IBM

EL02
Setup Guide
V5 iSeries Dynamic TCP/IP

ITSO iSeries Technical Forum 2002

Chapter 1. Lab Setup Instructions - V5 Dymanic iSeries TCP/IP

The following chart shows an example of the lab environment used for Team nn.
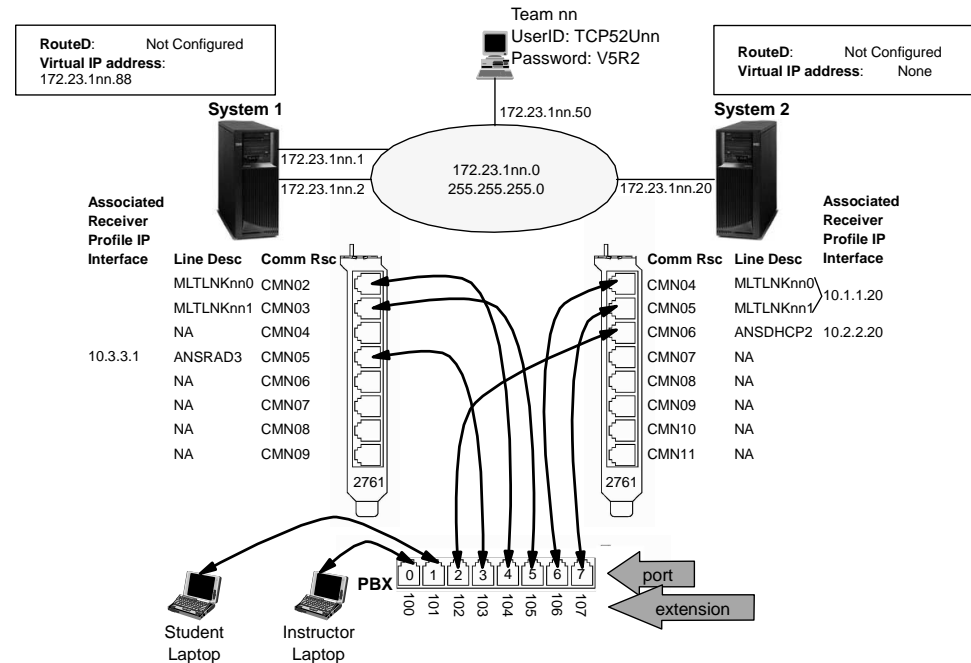

Figure 1. Lab environment and Team Structure

1.1 iSeries and client setup requirements

Ensure that you have the following hardware and software requirements for this lab project:

1.1.1 iSeries server requirements

For these labs you must have the following iSeries software:

- OS/400 V5R2 (5722-SS1)

  OS/400, Version 5 Release 2 Modification 0 (5722-SS1) with the CUM PTF ?? level driver and the following individual PTFs:

  - DNS:
  - DHCP:
  - QoS: SI05089
- PASE (5722-SS1 option 33)
- Host Servers (5722-SS1 option12)
- Domain Name Server (5722-SS1 option 31)
- TCP/IP Connectivity Utilities (5722-TC1)
- Client Access/400 Express for Windows (5722-XE1 V5R1M0)

For these labs you must have the following iSeries or AS/400e hardware:

- iSeries with a LAN interface. <System 1> needs two TRN interfaces. <System 2> needs just one. You can run the lab project on an Ethernet or a Token Ring

LAN. The recommendation is to use a Token Ring, since all drawings refer to a Token Ring network.

- For the DNS lab, we must have a system that can support PASE. Crudely, this is an AS/400e system (or later) and all iSeries models. For a complete list of AS/400e and iSeries systems that can use PASE see `http:// www.as400.ibm.com/developer/factory/pase/ehardware.html`

Additionally, there is a simple test to learn whether the PASE environment is properly installed and running on your AS/400e system or iSeries server. On a 5250 screen, type (OS/400 must be at V5R1 and Option 31 Domain Name System must be installed):

`CALL QDNS/QTOBPCHK  <ENTER>`

If PASE is not installed (but supported) you will receive a CPFB9C1.

If PASE is installed and supported on this hardware, then no messages appear. The call simply returns.

1.1.2 Client requirements

Much of the work the students will do is to configure via iSeries Navigator GUI. The students' PCs must meet the following requirements:

- Windows 95/98/NT/2K
- Client Access/400 Express for Windows V5R2 with the newest service pack. All of the iSeries Navigator components must be installed.

Also make sure the latest fix pack for Ops Nav is loaded: PTF level should be SI04484 via Client Access Properties:

- The PC has to be connected through a LAN interface, such as a Token Ring or Ethernet, to the local area network.
- A 500 MHz CPU
- 64 MBytes RAM for Windows 95/98/ME clients
- 128 MBytes RAM for Windows NT/2000 clients

1.1.3 Network requirements

Verify the following:

- The LAN network should be disconnected from the 'site' LAN - as you will be using DHCP.
- Token Ring or Ethernet LAN to which the AS/400 system and all the students PCs are connected.

  Note: if you are using Ethernet, the DHCP client configuration will be slightly different due to the MAC representation.

- TCP/IP setup. All PCs can access the iSeries servers.
- Ensure that nobody else is using the following address ranges in the lab environment:
  - 172.23.0.0

1.2 iSeries lab setup

You must setup the AS/400 system as well as the PCs prior to run the lab project. For the setup tasks you need to have available the information listed in Table 1.

Table 1. Lab Setup Information

Information	Value
iSeries host name	does not apply. No names are used in this lab (names are for people with week minds) (smile)
iSeries domain	none
LAN line description for iSeries system	TRNLINE
IP address for iSeries system	see Figure 1.
IP address range for PC	172.23.0.0
Lab user profile	TCP52Unn Password: V5R2

1.2.1 Creating the lab environment on the iSeries

Perform the following steps to setup your iSeries:

__ 1. Transfer the TCP52DMAST files to /tcp52dmast directory on the AS/400. Create the directory if necessary.

__ 2. Transfer the TCP52LMAST *SAVF to the QGPL library on your AS/400 system.

__ 3. Signon to the iSeries server using a user profile having all special authorities associated with the user class *SECOFR. Specifically, you must have *IOSYSCFG and *ALLOBJ special user authority.

__ 4. Restore the library TCP52LMAST using the following command:

```
RSTLIB SAVLIB(TCP52LMAST) DEV(*SAVF) SAVF(QGPL/TCP52LMAST) MBROPT(*ALL)
ALWOBJDIF(*ALL)
```

__ 5. Add the TCP52LMAST library to the library list:

```
ADDLIBLE LIB(TCP52LMAST)
```

__ 6. Run the setup utility by using the TCP setup Lab (TCPSETUP) command, as shown in the following example:

```
TCPSETUP FUNC(*CREATE) DTANUM(nn) RESETDHCP(*NO) RESETQOS(*NO)
```

```
                    Setup V5R1 TCP/IP lab (TCPSETUP)

Type choices, press Enter.

Program name . . . . . . . . . .    *CREATE        *CREATE, *DELETE, *RESET
number of user teams . . . . . .                   Number
Reset DHCP config  . . . . . . .    *YES           *YES, *NO
```

Program name (FUNC) gives you choice to select which function run. *CREATE option creates teh lab environment, *DELETE option deletes the lab environment, and *RESET option.

Number of user teams (DTANUM) specifies the number of teams that are supported during this lab session. The value specified on this parameter creates the actual setup for the student teams, starting with TCPUSR01. There is always one team added for the instructor. The instructor's team is TCPUSR00.

Reset DHCP config (RESETDHCP) with the default being *NO. This will reset the DHCP server configuration to one that is needed by the DHCP lab. It basically copies the dhcpsd.cfg file from /tcpdirmast to /qibm/userdata/os400/dhcp. This file contains a pre-configured DHCP setup as described in the planning worksheet for the DHCP lab for the Global Settings.

Reset QoS config (RESETQOS) with the default being *NO. This will reset the QoS server configuration to one that is needed by the QoS lab. It basically copies the policyd.conf file from /tcpdirmast to /qibm/userdata/os400/QoS/ETC. This file contains a pre-configured QoS setup.

1.2.2 General iSeries configuration (both systems)

__ 1. No port restrictions.

__ 2. Host table entries will not hurt, but keep them to a minimum.

__ 3. Make sure NetServer is up and running to allow mapped drives to the iSeries from the clients.

__ 4. Enter the following command to be able to vary on PPP line descriptions as required by this lab.

```
CHGNETA MDMCNTRYID(US)
```

1.2.3 iSeries <system_1> configuration

__ 1. Create two line descriptions for the LAN interfaces named TRNLINE1 and TRNLINE2. Assign a local administrered MAC address of 4000A0000001 for TRNLINE1 and 4000A0000002 for TRNLINE2. If you use more than one iSeries server to run the lab, it is recommended to use MAC addresses 4000B0000001 and 4000B0000002 for the second system. All other configured interfaces should deleted or made inactive.

__ 2. Pre-configure (enable) RADIUS NAS support in the Remote Access Services folder.

__ 3. Create on TRNLINE1 IP addresses 172.23.1nn.1 for each of the teams.

__ 4. Create on TRNLINE2 IP addresses 172.23.1nn.2 for each of the teams

__ 5. Configure RADIUS NAS for both Authentication and Accounting to a generic (I use 172.23.100.1 and 172.23.100.50 as a Team 00). Save this configuration.

__ 6. Configure a DHCP WAN Client on this system. This will cause you to create a DHCP server too.

1.2.4 iSeries <system_2> configuration

__ 1. Create one line description for the LAN interface named TRNLINE1. Assign a local administrered MAC address of 4000B0000001 for TRNLINE1.All other configured interfaces should deleted or made inactive.

__ 2. Create on TRNLINE1 IP addresses 172.23.1nn.20 for each of the teams.

1.3 Creating the lab environment on the student PC

It is assumed that all requirements mentioned in Chapter 1.1.2, "Client requirements" on page iv are met.

__ 1. Install the RadTac 2000 RADIUS Server. Make sure the two RadTac 2000 server icons are on the desktop.

__ 2. Make sure the following shortcut icons are on the desktop:
   - iSeries Navigator
   - DOS command prompt
   - Windows Explorer. Optionally have mapped drives to: \\172.23.1nn.1\root and \\172.23.1nn.20\root
   - My Network

__ 3. Each student PC should have the following network related settings:
   - LAA address: not needed
   - name: not needed.
   - IP address 172.23.1nn.50/24 (do not assign IP address via DHCP)
   - Domain name server: none
   - Domain name: none
   - Default gateways: none

__ 4. Ensure that the connections are working.

__ 5. On the client create a new iSeries Navigator connection to <system_1> by its IP address of 172.23.1nn.1. Make this the Management Central system.

1.4 Verifying the Lab Environment

This section describes how to verify the TCPSETUP command setup the lab environment correctly.

__ 1. Verify that the all user profiles needed for the lab are creates. Enter the command:
   `WRKUSRPRF TCP*` <Enter>:

```
Session A - [24 x 80]                                                    _ □ X
                          Work with User Profiles

 Type options, press Enter.
   1=Create    2=Change    3=Copy    4=Delete    5=Display
   12=Work with objects by owner

      User
 Opt  Profile     Text

 _    _____
 __   TCPUSR00    V5R1 TCP/IP user profiles (Brian R. Smith)
 __   TCPUSR01    V5R1 TCP/IP user profiles (Brian R. Smith)
 __   TCPUSR02    V5R1 TCP/IP user profiles (Brian R. Smith)
 __   TCPUSR03    V5R1 TCP/IP user profiles (Brian R. Smith)
 __   TCPUSR04    V5R1 TCP/IP user profiles (Brian R. Smith)
 __   TCPUSR05    V5R1 TCP/IP user profiles (Brian R. Smith)
 __   TCPUSR06    V5R1 TCP/IP user profiles (Brian R. Smith)
 __   TCPUSR07    V5R1 TCP/IP user profiles (Brian R. Smith)
 __   TCPUSR08    V5R1 TCP/IP user profiles (Brian R. Smith)
                                                              More...
 Parameters for options 1, 2, 3, 4 and 5 or command
 ===> _____
 F3=Exit    F5=Refresh    F12=Cancel    F16=Repeat position to    F17=Position to
 F21=Select assistance level           F24=More keys

MA    a              MW                                          09/00
```

__ 2. Verify that the lab directories were restored:
   WRKLNK OBJ('/*').

```
                        Work with Object Links

   Directory  . . . . :   /

   Type options, press Enter.
     2=Edit    3=Copy    4=Remove    5=Display    7=Rename    8=Display attributes
     11=Change current directory ...

   Opt    Object link         Type     Attribute    Text
   _      TCPDIR02            DIR
   __     TCPDIR03            DIR
   __     TCPDIR04            DIR
   __     TCPDIR05            DIR
   __     TCPDIR06            DIR
   __     TCPDIR07            DIR
   __     TCPDIR08            DIR
   __     TCPDIR09            DIR
   __     TCPDIR10            DIR
                                                              Bottom
   Parameters or command
   ===> _____
   F3=Exit    F4=Prompt    F5=Refresh    F9=Retrieve    F12=Cancel    F17=Position to
   F22=Display entire field           F23=More options
```

1.5 Preparing for the next lab session

This section has not been completed yet.

1.6 Deleting the lab environment

When all lab sessions are finished, delete the objects and definitions used for the lab.

1.6.1 Deleting the lab environment on the AS/400 system

The following list gives you an overview of the tasks performed by the TCPSETUP *DELETE command:

* Deletes the user profiles (TCPUSRxx) created for the lab and all objects owned by the user.
* Removes the /TCPDIRxx directories. Note: still a bug in this. You should delete them 'by hand' using a mapped network drive to the iSeries.

Perform the following steps to restore the original configuration:

__ 1. Due to a bug in the CL program you must delete all the /tcpdirnn in the IFS of the iSeries before you run the TCPSETUP program.

__ 2. Delete all lines descriptions MLTLNK*.

__ 3. Run the command as shown in the following example:

```
ADDLIBLE TCPLIBMAST
TCPSETUP FUNC(*DELETE) DTANUM(nn) RESETDHCP(*YES) RESETQOS(*YES)
```

__ 4. Delete the TCPLIBMAST library.

__ 5. Delete the AS/400 Operations Navigator from the PCs.

A small CL program called RESET (found in TCPLIBMAST/QCLSRC) can be edited and used to restore some of the system values on your system before you changed them all to iseries.itsoco.com.

1.7 Problems that might occur

This section describes some problems you may encounter during the lab setup or the lab itself.

This section has not been completed.