XT-hEX Encrypted Ethernet Tunnel
Quick Start Guide

This document guides the new user through configuration of two XT-hEX encrypted tunnels and demonstrates tunneling encrypted data between two LAN segments by configuring a pair of units as the Server and a Client. Connect two PCs through two XT-hEX units with a simulated network between them, as diagrammed in Figure 1 below.
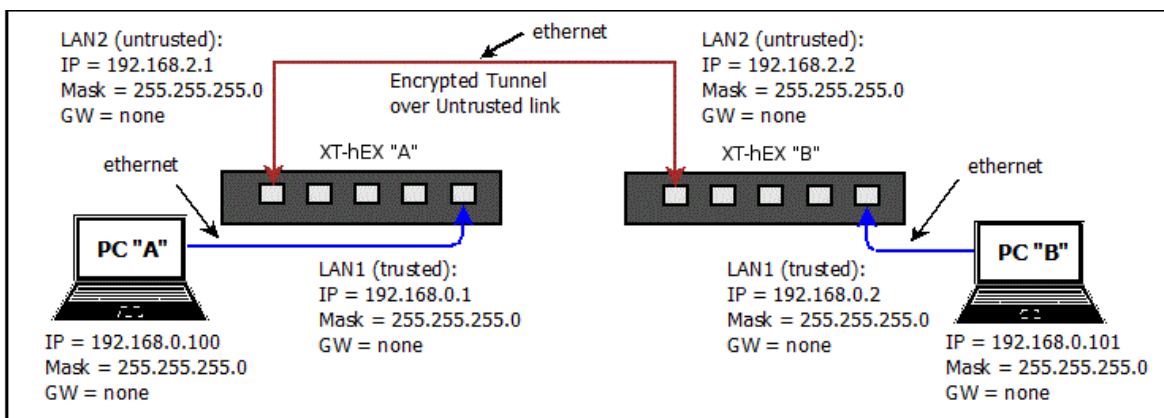

Figure 1 – Configuration for End-to-End Test, with Example IP Addresses

Requirements
1. Two XT-hEX units and knowledge of basic TCP/IP networking
2. One PC (preferably two) with wired Ethernet connections and any modern web browser

Step-by-Step Procedure
1: Open the first box and note the contents: The XT encrypted tunnel, Power Adapter, CDROM containing manual and Application Notes, two Black Straight-through Ethernet cables with RJ-45 connectors and 9-pin Female-to-Female Null Modem cable.

2: Configure a PC for use on the default LAN1 subnet of the XT-hEX. Use the IP address 192.168.0.100 with a Subnet Mask of 255.255.255.0. This will be PC "A".

3: Power up the first XT-hEX, (XT-hEX "A") to be configured as the Server unit.

4: Connect PC A to XT-hEX A's LAN1 trusted port (far right jack).

5: Open the browser (Internet Explorer, Firefox, Chrome, Safari), then enter:

   https://192.168.0.1 (NOTE that "https" is used, not http)

A security dialog may ask for approval of an Exception to complete this connection. Complete the dialog to give the PC permission to contact the XT.

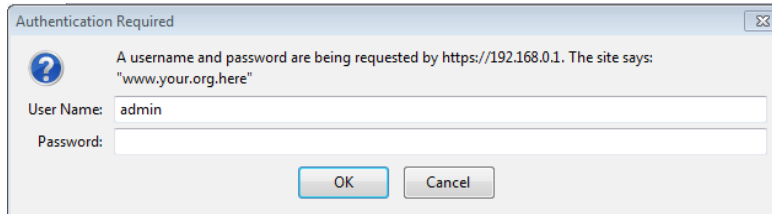The **Authentication Required** dialog should appear:

Figure 2 – Authentication Dialog

Enter default User Name "admin" and leave Password blank (nothing entered). Click "OK" to bring up the main menu for configuring the XT-hEX.
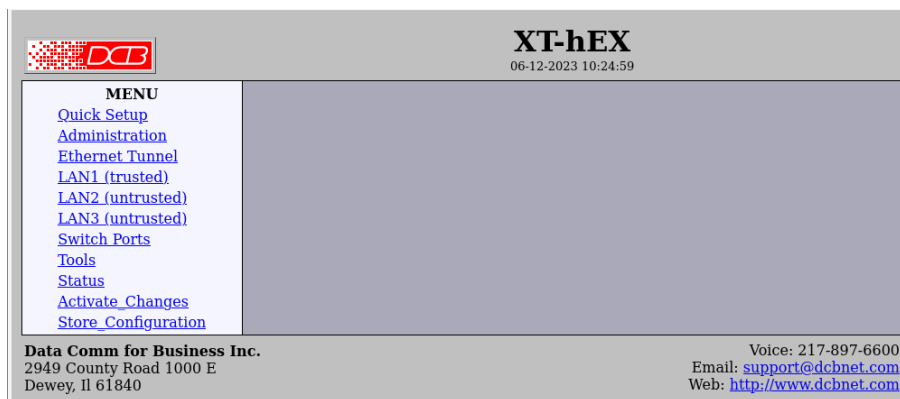

Figure 3 – Main Menu Screen

6: Click on *Quick Setup* from the menu and click **Static-Configuration** for LAN2 (untrusted) as shown in Figure 4. *All other parameters can stay at the default values.*
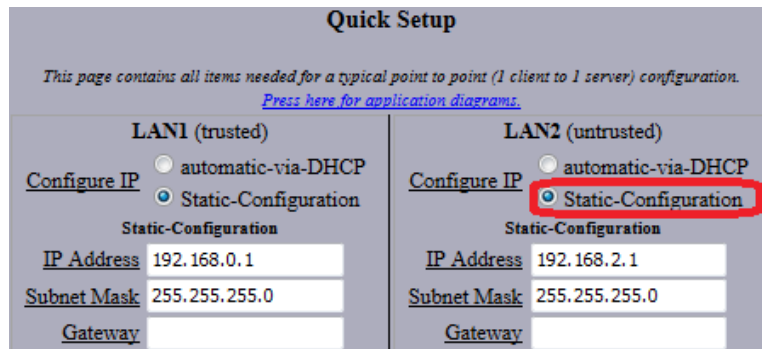

Figure 4 – LAN Settings for XT-hEX "A"

7: For this demonstration, the fields in the ***Ethernet Tunnel*** section of the screen are configured as shown in Figure 5, with this unit being the Server. The following values are used:

Shared Secret = tom   **Authorized Client Name1** = client1
Encryption = AES-256   **Authorized Client Password1** = john
Mode = server
Protocol = udp

*(The Client Password is entered in the **Server Mode Settings** portion of the page when XT-hEX A is configured as a Server: The values in the **Client Mode Settings** fields are ignored in this case.)*

Figure 5 – Ethernet Tunnel Settings for XT-hEX "A"

To make these changes active on XT-hEX A, click the **Store&Activate** button near the bottom of the screen. Wait a few seconds to make sure the changes have been applied.

8: Open the second box and apply power to the XT (XT-hEX "B") to be configured as the Client unit.

> *If there is a second PC (PC "B") available, use it to configure this unit. If only one PC is available, then **<u>before plugging the Ethernet cable into this second unit</u>**, reboot the PC or open a Command Window (as Administrator) and type the command **arp -d 192.168.0.1**, which should clear the ARP Cache and guarantee that there will not be an address conflict.*

9: Repeat steps 4 and 5 to access the Quick Startup screen.

10: Configure the IP addresses for LAN1 (trusted) and LAN2 (untrusted) and click **Static-Configuration** for LAN2 as shown in Figure 6 below. ***All other parameters can stay at the default values.***

Figure 6 – LAN Settings for XT-hEX "B"

11: Configure the *Ethernet Tunnel* section using these settings, shown in Figure 7 below:

Shared Secret = tom   **Client Name** = client1
Encryption = AES-256   **Client Password** = john
Mode = client   **Remote Server IP** = 192.168.2.1
Protocol = udp

*(The Client Password is entered in the **Client Mode Settings** portion of the page when XT-hEX B is configured as a Client: The values in the **Server Mode Settings** fields are ignored in this case.)*

Figure 7 – Ethernet Tunnel Settings for XT-hEX "B"

To make these changes active on XT-hEX B, click the **Store&Activate** button near the bottom of the screen. Wait a few seconds to make sure the changes have been applied.

12: Connect an Ethernet cable between the untrusted ports (far left jack) of XT-hEX A and XT-hEX B.

Testing the Link
If only one PC is available, it should be possible to connect to the LAN1 (trusted) network of XT-hEX A and open a web browser window displaying the main menu of XT-hEX A and a second browser window displaying the main menu of XT-hEX B. If the PC connection is moved to the LAN1 (trusted) network of XT-hEX B, the same two menu pages should be accessible as before. This verifies that the tunnel is configured properly and working.

In addition, if two PCs are available, allowing one to be on each side of the link, it should be possible for each PC to ping the other over the link as if they were connected to the same switch. *Note that it is not possible to ping the LAN2 (Untrusted) interface from the LAN1 (Trusted) interface: This is the way the tunnel is supposed to work.*

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