Application Note

Model 2635 PPP Bridged

Application Overview

This application note describes step-by-step how to configure the Model 2635 for a PPP Bridged application environment. The following steps assume that your 2635 has arrived with the factory default configuration.

What you will need

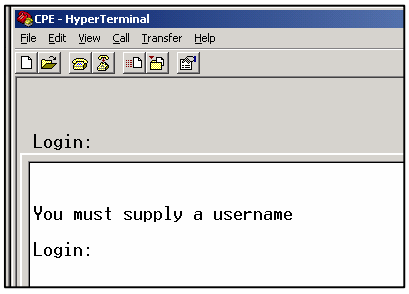
- Model 2635 IPLink Router
- Ethernet cable/serial cable (included with the 2635 router)
- DB9-RJ45 adapter (included with the 2635 router)
- PC computer with RS-232 serial port, Ethernet port, and a terminal emulation program such as HyperTerminal.
- V.35 (DB-25) tail circuit cable

Initial power-up

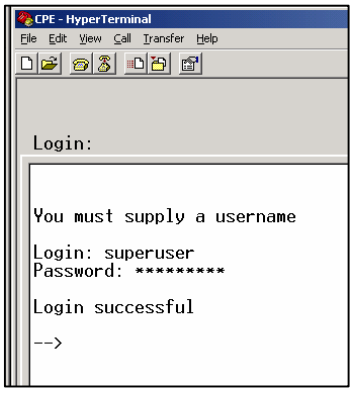
1. Connect the power cord first to the 2635 router, then to the appropriate AC power outlet.
2. Verify that the green *Power* LED is lit.

Modifying the 2635 configuration for accessing the GUI management pages

3. Using the DB9-RJ45 adapter and the Ethernet/serial cable included with your 2635, connect one end of the cable to the adapter. Then connect the adapter to the PC's RS-232 serial port.
4. Connect the other end of the cable to the Console Port located on the front panel of the 2635 router.
5. Bring up HyperTerminal or your favorite terminal emulation program on your PC. Configure it for the appropriate serial "Com:" port and set the Port Properties as follows: *9600 bps, 8 data bits, 1 stop bit, and no flow control.*
6. Press the <enter> key and you should see a screen similar to this image.



7. Enter the username, “superuser”, then the password which is also “superuser” as shown below.



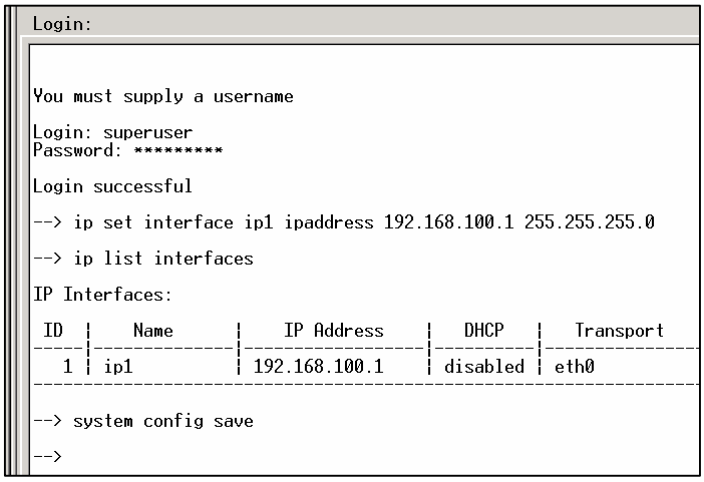
8. At this point, change the IP address of the 2635 to be on the same subnet as your PC. The 2635 router’s factory default IP address is 192.168.200.1/24. In this Application Note, the IP subnet for your PC is assigned as 192.168.100.0/24. The PC’s IP address is 192.168.100.5/24. Now to change the 2635 router’s IP address to 192.168.100.1/24.

   In the following screen from the console port, numerous commands have been executed. The action of each command is first explained.

   --> ip set interface ip1 ipaddress 192.168.100.1 255.255.255.0 <enter>
   Changes the IP address to 192.168.100.1/24. This IP address is bound to the Ethernet port interface which is named “*ip1*”.

   --> ip list interfaces <enter>
   Lists all active interfaces. Notice the IP address for the Interface “*ip1*” shows the change executed in the previous command. The Ethernet port found on the rear panel of the 2635 router is called “*eth0*”.

   --> system config save <enter>
   Saves the recent configuration changes to nonvolative memory. If the 2635 router were powered-down, the new IP address would not be lost.

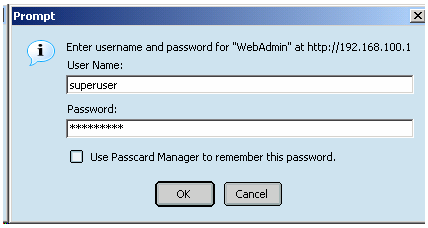


9. You can now access the all the 2635 web management pages via a standard browser. Commonly used browsers are Netscape or perhaps Internet Explorer.

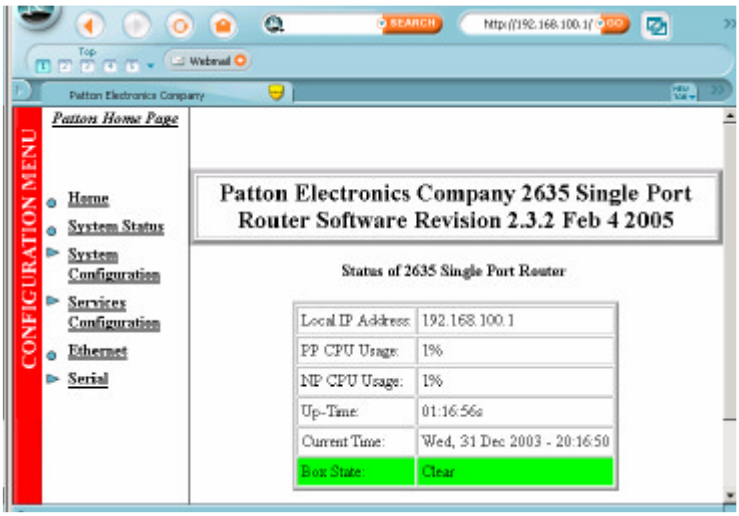
Accessing the management pages through your browser

10. Disconnect the cable from the console port on the 2635 and the DB9-RJ45 adapter. Reconnect it between the Ethernet port of your PC and the 2635's Ethernet port. The Ethernet port of the 2635 router is located on the rear panel of the 2635.
11. Determining whether your PC has a valid Ethernet link to the 2635 is easily done by monitoring the "Ethernet Link" LED on the front panel. If lit, the connection is valid. If the LED is not lit, press the Crossover MDI-X switch on the rear panel. You should now see the "Ethernet Link" LED lit on the front panel.

12. After bringing up the browser on your PC, enter the IP address of the 2635—192.168.100.1 in this example. The login screen should pop up. Log in with the same username and password previously used—*superuser*.

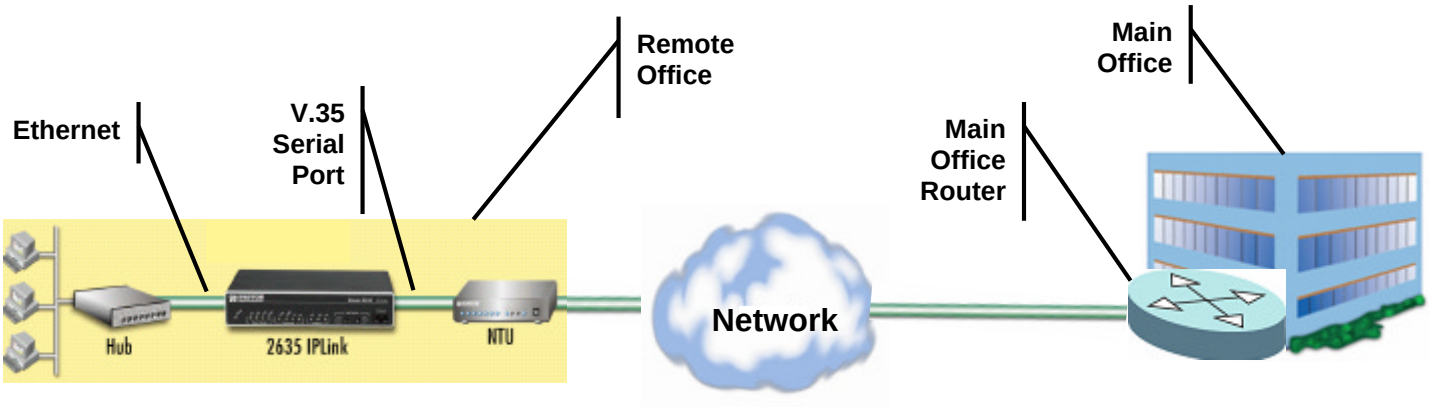


13. Assuming all connections have been correctly made, the proper IP address has been entered in the browser, and the correct User Name and Password were entered, you will see the Home web page of the 2635.



Bridged Application Description

The scenario in the diagram below is typical for the PPP Bridged application. A 2635 IPLink router is located in a remote office. The Ethernet LAN connects to the 2635 router's Ethernet port. The V.35 serial port connects to an NTU for a long-haul connection which terminates at the main office's router. The PPP Bridged link is between the 2635 and the main office's router. The remainder of this application note describes the configuration of the PPP bridged link in the 2635. You will also need to configure the other end of the PPP bridged link in the main office's router. The Main Office Router may be a third party router, such as Cisco, but it may also be a second 2635 IPLink router.



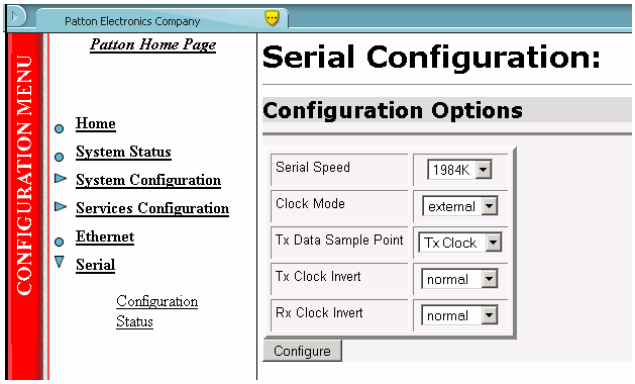
Configuring V.35 Serial Port

In this example, the 2635 V.35 serial port will be configured at 1984kbps that connects to an NTU. Since the NTU and the 2635's V.35 port are both DCE devices, you must use a tail-circuit cable in connecting them together.

14. This diagram shows a properly wired tail circuit cable.

DB25 Male (to 2635) Signal Name	2635 Signal Direction	NTU Signal Direction	Connector (to NTU) Signal Name
TD	←	←	**RD**
RD	→	→	**TD**
RTS	←	←	**CD**
CD	→	→	**RTS**
DTR	←	←	**DSR**
DSR	→	→	**DTR**
RC	→	→	**XTC**
XTC	←	←	**RC**
TC	No connection	No connection	**TC**
SG	--	--	**SG**

15. The remote office should use the Main Office router as the central timing source. To do this, the transmit and receive clocks on the 2635's V.35 port are taken from the NTU. In the 2635's Configuration Menu, click on "Serial", then "Configuration." The values for each synchronization parameter for the serial port is shown in the following image.



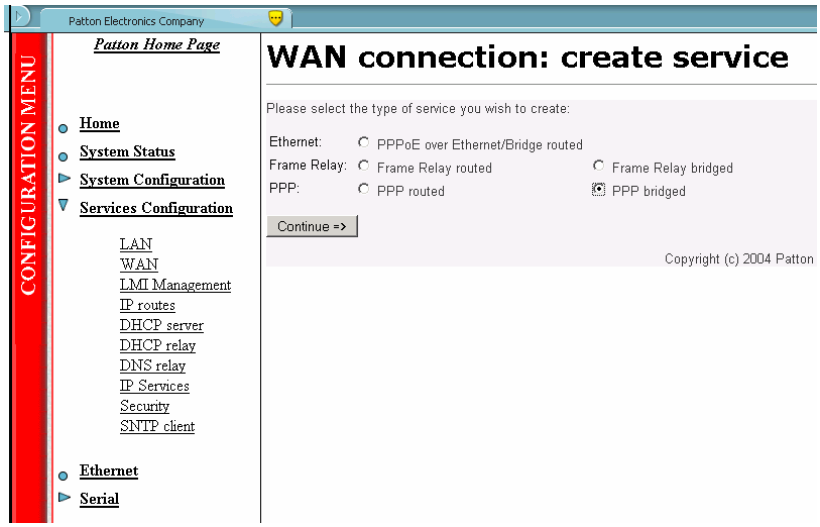
Serial Speed—1984K(bps)
Clock Mode—external
Tx Data Sample Point—Tx Clock (for external Clock Mode, this parameter has no effect)
Tx Clock Invert—normal
Rx Clock Invert—normal

Click on the "Configure" button to activate these changes and to save them in volatile memory (RAM).

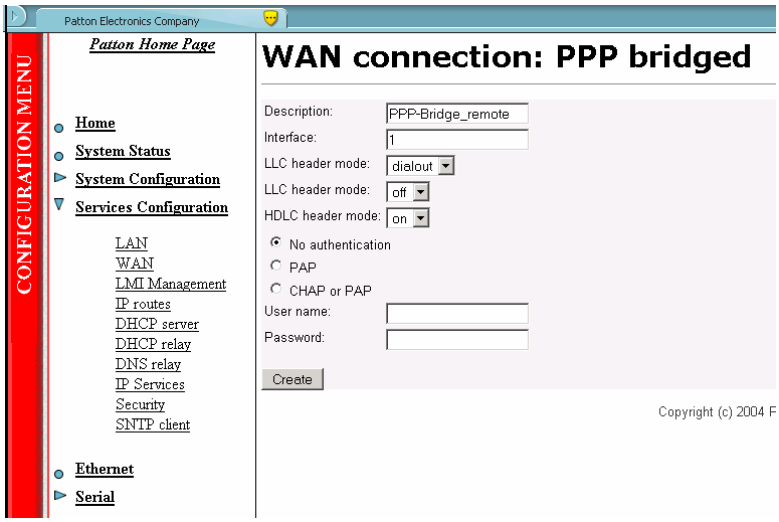
The Serial port is now properly configured.

Configuring the WAN Service for PPP Bridged Service

16. Click on *Services Configuration* → *WAN* → *Create a new service…* to create a WAN service. Select the "PPP Bridged" option as shown below, then click on the *Continue*=> button.



17. You have reached the configuration page for PPP Bridged.

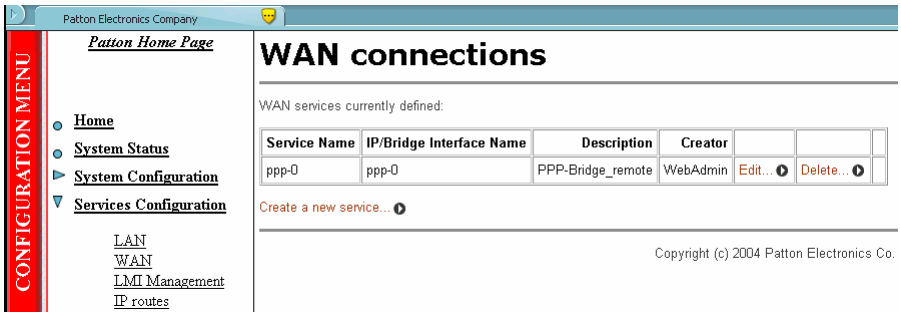


Configure the PPP Bridged web page as follows:

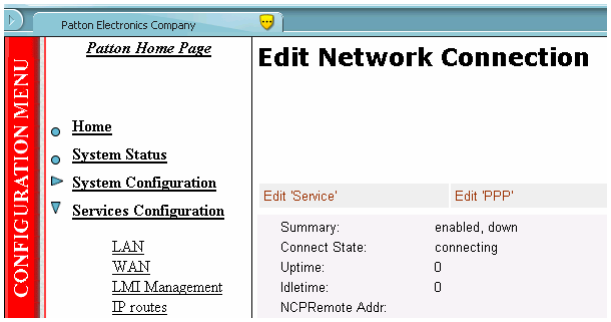
Description—PPP-Bridge_remote
Interface—1
LLC Header Mode—dialout
LLC Header Mode—off
HDLC Header Mode—On
Authentication—Select "No authentication" for the initial configuration.

Authentication can be configured at a later time once the PPP bridge link is up and running. Start with a simple configuration, then later add complexity for faster success.

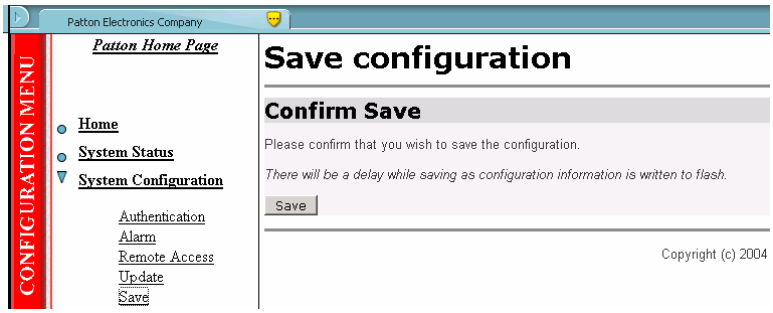
Click on the *Create* button and you will see this web page on the browser.



18. Click on the *Edit…* hyperlink, then the *Edit 'PPP'* hyperlink. By scrolling down the web page, you see whether the PPP link has successfully established a valid link.



19. In the *Configuration Menu* click on *System Configuration*, then click on *Save*. The new configuration is saved in non-volatile memory. In the main window pane, click on the "Save" button to complete the process.

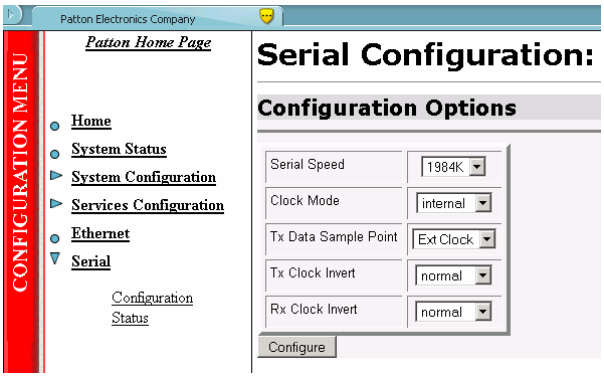


20. This completes the PPP Bridged configuration of the 2635 router for the remote office. Verify that all cables are properly connected, both Ethernet and the serial cables. Once you have completed the PPP Bridged configuration on the Main Office Router's proper port, you should see the PPP link come up. Test the end-to-end connectivity of the link by using the *ping* command, either from the 2635's → *System Configuration* → *Tools* configuration page or from a PC connected to the 2635 via the Ethernet LAN.

Configuring a 2635 router in the Main Office

In many applications the Main Office may use a second 2635 router as the Main Office Router. In this case, the configuration of the Main Office's 2635 differs only slightly from the one at the Remote Office—the one you have just configured.

21. Configure an IP address which is in the same subnet as the remote 2635.
22. The WAN Services configuration for the PPP Bridged link is identical to the Remote Office's 2635 router.
23. The only difference in configuration is for the V.35 serial port's synchronization timing. At the Main Office, the 2635 router provides synchronization for the end-to-end PPP Bridged link. Do this by following the configuration shown in the next management web page image.



24. This completes the configuration for PPP Bridged WAN service operation.

Contacting Patton

If you have any questions please feel free to contact Patton's Technical Support.

Patton support headquarters in the USA

- Online support: http://www.patton.com
- E-mail support: e-mail sent to support@patton.com will be answered within 1 business day
- PSTN Telephone support: standard telephone support is available five days a week—from 8:00 am to 5:00 pm EST (1300 to 2200 UTC/GMT)—by calling +1-301-975-1007
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Patton Inalp support for Europe, Middle East, and Africa (EMEA)

- Online support: http://www.inalp.com
- E-mail support: e-mail sent to support@inalp.com will be answered within 1 business day
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