



IBM Systems - iSeries
Universal Connection

Version 5 Release 4





IBM Systems - iSeries
Universal Connection

Version 5 Release 4

Note

Before using this information and the product it supports, be sure to read the information in "Notices," on page 67.

Third Edition (February 2006)

This edition applies to version 5, release 4, modification 0 of IBM i5/OS (product number 5722-SS1) and to all subsequent releases and modifications until otherwise indicated in new editions. This version does not run on all reduced instruction set computer (RISC) models nor does it run on CISC models.

© Copyright International Business Machines Corporation 2004, 2006. All rights reserved.

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

Universal Connection	1
Print this topic.	2
Universal Connection concepts	2
Application proxies	3
IP Packet Filter Firewall	3
Secure Sockets Layer (SSL) and Transport Layer Security (TLS)	4
Network address translation (NAT).	5
SOCKS	5
Virtual private network.	6
Plan for Universal Connection	6
Scenarios: Universal Connection	7
Scenario: Configure a PPP dial-up connection through AGNS	8
Scenario: Configure a PPP dial-up connection for a server that provides connectivity for other systems through AGNS	14
Scenario: Configure a remote PPP dial-up connection.	21
Scenario: Configure a direct Internet connection	26
Scenario: Configure a direct Internet connection from a server that provides connectivity for other systems or partitions	31

Scenario: Configure a PPP connection through an ISP	37
Scenario: Configure a PPP connection from a server that provides connectivity for other systems through an ISP	42
Scenario: Configure a multi-hop connection through a remote server	49
Configure Universal Connection	54
Configure a dial-up connection through AGNS	55
Configure a remote PPP dial-up connection.	56
Configure a direct Internet connection	57
Configure a PPP connection through an ISP	59
Configure a multi-hop connection	60
Additional Universal Connection configuration procedures	62
Troubleshoot the Universal Connection wizard	64

Appendix. Notices	67
Trademarks	68
Terms and conditions	69

Universal Connection

Universal Connection allows you to control how your business connects to IBM® support services. Once connected, you can access a variety of customer support options as you need them. This software is Transmission Control Protocol/Internet Protocol (TCP/IP)-based, and you configure it through a wizard or command interface that allows you to choose how you connect to IBM. Your choices include the following:

- Direct dial-up through the AT®&T Global Network Services
- An existing Internet Service Provider (ISP) connection
- A direct LAN connection to the Internet
- A remote dial-up via the AT&T Global Network Services
- A remote Virtual Private Network (VPN) multi-hop connection
- An HTTP or Service and Support proxy connection

This flexibility lets you choose the most convenient solution for your organization, while still providing a secure connection. For most users, the Universal Connection option is the fastest and most convenient method of accessing electronic customer support.

The Universal Connection wizard guides you through the steps to configure this connectivity. IBM uses this configuration when you allow the following applications to provide support, service, and system documentation:

- Electronic Customer Support
- Electronic Service Agent™
- Information Center Update

Note: You also can configure these profiles using CL Commands, including the GO SERVICE and CRTSRVCFG commands. See the Control language (CL) topic for details.

Universal Connection concepts

Learn more about firewall technologies and protocols used by the Universal Connection.

Plan for Universal Connection

The first step to successfully configuring a Universal Connection to IBM services is ensuring that you select a method of connecting to IBM from your server and fulfilling any required prerequisites.

Scenarios: Universal Connection

Review these scenarios to become familiar with using the Universal Connection wizard and the steps involved in creating a Universal Connection.

Configure Universal Connection

After planning for your Universal Connection and reviewing the scenarios, you can begin configuring it. This topic provides you with an overview of how to use the Universal Connection wizard and other related tasks that you need when you create a Universal Connection to IBM services.

Troubleshoot the Universal Connection wizard

See this topic when you experience problems using the Universal Connection wizard.

Print this topic


To view or download the PDF version of this topic, select Universal Connection (about 967 KB).

Saving PDF files

To save a PDF on your workstation for viewing or printing:

1. Right-click the PDF in your browser (right-click the link above).
2. Click **Save Target As...** if you are using Internet Explorer. Click **Save Link As...** if you are using Netscape Communicator.
3. Navigate to the directory in which you would like to save the PDF.
4. Click **Save**.

Downloading Adobe Acrobat Reader

You need Adobe Acrobat Reader to view or print these PDFs. You can download a copy from the Adobe Web site (www.adobe.com/products/acrobat/readstep.html) .

Universal Connection concepts

Review the following concepts to become familiar with the technical and configuration details involved with each of the connections that are available through Universal Connection. The information presented about these concepts focuses on the relationship between this technology and establishing a Universal Connection. Each concept includes references to additional information about the topic.

Data protection technologies

You need to understand how network security affects configuring a Universal Connection before you start creating a configuration.

Application proxies

If your method of accessing the Internet is through an application proxy, some Universal Connection applications may be able to use the proxy. However, you must ensure that you select a configuration method that allows the remainder of your service data to connect through Universal Connection from your server to IBM without going through an application proxy.

IP packet filter firewall

You may have to change packet filter rules to allow Universal Connection traffic to flow through your firewall to IBM.

Secure Sockets Layer (SSL) and Transport Layer Security (TLS)

SSL/TLS protocol helps provide privacy over a network. Universal Connection creates a Certificate Store, containing trusted Certificate Authority Certificates for use by SSL/TLS, and you do not need to change this item. Some service applications use SSL/TLS to protect the data flowing to IBM.

Network address translation (NAT)

Network address translation (NAT) changes internal or private addresses to public or globally routable IP addresses. The Universal Connection traffic can flow through a NAT to IBM. This is enabled automatically.

SOCKS

A SOCKS server or client is a TCP/IP proxy application that allows you to send information

through a wide variety of protocols without providing the internal network information. If your network includes a SOCKS server, you must ensure that you do not route Universal Connection traffic through this server.

Virtual private network

Learn how VPN affects data protection when configuring a Universal Connection between your server and the IBM support services. Some service applications use VPN to protect the data flowing to IBM.

Application proxies

An application proxy or application proxy server receives requests intended for another server and acts on the client's behalf (as the client's proxy) to obtain the requested service. You often use an application proxy server when the client and the server are incompatible for direct connection. For example, the client is unable to meet the security authentication requirements of the server but should be permitted some services. Characteristics of an application proxy include the following:

- Breaks the TCP/IP connection between a client and server; IP forwarding is not required.
- Hides the internal client IP addresses; only the public IP address of the proxy server is visible from the external network
- Provides detailed access logs
- Authenticates users
- Caches information

The most common type of proxy is the HTTP proxy. Most HTTP proxies also handle Secure HTTP (HTTPS) and file transfer protocol (FTP). The SMTP mail relay is an example of an application proxy.

The main drawback of application proxies is that they must support the application for which they are performing the proxy function. Many TCP/IP applications are not supported by proxy servers. In addition, application proxies do not typically encrypt data.

Some Universal Connection applications can flow through a standard HTTP proxy. The HTTP proxy must support SSL tunneling and can optionally require HTTP Basic Authentication.

i5/OS™ V5R4 includes a service and support HTTP Proxy which can be used specifically for Universal Connection applications if you want one partition or system providing connectivity for others.

IP Packet Filter Firewall

An IP packet filter firewall allows you to create a set of rules that either discard or accept traffic over a network connection. The firewall itself does not affect this traffic in any way. Because a packet filter can only discard traffic that is sent to it, the device with the packet filter must either perform IP routing or be the destination for the traffic.

A packet filter has a set of rules with accept or deny actions. When the packet filter receives a packet of information, the filter compares the packet to your pre-configured rule set. At the first match, the packet filter either accepts or denies the packet of information. Most packet filters have an implicit deny all rule at the bottom of the rules file.

Packet filters usually permit or deny network traffic based on:

- Source and destination IP addresses
- Protocol, such as TCP, UDP, or ICMP
- Source and destination ports and ICMP types and codes
- Flags in the TCP header, such as whether the packet is a connect request
- Direction (inbound or outbound)

- Which physical interface the packet is traversing

All packet filters have a common problem: the trust is based on IP addresses. Although this security type is not sufficient for an entire network, this type of security is acceptable on a component level.

Most IP packet filters are stateless, which means they do not remember anything about the packets they previously process. A packet filter with state can keep some information about previous traffic, which gives you the ability to configure that only replies to requests from the internal network are allowed from the Internet. Stateless packet filters are vulnerable to spoofing since the source IP address and ACK bit in the packet's header can be easily forged by attackers.

- | i5/OS lets you specify packet filter rules on interfaces and remote access service profiles. See the following topics for more details: Create IP filter rules and Remote Access Services: PPP connections. If you are using either an external packet filter firewall or packet filter rules on the i5/OS and your Universal Connection data passes through these filters, you must change the filter rules to allow the connection to the IBM VPN Gateway as follows:

IP filter rules	IP filter values
UDP inbound traffic filter rule	Allow port 4500 for VPN gateway addresses
UDP inbound traffic filter rule	Allow port 500 for VPN gateway addresses
UDP outbound traffic filter rule	Allow port 4500 for VPN gateway IP addresses
UDP outbound traffic filter rule	Allow port 500 for VPN gateway IP addresses
ESP inbound traffic filter rule	Allow ESP protocol (X'32') for VPN gateway IP addresses
ESP outbound traffic filter rule	Allow ESP protocol (X'32') for VPN gateway IP addresses

- | For those Universal Connection applications that use HTTP and HTTPs for a transport, you must change the filter rules to allow connections to the IBM service destinations as follows:

IP filter rules	IP filter values
TCP inbound traffic filter rule	Allow port 80 for all service destination addresses
TCP inbound traffic filter rule	Allow port 443 for all service destination addresses
TCP outbound traffic filter rule	Allow port 80 for all service destination addresses
TCP outbound traffic filter rule	Allow port 443 for all service destination addresses

Part of changing the filter rules involves specifying an actual IBM VPN Gateway address. You can determine these addresses as described in "Determine the IBM VPN Gateway addresses" on page 63.

- | In addition, for HTTP and HTTPs traffic, part of changing the filter rules may involve specifying actual service destination addresses. You can determine these addresses as described in "Determine the IBM Service Destination addresses" on page 63.

For more information, see the Packet rules concepts topic.

Secure Sockets Layer (SSL) and Transport Layer Security (TLS)

The objective of TLS protocol and its predecessor SSL is to provide privacy over the Internet. TCP/IP client and server applications that are SSL-enabled can communicate in a way designed to prevent eavesdropping, tampering, or message forgery. These protocols provide encryption, integrity, and authentication.

TLS is an evolutionary upgrade of the SSL Version 3.0 protocol. TLS provides the same function as SSL with additional new features and clarifications of protocol flows for areas that are ill-defined by the SSL

protocol definition. The major goal of TLS is to standardize the SSL definition and implementations to make the SSL protocol more secure, and to make the specification of the protocol more concise and complete.

The SSL/TSL protocol consists of two separate protocols: the record protocol and the handshake protocol. The handshake protocol is encapsulated within the record protocol. The SSL handshake establishes a secure connection between the client and the server.

Universal Connection creates a Certificate Store for use by SSL and you do not need to change this item. In addition, some Universal Connection applications and flows are protected using SSL or TLS.

Network address translation (NAT)

Network Address Translation (NAT) translates internal or private IP addresses to public or globally routable IP addresses and also translates ports. In order for the Universal Connection to connect to IBM through a NAT, you must enable NAT traversal, as described in the NAT compatible IPsec topic, so that the translation of the address does not break the encrypted data flow. The Universal Connection wizard automatically enables this technology.

NAT provides the following advantages:

- NAT saves public IP addresses. Because a client only needs a public IP address when it is communicating with the Internet, the pool of globally routable IP addresses can be shared with other clients. Therefore, you need fewer public IP addresses than the actual number of internal clients that need access to the public network if you use NAT. When your private IP address sends traffic through the NAT, this software translates the private address to the public address. This feature and the ability to translate both the IP address and port (NAT port mapping) make it possible, in many NAT implementations, to require only one public IP address.
- NAT hides the internal network's IP addresses.
- It simplifies routing. Since internal hosts are assigned IP addresses from the internal network, other internal systems can access them without special routes or routers. The same hosts are accessed from the public network through globally routable IP addresses translated by NAT.
- NAT is transparent to the client and, therefore, allows you to support a wider range of clients.
- NAT supports a wide range of services with a few exceptions. Any application that carries and uses the IP address inside the application does not work through NAT.
- NAT consumes fewer computer resources and is more efficient than using SOCKS and application proxy servers.
- The Universal Connection can flow through NAT.

Some disadvantages of NAT include the following:

- NAT provides minimum logging services.
- You must enable IP forwarding before you can use NAT to make an Internet connection.
- NAT is not as adept as either the SOCKS or application proxy servers in detecting attacks.
- NAT can break certain applications, or make these applications more difficult to run.

SOCKS

A SOCKS server is a TCP/IP proxy server application that allows you to send information through a wide variety of protocols without providing the internal TCP/IP network information. To use a SOCKS server, the client must support the SOCKS protocol.

There are some systems such as i5/OS systems that support a SOCKS client in its TCP/IP stack (versatile clients) so that all client applications can use a SOCKS server. The client configuration gives the name of the SOCKS server to use and the rules for when the server should be used.

SOCKS servers have no knowledge of the application protocol that they are using. These servers, for example, do not distinguish Telnet from HTTP. As a result, SOCKS servers can be written in a more efficient manner than other proxy server applications. The downside is that SOCKS servers can not perform functions like caching or logging URLs that are accessed through the server.

- | The Universal Connection does not support data flow through a SOCKS server. Therefore, if your i5/OS client accesses the network through a SOCKS server, you must ensure that none of the Universal Connection information is routed to the SOCKS server by specifying that all of the destinations are DIRECT in your SOCKS configuration.
- | For more information about SOCKS, see the Client SOCKS support topic and “Ensure compatibility with SOCKS” on page 63.

Virtual private network

A virtual private network (VPN) allows your company to extend its private intranet over a public network. It is based on creating virtual secure tunnels between hosts or gateways connected to the public network. To participate in a secure tunnel or VPN connection, the VPN tunnel end point must implement a compatible suite of VPN protocols. VPN provides the following security functions:

- Data origin authentication to verify that each datagram was originated by the claimed sender.
- Data integrity to verify that the contents of a datagram were not changed either deliberately or due to random errors.
- Data encryption to ensure message text confidentiality.
- Replay protection to ensure that an attacker cannot intercept data and play it back at some later date.
- Key management to ensure that your VPN policy can be implemented throughout the extended network with little or no manual configuration.

The Universal Connection builds a VPN connection to IBM, in some scenarios, to ensure that the information sent and received between your iSeries™ server and IBM is safe (for example, VPN encrypts and authenticates data). The VPN technologies used by the Universal Connection include L2TP, IKE, and IPsec. See the following topics for details, Layer 2 Tunnel Protocol (L2TP), Implicit IKE, and IP Security (IPsec) protocols. For some of the connectivity options, the Universal Connection uses L2TP alone for those portions of the connection that do not require encryption. For example, if you are connecting from one partition to another partition and then out across the Internet to IBM, the Universal Connection strictly uses L2TP between the partitions and then uses L2TP protected by IPsec for the second portion of the connection (that portion requiring encryption).

For more information, see the Virtual private networking topic.

Plan for Universal Connection

You need to make some decisions before running the Universal Connection wizard. During the configuration process, you are asked to choose the type of connection you want to use for IBM customer support. That decision depends on your network and accessibility to the Internet from your iSeries server. With NAT-compatible IPsec, iSeries servers support a connection even when there is an intervening NAT firewall. Support for HTTP and HTTPS allow connections through most firewalls and through customer- or IBM-supplied proxies.

Consider the following points before you select a Universal Connection configuration scenario:

- Your hardware, software, and network configuration:
 - If your server is not on a network, or is only on a private network and has a modem, you may want to select the **A dial-up connection using the AT&T Global Network Services** option. This option provides you with a secure dial-up connection to IBM services and support and all data is protected using a VPN or SSL.

- If your system or partition has access to a partition, system, or HMC that has a modem, you can configure that system with the **Connect through another system or partition** option using a remote AT&T Connection.
- If your server has direct access (broadband with a fixed IP address or LAN with a globally routable IP address) to the Internet (without an intervening firewall), or if your server has a private IP address but can access the Internet through a firewall using NAT, you can select the **A direct connection to the Internet** option. This is the recommended option, as it allows for the fastest, most secure access to IBM services and support.
- If you have an Internet service provider (ISP) that your server dials into and acts as a connecting point for other servers or partitions, you may want to select the **A connection using an Internet Service Provider** option. This option supports a secure connection to IBM services and support at the same time and over the same dial-up connection that is currently used by your iSeries server to access the Internet.
- If your server is located on a private network, does not have a global IP address, and has access to a router or server that allows the iSeries server to establish a connection to the Internet through an ISP, select the **A multi-hop connection to the Internet** option.
- In addition to one of the above configurations, if your enterprise contains an HTTP proxy or you configure a Service and Support proxy on one or more of your logical partitions, you can also configure so that service applications that support HTTP and/or HTTPS proxies can use these proxies.

Note: You can configure both a primary and a backup configuration and a primary and a backup proxy.

- Your company's network security policy
- Setting packet rules: You need to ensure that the Universal Connection traffic is allowed through your firewall. For details, see "IP Packet Filter Firewall" on page 3.
- SOCKS security: You need to ensure that none of the Universal Connection traffic gets directed through a SOCKS server. See the Client SOCKS support topic for more information.
- Domain Name Server (DNS): When possible, the service applications will use a DNS to look up service destination addresses. This allows for additional fault tolerance. This being the case, we encourage you to make your DNS available to the appropriate iSeries servers using the CHGTCPDMN CL command.

Note: Some configuration is required when using an HMC modem to connect to IBM through an i5/OS partition, or when having an HMC connecting to IBM through an i5/OS partition's VPN or modem connection. For further information, see Setting up your service environment in the IBM Systems Hardware Information Center.

Scenarios: Universal Connection

Review the following scenarios to become familiar with the technical and configuration details involved with each of the connections that are available through Universal Connection. Although you can also run the Universal Connection wizard to update the Information Center, these scenarios illustrate connecting to IBM electronic customer support.

Notes:

1. Before examining these scenarios, review "Plan for Universal Connection" on page 6 to select a connection method that meets your company's requirements. You can then select an appropriate scenario for your own configuration.
2. You also can configure these profiles using CL Commands, including the GO SERVICE and CRTSRVCFG commands. See the Control language (CL) topic for details.

Point-to-point dial-up connection to AT&T Global Network Services through a local server

In this scenario, MyCompany wants to establish a Universal Connection between your server and IBM electronic customer support through a point-to-point connection to AT&T Global Network Service (AGNS).

Point-to-point dial-up connection through AGNS to a server that provides connectivity for other systems

This scenario enables MyCompany to create a Universal Connection for a server that acts as a connecting point for other systems through a point-to-point connection through AGNS to electronic customer support.

Point-to-point dial-up connection to AGNS from a remote server or HMC

This scenario shows MyCompany creating a Universal Connection through a remote server that acts as a connecting point through AGNS to electronic customer support.

Direct Internet connection through a local server

This scenario shows MyCompany using the Universal Connection wizard to create a connection between its server and electronic customer support over a direct Internet connection.

Direct Internet connection through a local server that provides connectivity for other systems

In this scenario, MyCompany wants to configure a local server to act as a connecting point to electronic services through a direct connection to the Internet.

Point-to-point connection through a local server over an Internet service provider (ISP)

This scenario shows MyCompany using the Universal Connection wizard to create a connection between its server and electronic customer support over a local ISP connection.

Point-to-point connection through a local server that provides connectivity for other systems over an ISP

In this scenario, MyCompany creates a point-to-point connection through a local server that acts as a connecting point for other systems over an ISP.

Multi-hop connection through a remote server

This scenario describes how MyCompany can configure a multi-hop Universal Connection to electronic customer support through a remote server over an ISP.

Scenario: Configure a PPP dial-up connection through AGNS

Situation

Suppose you are responsible for maintaining an iSeries server for MyCompany, a small manufacturing company in Boone, Iowa. As part of providing this support, you need to establish a connection between IBM electronic customer support and MyCompany's iSeries server. Since MyCompany does not have an Internet network connection, you can create a connection from your iSeries server through a dial-up point-to-point (PPP) using your internal modem. Because you do not need to provide connections for other systems, you do not need to consider providing connections for other servers or partitions.

Solution

Create a Universal Connection to IBM through AT&T Global Network Services (AGNS). In this case, you establish a connection through the Connection Manager on your local iSeries server through an AGNS point-to-point connection to electronic customer support.

Advantages

This scenario provides the following advantages:

- MyCompany does not need to invest in additional hardware or software to receive benefit from electronic customer support. You can configure this connection using the internal modem that you already own through the Universal Connection wizard or through the **GO SERVICE** or **CRTSRVCFG CL** command.
- The AGNS connection provides a simple means of ensuring that MyCompany has electronic customer support available for ease of troubleshooting server problems, tracking current system hardware and software, or receiving software updates and fixes.
- The AGNS provides a secure connection between MyCompany and IBM by implementing its own security when making a connection. You do not need to provide additional security.

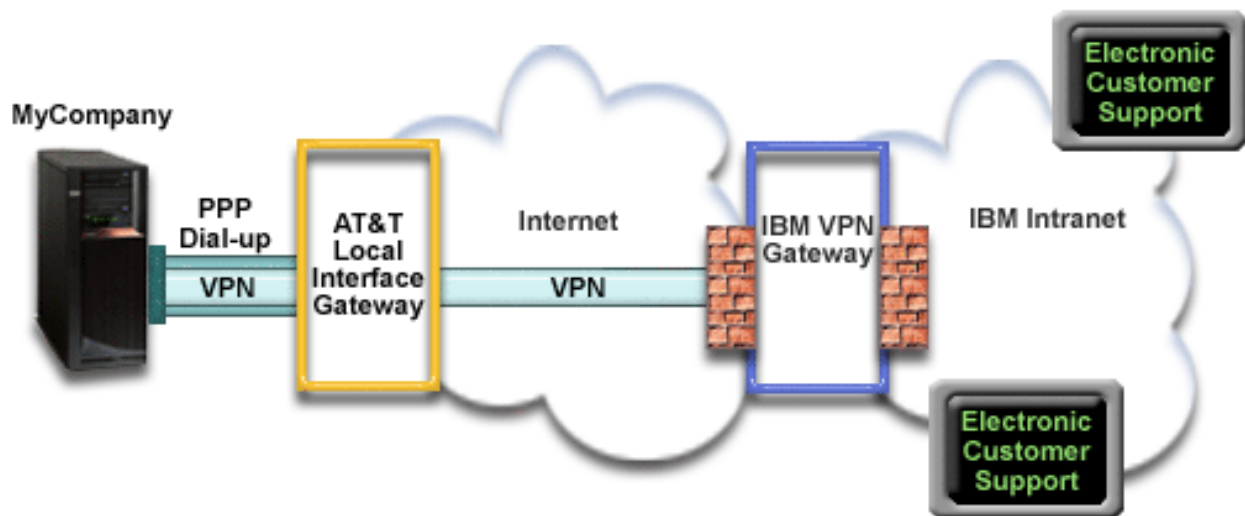
Objectives

In this scenario, the MyCompany wants to ensure that IBM can support the MyCompany computer system, when requested by the company's network administrator. The objectives of this scenario are as follows:

- To create a secure point-to-point dial-up connection between MyCompany and electronic customer support through AT&T Global Network Services
- To automate customer support through electronic customer support and services
- To allow electronic customer support to create an electronic hardware and software inventory of MyCompany's iSeries system
- To request that electronic customer support send software fixes and updates to MyCompany over the network

Details

The following diagram illustrates connecting the MyCompany iSeries server to electronic customer support through an AT&T Global Network Services connection.



Configuring Universal Connection

- iSeries Navigator launches the Universal Connection Wizard to configure the connection. This only needs to be done once unless AT&T phone numbers or other information needs to be updated.

Using Universal Connection

When a Service Application wants to use the Universal Connection to communicate with IBM the following will occur:

- A Point-to-Point connection is made through an AT&T Local Interface Gateway (LIG).
- A Virtual Private Network (VPN) is established, if the service application is not providing its own encrypted communications, through the AT&T LIG and the Internet to a VPN Gateway at IBM.
- The service application communicates with the appropriate IBM servers to perform the requested service.

Prerequisites and assumptions

The prerequisites for enabling electronic customer support over an AGNS connection include:

- Ensure that the iSeries Access for Windows[®] and iSeries Navigator exist on your personal computer, as described in the iSeries Access for Windows: Installation and setup topic.
- Ensure that you install all of the latest service packs for iSeries Navigator. The scenarios show using the V5R4 version of the software.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- You must have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your i5/OS user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- You must install the TCP/IP Connectivity Utilities (5722-TC1).
- For the virtual private network (VPN) and SSL to operate, you must install the Digital Certificate Manager (DCM) (5722-SS1 option 34).
- Ensure that the QRETSVRSEC system value is set to 1. You can check this value with the Display System Value (DSPSYSVAL) command. If this value is not set to 1, enter a Change System Value (CHGSYSVAL) command. This allows the account userid and password to be stored on the iSeries server.
- If you are using an internal modem such as the 56 Kbps modem that is provided with the 9793 adapter card, ensure that the network attribute MDMCNTRYID is set appropriately. You can check this value with the Display Network Attributes (DSPNETA) command. If this value is not set correctly, change this value with a Change Network Attributes (CHGNETA) command.

Current[®] system configuration steps

Assuming that TCP/IP configuration already exists and works, complete the following steps to set up the Universal Connection if you connect to electronic customer support through MyCompany's local server:

1. Complete the planning worksheet.
2. Start iSeries Navigator and select the Universal Connection wizard.
3. Enter the service, address, and country information on the Universal Connection wizard dialogs.
4. Under Connect from the Current System, select the dialup connection using AT&T Global Network Services as a connection type.
5. Choose a hardware resource, primary telephone number, and backup telephone number for creating a connection over the modem.
6. For proxy option, configure a proxy destination.
7. Indicate that this server does not provide connectivity for other servers or partitions.
8. Review the Summary window to ensure that the configuration meets your requirements, and click **Finish** to save your configuration.
9. When prompted, test the connection from your server to electronic customer support.
10. Configure a backup configuration.

Note: Repeat this process for each service application you would like to use.

Scenario details: Configure a point-to-point dial-up connection to AGNS

After you complete the prerequisites, you are ready to begin configuring the Universal Connection through the wizard.

Step 1: Complete the planning worksheet.

The following planning work sheet illustrates the type of information you need before configuring the AGNS connection. You use this information when running the Universal Connection wizard.

Planning work sheet	Answers
Service information <ul style="list-style-type: none"> • Company • Contact name • Telephone number • Help desk or pager number • Fax number • Alternate fax number 	<ul style="list-style-type: none"> • MyCompany • Tom Smith • 515-870-9990 • 515-870-9942 • 515-870-5586 • 515-870-5587
Company address <ul style="list-style-type: none"> • Street address • City or locality • State or province • Country (or region) • Postal code • National language version • Electronic mail address • Alternate electronic mail address • Media for PTFs (fixes) 	<ul style="list-style-type: none"> • 94 West Proctor St. • Boone • Iowa • United States • 55902 • English (2924) • myname@company.com • myname@othercompany.com • Automatic selection
Location <ul style="list-style-type: none"> • Country (or region) • State 	<ul style="list-style-type: none"> • United States • Iowa
Connection method	Through the local (current) iSeries server
Connection type	A dial-up connection through AT&T Global Network Services
Hardware resource	CMN08

If you prefer using CL Commands to create the configuration, use the Change Contact Information (CHGCNTINF) and the Create Service Configuration (CRTSRVCFG) commands.

Step 2: Start iSeries Navigator and select the Universal Connection wizard.

To start the Universal Connection wizard and begin establishing your connection:

1. Open iSeries Navigator software.
2. Select the server under the My Connections folder that you want to configure for electronic customer support.
3. Expand **Network**.
4. Expand **Remote Access Services**.
5. Right-click **Originator Connection Profiles**.
6. Select **Configure IBM Universal Connection** to start the Universal Connection wizard. The Welcome dialog appears.

Note: A progress bar indicates that iSeries Navigator is loading the Universal Connection wizard. If you encounter problems while running the wizard, see “Troubleshoot the Universal Connection wizard” on page 64 for a solution. Run the wizard again after solving the problem.

Step 3: Enter the service, address, and country information on the Universal Connection wizard dialogs.

To enter information about your company and connections:

1. On the Select Configuration dialog, select either **Primary connection configuration** or **Backup connection configuration**. The default is primary. Check the **View and modify contact information** box and click **Next**
2. On the Service Information dialog, enter the following information about MyCompany and click **Next**:
 - Company – MyCompany
 - Contact name – Tom Smith
 - Telephone number – 515-870-9990
 - Help desk or pager number— 515-870-9999
 - Fax number — 515-870-5586
 - Alternate fax number — 515-870-9942

If this information exists on your server, the company data already appears in the fields. For example, if MyCompany previously created a configuration, the wizard retrieves the data from the existing configuration.

3. On the Company Address dialog, enter MyCompany's address and click **Next**.
 - Street address – 94 West Proctor St.
 - City or locality – Boone
 - State or province – Iowa
 - Country or region – United States
 - Postal code – 55902
 - National language version – English (2924)
 - Electronic mail address – myname@company.com
 - Alternate electronic mail address – myname@othercompany.com
 - Media for PTFs – Automatic selection
4. On the Location dialog, select the country (or region) and the state or province where your iSeries server resides and Click **Next**.
 - Country (or region) – United States
 - State – Iowa

Step 4: Under Connect from the Current System, select the dialup connection using AT&T Global Network Services as a connection type.

Note: There is a checkbox to **Additionally configure a proxy connection**. If this box is checked, Step 6 will appear. If your enterprise has an HTTP proxy or you've configured a service and support proxy on another system or partition, and you wish to use that for Universal Connection applications which support going through a proxy, check this box.

Step 5: Choose a hardware resource, primary telephone number, and backup telephone number for creating a connection over the modem.

To specify hardware resources, telephone lines, and modems

1. Select an existing hardware resource from the list on the dialog and click **Next**. You can sort the hardware resources list in one of these ways:
 - List internal modem resources only.
 - List all resources by name.
 - List all resources by location
2. Select the appropriate country or region and state from the Phone Number dialog. A group of corresponding cities and telephone numbers appears in the City list. Select a telephone number from the list. If your location requires a dial prefix (such as a 9) or does not require part of the phone number (such as an area code), modify the selected phone number. Note that if a delay is required between a dial prefix and the rest of the number, insert a comma to add a delay. Click **Next**. The wizard takes you to the Backup Phone Number dialog.

Note: If you have never connected your server through AT&T, the telephone numbers may not be current. Verify your telephone number selections at the AT&T Business Internet Services

(www.attbusiness.net)  Web site.

3. Optional: Select the appropriate country or region and state from the Backup Phone number dialog. A group of corresponding cities and telephone numbers appears in the City list. Select a telephone number from the list, modify (if necessary) as described above, and click **Next**.

If your server has an external modem associated with the hardware resource and line, the wizard takes you to the Modem dialog, as described in Step 4. If the resource selected is for an internal modem, the wizard takes you to Step 8.

4. Optional: If your server uses an external modem, select a modem name from the list, and click **Next**.

Step 6: For proxy option, configure a proxy destination.

Note: This screen only appears if the proxy option was selected in Step 4.

To configure a proxy destination

1. Attempt proxy connection first

- a. Choose this option if you want the proxy to take precedence over the configuration for this scenario.
- b. If necessary, check the **Proxy destination requires HTTP basic authentication** box and fill in the **User name** and **Password** fields.
- c. Click **Next** and proceed to the next Step.

2. Attempt proxy connection if previously defined configuration fails

- a. Choose this option if the proxy is to be used only in the event that the configuration for this scenario fails.
- b. Fill in the **Proxy IP address or host name** field.
- c. Fill in the **Proxy port** field.
- d. If necessary, check the **Proxy destination requires HTTP basic authentication** box and fill in the **User name** and **Password** fields.
- e. Click **Next** and proceed to the next Step.

Step 7: Indicate that this server does not provide connectivity for other servers or partitions.

Click **No** to indicate that this server has a direct connection to electronic customer support without providing connectivity for other systems or partitions.

Step 8: Review the Summary window to ensure that the configuration meets your requirements, and click Finish to save your configuration.

To complete and save your server configuration:

1. Review the configuration summary. Click **Back** if you need to change a value on any of the wizard dialogs.
2. When the configuration is correct, click **Finish** to save the configuration. A progress bar indicates that the wizard is in the process of saving the configuration.

Step 9: Test the connection from your server to electronic customer support.

To test the configuration:

1. Click **Yes** when the wizard prompts you to test the configuration. The Verify Universal Connection dialog appears.
2. Make note of any problems as the wizard displays verification progress.
3. Click **OK** when the wizard indicates that verification is complete.

- | 4. If the wizard finds errors, restart the Universal Connection wizard, make necessary corrections, save, and retest the corrected configuration.

| **Step 10: Configure a backup configuration.**

- | If an additional connection method is available to you, it is suggested that you rerun the wizard to configure a backup. This backup will be used automatically in the event that the primary connection fails.

Scenario: Configure a PPP dial-up connection for a server that provides connectivity for other systems through AGNS

Situation

In this situation, you are responsible for maintaining an iSeries server for MyCompany, a small manufacturing company in Boone, Iowa. As part of providing this support, you need to establish a connection between electronic customer support and the four MyCompany iSeries servers. Since MyCompany does not have an Internet network connection, you could dial into AT&T to connect your iSeries servers to IBM over a point-to point connection. In addition, the only modem you currently have is an external 7852-400 modem, and you want to utilize this modem for all your servers.

Solution

Create a Universal Connection to IBM through the AT&T Global Network Services (AGNS). In this case, you establish a connection through the Connection Manager on the iSeries server that has a modem through an AGNS point-to-point connection to electronic customer support. The iSeries server acts as a connecting point for the other three servers.

- | As an option, your system can act as a connecting point for other the other three MyCompany servers in your company that need to connect to electronic customer support services, as described in Configure a remote PPP dial-up connection. In this case, you must either select an existing L2TP terminator profile, or let the Universal Connection wizard create an L2TP terminator profile. See L2TP (virtual line) for additional information about L2TP terminator profiles.

Advantages

This scenario provides the following advantages:

- MyCompany does not need to invest in additional hardware or software to receive benefit from electronic customer support. You can configure this connection through the Universal Connection wizard using your existing external modem or using CL commands.
- MyCompany's other three servers can remotely connect to electronic customer support through a single server. MyCompany would only need a single modem instead of a separate modem for each system or partition.
- The AGNS connection provides a simple means of ensuring that MyCompany has electronic customer support available for ease of troubleshooting server problems, tracking current system hardware and software, or receiving software updates and fixes.
- | • The AGNS provides a secure connection between MyCompany and IBM by implementing its own security when making a connection. You do not need to provide additional security.

Objectives

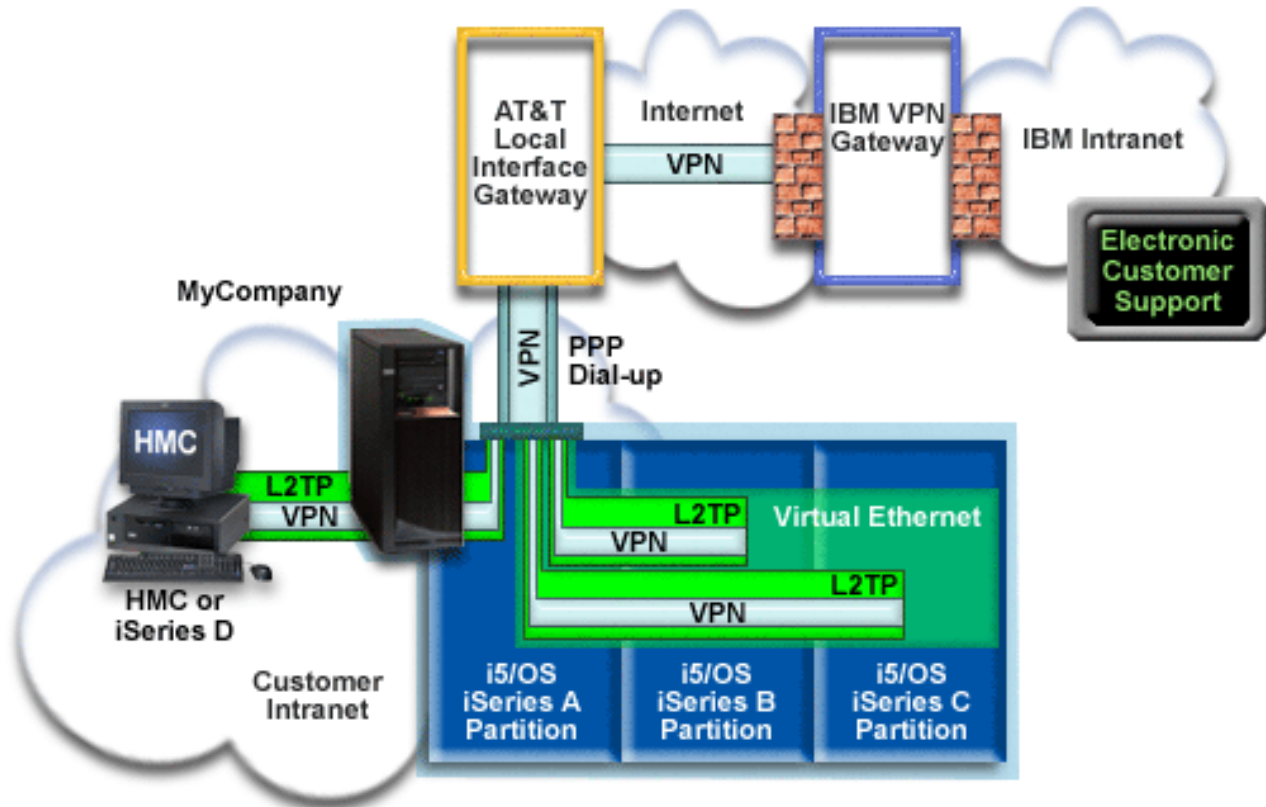
In this scenario, the customer wants to ensure that IBM can support the MyCompany system over the network though a point to point connection through the AT&T Global Network Services. The objectives of this scenario are as follows:

- To create a secure point-to-point dial-up connection between the MyCompany's 4 servers and electronic customer support through AT&T Global Network Services

- To automate customer support through electronic customer support and services
- To allow electronic customer support to create an electronic hardware and software inventory of MyCompany's iSeries system
- To permit electronic customer support to send software fixes and updates to MyCompany over the network

Details

The following diagram illustrates connecting the MyCompany iSeries server to electronic customer support through an AT&T Global Network Services connection.



Configuring Universal Connection

- iSeries Navigator launches the Universal Connection Wizard to configure the connection. This only needs to be done once on the system providing connectivity to others, and also once on each system using the connectivity.

Using Universal Connection

When a Service Application wants to use the Universal Connection to communicate with IBM the following will occur:

- If iSeries A needs to connect, a Point-to-Point connection is made through the local modem to an AT&T Local Interface Gateway (LIG). If iSeries B, C or D needs to connect, a Point-to-Point connection is made through an L2TP tunnel using the remote modem to the AT&T LIG.
- A Virtual Private Network (VPN) is established, if the service application is not providing its own encrypted communications, through the AT&T LIG and the Internet to a VPN Gateway at IBM.
- The service application communicates with the appropriate IBM servers to perform the requested service.

Prerequisites and assumptions

The prerequisites for enabling electronic customer support over an AGNS connection include:

- Ensure that the iSeries Access for Windows and iSeries Navigator exist on your personal computer, as described in the iSeries Access for Windows: Installation and setup topic.
- Ensure that you install all of the latest service packs for iSeries Navigator. The scenarios show using the V5R4 version of the software.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- l • You must have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your i5/OS user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- l • You must install the TCP/IP Connectivity Utilities (5722-TC1).
- l • For the virtual private network (VPN) and SSL to operate, you must install the Digital Certificate Manager (DCM) (5722-SS1 option 34).
- l • Ensure that the QRETSVRSEC system value is set to 1. You can check this value with the Display System Value (DSPSYSVAL) command. If this value is not set to 1, enter a Change System Value (CHGSYSVAL) command.
- If you are using an internal modem such as the 56 Kbps modem that is provided with the 9793 adapter card, ensure that the network attribute MDMCNTRYID is set appropriately. You can check this value with the Display System Value (DSPSYSVAL) command. If this value is not set correctly, change this value with a Change System Value (CHGSYSVAL) command. This allows the account userid and password to be stored on the iSeries server.
- IP connectivity is required between the system or partition with the modem and the systems or partitions wishing to use it.

Current system or partition configuration steps

Assuming that TCP/IP configuration already exists and works, complete the following steps to set up the Universal Connection when your local server acts as a connecting point for the other three servers in MyCompany:

1. Complete the planning work sheet.
2. Start the iSeries Navigator and select the Universal Connection wizard.
3. Enter the service, address, and country information on the Universal Connection wizard dialogs.
4. Under Connect from the Current System, select the dialup connection using AT&T Global Network Services as a connection type.
5. Choose a hardware resource, primary telephone number, and backup telephone number for creating a connection over the modem.
6. For proxy option, configure a Service and Support proxy server.
7. Specify that you want this iSeries server to provide connectivity for other systems that connect to electronic customer support.
8. Select an interface the other servers use when connecting to electronic customer support.
9. Create or select L2TP terminator profiles. You need these profiles to provide connectivity to the other systems or servers that connect to electronic customer support through your server.
10. Configure a Service and Support proxy server.
11. Review the Summary window to ensure that the configuration meets your requirements, and click **Finish** to save your configuration.
12. When prompted, test the connection from your server to electronic customer support.
13. Configure a backup configuration (optional).

Scenario details: Configure a PPP dial-up connection to a server that provides connectivity to other systems

After you complete the prerequisites, you are ready to begin configuring the Universal Connection through the wizard.

Step 1: Complete the planning work sheet.

The following planning work sheet illustrates the type of information you need before configuring the AGNS connection. You use this information when running the Universal Connection wizard.

Planning work sheet	Answers
Service information <ul style="list-style-type: none"> • Company • Contact name • Telephone number • Help desk or pager number • Fax number • Alternate fax number 	<ul style="list-style-type: none"> • MyCompany • Tom Smith • 515-870-9990 • 515-870-9942 • 515-870-5586 • 515-870-5587
Company address <ul style="list-style-type: none"> • Street address • City or locality • State or province • Country (or region) • Postal code • National language version • Electronic mail address • Alternate electronic mail address • Media for PTFs (fixes) 	<ul style="list-style-type: none"> • 94 West Proctor St. • Boone • Iowa • United States • 55902 • English (2924) • myname@company.com • myname@othercompany.com • Automatic selection
Location <ul style="list-style-type: none"> • Country (or region) • State 	<ul style="list-style-type: none"> • United States • Iowa
Connection method	Through current iSeries server
Connection type	A dial-up connection using AT&T Global Network Services
Hardware resource	CMN07
Modem type (if you use an external modem)	IBM 7852-400®
Interface description for other systems to use when connecting this system through a TCP/IP address	10.1.1.1 (Ethernet)

If you prefer using CL Commands to create the configuration, use the Change Contact Information (CHGCNTINF) and the Create Service Configuration (CRTSRVCFG) commands.

Step 2: Start the iSeries Navigator and select the Universal Connection wizard.

To start the Universal Connection wizard and begin establishing your connection:

1. Open iSeries Navigator software.
2. Select the server under the My Connections folder that you want to configure for electronic customer support.
3. Expand **Network**.
4. Expand **Remote Access Services**.
5. Right-click **Originator Connection Profiles**.
6. Select **Configure IBM Universal Connection** to start the Universal Connection wizard. The Welcome dialog appears.

Note: A progress bar indicates that iSeries Navigator is loading the Universal Connection wizard. If you encounter problems while running the wizard, see “Troubleshoot the Universal Connection wizard” on page 64 for a solution. Run the wizard again after solving the problem.

Step 3: Enter the service, address, and country information on the Universal Connection wizard dialogs.

To enter information about your company and connections:

1. On the Select Configuration dialog, select either **Primary connection configuration** or **Backup connection configuration**. The default is primary. Check the **View and modify contact information** box and click **Next**
2. On the Service Information dialog, enter the following information about MyCompany and click **Next**:
 - Company – MyCompany
 - Contact name – Tom Smith
 - Telephone number – 515-870-9990
 - Help desk or pager number— 515-870-9999
 - Fax number — 515-870-5586
 - Alternate fax number — 515-870-9942

If this information exists on your server, the company data already appears in the fields. For example, if MyCompany previously created a configuration, the wizard retrieves the data from the existing configuration.

3. On the Company Address dialog, enter MyCompany's address and click **Next**.
 - Street address – 94 West Proctor St.
 - City or locality – Boone
 - State or province – Iowa
 - Country or region – United States
 - Postal code – 55902
 - National language version – English (2924)
 - Electronic mail address – myname@company.com
 - Alternate electronic mail address – myname@othercompany.com
 - Media for PTFs – Automatic selection
4. On the Location dialog, select the country (or region) and the state or province where your iSeries server resides and Click **Next**.
 - Country (or region) – United States
 - State – Iowa

Step 4: Under Connect from the Current System, select the dialup connection using AT&T Global Network Services as a connection type.

Note: There is a checkbox to **Additionally configure a proxy connection**. If your enterprise has an HTTP proxy or you've configured a service and support proxy on another system or partition, and you wish to use that for Universal Connection applications which support going through a proxy, check this box. If this box is checked, Step 6 will appear.

Step 5: Choose a hardware resource, primary telephone number, and backup telephone number for creating a connection over the modem.

To specify hardware resources, telephone lines, and modems

1. Select an existing hardware resource from the list on the dialog and click **Next**. You can sort the hardware resources list in one of these ways:
 - List internal modem resources only.
 - List all resources by name.
 - List all resources by location
2. Select the appropriate country or region and state from the Phone Number dialog. A group of corresponding cities and telephone numbers appears in the City list. Select a telephone number from the list. If your location requires a dial prefix (such as a 9) or does not require part of the phone number (such as an area code), modify the selected phone number. Note that if a delay is required

between a dial prefix and the rest of the number, insert a comma to add a delay. Click **Next**. The wizard takes you to the Backup Phone Number dialog.

Note: If you have never connected your server through AT&T, the telephone numbers may not be current. Verify your telephone number selections at the AT&T Business Internet Services

(www.attbusiness.net)  Web site.

3. Optional: Select the appropriate country or region and state from the Backup Phone number dialog. A group of corresponding cities and telephone numbers appears in the City list. Select a telephone number from the list, modify (if necessary) as described above, and click **Next**.

If your server has an external modem associated with the hardware resource and line, the wizard takes you to the Modem dialog, as described in Step 4. If the resource selected is for an internal modem, the wizard takes you to Step 8.

4. Optional: If your server uses an external modem, select a modem name from the list, and click **Next**.

Step 6: For proxy option, configure a proxy destination.

Note: This screen only appears if the proxy option was selected in Step 4.

To configure a proxy destination

1. Attempt proxy connection first

- a. Choose this option if you want the proxy to take precedence over the configuration for this scenario.
- b. If necessary, check the **Proxy destination requires HTTP basic authentication** box and fill in the **User name** and **Password** fields.
- c. Click **Next** and proceed to the next Step.

2. Attempt proxy connection if previously defined configuration fails

- a. Choose this option if the proxy is to be used only in the event that the configuration for this scenario fails.
- b. Fill in the **Proxy IP address or host name** field.
- c. Fill in the **Proxy port** field.
- d. If necessary, check the **Proxy destination requires HTTP basic authentication** box and fill in the **User name** and **Password** fields.
- e. Click **Next** and proceed to the next Step.

Step 7: Specify that you want this iSeries server to provide connectivity for other systems that connect to electronic customer support.

Select **Yes** to indicate that this server provides connectivity for other servers or partitions and click **Next**.

Step 8: Select an interface the other servers use when connecting to electronic customer support.

Select the interfaces that the other MyCompany servers will use when connecting to IBM. Select one of the following options:

- Click **Any interface** to let the Universal connection accept connections from all TCP/IP interfaces.
- Click **Select interfaces** to select specific interfaces to listen for connection requests. The list box becomes active. Select all appropriate interfaces. The wizard automatically creates an L2TP terminator for each interface that does not have an associated terminator. If there are L2TP terminators associated with an interface, the wizard prompts you to select the one terminator you wish to associate with the interface.

As an option, you can select multiple interfaces with the CTRL key.

| **Note:** In addition, the wizard configures the Service and Support HTTP Proxy to start with TCP and to
| listen for connection requests on the interfaces you select.

In this case, MyCompany selects 10.1.1.1 Ethernet Interface.

| **Step 9: Create or select L2TP terminator profiles.**

1. Select an L2TP terminator profile for each of your selected interfaces. Choose one of the following options:

- | • Click **Create a new profile named QL2TP nn** where nn represents a number from 00 to 99. With this
| selection, the wizard creates, names, and consecutively numbers the new L2TP profile.
- | • Click **Select an existing profile** to choose a specific L2TP profile for the associated interface.

In this case, MyCompany lets the Universal Connection wizard create an L2TP profile.

2. Ensure that the **Start selected L2TP terminator profiles when TCP/IP is started** check box is checked. MyCompany wishes to start this profile when starting TCP/IP.

Note: By starting the selected L2TP terminator profile when the system starts TCP/IP, all other L2TP terminator profiles for this interface will be modified not to start with TCP/IP.

If you specify that you do not want to start the selected L2TP terminator profiles when TCP/IP is started, you must manually start the L2TP terminator before using the connection to the systems.

| **Step 10: Configure a Service and Support proxy server.**

| To configure a service and support proxy server

- | 1. Fill in the **Server port** field.
- | 2. If desired, check the **Require HTTP basic authentication** box and fill in the **User name** and **Password**
| fields. Authentication is optional. If specified, all other partitions or systems using this proxy must
| provide these security credentials.
- | 3. Click **Next** and proceed to the next Step.

| **Step 11: Review the Summary window to ensure that the configuration meets your requirements, and
| click Finish to save your configuration.**

To complete and save your server configuration:

1. Review the configuration summary. Click **Back** if you need to change a value on any of the wizard dialogs.
2. When the configuration is correct, click **Finish** to save the configuration. A progress bar indicates that the wizard is in the process of saving the configuration.

| **Step 12: Test the connection from your server to electronic customer support.**

To test the configuration:

1. Click **Yes** when the wizard prompts you to test the configuration. The Verify Universal Connection dialog appears.
2. Make note of any problems as the wizard displays verification progress.
3. Click **OK** when the wizard indicates that verification is complete.
4. If the wizard finds errors, restart the Universal Connection wizard, make necessary corrections, save, and retest the corrected configuration.

Note: After completing this scenario the system is ready to communicate with IBM and to accept remote connection requests from other systems. The Configure a remote PPP dial-up connection scenario should be repeated for each system or partition that is to use this system to reach IBM Electronic Customer Support.

| **Step 13: Configure a backup configuration (optional).**

| If an additional connection method is available to you, it is suggested that you rerun the wizard to configure a backup. This backup will be used automatically in the event that the primary connection fails.

Scenario: Configure a remote PPP dial-up connection

Situation

| Suppose you purchase an additional iSeries server for MyCompany, a small manufacturing company in Boone, Iowa. As part of providing support, you need to establish a connection between electronic customer support and MyCompany's iSeries server. Since this server does not include a modem and MyCompany does not have an Internet bound network connection, you could configure a remote connection through another iSeries server or HMC that already has a dial up point-to-point connection to electronic customer services. For more information about set up for an HMC environment, see Setting up your service environment in the IBM Systems Hardware Information Center.

Solution

Create a remote Universal Connection to IBM through the AT&T Global Network Services (AGNS). In this case, you establish a connection through the Connection Manager on your remote iSeries server through an AGNS point-to-point connection to electronic customer support.

Advantages

This scenario provides the following advantages:

- | • MyCompany does not need to invest in an additional modem, cabling, or software to receive benefit from electronic customer support. You can configure this connection through the Universal Connection wizard or CL commands.
- | • The AGNS connection provides a simple means of ensuring that MyCompany has electronic customer support available for ease of troubleshooting server problems, tracking current system hardware and software, or receiving software updates and fixes.
- | • The AGNS provides a secure connection between MyCompany and IBM by implementing its own security when making a connection. You do not need to provide additional security.

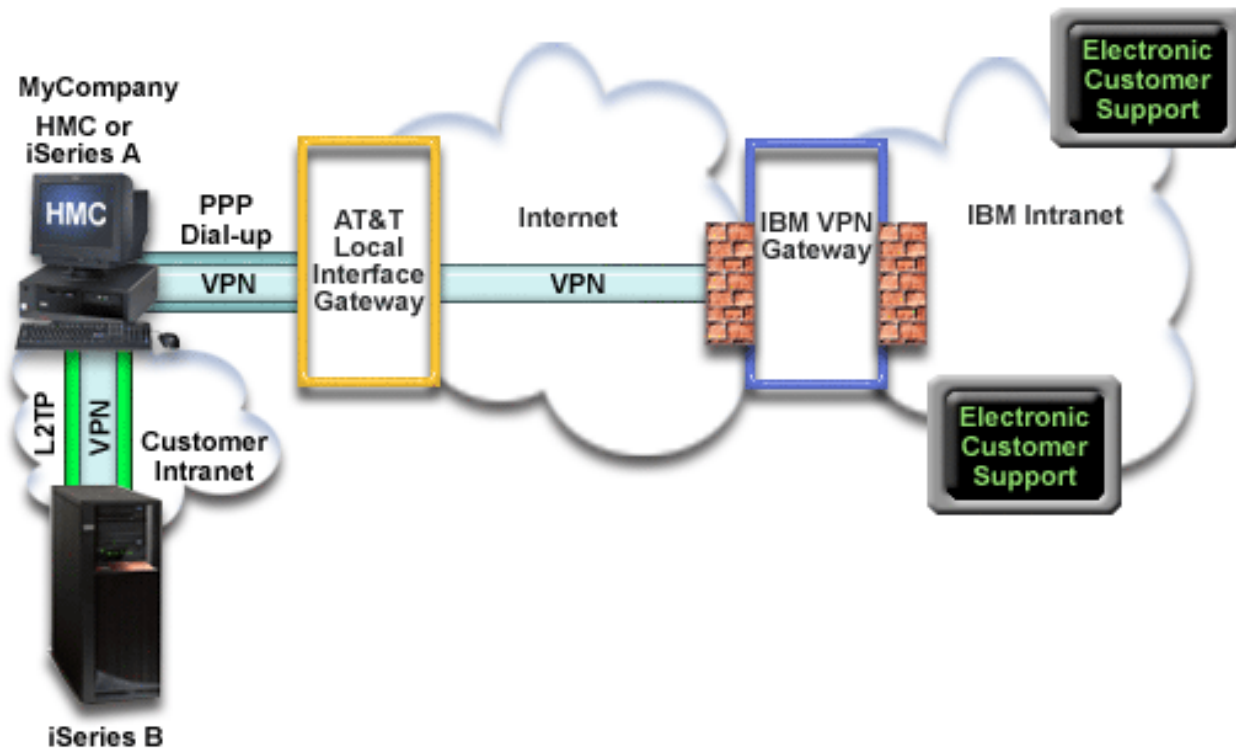
Objectives

In this scenario, the customer wants to ensure that IBM can support the remote MyCompany server over the network through a point-to-point connection through AT&T Global Network Services. The objectives of this scenario are as follows:

- | • To create a remote point-to-point dial-up connection between the customer and ECS through AT&T Global Network Services
- | • To automate customer support through electronic customer support and services
- | • To allow remote electronic customer support to create an electronic hardware and software inventory of MyCompany's iSeries servers
- | • To permit electronic customer support to send software fixes and updates to the remote MyCompany iSeries server over the network

Details

The following diagram illustrates creating a remote connection to another server to access electronic customer support through an AT&T Global Network Services connection.



Prerequisites and assumptions

The prerequisites for enabling electronic customer support over remote AGNS connection include:

- Ensure that the iSeries Access for Windows and iSeries Navigator exist on your personal computer, as described in the iSeries Access for Windows: Installation and setup.
- Ensure that you install all of the latest service packs for iSeries Navigator. The scenarios show using the V5R4 version of the software.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- You must have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your i5/OS user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- You must install the TCP/IP Connectivity Utilities (5722-TC1).
- You must install the Digital Certificate Manager (DCM) (5722-SS1 option 34).

Note: This scenario is supported for V5R1, V5R2, V5R3 and V5R4 systems. However, V5R3 or later iSeries Navigator is required in order to configure this option. The VPN will only be used over AT&T if your server is at V5R3 or later.

- Ensure that the QRETSVRSEC system value is set to 1. You can check this value with the Display System Value (DSPSYSVAL) command. If this value is not set to 1, enter a Change System Value (CHGSYSVAL) command.
- The Universal Connection from the server with the modem must have been configured to provide AT&T connectivity to others before you can actually use this remote connection. If the modem is attached to an HMC, see Setting up your service environment in the IBM Systems Hardware Information Center for instructions on how to configure it to allow the use of its modem.
- You must have configured TCP/IP connectivity between this system and the one containing the modem.

Remote server configuration steps

Assuming that TCP/IP configuration already exists and works, complete the following steps to set up the Universal Connection if you connect to electronic customer support through a remote system:

1. Complete the planning work sheet.
2. Start iSeries Navigator and select the Universal Connection wizard.
3. Enter the service, address, and country (or region) information on the Universal Connection wizard dialogs.
4. Under Connect through another system or partition, select the dialup connection using AT&T Global Network Services as a connection type.
5. To create the remote connection to IBM, enter the dial gateway address or host name of the server that connects to IBM.
6. For proxy option, configure a proxy destination.
7. Indicate that this server does not provide connectivity for other servers or partitions.
8. Review the Summary window to ensure that the configuration meets your requirements, and click **Finish** to save your configuration.
9. When prompted, Test the connection from your server to electronic customer support.
10. Configure a backup configuration (optional).

Scenario details: Configure a remote point-to-point dial-up connection

After you complete the prerequisites, you are ready to begin configuring the Universal Connection through the wizard.

Step 1: Complete the planning work sheet.

The following planning work sheet illustrates the type of information you need before configuring the AGNS connection. You use this information when running the Universal Connection wizard.

Planning work sheet	Answers
Service information <ul style="list-style-type: none"> • Company • Contact name • Telephone number • Help desk or pager number • Fax number • Alternate fax number 	<ul style="list-style-type: none"> • MyCompany • Tom Smith • 515-870-9990 • 515-870-9942 • 515-870-5586 • 515-870-5587
Company address <ul style="list-style-type: none"> • Street address • City or locality • State or province • Country (or region) • Postal code • National language version • Electronic mail address • Alternate electronic mail address • Media for PTFs (fixes) 	<ul style="list-style-type: none"> • 94 West Proctor St. • Boone • Iowa • United States • 55902 • English (2924) • myname@company.com • myname@othercompany.com • Automatic selection
Location <ul style="list-style-type: none"> • Country (or region) • State 	<ul style="list-style-type: none"> • United States • Iowa
Connection method	Through a remote server
Connection type	A dial-up connection using AT&T Global Network Services

Planning work sheet	Answers
Dial gateway address of the remote server or host name	192.168.1.1. (As an alternative, supply the host name [charlie.mycompany.com]) if the system being configured is at V5R3 or later.

If you prefer using CL Commands to create the configuration, use the Change Contact Information (CHGCNTINF) and the Create Service Configuration (CRTSRVCFG) commands.

Step 2: Start iSeries Navigator and select the Universal Connection wizard.

To start the Universal Connection wizard and begin establishing your connection:

1. Open iSeries Navigator software.
2. Select the server under the My Connections folder that you want to configure for electronic customer support.
3. Expand **Network**.
4. Expand **Remote Access Services**.
5. Right-click **Originator Connection Profiles**.
6. Select **Configure IBM Universal Connection** to start the Universal Connection wizard. The Welcome dialog appears.

Note: A progress bar indicates that iSeries Navigator is loading the Universal Connection wizard. If you encounter problems while running the wizard, see “Troubleshoot the Universal Connection wizard” on page 64 for a solution. Run the wizard again after solving the problem.

Step 3: Enter the service, address, and country (or region) information on the Universal Connection wizard dialogs.

To enter information about your company and connections:

1. On the Select Configuration dialog, select either **Primary connection configuration** or **Backup connection configuration**. The default is primary. Check the **View and modify contact information** box and click **Next**.
2. On the Service Information dialog, enter the following information about MyCompany and click **Next**:
 - Company – MyCompany
 - Contact name – Tom Smith
 - Telephone number – 515-870-9990
 - Help desk or pager number— 515-870-9999
 - Fax number — 515-870-5586
 - Alternate fax number — 515-870-9942

If this information exists on your server, the company data already appears in the fields. For example, if MyCompany previously created a configuration, the wizard retrieves the data from the existing configuration.

3. On the Company Address dialog, enter MyCompany’s address and click **Next**.
 - Street address – 94 West Proctor St.
 - City or locality – Boone
 - State or province – Iowa
 - Country or region – United States
 - Postal code – 55902
 - National language version – English (2924)
 - Electronic mail address – myname@company.com
 - Alternate electronic mail address – myname@othercompany.com
 - Media for PTFs – Automatic selection

4. On the Location dialog, select the country (or region) and the state or province where your iSeries server resides and Click **Next**.
 - Country (or region) – United States
 - State – Iowa

| **Step 4: Under Connect through another system or partition, select the dialup connection using AT&T Global Network Services as a connection type.**

| **Note:** There is a checkbox to **Additionally configure a proxy connection**. If this box is checked, Step 6 will appear. If using the modem on a remote i5/OS system or partition at V5R4 or above, the Service and Support proxy can be specified. If your enterprise contains an HTTP proxy, that can be specified instead.

| **Step 5: To create the remote connection to IBM, enter the dial gateway address or host name of the server that connects to IBM.**

| Enter the dial gateway address of the remote server or enter the remote server name and click **Next**. The dial gateway address is 192.168.1.1. The name of the MyCompany server is Charlie.mycompany.com in this scenario.

| **Step 6: For proxy option, configure a proxy destination.**

| **Note:** This screen only appears if the proxy option was selected in Step 4.
| To configure a proxy destination

| **1. Attempt proxy connection first**

- a. Choose this option if you want the proxy to take precedence over the configuration for this scenario.
- b. If necessary, check the **Proxy destination requires HTTP basic authentication** box and fill in the **User name** and **Password** fields.
- c. Click **Next** and proceed to the next Step.

| **2. Attempt proxy connection if previously defined configuration fails**

- a. Choose this option if the proxy is to be used only in the event that the configuration for this scenario fails.
- b. Fill in the **Proxy IP address or host name** field.
- c. Fill in the **Proxy port** field.
- d. If necessary, check the **Proxy destination requires HTTP basic authentication** box and fill in the **User name** and **Password** fields.
- e. Click **Next** and proceed to the next Step.

| **Step 7: Indicate that this server does not provide connectivity for other servers or partitions.**

| Click **No** to indicate that this server has a direct connection to electronic customer support without providing connectivity for other systems or partitions.

| **Step 8: Review the Summary window to ensure that the configuration meets your requirements, and click Finish to save your configuration.**

| To complete and save your server configuration:

1. Review the configuration summary. Click **Back** if you need to change a value on any of the wizard dialogs.
2. When the configuration is correct, click **Finish** to save the configuration. A progress bar indicates that the wizard is in the process of saving the configuration.

| **Step 9: Test the connection from your server to electronic customer support.**

To test the configuration:

Note: Ensure that the L2TP terminator is active on the remote server, or if the remote server is an HMC, ensure that it has been configured to allow dialing using the local modem.

1. Click **Yes** when the wizard prompts you to test the configuration. The Verify Universal Connection dialog appears.
2. Make note of any problems as the wizard displays verification progress.
3. Click **OK** when the wizard indicates that verification is complete.
4. If the wizard finds errors, restart the Universal Connection wizard, make necessary corrections, save, and retest the corrected configuration.

| **Step 10: Configure a backup configuration (optional).**

- | If an additional connection method is available to you, it is suggested that you rerun the wizard to
| configure a backup. This backup will be used automatically in the event that the primary connection fails.

Scenario: Configure a direct Internet connection

Situation

Suppose you are responsible for maintaining an iSeries server for MyCompany, a small manufacturing company in Boone, Iowa. As part of providing this support, you need to establish a connection between electronic customer support and MyCompany's iSeries server. Since MyCompany has an Internet connection and its iSeries server has a fixed global routable IP address or is behind a NAT firewall (see NAT compatible IPsec for details), you can create a connection from your iSeries server through your Internet connection. Because you do not need to provide connection for other systems, you do not need to consider providing connections for other servers or partitions.

Solution

Create a Universal Connection to IBM through a direct Internet connection. The Universal Connection wizard creates all the required definitions for the connection to electronic customer support.

Advantages

This scenario provides the following advantages:

- MyCompany can use its existing hardware and Internet provider to receive benefit from electronic customer support. You can configure this connection through the Universal Connection wizard or CL commands.
- Using an existing Internet connection provides a simple means of ensuring that MyCompany has electronic customer support available for ease of troubleshooting server problems, tracking current system hardware and software, or receiving software updates and fixes.
- This option provides higher speed connections than modem-based solutions.

Objectives

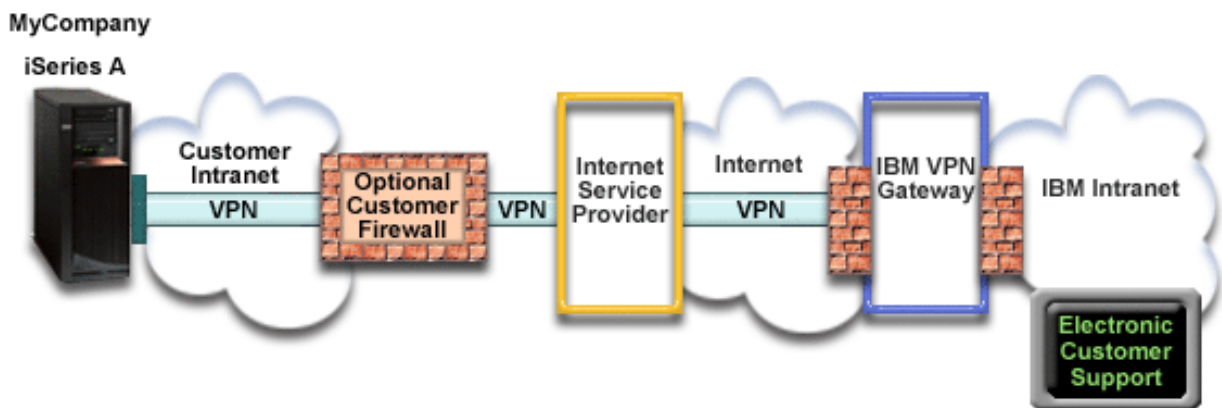
In this scenario, the customer wants to ensure that IBM can support the MyCompany system over the network through a direct connection to the Internet. The objectives of this scenario are as follows:

- To create an Internet connection between MyCompany and electronic customer support through MyCompany's cable modem, or other high-speed connection, over a direct Internet connection.
- To automate customer support through electronic customer support and services

- To allow electronic customer support to create an electronic hardware and software inventory of MyCompany's iSeries system
- To permit electronic customer support to send software fixes and updates to MyCompany over the network

Details

The following diagram illustrates connecting the MyCompany iSeries server to electronic customer support through a direct connection to the Internet.



Configuring Universal Connection

- iSeries Navigator launches the Universal Connection Wizard to configure the connection. This only needs to be done once unless some configuration information needs to be updated.

Using Universal Connection

When a Service Application wants to use the Universal Connection to communicate with IBM the following will occur:

- A Virtual Private Network (VPN) is established through your existing Internet connection to a VPN Gateway at IBM if the service application does not provide its own security.
- The service application communicates with the appropriate IBM servers to perform the requested service.

Prerequisites and assumptions

The prerequisites for enabling electronic customer support over a direct Internet connection include:

- The iSeries server must have a globally routable IP address, or the server must be behind a NAT firewall with a globally routable address.
- Ensure that the iSeries Access for Windows and iSeries Navigator exist on your personal computer, as described in the iSeries Access for Windows: Installation and setup topic.
- Ensure that you install all of the latest service packs for iSeries Navigator. The scenarios show using the V5R4 version of the software.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- You must have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your i5/OS user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- You must install the TCP/IP Connectivity Utilities (5722-TC1).
- You must install the Digital Certificate Manager (DCM) (5722-SS1 option 34).

- Ensure that the QRETSVRSEC system value is set to 1. You can check this value with the Display System Value (DSPSYSVAL) command. If this value is not set to 1, enter a Change System Value (CHGSYSVAL) command.
- Ensure your default TCP/IP route, or a host route, directs traffic out the appropriate TCP/IP interface to the Internet to allow the VPN and other service connections to be established to IBM. For details, see “Determine the IBM VPN Gateway addresses” on page 63 and “Determine the IBM Service Destination addresses” on page 63.
- Ensure your filter rules allow Universal Connection traffic to flow to the Internet. For details, see “IP Packet Filter Firewall” on page 3.

Current system configuration steps

Assuming that TCP/IP configuration already exists and works, complete the following steps to set up the Universal Connection if you connect to electronic customer support through MyCompany’s local server:

1. Complete the planning work sheet.
2. Start iSeries Navigator and select the Universal Connection wizard.
3. Enter the service, address, and country information on the Universal Connection wizard dialogs.
4. Under Connect from the current system, select a direct connection to the Internet as a connection type.
5. For proxy option, configure a proxy destination.
6. Indicate that this server does not provide connectivity for other servers or partitions.
7. Review the Summary window to ensure that the configuration meets your requirements, and click **Finish** to save your configuration.
8. When prompted, Test the connection from your server to electronic customer support.
9. Configure a backup configuration

Scenario details: Configure a direct Internet connection

After you complete the prerequisites, you are ready to begin configuring the Universal Connection through the wizard.

Step 1: Complete the planning work sheet.

The following planning work sheet illustrates the type of information you need before configuring the direct Internet connection. You use this information when running the Universal Connection wizard.

Planning work sheet	Answers
Service information <ul style="list-style-type: none"> • Company • Contact name • Telephone number • Help desk or pager number • Fax number • Alternate fax number 	<ul style="list-style-type: none"> • MyCompany • Tom Smith • 515-870-9990 • 515-870-9942 • 515-870-5586 • 515-870-5587
Company address <ul style="list-style-type: none"> • Street address • City or locality • State or province • Country (or region) • Postal code • National language version • Electronic mail address • Alternate electronic mail address • Media for PTFs (fixes) 	<ul style="list-style-type: none"> • 94 West Proctor St. • Boone • Iowa • United States • 55902 • English (2924) • myname@company.com • myname@othercompany.com • Automatic selection

Planning work sheet	Answers
Location <ul style="list-style-type: none"> • Country (or region) • State 	<ul style="list-style-type: none"> • United States • Iowa
Connection method	Through the local iSeries server
Connection type	Direct

- | If you prefer using CL Commands to create the configuration, use the Change Contact Information
| (CHGCNTINF) and the Create Service Configuration (CRTSRVCFG) commands.

Step 2: Start iSeries Navigator and select the Universal Connection wizard.

To start the Universal Connection wizard and begin establishing your connection:

1. Open iSeries Navigator software.
2. Select the server under the My Connections folder that you want to configure for electronic customer support.
3. Expand **Network**.
4. Expand **Remote Access Services**.
5. Right-click **Originator Connection Profiles**.
6. Select **Configure IBM Universal Connection** to start the Universal Connection wizard. The Welcome dialog appears.

- | **Note:** A progress bar indicates that iSeries Navigator is loading the Universal Connection wizard. If you
| encounter problems while running the wizard, see “Troubleshoot the Universal Connection
| wizard” on page 64 for a solution. Run the wizard again after solving the problem.

Step 3: Enter the service, address, and country information on the Universal Connection wizard dialogs.

To enter information about your company and connections:

1. On the Select Configuration dialog, select either **Primary connection configuration** or **Backup connection configuration**. The default is primary. Check the **View and modify contact information** box and click **Next**
2. On the Service Information dialog, enter the following information about MyCompany and click **Next**:
 - Company – MyCompany
 - Contact name – Tom Smith
 - Telephone number – 515-870-9990
 - Help desk or pager number— 515-870-9999
 - Fax number — 515-870-5586
 - Alternate fax number — 515-870-9942

If this information exists on your server, the company data already appears in the fields. For example, if MyCompany previously created a configuration, the wizard retrieves the data from the existing configuration.

3. On the Company Address dialog, enter MyCompany’s address and click **Next**.
 - Street address – 94 West Proctor St.
 - City or locality – Boone
 - State or province – Iowa
 - Country or region – United States
 - Postal code – 55902
 - National language version – English (2924)
 - Electronic mail address – myname@company.com

- | • Alternate electronic mail address – myname@othercompany.com
- | • Media for PTFs – Automatic selection
- | 4. On the Location dialog, select the country (or region) and the state or province where your iSeries server resides and Click **Next**.
 - | • Country (or region) – United States
 - | • State – Iowa

| **Step 4: Under Connect from the current system, select a direct connection to the Internet as a connection type.**

| **Note:** There is a checkbox to **Additionally configure a proxy connection**. If your enterprise has an HTTP proxy or you've configured a service and support proxy on another system or partition, and you wish to use that for Universal Connection applications which support going through a proxy, check this box. If this box is checked, Step 5 will appear.

| **Step 5: For proxy option, configure a proxy destination.**

| **Note:** This screen only appears if the proxy option was selected in Step 4.
| To configure a proxy destination

| **1. Attempt proxy connection first**

- | a. Choose this option if you want the proxy to take precedence over the configuration for this scenario.
- | b. If necessary, check the **Proxy destination requires HTTP basic authentication** box and fill in the **User name** and **Password** fields.
- | c. Click **Next** and proceed to the next Step.

| **2. Attempt proxy connection if previously defined configuration fails**

- | a. Choose this option if the proxy is to be used only in the event that the configuration for this scenario fails.
- | b. Fill in the **Proxy IP address or host name** field.
- | c. Fill in the **Proxy port** field.
- | d. If necessary, check the **Proxy destination requires HTTP basic authentication** box and fill in the **User name** and **Password** fields.
- | e. Click **Next** and proceed to the next Step.

| **Step 6: Indicate that this server does not provide connectivity for other servers or partitions.**

| Select **No** to indicate that this server has a direct connection to electronic customer support without providing connectivity for other server or partitions.

| **Step 7: Review the Summary window to ensure that the configuration meets your requirements, and click Finish to save your configuration.**

| To complete and save your server configuration:

- | 1. Review the configuration summary. Click **Back** if you need to change a value on any of the wizard dialogs.
- | 2. When the configuration is correct, click **Finish** to save the configuration. A progress bar indicates that the wizard is in the process of saving the configuration.

| **Step 8: Test the connection from your server to electronic customer support.**

| To test the configuration:

1. Click **Yes** when the wizard prompts you to test the configuration. The Verify Universal Connection dialog appears.
2. Make note of any problems as the wizard displays verification progress.
3. Click **OK** when the wizard indicates that verification is complete.
4. If the wizard finds errors, restart the Universal Connection wizard, make necessary corrections, save, and retest the corrected configuration.

Step 9: Configure a backup configuration (optional).

If an additional connection method is available to you, it is suggested that you rerun the wizard to configure a backup. This backup will be used automatically in the event that the primary connection fails.

Note: A good backup scenario for this might be dial-up. In the event the LAN fails, dial-up would ensure that there is still a way to contact IBM service.

Scenario: Configure a direct Internet connection from a server that provides connectivity for other systems or partitions

Situation

Suppose you are responsible for maintaining an iSeries server for MyCompany, a small manufacturing company in Boone, Iowa. As part of providing this support, you need to establish a connection between electronic customer support and MyCompany's iSeries server. Since MyCompany has an Internet network connection and a fixed global routable IP address cable modem, you can create a connection from your iSeries server through your cable modem. With this system, your server provides connectivity (as a VPN multi-hop gateway and a Service and Support proxy) for the three other MyCompany servers that need to connect to electronic customer support services.

Solution

Create a Universal Connection to IBM through a direct Internet connection. The Universal Connection wizard creates all the required definitions for the connection to electronic customer support. To provide connectivity for other systems, the wizard will create an L2TP terminator profile, or you can select an existing L2TP terminator profile. See L2TP (virtual line) for additional information about L2TP terminator profiles. In addition, the wizard will configure the Service and Support proxy.

Advantages

This scenario provides the following advantages:

- MyCompany can use its existing hardware and Internet provider to receive benefit from electronic customer support. You can configure this connection through the Universal Connection wizard or CL commands.
- The Internet connection provides a simple means of ensuring that MyCompany has electronic customer support available for ease of troubleshooting server problems, tracking current system hardware and software, or receiving software updates and fixes.
- MyCompany's other three servers can remotely connect to electronic customer support through a single server. MyCompany would only need connectivity from one system.
- A direct Internet connection provides a high-speed connection to electronic services.
- With this scenario the other MyCompany servers are protected from the Internet.

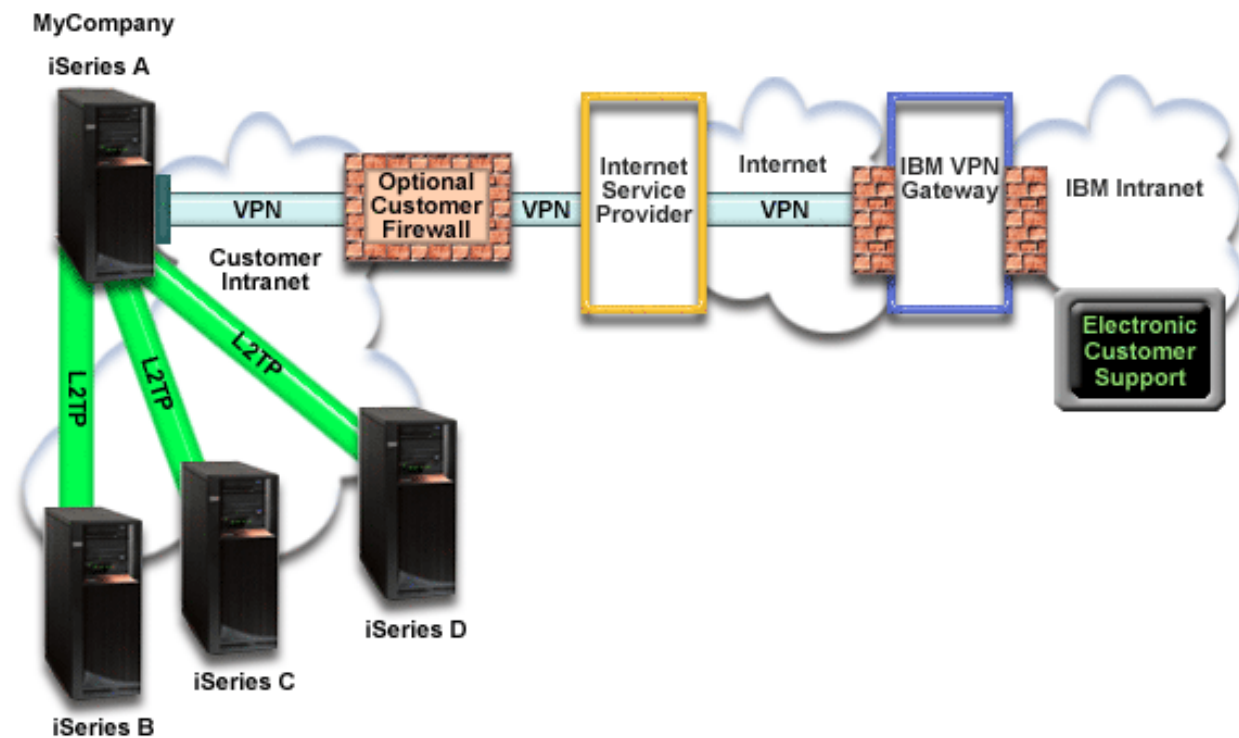
Objectives

In this scenario, the customer wants to ensure that IBM can support the MyCompany system over a direct connection to the Internet. The objectives of this scenario are as follows:

- To create a direct connection between the MyCompany's four servers and electronic customer support through the Internet.
- To automate customer support through electronic customer support and services
- To allow electronic customer support to create an electronic hardware and software inventory of MyCompany's iSeries system
- To permit electronic customer support to send software fixes and updates to MyCompany over the network

Details

The following diagram illustrates connecting the MyCompany iSeries server to electronic customer support through a direct connection to the Internet.



Configuring Universal Connection

- iSeries Navigator launches the Universal Connection Wizard to configure the connection. This only needs to be done once unless some configuration information needs to be updated.

Using Universal Connection

When a Service Application wants to use the Universal Connection to communicate with IBM the following will occur:

- **If the service application is not providing its own security and iSeries A is connecting:** A Virtual Private Network (VPN) is established through your existing Internet connection to a VPN Gateway at IBM.
- **If the service application is not providing its own security and iSeries B, C, or D are connecting:** An L2TP tunnel is established to iSeries A which initiates a VPN through your existing Internet connection to a VPN Gateway at IBM.
- **If the service application is providing its own security and iSeries A is connecting:** An HTTP or HTTPS connection is made with the appropriate IBM servers.

- **If the service application is providing its own security and iSeries B, C, or D are connecting and they support a proxy:** An HTTP or HTTPS connection is made through the Service and Support proxy server.

The service application communicates with the appropriate IBM servers to perform the requested service.

Prerequisites and assumptions

The prerequisites for enabling electronic customer support over a direct Internet connection include:

- The iSeries server must have a globally routable IP address, or the server must be behind a NAT firewall with a globally routable address.
- Ensure that the iSeries Access for Windows and iSeries Navigator exist on your personal computer, as described in the iSeries Access for Windows: Installation and setup topic.
- Ensure that you install all of the latest service packs for iSeries Navigator. The scenarios show using the V5R4 version of the software.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- You must have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your i5/OS user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- You must install the TCP/IP Connectivity Utilities (5722-TC1).
- You must install the Digital Certificate Manager (DCM) (5722-SS1 option 34).
- Ensure that the QRETSVRSEC system value is set to 1. You can check this value with the Display System Value (DSPSYSVAL) command. If this value is not set to 1, enter a Change System Value (CHGSYSVAL) command.
- Ensure your default TCP/IP route, or a host route, directs traffic out the appropriate TCP/IP interface to the Internet to allow the VPN and other service connections to be established to IBM. For VPN details, see “Determine the IBM VPN Gateway addresses” on page 63 and “Determine the IBM Service Destination addresses” on page 63.
- Ensure your filter rules allow Universal Connection traffic to flow to the Internet. For details, see “IP Packet Filter Firewall” on page 3.

Current system configuration steps

Assuming that TCP/IP configuration already exists and works, complete the following steps to set up the Universal Connection when your local server acts as a connecting point for the other three servers in MyCompany:

1. Complete the planning work sheet.
2. Start the iSeries Navigator and select the Universal Connection wizard.
3. Enter the service, address, and country information on the Universal Connection wizard dialogs.
4. Under Connect from the current system, select a direct connection to the Internet as a connection type.
5. For proxy option, configure a proxy destination.
6. Specify that you want this iSeries server to function as a connecting point through which other servers or partitions connect to electronic customer support.
7. Select an interface the other servers use when connecting to electronic customer support.
8. Create or select L2TP terminator profiles.
9. Configure a Service and Support proxy server.
10. Review the Summary window to ensure that the configuration meets your requirements, and click **Finish** to save your configuration.
11. When prompted, test the connection from your server to electronic customer support.
12. Configure a backup configuration (optional).

Scenario details: Configure a direct Internet connection from a server that provides a connection point for other systems

After you complete the prerequisites, you are ready to begin configuring the Universal Connection through the wizard.

Step 1: Complete the planning work sheet.

The following planning work sheet illustrates the type of information you need before configuring the direct Internet connection. You use this information when running the Universal Connection wizard.

Planning work sheet	Answers
Service information <ul style="list-style-type: none"> • Company • Contact name • Telephone number • Help desk or pager number • Fax number • Alternate fax number 	<ul style="list-style-type: none"> • MyCompany • Tom Smith • 515-870-9990 • 515-870-9942 • 515-870-5586 • 515-870-5587
Company address <ul style="list-style-type: none"> • Street address • City or locality • State or province • Country (or region) • Postal code • National language version • Electronic mail address • Alternate electronic mail address • Media for PTFs (fixes) 	<ul style="list-style-type: none"> • 94 West Proctor St. • Boone • Iowa • United States • 55902 • English (2924) • myname@company.com • myname@othercompany.com • Automatic selection
Location <ul style="list-style-type: none"> • Country (or region) • State 	<ul style="list-style-type: none"> • United States • Iowa
Connection method	Through current iSeries server
What is the interface description for other systems to use as a connecting point?	10.1.1.1
L2TP terminator profile name	QL2TP00

If you prefer using CL Commands to create the configuration, use the Change Contact Information (CHGCNTINF) and the Create Service Configuration (CRTSRVCFG) commands.

Step 2: Start the iSeries Navigator and select the Universal Connection wizard.

To start the Universal Connection wizard and begin establishing your connection:

1. Open iSeries Navigator software.
2. Select the server under the My Connections folder that you want to configure for electronic customer support.
3. Expand **Network**.
4. Expand **Remote Access Services**.
5. Right-click **Originator Connection Profiles**.
6. Select **Configure IBM Universal Connection** to start the Universal Connection wizard. The Welcome dialog appears.

| **Note:** A progress bar indicates that iSeries Navigator is loading the Universal Connection wizard. If you
| encounter problems while running the wizard, see “Troubleshoot the Universal Connection
| wizard” on page 64 for a solution. Run the wizard again after solving the problem.

Step 3: Enter the service, address, and country information on the Universal Connection wizard dialogs.

To enter information about your company and connections:

- | 1. On the Select Configuration dialog, select either **Primary connection configuration** or **Backup connection configuration**. The default is primary. Check the **View and modify contact information** box and click **Next**
- | 2. On the Service Information dialog, enter the following information about MyCompany and click **Next**:
 - Company – MyCompany
 - Contact name – Tom Smith
 - Telephone number – 515-870-9990
 - | • Help desk or pager number— 515-870-9999
 - | • Fax number — 515-870-5586
 - | • Alternate fax number — 515-870-9942

If this information exists on your server, the company data already appears in the fields. For example, if MyCompany previously created a configuration, the wizard retrieves the data from the existing configuration.

- | 3. On the Company Address dialog, enter MyCompany’s address and click **Next**.
 - Street address – 94 West Proctor St.
 - | • City or locality – Boone
 - | • State or province – Iowa
 - | • Country or region – United States
 - | • Postal code – 55902
 - | • National language version – English (2924)
 - | • Electronic mail address – myname@company.com
 - | • Alternate electronic mail address – myname@othercompany.com
 - Media for PTFs – Automatic selection
- | 4. On the Location dialog, select the country (or region) and the state or province where your iSeries server resides and Click **Next**.
 - Country (or region) – United States
 - State – Iowa

| **Step 4: Under Connect from the current system, select a direct connection to the Internet as a connection type.**

| **Note:** There is a checkbox to **Additionally configure a proxy connection**. If your enterprise has an HTTP proxy or you’ve configured a service and support proxy on another system or partition, and you wish to use that for Universal Connection applications which support going through a proxy, check this box. If this box is checked, Step 5 will appear.

| **Step 5: For proxy option, configure a proxy destination.**

| **Note:** This screen only appears if the proxy option was selected in Step 4.
| To configure a proxy destination

- | 1. **Attempt proxy connection first**
 - | a. Choose this option if you want the proxy to take precedence over the configuration for this scenario.
 - | b. If necessary, check the **Proxy destination requires HTTP basic authentication** box and fill in the **User name** and **Password** fields.
 - | c. Click **Next** and proceed to the next Step.

2. **Attempt proxy connection if previously defined configuration fails**
 - a. Choose this option if the proxy is to be used only in the event that the configuration for this scenario fails.
 - b. Fill in the **Proxy IP address or host name** field.
 - c. Fill in the **Proxy port** field.
 - d. If necessary, check the **Proxy destination requires HTTP basic authentication** box and fill in the **User name** and **Password** fields.
 - e. Click **Next** and proceed to the next Step.

Step 6. Specify that you want this iSeries server to function as a connecting point through which other servers or partitions connect to electronic customer support.

Select **Yes** to indicate that this server provides connectivity for other servers or partitions and click **Next**.

Step 7: Select an interface the other servers use when connecting to electronic customer support.

Select the interfaces that the other MyCompany servers will use when connecting to IBM. Select one of the following options:

- Click **Any interface** to let the Universal connection accept connections from all TCP/IP interfaces.
- Click **Select interfaces** to select specific interfaces to listen for connection requests. The list box becomes active. Select all appropriate interfaces. The wizard automatically creates an L2TP terminator for each interface that does not have an associated terminator. If there are L2TP terminators associated with an interface, the wizard prompts you to select the one terminator you wish to associate with the interface.

As an option, you can select multiple interfaces with the CTRL key.

Note: In addition, the wizard configures the Service and Support HTTP Proxy to start with TCP and to listen for connection requests on the interfaces you select.

In this case, MyCompany selects 10.1.1.1 Ethernet Interface.

Step 8: Create or select L2TP terminator profiles.

1. Select an L2TP terminator profile for each of your selected interfaces. Choose one of the following options:

- Click **Create a new profile named QL2TP nn** where nn represents a number from 00 to 99. With this selection, the wizard creates, names, and consecutively numbers the new L2TP profile.
- Click **Select an existing profile** to choose a specific L2TP profile for the associated interface.

In this case, MyCompany lets the Universal Connection wizard create an L2TP profile.

2. Ensure that the **Start selected L2TP terminator profiles when TCP/IP is started** check box is checked. MyCompany wishes to start this profile when starting TCP/IP.

Note: By starting the selected L2TP terminator profile when the system starts TCP/IP, all other L2TP terminator profiles for this interface will be modified not to start with TCP/IP.

If you specify that you do not want to start the selected L2TP terminator profiles when TCP/IP is started, you must manually start the L2TP terminator before using the connection to the systems.

Step 9: Configure a Service and Support proxy server.

To configure a service and support proxy server

1. Fill in the **Server port** field.

- | 2. If desired, check the **Require HTTP basic authentication** box and fill in the **User name** and **Password** fields. Authentication is optional. If specified, all other partitions or systems using this proxy must provide these security credentials.
- | 3. Click **Next** and proceed to the next Step.

| **Step 10: Review the Summary window to ensure that the configuration meets your requirements, and click Finish to save your configuration.**

| To complete and save your server configuration:

- | 1. Review the configuration summary. Click **Back** if you need to change a value on any of the wizard dialogs.
- | 2. When the configuration is correct, click **Finish** to save the configuration. A progress bar indicates that the wizard is in the process of saving the configuration.

| **Step 11: Test the connection from your server to electronic customer support.**

| To test the configuration:

- | 1. Click **Yes** when the wizard prompts you to test the configuration. The Verify Universal Connection dialog appears.
- | 2. Make note of any problems as the wizard displays verification progress.
- | 3. Click **OK** when the wizard indicates that verification is complete.
- | 4. If the wizard finds errors, restart the Universal Connection wizard, make necessary corrections, save, and retest the corrected configuration.

| **Note:** If the connection works, you are ready to accept connection requests from other system or partitions. See Configure a multi-hop connection through a remote server to configure other systems to connect to the Universal connection through this server.

| **Step 12: Configure a backup configuration (optional)**

| If an additional connection method is available to you, it is suggested that you rerun the wizard to configure a backup. This backup will be used automatically in the event that the primary connection fails.

Scenario: Configure a PPP connection through an ISP

Situation

Suppose you are responsible for maintaining an iSeries server for MyCompany, a small manufacturing company in Boone, Iowa. As part of providing this support, you need to establish a connection between electronic customer support and MyCompany's iSeries server.

Since MyCompany has an existing Internet dial-up connection, you can create a connection from your iSeries server through your modem and dial up connection to your ISP. Because you do not need to provide connections for other systems, you do not need to consider providing connections for other servers or partitions.

Solution

- | Create a Universal Connection to IBM through a dialup connection over the Internet. In this case, you establish a connection through the Connection Manager on your local iSeries server through a point-to-point Internet connection to electronic customer support.

Advantages

This scenario provides the following advantages:

- MyCompany does not need to invest in additional hardware or software to receive benefit from electronic customer support. You can configure this connection through the Universal Connection wizard or CL commands.
- The Internet connection provides a simple means of ensuring that MyCompany has electronic customer support available for ease of troubleshooting server problems, tracking current system hardware and software, or receiving software updates and fixes.
- You can use your existing ISP connection for electronic customer support so that you do not have to disconnect from your ISP to connect to IBM.

Note: In this scenario, MyCompany is using a dial-up ISP. You can use other originator ISP connections such as leased line or point-to-point over Ethernet.

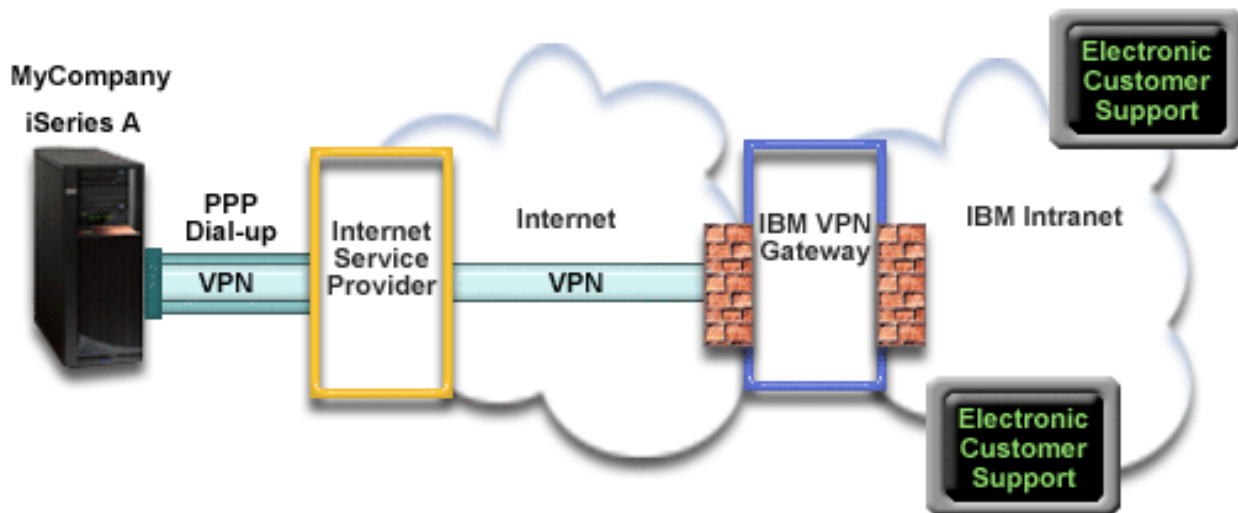
Objectives

In this scenario, the customer wants to ensure that IBM can support the MyCompany system over the network through a point-to-point Internet service provider (ISP) connection. The objectives of this scenario are as follows:

- To create a secure connection between MyCompany and electronic customer support through MyCompany's point-to-point dial-up ISP
- To automate customer support through electronic customer support and services
- To allow electronic customer support to create an electronic hardware and software inventory of MyCompany's iSeries system
- To permit electronic customer support to send software fixes and updates to MyCompany over the network

Details

The following diagram illustrates connecting the MyCompany iSeries server to electronic customer support through an ISP connection.



Configuring Universal Connection

- iSeries Navigator launches the Universal Connection Wizard to configure the connection. This only needs to be done once unless some configuration information needs to be updated.

Using Universal Connection

When a Service Application wants to use the Universal Connection to communicate with IBM the following will occur:

- If the connection to your ISP is not currently active, the specified profile is started to allow connections to the Internet.
- A Virtual Private Network (VPN) is established through your existing Internet connection to a VPN Gateway at IBM if the service application is not providing its own security.
- The service application communicates with the appropriate IBM servers to perform the requested service.

Prerequisites and assumptions

The prerequisites for enabling electronic customer support over a point-to-point ISP connection include:

- Ensure that the iSeries Access for Windows and iSeries Navigator exist on your personal computer, as described in the iSeries Access for Windows: Installation and setup topic.
- Ensure that you install all of the latest service packs for iSeries Navigator. The scenarios show using the V5R4 version of the software.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- You must have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your i5/OS user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- You must install the TCP/IP Connectivity Utilities (5722-TC1).
- You must install the Digital Certificate Manager (DCM) (5722-SS1 option 34).
- Ensure that the QRETSVRSEC system value is set to 1. You can check this value with the Display System Value (DSPSYSVAL) command. If this value is not set to 1, enter a Change System Value (CHGSYSVAL) command.
- If you are using an internal modem such as the 56 Kbps modem that is provided with the 9793 adapter card, ensure that the network attribute MDMCNTRYID is set appropriately. You can check this value with the Display Network Attributes (DSPNETA) command. If this value is not set correctly, change this value with a CHGNETA command. This allows the account userid and password to be stored on the iSeries server.
- The profile used to connect to your ISP must have been previously configured.
- Ensure that a TCP/IP route is associated with the ISP profile that will route the Universal Connection traffic to your ISP. In most situations, the default route will work. For VPN details, see “Determine the IBM VPN Gateway addresses” on page 63 and “Determine the IBM Service Destination addresses” on page 63.

Current system configuration steps

Assuming that TCP/IP configuration already exists and works, complete the following steps to set up the Universal Connection if you connect to electronic customer support through MyCompany’s local server:

1. Complete the planning work sheet.
2. Start iSeries Navigator and select the Universal Connection wizard.
3. Enter the service, address, and country information on the Universal Connection wizard dialogs.
4. Under Connect from current system or partition, select the A connection using an Internet service provider option as your connection type.
5. Select a connection profile for your ISP from the Select Profile dialog.
6. Indicate that this server does not provide connectivity for other servers or partitions.
7. For proxy option, configure a proxy destination.
8. Review the Summary window to ensure that the configuration meets your requirements, and click Finish to save your configuration.
9. Test the connection from your server to electronic customer support.
10. Configure a backup configuration (optional).

| **Scenario details: Configure a PPP connection through an ISP**

| After you complete the prerequisites, you are ready to begin configuring the Universal Connection through the wizard.

| **Step 1: Complete the planning work sheet.**

| The following planning work sheet illustrates the type of information you need before configuring the point-to-point connection through MyCompany's ISP. You use this information when running the Universal Connection wizard.

Planning work sheet	Answers
Service information <ul style="list-style-type: none"> • Company • Contact name • Telephone number • Help desk or pager number • Fax number • Alternate fax number 	<ul style="list-style-type: none"> • MyCompany • Tom Smith • 515-870-9990 • 515-870-9942 • 515-870-5586 • 515-870-5587
Company address <ul style="list-style-type: none"> • Street address • City or locality • State or province • Country (or region) • Postal code • National language version • Electronic mail address • Alternate electronic mail address • Media for PTFs (fixes) 	<ul style="list-style-type: none"> • 94 West Proctor St. • Boone • Iowa • United States • 55902 • English (2924) • myname@company.com • myname@othercompany.com • Automatic selection
Location <ul style="list-style-type: none"> • Country (or region) • State 	<ul style="list-style-type: none"> • United States • Iowa
Connection method	Through the local iSeries server
Connection type	Through an existing switched line connection profile for MyCompany's ISP.
What is your connection profile?	DIALPROF

| If you prefer using CL Commands to create the configuration, use the Change Contact Information (CHGCNTINF) and the Create Service Configuration (CRTSRVCFG) commands.

Step 2: Start iSeries Navigator and select the Universal Connection wizard.

To start the Universal Connection wizard and begin establishing your connection:

1. Open iSeries Navigator software.
2. Select the server under the My Connections folder that you want to configure for electronic customer support.
3. Expand **Network**.
4. Expand **Remote Access Services**.
5. Right-click **Originator Connection Profiles**.
6. Select **Configure IBM Universal Connection** to start the Universal Connection wizard. The Welcome dialog appears.

| **Note:** A progress bar indicates that iSeries Navigator is loading the Universal Connection wizard. If you
| encounter problems while running the wizard, see “Troubleshoot the Universal Connection
| wizard” on page 64 for a solution. Run the wizard again after solving the problem.

Step 3: Enter the service, address, and country information on the Universal Connection wizard dialogs.

To enter information about your company and connections:

- | 1. On the Select Configuration dialog, select either **Primary connection configuration** or **Backup connection configuration**. The default is primary. Check the **View and modify contact information** box and click **Next**
- | 2. On the Service Information dialog, enter the following information about MyCompany and click **Next**:
 - Company – MyCompany
 - Contact name – Tom Smith
 - Telephone number – 515-870-9990
 - | • Help desk or pager number— 515-870-9999
 - | • Fax number — 515-870-5586
 - | • Alternate fax number — 515-870-9942

If this information exists on your server, the company data already appears in the fields. For example, if MyCompany previously created a configuration, the wizard retrieves the data from the existing configuration.

- | 3. On the Company Address dialog, enter MyCompany’s address and click **Next**.
 - Street address – 94 West Proctor St.
 - | • City or locality – Boone
 - | • State or province – Iowa
 - Country or region – United States
 - | • Postal code – 55902
 - National language version – English (2924)
 - | • Electronic mail address – myname@company.com
 - | • Alternate electronic mail address – myname@othercompany.com
 - Media for PTFs – Automatic selection
- | 4. On the Location dialog, select the country (or region) and the state or province where your iSeries server resides and Click **Next**.
 - Country (or region) – United States
 - State – Iowa

| **Step 4: Under Connect from current system or partition, select the A connection using an Internet service provider option as your connection type.**

| **Note:** There is a checkbox to **Additionally configure a proxy connection**. If your enterprise has an HTTP proxy or you’ve configured a service and support proxy on another system or partition, and you wish to use that for Universal Connection applications which support going through a proxy, check this box. If this box is checked, Step 7 will appear.

| **Step 5: Select a connection profile for your ISP from the Select Profile dialog.**

| Select DIALFPROF, a switched line connection type, as the connection profile.

| **Step 6: Indicate that this server does not provide connectivity for other servers or partitions.**

| Click **No** to indicate that this server has a direct connection to electronic customer support without providing connectivity for other servers or partitions.

| **Step 7: For proxy option, configure a proxy destination.**

| **Note:** This screen only appears if the proxy option was selected in Step 4.

| To configure a proxy destination

| **1. Attempt proxy connection first**

- | a. Choose this option if you want the proxy to take precedence over the configuration for this scenario.
- | b. If necessary, check the **Proxy destination requires HTTP basic authentication** box and fill in the **User name** and **Password** fields.
- | c. Click **Next** and proceed to the next Step.

| **2. Attempt proxy connection if previously defined configuration fails**

- | a. Choose this option if the proxy is to be used only in the event that the configuration for this scenario fails.
- | b. Fill in the **Proxy IP address or host name** field.
- | c. Fill in the **Proxy port** field.
- | d. If necessary, check the **Proxy destination requires HTTP basic authentication** box and fill in the **User name** and **Password** fields.
- | e. Click **Next** and proceed to the next Step.

| **Step 8: Review the Summary window to ensure that the configuration meets your requirements, and click Finish to save your configuration.**

| To complete and save your server configuration:

- | 1. Review the configuration summary. Click **Back** if you need to change a value on any of the wizard dialogs.
- | 2. When the configuration is correct, click **Finish** to save the configuration. A progress bar indicates that the wizard is in the process of saving the configuration.

| **Step 9: Test the connection from your server to electronic customer support.**

| To test the configuration:

- | 1. Click **Yes** when the wizard prompts you to test the configuration. The Verify Universal Connection dialog appears.
- | 2. Make note of any problems as the wizard displays verification progress.
- | 3. Click **OK** when the wizard indicates that verification is complete.
- | 4. If the wizard finds errors, restart the Universal Connection wizard, make necessary corrections, save, and retest the corrected configuration.

| **Step 10: Configure a backup configuration (optional).**

| If an additional connection method is available to you, it is suggested that you rerun the wizard to configure a backup. This backup will be used automatically in the event that the primary connection fails.

Scenario: Configure a PPP connection from a server that provides connectivity for other systems through an ISP

Situation

Suppose you are responsible for maintaining an iSeries server for MyCompany, a small manufacturing company in Boone, Iowa. As part of providing this support, you need to establish a connection between electronic customer support and MyCompany's iSeries server.

Since MyCompany has an Internet bound network connection, you can create a connection from your iSeries server through your modem to a dial up point-to-point (PPP) connection. Because your network

includes three other iSeries servers, you also want to consider providing connectivity to electronic customer services through the Universal Connection from MyCompany's main server.

Solution

| Create a Universal Connection to IBM through the a dialup point-to-point connection over the Internet. In
| this case, you establish a connection through the Connection Manager on your local iSeries server
| through a point-to-point Internet connection to electronic customer support. In this case, your main server
| can act as a connecting point for the other three MyCompany servers in your company that need to
| connect to electronic customer support services, as described in Configure a multi-hop connection
| through a remote server. As part of your server configuration and setup, the wizard will create an L2TP
| terminator profile, or you can select an existing L2TP terminator profile. See L2TP (virtual line) for
| additional information about L2TP terminator profiles. In addition, the wizard will configure the Service
| and Support proxy.

Advantages

This scenario provides the following advantages:

- | • MyCompany does not need to invest in additional hardware or software to receive benefit from
| electronic customer support. You can configure this connection through the Universal Connection
| wizard or CL commands.
- | • MyCompany's other three servers can remotely connect to electronic customer support through a
| single server. MyCompany would only need a single modem and dialup ISP connection instead of a
| separate one for each system or partition.

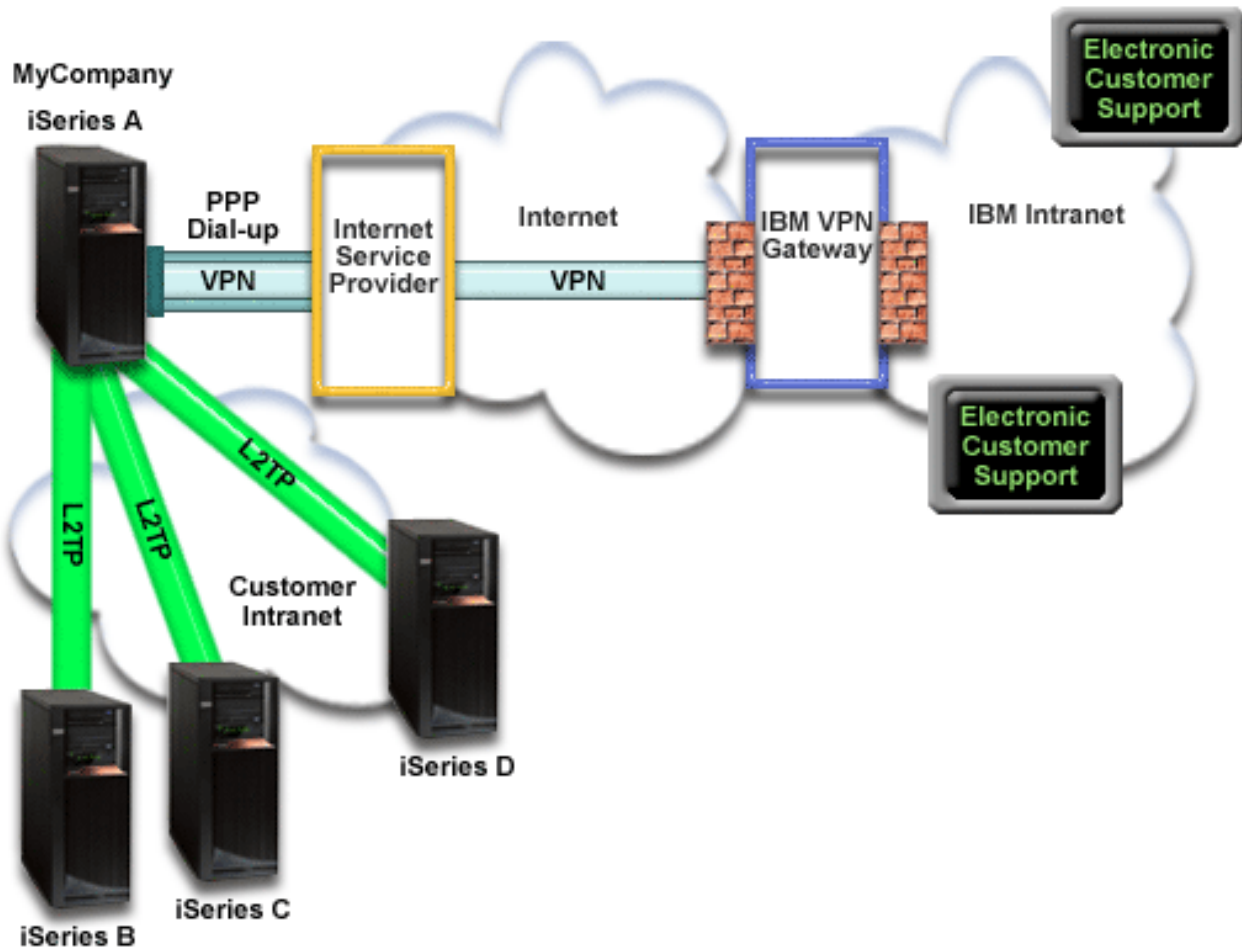
Objectives

In this scenario, the customer wants to ensure that IBM can support the MyCompany system over the network through a point to point connection through MyCompany's Internet service provider (ISP) connection. The objectives of this scenario are as follows:

- To create a secure point-to-point dial-up connection between the MyCompany's four servers and electronic customer support through MyCompany's ISP.
- To automate customer support through electronic customer support and services
- To allow electronic customer support to create an electronic hardware and software inventory of MyCompany's iSeries system
- To permit electronic customer support to send software fixes and updates to MyCompany over the network

Details

The following diagram illustrates connecting the MyCompany iSeries server to electronic customer support through an point-to-point ISP connection.



Configuring Universal Connection

- iSeries Navigator launches the Universal Connection Wizard to configure the connection. This only needs to be done once unless some configuration information needs to be updated.

Using Universal Connection

When a Service Application wants to use the Universal Connection to communicate with IBM the following will occur:

- If iSeries A needs to connect and the connection to your ISP is not currently active, the specified profile is started to allow connections to the Internet. If the service application on iSeries B, C, or D is not providing its own security, an L2TP tunnel is established to iSeries A. The ISP connection must be active. If the service application can use a proxy, a HTTP or HTTPS connection is made through the Service and Support proxy.
- A Virtual Private Network (VPN) is established through your existing Internet connection to a VPN Gateway at IBM if the service application is not providing its own security.
- The service application communicates with the appropriate IBM servers to perform the requested service.

Prerequisites and assumptions

The prerequisites for enabling electronic customer support over a point-to-point ISP connection include:

- Ensure that the iSeries Access for Windows and iSeries Navigator exist on your personal computer, as described in the iSeries Access for Windows: Installation and setup topic.

- Ensure that you install all of the latest service packs for iSeries Navigator. The scenarios show using the V5R4 version of the software.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- You must have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your i5/OS user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- You must install the TCP/IP Connectivity Utilities (5722-TC1).
- For the virtual private network (VPN) and SSL to operate, you must install the Digital Certificate Manager (DCM) (5722-SS1 option 34).
- Ensure that the QRETSVRSEC system value is set to 1. You can check this value with the Display System Value (DSPSYSVAL) command. If this value is not set to 1, enter a Change System Value (CHGSYSVAL) command. This allows the account userid and password to be stored on the iSeries server.
- If you are using an internal modem such as the 56 Kbps modem that is provided with the 9793 adapter card, ensure that the network attribute MDMCNTRYID is set appropriately. You can check this value with the Display Network Attributes (DSPNETA) command. If this value is not set correctly, change this value with a Change Network Attributes (CHGNETA) command.
- If connecting for others servers, ensure that the connection to the ISP is active before connecting to electronic customer support.

Current system configuration steps

Assuming that TCP/IP configuration already exists and works, complete the following steps to set up the Universal Connection when you connect to electronic customer support when your local server acts as a connection point for the other three servers in MyCompany:

1. Complete the planning work sheet.
2. Start the iSeries Navigator and select the Universal Connection wizard.
3. Enter the service, address, and county information on the Universal Connection wizard dialogs.
4. Under Connect from current system or partition, select the ISP connection type.
5. Select a connection profile for your ISP from the Select Profile dialog.
6. Specify that you want this iSeries server to function as a connecting point through which other servers or partitions connect to electronic customer support.
7. Select an interface the other servers use when connecting to electronic customer support.
8. Create or select an L2TP terminator profile. You need these profiles to provide the connectivity to other systems that connect to electronic customer support through your server.
9. Configure a Service and Support proxy server.
10. Review the Summary window to ensure that the configuration meets your requirements, and click **Finish** to save your configuration.
11. When prompted, Test the connection from your server to electronic customer support.
12. Configure a Backup configuration.

Scenario: Configure a PPP connection from a server that provides connectivity for other systems through an ISP

After you complete the prerequisites, you are ready to begin configuring the Universal Connection through the wizard.

Step 1: Complete the planning work sheet.

The following planning work sheet illustrates the type of information you need before configuring the point-to-point ISP connection. You use this information when running the Universal Connection wizard.

Planning work sheet	Answers
Service information <ul style="list-style-type: none"> • Company • Contact name • Telephone number • Help desk or pager number • Fax number • Alternate fax number 	<ul style="list-style-type: none"> • MyCompany • Tom Smith • 515-870-9990 • 515-870-9942 • 515-870-5586 • 515-870-5587
Company address <ul style="list-style-type: none"> • Street address • City or locality • State or province • Country (or region) • Postal code • National language version • Electronic mail address • Alternate electronic mail address • Media for PTFs (fixes) 	<ul style="list-style-type: none"> • 94 West Proctor St. • Boone • Iowa • United States • 55902 • English (2924) • myname@company.com • myname@othercompany.com • Automatic selection
Location <ul style="list-style-type: none"> • Country (or region) • State 	<ul style="list-style-type: none"> • United States • Iowa
Connection method	Through current iSeries server
Connection type	Through an existing switched line connection profile for MyCompany's ISP.
What is your connection profile?	DIALPROF
Interface description for other systems to use as a connecting point	Any Interface
L2TP terminator profile names	QL2TP00

If you prefer using CL Commands to create the configuration, use the Change Contact Information (CHGCNTINF) and the Create Service Configuration (CRTSRVCFG) commands.

Step 2: Start the iSeries Navigator and select the Universal Connection wizard.

To start the Universal Connection wizard and begin establishing your connection:

1. Open iSeries Navigator software.
2. Select the server under the My Connections folder that you want to configure for electronic customer support.
3. Expand **Network**.
4. Expand **Remote Access Services**.
5. Right-click **Originator Connection Profiles**.
6. Select **Configure IBM Universal Connection** to start the Universal Connection wizard. The Welcome dialog appears.

Note: A progress bar indicates that iSeries Navigator is loading the Universal Connection wizard. If you encounter problems while running the wizard, see "Troubleshoot the Universal Connection wizard" on page 64 for a solution. Run the wizard again after solving the problem.

Step 3: Enter the service, address, and county information on the Universal Connection wizard dialogs.

To enter information about your company and connections:

1. On the Select Configuration dialog, select either **Primary connection configuration** or **Backup connection configuration**. The default is primary. Check the **View and modify contact information** box and click **Next**
2. On the Service Information dialog, enter the following information about MyCompany and click **Next**:
 - Company – MyCompany
 - Contact name – Tom Smith
 - Telephone number – 515-870-9990
 - Help desk or pager number— 515-870-9999
 - Fax number — 515-870-5586
 - Alternate fax number — 515-870-9942

If this information exists on your server, the company data already appears in the fields. For example, if MyCompany previously created a configuration, the wizard retrieves the data from the existing configuration.

3. On the Company Address dialog, enter MyCompany's address and click **Next**.
 - Street address – 94 West Proctor St.
 - City or locality – Boone
 - State or province – Iowa
 - Country or region – United States
 - Postal code – 55902
 - National language version – English (2924)
 - Electronic mail address – myname@company.com
 - Alternate electronic mail address – myname@othercompany.com
 - Media for PTFs – Automatic selection
4. On the Location dialog, select the country (or region) and the state or province where your iSeries server resides and Click **Next**.
 - Country (or region) – United States
 - State – Iowa

Step 4: Under Connect from current system or partition, select the ISP connection type.

Select **A connection using an Internet service provider** option as your connection type.

Step 5: Select a connection profile for your ISP from the Select Profile dialog.

Select the DIALPROF, a switched line connection type, as the connection profile.

Step 6: Specify that you want this iSeries server to function as a connecting point through which other servers or partitions connect to electronic customer support.

Step 7: Select an interface the other servers use when connecting to electronic customer support.

Select the interfaces that the other MyCompany servers will use when connecting to IBM. Select one of the following options:

- Click **Any interface** to let the Universal connection accept connections from all TCP/IP interfaces.
- Click **Select interfaces** to select specific interfaces to listen for connection requests. The list box becomes active. Select all appropriate interfaces. The wizard automatically creates an L2TP terminator for each interface that does not have an associated terminator. If there are L2TP terminators associated with an interface, the wizard prompts you to select the one terminator you wish to associate with the interface.

As an option, you can select multiple interfaces with the CTRL key.

Note: In addition, the wizard configures the Service and Support HTTP Proxy to start with TCP and to listen for connection requests on the interfaces you select.

| In this case, MyCompany selects the Any Interface option so that connections will be accepted from all active TCP/IP interfaces.

| **Step 8: Create or select an L2TP terminator profile.**

- | 1. Select an L2TP terminator profile for each of your selected interfaces. Choose one of the following options:
- | • Click **Create a new profile named QL2TP nn** where nn represents a number from 00 to 99. With this selection, the wizard creates, names, and consecutively numbers the new L2TP profile.
 - | • Click **Select an existing profile** to choose a specific L2TP profile for the associated interface.
- | In this case, MyCompany lets the Universal Connection wizard create an L2TP profile.
- | 2. Ensure that the **Start selected L2TP terminator profiles when TCP/IP is started** check box is checked. MyCompany wishes to start this profile when starting TCP/IP.

| **Note:** By starting the selected L2TP terminator profile when the system starts TCP/IP, all other L2TP terminator profiles for this interface will be modified not to start with TCP/IP.

| If you specify that you do not want to start the selected L2TP terminator profiles when TCP/IP is started, you must manually start the L2TP terminator before using the connection to the systems.

| **Step 9: Configure a Service and Support proxy server.**

| To configure a service and support proxy server

- | 1. Fill in the **Server port** field.
- | 2. If desired, check the **Require HTTP basic authentication** box and fill in the **User name** and **Password** fields. Authentication is optional. If specified, all other partitions or systems using this proxy must provide these security credentials.
- | 3. Click **Next** and proceed to the next Step.

| **Step 10: Review the Summary window to ensure that the configuration meets your requirements, and click Finish to save your configuration.**

| To complete and save your server configuration:

- | 1. Review the configuration summary. Click **Back** if you need to change a value on any of the wizard dialogs.
- | 2. When the configuration is correct, click **Finish** to save the configuration. A progress bar indicates that the wizard is in the process of saving the configuration.

| **Step 11: Test the connection from your server to electronic customer support.**

| To test the configuration:

- | 1. Click **Yes** when the wizard prompts you to test the configuration. The Verify Universal Connection dialog appears.
- | 2. Make note of any problems as the wizard displays verification progress.
- | 3. Click **OK** when the wizard indicates that verification is complete.
- | 4. If the wizard finds errors, restart the Universal Connection wizard, make necessary corrections, save, and retest the corrected configuration.

| **Step 12: Configure a backup configuration.**

| If an additional connection method is available to you, it is suggested that you rerun the wizard to configure a backup. This backup will be used automatically in the event that the primary connection fails.

Scenario: Configure a multi-hop connection through a remote server

Situation

Suppose you are responsible for maintaining an iSeries server for MyCompany, a medium-sized manufacturing company in Boone, Iowa. As part of providing this support, you need to establish a connection between electronic customer support and MyCompany's iSeries server. MyCompany has an iSeries server on a private network that accesses the Internet through a VPN multi-hop gateway. The multi-hop gateway could be either an iSeries or a router that supports L2TP multi-hop (chained tunnels). In this case, you create a connection from your iSeries server through a multi-hop connection. Because you do not need to provide connections for other systems, you do not need to consider providing connections for other servers or partitions.

Note: The HMC cannot currently provide this multi-hop gateway support.

Solution

Create a Universal Connection to IBM through the multi-hop connection. In this case, you establish a connection between two virtual private network tunnels from a remote server to electronic customer support.

Advantages

This scenario provides the following advantages:

- MyCompany can create a connection from its iSeries system on a private network through another iSeries or router that has direct connectivity to the Internet.
- The multi-hop connection provides a means of ensuring that MyCompany has electronic customer support available for ease of troubleshooting server problems, tracking current system hardware and software, or receiving software updates and fixes.
- A multi-hop connection provides a high degree of security between your iSeries system and electronic customer support by shielding it from the Internet.
- High speed access to electronic customer support is available with this option.

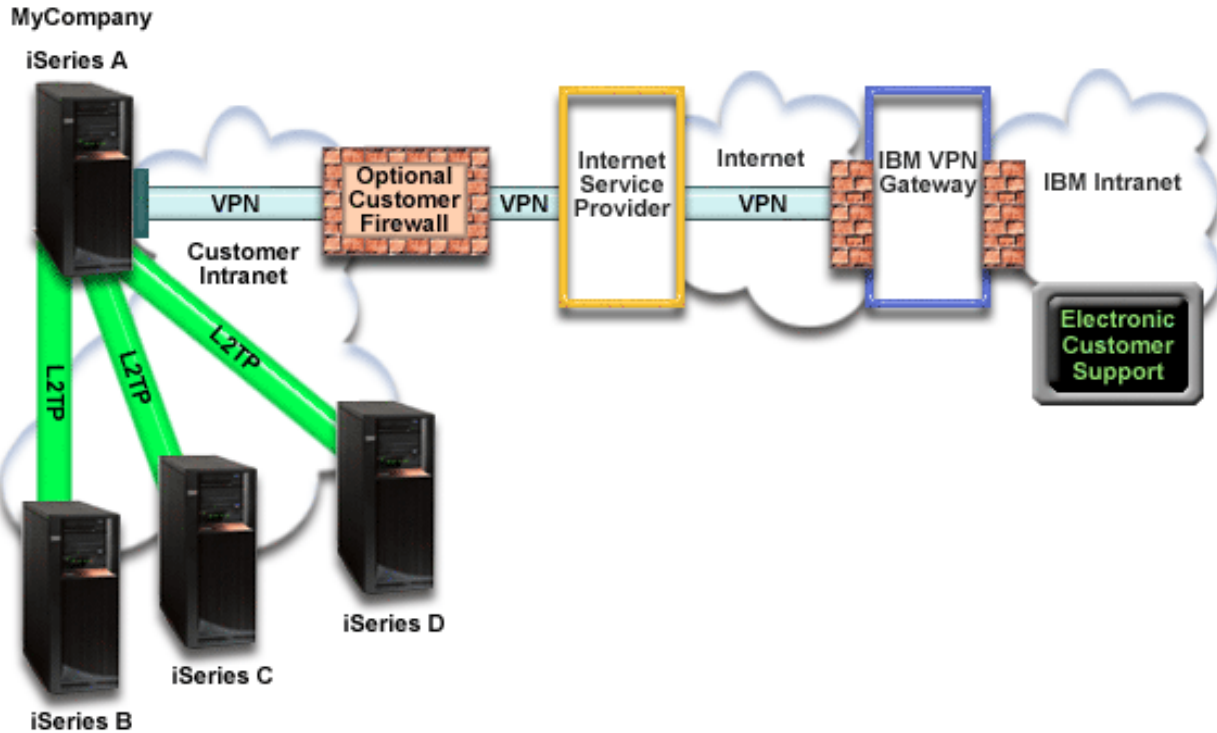
Objectives

In this scenario, the customer wants to ensure that IBM can support the MyCompany system over the network through a multi-hop connection over the Internet. The objectives of this scenario are as follows:

- To create a secure multi-hop connection between MyCompany and electronic customer support over the Internet.
- To automate customer support through electronic customer support and services
- To allow electronic customer support to create an electronic hardware and software inventory of MyCompany's iSeries system
- To permit electronic customer support to send software fixes and updates to MyCompany over the network

Details

The following diagram illustrates connecting the MyCompany iSeries server to electronic customer support through a VPN multi-hop gateway.



Configuring Universal Connection

- iSeries Navigator launches the Universal Connection Wizard to configure the connection. This only needs to be done once unless some configuration information needs to be updated.

Using Universal Connection

When a Service Application wants to use the Universal Connection to communicate with IBM the following will occur:

- An L2TP tunnel is established to the VPN multi-hop gateway.
- Seeing that the connection request is for IBM service, a VPN is established through your existing Internet connection to a VPN Gateway at IBM.
- The L2TP tunnel is chained to the VPN connection.
- The service application communicates with the appropriate IBM servers to perform the requested service.

Prerequisites and assumptions

The prerequisites for enabling electronic customer support over a remote multi-hop connection include:

- The iSeries server must have IP connectivity to the VPN multi-hop gateway.
- Ensure that the iSeries Access for Windows and iSeries Navigator exist on your personal computer, as described in the iSeries Access for Windows: Installation and setup topic.
- Ensure that you install all of the latest service packs for iSeries Navigator. The scenarios show using the V5R4 version of the software.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- You must have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your i5/OS user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- You must install the TCP/IP Connectivity Utilities (5722-TC1).

- You must install the Digital Certificate Manager (DCM) (5722-SS1 option 34).
- Ensure that the QRETSVRSEC system value is set to 1. You can check this value with the Display System Value (DSPSYSVAL) command. If this value is not set to 1, enter a Change System Value (CHGSYSVAL) command.
- Ensure that the VPN multi-hop gateway has been configured to allow connections to IBM. If you are using an iSeries as the VPN multi-hop gateway, see Configure a direct Internet connection from a server that provides connectivity for other systems or partitions. Other options are discussed in “Determine the IBM VPN Gateway addresses” on page 63.

Current System or Partition configuration steps

Assuming that TCP/IP configuration already exists and works, complete the following steps to set up the Universal Connection if you connect to electronic customer support through a VPN multi-hop gateway:

1. Complete the planning work sheet.
2. Start iSeries Navigator and select the Universal Connection wizard.
3. Enter the service, address, and country information on the Universal Connection wizard dialogs.
4. Under Connect through another system or partition, select the A multi-hop VPN connection to the Internet option.
5. Enter a VPN Gateway address or host name to make the multi-hop VPN connection to IBM.
6. For proxy option, configure a proxy destination.
7. Indicate that this server does not provide connectivity for other servers or partitions.
8. Review the Summary window to ensure that the configuration meets your requirements, and click **Finish** to save your configuration.
9. When prompted, Test the connection from your server to electronic customer support.
10. Configure a backup configuration.

Scenario details: Configure a multi-hop connection through a remote server

After you complete the prerequisites, you are ready to begin configuring the Universal Connection through the wizard.

Step 1: Complete the planning work sheet.

The following planning work sheet illustrates the type of information you need before configuring the remote multi-hop connection to electronic customer support. You use this information when running the Universal Connection wizard.

Planning work sheet	Answers
Service information <ul style="list-style-type: none"> • Company • Contact name • Telephone number • Help desk or pager number • Fax number • Alternate fax number 	<ul style="list-style-type: none"> • MyCompany • Tom Smith • 515-870-9990 • 515-870-9942 • 515-870-5586 • 515-870-5587
Company address <ul style="list-style-type: none"> • Street address • City or locality • State or province • Country (or region) • Postal code • National language version • Electronic mail address • Alternate electronic mail address • Media for PTFs (fixes) 	<ul style="list-style-type: none"> • 94 West Proctor St. • Boone • Iowa • United States • 55902 • English (2924) • myname@company.com • myname@othercompany.com • Automatic selection

Planning work sheet	Answers
Location <ul style="list-style-type: none"> • Country (or region) • State 	<ul style="list-style-type: none"> • United States • Iowa
Connection method	Through a remote server
Connection type	A multi-hop connection to the Internet
VPN Gateway address or host name	192.168.1.1 (As an alternative, supply the host name [charlie@mycompany.com])

If you prefer using CL Commands to create the configuration, use the Change Contact Information (CHGCNTINF) and the Create Service Configuration (CRTSRVCFG) commands.

Step 2: Start iSeries Navigator and select the Universal Connection wizard.

To start the Universal Connection wizard and begin establishing your connection:

1. Open iSeries Navigator software.
2. Select the server under the My Connections folder that you want to configure for electronic customer support.
3. Expand **Network**.
4. Expand **Remote Access Services**.
5. Right-click **Originator Connection Profiles**.
6. Select **Configure IBM Universal Connection** to start the Universal Connection wizard. The Welcome dialog appears.

Note: A progress bar indicates that iSeries Navigator is loading the Universal Connection wizard. If you encounter problems while running the wizard, see “Troubleshoot the Universal Connection wizard” on page 64 for a solution. Run the wizard again after solving the problem.

Step 3: Enter the service, address, and country information on the Universal Connection wizard dialogs.

To enter information about your company and connections:

1. On the Select Configuration dialog, select either **Primary connection configuration** or **Backup connection configuration**. The default is primary. Check the **View and modify contact information** box and click **Next**
2. On the Service Information dialog, enter the following information about MyCompany and click **Next**:
 - Company – MyCompany
 - Contact name – Tom Smith
 - Telephone number – 515-870-9990
 - Help desk or pager number— 515-870-9999
 - Fax number — 515-870-5586
 - Alternate fax number — 515-870-9942

If this information exists on your server, the company data already appears in the fields. For example, if MyCompany previously created a configuration, the wizard retrieves the data from the existing configuration.

3. On the Company Address dialog, enter MyCompany’s address and click **Next**.
 - Street address – 94 West Proctor St.
 - City or locality – Boone
 - State or province – Iowa
 - Country or region – United States
 - Postal code – 55902

- National language version – English (2924)
- Electronic mail address – myname@company.com
- Alternate electronic mail address – myname@othercompany.com
- Media for PTFs – Automatic selection

4. On the Location dialog, select the country (or region) and the state or province where your iSeries server resides and Click **Next**.

- Country (or region) – United States
- State – Iowa

Step 4: Under Connect through another system or partition, select the A multi-hop VPN connection to the Internet option.

Note: There is a checkbox to **Additionally configure a proxy connection**. If your enterprise has an HTTP proxy or you've configured a service and support proxy on another system or partition, and you wish to use that for Universal Connection applications which support going through a proxy, check this box. If this box is checked, Step 6 will appear.

Step 5: Enter a VPN Gateway address or host name to make the multi-hop VPN connection to IBM.

Enter either the VPN multi-hop gateway address or enter the host (server) name that connects to IBM electronic customer support.

Step 6: For proxy option, configure a proxy destination.

Note: This screen only appears if the proxy option was selected in Step 4.

To configure a proxy destination

1. **Attempt proxy connection first**

- a. Choose this option if you want the proxy to take precedence over the configuration for this scenario.
- b. If necessary, check the **Proxy destination requires HTTP basic authentication** box and fill in the **User name** and **Password** fields.
- c. Click **Next** and proceed to the next Step.

2. **Attempt proxy connection if previously defined configuration fails**

- a. Choose this option if the proxy is to be used only in the event that the configuration for this scenario fails.
- b. Fill in the **Proxy IP address or host name** field.
- c. Fill in the **Proxy port** field.
- d. If necessary, check the **Proxy destination requires HTTP basic authentication** box and fill in the **User name** and **Password** fields.
- e. Click **Next** and proceed to the next Step.

Step 7: Indicate that this server does not provide connectivity for other servers or partitions.

Click **No** to indicate that this server has a direct connection to electronic customer support without providing connectivity for other server or partitions.

Step 8: Review the Summary window to ensure that the configuration meets your requirements, and click Finish to save your configuration.

To complete and save your server configuration:

1. Review the configuration summary. Click **Back** if you need to change a value on any of the wizard dialogs.

- | 2. When the configuration is correct, click **Finish** to save the configuration. A progress bar indicates that the wizard is in the process of saving the configuration.

| **Step 9: Test the connection from your server to electronic customer support.**

| To test the configuration:

- | 1. Click **Yes** when the wizard prompts you to test the configuration. The Verify Universal Connection dialog appears.
- | 2. Make note of any problems as the wizard displays verification progress.
- | 3. Click **OK** when the wizard indicates that verification is complete.
- | 4. If the wizard finds errors, restart the Universal Connection wizard, make necessary corrections, save, and retest the corrected configuration.

| **Step 10: Configure a backup configuration (optional).**

| If an additional connection method is available to you, it is suggested that you rerun the wizard to configure a backup. This backup will be used automatically in the event that the primary connection fails.

Configure Universal Connection

| See the following procedures when creating a Universal Connection between your iSeries server and IBM electronic customer support. As an alternative, you can review the Universal Connection scenarios and follow the scenario that matches your site's configuration requirements.

Universal Connection wizard procedures

| The following procedures involve creating a configuration through the Universal Connection wizard or CL commands. After preparing to configure the Universal Connection, choose a configuration procedure that best fits your site's hardware and software setup.

| **Note:** Before using the wizard to create a Universal connection, ensure that you review the information in "Plan for Universal Connection" on page 6.

Configure a dial-up connection through AGNS

| Learn how to configure a connection from your server or partition through AT&T Global Network Services (AGNS) to an IBM support application. You can also configure your server to act as a connecting point through which other servers or partitions access an IBM support application.

Configure a remote PPP dialup connection

| Learn how to configure your server or partition to access IBM customer support through a remote server or an HMC.

Configure a direct Internet connection

| Learn how to configure a connection from your server or partition through a direct Internet connection to an IBM support application. You can also configure your server to act as a connecting point through which other servers or partitions access an IBM support application.

Configure a PPP connection through an ISP

| Learn how to configure a connection from your server or partition through a point-to-point Internet service provider (ISP) to an IBM support application. You can also configure your server to act as a connecting point through which other servers or partitions access an IBM support application.

Configure a multi-hop connection

Learn how to configure a connection from your server or partition through a remote multi-hop connection to an IBM support application.

Configure a dial-up connection through AGNS

Use the following Universal Connection wizard procedure to create a dial-up Universal Connection to any of the following services through AT&T Global Network Services (AGNS):

- Electronic customer support
- Electronic service agent
- Information Center update

Note: See “Scenario: Configure a PPP dial-up connection through AGNS” on page 8 and “Scenario: Configure a PPP dial-up connection for a server that provides connectivity for other systems through AGNS” on page 14 for specific configuration examples

Prerequisites

The prerequisites for enabling electronic customer support over an AGNS connection include:

- Ensure that the iSeries Access for Windows and iSeries Navigator exist on your personal computer, as described in the iSeries Access for Windows: Installation and setup topic.
- Ensure that you install all of the latest service packs for iSeries Navigator. The scenarios show using the V5R4 version of the software.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- You must have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your i5/OS user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- You must install the TCP/IP Connectivity Utilities (5722-TC1).
- For the virtual private network (VPN) and SSL to operate, you must install the Digital Certificate Manager (DCM) (5722-SS1 option 34).
- Ensure that the QRETSVRSEC system value is set to 1. You can check this value with the Display System Value (DSPSYSVAL) command. If this value is not set to 1, enter a Change System Value (CHGSYSVAL) command. This allows the account userid and password to be stored on the iSeries server.
- If you are using an internal modem such as the 56 Kbps modem that is provided with the 9793 adapter card, ensure that the network attribute MDMCOUNTRYID is set appropriately. You can check this value with the Display Network Attributes (DSPNETA) command. If this value is not set correctly, change this value with a Change Network Attributes (CHGNETA) command.

You can create a Universal Connection from the server to an IBM service and you can optionally let the server act as a connecting point for other servers or partitions in the network.

Configure a dial-up connection from your server through AGNS

Assuming that TCP/IP configuration already exists and works, complete the following steps to set up the Universal Connection if you connect to IBM customer support through a local server:

1. Start iSeries Navigator and select the Universal Connection wizard.
2. Select either primary or backup connection configuration. The default is primary.
3. Check the box to view and modify contact information.
4. Enter the service, address, and country (or region) information on the Universal Connection wizard dialogs.

5. Connect from the current system with a dialup connection using AT&T Global Network Services as a connection type.
6. Check the box if you want to configure a proxy.
7. Choose a hardware resource, primary telephone number, and backup telephone number for creating a connection over the modem.
8. If you chose to configure a proxy, fill out the proxy information. If not, skip to the next step.
9. Indicate that this server does not provide connectivity for other servers or partitions.
10. Review the Summary window to ensure that the configuration meets your requirements, and click **Finish** to save your configuration.
11. When prompted, test the connection from your server to electronic customer support.

Configure a dial-up connection from your server that provides connectivity to other systems through AGNS

Assuming that TCP/IP configuration already exists and works, complete the following steps to set up the Universal Connection when you connect to IBM customer support when your local server acts as a connecting point for other servers:

1. Start the iSeries Navigator and select the Universal Connection wizard.
2. Select either primary or backup connection configuration. The default is primary.
3. Check the box to view and modify contact information.
4. Enter the service, address, and country (or region) information on the Universal Connection wizard screens.
5. Connect from the current system with a dialup connection using AT&T Global Network Services as a connection type.
6. Check the box if you want to configure a proxy.
7. Choose a hardware resource, primary telephone number, and backup telephone number for creating a connection over the modem.
8. If you chose to configure a proxy, fill out the proxy information. If not, skip to the next step.
9. Specify that you want this iSeries server to function as a connecting point through which other servers or partitions connect to electronic customer support.
10. Select an interface or interfaces through which the other servers or partitions will be allowed to connect to electronic customer support.
11. Create or select an L2TP terminator profile. You need this profile to recognize the other systems or servers that connect to electronic customer support through your server.
12. Configure a Service and Support proxy server.
13. Review the Summary window to ensure that the configuration meets your requirements, and click **Finish** to save your configuration.
14. When prompted, test the connection from your server to IBM customer support.

Configure a remote PPP dial-up connection

Use the following Universal Connection wizard procedure to create a dial-up Universal Connection from a remote server through a server, a partition, or an HMC that acts as a connecting point to:

- Electronic customer support
- Electronic service agent
- Information Center update

Note: See “Scenario: Configure a PPP dial-up connection through AGNS” on page 8 and “Scenario: Configure a PPP dial-up connection for a server that provides connectivity for other systems through AGNS” on page 14 for specific configuration examples

| **Note:** See “Scenario: Configure a remote PPP dial-up connection” on page 21 for a specific example.

Prerequisites

The prerequisites for enabling electronic customer support over a remote AGNS connection include:

- Ensure that the iSeries Access for Windows and iSeries Navigator exist on your personal computer, as described in the iSeries Access for Windows: Installation and setup topic.
- Ensure that you install all of the latest service packs for iSeries Navigator. The scenarios show using the V5R4 version of the software.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- | • You must have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your i5/OS user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- | • You must install the TCP/IP Connectivity Utilities (5722-TC1).
- | • You must install the Digital Certificate Manager (DCM) (5722-SS1 option 34).
- Ensure that the QRETSVRSEC system value is set to 1. You can check this value with the Display System Value (DSPSYSVAL) command. If this value is not set to 1, enter a Change System Value (CHGSYSVAL) command.
- The Connection Point should have been configured on the system or HMC where the modem is attached.

Configuring a dial-up connection from a remote server through AGNS

Assuming that TCP/IP configuration already exists and works, complete the following steps to set up the Universal Connection if you connect to electronic customer support through a remote system:

- | 1. Start the iSeries Navigator and select the Universal Connection wizard.
- | 2. Select either primary or backup connection configuration. The default is primary.
- | 3. Check the box to view and modify contact information.
- | 4. Enter the service, address, and country (or region) information on the Universal Connection wizard screens.
- | 5. Connect from another system or partition with a dialup connection using AT&T Global Network Services as a connection type.
- | 6. Check the box if you want to configure a proxy.
- | 7. To create the remote connection to IBM, enter the dial gateway address or host name of the server that connects to IBM.
- | 8. If you chose to configure a proxy, fill out the proxy information. If not, skip to the next step.
- | 9. Set “Provide Connectivity For Others” to No.
- | 10. Review the Summary window to ensure that the configuration meets your requirements, and click **Finish** to save your configuration.
- | 11. When prompted, test the connection from your server to IBM customer support.

Configure a direct Internet connection

| Use the following Universal Connection wizard procedure to create a Universal Connection to any of the following services through a direct Internet connection:

- | • Electronic customer support
- | • Electronic service agent
- | • Information Center Update

| **Note:** See “Scenario: Configure a direct Internet connection” on page 26 and “Scenario: Configure a direct
| Internet connection from a server that provides connectivity for other systems or partitions” on
| page 31 for specific configuration examples.

Prerequisites

- | The prerequisites for enabling electronic customer support over a direct Internet connection include:
- The iSeries server must have a globally routable IP address, or the server must be behind a NAT firewall with a globally routable address.
 - Ensure that you install all of the latest service packs for iSeries Navigator. The scenarios show using the V5R4 version of the software.
 - Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
 - You must have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your i5/OS user profile and *USE authority to WRKCONTINF in order to configure the connection using the Universal Connection wizard.
 - You must install the TCP/IP Connectivity Utilities (5722-TC1).
 - You must install the Digital Certificate Manager (DCM) (5722-SS1 option 34).
 - Ensure that the QRETSVRSEC system value is set to 1. You can check this value with the Display System Value (DSPSYSVAL) command. If this value is not set to 1, enter a Change System Value (CHGSYSVAL) command.
 - Ensure that a TCP/IP route exists to route the Universal Connection Packets to the Internet. In most situations the default route will work.
 - Ensure your filter rules allow Universal Connection traffic to flow to the Internet. See “IP Packet Filter Firewall” on page 3 for details.

Configuring a Universal Connection from your server through a direct Internet connection

Assuming that TCP/IP configuration already exists and works, complete the following steps to set up the Universal Connection if you connect to electronic customer support through a local server:

- | 1. Start the iSeries Navigator and select the Universal Connection wizard.
- | 2. Select either primary or backup connection configuration. The default is primary.
- | 3. Check the box to view and modify contact information.
- | 4. Enter the service, address, and country (or region) information on the Universal Connection wizard dialog.
- | 5. Connect from the current system with a direct connection to the Internet as a connection type.
- | 6. Check the box if you want to configure a proxy, then fill out the proxy information.
- | 7. Indicate that this server does not provide connectivity for other servers or partitions.
- | 8. Review the Summary window to ensure that the configuration meets your requirements, and click **Finish** to save your configuration.
- | 9. When prompted, test the connection from your server to electronic customer support.

Configuring a Universal Connection from your server that provides connectivity for other systems through a direct Internet connection

Complete the following steps to set up the Universal Connection when you connect to electronic customer support through your local server that acts as a connecting point for other servers:

- | 1. Start the iSeries Navigator and select the Universal Connection wizard.
- | 2. Select either primary or backup connection configuration. The default is primary.
- | 3. Check the box to view and modify contact information.

4. Enter the service, address, and country (or region) information on the Universal Connection wizard screens.
5. Connect from the current system with a direct connection to the Internet as a connection type.
6. Check the box if you want to configure a proxy, then fill out the proxy information.
7. Specify that you want this iSeries server to function as a connecting point through which other servers or partitions connect to electronic customer support.
8. Select an interface or interfaces through which the other servers or partitions will be allowed to connect to electronic customer support.
9. Create or select an L2TP terminator profile. You need this profile to recognize the other systems or servers that connect to electronic customer support through your server.
10. Configure a Service and Support proxy server.
11. Review the Summary window to ensure that the configuration meets your requirements, and click **Finish** to save your configuration.
12. When prompted, test the connection from your server to IBM customer support.

Configure a PPP connection through an ISP

Use the following Universal Connection wizard procedure to create a Universal Connection to any of the following services through a Point-to-point Internet service provider (ISP) connection:

- Electronic customer support
- Electronic service agent
- Information Center Update

Note: See “Scenario: Configure a PPP connection through an ISP” on page 37 and “Scenario: Configure a PPP connection from a server that provides connectivity for other systems through an ISP” on page 42 for specific configuration examples.

Prerequisites

The prerequisites for enabling electronic customer support over a direct Internet connection include:

- Ensure that the iSeries Access for Windows and iSeries Navigator exist on your personal computer, as described in the iSeries Access for Windows: Installation and setup topic.
- Ensure that you install all of the latest service packs for iSeries Navigator. The scenarios show using the V5R4 version of the software.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- You must have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your i5/OS user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- You must install the TCP/IP Connectivity Utilities (5722-TC1).
- You must install the Digital Certificate Manager (DCM) (5722-SS1 option 34).
- Ensure that the QRETSVRSEC system value is set to 1. You can check this value with the Display System Value (DSPSYSVAL) command. If this value is not set to 1, enter a Change System Value (CHGSYSVAL) command. This allows the account userid and password to be stored on the iSeries server.
- If you are using an internal modem such as the 56 Kbps modem that is provided with the 9793 adapter card, ensure that the network attribute MDMCNTRYID is set appropriately. You can check this value with the Display Network Attributes (DSPNETA) command. If this value is not set correctly, change this value with a Change Network Attributes (CHGNETA) command.
- The profile used to connect to your ISP must have been previously configured.
- Ensure that a TCP/IP route is associated with your ISP profile that will route the Universal Connection traffic to your ISP. In most situations the default route will work.

Configuring a Universal Connection from your server through an ISP connection

Assuming that TCP/IP configuration already exists and works, complete the following steps to set up the Universal Connection if you connect to electronic customer support through the local server:

1. Start the iSeries Navigator and select the Universal Connection wizard.
2. Select either primary or backup connection configuration. The default is primary.
3. Check the box to view and modify contact information.
4. Enter the service, address, and country (or region) information on the Universal Connection wizard dialogs.
5. Connect from the current system using an Internet Service Provider as a connection type.
6. Select an existing connection profile for your ISP from the Select Profile dialog.
7. Indicate that this server does not provide connectivity for other servers or partitions.
8. Review the Summary window to ensure that the configuration meets your requirements, and click **Finish** to save your configuration.
9. When prompted, test the connection from your server to IBM customer support.

Configuring a Universal Connection from your server that provides connectivity for other servers through a point-to-point ISP connection

Complete the following steps to set up the Universal Connection when you connect to electronic customer support through a remote server or when your local server acts as a connection aggregation point for other servers:

1. Start the iSeries Navigator and select the Universal Connection wizard.
2. Select either primary or backup connection configuration. The default is primary.
3. Check the box to view and modify contact information.
4. Enter the service, address, and country (or region) information on the Universal Connection wizard screens.
5. Connect from the current system using an Internet Service Provider as a connection type.
6. Select an existing connection profile for your ISP from the Select Profile dialog.
7. Specify that you want this iSeries server to function as a connecting point through which other servers or partitions connect to IBM customer support.
8. Select an interface or interfaces through which the other servers or partitions will be allowed to connect to electronic customer support.
9. Create or select an L2TP terminator profile. You need this profile to recognize the other systems or servers that connect to IBM customer support through your server.
10. Configure a Service and Support proxy server.
11. Review the Summary window to ensure that the configuration meets your requirements, and click **Finish** to save your configuration.
12. When prompted, test the connection from your server to IBM customer support.

Configure a multi-hop connection

Use the following Universal Connection wizard procedure to create a Universal Connection to any of the following services through a remote multi-hop connection over the Internet.

- Electronic customer support
- Electronic service agent
- Information Center Update

Note: See “Scenario: Configure a multi-hop connection through a remote server” on page 49 for a specific configuration example.

Prerequisites and assumptions

The prerequisites for enabling electronic customer support over a remote multi-hop connection include:

- The iSeries server must have IP connectivity to the VPN multi-hop gateway.
- Ensure that the iSeries Access for Windows and iSeries Navigator exist on your personal computer, as described in the iSeries Access for Windows: Installation and setup topic.
- Ensure that you install all of the latest service packs for iSeries Navigator. The scenarios show using the V5R4 version of the software.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- You must have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your i5/OS user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- You must install the TCP/IP Connectivity Utilities (5722-TC1).
- You must install the Digital Certificate Manager (DCM) (5722-SS1 option 34).
- Ensure that the QRETSVRSEC system value is set to 1. You can check this value with the Display System Value (DSPSYSVAL) command. If this value is not set to 1, enter a Change System Value (CHGSYSVAL) command.
- Ensure your default TCP/IP route, or a host route, directs traffic out the appropriate TCP/IP interface to the Internet to allow the VPN to be established to IBM. For details, see “Determine the IBM VPN Gateway addresses” on page 63 and “Determine the IBM Service Destination addresses” on page 63.

Configure a multi-hop connection over a remote server

Assuming that TCP/IP configuration already exists and works, complete the following steps to set up the Universal Connection if you connect to electronic customer support through another server or partition:

1. Start iSeries Navigator and select the Universal Connection wizard.
2. Select either primary or backup connection configuration. The default is primary.
3. Check the box to view and modify contact information.
4. Enter the service, address, and country (or region) information on the Universal Connection wizard dialogs.
5. Connect from another system or partition using a multi-hop VPN connection to the Internet as a connection type.
6. Check the box if you want to configure a proxy.
7. Enter a VPN Gateway address or host name to make the multi-hop VPN connection to IBM.
8. If you chose to configure a proxy, fill out the proxy information. If not, skip to the next step.
9. Indicate that this system does not provide connectivity for other systems or partitions.
10. Review the Summary window to ensure that the configuration meets your requirements, and click **Finish** to save your configuration.
11. When prompted, test the connection from your server to electronic customer support.

Configure a multi-hop connection from a server that acts as a connecting point for other servers

Complete the following steps to set up the Universal Connection if you connect to electronic customer support through another server or partition:

1. Start the iSeries Navigator and select the Universal Connection wizard.
2. Select either primary or backup connection configuration. The default is primary.
3. Check the box to view and modify contact information.
4. Enter the service, address, and country (or region) information on the Universal Connection wizard screens.

5. Connect from another system or partition using a multi-hop VPN connection to the Internet as a connection type.
6. Check the box if you want to configure a proxy.
7. Enter a VPN Gateway address or host name to make the multi-hop VPN connection to IBM.
8. If you chose to configure a proxy, fill out the proxy information. If not, skip to the next step.
9. Specify that you want this iSeries server to function as a connecting point through which other servers or partitions connect to IBM customer support.
10. Select an interface or interfaces through which the other servers or partitions will be allowed to connect to electronic customer support.
11. Create or select an L2TP terminator profile. You need this profile to recognize the other systems or servers that connect to IBM customer support through your server.
12. Configure a Service and Support proxy server.
13. Review the Summary window to ensure that the configuration meets your requirements, and click **Finish** to save your configuration.
14. When prompted, test the connection from your server to IBM customer support.

Additional Universal Connection configuration procedures

The following procedures present information on configuring service provider information, testing your connection to electronic customer support, ensuring compatibility with SOCKS, and locating the address of the IBM VPN Gateways and service destinations.

Configure service provider information

Learn how to configure service provider information.

Test your connection to electronic customer support

Learn about testing your connection to ensure that your Universal Connection to electronic customer support is functioning properly.

Ensure compatibility with SOCKS

Learn how to locate the addresses that you need to treat as direct.

Determine the IBM VPN Gateway addresses

Learn how to determine the address for the IBM VPN gateway connections.

Determine the IBM Service Destination addresses

Learn how to determine the IBM Service destination addresses used by the service applications.

Configure service provider information

Occasionally, you may need to contact a service provider directly, over the telephone, for assistance. Complete the steps below to configure voice contacts for service and support:

1. On the command line of the main menu, type WRKCNTINF and press Enter. The Work with Support Contact Information dialog appears.
2. On the command line, type 6 (Work with service providers), and press Enter.
3. Select option 2 to change the *IBMSRV Control Point Entry, and press Enter. The Change Service Provider dialog appears.
4. If you are installing this server in the United States, type the following on the Change Service Provider display:
Hardware service: **1-800-426-7378**
Software service: **1-800-237-5511**

If you are not installing this server in the United States, call your service representative for the service telephone numbers.

5. Press Enter.

6. Press **F3** (Exit) to return to the Work with Support Contact Information dialog.

Test your connection to electronic customer support

To ensure that your connection to electronic customer support is functioning properly, complete the following test.

To test the Universal Connection, follow these steps:

1. Locate the Send Test Request dialog as follows:
 - a. Go to the main menu.
 - b. On the command line, enter `SNDSRVRQS *TEST`.
 - c. Press Enter. The Send Test Request dialog appears.
2. Press Enter to submit the test.
3. The words Test request complete appear at the bottom of the screen to verify that the test was successful. If your test does not work, note the error message and contact your service representative.

Ensure compatibility with SOCKS

- | To find the IP address of the VPN Gateways, see “Determine the IBM VPN Gateway addresses.” Traffic from these IP addresses must not be routed to the SOCKS server. They must be routed directly.
- | In addition, host routes are created for all service destinations as the application attempts to connect to that destination. To find the service hosts that need to be treated as direct, see “Determine the IBM Service Destination addresses”


Determine the IBM VPN Gateway addresses

To find the IBM VPN Gateway addresses after running the Universal Connection Wizard (when using iSeries Navigator):

1. Locate the L2TP Originator Connection Profile By Navigating as follows: **Network > Remote Access Services > Originator Connection Profiles**.
- | 2. Right-click on profile **QVPN01IBM1** and select to view Properties.
3. Select the **Connection** tab to view the IBM VPN Gateway address listed as the remote tunnel endpoint host name or IP address.
- | 4. Right-click on profile **QVPN01IBM2** and select to view Properties.
5. Select the **Connection** tab to view the IBM VPN Gateway address listed as the remote tunnel endpoint host name or IP address.
- | 6. Repeat steps 2-5 for **QVPN02IBM1** and **QVPN02IBM2** (if they exist).

To find the IBM VPN Gateway addresses if you are using a Cisco VPN Gateway for multi-hop:

To find the IBM VPN Gateway address, follow these steps:

1. Go to the Support for iSeries family
(<http://www-1.ibm.com/servers/eserver/support/series/index.html>)  Web site.
2. Select **Technical Databases**.
3. Select **Registered Software Knowledge Base**. You must have a valid password to access this page and a valid support line contract to access these topics.
4. Once you enter your password, search on **VPN Cisco multi-hop Connection Configuration or 23300444**. This page provides the GWA IP address as an IBM gateway address.

Determine the IBM Service Destination addresses

- | To find the IBM Service Destination addresses that may be used for HTTP and HTTPs traffic, the service provider location definition file can be browsed. The file is located at
| `'/qibm/userdata/os400/universalconnection/serviceProviderIBMLocationDefinition.xml'`


- | The <IP-Address> and <Port> elements define the address information that may be needed for filter rule and/or SOCKS configuration.
- | If the above file is not found, the master file (containing addresses for all worldwide locations) can be found at either '/qibm/userdata/os400/universalconnection/serviceProviderIBM.xml' or '/qibm/proddata/os400/universalconnection/serviceProviderIBM.xml'.
- | Any of these files can be browsed with the DSPF CL command.

Troubleshoot the Universal Connection wizard

If your attempt to run the Universal Connection wizard was unsuccessful, answer the following questions and run the wizard again.

1. Is the Universal Connection wizard unavailable to you?

Ensure you have the following criteria met:

- You must have iSeries Access for Windows installed. See the iSeries Access (<http://www-1.ibm.com/servers/eserver/iseres/access/>)  Web site for details.
- You must have the optional Network component installed.
- You must have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your i5/OS user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.

2. If you are using an internal modem, does your Modem Country or Region ID Network Attribute correspond to the location of your iSeries server?

To verify that this attribute is correct:

- a. On any i5/OS command line, enter DSPNETA (Display Network Attribute command).
- b. Press Enter.
- c. If the value is correct, move to the next question.
- d. If the value is incorrect, change it by entering CHGNETA MDMCNTRYID(XX), where XX is the appropriate Country or Region Identifier.

3. Is the QRETSVRSEC system value correct?

To return the authentication information required to connect to IBM, ensure that this system value is set to 1 (Retain Data). To make this change: On any i5/OS command line, enter CHGSYSVAL SYSVAL(QRETSVRSEC) VALUE('1')

4. Is TCP started?

You must start TCP for the Universal Connection wizard to run successfully. In addition, TCP must be active whenever you access the Universal Connection. To start TCP:

- a. On any i5/OS command line, enter STRTCP (Start TCP command).
- b. Press Enter.

5. Is your virtual private network (VPN) functioning correctly?

See the Troubleshoot VPN topic for assistance.

6. Does your modem selection exist or do you need to change some of the default parameters?

To change the modem list, choose from the following options:

- To change the modem list with iSeries Navigator, follow these steps:
 - a. Select the appropriate server.
 - b. Expand **Network**.
 - c. Select **Remote Access Services**.
 - d. Select modems.
 - e. See the Configure your modem for PPP topic for more information. Also, see your modem manual for the proper settings.


- To change the modem list from the command line, follow these steps:
 - a. On any i5/OS command line, enter CFGTCPPTP.
 - b. Press Enter.
 - c. Select option 11 (Work with modem information).
 - d. Select options to add or change modems as needed. See the Configure your modem for PPP topic for details. Also, see your modem manual for the proper settings.
- 7. Is your modem configured with a framing type of asynchronous?

If not, you may have to change dip-switch and other hardware settings. See your modem manual for more information. If you are using an internal modem or an IBM 7852-400, no change is required.
- 8. Did problems occur when you attempted to test the connection?

See the Troubleshoot PPP topic.
- 9. Are you trying to use an existing SNA electronic customer support switched connection as a backup?

Ensure that the QESLINE line description specifies a valid resource name (DSPLIND QESLINE) and is connected to a synchronous capable modem. You can use the same IBM 7852-400 modem for both the Universal Connection and an SNA backup. See the Configure an SNA connection topic for details. It is also possible to use two separate modems.
- 10. Do you make a connection to the Universal Connection wizard through AT&T Global Network Services?

If you are using AT&T for your electronic customer support connection, be aware of the following information:

 - a. Every 30 days (or whenever you use the Universal Connection after that 30 day period), your server downloads an updated AT&T telephone list. This ensures that the telephone numbers available for the Universal Connection remain current.
 - b. When this download occurs, a message is posted to the system operator's message queue.
 - c. If your Universal Connection profiles contain one or more telephone numbers that are no longer in the current AT&T telephone list, the system issues a diagnostic message. The purpose of this message is to notify you to run the wizard again to update the telephone numbers. When you run the wizard again, updated telephone numbers will be available for you to choose from. To view the latest telephone numbers, visit the AT&T Business Internet Services (www.attbusiness.net)  Web site.

Appendix. Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

- | IBM Director of Licensing
- | IBM Corporation
- | North Castle Drive
- | Armonk, NY 10504-1785
- | U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

- | IBM World Trade Asia Corporation
- | Licensing
- | 2-31 Roppongi 3-chome, Minato-ku
- | Tokyo 106-0032, Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

- | IBM Corporation

| Software Interoperability Coordinator, Department YBWA
| 3605 Highway 52 N
| Rochester, MN 55901
| U.S.A.

| Such information may be available, subject to appropriate terms and conditions, including in some cases,
| payment of a fee.

| The licensed program described in this information and all licensed material available for it are provided
| by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement,
| IBM License Agreement for Machine Code, or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

This information is for planning purposes only. The information herein is subject to change before the products described become available.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

Each copy or any portion of these sample programs or any derivative work, must include a copyright notice as follows:

© (your company name) (year). Portions of this code are derived from IBM Corp. Sample Programs. © Copyright IBM Corp. _enter the year or years_. All rights reserved.

If you are viewing this information softcopy, the photographs and color illustrations may not appear.

Trademarks

The following terms are trademarks of International Business Machines Corporation in the United States, other countries, or both:

| AIX
| AIX 5L
| AS/400
| Electronic Service Agent
| e(logo)server
| eServer
| i5/OS

- | IBM
- | iSeries
- | Operating System/400
- | OS/400
- | pSeries
- | Windows
- | xSeries
- | zSeries

Microsoft[®], Windows, Windows NT[®], and the Windows logo are trademarks of Microsoft Corporation in the United States, other countries, or both.

Other company, product, or service names may be trademarks or service marks of others.

Terms and conditions

Permissions for the use of these publications is granted subject to the following terms and conditions.

Personal Use: You may reproduce these publications for your personal, noncommercial use provided that all proprietary notices are preserved. You may not distribute, display or make derivative works of these publications, or any portion thereof, without the express consent of IBM.

Commercial Use: You may reproduce, distribute and display these publications solely within your enterprise provided that all proprietary notices are preserved. You may not make derivative works of these publications, or reproduce, distribute or display these publications or any portion thereof outside your enterprise, without the express consent of IBM.

Except as expressly granted in this permission, no other permissions, licenses or rights are granted, either express or implied, to the publications or any information, data, software or other intellectual property contained therein.

IBM reserves the right to withdraw the permissions granted herein whenever, in its discretion, the use of the publications is detrimental to its interest or, as determined by IBM, the above instructions are not being properly followed.

You may not download, export or re-export this information except in full compliance with all applicable laws and regulations, including all United States export laws and regulations.

IBM MAKES NO GUARANTEE ABOUT THE CONTENT OF THESE PUBLICATIONS. THE PUBLICATIONS ARE PROVIDED "AS-IS" AND WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO IMPLIED WARRANTIES OF MERCHANTABILITY, NON-INFRINGEMENT, AND FITNESS FOR A PARTICULAR PURPOSE.



Printed in USA