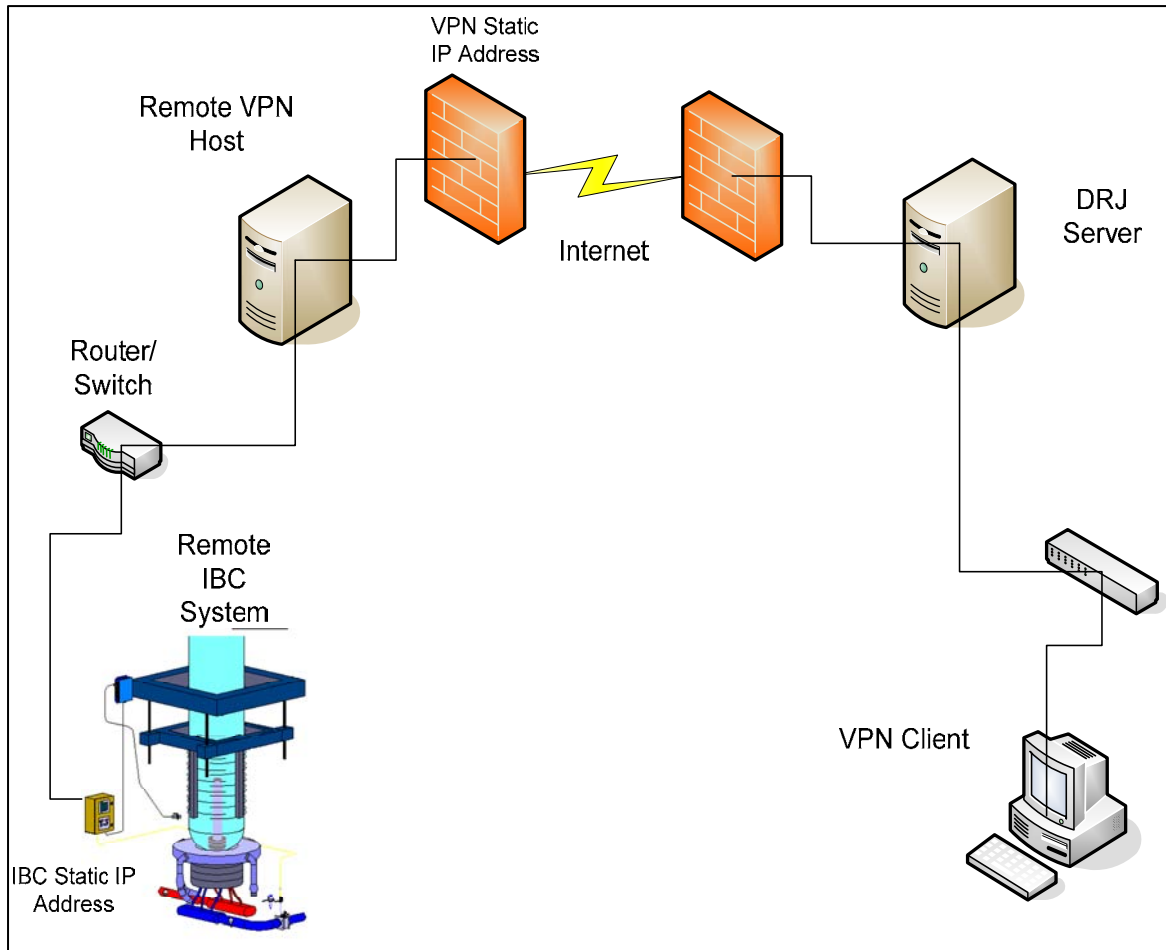# Setting up VPN Access for Remote Diagnostics Support

D. R. Joseph, Inc. supports both dial-up and Internet access for remote support of IBC and LF-Sizer control systems. This document describes how to setup the remote site to allow a VPN client to log in and then route to the DRJ equipment. The following diagram shows the overall schematic of the connection.

The first step to the process is to setup the Remote VPN Host to accept a request from a VPN client to access the Remote IBC System. The steps for this process are generally known by IT personnel, but for convenience the basic steps follow and are based on the data found at this web site:
http://www.chicagotech.net/vpnsetup.htm#How%20to%20manage%20IP%20assignment%20on%20RRAS

Summary

Virtual Private Networks (VPN) allow users working at home, on the road or at a branch office to connect in a secure manner to a remote corporate server using the public Internet. VPN server or host is a computer that accepts VPN connections from VPN clients. A VPN server or host can be a NT/W2K server or W2K/XP Pro. VPN client is a computer that initiates a VPN connection to a VPN server or host. A VPN client can be an individual computer running MS Windows NT version 4.0, Windows 2000, 9x. VPN clients can also be any non-Microsoft Point-to-Point Tunneling Protocol (PPTP) client or Layer Two Tunneling Protocol (L2TP) client using IPSec.

Network Design

The following items should be established prior to setting up the VPN and access permissions:

- **VPN address:** This is the static public IP address that is assigned to the Remote VPN Host. Remote clients will reference this IP address when attempting to establish a VPN connection.
- **VPN protocol**: PPTP
- **VPN username:** Decide on a user name for the remote VPN client.
- **VPN password:** Decide on a password for the remote VPN client
- **IBC static IP address**: This is the IP address that matches the sub-net of the Remote Host's Intranet. This should be a local IP address and NOT a public IP address. It must be static. The current setting in the IBC system is 10.10.225.100.
- **IBC gateway IP address:** If there is no Intranet gateway, set this to 0.0.0.0, otherwise set to the gateway IP address.
- **IBC subnet mask:** in most cases, this will be a class C subnet of 255.255.255.0
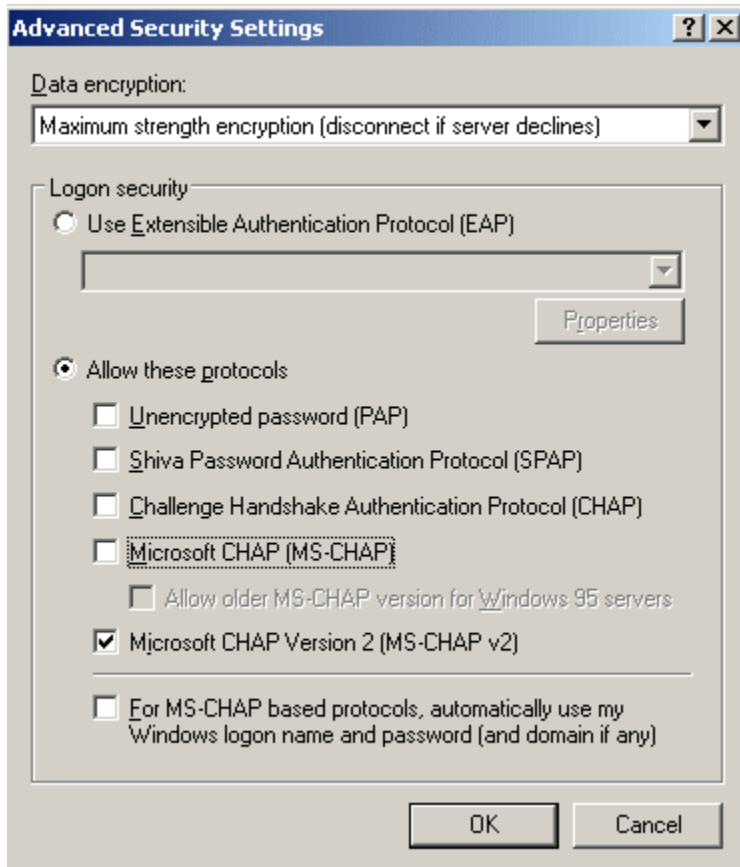
Basic VPN Requirement

On the Remote VPN Host machine, you will need to create a user account that the VPN client will use to log in.

- **User Permission**. Enable a user to access the VPN. To do this, go to ADD Users and Computers, select or create the user who needs to access the VPN, click Dial-in. Check Allow access on the Remote Access Permission (Dial-in or VPN).
- **IP Configuration**. The VPN server should have a static IP address and assign the arranged IP addresses to VPN clients. The VPN server must also be configured with DNS and WINS

server addresses to assign to the VPN client during the connection.

- **Data Encryption**. Data carried on the public network should be rendered unreadable to unauthorized clients on the network.
- **Protocol Support**. The TCP/IP is a common protocol used in the public network. The VPN also includes IP, Internetwork Packet Exchange (IPX), NetBEUI and so on.
- **Firewall Ports**. When you place a VPN server behind your firewall, be sure to enable IP protocol 47 (GRE) and TCP port 1723.
- **Interface(s) for VPN server**. If your network doesn't have a router or the VPN is also a gateway, your computer must have at least two interfaces, one connecting to the Internet and another connecting to the LAN. If it is behind a router, you just need one NIC.
- **One interface for VPN client**. The interface can be a dial-in modem, or a dedicated connection to the Internet.
- **Security**. See the diagram below and let DRJ know what settings you selected:

Advanced Security Settings

Data encryption:
Maximum strength encryption (disconnect if server declines)

Logon security
○ Use Extensible Authentication Protocol (EAP)

Properties

● Allow these protocols
- ☐ Unencrypted password (PAP)
- ☐ Shiva Password Authentication Protocol (SPAP)
- ☐ Challenge Handshake Authentication Protocol (CHAP)
- ☐ Microsoft CHAP (MS-CHAP)
  - ☐ Allow older MS-CHAP version for Windows 95 servers
- ☑ Microsoft CHAP Version 2 (MS-CHAP v2)

- ☐ For MS-CHAP based protocols, automatically use my Windows logon name and password (and domain if any)

OK   Cancel

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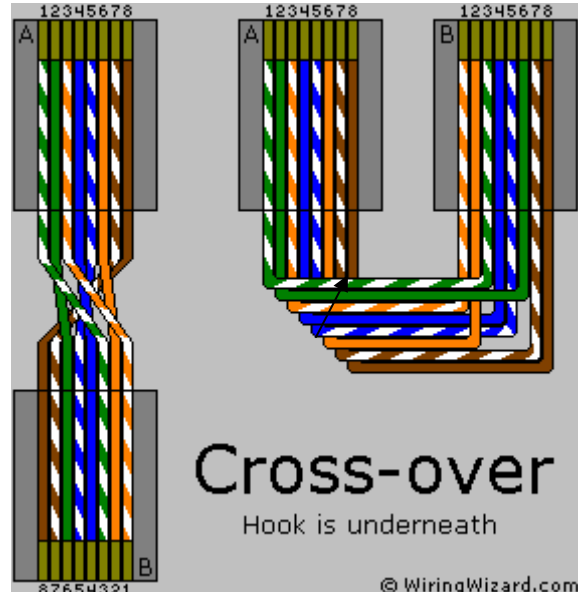
How to Build an Ethernet Crossover Cable

The crossover Ethernet cable is used when connecting two Ethernet devices without a router or managed switch between the devices.

Use this diagram when building your own Ethernet cables.

- For more details, please visit www.wiringwizard.com, select CAT-5 in the column on the left.


Connect the Ethernet Cable to IBC or LF-Sizer

The Ethernet or LAN port is located near the bottom of the panel. There are four RJ45 connectors across the bottom of the main controller. The LAN port is the left most connector.
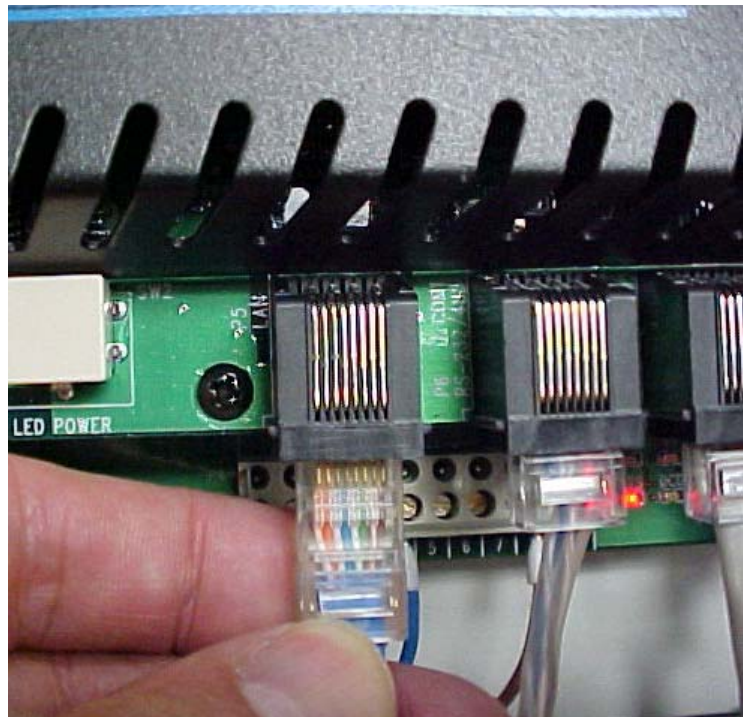
Verify Link Level is Functioning

If the cable is configured properly, you will see the LINK led turn on. It will stay on at all times. If the LINK LED is off, then recheck your cable configuration.
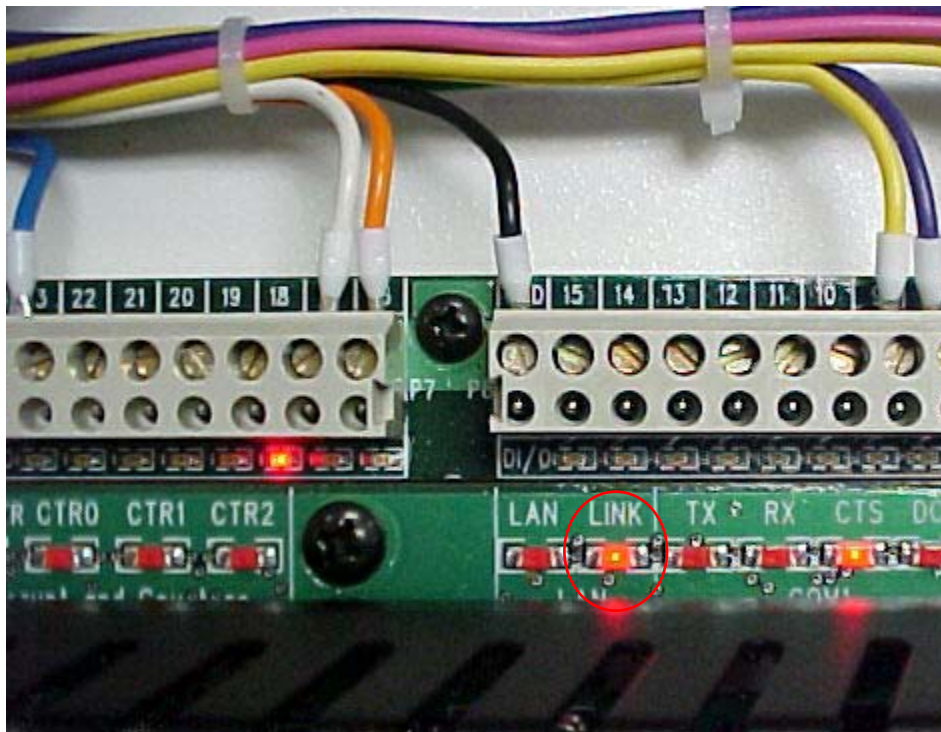
One important note: If you are connecting directly from the IBC to a laptop, you need the cross-over cable. If you use a straight through cable, you will still get the LINK led. The LINK led is not an indication of correct cable; it is only an indication that the hardware level is active.

Verify that Remote VPN Host Can Ping IBC

Using the Ping command to make sure you can ping the IBC system from the Remote VPN Host.

Contact DRJ and Provide Connection Details

Send an email to support@drjosepinc.com with "VPN Connection Details for custname" in the subject. Custname is the name of the customer. Make sure you send the following:
1. Static IP Address of Remote VPN Host
2. User Name
3. Password
4. Static IP Address of IBC System
5. Contact name and phone number in case we have problems connecting.