Simple IP Radio Dispatch Tunnel Using UT-3300

Point to Point Application through a corporate network

192.168.2.x on UT-3300 trusted (A) port

192.168.2.x on UT-3300 trusted (A) port (UT is set to client mode)

UT-3300 B port from router using DHCP

UT-3300 B port gets fixed address of 10.1.2.x (UT is set to server mode)
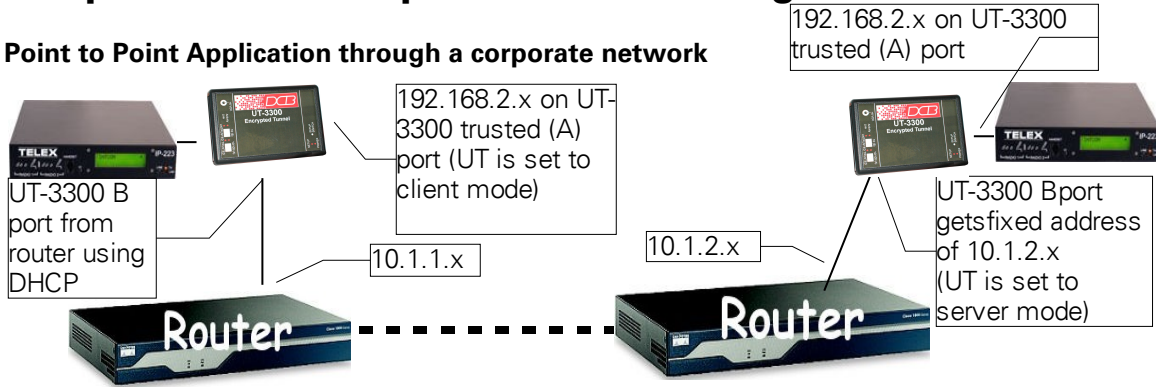
10.1.1.x

10.1.2.x

Telex IP addresses: 192.168.2.x at both ends of the link.

Internal corporate network addresses: 10.1.1.x on the left side, 10.1.2.x on the right hand side

Corporate router on the left is set for DHCP to give DHCP address to UT-3300 untrusted (B) port
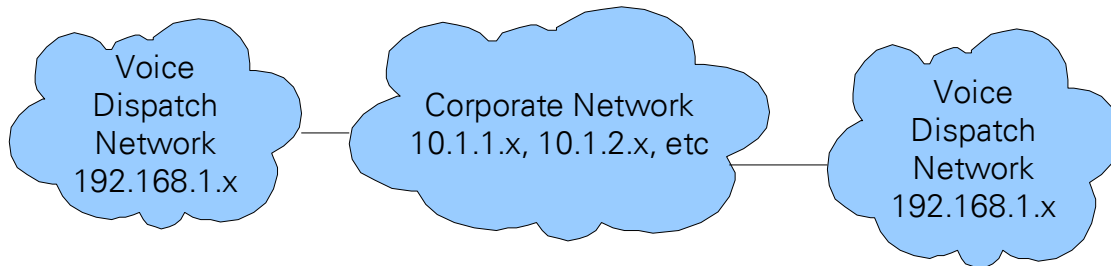
On the right, the UT-3300 untrusted (B) port is assigned a fixed address in the 10.1.2.x range

UT-3300 addresses on the trusted (A) port side are in the 192.168.2.x range at both locations

The UT-3300 uses either the default port 22, the SSH tunneling port, or any port designated by the IT department.

The link between the UT-3300's may be either encrypted or be unencrypted.
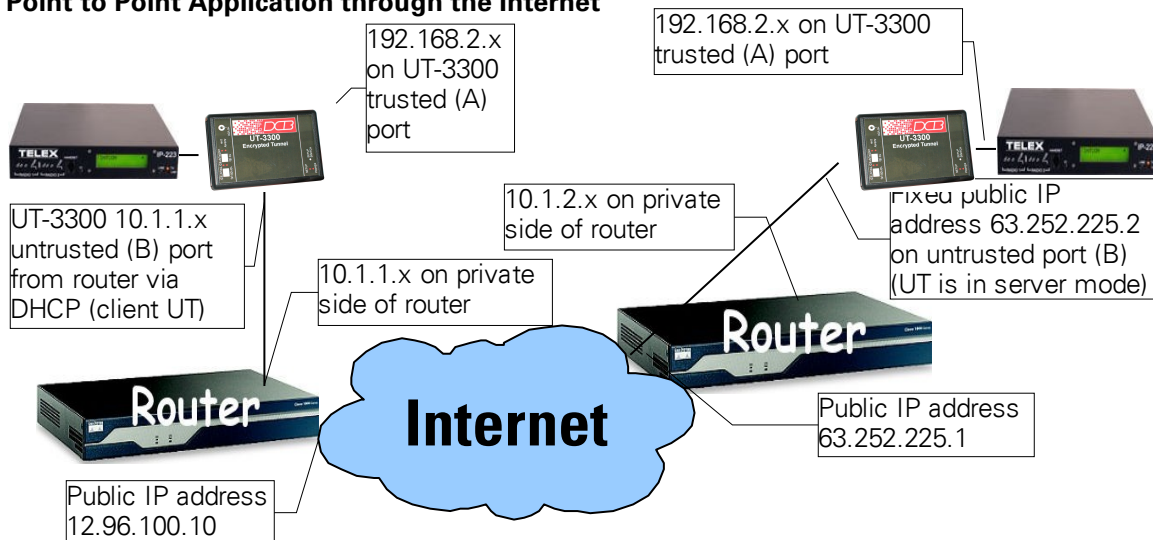
The illustration below shows how the the corporate network functions as transport only for the voice IP. Since the UT-3300 passes all traffic, including multicast through a single port, there is minimal configuration on the corporate network. It is possible that only one single fixed address for server end UT-3300 would be required. If encryption is turned on in the UT-3300, the corporate network is invisible to the voice dispatch network and the voice dispatch network is invisible to the corporate network.

Voice Dispatch Network 192.168.1.x

Corporate Network 10.1.1.x, 10.1.2.x, etc

Voice Dispatch Network 192.168.1.x

Note: The IP addresses used are for illustration purposes only

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Point to Point Application through the Internet

192.168.2.x on UT-3300 trusted (A) port

192.168.2.x on UT-3300 trusted (A) port

UT-3300 10.1.1.x untrusted (B) port from router via DHCP (client UT)

10.1.2.x on private side of router

Fixed public IP address 63.252.225.2 on untrusted port (B) (UT is in server mode)

10.1.1.x on private side of router

Router

Internet

Router

Public IP address 63.252.225.1

Public IP address 12.96.100.10

Telex IP addresses: 192.168.2.x at both ends of the link.

User side network addresses behind the routers: 10.1.1.x on the left side, 10.1.2.x on the right hand side

Router on the left is NATed and uses DHCP to give an address to UT-3300 untrusted (B) port

On the right, the UT-3300 is assigned a fixed address of 63.252.225.2 is on a "DMZ".

UT-3300 addresses on the trusted (A) port side are on the same class "C" private network address range of 192.168.2.x at both locations

The UT-3300 uses either the default port 22, the SSH tunneling port, or another port designated by the network manager.

The link between the UT-3300's can be encrypted or unencrypted. Since the link is over the Internet, encryption is recommended.
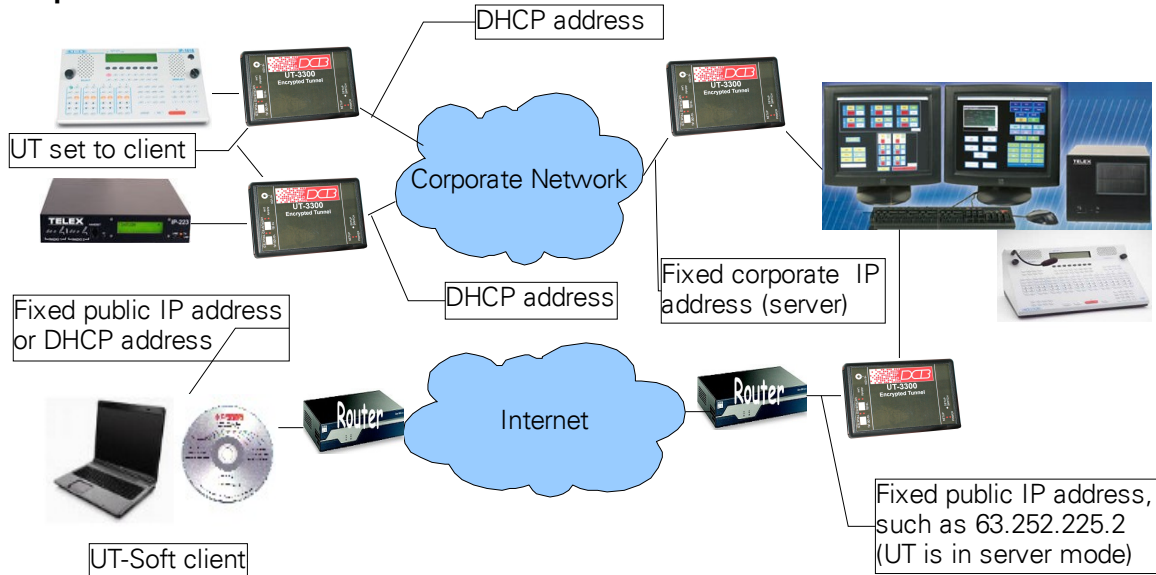
Note: The IP addresses used are for illustration purposes only

Corporate Network and Internet Combination Network

DHCP address

UT set to client

Corporate Network

DHCP address

Fixed corporate IP address (server)

Fixed public IP address or DHCP address

Internet

UT-Soft client

Fixed public IP address, such as 63.252.225.2 (UT is in server mode)

Corporate Network and Internet Combination Network

In the above illustration, the voice dispatch system uses the corporate network and also uses the Internet for transport.

By using encryption, and placing the voice dispatch system on its own private network, the corporate network is isolated and protected from intrusion via the Internet. The encryption on the links through the Internet also isolates and protects the dispatch system from Internet intrusion.

All of the voice dispatch equipment in the above illustration is on the same private network, for example, 192.168.2.x.

The UT-Soft client on the PC allows a PC to be anywhere, operating as a portable C-Soft console. The PC client can be wire connected, 802.11 wireless connected, or 3G cell modem connected. The UT-Soft client software can also serve as VPN software to a UT-3300 or UT-6602 operating as a VPN server.

Note: The IP addresses used are for illustration purposes only

Benefits of the UT Tunnels:

- $ - The UT-3300 and UT-6600 are low cost, much less expensive than GRE routers

- The UT devices are much easier to set up than are GRE routers

- Using the UT devices provides an easy way to work with/through firewalls

- The UT uses voice and video friendly UDP transport protocol

- The UT has multicast capability. All multicast traffic is passed transparently

- The UT default passes all multicast, but can be configured to allow only specific addresses. Allowed multicast addresses are set in a simple comma delimited file.

- Very little needs to be known about the customer network when using the UT

- The voice dispatch system can be on its own private network

- The UT adds encryption to radios that do not have encryption capability on the IP side

- The UT can tunnel data with or without encryption

- The UT separates voice dispatch from the rest of the customer network

- With the UT, ethernet can be bridged over serial links if the data rate is high enough

- The UT works with routers, DSL, cable modems, wireless ethernet, satellite links, etc.

- The UT works like a switch, filtering traffic at the MAC address, IP or port level

- The UT uses just a single IP port number, defaults to port 22, can be any port

- An UT can be set to server mode, client mode, or both (both used as mid-point relay)

- UT servers support from 8 to 100 users, depending on the model used as a server

- The UT-3300 and UT-6600 -40° to +70°C, the UT-6602 -20 to +70

- The UT-6600 has 12, 24, -48 and 125 VDC options, the UT-6602 operates 7 to 18 VDC