



Guide For Configuring a DX Router For Serial Access To A Linux Box

Featured Brands



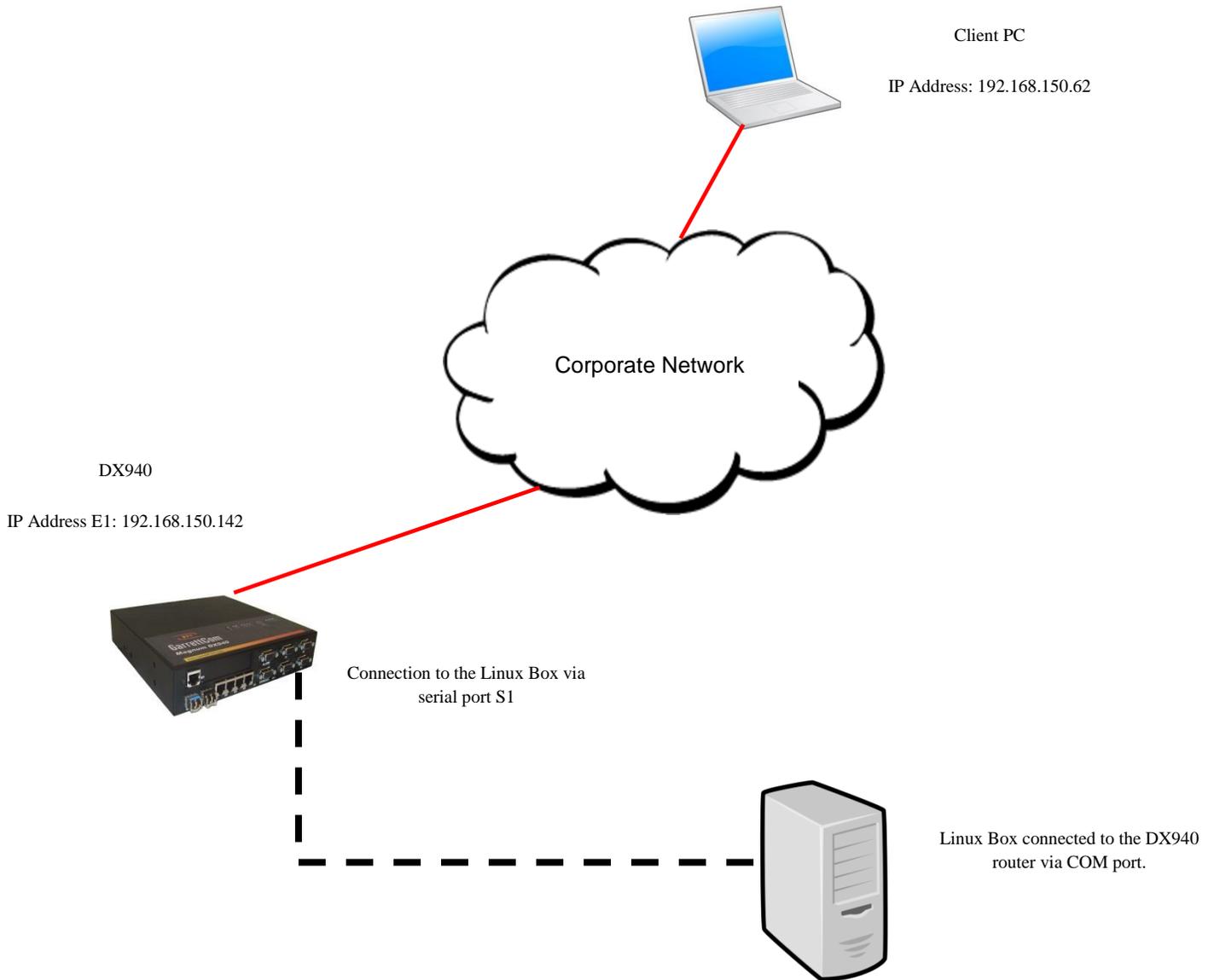
Contents

Overview.....	3
The Setup.....	4
Configuring The DX Router For Serial Access To The Linux Box	5
Configuring The Linux Server For Access Via The Serial/COM Port.....	8

Overview

The purpose of this guide is to help the users to configure a remote serial access to a Linux box. It involves configuration steps that need to be taken on a DX router, as well as the Linux server, to access the server via the serial port. As there are various Linux flavors and distributions available to the users, so the location of the required directories and files may be slightly different but in general it is mostly the same as the all Linux releases follow the same directory structure.

The Setup



Configuring the DX Router For Serial Access To The Linux Box

Click on Serial>Ports>Profile and create a new one. We made profile “Serial 1” with speed: 38400, data bits:8 parity: none stop bit:1

The screenshot shows the web interface of a Magnum DX900 Industrial Router. The browser address bar shows the URL https://192.168.150.142/. The interface is titled "Magnum DX900 Industrial Router" and "GarrettCom". A left-hand navigation menu includes options like "Virtual Front Panel", "Administration", "Events", "Ethernet", "Serial", "Ports", "WAN", "PPP", "Routing", "QoS", "Security", and "Wizards".

The main content area is titled "Serial : Ports : Profiles" and contains an "Add New Profile" section. Below this is a table for configuring a new profile:

Profile Name	Interface Standard	Speed	Data Bits	Stop Bits	Parity	Ignore DSS	Flow Control	Pkt Char	Pkt Time (msecs)	Max Pkt Size (bytes)	T/A Time (msecs)
New Profile	RS232	9600	8	1	None	No	None	None	200	1024	0

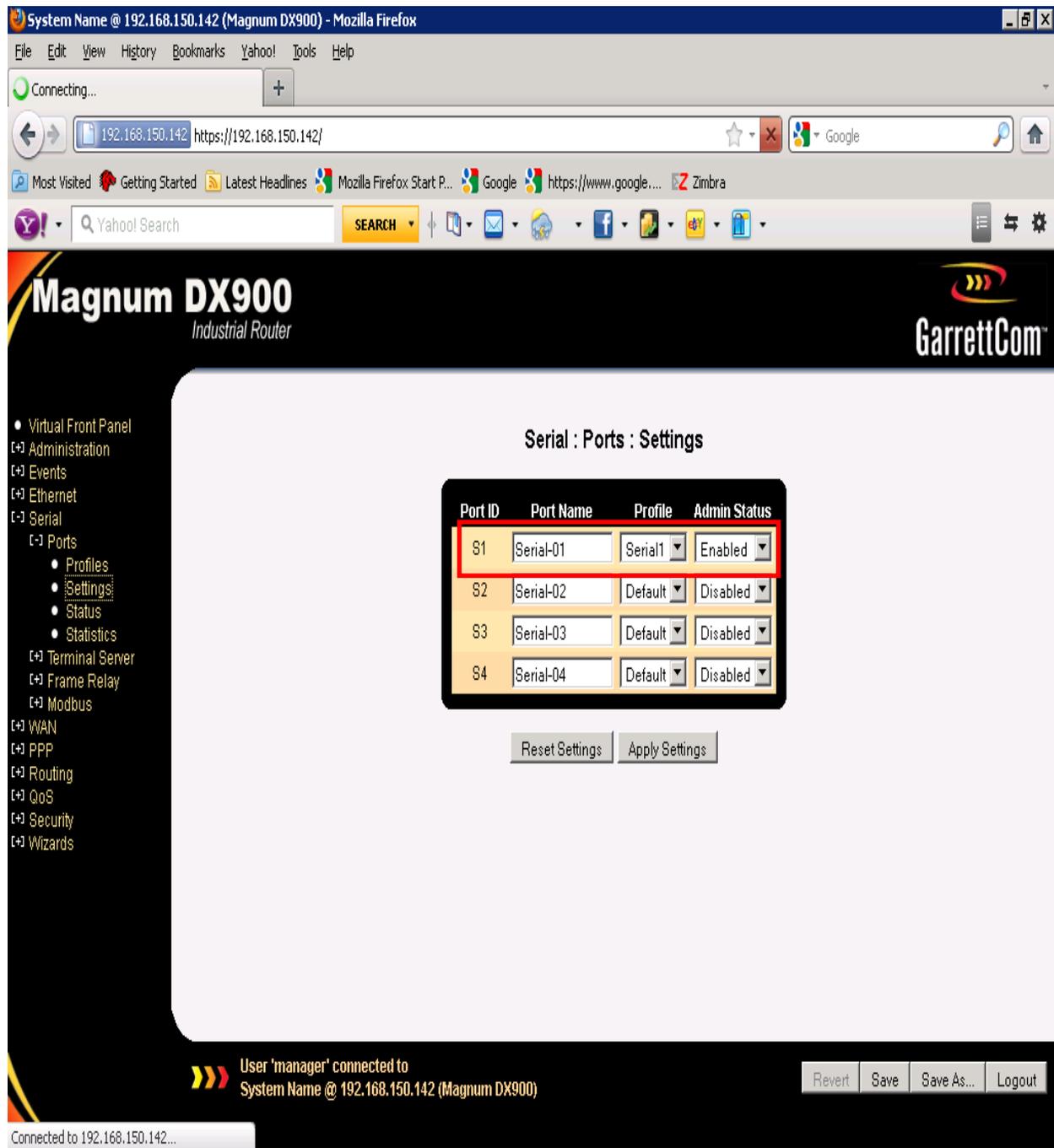
Below the table are "Reset Settings" and "Apply Settings" buttons. Underneath is an "Existing Profiles" section with a table:

Profile Name	Interface Standard	Speed	Data Bits	Stop Bits	Parity	Ignore DSS	Flow Control	Pkt Char	Pkt Time (msecs)	Max Pkt Size (bytes)	T/A Time (msecs)	Delete
Default	RS232	9600	8	1	None	No	None	None	200	1024	0	<input type="checkbox"/>
Serial1	RS232	38400	8	1	None	Yes	None	None	200	1024	0	<input type="checkbox"/>

The "Serial1" row is highlighted with a red border. At the bottom of the interface, a status bar shows "User 'manager' connected to System Name @ 192.168.150.142 (Magnum DX900)" and buttons for "Revert", "Save", "Save As...", and "Logout".

Continue on next page.

Click on “Settings” under “Profiles” and select the profile “Serial1” for serial port S1.



Magnum DX900
Industrial Router

GarrettCom

Serial : Ports : Settings

Port ID	Port Name	Profile	Admin Status
S1	Serial-01	Serial1	Enabled
S2	Serial-02	Default	Disabled
S3	Serial-03	Default	Disabled
S4	Serial-04	Default	Disabled

Reset Settings Apply Settings

User 'manager' connected to System Name @ 192.168.150.142 (Magnum DX900)

Revert Save Save As... Logout

Connected to 192.168.150.142...

Continue on to the next page

Click on Terminal Server>Channel Settings. Use the same settings as shown except, the local ip will be the DX40's ip address.

The screenshot shows the web interface for the Magnum DX900 Industrial Router. The browser address bar shows the URL https://192.168.150.142/. The main content area is titled "Serial : Terminal Server : Channel Settings".

Add New Channel

Port ID	Call Direction	Session Type	Priority (DiffServ)	Local IP	Local TCP	Remote Name or IP	Remote TCP	Maximum Connections	Retry Time (secs)
S1	In	Raw	Default	Any	0		0	5	30

Buttons: Reset Settings, Apply Settings

Existing Channels

Port ID	Call Direction	Session Type	Priority (DiffServ)	Local IP	Local TCP	Remote Name or IP	Remote TCP	Maximum Connections	Retry Time (secs)	Delete
S1	In	Raw	Default	192.168.150.142	10201		0	5	30	<input type="checkbox"/>
S2	In	Raw	Default	Any	10202		0	5	30	<input type="checkbox"/>
S3	In	Raw	Default	Any	10203		0	5	30	<input type="checkbox"/>
S4	In	Raw	Default	Any	10204		0	5	30	<input type="checkbox"/>

Buttons: Revert, Save, Save As..., Logout

Status: User 'manager' connected to System Name @ 192.168.150.142 (Magnum DX900)

That is all we have to do on the DX router. Make sure that Unix Server 's console port is connected to the RS232 (Serial) interface of the DX40 router with a NULL Modem cable.

Next we will discuss, how to setup the Linux Server's console port for access through the DX router.

Configuring The Linux Server For Access Via The Serial/COM Port

For testing the Unix/Linux access, we used Ubuntu Linux server running 10.* version. On the Linux box, first determine the console port on the system through the following command:

```
# dmesg | grep tty
```

It should give the following output

```
[0.000000] console [tty0] enabled.
```

Then create a new file in /etc/init/ttyS0.conf and add the following lines

```
# ttyS0 - getty
```

```
#
```

```
# This service maintains a getty on ttyS0 from the point the system is
```

```
# started until it is shut down again.
```

```
start on stopped rc RUNLEVEL=[2345]
```

```
stop on runlevel [!2345]
```

```
respawn
```

```
exec /sbin/getty -L 38400 ttyS0 vt102
```

***Please note that speed in the last line here “38400” should match the speed defined under Serial>Profiles page.

```
#sudo start tty0
```

Then go to /etc/default/grub and add these lines

```
GRUB_CMDLINE_LINUX="console=tty0 console=ttyS0,115200n8"
```

```
GRUB_TERMINAL=serial
```

```
GRUB_SERIAL_COMMAND="serial --speed=38400 --unit=0 --word=8 --parity=no --stop=1"
```

Save the file after making the above changes and update grub

```
# sudo update-grub
```

Once the above is done, the setup is complete.

To test the connectivity, just open any telnet client and point it to the DX40 router ip address and use the port number defined as “Local TCP” under “Terminal Server>Channel Settings”.

To check the configuration, go to Serial>Ports>Status

System Name @ 192.168.150.142 (Magnum DX900) - Mozilla Firefox

Magnum DX900 Industrial Router

GarrettCom

Serial : Ports : Status

Port ID	DCD	CTS	DSR	Oper State
S1	Off	On	Off	Up
S2	Off	Off	Off	Disabled
S3	Off	Off	Off	Disabled
S4	Off	Off	Off	Disabled

Refresh

User 'manager' connected to System Name @ 192.168.150.142 (Magnum DX900)

Revert Save Save As... Logout

Connected to 192.168.150.142...

Serial>Ports>Statistics

Magnum DX900 Industrial Router

Serial : Ports : Statistics

Port ID	Tx Chars	Rx Chars	Breaks	Parity Errors	Framing Errors	Overruns
S1	161	2338	0	0	248	0
S2	0	0	0	0	0	0
S3	0	0	0	0	0	0
S4	0	0	0	0	0	0

Refresh Clear Counters

User 'manager' connected to System Name @ 192.168.150.142 (Magnum DX900)

To check current connections Serial>Terminal Server>Channel Status

Magnum DX900 Industrial Router

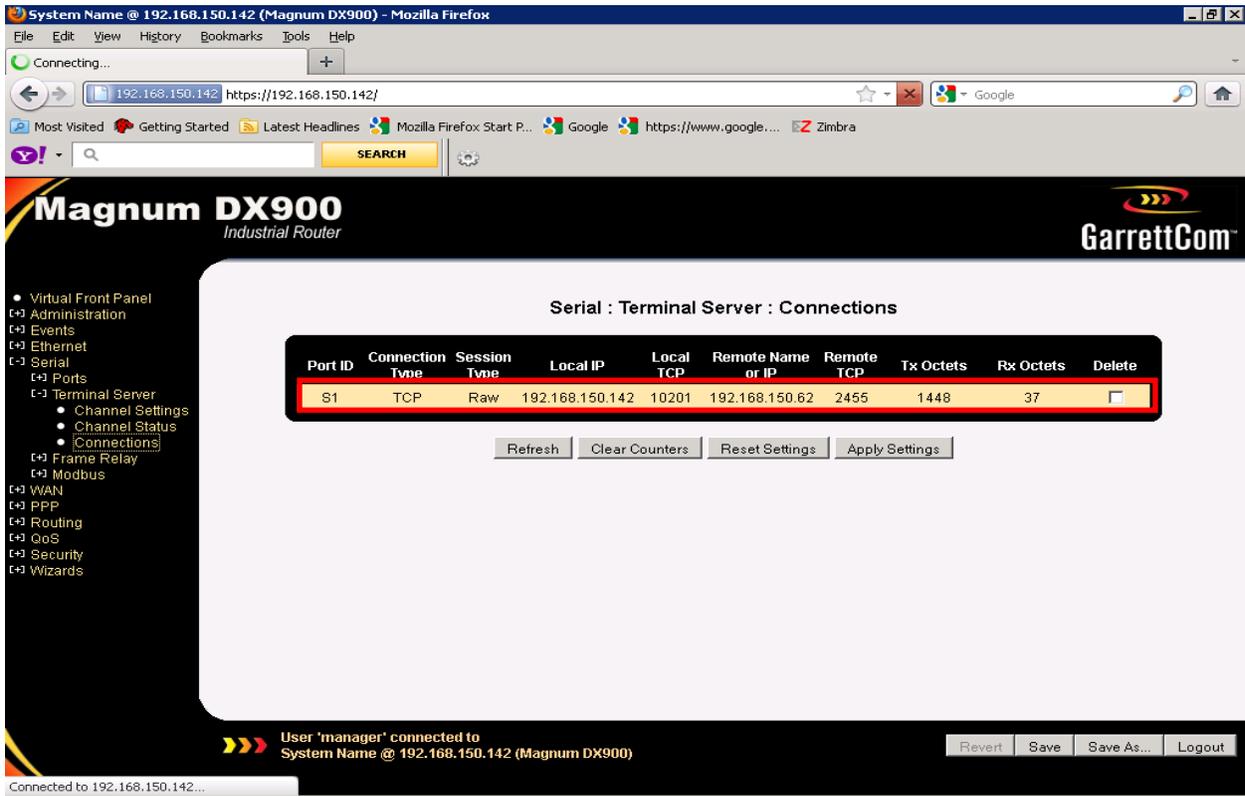
Serial : Terminal Server : Channel Status

Port ID	Call Direction	Local IP	Local TCP	Remote Name or IP	Remote TCP	State	Connections
S1	In	192.168.150.142	10201	---	---	Listening	1
S2	In	Any	10202	---	---	Inactive	0
S3	In	Any	10203	---	---	Inactive	0
S4	In	Any	10204	---	---	Inactive	0

Refresh

User 'manager' connected to System Name @ 192.168.150.142 (Magnum DX900)

Check connections.



System Name @ 192.168.150.142 (Magnum DX900) - Mozilla Firefox

Connecting... <https://192.168.150.142/>

Magnum DX900
Industrial Router

GarrettCom

- Virtual Front Panel
 - Administration
 - Events
 - Ethernet
 - Serial
 - Ports
 - Terminal Server
 - Channel Settings
 - Channel Status
 - Connections**
 - Frame Relay
 - Modbus
 - WAN
 - PPPoE
 - Routing
 - QoS
 - Security
 - Wizards

Serial : Terminal Server : Connections

Port ID	Connection Type	Session Type	Local IP	Local TCP	Remote Name or IP	Remote TCP	Tx Octets	Rx Octets	Delete
S1	TCP	Raw	192.168.150.142	10201	192.168.150.62	2455	1448	37	<input type="checkbox"/>

Refresh Clear Counters Reset Settings Apply Settings

User "manager" connected to System Name @ 192.168.150.142 (Magnum DX900)

Revert Save Save As... Logout

Connected to 192.168.150.142...