

ASNA Documentation: Readme



ASNA DataGate® 8.1 for IBM® System i™

[Installation Notes](#)

[Release Notes](#)

Installation Notes

Important - OS/400 Version Requirement

Please note that your OS/400 must be at V5R1 or greater to install DataGate for System i.

What the Installation Will Do

On the System i

- Restore the save file, ASNAINST onto the System i either directly from System i CD media or FTP.
- Restore the library ASNAINST from the ASNAINST save file.
- Install DataGate for System i to the library that you specify. Please note the following:
 - 1 User profile **DG8SVCPRF** is created. It is used to run the DataGate Service and the License Manager. When the DataGate service job is submitted for execution, the job is submitted under the user profile of DG8SVCPRF. This user profile is created during the installation and the system value for the Printer option will be assigned to this user profile. If the DataGate service job cannot be started, a one page report outlining the possible cause of the problem will be generated for the user DG8SVCPRF and printed to the assigned printer.
 - 2 TCP/IP port 5042 is the default port for the Service Table Entry used by the DataGate service. It is **not required** that you use this port. Port 5042 is registered to ASNA by "IANA", the Internet Assigned Numbers Authority (<http://www.iana.org/assignments/port-numbers>) and as such it is a common-sense default port. See **Changing the Default DataGate TCP Port** for more information.
 - 3 **ADDTCPPORT** is run to restrict the default/assigned port to the DataGate Service only. If you use your own port assignment(s), the installation program will implement the port restriction to ensure that products that randomly assign ports for their own use cannot have access to your assigned DataGate port.
 - 4 *USE Object authority for DataGate is added to APIs QSYGETPH and QWTSETP. This is required because the DataGate service "adopts authority" before starting the end user's job (using the user name and password). These programs are the IBM APIs for performing this function.

On the PC

- Restore PC programs, by default, to the **\DataGate\FTP** folder.

Prior to installation, DO NOT DELETE or RENAME the ASNA_DB8 library. It is required for all versions of DataGate, even though you may be installing into a library with a different name.

Transferring and Installing DataGate for System i

The procedure to install DataGate for System i on the System i consists of 2 parts. The first is to transfer the DataGate/400 software to the System i, either from a PC or the System i CD drive, and the second is to actually install DataGate/400 into the specified System i library.

There is 1 way in which you can transfer DataGate to the System i from the PC

- [FTP](#)

There are 1 way in which you can transfer DataGate to the System i from the System i

- [A CD-Rom on the System i](#)

Refer to the appropriate installation procedure below for the desired transfer method. Each procedure will have a subheading noting whether the steps are done on the System i or the PC.

The last step in each procedure will be to run the command that actually installs DataGate for System i onto the System i.

Installing DataGate for System i onto the System i from the PC

Installing DataGate for System i using FTP

In order to install DataGate for System i on the System i from a Save file (obtained from the Installation CD), **you must have TCP/IP installed on both your PC and on the System i.** (You must also have FTP installed on your System i).

Installing TCP/IP and FTP on the System i is beyond the scope of this document. If you do not know whether your System i has TCP/IP and/or FTP, please check with your network manager or system provider.

On the System i

1. Sign onto the System i using an account that has both ***SECADM** and ***IOSYSCFG** authorities, e.g. QSECOFR.
2. Create a Save file in QGPL by entering the following command:

CRTSAVF QGPL/ASNAINST

On the PC

3. To upload the Save file from the CD or PC, an FTP session must be started to the System i.

From Windows, click on the **START** button, select **RUN** and enter the following command:

FTP tcpipaddress

'*tcpipaddress*' is either the System i' TCP/IP address such as 198.176.129.35, or a machine name that is registered either in a DNS or a HOSTS file.

4. When prompted for a user name and password, enter the appropriate information that will give you privileges to upload data to the System i.
5. Once FTP has been started, upload the Save file to the System i by entering the following commands:
 - a) **binary**
 - b) **put x:\Datagate\FTP\ASNAINST QGPL/ASNAINST**
where **x** is the CD-ROM drive or PC disk drive
 - c) **quit**

On the System i

6. Restore the library called ASNAINST from the Save file by entering the following command:

RSTLIB ASNAINST DEV(*SAVF) SAVF(QGPL/ASNAINST)

7. To install DataGate for System i, execute the following command:

ASNAINST/DG8LOAD

When DataGate/400 is installed, it is automatically authorized for one user license. If you wish to authorize more than one license to DataGate/400 for the System i, obtain a license code from ASNA and then enter ASNA_DG8/REGISTER from System i command line.

8. The installation program will display the ASNA Software License Agreement. If you agree with the terms of the license, press the **F8** key to continue with the installation. If you do not agree, press the F3 key and the installation will be cancelled.

Next, the installation program displays the installation options. The installation can be cancelled at any time by pressing the **F3** key.

```

DataGate/400 Installation 4/19/06
Version nbr: 7.310.0 10:05:18
Release date: 2006-04-17

The library where DataGate is to be installed . . . : DG8_72
This library is also created: VCAT_70.

DataGate subsystem:
Name of the subsystem where DataGate will run . . . : QINTER
Name of the library for the subsystem description : QSYS

Name of the Service Table entry . . . . . : DataGate400
Port number used by the Service Table entry . . . : 5042

Start DataGate/400 when the installation completes : Y

Clear the DataGate cache library . . . . . : Y

F3-Cancel the installation.          F6-Begin installing DataGate.
F9-Work with subsystem descriptions. F10-Work with service table entries
  
```

Installation Library Option:

Select a library where DataGate/400 will be installed. If the library does not exist, it will be automatically created during the installation. The following libraries are not allowed for the installation: QSYS, QGPL, QSPL, QTEMP, VCAT_70 and the distribution library. Libraries called **ASNA_DG8** and **VCAT_70** are always created.

Subsystem Options:

Select a subsystem where DataGate/400 will run. You must also specify the library where the subsystem description is located or where it will be created during the installation. This is required so that the installation program can determine whether the specified subsystem exists or must be created. If the subsystem does not exist, it will be automatically created in the specified library during the installation.

Service Table Entry Options:

Select the name of the service table entry and the port that DataGate/400 will use. The default values are recommended.

Start DataGate Option:

Enter 'Y' to have DataGate/400 started as soon as the installation has completed. If you select not to start DataGate/400, you will have to start it manually with the STRDG8SVR command by entering:

InstallLib/STRDG8SVR

Where *InstallLib* is the library into which DataGate/400 was installed.

Clear Cache Library Option:

Enter 'Y' to clear the DataGate/400 cache library. This is recommended. Make sure that there are no active DataGate/400 jobs if you select this option.

9. When all options have been selected, press the **F6** key to display a verification screen for each of the above options. As you review each option, press Enter if you are satisfied with your selection, otherwise press the F12 key to redisplay the options screen and enter your changes. When all options have been verified, the installation will start.
10. The installation program will stop the version of DataGate/400 that is running out of the specified installation library – if there is one. If there are multiple versions of DataGate/400 running, those other versions will **not** be stopped.
11. Once the installation has completed, the ASNAINST Save file is no longer needed, and may be deleted. The ASNAINST library is automatically deleted.
12. You must name the System i Database in **DataGate Database Manager** using Work with Database Names. See **Naming a System i Database** for more information.

Installing DataGate for System i onto the System i from the System i

The following installation processes have two steps.

- The first step is to restore a temporary installation library and can be done by anyone with *USER authority or higher.
 - The second step does the actual installation and initialization of the product and requires *SECOFR authority to run it.
-

Installing DataGate for System i using a System i CD-ROM drive

To Install from a System i CD-Rom Drive

1. To restore the installation library, load the CD, then enter the following command:

```
RSTLIB ASNAINST OPT01 OPTFILE('DATAGATE/RSTLIB/ASNAINST')
```

Where *OPT01* is the device name from which the library will be restored.

2. See the above section titled 'Installing DataGate for System i with FTP', starting with step 8, for detailed instructions and information about the various installation options.

Once the installation is completed, the ASNAINST Save file is no longer needed, and may be deleted. The ASNAINST library is automatically deleted.

When DataGate for System i is installed, it is automatically authorized for one user license. If you wish to authorize more than one license to DataGate/400 for the System i, obtain a code from ASNA and then ASNA_DG8/REGISTER from System i command line.

Changing the Default DataGate TCP Port

To modify the installed (default) TCP/IP port 5042 to another port:

1. Enter the command **WRKSRVTBLE** (Work with service table entries) to verify the name of the DataGate service. On the prompt screen, press <enter> and list of table entries is displayed; the entry list is typically in arrival sequence, so this entry should be at or near the bottom of the list. Scroll down the list of entries until you see port 5042. The default DataGate Service name is "**Acceler8DBServer**". Write down the Service name and then press the **F3** key.
2. The entry for port 5042 must first be removed. On the command line, enter **RMVSRVTBLE** and press <enter>. In the Service prompt field, enter the name of the DataGate service from the Service Table entry; in the Port prompt field enter "5042"; and in the Protocol prompt field prompt enter "**tcp**". Press <enter> and the entry will be removed from the Service Table.
3. To add the entry for the port you wish to use, on the command line, enter **ADDSRVTBLE** and press <enter>. In the Service field prompt enter "**Acceler8DBServer**"; in the Port prompt field enter the **port number** you want to use; in the Protocol prompt field enter "**tcp**" (this **must** be lower-case); and in the Text prompt field enter "**DataGate/400 Service Table Entry**" and then press <enter>.

The name that you entered for the service on the **ADDSRVTBLE** command **must** match the name in the **TCPSERVICE** data area in the DataGate library (by default it is "Acceler8DBServer").

Licensing DataGate for System i

Before DataGate for System i may be used on any System i, a valid license code, issued by ASNA, must be entered. For new trials, this code will be sent with the product if the machine serial number and model type are known at the time of shipping.

The code issued with a trial of DataGate for System i will license, or register the product to be used on a specified machine up to a specified date. If it is required to move the product onto another machine, upgrade the model type, or extend the trial period, please contact your Distributor or ASNA for a new license code.

Once the product has been purchased, a new license code will be issued to register the product on a permanent basis. This code will be based either on unlimited users, or on a per-user basis.

Entering the License Code on the System i

A new license code is entered, or a current license can be viewed or changed by using the product's **Registration Assistant** program.

When installing the product for the first time, or when an upgrade is installed, the **Registration Assistant** screen is displayed with the bottom of the screen displaying whether the current License Code is valid or not. If the License Code is valid, press F3 to continue. If not, call ASNA or your Distributor to get a new License Code.

Note: You cannot use the product without a proper License Code.

To Enter, Display, or Change a License Code on the System i

1. If you are not already at the Registration Assistant Screen, enter the following:
 - a. **ADDLIBLE LIB(ASNA_DG8) POSITION(*FIRST)**
 - b. **ASNA_DG8/REGISTER**
2. Enter or verify the information to the display, as detailed below.

System Name

The name of the System i will automatically display.

Model

The model of the System i will automatically display.

Serial Number

The serial number of the System i will automatically display.

License Key

For a new license, enter the 16-digit license code acquired from ASNA **exactly** as it is given.

License Type

License Type specifies if the licensing is for an individual machine, or for the entire company.

- To license, or register the current machine, use ***MACH**, which is the default.
- To license, or register the entire company, enter ***SITE**.

Customer Name

The name of the user that was entered when the product was installed will automatically display. However, you can change this name as needed.

The customer name is case-sensitive and must match the customers name exactly as ASNA's account shows.

Company Name

The name of the company that was entered when the product was installed will automatically display. However, you can change this name as needed.

If you are entering a Site License, the name of the company must be spelled exactly as determined by you and ASNA. This name is also case-sensitive, so capitalization must match exactly.

Start Date

The Start Date specifies if the product has been purchased, in which you have a Permanent code, or if the product is a 'Trial', which is only valid for a specified period.

- If the product has been purchased, use ***PERM**, which is the default.
- For a 'Trial' of the product, enter the starting date in the format MM/DD/YYYY.

Expiration Date

The Expiration Date indicates the date in which the license code will expire.

- If the product has been purchased, use ***PERM**, which is the default.
- For a 'Trial' of the product, enter the ending date of the trial as specified by ASNA in the format MM/DD/YYYY.

User Count

User Count specifies the number of concurrent users that can access the product, as a per-user-basis, or as unlimited.

- For unlimited users, use ***UNLIM**, which is the default.
- For a specified number of users, enter the user count as a positive integer.

3. Acceptance of a valid licensing code is confirmed at the bottom of the screen. Press **F3** to continue.

If the message "**The License is Invalid**" displays, recheck all entries. If no errors were made in any of the entries, call ASNA or your National Distributor for further assistance.

If the message "**Couldn't create license data area, check authority and try again**" displays, you do not have the proper authority to register DataGate for System i. See **Authority of the User Profile used to Register DataGate** for more information.

Entering the License Code on the PC

To register a DataGate for System i license code, the user profile used must have ***CHANGE** authority to the ASNA_DG8 library. Additionally, it must have ***ALL** authority to the DGPCODE data area in ASNA_DG8. See **Authority of the User Profile used to Register DataGate** for additional information.

To Enter a License Code on the PC

1. After installing DataGate for System i, contact ASNA to obtain a License Key.
2. Open **Registration Assistant** by selecting **Start - Programs - ASNA Product Suite - ASNA Registration Assistant** and select **DataGate for System i/400** as the product by clicking on the arrow to the right.
3. Select the **database name** that points to the database on the System i in which you are registering a license for.

The database name for the System i to be licensed must already exist on the system running Registration Assistant. Use **DataGate Database Manager** to register a database name by selecting **Work with Database Names...** from the File menu.

Once a database name is selected, the **Model** and **Serial** number of the System i will automatically display.

4. Enter the License Key that you received from ASNA, along with the rest of the information as listed below. Select the **Register Product** button when finished.

Machine Code

Machine Code is a unique number that represents a "signature" of your system and will automatically display. The code is separated into groups of 4-digit numbers. It will contain 16 numbers. **The Machine Code cannot be changed.**

If for any reason you lose your machine code, please contact ASNA.

System i Model

The model of the System i will automatically display after selecting a database name to license.

Serial Number

The serial number of the System i will automatically display after selecting a database name to license.

License Key

A 16-digit license key acquired from ASNA. You may enter the License Key as a single, large number. However, for easier readability, it is recommended to enter one or more spaces between each set of 4 digits. *Note that this is not necessary, and spaces will not affect the License Key.*

Database Name

Select the database name on the System i in which you are registering a license for.

Name

The name of the user that was entered when the product was installed will automatically display. However, you can change this name as needed.

Company

The name of the company that was entered when the product was installed will automatically display. However, you can change this name as needed.

If you are entering a Site License, the name of the company must be spelled exactly as determined by you and ASNA. This name is also case-sensitive, so capitalization must match.

Version

The **version** (and build number) of the selected product will automatically display.

Full Version

A **full** version indicates that you have full use of the product, i.e., you can compile and make .EXE's, DLL's, and OCX's. The full version can be set as either permanent or temporary.

Trial Version

A trial version indicates that you do not have full use of the product, i.e., you can not compile and make .EXE's, DLL's, and OCX's.

When you install Visual RPG 3.x on a system in which Visual RPG has never been installed before, you are automatically given a "trial" version of AVR. A trial version is good for approximately 30 days, so you do not need to enter a license key until the product is purchased and you have received a permanent license key from ASNA.

Site License

Check this box if your company is set up with a **Site License**, in which multiple licenses have been acquired that will all use the **same** License Key.

Unlimited

Select **Unlimited** if the number of users that can access DataGate Engine or DataGate for System i is not limited to a particular number.

Limited

Select **Limited** if there is a limit to the number of users that can access DataGate Engine or DataGate for System i. If limited is selected, enter the number of concurrent users that can access DataGate Engine or DataGate for System i in User Count.

User Count

Enter the number of concurrent users that can access DataGate Engine or DataGate for System i. This option will only display if a user type of Limited was selected.

Date format

Select the date format in which you will enter the Starting and Ending date for the license. The two formats are:

mm/dd/yyyy (USA)

dd/mm/yyyy (UK)**Permanent**

The license period is permanent for this system. There is no start or end date.

You will not need to contact ASNA for another license unless there is a change to your system.

Temporary

The license period is temporary. You must specify a start and end date.

Start

Enter the starting date of the licensing of the specified product according to the date format you have selected. This is the date in which the product was installed.

End

Enter the ending date of the licensing of the specified product according to the date format you have selected. This should be approximately 30 days in which the product was installed. However, if you need an extension to the trial period, please contact ASNA.

5. Acceptance of a valid licensing code is displayed. Select **OK** to clear the message, then select **Exit** to close Registration Assistant.

If you receive DataGate error number 654 - "Not authorized to Object" after selecting the Register button, you do not have the proper authority to register DataGate for System i. See **Authority of the User Profile used to Register DataGate** below for more information.

Authority of the User Profile used to Register DataGate

The user profile used to register DataGate software must have ***CHANGE** authority to the ASNA_DG8 library. Additionally, it must have ***ALL** authority to the **DGPCODE** data area in ASNA_DG8, if it already exists (say, from a previous registration of the product).

The user profile must have these authorities regardless of the method used to register the program, such as the System i REGISTER command or the Windows PC Registration Assistant program.

As an example, suppose user profile ADBUSER is to be used to register DataGate. The successful execution of the following two System i commands prior to registration will insure that the required object authorities will be available to ADBUSER:

```
GRTOBJAUT OBJ(QSYS/ASNA_DG8) OBJTYPE(*LIB) USER(ADBUSER) AUT(*CHANGE)
```

```
GRTOBJAUT OBJ(ASNA_DG8/DGPCODE) OBJTYPE(*DTAARA) USER(ADBUSER) AUT(*ALL)
```

Remember that the DGPCODE data area may not exist yet if DataGate has never been registered on the machine. If so, the second command is not necessary.

- If the Registration Assistant is used, the user profile is the "Username" specified on the Work With Database Names dialog box of DataGate File Manager, and other tools.
- If the REGISTER command is used, the user profile in question is the one used to log on to the System i interactive session.

Configuring DataGate for System i

Configuring TCP/IP on Supported Windows Platforms

This process assumes that your machine is on a TCP/IP Network. If you are unsure of the type of Network, or do not understand any of the steps, please contact your Network Administrator.

You should use automated IP settings (DHCP) whenever possible, for the following reasons:

- DHCP is enabled by default.
- If your location changes, you do not have to modify your IP settings.
- Automated IP settings are used for all connections, and they eliminate the need to configure settings such as DNS, WINS, and so on.

To Configure TCP/IP on Windows Platforms

1. Open Network Connections by selecting **Start Menu – Settings – Control Panel**.
2. Double-click the **Network Connections** Icon to open the Network settings.
3. Click the connection you want to configure, and then, under **Network Tasks**, click **Change settings of this connection**.
4. Do one of the following:

- If the connection is a local area connection, on the **General** tab, under **This connection uses the following items**, click **Internet Protocol (TCP/IP)**, and then click **Properties**.
 - If this is a dial-up, VPN, or incoming connection, click the **Networking** tab. In **This connection uses the following items**, click **Internet Protocol (TCP/IP)**, and then click **Properties**.
5. Do one of the following:
 - If you want IP settings to be assigned automatically, click **Obtain an IP address automatically**, and then click **OK**.
 - If you want to specify an IP address or a DNS server address, do the following:
 - Click **Use the following IP address**, and in **IP address**, type the IP address.
 - Click **Use the following DNS server addresses**, and in **Preferred DNS server** and **Alternate DNS server**, type the addresses of the primary and secondary DNS servers.
 6. To configure DNS, WINS, and IP Settings, click **Advanced**.
If these differ from your configuration or you are not sure of the network configuration, please contact your Network administrator!
 7. Follow the procedure to **verify that TCP/IP is installed correctly**.

Verifying that TCP/IP is Installed Correctly

To verify that TCP/IP is installed correctly and can communicate with the AS400, you will need to know the AS400's TCP/IP address and **Full** domain name. If you do not know, please contact your Network Administrator!

To Verify that TCP/IP is Installed Correctly

1. Open an MS-DOS prompt by selecting **Start - Programs - Accessories - Command Prompt**.
2. Type the command **ping** followed by the TCP/IP address of the AS400.
3. If TCP/IP is functioning correctly, you should receive four replies.

Naming a System i Database

To Name a System i Database For TCP/IP Connectivity

1. Select **Work with Database Names...** from the Database menu. The Work with Database Names dialog box will display.
2. Select the browse button in the Database section to select the database server. The Select Database dialog box will display.
3. In Additional TCP/IP server, enter the Host name or IP address of the System i.
4. Select the **Add** button to add the TCP/IP server. The Host name or IP Address will be added to the list of available servers.
5. Click on the **plus** sign button next to the Host name or IP Address (or double-click on the name). After the TCP/IP connection is made, the database **label** for the System i is displayed.
If you see a label (typically DB2), then you have made a successful connection.
If you don't see a label, then there is an error and recommend that you review the "Troubleshooting" Section.
6. Click on the database **label**, and the server and label fields will be set to your selection.
7. Select the **OK** button to continue and return to the Work with Database Names dialog.
8. In **Name**, enter the name your programs will use to access this System i.
9. For Example, you **can** use ***REMOTEDFT**, **if** your existing applications have been referenced with this name.
10. Enter your **user name**, **password**, and **password confirmation** in the **Account to Use on server** section.
11. Select the **Add** button to complete adding a database name. A dialog box will display stating that the database name has been added.

Note: You can also easily name a database by selecting Database Wizard from the Database menu.

Configuring Multiple Versions of DataGate for System i Using TCP/IP

To Configure an Additional DataGate for System i on the same System i using TCP/IP

1. Create a new installation library.
2. Install DataGate into the newly created library by following the steps found in the Installation Notes in the sections entitled **Installing DataGate for System i using FTP** or **Installing DataGate for System i using a System i CD-ROM drive**.

Note: Make sure to specify an unused port, a new TCP Service Table Name, and the new Library specified in Step 1.

Troubleshooting

Troubleshooting System i TCP/IP Connectivity

If you are unable to connect to the System i database from ASNA's DataGate Database Manager, the following information may help identify possible incorrect setups on the System i.

It is assumed that TCP/IP configuration has been completed correctly on the PC side. If you are unsure whether TCP/IP is installed or correctly configured on your PC, contact your network administrator for assistance.

TCP/IP names are a combination of host names (machine names) and domain names. A machine name for TCP/IP does not have to match the System i machine name; however, it will be a unique name - and it can be the same as the System i machine name.

Throughout this example, the machine name used is 'machine', and the System i name is actually 'S1037242'. The domain name used throughout this example is 'domain.com'. Together the machine name and the domain name make a 'complete' TCP/IP name - 'machine.domain.com'. At your site, you should use your own domain name and own machine name.

1. First check to see if you are able to **ping** the System i by name from your PC. For example, if the TCP/IP name of the System i is '**machine.domain.com**,' then the following command should be issued from your machine from a DOS Box:
ping machine.domain.com
 - If you do not get a 'reply' from the machine that was pinged, then TCP/IP may not be configured correctly, either on your machine or on the System i. If you receive a "**Bad command or filename**" error message when typing the **ping** command, your machine may not have TCP/IP installed. Please check with your network administrator to make sure your machine has TCP/IP capability.
 - If you do get a response from the System i when the **ping** command is issued, then it is still possible some settings on the System i may be incorrect. From a command line on the System i, issue the following command: **cfgtcp**.
2. From the **Configure TCP/IP** menu screen that appears, select the **Work with TCP/IP Interfaces** (option 1).
3. The following menu screen will appear.

You should see something similar to this screen. If you do not, then TCP/IP is probably not configured on the System i properly, or it may not be completely installed. Check with your System i administrator to make sure the System i has TCP/IP installed.
4. If there is an internet address other than 127.0.0.1 listed, select that address and enter an **option 5** command to display the setting for that IP address.
 - The **Interface status** should indicate **Active**. If it does not, then the TCP/IP services, although installed, may not be started, or it may have terminated. The TCP/IP services should be started.
 - Try re-connecting to the System i database after restarting the TCP/IP services. (To start the TCP/IP services you must have sufficient authority rights and issue the following command from a menu prompt: **STRTCP**). After you have done this, then issue another **ping** command to see if you get a reply.
5. If you reach this point and are still having problems accessing the System i via TCP/IP, then **F12** back to the main configuration screen for TCP/IP (**Configure TCP/IP**) and enter option 21 (**Configure Related Tables**) from the main TCP/IP configuration menu.
 - On the **Configure Related Tables** menu screen that appears next, select option 1, **Work with Service Table Entries**. You will then see the **Work with Service Table Entries** menu screen. Scroll through the list of services to find the **DataGateServer** entry.
 - If there is no entry here, then that is the problem. Make sure you perform the installation section for the System i as stated earlier in this chapter.
 - If the **DataGateServer** entry is found, then the default port will be 5042 (unless it was installed with a different port). It is strongly suggested to use Port 5042.

Note: The protocol listed in the service table entry for the 'DataGateServer' service should be **'tcp'**. It is case sensitive, so if the letters are uppercase, you will need to remove the service and re-add the service with lower case letters.

Troubleshooting DataGate Service

If you are unable to start the DataGate Service, the following steps will assist in trouble shooting the possible causes.

When the DataGate service job is submitted for execution, the job is submitted under the user profile of **DG8SVCPRF**. This user profile is created during the installation and the system value for the Printer option will be assigned to this user profile. If the DataGate service job has trouble starting, a one page report outlining the possible cause of the problem will be generated for the user DG8SVCPRF and printed to the assigned printer. This report will not print unless the Output Queue associated with this printer automatically prints the generated reports. Otherwise, to view the list of reports that have not printed for this user, enter the following command:

WRKSPLF SELECT(DG8SVCPRF)

At this point you will need to contact ASNA for further assistance.

*The most probable cause for the DataGate service job not starting is if the current DataGate service job is terminated with an **ENDJOB** command, subsequent attempts to start the service will not be successful.*

1. If the DataGate service job is not currently running and it won't start by issuing the **STRDG8SVR** command, enter the following command:
NETSTAT
2. Select **Option 3**. Work with TCP/IP Connection Status.
3. Select **F14** to Display Port Numbers In the Local Port column, locate the Port Number you assigned as the Port for the DataGate Service (The default Port Number is 5042).
4. You will need to end this connection by selecting **Option 4**.
5. When this connection is ended successfully, you may now execute the **STRDG8SVR** command.

Troubleshooting a DataGate Job that is Not Terminating

If you notice that a DataGate Job is still running after a client connection is lost, this is due to a TCP/IP feature called "**Keep-Alive**". Refer to the following to change the system's default Keep-Alive value.

When the database connection is TCP/IP, the server machine utilizes a TCP/IP feature called "**Keep-Alive**". Keep-Alive packets are used to probe a connection that has been inactive for a long time. The server initiates a disconnect when the probes do not get through.

This means that if the client connection is lost for a prescribed length of time, the server sends a disconnect message to its server job (usually the result of a system crash or power-down).

The default Keep-Alive setting for Windows NT and System i is **two hours**, meaning that an DataGate thread or DataGate job would remain active for 2 hours **after** connection was lost with the client. The 2-hour default may be an unsatisfactory period of time for you, as files would continue to remain open, etc. on an abnormal disconnection until the Keep-Alive time had elapsed.

Refer to the following to modify the server machines' respective Keep-Alive period.

System i

1. Request the Configure TCP/IP menu by executing the command: **cfgtcp**
2. Select **menu item 3 - Change TCP/IP Attributes**.
3. Set TCP/IP Keep-Alive to the **number of minutes** desired. (Note: 2 to 5 minutes should work well in most cases).

Windows NT 4.0

WARNING: Using Registry Editor incorrectly can cause serious, system-wide problems that may require you to reinstall Windows NT to correct them. Microsoft cannot guarantee that any problems resulting from the use of Registry Editor can be solved. Use this tool at your own risk. The following was derived from Article ID Q120642.

To Change these parameters, use the following procedure:

1. Run Registry Editor (REGEDT32.EXE).
2. From the HKEY_LOCAL_MACHINE subtree, go to the following key:

\SYSTEM\CurrentControlSet\Services\Tcpip\Parameters

3. The Value is "**KeepAliveTime**". If present (usually not), double click on it to edit in milliseconds. Otherwise, continue with Step 4.
4. Select "**Edit -> Add Value**".
5. For Value name, enter **KeepAliveTime**.
6. From the Data Type drop down list, select **REG_DWORD**.
7. Press **OK**.
8. In the DWORD Editor dialog, enter the number of milliseconds. Select the **Radix Decimal** option.
9. Select **OK**.
10. Enter the Keep-Alive value in milliseconds; e.g. 5 minutes = 300000 msec.
 - Valid Range: 1 - 0xFFFFFFFF
 - Default: 7,200,000 (two hours)

The parameter controls how often TCP attempts to verify that an idle connection is still intact by sending a Keep-Alive packet. If the remote system is still reachable and functioning, it will acknowledge the Keep-Alive transmission. Keep-Alive packets are not sent by default. This feature may be enabled on a connection by an application.
11. After typing in the value, use the "Data Type" checkbox to set the value type.
12. Select **OK**.
13. Exit the Registry Editor.
14. Reboot the system to make the change take effect.

Setting up a Subsystem

Basically, to set up a subsystem, you need to have a **routing entry** with a compare value of "**QCMDB**" that runs the program **QCMD** in **QSYS**.

The subsystem that is used for the job queries must be set up with a proper routing entry in order for DataGate service to start. This routing entry **must run the program QCMD** in Library QSYS and have the compare value of 'QCMDB' or '*ANY'. If the subsystem has one of these routing entries, it may be used for DataGate.

Troubleshooting Manually Ending Users Jobs

If DataGate is shut down and there are users connected, their jobs will still be out there and you have to manually end them. However, after manually ending the users' jobs, DataGate may not start for about 5 minutes. It will start the first DG8SVC job and then end it until the 5 minutes (or so) is up.

It is likely that OS/400 is not reclaiming the DataGate TCP/IP port (5042) in a timely manner when the service and connection jobs are ended. When you "manually end" connections to DataGate, it may not have a chance to properly shut down TCP/IP resources. The system typically does not realize that those resources are no longer in use for some quantum.

The best way to avoid this is to let the connections and service end normally, though in abnormal situations this isn't always possible.

When you must use **ENDJOB**, etc., to end the connections and/or the service, you can sometimes use the **WRKTCPSTS** command to view the outstanding socket connections and end them. In such a case, if you find a socket in the "listening" state using the DataGate port, you can end this connection (but only if you are absolutely sure the service isn't running) using WRKTCPSTS. Likewise, if you find sockets connected to the DataGate port from external ports, you can end those (if you are sure that there are no jobs using the connection). The system will then reclaim the port, and a new instance of the DataGate service can use it immediately.

Finding a System i IP address

If the user does not know the IP address of the System i to which they are trying to Name a database, do the following. Note however, that most users should never have to do this, and you may want to "call your Network Manager" instead of performing the steps below.

1. On the PC, open a DOS window and enter:

```
arp -a
```

Note the IP addresses that appear. You will compare this list with the list generated in step 4. (Normally, there

will be only one difference, and it will be the addition of the System i's IP address).

- For **Windows 9x**: On the PC, click **Start - Run** the enter:

WINIPCFG

For **NT/2000**: At a DOS prompt, enter:

IPCONFIG

The IP address of the PC will display. Note this IP address, since you will use it in step 3.

- On the System i on a command line enter:

PING 'xxx.xxx.xxx.xxx'

where *xxx.xxx.xxx.xxx* is the IP addresses of the PC noted in step 2.

In the Configuration dialog, there's a drop down list box of adapters. Note that in most cases you will only have one Ethernet adapter, so the only challenge is to distinguish the Ethernet adapter from a dial-up adapter. This is usually easy, because dial-up adapters usually have a name like "**NdisWan4**".

*It is also wise to NOT attempt to ping a PC that is also running 5250 emulation, etc., to the object System i. That's because that System i will **already** be in the **arp** sorted "list", so one would not be able to know which is the target System i because the list would be the same in steps 1 and 4.*

- On the PC in the DOS window, enter:

arp -a

The IP addresses are sorted. Compare the list with the list in step 1 and note the new IP address, this is the System i's IP address.

Upgrading OS/400

If you are upgrading the OS/400 to a new level, **please contact ASNA** to ensure you have a compatible version of DataGate.

*Note that you will also need to reconfigure DataGate for TCP/IP access (i.e., the **ADDJOBQE** and **ADDSRVBLE** commands).*

Uninstalling DataGate

If you are running **multiple versions** of DataGate and wish to uninstall a single version; please note the following:

DO NOT delete or rename the ASNA_DG8 library. It is required for all versions of DataGate even though you may be installing into different library names.

For TCPIP access, you will need to remove the service table entry for the version of DataGate that you wish to uninstall. To verify the Service Table entry, display data area **TCPSERVICE** in the library that you are uninstalling. This data area contains the name of the Service Table entry that you will remove.

To uninstall a version of DataGate that was not installed in the default installation library ASNA_DG8, follow the steps below.

To Uninstall DataGate

- Remove the job queue entries for the **Jobq Datagate** and the **Jobq DG8_SVC** using the **RMVJOBQE** command. These Job Queues reside in the installation library. (Most commonly called ASNA_DG8).

If you have installed DataGate into a library other than ASNA_DG8, your job queues will reside in the library where DataGate is installed.

- Delete the Job Queues **Datagate** and **DG8_SVC** using the **DLTJOBQ** command.
- Remove Service Table Entry for TCPIP access using the following command.
RMVSRVTBLE SERVICE('DataGateService') PORT(5042) PROTOCOL('tcp')
- Delete the DataGate installation library using the **DLTLIB** command.

DataGate is now uninstalled.

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Release Notes

DataGate Client Compatibility

- ASNA DataGate® for System i 8.1 is compatible with DataGate Client versions 7.1 and 7.2.

Character Data Translation

- One of the most important and overlooked features of ASNA DataGate is its ability to render character data (database fields and text) in various character encodings, as dictated by platforms and globalization requirements. Using the facilities of the System i and Windows, DataGate not only supports transparent System i-based EBCDIC character translation, but also the unique international character sets supported by particular platforms.
- A Character Data Translation document entitled **Character_Data_Translation_in_DataGate_Rev_2.doc** is available that discusses System i, Windows, and DataGate character translation functionality; past and present. By illuminating DataGate's translation techniques and corresponding facilities, you are better equipped to configure and maintain robust character data applications. The document assumes some familiarity of applications programming with Windows, the System i, and DB2/400 database architecture.

The document can be accessed as an Adobe .PDF from the following address:

[http://devnet.asna.com/documentation/PDF Files/Character Data Translation in DataGate Rev 2.pdf](http://devnet.asna.com/documentation/PDF%20Files/Character_Data_Translation_in_DataGate_Rev_2.pdf)

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