



ePipe ML-IP Concentrator Getting Started Guide

Check Package Contents

Check the packing list below to ensure you have all the correct parts. Your ePipe ML-IP Concentrator for Linux kit should contain:

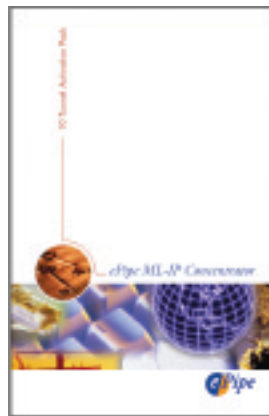
- ePipe ML-IP Family Software & Documentation CD
- Product Registration Card (not in Media Kit - part number 990274)
- One (1) ML-IP Tunnel Activation Pack (for 10, 50 or 100 ML-IP tunnels)
- Getting Started Guide (this document)



*ePipe ML-IP Family
software &
documentation CD*



*Product Registration
Card*



*Tunnel Activation
Pack*



*Getting Started
Guide*

Start Here

To get your ePipe ML-IP Concentrator up and running quickly, follow the steps in this Getting Started Guide. To understand how you can use ePipe refer to the ePipe ML-IP Concentrator User Guide on the ePipe ML-IP Software & Documentation CD. This user guide is also available from the ePipe web site (www.ml-ip.com).

What Else Do I Need?

Before installing ePipe ML-IP Concentrator, you will need the following:

- A PC connected to your LAN with Red Hat Linux (see the CD readme.txt file for information on versions supported) installed, referred to as the Linux PC. This PC must have appropriate Ethernet or serial hardware installed and operational under Linux. The recommended minimum hardware specifications are:

Model	CPU	RAM
ePipe ML-IP Concentrator Evaluation	Celeron 800 MHz	256 MB
ePipe ML-IP Concentrator 10	Celeron 800 MHz	256 MB
ePipe ML-IP Concentrator 50	Pentium 4, 1.4 GHz	256 MB
ePipe ML-IP Concentrator 100	Pentium 4, 2 GHz	256 MB

- o All models will require 20 MB of free disk space on the Linux file system
- o Linux IP Networking installed and working
- A PC connected to the same LAN as the Linux PC for configuring the ePipe ML-IP Concentrator. This PC will be referred to as the Configuration PC and needs to be running the following:
 - o Microsoft Windows (XP or 2000 recommended)
 - o Microsoft Internet Explorer 5 or above
 - o The Java™ Plug-in (i.e. Java™ 2 Runtime Environment). The Java™ Plug-in can be found on the ePipe ML-IP Software & Documentation CD and can also be obtained from the Sun Microsystems Java™ web site (<http://java.sun.com/getjava/>). See Step 5 below
- One or more xDSL, Cable, analog or ISDN modems or dedicated access routers
- Appropriate cables to connect your modems and/or routers to the Linux PC
- One or more xDSL or Cable services, analog (PSTN) or digital (ISDN) phone lines or other dedicated connections

- One or more accounts from one or more ISPs for connecting ePipe ML-IP Concentrator to the Internet
- An available port on your Ethernet hub or switch to which you will connect the Linux PC
- Sufficient Ethernet and RS-232 serial ports installed and working in the Linux PC to connect to the external network or Internet services.

Once you have the above items, you are ready to follow the 5 step process contained in this Getting Started Guide to setup the ePipe ML-IP Concentrator on your network.

Quick Setup

The ePipe ML-IP Concentrator software can be connected to a variety of devices via Ethernet interfaces and serial ports. You will typically need one Ethernet port that will be used by the Linux PC, in addition to whatever interfaces are needed for your communications links.

Ethernet 1 of the ePipe ML-IP Concentrator software is a virtual interface, which will be configured to communicate with the Linux operating system when the software is installed. Figure 1 shows a typical network deployment using a pair of systems running the ePipe ML-IP Concentrator to connect two sites.

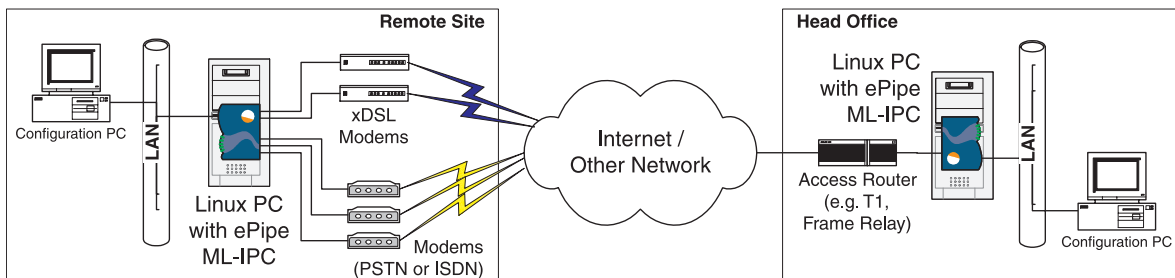


Figure 1 - Typical deployment of the ePipe ML-IP Concentrator on Linux connecting 2 sites

Follow the steps below for information on how to locate, install and start setting up the ePipe ML-IP Concentrator.

1 Step 1: Locating the ePipe ML-IP Concentrator

The ePipe ML-IP Concentrator is software that runs on a Linux PC. The Linux PC should be located in accordance with the manufacturer's guidelines. Generally, avoid areas that are dusty or prone to extremes of heat or humidity. Typically the Linux PC should be located close to a power supply outlet and to any external access devices that need to be connected to the unit, such as DSL, Cable or analog modems and other access devices such as routers.

2 Step 2: Installing ePipe ML-IP Concentrator

The ePipe ML-IP Concentrator software requires a PC running Red Hat Linux (see the CD readme.txt file for information on versions supported), with the networking components installed and working. The ePipe ML-IP Concentrator software runs as a 'virtual machine', which communicates with the Linux operating system via a Linux device called 'tap0'. The 'tap0' device is created during the install routine. Figure 2 illustrates the ePipe ML-IP Concentrator virtual machine running as an application on a Linux system and shows relationships between the virtual ePipe devices (e.g. Ethernet 2, Serial 3) with the Linux devices (e.g. /dev/eth1, /dev/ttyS1).

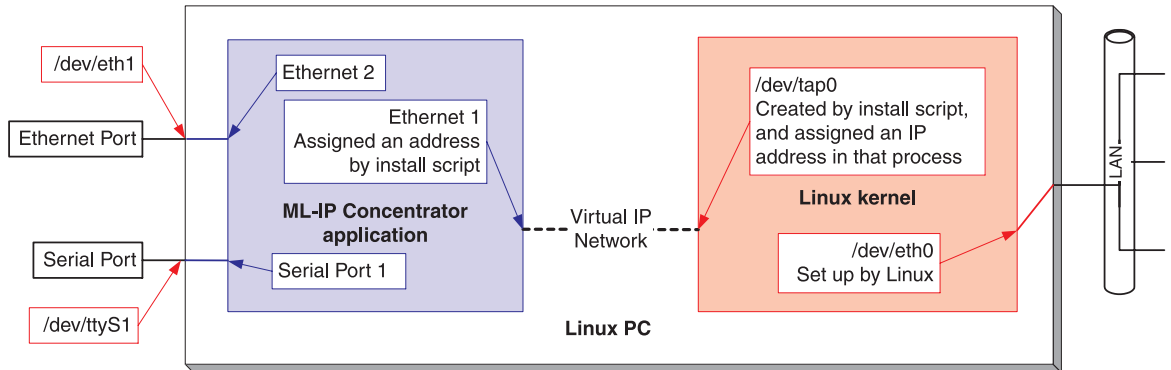


Figure 2 - Conceptual model of ePipe ML-IP Concentrator on Linux

Once the Linux PC is connected to your LAN and has an IP address, you are ready to proceed with installing the ePipe ML-IP Concentrator software.

To install ePipe ML-IP Concentrator on the Linux PC follow the steps below:

1. Login to the Linux PC's text console as the root user and mount the ML-IP CD.
2. Copy the `epipe-mlip-linux-NNN.run` file (where NNN is the version number) onto the Linux PC, in a temporary directory such as `/tmp`, or the root user's home directory, `/root`. This file can be deleted after installation is complete. If you are installing from the ePipe ML-IP Family Software & Documentation CD, this file can be found in the `/software` directory. For example, to copy the file to the Linux file system, use a command similar to the following:

```
cp /mnt/cdrom/software/epipe-mlip-linux-240.run /root
```

3. Set the `epipe-mlip-linux-NNN.run` file to be executable. Typically, you would run the command:

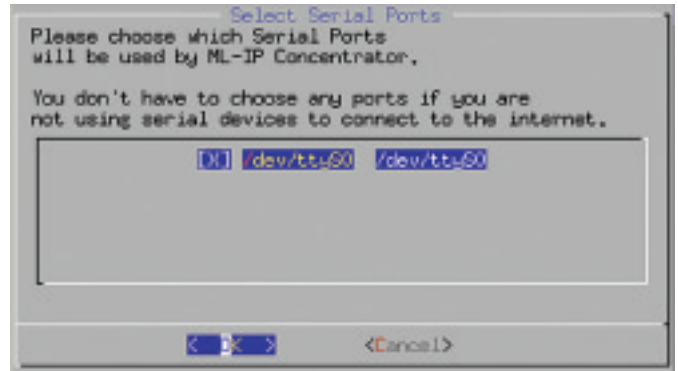
```
chmod +x epipe-mlip-linux-240.run
```

4. If X-Windows is running on the Linux PC, run the command:

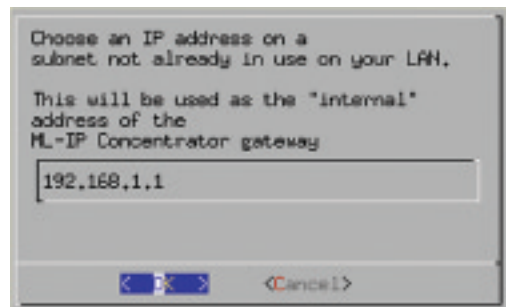
```
unset DISPLAY
```

Step 2 (Continued)

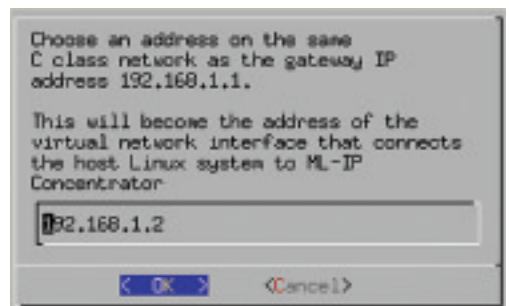
5. Execute the `epipe-mlip-linux-NNN.run` file. When you are asked whether you wish to run the install script, answer Yes.
6. Read the license agreement. Select 'Exit'. Select 'Yes' if you agree to the license.
7. At the prompt, enter the password you wish to use for the administrative user ("root") of the ePipe ML-IP Concentrator, and select 'OK'. Re-enter the same password for confirmation, and select 'OK' again.
8. Using the space bar, select any serial ports to be used with the ePipe ML-IP Concentrator.



9. Enter an IP address for Ethernet1 (the virtual network interface used to connect ePipe to Linux). Use an IP address from an unused C class network (e.g. 192.168.168.1).

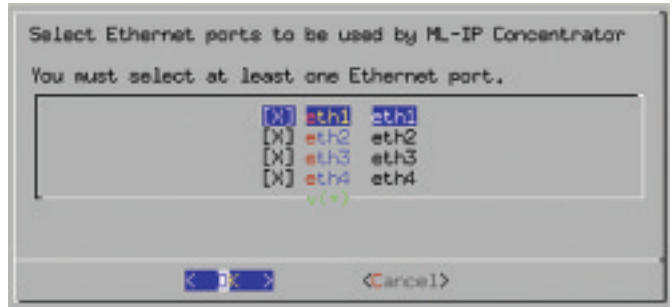


10. Enter an IP address for 'tap0' (the virtual network interface used to connect Linux to ePipe ML-IP Concentrator). Use an IP address on the same IP network as the address used in step 9 (e.g. 192.168.168.2).



Step 2 (Continued)

- Using the space bar, select any Ethernet ports to be used with the ePipe ML-IP Concentrator.



- This completes installation of the ePipe ML-IP Concentrator software. Messages indicating that the ePipe ML-IP Concentrator software has started should now appear on the console.

3 Step 3: Connecting the ePipe ML-IP Concentrator to WAN Access Devices

The ePipe ML-IP Concentrator software can use up to 5 Ethernet interfaces, and up to 4 RS-232 asynchronous serial ports. The Ethernet ports can be connected to xDSL modems/routers, Cable modems, other access routers and other LANs. The serial ports can be connected to standard analog modems and ISDN modems (terminal adapters or TAs). These devices typically connect the ePipe ML-IP Concentrator to a public network (e.g. the Internet) or other WAN.

To connect the ePipe ML-IP Concentrator to a public network or WAN, follow the steps below:

- Connect your Cable modems, xDSL modems/routers or dedicated access routers to the Ethernet ports on the Linux PC using an Ethernet patch lead.

! **NOTE:** Some devices may need to be connected to the Ethernet ports using an Ethernet crossover cable. Consult the documentation for each device for details. An alternative to a crossover cable is an Ethernet hub or switch.

- Connect your analog modems and/or TAs to the RS-232 serial ports of the Linux PC using appropriate serial cables.

Step 4: Preparing the Configuration PC

Configuration of the ePipe ML-IP Concentrator is achieved by using a web browser to access the Multilink IP Manager. The Multilink IP Manager is the user interface of the ePipe ML-IP Concentrator.

The ML-IP Manager requires the Java™ Plug-in (or Java™ Runtime Environment) to be installed for use with Microsoft Internet Explorer. The Configuration PC also requires a route to the ePipe ML-IP Concentrator to be configured.

A. Installing the Java Plug-in

At the time of writing, the latest version of the Java™ Plug-in was version 1.4.0. This version is included on the ePipe ML-IP Software and Documentation CD. The Multilink IP Manager requires this version or higher to run.

To install the Java™ Plug-in, follow the steps below:

1. Insert the ePipe ML-IP Family Software and Documentation CD into the CD drive of the Configuration PC.
2. Select 'Run' from the 'Start' menu and click Browse.
3. Navigate to the CD drive and then to the JRE directory. Select one of the following files and click Open.

Description	File Name
Java™ 2 Runtime Environment - Windows version - US English only	j2re-1_4_0-win.exe *
Java™ 2 Runtime Environment - Windows version - All languages (including English)	j2re-1_4_0-win-i.exe *

* File names are for version 1.4.0. If the CD contains a later version the file names will change accordingly.

4. Click OK to execute the Java™ Plug-in installer. Follow the prompts to install the Java™ Plug-in.



NOTE: The latest version of the Java™ Plug-in can also be downloaded from the Sun Microsystems Java™ web site (<http://java.sun.com/getjava/>).

Step 4 (continued)

B. Configuring a Route to the ePipe ML-IP Concentrator

To be able to browse to the ML-IP Manager (the user interface of the ML-IP Concentrator), the Configuration PC will need to have a route to the virtual network on which the ePipe ML-IP Concentrator has been installed. This can be achieved by configuring the Configuration PC with a default route to the Linux PC. Typically this involves modifying the properties of the Configuration PC's TCP/IP settings and setting the default gateway to be the IP address of the Linux PC on the LAN. Please refer to your Windows operating system documentation or online help for further information.

5 Step 5: Configuring the ePipe ML-IP Concentrator

You are now ready to configure the ePipe ML-IP Concentrator to connect to public networks (e.g. the Internet) and to configure ML-IP tunnels between ePipes across these networks.

To start configuring the ePipe ML-IP Concentrator, follow the steps below:

1. On the Configuration PC, start Microsoft Internet Explorer (version 5 or later) and browse to the IP address of the ePipe ML-IP Concentrator (the IP address entered in Step 2, point 9 above). This is the IP address assigned to the virtual Ethernet 1 of the ePipe ML-IP Concentrator.
2. The browser will now display the ML-IP Manager welcome page. Click the 'Start ML-IP Manager' button to start the ML-IP Manager.
3. The browser will show Java™ classes loading followed by a login prompt. Login with user name 'root' and password you entered in point 7 of Step 2. Click Yes when done. Refer to Figure 3.
4. You will now see the Multilink IP Manager. You are now ready to proceed with configuring the ePipe ML-IP Concentrator. Start by configuring Network Connections, followed by any ML-IP tunnels.

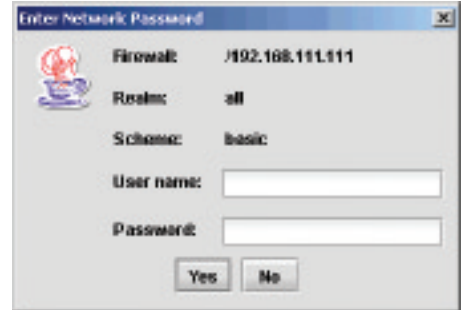


Figure 3 - ML-IP Manager login prompt

Refer to the ePipe ML-IP Family User Guide for more information on how to configure the ePipe ML-IP Concentrator.

Troubleshooting

Should you experience any difficulty with your ePipe ML-IP Concentrator, you may want to recheck previous steps in this Getting Started Guide to ensure correct installation. Consult the ePipe ML-IP documentation for more information on troubleshooting configuration, network or hardware problems.

Documentation

All documentation and software for the ePipe ML-IP Concentrator is included on the ePipe ML-IP Family Software & Documentation CD and is also available from the ePipe web site at <http://www.ml-ip.com>.

Warranty / Registration

ePipe is offering free telephone support for 12 months from the purchase date of the software, on registration of the product. You can register your licence of ePipe ML-IP Concentrator by completing and returning the enclosed registration form or by completing the on-line registration form available on the ePipe web site at <http://www.ml-ip.com>, within 30 days of purchase. Unregistered users may access our Technical Support Team by email only. Registered customers will also receive the latest information on ePipe's leading-edge product developments.

Contact Information

To contact the nearest Stallion Technologies office, see the address details on the back of this Getting Started Guide.

The Americas (USA)

Tel: +1 1800 347-7722

Asia Pacific (Australia)

Tel: 1800 037 473 (from within Australia)

Tel: +61 7 3270 4275 (outside Australia)

World Wide Web

<http://www.ml-ip.com/epipe/>

Email

General: info@ml-ip.com

Support: support@ml-ip.com

© 2002 ePipe Pty. Ltd., a Stallion Technologies company. All rights reserved.

Under the copyright laws, no portion of the information contained in this document or the software described within may be reproduced in any form or by any means without the prior written permission from ePipe Pty. Ltd., except in the normal use of the software to make a backup copy for personal use only. This copyright notice must be affixed to any permitted copies as are affixed to the original.

ePipe Pty. Ltd. has applied for patents for both ePipe and ML-IP. ePipe is a trademark of ePipe Pty. Ltd. All other brand and product names are trademarks of their respective owners. Information contained herein is intended as a guide only and is subject to change without notice.



730150 Rev 1.00
Printed in U.S.A.