



# Configuring the KlasRouter Serial WAN Port

*KB article reference no. Q10603*

*Version: 1.0*

*Keywords: KlasRouter, Serial WAN, PPP, PPP Client, PPP Server, Cisco HDLC*

The information in this article applies to:

- o KlasRouter v2.0

## Table of Contents

1.0 Introduction.....	2
2.0 Configuration of KlasRouter.....	2
2.1 Cable Connections .....	2
2.2 Establishing a HyperTerminal Session .....	2
2.3 Configuring a PPP Client.....	2
2.4 Configuring a PPP Server .....	4
2.5 Configuring Cisco HDLC .....	6

## Table of Figures

Figure 1. Serial WAN Configuration Menu .....	3
Figure 2. Enter the PPP Client IP Address .....	3
Figure 3. PPP Server Configuration Menu .....	4
Figure 4. PPP Server Configuration.....	5
Figure 5. Configuring Cisco HDLC .....	6

## **1.0 Introduction**

This document describes how to configure the Serial WAN port on KlasRouter. The Serial WAN port is a DB-25 RS-530 synchronous serial port. It is designed for use with serial Type-1 encryption devices, such as the KIV-7 and OMNIxi. Additionally, it can be used without Type-1 Encryption and connected directly to a KlasTA. The Serial WAN Port supports two types of connections, PPP and Cisco HDLC. The following paragraphs outline the steps needed to configure the Serial WAN port for successful WAN connectivity.

## **2.0 Configuration of KlasRouter**

### **2.1 Cable Connections**

Prior to beginning, ensure the following cable connections have been properly secured:

1. Power cord is plugged in and KlasRouter is on.
2. Control Port Cable is connected to the PCs serial port.
3. Control Port Cable is connected to the 'Control' port on the front of the KlasRouter.
4. RS-530 serial cable is connected in the Serial WAN port on the back of KlasRouter.

### **2.2 Establishing a HyperTerminal Session**

To configure the KlasRouter, you must establish a HyperTerminal session between a PC and KlasRouter. Follow the instructions in KlasRouter Application Note Q10601 to successfully establish a HyperTerminal session and open the KlasRouter Main Configuration Menu.

### **2.3 Configuring a PPP Client**

1. Enter '2' on the Main Configuration Menu to bring up the Serial WAN Configuration Menu.
2. Enter '1' on the Serial WAN Configuration Menu, as shown below in Figure 1, to configure the PPP Client and bring up the PPP Client Configuration Menu.

```
Serial WAN Configuration Menu
-----
```

```
1) PPP Client
2) PPP Server
3) PPP Advanced Options
4) Cisco HDLC
Press 'x' to Return
```

```
Enter Option>1
```

**Figure 1. Serial WAN Configuration Menu**

3. Enter '1' on the PPP Client Configuration Menu to configure the PPP Client and bring up the Authentication options.
4. Enter the number corresponding to the appropriate type of authentication method (All, PAP, CHAP, MSCHAP or None). PAP is the least secure authentication method because it sends both the user-name and password to the authentication server in clear text. CHAP uses a handshake validation method with the authentication server preventing the actual password from ever being transmitted. MSCHAP is the Microsoft version of CHAP that you can use to authenticate a PC running the Windows 2000 Operating System. Since CHAP is more secure than PAP, it is suggested you use CHAP as your authentication protocol.
5. If you selected one of the authentication methods, you will be directed to enter a user-name and password. If not proceed to Step 8.
6. Enter the authentication user-name.
7. Enter the authentication password.
8. After configuring the authentication parameters, enter the IP address and subnet mask of the Serial Interface, as shown below in Figure 2. Although your network may be different, the IP Address of the Serial WAN port from the example in Figure 2 is 192.168.2.1 with a subnet mask of 24. Enter the IP address and subnet mask using decimal notation by typing '192.168.2.1/24'. Additionally, if the router on the opposite end of the PPP connection is configured to issue IP addresses through DHCP, you may enter 'a' in order to prompt the Serial WAN port to get its IP Address from the opposite router.

```
Enter IP Address/Mask ('q' to quit/'a' for auto)> 192.168.2.1/24
```

**Figure 2. Enter the PPP Client IP Address**

9. The next step allows the user to configure KlasRouter for demand-dial routing. Demand-dial routing is a technique used to save bandwidth when there is no significant traffic across the link. If you enable demand-dial routing, KlasRouter will not raise the Data Terminal Ready (DTR) signal until it has traffic from the Ethernet LAN or VoIP package. DTR is used by most devices as a signal to establish a connection, so if DTR is not raised, the WAN link will stay off and will save bandwidth. The default is to disable demand-dial routing to keep the

## Configuring the KlasRouter Serial WAN Port

PPP connection established the entire time. The default setting is recommended for most scenarios.

10. If the client is configured for demand-dial routing, you will be prompted to enter the idle time in seconds. The idle time is the number of seconds KlasRouter will wait prior to terminating the PPP connection while there is no Ethernet or VoIP traffic.
11. KlasRouter will now execute the process to start the PPP Client and enable the Serial WAN Interface. Press 'Enter' to return to the PPP Client Configuration Menu.
12. Enter '2' on the PPP Client Configuration Menu to start the PPP client and verify the proper settings. (**Note: It is not necessary to start the PPP client again. This step is used to simply verify that the proper settings are in place.**)
13. If there are no errors in the settings, press 'Enter' to return to the PPP Client Configuration Menu once you have verified the proper settings are in place. If there is an error, press 'Enter' to return to the PPP Client Configuration Menu and follow steps 1 – 10 again to correct the error.
14. Press 'x' to return to the Serial WAN Configuration Menu.

*(Note: The PPP connection will not actually be established until the opposite end of the link has also been properly configured.)*

## 2.4 Configuring a PPP Server

1. Enter '2' in the Serial WAN Configuration Menu to begin the PPP Server Configuration Menu.
2. Enter '4' in the PPP Server Configuration Menu, as shown below in Figure 3, to add a PPP Client that will try and connect with the PPP Server. (**Note: You must have at least one PPP Client configured in order to configure the PPP Server.**)

```

PPP Server Configurati on Menu
-----
1) Configure PPP Server
2) Start PPP Server
3) Stop PPP Server
4) Add PPP Client
5) Delete PPP Client
6) Show PPP Clients
7) Show PPP Status
Press 'x' to Return

Enter Opti on>4

```

**Figure 3. PPP Server Configuration Menu**

3. You will be prompted to enter the user-name of a PPP Client. The PPP Server allows you to save any number of user-names for use in a network architecture where there are multiple clients that may try to establish a PPP session with a single PPP Server.

4. You will be prompted to enter the password of the PPP Client.
5. You will see a message indicating that the PPP Client has been added. Press 'Enter' to return to the PPP Server Configuration Menu. At this time, you can configure as many PPP Clients as necessary.
6. Enter '1' in the PPP Server Configuration Menu to configure the PPP Server properties.
7. You will be prompted to enter a hostname. The PPP Server hostname must match the PPP Client user-name. Enter the PPP Server hostname.
8. You will be prompted to enter the Local IP Address and Subnet Mask, which is the IP Address of the PPP Server. For example, to enter an IP Address of 192.168.2.1 with a subnet mask of 24, type in '192.168.2.1/24'.
9. You will be prompted to enter the Remote IP Address, which is the IP Address of the opposite router. Since it is a PPP connection, there is no need to enter the subnet information. For example, to enter an IP Address of 192.168.2.2, type in '192.168.2.2'.
10. You will be prompted to enter the method of encryption for the PPP link. Enter '3' to use CHAP/PAP in order to allow for any type of encryption. The KlasRouter will then execute the process to establish the PPP Server and authenticate the PPP Client, as shown in Figure 4.

```

PPP Server Configuration
-----
No Current Hostname!
Enter Hostname ('q' to quit)>coyote

No Current Local IP!
Enter Local IP Address/Mask ('q' to quit)> 192.168.2.1/24
No Current Remote IP!
Enter Remote IP Address ('q' to quit)>192.168.2.2

Select the Authentication Method to use:

1) PAP
2) CHAP
3) CHAP/PAP

Enter Option ('q' to quit)>3

PPP Configuration
Configuring router as CHAP|PAP server!
Debugging enabled! Debug file is: /var/log/ppp.log
Starting PPP connection to remote peer.....
Serial interface configured for PPP

Press Enter to return to PPP Server Configuration Menu

```

**Figure 4. PPP Server Configuration**

11. Press 'Enter' to return to the PPP Server Configuration Menu.
12. Press 'x' to return to the Serial WAN Configuration Menu.

## 2.5 Configuring Cisco HDLC on KlasRouter

1. To begin configuring Cisco HDLC, enter '4' on the Serial WAN Configuration Menu (*Note: You must disable any PPP Client or PPP Server prior to configuring HDLC*).
2. In the Cisco HDLC Configuration Menu, enter '2' to start HDLC.
3. Enter the Local IP Address, which is the IP Address of the Serial WAN port. For example, to enter an IP Address of 192.168.2.2, type in '192.168.2.2'. No subnet information is required, since there are only two sides to the connection.
4. Enter the Remote IP Address, which is the IP Address of the opposite router. For example, as shown in Figure 5, to enter an IP Address of 192.168.2.1, type in '192.168.2.1'.

```

Ci sco HDLC Confi gurati on Menu
-----
1) Vi ew HDLC Status
2) Start HDLC
3) Stop HDLC
4) Edi t HDLC MTU
Press 'x' to Return

Enter Opti on>2

Enter IP Address ('q' to qui t)>192.168.2.2

Enter Remote IP Address ('q' to qui t)>192.168.2.1

Configuring the serial interface for Ci sco HDLC with IP Address
"192.168.2.2"...
Serial interface configured with IP Address "192.168.2.2"

Press Enter to return to Ci sco HDLC Confi gurati on Menu

```

**Figure 5. Configuring Cisco HDLC**

5. Press 'Enter' to return to the Cisco HDLC Configuration Menu.
6. Press 'x' to return the Serial WAN Configuration Menu.

## MORE INFORMATION

For more information about KlasRouter and other Klas products, visit the following Klas website:

<[www.klasonline.com](http://www.klasonline.com)>

Copyright © 2005 Klas Ltd. All rights reserved. All company and brand names are trademarks or registered trademarks of their respective owners.

DISCLAIMER OF WARRANTY: THE DOCUMENT IS PROVIDED AS IS, WITHOUT WARRANTY OF ANY KIND. TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, WITH RESPECT TO THE DOCUMENT AND / OR ANY ASSOCIATED ON-LINE INFORMATION, KLAS DISCLAIMS ALL WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDED BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND NONINFRINGEMENT.