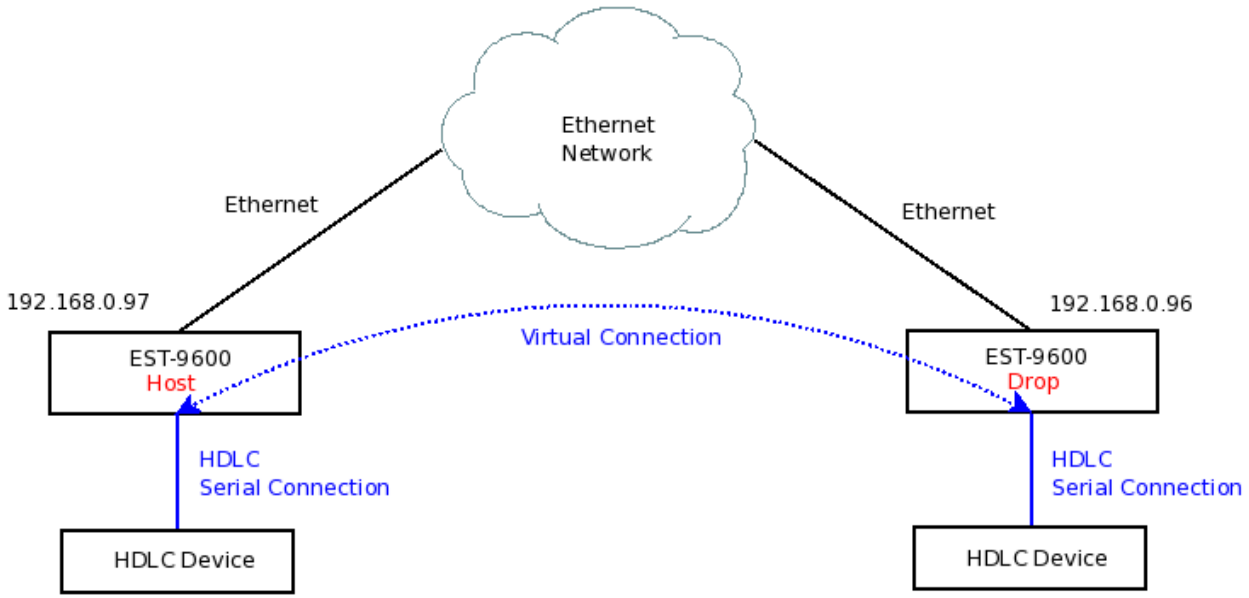
EST-9600 Quick Setup Guide

2/14/2022

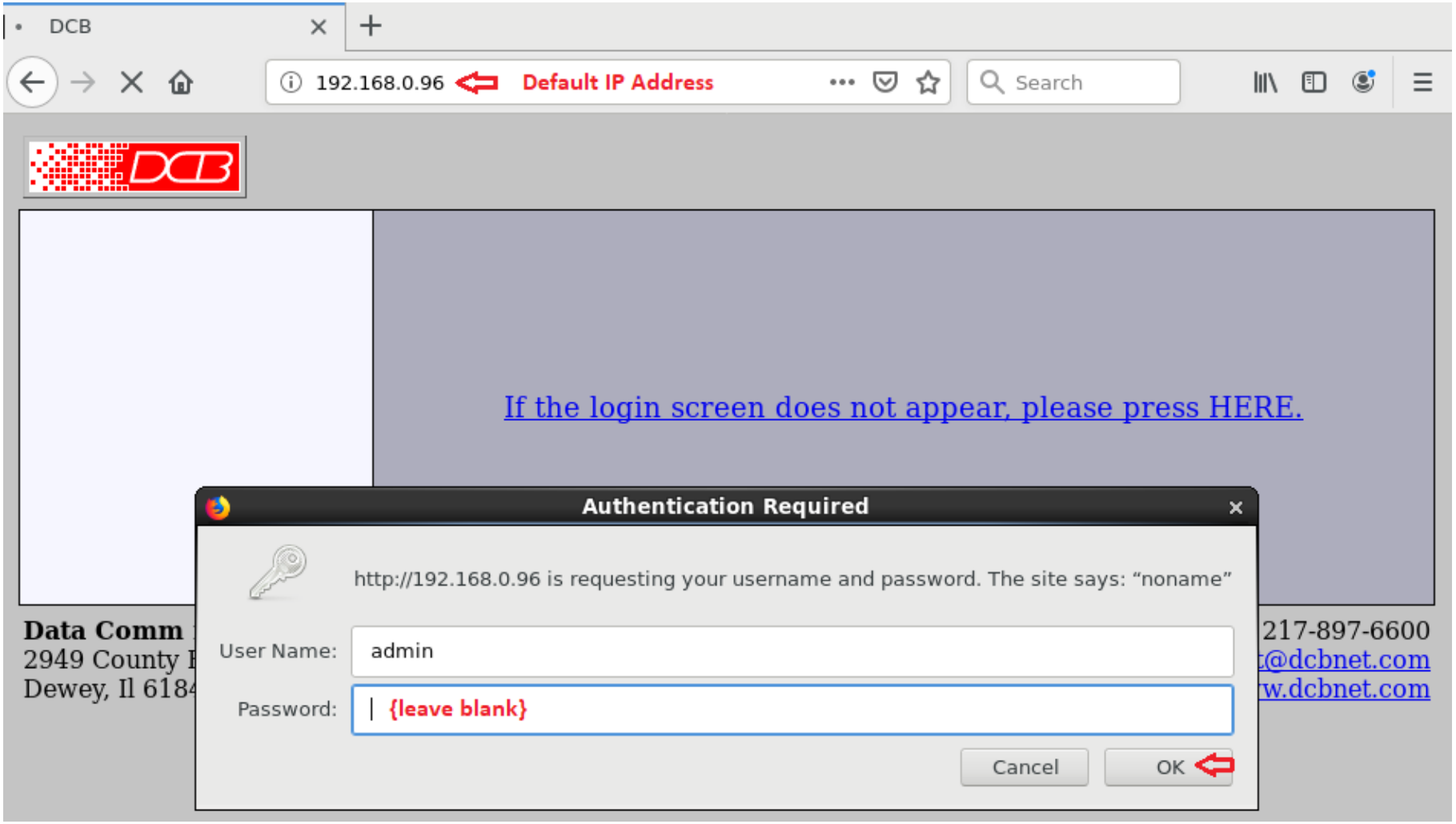
This guide will walk through a basic EST-9600 configuration. The example assumes a flat network with no routers between the two EST-9600 devices. We recommend setting up and testing the EST-9600 in this environment prior to deploying on a live network. You can substitute the IP addressing with addresses convenient for your network, but we recommend starting with both EST-9600s on the same subnet. The interface between the EST-9600 and the HDLC device is the most difficult part of the deployment. This simple bench setup provides a stable test environment for designing and troubleshooting the HDLC connection.

EST-9600 Example Configuration



Web Configuration

All configuration can be performed via the EST-9600 web interface. The default IP address is 192.168.0.96. You may need to temporarily change the IP address of your PC to be in the same subnet. In other words, your PC will need an address on 192.168.0.x subnet. For example, 192.168.0.100 with a subnet mask 255.255.255.0.



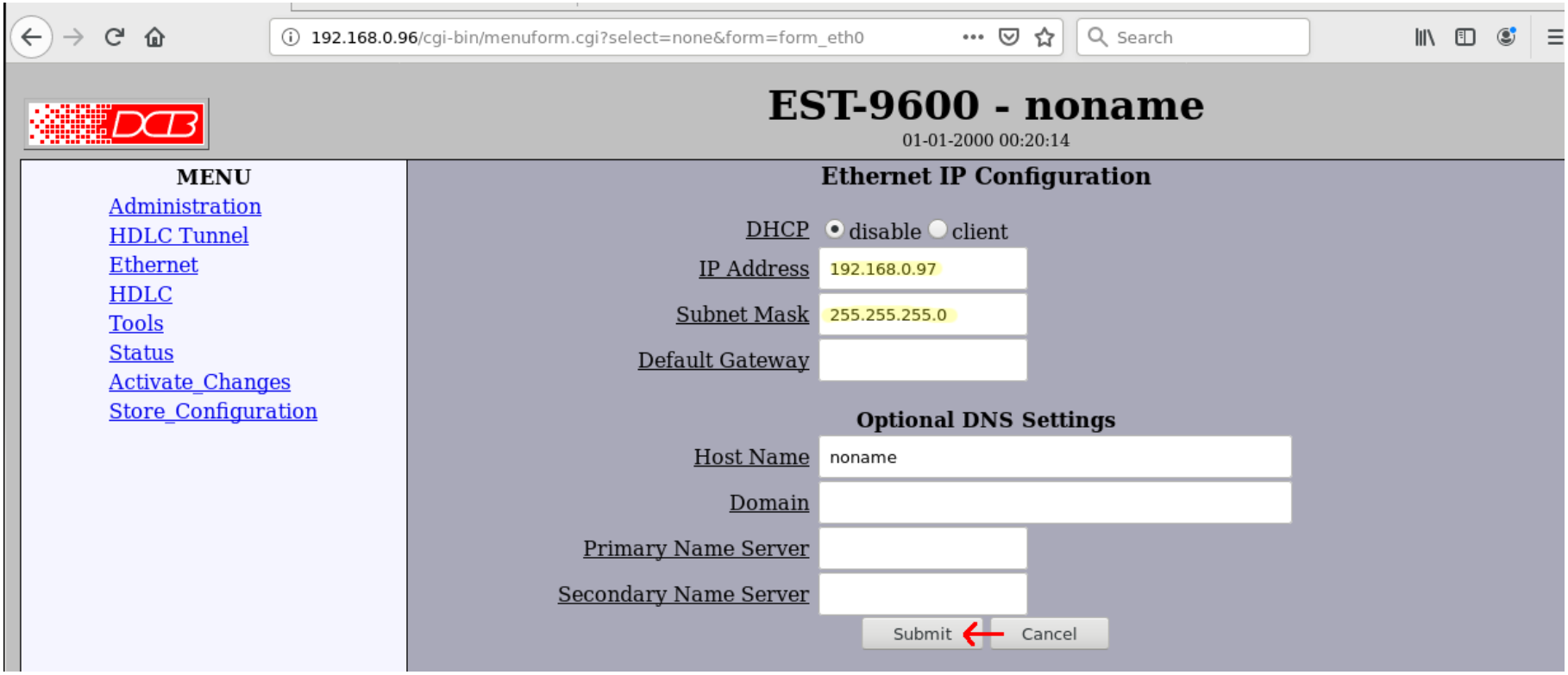
You will be prompted for a User Name and Password. The default user name is **admin**. Leave the password field blank.

If log-in is successful, should be looking at the unit's main web screen. (see below)

Setting the IP address.

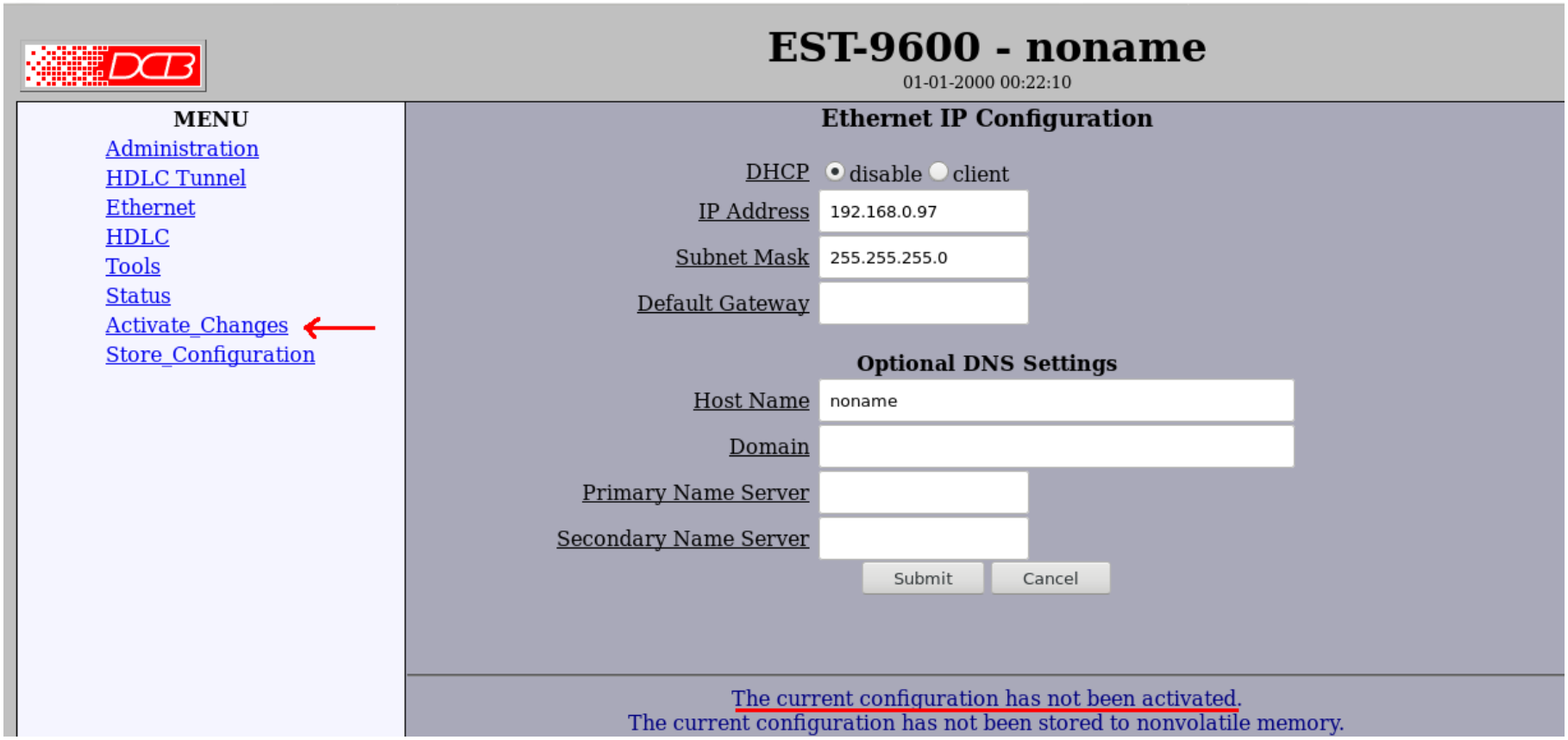
To modify the IP address, navigate to the “Ethernet” page.

Enter the IP configuration for the unit. For our example, we will use 192.168.0.97 with a subnet mask of 255.255.255.0.

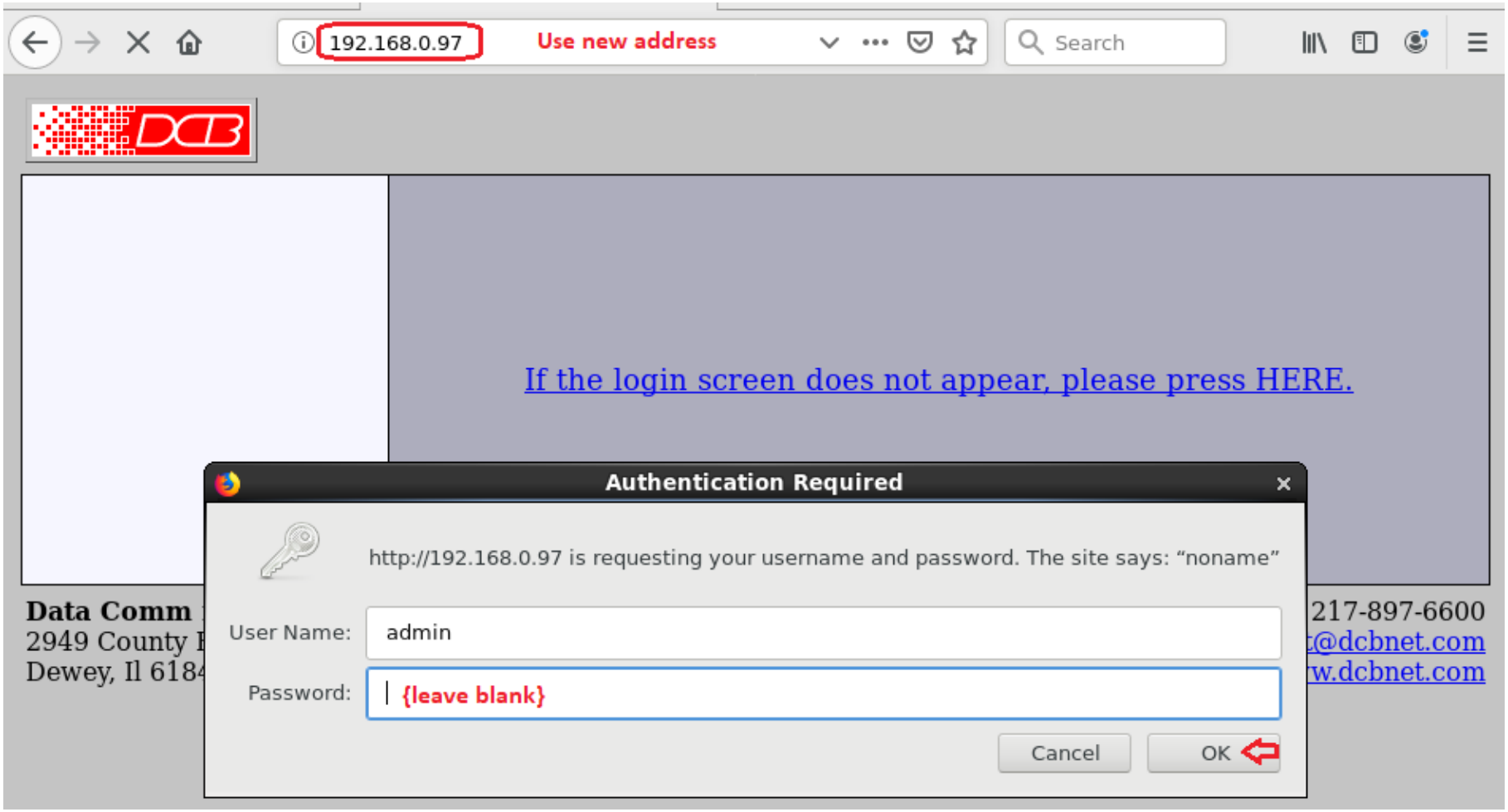


After making any configuration changes to a screen, always press the **submit** button. This causes the web browser to send the changes to the unit.

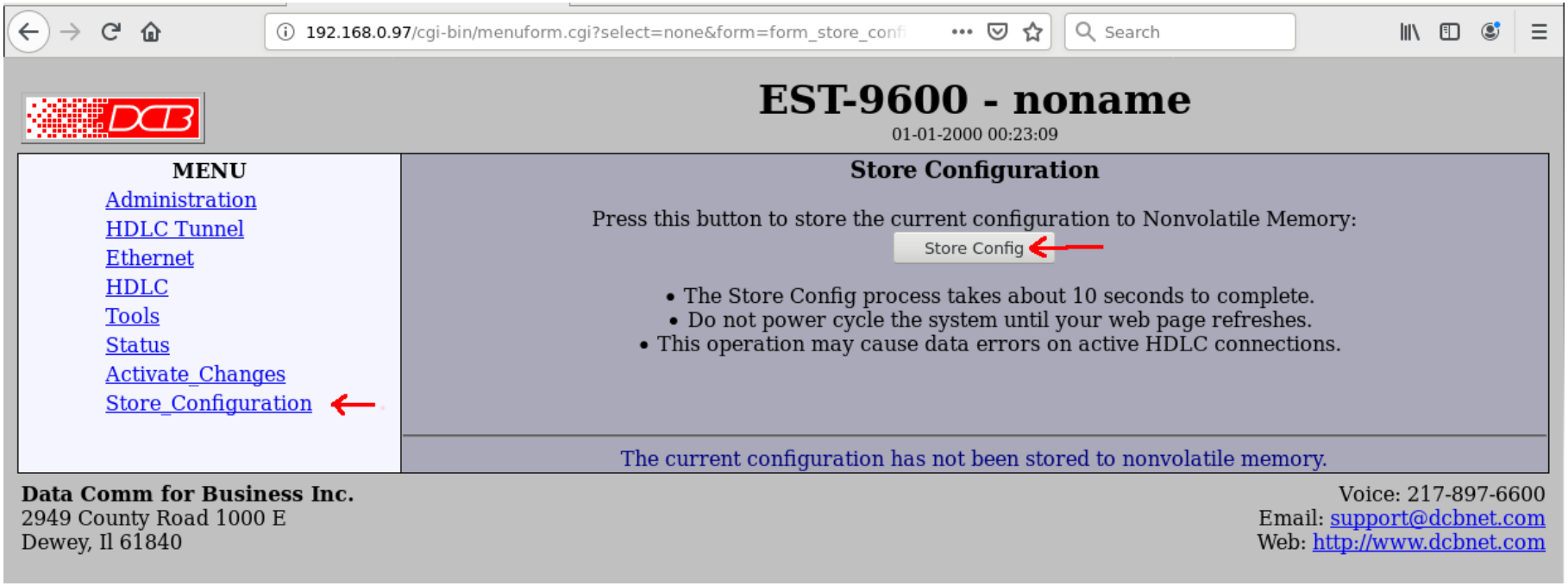
Changes do not take effect until you activate them. We will now activate the changes so the unit will start using the new IP address.



After you activate changes, the unit will start using it's new IP address. Adjust the URL in your web browser to point at the new address. In our example this is "http://192.168.0.97". It will be necessary to log into the unit again. Keep in mind if the new IP is on a different subnet, you will need to insure your PC also has an IP on that same subnet.



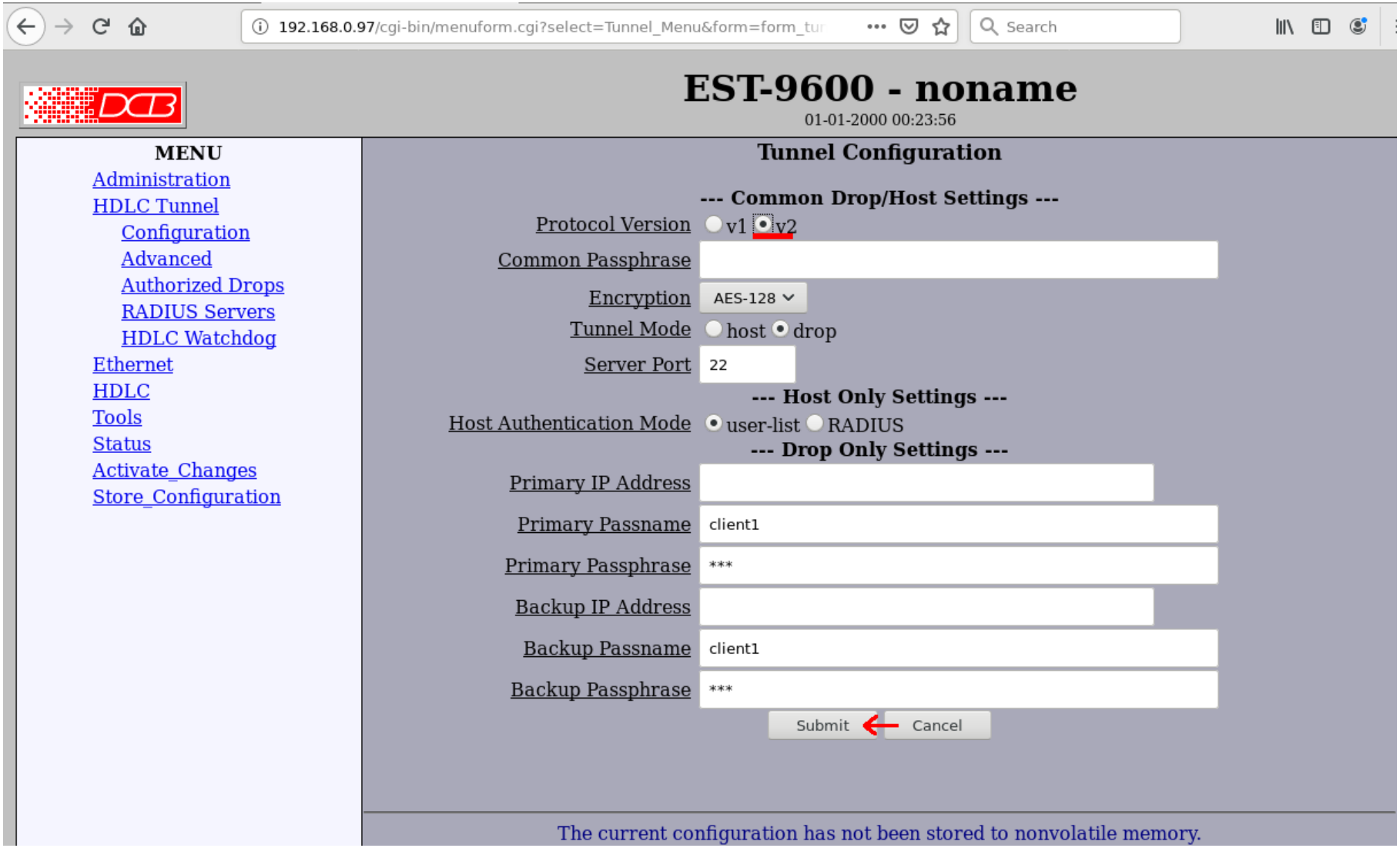
Configuration changes are not permanently saved until you perform a **Store Configuration** operation.



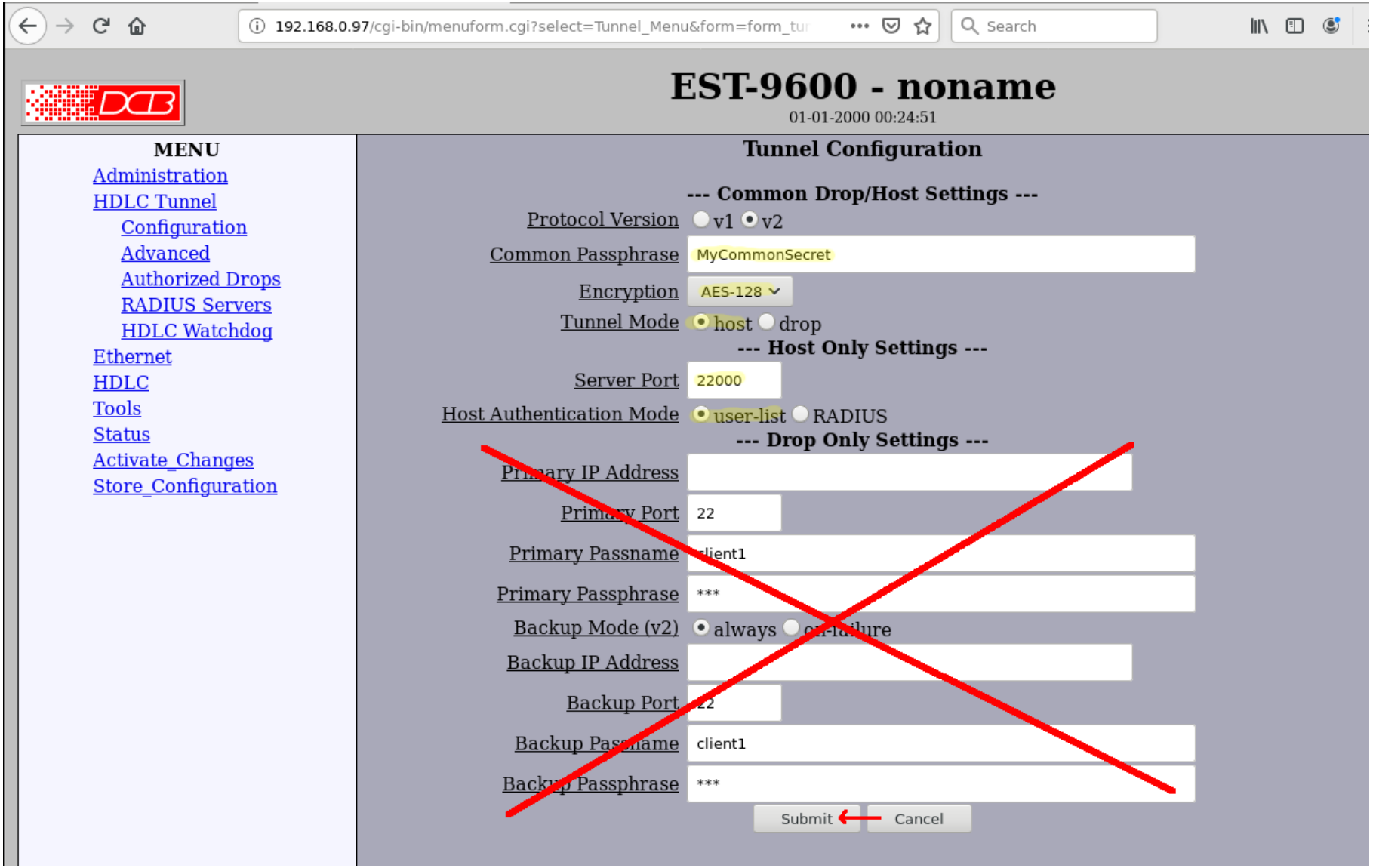
At this point, you can repeat the above operations to configure the IP address for the second EST-9600. In our example, we will be using the default IP address, 192.168.0.96 for the second unit, so it is not necessary.

Host EST-9600 Configuration

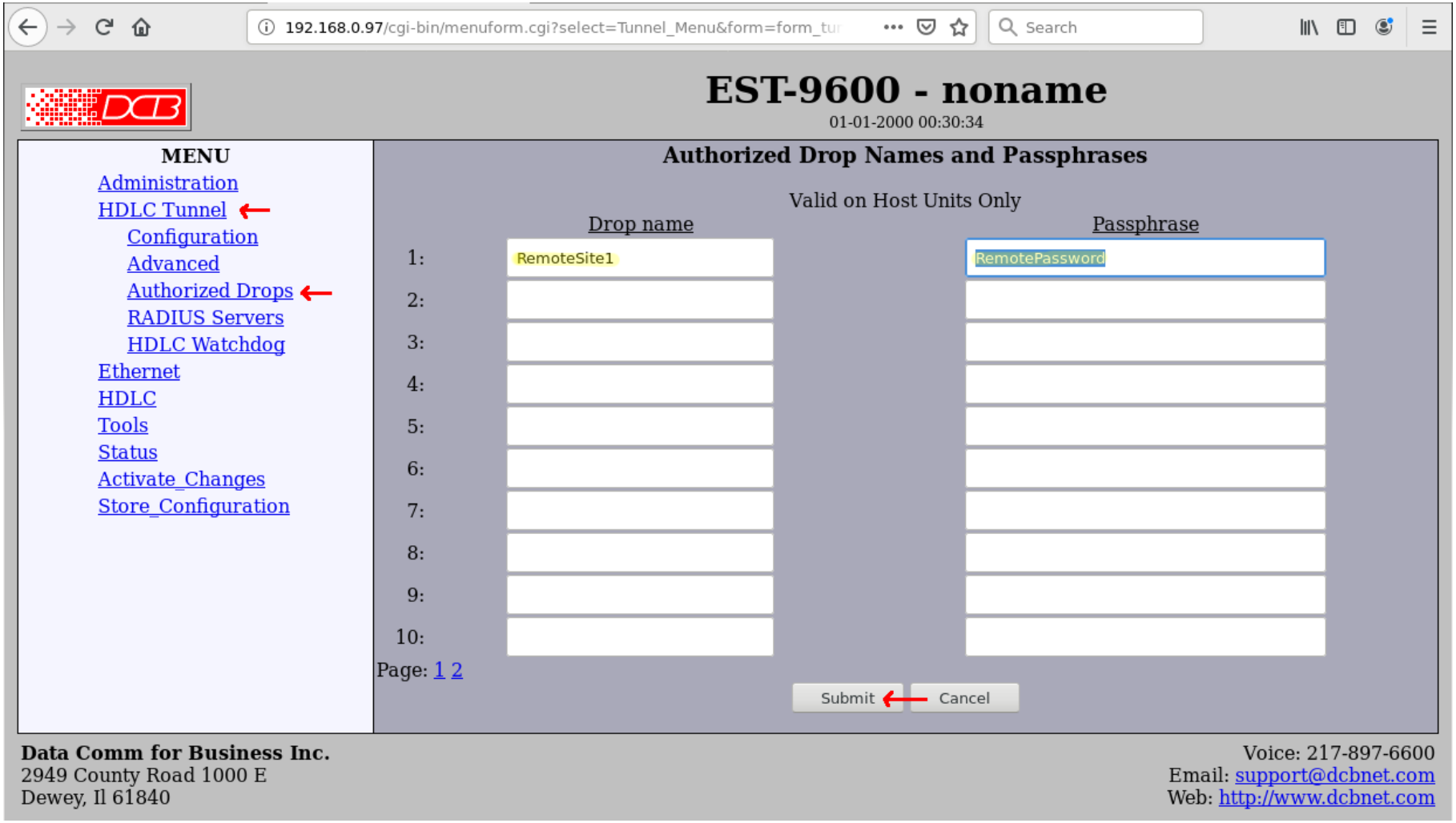
For new applications, we recommending operating the EST units in version 2 (V2) mode. This mode is better suited to operation through firewall routers and over the Internet. When switching modes, select the protocol and then press Submit. Do not make any other changes on the page. Changing the mode also changes the options on the screen.



We will now configure the unit operate as the **host** EST-9600. The EST devices use a client/server model, and the unit functioning as the host is the server side. It is the side that listens for connections.



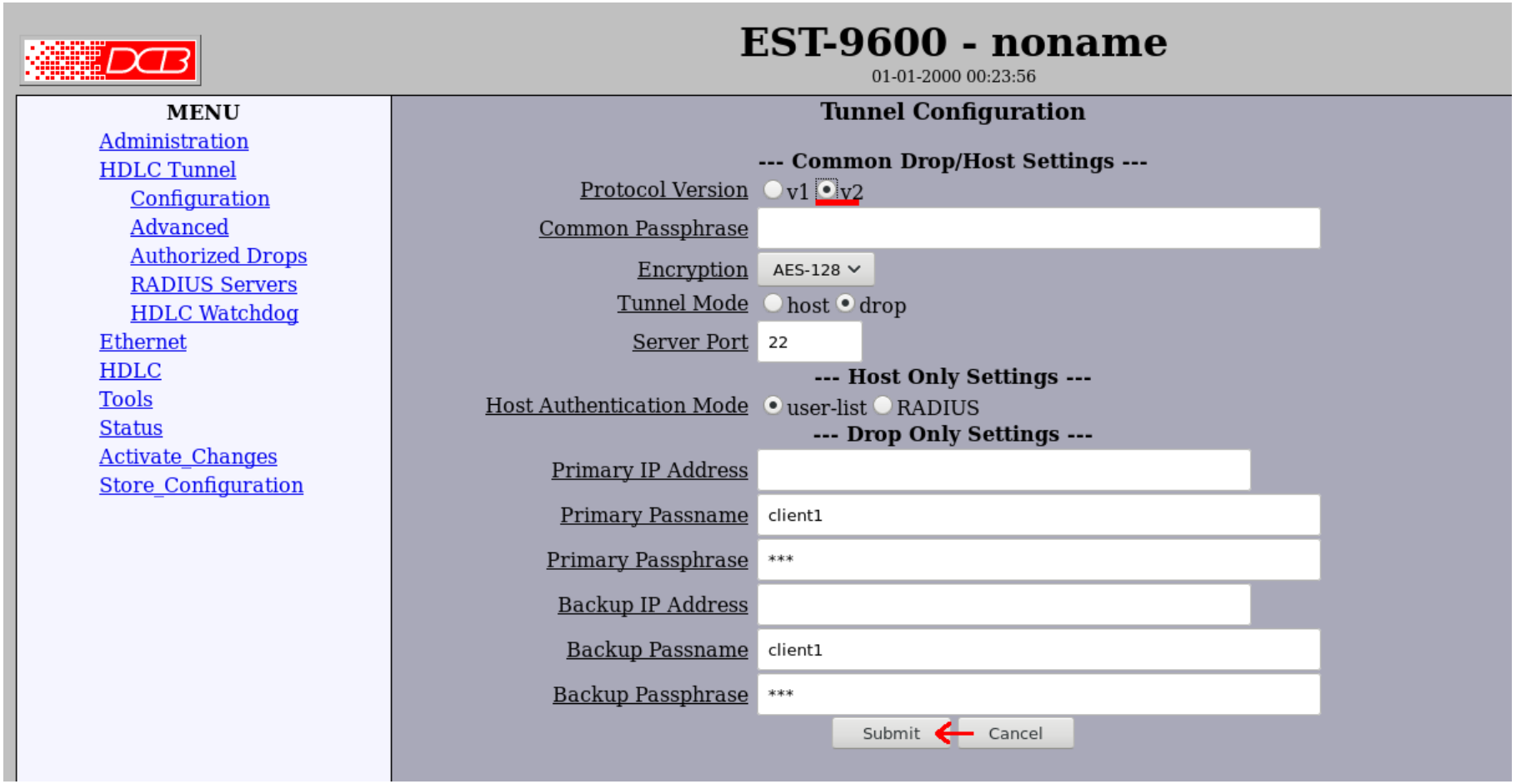
The host unit must also be configured with a table of authorized Drop (client) units. Our example configuration has only 1 drop unit.



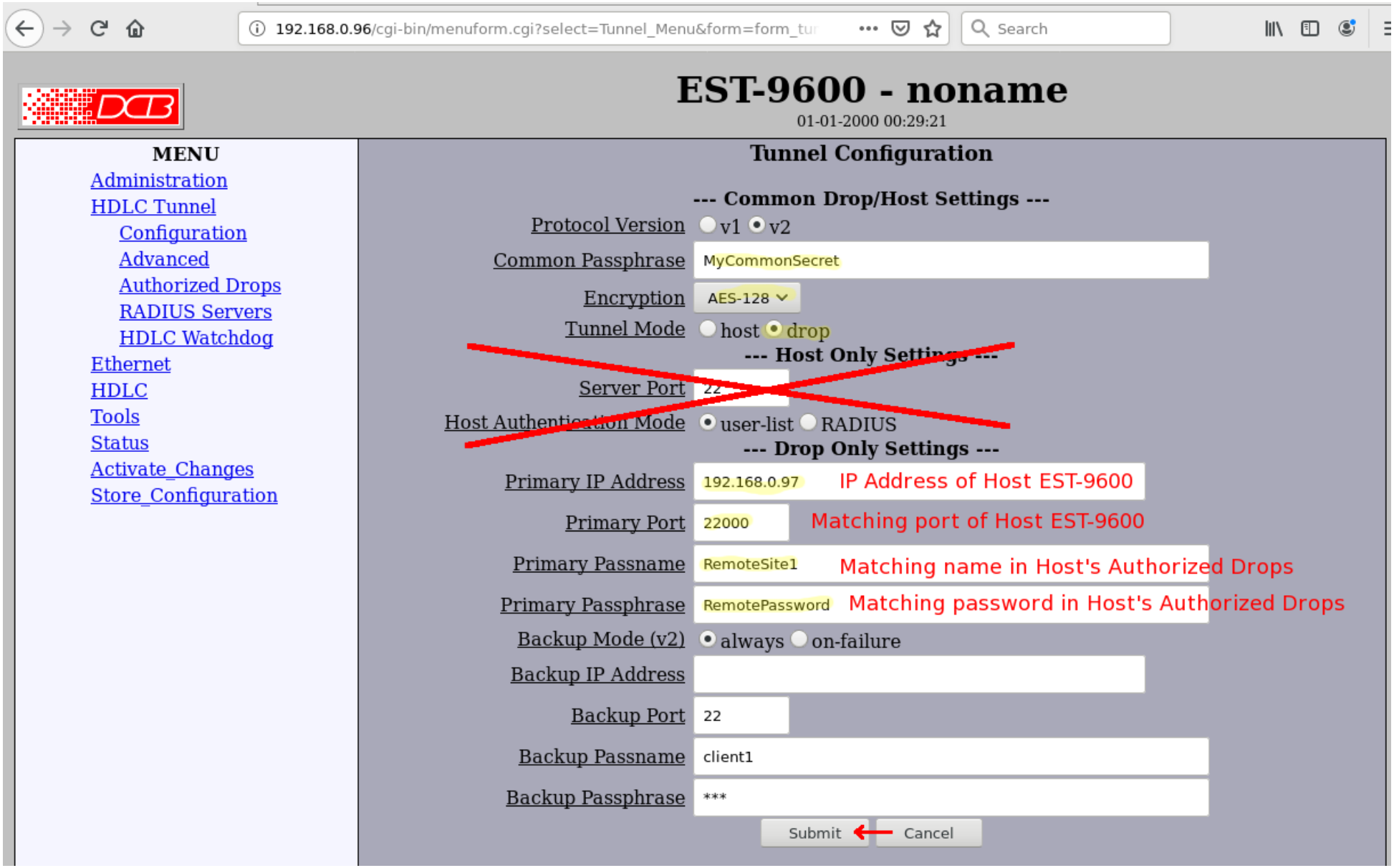
Don't forget to **Activate** and **Store** the configuration changes.

Drop EST-9600 Configuration

We are now going to configure the second EST-9600 as the **Drop** unit. Similar to what we did for the Host, set the Drop EST-9600 for “V2” mode. Submit this change before making any other changes on the page.



Now, configure the unit as a Drop and to initiate communications with the Host unit.

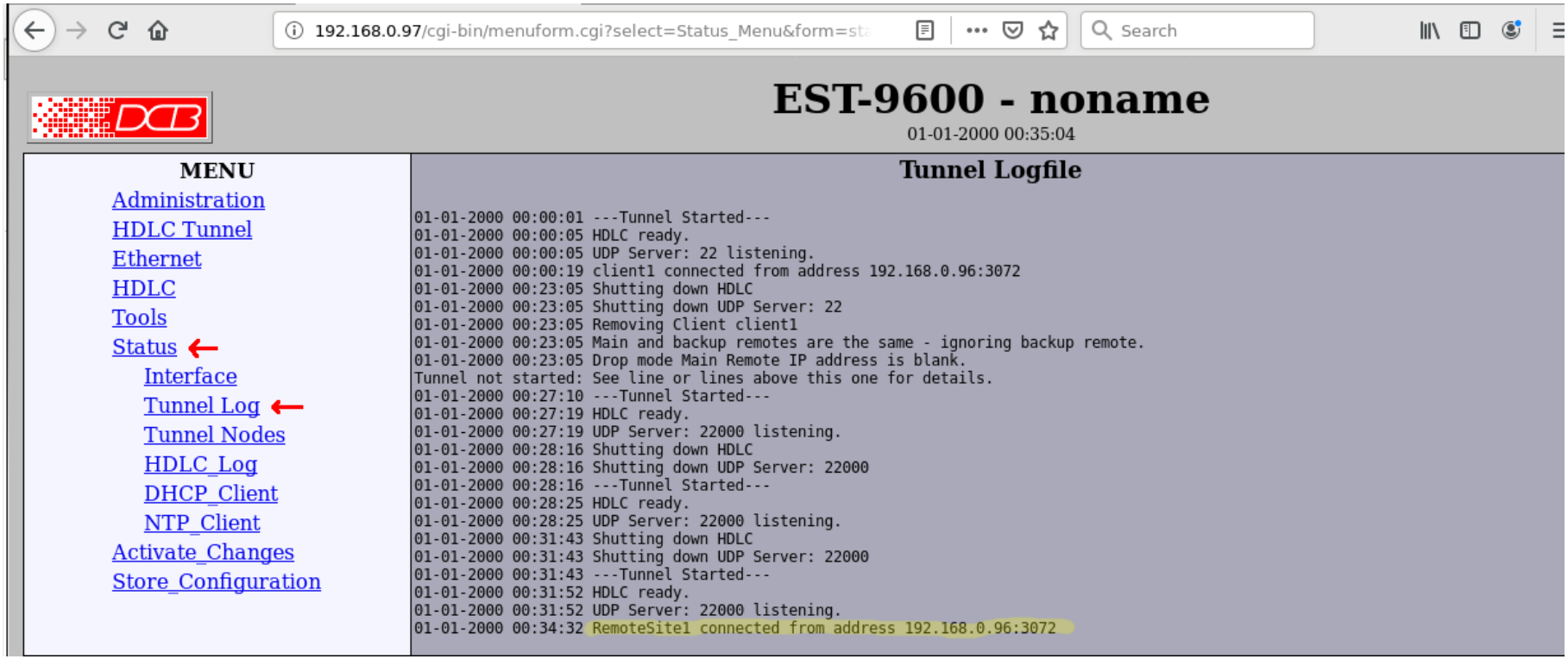


After submitting the page, don't forget to Activate and Store the configuration changes.

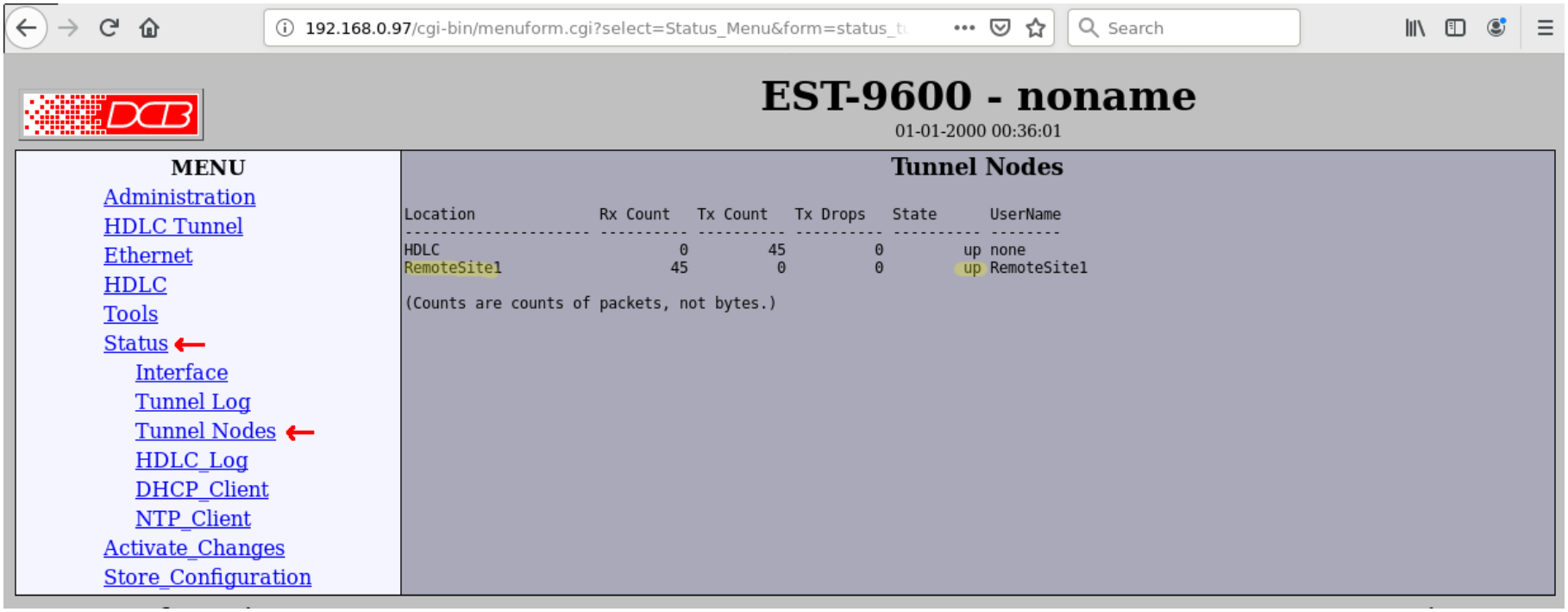
Checking the Connection Status

The units should establish a connection. You can verify this by checking the tunnel log status and tunnel node status. Below is an example of a successful connection as shown by the Host unit.

Select “Status – Tunnel Log”

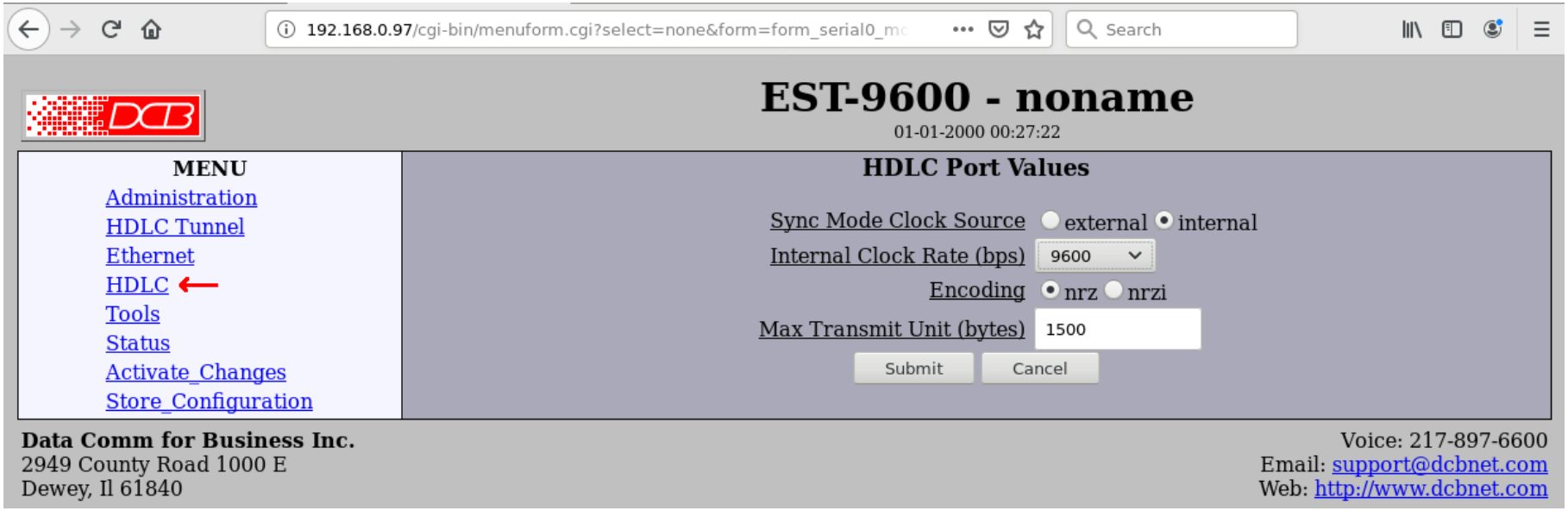


Select “Status – Tunnel Nodes”



HDLC Configuration

The final step in our walk-through is configuring the HDLC interface. Unfortunately, there is no “one-size fits all” configuration, so this can't be easily addressed in a quick-start guide. As you can see below, there are only a few configuration items related to HDLC.

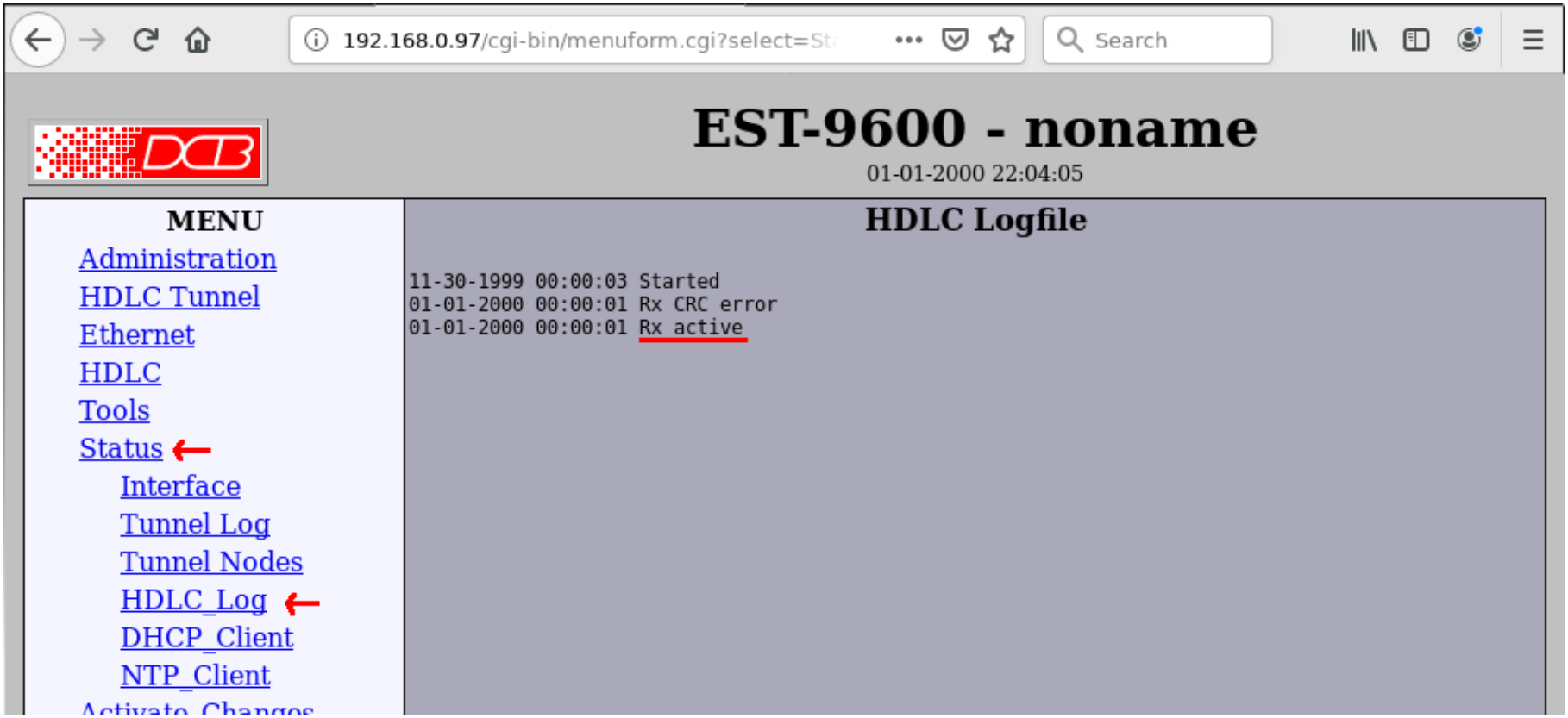


However, associated with this is the physical connection to the HDLC device. A custom cable will be required to connect your device to the EST-9600. You will need to correctly connect the data signals, clock signals, and any needed control signals. With regard to the clock signals, you will need to know whether your device provides the clock signals or if it receives the clock signals. If your device receives the clock signals, you will also need to know what rate at which your device expects to operate. Please refer to the EST-9600 Manual, page 25, for wiring information.

With regard to clock signals, there is also a jumper block located inside the EST-9600, that must be positioned correctly. Please refer to the EST-9600 manual page 9 for details.

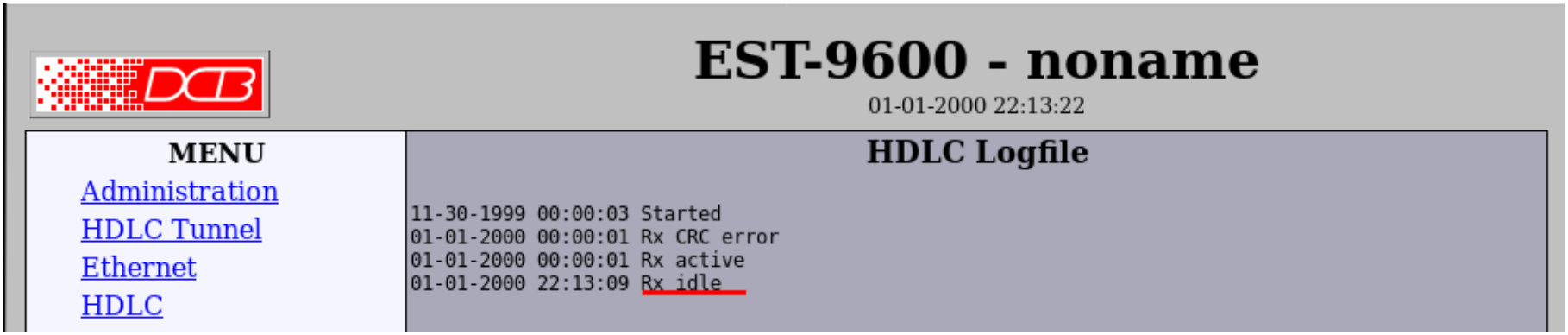
If you are using the EST-9600 to replace a modem-link that operates across a telco circuit, the modems usually supply clock to the system, so your end device is probably receiving clock. This would mean the EST-9600 would be configured for “**internal**” clock. The rate is application specific but is commonly between 9600 to 56000 bps. Most devices use “**nrz**” encoding. The MTU is rarely changed from 1500.

To help in verifying that the HDLC connection is good, first check the HDLC log.



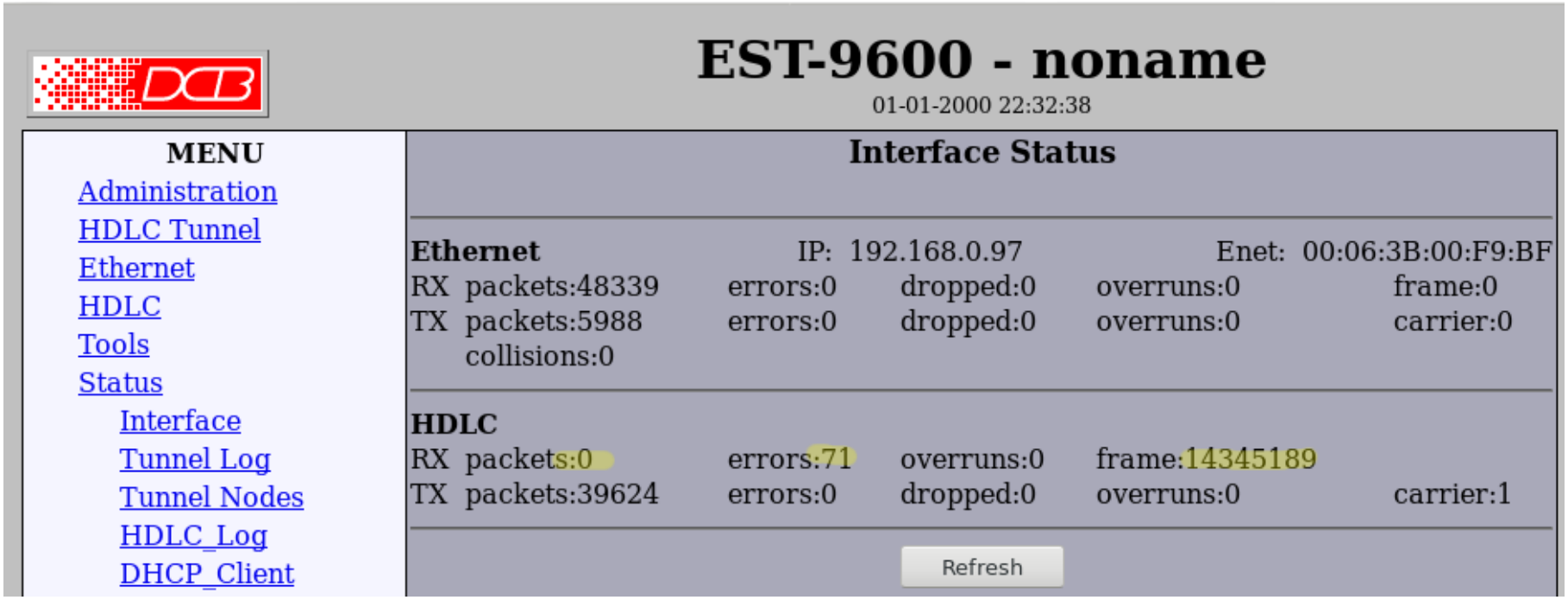
The log will show “Rx active” when it starts receiving valid HDLC frames. This is a good indicator that the receive side of the HDLC connection is good. Error messages after a “Rx active” message indicate there is a problem. In the above example, the “Rx CRC error” occurred before “Rx active”. So this does not necessarily indicate a problem. If the “Rx CRC error” was after the Rx active message, it might indicate a problem or simply an intermittent error on the link.

If the unit stops receiving valid HDLC frames for 1 minute, it will display a “Rx idle” message.



This event may or may not be an error. It depends upon the application. Most HDLC applications communicate more frequently than once per minute. This indication is intended to help diagnose problems where the communication unexpectedly stops.

Additional diagnostics can be obtained from the “Status – Interface” page. In the following example, the clocking was intentionally mis-configured to show errors.



Rx packets of 0 indicated the units has not **received** any valid packet, **in** from the HDLC port. The error and framing counts are indicating receive data that is failing CRC validation and HDLC framing. A well running system may show a few errors, but should be very low. If there is a systematic up-tick in these counters, it usually indicates a clocking problem.

The Tx packet count below indicates the unit is receiving valid HDLC packets from the peer EST-9600, and that these packets are being transmitted out the port. However, this does not necessarily mean the connected HDLC device is successfully receiving these HDLC packets. You will need to interrogate the HDLC device to determine if it is receiving valid data.