankfurt	0+D-6	06966824742
Munich	0+D-2	08936012906
Paderborn	0+D-5	05251829890

The operating mode of the modem is read from the modem parameters and normally does not need to be changed.

- Save the settings with SAVE.

Your system will now try to establish a connection to the defined Teleservice center. The following screen appears during this. The text on this screen is variable so the data shown below is just a snapshot.

```

----- getting a connection via TELESERVICE -----
examining TELESERVICE groups file
get access to connection file
read connection entry
get TELESERVICE service
get service information
connection established

```

***	CONNECT	DIALOUT	INIT MODEM	MODEM ONLINE	MODEM
-----	---------	---------	------------	--------------	-------

When the connection has been established, the Teleservice center requests you to enter the required information.

```

TELESERVICE ZENITHALE PADERBORN

1 Registration
Terminal Type: B229
How does this center contact your modem? (refer help!)
B2291 829939
Datatransfer with SCL: no

```

Fill out form and save your input by pressing <F8>.

HILFE MUSEMUL SICHEMUL _____ _____ _____ _____ **GOO-REWE** EXIT

This includes:

- **Terminal type:** Here you enter the type of terminal from which you will later monitor and possibly suppress all activities that are performed on your system.

- Phone number of your modem: This must be a number that can be reached directly from outside. You only need to input the country/area code because the actual number is displayed automatically. The Service organization will use this number to access your system if this is necessary.
- When you have completed the form, exit this menu with the SAVE function.

The following screen appears. At first only the first two lines appear. The rest is output after a successful test (this can take a while because connection establishment and the connection data are tested).

```
Teleservice Center 0 (TELESERVICE ZENTRALE PADERBORN):  
Waiting For the Registration Test  
  
Wed Mar 22 16:51:17 MET 2000: test with Teleservice Center:  
'TELESERVICE ZENTRALE PADERBORN' U.K. ?  
  
Press ENTER to continue■
```

- Pressing ENTER takes you back to the Teleservice Administration menu which you can close by selecting the EXIT function.

Generation and configuration of the Teleservice package have been completed successfully at this point.

6.4 TeleCall

The LAN Console is the central point of Teleservice access to the networked systems that can be reached from the LAN Console. It therefore makes sense to send TeleCall messages via it, too, and not via a local Teleservice connection for every machine.

The Telecall service is available with the Logging V3.0 software on the Reliant UNIX for RM or Solaris 8 for PRIMEPOWER (MR) server platforms. TeleCall enables a specific response to internal events and allows a message to be sent automatically to the support center.

The TeleCall service can only be used in conjunction with the support center that is responsible for you. If you are interested in using TeleCall for your RM/PRIMEPOWER (MR) servers, it is essential you get in touch with your contact person at Service before activating it, or call your hotline telephone number (0180/5-2202 in Germany) and inquire about a TeleCall connection or call up the following page on the Internet:

http://its.siemens.de/lobs/its/its_sc/swserv/reliant/telecall/telecall_en.htm

One of the components of Logging V3.0 is event management.

Event management is an instrument that defines events on the basis of error messages and the frequency with which they occur and initiates reactions according to these events.

An event occurs when the number of times that an error is reported within a certain period reaches the defined threshold value.

The events and reactions are described in event and reaction definitions. You can display and edit these definitions using the event management functions under *sysadm* (Reliant UNIX) (-> *Protocols* -> *Logging V3.0* -> *event management*).

The events are stored under *\$LOGPATH/filters* and the reactions are stored under *\$LOGPATH/reactions*. For more information about error management with TeleCall, refer to the manual "Error Diagnostics and Troubleshooting".

The following software packages allow you to configure a TeleCall cluster for computers that can be reached from the LAN Console:

- *Stelx* (Domain Teleservice Distribution) for Reliant UNIX
- *SMAWtelx* for Solaris 8

6.4.1 Installing Telecall

6.4.1.1 Preparations

- ▶ Draw up a list of the node names of all machines that are to belong to the TeleCall cluster.
- ▶ Check whether all machines in the above-mentioned list can be accessed from the LAN Console, for example using

```
ping <NodeName>
```

In this case, *NodeName* is identical to *ConsoleName* if this was selected in the *mklancon* command.

- ▶ If you want a German language environment for the software installation, you have to set the LANG variable to De_DE.88591, otherwise set it to En_US.ASCII.

6.4.1.2 Software installation on the LAN Console

- ▶ Install the *SMAWtelx* software package with the *installer* command from the system management CD. The software package is then installed automatically.
- ▶ You respond as follows to the questions prompted during the installation:

```
Select package(s) you wish to process (or 'all' to process all packages).  
(default: all) [?,??,q]: all  
Do you want to install these as setuid/setgid files [y,n,?,q] y  
Do you want to continue with the installation of <SMAWtelx> [y,n,?] y
```


6.4.1.3 Software installation on the RM

- ▶ Install the *Sitelx* software package using the *pkgadd* command, or from the CD-SYS-MI via the *sysadm* user interface.
- ▶ Answer the questions during installation as follows:

Do You want to use DOMAIN TELESERVICE DISTRIBUTION immediately?
(Standard: n) [y,n,?] y

Select node to collect for TELESERVICE: <LAN Console SystemName>

6.4.1.4 Software installation on the PRIMEPOWER (MR)

- ▶ Install the *SMAWtelx* and *SMAWskel* software packages (from the *Teleservice_Distribution* directory on the system management CD). The software packages are installed automatically in accordance with Solaris 8 conventions.
- ▶ Answer the questions during installation with *yes*.

6.4.2 Generating the Telecall cluster

Before continuing with generation of the TeleCall cluster,

- ▶ make sure that the *SMAWtelx* or *Sitelx* software package has been installed on all machines involved and that the LAN Console has a fully functional Teleservice connection to a Siemens IT Service Teleservice center.
- ▶ test this if you need to via the Teleservice menu (submenu: – *Simple TELESERVICE Administration*, menu item: – *Test Connection to a Teleservice Center*).



Note that this function can only be used in conjunction with the support center that is responsible for you (see the introduction to the section “TeleCall”).

The TeleCall cluster now has to be generated on the LAN Console.

1. Log in to the LAN Console under a user ID with root privileges and start the *teleadm* command from the shell. You will see the following start screen:

```

1 TELESERVICE administration
a (A) Connect to Center Information Service (CIS)
b (A) Operate Teleservice session
c (A) Common adjustments
>d (A) Install Teleservice channel
e (A) Install and administer Teleservice center
f (C) Remote operating with SIMIX PE
g (A) Analyze log files
h (A) Manage database
1
2 Install Teleservice channel (H)
a (A) Install/Modify service at Teleservice channel
b (A) Install modem for Teleservice channel
c (A) Reinstall modem and automatic repair
d (A) Modem information of modem at Teleservice channel
>e (A) Parameter for registration (OLR) and autom. defect reporting (ADR)
f (A) Registration at Teleservice Center (OLR)
g (A) Administer connections to Teleservice Centers
h (A) Test connection to a Teleservice Center
i (A) Show state of Teleservice-Channel

```

Move cursor to desired menu item and select it by pressing <F3>.

HELP ENTER CANCEL MENU-MENU EXIT

```

3 Parameter for registration (OLR) and autom. defect reporting (ADR) (E)
Ident. No.: Ident. No.
Company (abbrev.): Company
Automatic Defect Reporting (ADM): no
Administrators mail address: root
Company, Address: Company, full name
Contact person: Contact person
Phone / Fax: Phone / Faxnumber
Email: email address
Remark 1: remark, if necessary
Remark 2:
Remark 3:
Remark 4:
Remark 5:
Remark 6:
1 (A) Show state of Teleservice-Channel

```

Fill out form and save your input by pressing <F3>.

HELP CHOICES SAVE CANCEL MENU-MENU EXIT

- ▶ Enter the identification number of the LAN Console in window 3 “Parameter for registration (OLR) and autom. defect reporting (ADR)”. This number is unique and identifies you for all subsequent Teleservice activities. You will find the identification number on the nameplate on your system unit.
- ▶ Change the “Automatic Defect Reporting (ADM)” field to *yes* with the “Choices” function, and in the “to center” field, enter the Teleservice center where your fault reports are to be dealt with.
- ▶ Enter your customer information in the other fields.



Mandatory fields

All fields including “Phone/Fax” are mandatory.

- Save the “*Parameter for registration (OLR) and autom. defect reporting (ADR)*” window with *SAVE*.
- 2. Use the `node_adm` command to make the Telecall cluster aware of the LAN Console:


```
node_adm -A -n <LAN Console SystemName> -C telx
Password for <SystemName>:<Password for root>
```
- 3. Use the `node_adm` command to add all other machines to the Telecall cluster:


```
node_adm -A -n <SystemName RM> -C telx
Password for <SystemName>:<Password for root>
```
- 4. Check the state of the machines in the TeleCall cluster using the command:


```
node_adm -LI -C telx
```

All machines must be in the INTEGRATED state.

Example:

***** CLUSTER NAME: telx *****				
NODE NAME	STATE	SYSTEM	VERSION	IDENT
usun159	INTEGRATED	SINIX-N	5.43C2001	SSY6103009
efun215	INTEGRATED	SINIX-N	5.43C3002	SSY6300067
efun138	INTEGRATED	Reliant UNIX-N	5.44C1012	SSY6201525

- 5. Define the Teleservice machine for the entire cluster with the command:


```
event_adm -X <LAN Console SystemName> -t TELEX -C telx
```



Adding a new machine

This step must also be executed when adding a new machine to an existing cluster.

This completes generation of the TeleCall cluster.

You can initiate a test call on the machine to your configured Teleservice center with the

```
$LOGPATH/reactions/calltelex -M "This is a test call please  
cancel"
```

command in order to perform a function test.

6.5 Remote boot und installation

This chapter only describes the steps and commands that are needed to use the LAN Console as a boot and installation server for RM machines. What needs to be done to set up the LAN Console as a boot and installation server for Solaris machines (e.g. PRIMEPOWER (MR) servers) can be seen in the manuals titled "Solaris Installation Library" and "Solaris Advanced Installation Guide". The required steps and commands are described there. User and service manuals for the PRIMEPOWER system are listed in the section "PRIMEPOWER publications" on page 121.



SMAWrins must be installed

The *SMAWrins* package **must** be installed on the LAN Console no matter whether an RM system or a PRIMEPOWER system is connected because tools from the *SMAWrins* package are also used when the BOOTP service is activated for the RCA (see "BOOTP service for RCA" on page 48).

Only the RM600 Exx (apart from the E20/E60 models) from Reliant UNIX V5.45 on can be booted and installed over a LAN.

Remote boot and installation are not started from the LAN Console's CD drive but from the hard disk. The prerequisite for this function is that the *SMAWrins* package has been installed from the system management CD and that there is enough disk capacity to hold the data for the installation process (500-650 MB per version).

It is possible to provide different operating system versions on a server in parallel.

Special shell scripts are available to make it easier to set up a server. They are shipped with the *SMAWrins* package and are located on the system under the */opt/SMAW/SMAWrins/bin* path. The following scripts are available:

setup_RM_server

This sets up an RM boot and installation server on the LAN Console.

bootpconf

This starts the *DHCP* service in *BOOTP* mode on the LAN Console.

add_RM_client

This is used to enter and delete clients for remote installation on the LAN Console.

These scripts do not support NIS (Network Information Service) or NIS+ (Network Information Service Plus). This means there must be a file named */etc/hosts* on the server or DNS must be running.

Refer to the Installation Manual for the RM600, particularly the chapter on remote installation there.

6.5.1 setup_RM_server

Prerequisites:

1. If Volume Management (*/etc/init.d/volmgt*) has not been started (*vold* is not running), you have to manually mount the CD-ROM containing the Reliant UNIX operating system before starting the *setup_RM_server* command.
2. *nfs* must be running. It must be possible to use the *share* and *mount* commands. This means */usr/lib/nfs/mountd* and */usr/lib/nfs/nfsd* must be running (started from */etc/rc3.d/S15nfs.server*, or from */etc/init.d/nfs.server* if */etc/dfs/dfstab* contains entries). More information on this is given in the "NFS Administration Guide" for Solaris.
3. There must be enough free space in */tftpboot* to store the boot files (*sash*, *Miniroot* and *unix*). These take up about 30 MB for each operating system version that is going to be installed.

If there is not enough space, an attempt is made with *nfs* to mount the data from */var/sadm/remote/cdrom/BOOT* (or from */var/sadm/remote/<VERSION>/cdrom/BOOT*) to */tftpboot* (or to */tftpboot/<VERSION>*). If this does not work (because, for example, */tftpboot* already contains other data), you should mount a disk partition onto */tftpboot* with enough space for all the data.



No links

Since the TFTP service is started in security mode you cannot operate with hard or symbolic links.

4. There must be enough free space in */var/sadm* to copy the data from the CD-ROM containing Reliant UNIX (500-650 MB per operating system version). Alternatively you can set a symbolic link, for example
`ln -s /export/home var/sadm/remote/<VERSION>.`

Syntax:

setup_RM_server [-V VERSION]

A Solaris system can be set up as a boot/installation server for an RM with the *setup_RM_server* tool.

-V

In this case multiple versions of Reliant UNIX can be provided in parallel on the LAN Console for remote installation of the RM devices.

The data for installing the version *VERSION* is stored under */var/sadm/remote/<VERSION>/cdrom*.

The files for booting the version *VERSION* are stored under */tftpboot/<VERSION>/*.

The value of the *VERSION* variable must comply with a specific syntax consisting of the letter from the computer ID (N or Y), the last digit of the supplementary version (3 for 5.43, 4 for 5.44, 5 for 5.45), the letter of the revision level and the digits of the source patch level, object patch level and production level (C3004 for 5.43 C30, C1013 for 5.44 C10).

This syntax is important because the installation scripts on the RM ascertain precisely this variable from the UNIX that was booted for the installation process and then use this variable to search through the path on the server for the data for the required NFS (Network File System) mount.

Parameter -V not specified:

In this case only one version of Reliant UNIX can be provided on the Solaris system for remote installation of RM machines.

The data for the installation is stored under */var/sadm/remote/cdrom*.

The files for booting are stored directly under */tftpboot*.

Procedure in the system

1. Check and start the *rarpd* service
2. Start *DHCP* in *BOOTP* mode by calling *bootpcnf*
3. Check and start the *tftpd* service
4. Create the directories */var/sadm/remote* and */var/sadm/remote/cdrom* and the directories */var/sadm/remote/<VERSION>* and */var/sadm/remote/<VERSION>/cdrom*

5. Mount the Reliant UNIX CD-ROM, check it and copy it to disk. If the */var/sadm* file system does not have enough space for the copy, this is detected and reported.

There are the following possibilities at this point:

- */var/sadm/remote* or */var/sadm/remote/<VERSION>* is a symbolic link to another file system, which does have enough space.
- A separate file system with enough space has been mounted under */var/sadm/remote*.

6. Write entry in */etc/dfs/dfstab* and *NFS sharetab* for the installation directory (*/var/sadm/remote* or the directory to which the symbolic link points).
7. Copy the boot files to */tftpboot* or */tftpboot/<VERSION>*. If the */tftpboot* does not have enough space for the copy, this is detected and reported.

There are the following possibilities at this point:

- An attempt is made with *nfs* to mount */var/sadm/remote/cdrom/BOOT* or */var/sadm/remote/<VERSION>/cdrom/BOOT* under */tftpboot* or */tftpboot/VERSION*. Copying of the data is then inapplicable.
- If the first point does not work, you have to manually mount a separate file system with enough space under */tftpboot*.

6.5.2 bootpconf

Syntax:

bootpconf [-u]

The *bootpconf* tool is used to start or stop the *DHCP* service in *BOOTP* mode on the LAN Console. If you input the command without parameters the *DHCP* service is started in *BOOTP* mode.

-u:

(unconfigure). If the *DHCP* service has been started with *bootpconf*, it is now stopped.



Configuration files being deleted

In addition, all configuration files under */var/dhcp* are deleted, the links to */etc/rc[0-3,S]/[KS]34dhcp* are deleted, the *dhcpcd* options in */etc/init.d/dhcp* are reset and the */etc/default/dhcp* configuration file is deleted.

Procedure in the system

1. Stop the *DHCP* service if it is running.
2. Create the */etc/default/dhcp* file.
3. Enter the *dhcpcd* options in */etc/init.d/dhcp* (-o 10 -b manual).
4. Create the *DHCP* service configuration table */var/dhcp/dhcptab* with *dhtadm -C*.
5. Create the local *DHCP* network table */var/dhcp/xxx_xxx_xxx_xxx* with *pntadm -C*, empty at present.
6. Create or update the local LAN macro in */var/dhcp/dhcptab* with

```
dhtadm -A -m xxx.xxx.xxx.xxx -d ":Subnet=${SUBNET_IP}:Router=${ROUTER_IP}:"
```
7. Define links from */etc/init.d/dhcp* to */etc/rc[0-3,S]/[KS]34dhcp*.
8. Start the *DHCP* service in *BOOTP* mode.

6.5.3 add_RM_client

Format 1:

```
add_RM_client -i IP_ADDR -e ETHER_ADDR [-g GATEWAY_ADDR]
               -s SUBNETMASK -m MACRO -b BOOT_FILE CLIENT_NAME
```

A client for the *BOOTP* service is entered on the LAN Console with the *add_RM_client* tool.

Options:**-i IP_ADDR**

The IP address of the RM client that is going to be entered for remote installation. This is specified in the usual Internet format: xxx.xxx.xxx.xxx (decimal numbers separated by ".").

-e ETHER_ADDR

The Ethernet address (hardware/ MAC address of the LAN board connecting the RM to the Ethernet) of the RM client that is going to be entered for remote installation. This is specified in the standard format: x:x:x:x:x:x (hexadecimal numbers between 0 and ff separated by ":").

-g GATEWAY_ADDR

The IP address of the gateway to the subnet in which the RM client is located. This parameter must be specified if the RM client is not in the same subnet as the Solaris computer. It can be omitted if the two systems are in the same subnet. This is specified in the usual Internet format: xxx.xxx.xxx.xxx (decimal numbers separated by ".").

-s SUBNETMASK

The network mask of the subnet in which the RM client is located. This is specified in the usual Internet format: xxx.xxx.xxx.xxx (decimal numbers separated by ".").

-m MACRO

Macro name which is entered in the */var/dhcp/dhcptab* file (this macro is referred to as the install macro from now on). The name can be freely chosen. A separate name can be chosen for each client, but it is also possible to use the same name for several clients. In this way, various RM clients can be assigned to an installation class.

This macro contains data that is the same for all assigned computers (e.g. the boot file or the pointer to the associated network table). Different network tables apply to computers that are in different subnets so different macros have to be defined for them.

It is advisable, for instance, to give it the same name as the `VERSION` from the `setup_RM_server` call. In this way, all RM clients which are to be installed with this version and are located in the same subnet get the same macro and thus the same values from `/var/dhcp/dhcptab`.

-b BOOT_FILE

The path name of the boot file relative to the tftp home directory.

Example:

`/tftpboot` is the tftp home directory (defined by the entry in `/etc/inetd.conf`).
`Y4B0033/sash_b20` is then the relative path of the boot file.

CLIENT_NAME

The name (host name) of the client.

Format 2:

```
add_RM_client -D <CLIENT_NAME>
```

A client for the `BOOTP` service is deleted on a Solaris system with the `add_RM_client` tool.

Options:**-D CLIENT_NAME**

This call removes the entries for `CLIENT_NAME` from the `DHCP` tables. The assigned macro is also removed from the `DHCP` tables providing there are no other pointers to it.

This format is particularly important if an incorrect value was specified for entry of a client (i.e. in an earlier call of `add_RM_client`). To correct this, the incorrect entry is first deleted with the `-D` option and then re-entered with the correct parameters by calling `add_RM_client` again.

Procedure in the system

1. Stop the *DHCP* service if it is running.
2. Check and start the *rarpd* service.
3. Check and start the *tftpd* service.

4. Create or update the install macro in */var/dhcp/dhcptab* with

```
dhtadm -A -m ${MACRO} -d":Include=${LAN_Macro}:BootSrvA=
${SERVER_IP}:BootSrvN=${SERVER_NAME}:BootFile=
${BOOT_FILE}:Hostname:"
```

5. Create the remote *DHCP* network table */var/dhcp/yyy_yyy_yyy_yyy* with *pntadm -C yyy.yyy.yyy.yyy* if the client is in a different subnet to the server.

6. Create or update the local or remote LAN macro in */var/dhcp/dhcptab* with

```
dhtadm -A -m xxx.xxx.xxx.xxx -d "Subnet=${SUBNET_IP}:Router=
${GATEWAY_IP}:"
```

7. Enter the client information in the local or remote *DHCP* network table */var/dhcp/xxx_xxx_xxx_xxx* or */var/dhcp/yyy_yyy_yyy_yyy* with

```
pntadm -A ${IP_ADDR} -f BOOTP -h ${CLIENT_NAME} -i
${ETHER_ADDR} -m ${MACRO} xxx.xxx.xxx.xxx
```

or

```
pntadm -A ${IP_ADDR} -f BOOTP -h ${CLIENT_NAME} -i
${ETHER_ADDR} -m ${MACRO} yyy.yyy.yyy.yyy
```

The choice of table depends on whether or not the client is in the same subnet as the server.

8. Restart the *DHCP* service in *BOOTP* mode.

7 Operation

The LAN Console can represent up to 64 consoles on RM or PRIMEPOWER (MR) servers. All commands are available on each LAN Console, including the following console diagnostic tools: IKDB (Internal Kernel Debugger), BDM (Board Debug Monitor) and OBP Monitor. RM or PRIMEPOWER (MR) servers can also be rebooted from the LAN Console.

7.1 xscon call

Access to the RM and PRIMEPOWER (MR) servers is provided by *xscon* (*SMAWxsco* package) and the necessary connection is selected and established internally via *rtty* (*SMAWrty* package). To establish this connection, both *xscon* and *rtty* require data, which is defined when the LAN Console is configured.



On the basis of configuration entries for the LAN Console, *xscon* enables one or more RM and PRIMEPOWER (MR) servers to be selected. A console is represented for them on the PC. The names of the selectable systems are the console names that were specified in the *mklancon* script when the configuration entries were created.

The *xscon* user interface can also be chosen via the Solaris Common Desktop Environment where there is a corresponding entry in the Application Manager.

The connection is established basically in the same way as for *cu(1)*.

The connection is cleared down via the "~." string.

xscon – mapping consoles

Prerequisites for using *xscon*:



xscon can be called by root only.

The RCA must have been configured with the aid of the *mkrca* command.

You can obtain an exact description of the *xscon* command by displaying its manual page:

```
man xscon
```

Syntax:

```
xscon [<ConsoleName1>[, <ConsoleName2>[...]]]
```

Calling *xscon* without parameters brings up a user interface showing the available RM and PRIMEPOWER (MR) servers for selection. When *xscon ConsoleName* is executed, the connection to the selected system is established directly. You make the selection via “Establish Connections”.

If logging mode is enabled, all console output will be logged. The log file is given the default name */tmp/XSCON_<ConsoleName>* (see also “Log files” on page 83). The log file will be created and stored on the system on which *xscon* was started.

If the *SMAWtssv* package has also been installed, you can choose from a menu whether or not you want to use Teleservice.

A console window is opened for each connection. If the connection to the RCA cannot be established within 10 seconds, an error message is output and the console window is closed.

xscon supports up to 64 RM/PRIMEPOWER (MR) server connections.

To be able to operate display-dependent applications on a console, the TERM environment variable has to be set in accordance with the selected terminal emulation:

```
TERM=xterm
```

Resources:

You can use the normal resources to configure the emulation windows that are to be started. The instance name of these emulation windows is *xscon* and their class name is *XTerm*.

Example: Entry in *.Xdefaults* to configure the font on the console terminal:

```
.xscon.*.font: lucidasanstypewriter-14
```

The *xscon* command can also be started from an X terminal emulation that is not connected directly to the Solaris PC, e.g. *XVision*.

To ensure correct key binding, (see *VirtualBindings(3X)*, *xmbind(1X)*), you should carry out one of the following steps beforehand:

- ▶ Copy the file */usr/dt/lib/bindings/sun_at* under the name *.motifbind* to the user's home directory, or
- ▶ add an entry with the name of the maker of the X server to *xmbind.alias*. The maker name can be ascertained with the *xdpyinfo* command. For *XVision*, the entry would have to be:

```
"Visionware Limited."    sun_at
```

- ▶ If you are using */usr/dt/lib/bindings/xmbind.alias*, you must also set

```
XMBINDDIR=/usr/dt/lib/bindings
```

in the *.profile* file.

If you are using a private copy of *xmbind.alias* in the home directory, you must also copy */usr/dt/lib/bindings/sun_at* to the home directory.

7.2 Switching LAN Consoles

The LAN Console is switched when representation of consoles from RM or PRIMEPOWER (MR) servers, i.e. console access to these systems, is to be handled from another LAN Console in the future. The connection to the RM and PRIMEPOWER systems involved must be established via the same RCAs from both LAN Consoles.

The prerequisite for this is that another LAN Console supporting the same console accesses has been configured. For access to an RM or PRIMEPOWER system, at least the port number of the RCA **and** the password allocated to this port must be identical.

7.2.1 Planned switches

In this scenario, the activities of a LAN Console are planned to be taken over by another LAN Console for organizational reasons, i.e. the two underlying LAN Consoles are fully functional.

So that console accesses to the same RM and PRIMEPOWER (MR) servers can take place from the other LAN Console, all active connections involving the current LAN Console have to be terminated. This can be done with the “~.” string.

The connections to the required RM and PRIMEPOWER (MR) servers can then be established from the “new” LAN Console.

7.2.2 Switching because of problems

In this scenario, console accesses to the RM and PRIMEPOWER (MR) servers have to take place from another LAN Console because of problems with the current LAN Console.

If it was impossible to terminate console accesses from the original LAN Console properly, then these connections are still open on the RCA side. The section “Disrupted RCA - LAN Console connection” on page 87 provides information on resetting such connections.

7.3 Diagnostics

This section provides information on the diagnostic facilities in the LAN Console product. It describes logging properties of the *rtty* monitor and the internal impact of creating configuration entries. It goes on to describe diagnostic options and error situations involving the RCA.

7.3.1 Log files

When the LAN Console is configured, the *rtty* monitor is activated internally.

The *rtty* monitor is started and stopped via *sac* (Service Access Control). This stores status information in the */var/saf/_log* log file. The *rtty* monitor is identified in this log file by *port monitor <LAN Console SystemName>*.

rtty-specific details, i.e. information on the *rtty* connections between the LAN Console and the RCA, are stored in the */var/saf/lanconsole/log* log file.

The degree of detail of this information depends on the *rtty* trace level.

Trace level 0 is enabled by default. Up to 6 trace levels are available at present. They are set by means of the following *rtty* command:

```
rttyadm -T <level> lanconsole
```

Error situations are logged in the basic level (trace level 0). The other trace levels record additional information on the establishment and clearing down of connections and other activities of the *rtty* monitor, including timeouts and control of access to the RCA.



The extended trace mode (level > 0) should only be used briefly so that the log file does not become too big.

7.3.2 Status informations for the *rtty* monitor

The system uses the *sacadm* and *pmadm* tools to manage the *rtty* monitor.

These tools allow the state of the *rtty* monitor to be viewed and the monitor itself to be manipulated - see the manpages on *sacadm* and *pmadm*.

7.3.3 Configuration entries for the LAN Console

When a configuration entry is created for the LAN Console with *mklancon*, entries are generated in the *rtty*-specific */etc/saf/lanconsole/_pmtab* and */etc/saf/lanconsole/_shadow* files.

Under the specified console name, the *_pmtab* file contains information about the device used, the system name and port number of the RCA as well as internal *rtty* details of the type of connection. For each console name, the *_shadow* file contains the encrypted password for accessing the RCA.

This information on configuration entries can be displayed with *showlancon* or with the system tool *pmadm -l -p lanconsole*.

In addition, the *mklancon* configuration tool modifies the system files */etc/uucp/Devices* and */etc/uucp/Systems*.

A record is appended to the *Systems* file for every configuration entry. The first field of this record contains the console name. The third field in this record contains the internal name *Scon<line>*. If this name has already been allocated by other system tools, an internal name of the type *Scon0<line>*, ..., *Scon00000<line>* is generated, where *<line>* identifies the number of the *rtty* device, i.e. it is derived from the device information of the associated *_pmtab* entry: */dev/rtty/<line>*.

An entry is written to the *Devices* file under the internal name that is generated in this way.

In turn, the *rmlancon* tool removes such entries from the *Systems* and *Devices* files.

7.3.4 System information for the RCA

The *System Information* screen page in the RCA setup routine shows, among other things, the current firmware version and the Ethernet address of the RCA. See the “Appendix” on page 89 and the section “System information” on page 105.

7.4 Error situations

7.4.1 No response from the RCA

If the RCA does not respond to *ping* after booting or if the RCA setup routine cannot be executed as described, then all network parameter details (MAC address, IP address, ...) stated under "Preparing the setup data" on page 45 have to be checked.

The prerequisites for configuration were that the RCA could be accessed in the LAN network and that the required console connections had been inserted. Consequently it is only incorrect setup data that comes into question as the cause of the RCA failing to respond.

So that the setup data can take effect when it has been corrected, it is first necessary to cancel the *bootp* service that was activated under "BOOTP service for RCA" on page 48.

You do this with the following command:

```
/opt/SMAWrins/bin/add_RM_client -D <RCA SystemName>
```

You can now correct the setup data as described under "Preparing the setup data" on page 45 or in the work file that was created as described in this section. Then you have to carry out the actions described in "BOOTP service for RCA" on page 48.

7.4.2 Failure to establish a connection

The establishment of a connection between the LAN Console and the RCA is rejected if *xscon* was not called by the *root* user.

During connection establishment, the password that was allocated to the port in question is checked in order to control access to the RCA. If connection establishment is terminated because of a password mismatch or an internal timeout on the part of the LAN Console or RCA, then entries are written to */var/saf/lan-console/log* (see the section "Log files" on page 83):

Operation

Error situations

tag '*<ConsoleName>*': password check – password rejected, access denied

or

tag '*<ConsoleName>*': password check – no response from host '*<RCA SystemName>*'

If connection establishment fails because of a timeout and the timeout interval of the application that is called by *xscon* is less than the timeout intervals in the LAN Console or RCA, then no log entry is written.

7.4.3 Disrupted RCA - LAN Console connection

7.4.3.1 LAN connection disrupted

It can happen that the connection between the RCA and the LAN Console is not terminated properly. This results in an open, hanging connection on the RCA side.

The reason for this could be that the connector on the LAN Console has been detached, or that the connection from the RCA to the LAN has not been working for some time.

Reset using a command

Hanging or open socket connections can be closed using a command. The user *root* enters the following command on the LAN Console that set up the connection:

```
rsh <RCA SystemName> resetport <RCA PortNumber>
```

This command can also be input on a different LAN Console or system by the user *root*, provided it is entered in the RCA setup. Select the menu item *New* in order to enter the system on the screen "Hosts/DNS" on page 99.

Restore via the RCA setup routine

This problem can also be resolved by selecting the menu item *Ports* in the RCA setup routine.

Select the relevant port (COM1=TCP port 3001, COM2=TCP port 3002, ...COM6=TCP port 3006) and click the *Reset TCP Connection to this Port* button.

The open or hanging socket connection is then reset to the port in question and can be reopened.

**Warning**

Both of these functions will also reset or terminate an active connection.

An error message is output if there is no connection on the specified port.

7.4.3.2 No output in console window

If output is still not possible in the console window of a connected system despite the connection being set up successfully, this blockade can be lifted, if appropriate, from the LAN Console by entering the following command:

```
echo "\021\c" > /dev/rtty/<line>
```

<line> is derived from the entry under "DEVICE" from the output of the command

```
showlancon -n <ConsoleName>
```

<ConsoleName> is the symbolic system name of the target system.

7.4.4 Invalid password for RCA setup

It is only possible to access the RCA setup routine, and thus change connection parameters that have been defined for the RCA, by entering a valid password.

7.4.5 Incorrect remote call of RCA setup

If the remote call of the RCA setup routine – shown below –

```
rsh <RCA SystemName> setup -display <LAN Console SystemName>:0
```

is not entered correctly or has been forgotten, the following error message is output:

```
Can't open display
```

Specify the display option or correct your input.

8 Appendix

Configurable properties

The RCA properties can be configured in the setup routine:

– Access Control	– Hosts/DNS
– Language/Keyboard	– Sessions
– Network	– Firmware Update
– Ports	– System Information
– Mouse	– Exit
– Graphics/Screen	– Restart
– DPMS	

The following sections present the screen pages in sequence together with the properties, options and some explanations.

If no input or mouse click takes place for 5 minutes during setup, the setup routine terminates without saving any settings.

The RCA setup routine is called as follows on the LAN Console:

```
rsh <RCA SystemName> setup -display <SystemName LAN Console>:0
```



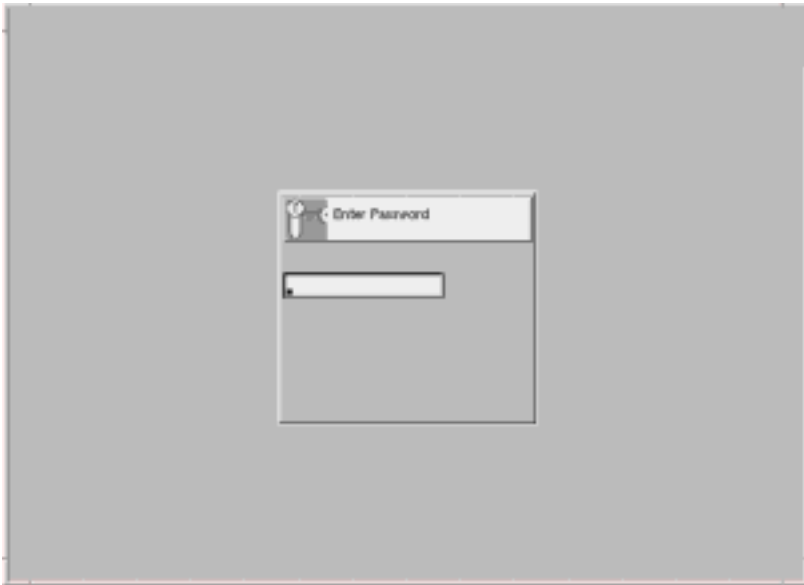
For this remote RCA call, make sure that the RCA has access to the LAN Console's X server. This access permission is allocated with the

`xhost +<RCA SystemName>`

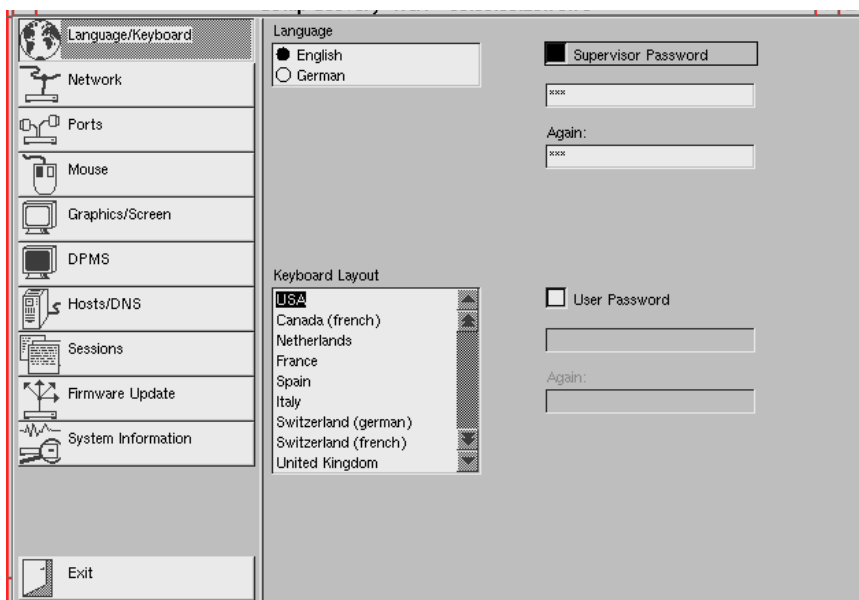
command. The `xhost` command has to be repeated whenever the user logs in.

This `xhost` command is also executed in the `mkrca` script (see "Configuring the RCA" on page 45), because remote call of RCA setup is needed to finish configuring the RCA by saving the setup data.

8.1 Access control



8.2 Language/Keyboard



Language

Here you can define the language in which texts are to appear on screen. English and German are available.

Supervisor Password

Here you can input a system administrator password. If you do this, the setup routine can only be called by entering this password. Any blanks at the end of the password are ignored.

User Password

Here you can input a user password. If you do this, the setup routine can only be called by entering this password or the system administrator password.

Only characters from the standard set can be used for the user password, i.e. no umlauts, separators or other special characters.

Access rights after entry of the user password apply to just some of the functions of the setup routine. Functions that are not available to a user who has input the user password but only to the system administrator are grayed on the screen.

8.3 Network

Local network settings of the RCA are configured and network parameters are changed on this screen page.

IP Address

Enter the IP address (Internet address) in the four fields provided.

If the IP address is changed, the net mask – which is also configured on this screen page – changes too (also refer to the description of the *Net Mask* option).

Pay attention to the following advice when allocating IP addresses:

- i An IP address must not be allocated more than once. If this happens, there can be considerable problems with terminal operations. These problems may not become apparent immediately. These problems may also arise even if the devices to which the same IP address has been allocated are not turned on at the same time.

Net Mask

Enter the net mask in the four fields here.

The net mask changes if the IP address is changed. The IP address is also configured on this page.

The system changes the net mask automatically in this case, i.e. it sets it in accordance with the change that has been made to the IP address. If this automatic adjustment does not correspond to the particular conditions of your network you have to enter the required net mask yourself. Your network administrator will be able to tell you what is required.

Gateways

It is necessary to specify gateways for connections between the RCA and stations that are in a different logical segment of the LAN. Enter one or more gateways here.

Type the address of a new gateway in the four fields that are available and confirm your input with *Add*.

To delete an existing gateway, select it and press *Remove*.

8.4 Ports

The RCA's serial ports are configured on this screen page. The port password can also be changed here. The same password has to be input in both fields otherwise an error message is output. Any blanks at the end of a password are ignored.

Language/Keyboard

Network

Ports

Mouse

Graphics/Screen

DPMS

Hosts/DNS

Sessions

Firmware Update

System Information

Exit

Port Settings for

☐ COM1 - V.24

☒ COM2 - V.24

☐ COM3

☐ COM4

☐ COM5

☐ COM6

☐ Password

Parity

☒ none

☐ even

☐ odd

Stop Bits

☒ 1

☐ 2

Word Width

☐ 5

☐ 6

☐ 7

☒ 8

Flow Control

☐ none

☐ RTS/CTS

☒ XON/XOFF

☐ both

Speed

☐ 50

☐ 75

☐ 110

☐ 150

☐ 200

☐ 300

☐ 600

☐ 1200

☐ 1800

☐ 2400

☐ 4800

☒ 9600

☐ 19200

☐ 38400

☐ 57600

☐ 115200

Local Printer

☒ none

☐ LPT1

☐ COM1

☐ COM2

Reset tcp connection to this port

Port Settings For

When you have selected the port, its settings are displayed. Click the circle next to the port name if you want to see the settings for another port.

The parameters in the fields *Parity*, *Stop Bits* etc. have to be set as required.

Reset TCP Connection To This Port

An open or non-responding TCP connection to the selected port can be reset with this button, making the port available for the next TCP connections that need to be established.

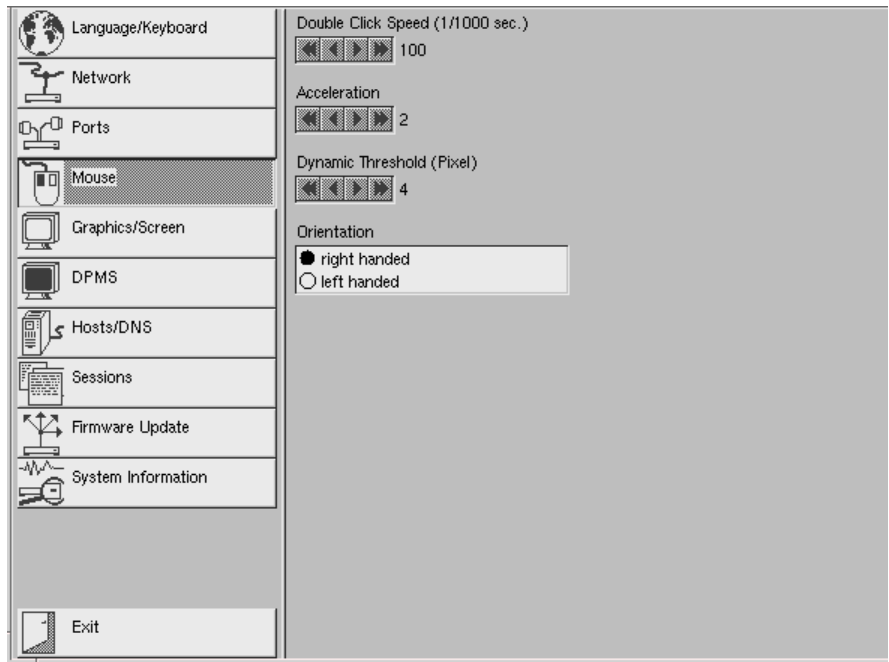


Abort active connections

This function will also reset or terminate an active connection. An error message is output if there is no connection on the selected port.

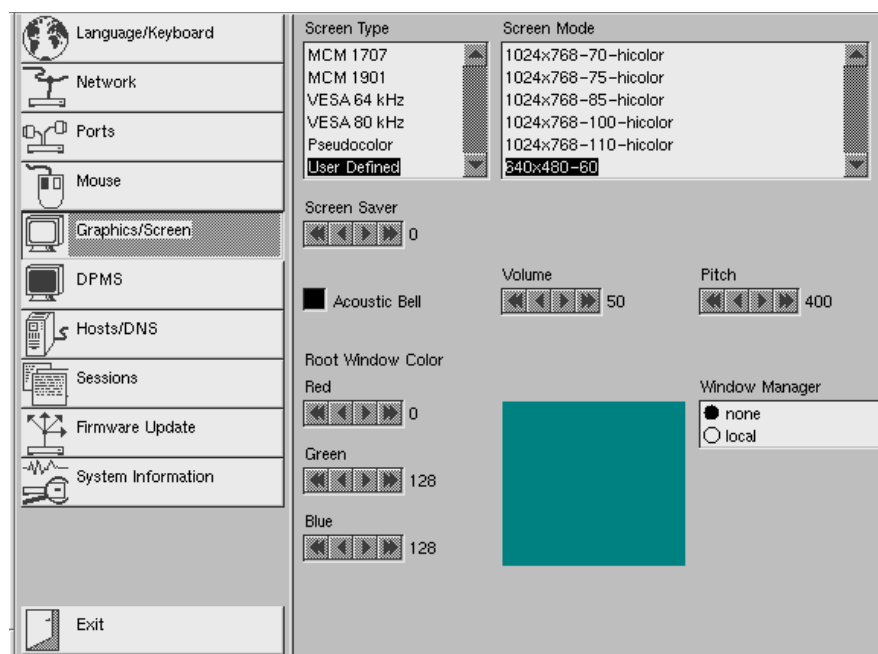
8.5 Mouse

The settings on this screen page are only relevant for a mouse that is connected locally to the RCA.



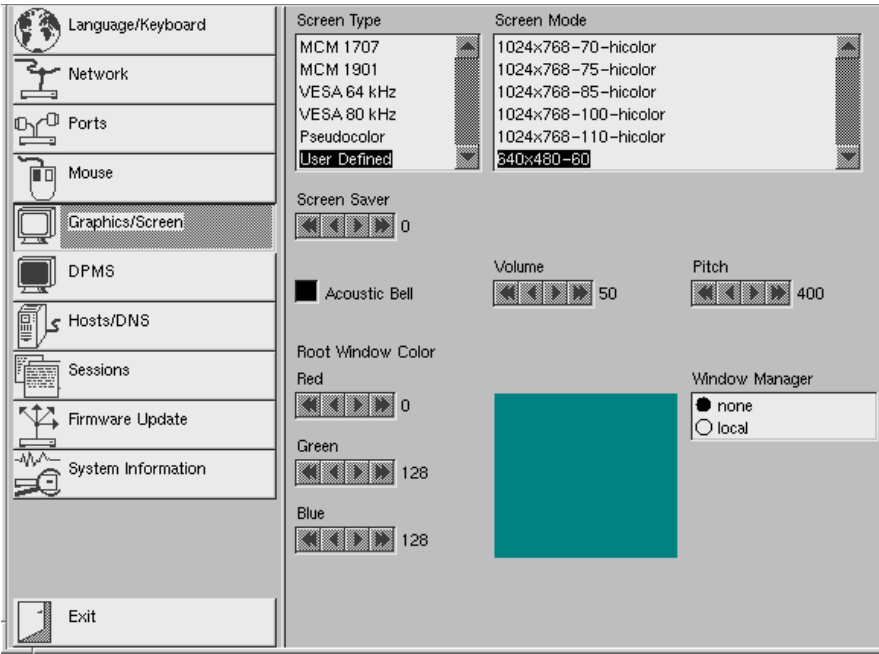
8.6 Graphics/Screen

The settings on this screen page are only relevant for a display that is connected locally to the RCA.



8.7 DPMS

The settings on this screen page are only relevant for a display that is connected locally to the RCA.



8.8 Hosts/DNS

The hosts/servers and the Domain Name Server (DNS) are configured for the RCA on this screen page.

Name	IP address
	0 0 0 0
<div>↑</div> <div>↓</div>	

New Copy Delete

☒ Use DNS

Local name: kohle Domain: pdlb.siemens.de

DNS Server: 0 0 0 0 Add

129.103.151.100 (highlighted)
129.103.145.4 Delete

Exit

If a host/server name was specified previously, an IP address has to be assigned to this name.

The names of specified hosts/servers are shown in the scroll list at the top. The name of the currently selected host/server is highlighted.

Name

You can change the name of the selected host/server here.

IP Address

You can specify the IP address (Internet address) of the selected host/server here.

New

A new host/server entry is created when you click this button. The name of this host/server is *Server_n* initially (*n* stands for the *n*-th host/server in the list).

You can change the specified name in the *Name* field. In the *IP Address* field you have to enter the IP address of the host/server that you have just added.

Copy

The host/server entry is copied when you click this button. Initially, the new name is in the form *hostname-2*, and the IP address for this new entry is the same as the original.

You can change the specified name in the *Name* field. In the *IP Address* field you have to enter a new IP address.

Delete

The host/server entry that you have selected in the list is deleted when you click this button.

Use DNS

Instead of specifying a series of hosts/servers and their IP addresses for each RCA you can get the IP addresses from a central computer that runs the DNS service (Domain Name Server).

Local Name

You have to enter your local name if you chose the *Use DNS* option.

Domain

Here, you have to specify the domain to which you belong if you chose the *Use DNS* option.



The domain name shown in the screenshot is an example only, as are other names, addresses and paths given in the input fields in screenshots.

DNS Server

If you chose the *Use DNS* option you have to specify a server that is running the *DNS* service. You can enter multiple servers here.

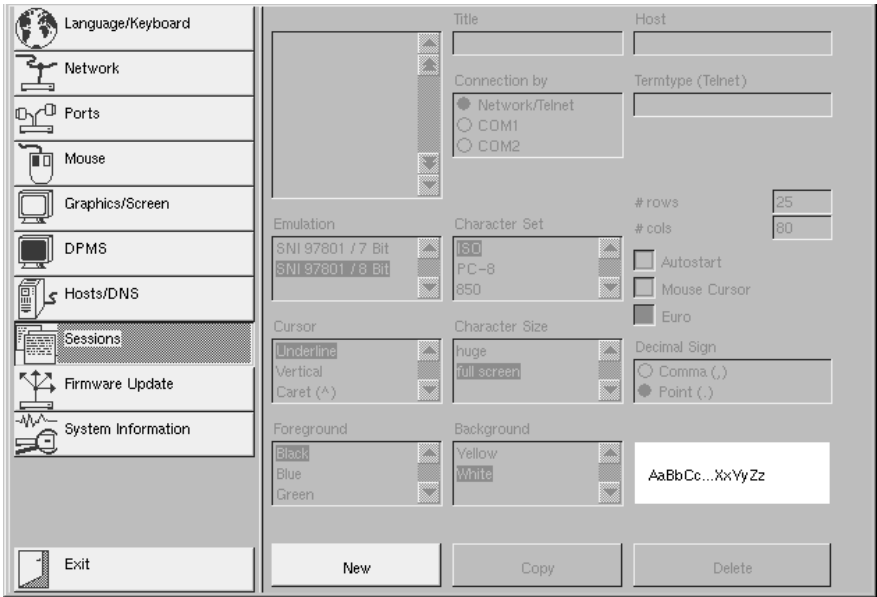
To specify a DNS server, enter its address in the four fields under the *DNS Server* caption. Then click the *Add* button.

This new address then appears in the scroll list.

To delete a DNS server entry, select its name from the list and click the *Delete* button.

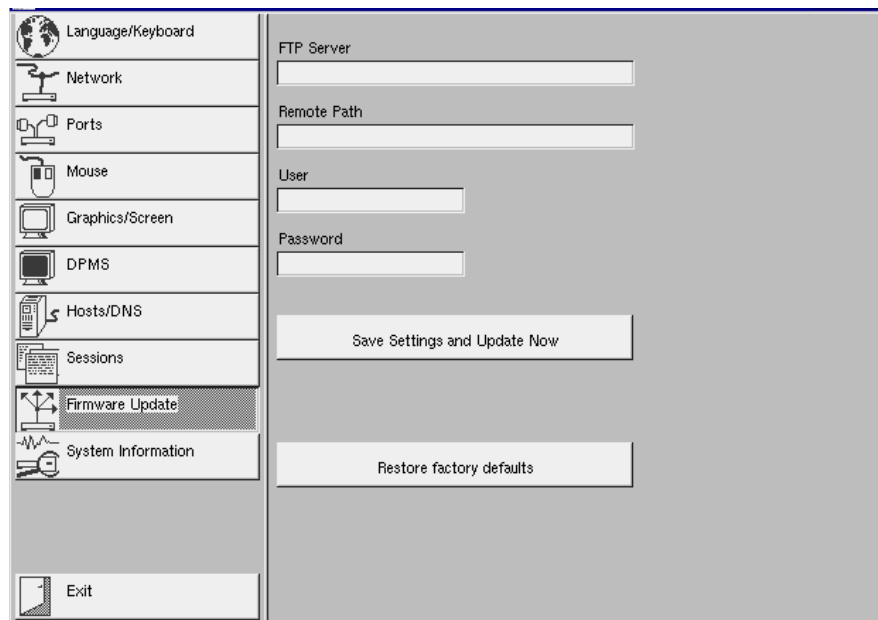
8.9 Sessions

Local Telnet sessions can be set up here. This mode is not supported in RCA.



8.10 Firmware update

An RCA firmware update is called from this screen page.



The screenshot shows a web-based configuration interface. On the left is a vertical sidebar menu with icons and labels: Language/Keyboard, Network, Ports, Mouse, Graphics/Screen, DPMS, Hosts/DNS, Sessions, Firmware Update (highlighted with a grey background), System Information, and Exit. The main content area on the right is titled 'Firmware Update' and contains the following fields and buttons:

- FTP Server: A text input field.
- Remote Path: A text input field.
- User: A text input field.
- Password: A text input field.
- Save Settings and Update Now: A button.
- Restore factory defaults: A button.

FTP Server

Here you can specify the server on which the new firmware is located.



The server name entered in the screen output is only provided as an example - as is the case with the other name, address and path details in the respective input boxes.

Remote Path

Here you can specify the directory on the server in which the firmware images are stored.

User

Here you can specify the name of the user who is entitled to access the firmware images.

Password

Here you can specify the password of the user who is entitled to access the firmware images.

This password is stored in the RCA in plain text, i.e. it is not encrypted, so it should only be used for updating the firmware.

Save Settings And Update Now

If you select *Save Settings And Update Now*, all settings that have been defined in the setup routine are saved (in the same way as for the *Save* option on the *Exit* screen page), and the new firmware is downloaded from the specified server.












The terminal is restarted several times during this operation. When the update has been completed successfully, a new firmware version number appears on the *System Information* screen page.

Restore Factory Defaults

If you select *Restore Factory Defaults*, the settings on all screen pages of the setup routine are put back in the state they were in when the device left the factory.

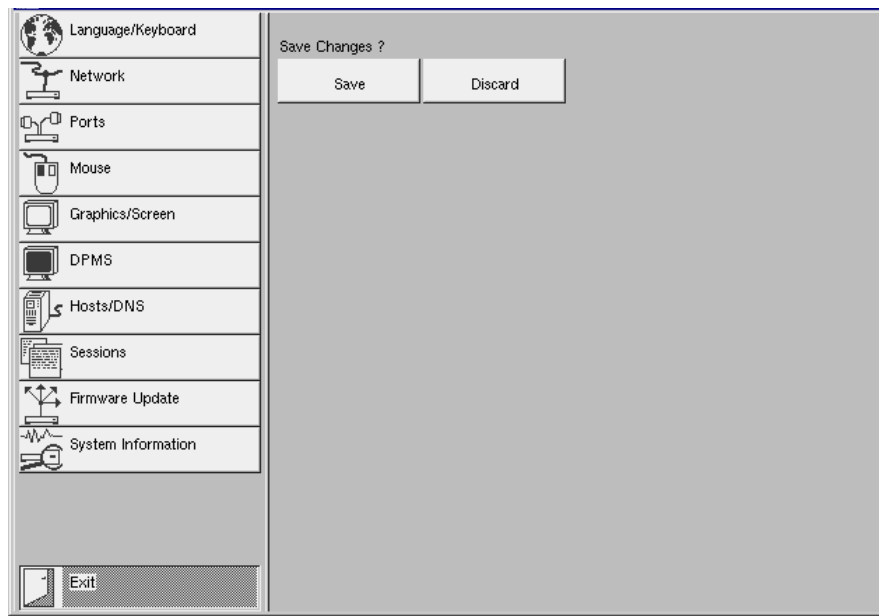
8.11 System information

RCA system information is output on this screen page.

 Language/Keyboard  Network  Ports  Mouse  Graphics/Screen  DPMS  Hosts/DNS  Sessions  Firmware Update  System Information  Exit	Video Memory	RAM	Monitor	Flash Memory
	2 MB	32 MB	external	16 MB
	Current Time and Date			COM1 Type
	Date (DD/MM/YY)			V.24
	<input type="text" value="28"/> <input type="text" value="10"/> <input type="text" value="1999"/>			
	Time (HH:MM)			
	<input type="text" value="9"/> <input type="text" value="14"/>			
	<input type="button" value="Set Time and Date"/>			
	Ethernet Address: 08:00:06:25:75:73			
	Firmware Version: Scovery-RCA 01.20a September 30 1999			

8.12 Exit

The setup routine is exited from this screen page. The current status can be saved or discarded.



When you select *Exit* you are asked whether you want to save the RCA settings that have been defined in the setup routine. You can choose between *Save* and *Discard*.

Save

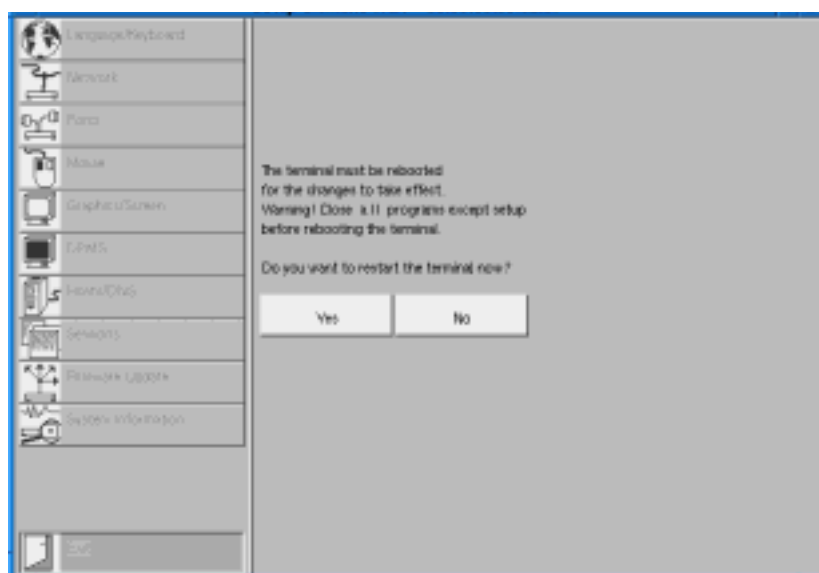
All settings are saved and control returns to the normal RCA mode.

In the case of certain changes it is necessary to restart the RCA for them to take effect. You are asked in each case whether or not you want to restart the RCA.

Discard

If you select this option on the *Exit* screen page, none of the settings is saved and control returns to the normal RCA mode.

8.13 Restart



This query lets you decide whether or not you want to restart the RCA.

Glossary

bootp

Protocol that is used for booting a system remotely.

cluster

A group of systems (nodes) interacting tightly as a system to provide fast, uninterruptible computer services.

console

A control unit that gives the user direct access to a computer.

DNS

Domain Name Service

MAC

Media Access Control. Hardware address for accessing a device.

NIS

Network Information Service. Central administration of configuration information in a network. For instance, IP addresses, security details, mail, Ethernet interface configurations and other network services can be administered or provided centrally.

Abbreviations

BDM	Board Debug Monitor
BIOS	Basic Input Output System
CCU	Console Connection Units
CPU	Central Processing Unit
CSA	Canadian Securities Administrators
CTS	Clear to Send
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Service
DTR	Data Terminal Ready signal
EN	European norm
FCC	Federal Communications Commission
GS	German certification “Geprüfte Sicherheit”
IEC	International Electrotechnical Commission

Abbreviations

IEEE
Institute of Electrical and Electronic Engineers

IKDB
Internal Kernel Debugger

IP
Internet Protocol

LAN
Local Area Network

MAC
Media Access Control

NFS
Network File System

OBP
Open Boot Prom Program

PCI
Peripheral Component Interconnect

RCA
Remote Communication Adapter

RMS
Reliant Monitor Software

RTS
Request To Send

RTTY
Remote TeleType

SCL
Secure Communication Layer

SCS
System Console Software

Abbreviations

SMC	System Management Console
SPARC™	Scalable Processor Architecture
SunVTS™	Sun Validation Test Suite
TCP/IP	Transmission Control Protocol / Internet Protocol
TFT	Thin Film Transistor
UL	Underwriters Laboratories Incorporated
USB	Universal Serial Bus
VGA	Video Graphic Adapter
VTs	see SUNVTS
WSA	Web-based System Administration

Related publications

Please apply to your local office for ordering the manuals.

- [1] **Reliant UNIX 5.45**
Reliant UNIX Installation
Installation Guide

Target group

System administrators

Content

The manual describes the re-installation and updating of Reliant UNIX as well as initial installation of it when there is a new system disk.

- [2] **Reliant UNIX 5.45**
Reliant UNIX Operation
System Administrator's Guide

Target group

System administrators

Content

Description of the administration of Reliant UNIX.

- [3] **Reliant UNIX 5.45**
Commands

Target group

Shell users

Content

This document describes the Reliant UNIX commands in alphabetic order.

- [4] **Reliant UNIX 5.45**
User Guide

Target group

Users

Content

Overview of the Reliant UNIX 5.45 operating system and an introduction into the general basics for users.

Related publications

[5] **Reliant UNIX 5.45
System Administrator's Reference Manual**

Target group

System administrators

Content

Commands and application programs for system maintenance, file formats, special files for system administration of the Reliant UNIX 5.45 operating system.

[6] **Reliant UNIX 5.45
System Administrator's Guide**
User Guide

Target group

System administrators

Content

This manual provides an introduction to UNIX system administration. Among other things, it describes the system administrator tools, UNIX system configuration and support, calculation of system usage as well as aspects of system security. The manual applies both for MIPS-based UNIX and for Intel-based UNIX.

[7] **Reliant UNIX 5.45
Error Diagnostics and Troubleshooting**
User's Guide

Target group

System administrators

Content

This document provides information on event management in RM200, RM300, RM400, RM600xxx, RM600E systems.

Related publications

[8] **Reliant UNIX 5.45**
Network Administration

Description

Target group

System administrators

Content

Description of the configuration and administration of networks.

[9] **Reliant UNIX 5.45**
Networking Reference Manual

Reference Manual

Target group

System administrators, programmers

Content

Quick reference for commands, functions, utilities and system files, which are required for working with networked computers.

[10] **Reliant UNIX 5.45**
RM 600E

Operating Instructions

Target group

System administrators

Content

This document provides information on the multi-user RM600E computer system running under Reliant UNIX 5.45.

[11] **Reliant UNIX 5.45**
RM 600
E40/E42/E80 CS42

Operating Instructions

Target group

System administrators

Content

This document provides information on the models E40/E42/E80 and CS42 on the multi-user RM600 computer system running under Reliant UNIX 5.45.

Related publications

- [12] **Reliant UNIX 5.45
RM 600
E45/E85/CS45/FC45**
Operating Manual
- Target group*
System administrators
- Content*
This document provides information on the models E45/E85/CS45/FC45 on the multi-user RM600 computer system running under Reliant UNIX 5.45.
- [13] **Reliant UNIX 5.45
RM ServerNode**
- Operating Manual
- Target group*
System administrators
- Content*
Description, startup and operation of the RM ServerNode multiprocessor computer system with the Reliant UNIX 5.45 operating system.
- [14] **Reliant Monitor Software V3.1
Installation of RMS**
(Reliant UNIX and Solaris)
System Administrator's Guide
- Target group*
System administrators
- Content*
This is a guide to installing the Reliant Monitor Software (RMS) on Siemens RM systems.
- [15] **Reliant Monitor Software V3.1
Administration of RMS with RCVM**
(Reliant UNIX and Solaris)
System Administrator's Guide
- Target group*
System administrators
- Content*

Related publications

This document describes the RCVN graphical user interface which is based on Motif and is used to administer Reliant Monitor Software (RMS) resources.

- [16] **Reliant Monitor Software V3.1
Configuration and Administration of RMS**
(Reliant UNIX and Solaris)
System Administrator's Guide

Target group

System administrators

Content

This document describes the functionality, configuration and administration of the Reliant Monitor Software (RMS).

- [17] **Reliant Monitor Software V3.1D
RMS Concepts**
(Reliant UNIX and Solaris)
System Administrator's Guide

Target group

System administrators

Content

This document describes the concepts of the RMS product.

- [18] **Reliant UNIX 5.45
High Availability**
System Administrator's Guide

Target group

System administrators

Content

Description of the hardware and software failover components in the RM system family.

- [19] **SIEMENS Parallel Server (SPS)
Installation, Configuration and Administration**
(Reliant UNIX)
Administration Guide

Target group

System administrators

Related publications

Content

This document describes software installation for the Reliant UNIX SPS, and administration of a cluster that uses these features.

[20] **RM-/SR2000 Systems
Safety Instructions**

Target group

System administrators, technicians

Content

Safety instructions in 12 languages for RM systems.

[21] **Rackvarianten/ Rack Variants
Safety Instructions**

Target group

System administrators, engineers

Content

Safety instructions in 12 languages for rack systems.

[22] **Reliant UNIX / Solaris
WebSysAdmin / Domain Admin 2.0**
System Administration within a Domain

Target group

System administrators, service technicians

Content

Bundling and administration of several computer nodes using WSA (Web-based System Administration) and Domain Admin.

Solaris publications

[23] **SUN Motherboard Netra™
Read me first! AX1105-500**

Target group

System administrators, technicians

Content

Netra AX1105-500 motherboard supports Sun's Solaris™ Operating Environment.

Related publications

- [24] **SUN Motherboard Netra™**
Read me first! Audio/Video Module for the Netra™ AX1105-500
Motherboard
- Target group*
System administrators, technicians
- [25] **Netra™AX1105-500**
Technical Reference and Installation Manual
- Target group*
System administrators, technicians
- Content*
This manual describes the functions of the Netra™ AX1105-500 CPU board, its operation, displays, connections, boot sequences and specifications.

PRIMEPOWER publications

- [26] **GP 7000F/PRIMEPOWER Systems**
Safety Instructions
- Target group*
System administrators, technicians
- Content*
Safety brochure in eighteen languages for the GP 7000F/PRIMEPOWER systems.
- [27] **PRIMEPOWER (Solaris)**
PRIMEPOWER 2000/1000/800
System Management Console (SMC) User Guide
- Target group*
System administrators, technicians
- Content*
Operating instructions for the System Management Console of the PRIMEPOWER enterprise server

Related publications

- [28] **PRIMEPOWER** (Solaris)
User's Manual
PRIMEPOWER 200/400/600
- Target group*
System administrators, technicians
- Content*
Operating instructions for the PRIMEPOWER M200/M400/M600 systems, floorstand and rack version.
- [29] **PRIMEPOWER** (Solaris)
Model 200 Installation Instructions
- Target group*
Technicians
- Content*
Installation instructions for the PRIMEPOWER M200 system.
- [30] **PRIMEPOWER** (Solaris)
Model 400 Installation Instructions
- Target group*
Technicians
- Content*
Installation instructions for the PRIMEPOWER M400 system.
- [31] **PRIMEPOWER** (Solaris)
Model 600 Installation Instructions
- Target group*
Technicians
- Content*
Installation instructions for the PRIMEPOWER M600 system.
- [32] **PRIMEPOWER** (Solaris)
Model 200 Maintenance Manual
- Target group*
Technicians
- Content*
Service Manual for the PRIMEPOWER M200 system.

Related publications

- [33] **PRIMEPOWER (Solaris)**
Model 400 Maintenance Manual

Target group
Technicians

Content
Service Manual for the PRIMEPOWER M400 system.

- [34] **PRIMEPOWER (Solaris)**
Model 600 Maintenance Manual

Target group
Technicians

Content
Service Manual for the PRIMEPOWER M600 system.

Index

/etc/init.d/volmgt 72
/home 57
/opt/readme/telesv-d/fgm00 55
/opt/SMAW/SMAWxsco/misc/
 setup.tpl
 template file 48
/opt/SMAW/SMAWxsco/sbin/
 mklancon 43
/var/saf/lanconsole/log 83

15" monitor 9
17" monitor 9
21" monitor 9

A

abort 82
adapter 39
application manager 80

B

board debug monitor 7, 79
boot
 remote 7
boot files
 copying 74
bootp
 initial configuration 42
bootp request 42

C

cable 29
 console connection 34
 unplugging 17
cabling 29
 console 34
 order numbers 32
CCU 1
CDE 24
CE conformity 14

client
 deleting 71
 setting up 71
climatic class 13
cluster 2
Combo controller 7
common desktop environment 24
configuration
 LAN Console 39
 RCA 39
configuration files 75
connection
 aborted 87
 cable 32
 clearing down 80
 devices 17
 disrupted 87
 external devices 16, 17
 hanging 87
 LAN Console 17
 to LAN 2, 32
 to PRIMEPOWER 32
 to RM system 32
 V.24 2
connector
 console connection 30
console 1, 7
 software 25
console connection 30
 connector 30
console connection units 1
console input 39
console name 43
console output 39
Control CD 25, 26
controller 11
copying
 boot files 74
 CD 74
cu
 xscon 80

Index

customer service
communication 2

D

DAT drive 7, 11
deleting
client 71
delivery unit 14
desktop housing
dimensions 13
devices
connect 17
DHCP 48, 75, 77, 78
diagnostics
rtty monitor 83
dimensions 13, 36
diskette drive
memory 11
diskette indicator 22
disruption 87
distance
building 1
DNS 53
Domain Admin 26
DVD-ROM indicator 22

E

electromagnetic compatibility 14
EMC data 14
environmental conditions 13
error situations
trace level 83
etc/hosts 53
ethernet 30
address 76
exhaust air clearance 36
external devices
connect 17
connection 16

F

FCC 14
firmware
update 103

firmware images
password 104
firmware version
RCA 85

G

GP7000F 1

H

hard disk indicator 22
hard disk partitioning 23
hardware
RCA 29
hardware address 76, 86
host name 24

I

important information 5
installing telecall 66
interface 18
internal kernel debugger 7, 79
IP address 86

K

key binding 82
keyboard
connection 17

L

LAN 2
LAN Console
configuration 39
connect 17
connecting to power supply 20
disrupted connection 87
rear side 16
switching off 21
switching on 21
language setting 24
line speed 39, 53, 91
log
logging mode 81

M

MAC address 42, 76, 86

Index

mapping consoles 81
mixed operation 2
 RM and PRIMEPOWER systems 2
mklancon 84
 xscon 80
mkrca 45, 48, 50, 81
monitor
 connection 18
motherboard 34
mounting
 CD 74
 operating system CD 74
mouse
 connection 17

N

network 24
node_adm 69

O

OBP monitor 79
operating system 23
 mounting CD 74
 version 71
order numbers
 cabling 32

P

packaging 14
parallel interface
 connecting devices 18
password 51, 82
 firmware images 104
 port password 95
 setup 91
 system administrator 91
 user 91
PATH 27
pmadm
 rtty monitor 84
port
 password 95
port number

RCA 43
ports 39
power consumption 12
power LED 22
power supply 12
 connecting 20
 setting 19
PRIMEPOWER 1
 connection cable 32
 connection to RCA 32
 enterprise server 23
 models 100/200/400/600 1
 models 800/1000/2000 1, 23
processor 11
prom monitor 7, 79

R

rack console 10
rack module 9
rated voltage 12
RCA
 configuration 39
 connection to PRIMEPOWER 32
 disrupted connection 87
 firmware version 85
rear side
 LAN Console 16
Reliant UNIX
 version 73
remote
 boot 7
remote communication adapter 2
RM600 1
rmlancon 84
root password 24
RS232 34
rsh command 87
rtty 83, 84
rtty monitor 84
 diagnostics 83

S

sacadm
 rtty monitor 84

Index

- safety notes 5
 - SCL 58
 - scope of delivery 18
 - SCS 1, 11
 - secure communication layer 58
 - serial interface
 - connecting devices 18
 - server
 - setting up 71
 - setting up
 - client 71
 - server 71
 - setup
 - password 91
 - short-circuit 6
 - showlancon 84
 - SIDATA 29
 - SMAWrlins 25, 71
 - SMAWrty 25, 79
 - SMAWtelx 25, 66
 - SMAWtssv 25
 - SMAWxsco 25, 42, 79
 - SMC 7, 11, 23
 - software
 - version 25
 - software installation
 - teleservice 57
 - Solaris 79
 - common desktop environment 80
 - SPARC processor 1, 2, 3
 - standards 30
 - storage space 11
 - subnet 76
 - Supplement CD 25
 - switching off
 - LAN Console 21
 - switching on
 - LAN Console 21
 - system console 1, 7
 - cabling 34
 - software 25
 - System Console Software 7
 - system console software 1, 11
 - System Management Console 7
 - system management console 11, 23
- T**
- TCP/IP
 - RCA 29
 - technical customer service
 - communication 2
 - teleadm 67
 - telecall
 - installation 66
 - telecall gateway 2
 - teleservice 2, 26
 - software installation 57
 - template file 46
 - /opt/SMAW/SMAWxsco/misc/
setup.tpl 48
 - TFT monitor 9
 - time zone 24
 - trace level
 - error situations 83
- U**
- unpacking 14
 - update
 - firmware 103
 - user password 91
- V**
- V.24 34
 - RCA 29
 - version
 - operating system 71
 - software 25
- W**
- web-based system administration
 - starting 28
 - webstart wizard 25
- X**
- xscon 7, 79, 81
 - cu 80
 - mklancon 80
 - XVision 82

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Submitted by

Comments
Suggestions
Corrections

Comments on LAN-Konsole
Installieren, Konfigurieren und Bedienen

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