IBM i
Version 7.2

Service and support

IBM i
Version 7.2

Service and support

Note
Before using this information and the product it supports, read the information in "Notices" on page 71.

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Service and support

Various service options are available on your IBM® i, such as problem reporting and remote support.

If you are using a Hardware Management Console (HMC), you need to follow certain steps on your HMC to set up a connection to IBM. Refer to the information about setting up your service environment in the IBM Systems Hardware Information Center for more details.

Note: By using the code examples, you agree to the terms of the "Code license and disclaimer information" on page 70.

Related concepts:

Setting up your service environment

What's new for IBM i 7.2

Read about new or significantly changed information for the Service and support topic collection.

AT&T Dialup Connections Removed

AT&T Dialup Connections are removed. Dialup connections are still supported, but users must supply their own dial-up ISP.

Ordering PTFs over VPN no longer supported

Ordering PTFs or reporting problems over VPN is no longer supported.

How to see what's new or changed

To help you see where technical changes have been made, the information center uses:

- The » image to mark where new or changed information begins.
- The « image to mark where new or changed information ends.

In PDF files, you might see revision bars (|) in the left margin of new and changed information.

To find other information about what's new or changed this release, see the Memo to users.

PDF file for Service and support

You can view and print a PDF file of this information.

To view or download the PDF version of this document, select Service and support .

Saving PDF files

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

1. Right-click the PDF link in your browser.
2. Click the option that saves the PDF locally.
3. Navigate to the directory in which you want to save the PDF.
4. Click **Save**.

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Downloading Adobe Reader

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

Related reference:

"Related information for Service and support" on page 69
Product manuals, IBM Redbooks® publications, Web sites, and other information center topic collections contain information that relates to the Service and support topic collection. You can view or print any of the PDF files.

Service and support overview

Service and support options can be used to ensure that your system and applications are ready when you need them.

The following figure illustrates the service and support that you can use when a problem or failure occurs.

Figure 1. Service and support overview

Electronic Service Agent overview

Electronic Service Agent is an IBM i function that collects system inventory for software and hardware and provides an automatic problem-reporting function. It helps predict and prevent hardware errors by early detection of potential problems. It also reports software errors. In addition, if PM/400 is collecting performance data, that data also sent as part of the inventory. Electronic Service Agent™ downloads fixes and automatically submits problems to IBM when appropriate.

Related concepts:

"Electronic Service Agent" on page 12
Electronic Service Agent provides an automatic problem-reporting function. It helps predict and prevent hardware errors by early detection of potential problems. It also reports software errors. Electronic Service Agent downloads fixes and automatically submits problems to IBM when appropriate.

Connectivity

To make the service environment available, your system must have connectivity to IBM.

Service Agent uses the Universal Connection to communicate with IBM. What connection method you choose depends on several factors:

- Your hardware, software, and network configuration. This includes whether you have a direct connection to the Internet, whether you use a modem, and whether you connect through a console, such as a Hardware Management Console.
- The level of security your company wants to maintain.
- PTF ordering, problem reporting, and sending inventory are no longer supported over VPN. IBM recommends using HTTP or HTTPS for PTF ordering, problem reporting, and sending inventory to IBM.

You can use the Universal Connection wizard to set up a connection to IBM. You can also configure a connection to IBM by using the Create Service Configuration (CRTSRVCFG) command.

Related concepts:

"Setting up a connection to IBM" on page 24
If you are using a Hardware Management Console (HMC), you need to complete these steps on your HMC to set up a connection to IBM.

"Connecting to IBM using CL commands" on page 67
You can use the CL commands to create your connection to IBM.

Universal Connection

With Universal Connection, you control how your business connects to IBM support services.

After the connection, you can access a variety of support options. Universal Connection is TCP/IP-based, and can be automatically or manually configured. Automatic configuration of the connection is attempted if the following conditions are true:

- The Universal Connection is not configured.
- A command, such as SNDSRVRQS or SNDPTFORD, or action is performed that requires a connection to IBM.
- The user initiating the connection to IBM has *IOSYSCFG authority.
- /QIBM/UserData/OS400/UniversalConnection/eccBase.properties contains the property AUTO_CONFIGURE_CONNECTIVITY=YES, which is the default value shipped with the system. Setting AUTO_CONFIGURE_CONNECTIVITY=NO will disable automatic configuration.

Automatic configuration only attempts to configure a direct LAN connection to IBM. If a direct LAN connection to IBM can not be successfully established, automatic configuration will fail and manual configuration of the Universal Connection is required. Manual configuration of the Universal Connection is also required for a connection other than direct LAN, such as a dialup connection or a connection through an HTTP/HTTPS proxy.

Manual configuration is performed using the Universal Connection Wizard or the CRTSRVCFG CL command. You select how to connect to IBM from the following choices:

- An existing Internet service provider (ISP) connection.
- A direct local area network (LAN) connection to the Internet using HTTP/HTTPS or virtual private network (VPN).

- A remote virtual private network (VPN) multi-hop connection.
- A local area network (LAN) connection through an HTTP/HTTPS proxy.

The flexibility of multiple choices allows you to choose the most convenient solution for your organization while still providing a secure connection. In most situations, 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

Note: You can also configure these profiles using control language (CL) commands, including the Create Service Configuration (CRTSRVCFG) command.

Related concepts:

"Troubleshooting Electronic Service Agent" on page 20
When an error occurs, the system attempts to automatically report a problem or to send service information to IBM.

Universal Connection concepts

These concepts can help you become more familiar with the technical and configuration details involved with each of the connections that are available through Universal Connection. The information focuses on the relationship between the technology and the establishment of a Universal Connection. Each concept includes references to additional information about the topic.

Application proxies:

An application proxy or application proxy server receives requests intended for another server and acts as the proxy of the client 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 cannot meet the security authentication requirements of the server but need to be permitted some services.

If you access the Internet through an application proxy, some Universal Connection applications might use the proxy. However, you must ensure that you select a configuration method that allows the remainder of your service information to connect through Universal Connection from your system to IBM without going through the application proxy.

The following list shows the characteristics of an application proxy:

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

The most common type of proxy is the Hypertext Transfer Protocol (HTTP) proxy. Most HTTP proxies also handle Hypertext Transfer Protocol Secure (HTTPS) and file transfer protocol (FTP). The Simple Mail Transfer Protocol (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 service information.

Some Universal Connection applications can flow through a standard HTTP proxy. The HTTP proxy must support Secure Sockets Layer (SSL) tunneling and can optionally require HTTP basic authentication.

The IBM i operating system includes a service and support HTTP proxy that can be used specifically for Universal Connection applications if you want one partition or system to provide connectivity for others.

IP packet filter firewall:

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

An Internet Protocol (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. 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 preconfigured 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 the following information:

- Source and destination IP addresses
- Protocol, such as Transmission Control Protocol (TCP), User Datagram Protocol (UDP), or Internet Control Message Protocol (ICMP)
- Source and destination ports, 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 that 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 because the source IP address and ACK bit in the packet's header can be easily forged by attackers.

IBM i allows you to specify packet filter rules on interfaces and remote access service profiles. If you are using either an external packet filter firewall or packet filter rules on the system and your Universal Connection information passes through these filters, you must change the filter rules to allow the connection to the IBM virtual private network (VPN) Gateway as follows:

Table 1. IP filter rules change: Packet filters

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
Encapsulated Security Payload (ESP) inbound traffic filter rule	Allow ESP protocol (X'32') for VPN gateway IP addresses

Table 1. IP filter rules change: Packet filters (continued)

IP filter rules	IP filter values
ESP outbound traffic filter rule	Allow ESP protocol (X'32') for VPN gateway IP addresses

For those Universal Connection applications that use Hypertext Transfer Protocol (HTTP) and Hypertext Transfer Protocol Secure (HTTPS) for a transport, you must change the filter rules to allow connections to the IBM service destinations as follows:

Table 2. IP filter rules change: HTTP and HTTPS

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

To change the filter rules, you need to specify an actual IBM VPN gateway address. In addition, for HTTP and HTTPS traffic, to change the filter rules, you might need to specify actual service destination addresses.

Related tasks:

"Planning for Universal Connection" on page 25
To successfully configure a Universal Connection to IBM services, you need to select the type of connection you want to use for IBM service and support. Make sure that you meet all the required prerequisites.

"Determining the IBM VPN gateway addresses" on page 33
This topic tells how to determine the address of the IBM virtual private network (VPN) gateway connections.

Related reference:

"Determining the IBM service destination addresses" on page 33
This topic describes how to find the IBM service destination addresses when you connect to IBM customer support.

Related information:

Packet rules concepts

Secure Sockets Layer and Transport Layer Security:

Secure Sockets Layer (SSL) and Transport Layer Security (TLS) protocol help provide privacy over a network. Universal Connection creates a certificate store that contains trusted Certificate Authority Certificates for use by SSL or TLS. Some service applications use SSL or TLS to protect the service information that flows to IBM.

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 that prevents eavesdropping, tampering, or message forgery. These protocols (including SSL and TLS) 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 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 definitions and implementations to make the SSL protocol more secure, and to make the specification of the protocol more concise and complete.

The SSL or TLS 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:

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

NAT also translates ports. In order for the Universal Connection to connect to IBM through a NAT, you must allow IPSec through NAT, as described in the NAT compatible IPSec with UDP topic, so that the translation of the address does not break the encrypted service information flow. The Universal Connection wizard automatically enables this technology.

NAT has 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. Internal hosts are assigned IP addresses from the internal network, so 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 so it 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.

Related information:

NAT compatible IPSec with UDP

SOCKS:

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

There are some systems such as IBM i 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 Hypertext Transfer Protocol (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 cannot perform functions like caching or logging URLs that are accessed through the server.

The Universal Connection does not support service information flow through a SOCKS server. Therefore, if your 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.

Related tasks:

"Ensuring compatibility with SOCKS" on page 32
This topic helps you to locate the addresses that you need to treat as direct.

Related information:

Client SOCKS support

Virtual private network:

Virtual private network (VPN) can protect service information when you configure a Universal Connection between your system and the IBM support services.

A 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:

- Service information origin authentication to verify that each datagram was originated by the claimed sender.
- Service information integrity to verify that the contents of a datagram were not changed either deliberately or due to random errors.
- Service information encryption to ensure message text confidentiality.
- Replay protection to ensure that an attacker cannot intercept service information 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 system and IBM is safe (for example, VPN encrypts and authenticates service information). The VPN technologies used by the Universal Connection include Layer Two Tunneling Protocol (L2TP), Internet Key Exchange (IKE), and IP security protocol (IPSec). 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 connecting across the Internet to IBM, the Universal Connection uses L2TP between the partitions and then uses L2TP protected by IPSec for the second portion of the connection (that portion requiring encryption).

Related information:

Layer 2 Tunnel Protocol (L2TP)

Implicit IKE

IP Security (IPSec) protocols

Virtual private networking

Problem reporting

Your system can help isolate the cause of system-detected hardware problems and some software problems.

Any one of the following actions might be taken when a problem occurs:

- A fix can be sent to you, if the fix has already been identified.
- A hardware part can be sent to your system, if appropriate.
- IBM support can call you to gather more information and help you perform further problem analysis.
- IBM can send a service representative to you.

Related information:

Overview: Reporting problems

Fixes

Fixes can help you correct problems and maintain the system.

Periodically, problems might be discovered in your software or firmware. IBM issues a fix, which is also known as a program temporary fix (PTF), to correct the problem. Fixes play an important role in your system maintenance strategy. Fixes can reduce system downtime, add functions, or provide optimal availability. It is important that you develop a fix management strategy to keep track of fixes that are available for your software.

Note: The expected delivery time of mailed PTFs is 5 - 9 business days.

For detailed information about fixes and how to develop a fix management strategy, refer to the information about maintaining and managing IBM i and related software.

Related information:

Maintaining and managing IBM i and related software

Remote support

In some cases, an IBM service representative can connect directly to your system to determine the sources of a problem.

Virtual private network

Virtual private network (VPN) is an extension of a company's intranet over the existing framework of either a public or private network. VPN uses several important TCP/IP protocols to protect service information traffic. If Electronic Customer Support is configured to use one of the Universal Connection VPN connectivity options, you can use the Start Remote Support (STRRMTSPT) command with the *VPN option.

Point-to-Point Protocol

Point-to-Point Protocol (PPP) is an Internet standard for transmitting service information over serial lines. It is the most widely used connection protocol among Internet service providers (ISPs). PPP allows individual computers to access networks, which in turn provides access to the Internet. The IBM i platform includes TCP/IP PPP support as part of its wide area network (WAN) connectivity. The *PPP option of the Start Remote Support (STRRMTSPT) command has additional details.

Remote service support facility

The remote service support facility enables IBM support to have diagnostic access to your system. If a support person determines that the remote service support facility is the best way to diagnose and fix

your problem, you are given detailed information about how to enable the connection.

Related information:

Virtual Private Networking (VPN)

Start Remote Support (STRRMTSPT) command

Universal Connection

Remote Access Services: PPP connections

Electronic Customer Support

The integrated Electronic Customer Support functions assist in the service and support of your system by helping you isolate the cause of system-detected hardware problems and some software problems.

The communications hardware and software that are needed to access remote IBM service and support functions are part of the operating system.

The following figure shows how Electronic Customer Support is organized to report problems and to receive responses.

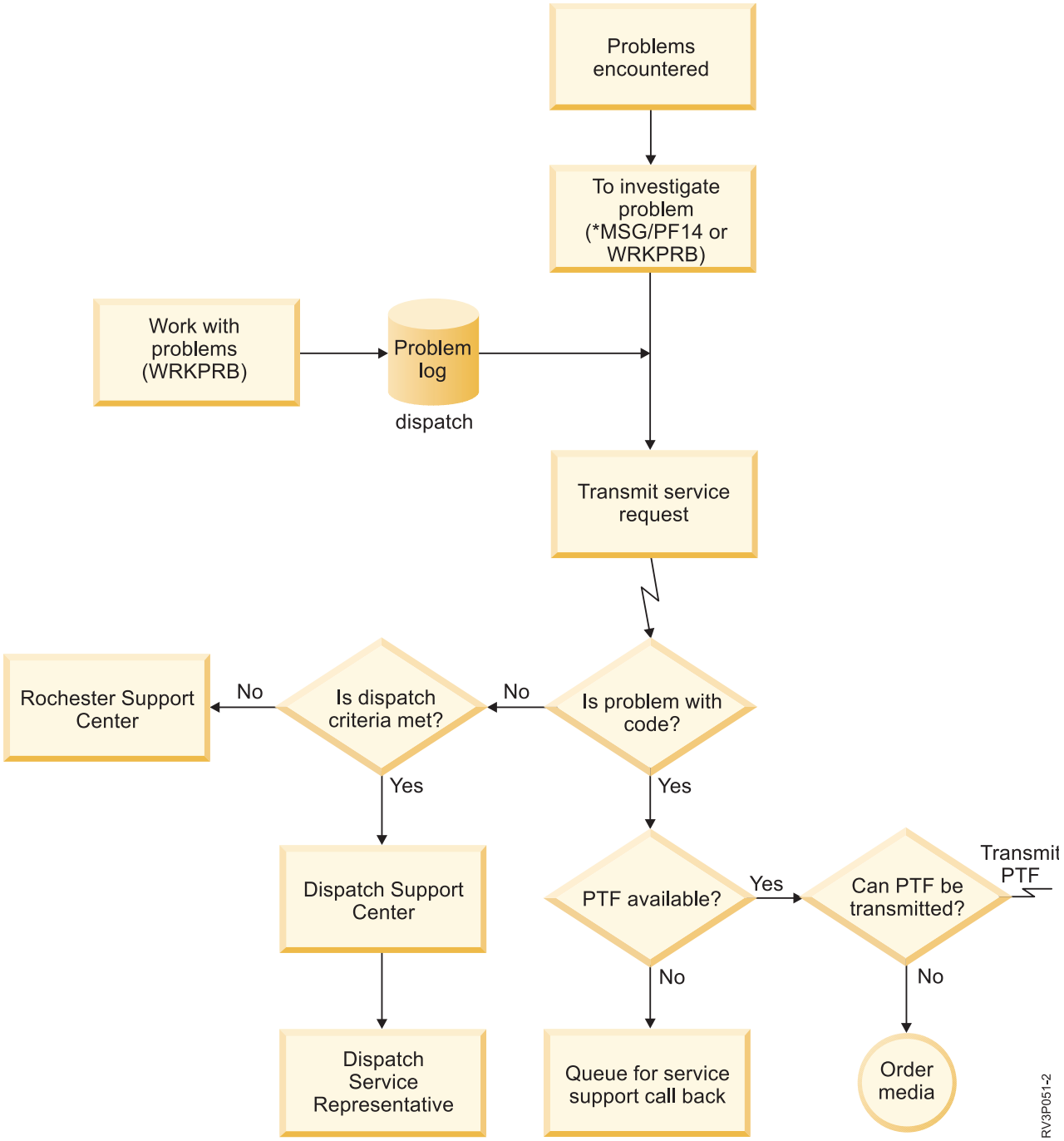


Figure 2. Reporting problems and receiving responses

Electronic Customer Support: Command authority

To use Electronic Customer Support, you must have certain command authorities.

Your security officer must give you authority to the following commands:

- Send PTF Order (SNDPTFORD).
- Send Service Request (SNDSRVRQS).
- Work with Contact Information (WRKCNTINF).

- Work with PTF Order (WRKPTFORD)

Refer to the information about control language for details on these CL commands.

Related information:

Send PTF Order (SNDPTFORD) command

Send Service Request (SNDSRVRQS) command

Work with Contact Information (WRKCNTINF) command

Work with PTF Order (WRKPTFORD) command

Enabling Electronic Customer Support to your system

To access Electronic Customer Support from your system, you can set up a connection to IBM by using Universal Connection.

Electronic Customer Support is available to help keep your system operating efficiently. Sometimes, your system might experience problems that need attention from IBM service representatives. If a hardware or software problem occurs, IBM service representatives can access your system directly to rapidly diagnose and solve the problem. Electronic Customer Support allows you to perform the following tasks:

- Order and install fixes.
- Access local service and IBM product information.
- Access technology forums.
- Access problem analysis reporting and management.

You can set up the connection to IBM using the following methods:

Universal Connection
: A TCP/IP-based program that allows you to choose how you connect to IBM. For assistance on how to do this, refer to the information about configuring Universal Connection.

Related tasks:

"Configuring Universal Connection" on page 26
This is 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.

Related information:

Using software fixes

Online Publications

Electronic Service Agent

Electronic Service Agent provides an automatic problem-reporting function. It helps predict and prevent hardware errors by early detection of potential problems. It also reports software errors. Electronic Service Agent downloads fixes and automatically submits problems to IBM when appropriate.

Supplemental system service information is sent to IBM and made available to IBM support centers to aid in problem resolution. The same service information is available to be viewed with prior registration of an IBM ID. For more information about creating an IBM ID, registering your system, and viewing the service information that you share with IBM, follow these steps:

1. Go to the IBM Electronic Services Web site.
2. Choose from the following options:
   a. To request an IBM ID, select **Register**.
   b. To view the service information that you share with IBM, select **My Systems**.

Electronic Service Agent must be activated on each system and logical partition (LPAR). It is integrated into the operating system.

If you have other IBM i operating systems and IBM i LPARs that are running other releases of the operating system in your network, Electronic Service Agent is available for installation on all releases of the operating system. For information about Electronic Service Agent for previous releases, go to the Online Publications Web site to find the IBM Electronic Service Agent documents.

Related concepts:

System information
You can use IBM Navigator for i on your system to collect and manage service information for multiple systems. You can also store the service information about a designated central system.

Related information:

Online Publications

Where to install and activate IBM Electronic Service Agent

IBM Electronic Service Agent can be run on a variety of operating systems and system platforms.

- AIX®
- Hardware Management Console (HMC)
- Linux
- IBM i
- System p
- System x
- Windows on System x
- z/OS®

For some systems, you can have multiple logical partitions with one or more operating systems running. No matter which system you have, how many logical partitions are configured, or which operating systems are running, IBM Electronic Service Agent should be installed and activated on each logical partition, each operating system, and each HMC.

The functions provided by IBM Electronic Service Agent vary based on the network environment. For example, if your system is running two AIX logical partitions and two IBM i logical partitions, the HMC reports platform errors for the system and logical partition errors for the AIX logical partitions. IBM Electronic Service Agent on each IBM i logical partition reports partition errors for the logical partition on which it is running. For this reason, to have total coverage, IBM Electronic Service Agent needs to be running on each HMC, each AIX logical partition, and each IBM i logical partition.

Pre-activation checklist

Before you activate Electronic Service Agent, consider prerequisites, security, and the topology of the network you plan to support.

Use this checklist to help plan for Electronic Service Agent activation and to verify that you have completed all the preparation tasks.

1. Ensure that you have the following required products installed. Use the Display Software Resources (DSPSFWRSC) command to confirm this.
   - 5770-SS1 - option 3 [Extended Base Directory Support]
   - 5770-SS1 - option 33 [Portable Application Solutions Environment (PASE)]
   - 5770-SS1 - option 34 [IBM i - Digital Certificate Manager]
   - 5770-JV1 - option 16 [Java SE 8 (32-bit)]
   - 5770-UME - *base [IBM Universal Manageability Enablement]

- 5733-SC1 - *base [IBM Portable Utilities for i]
- 5733-SC1 - option 1 [OpenSSH, OpenSSL, zlib]

2. Ensure that the latest PTF groups are installed:
   a. Go to the Preventive Service Planning - PSP Web site.
   b. Select the release.
   c. Select these groups:
      - Java™
      - IBM HTTP Server for i
3. Install the latest recommended fixes:
   a. Go to the Recommended fixes Web site.
4. Choose the connectivity method. The following methods are recommended for your systems or logical partitions (listed in order):
   a. **Direct Internet from each logical partition or system:** This method allows larger fix files to pass through the connection to the system. Each logical partition can receive the fixes it needs. It is also faster than the modem dial-up connection.
   b. **Shared direct Internet:** This method allows larger fix files to pass through the connection to the system. It allows connectivity to be concentrated through one system or logical partition; thus, it simplifies firewall rules. It is also faster than the modem dial-up connection.

   For more information about different types of connections, see Planning for Universal Connection.
5. Ensure that you have the required setup for the type of connection you are using.
   - **If you are using a dial-up connection:**
     – Refer to "Modem and resource requirements" on page 22 to find out the requirements for Electronic Service Agent connections to IBM.

Activating Electronic Service Agent

Electronic Service Agent must be activated on each system and logical partition. The activation consists of all steps necessary to enable problem detection, problem reporting, and transmission of service information to IBM. Only a system administrator can perform the activation.

If you are upgrading from previous releases of the operating system, the Electronic Service Agent migrates Electronic Service Agent settings from the previous release.

As part of Electronic Service Agent activation, a service configuration for Electronic Customer Support and Electronic Service Agent is created automatically if needed.

Prerequisite: Ensure that you have met all the requirements of the pre-activation checklist.

To activate Electronic Service Agent, follow these steps:

1. Use a 5250 emulator, sign on to the system or logical partition with a user profile (other than QSECOFR) that has an *SECOFR user class and its system-defined special authorities.
2. Enter the DSPSYSVAL QRETSVRSEC command.
   a. Confirm that this system value is set to 1.
   b. Change the system value to 1, if needed, using the CHGSYSVAL QRETSVRSEC command.
3. Ensure that the latest recommended PTFs are installed on the system.

   The latest PTFs for Electronic Service Agent can be found on the Recommended fixes Web site.

   Select release of the operating system, select Electronic Service Agent as the topic, and click Go.
4. From a command line, enter `GO SERVICE`.

5. If the Change Contact Information (CHGCNTINF) command is prompted, add or update the contact information for this system. Press Enter.
6. If the Create Service Configuration (CRTSRVCFG) command is prompted, notice that *SELECT is the value for several parameters. Press Enter. An additional panel is displayed for each parameter, for which *SELECT was specified. On each of these additional panels, make a selection and press Enter.

   For details about these CL commands, see the information about control language.

The Service Agent Main Menu is displayed. Activation is complete.

To verify the activation, perform these steps:

1. Enter `GO SERVICE`.
2. Choose Work with jobs to show the active status of the Service Agent jobs.
3. Type `WRKJOBSCDE QS9SACOL` to show the job schedule entry that initiates the collection and transmission of Electronic Service Agent service information.

For information about changing the connection profiles that were created during activation, refer to the information about configuring connectivity to IBM.

Related concepts:

"Pre-activation checklist" on page 13
Before you activate Electronic Service Agent, consider prerequisites, security, and the topology of the network you plan to support.

Related tasks:

"Configuring connectivity to IBM" on page 16
Electronic Service Agent uses the Universal Connection to connect to IBM.

Related reference:

"Batch activation" on page 22
Electronic Service Agent can be activated in a batch environment. This approach is helpful for customers who have many remote systems and want to send programs from a central site for remote activation.

Related information:

Recommended fixes

Change Contact Information (CHGCNTINF) command

Create Service Configuration (CRTSRVCFG) command

Configuring Electronic Service Agent

Configuring Electronic Service Agent consists of specifying contact information, specifying connectivity choices and values, and specifying operational settings. Some of the information and values are entered during activation. For some settings, default values are used. Configuring Electronic Service Agent allows you to change any of the Electronic Service Agent information and settings.

Configuring contact information

IBM support uses contact information to contact your company when Electronic Service Agent reports a problem.

To configure the contact information, follow these steps:

1. On the command line of the main menu, type `CHGCNTINF` and press F4 (Prompt).
2. Enter the required information and page down to the next page. The required fields are:
   - company
   - contact name
   - email address
   - primary telephone number

- alternate telephone number
- address
- city
- state
- country
- zip code
- media for PTFs

3. Enter the customer number and ID.
4. Enter the information in the **Mailing address** field.
5. Enter the information in the **National language version** field. Press F4 (Prompt) for a list of national language versions.
6. Page down to the next page.
7. Enter the information in the **Electronic mail addresses** field.
8. Enter the information in the **Media for mailing fixes** field.

   Note: The expected delivery time of mailed PTFs is 5 - 9 business days.
9. Press Enter.

For more information about any field, position the cursor to the field and press the Help key. For more information about the command, position the cursor to the title at the top of the page and press the Help key.

Configuring connectivity to IBM

Electronic Service Agent uses the Universal Connection to connect to IBM.

See Universal Connection for information about how to configure connectivity to IBM. To use the Service Configuration commands, from the Service Agent menu, select option 18 (Service Configuration).

Starting in IBM i 7.1, manually configuring Universal Connection to use VPN for Electronic Service Agent is not supported for PTF ordering, problem reporting, or sending inventory to IBM. IBM recommends using HTTP or HTTPS for PTF ordering, problem reporting, or sending inventory to IBM.

Related concepts:

"Activating Electronic Service Agent" on page 14
Electronic Service Agent must be activated on each system and logical partition. The activation consists of all steps necessary to enable problem detection, problem reporting, and transmission of service information to IBM. Only a system administrator can perform the activation.

"Modem and resource requirements" on page 22
The Electronic Service Agent (ESA) and Electronic Customer Support service configurations created during activation may be PTP (Point-to-Point) TCP/IP Universal Connection-based. The modem and resource requirements for a PTP configuration are listed below.

Configuring Electronic Service Agent operational settings

Electronic Service Agent attributes control many aspects of how Electronic Service Agent operates and transmits information to IBM, including the list of users to receive Electronic Service Agent messages and the time of day that Electronic Service Agent collects service information. By configuring Electronic Service Agent, you can have Electronic Service Agent perform the functions that are important to your service environment.

You configure Electronic Service Agent through the Electronic Service Agent main menu. To configure the operational settings, follow these steps:

1. On a command line, type `GO SERVICE`.

2. Select option 1 (Change Service Agent attributes). The Change Service Agent attributes display is shown.

   Note: The Enable option controls whether Electronic Service Agent reports problems and transmits service information or not. Specify Yes to enable the Electronic Service Agent for problem reporting and service information transmission. Specify No to disable the problem reporting and service information transmission.
   These are some of the settings that control Electronic Service Agent activities:

   - **Problem reporting retry (Auto report retry):** The retry attributes are used for service requests that are placed automatically by Service Agent. These attributes define the action that Electronic Service Agent takes when it fails at an attempt to report a problem. These are the retry attributes:
     - **Retry:** Whether service requests that are placed automatically by Service Agent are to be retried if an attempt fails.
     - **Frequency:** The frequency, in minutes, at which service requests are retried.
     - **Number of times to retry:** The number of times to try to report a problem.
     - **Notify users:** Whether Service Agent users are to receive a message when a retry occurs.
   - **Product activity log analysis:** This determines whether problems in the product activity log are analyzed and potentially reported to IBM. You can enable the analysis, set the start hour and the interval (in hours) when the analysis will occur. You can also indicate that a message should be sent to the Notify Users list when the analysis is run.
   - **Notify user ID:** The user IDs specified for this field receive messages about Electronic Service Agent activity. In addition to the specified users, QSYSOPR, QSRV and QSRVAGT also receive messages.
   - **Auto PTF:** The Auto PTF function of Electronic Service Agent checks the system or logical partition to determine if PTFs deemed critical by IBM service are on the system or on the logical partition. If PTFs are needed, the system creates fix request entries that include the PTF numbers to be ordered into the problem log and send the log to IBM. You can enable or disable this function. You can set the day that Auto PTF runs and you can indicate whether PTFs or cover letters are downloaded.

     Note: The expected delivery time of mailed PTFs is 5 - 9 business days.
   - **Service information:** IBM support uses service information to help with problem resolution. Service information is collected daily at the specified time and sent to IBM at the specified time. Information is sent only if the information has changed since the last time it was collected and sent.

     The **connection verification timer** is used to automatically test the connection to IBM. You can set the interval at which the test occurs. If the test fails, a message is sent to the list of users specified in the **Notify user ID** field.

     There are also fields that indicate what inventory should be collected and when the collection and send of inventory should occur:

Managing Electronic Service Agent

Managing Electronic Service Agent consists of updating configuration information, displaying Electronic Service Agent activities, checking connection and access to IBM, and stopping Electronic Service Agent.

Authorizing users to view service information

You can authorize users to view service information that was sent to IBM. After authorization, service information can be viewed on the IBM Electronic Services Web site.

Registering a new IBM ID

To register for a new IBM ID, go to My IBM profile Web site and click **Register**.

Important: The first IBM ID that is sent to IBM from Electronic Service Agent becomes the administrator. The administrator has the only IBM ID that has the authority to manage IBM IDs using the IBM Electronic Services Web site functions.

Providing IBM IDs

For security and privacy reasons, it is necessary that an IBM ID be associated with a specific system. Only the specified IDs can view the service information for that system. Up to 2 IBM IDs can be entered per request. To add additional IDs, see the information under Managing IBM IDs. Authorizing users to view service information can be done using the Electronic Service Agent menu or the graphic user interface.

To authorize users to view service information using Electronic Service Agent, select option 3 (Authorize users to access service information) from the Electronic Service Agent main menu.

Managing IBM IDs

To manage your IBM IDs, which includes associating new IBM IDs with a system or removing existing IBM IDs, go to the IBM Electronic Services Web site and click **Services administration** from the navigation pane on the left.

Configuring Electronic Service Agent

To configure Electronic Service Agent values such as operational settings, follow these steps:

1. On a command line, enter `GO SERVICE`.
2. Select option 1 (Change Service Agent attributes) from the Electronic Service Agent main menu.

Displaying Electronic Service Agent activities

You can use Electronic Service Agent to view problem reporting activities, service information collection activities, and the audit logs.

Problem reporting activity includes this information:

- The status of the problems that are processed by Electronic Service Agent
- The service-assigned number
- Retry information and whether service information accompanies the problem
- Whether service information for the problem has been sent

Service information collection includes the type of service information that was collected and sent to IBM, and the dates and times the information was collected and sent.

The audit log contains information about Electronic Service Agent activities and errors that have been encountered.

To display Electronic Service Agent activities, do the following:

- To display the problem reporting information, from the Electronic Service Agent main menu, select option 4 (Display problem reporting information).
- To display the service information collection activities from the Electronic Service Agent main menu, select option 5 (Display service information collection).
- To display the audit log from the Electronic Service Agent main menu, select option 14 (Display audit log).

Sending a test problem

To determine if the problem reporting function is working properly, send a test problem to IBM. To send a test problem, from the Electronic Service Agent main menu, select option 15 (Send test problem).

Reporting software problem

Electronic Service Agent reports software problems detected by the i5/OS Service Monitor. Service Monitor is a service function that monitors the system for specific conditions. In addition to reporting the problems, Electronic Service Agent automatically sends the primary service information to IBM. Secondary service information can be manually sent to IBM.

To manually send the secondary service information, follow these steps:

1. From the Electronic Service Agent main menu, Select option 2 (Run service information collection).
2. In the **Collect information** field, specify *YES.
3. In the **Send information** field, specify *YES.
4. In the **Service information** field, specify *PRBID.
5. Press Enter.
6. In the **Problem identifier** field, specify the problem identifier from the problem log for which the secondary service information is to be sent.
7. In the **Information for a problem** field, specify *SECONDARY.

Stopping and starting Electronic Service Agent

Electronic Service Agent is automatically started when the activation process is completed; however, sometimes you need to stop or start Electronic Service Agent.

To stop or start Electronic Service Agent problem monitoring, from Jobs group on the Electronic Service Agent main menu, select option 8 (End jobs), option 9 (Start jobs), or option 10 (Work with jobs). If Electronic Service Agent is stopped using option 8 (End jobs), it will automatically start after rebooting the system or logical partition.

Another way to stop and start the Service Agent is through the Enable setting: Specify *YES to enable and *NO to disable the Electronic Service Agent. If Electronic Service Agent is stopped using the Enable setting, it will stay stopped after rebooting the system or logical partition. To restart Service Agent, set Enable to *YES.

Testing connectivity to IBM

To verify that the Service Agent connection between the system or the logical partition and IBM is working, from the Electronic Service Agent main menu, select option 17 (Verify Service Agent connection).

Using Electronic Service Agent

You can perform various Electronic Service Agent operations and expected Electronic Service Agent activities on your system.

You can manage and control Electronic Service Agent and its functions through the IBM i command line.

To manage Electronic Service Agent, on a command line, enter `GO SERVICE`. The Electronic Service Agent main menu is displayed.

The following display screen shows the Electronic Service Agent main menu. To access the menu from a command line, enter `GO SERVICE`.

```
QS9MAIN              Electronic Service Agent         System: S10XXXXX

Select one of the following:

     1. Change Service Agent attributes
     2. Run service information collection
     3. Authorize users to access service information

  Information
     4. Display problem reporting information
     5. Display service information collection
     6. Display service registration information
     7. Reports

  Jobs
     8. End jobs
     9. Start jobs
    10. Work with jobs

  Problem determination
    11. Change Service Agent job logging
    12. Change product activity log analysis
    13. Work with Service Agent spooled files
    14. Display audit log
    15. Send test problem
    16. Work with threshold table
    17. Verify Service Agent connection
    18. Service Configuration menu
    19. Change send option
    20. Check and refresh Update Acess Key

  Related
    70. Related Service Agent commands
```

For more information about previous versions of Electronic Service Agent, go to the Online Publications Web site to find the IBM Electronic Service Agent documents.

Related information:

Online Publications

Troubleshooting Electronic Service Agent

When an error occurs, the system attempts to automatically report a problem or to send service information to IBM.

Electronic Service Agent is dependent on many functions of the IBM i operating system to be working properly, including:

- 5770-SS1 - option 3 [Extended Base Directory Support]
- 5770-SS1 - option 33 [Portable Application Solutions Environment (PASE)]
- 5770-SS1 - option 34 [IBM i - Digital Certificate Manager]
- 5770-JV1 - option 16 [Java SE 8 (32-bit)]
- 5770-UME - *base [IBM Universal Manageability Enablement]
- 5733-SC1 - *base [IBM Portable Utilities for i]
- 5733-SC1 - option 1 [OpenSSH, OpenSSL, zlib]

Normal system problem determination is recommended for any error that is detected.

Activation

To determine if Electronic Service Agent is activated, from a command line, type `GO SERVICE`. Once the Electronic Service Agent main menu is displayed, the Service Agent is activated.

General

To verify that no errors occurred in Electronic Service Agent activities, check the Audit log. To see the Audit log, use the Electronic Service Agent menu, option 14 (Display audit log).

Problem Reporting and Auto PTF

To verify that Electronic Service is enabled, from a command line, type `GO SERVICE`, and select Change Service Agent attributes, option 1. To enable automatic problem reporting, the Enable parameter must be set to *YES.

For problems with Auto report, Product activity log analysis, or Auto PTF, verify that Electronic Service Agent jobs are running: QS9HDWMON, QS9PALMON, QS9PRBMON, and QS9PRBSND. To verify that the specified jobs are running, type Go SERVICE and select option 10 (Work with jobs) from the Electronic Service Agent Menu.

Notes:

- QS9PALMON is active only when the Product activity log analysis is enabled.
- The expected delivery time of mailed PTFs is 5 - 9 business days.

If the jobs are active, and errors still persist, try restarting the Electronic Service Agent jobs as follows:

1. Stop the jobs using GO SERVICE menu option 8 (End jobs).
2. Verify that jobs are not displayed using GO SERVICE menu option 10 (Work with jobs).
3. Start the jobs using GO SERVICE menu option 9 (Start jobs).
4. Verify that jobs are active using GO SERVICE menu option 10 (Work with jobs).

To collect additional error details from Electronic Service Agent jobs, type `GO SERVICE` and selection option 11 (Change Service Agent job logging). Specify *YES for Create job logs. To display the jobs logs, use option 13 (Work with Service Agent spooled files).

Service Information Collection and Transmission

The task of sending service information uses Universal Connection. This task take time to run. A summary of the collection and transmission steps is outlined as follows.

- After the collection is completed, a job is submitted to use Universal Connection to perform the following tasks:
  - Start the connection profile.
  - Vary on its associated line, controller, and device descriptions, if applicable.
  - Connect to IBM.
  - Send the service information.
- Factors that affect the length of the time needed to collect and send information are the size of the system, processing load, and the speed of the connection.

To verify that service information was sent to IBM, use the Electronic Service Agent menu option 5 (Display service information collection). If service information is in the process of being collected or transmitted, the Last Run and Last Send information might not show this activity. These activities are shown when the tasks have completed.

When inventory runs, the Electronic Service Agent submits a job named QSJSENDER in the QSYSWRK subsystem.

Related concepts:

“Universal Connection” on page 3
With Universal Connection, you control how your business connects to IBM support services.

Modem and resource requirements

The Electronic Service Agent (ESA) and Electronic Customer Support service configurations created during activation may be PTP (Point-to-Point) TCP/IP Universal Connection-based. The modem and resource requirements for a PTP configuration are listed below.

Modem requirements

The point-to-point functions that can be set up depend on your modem and resource. Refer to the table later in this topic to determine the functions.

Modem in asynchronous mode

If the modem is configured to operate in asynchronous mode, you can configure both problem-reporting and service information collection and transmission (such as 2793 and 576C internal modems, dual mode IBM 7852–400, and MultiTech MT5600BA-V.92 external modems).

Note: If you use a non-IBM modem, any asynchronous modem that supports the RS-232 (EIA 232) serial interface and the V.34/V.42 protocol (V.90/V.92 is optional) can be used for this function.

Typically, the default modem setting data set ready (DSR) must be overridden. For a IBM i platform that is to detect a hang-up disconnection (modem has hung up), DSR must be set to follow Carrier Detect (CD). Refer to the modem manual for more information.

Communications I/O adapter requirements

Determine if you have one of the following compatible I/O adapters.

Table 3. Adapters and descriptions

Adapter	Description
2742	Two-line communications IOA.
2793	Two-port WAN IOA, with a V.92 integrated modem on port 1 and a standard communications interface on port 2. To use port 2 of the 2793 adapter, an external modem with the appropriate cable is required.
2805	Four-port V.92 integrated modem WAN IOA.
576C	Two-port WAN IOA, with a V.92 integrated modem on port 1 and a standard communications interface on port 2. To use port 2 of the 576C adapter, an external modem with the appropriate cable is required.
57D4	Two-port WAN IOA

Note: IOA - input/output adapter; PCI - Peripheral Component Interconnect; WAN - wide area network.

Related tasks:

“Configuring connectivity to IBM” on page 16
Electronic Service Agent uses the Universal Connection to connect to IBM.

Batch activation

Electronic Service Agent can be activated in a batch environment. This approach is helpful for customers who have many remote systems and want to send programs from a central site for remote activation.

A sample CL program is provided.

Sample CL Program for batch activation

This sample program refers to the fictitious ABC Company. Any associated references to this fictitious company are for illustration purposes only.

Note: By using the code examples, you agree to the terms of the "Code license and disclaimer information" on page 70.

```
/*********************************************************************/
/* ELECTRONIC SERVICE AGENT SAMPLE BATCH ACTIVATION PROGRAM          */
/*********************************************************************/
/*                                                                   */
/* THIS CODE IS PROVIDED AS A SAMPLE AND IS NOT INTENDED             */
/* TO BE SUPPORTED BY IBM. THIS IS SUPPLIED ON AN AS-IS              */
/* BASIS AND IT IS THE RESPONSIBILITY OF THE END USER TO ENSURE      */
/* THE ACCURACY OF THE PROGRAM IN THEIR ENVIRONMENT.                 */
/*                                                                   */
/*********************************************************************/
/*                                                                   */
/* See the Electronic Service Agent Information Center topics        */
/* for additional requirements, such as authorities and system       */
/* values.                                                           */
/*                                                                   */
/*********************************************************************/
PGM
/*********************************************************************/
/*                                                                   */
/* The following variables are used to retrieve the possible         */
/* days to be used as input to the CHGSRVAGTA and AUTOPTF and         */
/* parameters.                                                       */
/*                                                                   */
/*********************************************************************/
DCL VAR(&DAY1) TYPE(*CHAR) LEN(4)
DCL VAR(&DAY2) TYPE(*CHAR) LEN(4)
DCL VAR(&DAY3) TYPE(*CHAR) LEN(4)
DCL VAR(&DAY) TYPE(*CHAR) LEN(4)
DCL VAR(&DAYS) TYPE(*CHAR) LEN(28) +
VALUE('*WED*THU*FRI*SAT*SUN*MON*TUE')
DCL VAR(&DAYPTR) TYPE(*DEC) LEN(1 0) VALUE(1)
/*********************************************************************/
/*                                                                   */
/* Change the contact information.                                   */
/*                                                                   */
/*********************************************************************/
QSYS/CHGCNTINF CMPNY('ABC Company') CONTACT('System +
               Administrator') TELNBR('123-456-7890') +
               MAILADDR('123 ABC Street' *SAME *SAME +
               ANYTOWN MN US 12345) LNGVER(2924) +
               EMAILADDR(SYSADMIN@ABCCOMPANY.COM) +
               MEDPTF(*AUTOMATIC)
/*********************************************************************/
/*                                                                   */
/* Configure the Electronic Customer Support and Service Agent       */
/* connections.                                                      */
/* NOTE: THIS SAMPLE ASSUMES A DIRECT CONNECTION FOR THE PRIMARY     */
/*       AND A MULTIHOP CONNECTION FOR THE BACKUP.                   */
/*                                                                   */
/*********************************************************************/
QSYS/CRTSRVCFG ROLE(*PRIMARY) CNNTYPE(*DIRECT) +
               CNTRYID(US) STATE(MN)
/*                                                                   */
QSYS/CRTSRVCFG ROLE(*BACKUP) CNNTYPE(*MULTIHOP) +
               RMTSYS('10.11.12.13')
/*********************************************************************/
/*                                                                   */
/* Retrieve the days of the week that can be used for CHGSRVAGTA.    */
```

```
/*                                                                  */
/* Choose the day that best fits the activity for this system.      */
/* Use the &DAYS variable. The first one is the first choice,       */
/* second one is the second choice, and so on.                      */
/********************************************************************/
QSYS/RTVSRVAGT DAY1(&DAY1) DAY2(&DAY2) DAY3(&DAY3)

DAYLOOP:
IF (&DAY1 *EQ (%SUBSTRING(&DAYS &DAYPTR 4))) THEN(DO)
   CHGVAR VAR(&DAY) VALUE(&DAY1)
GOTO DAYLOOP
ENDDO

IF (&DAY2 *EQ (%SUBSTRING(&DAYS &DAYPTR 4))) THEN(DO)
   CHGVAR VAR(&DAY) VALUE(&DAY2)
GOTO DAYLOOP
ENDDO

IF (&DAY3 *EQ (%SUBSTRING(&DAYS &DAYPTR 4))) THEN(DO)
   CHGVAR VAR(&DAY) VALUE(&DAY)
GOTO DAYLOOP
ENDDO

CHGVAR VAR(&DAYPTR) VALUE(&DAYPTR +4)
GOTO DAYLOOP

ENDDAYLOOP:
/********************************************************************/
/*                                                                  */
/* Configure Service Agent hardware problem reporting using the     */
/* day of the week that was determined above and the desired time.  */
/*                                                                  */
/* -- NOTE: Use this command only if you want to override the       */
/* CHGSRVAGTA defaults.                                             */
/*                                                                  */
/********************************************************************/
QSYS/CHGSRVAGTA ENABLE(*YES) AUTORPT(*YES) AUTOPTF(*YES +
                &DAY *YES) SRVINF((*ALL))

/********************************************************************/
/*                                                                  */
/* Activate Service Agent. If commands CHGSRVAGTA was used ahead of */
/* this, Service Agent will activate using those settings.          */
/* If the command was not used, Service Agent will be activated     */
/* using the defaults.                                              */
/*                                                                  */
/********************************************************************/
SKIPIT: QSYS/STRSRVAGT TYPE(*ACTIVATE)

ENDPGM
```

Related concepts:

"Activating Electronic Service Agent" on page 14
Electronic Service Agent must be activated on each system and logical partition. The activation consists of all steps necessary to enable problem detection, problem reporting, and transmission of service information to IBM. Only a system administrator can perform the activation.

Related information:

Online Publications

Setting up a connection to IBM

If you are using a Hardware Management Console (HMC), you need to complete these steps on your HMC to set up a connection to IBM.

See Setting up your service environment in the IBM Systems Hardware Information Center for more information.

Related concepts:

"Connectivity" on page 3
To make the service environment available, your system must have connectivity to IBM.

Planning for Universal Connection

To successfully configure a Universal Connection to IBM services, you need to select the type of connection you want to use for IBM service and support. Make sure that you meet all the required prerequisites.

The connection you want to use depends on your network and accessibility to the Internet from your system. With network address translation (NAT)-compatible IP security protocol (IPSec), the system supports a connection even when an intervening NAT firewall exists. The support for Hypertext Transfer Protocol (HTTP) and Hypertext Transfer Protocol Secure (HTTPS) allows 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 system has direct access (broadband with a fixed IP address or local area network with a globally routable IP address) to the Internet (without an intervening firewall), or if your system 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, because it allows for the fastest, most secure access to IBM services and support.
  - If you have an Internet service provider (ISP) that your system dials into and acts as a connecting point for other systems or partitions, you might 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 system to access the Internet.
  - If your system is located in a private network, does not have a global IP address, and has access to a router or system that allows the system 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, you can also configure a service and support proxy on one or more of your logical partitions, so that service applications that support either HTTP, or HTTPS, or both proxies can use these proxies.

  Note: You can configure both a primary and a backup configuration, and both a primary and a backup proxy.
- The network security policy of your company.
- Setting packet rules: ensure that the Universal Connection traffic is allowed through your firewall.
- SOCKS security: ensure that none of the Universal Connection traffic gets directed through a SOCKS system.
- Domain Name system (DNS): When possible, the service applications use a DNS to look up service destination addresses. This allows for additional fault tolerance. If this is the case, you might want to make your DNS available to the appropriate system using the Change TCP/IP Domain (CHGTCPDMN) command. If you configure a dial-up connection you may specify a DNS server that is dynamically added when the dial-up connection is active.

Note: Some configuration is required when using an HMC modem to connect to IBM through a partition, or when having an HMC connecting to IBM through the VPN or modem connection of a partition.

Related concepts:

"IP packet filter firewall" on page 5
You might need to change packet filter rules to allow Universal Connection traffic to flow through your firewall to IBM.

Related tasks:

"Configuring Universal Connection"
This is 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.

Related information:

Client SOCKS support

Setting up your service environment

Configuring Universal Connection

This is 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.

Follow these procedures when you create a Universal Connection between your system and IBM Electronic Customer Support. As an alternative, you can review the Universal Connection scenarios and follow the scenario that matches the configuration requirements of your site.

Universal Connection automatic configuration

Automatic configuration of a direct LAN connection to IBM is enabled by default. See Universal Connection for more information.

Universal Connection wizard procedures

These procedures involve creating a configuration through the Universal Connection wizard or control language (CL) commands. After preparing to configure the Universal Connection, choose a configuration procedure that best fits the hardware and software setup of your site.

Related concepts:

"Scenarios: Universal Connection" on page 34
These scenarios show the technical and configuration details of each connection that is available through Universal Connection.

Related tasks:

"Planning for Universal Connection" on page 25
To successfully configure a Universal Connection to IBM services, you need to select the type of connection you want to use for IBM service and support. Make sure that you meet all the required prerequisites.

Related reference:

"Enabling Electronic Customer Support to your system" on page 12
To access Electronic Customer Support from your system, you can set up a connection to IBM by using Universal Connection.

Configuring a direct Internet connection

You can configure a connection from your system or partition through a direct Internet connection to IBM customer support. You can also configure your system to act as a connecting point through which other systems or partitions access IBM customer support.

When you configure a direct connection to the Internet, both the HTTP/HTTPS connectivity and the VPN connectivity are configured. HTTP/HTTPS connectivity is always attempted first and if it fails, VPN connectivity is attempted automatically.

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

Prerequisites

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

- Ensure that the IBM Navigator for i is available on your system.
- Ensure the latest HTTP Server and Java PTF groups are installed on your system.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- Ensure the HTTP Administration Server is started. You can start the HTTP Administration Server using the STRTCPSVR SERVER(*HTTP) HTTPSVR(*ADMIN) CL command.
- You must have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your IBM i user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- Ensure that the IBM TCP/IP Connectivity Utilities for i (5770-TC1) licensed program is installed.
- Ensure that the Certificate Manager (DCM) (5770-SS1 option 34) licensed program is installed.
- 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 that your firewall filter rules allow Universal Connection traffic to flow to the Internet.

Configuring Universal Connection from your system through a direct Internet connection

Assuming that TCP/IP configuration already exists and works, follow these steps to set up the Universal Connection if you connect to Electronic Customer Support through a local system:

1. Start 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 system does not provide connectivity for other systems 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 system to electronic customer support.

Configuring Universal Connection from your system 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 system that acts as a connecting point for other systems:

1. Start IBM Navigator for i 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 about the Universal Connection wizard display 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 the system to function as a connecting point through which other systems or partitions connect to Electronic Customer Support.
8. Select an interface or interfaces through which the other systems 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 systems that connect to Electronic Customer support through your system.
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 system to IBM customer support.

Related concepts:

"Direct Internet connection" on page 35
This scenario shows how to use the Universal Connection wizard to create a connection between your system and Electronic Customer Support over a direct Internet connection.

"Direct Internet connection from a system that provides connectivity for other systems or partitions" on page 40
This scenario shows how to configure a local system to act as a connecting point to electronic services through a direct connection to the Internet.

"IP packet filter firewall" on page 5
You might need to change packet filter rules to allow Universal Connection traffic to flow through your firewall to IBM.

Related tasks:

"Starting the Universal Connection Wizard" on page 38
The Universal Connection wizard is started from IBM Navigator for i .

Configuring a PPP connection through an ISP

You can configure a connection from your system or partition through a point-to-point (PPP) Internet service provider (ISP) connection to IBM customer support. You can also configure your system to act as a connecting point through which other systems or partitions access IBM customer support.

Use the following Universal Connection wizard procedure to create a Universal Connection to any of the following services through a PPP ISP connection:

- Electronic Customer Support
- Electronic Service Agent

Prerequisites

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

- Ensure that the IBM Navigator for i is available on your system.
- Ensure the latest HTTP Server and Java PTF groups are installed on your system.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- Ensure the HTTP Administration Server is started. You can start the HTTP Administration Server using the STRTCPSVR SERVER(*HTTP) HTTPSVR(*ADMIN) CL command.
- Ensure that you have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your IBM i user profile and *USE authority to WRKCNTINF to configure the connection using the Universal Connection wizard.

- Ensure that the IBM TCP/IP Connectivity Utilities for i (5770-TC1) licensed program is installed.
- Ensure that the Digital Certificate Manager (DCM) (5770-SS1 option 34) licensed program is installed.
- 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 user ID and password to be stored on the operating system.
- 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.

Configure a Universal Connection from your system through an ISP connection

Assuming that TCP/IP configuration already exists and works, follow these steps to set up the Universal Connection if you connect to Electronic Customer Support through the local system:

1. Start 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 ISP as a connection type.
6. Select an existing connection profile for your ISP from the Select Profile dialog.
7. Indicate that this system does not provide connectivity for other systems 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 system to IBM customer support.

Configure a Universal Connection from your system that provides connectivity for other systems through a PPP ISP connection

Complete the following steps to set up the Universal Connection when you connect to Electronic Customer Support through a remote system or when your local system acts as a connection aggregation point for other systems:

1. Start 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 about the Universal Connection wizard display screens.
5. Connect from the current system using an ISP as a connection type.
6. Select an existing connection profile for your ISP from the Select Profile dialog.
7. Specify that you want the system to function as a connecting point through which other systems or partitions connect to IBM customer support.
8. Select an interface or interfaces through which the other systems or partitions will be allowed to connect to Electronic Customer Support.
9. Create or select a Layer Two Tunneling Protocol (L2TP) terminator profile. You need this profile to recognize the other systems that connect to IBM customer support through your system.
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 system to IBM customer support.

Related concepts:

"PPP connection through an ISP" on page 48
This scenario shows how to use the Universal Connection wizard to create a connection between your system and electronic customer support over a local Internet service provider (ISP) connection.

"PPP connection from a system that provides connectivity for other systems through an ISP" on page 53
This scenario shows how to create a point-to-point (PPP) connection through a local system that acts as a connecting point for other systems over an Internet service provider (ISP).

Configuring a multi-hop connection

To configure a connection from your system or partition through a remote multi-hop connection to IBM customer support, follow these procedures and ensure that the prerequisites and assumptions are met.

Prerequisites and assumptions

The prerequisites for enabling Electronic Customer Support over a remote multi-hop connection include the following items:

- Ensure that the IBM Navigator for i is available on your system.
- Ensure the latest HTTP Server and Java PTF groups are installed on your system.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- Ensure the HTTP Administration Server is started. You can start the HTTP Administration Server using the STRTCPSVR SERVER(*HTTP) HTTPSVR(*ADMIN) CL command.
- Ensure that you have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your IBM i user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- Ensure that the IBM TCP/IP Connectivity Utilities for i (5770-TC1) licensed program is installed.
- Ensure that the Digital Certificate Manager (DCM) (5770-SS1 option 34) licensed program is installed.
- 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 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.

Configuring a multi-hop connection over a remote system

Assuming that TCP/IP configuration already exists and works, follow these steps to set up the Universal Connection if you connect to Electronic Customer Support through another system or partition:

1. Start 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 system to electronic customer support.

Configuring a multi-hop connection from a system that acts as a connecting point for other systems

Follow these steps to set up the Universal Connection if you connect to Electronic Customer Support through another system or partition:

1. Start the Universal Connection Wizard.
2. Select either primary or backup connection configuration. By default, primary connection is specified.
3. Check the box to view and modify contact information.
4. Enter the service, address, and country (or region) information about the Universal Connection wizard display 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 the system to function as a connecting point through which other systems or partitions connect to IBM customer support.
10. Select an interface or interfaces through which the other systems 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 that connect to IBM customer support through your system.
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 system to IBM customer support.

Related concepts:

"Multi-hop connection through a remote system" on page 60
This scenario shows how to configure a multi-hop Universal Connection to Electronic Customer Support through a remote system over an Internet service provider (ISP).

Related tasks:

"Determining the IBM VPN gateway addresses" on page 33
This topic tells how to determine the address of the IBM virtual private network (VPN) gateway connections.

"Starting the Universal Connection Wizard" on page 38
The Universal Connection wizard is started from IBM Navigator for i .

Related reference:

"Determining the IBM service destination addresses" on page 33
This topic describes how to find the IBM service destination addresses when you connect to IBM customer support.

Additional Universal Connection configuration procedures

These procedures provide information about configuring service provider information, testing your connection to Electronic Customer Support, ensuring compatibility with SOCKS, and locating the address of the IBM virtual private network (VPN) Gateways and service destinations.

Configuring service provider information:

Occasionally, you might need to contact a service provider directly for assistance over the telephone. To contact your service provider, you must first configure the service provider information.

To configure voice contacts for service and support, follow these steps:

1. On the command line of the main menu, type `WRKCNTINF` and press Enter. The Work with Support Contact Information display is shown.
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 display is shown.
4. If you are installing this system in the United States, from the Change Service Provider display, enter: `Hardware and software service: 1-800-426-7378`

   If you are not installing this system in the United States, call your service representative for the service telephone numbers, or see our directory of worldwide contacts (http://www.ibm.com/planetwide/).
5. Press Enter.
6. Press F3 (Exit) to return to the Work with Support Contact Information display.

Testing your connection to Electronic Customer Support:

To ensure that your Universal Connection to Electronic Customer Support is functioning properly, you need to test your connection.

To ensure that your connection to Electronic Customer Support is functioning properly, follow these test:

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 display screen to verify that the test was successful. If your test does not work, note the error message and contract your service representative.

Ensuring compatibility with SOCKS:

This topic helps you to locate the addresses that you need to treat as direct.

To find the Internet Protocol (IP) address of the virtual private network (VPN) Gateways, see "Determining the IBM VPN gateway addresses" on page 33. 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 "Determining the IBM service destination addresses" on page 33.

Related concepts:

"SOCKS" on page 7
A SOCKS server or client is a Transmission Control Protocol/Internet Protocol (TCP/IP) proxy application that allows you to send information through a wide variety of protocols without providing the internal network information. To use a SOCKS server, the client must support the SOCKS protocol.

Determining the IBM VPN gateway addresses:

This topic tells how to determine the address of the IBM virtual private network (VPN) gateway connections.

To find the IBM VPN gateway addresses after running the Universal Connection wizard (when using IBM Navigator for i), follow these steps:

1. Locate the Layer Two Tunneling Protocol (L2TP) Originator Connection Profile By Navigating as follows: **Network** > **Remote Access Services** > **Originator Connection Profiles**.
2. Right-click profile **QVPN01IBM1** and select **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 profile **QVPN01IBM2** and select **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, follow these steps:

1. Go to the Support for IBM i (http://www.ibm.com/systems/support/i) 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.

Related concepts:

"Direct Internet connection" on page 35
This scenario shows how to use the Universal Connection wizard to create a connection between your system and Electronic Customer Support over a direct Internet connection.

"Direct Internet connection from a system that provides connectivity for other systems or partitions" on page 40
This scenario shows how to configure a local system to act as a connecting point to electronic services through a direct connection to the Internet.

"PPP connection through an ISP" on page 48
This scenario shows how to use the Universal Connection wizard to create a connection between your system and electronic customer support over a local Internet service provider (ISP) connection.

"IP packet filter firewall" on page 5
You might need to change packet filter rules to allow Universal Connection traffic to flow through your firewall to IBM.

Related tasks:

"Configuring a multi-hop connection" on page 30
To configure a connection from your system or partition through a remote multi-hop connection to IBM customer support, follow these procedures and ensure that the prerequisites and assumptions are met.

Determining the IBM service destination addresses:

This topic describes how to find the IBM service destination addresses when you connect to IBM customer support.

To determine the IBM service destination addresses that might be used for Hypertext Transfer Protocol (HTTP) and Hypertext Transfer Protocol Secure (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 you might need for filter rule, or SOCKS configuration, or both.

A text version of the service provider location definition file is available after the service configuration is created and the first connection is attempted to IBM service. This file is easier to read than the XML version of the file and it separates out all the unique IP addresses and ports, making it easier to use for firewall configuration. The file is located at '/qibm/userdata/os400/universalconnection/serviceProviderIBMLocationDefinition.txt'

If the above files are 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 Display File (DSPF) command.

Related concepts:

"Direct Internet connection" on page 35
This scenario shows how to use the Universal Connection wizard to create a connection between your system and Electronic Customer Support over a direct Internet connection.

"Direct Internet connection from a system that provides connectivity for other systems or partitions" on page 40
This scenario shows how to configure a local system to act as a connecting point to electronic services through a direct connection to the Internet.

"PPP connection through an ISP" on page 48
This scenario shows how to use the Universal Connection wizard to create a connection between your system and electronic customer support over a local Internet service provider (ISP) connection.

"IP packet filter firewall" on page 5
You might need to change packet filter rules to allow Universal Connection traffic to flow through your firewall to IBM.

Related tasks:

"Configuring a multi-hop connection" on page 30
To configure a connection from your system or partition through a remote multi-hop connection to IBM customer support, follow these procedures and ensure that the prerequisites and assumptions are met.

Scenarios: Universal Connection

These scenarios show the technical and configuration details of each connection that is 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:

- Before examining these scenarios, review the information about planning for Universal Connection to select a connection method that meets the requirements of your company. You can then select an appropriate scenario for your own configuration.
- You can also configure these profiles using control language (CL) commands, including the GO SERVICE and CRTSRVCFG commands.

Related tasks:

“Configuring Universal Connection” on page 26
This is 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.

“Planning for Universal Connection” on page 25
To successfully configure a Universal Connection to IBM services, you need to select the type of connection you want to use for IBM service and support. Make sure that you meet all the required prerequisites.

Related information:

Control language

Direct Internet connection

This scenario shows how to use the Universal Connection wizard to create a connection between your system and Electronic Customer Support over a direct Internet connection.

Situation

Suppose that you are responsible for maintaining a system for MyCompany, a small manufacturing company in Boone, Iowa. You need to establish a connection between Electronic Customer Support and MyCompany's system. Because MyCompany has an Internet connection and its system has a fixed global routable IP address or is behind a NAT firewall, you can create a connection from your system through your Internet connection.

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 system problems, tracking current system hardware and software, or receiving software updates and fixes.
- This option provides higher speed connections than modem-based solutions.

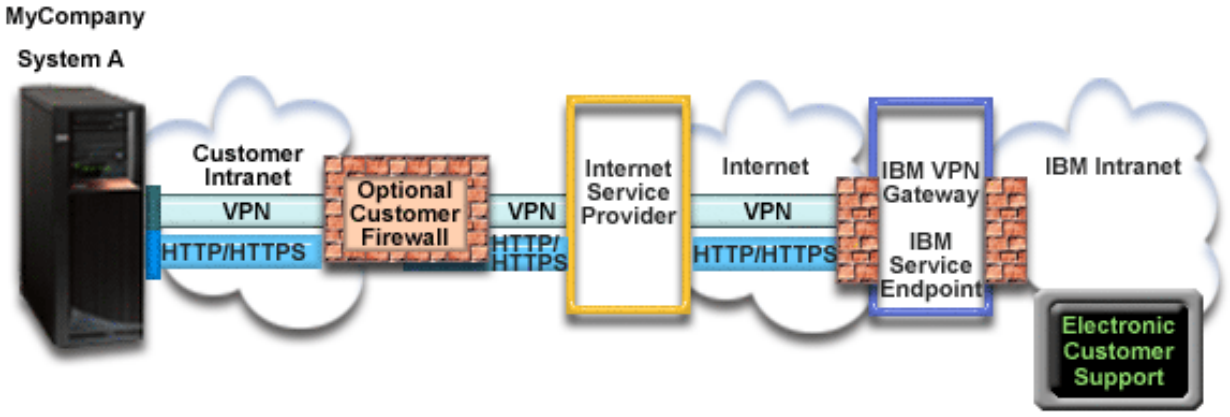
Objectives

In this scenario, the customer wants to ensure that IBM can support the MyCompany system over the network though 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 enable Electronic Customer Support to create an electronic hardware and software service information of MyCompany's system
- To permit Electronic Customer Support to send software fixes and updates to MyCompany over the network

Details

The following diagram illustrates a connection from MyCompany's system to Electronic Customer Support through a direct connection to the Internet.



Configuring Universal Connection

- IBM Navigator for i 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:

- The service application attempts to establish an HTTP (if the service application provides its own encryption) or HTTPS (if the service application uses SSL) connection to IBM. If an HTTP or HTTPS connection cannot be established, the service application attempts to establish a virtual private network (VPN) through the AT&T LIG and the Internet to a VPN gateway at IBM.
- The service application communicates with the appropriate IBM systems to perform the requested service.

Prerequisites and assumptions

The prerequisites for enabling Electronic Customer Support over a direct Internet connection are as follows:

- The IBM i operating system must have a globally routable IP address, or the system must be behind a NAT firewall with a globally routable address.
- Ensure that the IBM Navigator for i is available on your system.
- Ensure the latest HTTP Server and Java PTF groups are installed on your system.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- Ensure the HTTP Administration Server is started. You can start the HTTP Administration Server using the STRTCPSVR SERVER(*HTTP) HTTPSVR(*ADMIN) CL command.
- Ensure that you have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your IBM i user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- Ensure that the IBM TCP/IP Connectivity Utilities for i (5770-TC1) licensed program is installed.
- Ensure that the Digital Certificate Manager (DCM) (5770-SS1 option 34) licensed program is installed.
- 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 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.
- Ensure that your firewall filter rules allow Universal Connection traffic to flow to the Internet.

Current system configuration steps

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

Assuming that TCP/IP configuration already exists and works, complete these steps to set up the Universal Connection if you connect to Electronic Customer Support through MyCompany's local system.

Related concepts:

"IP packet filter firewall" on page 5
You might need to change packet filter rules to allow Universal Connection traffic to flow through your firewall to IBM.

Related tasks:

"Determining the IBM VPN gateway addresses" on page 33
This topic tells how to determine the address of the IBM virtual private network (VPN) gateway connections.

"Configuring a direct Internet connection" on page 26
You can configure a connection from your system or partition through a direct Internet connection to IBM customer support. You can also configure your system to act as a connecting point through which other systems or partitions access IBM customer support.

Related reference:

"Determining the IBM service destination addresses" on page 33
This topic describes how to find the IBM service destination addresses when you connect to IBM customer support.

Related information:

NAT compatible IPSec

System i Access for Windows: Installation and setup

Completing the planning work sheet:

The 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.

Table 4. Planning work sheet

Planning work sheet	Answers
Service information • Company • Contact name • Telephone number • Help desk or pager number • Fax number • Alternate fax number	 • MyCompany • Tom Smith • 515–870–9990 • 515–870–9942 • 515–870–5586 • 515–870–5587
Company address • 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)	 • 94 West Proctor St. • Boone • Iowa • United States • 55902 • English (2924) • myname@company.com • myname@othercompany.com • Automatic selection
Location • Country (or region) • State	 • United States • Iowa

Table 4. Planning work sheet (continued)

Planning work sheet	Answers
Connection method	Through the local system
Connection type	Direct

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

Related information:

CL Commands

Starting the Universal Connection Wizard:

The Universal Connection wizard is started from IBM Navigator for i .

To start the Universal Connection Wizard and begin establishing your connection, follow these steps:

1. enter the following URL in a web browser: http://{IBM i system name}:2001.
2. Expand **Network**.
3. Expand **All Tasks**.
4. Expand **Remote Access Services**.
5. Expand **Originator Connection Profiles**.
6. Click **Universal Connection Wizard** to start the Universal Connection wizard. The Welcome dialog is displayed.

Related tasks:

"Troubleshooting the Universal Connection wizard" on page 66
See this topic when you experience problems using the Universal Connection wizard.

"Configuring a direct Internet connection" on page 26
You can configure a connection from your system or partition through a direct Internet connection to IBM customer support. You can also configure your system to act as a connecting point through which other systems or partitions access IBM customer support.

"Configuring a multi-hop connection" on page 30
To configure a connection from your system or partition through a remote multi-hop connection to IBM customer support, follow these procedures and ensure that the prerequisites and assumptions are met.

Entering the service, address, and country (or region) information:

From the Universal Connection wizard dialogs, specify the service, address, and country or region information about your company and the connections.

To enter information about your company and connections, follow these steps:

1. On the Select Configuration dialog, select either **Primary connection configuration** or **Backup connection configuration**. By default, the primary connection is specified. 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 system, the company service information already appears in the fields. For example, if MyCompany previously created a configuration, the wizard retrieves the service information 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 system resides and click **Next**.
   - Country (or region) – United States
   - State – Iowa
5.

Selecting a direct connection to the Internet as a connection type:

From the current system under Connection, select the direct connection to the Internet as a connection type.

Note: If your enterprise has a Hypertext Transfer Protocol (HTTP) proxy or if you want to use the service and support proxy that you have configured on another system or partition for Universal Connection applications that support going through a proxy, select the check box next to **Additionally configure a proxy connection**. If this check box is checked, the Configuring a proxy destination display is shown.

Configuring a proxy destination:

To configure a proxy destination for the proxy option, follow these steps.

To configure a proxy destination, follow these steps:

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.

Indicating that this system does not provide connectivity for other systems or partitions:

To indicate that this system has a direct connection to Electronic Customer Support without providing connectivity for other systems or partitions, click No.

Reviewing the Summary window:

To ensure that the configuration meets your requirements, review the Summary window.

To complete and save your system configuration, follow these steps:

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.

Testing the connection:

To test the connection from your system to Electronic Customer Support, follow these steps.

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. You can also use the VFYSRVCFG command to verify a connection to specific IBM service destinations. See the VFYSRVCFG CL command help text for more information.

Configuring a backup configuration:

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

Note: A good backup scenario for this might be dial-up. If the local area network (LAN) fails, dial-up can still connect you to IBM service.

Direct Internet connection from a system that provides connectivity for other systems or partitions

This scenario shows how to configure a local system to act as a connecting point to electronic services through a direct connection to the Internet.

Situation

Suppose that you are responsible for maintaining a system for MyCompany, a small manufacturing company in Boone, Iowa. You need to establish a connection between Electronic Customer Support and MyCompany's system. Because MyCompany has an Internet network connection and a fixed global routable IP address cable modem, you can create a connection from your operating system through your cable modem. With this system, your system provides connectivity (as a virtual private network (VPN) multi-hop gateway and a service and support proxy) for the three other MyCompany systems 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 creates a Service and Support Proxy and a Layer Two

Tunneling Protocol (L2TP) terminator profile. You can also choose to use an existing L2TP terminator profile rather than creating a new one.

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 system problems, tracking current system hardware and software, or receiving software updates and fixes.
- MyCompany's other three systems can remotely connect to Electronic Customer support through a single system. MyCompany only need connectivity from one system.
- A direct Internet connection provides a high-speed connection to electronic services.
- With this scenario the other MyCompany systems are protected from the Internet.

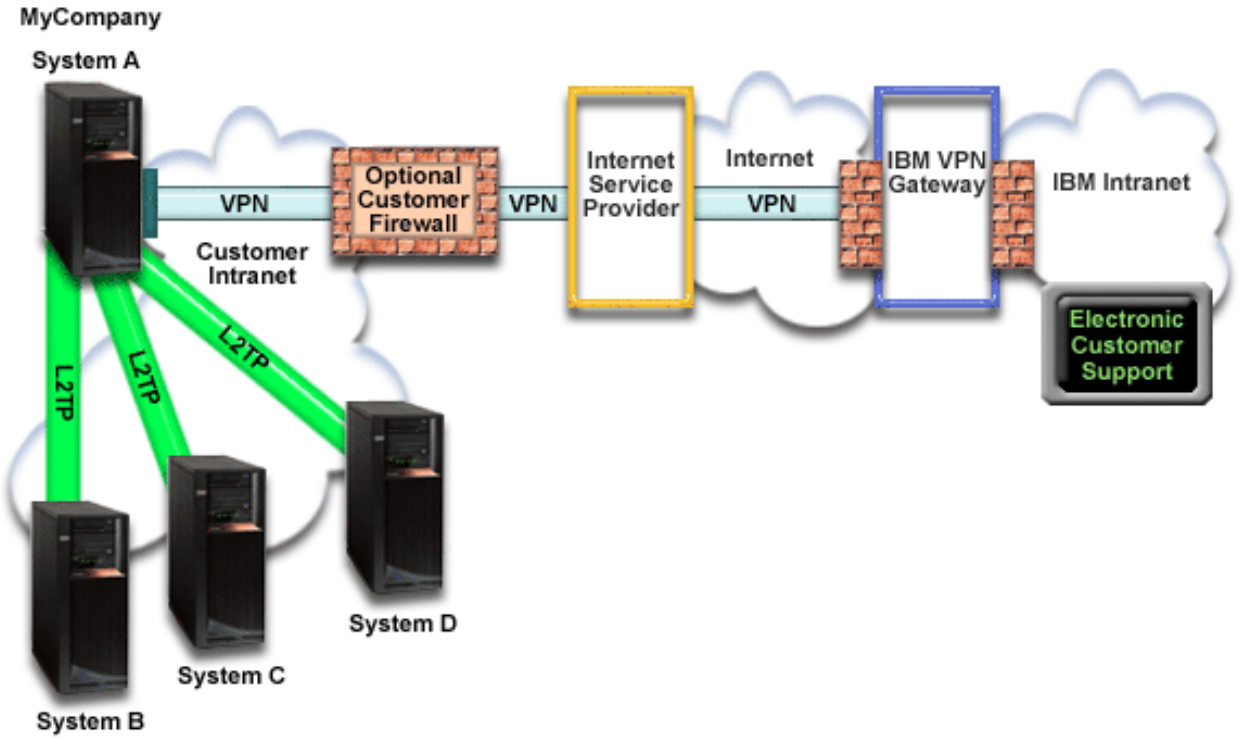
Objectives

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 systems and Electronic Customer Support through the Internet.
- To automate customer support through Electronic Customer Support and services
- To enable Electronic Customer Support to create an electronic hardware and software service information of MyCompany's system
- To permit Electronic Customer Support to send software fixes and updates to MyCompany over the network

Details

The following figure illustrates a connection from MyCompany's system to Electronic Customer Support through a direct connection to the Internet.



Configuring Universal Connection

- IBM Navigator for i 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 system A is connecting to IBM Service, a 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 system B, C, or D is connecting to IBM Service, an L2TP tunnel is established to system 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 system A is connecting to IBM Service, a Hypertext Transfer Protocol (HTTP) or Hypertext Transfer Protocol Secure (HTTPS) connection is made with the appropriate IBM systems.
- If the service application is providing its own security and system B, C, or D is connecting to IBM Service and they support a proxy: An HTTP or HTTPS connection is made through the Service and Support proxy server to the appropriate IBM servers..

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

Prerequisites and assumptions

The prerequisites for enabling Electronic Customer Support over a direct Internet connection include the following items:

- The IBM i operating system must have a globally routable IP address, or the system must be behind a NAT firewall with a globally routable address.

- Ensure that the IBM Navigator for i is available on your system.
- Ensure the latest HTTP Server and Java PTF groups are installed on your system.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- Ensure the HTTP Administration Server is started. You can start the HTTP Administration Server using the STRTCPSVR SERVER(*HTTP) HTTPSVR(*ADMIN) CL command.
- Ensure that you have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your IBM i user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- Ensure that the IBM TCP/IP Connectivity Utilities for i (5770-TC1) licensed program is installed.
- Ensure that the Digital Certificate Manager (DCM) (5770-SS1 option 34) licensed program is installed.
- 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 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.
- Ensure that your firewall filter rules allow Universal Connection traffic to flow to the Internet.

Current system configuration steps

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

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

Related concepts:

"IP packet filter firewall" on page 5
You might need to change packet filter rules to allow Universal Connection traffic to flow through your firewall to IBM.

Related tasks:

"Determining the IBM VPN gateway addresses" on page 33
This topic tells how to determine the address of the IBM virtual private network (VPN) gateway connections.

"Configuring a direct Internet connection" on page 26
You can configure a connection from your system or partition through a direct Internet connection to IBM customer support. You can also configure your system to act as a connecting point through which other systems or partitions access IBM customer support.

Related reference:

"Determining the IBM service destination addresses" on page 33
This topic describes how to find the IBM service destination addresses when you connect to IBM customer support.

Related information:

L2TP (virtual line)

System i Access for Windows: Installation and setup

Completing the planning work sheet:

The 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.

Table 5. Planning work sheet

Planning work sheet	Answers
Service information • Company • Contact name • Telephone number • Help desk or pager number • Fax number • Alternate fax number	 • MyCompany • Tom Smith • 515–870–9990 • 515–870–9942 • 515–870–5586 • 515–870–5587
Company address • 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)	 • 94 West Proctor St. • Boone • Iowa • United States • 55902 • English (2924) • myname@company.com • myname@othercompany.com • Automatic selection
Location • Country (or region) • State	 • United States • Iowa
Connection method	Through the current system
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 to use control language (CL) commands to create the configuration, use the Change Contact Information (CHGCNTINF) and the Create Service Configuration (CRTSRVCFG) commands.

Related information:

CL Commands

Starting the Universal Connection Wizard:

The Universal Connection wizard is started from IBM Navigator for i .

To start the Universal Connection Wizard and begin establishing your connection, follow these steps:

1. enter the following URL in a web browser: http://{IBM i system name}:2001.
2. Expand **Network**.
3. Expand **All Tasks**.
4. Expand **Remote Access Services**.
5. Expand **Originator Connection Profiles**.
6. Click **Universal Connection Wizard** to start the Universal Connection wizard. The Welcome dialog is displayed.

Related tasks:

"Troubleshooting the Universal Connection wizard" on page 66
See this topic when you experience problems using the Universal Connection wizard.

"Configuring a direct Internet connection" on page 26
You can configure a connection from your system or partition through a direct Internet connection to IBM customer support. You can also configure your system to act as a connecting point through which other systems or partitions access IBM customer support.

"Configuring a multi-hop connection" on page 30
To configure a connection from your system or partition through a remote multi-hop connection to IBM customer support, follow these procedures and ensure that the prerequisites and assumptions are met.

Entering the service, address, and country (or region) information:

From the Universal Connection wizard dialogs, specify the service, address, and country or region information about your company and the connections.

To enter information about your company and connections, follow these steps:

1. On the Select Configuration dialog, select either **Primary connection configuration** or **Backup connection configuration**. By default, the primary connection is specified. 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 system, the company service information already appears in the fields. For example, if MyCompany previously created a configuration, the wizard retrieves the service information 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 system resides and click **Next**.
   - Country (or region) – United States
   - State – Iowa

Selecting a direct connection to the Internet as a connection type:

From the current system under Connection, select a direct connection to the Internet as a connection type.

Note: If your enterprise has an HTTP proxy or you configured a service and support proxy on another system or partition, and you want to use that for Universal Connection applications that support going through a proxy, select the check box for **Additionally configure a proxy connection**. If this check box is checked, "Configuring a proxy destination" is shown.

Configuring a proxy destination:

To configure a proxy destination for the proxy option, follow these steps.

Note: This display screen is shown only if the proxy option was selected when you selected the dial-up connection using AGNS as a connection type.

To configure a proxy destination, follow these steps:

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.

Specifying that the system provides connectivity for other systems or partitions:

To indicate that this system provides connectivity for other systems or partitions, follow this instruction.

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

Selecting an interface the other systems use:

Select the interfaces that the other MyCompany systems 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 want to associate with the interface.

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

Note: 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.

Creating or selecting L2TP terminator profiles:

To create or select a Layer Two Tunneling Protocol (L2TP) terminator profile for each of your selected interfaces, follow these steps.

1. Select a Layer Two Tunneling Protocol (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 wants to start this profile when starting Transmission Control Protocol/Internet Protocol (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.

Configuring a service and support proxy server:

To configure a service and support proxy server, follow these steps.

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.

Reviewing the Summary window:

To ensure that the configuration meets your requirements, review the Summary window.

To complete and save your system configuration, follow these steps:

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.

Testing the connection:

To test the connection from your system to Electronic Customer Support, follow these steps.

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. You can also use the VFYSRVCFG command to verify a connection to specific IBM service destinations. See the VFYSRVCFG CL command help text for more information.

Related concepts:

"Multi-hop connection through a remote system" on page 60
This scenario shows how to configure a multi-hop Universal Connection to Electronic Customer Support through a remote system over an Internet service provider (ISP).

Configuring a backup configuration:

If an additional connection method is available to you, you might want to rerun the wizard to configure a backup. This backup is used automatically if the primary connection fails.

PPP connection through an ISP

This scenario shows how to use the Universal Connection wizard to create a connection between your system and electronic customer support over a local Internet service provider (ISP) connection.

Situation

Suppose that you are responsible for maintaining a system for MyCompany, a small manufacturing company in Boone, Iowa. You need to establish a connection between Electronic Customer Support and MyCompany's system.

Because MyCompany has an existing Internet dial-up connection, you can create a connection from your system through your modem and dial up connection to your ISP.

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 operating system 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 need 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.

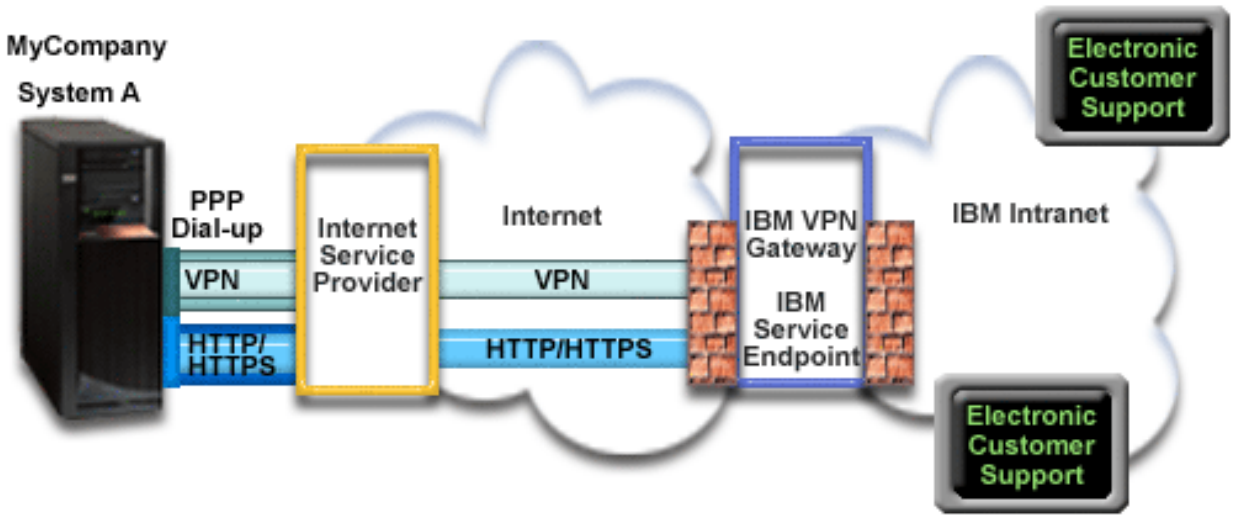
Objectives

In this scenario, the customer wants to ensure that IBM can support the MyCompany system over the network through a point-to-point 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 enable Electronic Customer Support to create an electronic hardware and software service information of MyCompany's system
- To permit Electronic Customer Support to send software fixes and updates to MyCompany over the network

Details

The following figure illustrates a connection from MyCompany's system to Electronic Customer Support through an ISP connection.



Configuring Universal Connection

- IBM Navigator for i 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.
- The service application attempts to establish an HTTP (if the service application provides its own encryption) or HTTPS (if the service application uses SSL) connection to IBM. If an HTTP or HTTPS connection cannot be established, the service application attempts to establish a virtual private network (VPN) through your ISP 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 a point-to-point ISP connection include the following items:

- Ensure that the IBM Navigator for i programs exist on your personal computer.
- Ensure that you have installed all of the latest HTTP Server and Java PTF groups.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- Ensure that you have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your IBM i user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- Ensure that the IBM TCP/IP Connectivity Utilities for i (5770-TC1) licensed program is installed.
- Ensure that the Digital Certificate Manager (DCM) (5770-SS1 option 34) licensed program is installed.
- 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 the CHGNETA command. This allows the account user ID and password to be stored on the operating system.

- Ensure that the profile used to connect to your ISP 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.

Current system configuration steps

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

Assuming that TCP/IP configuration already exists and works, complete these steps to set up the Universal Connection if you connect to Electronic Customer Support through MyCompany's local system.

Related tasks:

"Determining the IBM VPN gateway addresses" on page 33
This topic tells how to determine the address of the IBM virtual private network (VPN) gateway connections.

"Configuring a PPP connection through an ISP" on page 28
You can configure a connection from your system or partition through a point-to-point (PPP) Internet service provider (ISP) connection to IBM customer support. You can also configure your system to act as a connecting point through which other systems or partitions access IBM customer support.

Related reference:

"Determining the IBM service destination addresses" on page 33
This topic describes how to find the IBM service destination addresses when you connect to IBM customer support.

Related information:

System i Access for Windows: Installation and setup

Completing the planning work sheet:

The planning work sheet illustrates the type of information you need before configuring the point-to-point (PPP) connection through MyCompany's Internet service provider (ISP). You use this information when running the Universal Connection wizard.

Table 6. Planning work sheet

Planning work sheet	Answers
Service information • Company • Contact name • Telephone number • Help desk or pager number • Fax number • Alternate fax number	 • MyCompany • Tom Smith • 515–870–9990 • 515–870–9942 • 515–870–5586 • 515–870–5587
Company address • 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)	 • 94 West Proctor St. • Boone • Iowa • United States • 55902 • English (2924) • myname@company.com • myname@othercompany.com • Automatic selection

Table 6. Planning work sheet (continued)

Planning work sheet	Answers
Location • Country (or region) • State	 • United States • Iowa
Connection method	Through the local system
Connection type	Through an existing switched line connection profile for MyCompany's ISP.
What is your connection profile?	DIALPROF

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

Related information:

CL Commands

Starting the Universal Connection Wizard:

The Universal Connection wizard is started from IBM Navigator for i .

To start the Universal Connection Wizard and begin establishing your connection, follow these steps:

1. enter the following URL in a web browser: http://{IBM i system name}:2001.
2. Expand **Network**.
3. Expand **All Tasks**.
4. Expand **Remote Access Services**.
5. Expand **Originator Connection Profiles**.
6. Click **Universal Connection Wizard** to start the Universal Connection wizard. The Welcome dialog is displayed.

Related tasks:

"Troubleshooting the Universal Connection wizard" on page 66
See this topic when you experience problems using the Universal Connection wizard.

"Configuring a direct Internet connection" on page 26
You can configure a connection from your system or partition through a direct Internet connection to IBM customer support. You can also configure your system to act as a connecting point through which other systems or partitions access IBM customer support.

"Configuring a multi-hop connection" on page 30
To configure a connection from your system or partition through a remote multi-hop connection to IBM customer support, follow these procedures and ensure that the prerequisites and assumptions are met.

Entering the service, address, and country (or region) information:

To enter information about your company and connections on the Universal Connection wizard dialogs, follow these steps.

1. On the Select Configuration dialog, select either **Primary connection configuration** or **Backup connection configuration**. By default, the primary connection is specified. 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 system, the company service information already appears in the fields. For example, if MyCompany previously created a configuration, the wizard retrieves the service information 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 system resides and click **Next**.
   - Country (or region) – United States
   - State – Iowa

Selecting a connection using an ISP as your connection type:

Under Connection from current system or partition, select the **A connection using an Internet service provider** option as your connection type.

Note: If your enterprise has a Hypertext Transfer Protocol (HTTP) proxy or if you want to use the service and support proxy that you configured on another system or partition for Universal Connection applications that support going through a proxy, select the check box to **Additionally configure a proxy connection**. If this box is checked, the Configuring a proxy destination display is shown.

Selecting a connection profile for your ISP:
Select **DIALFPROF**, a switched line connection type, as the connection profile.

Indicating that this system does not provide connectivity for other systems or partitions:

To indicate that this system has a direct connection to electronic customer support without providing connectivity for other systems or partitions, click No.

Configuring a proxy destination:

To configure a service and support proxy server, follow these steps.

Note: This display screen is shown only if the proxy option was selected when you selected the dial-up connection using AGNS as a connection type.

To configure a proxy destination, follow these steps:

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.

Reviewing the Summary window:

To ensure that the configuration meets your requirements, review the Summary window.

To complete and save your system configuration, follow these steps:

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.

Testing the connection:

To test the connection from your system to Electronic Customer Support, follow these steps.

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. You can also use the VFYSRVCFG command to verify a connection to specific IBM service destinations. See the VFYSRVCFG CL command help text for more information.

Configuring 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 is used automatically in case that the primary connection fails.

PPP connection from a system that provides connectivity for other systems through an ISP

This scenario shows how to create a point-to-point (PPP) connection through a local system that acts as a connecting point for other systems over an Internet service provider (ISP).

Situation

Suppose that you are responsible for maintaining a system for MyCompany, a small manufacturing company in Boone, Iowa. You need to establish a connection between Electronic Customer Support and MyCompany's system.

Because MyCompany has an Internet bound network connection, you can create a connection from your operating system through your modem to a dial up PPP connection. Because your network includes three other operating system, you also want to consider providing connectivity to electronic customer services through the Universal Connection from MyCompany's main system.

Solution

Create a Universal Connection to IBM through the a dialup PPP connection over the Internet. In this case, you establish a connection through the Connection Manager on your local system through a PPP Internet connection to Electronic Customer Support. In this case, your main system can act as a connecting point for the other three MyCompany systems in your company that need to connect to Electronic Customer Support services. As part of your system configuration and setup, the wizard Universal Connection creates a Layer Two Tunneling Protocol (L2TP) terminator profile, or you can select an existing L2TP terminator profile. In addition, the wizard configures 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 control language (CL) commands.
- MyCompany's other three sytsems can remotely connect to Electronic Customer Support through a single system. MyCompany only need a single modem and dialup ISP connection instead of a separate one for each system or partition.

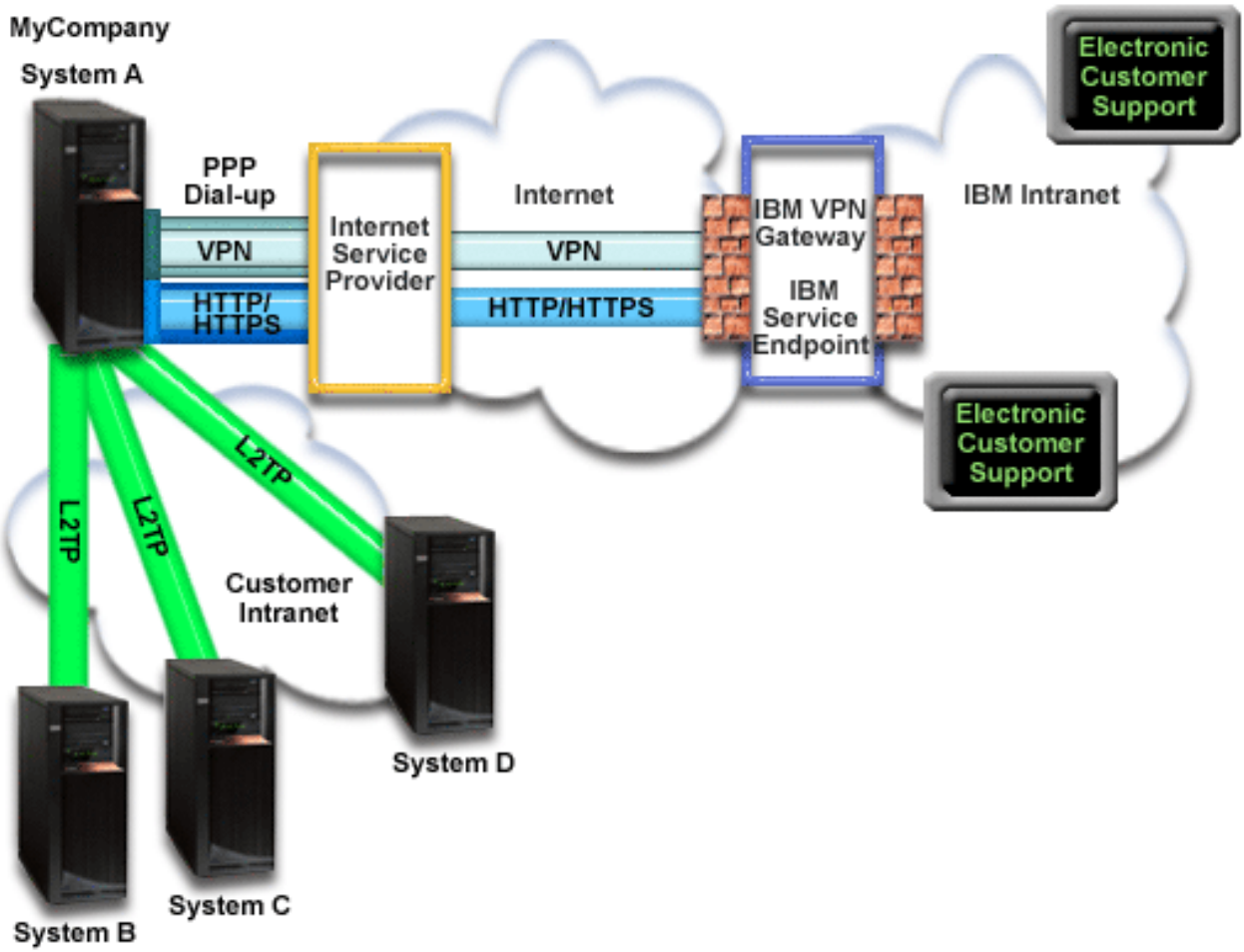
Objectives

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 ISP connection. The objectives of this scenario are as follows:

- To create a secure PPP dial-up connection between the MyCompany's four systems and Electronic Customer Support through MyCompany's ISP.
- To automate customer support through Electronic Customer Support and services
- To enable Electronic Customer Support to create an electronic hardware and software service information of MyCompany's system
- To permit Electronic Customer Support to send software fixes and updates to MyCompany over the network

Details

The following diagram illustrates a connection from MyCompany's system to Electronic Customer Support through an PPP ISP connection.



Configuring Universal Connection

- IBM Navigator for i 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 system 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 system B, C, or D needs to connect, a Point-to-Point connection is made through an L2TP tunnel using the remote modem to your ISP.
- The service application attempts to establish an HTTP (if the service application provides its own encryption) or HTTPS (if the service application uses SSL) connection to IBM. Or, If the service application is configured to use a proxy, a Hypertext Transfer Protocol (HTTP) or Hypertext Transfer Protocol Secure (HTTPS) connection is made through the service and support proxy. If an HTTP or HTTPS connection cannot be established, the service application attempts to establish a virtual private network (VPN) through the AT&T LIG and the Internet to a VPN gateway at IBM.
- The service application communicates with the appropriate IBM systems to perform the requested service.

Prerequisites and assumptions

The prerequisites for enabling Electronic Customer Support over a PPP ISP connection include the following items:

- Ensure that IBM Navigator for i is available on your system.
- Ensure that all of the latest HTTP Server and Java PTF groups are installed on your system.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- Ensure that you have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your IBM i user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- Ensure that the IBM TCP/IP Connectivity Utilities for i (5770-TC1) licensed program is installed.
- For the VPN and Secure Sockets Layer (SSL) to operate, install the Digital Certificate Manager (DCM) (5770-SS1 option 34) licensed program.
- 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 user ID and password to be stored on the operating system.
- 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 systems, ensure that the connection to the ISP is active before connecting to Electronic Customer Support.

Current system configuration steps

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

Assuming that TCP/IP configuration already exists and works, complete these steps to set up the Universal Connection when you connect to Electronic Customer Support when your local system acts as a connection point for the other three systems in MyCompany.

Related tasks:

"Configuring a PPP connection through an ISP" on page 28
You can configure a connection from your system or partition through a point-to-point (PPP) Internet service provider (ISP) connection to IBM customer support. You can also configure your system to act as a connecting point through which other systems or partitions access IBM customer support.

Completing the planning work sheet:

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

Table 7. Planning work sheet

Planning work sheet	Answers
Service information • Company • Contact name • Telephone number • Help desk or pager number • Fax number • Alternate fax number	 • MyCompany • Tom Smith • 515–870–9990 • 515–870–9942 • 515–870–5586 • 515–870–5587

Table 7. Planning work sheet (continued)

Planning work sheet	Answers
Company address • 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)	 • 94 West Proctor St. • Boone • Iowa • United States • 55902 • English (2924) • myname@company.com • myname@othercompany.com • Automatic selection
Location • Country (or region) • State	 • United States • Iowa
Connection method	Through the current system
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 to use control language (CL) commands to create the configuration, use the Change Contact Information (CHGCNTINF) and the Create Service Configuration (CRTSRVCFG) commands.

Related information:

CL Commands

Starting the Universal Connection Wizard:

The Universal Connection wizard is started from IBM Navigator for i .

To start the Universal Connection Wizard and begin establishing your connection, follow these steps:

1. enter the following URL in a web browser: http://{IBM i system name}:2001.
2. Expand **Network**.
3. Expand **All Tasks**.
4. Expand **Remote Access Services**.
5. Expand **Originator Connection Profiles**.
6. Click **Universal Connection Wizard** to start the Universal Connection wizard. The Welcome dialog is displayed.

Related tasks:

"Troubleshooting the Universal Connection wizard" on page 66
See this topic when you experience problems using the Universal Connection wizard.

"Configuring a direct Internet connection" on page 26
You can configure a connection from your system or partition through a direct Internet connection to IBM customer support. You can also configure your system to act as a connecting point through which other systems or partitions access IBM customer support.

"Configuring a multi-hop connection" on page 30
To configure a connection from your system or partition through a remote multi-hop connection to IBM customer support, follow these procedures and ensure that the prerequisites and assumptions are met.

Entering the service, address, and county information:

To enter information about your company and connections, follow these steps.

1. On the Select Configuration dialog, select either **Primary connection configuration** or **Backup connection configuration**. By default, the primary connection is specified. 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 system, the company service information already appears in the fields. For example, if MyCompany previously created a configuration, the wizard retrieves the service information 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 system resides and click **Next**.
   - Country (or region) – United States
   - State – Iowa

Selecting the ISP as a connection type:

This topic tells you how to select the internet service provider (ISP) connection type.

From the current system or partition under Connect, select **A connection using an Internet service provider** option as your connection type.

Selecting a connection profile for your ISP:

This topic describes how to select a connection profile for your Internet service provider (ISP).

From the **Select Profile** dialog, select **DIALPROF**, which is a switched line connection type, as the connection profile.

Specifying that this system provides connectivity for other systems or partitions connect:

To indicate that this system provides connectivity for other systems or partitions, follow this instruction.

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

Selecting an interface the other systems use:

To specify the interfaces that the other MyCompany systems use when connecting to IBM, follow these steps.

Select one of the following options:

1. Click **Any interface** to let the Universal Connection accept connections from all TCP/IP interfaces.
2. 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 want 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.

Creating or selecting an L2TP terminator profile:

To create or select a Layer Two Tunneling Protocol (L2TP) terminator profile for each of your selected interfaces, follow these steps.

1. Select a Layer Two Tunneling Protocol (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 wants to start this profile when starting Transmission Control Protocol/Internet Protocol (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.

Configuring a service and support proxy server:

To configure a service and support proxy server, follow these steps.

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.

Reviewing the Summary window:

To ensure that the configuration meets your requirements, review the Summary window.

To complete and save your system configuration, follow these steps:

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.

Testing the connection:

To test the connection from your system to Electronic Customer support, follow these steps.

1. Click **Yes** when the wizard prompts you to test the configuration. The Verify Universal Connection dialog is displayed.
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. You can also use the VFYSRVCFG command to verify a connection to specific IBM service destinations. See the VFYSRVCFG CL command help text for more information.

Configuring 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 is used automatically in case that the primary connection fails.

Multi-hop connection through a remote system

This scenario shows how to configure a multi-hop Universal Connection to Electronic Customer Support through a remote system over an Internet service provider (ISP).

Situation

Suppose that you are responsible for maintaining a system for MyCompany, a medium-sized manufacturing company in Boone, Iowa. You need to establish a connection between Electronic Customer Support and the system. MyCompany has a system on a private network that accesses the Internet through a virtual private network (VPN) multi-hop gateway. The multi-hop gateway could be either an IBM i operating system or a router that supports Layer Two Tunneling Protocol (L2TP) multi-hop (chained tunnels). In this case, you create a connection from your system through a multi-hop connection. Because you do not need to provide connections for other systems, you do not need to consider such connections.

Note: The Hardware Management Console (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 system to Electronic Customer Support.

Advantages

This scenario provides the following advantages:

- MyCompany can create a connection from its IBM i operating system on a private network through another sytsem 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 system 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 system and Electronic Customer Support by shielding it from the Internet.
- High-speed access to Electronic Customer Support is available with this option.

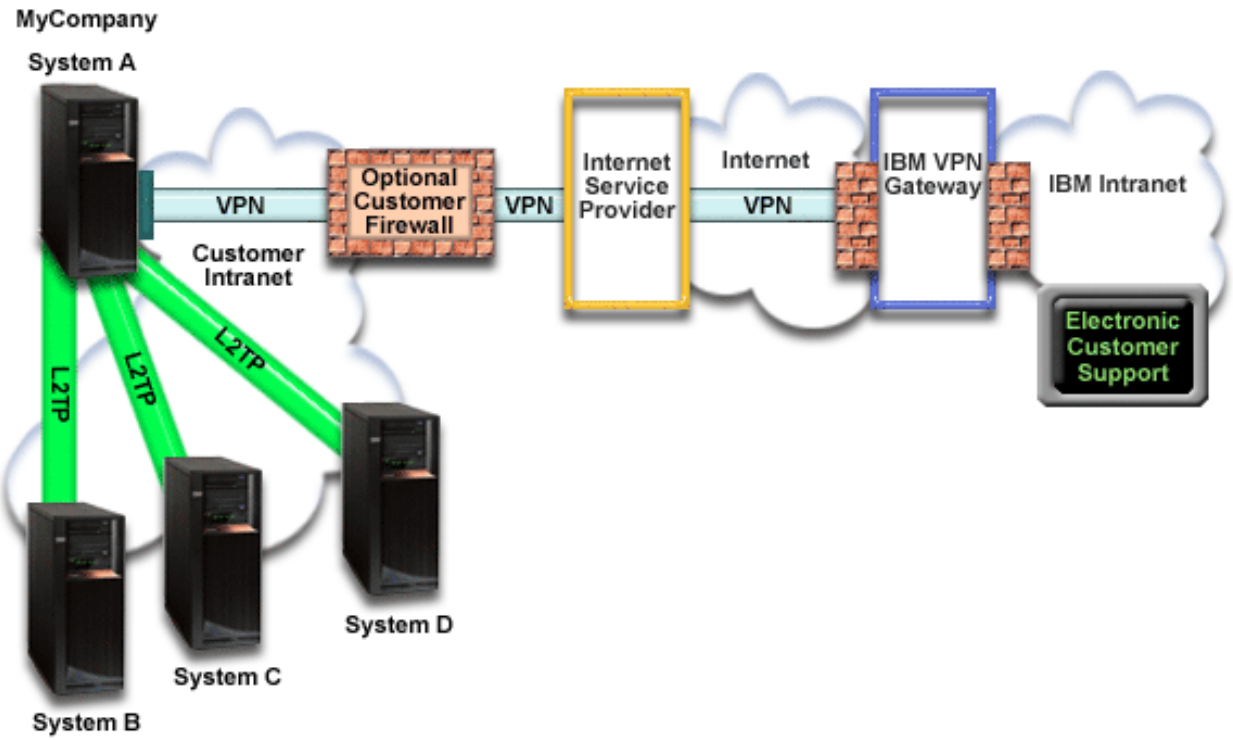
Objectives

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 enable Electronic Customer Support to create an electronic hardware and software service information of MyCompany's system
- To permit Electronic Customer Support to send software fixes and updates to MyCompany over the network

Details

The following figure illustrates a connection from the MyCompany IBM i operating system to Electronic Customer Support through a VPN multi-hop gateway.



Configuring Universal Connection

- IBM Navigator for i 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 situations 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 systems to perform the requested service.

Prerequisites and assumptions

The prerequisites for enabling Electronic Customer Support over a remote multi-hop connection include the following items:

- Ensure that the IBM Navigator for i is available on your system.
- Ensure the latest HTTP Server and Java PTF groups are installed on your system.
- Ensure that TCP/IP is active. You can start TCP/IP through the Start TCP/IP (STRTCP) command.
- Ensure the HTTP Administration Server is started. You can start the HTTP Administration Server using the STRTCPSVR SERVER(*HTTP) HTTPSVR(*ADMIN) CL command.
- Ensure that you have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your IBM i user profile and *USE authority to WRKCNTINF in order to configure the connection using the Universal Connection wizard.
- Ensure that the IBM TCP/IP Connectivity Utilities for i (5770-TC1) licensed program is installed.
- Ensure that the Digital Certificate Manager (DCM) (5770-SS1 option 34) licensed program is installed.
- 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 IBM i operating system as the VPN multi-hop gateway, see Direct Internet connection from a system that provides connectivity for other systems or partitions. Other options are discussed in “Determining the IBM VPN gateway addresses” on page 33.

Current system or partition configuration steps

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

Assuming that TCP/IP configuration already exists and works, complete these steps to set up the Universal Connection if you connect to Electronic Customer Support through a VPN multi-hop gateway.

Related tasks:

“Testing the connection” on page 47
To test the connection from your system to Electronic Customer Support, follow these steps.

“Configuring a multi-hop connection” on page 30
To configure a connection from your system or partition through a remote multi-hop connection to IBM customer support, follow these procedures and ensure that the prerequisites and assumptions are met.

Completing the planning work sheet:

The 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.

Table 8. Planning work sheet

Planning work sheet	Answers
Service information • Company • Contact name • Telephone number • Help desk or pager number • Fax number • Alternate fax number	 • MyCompany • Tom Smith • 515–870–9990 • 515–870–9942 • 515–870–5586 • 515–870–5587
Company address • 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)	 • 94 West Proctor St. • Boone • Iowa • United States • 55902 • English (2924) • myname@company.com • myname@othercompany.com • Automatic selection
Location • Country (or region) • State	 • United States • Iowa
Connection method	Through a remote system
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 to use control language (CL) commands to create the configuration, use the Change Contact Information (CHGCNTINF) and the Create Service Configuration (CRTSRVCFG) commands.

Related information:

CL Commands

Starting the Universal Connection Wizard:

The Universal Connection wizard is started from IBM Navigator for i .

To start the Universal Connection Wizard and begin establishing your connection, follow these steps:

1. enter the following URL in a web browser: http://{IBM i system name}:2001.
2. Expand **Network**.
3. Expand **All Tasks**.
4. Expand **Remote Access Services**.
5. Expand **Originator Connection Profiles**.
6. Click **Universal Connection Wizard** to start the Universal Connection wizard. The Welcome dialog is displayed.

Related tasks:

"Troubleshooting the Universal Connection wizard" on page 66
See this topic when you experience problems using the Universal Connection wizard.

"Configuring a direct Internet connection" on page 26
You can configure a connection from your system or partition through a direct Internet connection to IBM customer support. You can also configure your system to act as a connecting point through which other systems or partitions access IBM customer support.

"Configuring a multi-hop connection" on page 30
To configure a connection from your system or partition through a remote multi-hop connection to IBM customer support, follow these procedures and ensure that the prerequisites and assumptions are met.

Entering the service, address, and country (or region) information:

To enter information about your company and connections, follow these steps.

1. On the Select Configuration dialog, select either **Primary connection configuration** or **Backup connection configuration**. By default, the primary connection is specified. 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 system, the company service information already appears in the fields. For example, if MyCompany previously created a configuration, the wizard retrieves the service information 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 system resides and click **Next**.
   - Country (or region) – United States
   - State – Iowa

Selecting a multi-hop VPN connection to the Internet:

Under Connect from current system or partition, select the **multi-hop VPN connection to the Internet** option as your connection type.

Note: If your enterprise has a Hypertext Transfer Protocol (HTTP) proxy or if you want to use the service and support proxy that you have configured on another system or partition for Universal Connection applications that support going through a proxy, check this box, select the check box to **Additionally configure a proxy connection**. If this box is checked, the Configuring a proxy destination display is shown.

Entering a VPN gateway address or host name:

To make the multi-hop connection to IBM, enter either the virtual private network (VPN) multi-hop gateway address or enter the host (server) name that connects to IBM electronic customer support.

Configuring a proxy destination:

To configure a proxy destination, follow these steps.

Note: This display screen is shown only if the proxy option was selected in "Selecting a multi-hop VPN connection to the Internet" on page 64.

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.

Indicating that this system does not provide connectivity for other systems or partitions:

To indicate that this system does not provide connectivity for other systems or partitions, follow this instruction.

Click **No** to indicate that this system has a direct connection to Electronic Customer Support without providing connectivity for other systems or partitions.

Reviewing the Summary window:

To ensure that the configuration meets your requirements, follow these steps.

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.

Testing the connection:

To test the configuration from your system to Electronic Customer support, follow these steps.

1. Click **Yes** when the wizard prompts you to test the configuration. The Verify Universal Connection dialog is displayed.
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. You can also use the VFYSRVCFG command to verify a connection to specific IBM service destinations. See the VFYSRVCFG CL command help text for more information.

Configuring 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 is used automatically in case that the primary connection fails.

Troubleshooting the Universal Connection wizard

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

If your attempt to run the Universal Connection wizard unsuccessfully, answer the following questions and run the wizard again:

1. Is the Universal Connection wizard unavailable to you?

   Ensure that you have the following criteria met:

   - IBM Navigator for i must be available on your system if you want to use it to start the Universal Connection Wizard.
   - You must have the optional Network component installed.
     - For IBM Navigator for i, more details are available at: IBM Navigator for i

       (http://www.ibm.com/systems/i/software/navigator/directornavigator.html)
   - You must have security officer (*SECOFR) authority with *ALLOBJ, *IOSYSCFG, and *SECADM special authorities in your IBM i 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 IBM i operating system?

   To verify that this attribute is correct, follow these steps:

   a. On any 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 command line, enter `CHGSYSVAL SYSVAL(QRETSVRSEC) VALUE('1')`
4. Is TCP/IP 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, follow these steps:

   a. On any command line, enter `STRTCP` (Start TCP command).
   b. Press Enter.
5. If you are using IBM Navigator for i, is the HTTP Administration Server started? You can start the HTTP Administration Server using the STRTCPSVR SERVER(*HTTP) HTTPSVR(*ADMIN) CL command.
6. Is your virtual private network (VPN) functioning correctly?

   See the Troubleshooting VPN topic for assistance.
7. 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 IBM Navigator for i, follow these steps:
     a. Select the appropriate server.
     b. Expand **Network**.
     c. Select **Remote Access Services**.

d. Select modems.
e. See the Configuring your modem for PPP topic for more information. Also, see your modem manual for the proper settings.

8. Is your modem configured with a framing type of asynchronous?

   If not, you might need 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.

9. Did problems occur when you attempted to test the connection?

   See the Troubleshooting PPP topic.

10. Ensure that your firewall filter rules allow Universal Connection traffic to flow to the Internet. See IP packet filter firewall for more details.

11. Do you think the Universal Connection configuration is correct, but you still can not connect successfully to IBM service destinations? Use the VFYSRVCFG command to test the connections to IBM service destinations and see information about the specific IP addresses and ports used for the connections. You can test connections to different IBM service destinations and determine which specific connections are working or failing.

Connecting to IBM using CL commands

You can use the CL commands to create your connection to IBM.

You can connect to the IBM Service Center by using the GO SERVICE or the Create Service Configuration (CRTSRVCFG) command.

Related concepts:

"Connectivity" on page 3
To make the service environment available, your system must have connectivity to IBM.

Related information:

Create Service Configuration (CRTSRVCFG) command

Sending service requests

For hardware failures that do not disable system operation, Electronic Customer Support provides a fast, electronic method for requesting the service from a hardware service provider with replacement parts. Using this method, you can report failures that occur on your System i® platform or on specified input/output devices.

The **Send Service Request (SNDSRVRQS)** command establishes a communications session and sends problem information to the support center or tests the communications link to your service representative.

Sending a service request immediately

If you select option 1 (Send service request now) on the Select Reporting Option display to send a service request right after detecting a problem, your system packages the problem log entry as a service request, automatically dials the IBM service provider system, and transmits the problem.

Note: Service requests can also be sent to other systems that have the System Manager for IBM i licensed program installed.

The service provider determines whether the request is for hardware or software service, and takes the following appropriate action.

Hardware service:

If the service provider is IBM and no PTFs match your problem symptoms, one of the following activities happens:

- Your request is sent to an IBM service representative.
- An IBM Customer Assistance Group representative calls you to help define the problem. The connection to the service provider system ends, and the status of the problem in the problem log is changed to SENT.

Software service:

- A search is performed against the database of program temporary fixes (PTFs) by using the symptom string you created during problem analysis.
- If the service provider is IBM, a match is found, and a PTF is available, then IBM will either transmit the PTF to you automatically, or send a PTF CD to you through normal mail channels. The size of the PTF and its requisites determine whether IBM sends the PTF automatically or through the mail. The PTFs that you receive automatically are placed in the QGPL library with a file name of the PTF number that is preceded by a Q and a file type of SAVF.
- If a match is not found or if the PTF is not available, the Save APAR Data display is shown. This display saves the following information about your problem:
  - History log
  - Job information
  - Hardware and software resources
  - Error log entries
  - Vertical Licensed Internal Code log entries
  - Problem log entries
  - Pictures of displays

  This service information is transmitted to IBM Software Support Center automatically if Electronic Service Agent is configured properly to help you solve your problem. If the service information failed to be sent, you must forward this information to the IBM Software Support Center manually.

The connection to the service provider ends when you receive a PTF or when your problem is opened for further investigation. The system changes the status of the problem to SENT or ANSWERED in the problem log.

Note: Whenever you use Electronic Customer Support, your system needs to dial out to the IBM Support Center. Remember to have the Electronic Customer Support modem available and turned on.

Sending a service request later

If you decide to send a service request later, select **option 2** (Do not send service request) on the Select Reporting Option display. The status of the problem in the problem log changes to PREPARED.

To submit a problem with PREPARED status, follow the directions in Reporting problems detected by the system. When the system reports the problem, the problem log entry is packaged as a service request. Then your system automatically dials the service provider system, and the system transmits the problem to the service provider.

To report all problems in the problem log that have a status of PREPARED, perform one of the following actions:

1. On the Work with Problems display, press F16 (Report prepared problems).
2. On any command line, enter `SNDSRVRQS *PREPARED` and press the Enter key.

The connection to the service provider system ends when you receive a program temporary fix (PTF) or when your problem is opened for further investigation. The system changes the status of the problem to SENT or ANSWERED in the problem log.

Note: Whenever you use Electronic Customer Support, your system needs to dial out to the IBM Support Center. Remember to have the Electronic Customer Support modem available and turned on.

Related information for Service and support

Product manuals, IBM Redbooks publications, Web sites, and other information center topic collections contain information that relates to the Service and support topic collection. You can view or print any of the PDF files.

Related information for Service and support

IBM Redbooks

- i5/OS Diagnostic Tools for System Administrators: An A to Z Reference for Problem Determination

Web sites

- Online Publications (http://publib.boulder.ibm.com/isrvagt/sdsadoc.html)
  This site contains links to documentation for IBM Electronic Service Agent for iSeries.

Other information

- IBM Performance Management for Power Systems - support for IBM i
- Maintaining and managing IBM i and related software
- Remote Access Services: PPP connections
- Troubleshooting
- Using software fixes
- Virtual Private Networking (VPN)

Related information for Universal Connection

Web sites

Other information

- Client SOCKS support
- Configuring your modem for PPP
- IP Security protocols
- Layer 2 Tunnel Protocol
- NAT compatible IPSec with UDP
- Packet rules concepts
- Troubleshooting PPP
- Troubleshooting VPN
- Setting up your service environment in the IBM Systems Hardware Information Center

Related reference:

"PDF file for Service and support" on page 1
You can view and print a PDF file of this information.

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