

Embedded Linux for Thin Clients Next Generation (eLux<sup>®</sup> NG) Version 1.25

Administrator's Guide Build Nr.: 23

UniCon Software GmbH



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# 1 Before You Begin

# 1.1 Who Should Use This Manual

This manual is for system administrators responsible for installing, configuring, deploying and maintaining Embedded Linux Next Generation (eLux<sup>®</sup> NG), and for experienced users. This manual assumes knowledge of:

- Installation, operation and maintenance of network and asynchronous communication hardware, including serial ports, modems and device adapters
- The operating system (OS) on the client computer

While eLux NG is Linux<sup>®</sup> based, the advantage of eLux NG is that no significant knowledge of Linux is needed for either the administrator or the end user.

# 1.2 About This Guide

Starting with unpacking the appliance, this documentation presents step-by-step directions to run the Thin Client using eLux NG. For convenience, the manual is divided into the following parts:

Chapter		Description
1	Before You Begin	Manual conventions, overview of eLux NG functions and features
2	Quick Start	How to get eLux NG running quickly
3	Setup	Instructions on how to set eLux NG desktop settings, hardware settings, mirroring, security settings, VPN
4	Configuring Applications	Instructions on how to configure local applications and session clients
5	Troubleshooting	Detailed instructions on how to recognize and enter a manual eLux NG upgrade license, how to perform a safe boot, how to perform a factory reset, and solutions to frequent user errors
6	Recovery Installation	Detailed instructions on how to return the Thin Client to default settings and default flash image. A recovery is necessary to update from eLux 1.0 to NG.
7	Shortcut Keys	Keyboard shortcuts
	Appendix 1: Desktop	Introduction to the eLux NG desktop: starter, taskbar, workspaces
	Appendix 2: Memory Usage	Memory usage data
	Appendix 3: Examples of Internet Profiles	A list of the default ISDN and modem profiles included in the eLux NG software
	Appendix 4: Configuring Kiosk Mode	Detailed instructions on how to configure kiosk mode
	Appendix 5: Setting Thin Client Time to UTC	How to set BIOS time to UTC
	Appendix 6: Supported Hardware	List of supported hardware: network cards, video cards, keyboards, modems
	Appendix 7: Supported Smart Card Readers	List of supported card readers
	Appendix 8: Port Assignments	eLux NG and Scout NG port numbers for firewall administrators



# **1.3 Conventions and Abbreviations**

# 1.3.1 Conventions

The following are text formats and symbols that appear in the manual:

Convention	Description
>	Move to a tab or directory.
⇒	Refers to a procedure with sequential steps.
•	Refers to a list of related information, not procedural steps.
""	Quotation marks refer to screen text and text in pop-up messages.
ALL UPPERCASE	Represents keyboard keys (for example, ENTER, F4, CTRL).
Bold	Indicates boxes and buttons, column headings, command- line commands and options, dialog box titles, tabs, icons, lists, menu names and menu commands, and directories, subdirectories and folders.
Courier New	The Courier New font represents entries you can type at the command line or initialization files.
<italics></italics>	Indicates a placeholder for information or parameters that you must enter. As an example, if the procedure asks you to type <i><ip< i=""> address&gt;, you must type the actual IP address. Italics can also refer to book titles.</ip<></i>

Two stars (\*\*) next to a title indicates this function is not supported by all hardware platforms.

# 1.3.2 Commonly-Used Abbreviations

The following are terms that appear in the manual:

Abbreviation	Description
ADSL	Asymmetric Digital Subscriber Line
base OS	Base operating system
BDC	Backup Domain Controller
BOOTP	Bootstrap Protocol
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name Service
GUI	Graphical User Interface
ICA	Independent Computer Architecture
IP address	IP addresses are represented in four 3-digit groups separated by periods.
	<i>Example</i> :192.45.85.1
LDAP	Lightweight Directory Access Protocol, a TCP/IP-based protocol for accessing information directories and retrieving directory information such as e-mail addresses, public keys, etc.
MAC address	Media Access Control address. The format of a MAC or hardware address is: xx:xx:xx:xx:xx:xx

Abbreviation	Description
	<i>Example</i> :
MSN	Multiple Subscriber Number
NFS	Network File System
PCL	Printer Control Language
PDC	Primary Domain Controller
PXE	Pre-Boot Execution Environment
RDP	Remote Desktop Protocol
RFC	Request For Comments. A series of documents about Internet protocols, moderated by the Internet Engineering Task Force.
SMB	Server Message Block
SNMP	Simple Network Management Protocol
VNC	Virtual Network Computing
XDMCP	X Display Manager Control Protocol

# **1.4 Finding More Information**

This manual contains conceptual information, and installation and configuration steps for eLux NG. Additional information is available from the following sources:

- The eLux NG Administrator's Guide for previous releases of eLux NG.
- The Scout NG Administrator's Guide for information on the Scout NG management tool and the supplementary program and image editor ELIAS NG.

This guide as well as other eLux NG documentation is available in Adobe PDF format. It can be found in the following locations:

- The documentation folder on your eLux NG CD-ROM
- The product documentation library at <u>www.myelux.com</u>

# 1.5 eLux NG on the World Wide Web

UniCon offers online technical support at <u>www.myelux.com</u>. This includes the following:

- An actual version of this document in PDF
- Downloadable software
- The latest updates and hotfixes for download
- A list of supported hardware

# 1.6 Overview of eLux NG

#### 1.6.1 What is eLux NG?

**eLux**<sup>®</sup> **NG** is a Linux-based, complete desktop solution which offers the Thin Client user fast, comfortable and secure access to Windows<sup>®</sup> and other servers in a server-based environment. Server-based computing is known for reducing the total cost of ownership and administrative costs – important factors in today's economy.

In server-based computing, applications run on a central server. "Client" software is installed locally on a terminal to enable the device to connect to the respective server. eLux NG provides access to the following servers:

#### Server

- Microsoft<sup>®</sup> Windows<sup>®</sup> Terminal Server
- Citrix<sup>®</sup> MetaFrame<sup>®</sup> Server
- Web server
- UNIX<sup>®</sup> system
- Mainframes

#### Client

Remote Desktop Protocol (RDP) client

Independent Computer Architecture (ICA<sup>®</sup>) client

Opera, Mozilla, Firefox

X11 server (local desktop or XDM)

Terminal emulations:

eterm (Siemens 97801 [7 & 8 bit], ANSI, AT386, BA-80, VT320)
Terminal Emulation for Motif (3270, 5250, 9750)

• PowerTerm InterConnect (3270, 5250, VT3xx, AT386, Wyse and more)

SAP<sup>®</sup>GUI for the Java environment

- SAP server
- Tarantella server

Tarantella client

**eLux NG** can be installed on a flash card (for use in Thin Clients) or a hard disk, turning your PC into a multifunctional terminal!

**eLux NG** is a Linux-based embedded operating system. However, neither the end user nor the administrator needs Linux knowledge to use or configure the software. The interface is user-friendly, and can be operated using the mouse or keyboard. Additionally, the QT interface has been streamlined to insure the maximum amount of space for client applications and to reduce initialization time upon start.

- IBM 3270 (TN3270E), 3179, 3278, 3279, 5250 (TN5250 with device name support), 3477
- Digital VT52, VT100, VT220, VT320, VT420, VT520, VT525
- ANSI BBS-ANSI, SCO-ANSI, AT386
- Other Wyse (50/60), Data General D-412, Televideo TVI 925/950, AIXterm

#### **Updating Firmware**

Updating the firmware on your terminal is fast and easy using the "container method." All required software is provided in the so-called "containers," which are available on the eLux NG CD or for download on the Internet. The software to be installed on the device is determined by the image definition file (IDF). The IDF is edited using the program **eLux NG Image Administration Service Next Generation** (ELIAS NG), which is available to owners of eLux NG at no additional charge and allows the administrator to customize the software installed on the device to exactly satisfy end-user requirements. The use of ELIAS NG is not discussed in this manual. Please consult the *Scout NG Administrator's Guide* for more information.

#### **Management Tool**

eLux NG can be 100% managed from a central location, again without any Linux know-how, using the management tool **Scout Next Generation** ("Scout NG"). This application is installed on a PC and must be purchased separately. Please consult the *Scout NG Administrator's Guide* for information on how to install and use ELIAS NG and Scout NG.

#### Compatibility

eLux NG version 1.20 should be used with Scout NG version 5.5.12 (and later) and ELIAS NG version 5.2.4 (and later).

#### **Defining Packages**

Not just any software can be installed on the device – the software must be compatible with the container method. In addition to the software provided on the eLux NG CD, software updates are available on the Internet 24 hours a day! These include new client software, base OS updates, new drivers, etc. For ease of use, these "packages" are already in eLux NG-compatible format.

In addition, you can create your own packages – for example, to install a specific driver – using the **eLux Builder Kit** (EBK). Advanced Linux knowledge is required. More information on this product is available at the Web site <u>www.myelux.com</u>.

# 1.6.2 Features of eLux NG

eLux NG offers the following features:

• Easy installation Installs on flash cards or hard disks. eLux NG can also be installed on CD-ROMs or USB sticks to boot from the peripheral device.

You can install eLux NG on a device that does not yet have eLux NG installed or has another operating system installed by performing a recovery installation. This can be done using a recovery CD or the PXE EPROM of the network card.

- **User-friendly interface** The QT GUI has been streamlined to insures a low start time. The appearance of the eLux NG desktop is modern and can be personalized using desktop themes. In addition, corporate branding is possible by setting the background color or transferring a background image.
- Network hardware support Extensive support of all current technologies and additional legacy technologies, including Ethernet, gigabit Ethernet, fiber optics, modem, ISDN, USB ISDN, DSL and Token Ring.
- Wireless LAN support You can connect to an access point using a Cisco Aironet card.
- **Simple** desktop **management** The first time the device starts, a First Contact Wizard appears to help the user through the initial configuration. After that, customizing the desktop settings to fulfill the needs of the user is simple for the administrator using the easy-to-use "eLux NG starter" (Setup tab). The options are laid out logically and intuitively.
- **Application management** Applications can be easily created using the eLux NG starter (Configuration tab). The applications can be set to automatically start at device boot or automatically restart when the application is closed.
- Easy firmware management The firmware installed on the device can be easily managed using the "container method" and the image definition file editor ELIAS NG, Windows-based software available to users of eLux NG at no additional charge.
- Comprehensive **management** eLux NG can be 100% managed from a central location, again without any Linux know-how, using the management tool **Scout Next Generation** ("Scout NG"). Scout NG offers additional features such as automatic software license distribution, license transfer, recovery settings configuration, background image transfer, configuration file transfer, help desk and more.
- License transfer If the device becomes defect, the eLux NG license is not lost. Note: The device must be managed by Scout NG.
- Security Support of authentication servers during logon, including LDAP and ADS. This provides greater system entry security into networked environments by limiting user access to the system. Smart card support for local authentication, user roaming, and Citrix ICA logon. SSH and virtual private networks are supported.
- **User variables** In conjunction with an authentication server, user variables allow for configuration consolidation, reduce configuration time for the administrator and simplify the configuration overall. In addition, special ICA variables are available when you log on to MetaFrame server using Program Neighborhood, allowing you to set a unique client name in the Citrix MetaFrame session.
- Network drives Connect to network drives with SMB or NFS protocol.

- Printing Printing support for network printers and local printers (line printer, PostScript, PCL v. 2) connected via serial, parallel or USB. The Common UNIX Printing System<sup>™</sup> (CUPS<sup>™</sup>) client supported.
- Language Desktop support of most common European languages, keyboard support of most common keyboard layouts. The eLux NG starter itself can only be displayed in English or German.
- **Multi-monitors** When used with a Matrox graphics card, eLux NG supports up to four monitors.
- **Peripheral** devices You can use up to eight USB mass storage devices at a time, in addition to a USB mouse and USB keyboard. In addition, you can access serial peripheries using a USB to serial adapter from Digitus.
- **Backing store** Saves screen information to the local X11 server on the thin client. This increases the screen refresh speed when the network connection is slow.
- SNMP eLux NG supports the Simple Network Management Protocol.
- **Time server** support You can use a Windows or UNIX time server to properly set the time on the Thin Client.
- Advanced monitor options You can set resolution up to 1600x1200. eLux NG comes with a screen saver to increase monitor life and power delay energy saving feature that turns the screen off after a specified idle time. In addition, the screen can be locked with a one-time password.
- Help desk features Interactive, real-time mirroring capabilities.
- Troubleshooting One-click viewing of various logs and system files from the diagnostics tab, factory reset to remotely delete the configuration and all locally-saved files, recovery installation to reformat the flash card or hard drive.

No other terminal software offers the features and flexibility of eLux NG!

# 1.6.3 New Features in eLux NG 1.8

- Autostart application feature can be suppressed Press SHIFT when the device boots to suppress applications configured to automatically start.
- **COM port** settings It is now possible to change the COM port settings.
- **Desktop** tools New desktop tools include a QT-based file manager for browsing the local flash and a text editor.
- Languages New desktop language: Estonian. New keyboard languages: Estonian, Japanese (ICA client only), Bulgarian and Faeroese.
- Mouse and keyboard settings You can now set the mouse double-click speed, mouse drag speed, key delay and key repeat speed. In addition, the NUMLOCK key can be deactivated upon boot.
- **Movie player** Play DVDs and MPEG files, as well as other file types. The files can reside on the Thin Client, a network drive or the Internet.
- **NoMachine** The NoMachine NX client is now available for eLux NG. The NX client connects to an NX server (running on a Linux or Solaris machine). The NoMachine software provides terminal server functionalities, X-Window protocol compression and tunneling of protocols such as RDP. It improves performance across slow modems.
- **Virtual** keyboard Display a virtual keyboard on the screen to enter characters into a program using a mouse click. This is useful for kiosk terminals or for workstations without a keyboard.
- Web tools Adobe<sup>®</sup> Acrobat<sup>®</sup> Reader<sup>®</sup> is available as browser plug-in or as a stand-alone program. RealPlayer<sup>®</sup> is available as a plug-in.
- **XDMCP** An XDMCP session can now run in a local window, rather than in a separate console.

### 1.6.4 New Features in eLux NG 1.9

- **Card** readers GemPC Twin USB (USB only) and GemPC Key are supported. GemPC Key is a USB reader in key format which reads/writes smart cards in plug-in form. Gemplus card readers can be used with Citrix ICA smart card logon.
- Mirroring password You can password-protect a mirroring session.
- **Network** cards AT-2700FX PCI LAN card from Allied Telesyn, Inc. and OLICOM 3140 PCI Token Ring card from Madge Limited are now supported.
- ThinPrint Can now print to network printers in addition to local parallel and USB printers.
- **USB stick** Support of MemoryBird USB 2.0 Revision 2 from Fujitsu Siemens Computers formatted by Windows 2000 or Windows 2003.

### 1.6.5 New Features in eLux NG 1.10

- **Card reader** SPR532 dual mode PINpad from SCM Microsystems. For use as a USB card reader (PINpad not supported, RS232 not supported).
- Desktop theme New desktop theme "XP."
- **Handhelds** The palmOne<sup>™</sup> Tungsten<sup>™</sup> E and HP iPAQ pocket PC 2003 handhelds are now supported.
- Network card Gigabit Ethernet network cards of type Broadcom Tigon 3 (BCM570x) are now supported.
- Wireless LAN The Connect2Air USB network adapter from Fujitsu Siemens Computers is now supported.

### 1.6.6 New Features in eLux NG 1.11

- Card reader EZ100PU USB card reader from Castles Technology Co.
- **Desktop icons** Desktop shortcuts for applications can be defined on the eLux NG desktop. Double-clicking with the middle mouse button on an icon redraws all icons.
- **Starter** Improved ease of use. The selected application remains selected when switching between the Applications tab to the **Configuration** tab.

#### 1.6.7 New Features in eLux NG 1.12

- **Browser** The Firefox browser is now available.
- **RDP** keyboard **mappings** Bulgarian, Czech, Czech/US, Estonian, Faeroese, French (Switzerland) and Japanese are now supported.
- **RDP ports** You can access serial ports using the native RDP client.
- **RDP** smart **card** Certificate-based smart card logon using RDP 1.4.0 is now supported.
- **USB to** serial **converter** The USB v. 24 converter from DIGITUS or Sandberg with chip PL2303 or PL2303-HX is now supported.
- VPN The Nortel Contivity VPN is now supported.
- XFree 4.4.0 New X11 server.

#### 1.6.8 New Features in eLux NG 1.14

• Screen The monitor frequencies have been optimized.

#### 1.6.9 New Features in eLux NG 1.17

- COM ports The COM ports 3 and 4 have been renamed to COM ports 5 and 6. For example, when a PCI card is inserted, the two new ports – COM 5 and COM 6 – can be made available. View available ports in eLux NG starter > Setup > Hardware > "COM port settings."
- **Handhelds** The palmOne<sup>™</sup> Tungsten<sup>™</sup> 5 handheld is now supported.

- Network card The network speed can now be set to "1 Gbit" in eLux NG starter > Setup
   Hardware. This applies only to the gigabit Ethernet network card Broadcom Tigon 3 (BCM570x). All other card parameters are automatically configured.
- **PC/SC lite** The PC/SC lite software has been removed from the base OS and is now available as a stand-alone upper-level package.
- **Program** Neighborhood **Agent** PNA sessions can no longer be disconnected using the eLux NG starter.
- **XDMCP** Applications that are e-sound compatible can now be played in an XDMCP session.

# 1.6.10 New Features in eLux NG 1.20

- Thunderbird Mail Client V1.0.6
- Sun Java<sup>™</sup> 2 Runtime Environment V 1.5 supports Java Web Start as a local application.
- Cisco Aironet Utility has been extended by "leapscript" and "leapset" for LEAP authentication.

# 1.6.11 New Features in eLux NG 1.21

• SSID and Channel can be configured in the WAVELAN settings

# 1.6.12 New Features in eLux NG 1.22

- Printer can be verified by sending a test page (Text formatted or Postscript)
- PDA Qtek S100 support
- Graphic card Radeon 9100 PRO IGP supported
- DHCP lease is now stored permanently
- Improved detection of Intel network adapters
- Fibre optic adapter DLINK DFE 550 FX supported
- Fibre optic adapter AT2701 FTX supported
- Card reader Omnikey CardMan 2020 and Omnikey CardMan 6020 supported
- 'Shutdown' button is available in userauth and smartcard dialogs

# 1.6.13 New Features in eLux NG 1.23

- Starter/Desktop: New button to sync time/date with time server
- Starter/Security: New dialog for advanced manager settings to enter info properties
- Starter/Security: New button to select a group from the list of available groups
- Starter/Security: New button to delete the manager and set the client unmanaged (factory reset will be performed)
- If the DHCP server is unreachable on boot, IP network connections are not available. If DHCP connection was established and DHCP server fails, the client will loose its IP address when half the lease time has elapsed.

# 1.6.14 New Features in eLux NG 1.25

- Futro D100 now supports screen resolution 1280x1024/85Hz/24bbp
- Graphic adapter Intel 945G supported
- Taskbar: new button to show desktop (minimize/restore all windows)
- Starter/General: Serial number is now listed
- Starter/Multimedia: New slide to change microphone volume

eLux<sup>®</sup> NG

- Starter/Multimedia: Volume slides are now vertical
- WLAN WPA mode supported, TKIP or Radius EAP (certificate based)
- WLAN client adapter Intel PRO/Wireless 2200BG supported
- Kernel V2.4.32
- AES encryption between eLux NG clients and Scout NG V8.5.0
- The screen saver is now locked by the actual user password and no longer by userdefined password (requires a configured user authorisation).
- Starter/Diagnosis: IP availability can be verified with Ping
- Print performance enhanced when printing to parallel port

### 1.6.15 eLux NG Software Packages

#### Terminalserver:

- ICA Client (Citrix), V 9.2
- NX Client (NoMachine), V 1.5.0
- RDP Client (Linux), V 5.2
- Tarantella Client (Linux), V 3.42.917
- ThinLinc, V 1.20

#### Host Connectivity:

- SAPGUI Client (Java), V 6.30rev.8
- eterm 97801 Terminal emulation , V 2.2.2
- X97 9750 Emulation
- PowerTerm, V 7.1
- HOB Link Jterm, V 3.3
- X11 Terminal with XDM support

#### Hardware Support:

- PCL Printer Support
- Cisco Aironet Utility
- WLAN USB
- WLAN DLINK
- USB Compaq IPAQ Driver, Pocket Loox
- USB Handspring Visor, Palm Driver
- Cherry KVK Reader
- KV Card
- PCSC Lite
- Touchscreen Elographics Input Driver, V 2.0-1
- G-Touch, Touchscreen Driver



#### **Printing:**

- ThinPrint, V 1.6.65.2
- CUPS Print Client, V 2.0-10

#### Browser:

- Firefox , V 1.5.0.1
- Mozilla, V 1.7.5
- Opera, V 8.0

#### Mail Client:

• Thunderbird Mail Client, V 1.5

#### Desktop:

- Desktop themes
- Desktop tools (CD Player, Calculator, File Manager, Editor)
- XScreensaver

#### **Document Viewer:**

• Adobe Acrobat Reader, V 5.09; V 7.0.5

#### Multimedia:

- Macromedia<sup>®</sup> Shockwave<sup>®</sup> Player, V 7.0r25
- Movie Player (DVD, MPEG, DivX, etc.), V 1.0.7.1
- RealPlayer<sup>®</sup>, V 10.0.0-3

#### Middleware:

- IBM Java: Sun
- Sun Java Runtime Environment, V 1.5.0.4
- Sun Java Web Start

#### **Network Management:**

• net-SNMP, V 4.2.1

#### **Network Security:**

- Secure Shell (SSH)
- Cisco Systems VPN Client
- Nortel Contivity VPN Client, V 3.1.1
- F-Secure Client

#### Security:

• User authorization with LDAP, ADS, SMB, V 2.5-4

#### Helpdesk:

• VNC Server; VNC Client

#### Additional Software (ThirdParty):

Accelerated-X<sup>™</sup> Display Server, V 2.2.21.3

A list of all currently available software and version numbers is available at <u>www.myelux.com</u>. Some software is included in the eLux NG license, other is third-party software that must be purchased separately. For more information, see your vendor.



# 2 Quick Start

This chapter provides the basic steps necessary to configure the Thin Client for use as a Windows-based terminal and open a session via ICA. It does not describe all eLux NG features. For detailed descriptions on eLux NG settings and configurations, see chapters 3 and 4.

Section		Description	
2.1	First Boot	Flow chart and description of the first boot procedure	
2.2	First Configuration Wizard	Step-by-step, detailed instructions of the Wizard that appears the first time the device is turned	
2.3	Troubleshooting	Error messages and answers to common problems upon boot	
2.4	eLux NG Interface	eLux NG main screens	
2.5	User Settings	How to configure user settings	
2.6	Defining an Application	How to define your first application	
2.7	Sessions	How to start and close applications	
2.8	Shut Down	How to switch off/restart the Thin Client, log off the user, or activate the screen lock	



# 2.1 First Boot

Unpack the device, attach the cables and turn it on.

We highly recommend using the Scout NG software to centrally manage your eLux NG clients.

The Thin Client is delivered containing eLux NG software and a default image on the flash memory. This figure shows the boot procedure the first time on the Thin Client is switched on.



Figure 1: Boot procedure for the first boot



#### **First Boot Procedure:**

This is the boot procedure for a Thin Client *with default settings* (upon delivery, after a factory reset, or after a Recovery Installation):

- 1. Scan BIOS
- 2. Check if a LAN (Ethernet) connection is available
  - If none is found, an error message is displayed, eLux NG is booted, and the First Configuration Wizard appears, allowing the user to set initial user settings. Go to step 6.
- 3. Make a DHCP server request
  - If a DHCP server is not found, an error message is displayed, eLux NG is booted, and the user is asked to enter the network information manually. Go to step 6.
- 4. Boot eLux NG
- 5. The device is automatically entered in Scout NG and configured. Requirement: The hostname "ScoutSrv" has been set to the Scout NG Server IP address on the DNS server.
  - If the hostname "ScoutSrv" cannot be resolved, this step is skipped.
- 6. First Contact: A Wizard appears, helping the user through the initial configuration.

This procedure does not apply to subsequent boots.

# 2.2 First Configuration Wizard

By default, the first time the Thin Client successfully boots, a Wizard appears to help you through the configuration process.

You have the choice between entering the device in the management software Scout NG or configuring it by hand.

If a DHCP server was contacted, the IP address is displayed at the top. Otherwise, a default value is displayed.

# 2.2.1 Managed Device

### Step 1: Activating Manager

The Scout NG server that manages the Thin Clients is referred to as the "manager."

If the device is to be managed and the IP address of the Scout NG server is known, select **Yes**.

If the Thin Client will not be managed, you can still configure the device manually. Select **No** and go to section "2.2.2 Manually Configured Device".



Figure 2: First contact: Activating manager

# Step 2: Manager Address

Enter the IP address or name of the Scout NG manager.

Entering information in the Information fields is optional.

Click Next.

I I I		
+•	Please enter the	IP name or IP address of the Scout manager
	217.160.115.67	
	Terminal name	Herman
	Info1	Ms. Smith
	Info2	Room 237
	Info3	Ext10
	When you click I and retrieve the	<b>Vext</b> , eLux NG attempts to contact the manager list of available manager groups.

Figure 3: First contact: Entering manager IP address



### Step 3: Manager Groups

Next, you are asked to select the destination Group of the device on the Scout NG server. Default is Lost&Found (ID=0).



Figure 4: First contact: Manager groups

### Step 4: Summary

Finally, you are given a summary of the entered information.

When you click **Next**, the device is registered in the Scout NG Server, entered in the destination Group, and restarted. Upon boot, it contacts Scout NG and downloads its configuration and application definitions. In addition, you can configure Scout NG to automatically update the software.

If a profile for this device already exists in Scout NG, the device will not change Groups. Rather, its status in Scout NG will be updated and it will receive the configuration of the existing profile.



Figure 5: First contact: Summary

For more information on the management software Scout NG, see the *Scout NG Administrator's Guide*.



# 2.2.2 Manually Configured Device

### Step 1: Deactivating Manager

The Scout NG server that manages the Thin Clients is referred to as the "manager."

If the device is to be managed and the IP address of the Scout NG server is known, select **Yes** and go to section "2.2.1 Managed Device".

If the Thin Client will not be managed, select **No** to configure the device manually.



Figure 6: First contact: Activating manager

# Step 2: Mouse / Keyboard

Select your **desktop language**. The eLux NG screen elements themselves can only be displayed in English or German. However, your country's language must be set for applications to work correctly.

Select your **keyboard language** from the country-specific list.

Select the mouse type.



Figure 7: First contact: Mouse / Keyboard configuration



#### Step 3: Summary

Finally, you are given a summary of the entered information.

When you click **Next**, the configuration is updated and the desktop may be restarted.



Figure 8: First contact: Summary

The Wizard assists you in setting minimum user settings. User settings are described in detail in chapter "3 Setup."

# 2.3 Troubleshooting

- Problem: An error message appears at boot saying the network interface "etho0" has been disconnected.
- Solution: There is no LAN connection. Check for loose cable connections. Check that the cable is patched and the port is active.
- Problem: An error message appears at boot saying the DHCP client does not have IP address information.
- Solution: When a DHCP time-out occurs the first time the Thin Client boots, eLux NG network settings are set to "manual" and you are prompted to enter network settings by hand. A Wizard appears to guide you through the process. Please be aware that the next time the Thin Client boots, it will not automatically search for a DHCP server. To set network settings to DHCP, in the eLux NG starter go to **Setup** > **Network**.



# 2.4 eLux NG Interface

After completing the first configuration Wizard, the eLux NG interface appears. The main window is referred to in this documentation as the "eLux NG starter". Screen elements can only be displayed in German. For all other desktop languages, the screen elements appear in the default language, English (US). However, the desktop language setting is required for local applications to run correctly.

There are three main tabs at the top: Applications, Configuration and Setup.

Name 🔻	Туре	Active	

Figure 9: Initial eLux NG screen

- (1) **Applications tab** Displays a list of configured applications, allowing you to connect/disconnect a session.
- (2) Configuration tab For configuring applications.
- (3) **Setup tab** For configuring eLux NG settings.

Initially, the **Applications** and **Configuration** tabs are empty, and the **Setup** tab contains a default configuration.

The eLux NG starter is mouse based. However, it is possible to navigate the eLux NG starter using the keyboard by pressing ALT + *<underlined letter*>. For example, press ALT + T to jump to the **Setup** tab.



Clicking the **Setup** tab displays the following:

🙀 eLux NG [Herman, 217.160.115.100]		
Applications Configuration Se	tup	
<u>G</u> eneral <u>N</u> etwork Des <u>k</u> top	<u>S</u> creen Mouse/Key <u>l</u>	ooard <u>F</u> irmware
eLux NG V1.2-2	MAC 003005057 Host ID 7756-8056 License Update eLux OS V1.2-2 Device SCENIC xS/9 CPU 600 MHz RAM 96 MR	6B3 -1327 × NG (5Y3655W945X) SCOVERY ×S
(c) 2004 UniCon Software Gmb Installed image: UC_INTEL_P3:	H Karlsruhe recoverymedium.idf	\$
Realplayer 8 Plugin, V8.0–6 Realplayer 8 Plugin, V8.0–6		<b>*</b>
<u>Apply</u> <u>Reset</u>		

Figure 10: Setup

The subtabs General, Network, Desktop, Screen, Mouse / Keyboard, Firmware are displayed. Click the ► symbol to display the subtabs Security, Multimedia, Drives, Printer, Hardware, VPN, Diagnostics.

# 2.5 User Settings

The **Setup** tab is used to configure desktop settings. It is not necessary to modify all settings in order to get the Thin Client ready for use. This chapter describes the minimum settings required to get eLux NG running.

# 2.5.1 Making changes

Modifying the settings activates the **Apply** and **Reset** buttons.

- Click Reset to discard changes.
- Click Apply to accept changes.

Some changes require the graphical user interface (GUI) or the terminal to be restarted. In this case, after clicking **Apply** the message: "The changes require a new start of the user interface. Continue?" appears.

- Click Yes to restart immediately.
- Click No to restart at a later time.

In Quick Start, we configure the minimum settings user settings. These include the subtabs **Desktop, Mouse / Keyboard, Screen** and **Network, Hardware** in the **Setup** tab. You already configured some settings in the First Configuration Wizard.

- Desktop language Subtab Desktop (see section "3.3 Desktop")
- Keyboard language, mouse type Subtab Mouse / Keyboard (see section "3.5 Mouse / Keyboard")

eLux<sup>®</sup> NG

In addition, you should configure the following:

- Screen resolution, color depth
- Network IP information
- Network hardware

#### 2.5.2 Screen

Screen settings are set in the **Screen** subtab. Please adjust settings to your monitor. (default settings: resolution = 1024x768, frequency = 60 Hz, color depth = 16 bit)

Figure 11: Setup > Screen

# ⇒ To modify the screen settings

From the **Setup** tab, click the **Screen** subtab.

- 1. Select your monitor resolution, frequency and color depth.
- 2. Click Apply and Yes in the eLux NG Starter dialog box regarding restart.

<u>G</u> eneral <u>N</u>	etwork Des <u>k</u> top	Screen	Mouse/Key <u>b</u> oard	<u>F</u> irmware
Resolution	1024x768	•	🗖 Power save after	20 mi
Frequency	60 Hz		🕱 Screen saver	
Color depth	High color	E.	Delay	3 mi
			Passworu pro	Settings
				Jottings
				Advanced

Screen subtab is described in detail in section "3.4 Screen."



### 2.5.3 Network

	eLux [eLux0316-8738-2521, 217.160.115.	100] <b>10</b>
	Applications Configuration Setup	
	<u>G</u> eneral <u>N</u> etwork Des <u>k</u> top <u>S</u> creen	Mouse/Key <u>b</u> oard <u>F</u> irmware
Server —	O DHCP (Timeout 20) BOOTP Manually	Advanced
lanual 🦯	IP address 217.160.115.100	Hostname ux0316-8738-2521
	Subnet 255.255.255.128	Domain unicon-ka.de
	Gateway 217.160.115.6 <b>=</b>	DNS 217.160.115.4: -
	Add Delete	Add Delete
	<u>Apply</u> <u>R</u> eset	

Figure 12: Setup > Network

# ⇒ To modify the network settings

From the **Setup** tab, click the **Network** subtab.

- 1. The network settings can be automatically retrieved from a DHCP or BootP server, or they can be is set manually.
- 2. Click **Apply** for modifications to take effect.

Configuring network settings is discussed in detail in section "3.2 Network".

### 2.5.4 Network Hardware

The First Configuration Wizard automatically detects and sets an Ethernet LAN connection. However, if you have ADSL, Token Ring or ISDN, you must enter the hardware settings manually.

😫 eLux NG [Herman, 217.160.115.105]	
Applications Configuration Setup	
ard <u>F</u> irmware S <u>e</u> curity <u>M</u> ultimed	ia Dri <u>v</u> es Pr <u>i</u> nter <u>H</u> ardware
USB mass storage devices 🛛 🗖	Network type ADSL
Smart card	Speed Auto 두
RAM disk	Profile myADSLprofile <b>=</b>
	User 01234567890123456
	F - 114
	Edit
Apply <u>R</u> eset	

Figure 13: Setup > Hardware

### ⇒ To modify the network hardware settings

From the **Setup** tab, click the **Hardware** subtab.

- 1. Select the network type.
- Token Ring Select the speed. Generally Auto (="automatic detection") is sufficient.
- **ADSL, ISDN** Click **Edit** to enter user information (account name, password, dialup number, etc.).
- 2. Click **Apply** for modifications to take effect.

Configuring network hardware settings are discussed in detail in section "3.13 Network Hardware."

Next, we define an application in the **Configuration** tab.



# 2.6 Defining an Application

Let's configure a Windows desktop via an ICA session.

	Name 💌	Туре	Autostart		
		Application definition		<u>s</u>	
		ICA     RDP     Browser     Emulation     Local       Name     Citrix Desktop     Image: Server     Image: Server     Image: Server       Application     Image: Server     Image: Server     Image: Server     Image: Server       Working dir     Image: Server     Image: Server     Image: Server       User     Image: Server     Image: Server       Password     Image: Server     Image: Server	PN-Agent	A d	lame of lefined ipplication Server name or IP address
Define a new	New	Domain	A <u>d</u> vanced Apply <u>F</u> inish		



#### ⇒ To configure a Windows session via ICA

- 1. From the **Configuration** tab, click **New**. This opens the **Application definition** dialog box, which contains a number of subtabs. The subtabs reflect the firmware installed on the Thin Client's flash memory (\*.idf file).
- 2. Click the ICA tab.

**Name**: Enter a name for this application. You can enter any name, however we recommend you make it relevant to the application (that is, "Citrix Desktop" for a remote desktop, etc.).

**Server:** Enter the IP address (or name) of the MetaFrame server (at this point, use an individual server, not a server farm). The **Application** and **Working directory** fields can be left empty for the moment.

**User, Password, Domain:** (optional) Required for automatic logon. For now, can be left blank.

3. Click Apply in the Application Definition dialog box and Finish in the Configuration tab.

When you open the **Application definition** dialog box, the main eLux NG screen is disabled. Close the **Application definition** dialog box to re-enable the main eLux NG screen.

If the **Application definition** dialog box is hidden by another screen, you can use the "task hotkey" CTRL + ALT +  $\psi$  not only to switch between application windows, but also to switch between eLux NG screens. See "Task hotkey" in chapter "3.3 Desktop," page 32.

Configuring applications is discussed in detail in chapter 4.

# 2.7 Sessions

# 2.7.1 Starting an Application

	eLux NG [eLux031	6-8738-2521, 217.	160.115.101]	
	Applications Config	uration Se <u>t</u> up	)	
	Name 👻	Туре	Active	
Highlight		ICA	Yes	
0 0	🛨 Mozilla	Mozilla	No	
	S Word	RDP	No	
	RDP Desktop	RDP	No	
	JSAP−GUI	SAP	No	
	Shell	Local	No	
	🔜 X32	3270	No	
	📃 xv local	Local	No	
and click Connect.	<u>Connect</u>	isconnect	eLux NG	<u>S</u> hutdown

Figure 15: Applications tab

#### ⇒ To start an application

Once you have configured an application, click the **Applications** tab. The applications appear in alphabetical order.

Click on a column title to sort in ascending order. Click a second time to sort in descending order.

To run the Windows application you configured, either:

- highlight the application and click Connect or
- double-click the application or
- click with the left mouse button on the applications button in the taskbar (see Appendix 1: Desktop)

# 2.7.2 Exiting an Application

The **Disconnect** button disconnects a session.

The **Disconnect** button can be used to close a local application (browser, shell, user-defined command, resource information, etc.)

However, a remote session should be closed from within the session itself. For example, for ICA:

- ICA desktop Start menu (Start menu > Shut Down > Log off)
- ICA application Application command (File menu > Exit)
- ICA published application Application command (File menu > Exit)

etc.

If you use the **Disconnect** button to end a remote session, open applications continue to run on the server. This can cause problems for the server administrator.

# 2.8 Shut Down

📫 eLux NG [	eLux0316-8738-2	521, 217.160.115.10	01]	- Land	- ×
Applications	Configuration	Setup			
Name Citrix de Mozilla MS Wor RDP De SAP-Gi Shell X32 xv loca	Ty sktop IC Ma eLux Starter Switch off Logoff Restart Switch off Lock	ype A ozilla	Active No No	The second secon	
Connect	Disconnect	t 🛉 e	Lux NG	<u>S</u> hutdown	

Figure 16: Applications > Shut Down

# ⇒ To shut down the Thin Client

The **Shutdown** button in the **Applications** tab provides three standard and one optional option:

- **Logoff** ends the session for that user. This is useful when more than one person uses the Thin Client.
- **Restart** restarts the Thin Client. This is necessary for certain **Setup** changes to take effect (if you did not restart the Thin Client previously).
- **Switch off** turns off the power to the Thin Client.
- Lock is a security feature. It is part of the Desktop Tools package ("Local X display locker," xlock) and must be installed. By default it is not installed.
   Enter a screen saver password containing numbers or letters. Do not use country-specific letters with accents or symbols. Press Enter. Wait two seconds. The screen locks.
   To return to the monitor, pause the screen saver by pressing a key or moving the mouse and enter the correct password. The lock feature lasts only for the current session. Turning off the Thin Client ends the screen lock.
   The hotkey to initiate the screen lock from any session is CTRL + ALT + END.

**Note** The screen lock password is an arbitrary password for one use only. It is not the same as your the Thin Client password. The screen lock password is not saved, that is, you must re-enter a screen saver password every time you use the Lock feature. The exception is if when an

authentication server is activated. In this case, the screen lock is preset with the password.

# Conclusion

Chapter 2 showed how to get your Thin Client up and running quickly as a Windows-based terminal. This is only the beginning of what eLux NG offers. For complete descriptions of eLux NG settings and step-by-step directions on how to configure other types of applications, see chapters 3 and 4.



# 3 Setup

This chapter describes how to configure eLux NG desktop settings.

Sect	ion	Description
3.1	General	Viewing Thin Client hardware information, eLux NG license, MAC address, installed image name, version of eLux NG starter and firmware versions
3.2	Network	Setting network IP information via BootP server, DHCP server or manually
3.3	Desktop	Desktop language settings, background color, key combination for switching between open sessions, date and time settings, taskbar and workspace settings
3.4	Screen	Screen settings, screen saver, energy save mode, font server, backing store
3.5	Mouse / Keyboard	Mouse and keyboard settings, deactivating dead keys
3.6	Firmware	Server parameters for a firmware update via FTP or HTTP server, configuring for update from a USB stick or CD-ROM
3.7	Security	Description of and how to set the Thin Client password, how to set user rights, the authorization hotkey for overriding locked settings, how to connect to an authorization server, usage possibilities for user variables
3.8	Multimedia (Volume)	Volume settings
3.9	Drives	Configuring an SMB drive
3.10	Browser Home Directory	Setting the home directory for a local browser to an NFS or Samba network drive
3.11	Printer	Configuring local printers, configuring network printers, activating TCP direct print, using Thin Client as a print server, Citrix ICA autocreated printer
3.12	Hardware	Activating the USB port, setting the number of monitors, increasing RAM disk size
3.13	Network Hardware	Configuring the Thin Client for Ethernet, ADSL, ISDN, modem, Token Ring, wireless LAN
3.14	Remote Management	Entering Scout NG manager settings
3.15	Smart Card	Using smart cards as an eLux NG security feature and for user roaming, or for automatic Windows logon. How to deactivate the card reader when not in use.
3.16	Mirroring	Description of and how to configure device to allow (or prohibit) remote mirroring from an administrator machine
3.17	VPN	The different virtual private networks eLux NG supports
3.18	Diagnostics	How to view log files or send them to an FTP server



### 3.1 General

### ⇒ To view eLux NG license and installed software

From the Setup tab, click the General subtab.

🍄 eLux NG [Herman, 192.168.10.2]	
Applications Configuration S	etup
<u>G</u> eneral <u>N</u> etwork Des <u>k</u> top	Screen Mouse/Keyboard <u>F</u> irmware
	MAC 0030050576B3 💽
	Host ID 7756-8056-1327
	🔎 License Update eLux NG (5Y3655W94 📑
	OS V1.8-4
	Device SCENIC xS/SCOVERY xS
oLuv NC V1 9-4	CPU 600 MHz
ELUX NG 41.0 4	
(c) 2004 UniCon Software Gm Installed image: UC_INTEL_P3	bH Karlsruhe
BaseOS NG, V1.8–4	
Core installer, V1.5–1	
Linux base system, V2.3–1	
Apply Reset	

Figure 17: Setup > General

In the **General** tab you can find the thin client's MAC address, license number, host ID and related hardware information. If you double-click on "License," the license dialog box appears for manual entry of a new license.

Go to the scroll box to find the name of the installed image, as well as a list of the software packages installed on the Thin Client's flash card (including version numbers).

The Apply and Reset buttons are not active, as there are no changes that can be made.

In all other **Setup** subtabs the **Apply** and **Reset** buttons are context sensitive. After making changes to settings, click **Apply** and confirm the request to restart to save the new values. To discard changes that have not yet been applied, click **Reset**.



### 3.2 Network

Before you can begin working, you need to assign an IP address to your client. here are three ways to set network settings: DHCP server, BootP server or manually.

	📫 eLux [eLux0316-8738-2521, 217.160.115.100]		
	Applications Configuration Setup		
	<u>General Network Desktop Screen Mouse/Keyboard Firmware</u>		
DHCP - BOOTP -	ODHCP (Timeout 20) BOOTP Manually		
	IP address 217.160.115.100 Hostname ux0316-8738-2521		
Manualanta	Subnet 255.255.128 Domain unicon-ka.de		
Manual entry -	Gateway 217.160.115.6 T DNS 217.160.115.4: T		
	Add Delete Add Delete		
	Apply Reset		

Figure 18: Setup > Network

# 3.2.1 Dynamic Host Configuration Protocol

A Dynamic Host Configuration Protocol (DHCP) server assigns the client a dynamic IP address. This means that the IP address assigned to the Thin Client changes periodically (the interval is set on the DHCP server). DHCP also supports a mix of static and dynamic IP addresses. DHCP simplifies network administration because the server and not an administrator assigns IP addresses – when a new Thin Client is added to the network, it automatically receives an IP address and network settings. Due to its flexibility, most networks use DHCP.

- 1. From the **Setup** tab, click the **Network** subtab.
- 2. Select DCHP. You can also set a time-out in seconds. The default is 20 seconds.
- 3. (optional) Enter a local hostname. It will be transferred to the server upon boot if server settings permit (a hostname may not already be defined on the server).
- 4. Click Apply and Yes in the eLux NG Starter dialog box regarding restart.

If a server is not found within the defined time, it uses the settings saved from the previous session.

# 3.2.2 Bootstrap Protocol

A Bootstrap Protocol (BootP) server assigns the client a static IP address. This means that the IP address assigned to the Thin Client is fixed. A BootP server is more work for the administrator, because the administrator must configure the server when a new Thin Client is added to the network.

- 1. From the **Setup** tab, click the **Network** subtab.
- 2. Select **BOOTP**. The BootP standard time-out is a fixed 10 seconds.
- 3. (optional) Enter a local hostname. It will be transferred to the server upon boot if server settings permit (a hostname may not already be defined on the server).
- 4. Click Apply and Yes in the eLux NG Starter dialog box regarding restart.

If a server is not found within the defined time, it uses the settings saved from the previous session.

## 3.2.3 Manual Entry

If you do not have one of the above servers, you can enter the IP address and network information directly on the terminal.

- 1. From the **Setup** tab, click the **Network** subtab.
- 2. Click Manually.
- 3. Enter the IP address, subnet mask, host name and domain.
- 4. To enter a gateway (router) address, click the Add button below Gateway.
- Enter the IP address in the dialog box. Click **OK**.
- Repeat until you have entered all gateway addresses.
- To delete a gateway entry, select it from the **Gateway** list and click **Delete**. Click **Yes** in the **eLux NG Starter** dialog box.
- To change the order, you must delete and re-enter the IP addresses.
- 5. To enter the IP address of a domain name server, click the Add button below DNS.
- Enter the IP address in the dialog box. Click **OK**.
- Repeat until you have entered all DNS addresses.
- To delete a DNS entry, select it from the **DNS** list and click **Delete**. Click **Yes** in the **eLux NG Starter** dialog box.
- To change the order, you must delete and re-enter the IP addresses.
- 6. Click Apply and Yes in the eLux NG Starter dialog box regarding restart.

To avoid network conflicts, verify that the IP address you enter is not in use by another machine or assigned a DHCP pool.

Those are the three ways to enter the IP address and network information on a Thin Client. The following two sections describe advanced features, such as how to set the client hostname on the DHCP server using the terminal or how to set a local hosts list.

## 3.2.4 Setting the Host Name via DHCP

With a DHCP request it is possible to transfer the local host name to the DHCP. The host name will then be visible at the DHCP server.

- 1. Click Manually.
- 2. Enter the host name of the Thin Client in the field **Hostname** and click **Apply**. The remaining fields should stay empty they are automatically set by the DHCP server.
- 3. Click No in the eLux NG Starter dialog asking for restart.
- 4. Click **DHPC**.
- 5. Click Apply.
- 6. Click **Yes** in the **eLux NG-Starter** message box asking for restart.

Delete	- Host name
	Host IP add
DK Cancel	
	<u>A</u> dd <u>Delete</u>

## 3.2.5 Setting a Hosts List When No Name Server Is Present



eLux NG allows you to store a hosts list locally. This allows you to use host names even if your network does not contain a domain name server (DNS). The hostnames and IP addresses must be entered manually.

- 1. Click Network tab > Advanced. The Network advanced dialog box appears.
- 2. Enter the host name and its IP address in the appropriate boxes. Click **Add**. To delete an entry, select it and click **Delete**.
- 3. Click **OK** and then **Apply** in the **Network** tab.



## 3.3 Desktop

Desktop settings can be individually tailored to your country's language and time zone.

e e	Lux NG [dhcp107_2, 217.160.115.107]	
A	plications Configuration Setup	
1 I	Network Desktop Screen Mous	se/Key <u>b</u> oard <u>F</u> irmware S <u>e</u> curity
	Desktop	Date & Time
	Language English (US) 🔻	01/25/2006 \$ 16:09:52 \$
	Background Background color	Adjust
	Task hotkey <alt-ctrl>-<dov td="" 🐺<=""><td>Time zone</td></dov></alt-ctrl>	Time zone
		Berlin GMT+1
		Time server
		unix
	<u>Ad</u> vanced	Windows     Synchronize     Unix
l	<u>Apply</u> <u>R</u> eset	

Figure 20: Setup > Desktop

#### ⇒ To modify the desktop settings

From the Setup tab, click the Desktop subtab.

- 1. Select your desktop language from the Language list.
  - The default language of eLux NG screen elements (tabs, lists, etc.) is English.
  - The eLux NG screen elements themselves can only be displayed in English or German. However, your country's language must be set for local applications to work correctly.
- 2. Click **Background color** to set the eLux NG desktop background color.
- 3. Although eLux NG is mouse-based, several keyboard commands are important. The Task hotkey drop-down list allows you to choose the key combination to switch between current open sessions, or "tasks." You can use this not only to switch between applications, such as between an XTerm and an ICA application, but also between eLux NG screens, such as the main eLux NG screen and a dialog box. Default is CTRL + ALT + <cursor>.

CTRL + ALT +  $\psi$ : Left selection in the Applications bar

CTRL + ALT + ↑: Right selection in the Applications bar

4. Click Apply and then Yes in the eLux NG Starter dialog box.

#### ⇒ To set the date and time

From the **Setup** tab, click the **Desktop** subtab.

- 1. Select your time zone from the Time zone list.
  - eLux NG adjusts for daylight savings time automatically.
- 2. There are two ways to set the time:
  - Manually: Enter the date and time and click Adjust to update the settings.
  - Automatically: (recommended) Enter a time server. Settings are retrieved when the Thin Client boots. For technical requirements, see the section "3.3.1 Time Server" below.
- 3. Click Apply and then Yes in the eLux NG Starter dialog box.



#### 3.3.1 Time Server

In addition to time zone, the time must be set on the Thin Client for proper use. This can, of course, be done by filling in the date and time fields as described above. However, due to its better accuracy we recommend using a time server.

You have the option of entering a time server running on either a UNIX or Windows machine.

Synchronizing the time with the time server may now be done online by clicking the button "Synchronize" in the Desktop tab. Up to V1.23 the time leveling was performed by a restart, only.

Note Please read the entire section for a complete overview of all possibilities!

#### Windows

Enter the IP address or name of a computer running Windows 2000 (or later).

If you select this option, the time server must conform to Simple Network Time Protocol as described in RFC 1305. The Windows Time Service (W32Time), which is installed by default on computers running Windows 2000 or later, is SNTPv4 compliant.

The W32Time service starts automatically on computers that are joined to an Active Directory domain. For computers that are not joined to a domain, you must start the time service manually.

The Windows NT time service does not support SNTP. To use NT, you must install third-party software. See the following section "Unix" for more information.

For more information on SNTP, see the Knowledge Base article 224799 ("Basic Operation of the Windows Time Service"), 216734 ("How to Configure an Authoritative Time Server in Windows 2000") or the white paper "Windows Time Service" (http://www.microsoft.com/windows2000/docs/wintimeserv.doc).

The forerunner of SNTP is Network Time Protocol as described in RFC 1305. The two protocols are interchangeable. Thus, you can alternatively enter an NTP-compliant machine. Many UNIX servers have xntpd, which is NTP compliant. The service must be started.

For more information on NTP, see <u>www.ntp.org</u>.

This service operates on port 123 with the UDP protocol.

#### Unix

Enter the IP address or name of a UNIX machine running a RFC 868 time service.

If you select this option, the time server must conform to Internet standard RFC 868 ("Time protocol"). This type of time service is a standard component on UNIX machines as an internal service of inetd. It can be activated in the file /etc/inetd.conf.

There are several products on the market that allow you to install a time server conform to RFC 868 on a Windows machine, for example, the free time server for Windows NT from Roberson Computer Consulting, Inc., available at <u>www.rccinc.com</u>.

The service operates on port 37 with the TCP and UDP protocols.

For more information on RFC 868, see <u>www.faqs.org</u>.

**Note** It is also possible to set the system time directly in the Thin Client's BIOS Setup. Due to inconvenience, this is not recommended. However, the procedure is described in the appendix.

New



### 3.3.2 Desktop Themes

Users of eLux 1.1 will be delighted to learn that eLux NG offers a new desktop with a whole new range of features.

To use this feature, you must have the "Desktop themes" (themes) package installed.

You can change the appearance of the taskbar, dialog boxes and menus. In the **Desktop** tab click **Advanced**. Choose from the predefined colors and fonts in the drop-down list **Theme**.

## 3.3.3 Taskbar

Users of eLux 1.1 will be delighted to learn that eLux NG offers a new taskbar with a whole new range of features.

In the **Desktop** tab click **Advanced**. Here you can set the taskbar options ("Always on top", "Hide automatically") or blend out the taskbar by deselecting the **Taskbar** check box. In addition, you can choose to blend out the clock.

## 3.3.4 Background Image

Users of eLux 1.1 will be delighted to learn that eLux NG offers a variety of ways to customize the desktop, including installing a background image.

The background image must match the resolution setting of the monitor. Supported formats include: JPEG, PNG or GIF. eLux NG does not support wallpaper or tiled images. There must be enough space on the Thin Client (saved to /setup on the flash card).

The background image is transferred using the management tool Scout NG. For more information, please see the *Scout NG Administrator's Guide*.

#### 3.3.5 Starter

Users of eLux 1.1 will be delighted to learn that eLux NG offers a new starter with a whole new range of features.

By default, the starter runs automatically when the devices starts. To deactivate this feature, in the **Desktop** tab click **Advanced**. Deselect the **Starter** check box. You can run the starter from the eLux desktop at any time by clicking the Run starter button in the taskbar or using the hotkey CTRL-<Win key>.

#### 3.3.6 Workspaces

Users of eLux 1.1 will be delighted to learn that workspaces have been integrated into eLux NG.

In the **Desktop** tab click **Advanced**. Select the desired number of workspaces from the **Number** list. Default is one.

The new functionality of the "eLux NG desktop" – taskbar, starter and workspaces – is discussed in detail in Appendix 1: Desktop.

## 3.4 Screen

eLux NG [eLux7	7111-8408-4021, 217.160.115 Configuration Setup	.116]	
<u>G</u> eneral <u>N</u>	etwork Des <u>k</u> top <u>S</u> cree	en Mouse/Key <u>b</u> oard	<u>F</u> irmware
Resolution Frequency Color depth	1024x768 60 Hz High color	<ul> <li>Power save after</li> <li>Screen saver</li> <li>Delay</li> <li>Password pro</li> </ul>	20 min. 3 min. otected Settings
			<u>Advanced</u>
APPIV	<u>Reset</u>		

Figure 21: Setup > Screen

## ⇒ To modify the screen settings

From the **Setup** tab, click the **Screen** subtab.

- 1. Select your monitor resolution, frequency and color depth.
- 2. (optional) Power save is an energy saving feature that shuts the monitor off after a specified idle time. Moving the mouse or pressing a keyboard character activates the monitor again. Enter a screen shutdown time (in minutes) in **Power save after**.
- 3. (optional) Enter a delay time for the **screen saver**. You can restart the monitor by pressing a key or moving the mouse. Provided that the eLux software packages "userauth" and "xscreen" have been installed and the authentication server is active (see 3.7.4 User Authorization) you can define in the screen setup whether the screen saver is to be locked. To unlock the screen saver you have to enter your logon password.
- 4. Click Apply and Yes in the eLux NG Starter dialog box regarding restart.

The higher the resolution and color settings, the greater the amount of main memory that is used. The number of applications that can be used simultaneously is limited by system resources. See Appendix 2: Memory Usage.

Screen advance		
Font server		
tcp/solaris:7100	<u>N</u> ew <u>E</u> dit	
Prepend user for	Delete	Backing store is not supported by all hardware platforms.
🔲 Backingstore		
ОК	Cancel	

## ⇒ To modify advanced screen settings

From the **Setup > Screen** subtab, click **Advanced**.

- Backing store: Saves screen information to the local X11 server on the thin client. When this
  option is active, a copy of the application window is stored in an off-screen pixel buffer. When
  hidden sections of overlapping application windows are redrawn, the sections are copied from
  this buffer rather than fetched from the server. This increases the screen refresh speed when
  the network connection is slow (especially noticeable by ISDN); however, the main memory
  requirements are large (128 MB or higher).
- Font server: If your network has an X11 font server, you can use it to access fonts. The font server will be available in both the eLux NG desktop and XDMCP sessions. Click New in the Screen advanced dialog box.

📫 Font server	📫 Font server
Type Fontserver:Port solaris:7100	Type Fontserver:Port
O Font path	Font path /smb/g/fonts
OK Cancel	OK Cancel



• Either click **Font server:Port** and enter the IP address (or name) of the font server and the port number, separated by a colon.

Example:

or

office:7100

• Click **Font path** and enter the font path. (Font paths are usually accessed via Samba or Network File System (NFS) drives. Ask your administrator for the correct path.)

Example:

/smb/g/fonts

- 3. Click **OK** in the **Font server** dialog box. If the information you entered is valid, the dialog box closes. If it is invalid, an error message appears. Correct the information and click **OK**.
- 4. By default, local fonts have precedence. Select **Prepend user font path** to give the font server/path you just entered precedence.

## 3.4.1 Safe Boot

Default screen settings are set to values all monitors support. If after configuring the Thin Client you have massive screen distortion, resolution, frequency and color depth are most likely set to values your monitor does not support. In this case, switch off your monitor to avoid damage. Start the Thin Client in Safe Boot mode. Safe Boot allows you start the terminal in a mode which does not damage hardware. You can then correct screen settings.

See section 5.2 Safe Boot.

# 3.5 Mouse / Keyboard

neral <u>N</u> etwork Des <u>l</u>	<u>k</u> top <u>S</u> creen	Mouse/Key	board <u>F</u> irm	ware
1ouse		_ Keyboard —		
Type Wheel		Language	English (UK	) ∥₹
		Туре	MEII	
Double click speed		Delay		
Slow	Fast	Short		Long
Acceleration		Speed		
Land the second				
Slow	Fast	Slow		Fast
				dvanced

Figure 23: Setup > Mouse / Keyboard

# ➡ To modify standard mouse / keyboard settings

From the Setup tab, click the Mouse / Keyboard subtab.

- 1. Here you can set the mouse settings.
  - Type Click to select your mouse type from the drop-down list.
  - Auto Automatically detect the mouse type. Default setting.
  - 2 button Two-button mouse
  - 3 button Three-button mouse
  - Wheel To enable the wheel function of a mouse
  - No mouse Deactivates the mouse functionality. The mouse pointer is fixed in the lower right-hand corner of the screen. To reactivate mouse functionality you must go into the Mouse / Keyboard tab using the keyboard and change this setting: ALT+<underlined letter> allows you to jump from tab to tab, TAB key allows you to move within a tab, and UP/DOWN arrow keys allow you to select the mouse type from the drop-down list.
  - Double **click speed** Move the slider to the right to shorten the interval between mouse double-clicks.
  - Acceleration Move the slider to the right to increase the mouse drag speed.



- 2. Here you can set the keyboard settings.
  - Language Click to select your keyboard language from the drop-down list.
  - The default is English (US).
  - **Delay** The initial delay before a symbol appears when a key is pressed and held.
  - **Speed** The repeat speed when a key is pressed and held.
- 3. Click Apply in Mouse / Keyboard subtab and Yes in the eLux NG Starter dialog box.

Keyboard types are automatically recognized when they are plugged in. No further configuration is necessary. For a list of supported keyboards, see "Appendix 6: Supported Hardware."

When configuring a Microsoft application via ICA, if you wish to use the Windows default option which moves the mouse pointer to the default button in a dialog box, you must set the mouse type to two button or three button (the wheel function will not be supported). This setting is not required for Microsoft Remote Desktop Protocol (RDP).

## 3.5.1 Advanced Mouse and Keyboard Settings

📫 Mouse Advan 🏪 🗖 🗵
🗷 3-button mouse emulation
🗖 Left-handed
🗷 Dead keys
🗷 Numlock
🗷 Console switch enabled
OK Cancel

From the **Setup > Mouse / Keyboard** subtab, click **Advanced**. Here you can configure the following advanced settings:

• 3-button mouse emulation

In general, eLux NG is used with a three button mouse. However, it is possible to achieve the same functionality with a two button mouse. In this case, the third button is simulated by clicking the left and right mouse buttons at the same time. Select to activate this feature. By default it is not active.

• Left-handed

Select to switch the mouse buttons. By default it is not active.

Dead keys

"Dead keys" make it possible to entered accented combination characters. A dead key combination means that you press two keys one after the other (press the first key and release it, then press the second key and release it) in order to form a single character. In general, you press a key for the accent you want (nothing happens), then a key for the letter to apply to accent to (the accented combination character appears).

For example, pressing "`" on the U.S. international keyboard produces nothing, but subsequently typing "e" produces "è". Other keyboard layouts may produce accented characters in other ways (on the French keyboard there is a key that produces "è" directly).

By default, dead keys are active. If you use an application that is incompatible with dead keys, click to deselect.

Note: Some hardware platforms do not offer this option. In this case, it is not possible to deactivate dead keys.

Numlock

Select to activate the NUM key when the Thin Client boots. By default, it is active.

• Console switch enabled

Allows the user to switch between consoles ("virtual screens") on the Thin Client using the hotkeys. By default, it is active. For information on consoles, see "3.5.2 Consoles."

Click OK in the Mouse Advanced dialog box.

## 3.5.2 Consoles

eLux NG provides access to virtual consoles, which allow you to have more than one logon session at a time:

Console 1: eLux NG desktop

This is the console you see when you boot the terminal. Here is where the user runs terminal server sessions, SAP sessions, local browser sessions, configures the eLux NG starter, etc. You can have multiple windows and multiple workspaces open. This is the default console.

Console 2: First XDMCP session

The first XDMCP session, if one is running.

Console 3: Second XDMCP session

The second XDMCP session, if one is running.

• Console 4: Message console

A text console that displays kernel messages and scripts. Useful for troubleshooting.

Up to two XDM sessions at a time are possible. By default, an XDMCP session runs in a separate console. However, you can configure XDMCP sessions to run as a normal window in console 1. For information on configuring XDMCP sessions, see "4.7.5 XDMCP."

To switch consoles, press the appropriate hotkey. A list is provided in Figure 24. These hotkeys can be deactivated, restricting the user to the eLux NG desktop (console 1). See "3.5 Mouse / Keyboard."

No.	Console	Hotkey
1	eLux NG desktop	CTRL + ALT + F1
2	First XDMCP session	CTRL + ALT + F2
3	Second XDMCP session	CTRL + ALT + F3
4	Message console	CTRL + ALT + F4

Figure 24: Hotkeys for switching consoles

# 3.6 Firmware

To update terminal firmware, you need a new image definition file (IDF) (the name of the file may be the same). The new IDF is created using the software "ELIAS NG." For information on how to create an IDF, see the *ELIAS NG Administrator's Guide* or the *Scout NG Administrator's Guide*.

This new IDF may reside on an FTP/HTTP server, CD-ROM or USB stick. The image file **must** reside in the same directory as the software packages (that is, in the container)!

eLux NG [Herman, 217.160.115.100]	
Applications Configuration Setup	
<u>N</u> etwork Des <u>k</u> top <u>S</u> creen Mouse/Key <u>b</u> oard <u>F</u> irmwa	ure Security
Server 217.160.115.88 Proxy	
Path eluxng/UC_INTEL_P3 Proxy port	
User user1 Password ******	*****
IDF-File users_image.idf Protocol HTTP	
Check for update on start	
Update confirmation necessary 🗷	
Update Reload	Reset
Apply <u>R</u> eset	

Figure 25: Setup > Firmware

# 3.6.1 Updating over the Network (Base OS)

Packages and the base OS can be updated over the network.

To update over the network, do the following:

- 1. From the **Setup** tab, click the **Firmware** subtab.
- 2. Enter the IP address or name of the update server in the Server field.
- 3. Enter the name of the new IDF file in the **IDF-File** field (see "6.12 Size Macro") and the directory where it is located in the **Path** field (see "6.11 Container Macro").
- 4. In the **Protocol** area select:
  - **HTTP** if the update server is an HTTP server. Enter the proxy IP address or name, and the proxy port number, if used (optional). To use Microsoft Internet Information server 6.0, you must define several new MIME types. See the section ""3.6.4 Microsoft Internet Information Server."
  - **FTP** if the update server is an FTP server.
  - Enter the username and password for the server in the User and Password fields.
  - If no username or password is defined for the server, the entries are arbitrary. Use elux as the password and username. Do not leave blank.
  - We recommend you access the FTP server using a user account. However, "anonymous" FTP is supported.
- 5. Click Apply.

## 3.6.2 Package Update from a CD-ROM or USB Stick

Packages can be updated locally. The base OS must be updated over network. For more information on network update, see "3.6.1 Updating over the Network (Base OS)."

To perform an update locally you need direct file access to a container on a USB stick or a CD drive. It is not possible to perform an update using Samba or Network File System (NFS). Update over floppy is not supported.

- 1. From the **Setup** tab, click the **Firmware** subtab.
- 2. In the **Protocol** area select **File**.
- 3. Enter the name of the new IDF file in the IDF-File field (see "6.12 Size Macro").
- 4. In the Path field enter /misc/cdrom to access an internal CD drive (IDE) or /misc/USB[0...7] to access a USB stick or USB CD drive. See section "3.9.5 Mount points." Enter the subdirectory of the image definition file, if required. Example: /misc/usb0/eluxng/<container name> Note: If you used the standard container name, you can enter the Container macro. See "6.11 Container Macro" for more information.
- 5. Click Apply.

The following restrictions apply for update via file:

- 1. Both the current IDF and the update IDF must contain the base OS FPM "Drive Support". See Figure 26.
- 2. **USB** must be activated in the **Hardware** Tab.



#### **Required Firmware**

Required firmware for an update via file is the base OS FPM "Drive Support." This firmware allows the terminal to access the USB drive, so it must be installed on the terminal before performing an update via USB drive. In addition, the new IDF must likewise contain this firmware, otherwise it will be removed during the update and the process will hang.

👺 salesmedium.idf - ELIAS NG				_ 🗆 ×
Image <u>C</u> ontainer <u>V</u> iew <u>?</u>				
_ Image		– Containe	er	
Name: salesmedium		Name:	UC INTEL P3-1.0-1	
Size: 21335 kB			eLux NG Container for Intel Pentium	
Files: 1156				
Path: C:\webroot\htdocs\eluxng\UC_INTEL_P3\		Path:	C:\webroot\htdocs\eluxng\UC_INT	EL_P3\
Defined packages:		Availabl	e packages:	
<ul> <li>Intel graphics chipsets driver, V1.2-3</li> <li>MATROX Video Card, V1.1-1</li> <li>Support for Anti-Alias Fonts, V1.0-3</li> <li>Truetype Fonts, V1.0-1</li> <li>Window Manager, V1.3-10</li> <li>Latin2 Language Package, V1.1-2</li> <li>Latin5 Language Package, V1.1-2</li> <li>Cyrillic (iso8859-5) Language Package,</li> <li>eLux terminal management, V3.3-3</li> <li>Drive Support, V4.00-23</li> <li>Sound support, V0.9.6-6</li> <li>ISDN Modem ADSL support, V5.2-2</li> <li>Aironet Client 350 Series, V2.1-1</li> <li>USB core support, V5.3-1</li> <li>PCC Lite, V1.2.0-5</li> <li>PCL printer support, V6.51-3</li> <li>OT curvince environment, V(2, 0, 1, 1)</li> </ul>	<== ==> Deactivate	GTI ICA ICA ICA ICA ICA ICA ICA ICA ICA IC	K Library Package, V1.2.0.5.3-1 client, V8.2-1 client, V8.7-2 ix FreeS/WAN, V1.97-5 vie Player, V1.0.5-1 zilla Suite, V1.7.2-3 snmp, V4.2.1-4 Client, V1.3.2.7-1 era Web Browser, V7.54-1 verTerm InterConnect, V7.1.1-2 ESKTOP client, V1.3.1-9 alplayer 8 Plugin, V8.0-8 P R/3 client PlatinGUI, V6.30rev8-1 ickwave Flash 7.0r25, V7.0-1 H tools, V2.9.9p2-3 is Java(TM) 2, V1.4.2-2 antella Native Client, V3.40.911-1 aptella Mative Client, V3.40.911-1	
Package information				
Name: automount Version: 4.0.0	UniCo Brouid	n Softwar les net driv	e GmbH ve menning via NES and SMP. Eacher	as also
Size: 303 kB Files: 26 File: automount-4.0.0-23.UC_INTEL_P3-1.0.fpm	floppy	disk and l	ve mapping via ivrisi and smith, readun CD-ROM access.	es also
MB 32 96 12	8		256	>256

Figure 26: Required base OS FPMs

The right to use the image builder tool ELIAS NG software is included in the eLux NG license. There is no additional charge. It is used to edit the IDFs for updating firmware on Thin Clients and can be downloaded from <u>www.myelux.com</u>. Its use is beyond the scope of this document. For more information on ELIAS NG functionality and editing IDFs, as well as terminology such as "FPM", see the *ELIAS NG Administrator's Guide* or the *Scout NG Administrator's Guide*.

## Activating USB port

For security reasons, by default the USB port is deactivated. From the **Hardware** tab, click to activate the **USB mass storage devices** check box. Note that update over floppy is not supported.



## 3.6.3 Starting an update

- 1. From the **Setup** tab, click the **Firmware** subtab.
- 2. Select the **Click for update on boot** check box to check for an update when the Thin Client boots.
- 3. Select the **Update confirmation necessary** check box for a confirmation message to appear before an update takes place. If you click on **Details** in this confirmation box, the packages that will be installed/removed are displayed.
- 4. Click **Apply** to save your changes.
- 5. Click **Update** to perform a recovery immediately.

During an update, eLux NG compares the software on the Thin Client to the software in the image definition file. If they differ, an update is performed. (The name of the IDF is irrelevant, because it is the contents that are examined.)

**Warning** Never switch off the Thin Client during an update procedure! This can destroy the image and the terminal will no longer boot. In this case, contact your system administrator and perform a recovery (see chapter "6 Recovery Installation").

The following two sections describe buttons that are in the **Firmware** tab, but do not directly relate to a firmware update.

If the update cannot be performed, the reason is displayed in a dialog. In addition, you can click on **Details** to display the technical details.



## 3.6.4 Microsoft Internet Information Server

To update firmware or perform a recovery using Microsoft Internet Information Server (IIS), there is an additional step: The file extensions requested by eLux NG are not automatically transferred by IIS, but rather must be explicitly added to the MIME types. This is discussed in the Microsoft online help.

**Note** Entering the MIME types may not always be necessary. We recommend, however, that you add them when using IIS. For version 6.0 they are required.

- 1. Open the Internet Services Manager (Start > Administrative Tools > Internet Information Services (IIS) Manager).
- 2. Expand the branches until the Internet site is visible.
- 3. Click with the right mouse button on the Internet site and select Properties.

ee	Name Path	
Internet Information Services	Scripts c:\inetpub\scripts	
🛄 * rapport 📩 🗂 Default STD Site (Stepped)	Default Web Site Properties	?
	Web Site   Operators   Performance   ISAPI Filters   Home Directory   Docu	uments
Explore	Directory Security HTTP Headers Custom Errors Server Exten	sions
Open		
Browse	G Content should:	
Start	C Expire Immediately	
Stop	C Expire after 1 Dav(s)	
Pause		_
New	The second secon	
All Tasks	Custom HTTP Headers	
	Add	
<u>V</u> iew		-
Delete		
Refresh	Eemove	
Export <u>L</u> ist	Cartant Bating	
Properties		
1 Epperates	Ratings help identity to your users what type or content your site	
Help	Edit Ratings	
	MIME Map	=
	To configure additional MIME types the Web Service sends to	
	File Types	
		-

Figure 27: Microsoft Internet Information Services Manager

4. In the **Web Site Properties** dialog box go to the **HTTP header** tab. Click the button **File Types**.



5. In the File Types dialog box click New Type and enter .idf, .fpm, .epm, .gz as text/plain.

Fi	le Type	5						×
	Registere	ed file <u>t</u> ypes:				_		
	.epm	text/plain					<u>N</u> ew Type	
	.gz	text/plain					<u>R</u> emove	
	.idf	text/plain					Edit	
							22000	
Fi	е Туре							×
-	<u>A</u> ssociati	ed extension:	.idf					
	<u>C</u> ontent I	type (MIME):	text/p	lain				
					OK		Cancel	
	Conter	nt Type (MIME	:):					
					0K.		Cancel	

IIS is configured for an update/recovery.

## 3.6.5 Update Log

To view the update log, go to **Diagnostics** tab, click to select **System files**, and click **Execute**. Use the PAGE UP / PAGE DOWN keys to scroll. The update log is "eluxman.log". For more information on the **Diagnostics** tab, see section "3.18 Diagnostics."

#### 3.6.6 To Reload the Configuration from Scout NG

A Thin Client managed by the management tool Scout NG receives its Setup configuration from the Scout NG server:

- the first time it is entered in the Scout NG software
- when the Thin Client starts

However, the Setup configuration is loaded when the Thin Client starts only if a change is registered in the Scout NG server. This takes place when the administrator makes a change to the Setup configuration using Scout NG. If the administrator makes no change, the Setup configuration is not loaded when the Thin Client starts. The Thin Client uses the previously saved configuration instead.

To force the Setup configuration to reload, click the **Reload** button. The Thin Client contacts the Scout NG server and loads the configuration, regardless of whether there has been a change registered with the Scout NG server.

Note: You must be managed.

For more information on the management tool Scout NG, see the Scout NG Administrator's Guide.

#### 3.6.7 Resetting the Thin Client to Factory-Delivered Default Settings

The **Reset** button overwrites the eLux NG configuration and with the factory default setting and deletes all defined application. For information on the **Reset** button, see "5.3 Factory Reset."



## 3.7 Security

reen Mouse/Key <u>b</u> oard <u>F</u> irmware	S <u>e</u> curity	<u>M</u> ultimedia Dri <u>v</u> es
Local security	⊢ Manager se	ettings
Permissions Edit	Manager	192.160.10.88
	Info1	Ms. Smith
Allow remote X11 clients	Info2	Room 237
Smart card Chack power =	Info3	Ext10
	Group ID	4
User authorisation Authorisation LDAP server	Mirror serv Activate Read or Confirm Password	er settings ed XDMCF nly access nation necessary ******

Figure 28: Setup > Security

## ⇒ To modify security settings

From the Setup tab, click the Security subtab.

By default, the user has access to the **Setup** and **Configuration** tabs. In the **Security** subtab you can and set user rights and restrict access.

eLux NG mirroring settings ("3.16 Mirroring") are discussed in a different chapter.

#### 3.7.1 Device Password

The device password is very powerful, as it gives administrator rights for the Thin Client. It is required for various functions, such as entering the Thin Client in the Scout NG management software (see the *Scout NG Administrator's Guide*, "Client Discovery"), etc.

To change the Thin Client password, from the **Security** subtab, click "Local security" > **Permissions** > **Edit**. In the **Local security settings** dialog box, enter the new password twice. The password upon delivery is elux.

👯 Local security sett	ings 🐂 🖃
Password	****
Password confirmation	****

**Warning** Do not forget the Thin Client password! The only way to recover a lost Thin Client password is to do a Recovery Installation. This deletes the configuration and defined applications and resets the Thin Client password to elux. See chapter "6 Recovery Installation."



## 3.7.2 Local Security Settings

It is possible to set user rights for the Thin Client. This section describes how to restrict the access the user has to the configuration settings.

## ⇒ To set user rights

From the **Security** subtab, click "Local security" > **Permissions** > **Edit**. In the **Local security settings** dialog box you can set user rights. The configuration parameters are displayed in a branching tree-like structure. Upon restart, the user can only access the functions that you enabled.

📫 Local security settings	📫 Local security settings
Password *****	Password *****
Password confirmation *****	Password confirmation *****
Field	Field
<ul> <li>Setup</li> <li>Configuration</li> <li>Start application</li> <li>Stop application</li> <li>Cogoff</li> <li>Restart</li> <li>Halt</li> <li>Lock</li> </ul>	<ul> <li>♀ Setup</li> <li>♀ Configuration</li> <li>♀ Start application</li> <li>♀ Stop application</li> <li>♀ Logoff</li> <li>♥ Restart</li> <li>♥ Halt</li> <li>♥ Lock</li> </ul>
All fields modifiable All fields locked	All fields modifiable All fields locked
OK Cancel	OK Cancel

Figure 29: Examples of "All fields modifiable" (left) and "All fields locked" (right)

- 1. All fields modifiable Click to enable local configuration of all fields. The color green indicates that a field is unlocked.
- 2. All fields locked Click to disable local configuration of all fields. The color red indicates that a field is locked.





Figure 30: Examples of fields in the Setup tab (left) and Applications tab (right)

The configuration parameters are displayed in a tree-like structure. Click the plus to expand the element. Click the minus to collapse the element. Double click with the left mouse button (keyboard equivalent: space bar) to change a field's status: red = locked, green = unlocked (local configuration allowed).

- 3. **Setup** To allow users to access the **Setup** tab and modify user settings, expand "Setup" and set the desired fields to green.
- 4. **Configuration** Allows you to restrict local access to the **Configuration** tab and local access to application profiles.
- 5. The remaining top-level parameters refer to options in the **Applications** tab (see Figure 30, right).
  - Start application and Stop application refer to the "Connect" and "Disconnect" options.
  - Logoff, Restart, Halt and Lock refer to the shutdown options.
- 6. When you are done configuring local access, click **OK** in the **Local security settings** dialog box and **Apply** in the **Security** subtab.

In addition, the option "Allow remote X11 clients" in the **Security** tab allows remote X11 clients to connect to the local Thin Client.



	eLux NG [Herman, 2     Applications Config	217.160.115.100] uration Setup			
Configuration disabled —	Name ← Citrix desktop Mozilla MS Word RDP Desktop SAP-GUI Shell N32 X32 Xv local	Type ICA Mozilla RDP RDP SAP Local 3270 Local	Active No No No No No No		- Setup disabled
	<u>Connect</u>	sconnect	eLux NG	Shutdown	

The following figure shows an example of the eLux NG starter with restricted access.

Figure 31: eLux NG screen with security settings - Configuration and Setup tabs disabled

## 3.7.3 Authorization Hotkey

The default user "LocalLogin" is the local device administrator. The password for "LocalLogin" is the Thin Client password.

You can access **Setup** or **Configuration** from an account in which they are disabled using the so-called "terminal password authorization hotkey."

#### ⇒ To re-enable disabled settings



Figure 32: Device password hotkey dialog box

- 1. Select the eLux NG starter. Use the hotkey CTRL + ALT + HOME. The hotkey dialog box appears.
- 2. Enter the terminal password (= password of "LocalLogin") and click OK.

**Note:** The terminal password is "elux" by default. If you change the terminal password and forget it, to reset the password you must do a Recovery. See chapter "6 Recovery Installation."

- 3. All settings are re-enabled. Click the **Settings** tab to make changes to settings.
- 4. To disable this access, click **Shut down > Log off** from the **Applications** tab.

You can also re-enable settings using the remote management tool Scout NG.



## 3.7.4 User Authorization

### **Software Requirements**

User authorization: "User authorization modules" (file name: "userauth") EPM.

To test user variables: "LDAP search module" (file name: "usersearchIdap") FPM in "User authorization modules" EPM. By default, it is not activated.

For a description of EPMs and FPMs, see the ELIAS NG Administrator's Guide.

creen	Mouse/Key <u>b</u> oard	<u>F</u> irmware	S <u>e</u> curity	<u>M</u> ultimedia	Dri <u>v</u> es 🖣
-Local s	ecurity		_ Manager s	ettings	
Permis	ssions	Edit	Manager	217.160.11	5.88
			Info1	MS. Smith	
			Info2	Room 237	
			Info3	Ext10	
			Group ID	4	
- User a	uthorisation ———		_ Mirror serv	ver settings	
Autho	risation LDAP serv	er 두	🗷 Activat	ed	🗷 XDMCP
		E dit	🔲 Read o	nly access	
		Euit	🛛 🔀 Confirm	mation necessa	rv

Figure 33 User Authorization

You can use an authorization server with eLux NG. Settings are made in the **Setup** > **Security** tab. Username and password are entered once at eLux NG start.

**Note** In this chapter, there are numerous configuration examples that include unusable IP addresses, passwords, and domain examples. Be sure to use your own IP addresses, passwords, and domains when configuring the authentication server settings.

#### ⇒ To configure server authorization

Settings are made in the **Setup > Security** tab.

- 1. Under "Access authorization", select the type of authorization server from the dropdown list:
  - None:to disable user authorizationLDAP server:for an LDAP serverWindows NT/2000:for a Windows NT® 4.0 domain controllerActive Directory Server:for an Active Directory Server (Windows 2000)
- 2. Further parameters are server specific.
- 3. Click Edit. The Authorisation settings dialog box appears.



**LDAP server**: Light Directory Access Protocol is a TCP/IP-based protocol that defines a standard method for accessing directory services.

For authorization using an LDAP server, enter the following:

- Server: Enter the IP address/name of the LDAP server.
- Version: Select the LDAP version to use from the drop-down list

Click **Find values**. The Thin Client will search for the server and automatically fill in the **Search base** field.

For information on user variables, see "User Variables" in this section.

Authorization	settings			
Server	ldap1.mydomain	.com:389		
Version	Version 3	Ŧ		
Search base	o=company,l=yo	urcity,c=yourcol		
Find values				
ELUXFULLNAME=displayName <u>N</u> ew				
	antocamuuress	Edit		
		Delete		
	ОК	Cancel		

**Windows NT/2000**: In a Windows NT domain the user accounts are administrated by a Primary Domain Controller (PDC). When a user logs on to the PDC, he or she is authenticated using the user database. User account information must no longer be entered on every workstation within the domain. User information must only be entered once. Due to redundancy, load sharing or optimizing WANs, user information can be replicated using a Backup Domain Controller (BDC). Authorization takes place using this server if the PDC cannot be reached.

For authentication using a Windows NT computer, enter the following parameters:

- Domain: Enter the NT domain.
- **Primary**: Enter the IP name of the Primary Domain Controller (PDC). Each domain has one and only one PDC. An IP address is not allowed.
- Secondary: Enter the IP name of the Backup Domain Controller (BDC). An IP address is not allowed. While a domain can have more than one BDC, only one entry is allowed.

💾 Authorisa	ation settings	- Vila	IX
Domain	mydomain		
Primary	host1		
Secondary	host2		

The NetBIOS name of the PDC must be identical to the IP name. This is also true for the BDC.



Active Directory Server: The directory service for Windows 2000 is called Active Directory. The structure is different from Windows NT: there are no longer PDCs and BDCs – they are given up in favor of a peer model, where all domain controllers (DC) in a Windows forest are equal.

For authorization using Active Directory, enter the following:

• Server: Enter the IP address/name of the domain controller.

Click **Find values**. The Thin Client will search for the server and automatically fill in the **Search base** field.

For information on user variables, see "User Variables" in this section.

<b>Authorization</b>	n settings			
Server	dc1.mydomain.c	:om:389		
Version	Version 3			
Search base	ou=users, dc=my	domain, dc=com		
	L	Find values		
User variables				
ELUXFULLNAME=displayName				
		Edit		
		Delete		
	ОК	Cancel		

4. Click **OK** and then **Apply** in the **Security** tab.

You must now enter a username and password when the Thin Client starts.

eLux NG supports changing the password (ADS only). When the password on the ADS server expires, the user will be requested to enter a new password in the logon dialog box.

If you have entered incorrect directory service settings, use LocalLogin and the Thin Client password to log on to the Thin Client locally. You can then correct the settings by going to **Setup > Security**.

#### "Help! I'm locked out!"

If you activate directory services and settings are incorrect, you will be locked out. However, you can still log on to the Thin Client locally using the login name "LocalLogin" and the Thin Client password. You can then correct the settings by going to **Setup > Security**.

## 3.7.5 User Variables

## Software Requirements

To test user variables: "LDAP search module" (file name: "usersearchldap") FPM in "User authorization modules" EPM. By default, it is not activated.

User variables are variables whose values are read from the authorization server when the Thin Client makes its authorization call. The variables can be used in certain fields in the eLux NG starter.

Preset variables are \$ELUXUSER, \$ELUXDOMAIN und \$ELUXPASSWORD. They are automatically set when the Thin Client starts. When using LDAP or Active Directory Server as the authorization server, it is also possible to define your own user variables.



### ⇒ To set user variables

- 1. In the **Authorisation settings** dialog box for ADS or LDAP click on **Add**. The **User variable** dialog box appears.
  - Local variable: Enter a name for the variable. The name must begin with the prefix "ELUX" without the initial "\$".
     End with the "#" character to transfer more than one value, for example, ELUXMAIL#=mailLocalAddress. If more than one mail account address resides on the server, they will be transferred using the nomenclature ELUXMAIL\_1, ELUXMAIL\_2, etc. In this case, the variable ELUXMAIL\_0 contains the number of mail addresses that were read.
  - **LDAP variable**: Enter the name of the attribute that the LDAP or Active Directory should assign the variable. As an example, the LDAP/Active Directory schema can contain the attribute "displayName". If you assign this attribute to the variable ELUXFULLNAME, it will be assigned the value of this attribute during the next user authorization call.

📲 User variable	
Local variable	LDAP variable
ELUXFULLNAME	displayName
Test	OK Cancel

- 2. **Test**: The Thin Client attempts to retrieve the value for the attribute you entered from the authorization server.
- 3. Click OK in the User variable dialog box and Apply in the Security tab.

User variables can be entered in the eLux NG starter just like normal parameters. Enter each variable with the "\$" character as prefix. For example, in an ICA application definition enter \$ELUXUSER as the username. This variable will be replaced with the given username when the application is called.

## **Application Possibilities for User Variables**

When user authorization is active, user variables can be used in the following fields in the eLux NG starter.

#### **Applications Tab**

Field	Function	User Variable
Shut down > Lock	Manual activation of the screen saver lock	Preset with the value of \$ELUXPASSWORD

Setup Tab

Subtab	Field	User Variable
Drives	Username	\$ELUXUSER,
	Password	\$ELUXPASSWORD,
	Directory, Server, Share	Every \$ELUX variable
	Browser home directory	Every \$ELUX variable
Screen	Screen saver password	\$ELUXPASSWORD

## **Configuration Tab**

Subtab Field **User Variable** ICA/RDP Server Every \$ELUX variable User \$ELUXUSER Password **\$ELUXPASSWORD** Domain \$ELUXDOMAIN Browser Proxy, Proxy port Every \$ELUX variable Tarantella Server Every \$ELUX variable Local > Customized Commands Application possibility: Programs that can be executed using the command line.

## 3.7.6 Manager Settings

See "3.14 Remote Management."

#### 3.7.7 Mirroring Settings

See "3.16 Mirroring."



Setup

Applications

Configuration



## 3.8 Multimedia (Volume)

📫 eLux NG [Herman, 192.168.10.2]	
Applications Configuration Setup	
irmware S <u>e</u> curity <u>M</u> ultimedia Dri <u>v</u> es Pr <u>i</u> nter <u>H</u> ardware	VPN I
Master volume Min Max	
PCM volume Min Max	
Enable sound in XDMCP sessions	
<u>Apply</u> <u>R</u> eset	

Figure 34: Setup > Multimedia

## ⇒ To adjust the volume

- 1. From the **Setup** tab, click the **Multimedia** subtab.
- 2. Move the slider to the right to increase the volume.
- 3. To enable sound in XDMCP sessions, click to select **Enable sound in XDMCP sessions**. Note: The application must be e-sound system compatible.
- 4. Click Apply.

## 3.9 Drives

eLux NG supports the following drives:

- Samba
- Network File System
- internal drives (CD-ROM, floppy)
- Universal Serial Bus

This section describes how to access the various drives.

**Note** The **Drives** tab is exclusively for mapping SMB drives! All other drive types are mapped automatically.

#### 3.9.1 Samba

Samba is an implementation of the Session Message Block (SMB) protocol that allows Linux and Windows computers to share files and printers over the network. Network drives for a Windows NT or Samba server must be explicitly defined.

😫 eLux [Herman, 217	.160.115.100]		
Applications Config	uration Setup		
curity <u>M</u> ultimedia	Drives Printer	Hardware <u>V</u> PN	Diagnostics
/smb/g /smb/h	New Edit	Browser /sm	ıb/G/chris/brows
	eset		

Figure 35: Setup > Drives

#### ⇒ To set a network drive using NT or Samba server

From the Setup tab, click Drives.

- 1. Click the button **New**.
- 2. Fill in the fields in the Define drives dialog box:
  - Local directory: Enter the directory name.
     eLux NG automatically adds "/smb/" to the directory name. The data can then be accessed locally in the directory /smb/<directory name>. See section "3.9 Drives" for more information.
  - **Server**: Enter the name of the server.
  - **Share**: Enter the export name of the shared drive as defined on the Windows machine.
  - Username, Password: Enter your username and password on the server.

📲 Drive settings	
Local directory	9
Server	master
Share	G
Username	user1
Password	****
ОК	Test Cancel

Figure 36: Define drives dialog box

Drive settings		Drive settings	
Local directory	9	Local directory	g
Server	master	Server	master
Share	drive1	Share	G
Username	user1	Username	user1
Password	****	Password	aderaderaderade
Wrong share name		Drive can be used	
ОК	Test Cancel	ОК	Test Cancel

Figure 37: Results of the Test button in the Define drives dialog box

- 3. Click **Test**. If the drive can be used, the message "Drive can be used" appears. If the server cannot be located, the message "Server cannot be contacted" appears. Check your entries for validity.
- 4. Click **OK** in the **Define drives** dialog box. Click **Apply** in the **Drives** subtab and **Yes** in the **eLux NG Starter** dialog box.

**Note** It is particularly important to click **Apply** and **Yes** in the confirmation request dialog box to complete the mapping process.

#### 3.9.2 Network File System

eLux NG comes equipped with NFS drive capability. No additional settings modifications are required.

To use a network drive shared via NFS, use the following format:

/nfs/<hostname>

or

```
/nfs/<IP address>
```

When the Thin Client accesses an NFS drive, all shared NFS directories on this host are displayed.

**Warning** <u>All</u> Thin Clients have access to the server as "nobody." There is no privacy. Each client has the same access rights to the other clients' files. Therefore, we strongly recommend that you permit write-protected drives only.

#### 3.9.3 Internal Drives

If your hardware includes an internal (IDE) CD-ROM or floppy drive, you can access it without further configuration. It is also automatically mapped in a Citrix ICA session.

To access it locally, use the mount point. See section "3.9.5 Mount points."

### 3.9.4 USB Drives

eLux NG supports the following USB peripherals:

- card readers
- network cards
- mass storage devices
- mouse / keyboard

More than one USB peripheral can be in use at the same time.

Due to security reasons, by default the USB port is disabled for mass storage devices (CD-ROM, floppy, USB stick, etc.). To enable this port, select the **USB mass storage devices** check box in the **Hardware** tab. To access the mass storage device locally, use the mount point. See section "3.9.5 Mount points."

For more information on USB devices, see section "3.12.1 USB Devices."

#### Mass storage devices

A pop-up message appears when a mass storage device is successfully connected to the Thin Client. Alternatively, click the **Show detected devices** button in the **Hardware** tab to see the currently connected USB devices.

#### **Citrix ICA drive mapping**

To access a mass storage device or handheld device from within a Citrix ICA session, it must be mapped. See section "4.2.5 Client Drive Mapping" for information on mapping client drives within a Citrix ICA session.

#### 3.9.5 Mount points

eLux NG is Linux based. For this reason, to access a drive from a local application, you must use a prefix in your drive path. This prefix is the so-called "mount point." The drive prefixes are:

Samba	/smb
NFS	/nfs
Internal floppy	/misc/floppy
Internal CD-ROM	/misc/cdrom
USB mass storage device	/misc/usb[0-7]

Your device may support up to eight USB mass storage devices, depending on your hardware platform. The mount points are distributed chronologically starting with /misc/usb0, that is, the first device to be connected receives the mount point /misc/usb0, the second device /misc/usb1, etc. For security reasons, the USB port must be activated before use (Hardware tab).

See section "4.2.5 Client Drive Mapping" for information on mapping client drives within a Citrix ICA session.

#### Example 1: Setting a browser home directory

To set the browser home directory to a network drive (see section "3.10 Browser Home Directory" for more details) in the **Hardware** tab > **Browser** field enter:

NFS drive:	/nfs/smith/browser
Samba:	/smb/g/smith



To use a network drive via Samba, the drive must already be defined in the **Drives** tab.

#### Example 2: Downloading to a network drive

A user wants to download a file from the Internet. The user is using the local browser Mozilla. The file is too large to save to the flash.

A solution is to save the file to a network drive. In our example, the target directory is the Samba network drive "g".

In the **Save As** dialog > **File name** field, the user can either type the complete path including file name (/smb/g/test.pdf) or the user can type /smb/<*drive name*> (in our example = /smb/g) to view a list of subdirectories. The user can then choose the desired subdirectory.

The file download path is not the same as the browser home directory.

#### Example 3: Reading a PDF file from an internal CD-ROM drive

To use a local application to view a PDF document using an internal CD-ROM drive (IDE), install the Adobe<sup>®</sup> Acrobat<sup>®</sup> Reader and Mozilla software and start the browser. Insert a CD containing PDF files (in this example, the eLux NG CD) in the CD drive.

Start Mozilla. In the **Open File** dialog, enter /misc in the **File name** field. A list of mount points appears. Double-click on **cdrom** > **windows** > **docu** > **eng**. A list of available documentation folders is displayed.

Alternatively, you can use the local command

```
acroread /misc/cdrom/windows/docu/eng/elias/elias_manual_eng.pdf
```

from within a shell to open the file using the file directly using the Acrobat Reader software (you must know the complete path).

## 3.10 Browser Home Directory

All browser files are saved to the Thin Client's local memory. The local folder /tmp is used for temporary files (cache, etc.) and the local folder /setup/<*browser*> is used for permanent files (history, bookmarks, etc.).

By definition, a Thin Client has very little available memory. For this reason, heavy surfing can use up the available local memory very quickly. When available memory is 5% or less, the user is plagued by recurring warning messages. There are two options: either the user restarts the terminal (the /tmp folder resides on a RAM disk and is deleted when the Thin Client is turned off) or the administrator must go to the terminal and delete the files by hand.

To avoid this inconvenience, you can use a network drive as the home directory for the browser. All browser files (cache, history, configuration, cookies, etc.) are saved to this directory, regardless of whether they are temporary files or not.

#### ⇒ To set a browser home directory

- 1. From the Setup tab, click Drives.
- 2. Enter a netdrive path in the "Directories" > **Browser** field.

You can use a network drive or a subdirectory on that drive. *Example*: /smb/g/user/paul or /nfs/hal2001/users/paul In the case of Samba, the drive must have been previously defined. (See "3.9 Drives".)

3. Click **Apply**.

## 3.11 Printer

You can print from both local and network printers. In addition, other workstations or servers within the network can use a printer installed locally on your Thin Client, which supports LPR and TCP direct print. You can use eLux NG to configure and assign logical names to local printers, which can be used from within the network. If the printer name for the local or network printer is different from the preset "Ip", you must also configure it within in the local application, such as Mozilla.

ard <u>F</u> irmware	S <u>e</u> curity <u>M</u> ultimedia	Drives Printer	Hardware
Printer		TCP direct print-	
lp	New	🗖 Enabled	
	Edit	Parallel on port	9100
	Delete	USB on port	9101
	Print test page		
	Text PS		
🔲 Maximum pri	nter response tim 10		

Figure 38: Setup > Printer

The printer attached locally to your Thin Client may be used by other machines if they support TCP direct print (for Windows: Windows 2000 and later). In this case, enter the port number of the local printer's interface (parallel or USB) in the "TCP direct print" area.

For local applications that use PostScript<sup>®</sup> as the output format, such as Mozilla or Acrobat Plug-in, you must define a PostScript printer.

The **Maximum printer response time** allows you to set a time-out for a locally defined printer. If the printer is for any reason unavailable (paper out, cannot be reached, broken, etc.), the local application stops responding, or "hangs." The print job will be terminated after this time-out, allowing you to resume using the local application.

With eLux NG V1.23 and higher you can print a test page in text format or PostScript format (see figure 38).

New

## 3.11.1 Local Printer

The default printer definition "Ip" is preset to a local printer. This means you can attach a printer to the Thin Client parallel port and print without additional configuration (depending on your printer, you may need to activate the filter).

The main memory is used to buffer print data. The following describes how to configure a local printer.

#### ⇒ To configure a local printer

- 1. Connect a printer to the parallel, serial or USB port of the Thin Client.
- 2. From the **Setup** tab, click the **Printer** subtab.
- 3. Click New.
- 4. Enter the name of the printer in the **Printer settings** dialog box.
- 5. Click the interface type in the **Connection type** list.
  - **Parallel**: If the printer is attached to a parallel port.
  - Serial (COM1): If the printer is attached to the external serial port. Click the baud rate from the Baud rate list. To set COM port settings, see "3.12.4 COM Ports."
  - **USB**: If the printer is attached to a USB port.

🕈 Printer settings	
Name	Ip
Connection type	Parallel 두
Filter	None
Baud rate	1200
Printer address	
Printer queue	
Driver name	HP LaserJet 20(
Default	×
	OK Cancel

Figure 39: Printer definition dialog box (settings for local printer shown)

- From the Filter drop-down list, select Text to print from a local shell (print shell command: 1pr -P <printer name>). Select PCL2 for the PCL 2 protocol. Select None to disable filtering. In this case, the print data will be sent to the printer in the output format of the application. See also "Filtering" below.
- Citrix MetaFrame ICA servers have autocreated printer capabilities. Autocreated printer means a printer definition is automatically created on the MetaFrame server when you connect via ICA. It is now possible to configure eLux NG to use these capabilities. Enter the following:

**Driver name**: Enter the driver for your printer. Note: The printer driver name must be exactly the same as the driver installed on the MetaFrame server. See the installed printer driver list on the MetaFrame server if you are unsure. The MetaFrame server will not autocreate a printer if the printer driver you entered here is not installed on the MetaFrame server (check capitalization and spelling!).

Default: Sets the printer to your default printer on the MetaFrame server.

8. Click OK in the Printer definition dialog box and Apply in the Printer subtab.

#### Filtering

To configure the filter, you must determine which page description language is being used by the application and by the printer. The two most common are PostScript® from Adobe and Printer Control Language (PCL®) from Hewlett Packard.

If the output format of the application differs from the local printer format, you will have to activate the filter.

File format		Convert to	Filter Setting
UNIX text	⇒	DOS text	"Text"
PostScript	⇔	PCL2	"PCL2"

If the application output format is the same as the printer format, disable the filter ("None").

## Troubleshooting

Printing is a complex topic beyond the scope of this manual. For help with a specific printer, please contact the printer manufacturer. As a guide, below is help for some common questions.

#### 1. PostScript file – PostScript printer (Filter = "None")

Most local applications – such as the local browser or Acrobat Reader – generate PostScript output. To print PostScript files to a PostScript printer, the filter should be set to "None."

If your printer prints a large amount of ASCII text, your file could be PCL. To check the file format, in the print dialog select "Print to file" and save to a network drive or to the local directory "tmp". Open the resulting \*.prn file using Notepad or vi. If the first line starts with % ! the file is PostScript.

2. PostScript file – PCL printer (filter should be set to "PCL2")

For this filter option to be displayed, the PCL package must be installed on the Thin Client ("PCL printer support" located in the base OS). By default, it is not installed.

3. Is the printing problem affecting multiple devices or just one device? If one device, make sure the Thin Client is working properly – try printing to other printers, accessing network drives, contacting other devices, etc. If it cannot, it is not a printer problem. If it can, see if the print job reaches the printer (most printers have a status line). If it does, the problem is most likely the file format. See 1 and 2 above.

4. Attempt to communicate with the printer on a protocol level. If the printer has an IP address, ping it from a local shell (see "4.8.1 XTerm (Local Shell)"). If you are unsuccessful, or if the problem is affecting multiple Thin Clients, it may be a network problem.

5. If the application stops responding, or "hangs," you may have a performance problem. For example, the Thin Client buffers print data in main memory. How large is the main memory compared to the file you are trying to print? The more complex the file, the larger it will be. Graphics and color increase file size. PostScript files are often much larger than the original file. If your main memory is small, printing large files could cause a delay if the printer is not ready at the time a print task is running (see 6). Avoid this by checking the printer status in advance and by setting a "Maximum printer response" time-out.

6. Hardware problem: Verify that the printer is on and ready, that the paper tray is full, and that there are no error messages in the display.



## 3.11.2 Network Printer

The Thin Client uses the standardized Line Printer Daemon Protocol (BSD spool) as defined in RFC 1179 to communicate with network printers.

📲 Printer settings		
Name Connection type Filter Baud rate Dripter addross	laser_printer Network Text 1200 Vecer2	IP address or name of the
Printer queue		remote system or printer box     Name of printer queue of the     remote system or printer box
Default		
	OK Cancel	

Figure 40: Printer definition dialog box (settings for network printer shown)

#### ⇒ To set up a network printer

From the Setup tab, click the Printer subtab.

- 1. Click New.
- 2. Enter the name of the printer in the **Printer settings** dialog box.
- 3. From the Connection type drop-down list, select Network.
- 4. From the **Filter** drop-down list, select **None** to disable filtering. Select **Text** to print from a local shell (print shell command: lpr -P<*printer name*>). Select **PCL2** for the PCL2 protocol (not supported by all hardware platforms).
- 5. Enter the IP address or name of the remote system or printer box in the **Printer** address field.
  - If your network does not have a DNS server, alternatively you can use the name of the printer if it has been defined in the local hosts file on the Thin Client (Setup > Network > Advanced) See Ch. 3.2 Network.
- 6. Enter the name of the printer queue of the remote system or printer box in the **Printer queue** field.
- Citrix MetaFrame ICA servers can automatically create a printer definition ("autocreated printer") using parameters you entered on the Thin Client. These parameters are transferred to the MetaFrame server when you connect via ICA. Enter the following:

**Driver name**: Enter the driver for your printer. Note: The printer driver name must be exactly the same as the driver installed on the MetaFrame server. See the installed printer driver list on the MetaFrame server if you are unsure. The MetaFrame server will not autocreate a printer if the printer driver you entered here is not installed on the MetaFrame server (check capitalization and spelling!).

Default: Sets the printer to your default printer on the MetaFrame server.

8. Click OK in the Printer definition dialog box and Apply in the Printer subtab.

## 3.11.3 Citrix Universal Printer Driver 2

MetaFrame XP with Feature Release 3 offers autocreated printers with generic drivers. To use this feature, you must have Citrix ICA Client for Linux V 7.04 or higher installed on your Thin Client.

Client-side settings are made in the **Printer settings** dialog box described in the previous section.

Server-side settings are described in this section.

To configure driver settings, log on to the server as administrator and open the Management Console for MetaFrame XP. From the context menu for **Printer Management**, select **Properties**. The **Printer Management Properties** dialog box opens.

Click **Printers** in the left-hand panel. Here you set autocreated printer settings. See the Citrix documentation for more information.

Drivers Printers	Drivers	
	Printer Drivers	
	Choose which type of printer drivers (universal or native) to use when auto-creating client printer connections.	
	O <u>N</u> ative drivers only	
	O Universal driver only	
	O Use universal driver only if native driver is unavailable	
	Both universal and native drivers	

Click Drivers in the left-hand panel. Here you set driver settings.

- **Native drivers only** A client printer will be created using the printer driver entered in Scout NG. If the driver is not installed on the MetaFrame server, the client printer will not be created.
- **Universal driver only** A client printer will be created. The printer driver entered in Scout NG will be replaced with the generic driver.
- Use universal driver only if native driver is unavailable A client printer will be created using the printer driver entered in Scout NG. If the driver is not installed on the MetaFrame server, the generic driver will be used.
- **Both universal and native drivers** Two versions of each client printer will be created, one with the generic driver and one with the native driver entered in Scout NG.
- Automatically install native drivers for auto-created client and network printers Native printer drivers will automatically be installed on MetaFrame XP servers where printers are autocreated.

The generic driver used with the Citrix ICA Client for Linux 7.04 and higher is the MetaFrame XP PS Universal Driver (HP Color LaserJet PS).

In this example, we activate the autocreated printer function and set driver settings to "Universal drivers only if native driver is unavailable."



🤕 Printers and Faxes				
<u>File E</u> dit <u>V</u> iew F <u>a</u> vorites <u>T</u> ools	He	lp		
← Back → → ← ▲   ② Search ← Folders   □ □ □ ↓ □ ↓ □ ↓ □ ↓ □ ↓				
Address 😺 Printers and Faxes				<b>▼</b> ∂ ⊙
Name 🔻	D	S	Comments	L. Model
💓 Lexmark T630 PS3	0	R		S Lexmark T630 PS3
FreePDF XP	0	R		Apple Color LW 12/
Faxserver	0	R		Apple LaserWriter 1
Signal (Herman#/lp	0	R	Auto Created Client Printer Herman	HP LaserJet 4L
Client/Herman#/laser6 [UPD:PS]	0	R	Auto Created Client Printer Herman	HP Color LaserJet PS
🛃 Add Printer				
6 objects				li.

Figure 41: MetaFrame XP generic printer drivers

Assume the user opens an ICA session to the Citrix MetaFrame server. In the **Printers and Faxes** window (**Start > Printers and Faxes**), the user will see icons for the automatically created client printers in the format Client/<*hostname*>#/<*printer*>, where <*hostname*> is the hostname of the Thin Client and <*printer*> is the name of the printer as defined in Setup.

When a universal printer driver is used, the text "[UPD:<*generic driver name*>]" is appended to the printer name, where <*generic driver name*> is "PS". In the figure above, the client printer "Client/Herman#/Ip" is created using the native driver "HP LaserJet 4L" and "Client/Herman#/Ip" is created using the generic driver for PestSeriat, as the specified

"Client/Herman#/laser6" is created using the generic driver for PostScript, as the specified driver "HP LaserJet PS" is not installed on the application server.

For more information on server-side settings for Universal Drivers, please see the Citrix documentation for MetaFrame XP with Future Release 3.

## 3.11.4 TCP Direct Print

In TCP direct print, data is sent directly to the printer. There is no spooling of print jobs on the Thin Client and the data is not modified before printing. The flow is controlled by TCP/IP.

#### ⇒ To configure the Thin Client as a print server with TCP direct print

Enable TCP/IP on the Thin Client.

- In the eLux NG starter (Setup > Printer) click to select "TCP direct print" > Enabled.
- 2. Enter the number of the port (parallel or USB) the printer is attached to.
- 3. Click Apply in the Printer subtab.

TCP direct print	
🗷 Enabled	
Parallel on port	9100
USB on port	9101

The IP address of the Thin Client, printer name and port number must be entered at the remote machine.

The Thin Client can resolve the host name of the machine initiating the print job. If you don't have a domain name service (DNS), enter the host name and the IP address in the local file "hosts" (**Setup > Network > Advanced**). See Ch. 3.2 Network.


# 3.11.5 Thin Client as Print Server

Other workstations or servers can use a printer connected to a Thin Client. These workstations or servers must either support TCP direct print or have the have the LPR protocol (BSD spool) installed.

The figure below shows the definition of an LPR printer in Windows NT Server.

Figure 42: Installing an LPR printer

# ⇒ To define an LPR printer in Windows NT

In Windows NT,

- 1. Install the "Microsoft TCP/IP Print Service" via Control Panel > Network > Services.
- 2. Install the printers in the Print Setup.
- 3. Use the eLux NG printer as a network printer from the Windows NT station.

# ⇒ To define an LPR printer in Sinix

In Sinix,

- 2. Add the printer to the system. Be sure that the Thin Client can be reached when entering the following command:

xpadd -dev my\_elux\_printer

da ,	/var/spool/Spool/config/my_elux_	printer //	Sinkfile
-su	root	// Xprint Superviso	or
-fl	bsd	// LPR print filter	
-ca	"host=myterminal queue=lp"	// Host name of Th name as defined	in Client and queue
-pc	HP_LASERJET	// Printer type	



- 3. Activate the printer: xpchange -dev my\_elux\_printer
- 4. Test the printer: xpadd -de my\_elux\_printer dr /etc/hosts

# 3.11.6 ThinPrint

ThinPrint<sup>®</sup> software from the ThinPrint GmbH in Germany allows optimized printing in network across various platforms. Components include the ThinPrint server and ThinPrint client. The server component processes print data for the target printer and sends it in compressed form to the client. The client receives print jobs from the server, decompresses them and sends them to the selected printer. ThinPrint Server and Client are connected via TCP/IP. ThinPrint is a print protocol. Unlike TCP direct, LPR or CUPS, with ThinPrint the bandwidth can be specified, meaning it is a viable option for networks with small bandwidth.

To use this software, on the Thin Client you must install the ThinPrint client software, attach a local printer and configure the ThinPrint Client and ThinPrint Server.

# ➡ To configure the ThinPrint client as a local application using a user-defined command

- 1. Install the software "Thin Print client" ("thinprint") on the Thin Client.
- 2. Connect a printer to the Thin Client.
- 3. On the Thin Client, go to **Configuration > New > Local**.
  - Name: Enter an appropriate name, such as "ThinPrint".
  - Application: Select Custom.
  - Parameter: Enter the command "thnuclnt" and required parameters. The individual parameters are described the section "Parameters" below.
     Example: thnuclnt -dev /dev/lp0 -class HP -name "HP LaserJet 6L"
- 4. Select Start automatically to start the software at device start.
- 5. (optional) Select **Hidden** to hide the application from the user. (recommended)
- 6. Click Apply and Finish.

#### Parameters

Format:thnuclnt -dev <device> -class <classname> -name <printer name>

<device></device>	Enter the device name. Use one of the following formats:
	Parallel printer Enter /dev/lp0.
	<b>USB printer</b> Enter /dev/usb/lp0.
	<b>Network printer</b> Enter the printer definition name as defined in the eLux NG starter (see "3.11.2 Network Printer").
	Serial printers are not supported.
<classname></classname>	(optional) Class name. Maximum length of seven characters. Do not include blanks.
<printer name=""></printer>	Name for this printer. UNIX conventions generally apply.

For more than one printer, repeat the parameters in the order above.

#### Example for a parallel and USB printer:

```
thnuclnt -dev /dev/lp0 -class HP -name "HP LaserJet 6L" -dev /dev/usb/lp0 -class HP -name "HP LaserJet 4L"
```

**Note** No error messages are displayed when a local program is run. If you enter the command in a local shell, you will be able to view any error messages. We recommend doing this before configuring ThinPrint as a local application using a user-defined command.

See section "4.8.1 XTerm (Local Shell)" for more information on the local shell and section "4.8.4 User-Defined Commands" for information on local commands.

Additional settings must be made on the ThinPrint server. This is beyond the scope of this manual. For more information, please see the ThinPrint documentation available at <u>www.thinprint.com</u>.

# 3.11.7 CUPS

To use this feature, the software "CUPS printing front-end" (qtcups) must be installed. In addition, the CUPS server must have server options configured.

The Common UNIX Printing System<sup>™</sup> (CUPS<sup>™</sup>) is a software product from Easy Software Products. It provides a common printing interface within a local network and dynamic printer detection and grouping. The advantage of CUPS is that all configuration takes place on the CUPS server. No configuration takes place locally on the client.

The CUPS server contains a list of back-ends, including parallel port, USB connections, serial connections and network (LPD).

On the Thin Client, when the CUPS client is installed, it replaces the local LPD printing system. All local printer definitions in Setup > **Printer** are ignored.

The CUPS client and server are provided free of charge. Commercial add-ons and support for the CUPS server can be purchased from Easy Software Products. For more information, see <u>www.cups.org</u>.

CUPS is used to print from local applications on the Thin Client (for example, Adobe Acrobat or a local browser). These local applications have PostScript as output format. If you do not have a PostScript printer, you must install a filter (for example, PostScript to PCL) on the CUPS server.

Configuration takes place using the Scout NG management tool. For more information, see the *Scout NG Administrator's Guide*.



# 3.12 Hardware

In the **Hardware** tab you can set various hardware settings: USB port activation, RAM disk size and the number of monitors.

Network hardware settings are discussed in chapter "3.13 Network Hardware."

	eLux NG [Herman, 192.168.10.2]		
	Applications Configuration Setup		
	curity <u>M</u> ultimedia Dri <u>v</u> es Pr <u>i</u> nter	Hardware <u>VPN</u> Diagnostics	
	USB mass storage devices 🛛 🛄 🗷	Network type ISDN -	
	Smart card USB (External/In: 🔻		
Hardware	RAM disk	Profile FreeNet 두	Network hardware
settings	Monitors	User eLux	settings (Ch. 3.13)
	COM port settings	Edit	
	<u>Apply</u> <u>R</u> eset		

Figure 43: Hardware Tab

#### 3.12.1 USB Devices

The following USB devices are supported:

- card readers
- network adapters
- mass storage devices
- mouse, keyboard

#### **USB card readers**

Card readers are used with smart cards. For information on smart cards and a list of supported card readers, see "3.15 Smart Card."

#### **USB** network adapter

Define a profile for the ISDN connection as described in section "3.13.2 ISDN \*\*." No further configuration is required (plug-and-play).

Configuring a WLAN USB network adapter is described in section "(3) Fujitsu Siemens WLAN D1700 USB Network Adapter."

#### **USB** mass storage devices

In general, all USB mass storage devices are supported including, but not limited to, CD-ROM, floppy, USB stick, 2.0 flash card readers, photo mass storage, etc. A maximum of eight mass storage devices can be used at one time.

Build Nr.: 23

For security reasons, by default the port is disabled. To enable the USB ports for mass storage devices, select the check box **USB mass storage devices** in the **Hardware** tab.

Click on the browse button to display currently connected devices.

Accessing USB storage devices is described in section "3.9 Drives."

## USB mouse / keyboard

A USB keyboard / mouse can be used without further configuration (plug-and-play). For a list of supported keyboards, see "Appendix 6: Supported Hardware."

# 3.12.2 RAM Disk

A large RAM disk is required in special instances, such as printing a large file from Acrobat Reader. You can set the size in a defined area depending on the physical main memory without restricting the basic functionality of the Thin Client. The option **RAM disk** only affects /tmp on the flash card (and not /setup, for example).

If you have 64 MB or less of main memory, the RAM disk size cannot be changed. It is fixed at 4 MB. However, if your main memory is greater than 64 MB, you can increase the RAM disk settings. In this case, the minimum RAM disk size is 8 MB.

**Ramdisk** 

# ⇒ To modify RAM settings (> 64 MB)

- 1. From the **Setup** tab, click the **Hardware** subtab.
- 2. Move the slider to the right to increase the disk space allocated to RAM.
- 3. Click Accept.



31856 kB

Data in /tmp is automatically deleted when you turn off or restart the Thin Client (Applications > Shutdown > Restart or Switch off). It is not deleted when you log off (Applications > Shutdown > Log off).

# 3.12.3 Multiple Monitors

If you have a video card installed, you can set the number of monitors to use in the **Hardware** tab. You can choose between one, two, three or four monitors (depending on card type). This option is displayed only if the corresponding software (Matrox video card software FPM in base OS, "matrox") and hardware (a graphics card) are installed.

Monitors

For a list of supported cards, see "Appendix 6: Supported Hardware."

# 3.12.4 COM Ports

Available with base OS 1.8.

You can set COM port settings in the Hardware tab.

Click on the **COM port settings** button. The **COM port settings** dialog box appears. Make the desired changes.



... | 🗙



# 3.13 Network Hardware

#### Software Requirements

ISDN, ADSL, modem: "ISDN Modem ADSL support" (file name: "isdn") FPM in base OS EPM. Required software for wireless LAN is discussed in the wireless LAN chapter. For a description of EPMs and FPMs, see the *ELIAS NG Administrator's Guide*.

#### ⇒ To modify network hardware settings

- 1. From the Setup tab, click the Hardware subtab.
- 2. Click your network type from the **Network type** drop-down list: **Ethernet, ISDN, ADSL, Modem, Token ring**. Fill in the related fields.
- 3. Click Apply.

A detailed description of each network setting follows. For a list of supported cards, see "Appendix 6: Supported Hardware."

# 3.13.1 Ethernet

Depending on your hardware platform you can connect to a local-area network using the onboard Ethernet card, a network interface card, or an adapter card for fiber optic.

	Auto
📫 eLux NG [uc97, 217.160.115.97]	[ 100 Mbit/Half duplex
Annihistican Configuration Catura	100 Mbit/Full duplex
Applications Configuration Secur	10 Mbit/Half duplex
curity <u>M</u> ultimedia Drives Printer <u>H</u> ardware <u>V</u> PN <u>D</u> iagnostics (	10 Mbit/Full duplex
	AUI
USB mass storage devices 📖 🗷 Network type 🛛 Ethernet 🛛 🐺	BNC
Smart card None 🐺 Speed Auto 🐺	1

#### ⇒ To set network hardware settings for Ethernet

- 1. From the **Setup** tab, click the **Hardware** subtab.
- 2. Click Ethernet from the Network type list.
- 3. Select the Ethernet speed from the **Speed** list. If **Auto** does not work, see your network administrator for the correct speed.
  - **1 Gbit** Only available for the gigabit Ethernet network card Broadcom Tigon 3 (BCM570x). Other card parameters will be automatically configured.
  - AUI, BNC: Only available for the 3Com® EtherLink® 10 PCI Combo Network Interface Card.
- 4. Click **Apply**.



# 3.13.2 ISDN \*\*

You have two possibilities to connect to ISDN: PCI interface card or USB modem.

# **ISDN Card**

In this variant, the Thin Client has an ISDN card installed and is connected to an ISDN cable. See "Appendix 6: Supported Hardware" for a list of supported hardware.

#### **USB Network Adapter**

In this variant, the Thin Client is connected to an ISDN cable over a USB network adapter. Verify that a LAN cable (for example, Ethernet) is not connected to the device.

Warning Do not use USB ISDN with a Thin Client that already contains an ISDN card.

See "Appendix 6: Supported Hardware" for a list of supported hardware.

#### **Configuring Network Hardware Settings for ISDN**

📫 eLux NG (uc97, 217.160	).115.97]		18.0 - ×
Applications Config	uration Se <u>t</u> up		
curity <u>M</u> ultimedia	Dri <u>v</u> es Pr <u>i</u> nter	<u>H</u> ardware	<u>VPN</u> Diagnostics
Network profiles		Network type	ISDN
Defined profiles			
FreeNet	<u>N</u> ew		
T–Online	Edit	Profile	FreeNet
		User	eLux
	<u>D</u> elete		
			Edit
ОК	Cancel		

Figure 45: Setup > Hardware > ISDN

- 1. From the Setup tab, click the Hardware subtab.
- 2. Click ISDN from the Network type list.

A series of fields appears.

- 3. Select a profile from the **Profile** list. Otherwise click **Edit** to create or edit one. This opens the **Network profiles** dialog box.
- 4. In the **Network profiles** dialog box click **New** to create a new profile or **Edit** to modify an existing one.

The **Profile** dialog box is displayed.

🍄 Profile	
N	
Name	FreeNet
User account	eLux
Password	ade ade ade
Identification	PAP
Idle timeout	240
Manager timeout	60
Number	0019231770
MSN	
Callback	
Use local IP-Address	
ſ	OK Cancel
L	

Figure 46: "Profile" dialog box for ISDN

Name:	Enter a name for the ISDN profile, such as the name of your provider.
User account:	Enter the user account name assigned by your provider.
Password:	Enter the password assigned by your provider.
Identification:	Click the method assigned by your provider (generally PAP).
Idle time-out:	Enter an idle time (in seconds). After this specified amount of inactivity, eLux NG disconnects the ISDN connection.
Manager time-out:	Time (in seconds) for the security / remote management tool Scout NG to reply when the terminal boots (ask your network administrator). The Thin Client must be managed. The countdown starts when the network connection is established. See the <i>Scout NG Administrator's Manual</i> for information on Scout NG. If the manager time-out is not known, use the default value.
Number:	Enter the access number of your provider. For company telephone systems, include the code used to access an outside line, if required.
MSN:	Multiple Subscriber Number. If you use the callback function, enter the phone number of your terminal (without the area code). If you don't use the callback function, enter zero.
Callback:	Select if your provider supports the callback feature (usually unchecked for commercial providers). If you use callback, you must enter an MSN.
Use local IP address:	Select if your provider reserves a static IP address for your eLux NG terminal (usually unchecked for commercial providers).

- 5. When you are done entering information for a profile, click **OK** in the **Profile** dialog box. Repeat until you have entered / edited the desired profiles.
- 6. Click **OK** in the **Profile** dialog box and **Apply** in the **Hardware** subtab.

# **Comments on ISDN**

When connecting via ISDN, ADSL or modem it is possible that the thin client's IP address will change dynamically. The new address is updated immediately in the eLux NG starter title bar.

See "Appendix 3: Examples of Internet Profiles" for a list of the default hardware profiles that are delivered in eLux NG. These default profiles are valid in Germany and may not be valid in your country. Use them only as examples when defining your profiles. Included is a T-Online profile.

For troubleshooting, see chapter "5.4 Solutions to Common Problems."

# 3.13.3 ADSL

eLux NG [uc97, 217.160.115.97]		
Applications Configuration Setup		1
curity <u>M</u> ultimedia Dri <u>v</u> es Pr <u>i</u> nter	r <u>H</u> ardware	<u>VPN</u> <u>D</u> iagnostics
Network profiles	Network type	ADSL
Defined profiles	Speed	Auto
myADSLaccount	Profile	myADSLaccount
	User	01234567890123456
Delete		
		Edit
OK Cancel		

Figure 47: Setup > Hardware > ADSL

- 1. From the **Setup** tab, click the **Hardware** subtab.
- 2. Choose **ADSL** from the **Network type** list.

A series of fields appears.

- 3. Select the LAN speed from the **Speed** list. If **Auto** does not work, see your network administrator for the correct speed.
- 4. Select a profile from the Profile list. Otherwise click Edit to create or edit one.
- 5. In the **Network profiles** dialog box click **New** to create a new profile or **Edit** to modify an existing one.

The **Profile** dialog box is displayed.

Profile	
Name	myADSLaccount
User account	01234567890123456
Password	
Identification	PAP
Idle timeout	120
Manager timeout	30
Number	
MSN	
Callback	
Use local IP-Address	
	OK Cancel

Figure 48: "Profile" dialog box for ADSL

Name:	Enter a name for this profile.
User account:	Enter the user account name assigned by your provider.
Password:	Enter the password assigned by your provider.
Identification:	Select the method assigned by your provider (generally PAP).
Idle time-out:	Enter a value for the idle time (in seconds). After this specified amount of inactivity, eLux NG disconnects the connection.
Manager time-out:	Enter the time (in seconds) for the security / remote management tool Scout NG to reply when the terminal boots (ask your administrator). If not known, use the default value.

- 6. Click **Apply** in the **Profile** dialog box.
- 7. Click **OK** in the **Network profile** dialog box and **Apply** in the **Hardware** tab.

When connecting via ISDN, ADSL or modem it is possible that the thin client's IP address will change dynamically. The new address is updated immediately in the eLux NG starter title bar. See "Appendix 3: Examples of Internet Profiles" for a list of the default hardware profiles that are delivered in eLux NG. Included is a T-Online profile for ADSL.

# 3.13.4 Modem

😫 eLux NG [uc97, 217.160.115.97]		
Applications Configuration Se	e <u>t</u> up	
curity <u>M</u> ultimedia Dri <u>v</u> es	Pr <u>i</u> nter <u>H</u> ardware	<u>VPN</u> <u>D</u> iagnostics
Network profiles	Network type	Modem
FreeNet	Speed	38400
arcor T–Online <u>E</u> dit	Profile	FreeNet
	User	elux
Delete		
		Edit
OK Cancel		

Figure 49: Setup > Hardware > Modem

- 1. From the Setup tab, click the Hardware subtab.
- 2. Choose **Modem** from the **Network type** list.

A series of fields appears.

3. Click the baud rate of your modem from the **Speed** list.

Note: Must be greater than the actual maximum modem baud rate.

- 4. Select a profile from the **Profile** list. Otherwise click **Edit** to create or edit one.
- 5. In the **Network profiles** dialog box click **New** to create a new profile or **Edit** to modify an existing one.

The **Profile** dialog box is displayed.

🍄 Profile	
Name	FreeNet
User account	elux
Password	
Identification	PAP
Idle timeout	240
Manager timeout	60
Number	0019231770
MSN	
Callback	
Use local IP-Address	
	OK Cancel

Figure 50:" Profile" dialog box for modem

Name:	Enter a name for this profile.
User account:	Enter the user account name assigned by your provider.
Password:	Enter the password assigned by your provider.
Identification:	Click the method assigned by your provider (generally PAP).
Idle time-out:	Enter a value for the idle time (in seconds). After this specified amount of inactivity, eLux NG disconnects the connection.
Manager time-out:	Enter the time (in seconds) for the security / remote management tool to reply when the terminal boots (ask your administrator). If not known, use the default value.
Number:	Enter the access number of your provider.

- 6. Click Apply in the Profile dialog box.
- 7. Click OK in the Network profiles dialog box and Apply in the Hardware tab.

When connecting via ISDN, ADSL or modem it is possible that the thin client's IP address will change dynamically. The new address is updated immediately in the eLux NG starter title bar. See "Appendix 3: Examples of Internet Profiles" for a list of the default hardware profiles that are delivered in eLux NG. These default profiles are valid in Germany and may not be valid in your country. Use them only as examples when defining your profiles. Included is a T-Online profile.



# 3.13.5 Token Ring \*\*

📫 eLux NG [uc97, 217.160.115.97]	
Applications Configuration Setup	
curity <u>M</u> ultimedia Dri <u>v</u> es Pr <u>i</u> nter	Hardware VPN Diagnostics
USB mass storage devices 🛄 🗷 🕅	Network type Token Ring 🗐
Smart card None	ipeed 4
Figure 51: Setup > Hardware >	Token Ring 16
1. From the Setup tab, click the Hardware	subtab.

- 2. Choose Token Ring from the Network type list.
- 3. Click autosensing or the speed (in Mbit/s) from the **Speed** list.
- 4. Click Apply.



#### 3.13.6 Wireless LAN \*\*

eLux NG supports the following wireless LAN products:

- (1) Aironet 350 Series Network cards from Cisco Systems, Inc.
- (2) DWL-G520 Network card from D-Link Corporation.
- (3) WLAN USB D1700 USB network adapter from Fujitsu Siemens Computers.

# (1) Cisco Aironet 350 Series Network Cards

eLux NG supports the Aironet 350 Series network cards from Cisco Systems, Inc. No adapter is required and it is not necessary to disable the onboard Ethernet controller in the Thin Client's BIOS Setup. This feature is not available for all hardware platforms.

Enabling wireless LAN on your device involves the following:

- 1. Installing the required firmware
- 2. Inserting the card
- 3. Configuring network hardware settings
- 4. Entering the WEP key for encrypted transfer

# ⇒ To install the wireless LAN firmware

To use wireless LAN you must install the Aironet Client Utility from Cisco.

- 1. Start ELIAS NG and add the following packages to the device's IDF:
  - Aironet Client 350 Series (aironet) This FPM is found in the base OS package.
  - **GTK Library Package (gtklib)** EPM. This is a library required for the next package. Confirm that the FPM "GTK MM Library" (libgtkmm) is active.
  - Cisco Aironet Utility (airo) EPM. The graphical interface of the Cisco client.
- 2. Save the IDF and exit ELIAS NG.
- 3. Install the software on the Thin Client by performing a firmware update over Ethernet.

#### ⇒ To insert the wireless card

Insert the card into your device according to the directions that came with the card.

#### ⇒ To set network hardware settings for wireless LAN

eLux NG [Herman, 217.160.115.106]	100 E
Applications Configuration Setup	
curity <u>M</u> ultimedia Dri <u>v</u> es Pr <u>i</u> nter	Hardware <u>VPN D</u> iagnostics
USB mass storage devices 🛛 🛄	Network type WLAN Aironet 두
Smart card None 😱	

Figure 52: Setup > Hardware > Wireless LAN

- 1. In eLux NG, from the **Setup** tab, click the **Hardware** subtab.
- 2. Choose WLAN Aironet from the Network type list.
- 3. Click **Apply** and then **Yes** in the **eLux NG Starter** dialog box.



4. When the device restarts, it will attempt to contact the access point using unencrypted wireless LAN.

## ⇒ To set client-side encryption settings

This section explains how to activate Wired Equivalent Privacy (WEP) with static keys for your client in an enterprise network. WEP is an optional feature based on the IEEE 802.11b standard that provides data confidentiality. Using WEP involves packet-by-packet data encryption by the transmitting device and decryption by the receiving device. The 350 Series supports high-speed WEP at 40 and 128 bits.

Encryption settings are made in the Client Encryption Manager (CEM) portion of the Cisco Aironet Client Utility.

📫 eLux NG [eLux4162-8321-8938, 192.168.1.165	
Applications Configuration Setup	
curity <u>M</u> ultimedia Dri <u>v</u> es Pr <u>i</u> nter	Hardware VPN Diagnostics
USB mass storage devices 🛛 🛄 🗖	Network type WLAN Aironet 두
Smart card None	
RAM disk U4096 kB	
	Edit
Apply <u>R</u> eset	

Figure 53: Setup > Hardware > Wireless LAN > Edit button

1. From the **Setup** tab, click the **Hardware** subtab. Click the **Edit** button. The Aironet Client Utility appears (command line equivalent: "acu").

**Note** If the **Edit** button is not displayed, select **WLAN Aironet** from the **Network type** list. Click **Apply** and then **Yes** in the **eLux NG Starter** dialog box. After restarting, the **Edit** button will be present.



Figure 54: Cisco Aironet Client Utility interface

- 2. This client program is from Cisco Systems. A few highlights:
  - **Commands > Status** Displays the signal level and other useful information for userlevel diagnostics.
  - **Commands > Statistics** Shows how data is currently being transmitted or received.
  - CEM > Change Password Allows you to change the Client Encryption Manager (CEM) password.
  - **Commands > Edit Properties** In the **System Parameters** tab, enter the client name and SSID (from the network administrator).

For a description of all Aironet client settings, see the Cisco documentation. Enterpriselevel encryption settings are described below.

- To activate Wired Equivalent Privacy (WEP) for encrypted transfer, from the CEM menu select Enter WEP key. Enter the CEM password (default = "Cisco"). The Enter WEP key(s) dialog box appears.
- 4. Click to select the **WEP key** check box, **Transmit Key** check box and speed (40- or 128bit) for the key that you are creating (1, 2, 3 or 4). Note that the speed must match serverside settings.
- 5. Enter the WEP key, keeping the following rules in mind:
  - The WEP key must match the WEP key used by the access point with which you are planning to communicate.
  - For 40-bit encryption, the WEP key must be 10 characters in length, for 128-bit encryption, 26 characters.
  - General purpose WEP keys can only consist of the hexadecimal characters 0-9, A-F, and a-f, whereas home networking WEP keys can be comprised of ASCII text.
  - You can write over existing keys, but you cannot edit or delete them.
- 6. Click **Apply** and **OK**. Note that entering a WEP key does not enable WEP. Also, for security reasons, the codes for existing WEP keys will not be displayed.

- From the Commands menu select Edit Properties. The Properties dialog box opens. Go to the Network Security tab. Click to select the Enable WEP (Wired Equivalent Privacy) check box. Click OK.
- 8. Close the Aironet Client Utility and restart the device for configuration settings to take effect.

In addition, security settings must be configured on the access point.

#### Extensions in Cisco Aironet Utility, V 2.1.13-2 (and later)

With eLux NG V1.20 the software package "Cisco Aironet Utility 2.1.13" has been extended by the programs "leapscript" and "leapset".

**leapscript** enables to set the user name and password for the LEAP-authentication. LEAP is an authentication method supported by Cisco WLAN devices for networks secured by IEEE 802.1x. Up to now user name and password could only be entered via graphical interface (acu), so that during boot procedure no network connection was available nor could the management server be reached.

**leapscript** reads the user name and password for the LEAP authentication from the file /setup/aironet/aironet.ini. This file can be entered in Scout NG for devices and/or groups (properties of groups or devices – Advanced file entries).

#### Structure of the file /setup/aironet/aironet.ini:

Example 1:

```
[LEAP]
```

Username=elux

CleartextPassword=secret

The device authenticates with the user name elux and the password secret. The password is shown as plain text.

#### Example 2:

[LEAP]

Username=\_\_HOSTNAME\_\_\_

CleartextPassword=secret

The macro \_\_\_HOSTNAME\_\_ is being replaced by the host name of the device, i.e. each device authenticates by its network name and the password secret.

#### Example 3:

```
[LEAP]
Username=elux
```

Password=q]@Xy^b[w

In this example the password is stored in encrypted form.

**leapset** – just like **leapscript** – serves for entry of the user name and password for the LEAP authentication. However, entry with leapset can only be done interactively, not by scriptfile.

For further information on Cisco products, or for WEP settings for a home (non-enterprise) network, consult the Cisco documentation.



# (2) D-Link DWL-G520 Network Card

eLux NG supports the DWL-G520 network card from D-Link Corporation. No adapter is required and it is not necessary to disable the onboard Ethernet controller in the Thin Client's BIOS Setup. This feature is not available for all hardware platforms.

Enabling wireless LAN on your device involves the following:

- 1. Installing the required firmware
- 2. Inserting the card
- 3. Configuring network hardware settings
- 4. Configuring network hardware settings and entering the WEP key for encrypted transfer

#### ⇒ To install the wireless LAN firmware

To use wireless LAN you must install the following firmware:

- 1. Start ELIAS NG and add the following packages to the device's IDF:
  - WLAN DLINK DWL-G520 (wireless\_g520) This FPM is found in the base OS package.

Note: If you cannot activate this FPM, remove the "Cisco Aironet Utility" (airo) EPM from the IDF first.

- 2. Save the IDF and exit ELIAS NG.
- 3. Install the software on the Thin Client by performing a firmware update over Ethernet.

#### ⇒ To insert the wireless card

Insert the card into your device according to the directions that came with the card.

# ⇒ To set network hardware settings for wireless LAN

📫 eLux NG [dhcp111, 217.160.115.105]	_	
Applications Configuration Setup		
curity <u>M</u> ultimedia Dri <u>v</u> es Pr <u>i</u> nte	r <u>H</u> ardware	<u>VPN</u> <u>D</u> iagnostics
USB mass storage devices 🛛 🛄 🗷	Network type	Wireless LAN
Smart card None	WEP Key	09876543210987654
RAM disk 📕 16384 kB	SSID Channel	UC_Wlan

Figure 55: Setup > Hardware > Wireless LAN

- 1. In eLux NG, from the Setup tab, click the Hardware subtab.
- 2. Choose Wireless LAN from the Network type list.
- 3. (optional) Enter the WEP key you received from your network administrator. If you leave this field blank, the connection will be unencrypted.
  - Wired Equivalent Privacy (WEP) is based on the IEEE 802.11b standard and provides data confidentiality.
- 4. (optional) Enter the SSID information you got from your network administrator.
  - Service Set Identifier (SSID) defines the network name of a wireless network based on the IEEE 802.11b standard.
- 5. Configure the **channel** where the Access Point provides its service or set **Auto** for this parameter, in order to make the client scan for the used channel and automatically configure it.
- 6. Click Apply and then Yes in the eLux NG Starter dialog box.
- 7. When the device restarts, it will attempt to contact the access point using wireless LAN.

#### (3) Fujitsu Siemens WLAN D1700 USB Network Adapter

eLux NG supports the Connect2Air<sup>™</sup> WLAN E-5400 D1700 USB adapter from Fujitsu Siemens Computers. The Connect2Air USB adapter supports data transfer rates of up to 54 Mb/s and 64 and 128 bit WEP encryption. This product is not supported by all hardware platforms.

Enabling wireless LAN on your device involves the following:

- 1. Installing the required firmware
- 2. Attaching the USB network adapter
- 3. Configuring network hardware settings and entering the WEP key for encrypted transfer

#### ➡ To install the wireless LAN firmware

To use wireless LAN you must install the following firmware:

- 1. Start ELIAS NG and add the following packages to the device's IDF:
  - WLAN USB D1700 (wireless) This FPM is found in the base OS package.

Note: If you cannot activate this FPM, remove the "Cisco Aironet Utility" (airo) EPM from the IDF first.



- 2. Save the IDF and exit ELIAS NG.
- 3. Install the software on the Thin Client by performing a firmware update over Ethernet.

# ⇒ To attach the USB network adapter

Insert the USB network adapter into your device according to the directions that came with the adapter.

## ⇒ To set network hardware settings for wireless LAN

eLux NG (dhcp	111, 217.160.115.105]		
A <u>p</u> plications	Configuration Setup		
curity <u>M</u> ul	timedia Dri <u>v</u> es Pr <u>i</u> nte	r <u>H</u> ardware	VPN Diagnostics
USB mass st	orage devices 🛄 🗷	Network type	Wireless LAN
Smart card	None	WEP Key	09876543210987654
RAM disk	11	SSID	UC_Wlan
	16384 kB	Channel	11 .

Figure 56: Setup > Hardware > Wireless LAN

- 1. In eLux NG, from the **Setup** tab, click the **Hardware** subtab.
- 2. Choose Wireless LAN from the Network type list.
- 3. (optional) Enter the WEP key you received from your network administrator. If you leave this field blank, the connection will be unencrypted.
- 4. Wired Equivalent Privacy (WEP) is based on the IEEE 802.11b standard and provides data confidentiality.
- 5. (optional) Enter the SSID information you got from your network administrator.
- 6. Service Set Identifier (SSID) defines the network name of a wireless network based on the IEEE 802.11b standard.
- Configure the channel where the Access Point provides its service or set *Auto* for this parameter, in order to make the client scan for the used channel and automatically configure it.
- 8. Click Apply and then Yes in the eLux NG Starter dialog box.
- 9. When the device restarts, it will attempt to contact the access point using wireless LAN.



# 3.14 Remote Management

Thin Clients are managed using the Scout NG management tool. In order to be managed, they must be registered in the Scout NG Server. There are two ways to do this:

- 1. The Scout NG "Client Discovery" function is performed at the Scout NG Server management server. This procedure searches for Thin Clients available over the network remotely and automatically enters the IP address of the management server in the Thin Client's **Manager** field.
- 2. A "Reverse Discovery" is similar to a Client Discovery, except that the IP address of the management server Scout NG is entered in the **Manager** field on the Thin Client manually. This procedure is described below.

First, install and configure the Scout NG management software on the designated machine. Second, unpack and set up the Thin Clients. The information you enter in the "Remote management settings area" on the Thin Client is sent to the Scout NG management machine, which uses this information to locate and configure the Thin Client.

# ⇒ To use the First Configuration Wizard

By default, the first time the Thin Client successfully boots, a Wizard appears to help you through the configuration process.

You have the choice between entering the device in the management software Scout NG or configuring it by hand.

For more information, see "2.2 First Configuration Wizard."

# ⇒ To perform a Reverse Discovery

After the initial configuration, you can enter the Thin Client in the management software by performing a Reverse Discovery.

From the Setup tab, click the Security subtab.

 Enter the IP address or name of the Scout NG server in the "Manager settings" > Manager field. You may also assign the management addresse to the client by the Scout NG Discovery function. But if te

field already contains an IP address, the terminal is currently being managed.

- 2. With V1.23 and higher the group may be selected from the list of available groups at the server.
- 3. With V1.23 and higher the user may disconnect from the management by clicking **delete**, but consider that this effects a **factory reset**.
- 4. The **Advanced** button opens the dialog with a list of all Scout NG servers, the top one being the currently assigned server. Further you find the info fields here.

ſ	Manager settings						
	Manager 217.160.115.39						
	Gro	oup	19	19 1280@60		Ŀ	
		(De	lete		A <u>d</u> va	unce d	J
•	Manag	jer setting	s		- Yes		X
Ма	nager						
Na	ame	IP					
		217.160.	115.39				
Inf	01	Building	5295				-
Inf	02	Room 3	32				
Inf	0З	phone 4	871				_
	_			ж	) 🔽	ancel	

Figure 57: Remote management settings area

This feature has been implemented in eLux NG V1.23, because of the ability to work with a so-

called Scout NG farm, i.e. several Scout servers run simultaneously and the client may use another server in case of a disconnection. This increases availability. The list of Scout NG servers is either transferred by one of the Scout servers or may be set by means of DHCP tags from the DHCP server.

5. Fill in the **Info1**, **Info2**, and **Info3** fields with the information requested by your managing administrator. (We suggest user-specific information such as name, room number, telephone extension, etc.)

New

New



- 6. If your Scout NG administrator has predefined groups, enter your group ID number in the **Group ID** field. Otherwise enter zero. This will send the Thin Client's information to the "Lost and Found" group of Scout NG.
- 7. Click Apply.

**Note** Upon delivery, the host name "ScoutSrv" is preset in the **Manager** field. Set this field to your Scout NG server IP address on your Domain Name Server to automatically enter the device in Scout NG the first time the Thin Client boots. For more information on this functionality as well as on entering Thin Clients in the Scout NG management tool, see the *Scout NG Administrator's Handbook*.

# 3.15 Smart Card

Smart cards can be used as an eLux NG security feature, for user roaming, for Citrix logon or for RDP logon. The PC/SC lite interface is used.

The following features are supported:

- **Citrix ICA roaming** Allows you to capture a Citrix session that was running on another terminal by removing and inserting a smart card.
- **PKSC#11** The PKSC#11 smart card interface can be used by local applications, for example, by Mozilla to sign or encrypt emails.
- **RDP CSP** A Crypto Service Provider is server-side software. CSP can be used for RDP logon or to capture an RDP session that was running on another terminal (roaming).
- Secure PIN Allows you to enter a PIN on a card reader instead of via keyboard. The card verifies the PIN itself.

# 3.15.1 Configuring Smart Card Hardware Settings

#### Software Requirements

To use smart cards, the "PCSC Lite" (pcsc\_lite) EPM must be installed. Available driver FPMs for various card readers:

- "CCID Gemplus" (gemplus): Driver for the following card readers: Gemplus GemPC Key, Gemplus GemPC Twin USB (serial not supported), OMNIKEY CardMan 3121, Cherry keyboard XX33 with integrated smart card reader, Fujitsu Siemens Computers smart card reader and more. Supports ICA roaming.
- "Castles EZ100" (ez100): Driver for the Castles Technology EZ100 and EZ100PU USB card readers. Supports ICA roaming.
- "Generic CCID reader" (ccid): Driver for the following card readers: Gemplus GemPC Key, Gemplus GemPC Twin USB (serial not supported), OMNIKEY CardMan 3121, Cherry keyboard XX33 with integrated smart card reader, Kobil KAAN Base, Kobil KAAN Advanced, Kobil KAAN SIM III and more. Supports secure PIN.
- "OMNIKEY CardMan 2020" (cm2020): Driver for the OMNIKEY CardMan 2020 and Fujitsu Siemens Computers USB card readers.
- "OMNIKEY CCID" (omnikey): Driver for the following card readers: OMNIKEY CardMan 3121, Cherry smart terminal X44, Cherry SmartBoard X44, Fujitsu Siemens Computers USB smart card reader 2A, Fujitsu Siemens Computers USB keyboard with integrated smart card reader 2A and more. Supports ICA roaming.

In ELIAS NG select the FPM to view the card readers supported by this driver. If the list exceeds available space, in the Package Information window click in the description field and drag with the mouse or press the PAGE DOWN key to view remaining entries.

For a description of EPMs and FPMs, see the ELIAS NG Administrator's Guide.

eLux NG supports a number of USB card readers and USB keyboards with integrated card reader from the following companies (not all-inclusive):

- Castles Technology
- Datakey
- Fujitsu Siemens Computers
- Gemplus
- Kobil Systems
- OMNIKEY
- SCM Microsystems

For a table of available drivers and their use at the time of publishing, see "Appendix 7: Supported Smart Card Readers." An up-to-date version of this table is available at <u>www.myelux.com</u>.

#### Activating the Card Reader

To activate the card reader, in the **Setup** dialog box, click the **Hardware** subtab. From the **Smart Card** list choose **USB**.

#### **Deactivating the Card Reader**

If you do not have a card reader, deactivate the card reader setting in the **Hardware** subtab. This prevents you from accidentally being locked out of an application. If a card reader is present, this prevents eLux NG and other applications from accessing it.

# 3.15.2 Local Authentication

You can restrict local access to the Thin Client by requiring a smart card upon boot. Local authentication works with the following smart cards:

- CardOS<sup>®</sup> version "M2" or "M4"
- SICRYPT<sup>®</sup> CryptoCard

Siemens GmbH

Fujitsu Siemens Computers

They must be encoded with the users' logon data (name, password, if desired domain) using the SICRYPT SMARTY 2 software.

Local authentication requires a Fujitsu Siemens Computers card reader.

#### ⇒ To configure the client for smart card authentication

1. Set the smart card hardware settings as described in "3.15.1 Configuring Smart Card

Smart card Check always 🐺

Hardware Settings."

- 2. Set the smart card security settings. In the **Setup** dialog box, click the **Security** subtab. From the **Smart card** drop-down list, click to select one of the following:
  - Always required A smart card is required when the Thin Client boots and during the entire eLux NG session. If the user removes the card, the session will be locked. A smart card and valid PIN are required to unlock the terminal.

- **Required on startup** A smart card is required only when the Thin Client starts. The local user can remove the card without interrupting the eLux NG session.
- 3. If the information saved on the smart card includes a domain name, go to the **Network** tab, click **Advanced**, and enter the domain name in the **Smart Card domain** field.



Figure 58: Smart card domain field in Setup > Network > Advanced network settings dialog box

4. Save your changes.

Security settings have now been activated. Depending on the security settings you chose (step 2), the smart card screen will appear at system start and whenever the card is removed during the session, or at system start only. The smart card screen instructs the local user to insert a smart card into the card reader and enter a PIN. The user is blocked until this is done.

Attention Do not mistype the PIN! If an invalid PIN is entered three times, the card is locked and can no longer be used. It must be reset by the smart card administrator using the SICRYPT<sup>®</sup> SMARTY 2 software.

#### Troubleshooting

Following is a list of the most frequent error messages.

Code	Error	Description
	The card is locked	The card has been locked. See your smart card administrator with SMARTY 2 software to unlock.
	No card reader was detected	The card reader is missing. Please attach a card reader and reboot.
	Domain mismatch	The domain name saved to the smart card is not the same as the domain entered in eLux NG.
6d00	Cannot read card	The card is not supported. Please use cards coded with SMARTY 2.
6301	PIN mismatch	Invalid PIN. You have one more attempt to enter the correct PIN.
6302	PIN mismatch	Invalid PIN. You have two attempts remaining to enter the correct PIN.

If the smart card does not work, you can access the device by performing a factory reset. For security reasons, all configuration information is deleted. See "5.3 Factory Reset."



## 3.15.3 User Roaming

You can combine local authentication with another eLux NG feature: user roaming.

User roaming is transferring an active Windows terminal server session from one eLux NG terminal to another. This is useful when you want to move to a terminal with certain hardware – for example, with a special printer – without logging off from your current ICA or RDP session. In user roaming, the terminal disconnects the session when you remove the smart card (the processes continue to run on the server) and reconnects when you insert the smart card in a second terminal, using the second device's hardware settings (printer, drive mapping).

All terminals that will be used for user roaming must have user roaming enabled in advance.

User roaming works with the following smart cards:

- CardOS<sup>®</sup> version "M2" or "M4" Siemens GmbH
- SICRYPT<sup>®</sup> CryptoCard

Fujitsu Siemens Computers

They must be encoded with the users' Citrix logon data (name, password, domain) using the SICRYPT SMARTY 2 software. A certificate is not permitted.

User roaming requires a Fujitsu Siemens Computers card reader.

#### ⇒ To configure eLux NG for user roaming

- 1. Set the smart card hardware settings as described in "3.15.1 Configuring Smart Card Hardware Settings."
- 2. Set the smart card security settings. In the **Setup** tab, click the **Security** subtab. From the **Smart card** drop-down list, click to select the following:



- Always required A smart card is required when the Thin Client boots and during the entire eLux NG session. If the user removes the card, the session will be locked. A smart card and valid PIN are required to unlock the terminal.
- 3. Click Apply and OK to close the Setup dialog box.
- 4. Configure one of the following sessions:
  - ICA See "4.2.1 Remote Desktop."
  - RDP See "4.4.1 Remote Desktop."

In the application definition, click to select Roaming.

Logon information is read directly from the card. The entries **User**, **Password**, **Domain** in the application definition dialog will be ignored.

Note: The option **Allow smart card logon** (see "3.15.4 Citrix Logon") cannot be combined with user roaming.

5. Save your changes.

Activating the **Roaming** check box starts the terminal server session automatically. Log on to a Windows session or unlocking a locked Windows session is reduced to inserting a smart card and entering the user PIN for this card. The user logon data is dynamically read from the smart card and used to connect to the terminal server. If the local user removes the smart card, the terminal server session is disconnected. Therefore, certain settings must be defined on the terminal server. For further information, consult the terminal server manual.

# 3.15.4 Citrix Logon

You can restrict access to a Citrix MetaFrame server by requiring a smart card upon logon. This feature is distinct from local authentication and user roaming and cannot be combined.

Citrix smart card logon works with a number of smart cards. Users' logon data (name, password, domain) as well as a certificate are saved to the smart card. You must have the corresponding smart card software installed on your MetaFrame server. See the Citrix documentation for more information.

# ⇒ To configure eLux NG for Citrix ICA smart card logon

- 1. Set the smart card hardware settings as described in "3.15.1 Configuring Smart Card Hardware Settings."
- 2. Set the smart card security settings. In **Setup**, click the **Security** subtab. From the **Smart** card drop-down list, click to select the following:
  - **Not required** This disables eLux NG security settings, freeing up the card reader for other applications, in this case, for the Citrix ICA client.

Click Apply.

- 3. Go to the **Configuration** tab. Configure an ICA session as described in "4.2.1 Remote Desktop." Click to select **Allow smart card logon**.
- 4. Save your changes.

# 3.15.5 RDP Logon

To use this feature, your terminal server must support RDP 5.2 or higher. In addition, on the thin client you must have base OS 1.14.1 or higher and the RDP native client 1.4.0 or higher installed ("rdesktop52").

You can restrict access to a terminal server by requiring a smart card upon logon. This feature is distinct from local authentication and user roaming and cannot be combined.

RDP smart card logon works with a number of smart cards. Users' logon data (name, password, domain) as well as a certificate are saved to the smart card. You must have the corresponding smart card software installed on your server.

The following cryptographic service providers are supported:

- GemSAFE<sup>™</sup> from Gemplus<sup>®</sup>
- SafeSign<sup>®</sup> from Thales e-Security Ltd.

## ⇒ To configure eLux NG for RDP smart card logon

- 1. Set the smart card hardware settings as described in "3.15.1 Configuring Smart Card Hardware Settings."
- 2. Set the smart card security settings. In **Setup**, click the **Security** subtab. From the **Smart card** drop-down list, click to select the following:
  - Not required This disables eLux NG security settings, freeing up the card reader for other applications, in this case, for the RDP client.

Click Apply.

- 3. Go to the **Configuration** tab. Configure an RDP session as described in "4.4.1 Remote Desktop." Leave **Roaming** deselected.
- 4. Click Advanced.
- 5. In the **RDP advanced** dialog box go to the **Advanced** tab and set the protocol to "Auto" or "RDP V5".
- 6. Go to the Local Resources tab and select the Enable smart card check box.
- 7. Save your changes.



# 3.16 Mirroring

Mirroring is the term used to describe the process of monitoring a user's session remotely and, optionally, participating in the session using your own keyboard and mouse. Mirroring has a variety of uses, including troubleshooting, training and presentations.

Mirroring requires server-side and client-side configuration. In this section, we will use the scenario of a Thin Client mirroring another Thin Client.

# Required Software

Administrator

User

VNC viewer ("VNC client" (vnc)). (If the administrator machine is not a Thin Client, use the respective VNC viewer software.) VNC server ( "eLux NG mirroring" (mirror)). Mirroring is

disabled if the eLux NG terminal does not have the necessary firmware installed.



# ⇒ To enable / disable mirroring (user terminal)

From the Setup tab, click the Security subtab.

- 1. Select the Activated check box to allow mirroring. Other options are:
  - **Read only access**: Gives other machines view rights only.

**Confirmation necessary**: The user must confirm a mirroring session before it can start. **XDMCP:** Enables mirroring of XDMCP sessions.

<ul> <li>Mirror serv</li> </ul>	er settings	<u></u>
🗶 Activate	ed	XDMCP
🔲 Read or	nly access	—
🗷 Confirm	nation nece	issary

Password: (optional) Set the password that must be entered to start a mirroring session.

2. Click Apply.

# ⇒ To configure the eLux NG VNC viewer (administrator machine)

From the **Configuration** tab, click **New**.

- 1. The Application Definition dialog box appears. Click the Emulation tab.
- 2. Click **VNC** in the **Emulation type** list. A series of fields appears.
  - **Name**: Enter an appropriate name for this application, such as "mirror."
  - Server address: Use the following format:
    - <IP address or name of the eLux NG terminal>:<display number>

For description of display numbers, see below.

- **Password**: (optional) Enter the mirroring password saved to the target device. If a mirroring password does not exist, leave blank.
- 3. Click Finish.

During the mirroring session, the keyboard mapping of the local system has precedence.

# **Display number**

You can enter "0", "1" or "2" for the display number.

If your hardware platform supports multiple consoles, use "0" to mirror the eLux NG main screen. Use "1" to mirror the first running XDMCP session and "2" for the second XDMCP session, if applicable.

If your hardware platform does not support multiple consoles – you will know this because the eLux NG desktop is automatically ended when an XDMCP session is started – always use "0".

#### Security concerns

During a mirroring session, a message box appears on the remote machine, making it impossible to "secretly" mirror a user. The user can end a mirroring session at any time. In addition, you can set a mirroring password. Nonetheless, if security is a concern, you can deactivate mirroring entirely by deselecting the **Activated** check box in the **Security** subtab > "Mirror server settings".



🗙 VNC: Harry								
	M/	M/	M/	M/	Mr.	M/	Mr.	
Solaris ARIS	SOLARIS"	SOLARIS"	SOLARIS"	SOLARIS"	SOLARIS"	SOLARIS"	SOLARIS"	SOLARIS"
M	Mr.	Mr.	Mr.	Mr.	Mr.	Mr.	Mr.	M
SOLARIS"	SOLARIS"	SOLARIS"	SOLARIS"	SOLARIS"	SOLARIS"	SOLARIS"	SOLARIS"	SOLARIS"
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M		M	Voice	Note	M	M	M	mirror
SOLATION					COLADIC	COLADIC	COLAR	Accept connections
	Sep 2		One Three	Two Four			cpu disk	Untirm requests View only Disconnect session

Figure 60: Example mirroring session – XDMCP session (display number depends on hardware platform)

# Related Information

Section "4.7.6 VNC" discusses configuring the free eLux NG software "VNC viewer". Section "4.7.5 XDMCP" discusses configuring XDMCP sessions.

# 3.17 VPN

A virtual private network (VPN) is a system that allows two or more private networks to be connected over a publicly accessible network, such as the Internet. These systems use encryption and other security mechanisms to ensure that only authorized users can access the network and that the data cannot be intercepted. A VPN can be used to exchange critical information between employees working remotely or to securely deliver information between business partners.

eLux NG can be used with the following VPNs: Cisco VPN and Nortel Contivity.

# 3.17.1 Cisco VPN Client \*\*

The Cisco VPN client is used to connect to a Cisco VPN device to create a secure connection between the Thin Client and a private network. It uses Internet Key Exchange (IKE) and IP Security (IPSec) tunneling protocols to establish and manage the secure connection. You can connect using LAN, DSL or ISDN to one of the following:

- Cisco IOS devices that support Easy VPN server functionality
- VPN 3000 Series Concentrators
- Cisco PIX Firewall Series

The following describes how to configure the VPN client via shell and start a session using preshared keys. Configuration takes place locally on each Thin Client that will access the private network. It is assumed that the initial configuration takes place in the company's Ethernet network before the device is transferred to a remote workplace using Ethernet, ADSL, ISDN or WLAN.

Each Thin Client must have the configuration parameters saved to the file: /setup/ciscovpn/sample.pcf.

This section assumes you are familiar with defining a local shell, setting network hardware settings and using the UNIX text editor vi.

#### **Firewall Issues**

If you are running a firewall, the following types of traffic must be allowed through:

- Port 500 for UDP
- Port 10000 for UDP (or any other port number being used for IPSec/UDP)
- IP protocol 50 (ESP)
- TCP port configured for IPSec/TCP
- NAT-T (Standards-Based NAT Transparency) port 4500

#### **Required Information**

The following information is necessary for the configuration (see your VPN system administrator):

- Hostname or IP address of the secure gateway you are connecting to
- IPSec group name
- IPSec group password
- Username and password if authenticating through:
   ~ the secure gateway's internal server
   ~ an authentication, authorization and accounting (AAA) server, either RADIUS or TACACS+
- The hostnames or IP addresses of the backup servers, if configuring backup server connections

Using the Cisco VPN to build a tunnel involves the following:

- 1. Installing the required firmware
- 2. Configuring network hardware settings
- 3. Configuring the Cisco VPN client
- 4. Initiating a connection
- 5. Configuring an application for automatic start

## ⇒ To install the required firmware

To set up your VPN you must install the VPN client from Cisco.

- 1. Start ELIAS NG and add the following packages to the device's IDF:
  - Base OS 1.7 or later
  - Browser of your choice (optional, for testing purposes)
  - Cisco Systems VPN Client (cisco\_vpnclient) EPM. The Cisco client software.
- 2. Save the IDF and exit ELIAS NG.
- 3. Install the software on the Thin Client by performing a firmware update.

**Note** Only one VPN may be installed on the Thin Client at a time. In ELIAS NG, if you receive the error message "Package already defined" when selecting the package, remove the current VPN from your IDF.

## ⇒ To configure network hardware settings

1. Configure the network hardware settings.

Tip: For ISDN or ADSL, set the time-out to 600 seconds.

For information on how to configure network hardware settings, see "3.13 Network Hardware."

- 2. Restart the device.
- 3. Test that your hardware parameters are correct.

Tip: You can do this by starting a local browser (such as Opera, Mozilla or Firefox). If you can successfully connect to an external Web site, the parameters are valid.

#### ⇒ To configure the Cisco VPN client

To initiate an encrypted session with a Cisco device, you must have certain parameters saved to the device. The Cisco VPN client default configuration file is sample.pcf.

Edit the profile configuration file with one of the following:

- UNIX editor vi. Run a local shell (see "4.8.1 XTerm (Local Shell)"). At the command-line
  prompt type the following command to open the file in the editor vi:
  vi /setup/ciscovpn/sample.pcf
- Local text editor (see "4.8.8 Text Editor")

To set the required parameter:

- 1. Open the file. Set the parameter "Host" to address of the Cisco VPN server. The address can be either in decimal format (nnn.nnn.nnn) or a DNS Lookup address. You can set other tunnel parameters in this file if desired, such as IPSec group name and password or backup servers. For a complete list of all configuration parameters, see the Cisco documentation.
- 2. Save the file and exit the editor.

#### ⇒ To initiate a session

- 1. A VPN session is initiated from the local shell. There is no graphical user interface.
- 2. To initiate the session, open a local shell. At the bash prompt type: vpnclient connect sample
- 3. If connection was successful, you will be requested to enter a group name and password and a user name and password (depending on the configuration).
- 4. Once the tunnel has been established, the local shell displays the status of the connection as well as potential error messages (see Figure 61).
- 5. You can run applications (ICA, RDP, emulations etc.) from the eLux NG starter as usual. The connections will be established through the secure tunnel.
- 6. To disconnect, type CTRL-C or close the local shell.

#### ⇒ To configure an application for automatic start

After successfully establishing a session from a local shell, you can configure an application to run Cisco VPN automatically when the device starts. This section is optional.

- 1. From the **Configuration** tab, click **New**. In the **Application Definition** dialog box, click the **Local** tab.
  - Name: Enter "VPN Connect".
  - Application: Select XTERM.
  - **Parameter**: Enter -e vpnclient connect sample
  - Application Restart: Leave deselected
  - Start automatically: Click to select
- 2. From now on when the Thin Client starts, the window **VPN Connect** will automatically open and a VPN session will be initiated.





- 3. The **VPN Connect** window displays the status of the connection. The window is displayed only for the duration of the VPN session. Error messages are not displayed.
- 4. To disconnect, use CTRL-C or close the **VPN Connect** window.



#### Helpful hints

In a local shell:

- Entering the command vpnclient displays a list of all VPN client commands.
- Entering the command vpnclient stat displays status information for the connection.
- When you start the client automatically using the -e parameter, the window is displayed only for the duration of the VPN session, making it inappropriate for debugging. Call the client from a local shell to view potential error messages.
- You can save more than one profile configuration file to the Thin Client directory /setup/ciscovpn/. In this case, when calling the program replace sample with <file name> where <file name> is the name of the profile without the extension \*.pcf.
- Always end your applications before closing the VPN tunnel!
- If the VPN tunnel closes when applications are running, the applications will hang. If this occurs, disconnect the session by either closing the window or disconnecting the session in the eLux NG starter. Avoid this by setting high idle times when using ISDN or DSL.
- If you cannot build a tunnel, verify that the network connection is active (especially if you are using ISDN or DSL). One way to do is by starting a local browser.

The configuration parameters in sample.pcf can also be set by Scout NG. In addition, remote devices with Cisco VPN can be managed by Scout NG as long as the manager can be reached outside of the tunnel. See the *Scout NG Administrator's Guide* for more information.

For configuring the profile for authentication using a digital certificate or token vendor, see the Cisco documentation.

#### 3.17.2 Nortel VPN Client \*\*

The Contivity VPN client from Nortel Networks is used to connect to a Nortel VPN device to create a secure connection between the Thin Client and a private network. It uses Internet Key Exchange (IKE) and IP Security (IPSec) tunneling protocols to establish and manage the secure connection. You can connect using LAN, DSL or ISDN to one of the following:

Contivity VPN Switches

The following describes how to configure the VPN client via browser and establish a connection between the client and the Contivity VPN switch. Configuration takes place locally on each Thin Client that will access the private network.

This section assumes you are familiar with setting network hardware settings on the Thin Client and configuring Nortel Contivity switches.

#### **Firewall Issues**

If you are running a firewall, the following types of traffic must be allowed through:

- Port 500 for UDP
- IP protocol 50 (ESP)

# **Required Information**

The following information is necessary for the software registration (see your VPN system administrator):

- Name
- Organization
- License code

The following information is necessary to establish a connection (see your VPN system administrator):

- Hostname or IP address of the switch you are connecting to
- Username and password if authenticating through:
   ~ an authentication, authorization and accounting (AAA) server, such as TACACS+
- Digital certificate if using certificate authentication

Using the VPN to establish a secure connection involves the following:

- 1. Configuring the Contivity switch
- 2. Installing the required firmware
- 3. Configuring network hardware settings
- 4. Launching the VPN client
- 5. Registering the VPN client
- 6. Defining a connection

# ⇒ To configure the Contivity switch

The Nortel Networks Contivity switch must be configured prior to configuring the client. For information on configuring Contivity switches, see the Nortel documentation.

# ⇒ To install the required firmware

The VPN client firmware must be installed on the Thin Client.

- 1. Start ELIAS NG and add the following packages to the device's IDF:
  - Base OS 1.11 or later
  - Browser of your choice
  - Contivity VPN client (cvc) EPM, the VPN client software
- 2. Save the IDF and exit ELIAS NG.
- 3. Install the software on the Thin Client by performing a firmware update.

**Note** Only one VPN may be installed on the Thin Client at a time. In ELIAS NG, if you receive the error message "Package already defined" when selecting the package, remove the existing VPN from your IDF.

#### ⇒ To configure network hardware settings

Configure your network hardware settings as described in "3.13 Network Hardware." For ISDN or ADSL, set the time-out to 600 seconds. Restart the device, if necessary.

# ⇒ To launch the VPN client

To start the VPN client:

1. In the eLux NG starter, configure a browser.

For information on how to configure a browser, see "4.5.1 Local Browser."

- 2. In the **Applications** tab, run the browser session you just configured.
- 3. Go to URL http://127.0.0.1:9161.

# ⇒ To register the VPN client

To enter registration information locally on the Thin Client:

- 1. Launch the VPN client as described in "To launch the VPN client," page 99.
- 2. The "Product Registration" window appears.
- 3. Enter the following registration information: name, organization and license code as given to you by your VPN administrator.

**Note** The registration information is case sensitive. The letters in lower case must be typed in lower case.

4. Click Register.

A window appears with the message that the license code has been validated.

5. Click OK.

The "Connections" window appears and you can configure a VPN session.

#### ⇒ To define a connection

To define a new connection profile:

- 1. Launch the VPN client as described in "To launch the VPN client," page 99.
- 2. If the product is registered, the "Connections" window appears. Otherwise register the product first.
- 3. Click New.

The page to define a new connection profile appears.

4. Enter the following:

Connection Name Enter a name for the connection.

**Destination** Enter the address of the Contivity switch. The address can be either in decimal format (nnn.nnn.nnn) or a DNS Lookup address.

5. Click Next.

The page to select the method of authentication appears.

6. Select the authentication method.

Note: The rest of this section describes user name and password authentication. To authenticate using RADIUS or SecurID or a digital certificate, see the Nortel documentation.

7. Click Next.

A page for you to specify a user name appears.

8. Enter the following:

User ID Enter a user name.

**Prompt** (optional) When selected, you must enter the user name on the logon screen. When deselected, the user name appears automatically.

9. Click Finish.

The "Connections" window appears with the connection profile for this connection displayed.

10. Enter the following:

Password Enter a the password for this user.

This completes the first connection configuration.

For information on disabling Keepalives or editing a configuration profile, see the Nortel documentation.

The next time the VPN client is launched, the "Connections" window will automatically appear and this connection profile can be selected from the **Connection** drop-down list.

# **Helpful hints**

- The Command-Line Interface is not active.
- The configuration parameters are saved to /setup/netlock/prefs.db and /setup/netlock/eac.db.
- To configure a number of VPN clients with the same configuration, configure the VPN client on one device and copy the configuration files to the same directory on the other devices (/setup/netlock/prefs.db and /setup/netlock/eac.db). Users no longer have to enter license codes, group IDs or preferences.
- Always end your applications before closing the VPN tunnel!
- If the VPN tunnel closes when applications are running, the applications will hang. If this occurs, disconnect the session by either closing the window or disconnecting the session in the eLux NG starter. Avoid this by setting high idle times when using ISDN or DSL.
- If you cannot build a tunnel, verify that the network connection is active (especially if you are using ISDN or DSL). One way to do this is by starting a local browser.
- The log file is saved to /tmp/netlock/agentlog.txt.
- To view the log file in the Mozilla browser, click **Logfile** and drag and drop the word "refresh" into the lower part of the screen. This may differ in other browsers. Alternatively enter file:///tmp/netlock/agentlog.txt.
- Documentation for the Nortel VPN client can be downloaded from <u>www.nortel.com</u> (see "Nortel VPN client" or "Contivity Multi-OS VPN client").

After manually configuring a VPN client, the configuration files prefs.db and eac.db can be transferred to other clients using Scout NG file transfer feature.

Remote devices running the VPN can be managed by Scout NG as long as the manager can be reached outside of the tunnel.

For more information on the Scout NG management tool, see the Scout NG Administrator's Guide.


# 3.18 Diagnostics

📫 eLux [Herman, 217.160.115.100]	
Applications Configuration Setup	
curity <u>M</u> ultimedia Dri <u>v</u> es Pr <u>i</u> nter <u>H</u> ardware <u>V</u> PN	Diagnostics
Debug level Most detailed	
🗶 Log files	
System files Browser files ICA files X-Emulation files User file	
<ul> <li>☑ View files</li> <li>☑ Transfer files to</li> </ul>	<u>Execute</u>
Apply <u>R</u> eset	



This subtab is for diagnostic purposes. You can either view a single file, view groups of files, or you can send files to an FTP server.

#### ⇒ To configure diagnostics

From the Setup tab, click the Diagnostics subtab.

1. To view a single file, you must know its path on the Thin Client. Select the User file check box and enter the complete path including path name in the box. (The file name is generally provided by your servicer during a diagnostic procedure.) Example: /setup/ica/wfclient.ini.

To view the file, click Execute.

- 2. For ease of use, you can choose to select preprogrammed groups of files. For example, the check box ICA files displays the file "appsrv.ini" in addition to the file "wfclient.ini". In this case, vou do not need to know the file path.
  - Log files: eLux NG log files. Displays the files diag.txt, eluxd.log and elux starter.log. Note: The level of eLux NG logging detail is set in Debug level. None means the logs eluxd.log and elux starter.log will not be generated. You must reboot the Thin Client for changes in eLux NG logging detail to take effect.
  - System files: System configuration files, including the update log (eluxman.log).
  - ICA files: ICA configuration files. •
  - Browser files: Configuration files for Opera, Mozilla or Firefox browsers. .
  - X-Emulation files: The trace files written by one of the X-Emulations X97, X32 or X52 . are binary and cannot be displayed. However, they can be sent to an FTP server. See step 3.

To view the files, click Execute.

3. To send files to an FTP server, select the desired files, select the **Transfer files to** check box, enter the URL of the destination directory, and click **Execute**.

ftp://<FTP server>/<path>

or ftp://<username>:<password>@<FTP server>/<path>

#### Navigation

Format:

When viewing the files, if you do not have a scroll bar, you still have the following scrolling options:

- Keys: PAGE UP and PAGE DOWN, HOME and END
- Mouse: Click anywhere in the text and drag above or below the window frame to shift the focus



# 4 Configuring Applications

This chapter describes how to define an application that runs locally or how to connect to a remote server.

Sect	ion	Description
4.1	Introduction	Introduction to local applications and session clients, description of the <b>Application definition</b> tab, standard tab options
4.2	ICA Terminal Session	How to configure the Citrix ICA Client and connect to a Citrix MetaFrame server
4.3	Accessing Citrix Published Applications	Different configuration possibilities for connecting to a Citrix ICA published application
4.4	RDP	How to connect to a terminal server via RDP
4.5	Internet	How to configure a local browser (Opera, Mozilla or Firefox) and available Web tools
4.6	SAPGUI	How to configure the SAPGUI client
4.7	Emulation	How to configure a session to connect to a mainframe
4.8	Local	How to configure a local shell, user commands and desktop accessories that run locally



# 4.1 Introduction

eLux NG offers you two types of application possibilities:

- remote
- local

The main employment area of a Thin Client is as a terminal in server-based computing. "Remote" means the application runs on a server, such as a Windows application on a terminal server. Even when an application runs remotely, client-side software is still required to initiate and maintain a session.

By nature, the Thin Client has limited resources, meaning the majority of applications will be server based. However, in addition to server applications eLux NG also offers a variety of local applications. "Local" means the application runs directly on the Thin Client. Local applications include browser software (Opera, Mozilla, Firefox), local shell (XTerm), and desktop tools (resource information, calculator, CD player). This software is provided free of charge and can be downloaded from <u>www.myelux.com</u> or copied from the eLux NG CD-ROM.

This chapter describes how to configure both local applications and session clients. In addition, further configuration may be required in the application itself. For further information on configuring session clients (such as SAPGUI or Citrix ICA), please consult the manufacturer's product documentation.

Configuration takes place in the **Configuration** tab.

Application definition	- Ba	- ×
ICA <u>RDP Browser E</u> mulation Local PN-Agent		
Name		
Published application		
Server Browse		
Application		
Working dir		
User		
Password		
Domain		
🔲 Allow Smart Card Logon		
□ Roaming	Advanced	
Application restart      Start automatically		
Desktop icon	<u>A</u> pply	
	<u>F</u> inish	J

Figure 63: Application definition dialog box

#### ⇒ To configure a local application or session client

- 1. From the **Configuration** tab, click **New**. This opens the **Application definition** dialog box, which contains a number of subtabs.
- 2. Click the tab for the application you want in the Application definition dialog box.

**Note:** If the application you want does not appear as a tab, the required firmware is not installed on the Thin Client. Contact your network administrator.

- 3. Configure the application (see details in the following sections).
- 4. Click **Finish** in the **Application definition** dialog box.

Standard options:

- Start automatically The session will be started when the terminal starts.
- **Application restart** The session will be reconnected after a user logs off (so-called "terminal mode"). In addition, the session will be started when the terminal starts.
- **Desktop icon** Creates a desktop shortcut for this application on the eLux NG desktop. Note: Not available for Program Neighborhood Agent.

Additional options are application specific, for example, kiosk mode for a browser.

As long as the dialog box **Application Definition** is open, you cannot start any applications or activate the **Setup** tabs.

Use the task hotkey CTRL + ALT + <*cursor*> to jump between open eLux NG dialog boxes:

- CTRL + ALT +  $\psi$ : Left selection in the Applications bar
- CTRL + ALT + ↑: Right selection in the Applications bar

To start an application, from the **Applications** tab either double-click the application you want, or click to select the application and click **Connect**.

When the user shuts off the device, remote applications continue to run on the server. For this reason, it is important that the administrator either set a server-side time-out for logging off inactive accounts or instruct users to quit from within the session rather than click the eLux NG **Disconnect** button.

You can modify an existing application configuration by clicking **Edit**. Click **Delete** to remove an application configuration.

# 4.1.1 Copying Between Applications

eLux NG has a clipboard that allows you to copy between applications running locally on the client and applications running remotely in a server session. Access to the local clipboard requires no special procedures; using the familiar cut, copy, and paste commands, you can transfer text back and forth between most local and remote applications.

In general, this works for terminal server sessions and ICCCM compliant X window applications running on the eLux NG desktop. Note: Due to the differences in applications this may not work in every case.

#### To copy text:

Applies to copying between Citrix ICA, RDP and X window applications (such as local programs):

- 1. In the terminal server session (for example, Citrix) use the relevant copy command in the application.
- 2. Use the task key to switch to the local program (for example, Mozilla). For more information on the task key, see "3.3 Desktop."
- 3. Use the relevant paste command in the local program.

Tip: To copy in XTerm, click the middle mouse button.

#### To copy graphics:

Applies to copying between Citrix ICA and an X window application:

• Use the program xcapture described in "4.2.10 Tool xcapture."



# 4.2 ICA Terminal Session

Independent Computing Architecture (ICA<sup>®</sup>) is used to connect to a Windows terminal server running Citrix<sup>®</sup> MetaFrame<sup>®</sup> software. You can then access all Windows applications residing on the terminal server.

You have the following two configuration possibilities when connecting to a specific MetaFrame server: remote desktop or Windows application. In addition, this chapter discusses the Citrix ICA Client for Linux, which allows you to set advanced ICA client settings.

Configuring a session to connect to a published application is discussed in chapter "4.3 Accessing Citrix Published Applications."

# 4.2.1 Remote Desktop

A remote desktop session allows you access to the desktop of a MetaFrame server. You can run any applications available on the desktop, in any order.

Application definition	١		
ICA			
Name	Citrix desktop		
🔲 Published appl	ication		
Server	metaframe	Browse	1
Application			
Working dir			
User			
Password			
Domain			
🔲 Allow Smart C:	ard Logon		
🔲 R <u>o</u> aming			
🔲 Applica <u>t</u> ion res	tart		A <u>d</u> vanced
🗷 <u>S</u> tart automati	cally		0 mm/u
🗶 Desktop icon			
			<u>F</u> inish

Figure 64: ICA configuration - Remote Desktop

# ⇒ To configure a remote desktop session via ICA

From the **Configuration** tab, click **New**.

- 1. The Application Definition dialog box appears. Click the ICA tab.
  - Name: Enter an appropriate name for this application, such as "Remote desktop".
  - Published application: Leave deselected.
  - Server: Enter the IP address (or name) of the MetaFrame server.
  - Application: Leave blank
  - Working dir: Leave blank
  - User, Password, Domain: Enter to automatically log on to the terminal server.
  - Allow smart card logon: See section "3.15.4 Citrix Logon"
  - Roaming: See section "4.2.3 Smart Card User Roaming"

- Application restart: Immediately reconnects after the user logs off. When this
  feature is selected, the application automatically starts when the Thin Client starts
  or restarts.
- **Start automatically:** Click this check box to open the session when the terminal starts.
- **Desktop icon** Creates a desktop shortcut for this application on the eLux NG desktop.
- 2. Advanced: See "4.2.4 Citrix ICA ."
- 3. Click Apply and Finish.

#### 4.2.2 Microsoft Windows Application

This section describes how to configure a session to a Windows application running on a specific MetaFrame server.

•	Application definition			- The	- ×
ſ	ICA				
10					
	Name	Excel as application			
	🔲 Published appli	cation			
	Server	metaframe	Browse		
	Application	c:\Program Files\Mic			
	Working dir	c\Program Files\Mic			
	User	smith			
	Password	***			
	Domain	work.myelux.com			
	🔲 Allow Smart Ca	rd Logon			
	🔲 R <u>o</u> aming				
	🔲 Applica <u>t</u> ion rest	tart	L	A <u>d</u> vanced	
	🗴 <u>S</u> tart automatic	ally		•	
	🗷 Desktop icon		L	Арріу	
			L	<u>F</u> inish	J

Figure 65: ICA configuration – MS Windows application

#### ⇒ To configure a connection to a Microsoft Windows application via ICA

From the **Configuration** tab, click **New**. The **Application Definition** dialog box appears. Click the **ICA** tab.

The parameters are the same as in "4.2.1 Remote Desktop" with the following exceptions:

- **Name**: Enter an appropriate name for this application, such as "MS Excel" for Microsoft Excel.
- Application: Name of the Windows application (for example, notepad.exe), including path, for example, c:\Program Files\Microsoft Office\Office\EXCEL.EXE
- Working dir: (optional) Enter the working directory of the Windows application.

# 4.2.3 Smart Card User Roaming

For user roaming, you need a smart card (containing user information) and a valid PIN. The user information is sent to the ICA server and logon takes place automatically. If the smart card is removed, the session is automatically disconnected and the Thin Client is locked. The applications on the server remain open. If you enter the smart card and PIN on a different Thin Client, the connection is restored. This allows you to "transfer" sessions from one Thin Client to another.

For more information, see "3.15.3 User Roaming."

# 4.2.4 Citrix ICA Client for Linux – Advanced Citrix ICA Settings

Using Citrix ICA, you can access server-specific applications or published applications. Other features include:

- Client drive mapping
- Client printer mapping
- COM port mapping
- Low bandwidth requirements
- Citrix ICA Client hotkeys
- Seamless Windows support
- Program Neighborhood Agent
- 128-bit SSL support

Note that some of these features are server specific.

Configuration of advanced ICA settings is done by clicking the **Advanced** button in an ICA application definition.

Application definition			
ICA			
Province of the second se			
Name	Citrix desktop		
🔲 Published appl	ication		
Server	metaframe	Browse	
Application			
Working dir			
User			
Password			
Domain			
🗖 Allow Smart Ca	ard Logon		
🔲 R <u>o</u> aming		_	
Application res	tart	Les Les	A <u>d</u> vanced
Start automatic	tally		Apply
Desktop icon			
			<u>F</u> inish

Figure 66: Accessing Citrix advanced settings



👌 Citrix ICA Client for Linux	
<u>C</u> onnections <u>V</u> iew <u>T</u> ools	<u>H</u> elp
12 🗈 🖻 😭 📈	2
Description Server	
Citrix des ktop metafram	e
Word as application server1	

Figure 67: Citrix ICA Client dialog box

This opens the ICA Client for Linux, which is software from Citrix and has a different look than the eLux NG starter.

In Connection view, you see a list of all ICA connections. ICA sessions defined in eLux NG are automatically entered in the Citrix ICA Client. You do not have to redefine them here.

If you do not see a list of ICA connections, you may not be in Connection view. In the **View** menu, click **Connection View** to switch to Connection view. PNAgent view is described in chapter "4.3.4 Via Program Neighborhood Agent."

**Warning** Do not define a new ICA session in the Citrix Client! Define new sessions in the eLux NG **Configuration** tab. If you define new sessions in the Citrix Client, they will not be accessible via the eLux NG **Applications** tab!

The configuration file for the Citrix ICA Client for Linux is named "wfclient.ini" and resides on the Thin Client under: /setup/ica/wfclient.ini

This file can easily be viewed using the **Diagnostics** tab > **ICA files**.

Published applications, a feature commonly in use with MetaFrame server farms, are discussed in a separate chapter: "4.3 Accessing Citrix Published Application."

Drive mapping, COM port mapping and server location are discussed in the following sections. For further information on configuring the Citrix ICA Client, please consult the Citrix documentation.



### 4.2.5 Client Drive Mapping

Client drive mapping allows a remote application running on the MetaFrame server to access a floppy, CD-ROM and USB drives from within an ICA session. You then have access to locally stored files during an ICA session. Note: The MetaFrame server must be configured to allow client drive mapping.

- Internal floppy No further configuration is necessary.
- Internal CD-ROM No further configuration is necessary.
- USB drive Configuration necessary.

Two CD-ROM drives can be in use at the same time (IDE internal and USB external).

Two floppy drives can be in use at the same time (IDE internal and USB external).

By default, the IDE floppy or CD-ROM drive is mapped. However, the USB drive is not. How to map USB drives is described below.

#### ⇒ To map USB client drives to an ICA session

- 1. Due to security reasons, the USB port is not activated. Go to the Hardware tab, select the USB mass storage devices check box and save the settings.
- 2. Connect the USB device to the Thin Client.

👌 Settings	
Drive Mapping 😑	
	Enable/Read/Write
A: /misc/floppy	
B:	
C: /misc/cdrom	- dor 🗶
D:	- or <b>2</b>
E: /misc/usb0	<b>60 2</b>
F.	- or <b>2</b>
G:	- 60° 🥒
н:	- 60° 🥒
🗖 Enable Drive Mapping	Clear Modify
ОК Ар	ply Cancel

Figure 68: Citrix ICA Client for Linux – Drive Mapping

 To make the external drive accessible in an ICA session, in the ICA client (Configuration > ICA > Advanced) click Tools > Settings > Drive Mapping. Enter the mount point (see section "3.9.5 Mount points") in the drive of your choice (we



recommend drive E or later) and set it to read-only (if required). Click **Apply** and **OK** to save the advanced ICA parameters.

4. At this point, you can connect to the MetaFrame server. The client drive appears in Windows Explorer under the letter you mapped it to.

For more information, see "3.9 Drives" and "3.12 Hardware."

# Troubleshooting

Do not configure advanced ICA settings for an open or disconnected session! Log off first. If the desired client drive does not appear in the ICA session, and you have multiple USB devices attached to the Thin Client, check that the mount point you used is correct.

# 4.2.6 COM Port Mapping

Client COM port mapping allows devices attached to the Thin Client's serial ports to be used from ICA sessions on a MetaFrame server. This allows local devices like modems, serial printers, and bar-code scanners to be used by applications running on the MetaFrame server.

To map a COM port, you must know the device name of the serial port on the client.

- The serial port device name always begins with "/dev":
- /dev/ttyS0 : external serial port
- /dev/ttyS1 : internal serial port
- /dev/usb/tts/0 : USB v. 24 converter (PL2303 chip only)

Note: Device names are case sensitive. The letters shown here in lower case must be typed in lower case.

Which serial ports are available depends on your hardware platform.

To map a Thin Client COM port to an ICA session, first configure the advanced ICA settings in the eLux NG starter, then configure the Citrix MetaFrame ICA server settings.

# ⇒ To map a COM port from a Thin Client to an ICA session

As an example, we will map the internal serial port (COM2 on the Thin Client).

- 1. eLux NG starter
- In the eLux NG starter Configuration tab, click New and select ICA.
- Fill out the ICA application definition as described in "4.2.1 Remote Desktop."
- Click Advanced. This opens Citrix ICA Client for Linux dialog box.

Application defin	ition	
CA		
Name	Citrix desktop	-
🔲 Published a	pplication	
Server	metaframe	Browse
Application		
Working dir		
User		-
Password		-
Domain		-
🔲 Allow Smar	t Card Logon	
🔲 R <u>o</u> aming		
Application	restart	A <u>d</u> vanced
Start autom	atically	Apply
Desktop Ico	n	
		Einish

• From the **Tools** menu, select **Settings**.

<u> </u>			
👌 Citrix ICA Client fo	r Linux		
<u>C</u> onnections <u>V</u> iew	Tools		
	<u>S</u> ettings		
1 🖺 🖻 😭 1	<u>Connection</u> Center		
	Xcapture		
Description			
Citrix des ktop			
Excel as published application			
word as apprication			

 In the Settings dialog box, from the Preferences drop-down list select COM Ports. This opens the window for COM port settings.

# 👌 Settings

Preferences	नि
Window	
Server Location	vboard Layout
HotKeys	
Disk Cache	S-International
Drive Mapping	the end True (allowed)
COM Ports	yboard Type (Client)
Firewall	utomatic (User Profile)
Auto Reconnect	
PNAgent	yboard Type (Server)
((	) Default)

- The window for COM port settings displays the COM ports that have been defined on the Thin Client. In the figure, COM1 has been defined as /dev/ttyS0.
- To define a new COM port on your Thin Client, click Add. This opens the COM Port Device

**Selection** dialog. All available COM ports on your Thin Client are displayed.

Select the desired port. In our example, we use  $/{\tt dev/ttyS1}$  for the internal V24 port. Click  ${\rm OK}.$ 

 A new COM port will appear, numbered automatically in ascending order. If this is the second port you have entered, it will be named COM2.

👌 Settings	hox
COM Ports 🖃	
COM Port Devices	
COMI //dev/ttyS0	dd
	elete
Mo	ve Up
👌 COM Port Device Sel 🐂 💷 🛛 🖓	e Down
Filter	
/dev/ttyS*	
Files	
/dev/ttyS0	
	Cancel
A Settings	
COM Ports 💴	
COM Port Devices	
COM1 /dev/ttyS0	
COM2 /dev/ttyS1	



- 2. Citrix MetaFrame ICA server
- Connect to your MetaFrame server and open a command shell.
- To map the Thin Client COM port to the COM port on the MetaFrame server, use the following format:

```
net use </Client\<Thin Client port>: /persistent:yes
```

```
<ICA port> : local port on MetaFrame server
<Thin Client port> : remote port on Thin Client
```

```
Example:
net use com1: \\Client\COM2: /persistent:yes
```



3. Following are useful commands:

net use	: To view the mapping (for a drive, printer, COM port, etc.)
mode com1:	: To view the parameters
mode /?	: To change parameters
net use /help	: To view man pages

Normally the port parameters are set within your application.

This procedure should work with all COM port based synchronizing software. For example, if your personal digital assistant (PDA) software synchronizes with the COM port, map it within the ICA session using the procedure described above.

To set COM port settings, see "3.12.4 COM Ports."

### 4.2.7 Handhelds

You can access handheld computing devices (such as personal data assistants, PDAs) within an ICA session by mapping the serial connection. In addition, you need third-party server synchronization software.

### Requirements

eLux NG supports the following PDAs:

- palmOne<sup>™</sup> Tungsten<sup>™</sup> 3 und 5
- palmOne™ Tungsten™ E
- iPAQ pocket PC 2003
- Pocket Loox from Fujitsu Siemens Computers and others

Required software:

- Administration and client software. This is included with your handheld.
- For all Tungsten handhelds: OneBridge Sync server v. 4.2 or later (part of the OneBridge Mobile Groupware) from Extended Systems, Inc. This must be purchased separately.
- For all Pocket PCs: Microsoft Active Sync (free) or others

#### Procedure

To access Microsoft applications from the handheld (for example, Lotus Notes) within a Citrix ICA session:

- 1. Install the required firmware on the eLux NG device
- 2. For Tungsten: Install the OneBridge Sync server on a PC
- 3. For Tungsten: Install the OneBridge Sync client on the MetaFrame server
- 4. Install the client software on the PDA
- 5. Map the COM port
- 6. Access the handheld within an ICA session

#### Installing the required driver on the eLux NG device

Install the following firmware on the eLux NG device using the image editor ELIAS NG. For more information, see the *ELIAS NG Administrator's Guide*.

- Handheld driver. This is a component of the base OS. Only one handheld driver can be installed at a time. Install one of the following:
- Tungsten "USB Handspring Visor, Palm driver" (visor)
- iPAQ "USB Compaq iPAQ driver" (ipaq) included in the BaseOS
- "ICA Client" (ica)

#### Installing the OneBridge Sync server on a PC

The OneBridge Sync server runs as a service on Windows NT or Windows 2000 Server, allowing users to synchronize their mobile device. Version 4.2 or later is required The OneBridge Sync server is required third-party software that must be purchased separately.

For information on purchasing and installation, see <u>www.extendedsys.com</u>.

### Installing the OneBridge Sync client on the MetaFrame server

The OneBridge Sync client must be installed on your MetaFrame server you plan to connect to.

For information on purchasing and installation, see www.extendedsys.com.

#### Installing the client software on the PDA

Use the CD and documentation that came with the PDA to install the client on the PDA.

# Mapping the COM port

Configure COM port settings as described in "4.2.6 COM Port Mapping." In the **COM Port Device Selection** dialog enter the following parameter:

•	Tungsten:	/dev/palm/0
•	iPAQ:	/dev/usb/tts/0
•	USB v. 24 converter (PL2303 chip only):	/dev/usb/tts/0

When you use the  ${\tt net}~{\tt use}$  command, write down the COM port number you mapped to on the MetaFrame server.

### Accessing the handheld within an ICA session

- 1. In the eLux NG starter, configure a remote desktop ICA session.
  - For more information, see "4.2.1 Remote Desktop."
- 2. Start the session (Applications > Connect). The Windows desktop appears.
- In the ICA session, start the OneBridge Sync client and go to the Desktop Connector. Select the COM port number you mapped to on the MetaFrame server and click Enable.

Note: This only needs to be performed once. Settings will be saved for future sessions.

4. Perform the desired operations with the handheld.



# 4.2.8 Server Browsing

Server location (also called server browsing) in the Citrix ICA Client for Linux permits one-click access from the ICA application definition to all MetaFrame servers on the network, or a list of all published applications. To use this feature, the software "Utils for ICA Client" (icautils) must be installed. It is located in the "ICA client" (ica) package. In addition, the MetaFrame servers must have server connections configured for the specific network protocol.

First configure the Citrix ICA Client for Linux, then configure the ICA application in the eLux starter.

### ⇒ To configure the Citrix ICA Client for Linux

Global server location:

- In the eLux NG starter Configuration tab, click New and select ICA.
- 2. Enter a name for this ICA application.
- 3. Click Advanced. This opens Citrix ICA Client for Linux dialog box.

Applica	ation definition				19aa	- ×
ICA						
Nomo						
Name		Citrix deskto	op			
🔲 Pu	iblished appli	ication				
Serve	r	metaframe		Browse	]	
Appli	cation					
Worki	ng dir					
User						
Passw -	vord					
Doma	un					
🖂 AI	low Smart Ca	rd Logon				
🛄 R <u>c</u>	aming				A dua y as d	<b>-</b>
Ap	oplica <u>t</u> ion res art automatic	tart allu			A <u>d</u> vanced	
▲ 20 ▲ 20	art automatic esktop icon	.any			Apply	
				/	Einish	
			-			
			×			
	👗 Citi	rix ICA C	lient fo	r Linux		
		41		Testal		
	Conn	ections	view	<u>1</u> 0015		
				<u>S</u> etting:	s	
	1 <b>1</b> 21	Ba		<u>C</u> onnec	tion Cent	er
				<u>X</u> captu	re	
	Desc	ription				
	Citrix	desktor				
	Excel	as publ	ished a	pplicatio	n	
	Word	as appli	cation			

4. From the **Tools** menu, select **Settings**.



5. In the **Settings** dialog box, from the **Preferences** drop-down list select **Server Location**. This opens the window for the server location settings.

👌 Settings	
Preferences Window	
Server Location	1/board Layout
HotKeys Disk Cache	i-International
Drive Mapping COM Ports	/board Type (Client)
Firewall	Itomatic (User Profile)
Auto Reconnect PNAgent	t /board Type (Server)
I	Default)

6. Select the network protocol and/or enter one or more servers. The way in which server location works depends on which network protocol is configured:

😫 Settings	
Server Location =	
Network Protocol	
TCP/IP + HTTP server location 📃	
Server Group	
Primary : 🔤	Rename Group
Address List	
ica	
	Add
	Delete
,	
ОК Арріу	Cancel

• **TCP/IP+HTTP** The Citrix ICA Client for UNIX uses the HTTP or HTTPS protocol to contact MetaFrame servers. The default server address is *ica.<domain name*>, where *<domain name*> is a TCP/IP domain name. Alternatively, you can set specific addresses for MetaFrame servers.

👌 Settings	
Server Location =	
Network Protocol	
тср/ір 🖃	
Server Group	
Primary : 🔤	Rename Group
Address List	
(Auto-Locate)	Add
	Auu
	Delete
OK Apply	Cancel

- **TCP/IP** By default, the UNIX client attempts to contact all of the servers on the subnet by broadcasting on the UDP protocol (auto-locate). Alternatively, you can set specific addresses for MetaFrame servers.
- 7. Click Apply and OK to save your settings and close the dialog box.



After setting a global server location, configure the ICA application definition. From the **Configuration** tab, click **New**.

🙀 Application definit	ion	- The	- ×
ICA			
Name	Desktop		
🔲 Published ap	plication		
Server	metaframe1	Browse	
Application			
Working dir		-	
User	\$ELUXUSER	-	
Password	*****	-	
Domain	\$ELUXDOMAIN	-	
🗖 Allow Smart	Card Logon		
🔲 R <u>o</u> aming			
🗷 Applica <u>t</u> ion r	restart	Advanced	
🛄 <u>S</u> tart automa	atically	0 mplu	,
🗷 Desktop icon	I	Дрруу	
		<u> </u>	I

• **Remote desktop** The parameters are described in "4.2.1 Remote Desktop." Choose the server from the drop-down list by clicking **Browse**. All MetaFrame servers currently on the network configured for that protocol will be displayed.

Application definition	on		1000	-×
ICA				
Name	Application			
🗖 Published app	olication			
Server	metaframe1	Browse		
Application	c:\Program Files\Uni			
Working dir	c\			

• **Application** After choosing the MetaFrame server, enter the complete path of the desired Windows application. A working directory is optional. See "4.2.2 Microsoft Windows Application."

•	Application definition			
1	CA			
	Name Name	Published Applicatio		
	Application	Notepad	Browse	
	eLux NG - Start Notepad	er		<u>■×</u>
	Notepad Desktop W2KTS PN W2KTS1 Desktop Suppor	1 t	1	
	Excel K Internet Explore Notepad W2KTS	er 1		dvanced
	PowerPoint ScoutNG			Einish

• **Published application** The parameters are described in "4.3.1 Via Application Definition." Choose the application from the drop-down list by clicking **Browse**. All applications currently published on that MetaFrame server will be displayed. Note: This is one method for connecting to published applications. For a detailed description of other methods, see chapter "4.3 Accessing Citrix Published Applications."



# 4.2.9 Citrix Secure Gateway

You can use certificate-based server authentication to ensure that the server you are connecting to is genuine.

To use Secure Sockets Layer (SSL) or Transport Layer Security (TLS) to connect to a Citrix Secure Gateway server, you need a root certificate on the client machine that can verify the signature of the Certificate Authority (CA) on the server certificate. The following CA certificates are automatically installed with the Citrix ICA client:

Certificate	Issuing Authority
Class3PCA_G2_v2.crt	VeriSign Trust Network
Class4PCA_G2_v2.crt	VeriSign Trust Network
BTCTRoot.crt	Baltimore Cyber Trust Root
GTECTGlobalRoot.crt	GTE Cyber Trust Global Root
GTECTRoot.crt	GTE Cyber Trust Root
Pcs3ss_v4.crt	Class 3 Public Primary Certification Authority
SecureServer.crt	Secure Server Certification Authority
TC_RootServer_DER_Class2.crt	Class 2 TC TrustCenter Certification Authority

Figure 69: CA certificates for Citrix ICA

You are not required to obtain and install root certificates on the client machine to use the certificates from these CAs. However, if you choose to use a different CA, you must obtain and install a root certificate from the CA on each client machine.

**Warning** Certificate key lengths of greater than 2048 bits are not supported by the Citrix ICA Client for Linux. Ensure that the bit lengths of the CA root certificates, intermediate certificates and server certificates do not exceed this size.

Save root CA certificates to /setup/cacerts.

**Note** Sometimes the Citrix literature tells you to save the CA certificate to the client directory /usr/lib/ICAClient/keystore/cacerts. This directory is read-only. Save it to /setup/cacerts instead. A symbolic link will refer the program to the correct directory.

Certificates can be transferred to many clients using Scout NG file transfer feature. For more information on the Scout NG management tool, see the *Scout NG Administrator's Guide*.

#### 4.2.10 Tool xcapture

To use this feature, you must have the "Utils for ICA Client" (icautils) package installed. It is located in the "ICA client" (ica) package.

The Citrix ICA Client for Linux includes a helper application, xcapture, that allows you to exchange graphical data between the MetaFrame server clipboard and non-ICCCM-compliant X Windows applications on the X desktop. You can use xcapture to:

• Grab dialog boxes or screen areas and copy them between the UNIX desktop (including non-ICCCM-compliant applications) and an application running in an ICA Client window.



### ⇒ To configure xcapture

From the **Configuration** tab, click **New**.

1. The Application Definition dialog box appears. Click the **Local** tab.

Name	Enter an appropriate name for this application.
Application	Click Customized.
Parameter	Enter /usr/lib/ICAClient/util/xcapture
Hidden	Does not display the application in the <b>Application</b> tab.
Application Restart	Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts
Start automatically	Click this check box to open the session when the terminal starts.
Desktop icon	Creates a desktop shortcut for this application on the eLux NG desktop.
2. Click Finish.	

From the **Applications** tab, double-click or use the **Connect** button to run xcapture.

#### How to use xcapture

- 1. From the **xcapture** dialog box, click **From screen**. The cursor changes to a crosshair.
  - Select a window Move the cursor over the window you want to copy and click the middle mouse button.
  - Select a region Hold down the left mouse button and drag the cursor to select the area you want to copy.
- 2. From the **xcapture** dialog box, click **To ICA**.

The xcapture button changes color to show that it is processing the information.

3. When the transfer is complete, switch to the ICA session. Use the paste command to insert the contents of the clipboard in the application.

# 4.3 Accessing Citrix Published Applications

A connection to a published application lets a user access a predefined application and its associated environment. Published applications can be run in seamless mode, where the applications appear to the Thin Client as if they were running locally, each application running in its own resizable window.

Published applications require server-side and client-side configuration. In this section, we will discuss client-side configuration.

# 4.3.1 Via Application Definition

You can configure a session to access a published application via the eLux NG starter. Note: You must know the application name exactly as it is published on the server.

•	Application definition			18ha	- ×
	СА				
	Name	ublished application			
	🗷 Published appl	ication			
	Application	Excel	Browse		
	User Password	smith			
	Domain	work.myelux.com			
	🔲 Allow Smart Ca	ird Logon			
	Roaming Application res	tart		A <u>d</u> vanced	
	Desktop icon	ану		Apply	
				<u> </u>	J

Figure 70: ICA configuration - Published application

#### ⇒ To configure a published application session via eLux NG starter

The parameters are the same as in "4.2.1 Remote Desktop" with the following exceptions:

- **Name**: Enter an appropriate name for this application, such as "MS Excel" for Microsoft Excel.
- Published Application: Select.
- Application: Enter the name exactly as it is published on the MetaFrame server.

Server location (also called server browsing) provides a method for users to view a list of all published applications. See section "4.2.8 Server."



# 4.3.2 Via Citrix ICA Client for Linux

Alternatively, you can search for available published applications in the **Citrix ICA Client for Linux**. When you are done, the parameters will automatically be transferred to eLux NG. For an overview of the Citrix ICA Client for Linux, see "4.2.4 Citrix ICA ."

# $\Rightarrow$ To configure a published application in Citrix ICA Client for Linux

From the **Configuration** tab, click **New**.

- 1. The Application Definition dialog box appears. Click the ICA tab.
- Name: Enter an appropriate name for this application.
- 2. Click Advanced. The Citrix ICA Client for Linux opens.
- 3. Select the session you want to configure.
- 4. Click Connections > Properties > Network.
- 5. Select the check box **Published Application**. Type the name of the published application or select the name from the pop-up menu to the right of the **Server** field.

Note If no applications appear, check that the browser protocol is correct.

- 6. In the **Properties** dialog box, click **OK**.
- Exit the Citrix ICA Client for Linux to return to the eLux NG ICA application definition. The published application parameters are automatically entered in the eLux NG ICA application definition.
- 8. Click Apply and OK.

# 4.3.3 Via Web Interface

You can launch published applications from a local browser using the Web Interface for MetaFrame  $XP^{\mathbb{B}}$  (formerly called "NFuse Classic").

Required software: browser software (Opera, Mozilla or Firefox) and Citrix ICA Client version 7.x

#### ⇒ To access a published application via local browser

- 1. Configure a local browser, as described in "4.5.1 Local Browser."
  - **Name**: Enter an appropriate name for this application.
  - **Start page**: Enter the URL used to access your Web Interface (ask your Citrix administrator). Common formats are: http://<server name> or http://<server name>/Citrix/Nfuse
  - **Proxy type** Choose one of the following:

No proxy: If you don't use a proxy server.

**Manual (Proxy:Port)**: If you use a proxy server, enter it in the format: <proxy server IP address or name>:<prox number>.

Auto (URL): If you use an automatic proxy configuration file. Example: http://www.yourserver.com/autoproxy.pac

- Browser type: Select the browser you want: Opera, Mozilla or Firefox.
- Kiosk mode: Leave unchecked.
- 2. Start the browser from the eLux NG **Applications** tab. The Web Interface appears. Enter your credentials to log on.
- 3. After successful logon, a list of published applications is displayed. Click on an application to start it.

# 4.3.4 Via Program Neighborhood Agent

The Citrix ICA Client for Linux 7.x contains a new feature, the Program Neighborhood Agent.

The PNAgent allows the MetaFrame server to capture credentials and launch applications and content that are accessed by users through servers running the Web Interface for MetaFrame XP. The configuration for all users is defined in the configuration file "config.xml". The default location for config.xml on a MetaFrame server is //Inetpub/wwwroot/Citrix/PNAgent. The PNAgent downloads its configuration data from the server running the Web Interface when it is started, and can be configured to update settings and the user interface periodically.

The file config.xml should be edited using the Program Neighborhood Agent Admin Tool, which is available in Citrix MetaFrame XP Server with Feature Release 3 and later.

### ⇒ To configure Program Neighborhood Agent settings on the Thin Client

PNAgent settings can also be set for all users by the administrator using the Program Neighborhood Agent Admin Tool. See the Citrix documentation for more detail.

	Application definition	ha -	×
	ICA Name Citrix desktop Published application Server metaframe Application		
👌 Citrix ICA Client for Linux			
<u>Connections</u> <u>View</u> <u>T</u> ools	<u>H</u> elp		
Image: Second state sta	Server <u>metaframe</u> Excel server1	A <u>d</u> vanced Apply <u>F</u> inish	

Figure 71: Citrix ICA Client for Linux - Connection view

To configure PNAgent settings on the Thin Client, from the **Configuration** tab, click **New**.

- 1. The Application Definition dialog box appears. Click the ICA tab.
- 2. Enter a name for this definition and click the **Advanced** button. The **Citrix ICA Client for Linux** appears.
- In the Citrix ICA Client for Linux click Tools > Settings > PNAgent to display the PNAgent page.

4	Citrix ICA Client for Linux	
<u>_</u> Co	nnections <u>V</u> iew <u>T</u> ools	<u>H</u> elp
TE DE	Scription	<u>jec</u>
👌 Settings		taframe
Preferences 🖃	Exc uci	el messe
Window Server Location		
HotKeys	Layout	
Disk Cache	national	
Drive Mapping COM Ports /board		
Firewall Itomati		
Auto Reconnect	PNAgent =	
PNAgent PD0ard	Server	
(Denaulo	Server URL jutp://support/Citrix/PNagent/config.xn	Change
	Logon mode Prompt user =	
F	E Save nassward	
п		
1		
	Application refresh	
	☐ Refresh list at start	
	Refresh list when remote application launches	
ок	🗖 Refresh list on hourly interval 🛛 7	
	4	
	OK Apply Refresh Setting	Cancel

Figure 72: Citrix ICA Client for Linux - PNAgent page

- 4. The PNAgent page consists of three configuration areas. (It is possible for the Citrix administrator to blend areas out. These settings are made in the configuration file config.xml, which is edited with the Program Neighborhood Agent Admin Tool. See the Citrix documentation for more information). Here the two eLux NG related areas::
- (1) Server

**Server URL** To set the server running the Web Interface, click "Server URL" > Change. In the **PNA configuration** dialog box, enter the IP address/name of the server. Click **Update**. Your entry will automatically be extended with the URL of the configuration file. If the PNAgent cannot contact the server, check server-side entries.

**Logon mode** Only "anonymous logon" and "prompt user" are supported. Entries are made on the server side using the Program Neighborhood Agent Admin Tool.

#### • (2) Application refresh

Define an update time for the published resources in the PNAgent view. In addition to PNAgent or published application start, you can choose to update the display at intervals specified by the number of hours in the box.



- 5. Click **Apply** and **OK**. (The **Refresh Settings** button retrieves changes made to the PNAgent configuration using the Program Neighborhood Agent Admin Tool.)
- 6. Exit the Citrix ICA Client and return to the eLux NG starter.

# ⇒ To define a Program Neighborhood Agent application in eLux NG

The following describes how to configure a PNAgent application definition, enabling the user to call the PNAgent directly from the **Applications** tab.

	Туре	Autostart	and the second second
Citrix desktop	ICA	Yes	
Excel as published application	ICA	No	
Mozilla	Mozilla	Yes	
PNAgent	Local	No	
PowerTerm Interco	n definition		
RDP Desktop			
Word as application			
word as application			
Name	PNAgent		
Applicati	on Custom	Ŧ	
Baramate	ur Lufanaan		
Paramete	a jwremgr		
Neur			
<u>New</u>			
	11		
🛄 <u>H</u> idde	ation vortext		
Lidde Appli	ca <u>t</u> ion restart		
☐ <u>H</u> idda ☐ Appli ⊠ <u>S</u> tart	ca <u>t</u> ion restart automatically		( Applu )

Figure 73: Definition of the PNAgent application

- 1. To define a PNAgent application in eLux NG, from the **Configuration** tab, click **New**. The **Application Definition** dialog box appears. Click the **Local** tab.
  - Name: Enter an appropriate name for this application, such as "PNAgent".
  - Application: Select Custom.
  - Parameter: Enter wfcmgr
  - **Hidden:** Does not display the application in the **Applications** tab. If this option is selected, please select one of the two following options:
  - **Application restart:** Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts
  - **Start automatically:** Click this check box to open the session when the terminal starts.



- Desktop icon Creates a desktop shortcut for this application on the eLux NG desktop.
- 2. Click Finish in the Application definition dialog box.

#### ⇒ To start the Program Neighborhood Agent from eLux NG

The following describes how to call the PNAgent directly from the **Applications** tab and access a published resource.

1. In the eLux NG starter **Applications** tab, start the application you just defined.

📫 eLux NG [Herman, 192.168.10.2]	x NG [Herman, 192.168.10.2]				
Applications Configuration Setu	q				
Name 👻	Туре	Autostart			
👌 Citrix desktop	ICA	Yes			
Excel as published application	ICA	No			
★ Mozilla	Mozilla	Yes			
PNAgent	Local	No			
🗧 📕 Powe 👌 Citrix ICA Client for Li	inux		"ha	- O ×	
Text <u>Connections</u> <u>View</u> <u>T</u>	ools			<u>H</u> elp	
	<u>Connection View</u> <u>PNAgent View</u>			ica	
Description		Server			
Citrix desktop Excel as published appl Word as application	lication	metaframe Excel ucmesse			

- 2. If you see a list of connections (as shown above), you are in the so-called "Connection view." Click **View > PNAgent view** to enter PNAgent view.
- 3. A dialog opens requesting your user credentials for the Web Interface server. Enter your user information to log on.

👌 Citrix IC	A Client for Linux	ka lox
<u>P</u> NAgent	<u>V</u> iew <u>T</u> ools	<u>H</u> elp
		<u>(jea</u>
💧 Program Neig	Jhborhood Agent Logon	
Logging on to s	erver SUPPORT	
Username	user1	
Password	*****	
Domain	mydomain	
🗆 Save Passwo	rd	
ОК	Cancel	

👌 Citrix	ICA Client for Linux	4	hox
<u>P</u> NAger	t <u>V</u> iew <u>T</u> ools		<u>H</u> elp
睝	🗈 🖻 🚰 📈		<u>jea</u>
	Display Name	Туре	
2	Internet Explorer	Application	4
	Notepad Support	Application	г
	Notepad@W2KTS1	Application	
	Pn for testuser	Application	x,

Figure 74: PNAgent

4. After successfully logging on, the Citrix ICA Client for Linux opens in PNAgent view and you have access to published resources. Click the icon to start an application. Refresh settings are set either by the administrator or in the PNAgent page of the Citrix ICA Client for Linux, as shown in Figure 72, page 128, area (2).



# 4.3.5 Via Program Neighborhood Light

The eLux NG starter offers a new function, Program Neighborhood Light (PNL). Using PNL, you can display all published applications on a MetaFrame server by entering the server name directly in an application definition.

# ⇒ To configure PNLight

Application definition		
PN-Agent		
Name	Applications	
Server	server1	
User		
Password		
Domain		
🗷 Logoff delay	3 💠 Seconds	
Show last user		
Autostart folder	SubTest	A <u>d</u> vanced
Start automatically		Apply
		<u> </u>

Figure 75: Configuring PNLight

From the **Configuration** tab, click **New**.

- 1. The Application Definition dialog box appears. Click the PN-Agent tab.
- Name: Enter an appropriate name for this application.
- Server: Enter the IP address (or name) of the MetaFrame server.
  - Alternatively, if the Citrix Web interface is not running on port 80 or if the configuration file does not have the standard path "/Citrix/PNAgent/config.xml", you can enter an URL to direct the client to the configuration file on the server. Format: http://<server>:<port> or http://<server>:<port> or http://server>:<port> . Example: http://server1/Citrix/PNAgent/config.xml http://server1:81 http://server1/MyNfuse/config.xml
- User, Password, Domain: Enter to automatically log on to the terminal server.
- Logoff delay After closing the last published application, the idle time the user has to start another published application before the session is automatically disconnected from the MetaFrame server.
- Show last user The user credentials (except for password) of the last logon will automatically be displayed in the MetaFrame logon dialog box. Note that this option has no effect if you enter user credentials for automatic logon.

- Allow cancel When activated, allows the user to close the MetaFrame logon dialog box.
- Autostart folder On the server, in Program Neighborhood Agent create a folder (or subfolder) with published applications. Enter the name of the folder here. All published applications in this folder will automatically be started when the session connects.
- **Start automatically:** Click this check box to open the session when the terminal starts.
- 2. Click Apply and Finish.

#### Window properties

Click on **Advanced** to display the **Advanced PN-Agent settings** dialog box. Here you can set the window parameters for this application. If you click **Use default**, the settings as defined on the server will be used.

When this session connects, the Thin Client will retrieve all applications from the defined MetaFrame server which were published for the given user credentials. The published applications will be displayed in the eLux NG starter and taskbar menu (in addition to the other defined applications) in a tree-like structure: the top-level name is the PNLight application definition name, second level are the published applications or folders from the server (both applications and folders are defined server side).

Name Vype Applications PN-A Desktop ICA(P Notepad ICA(P Scout NG ICA(P SubTest Stak-Manager ICA(P	gent N-Agent) N-Agent) N-Agent) N-Agent)	Active No No No No	
Applications PN-A Desktop ICA(P Wotepad ICA(P Scout NG ICA(P SubTest Task-Manager ICA(P	gent N-Agent) N-Agent) N-Agent) N-Agent)	No No No No	
	N-Agent) N-Agent) N-Agent) N-Agent)	No No No	
	N-Agent) N-Agent) N-Agent)	No No	
- Scout NG ICA(P - SubTest - ICA(P - ICA(P	N-Agent)	No	
⊡—SubTest اس ⊡ TaskManager ICA(P	N-Agent)	No	
『 🔄 Task-Manager ICA(P	N-Agent)	110	
	IN INCLU	No	
			1

Figure 76: How PNL definitions appear to Thin Client user

The option **Refresh** in the taskbar menu allows the user to periodically refetch the published applications from the server.

If an autostart folder has been defined, the published applications in this folder will automatically run when the session is connected.



**Multiple Users** 

PN-Agent	- User information	1840 -
#	eLux <sup>©</sup> NG	ULL ULL
	User name	user
	Password	
	Domain	
Bh	Server	server1
R		<u>o</u> k

In the application definition, if you leave the server or user credentials fields blank, a dialog requesting user logon information will appear when the Thin Client attempts to contact the server, either upon boot ("Start automatically" is selected) or upon demand (the user selects the **Refresh** option from the Taskbar menu). This is useful for multiple users on the same terminal. Please note that for ease of use, there is an option where the user information (except for password) of the last logon will automatically be displayed in the MetaFrame logon dialog box.

# 4.3.6 Troubleshooting

### 4.3.2 Via Citrix ICA Client for Linux, Step 5

If you are having trouble accessing a list of published applications over the network:

- verify the Thin Client network settings (eLux NG starter > **Setup** > **Network**)
- verify the server location parameters (Citrix ICA Client for Linux > Tools > Settings > Server Location)

#### 4.3.4 Via Program Neighborhood Agent

If you get the error message when logging on using the PNAgent:

One or more fields are incorrect

check if your logon credentials are correct. Note: In our experience, the PNAgent will not always accept an empty domain name field. If your server does not belong to a Citrix domain, we recommend entering the Windows domain at logon.

# 4.4 RDP

This connection corresponds to the ICA functionality using Microsoft Remote Desktop Protocol (RDP). It is used to connect to a Microsoft Terminal Server. The application type is a native RDP client with the free software "rdesktop." For further information see <u>www.rdesktop.org</u>.

Previous releases of eLux offered a Java-based RDP solution from Hob called "JWT" that was licensed. This application has since been incorporated into the J-Term emulation (also from HOB). Please consult HOB (<u>www.hob.de</u>) for further information.

You have two configuration possibilities: Windows desktop or individual application.

#### 4.4.1 Remote Desktop

A remote desktop session allows you access to the desktop of a terminal server. You can run any applications available on the desktop, in any order.

Application definition			18 a	- ×
RDP				
Name Server Application Working dir	RDP Desktop terminalserver1			
User Password Domain				
<ul> <li>Roaming</li> <li>Application rest</li> <li>Start automatic</li> <li>Desktop icon</li> </ul>	ally	(	A <u>d</u> vanced <u>A</u> pply	]
		l	<u>F</u> inish	

Figure 77: RDP client configured for a remote desktop

### ⇒ To configure a remote desktop session via RDP

From the **Configuration** tab, click **New**.

- 1. The Application Definition dialog box appears. Click the RDP tab.
- Name: Enter an appropriate name for this application, such as "RDP Desktop."
- Server: Enter the IP address or name of the terminal server.
- Application: Leave blank.
- Working dir: Leave blank.
- User, Password, Domain: Enter to automatically log on to the terminal server.
- **Roaming:** Click this check box to enable smart card User Roaming. A smart card and PIN are required when the terminal starts. If the PIN is correct, the terminal server

session is automatically started using the user logon data saved to the card. If you remove the smart card, the session is automatically disconnected. It is reconnected when you reinsert the card and enter the PIN, even in another terminal. See section "3.15.3 User Roaming" for a description of settings.

- **Application Restart:** Immediately reconnects after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts.
- **Start automatically:** Click this check box to open the session automatically when the terminal starts.
- **Desktop icon** Creates a desktop shortcut for this application on the eLux NG desktop.
- 2. Advanced: See section "4.4.3 Session Parameters."
- 3. Click Finish.

### 4.4.2 Windows Application

This section describes how to configure a session to a Windows application running on a specific terminal server.

*	Application definition		070707070707070	Sha .	-×
I	<u>R</u> DP				
	Name	MS Word			
	Server	server1			
	Application	C\Program Files\Mic			
	Working dir	c:\Program Files\Mic			
	User				
	User	smith			
	Domain	work.myelux.com			
	<ul> <li>Roaming</li> <li>Application rest</li> <li>Start automatic</li> <li>Desktop icon</li> </ul>	art ally		A <u>d</u> vanced <u>A</u> pply	]
				<u> </u>	J

Figure 78: RDP client configured for a terminal server application

# ⇒ To configure a connection to a Microsoft Windows application via RDP

From the **Configuration** tab, click **New**. The **Application Definition** dialog box appears. Click the **RDP** tab.

The parameters are the same as in "4.4.1 Remote Desktop" with the following exceptions:

- **Name**: Enter an appropriate name for this application, such as "MS Word" for Microsoft Word.
- **Application**: Enter the name of the Windows application (for example, notepad.exe), including path, for example,

c:\Program Files\Microsoft Office\Office\Winword.exe



Note: System variables are allowed, for example: %SystemRoot%\system32\notepad.exe

• Working dir: (optional) Enter the working directory of the Windows application. Do not end the parameter with a backslash. Note: System variables are allowed, for example: %HOMEDRIVE%%HOMEPATH%

# 4.4.3 Session Parameters

Click on **Advanced** to display the **RDP advanced** dialog box. Here you can set the parameters for this session.

In the **Display** tab, you can set screen settings.



Figure 79: RDP client session settings: screen

In the Advanced tab, you can set the following parameters:

RDP adv	anced	
Display	Local resources	Advanced
Protocol	Auto	Ţ
Keyboard	l layout Auto	Ŧ
🗖 Disab	le Window Manag	er decorations
🔲 Disab	le encryption	
🗷 Disab	le mouse motion e	events

Figure 80: RDP client session settings: advanced

- Protocol Allows you to set the protocol to 4 or 5. By default, the RDP protocol type is automatically detected.
- **Keyboard layout** Allows you to set the keyboard layout within the RDP session. Default setting is **Auto**, which means the setting in the eLux NG starter will be used. Warning: The keyboard language set in RDP advanced settings may not differ from the keyboard language set in the eLux NG starter.
- **Disable window manager decorations** The border that appears on eLux NG windows will be blended out.
- **Disable encryption** Activate if your server does not accept encrypted sessions. Default is deactivated.
• **Disable mouse motion events** Information on mouse position will not be sent to the server continuously, but rather only upon mouse clicks. This improves performance for low-bandwidth connections. Default is deactivated.

The **Local resources** tab offers additional settings for terminal servers that support RDP 5.2 or higher. Note: This tab is only visible if you have the native RDP client version 1.3.1 or higher installed ("rdesktop52"). In addition, these options will have no effect if you set the protocol to "RDP V4" in the **Advanced** tab. To be able to use these settings, you must be using a terminal server that supports RDP 5.2 or higher.

Display       Local resources       Advanced         Prives       /misc/floppy • as A         Drive 1       /misc/floppy • as A         Drive 2       /misc/cdrom • as B         Drive 3       /misc/usb0 • as C         Drive 3       /misc/usb1 • as D         Drive 5       • as E         Drive 6       • as F         Drive 7       • as G         Drive 8       • as H         Drive 9       • as I         Drive 10       • as J	RDP advanced			
Drives Drive 1 /misc/floppy as A Drive 2 /misc/cdrom as B Drive 3 /misc/usb0 as C Drive 4 /misc/usb1 as D Drive 5 as E Drive 6 as F Drive 7 as G Drive 8 as H Drive 9 as A Drive 9 as A Drive 10 as J	Display Local	resources Adv	vanced	
	Drives Drive 1 Drive 2 Drive 2 Drive 3 Drive 4 Drive 5 Drive 5 Drive 6 Drive 7 Drive 8 Drive 8 Drive 9 Drive 10	/misc/floppy /misc/cdrom /misc/usb0 /misc/usb1	<ul> <li>as A</li> <li>as B</li> <li>as C</li> <li>as D</li> <li>as E</li> <li>as F</li> <li>as G</li> <li>as H</li> <li>as J</li> </ul>	Printers Enable printer Sound Off Play local Play remote Ports Enable serial ports Enable parallel ports Smart card Enable smart card
OK Cancel			C	OK Cancel

Figure 81: RDP client session settings: local resources

• **Drives** Allows you to map local drives. To map a drive, click to select the drive. Enter the mount point, which is the path to access the drive locally (see "3.9.5 Mount points"). Enter a letter. This is the drive that will appear in the RDP session. You can map up to 10 local drives.

To access the drive from the command shell, use \\tsclient\<*drive letter*>, for example, dir \\tsclient\b would allow you to access the CD-ROM.

- **Printers** Allows you to automatically create up to four printer definitions for this session. The printers must be defined in the eLux NG starter > **Printer** tab and have a valid driver name as it appears on the server (capitalization is important). The first four profiles with drivers are used. To set a default printer, click to select the "default" check box in the eLux NG printer profile.
- **Sound** "Play local" means the sound will be played locally on the Thin Client. "Play remote" means the sound will be played remotely on the server.
- Ports Enabling the check box means the ports will be accessible from within the RDP session.

• Smart card This feature is available starting with base OS 1.14.1 and RDP 1.4.0. Enabling the check box means smart cards can be used for certificate-based logon. See section "3.15.5 RDP Logon."

# 4.4.4 Command RDESKTOP



Advanced users have the possibility of calling the native RDP client from a local shell.

To see command line parameters, enter the command rdesktop -h in a shell. You can then define a session with any rdesktop parameter in the tab Local > Local application > Customized. See also section "4.8.4 User-Defined Commands."

# 4.5 Internet

eLux NG offers a variety of ways to connect locally to the Internet, including browsers and Web tools.

# 4.5.1 Local Browser

The following browsers are available: Opera, Mozilla and Firefox.

### Opera

### Software Requirements

To use this program, the "Opera Web browser" (opera) EPM must be installed. Available FPMs:

- "Kiosk mode" (opera kiosk): Required for kiosk mode.
- "Opera help pack" (opera\_help): Online help for the program.
- Various language packs are available for your localization.

For a description of EPMs and FPMs, see the ELIAS NG Administrator's Guide.

Opera is a Web browser from Opera Software ASA. It is a complete suite of Web-related applications, including a browser, a mail/news client and a chat client. Opera offers various features including pop-up blocking and customizable toolbars. For more information, see <a href="http://www.opera.com">www.opera.com</a>.

This software can be tested without purchasing a license. For professional use or to remove the advertising banners, you must purchase a license. To purchase a license, see <u>www.opera.com</u>.

### Mozilla

### **Software Requirements**

To use this program, the "Mozilla suite" (mozilla) EPM must be installed. Available FPMs:

- "Kiosk mode" (mozkiosk): Required for kiosk mode.
- Various language packs are available for your localization.

Mozilla and Firefox cannot both be installed on the same machine running eLux NG.

For a description of EPMs and FPMs, see the ELIAS NG Administrator's Guide.

Mozilla is a free, open-source Web browser from the Mozilla Foundation. It is a complete suite of Web-related applications, including a browser, a mail/news client and a chat client. Mozilla offers various features including pop-up blocking. For more information, see <u>www.mozilla.org</u>.



### Firefox

### **Software Requirements**

To use this program, the "Firefox" (firefox) EPM must be installed. Available FPMs:

- "Kiosk mode" (firefoxkioskmode): Required for kiosk mode.
- "Firefox DOM inspector" (firefoxinspector): Tool for displaying the structure of HTML and XML pages. For more information, see the Firefox documentation.
- "Java support" (firefoxjava): Enables Java support in Firefox. Requires "SunJava(2)" (j2jre150) EPM 1.5 or higher.
- Various language packs are available for your localization.

Mozilla and Firefox cannot both be installed on the same machine running eLux NG. For a description of EPMs and FPMs, see the *ELIAS NG Administrator's Guide*.

Firefox is a free, open-source web browser based on the Mozilla codebase. It is just a browser and does not contain a mail client. Firefox offers various security features including control over cookies and pop-up blocking. Firefox is not the stand-alone Mozilla browser. The user interface in Firefox differs from Mozilla in many ways. For example, Firefox has customizable toolbars. For more information, see <u>www.mozilla.org/products/firefox</u>.

### **Configuring a Browser Application**

To create or modify a browser session, in the **Configuration** tab click **New**.

📫 Application definit	ion	ha -×
Browser		
Name	Mozilla	
Home page	www.myelux.com	
Start page	www.myelux.com	
Proxy type	Manual (Proxy:Pe 🔻	
	proxy:3800	
Browser type	Mozilla	→ Firefox Mozilla Opera
🔲 <u>K</u> iosk mode	restart	
🔲 <u>S</u> tart automa	atically	Applu
Desktop icor	l	Арріу
		Einish

Figure 82: Browser application

- 1. The **Application Definition** dialog box appears. Click the **Browser** tab. A series of fields appears.
  - Name: Enter an appropriate name for this application, such as "www."
  - Homepage: Enter a home page for the browser.
  - Start page: Enter the first Web page to be called when the system starts.



### Proxy type

No proxy: If you don't use a proxy server.

**Manual (Proxy:Port)**: If you use a proxy server. Use the format <proxy server IP address or name>:<prox number>.

Auto (URL): If you use an automatic proxy configuration file. Example: http://www.yourserver.com/autoproxy.pac

### • Browser type

### Software Requirements

A selection of browser types is offered only if multiple browser software is installed (Opera, Mozilla or Firefox).

Select the browser you want: Opera or Mozilla or Firefox.

- Kiosk mode See "Kiosk Mode," page 141.
- **Application Restart:** Immediately reconnects after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts.
- **Start automatically:** Click this check box to open the session when the terminal starts.
- **Desktop icon** Creates a desktop shortcut for this application on the eLux NG desktop.
- 2. Click **Apply** and **Finish**.

**Note** By default, all browser files (cache, history, bookmarks, etc.) are saved to the device flash memory, which is limited. This can quickly use up available memory and interfere with work. To avoid this, configure the browser to save files to a network drive. See "3.10 Browser Home Directory."

You can make additional settings configurations in the browser itself. For further information consult the respective browser documentation at <u>www.opera.com</u> or <u>www.mozilla.org</u> or <u>www.mozilla.org/products/firefox</u>.

# Kiosk Mode

### Software Requirements

The kiosk option is enabled only if the kiosk feature is installed. It is located in the respective browser package. By default it is not activated.

Allows the users access to a specific Web site. In general, navigation (menus, toolbars, etc.) is deactivated, the user cannot alter preferences and keyboard commands are deactivated. Keyboard input is generally allowed. To allow the user to navigate, the Web site should be constructed appropriately.

Enter in **Start page** the Web page that you want to appear when the browser starts. The Web page can be on the Internet, on your thin client, or on another computer on the network. To enter a Web site, use the full URL format: "http://<domain name>".

For more information on kiosk mode, see "Appendix 4: Configuring Kiosk Mode."



# 4.5.2 Mail Clients

### Thunderbird

### **Required Software**

To use this program you must install the EPM "Thunderbird, V1.0.6-1". The application "Thunderbird mail client" is supported by eLux NG BaseOS, V1.20-2. If you should want to use older BaseOS versions, it can be configured with the application type "user", but no icons for starter or desktop are provided in this case.

Application definition in the eLux NG Starter:

Brow <u>s</u> er	Emulation	n <u>L</u> okal
Name		thunderbird
Anwend	lung	Thunderbird ma

Figure 83: Definition of the Thunderbird mail client

### Remarks

- Just like the browsers (Firefox, Mozilla, Opera) Thunderbird provides the possibility to set the home directory on a network drive (via Starter / Setup / drives, see chapter 3.10 Browser Home Directory).
- E-Mails coming in from a POP3 server will be lost after reboot of the Thin Client, if the Thunderbird home directory does not reside on a network drive (also valid for subscribed RSS-Feeds, newsgroup accounts and address books).
- Clicking hyperlinks in e-mails (such as http://www.myelux.com) opens the Firefox Browser (or a new browser tab, if Firefox is already open). Required is Firefox Version 1.4.0-2 or later.
- Vice versa you can click a mailto hyperlink in Firefox (e.g. info@unicon-ka.de) to create a new message, thus opening a Thunderbird window. If this should not occur automatically proceed as follows:
- In the address bar of Firefox enter the URL about:config (confirm entry with RETURN). Then enter the "Filter" network.protocol-handler.external into the textfield and confirm (see figure below). The entry network.protocol-handler.external.mailto must be assigned the value true..

Datei Bearbeiten Ansicht Gehe Lesez	zeichen E <u>x</u> tras	<u>H</u> ilfe	
🗇 - 🔿 - 🥰 🛞 😭 🗋 about:conf	ig		
Filter: network.protocol-handler.external			
Einstellungsname	∇ Status	Тур	Wert
network.protocol-handler.external-default	Standard	boolean	true
network.protocol-handler.external.afp	Standard	boolean	false
network.protocol-handler.external.data	Standard	boolean	false
network.protocol-handler.external.disk	Standard	boolean	false
network.protocol-handler.external.disks	Standard	boolean	false
network.protocol-handler.external.hcp	Standard	boolean	false
network.protocol-handler.external.help	Standard	boolean	false
network.protocol-handler.external.javascript	Standard	boolean	false
network.protocol-handler.external.mailto	Standard	boolean	true
network.protocol-handler.external.ms-help	Standard	boolean	false

Figure 84: Einstellung in Firefox

Rightclick the selected line, select New → String and define a new string value with the name network.protocol-handler.app.mailto.

i	Geben Sie den Eige	enschaftsnamen ein	
	network.protocol-ha	andler.app.mailto	
		Abbrechen	ок

Enter thunderbird

Geben Sie einen string-Wert einen string-Wert einen string-Wert einen string-Wert einen string-Wert einen string network.protocol-handle [hunderbird]	er.app.mailto	ha E E	
	Abbrechen	ОК	
🥹 about:config - Mozilla Firefox		_	
Datei Bearbeiten Ansicht Gehe Le	sezeichen E <u>x</u> tras	<u>H</u> ilfe	
🔶 • 🛶 - 😂 🛞 🟠 🗋 about:c	onfig		
Filter: network.protocol-handler			
Einstellungsname v	Status	Тур	Wert
network.protocol-handler.app.mailto	vom Benutzer	string	thunderbird
network.protocol-handler.expose-all	Standard	boolean	true
network.protocol-handler.expose.mailto	Standard	boolean	false

Mozilla Thunderbird help is provided under http://www.mozilla.org/support/thunderbird/

# 4.5.3 Web Tools

The following Web tools are available: Adobe<sup>®</sup> Acrobat<sup>®</sup> Reader<sup>®</sup>, RealPlayer<sup>®</sup> and Java<sup>™</sup> Plug-in.

# Adobe Acrobat Reader

To use this feature, the software "Acrobat5" (Acrobat5) must be installed. This software can be run either as a stand-alone program or as a browser plug-in.

- To run Adobe Acrobat Reader as a stand-alone program, see "4.8.6 Adobe Acrobat Reader."
- To run Adobe Acrobat Reader as a browser plug-in, just install the software. No further configuration is required.

# **Movie Player**

To use this feature, the software "Movie Player" (mplayer) must be installed. Install the individual subcomponents (FPMs) relating to the features you desire. In addition, the base OS starting with version 1.8.4 must be installed.

MPlayer is an open-source movie player. It supports all common movie formats including DVD (including encrypted DVD), MPEG, DivX, AVI, ASF, RealVideo, Windows Media Video (.wmv), Quicktime (.mov) and others. The files can reside on the Thin Client, a network drive or the Internet.

This software can be run either as a stand-alone program or as a browser plug-in.

- To run MPlayer as a stand-alone program, see "4.8.9 Movie Player."
- To run MPlayer as a browser plug-in (Mozilla only), just install the software "MPlayer Mozilla support" (mplayer\_plugger) in the package "Movie Player" (mplayer). No further configuration is required.

# RealPlayer

To use this feature, the software "Realplayer 8 Plugin" (realplayer) must be installed. RealPlayer is software from RealNetworks, Inc.

This software can only be run as a browser plug-in.

Configuration depends on whether you use a proxy:

- If you do not use a proxy, to run RealPlayer as a browser plug-in, just install the software. No further configuration is required.
- If you use a proxy, to run RealPlayer as a browser plug-in, install the software and configure the RealPlayer proxy setting.

# ⇒ To configure the RealPlayer proxy setting

- 1. Install the software.
- 2. Start the browser of your choice.
- 3. Start RealPlayer. To do this, go to a website that contains a RealPlayer-supported file (for example, RealAudio, RealVideo, MP3, Ogg Vorbis and Theora, H263, AAC). Click the link to the file. RealPlayer runs.
- 4. Open the **Preferences** dialog.
  - If RealPlayer is running in a separate window, go to View > Preferences.
  - If RealPlayer is running embedded in a page, right-click and select **Preferences**.
- 5. In the **Proxy** tab, enter the proxy server. If the proxy server is in a different subnet, enter the fully qualified domain name.



- (optional) In addition, you can set other RealPlayer settings in the Preferences dialog box as desired.
- 6. Click **OK**.

### Java Plug-in

To use this feature, the software "SunJava 2" (j2jre142) must be installed.

The Java<sup>™</sup> 2 Runtime Environment (JRE) is software from Sun Microsystems, Inc. The JRE enables your computer to run applications and applets that use Java<sup>™</sup> technology, such as the Mozilla browser and SAP/R3 client. The Java plug-in software used by browsers is a component of the JRE.

To run the Java plug-in, just install the software. No further configuration is required if you decide to use default settings.

Configuring the Java plug-in involves the following:

- 1. Configuring a Java Plug-in Control Panel application definition in eLux NG
- 2. Configuring options in the Java Plug-in Control Panel

### ⇒ To configure a Java Plug-in Control Panel application definition in eLux NG

Configuring the application definition in eLux NG does not configure the plug-in. It simply runs the Java Plug-in Control Panel. You configure the plug-in directly in the Java Plug-in Control Panel.

From the **Configuration** tab, click New.

1. The Application Definition dialog box appears. Click the **Local** tab.

Name	Enter an appropriate name for this application.	
Application	Click Customized.	
Parameter	Enter the following: ControlPanel	
	Caution: Capitalization is important!	
Hidden	Does not display the application in the <b>Application</b> tab.	
Application Restart	Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts	
Start automatically	Click this check box to open the session when the terminal starts.	

2. Click Apply and Finish.

### ⇒ To configure options in the Java Plug-in Control Panel

To configure the Java plug-in, go to the **Applications** tab.

- 1. Start the application you configured in "To configure a Java Plug-in Control Panel application definition in eLux NG". The **Java Plug-in Control Panel** dialog box appears.
- 2. Make the desired changes.

Tip: Optimize the cache size. The optimal size is hardware specific. Default is 4 MB.

3. Click **Apply** and close the dialog box.

For information on the Java 2 Runtime Environment, see <u>http://java.com</u>.

# 4.6 SAPGUI

eLux NG supports the SAP/R3 client from SAP AG. This feature is not available for all hardware platforms.

The SAP client configuration file is: "/setup/sapgui/platin.ini".

System requirements:

- 96 MB flash card or larger
- 128 MB of RAM minimum

Establishing a connection involves the following:

- 1. Installing the required firmware
- 2. Configuring the SAPGUI application definition in eLux NG
- 3. Entering connection data in the SAP/R3 client

# ⇒ To install the required firmware

To use this feature, you must have the "SAP R/3 client PlatinGUI" (sapplatingui) and "IBMJAVA2" (IBMJAVA2) packages installed.

# ⇒ To configure the SAPGUI application definition in eLux NG

Application defin	ition	₩a [	×
SA <u>P</u> -GUI			
Name	SAP-GUI		
🗷 Classical us	ser interface		
Applica <u>t</u> ion	restart		
<u> </u>	natically on	Apply	
		Einish	

Figure 85: SAP/R3 application definition in eLux NG

Configuring the application definition in eLux NG does not configure a session. It simply runs the SAP/R3 interface. You configure a session directly in the SAP/R3 interface.

From the **Configuration** tab, click **New**.

- 1. The **Application Definition** dialog box appears. Click the **SAPGUI** tab. Configure the following options:
  - Name: Enter an appropriate name for this application, such as "SAP".
  - **Classical user interface** Click to select to display the SAP interface in the former design ("Classic"). Default settings are for the new design ("EnjoySAP").
  - **Application Restart:** Immediately reconnects after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts.
  - Start automatically: Click this check box to open the session automatically when the terminal starts.
- 2. Click Apply and Finish.

# 4.6.1 Entering Connection Data

To connect to an SAP system, you must enter its connection data. This is done in the SAP/R3 interface. See your SAP administrator for connection data.

To enter the connection data, you have two options:

Message Server List

Instruct the SAP client to retrieve a message server list.

Manual configuration

Enter the parameters manually.

### ⇒ To enter SAP connection data from a message server

This section describes how to retrieve the connection data for an SAP system from a message server. The message server list must exist in advance and be available over the network.

To set a message server list, go to the **Applications** tab.

 Click to highlight the SAP application configured in "To configure the SAPGUI application definition in eLux NG" and click **Connect**. The **SAPGUI for Java** dialog box appears.



Figure 86: Configuring SAPGUI (automatically): Connection dialog box

2. In the **Options** menu, select **Preferences**.

X SAPGUI Preferences		
	Configuration	
Configuration	Include Configuration File:	
VisualSettings	Messageserver List:	
	http://server1/sapmsg.ini	
Options	Router List:	
Desktop		
	Save	

Figure 87: Configuring SAPGUI (automatically): Preferences dialog box

- 3. The **SAPGUI Preferences** dialog box appears. Configure the following options:
  - Include Configuration File Enter a blank.

Note: You must enter a blank to be able to save the configuration. This is a known bug in the SAP/R3 software.

• **Messageserver List** Enter the message server list. This file must exist on the SAP message server in advance. You have the following options:

### • Web server

Enter the fully qualified URL of the message server list, for example: http://server1/sapmsg.ini

Netdrive

Enter the path of the of the message server list residing on a Samba or NFS network drive, for example: /smb/drive1/sap2.ini

Click Save. The SAPGUI Preferences dialog box closes.

4. In the **SAPGUI for Java** dialog box, click **New**. The **Add New Connection** dialog box appears.

🗙 🛛 Add New Connec	tion			
Description:	Linux			
System Lang	guage Security	Logon Advanced		
System:	LNX i	Group/Server:	linux3	Ē
Router:	(none) LNX			Ē
Speed:	Low Speed Conr	nection		
		Save	Save As	Cancel

Figure 88: Configuring SAPGUI (automatically): Add New Connection dialog box

- 5. In the **System** tab, configure the following options:
  - **Description** Enter a name for this connection.

The choices in the following dropdown-lists are automatically set once you enter a message server:

- System Select your SAP system from the drop-down list.
- Group/Server Select your SAP group from the drop-down list.
- Router (optional) Select your SAP router from the drop-down list. Only required if you use SAP routers to make remote connections.

For information on remaining parameters, see the SAP documentation.

Click Save. The Add New Connection dialog box closes.



Figure 89: Configuring SAPGUI (automatically): Connection dialog box (connections configured)

6. To connect, in the **SAPGUI for Java** dialog box select a connection and click **Connect**.

**Tip** To save your entries, close the SAP/R3 for Java dialog box. Only then is the configuration saved to the Thin Client.

### ⇒ To enter SAP connection data manually

To enter the connection data manually, go to the Applications tab.



Figure 90: Configuring SAPGUI (manually): Connection dialog box

 Click to highlight the SAP application configured in "To configure the SAPGUI application definition in eLux NG" and click **Connect**. The **SAPGUI for Java** dialog box appears.

🗙 Add New Connect	ion	
Description:		
System Langua	ge Security Logon Advanced	
System:	Group/Server:	<b>•</b>
Router:		•
Speed:	Low Speed Connection	
	Save Save As	Cancel

Figure 91: Configuring SAPGUI (manually): Add New Connection dialog box (System tab)

2. Click New. The Add New Connection dialog box appears.

🗙 Add New Connection
Description: connection1
System Language Security Logon Advanced
Expert settings:
✓ use expert configuration
conn=/H/192.168.115.72/S/3217
Save Save As Cancel

Figure 92: Configuring SAPGUI (manually): Add New Connection dialog box (Advanced tab)

- 3. Click the Advanced tab. Configure the following options:
  - **Description** Enter a name for this connection.
  - Use expert configuration Click to select.
    - In the text field, enter the connection string in the following format: conn=/H/<host>/S/<port> where

<host> = IP address or hostname of the SAP host <port> = port number

Note: Do not use blanks.

For information on connection string syntax possibilities, see the SAP documentation.

- 4. Click **Save**. The **SAPGUI for Java** dialog box appears and displays the new connection.
- 5. Add additional connections as desired.

🧳 SAPGUI for Java	hox
Connection Options	
connection1 connection2 connection3	New       Edit       Delete

Figure 93: Configuring SAPGUI (manually): Connection dialog box (connections configured)

6. To connect, in the **SAPGUI for Java** dialog box select a connection and click **Connect**.

For further information on this application, see <u>www.mysap.com</u> or the SAP documentation available on the eLux NG CD-ROM.



# 4.7 Emulation

- second	· · · · · · · · · · · · · · · · · · ·	97801-7Bit
Application definition		97801-8Bit
Emulation		Ansi
		AT386
Name X32		VT320
Emulation type		BA-80
		3270
Configuration 3270.cfg	<b>↓∓</b> ]	5250
		9750
		X11
		XDMCP
		VNC
		Tarantella
		PowerTerm
<ul> <li>Application restart</li> <li>Start automatically</li> <li>Desktop icon</li> </ul>		Apply
		Einish

Use the **Emulation** tab to connect to mainframes or UNIX systems.

Figure 94: Application definition dialog box for an emulation

### ⇒ To configure a terminal emulation

From the **Configuration** tab, click **New**.

- 1. The Application Definition dialog box appears. Click the Emulation tab.
  - **Name**: Enter an appropriate name for this application, such as, "Star Office" for the SUN office program run as an X11 terminal.
  - **Emulation type**: Click an emulation type from the **Emulation type** list. The following emulations are supported:
    - 97801-7Bit: for Sinix or Reliant UNIX systems with TCP/IP or V.24 protocol
    - 97801-8Bit: for Sinix or Reliant UNIX systems with TCP/IP or V.24 protocol
    - ANSI: for UNIX systems with TCP/IP or V.24 protocol
    - AT386: for UNIX systems with TCP/IP or V.24 protocol
    - VT320: for UNIX systems with TCP/IP or V.24 protocol
    - **BA-80:** for Targon systems with TCP/IP or V.24 protocol
    - 3270: for IBM mainframes with TN3270E protocol (to be licensed)
    - 5250: for IBM AS400 systems with TN5250E protocol (to be licensed)
    - 9750: for BS2000/OSD systems with TCP/IP (to be licensed)
    - X11: for X applications on remote (UNIX) systems, using the local X server
    - **XDMCP:** for the complete X Desktop of remote UNIX systems using the local X server (Not available for all hardware platforms)
    - VNC: for VNC server or mirroring



- Tarantella: for a Tarantella server
- **PowerTerm:** for IBM Mainframe, IBM AS/400,Unix, VAX/Alpha OpenVMS, Tandem (NSK), HP-3000 and Data General (to be licensed)

A series of fields appears. Fill in the requested information (see sections 4.7.1 to 4.7.7).

- **Application Restart:** Immediately reconnects after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts.
- Start automatically: Click this check box to open the session when the terminal starts.
- Desktop icon Creates a desktop shortcut for this application on the eLux NG desktop.
- 2. Click Finish.

# 4.7.1 Tarantella

To use this software, you must have the "Tarantella Native Client" (tarantella) package installed.

Tarantella uses a bitmap protocol to connect from a Tarantella client to a Tarantella server, which can then connect to another machine. It can be used as an alternative to Citrix for small installations.

You can enter the server name (or IP address) and the username directly in the application definition.

The native Tarantella client has no further parameters. The configuration of the client is done within the application. For further information consult the Web site <u>www.tarantella.com</u>.

# 4.7.2 Terminal Emulation for Motif

To use this software, you must have the "Terminal emulation for Motif" (xemu) package installed.

"Terminal emulation for Motif" is a terminal emulation suite for IBM and BS2000 systems that includes the following emulations:

- 3270 for IBM mainframes with TN3270E protocol
- 5250 for IBM AS400 systems with TN5250E protocol
- 9750 for BS2000/OSD systems with TCP/IP

This is a licensed product. The software includes a 15-minute trial period To purchase a license, please contact <u>sales@myelux.com</u>. You can purchase either a license that is distributed using the Scout NG management tool or a license that is entered directly on the terminal (start the program > **Add-Ons** menu > **Licensing**).

The configuration is saved in a file with the extension "cfg". Select the configuration file from the drop-down list. Initially only the default configuration file (X32: 3270.cfg, X52: 5250.cfg, X97: default.cfg) is available.

### ⇒ To define a new configuration file

- 1. Start the emulation.
- 2. Set the settings you want.
- 3. The menu command File > CONFIGURATION > Save as allows you to save the settings to a new configuration file. Enter the name of the configuration file in the Save Configuration dialog box. You must enter the extension ".cfg"!

Note The path must be the default /setup/xemu!

4. Close the emulation and return to the eLux NG Configuration tab.

This new configuration file is now available in the eLux NG **Configuration > New > Emulation > 3270** (or **5250** or **9750**) **> Configuration** drop-down list.

You can set the station name to a set value using an environment variable. "X97STATNAM" is the defined station name environment variable for all UniCon Software GmbH emulations (X32, X52, X97). Alternatively, you can set the station name to a variable. Requirement: The device must be managed by Scout NG. For more information, see the X97 chapter or environment variable chapter in the *Scout NG Administrator's Guide*.

For detailed instructions on how to use X32 or X52, please consult the X32 – 3270 / X52 – 5250 for Motif Administrator's Guide, available at <u>www.myelux.com</u> or the eLux NG CD.

For detailed instructions on how to use X97, please consult the X97 – 9750 for Motif Administrator's Guide, available at <u>www.myelux.com</u> or the eLux NG CD.

### 4.7.3 eterm for UNIX Systems

To use this software, you must have the "Eterm 97801 terminal emulation" (eterm) package installed.

eterm is a terminal emulation suite for UNIX systems that includes the following emulations: Siemens 97801 (7 & 8 bit, Sinix or Reliant), ANSI, AT386, BA-80, VT320 Information on how to configure the key mapping file (such as for special sequences) is provided below. For further information on how to configure eterm, see the *eterm Administrator's Guide*, available for download at <u>www.myelux.com</u> (log on, go to "Manuals" > "Emulations") or on the eLux NG CD.

### Key Definition File "eterm.map"

Technical details:

File name:	eterm.map
File format:	UNIX
File path:	/setup/eterm
Automatically installed during installation?:	No, must be created

**Tip** Do not edit elux.map using Notepad, which will convert it to an MS-DOS® text file.

The default eterm keyboard mapping suffices for most keyboards and emulations (VT320, 97801, etc.).

In addition, elux supports user-defined keyboard mapping. To perform this:

- 1. Create a new UNIX text file. Acceptable editors include "vi" on UNIX machines or "Programmer's File Editor" on Windows machines.
- 2. Enter the values in the format described below.
- 3. Save the file as "eterm.map".
- Transfer it to the directory "/setup/eterm" on the Thin Client. (This is done easily using the "File Transfer" feature of Scout NG – see the Scout NG Administrator's Guide for more information.)

The user-customized keyboard mapping file allows you to change the default mapping and/or implement your own sequences (such as special control sequences).

### Format

In the file eterm.map,	tabs are field	separators.	The first	field	must	start i	n the	first	colum	n:
<key symbol=""></key>	<modifier></modifier>		<string></string>							

# Parameters<key symbol>The key to modify (=character string).<modifier>The level switching value (=hexadecimal number).<string>The character(s) that the key is to produce (=character string).



A detailed description of the parameters follows.

### **Key Symbol**

This is the key to modify. The parameter format is character string.

To view key symbols, open a local shell and enter the following command, which displays the keyboard mapping of the local X server:

xmodmap -pke | more

The available key symbols are displayed in the format:

keycode <keycode number> = <key symbol>

The parameter <*keycode number*> can be ignored. Enter the string <*key symbol*> exactly as it is shown here in the file eterm.map.

### Modifier - Level Switching

Each key can be in more than one state, or "level":

- 1. pressing the key (unshifted)
- 2. pressing the key with Numlock on
- 3. pressing the key and the Shift button (shifted)
- 4. pressing the key with Shift-Lock on

etc.

Levels are specified using a modifier. The modifier is a preset hexadecimal number (base 16). A comprehensive list of level switching modifiers is shown in Figure 95.

Level Switch	Value	
Unshifted		0
Shifted	1	
Shift-Lock	2	
Control		4
Alt (mo	od1)	8
Numlock (mo	10	
Alt Gr (mo	od3)	2000

Figure 95: Level switching

Modifiers can be combined, for example, Shift + Numlock. In this case, add the level switching modifiers using hexadecimal addition (8+2 = A, not 10).

In the file eterm.map, it is highly recommended that for each key you enter multiple entries corresponding to different levels. For example, you could map the following levels:

- 1. the key alone (level = "unshifted")
- 2. key + Shift-Lock
- 3. key + Numlock
- 4. key + Numlock + Shift-Lock

**Tip** We recommend configuring each key in the mapping file twice, with and without Numlock.

If you are running eterm on a Thin Client running eLux NG software, when the Thin Client boots, by default the Numlock key is activated. Thus, in eterm.map you should have an entry for unshifted (modifier=0) and Numlock (modifier=10) for each key. If you just map the key for unshifted, then no mapping will occur if the Numlock key is accidentally on! This is one of the most common errors.



# String

The character(s) that pressing the key should produce. The parameter format is character string.

For a list of character strings, enter the command informp on the host. You will see the character sequences the host accepts for different terminals.

For a list of ASCII control character sequences, see the following table.  $CTRL = ^{s}$  so the key sequence you would enter for the parameter < string> is always  $^{p}$  plus the key listed in the second column. For example,  $^{p}$  would produce the ESC character (0x1B). (For the character  $^{t}$  itself, enter it twice:  $^{n}$ )

Control Character (Mnemonic)	CTRL + Key
NUL	@
SOH	A
STX	В
ETX	С
EOT	D
ENQ	E
ACK	F
BEL	G
BS	Н
HT	I
LF	J
VT	К
FF	L
CR	М
SO	N
SI	0
DLE	Р
DC1	Q
DC2	R
DC3	S
DC4	Т
NAK	U
SYN	V
ETB	W
CAN	Х
EM	Y
SUB	Z
ESC	[
FS	١
GS	]
US	-

Figure 96: Key sequences for ASCII control characters for eterm.map



### Example for eterm.map

For a VT320 emulation, assume that you want to assign the keys F1 to F4 with the codes for the VT320 keys PF1 to PF4 (ESC OP, ESC OQ, ESC OR, ESC OS).

In the example that follows, each key is mapped four times for the following levels:

- 1. Normal
- 2. Shift Lock
- 3. Numlock
- 4. Shift Lock + Numlock.

The eterm.map file is as follows:

			Level Mapping
# Enter a	pound symbol in th	ne first	
# column t	to comment out a li	.ne.	
F1	0	^[OP	1. Normal
F1	2	^[OP	2. Shift Lock
F1	10	^[OP	3. Numlock
F1	12	^[OP	4. Shift Lock + Numlock
F2	0	^[0Q	etc.
F2	2	^[0Q	
F2	10	^[0Q	
F2	12	^[0Q	
F3	0	^[OR	
F3	2	^[OR	
F3	10	^[OR	
F3	12	^[OR	
F4	0	^[OS	
F4	2	^[0S	
F4	10	^[OS	
F4	12	^[0S	

### Troubleshooting

If the customized key mapping does not work, answer the following questions regarding eterm.map:

- 1. Did you mix upper and lowercase? (case-sensitive)
- 2. Is the file name "eterm.map"?
- 3. Is the file path "/setup/eterm" on the Thin Client?
- 4. Is it a UNIX text file?

etc.

# 4.7.4 X11 for X Applications Using the Local X Server

The X11 server developed by The XFree86 Project, Inc (<u>http://www.xfree86.org/</u>) and its contributors is included in the base OS. No additional software must be installed.

Application definition	DII	<u>ک</u> ور	- ×
Emulation			
Name	xv		
Emulation type	X11 -		
Server address	host		
User name	test		
Application	/usr/X11R6/bin/xv		
Use SSH	×		
L Application re	sctort		
Start automat	tically		
Desktop icon		<u>Apply</u>	
		Finish	
		Turist .	

Figure 97: Application definition dialog box for an X11 emulation

### ⇒ To configure an X11

From the **Configuration** tab, click **New**.

- 1. The Application Definition dialog box appears. Click the Emulation tab.
- 2. Click X11 in the Emulation type list. A series of fields appears.
  - Name: Enter an appropriate name for this application, such as "X11."
  - Server address: Enter the IP address (or name) of the UNIX server.
  - User name: Enter the username on the UNIX server.
  - Application: Enter the X application name with its complete path.
  - **Use SSH**: If selected, the X11 session is started via the Secure Shell (SSH) protocol. Only the public key authorization is permitted (see page 169 for instructions on how to set a public key).
- 3. **Application restart**: Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts.
- 4. **Start automatically**: Click this check box to open the session when the terminal starts.
- 5. **Desktop icon** Creates a desktop shortcut for this application on the eLux NG desktop.
- 6. Click Finish.

**Note** You must register the host name of the Thin Client on the server by creating the user "elux" in the file .rhosts in the user's home directory. *Example*: xsklaus.unicon-ka.de elux

For more information on rsh services, please refer to your UNIX server's man page.

**Note** Useful additional software is Accelerated-X<sup>TM</sup> Display Server, an accelerator for X11 applications. This software is licensed and can be purchased from UniCon Software GmbH (see <u>www.myelux.com</u>) or your eLux NG supplier. Not available for all hardware platforms. Accelerated-X requires a Matrox graphics card.

# 4.7.5 XDMCP

You can configure an X terminal using X Display Manager Control Protocol (XDMCP). This functionality is included in the base OS.

📫 Application definiti	on	
ICA <u>R</u> DP <u>B</u> ro	wser Emulation Local PN-Agent	
Name	ХДМСР	
Emulation type	XDMCP	
Server address	server3	
Access	Direct	
Resolution	□ Default 1280×1024 ∓	
Color depth	🗖 Default 🛛 True color 🖩 Ŧ	
Backing store	🗖 Default 🛛 🛛 🕞	
Dead keys	🗷 Default	
🗷 Allow remote 🗷 Show inform	X11 clients 🛛 🗷 Run as normal window ation message	4
🔲 Applica <u>t</u> ion n	estart	
🔄 <u>S</u> tart automa	tically	Apply
		<u>F</u> inish

Figure 98: XDMCP session

# ➡ To configure an XDMCP session

From the **Configuration** tab, click **New**.

- 1. The Application Definition dialog box appears. Click the Emulation tab.
- 2. Click XDMCP in the Emulation type list. A series of fields appears.
  - Name: Enter an appropriate name for this application, such as "XDMCP."
  - Server address: Enter the IP address (or name) of the UNIX server.
  - Access: Choose the mode:

**Direct**: Direct connection to the defined UNIX system.

**Indirect**: The defined UNIX system is searched for a list of servers which is then displayed.

For the following parameters, if "Default" is selected, the settings in the eLux NG starter (**Setup > Screen**) will be used.

• Set the **Resolution** and **Color depth**.

- **Backing store**: Saves screen information to the local X11 server on the thin client. This increases the screen refresh speed when the network connection is slow (especially noticeable by ISDN); however, the main memory requirements are large (128 MB or higher).
- Dead keys: Maps exist that define several "dead keys" on the keyboard. Dead keys make it possible to entered accented combination characters. A dead key combination means that you press two keys one after the other (press the first key and release it, then press the second key and release it) in order to form a single character. In general, you press a key for the accent you want (nothing happens), then a key for the letter to apply to accent to (the accented combination character appears).

For example, pressing "`" on the U.S. international keyboard produces nothing, but subsequently typing "e" produces "è". Other keyboard layouts may produce accented characters in other ways (on the French keyboard there is a key that produces "è" directly).

By default, dead keys are active. If you use an application that is incompatible with dead keys, click to deselect.

- Allow remote X11 clients: Allows remote X11 clients to connect to the local Thin Client.
- **Show information message**: Pop-up message that appears when an XDMCP session is started. Can be deactivated.
- Run as normal window To use this feature, you must have the "Xnest" (xnest) package installed.
   By default, an XDMCP session runs in its own console. The key combinations for switching between consoles are described below.
   Select this option to run the XDMCP session directly in the eLux NG desktop. No switching is required.
- 3. **Application Restart:** Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts.
- 4. **Start automatically:** Click this check box to open the session when the terminal starts.
- 5. **Desktop icon** Creates a desktop shortcut for this application on the eLux NG desktop.
- 6. Click Finish.

To enable sound, go to **Setup > Multimedia** and click to select **Enable sound in XDMCP sessions**. Note: The application must be e-sound system compatible.

An XDM session uses a virtual screen. A new console is started. Use the shortcut key CTRL + ALT + F1 to move to the eLux NG screen. To switch to the XDM screen, use CTRL + ALT + F2. Up to two XDM sessions at a time are possible (switch to the second open XDM session using CTRL + ALT + F3).

To close the session, move to the eLux NG screen, highlight the active XDM session and click **Disconnect**.

**Note** Multiple consoles are not supported by all hardware platforms, due to large resource use. In this case, when you start an XDMCP session, a pop-up dialog box appears informing you that all active sessions are about to be disconnected, giving you the chance to cancel. When you click **OK**, all eLux NG sessions are stopped and the XDMCP session is started. Return to the eLux NG desktop by disconnecting from your XDMCP server.

For more information on consoles, see "3.5.2 Consoles."



# 4.7.6 VNC

To use this software, you must have the "VNC client" (vnc) package installed.

A VNC (Virtual Network Computing) viewer allows you to connect to a VNC server or to mirror a Thin Client.

📫 Applic	ation definiti	on	 - Vala	- ×
Emulat	ion			1
Name	9	VNC viewer		
Emul	ation type	VNC T		
Serve	r address	vncserver:2		
Passv	vord	***		
	nnlication n	estart		
	tart automa	tically		
D D	esktop icon	•	Apply	
			<u> </u>	

Figure 99: VNC viewer

### ⇒ To configure a VNC session

From the **Configuration** tab, click **New**.

- 1. The **Application Definition** dialog box appears. Click the **Emulation** tab.
- 2. Click **VNC** in the **Emulation type** list. A series of fields appears.
  - Name: Enter an appropriate name for this application, such as "VNC."
  - Server address: Use the following format (see below): </ > *IP address or name of the VNC server>:<display number>*
  - **Password:** Enter the password of the VNC server. If you are connecting to a Thin Client, enter the mirroring password saved to the Thin Client, if it exists.
  - **Application Restart:** Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts.
  - **Start automatically:** Click this check box to open the session when the terminal start.
  - Desktop icon Creates a desktop shortcut for this application on the eLux NG desktop.
- 3. Click Finish.

To connect to another Thin Client (for example, for help desk support), the eLux NG VNC server on the target Thin Client must be activated. Do this by activating the mirroring options on the target Thin Client. See chapter "3.16 Mirroring".

The following table lists the display numbers:

Session	Display number
eLux NG desktop	0
1st XDMCP session	1
2nd XDMCP session	2

Not all hardware platforms support multiple displays.

# 4.7.7 PowerTerm InterConnect

To use this software, you must have the "PowerTerm InterConnect" (powerterm) package installed.

PowerTerm<sup>®</sup> Interconnect from Ericom<sup>®</sup> Software allows you to connect to IBM Mainframe, IBM AS/400,Unix, VAX/Alpha OpenVMS, Tandem (NSK), HP-3000 and Data General. The following emulations can be simulated:

- IBM 3270 (TN3270E), 3179, 3278, 3279, 5250 (TN5250 with device name support), 3477
- Digital VT52, VT100, VT220, VT320, VT420, VT520, VT525
- ANSI BBS-ANSI, SCO-ANSI, AT386
- Other Wyse (50/60), Data General D-412, Siemens 97801, Televideo TVI 925/950, AIXterm

This is a licensed product. The software includes a 30-minute trial period. To purchase a license, please contact <u>sales@myelux.com</u>. The license is distributed using the Scout NG management tool.

*	Application definiti	011	
E	mulation		
-	Name	PowerTerm	
	Emulation type	PowerTerm 두	
	Parameter	""telnet.psl myserver""	
	I Annlication n	actort	
	<u>Start automa</u>	tically	
	🗷 Desktop icon	-	Apply
			Einish

Figure 100: PowerTerm configuration



### ⇒ To start PowerTerm InterConnect

From the **Configuration** tab, click **New**.

- 1. The Application Definition dialog box appears. Click the Emulation tab.
- 2. Click **PowerTerm** in the **Emulation type** list. A series of fields appears.
  - Name: Enter an appropriate name for this application, such as "PowerTerm."
    - **Parameter**: (optional) If you leave this field blank, the default setup file (ptdef.pts) will be used. Alternatively, you can enter one of the following:
      - **PowerTerm setup file** A customized setup file. It must have the ending \*.pts. Example: myfile.pts
      - **Parameters + PowerTerm setup file** Enter accepted PowerTerm parameters, followed by the customized setup file. Example: -no-menu -fullscreen myfile.pts
      - PowerTerm script Enter an accepted Power Script Language (\*.psl) enclosed in double quotation marks (""). Example: ""telnet.psl myserver""

See the PowerTerm documentation for more information on PowerTerm parameters and scripts.

- **Application Restart:** Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts.
- **Start automatically:** Click this check box to open the session when the terminal start.
- Desktop icon Creates a desktop shortcut for this application on the eLux NG desktop.
- 3. Click Finish.
- 4. From the **Applications** tab, double-click or use the **Connect** button to run the application.
- In the Communication menu select Connect. The Connect dialog box opens. Set the Terminal Type (emulation), the Terminal ID (if necessary) and the appropriate Session Type. Fill in the appropriate parameter fields and click Connect.

The configuration is saved to a file with the extension "pts". The configuration files must be located in the directory "/setup/PowerTerm/" (or "/setup/local/PowerTerm"). To create a new configuration file, start PowerTerm, configure your settings and save the file using a different name (**File** menu > **Save terminal setup as**). When you open a connection (**Communication** menu > **Connect**), you can select the configuration file by clicking on the browse button next to "Setup File" in the "Upon connection run" area. Initially only the default configuration file (ptdef.pts) is available.

You can transfer a configuration file to many Thin Clients using the "File Transfer" feature of Scout NG – see the *Scout NG Administrator's Guide* for more information.

For information on configuring PowerTerm, please see the Ericom documentation available at <u>www.ericom.com</u> or the eLux NG CD.



# 4.8 Local

eLux NG offers an easy-to-use graphical user interface (the so-called "starter"). All configuration settings and application definitions can be made using point-and-click. No Linux knowledge is required.

Because eLux NG is Linux-based, you also have the option of entering commands directly in the command-line interface (CLI). It helps if the administrator has experience either with Linux or using a CLI (such as the Windows CLI). Selected commands are provided in this manual.

The command line does not replace the GUI, rather it extends the options available to experienced administrators.

The **Local** tab allows you to enter a command just as you would from a local shell. There are two types of local commands available:

- predefined (XTerm, resource display or SSH)
- user defined (the so-called "customized commands")

# 4.8.1 XTerm (Local Shell)

The terminal window is useful for troubleshooting and for defining applications interactively. For example, if you are experienced with using the command line, you can type in the command line for the application, see if it works correctly and test different options. You can then configure that application using the eLux NG GUI or by entering that same command line into the starter (see 4.8.4 User-Defined Commands). Using UNIX commands and the UNIX editor vi, you can browse local directories, edit configuration files, or move files between the Thin Client and mapped SMB drives (such as log files to send to your support team).

The predefined command **XTerm** opens a local shell. The user is elux and has no root authorization.

Application definit	ion	
Local		
Name	Shell	
Application Parameter	XTERM ■	
🔲 Applica <u>t</u> ion 1	restart	
🔄 <u>S</u> tart automa	atically	Apply
		Einish

#### Figure 101: Local shell (XTerm)



### ⇒ To configure a local shell

From the **Configuration** tab, click **New**.

- 1. The Application Definition dialog box appears. Click the Local tab.
  - Name: Enter an appropriate name for this application, such as "shell."
  - Application: Select XTERM.
  - Parameter: (optional) Enter the desired parameter. See the examples below.
  - Application Restart: Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts
  - **Start automatically:** Click this check box to open the session when the terminal starts.
  - **Desktop icon** Creates a desktop shortcut for this application on the eLux NG desktop.
- 2. Click Finish.

### Example 1: Setting font and color parameters

Enter the following in the Parameter box:

fn 10x2	) -bg darkblue -fg yellow
fn	font
10x20	font size (big)
bg	background color
fg	foreground color

### Example 2: Setting font and color parameters and calling a program

Enter the following in the **Parameter** box:

	-fn	10x20	-bg	navy	-fg	white	-e	telnet	-1	schmidt	myhost
--	-----	-------	-----	------	-----	-------	----	--------	----	---------	--------

fn 10x20 bg fg	font font size (big) background color foreground color
-е	parameter to call a program
telnet	ASCII program
-I schmidt	program-specific parameter
myhost	host required by telnet program

For more information see the man pages of a Linux system.

Tip: To copy in XTerm, click the middle mouse button.

The properties for all X applications are set in the resource file "Xdefaults" located in /setup. For more information on Xdefaults, see the *Scout NG Administrator's Guide*.

# 4.8.2 Resource Display

This predefined command calls a program that displays the current resource use (such as memory, CPU). This can be used for diagnostics. To use this program, you must have the software "Resource info display" (resinfo) installed. It is located in the "Desktop Tools" (dtt) package.

Application defin	ition	ha -×
Local		
Name	Resource display	
Application	Resource display 두	
Parameter		
🔲 Applica <u>t</u> ion	) restart	
🔲 <u>S</u> tart auton	natically	Annly
Desktop ico	on	дрру
		<u> </u>

Figure 102: Resource Display

### ⇒ To configure a resource display

From the **Configuration** tab, click **New**.

- 1. The **Application Definition** dialog box appears. Click the **Local** tab.
  - Name: Enter an appropriate name for this application.
  - Application: Click Resource display.
  - Parameter: Leave blank.
  - **Application Restart:** Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts
  - **Start automatically:** Click this check box to open the session when the terminal starts.
  - **Desktop icon** Creates a desktop shortcut for this application on the eLux NG desktop.
- 2. Click Finish.



### 4.8.3 Secure Shell

This predefined command calls a local client that allows you to connect to a remote Secure Shell (SSH) server. The software package "SSH Tools" (ssh) must be installed.

Application definit	lion	
Local		
Name	Secure Shell	
Application Parameter	SSH 두	
Applica <u>t</u> ion i	restart	
Desktop icor	atically 1	
		<u> </u>

Figure 103: Application definition dialog box for SSH

### ⇒ To configure SSH

From the **Configuration** tab, click **New**.

- 1. The Application Definition dialog box appears. Click the Local tab.
  - Name: Enter an appropriate name for this application.
  - Application: Click SSH.
  - **Parameter**: Enter the user and the remote host, as shown in Figure 103, in the following format: -1 <*username*> <*host*>. See "User Authorization" below.
  - **Application Restart**: Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts
  - **Start automatically**: Click this check box to open the session when the terminal starts.
  - **Desktop icon** Creates a desktop shortcut for this application on the eLux NG desktop.
- 2. Click Finish.

### **Password Authorization**

SSH server settings determine the type of authorization (password or key) needed to connect. If you want to connect using a password, the SSH server must be configured for password authorization.



To connect using password authorization, open a session and enter the password. In the future, you must enter this password every time you connect to the server.

### **Public Key Authorization**

SSH server settings determine the type of authorization (password or key) needed to connect.

The authentication type – RSA or DSA – required to start a session is configured on the server. Older server support RSA version 1. Newer servers support RSA version 1 and in addition RSA version 2 and DSA version 2.

Each user uses the program ssh-keygen to generate a public/private key pair. The key pair is generated locally. The public key (\*.pub) must be transferred to the server that the user will log on to. The server knows the public key, however only the user knows the private key. This is typical asymmetrical encryption.

### ⇒ To connect using a public key

1. Open a local shell and type:

ssh-keygen -t <authentication type>

where <authentication type> =

rsal	: generates the protocol for version 1 RSA public authentication key
rsa	: generates the protocol for version 2 RSA public authentication key
_	

- dsa : generates the protocol for version 2 DSA public authentication key
- 2. At the "where to locate the files" prompt, press ENTER.
- 3. At the passphrase prompt,
  - Enter a passphrase to enter this phrase every time you establish a connection to the server.
  - Press ENTER to avoid having to enter a passphrase in the future.
- 4. The program generates the keys using the authentication parameter entered in step 1 and saves them to the following directory:

rsal (version 1 RSA)	: /setup/ssh/identity /setup/ssh/identity.pub
rsa (version 2 RSA)	: /setup/ssh/id_rsa /setup/ssh/id_rsa.pub
dsa (version 2 DSA)	: /setup/ssh/id_dsa /setup/ssh/id_dsa.pub

5. The contents of the public key file (\*.pub) should be entered in the file \$HOME/.ssh/authorized\_keys on all SSH servers the user is allowed to log on to using the public key (where \$HOME is the user's home directory).

If you know which authentication type your server uses, you can create a single authentication key pair. However, if you do know the authentication type, all is not lost – run the program ssh-keygen three times using the three different authentication parameters. You will then have three key pairs for all three authentication types. Save all three public keys to \$HOME/.ssh/authorized\_keys, as in step 5. Enter one key per line. The keys that are not needed will be ignored.

For more information on SSH server configuration, ask the system administrator of the remote host.



# 4.8.4 User-Defined Commands

Defining local commands is special – it allows you to define applications which can be called within a shell. (Note that the average user may not have the necessary knowledge about commands.)

The user must be authorized to start the applications. All commands are carried out by the UNIX user "eLux NG" (UID = 65534).

In some hardware platforms, "Customized Commands" is called "Custom".

We recommend that you test whether the command works by calling it from within an XTerm session before entering it in the **Application definition** dialog box. This is the only way you will receive feedback via error messages. You will not receive feedback when you enter it in the **Local** tab, as no error messages are displayed when it is called from eLux NG.

If you enter a command that does not call an X-capable application, you will not see anything when it is carried out.

📫 Application defini	tion	
Local		
Name	getfile	
Application Parameter	Custom 📮 ftp –o /setup/public/c	
Hidden	ractort	
Start autom	atically	
🗖 Desktop ico	n	Apply
		<u> </u>

Figure 104: Customized commands

### ⇒ To enter a command

From the **Configuration** tab, click New.

- 1. The **Application Definition** dialog box appears. Click the **Local** tab.
  - **Name**: Enter an appropriate name for this application.
  - Application: Click Customized.
  - **Parameter:** Enter the desired command, including all program parameters. See the examples below. For more information see the man pages of a Linux system.
  - Hidden: Does not display the application in the Application tab.
  - Application restart: Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts
  - Start automatically: Click this check box to open the session when the terminal starts.

- Desktop icon Creates a desktop shortcut for this application on the eLux NG desktop.
- 2. Click Finish.

If you select the option "Hidden," you must select "Start automatically" (or "Application restart") for the command to run.

**Example 1**: Retrieve any file from an FTP server automatically Enter the following:

ftp -o /setup/public/getfile ftp://user:passwd@myftpserver/getfile

This command is entered on one line. The parameter  $-\circ$  describes the target location and target name of the file you want to get from the FTP server, followed by the name of the FTP server the file resides on.

Files can also be retrieved from a Web server.

Example 2: Retrieve any file from a Web server automatically

ftp -o /setup/local/eterm/eterm.map http://mywebserver/confiles/eterm.map

This command is entered on one line. Keep in mind that files can only be transferred to the local directories /setup/public and /setup/local/<application>. Further, the memory area is restricted.

To see the current memory usage, enter the shell command df (=disk free) to see free disk space and df -i to see the number of I nodes. For example on a 32-MB flash, data saved in /setup cannot exceed 512 KB or 100 files.

Further line commands and parameters can be found in the product's online documentation or the Internet.

### "Start automatically" with "Customized command"

You can use the customized command features to retrieve a configuration file, as in the examples above. However, the order in which applications are started automatically (**Start automatically** check box) is not defined. If both the application and a local command to get its configuration file are set to "Start automatically," this application may be started before the configuration file arrives. If this conflict occurs upon start, restart the desktop.



# 4.8.5 Calculator

To use the desktop calculator, you must have "X calculator" (xcalc) activated. It is located in the "Desktop Tools" (dtt) package.

٠	Application definition		Jan Star	
	₂ocal			
	Name	Calculator		
	Application	Custom 🖡		
	Parameter	xcalc		
	🛄 <u>H</u> idden			
	Application res	tart allv		
	Desktop icon		Appl	y
			<u> </u>	h

Figure 105: Calculator

# ⇒ To configure the calculator

From the **Configuration** tab, click **New**.

1. The Application Definition dialog box appears. Click the **Local** tab.

Name	Enter an appropriate name for this application.
Application	Click Customized.
Parameter	Enter xcalc.
Hidden	Does not display the application in the <b>Application</b> tab.
Application Restart	Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts
Start automatically	Click this check box to open the session when the terminal starts.
Desktop icon	Creates a desktop shortcut for this application on the eLux NG desktop.
2. Click Finish.	

From the Applications tab, double-click or use the Connect button to run the calculator.



# 4.8.6 Adobe Acrobat Reader

To use Adobe<sup>®</sup> Acrobat<sup>®</sup> Reader<sup>®</sup>, you must have the software "Acrobat5" (Acrobat5) installed.

This section describes how to run Adobe Acrobat as a stand-alone program. To run Adobe Acrobat Reader as a browser plug-in, just install the software. No further configuration is required.

### ⇒ To run Adobe Acrobat Reader as a stand-alone program

From the Configuration tab, click New.

1. The Application Definition dialog box appears. Click the **Local** tab.

Name	Enter an appropriate name for this application.
Application	Click Customized.
Parameter	Enter the following: acroread <parameters></parameters>
	where < <i>parameters</i> > are optional command-line parameters. Note: Capitalization is important!
Hidden	Does not display the application in the <b>Application</b> tab.
Application Restart	Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts
Start automatically	Click this check box to open the session when the terminal starts.
Desktop icon	Creates a desktop shortcut for this application on the eLux NG desktop.
2. Click Finish.	

From the **Applications** tab, double-click or use the **Connect** button to run the program. You can view a PDF that is saved locally (such as in the directory /tmp) or on a network drive (SMB or NFS).

For more information on:

- Available command-line parameters. Open a local shell (see "4.8.1 XTerm (Local Shell)") and type acroread -helpall | more. A list of available parameters is displayed. To scroll, press the spacebar.
- How to use Acrobat Reader. See the Acrobat Reader documentation available on the eLux NG CD-ROM. Also describes selected parameters.
- **Online help.** The Acrobat Reader Online help is not available.

Related information: See "4.5 Internet."

### 4.8.7 File Manager

To use this feature, you must have the "File Explorer" (qfm) package installed. It is in the package "Desktop tools" (dtt) starting with version 1.4.2. In addition, the base OS starting with version 1.8.4 must be installed.

eLux NG is a Linux-based operating system. While no Linux knowledge is required to install and use eLux NG, to browse local files and directories using a local shell you need to know UNIX commands.
QFm is a QT-based file manager from Nick Battle (<u>http://home.freeuk.com/nick.battle/</u>). It allows you to browse local files and directories on the Thin Client in a graphical interface using the mouse rather than in a local shell using text commands. You can move, copy and rename files.

# ⇒ To run the File Manager

From the **Configuration** tab, click **New**.

1. The Application Definit	ion dialog box appears. Click the <b>Local</b> tab.
Name	Enter an appropriate name for this application.
Application	Click File manager.
Parameter	(optional) Enter < directory>
	where <i><directory></directory></i> is an optional parameter that enables you define the directory that will be displayed upon start. For example, tmp will display the tmp directory. By default, the root directory is displayed. Note: Capitalization is important!
Application Restart	Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts
Start automatically	Click this check box to open the session when the terminal starts.
Desktop icon	Creates a desktop shortcut for this application on the eLux NG desktop.
2. Click Finish.	

Start the program with a double-click on the profile in the **Applications** tab or by marking the profile and clicking the **Connect** button.

#### How to use QFm

Using QFm is similar to other file managers, such as Windows Explorer. You can delete, copy, rename and change files.

Tool tips help you through the basic features (holding the cursor over an object displays a short description).

To understand how files are displayed, the highest-level directory is root. Root contains a number of subdirectories, including setup, tmp, smb, nfs.

- **setup** Contains permanent files needed by applications, such as configuration files. The contents are not deleted upon boot.
- **tmp** Contains temporary files needed by applications for this session. Deleted upon boot. Note: Browser, ICA and SAP cache is stored here. For improved performance, we recommend reducing allocated cache in the respective program or, in the case of the browser, defining a network drive for storing program files ("browser home directory"). See "3.10 Browser Home Directory."
- **smb** Displays the currently mapped SMB drives. Note: Only defined SMB drives that are currently mounted are displayed. The user must connect to the SMB drive before it will be displayed. For information on mapping SMB drives, see "3.9 Drives."
- **nfs** Displays the currently available NFS drives.

eLux<sup>®</sup> NG

While using QFm is intuitive, we provide the following general guidelines and tips:

• The task bar provides one-click access to the most frequently used commands: Home, Display hidden files, Exit, Refresh, One directory up, Change directory, Shell, New window.



- To expand a directory, click once. To display that directory only in tree view, double-click.
   To return to root, click Home in the task bar or File > Home.
- To open a file, double-click. By default, applications have been preset for the following files (you must have the respective application installed):

Acrobat Reader	Opens *.pdf files.
Citrix ICA Client	Opens *.ica files.
MP3 Player	Opens *.mp3 files.
Opera, Mozilla, Firefox	Opens HTML files.
QT Text Editor	Opens *.cnf, *.conf, *.cpp, *.h, hosts, *.ini, *.java, *.log, printcap, readme, *.txt files. See "4.8.8 Text Editor."
Wav Player	Opens *.wav files.

- You can bookmark frequently used files and directories by right-clicking on the file and selecting **Bookmark**. You can then jump directly to the file or directory using the **Bookmarks** menu.
- To open a shell, click Shell sin the task bar or **File > Shell**.
- The error "Not an executable file" means that the file cannot be displayed. Try installing the appropriate software or clicking with the right mouse button on a file and selecting **Open with** to display a list of available programs.

#### 4.8.8 Text Editor

To use this feature, you must have the "Text Editor" (qtt) package installed. It is in the package "Desktop tools" (dtt) starting with version 1.4.2. In addition, base OS version 1.8.4 or later must be installed.

QT Text Editor is a simple QT-based text editor that offers basic editing features. You can copy, paste, find, undo, redo, select all text, etc. The files must be saved to the Thin Client or available on a network drive.

#### ⇒ To run the text editor

Click with the right mouse button on an Applications category and select Add.

1. The Application Definition dialog box appears. Click the Local tab.

Name	Enter an appropriate name for this application.
Application	Click Text editor.
Parameter	(optional) Enter < <i>file name</i> >
	where <i><file name=""></file></i> is an optional parameter that enables you define the file that will be displayed upon start. Enter the complete file name. For example, tmp/hosts will display the hosts file located in the tmp directory. Note: Capitalization is important!
Application Restart	Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts

Start automatically	Click this check box to open the session when the terminal starts.

**Desktop icon** Creates a desktop shortcut for this application on the eLux NG desktop.

2. Click Finish.

Start the program in the **Applications** tab with a double-click on the profile or by marking the profile and clicking the **Connect** button.

#### Тір

To access files on an SMB network drive, you must configure the SMB drive in advance. For information on how to configure SMB drives, see "3.9 Drives." In addition, the user must know the SMB drive name. On the Thin Client, open the QT Text Editor. Click **File > Open > smb**, enter the network drive and click **Open**. This mounts the drive. It will then appear in the dialog box and can be selected. It remains mounted for the rest of the eLux NG session.

#### 4.8.9 Movie Player

To use this feature, you must have the "Movie Player" (mplayer) package installed. In addition, install the individual subcomponents (FPMs) relating to the features you desire. In addition, the base OS starting with version 1.8.4 must be installed.

MPlayer is an open-source movie player from the MPlayer Project (<u>http://www.mplayerhq.hu</u>). It supports all common movie formats including DVD (including encrypted DVD), MPEG, DivX, AVI, ASF, RealVideo, Windows Media Video (.wmv), Quicktime (.mov) and others. The files can reside on the Thin Client, a network drive or the Internet.

This section describes how to run MPlayer as a stand-alone program. To run MPlayer as a browser plug-in (Mozilla only), install the software "MPlayer Mozilla support" (mplayer\_plugger) in the package "Movie Player" (mplayer). No further configuration is required.

#### ⇒ To run the movie player as a stand-alone program

Click with the right mouse button on an Applications category and select Add.

1. The Application Definition dialog box appears. Click the Local tab.

Name	Enter an appropriate name for this application.
Application	Click Movie player.
Parameter	Leave blank.
Application Restart	Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts.
Start automatically	Click this check box to open the session when the terminal starts.
Desktop icon	Creates a desktop shortcut for this application on the eLux NG desktop.
2. Click Finish.	

Start the program in the **Applications** tab with a double-click on the profile or by marking the profile and clicking the **Connect** button.

Proxy settings are set using Scout NG. For more information, see the *Scout NG Administrator's Guide.* 



#### How to use MPlayer

While using MPlayer is intuitive, we provide the following general guidelines and tips:

- Access commands by clicking the buttons of the remote control. Alternatively, click with the right mouse button in the movie window. This opens the context menu.
- To play a DVD from a local drive, on the Thin Client start MPlayer. Insert the DVD in the drive. Click with the right mouse button in the movie window. In the context menu select DVD > Open disk... and browse for the DVD. To open a chapter, in the context menu select DVD > Chapters > <chapter number>. Note: MPlayer does not support chapter menus.
- To change the appearance, in the context menu select **Skin browser**. The **Skin Browser** dialog box is displayed. Select your desired theme.
- To configure settings, in the context menu select **Preferences**. The **Preferences** dialog box is displayed.
- You have two drivers available: xv, which provides hardware acceleration with a modern graphics card, and x11, which provides no scaling. If playback does not occur, try setting the driver to x11. This is done in the **Preferences** dialog box. The default driver is xv.

For more information on MPlayer, see the documentation available at <u>http://www.mplayerhq.hu/DOCS/HTML-single/en/MPlayer.html</u>.

#### 4.8.10 NoMachine

To use this feature, you must have the software "NxClient" (nxclient) installed.

NoMachine from Medialogic S.p.A. enables a UNIX workstation to provide terminal server functionalities. NoMachine software is based on the NX Distributed Computing Architecture, a suite of open source technologies built on SSH and the X-Window System. NX also translates and embeds the RDP (Remote Desktop Protocol) used by Microsoft in its terminal server product family and VNC protocols into X/NX. NX is faster than VNC or X11 and can run on bandwidth as narrow as 10 kBit/sec. It enables users to compress and accelerate remote desktops like Windows, KDE, Gnome and CDE. NX lets you work fluently even across slow links like modems.

NX software consists of the following components:

- NX server The NX server is available for Linux and Solaris and is licensed per-server, not per-connection.
- **NX client** The client software is available for eLux NG and other platforms. All NX clients are free of charge.

#### ⇒ To configure the NoMachine NX client

From the **Configuration** tab, click **New**.

1. The Application Definition dialog box appears. Click the Local tab.

Name	Enter an appropriate name for this application.
Application	Click Customized.
Parameter	Enter nx.sh.
Hidden	Does not display the application in the <b>Application</b> tab.
Application Restart	Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts.
Start automatically	Click this check box to open the session when the terminal starts.
Desktop icon	Creates a desktop shortcut for this application on the eLux NG desktop.
2. Click Finish.	

From the **Applications** tab, double-click or use the **Connect** button to run the program.

#### How to use NX client

- The NoMachine NX server must be installed and running.
- A wizard appears the first time you run the software to help you through the initial configuration.
- For further information, see the NoMachine documentation available at <u>www.nomachine.com</u>.

#### Tip

• We recommend setting the "cache on disk" (Configure > Advanced) to zero.

For information on NoMachine, see www.nomachine.com.

#### 4.8.11 Virtual Keyboard

To use this feature, you must have the software "Virtual Keyboard" (xvkbd) installed. It is in the package "Desktop tools" (dtt) starting with version 1.4.2.

This is an open-source program to display a virtual keyboard on the screen. You can enter characters into a program using a mouse click. This is useful for kiosk terminals or for a workstation with a mouse but no keyboard.

#### ⇒ To run the virtual keyboard

From the **Configuration** tab, click New.

1. The Application Definition dialog box appears. Click the Local tab.

Name	Enter an appropriate name for this application.
Application	Click Customized.
Parameter	Enter xvkbd.sh.
Hidden	Does not display the application in the <b>Application</b> tab.
Application Restart	Click to select to immediately reconnect after the user logs off. When this feature is selected, the application automatically starts when the Thin Client starts or restarts.
Start automatically	Click this check box to open the session when the terminal starts.
Desktop icon	Creates a desktop shortcut for this application on the eLux NG desktop.
2. Click Finish.	

From the Applications tab, double-click or use the Connect button to run the program.

#### How to use the virtual keyboard

While using the virtual keyboard is intuitive, we provide the following general guidelines and tips:

- Run a program of your choosing that requires keyboard entry.
- Run the virtual keyboard. The keyboard window always appears on top. Click on a character using the mouse.
- By default, the character appears in the window of the last program used. To set the focus to a specific window, click **Focus** and the window of your choosing.

• By default, the virtual keyboard program uses the keyboard language setting from the eLux NG starter (see "3.5 Mouse / Keyboard"), assuming the language is supported, otherwise English will be used. To manually set the language for this session or to view a list of available languages, click **Main menu > Change Keyboard Layout**.

## Тір

• To set the size and/or position, enter the following command in the **Parameter** field: xvkbd.sh-geometry <width>x<height>+<x position>+<y position>

Examples:

xvkbd.sh	-geometry	600x200	Set keyboard size to 600x200 pixel
xvkbd.sh	-geometry	600x200+200+0	Set keyboard size to 600x200 pixel and position it above center
xvkbd.sh	-geometry	600x200+0-40	Set keyboard size to 600x200 pixel and position it lower left

For further information, see the documentation available at <u>http://homepage3.nifty.com/tsato/xvkbd/</u>.



# 5 Troubleshooting

Following are solutions to various problems.

Sec	tion	Description
5.1	eLux NG Upgrade License	What to do when eLux NG is not licensed
5.2	Safe Boot	How to boot eLux in safe mode
5.3	Factory Reset	How to return eLux NG configuration to factory-delivered state
5.4	Solutions to Common Problems	Answers to common problems



# 5.1 eLux NG Upgrade License

eLux NG is a licensed product. You must pay for the product in order to use it.

When you order a Thin Client containing eLux NG from the factory, it is delivered with a license. No further action is required on your part. In normal use – including such procedures as firmware update or recovering the Thin Client - the license is not deleted. Once it is licensed, it is always licensed.

In rare occasions the license can be deleted or if you rewrite a non-eLux NG operating system with eLux NG, eLux NG will not be licensed. In this case you will need the so-called **eLux NG upgrade license**. There are two types:

#### 1. Scout NG eLux NG upgrade license

Format : xxxx-xxxx-xxxx-xxxxx

A license with the above format is to be distributed using the Scout NG management software. It may be for one eLux NG upgrade license, can also be for many. The license must be activated via the Internet site <u>www.myelux.com</u>. When the license activation process is complete, eLux NG upgrade licenses are distributed by Scout NG on a first come, first serve basis. That means the first unlicensed Thin Client to contact Scout NG will receive an eLux NG upgrade license. License distribution takes place once. Remaining Scout NG eLux NG upgrade licenses cannot be reactivated if unintentionally deleted from the Scout NG software.

See the *Scout NG Administrator's Manual* for a detailed description of the license activation process via the Internet.

#### 2. Manual eLux NG upgrade license

Format : xxx-xxx-xxx-xxx-x

Your license is a manual eLux NG upgrade license if:

- it has the format: xxx-xxx-xxx-xxx-x
- you had to provide a host ID to your servicer to obtain the license
- the license is for one device only

In this case, you do not need to activate it via the Web. It is already activated. Enter it directly on the Thin Client as described below.

eLux N	eLux NG system information		
#	eLux®N	NG	"The
	The thin client is Please enter the	not licensed. eLux NG license key:	
	Host ID	7756-8056-1327	
	License key	S435	ок
	Test mode active You are allowed times with full fur	e ! to use the thin client 4 more nctionality.	Continue <u>T</u> esting

Figure 106: Message when eLux NG is not licensed



#### ⇒ To enter a manual eLux NG license key

- 1. Start the terminal. If your system is unlicensed, you receive the **eLux NG system information** message box.
- The license key you received from your eLux NG distributor is specific to this eLux NG terminal's host ID (to get your license, provide your supplier with the 12-digit terminal host ID displayed here). A manual license key has the format: xxx-xxx-xxx-xxx-xx. Enter the complete 13-digit license key. Hyphens are not required.
- 3. Click **OK**. The terminal is licensed. Licensing is one-time only eLux NG remains licensed even if you update firmware or perform a recovery.

# 5.2 Safe Boot

Default screen settings are set to values all monitors support. If after configuring the Thin Client you have massive screen distortion, resolution, frequency and color depth are most likely set to values your monitor does not support. In this case, switch off your monitor to avoid damage. Start the Thin Client in Safe Boot mode. Safe Boot allows you start the terminal in a mode which does not damage hardware. You can then correct screen settings. In addition, network capabilities are disabled. This allows you to change incorrect network hardware settings.

In Safe Boot, the eLux starter is displayed in English. If you had set a different application language, do not be concerned. User settings (**Setup** tab) and defined applications (**Configuration** tab) are not deleted. When you exit Safe Boot, your old language will be restored.

#### ➡ Procedure for Safe Boot

- 1. Switch off the Thin Client immediately.
- 2. Restart the Thin Client.
- 3. During the boot procedure, the supplier logo appears. Press the TAB key when the screen goes blank.
- 4. The eLux NG logo will be displayed, and then the prompt "Please enter admin password". Enter the terminal password ("elux" by default).
  - If an invalid password is entered three times, the terminal restarts.
- 5. At the prompt "factory reset (y/n)?" type n. You can now access eLux NG and make changes to settings in a mode that is safe for the monitor. Previous settings information is not lost.
- 6. Restart the Thin Client to exit Safe Boot mode.



# 5.3 Factory Reset

Factory reset returns the Thin Client to the factory-delivered configuration state. User settings (**Setup** tab) and defined applications (**Configuration** tab) are deleted. Firmware is not deleted.

#### ➡ Procedure for Factory Reset via Keyboard

- 1. Switch off the Thin Client.
- 2. Restart the Thin Client.
- 3. During the boot procedure press the TAB key within three seconds.
- 4. At the prompt "Please enter admin password" enter the terminal password ("elux" by default).
  - If an invalid password is entered three times, the terminal restarts.
- 5. At the prompt "factory reset (y/n)?" type y. Previous settings information and defined applications are deleted.

Alternatively you can initiate factory reset using the mouse.

#### ⇒ Procedure for Factory Reset via Mouse

- 1. From the Setup tab, click the Firmware subtab.
- 2. Click Default.
- 3. Click Yes in the eLux NG Starter dialog box. eLux NG restarts.

📫 eLux Starter		
All application data will be Proceed?	e deleted and the setup factory set	ttings will be restored.
Yes and Reboot	Yes and Shutdown	No

Figure 107: The Reset button in Setup > Firmware

**Warning** A Factory Reset deletes all defined applications and resets configuration settings to factory default.



# 5.4 Solutions to Common Problems

#### General

- Problem: You can change settings in the tabs **Setup** or **Configuration**, but your changes are overwritten when the device is restarted.
- Solution: Your Thin Client is managed. Remove it from or deactivate it in the Scout NG software.

#### Ch. 3.4, "Screen"

- Problem: eLux screen settings are incompatible with the monitor.
- Solution: If you are no longer able to view the **Screen** tab, either attach a compatible monitor, perform a Recovery Installation, or change the settings remotely using the Scout NG management software. Alternatively, you can start the terminal using Safe Boot. Safe Boot allows you start the terminal in a mode which does not damage hardware. You can then change eLux NG settings.

#### ⇒ Procedure for Safe Boot

- 1. Switch off the Thin Client immediately.
- 2. Restart the Thin Client.
- 3. During the boot procedure, the BIOS information is displayed. When the screen goes blank, press the TAB key.
- 4. The eLux NG logo will be displayed, and then the prompt "Please enter admin password". Enter the terminal password ("elux" by default).
  - If an invalid password is entered three times, the terminal restarts.
- 5. At the prompt "factory reset (y/n)?" type n. You can now access eLux NG and make changes to settings in a mode that is safe for the monitor. Previous settings information is not lost.
- 6. Restart the Thin Client to exit Safe Boot mode.

#### Ch. 3.4, "Screen"

- Problem: Font server error (in the dialog box **Setup** > **Screen** > **New**).
- Solution: "Check the **Font server:Port** entry.
  - The format is incorrect (font server:port), for example, the colon has not been entered, or the port number is missing or not a number.
  - The font server name or address is incorrect.
  - The font server cannot be reached.

Check the Font path entry.

- The path does not exist.
- There is no file named fonts.dir in, for instance, the following directory: / smb/share/dir or /nfs/host/dir

#### Ch. 3.6, "Firmware"

Problem: You are using an HTTP server. After starting the firmware update, the update stops and you receive one of the following errors:

Error 401: Unauthorized Error 403: Forbidden Error 404: File or directory not found

Error 406: Client browser does not accept the MIME type of the requested page (client problem)

Error 407: Initial proxy authentication required by the Web server

- Solution: If an update is interrupted, click the **Details** button to display a detailed error message. Depending on the HTTP error that is displayed, take the appropriate actions. If you have checked that settings are correct, you can do the following:
  - 1. Verify that the IDF is in the appropriate HTTP server directory.

2. Enter the MIME types. If you are using IIS version 6.0 or higher, you must enter the MIME types explicitly. If you are using a previous version IIS or a different HTTP server, see if defining the MIME types solves the problem. For more information, see "3.6.4 Microsoft Internet Information Server."

#### Ch. 3.7, "Security"

- Problem: You no longer have the password for the terminal (=LocalLogin).
- Solution: The Thin Client's password is at the same time the password for LocalLogin. Factory default is "elux". If you change and then forget LocalLogin's password, only a Recovery Installation can reset the password. All settings are reset to factory default.

#### Ch. 3.11, "Printer"

- Problem: After you connect a locally attached printer and load the printer drivers to the Citrix MetaFrame ICA server, you log on to the terminal server computer. The printer is supposed to be autocreated and available to you in the Printers folder of your Terminal Server session. The printer does not appear in the Printers folder.
- Solution: If the printer driver name on the thin client does not match the printer driver name on the terminal server computer exactly, the printer will not autocreate. On the thin client, correct spelling, capitalization and spacing.

In addition, on the Citrix MetaFrame ICA server verify the following:

1. In Citrix Connection Configuration double click the **ICA listener port**. Select the **Client Settings** button, ensure "Connect client printers at logon" is checked.

2. Ensure that the following boxes are not checked under the Client Settings Area: Disable Windows Client Printer Mapping Disable Client LPT Mapping

Both of these settings prevent client printers from being autocreated on the system, and prohibit the client printer from being manually added during the session.

For further MetaFrame configuration, see the Citrix documentation.

#### Ch. 3.13, "ISDN"

- Problem: ISDN does not connect (not the first time you try to connect).
- Solution: Check the ISDN error codes.

#### ⇒ Procedure for troubleshooting ISDN connections

- 1. Open a local shell (XTerm)
- 2. On prompt type: dmesg | xmessage file -
- Problem: Connecting to the server or using Windows Explorer is extremely slow. The application stops responding, or "hangs."

Solution: Automatic floppy drive mapping is active. Go to BIOS Setup on the Thin Client and deactivate the floppy controller setting.

#### Ch. 3.16, "Mirroring"

- Problem: You want to initiate a mirroring session, but the Mirroring settings area on the target Thin Client is disabled.
- Solution: The Mirroring settings area is disabled if the mirror package is not installed.

#### Ch. 4, "Configuring Applications"

- Problem: The application does not start automatically when the Thin Client starts, although the **Start automatically** check box is selected.
- Solution: If eLux NG is not licensed, applications cannot be started automatically.

#### Ch. 4.5.3 Web Tools

- Problem: After clicking on a link to run a RealPlayer-supported file, the screen freezes and the keyboard does not work (NUMLOCK key does not respond).
- Solution: When the screen freezes and the keyboard does not respond, the main memory has been used to full capacity. Most likely the file you just tried to download is too large for the available main memory. Generally, a pop-up message appears when memory usage has reached 95%, allowing you to quit applications and prevent a screen freeze. However, RealPlayer files may download and completely use available main memory before the pop-up warning can be sent.

Unfortunately, there is no way to solve this problem once it has occurred. You must restart the device.

You can, however, prevent the problem. In the future, avoid downloading oversized RealPlayer files and be aware of your memory size. To see the main memory available on the device, go to **Setup > General**.

#### Ch. 4.7.4, "X11 for X Applications Using the Local X Server"

- Problem: X11 application does not start.
- Solution: Check remote shell and command functionality.

#### ⇒ Procedure for troubleshooting remote shell applications

- 1. Open a local shell (XTerm).
- 2. At the prompt type: rsh <host name> -1 <username> ls.
- 3. If you receive the error message "permission denied," check the remote shell functionality on the UNIX server.

If you receive other error messages, this indicates a problem with the command. Log on to your UNIX server, set the DISPLAY variable to your Thin Client's address, and check the functionality of the command.

- Problem: My X11 application (running on a remote machine) will not start. When connecting from the **Application** tab, the "Active" column displays **Yes** and then a short time later **No**.
- Solution: Remote X11 applications are not allowed. Go to **Setup > Security >** "Local security" > **Permissions**. In the **Local security settings** dialog box select the check box **Allow remote X11 clients**.



# 6 Recovery Installation

This chapter describes a Recovery Installation, a useful procedure that installs the eLux NG software on the Thin Client's flash card and/or returns the Thin Client to the factory-delivered state.

Sect	ion	Description
6.1	Introduction	What a recovery is and when to perform a recovery
6.2	Updating to eLux NG	Possibilities for updating from eLux 1.x to NG
6.3	Frequently Asked Questions	Answers to frequently asked questions
6.4	Recovering from a CD	How to recover from a CD-ROM
6.5	Boot Procedure	Flow chart of the boot process
6.6	Requirements	Required hardware and software
6.7	Servers	Description of the required servers
6.8	Installing Recovery Components	How to install the required files and programs using the Scout NG installation procedure
6.9	Configuration	Step-by-step instructions on how to configure the TFTP and DHCP servers
6.10	Starting a Recovery	Initiating a recovery on the Thin Client
6.11	Container Macro	Discussion of the macro for automatic recognition of device hardware
6.12	Size Macro	Discussion of the macro for automatic recognition of flash size
6.13	BootP Server	Step-by-step instructions on how to install and configure the BootP server, and how to determine the terminal's MAC address
6.14	Troubleshooting	Error messages and answers to common problems
6.15	Licensing eLux NG	How to license eLux NG, explanation of demo mode
6.16	Advanced Users	How to modify the software that is installed on the Thin Client



# 6.1 Introduction

During an eLux NG Recovery Installation, the Thin Client boots from a server over the network, loads network information from a so-called "boot server", loads a boot file from a TFTP server, and overwrites the entire flash image with a default image retrieved from the recovery server. The procedure returns the Thin Client to factory-delivered flash image and settings.

A recovery can be used to solve the following problems:

- eLux NG cannot be booted anymore.
- The flash memory of the Thin Client does not yet contain a basic image.
- The password for LocalLogin has been changed from factory settings and is no longer known.
- You want to replace the current software on the flash memory with eLux NG.
- To update from eLux 1.x to eLux NG.
- When during update a message box appears saying a recovery is necessary.

# 6.2 Updating to eLux NG

If you are updating from eLux 1.0 to eLux NG, you must use the recovery procedure. If you are updating from eLux 1.1 to eLux NG, in addition you have the possibility of updating via firmware update. Documentation on how to update from eLux 1.1 to eLux NG using an FTP or HTTP server and firmware update is available at <u>www.myelux.com</u>.

## 6.3 Frequently Asked Questions

**Q**: Can I perform an eLux NG Recovery using a modem or ISDN connection to my Thin Client?

**A**: No. An eLux NG Recovery needs LAN protocols and the PXE functionality of the onboard LAN chip. However, recovering from USB CD-ROM is supported. Use the recovery CD.

Q: My BIOS supports "boot from USB". Can I perform a recovery using a USB stick?

**A**: At the moment, the eLux NG does not support a recovery via USB stick. Use the recovery CD and a USB CD-ROM instead.

Q: Are there any restrictions on the flash?

A: No, you can recovery to any flash or hard drive.

# 6.4 Recovering from a CD \*\*

Some hardware platforms support a recovery from CD. For this method, you need the eLux NG recovery CD (available from your supplier or download the ISO image from <u>www.myelux.com</u> and burn to a CD in ISO format), a CD-ROM drive (IDE or USB) and BIOS support of CD boot.

**Tip** You can recover from a CD!

Procedure:

- 1. Insert the CD.
- 2. A warning appears, asking if you want to perform the recovery. Click **Y** (or **J** or **Z**). The recovery starts.
- 3. When the recovery has finished, the CD is ejected and the Thin Client reboots.

If the recovery does not start immediately, confirm that "CD-ROM drive" comes before "harddisk" in the BIOS Setup boot options.



# 6.5 Boot Procedure

During a recovery, the Thin Client boots from a server over the network using Pre-Execution Boot Environment (PXE). An image definition file (IDF) is transferred and installed on the flash. The boot procedure is shown in the following diagram:

		BOOTP or DHCP		FTP or HTTF
eLux I	NG	server	TFTP server	server
Booting eLux NG	BOOTP/DHC ha=003 DHCP/BOOTP values for 0030050 IP address of TFTP server Program to load from TFTP (pxelin network information	P broadcast 3005029e35 29e35: ux.0),		
	Connect to TFTP server			
			Connect to FTI	P/HTTP server
	Install recovery.idf			-

Figure 108: Phases of the Recovery Installation - loading a recovery (default) image to an eLux NG terminal

# 6.6 Requirements

You can perform a recovery using existing network resources or as a stand-alone procedure.

Requirements:

- Thin Client. The BIOS of the Thin Client must support the Pre-Execution Boot Environment (PXE).
- Local-Area Network (LAN) connection
- eLux NG CD-ROM
- Boot server. DHCP server from Windows NT<sup>®</sup> 4.0 Server with Service Pack 6a, Windows 2000 or Windows Server<sup>tm</sup> 2003. The boot server must be in the same LAN segment. Alternative: BootP server from UniCon Software GmbH (see section "6.13 BootP Server").
- FTP or HTTP server
- TFTP server from UniCon Software GmbH

The TFTP server and BootP server and optional Apache Web server are installed using the eLux NG CD-ROM.

**Tip** It simplifies configuration when you install all servers on one PC!

#### Stand Alone

The requirements for a stand-alone procedure are the same, except that the terminal is connected to the server using a crossover cable (recommended) or patch cable and hub and both are disconnected from the network.



Figure 109: Connection possibilities for stand alone

# 6.7 Servers

#### DHCP server

As most networks contain a DHCP server, it is expected that you will use an existing DHCP server in your network. No DHCP server is provided. Please be aware that the options that must be configured were carefully selected so as not to affect general network operation. They must be configured once. Afterwards, they can be left on the DHCP server without affecting general network operation, which makes performing recoveries in the future much easier.

#### FTP or HTTP server

You can use an existing FTP or HTTP server on your network. If your network does not contain one of these two servers, the Apache HTTP server is provided free of charge on the eLux NG CD-ROM. Please install this server or locate an existing FTP or HTTP server before continuing. For more information.

If you are using the Microsoft Internet Information server 6.0 or higher, set MIME entries as described in section "3.6.4 Microsoft Internet Information Server."

#### **TFTP server**

Due to technical reasons, you <u>must</u> use the TFTP server from UniCon Software GmbH provided on the eLux NG CD-ROM. The procedure will not work if you use a TFTP server from a different manufacturer. The installation procedure is described below.



# 6.8 Installing Recovery Components

#### 6.8.1 System requirements

- 64-MB main memory (for small installations)
- Microsoft Windows NT Workstation version 4.0 with Service Pack 6a Windows NT Server or NT Terminal Server Microsoft Windows 2000 and the Windows 2000 family Windows XP Professional Windows Server 2003 Standard Edition

You must have administrator rights on the PC and be connected to a TCP/IP network.

The container has the following requirements:

- FTP or HTTP server with write access, installed locally or available on a network drive
- Space requirements vary depending on the thin client hardware platform. Minimum for all containers at the time of publishing: 550 MB

#### 6.8.2 System Restrictions

There are no known system restrictions. Other services, such as Citrix MetaFrame, can be running on the same PC.

A TFTP server may not be running on the same machine.

#### 6.8.3 Installing

The Scout NG setup program is available on the eLux NG CD-ROM or can be downloaded from the Web site <u>www.myelux.com</u>.

To begin the installation procedure, log on to your PC as administrator. If you are using a terminal server, please run the setup program from the applet **Add/Remove programs** in the Control Panel.

Choose the language you want for the installation procedure.

A setup wizard is provided to guide you through the installation process.

All required programs and files are installed if you select **Typical**. Alternatively, this section describes a customized installation.

Installation procedure:

- 1. At the welcome screen, click Next.
- 2. Read the license agreement and accept to continue.
- 3. Click **Custom**. You can also set the installation directory for Scout NG (by default, c:\Program Files\UniCon\scoutng).
- 4. Select Scout NG Console, Scout NG Server, Container and Recovery. Click Next.
- 5. Choose the type of server that will be used to access your container.

 FTP server root directory.....c:\Program Files\Inetpub\ftproot

 FTP......ftp://ftp.domain.com

 User name.....anonymous

 Password.....eluxng@domain.com

The setup program then attempts to verify the values you entered. Note: This may result in a delay – please do not click during this time.

If there are problems contacting the server, an error message appears and you are prompted to change your parameters.

7. If the server was successfully reached, a summary of the components to be installed is displayed. Click **Next** to start copying files.

When you select the "Recovery" component during the Scout NG installation, the required files and programs are automatically installed on your system, including a TFTP server, which will be installed as a service (standard installation directory: .../UniCon/scoutng/tftpd). Please do not have another TFTP server running on the same machine when you install.

By default, the container is installed in the FTP or HTTP server root directory under:

- ...\eluxng\UC\_INTEL\_P3 or
- ...\eluxng\UC\_GEODE\_P1 or
- ...\eluxng\UC\_TRANSMETA or
- ...\eluxng\UC\_VIA or

...\eluxng\UC\_PC

Installing the Scout NG Server and Console is optional. Scout NG is software for managing Thin Clients. For more information, see the *Scout NG Administrator's Guide*.

# 6.9 Configuration

#### 6.9.1 TFTP Server

To configure the TFTP server, modify the TFTP server configuration file using a UNIX text editor. Alternatively, edit the recovery settings in Scout NG. For more information, see the *Scout NG Administrator's Guide*.

**Note** Commands are case sensitive. Those commands shown here in lower case must be typed in lower case.

- 1. Open the file "eluxng.des" which is located in the download directory of the TFTP server (.../UniCon/scoutng/tftpd).
- 2. Describe the access to the recovery server by changing the URL parameters. Use a fully qualified URL.

Enter the following entries for HTTP:

[RECOVERY]

```
URL=http://<user>:<password>@<host>/eluxng/__CONTAINER__/recovery__SIZE__.idf
PROXY=<proxy>
```

PORT=<port>

- protocol = HTTP
- host = server IP address
- user name and password for this server



• proxy server IP address and port (if used, otherwise leave out)

Enter the following entries for FTP:

[RECOVERY]

```
URL=ftp://<user>:<password>@<host>/eluxng/__CONTAINER__/recovery__SIZE__.idf
```

; PROXY=<proxy>

; PORT=<port>

- protocol = FTP
- host = server IP address
- user name and password for this server
- proxy server IP address and port are commented out (";" symbol in first column)

Even if your server does not require a user name or password, do not leave these fields blank – enter elux. For the FTP password, special characters – such as the @ symbol by FTP logon via anonymous – are allowed.

Do not change the path or image file name. Use the settings "\_\_CONTAINER\_\_" and "\_\_SIZE\_\_". The reason for this is discussed in sections "6.11 Container Macro" and "6.12 Size Macro."

## 6.9.2 DHCP Server

- 1. Log on to your PC as administrator.
- 2. Open the DHCP manager.

Windows NT: Start > Programs > Administration (General) > DHCP Manager

Windows 2000: Start > Programs > Administrative Tools > DHCP

3. In the DHCP manager, go to the dialog box for configuring options.

Windows NT: Click to select the scope of the DHCP server you would like to configure. In the **Options** menu, select **Global** to configure the options for all scopes for that server, or **Scope** to configure the options for that scope. The **DHCP options** dialog box opens.

Windows 2000: Click to select either the server options, scope options or a reservation. In the **Action** menu select **Configure**. In the **Options** dialog box go to the **General** tab. (Alternatively: **Advanced** tab > select **DHCP Standard options** from the **Vendor class** drop-down list.)

4. Configure the following options:

003 Router:	Enter one or more router IP addresses
006 DNS Servers:	Enter the DNS server IP address
015 Domain Name:	Enter the DNS domain name
066 Boot Server Host Name:	Enter the IP address of the TFTP server
067 Bootfile Name:	Enter pxelinux.0

This completes the DHCP server configuration. These settings can remain on the DHCP server without affecting normal network operation.

# 6.10 Starting a Recovery

A recovery is initiated client-side. The method used to initiate a recovery depends on your hardware platform.

Some – but not all – hardware platforms require you to first set remote boot to PXE in the Thin Client's BIOS (1) and then call PXE from the boot menu (2).

Other hardware platforms offer a simpler possibility: you initiate a recovery simply by pressing a function key upon boot.

See the documentation included with your Thin Client to see what situation applies to you.

(1) To configure the protocol on the Thin Client:

- 1. Upon boot, press the function key that opens BIOS for your hardware platform. See the documentation that was included with the Thin Client if you are unsure.
- 2. Set "LAN remote boot" to PXE.
- 3. Save your settings and exit BIOS.

(2) To select the protocol from the Thin Client boot menu:

- 1. Upon boot, press the function key that opens the boot menu for your hardware platform. See the documentation that was included with the Thin Client if you are unsure.
- 2. Select PXE<sup>1</sup> and press ENTER.
- 3. A message appears. Choose one of the following (keyboard is by default English):
  - **Platform-specific container** (optional) Installs the container for this hardware platform. This option is displayed only if one of the following hardware was successfully detected:

Processor	Container
Intel Pentium III (or compatible)	UC_INTEL_P3
Geode	UC_GEODE_P1
Via	UC_VIA
Transmeta Crusoe	UC_TRANSMETA

- Generic container Installs the PC container (UC\_PC).
- Quit Allows you to cancel the procedure.
- 4. The recovery starts. Do not turn off the Thin Client off during a recovery!
- 5. After a successful boot, a "Success" message appears and the Thin Client restarts.

The Thin Client is now ready for use. For normal eLux NG operation, the BIOS settings can remain on the device.

For help in solving common errors, see "6.14 Troubleshooting."

# 6.11 Container Macro

One of the features of eLux NG is its integrated macros.

The device hardware is automatically detected during the recovery process. The text

"\_\_CONTAINER\_\_\_" in the **Path** field of the **Recovery settings** dialog box represents a macro that will automatically be replaced with the standard container name for that hardware. This greatly eases configuration and is especially useful for networks with more than one hardware platform. You must use containers with standard names.

As administrator, naturally you can replace this text with a different text. In this case, the text in the **Path** field must be the actual container name.

The container macro is not specific to a recovery and can also be entered in the **Firmware** tab. For more information on firmware parameters, see section "3.6 Firmware."

# 6.12 Size Macro

One of the features of eLux NG is its integrated macros.

<sup>&</sup>lt;sup>1</sup> Must be supported by BIOS.

The device hardware is automatically detected during the recovery process. The text "\_\_SIZE\_\_\_" in the **Image file** field of the **Recovery settings** dialog box represents a macro that will automatically be replaced with text corresponding to the size of the Thin Client's flash card as follows:

Text	Flash size (MB)
"small"	32
"medium"	96
"large"	128
"xxl"	256 or greater

For example, if a 32-MB flash card is detected, the recovery IDF "recoverysmall.idf" will be installed, if a 96-MB flash card is detected, the recovery IDF "recoverymedium.idf" will be installed, etc. If a harddisk is detected, the recovery IDF "recoveryxxl.idf" will be installed.

This greatly eases configuration and is especially useful for networks with different sizes of flash cards.

As administrator, naturally you can replace this text with the actual name of the recovery IDF. In this case, you lose the dynamic recognition of the macro. The size of the recovery IDF must equal to or less than the size of the flash card. For information on generating IDFs, see the *Scout NG Administrator's Guide*.

The flash size macro is not specific to a recovery and can also be entered in the **Firmware** tab. For more information on firmware parameters, see section "3.6 Firmware."

# 6.13 BootP Server

## 6.13.1 Installing

We highly recommend using an existing DHCP server to perform a recovery. However, as an alternative, it is possible to use a BootP server.

Note that the recovery procedure using a BootP server is more complicated: you need the MAC address of the eLux NG terminal's network interface in advance, only a static IP address reservation is supported, and you must edit the boot server configuration file by hand. When a BootP server is used, a DHCP server may not be active in the same subnet.

Otherwise the requirements for a recovery installation using BootP boot server are the same. For a list of required software and hardware, see "6.6 Requirements."

Due to technical reasons, you <u>must</u> use the BootP server provided in the Scout NG installation procedure. The procedure will not work if you use a BootP server from a different manufacturer. The installation procedure is described below.

#### ⇒ Installing the BootP server and recovery components

.The Scout NG setup program is available on the eLux NG CD-ROM or can be downloaded from the Web site <u>www.myelux.com</u> For system requirements, see section "6.8.1 System requirements."

To begin the installation procedure, log on to your PC as administrator. If you are using a terminal server, please run the setup program from the applet **Add/Remove programs** in the Control Panel.

Choose the language you want for the installation procedure.

A setup wizard is provided to guide you through the installation process.

Scout NG installation procedure with recovery components:

- 1. At the welcome screen, click Next.
- 2. Read the license agreement and accept to continue.

- 3. Click **Custom** to install the recovery components. You can also set the installation directory for Scout NG (by default, c:\Program Files\UniCon\scoutng).
- 4. Select Scout NG Console, Scout NG Server, Container, Recovery and BOOTP. Click Next.
- 5. Choose the type of server that will be used to access your container.
- 6. Enter the path of the FTP or HTTP server root directory (either locally or on a network drive) and the fully qualified URL to access the server (format: [ftp/http]://<*host*>). In addition, for FTP enter the logon information ("anonymous" FTP is supported). Examples:

HTTP server root directory ......\\server1\Inetpub\wwwroot\ URL ......http://work.domain.com

FTP server root directory	c:\Program Files\Inetpub\ftproot
FTP	ftp://ftp.domain.com
User name	anonymous
Password	eluxng@domain.com
The setup program then attempts to verify the values you entered. Note: This may resul in a delay – please do not click during this time.	

If there are problems contacting the server, an error message appears and you are prompted to change your parameters.

7. If the server was successfully reached, a summary of the components to be installed is displayed. Click **Next** to start copying files.

When you select the "BOOTP" component during the Scout NG installation, the BootP server is installed as a service (standard installation directory: .../UniCon/scoutng/bootpd). Please do not have another BOOTP server running on the same machine.

# 6.13.2 Configuring

To configure the BootP server configuration file, you need the MAC address of the Thin Client, the network information, and the IP address. Recovery via BootP uses a static IP address configuration.

#### Procedure:

- 1. Shut down any DHCP servers running in the same LAN segment.
- 2. Open the configuration file "bootptab" using Notepad. The file is located in the installation directory of the BootP server (.../UniCon/scoutng/bootpd):
  - ~ ha MAC address of Thin Client. See section 6.13.3.
  - ~ ip IP address to assign to Thin Clients
  - ~ dn Domain name
  - ~ sm Subnet mask IP address
  - ~ gw Gateway IP address
  - ~ ds Domain Name Server IP address
  - ~ sa IP address of TFTP server where the boot file resides
  - ~ hd Path of the boot file on the TFTP server
  - ~ bf Name of the boot file. Enter pxelinux.0

elux1 is an arbitrary profile name and can be changed (as in the example below).

# **Example - bootptab** Assume IP address of Thin Client=212.172.90.94, IP address of PC=212.172.90.11, MAC address of Thin Client=003005029e35, domain name=domain.com, subnet mask=255.255.255.0:

uc94:ha=003005029e35:ip=212.172.90.94:\



```
:dn=domain.com:\
:sm=255.255.255.0:\
:ds=212.172.90.11:\
:gw=212.172.90.11:\
:sa=212.172.90.11:hd=/Programs/UniCon/scoutng/tftpd:bf=pxelinux.0:\
:to=3600:\
:ht=1:\
:hn:vm=rfc1084:
```

Do not confuse slash ("/" = directory separator in tag "hd") with backslash ("\" = tag separator). This completes the BootP server configuration.

3. Next, configure the TFTP server as described in section "6.9.1 TFTP Server."

As the procedure for starting the recovery installation is started client-side, the procedure is identical. See "6.10 Starting a Recovery."

#### 6.13.3 Determining the Thin Client's MAC Address

The MAC address is a required parameter in the BootP server configuration file bootptab. Here are some ways to determine the MAC address of the network card of your Thin Client.

eLux NG starter

The MAC address is displayed in **Setup > General**.

#### Scout NG

If you use the Scout NG Manager to manage Thin Clients (separate product), click to select the device. The MAC address will be displayed in the Properties window.

#### Network Manager

Ask your network manager (assumes your company uses DHCP based on MAC addresses).

#### BIOS

Enter BIOS Setup and open the "System Information" window. The MAC address is listed in the "LAN Address" field. (This function not supported by all BIOS versions.)

BootP server log

- 1. Start the BootP server (be sure no DHCP server is active in the same segment).
- 2. Initiate a recovery (see section 6.10). Do not worry about configuration at this time.
- 3. The recovery will be interrupted, because the BootP server will receive an unknown MAC address. However, this event will be logged.
- 4. Open the BootP server log "bootpd.log" using Notepad. It is located in the installation directory of the BootP server (.../UniCon/scoutng/bootpd).
- 5. The 12-digit MAC address is located after request from Ethernet address and in the unknown client line.

# 6.14 Troubleshooting

Problem:	After beginning a PXE recovery, a DHCP time-out occurs and the terminal just boots.
Solution:	The DHCP server failed to respond. Check the network connection. Check the DHCP server's log file for the client to receive an IP address. Adapt DHCP Server settings if necessary.
Problem:	The terminal begins a PXE recovery, then boots normally or displays a TFTP time-out error: TFTP open timeout
Solution:	The TFTP server failed to respond. Check if the TFTP server is available. Check the log file of the TFTPD daemon. Check the router/gateway and boot server settings for DHCP/BootP.
Problem:	After beginning a PXE recovery, the following message is displayed: TFTP Error – File not found and the terminal just boots.
Solution:	The TFTP server failed to send the bootfile (pxelinux.0). Check bootfile settings for your DHCP server and TFTP server log. Check access rights for the TFTP server's root directory.
Problem:	Recovery stops. The screen is black and displays: could not find kernel image: linux boot:
Solution:	The TFTP server failed to provide elux.cfg. Check the TFTP server log. Check access rights for recovery files. If necessary, copy this file from the recovery folder on the eLux NG CD to the TFTP server root directory.
Problem:	Recovery stops. The screen is black and displays: could not find ramdisk image: eluxngdisk.gz boot:
Solution:	The TFTP server failed to provide eluxngdisk.gz. Check the TFTP server log. Check access rights for recovery files. If necessary, copy this file from the recovery folder on the eLux NG CD to the TFTP server root directory.
Problem:	Recovery hangs. The screen displays: ec = 406
	elux-library
	or it displays:
	failed http://user:password@webserver
	failed ftp://user:password@ftpserver
Solution:	Transfer of the recovery IDF via FTP or HTTP server has failed. Wait for the FTP or HTTP time-out to occur. Check the address shown in:
	failed http://user:passwort@webserver or
	failed ftp://user:passwort@ftpserver

Change the parameters in the file eluxng.des to refer to the correct address and make sure the recovery IDFs are available at this address. If necessary, copy the recovery files from the eLux NG CD to the recovery server root directory.

Recovery files must be transferred as plain text. If you are using the Microsoft Internet Information server 6.0 or later, set MIME entry types as described in section "3.6.4 Microsoft Internet Information Server."

Verify that the file eluxng.des is a UNIX text file. If you have saved the file using a non-UNIX compatible text editor, such as WordPad for Windows, you may have corrupted the file. Open the FTP or HTTP server log file. If you see a line with the recovery file name (such as recoverysmall.idf) followed by an indecipherable character, the file format is no longer UNIX. Use an appropriate editor to save eluxng.des as a UNIX text file. If you use Scout NG, you can delete eluxng.des, run the Scout NG setup program and select "Repair." A new eluxng.des file in the correct format will automatically be created.

During a recovery, package installation will be displayed graphically. You can press CTRL - ALT - F4 to leave graphics mode and switch to a text screen. This is useful for troubleshooting, to view any error messages that may be displayed.

# 6.15 Licensing eLux NG

Licenses are not deleted during a recovery.

However, when you upgrade from eLux 1.1 to eLux NG, initially the terminal will be unlicensed. This is because eLux NG is a <u>new product</u> and not an upgrade.

When eLux NG is not licensed, it starts in test mode. Test mode allows you to evaluate the software with full functionality. You may log on to eLux NG 40 times without a license. You log on every time you start the device, restart the user interface, restart the device, or log off from the eLux NG starter. After the evaluation period is over, you must enter a license to continue using eLux NG.

The following two types of licenses are available for eLux NG:

- 1. eLux NG license
- 2. eLux NG + built-in Scout NG license (= one license. In addition to licensing eLux NG, this license also allows Scout NG to manage the device.)

The above licenses are for one terminal. Enter one of the above licenses in the initial dialog box on the Thin Client (see Figure 106). Licenses on the Thin Client can be viewed by going to **Setup > General**. (If the license number is partially hidden, highlight and click the right arrow key to scroll.)

You can also license terminals using Scout NG. An eLux NG license, generally for multiple terminals, is entered in the manager. Licenses are then automatically distributed on a first come, first serve basis to unlicensed terminals running eLux NG when they contact the server. The procedure for entering licenses in Scout NG is described in the *Scout NG Administrator's Guide*.

## 6.16 Advanced Users

The following is for administrators who are experienced in using eLux NG and familiar with creating IDFs in ELIAS.

## 6.16.1 Editing Recovery IDFs

You can edit the recovery IDF to contain the software of your choice.

The following files are the recovery IDFs. They are automatically installed in the container during Scout NG installation:

IDF name	Appropriate for following flash card (MB)
recoverysmall.idf	32
recoverymedium.idf	96
recoverylarge.idf	128
recoveryxxl.idf	256 or greater



Do not forget good administrative practices: Make a backup copy before editing default files.

#### ⇒ To edit the recovery IDFs for a network with various flash sizes

- 1. In Scout NG, click View menu > ELIAS to open the image definition file editor ELIAS.
- 2. In ELIAS, click **Container** menu > **Select**. Go to the container for your hardware and select the file "container.ini".
- 3. In ELIAS, click **Image** menu > **Open**. Go to the container for your hardware and select "recoverysmall.idf".
- 4. Edit the file, adding the software you need and removing unneeded packages. (For more information on editing image definition files, see the *Scout NG Administrator's Guide*.)
- 5. When you are done, save the file but retain the macro text, for example, "recoverysmall01.idf".
- 6. Repeat for the remaining IDFs.
- 7. Quit ELIAS.

To perform a recovery using your new set of recovery IDFs, enter "recovery\_SIZE\_01.idf" in the **Image file** field of the **Recovery settings** dialog box ("6.9.1 TFTP Server").



# 7 Shortcut Keys

Following is a list of shortcut keys:

CTRL+ALT+HOME	Password request for the Thin Client (and LocalLogin)
CTRL+ALT + 🛧	Opens the window list, which allows you to switch between running applications (alternative to the taskbar). Scroll direction: left.
CTRL+ALT + ♥	Opens the window list, which allows you to switch between running applications (alternative to the taskbar). Scroll direction: right.
CTRL+ALT+F1	Moves to console 1 for the eLux NG desktop
CTRL+ALT+F2	Moves to console 2 for the first open XDM session
CTRL+ALT+F3	Moves to console 3 for the second open XDM session
CTRL+ALT+F4	Moves to console 4 for the messages during the boot phase and recovery phase
Cursor keys	Selects applications in the <b>Applications</b> and <b>Configuration</b> tabs
TAB key	Moves from button to button (changes the active button) in the eLux NG starter
ALT + < underlined letter>	Changes the active screen element in the eLux NG starter
CTRL+ALT+END	Starts screen saver, if installed. If an authentication server is used (LDAP, ADS), the password is preset with the user password (\$ELUXPASSWORD).
CTRL+< <i>Win key</i> >	Opens the Taskbar Menu
SHIFT	Suppresses the application autostart function upon boot. After the eLux NG logo appears, the screen goes black, and the cursor appears as a clock, press and hold the SHIFT key (do not press and release).



# Appendix 1: Desktop

In eLux 1.1, the starter was always started upon system boot and remained blended in during the entire session. This was distracting to some users. In NG, automatic start of the starter is an option that can be deselected by the administrator.

The taskbar has new features. For example, in eLux 1.1, applications were run using the starter. This led to the problem that the starter could not be blended out, because the user would then be unable to start sessions. In eLux NG, This problem has been eliminated by implementing one-click access to the applications directly from the taskbar.

Finally, the desktop itself has been greatly enhanced.

These changes are described in detail below.

# A. eLux NG Desktop

The desktop consists of the starter, the taskbar and workspaces.

The starter contains three tabs with the following functions:

- Setup Configuring eLux NG settings. See chapter "3 Setup."
- Configuration Defining applications. See chapter "4 Configuring Applications."
- **Applications** Starting applications and shutdown options. See chapter "2.7 Sessions" and "2.8 Shut Down."

The **taskbar** allows you to minimize applications, switch between applications and workspaces, and start/minimize the starter.

Users of eLux 1.1 will be happy to learn that **workspaces** are a new feature of eLux NG. Note: This feature is recommended for advanced users.

# **B. Desktop Options**

Access the taskbar/starter/workspace options by going to **Setup > Desktop > Advanced**. Your choices of taskbar properties include:

- **Taskbar** Activates the taskbar. The taskbar will be visible no matter what program is open. It remains in the background. Default setting. Deselect to deactivate the taskbar.
- Always on top The taskbar will be visible no matter what program is open, reducing screen space but making minimized programs accessible.
- **Hide automatically** The taskbar disappears, increasing screen space. It reappears when you move the cursor to the lower edge of the screen.
- **Show clock** A clock appears on the right-hand side of the taskbar. Moving the cursor over the clock to displays the date.

Your choices of starter properties include:

• **Starter** Automatically starts the starter when the system boots. This is the default setting. Deselect this option to deactivate. The starter can always be accessed by clicking the "Run starter" button in the taskbar.

Your choices of workspace properties include:

• Number Sets the number of workspaces. You are allowed up to four. Default is one.



# C. Taskbar

The taskbar is a bar on the lower edge of the screen that allows open applications to be minimized and minimized applications to be maximized. It can also display the date and time as well as icons that represent the status of certain operations on the device.





Click with the left mouse button on the **Taskbar button** to display the Taskbar Menu. The Taskbar Menu provides one-click access to the defined applications, shutdown options and the Window menu, and running the eLux NG starter. Hotkey: CTRL+<Win key>

Click with the left mouse button on the **Active applications button** to display a list of all applications that are currently running. Click to toggle between applications. You can also toggle between workspaces, assuming you have defined more than one, or access the Window menu.

If you have defined multiple workspaces, the **Workspace buttons** are active on the taskbar. Select a workspace to switch to it.

The Run starter button starts the starter when it is currently not running.

An **Application icon** is displayed in the taskbar when an application is started. Click to switch to this application.

A Starter icon appears when you minimize the starter.

Mirroring is a help desk feature that is performed using the management tool Scout NG. When a device is mirrored, the **Mirroring icon** appears.

Finally, if you move the cursor over the time, the **Time and Date** are displayed according to the conventions for your desktop language (in the figure above, English (US)).

Clicking with the right mouse button on a free space in the taskbar opens the View Menu. Here you can arrange open windows on your screen, tiling them horizontally or vertically or cascading them. If you click "Hide All", their icons will disappear from the taskbar. Open the View Menu again and select "Undo" to reverse this. Even when the application icons are hidden, the sessions can always be accessed from the Window List or by clicking on the Active applications button or by using the hotkey CTRL+<Win key> or CTRL-ALT-<arrow up>.



# Appendix 2: Memory Usage

A Thin Client contains the following internal memory: a flash card and main memory.

## A. Flash Memory

The following is saved to the flash card:

- software packages (firmware). Rights: read only.
- application files. Rights: read/write.

Different suppliers offer different flash sizes, such as 32 MB, 128 MB, etc. Contact your supplier for a list of available flash sizes.

Each local application or session client requires software saved to the flash card. The size of these packages is displayed in ELIAS NG when the image files are created. The flash card size for your requirements depends on the total number of programs to be run on the Thin Client (local browser, ICA, SAP, RDP, emulation, etc.).

In addition, the directory /setup on the flash card is reserved for application files, such as ICA configuration files, browser history file, etc. This directory is not deleted upon system shutdown.

# **B.** Main Memory

Each Thin Client contains main memory. The directory /tmp in the main memory is reserved for temporary system files or applications.

If you have 64 MB or less of main memory, 4 MB of main memory is reserved for the directory /tmp. If your main memory is greater than 64 MB, the size of /tmp is a minimum 8 MB and can be increased by the user.

The files in the directory /tmp are deleted upon system shutdown.

## C. Warning Messages

When disk usage exceeds 95% (either in /setup or /tmp), eLux NG displays a warning message:



Figure 111: Low memory warnings

Note which directory is affected! Files in /tmp can be deleted by restarting the device. Files in /setup must be removed by hand.

Tips:

- ICA clients save cache files to the temporary directory. Solution: In advanced ICA settings, set the ICA cache (Tools > Settings > Disk Cache > "Amount of disk space to use") to zero. See section "4.2.4 Citrix ICA Client for Linux Advanced Citrix ICA Settings" for information on accessing the advanced ICA settings.
- During a local browser session, cache files are saved to the temporary directory, which can fill up quickly. Solution: Set the browser home directory to a network drive. See section "3.10 Browser Home Directory."

# D. Main Memory Usage

The following survey gives approximate minimum values of memory usage (in MB) for several applications. The stated values vary depending on the functions used during a session and should only be used as a rough guideline.

Application	Approximate Main Memory Requirements	
Application	First Session	Every Further Session
Basic memory usage	35 MB	-
ICA client (for example, WORD, EXCEL)	10 MB	6 MB
SAP®GUI (SAP/R3)	128 MB	-
X terminal client	3 MB	2,3 MB
Local applications	2,5 MB	1,5 MB
RDP session (native client)	3,9 MB	1,9 MB
Mozilla	20 MB	-
XDMCP	2,5 MB	-
Emulations for Motif 3270, 5250, 9750 (UniCon Software GmbH)	2,3 MB	2,1 MB
eterm emulation 97801	0,9 MB	0,8 MB

Figure 112: Main memory usage table



# **Appendix 3: Examples of Internet Profiles**

Following are the preset hardware profiles. The following providers are present in Germany and may or may not be available in other countries:

- Arcor AG (<u>www.arcor.de</u>)
- freenet.de AG (<u>www.freenet.de</u>)
- T-Online International AG (<u>www.t-online.com</u>)

The profiles are meant to serve as guidelines and should be modified based on the provider you use. Except for T-Online, the numbers listed are call-by-call. No registration is required. The dial-up information listed here was current as of June 8, 2005. Please contact the provider before using to verify availability and the dial-up rate.

Follow these general rules when entering network information for a call-by-call provider:

- **Profile name** The profile name is a name of your choosing.
- User account May not contain symbols or be left blank.
- **Password** May not contain symbols or be left blank.

# A. Examples of ADSL Connections

Example of an ADSL connection using T-Online

Profile name:	<arbitrary></arbitrary>
User account:	000000000008888888888880001@t-online.de
Password:	***
Identification:	PAP
Idle time-out:	240
Manager time-out:	60

The user account has the following format: 12-digit ID number + 12-digit T-Online number + 4-digit co-user number + @ + t-online.de

Consult your T-Online order for this information.

## **B. Examples of ISDN Connections**

Example of an ISDN connection using Arcor

Profile name:	<arhitran></arhitran>
	summary.
User account:	arcor
Password:	internet
Identification:	PAP
Idle time-out:	240
Manager time-out:	60
Dial-up number:	01920785 ("Spartarif Tag")
MSN:	0
Callback:	Not activated
Use local IP address:	Not activated



Example of an ISDN connection using freenet.de

Profile name:	<arbitrary></arbitrary>
User account:	<arbitrary></arbitrary>
Password:	<arbitrary></arbitrary>
Identification:	PAP
Idle time-out:	240
Manager time-out:	60
Dial-up number:	019231770 ("Internet-by-call")
MSN:	0
Callback:	Not activated
Use local IP address:	Not activated

Example of an ISDN connection using T-Online

<arbitrary></arbitrary>
000000000088888888888888888888888888888
***
PAP
240
60
0191011
0
Not activated
Not activated

The username has the following format: 12-digit ID number + 12-digit T-Online number + # +4-digit co-user number

Consult your T-Online order for this information.

# C. Examples of Modem Connections

Example of a modem connection using Arcor

Profile name:	<arbitrary></arbitrary>
User account:	arcor
Password:	internet
Identification:	PAP
Idle time-out:	240
Manager time-out:	60
Dial-up number:	01920785 ("Spartarif Tag")

Example of a modem connection using freenet.de

Profile name:	<arbitrary></arbitrary>	
User account:	<arbitrary></arbitrary>	
Password:	<arbitrary></arbitrary>	
Identification:	PAP	
Idle time-out:	240	
Manager time-	out: 60	
Dial-up numbe	: 019231770 ("Internet-by-ca	all")

Example of a modem connection using T-Online

Profile name:	<arbitrary></arbitrary>
Password:	***
User account:	00000000000888888888888888
Identification:	PAP



Idle time-out:240Manager time-out:60Dial-up number:0191011

The username has the following format:

12-digit ID number + 12-digit T-Online number + # +4-digit co-user number

Consult your T-Online order for this information.



# Appendix 4: Configuring Kiosk Mode

Kiosk mode allows you to restrict the user functionality of the browser. The individual elements (and layout) of the graphical user interface are defined in XML User Interface Language (XUL). The functionality is formulated in JavaScript.

For kiosk mode, a number of XUL and JavaScript files are bundled into a JAR archive. To define your own kiosk mode, you must edit these XUL documents.

For more information on XUL, see http://www.xulplanet.com/tutorials/xultu/intro.html.

# A. Kiosk Mode for Firefox

Firefox comes with a default kiosk mode with the following features:

- URL bar has been blended out
- Toolbar cannot be customized by user
- "Save to disk" is deactivated (downloads still allowed)
- Preferences cannot be customized by user
- Not in full screen mode

To make additional changes, you will have to customize kiosk mode yourself. The JAR archive that comes with Firefox can be used as a template. It contains all XUL documents used to describe the user interface.

#### ⇒ To customize kiosk mode for Firefox

- 1. Install the kiosk mode software (in the respective browser package).
- 2. Copy the following file to a machine with unzipping software:

/opt/MozillaFirefox/lib/chrome/modes/kioskmode.jar

**Tip** On the Thin Client, you can use the UNIX copy command ("cp <*file directory*> <*target directory*>") to copy the file to an NFS or SMB drive, or in the eLux NG starter the FTP function available in **Setup** > **Diagnosis**.

3. Unzip the file.

Windows:	Winzip tool
UNIX:	<pre>unzip tool (command: unzip kioskmode.jar)</pre>

The directory "content" with the subdirectory "browser" will be created.

**Warning** Do not change the directory structure. This will make your rezipped JAR file unusable.

4. Edit the appropriate files using Notepad or an XUL editor. Comment out functions you want to deactivate and interface elements (menus, toolbars, etc.) you do not want displayed. For an example, view the document "browser.xul" from "/opt/MozillaFirefox/lib/chrome/modes/kioskmode.jar", which mainly describes the browser interface.


**Tip** A description of what to edit exceeds the scope of this document. For more information, there are many tutorials available on the Web, for example, http://tln.lib.mi.us/~amutch/pro/phoenix/kiosk.htm.

5. Zip the file to the name "kiosk.jar".

Windows:Winzip programUNIX:"zip" command with the "-r" option (recursive) (zip -r kiosk.jar)

6. Copy the file to the following directory on the Thin Client:

/setup/firefox/kiosk.jar

 Set the homepage and start page in the application definition (Configuration > New > Browser). Use full URL format: "http://<domain name>". The Web page can be on the Internet, on your thin client, or on another computer on the network. Click to select Kiosk mode.

Firefox uses the \*.jar file according to the following selection rules:

1. /opt/MozillaFirefox/lib/chrome/modes/normalmode.jar

This file is used if the **Kiosk mode** check box in the browser definition is <u>deactivated</u> (always the case when the "Kiosk mode" software has not been installed).

2. /setup/firefox/firefox.ini

The following entry in the Firefox initialization file is used if the **Kiosk mode** check box in the browser definition is <u>activated</u>, "File=<*path*>/<*file*>", where *path* is the complete path of the \*.jar file and *file* is the file name. The default value "/setup/firefox/kiosk.jar" can be customized to the path and name of your choosing, for example "/smb/smith/browser/testkiosk.jar".

3. /opt/MozillaFirefox/lib/chrome/modes/kioskmode.jar

This file is used if the **Kiosk mode** check box in the browser definition is <u>activated</u> and the \*.jar archive specified in the Firefox initialization file (/setup/firefox/firefox.ini) does not exist.

## B. Kiosk Mode for Mozilla

Mozilla comes with the following default kiosk styles (so-called "chromes"):

- **full** A modified toolbar is displayed. All other buttons have been blended out.
- **blank** All buttons have been blended out. A time-out loads the homepage after 30 seconds idle time.
- urlbar A modified toolbar and the URL bar are displayed. All other buttons have been blended out.

All styles have the following:

- Keyboard shortcuts are deactivated, however the keyboard is still active.
- The homepage and start page are taken from the application definition.
- Toolbar cannot be customized by user
- Preferences cannot be customized by user

#### ➡ To activate kiosk mode for Mozilla

- 1. Install the kiosk mode software (in the respective browser package).
- 2. In /setup/mozilla.ini set the following style parameter (so-called "chrome"):

[kiosk] chrome=<value> where value:

full:	A modified toolbar (Back, Forward, Reload, Stop, Print) is displayed. You can choose a Web site from the list of base sites. All other buttons are blended out. Keyboard shortcuts are deactivated, however the keyboard is still active.
blank:	All buttons in the browser are blended out. In addition, returns to the homepage after a set idle time.
urlbar:	A modified toolbar (Back, Forward, Reload, Stop, Print) and the URL bar are displayed. All other buttons are blended out. Keyboard shortcuts are deactivated, however the keyboard is still active.

To set the chrome parameter locally you can use the "ucinitool" command. Example: To set the chrome to "urlbar," on the Thin Client open a local shell and type the following (case sensitive):

ucinitool -f /setup/mozilla/mozilla.ini -s kiosk Chrome=urlbar

**Tip** To edit a file in /setup:

- 1. Use the UNIX editor vi
- 2. Use the text editor (see "4.8.8 Text Editor")
- 3. Transfer the file to a machine with editing software, edit the file and copy it back to the Thin Client

**Tip** On the Thin Client, you can use the UNIX copy command ("cp *<file directory*> *<target directory*>") to copy the file to an NFS or SMB drive, or in the eLux NG starter the FTP function available in **Setup > Diagnosis**.

3. Depending on which style you used, set additional parameters:

"full":

Set the list of base sites in /setup/mozilla/uri-list.properties. Example: To set three entries: uriCount=3 uriString1=My eLux uriValue1=http://www.myelux.com

uriString2=UniCon Software GmbH uriValue2=http://www.unicon-ka.de

uriString3=Mozilla uriValue3=http://www.mozilla.org

"blank": Returns to the homepage after 30 seconds idle time. Set the time in /setup/mozilla/kioskDefault.properties.

"urlBar": No further parameters available.

 Set the homepage and start page in the application definition (Configuration > New > Browser). Use full URL format: "http://<domain name>". The Web page can be on the Internet, on your thin client, or on another computer on the network. Click to select Kiosk mode.

This section described how to activate the default styles by editing files in /setup. The required files can be transferred to many Thin Clients using the Scout NG file transfer function. This is the easiest method. Making changes to the \*.jar file (/usr/mozilla/chrome/kiosk.jar) directly requires EBK.



# **Appendix 5: Setting Thin Client Time to UTC**

Coordinated Universal Time (UTC) is the successor to and modern version of Greenwich Mean Time (GMT). The system time in the Thin Client's BIOS must be set to UTC. You must do this directly on the Thin Client, either in the eLux NG software (recommended) or BIOS Setup.

#### eLux NG Software

The easiest method is to use the eLux NG main screen (**Setup** > **Desktop**) and enter a time server conform to Internet standard RFC 868 ("Time protocol").

If your network does not have such a time server, manually enter the time and date settings, and select the time zone from the drop-down list.

#### Click Apply.

This updates the time settings in BIOS automatically. There is no need to enter BIOS Setup. In addition, the fall and spring Daylight Saving Time changes are made automatically.

#### **BIOS Setup**

Alternatively, you can enter BIOS Setup and change the system time manually to UTC. To calculate UTC, take local time minus the time zone difference from GMT (found in the **Time Zone** drop-down list in Scout NG **Setup** > **Desktop** tab). In Summer Time, subtract an additional hour to take into account Daylight Saving Time.

UTC in winter months = (local time – time zone difference)

UTC in summer months= (local time – time zone difference) – 1 hour

For example, if you are in Amsterdam, the **Time Zone** drop-down list in Scout NG shows the local time for Amsterdam is GMT plus one hour (GMT + 1). Thus, you should change time setting in BIOS to the local time <u>minus</u> one hour. If local time is 17:45, system time in BIOS should be set to 16:45. If it is Summer Time (Daylight Saving Time), the system time should be set to local time minus <u>two</u> hours, or 15:45. Note that BIOS system time uses the 24-hour system.

You only need to set the system time once. Fall and spring Daylight Saving Time changes are made automatically.



# Appendix 6: Supported Hardware

The following hardware components are supported by eLux NG version 1.21 and later.

Туре	Product	Producer	Specification
LAN	3C900B Combo	3Com Corporation	10 Mbps Ethernet, RJ-45, AUI and BNC connectors for 10Base-T, 10BASE5 and 10BASE2
	3C905C-TX-M	3Com Corporation	10/100 Mbps Fast Ethernet, RJ-45 connector
	AT-2450FT	Allied Telesyn, Inc.	10 Mbps fiber (ST or SC) connectors PCI bus
	AT-2450FTX	Allied Telesyn, Inc.	10 Mbps fiber (ST or SC), 10/100 auto-sensing port (RJ-45), PCI bus
	AT-2700FX	Allied Telesyn, Inc.	100 Mbps fiber (ST or VF45), 10/100 auto-sensing port, PCI bus
	BCM570x (Tigon 3)	Broadcom Corp.	Gigabit Ethernet controller, PCI
	IBM 16/4 Adapter 2	IBM Corporation	Token Ring, PCI
	Intel Pro / 1000 MT	Intel Corporation	Gigabit Ethernet controller, PCI
	OLICOM 3140	Madge Limited	Token Ring, PCI
	SK9521	SysKonnect	Gigabit Ethernet controller, PCI
	Smart MK4 PCI	Madge Limited	Token Ring, full duplex 100/16/4 Mbps switched and 16/4 Mbps shared connectivity
Modem			External Hayes compatible modem 56 k
Keyboard	FSC K235	Fujitsu Siemens Computers	IBM-MF compatible keyboard for 3270 terminal emulation, PS/2
	FSC K257	Fujitsu Siemens Computers	Trimodal keyboard for terminal emulations, PS/2
	FSC K319 (KBPC C2)	Fujitsu Siemens Computers	Keyboard with integrated PC/SC compatible smart card reader, USB
	FSC K329 (KBPC CX)	Fujitsu Siemens Computers	Keyboard with integrated PC/SC compatible smart card reader, USB
	SUN Type 6	Sun Microsystems	SUN Type 6, USB
	Cherry G80-1501	Cherry GmbH	Keyboard with integrated smart card reader compatible with German health insurance cards, PS/2
ISDN	Fritz!PCI 2.0	AVM GmbH	ISDN interface card, PCI
	Fritz!Card USB V2.1	AVM GmbH	External ISDN adapter, USB
	Diva ISDN V2.0.1	Eicon Networks Corporation	ISDN interface card, PCI
Wireless	Aironet 350 Series	Cisco Systems, Inc.	Wireless LAN adapter card, IEEE 802.11b and 802.11g compliant, PCI
	Wireless USB D1700	Fujitsu Siemens Computers	Wireless LAN network adapter, IEEE 802.11b compliant, USB
	DWL-G520	D-Link Corporation	Wireless LAN adapter card, IEEE 802.11b and 802.11g compliant, PCI



Туре	Product	Producer	Specification
Video	G200 Quattro	Matrox Graphics Inc.	Matrox G200 graphics chip, single PCI card for dual or quad output
	G450 PCI32	Matrox Graphics Inc.	Matrox G450 chip for dual output
	G450 MMS Quad	Matrox Graphics Inc.	Matrox G450 chip, single PCI card Multi-Monitor Series for dual or quad output
USB	EZ100PU	Castles Technology	USB card reader
	Datakey 731	SafeNet	USB card reader
	GemPC Key	Gemplus	Portable USB reader in key format that reads/writes smart cards in plug-in form
	GemPC Twin	Gemplus	USB external smart card reader/writer for USB and serial (only USB supported)
	SCR USB internal	Fujitsu Siemens Computers	USB internal smart card reader/writer
	SCR USB Solo 2	Fujitsu Siemens Computers	USB external smart card reader/writer
	SPR532	SCM Microsystems	Dual mode PINpad. For use as USB card reader (PINpad not supported, RS232 not supported)
	USB V.24 converter	DIGITUS, Sandberg	USB to serial adapter, PL2303 or PL2303-HX chip
			USB 3.5", 1.44MB external floppy disk drive <sup>2</sup>
			USB CD-ROM <sup>3</sup>
			USB stick <sup>3</sup>
Handheld	iPAQ	Hewlett Packard	Can be accessed in Citrix ICA session via serial adapter
	Pocket PCs,		Can be accessed in Citrix ICA
	e.g. Pocket Loox	Fujitsu Siemens Computers	session via serial adapter.
			Requires: Microsoft Active Sync or others (free software)
	Tungsten E	palmOne, Inc.	Can be accessed in Citrix ICA
	Tungsten 3		
	Tungsten 5		OneBridge Sync Server V4.2 and later from Extended Systems, Inc.

<sup>&</sup>lt;sup>2</sup> eLux NG supports a large number of USB mass storage devices (floppy, CD-ROM, USB stick). The USB device can be used if it is automatically detected when it is plugged in.



# Appendix 7: Supported Smart Card Readers

The following smart card readers are supported by the "PCSC lite" (pcsc\_lite) package (eLux NG version 1.17 and higher).

For more information on smart cards, see "3.15 Smart Card".

Feature			Driver Package		
	Generic CCID	Gemplus CCID	OMNIKEY CCID	OMNIKEY CardMan	Castles EZ100
PKCS#11	_	GEM	DataKey	GEM	GEM
RDP CSP	_	GEM	GEM	GEM	GEM
		KOBIL	KOBIL		
		SafeSign	SafeSign	SafeSign	SafeSign
ICA Roaming	-	+	+	_	+
Secure PIN	+	_	_	_	_
Reader	ACR 38	ACR 38			
	ActivCard	ActivCard			
					CASTLES
					EZ100
					CASTLES EZ100PU
		Cherry SmartBoard X44	Cherry SmartBoard X44		
	Cherry xx33	Cherry xx33			
	Cherry xx44	Cherry xx44	Cherry xx44		
	Dell keyboard SK-3106	Dell keyboard SK-3106			
	Dell smart card reader keyboard	Dell smart card reader keyboard			
		FSC SmartCard Keyboard USB 2A	FSC SmartCard Keyboard USB 2A		
				FSC SmartCard Reader USB	
		FSC SmartCard Reader USB 2A	FSC SmartCard Reader USB 2A		
	GemPC Key	GemPC Key			
	GemPC Twin	GemPC Twin			
	GemPC433 SL	GemPC433 SL			
	KAAN Advanced				



Feature			Driver Package		
	GENERIC CCID	GEMPLUS CCID	OMNIKEY CCID	OMNIKEY CARDMAN	CASTLES EZ100
Reader	KAAN Base				
	KAAN mIDentity KAAN SIM III				
	LTC31	LTC31			
				OMNIKEY CardMan 2020	
	OMNIKEY CardMan 3121	OMNIKEY CardMan 3121	OMNIKEY CardMan 3121 OMNIKEY CardMan Smart@Key OMNIKEY CardMan Smart@Link		
	Oz776				
	SCR 331	SCR 331			
	SCR 3310				
	SCR 331-DI	SCR 331-DI			
	SCR 333	SCR 333			
	SCR 335	SCR 335			
	SK-3105	SK-3105			
	SPR 532	SPR 532			

An up-to-date version of this table is available in the Internet. You must complete a free one-time registration.

#### ⇒ To view an up-to-date list of smart card readers on the Internet

- 1. Go to the Web site <u>www.myelux.com</u>.
- 2. In the navigation links on the left-hand side, click "Login."
- 3. If you have not yet registered, click "Registration" and follow the instructions. You will receive your login and password in one to three days. Otherwise enter your login information and click "Submit."
- 4. The main page is displayed with a "Download" and "Service" area. Click "eLux software packages." This opens the "Available containers" page.
- 5. Under "eLux NG", locate your hardware platform and click on the link in the column under "Released packages." Select container version 1.17 or later.
- 6. The container page lists the container ID and the hardware platform. As containers are hardware specific, please verify that you have selected the correct container and, if necessary, go back and correct your selection.
- 7. Scroll down until you find "PCSC lite." Click on "Details." A list of supported smart card reader and features is displayed.



# **Appendix 8: Port Assignments**

The following is a list of TCP/IP ports for eLux NG und Scout NG. The port numbers are fixed. Exceptions are indicated with a footnote.

#### eLux NG

Port	Туре	Description	How to Deactivate	Port Type
	ESP	VPN (Cisco)	Uninstall the package "Cisco Systems VPN client" (cisco_vpnclient)	Incoming
	ESP	VPN (Cisco)	Uninstall the package "Cisco Systems VPN client" (cisco_vpnclient)	Outgoing
21	ТСР	Updating via FTP control port (dynamic data port)		Outgoing
22	TCP	SSH applications		Outgoing
23	TCP	3270, 5250, 97801 emulations and telnet sessions		Outgoing
37	ТСР	Time server – RFC 868	Do not configure a time server ( <b>Setup &gt; Desktop</b> )	Outgoing
37	UDP	Time server – RFC 868	Do not configure a time server ( <b>Setup &gt; Desktop</b> )	Outgoing
53	TCP	DNS server (Windows)		Outgoing
53	UDP	DNS server		Outgoing
67	UDP	DHCP server		Outgoing
68	UDP	DHCP client (or BootP client)	Configure a local IP address ( <b>Setup</b> > <b>Network</b> )	Incoming
69	UDP	TFTP server (only used during a Recovery Installation)		Outgoing
69	UDP	TFTP server (only used during a Recovery Installation)		Incoming
80	ТСР	Updating using HTTP (and proxy port, if used)		Outgoing
102	ТСР	Emulations to BS2000 mainframes		Outgoing
111	UDP	Port mapper – drive access on NFS servers. Works with NFSD drive access (port 2049) and mountd (random)	Uninstall the FPM "Drive Support" (automount) in baseOS	Outgoing
111	TCP	Port mapper – RPC internal use only. Works with nlockd (random)	Uninstall the FPM "Drive Support" (automount) in baseOS	Incoming
139	TCP	SMB drive mapping (NetBIOS) and SMB user authentication	Uninstall the FPM "Drive Support" (automount) in baseOS and the package "User authorisation modules" (userauth)	Outgoing

Port	Туре	Description	How to Deactivate	Port Type
139	UDP	SMB drive mapping (NetBIOS) and SMB user authentication	Uninstall the FPM "Drive Support" (automount) in baseOS and the package "User authorisation modules" (userauth)	Outgoing
161	UDP	SNMP	Uninstall the package "net-snmp" (snmp)	Incoming
161	UDP	SNMP	Uninstall the package "net-snmp" (snmp)	Outgoing
162	UDP	SNMPTRAP		Outgoing
177	UDP	XCMCP protocol		Outgoing
389	TCP	LDAP user authentication		Outgoing
500	UDP	VPN (Cisco, FreeS/WAN)	Uninstall the package "Cisco Systems VPN client" (cisco_vpnclient) or "Linux Free S/WAN" (swan)	Incoming
500	UDP	VPN (Cisco, FreeS/WAN)	Uninstall the package "Cisco Systems VPN client" (cisco_vpnclient) or "Linux Free S/WAN" (swan)	Outgoing
514	TCP	Shell, RSH applications		Outgoing
515	TCP	Printing over LPD		Outgoing
515	TCP	Printing over LPD	Cannot be deactivated, in the future can be deactivated by uninstalling the package "Printer support"	Incoming
631	ТСР	CUPS (IPP) print client	Uninstall the package "CUPS print client" (qtcups)	Outgoing
631	UDP	CUPS (IPP) print client	Uninstall the package "CUPS print client" (qtcups)	Outgoing
2049	UDP	NFSD drive access NFS	Uninstall the FPM "Drive Support" (automount) in baseOS	Outgoing
5681	ТСР	Scout NG management port	Cannot be deactivated	Incoming
5900	TCP	Mirroring eLux NG desktop	Disable mirroring ( <b>Setup</b> > <b>Security</b> ) or uninstall the EPM "eLux mirroring" (mirror)	Incoming
5901	TCP	Mirroring first XDMCP session	Disable mirroring ( <b>Setup</b> > <b>Security</b> ) or uninstall the EPM "eLux mirroring" (mirror)	Incoming
5902	TCP	Mirroring second XDMCP session	Disable mirroring ( <b>Setup</b> > <b>Security</b> ) or uninstall the EPM "eLux mirroring" (mirror)	Incoming
6000	TCP	Remote X11 applications	Click to deselect the check box "Allow remote X11 clients" ( <b>Setup</b> > <b>Security</b> )	Incoming
6001	TCP	First XDMCP session		Incoming
6002	TCP	Second XDMCP session		Incoming
7100	TCP	Font server <sup>1</sup>		Outgoing
7777	TCP	Scout NG manager		Incoming
7777	TCP	Scout NG manager		Outgoing



Port	Туре	Description	How to Deactivate	Port Type
9100	TCP	Direct Print to parallel port <sup>2</sup>	Deactivate the check box "TCP direct print" ( <b>Setup &gt; Printer</b> ).	Incoming
9101	TCP	Direct Print to USB port <sup>2</sup>	Deactivate the check box "TCP direct print" ( <b>Setup &gt; Printer</b> ).	Incoming
16001	ТСР	e-sound system for audio in XDMCP sessions	Deactivate the check box "Enable sound in XDMCP sessions" ( <b>Setup</b> > <b>Multimedia</b> ).	Incoming

<sup>1</sup> Port number can be assigned by the administrator in eLux NG starter (**Setup > Screen > Advanced**) <sup>2</sup> Port number can be assigned by the administrator in eLux NG starter (**Setup > Printer**).

#### Scout NG Server

Port	Туре	Description	How to Deactivate	Port Type
7778	TCP	Scout NG Console		Incoming
7779	TCP	Wake-on-LAN gateway		Outgoing

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