



Network Station Manager Version 2

AS/400 Installation



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Agenda



- **Software Requirements**
- **V2R1 Installation: What's New?**
- **Pre-Installation tasks**
- **Installation tasks**
- **Migration**
- **AS/400 Network Station Setup Wizard**
- **Summary - Getting Started: AS/400**
- **Additional Information Sources**



Notes



The purpose of this session is to familiarize you with the installation of IBM Network Station Manager Version 2 Release 1 on the AS/400. However, since this is an introductory session, it is important that you read the appropriate chapters of the Installing IBM Network Station Manager for AS/400 manual, SC41-0684.

During this session, a number of different topics will be discussed. As shown on the Agenda foil, I will first be describing the software which is required to boot IBM Network Stations from an AS/400. For those of you who have installed Version 1 Release 3 (V1R3) of Network Station Manager, I have included a foil listing the key differences in a V2R1 installation. Subsequently, I will introduce you to the pre-installation and installation tasks which you should become familiar with. If you currently have V1R3, you will be sure to find the migration information useful. I also felt it was important to discuss the new graphical Network Station Setup wizard which replaces the V1R3 'green screen' Setup Assistant menus. I will then end this presentation with a summary foil of 'How to Get Started' and a list of useful sources for more information.

Let's begin by looking at the software requirements.

Notes



As you can see on this foil, there are several software prerequisites needed to support a Network Station boot environment on your AS/400.

In addition to having OS/400 V4R2 (5769-SS1) or later with the OS/400 Host Servers (option 12) installed, your AS/400 must have the TCP/IP Connectivity Utilities (5769-TC1) product installed. The TCP/IP Connectivity Utilities product ships automatically with OS/400 on the media from IBM. Also, if you have a V4R3 or V4R4 AS/400 then the product IBM HTTP Server for AS/400 (5769-DG1) is required.

After the above prerequisites have been met, the IBM Network Station Manager for AS/400 product (5648-C07) must be installed. However, the 128 bit IBM Network Station Manager for AS/400 product (5648-C08) is an option available to customers in the USA and Canada.

A new graphical based Network Station Setup wizard, which will be discussed later, requires a PC with Client Access Express V4R4M0 installed. In addition, the Client Access Express Service Pack 1 or later must be installed and the AS/400 NetServer server must be started. Finally, the Network Component of Operations Navigator is also required.

V2R1 Installation - What's New?



- **Graphical Setup Assistant via Operations Navigator (replaces STRNSSA)**
- **Network Station Manager for AS/400 R3 coexistence**
- **Base directory (e.g. NetworkStationV2)**
- **Component install**
 - OPTION(*BASE) -- for Series 2800, Series 2200
 - Install OPTION(1) also -- for Series 1000s, Series 300s
- **Post installation migration utility**
- **128 bit version product install**
- **CD media only**

Notes



As I just mentioned, the graphical Network Station Setup wizard is new with V2R1 and it replaces the V1R3 command STRNSSA (Start Network Station Setup Assistant). In addition, the Network Station Manager for AS/400 V1R3 can coexist on the same server with Network Station Manager V2R1. This coexistence may be necessary; for example, if you are currently using twinax Network Station models. Although V2R1 does not support the twinax models, existing users of them can still get the V1R3 functions that they are accustomed to since V1R3 can coexist with V2R1.

For those of you who have installed Network Stations in the past, you know that when the Network Station Manager for AS/400 product is installed, the AS/400 Integrated File System is used to hold much of the code, preference files, and so on. In V2R1, the new base directory is NetworkStationV2 instead of NetworkStation.

A new V2R1 capability allows the selection of one or both of the following options in the RSTLICPGM command: *BASE and Option 1. The *BASE component must be installed to support Series 2800s and Series 2200s. However, if you will be supporting Series 1000s and/or Series 300s, then you must also install Option(1) using RSTLICPGM.

Another new aspect of the V2R1 installation is the Migration Utility. This utility will be discussed in more detail later.

Customers in the USA or Canada also have the option of installing the 128 bit Network Station Manager for AS/400 product, 5648-C08 in addition to the 5648-C07 product.

Lastly, the V2R1 release can be ordered on CD via a part number and will not be available for download from the Internet.

Before we discuss the installation tasks, let's take a look at some pre-installation tasks.

Pre-Installation Tasks



- **Obtain Installing IBM Network Station Manager for AS/400 manual (SC41-0684)**
 - Online at www.ibm.com/nc/pubs
- **Install/migrate to OS/400 version (V4R2 or later)**
- **Do you need Token Ring or Ethernet models?**
- **Determine/verify memory size of Network Stations**
- **Purchase/Install any required LAN/network hardware**
- **Obtain IBM Network Station Manager V2R1 (5648-C07) ***
- **Optionally order 5648-C08 IBM Network Station Manager for AS/400 -- 128 bit version (USA and Canada only) ***

* See www.ibm.com/nc for Software ordering information (or the V2R1 announcement letter)

Notes



As I mentioned before, you should obtain a copy of the manual Installing Network Station Manager for AS/400, SC41-0684. Although this manual should ship with your software CD, you can view it online or download it from the web site: www.ibm.com/nc/pubs.

Certainly, another critical step is to ensure that you currently have or plan to migrate to a supported OS/400 version like V4R2, V4R3 or V4R4.

If we turn to the hardware area, you will need to decide which models of the IBM Network Station you will be using, will you need Token Ring and/or Ethernet Network Station models, and will you need LAN hardware? It is also very important to determine the required Network Station memory size; this size will vary depending on the applications that your users need. V2R1 memory sizing information can be found online at the www.pc.ibm.com/support web site by selecting the 'Network Station' brand and searching on 'memory'.

Finally, you will need to order V2R1 of the IBM Network Station Manager for AS/400 product and optionally the 128 bit 5648-C08 product (if you are in Canada or the United States). Ordering information can be found on the web site www.ibm.com/nc or in the V2R1 announcement letter. Essentially, the V2R1 release CD can be ordered via part number through either IBM Direct, your local IBM Representative or Business Partner. There are different part numbers for the software CD depending on your geography, Network Station models being used and platform. For example, customers in the US and Canada who will be using Series 2xxx models in their AS/400 environment can use the part number 30L9882 to order IBM Network Station Manager V2R1 for AS/400, 5648-C07.

Pre-Installation Tasks (continued)



- **Obtain latest V2R1 information - see www.ibm.com/nc**
 - Select "Support" link
 - Click on "Hot News"
- **Obtain and/or create existing and planned network diagram**
- **TCP/IP planning, installation, configuration information in:**
 - IBM Network Station Manager for AS/400 Installation manual, SC41-0684 (online at www.ibm.com/nc/pubs)
 - TCP/IP Fastpath Setup manual *
 - TCP/IP Configuration and Reference manual *

** available online at as400service.ibm.com*

Notes



In addition to ordering the V2R1 software, you should obtain the latest V2R1 service information. The latest service news regarding PTFs, etc. can be found by selecting 'Support' and then 'Hot News' at the www.ibm.com/nc web site.

If you do not already have a current diagram of your network, please obtain one since an understanding of your TCP/IP network will prove very helpful during the implementation of IBM Network Stations.

If you are new to TCP/IP, implementing a TCP/IP based network may seem to be a very challenging task. Although planning for and setting up a TCP/IP based network is not a trivial effort, there are sources of information which can be helpful. In particular, the TCP/IP Fastpath Setup manual can be very helpful in getting started, especially if your network is relatively simple. In addition, more information can be found in the Installing Network Station Manager for AS/400 manual (SC41-0684) and the TCP/IP Configuration and Reference manual. Although the Network Station related manuals can be found online at the www.ibm.com/nc/pubs site, the TCP/IP manuals are available online at the web site as400service.ibm.com by selecting the 'Technical Publications' link.

Now that we've looked at a number of pre-installation tasks, we can go on to the Installation Overview topic.

V2R1 Installation Overview



- **Read appropriate chapters in IBM Network Station Manager for AS/400 Installation manual, SC41-0684**
- **Obtain latest V2R1 service/ptf information - see www.ibm.com/nc**
 - Select "Support", Click on the "Hot news" topic
- **Order group PTF SF99083**
 - install any prerequisite PTFs
- **Follow install steps in above manual, SC41-0684**
- **Use RSTLICPGM to install 5648-C07 (optionally 128 bit 5648-C08)**
- **Install any recommended Network Station Manager PTFs**
- **Use Migration Utility**
 - if V1R3 will coexist with V2R1 on same server
 - if V1R3 preferences need to be migrated
- **Use IBM Network Station Setup Assistant wizard**

Notes



After obtaining the Installing Network Station Manager for AS/400 manual (SC41-0684), please read the appropriate sections to help ensure a smooth installation. One of the steps in the Installing chapter indicates that you should obtain the latest PTF information by going to the Support link on the www.ibm.com/nc web site and searching on 'PTFs'. Alternatively, service information should be available online at this same site by selecting the 'Support' link and then selecting the 'Hot News' topic.

As with Network Station Manager V1R3, there is a critical group PTF for V2R1 which must be ordered. This group PTF, SF99083, will contain any prerequisite fixes and recommended Network Station Manager for AS/400 PTFs. As the installation steps in the manual state, any prerequisite PTFs must be applied before installing the Network Station Manager for AS/400 product. Remember, it is very important to **follow** the steps in the installation chapter of the manual, SC41-0684. These steps will walk you through the installation of the Network Station Manager for AS/400 product 5648-C07 as well as the optional 128 bit 5648-C08, if desired. After you have installed the product, you will then use the SF99083 group PTF CD to install any recommended Network Station Manager PTFs (or Program Temporary Fixes).

If you currently have V1R3 (5648-C05), then you will need to run the Migration Utility if V1R3 will coexist with V2R1 on the same AS/400 or if you have V1R3 preference files to migrate.

One of the installation tasks is to use the new graphical IBM Network Station Setup wizard to finish the preparation needed on your AS/400 to support Network Stations. Since this wizard will be discussed later, let's focus now on the Migration Utility.

V1R3 to V2R1 Migration



- **Must refer to Chapter 4 in SC41-0684**
 - if migrating from V1R3 to V2R1 of Network Station Manager
 - if V2R1 will coexist with V1R3 on server
- **Migration involves:**
 - migrating software release/preference files (via utility)
 - ▶ See Chapter 4 for command and parameters
 - migrating existing hardware -- i.e. client migration (if desired)
 - ▶ See Ch. 4, 'Migrating from V1R3 to V2R1'

Notes



As I just mentioned, the Migration Utility must be run if you are migrating from V1R3 to V2R1 and/or if V1R3 and V2R1 will need to coexist on the same AS/400.

Migration to V2R1 from V1R3 of Network Station Manager for AS/400 involves migrating the software release and preference files via the utility as well as migrating existing client hardware, if desired. It is critical that you read the 'Migrating from V1R3 to V2R1' chapter in the Installing Network Station Manager for AS/400 manual, SC41-0684. This chapter discusses migration in general, migration considerations, running the utility and client hardware migration.

V1R3 to V2R1 Migration Utility



- **Migration Utility is NOT run automatically**
 - Use the following command after product installation:
call pgm(qytcv2/qytcmmumu) parm(*parameters...*)
 - For example, parameters specified can:
 - ▶ migrate everything (all users, groups, terminals, system preferences)
 - ▶ migrate all or specific users, groups, terminals
 - ▶ migrate just the system preferences
 - ▶ enable client hardware migration

- **Utility can be called multiple times**
 - V2R1 configuration and/or user data is overwritten each time

- **One way migration only - from V1R3 to V2R1**

Notes



It is important to note that the Migration Utility is **not** run automatically for you; you must issue the command **call pgm(qytcv2/qytcmmu) parm(parameters...)** to run the utility. The allowable parameters are documented in the migration chapter of SC41-0684. The parameters are used to indicate the scope of the migration. For example, you might initially want to migrate everything or you might want to migrate in phases. As shown here, the parameters can be used to:

- migrate everything (all users, groups, terminals and system preferences) or
- migrate all or specific users, groups or terminals or
- migrate just the system preferences and/or
- enable client hardware migration

If desired, your migration from V1R3 to V2R1 can be done in phases since the migration utility can be called multiple times. However, the V2R1 configuration and/or user data is overwritten each time you run the utility.

In addition, the Migration Utility only goes one way ... from Version 1 Release 3 to Version 2 Release 1 and not the reverse.

AS/400 Network Station Setup Wizard



- **New graphical user interface - via Operations Navigator**
 - Replaces 'green screen' Setup Assistant (STRNSSA)
- **See details on running wizard in SC41-0684**
 - Client Access Express must be installed on PC
 - ▶ Latest Client Access Express Service Pack needed
(www.as400.ibm.com/clientaccess/express.htm)
 - Verify that AS/400 NetServer is started
 - Use CA Express Selective Setup to add wizard component to Operations Navigator
 - Open Operations Navigator
 - ▶ Expand the view for your AS/400
 - ▶ Click on 'Network', right click on 'IBM Network Stations'
 - ▶ Click on 'Add Network Stations to AS/400'

Notes

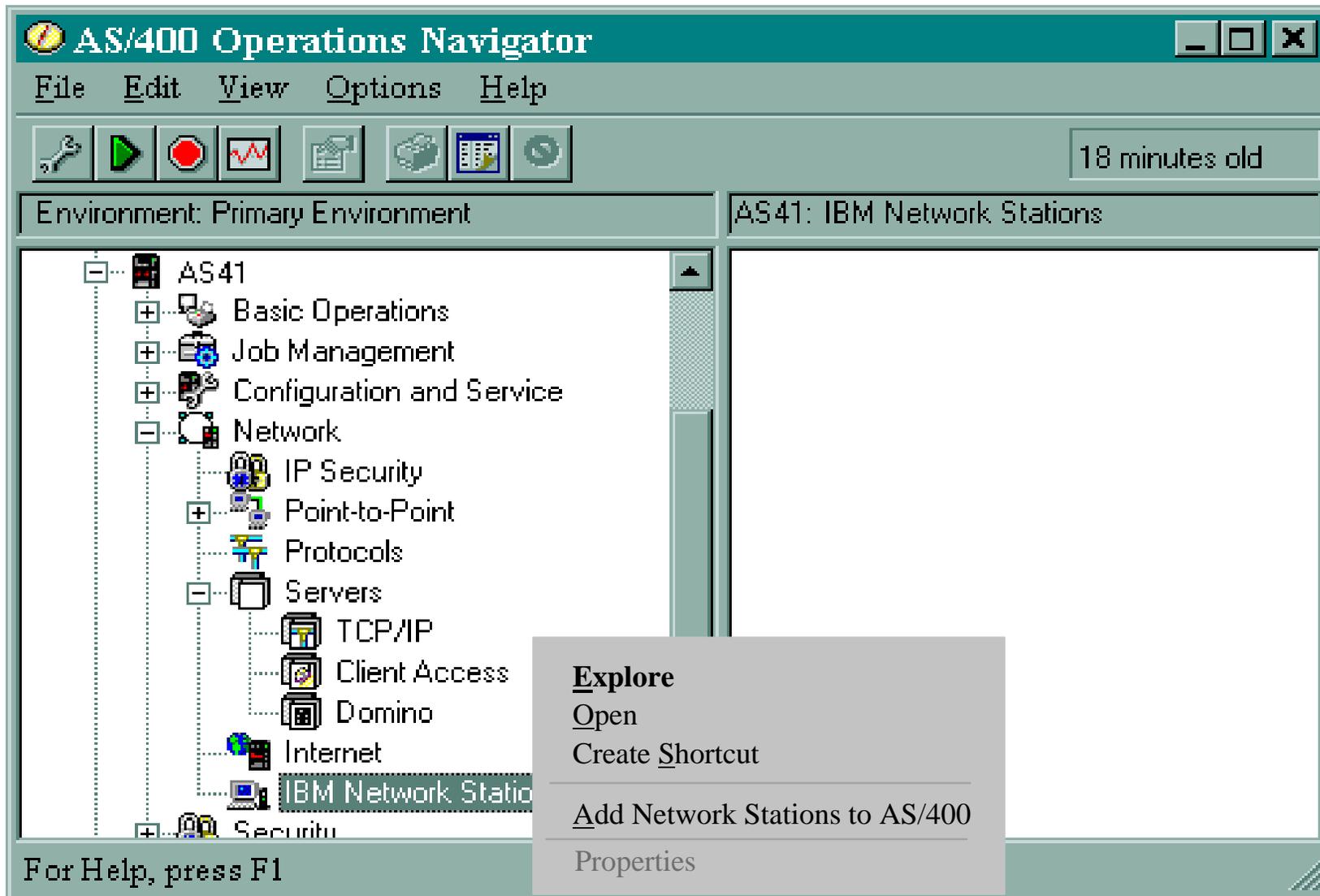


In addition to many other enhancements in V2R1, it provides a new graphical setup tool called the Network Station Setup wizard. This Operations Navigator based wizard replaces the V1R3 'green screen' Setup Assistant tool and requires a PC with Client Access Express. In addition, a minimum of Service Pack 1 must be installed on Client Access Express. Information on Client Access Express and the latest Service Pack can be found online at www.as400.ibm.com/clientaccess/express.htm. After installing the Service Pack, you must ensure that the AS/400 NetServer is started (through Operations Navigator) and then use the Client Access Express Selective Setup to add the wizard component to Operations Navigator. After the wizard component has been installed, you can start Operations Navigator, expand the view for your AS/400 and then click on 'Network' followed by a right click on 'IBM Network Stations'. In the resulting pop up window, click on 'Add Network Stations to AS/400' and then follow the screen prompts as directed. More information on running the wizard as well as what it does can be found in the Installing Network Station Manager for AS/400 manual, SC41-0684. However, let's go to the next foil and see what the Operations Navigator looks like.

Operations Navigator Screen



- Right click on **IBM Network Stations**, left click on **Add Network Stations to AS/400**



Notes

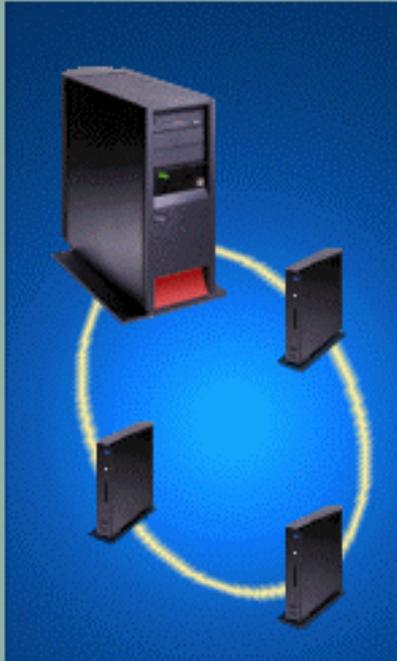


As shown here, this Operations Navigator window results when you expand the 'Network' view and then right click on 'IBM Network Stations'. When you click on 'Add Network Stations to AS/400', the next foil shows the screen which will appear.

Setup Assistant Wizard - Welcome Screen



AS/400 Network Station Setup



Welcome to the AS/400 Network Station Setup Wizard. This wizard configures the AS/400 for your IBM Network Stations, including TCP/IP and DHCP or BOOTP configuration for the AS/400.

After successfully completing this wizard, your Network Stations will be able to boot from this AS/400.

You can exit this wizard at any time by clicking Cancel. Press F1 to receive detailed information throughout the wizard.

Click the Planning Form button to see a list of information needed to set up your Network Stations. You should complete the Planning Form if you are unfamiliar with TCP/IP.



< Back

Next >

Cancel

Help

Notes



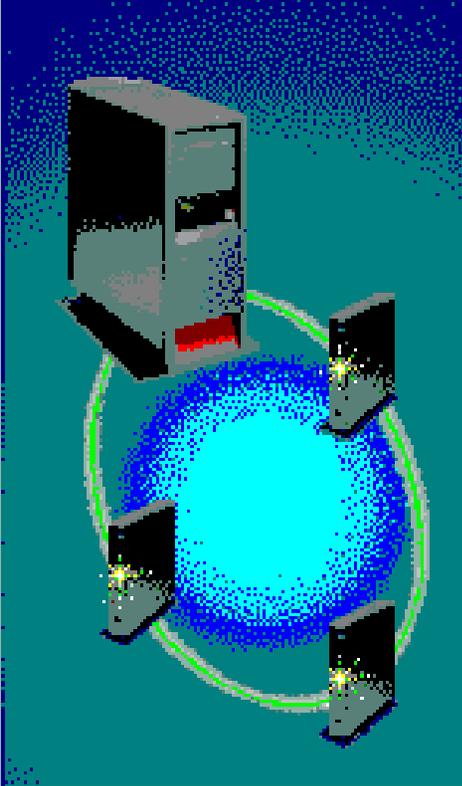
This welcome screen introduces you to the Setup wizard and also allows you to view a Planning form which is particularly useful if you are new to TCP/IP. When you are ready, you can click the Next button to proceed to the next wizard window. As you go through the screens, the windows and screen prompts will vary depending on the selections you make. For example, if you do not choose DHCP as your boot method, no further DHCP related fields will appear.

After completing the appropriate prompts, a final window (like the one shown in the next foil) will appear to indicate whether or not the wizard was successful.

Setup Assistant Wizard - Completion Screen



Configure the AS/400 for Your IBM Network Stations - AS41



The wizard will now configure and verify the AS/400 for your IBM Network Stations.

Status	Result
Setting the TFTP server to autostart...	Success.
Setting the HTTP server to autostart...	Success.
Setting the Telnet server to autostart...	Success.
Setting system to retain server security data...	Success.
Starting TCP/IP...	Success.
Setting the HTTP server directives...	Success.
Starting the Network Station Login Daemon...	Success.
Configuration and Verification Completed...	

Close Help

Notes



This final completion window indicates the various steps the wizard has taken and whether they were successful or not. For example, you can see in this screen that certain critical TCP/IP servers were set to autostart, directives were added to your HTTP server and that the Network Station Login Daemon was started. The last item states that the configuration and verification had completed.

Although the Installing Network Station Manager for AS/400 manual (SC41-0684) contains a section listing what the wizard actually does, I have also included some of its key tasks in the following foils.

AS/400 Network Station Setup Wizard



- **Can configure or verify TCP/IP information:**
 - AS/400 host name and domain name
 - Host table entries, Domain Name Servers
 - TCP/IP interfaces, routes, gateways
 - Creates new line
- **Sets TCP/IP servers to autostart (TFTP, HTTP, Telnet)**
 - CHGTFTP AUTOSTART(*YES)
 - CHGHTTP AUTOSTART(*YES)
 - CHGTELNA AUTOSTART(*YES)
- **Select Boot method (DHCP, BOOTP, NVRAM)**

Notes



Although this is not an all-inclusive list, the Setup wizard can be used to configure and/or verify the TCP/IP configuration on your AS/400. Items that it can create or verify include your AS/400 host and domain name, host table entries, Domain Name Server identities, interfaces, routes, gateways and lines.

Also, the wizard ensures that required TCP/IP servers such as TFTP (Trivial File Transfer Protocol), HTTP and Telnet are set to autostart when TCP/IP starts. This is done by using the Change Attribute commands shown here.

In addition, depending on if you choose the DHCP, BOOTP or NVRAM boot method, certain other servers may be set to autostart such as BOOTP or DHCP.

AS/400 Network Station Setup Wizard



- **DHCP server configuration on AS/400**
- **Starts Network Station Login Daemon**
- **Sets AS/400 'retain server security data' system value**
- **Adds HTTP Server directives**
 - Enable POST
 - Enable Get
 - HostName xxxxxxx
 - Map, Pass, Exec statements

Notes



If you choose the DHCP boot method, the Setup wizard allows you to configure DHCP on the AS/400 for use by your Network Stations. Another task that it does for you is to start the Network Station Login Daemon server. This server must be active to successfully log in to an IBM Network Station.

In addition, the wizard will set the appropriate 'retain server security data' system value for you and add the correct, sometimes lengthy HTTP server directives. If any of you have ever typed in HTTP directives manually and made a typing error, you can definitely appreciate the fact that this wizard does it for you. The statements that are added for you include Enable Post, Enable Get, the AS/400 HostName, and the Map, Pass and Exec statements.

After Network Station Setup Wizard runs



- **Update boot code and/or boot monitor level ***
- **If V1R3 exists, ensure V1R3 NSLD is stopped: ***
CALL QYTC/QYTCUSVR ('ENDTCPSVR ')
- **Set DNS Support with NSM if using NVRAM or BOOTP for Series 300s, 1000s ***
- **If BOOTP, add Network Stations to BOOTP table ****
- **If needed, add statically defined Network Stations in DHCP ****

* See 'Before you continue' section in Installing chapter of SC41-0684

** See 'After installation and configuration' chapter in SC41-0684

Notes



After the Setup wizard has completed successfully, certain tasks should be considered.

If you are running a back level of boot code on a Series 2800, for example one dated 3/31/99, you may need to manually change the NVRAM settings to update the Network Station boot version before it will be able to successfully boot from the AS/400. Details on this should be available by selecting the 'Support' link and then 'Hot News' at the www.ibm.com/nc web site. Additionally, details on updating the boot code/monitor normally can be found in the manual Using IBM Network Station Manager, SC41-0690 which is online at the www.ibm.com/nc/pubs web site.

Also, if you will have V1R3 coexisting with V2R1 on the same AS/400, be sure to stop the V1R3 Network Station Login Daemon by issuing the command call `qytc/qytcusvr ('ENDTCPSVR')`.

If you are using Series 1000s or 300s, ensure that DNS support is enabled through NSM. Details on this can be found in the manual, Using IBM Network Station Manager.

Depending on whether you selected DHCP or BOOTP (instead of NVRAM), different actions should be or may need to be taken. If you selected BOOTP, then you will need to add Network Stations to your BOOTP table. The steps to accomplish this via Operations Navigator are described in the 'After installation and configuration' chapter in SC41-0684. This same chapter also discusses defining statically addressed Network Stations in DHCP. For example, there may be a Network Station with a locally attached printer which needs to be accessible on the network. If this is so, then a static address needs to be assigned to that Network Station so its address does not change.

After Setup Wizard runs (continued)



- **Configure printers (e.g. local, network printers) ****
- **Optimize AS/400 performance - Network Stations ****
 - Increase maximum frame size
 - Increase TCP/IP send and receive buffer sizes
 - Increase TFTP block size
 - Increase number of TFTP server jobs

** See 'After installation and configuration' chapter in SC41-0684

Notes



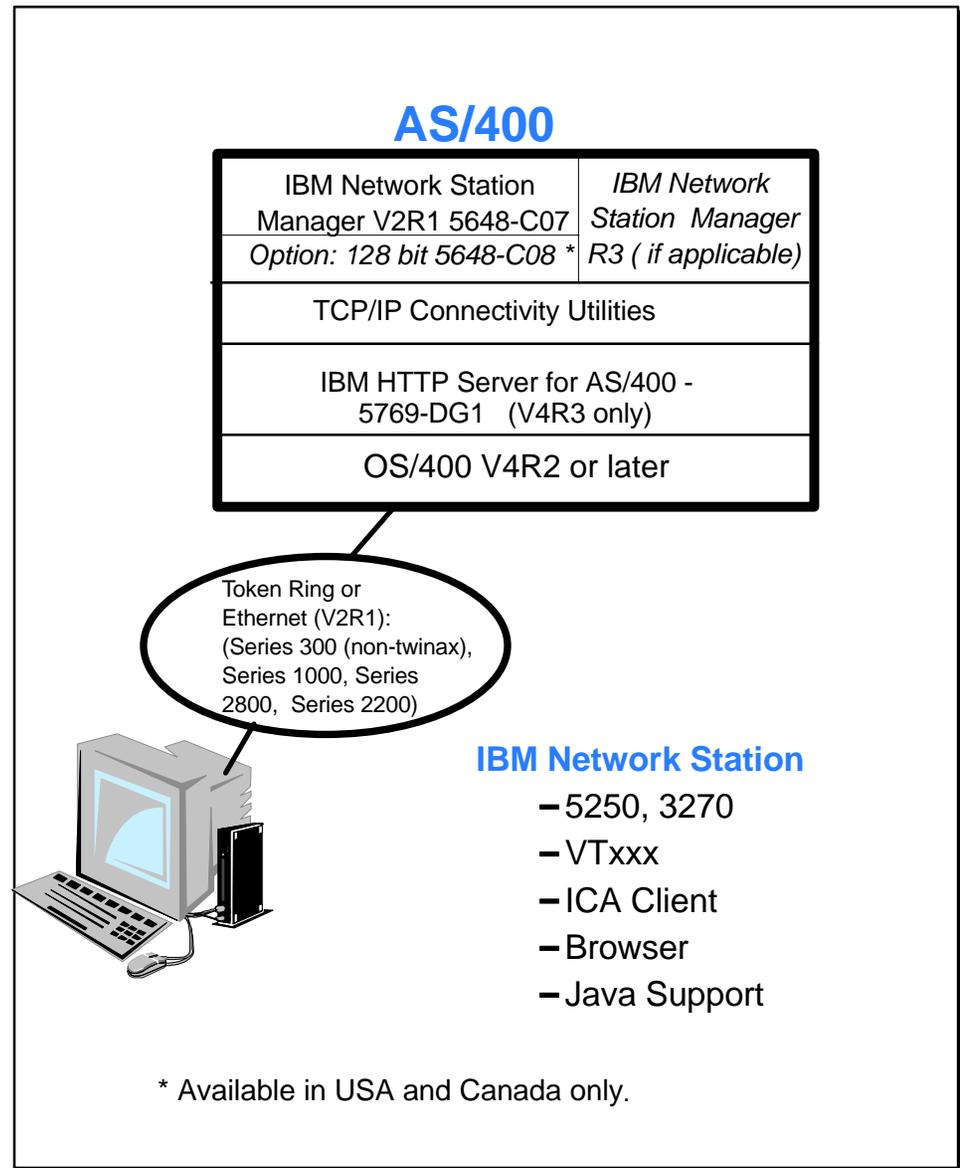
Speaking of printers, you will most likely need to configure printers in your Network Station environment. For example, you may want to print AS/400 output to a local attached Network Station printer. Details on configuring printers on the AS/400 can be found in the 'After installation and configuration' section in SC41-0684. In addition, the V2R1 redbook, SG24-5844 (available online at www.redbooks.ibm.com) contains a chapter on printing.

Finally, there are steps you can take on the AS/400 to optimize the TCP/IP network related performance of Network Stations. As shown here, you should increase the maximum frame size parameter in your line description if possible. In addition, you should increase the TCP/IP Send and Receive buffer sizes to 64000, increase the TFTP block size and possibly increase the number of TFTP server jobs if appropriate. These parameters are discussed in the 'After installation and configuration' chapter of the Installing IBM Network Station Manager for AS/400 manual, SC41-0684.

Summary - Getting Started: AS/400



- Install/Migrate to **OS/400 V4R2 or later**
- Do you need Token Ring or Ethernet models? V2R1 does not support *Twinax* model 341 or Series 100s, V1R3 coexists with V2R1.
- Complete Network Station **memory sizing**.
- Purchase/Install any required LAN hardware.
- Order IBM Network Station Manager V2R1.
- Obtain IBM Network Station Manager manuals.
See: www.ibm.com/nc/pubs
- Get V2R1 service info. & group ptf SF99083.
- Do **TCP/IP** planning, installation, configuration.
- Install IBM Network Station Manager software on AS/400. (Use directions in SC41-0684.)
- Use the **Setup Assistant** to verify, install and configure the AS/400 environment. PC with Client Access Express required.
- Run Migration Utility (if appropriate).
- **Update your QSTRUP program** with: STRTCP, STRTCPSVR *TFTP, *HTTP, *BOOTP (or *DHCP), STRHOSTSVR *all
- Use Operations Navigator to set **NSLD to autostart**, or add following to QSTRUP: CALL QYTCV2/QYTCUSVR ('STRTCPSVR ').
- Use NSM to create and/or change system wide, group, user and/or workstation level preferences. Setup/connect Network Stations.
- Follow steps in SC41-0684 for **recommended performance tuning** (e.g. TFTP block size).



Notes



I have included this summary foil for your information only and as such will not be discussing it any detail. It summarizes much of what we've already discussed and although it is not all-inclusive, it does provide a quick list of key 'Getting Started' tasks.

Additional Information Sources



● Web Sites

- as400service.ibm.com (Technical knowledge base)
- www.ibm.com/nc (IBM Network Station Home)
- www.pc.ibm.com/networkstation/support (Tech. support and services site)

● Publications (www.ibm.com/nc/pubs)

- IBM Network Station Manager for AS/400 Installation SC41-0684 *
- Using IBM Network Station Manager SC41-0690 *
- IBM Network Station Advanced Information *
- Setting Up IBM Network Station Hardware - Type 6384 *
- IBM Network Station Setup and Use - Type 8361 and 8362 *
- IBM Network Station Manager V2R1, SG24-5844 (redbook) **
- AS/400 TCP/IP Autoconfiguration: DNS and DHCP Support SG24-5147 **

● Online Help

- Desktop Help and IBM Network Station Manager help text

* See www.ibm.com/nc/pubs

** See www.redbooks.ibm.com

Notes



Since this session was intended to be an introduction to the installation of IBM Network Station Manager for AS/400, I have listed a number of helpful sources of information here.

Although the Network Station specific manuals are obviously very important, the web sites and the online help have proven very useful to other customers in the past. In addition, I will point out that there is a new redbook available, SG24-5844 which pertains to Network Station Manager V2R1 on all platforms. This redbook, as with others, is available online at www.redbooks.ibm.com. The Network Station related manuals are available online at www.ibm.com/nc/pubs.

I hope you have found this session useful. Thank you.