CICS® Universal Client Configuration

# Configuring CICS Universal Client for AIX® for Communications Server

CICS® Universal Client Configuration

# Configuring CICS Universal Client for AIX® for Communications Server

# Contents

# Chapter 1. Overview

The sample configuration in Figure 1 consists of a CICS Universal Client for AIX Version 3.1 acting as a client gateway for TN3270 clients. The client gateway connects to CICS Transaction Server for OS/390 Version 1.3 through APPC provided by IBM eNetwork Communications Server for AIX Version 5.0 on the client gateway and VTAM on the CICS server.

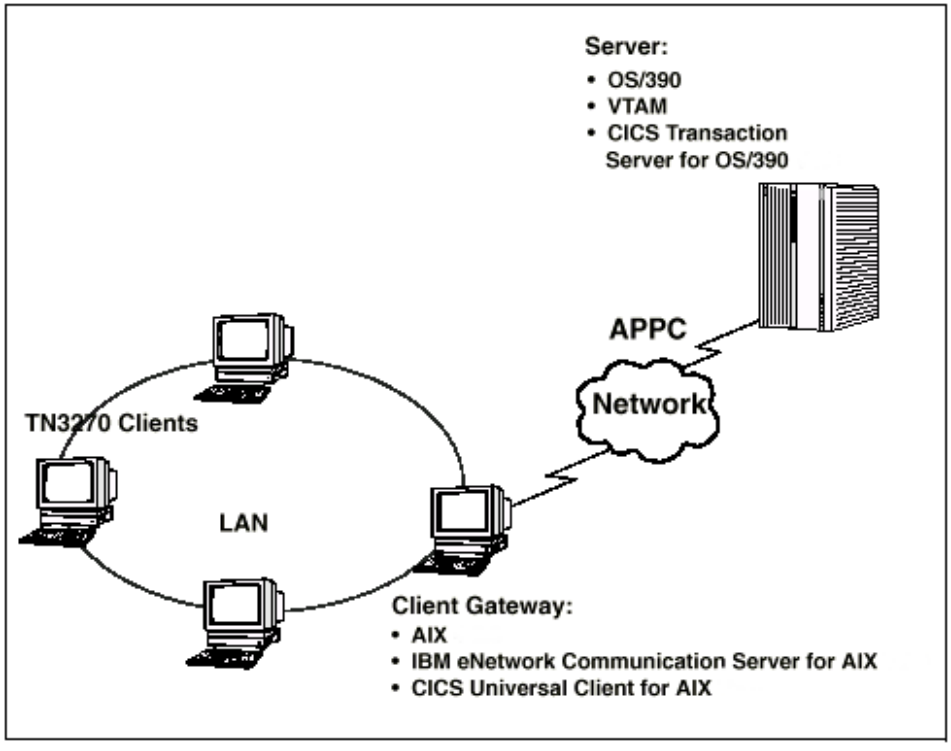


*Figure 1. CICS Universal Client for AIX connected to TS Version 1.3 through APPC*

In this document we cover the following topics:

# Chapter 2. Software checklist

The levels of software we used in the sample configuration are not necessarily the latest levels available. Check the relevant products for levels of compatible software.

We used the following software on the CICS server:

- OS/390 Version 2.6
  - Includes VTAM Version 4.5
- CICS Transaction Server for OS/390 Version 1.3

We used the following software on the client gateway:

- AIX Version 4.3.0
- CICS Universal Client for AIX Version 3.1
- IBM eNetwork Communications Server for AIX Version 5.0
- Java Runtime Environment (JRE) Version 1.1.8 for AIX (necessary for running the configuration tool and other tools.)

We used the following software on the TN3270 clients:

- Windows NT Workstation Version 4.0, or AIX Version 4.3.0
- TN3270

## Software checklist

# Chapter 3. Definitions checklist

Before you configure the products, we recommend that you acquire definitions for the parameters listed below. Reference keys, for example, **1** are assigned to definitions that must contain the same value in more than one product.

- VTAM
  - NETID **1**
  - PU **2**
  - LU **3**
  - XID **4**
  - Token Ring destination address **5**
  - APPL **6**
  - LogModeE **7**
- CICS Transaction Server for OS/390
  - ISC System Initialization Table (SIT) override
  - NetName **3**
  - APPLID **6**
  - DFHISC group
  - Modename in the LU6.2 sessions definition **7**
- CICS Universal Client for AIX Version 3.1
  - Local LU name **3**
  - Partner LU name **8**
  - Mode name **7**
- IBM eNetwork Communications Server for AIX Version 5.0
  - Node
    - Control Point Alias **2**
  - DLC
  - Port
  - Link Station
    - Adjacent node MAC address **5**
  - Independent LU Type 6.2
    - LU Alias
    - LU name **3**
  - LU 6.2 Partner LU

- Alias
- Fully qualified LU name **1** . **6**

– LU 6.2 Mode
- Name **7**

# Chapter 4. Matching definitions

In the sample configuration a number of definitions must match. Table 1 shows the definitions that must be the same. The Example column shows the values we used in our configuration (see “Chapter 5. Sample configuration” on page 9).

*Table 1. Matching Definitions*

| Ref: Key | VTAM | CICS Transaction Server | IBM eNetwork Communications Server for AIX | Client configuration | Example |
|---|---|---|---|---|---|
| 1 | NETID | — | First part of fully qualified LU name in Partner LU | — | GBIBMIYA |
| 2 | PU | — | Control Point alias in Node Definition | — | SC02128 |
| 3 | LU | Netname | LU Name/LU alias in independent LU Type 6.2 | Local LU name | SC02128I |
| 4 | XID | — | Last five digits of Node identifier in Node Definition | — | 05d**02128** |
| 5 | Token Ring destination address | — | Adjacent node MAC address in Link Station | — | 400009ff07a1 |
| 6 | APPL | APPLID | Second part of fully qualified LU name in Partner LU | — | IYCQCTS5 |
| 7 | LogMode | Modename | Name in Mode | Mode name | LU62PS |
| 8 | — | — | — | Partner LU name | CICSTS13 |

## Matching definitions

# Chapter 5. Sample configuration

In this section we present examples of each of the definitions mentioned in “Chapter 3. Definitions checklist” on page 5. The values highlighted in the figures refer to the Example column of Table 1 on page 7.

## VTAM

In this section we present the VTAM definitions required for accessing the server across the network.

### NETID

Define the NETID **1** for your network node in the VTAM start command for your VTAM system. Figure 2 shows the NETID we used in our sample configuration.

```
     :::
NETID=GBIBMIYA, 1
     :::
```

*Figure 2. VTAM: NETID definition*

### PU, XID, and LU

Figure 3 shows the VTAM PU **2**, XID **4**, and LU **3** definitions for our Client gateway. These are the definitions for the Client gateway known to the VTAM system we used in the sample configuration. The XID consists of two parts. The block number, IDBLK, is the first three digits, and the node number, IDNUM, is the last five digits.

```
SC02128 PU ADDR=01, 2
            IDBLK=05D,IDNUM=02128, 4
            ANS=CONT,DISCNT=NO,
            IRETRY=NO,ISTATUS=ACTIVE,
            MAXDATA=265,MAXOUT=1,
            MAXPATH=1,
            PUTYPE=2,SECNET=NO,
            MODETAB=POKMODE,DLOGMOD=DYNRMT,
            USSTAB=USSRDYN,LOGAPPL=SCGVAMP,
            PACING=1,VPACING=2
*
SC02128I LU LOCADDR=0,DLOGMOD=LU62PS 3
::
```

*Figure 3. VTAM: PU, XID, and LU definitions*

## Sample configuration

The LU SC02234I **3** is an independent LU6.2 definition.

### APPL

Figure 4 shows the VTAM APPL **6** definition for the CICS Transaction Server for OS/390 required for the sample configuration.

```
AP26CICS VBUILD TYPE=APPL 6
*
IYCQCTS5 APPL AUTH=(ACQ,PASS,VPACE),VPACING=0,EAS=29,PARSESS=YES,
              SONSCIP=YES,MODETAB=MTCICS
*
:::
```

*Figure 4. VTAM: APPL definition*

We used LU6.2 parallel sessions (PARSESS=YES) rather than single sessions.

### LogMode

Figure 5 shows the VTAM LogMode **7** definition required for the CICS Universal Client to connect to the CICS Transaction Server for OS/390.

```
LU62PS MODEENT LOGMODE=LU62PS, 7
TYPE=0,           ONLY TYPE RECOGNISED
FMPROF=X'13',     SNA
TSPROF=X'07',     SNA
PRIPROT=X'B0',    PRIMARY PROTOCOL
SECPROT=X'B0',    SECONDARY PROTOCOL
COMPROT=X'79A5',  COMMON PROTOCOL
SSNDPAC=X'00',
SRCVPAC=X'00',
RUSIZES=X'8989',  RUSIZES IN-4096 OUT-4096
PSNDPAC=X'00',
PSERVIC=X'060200000000000000122F00'
```

*Figure 5. VTAM: LogMode definition*

## CICS Transaction Server for OS/390 Version 1.3

Figure 6 on page 11 and Figure 6 on page 11 show, respectively, the connection and session definitions for our configuration.

```
OBJECT CHARACTERISTICS                                  CICS RELEASE = 0530
  CEDA View Connection( C028 )
   Connection    : C028
   Group         : C029
   DEscription   : CONNECTION DEFINITION FOR LU SC02128I
  CONNECTION IDENTIFIERS
   Netname       : SC02128I  3
   INDsys        :
  REMOTE ATTRIBUTES
   REMOTESYSTem  :
   REMOTEName    :
   REMOTESYSNet  :
  CONNECTION PROPERTIES
   ACcessmethod  : Vtam               Vtam | IRc | INdirect | Xm
   PRotocol      : Appc               Appc | Lu61 | Exci
   Conntype      :                    Generic | Specific
   SInglesess    : No                 No | Yes
   DAtastream    : User               User | 3270 | SCs | STrfield | Lms
 + RECordformat  : U                  U | Vb

                                                 SYSID=YCQ5 APPLID=IYCQCTS5

PF 1 HELP 2 COM 3 END             6 CRSR 7 SBH 8 SFH 9 MSG 10 SB 11 SF 12 CNCL
```

*Figure 6. CICS TS Version 1.3: Connection definition*

```
OBJECT CHARACTERISTICS                                  CICS RELEASE = 0530
  CEDA View Sessions( LU62PS )
   Sessions      : LU62PS
   Group         : C028
   DEscription   :
  SESSION IDENTIFIERS
   Connection    : C028
   SESSName      :
   NETnameq      :
   MOdename      : LU62PS  7
  SESSION PROPERTIES
   Protocol      : Appc               Appc | Lu61 | Exci
   MAximum       : 008 , 004          0-999
   RECEIVEPfx    :
   RECEIVECount  :                    1-999
   SENDPfx       :
   SENDCount     :                    1-999
   SENDSize      : 00256              1-30720
 + RECEIVESize   : 00256              1-30720

                                                 SYSID=YCQ5 APPLID=IYCQCTS5

PF 1 HELP 2 COM 3 END             6 CRSR 7 SBH 8 SFH 9 MSG 10 SB 11 SF 12 CNCL
```

*Figure 7. CICS TS Version 1.3: Sessions definition*

## CICS Universal Client for AIX Version 3.1

You use the CICS Universal Client's configuration tool to define the settings for SNA communication. The configuration tool generates the CTG.INI file, which is located, by default, in the /usr/lpp/cicscli/bin directory. If you need to use a configuration file other than the default, use the cicscli /f=*filename* command to specify the file you want. The CICS Universal Client uses the CTG.INI file to establish a connection to a CICS server.

For information on using the configuration tool, refer to your *CICS Universal Client Administration* book.

You need to define the following **Server** configuration settings (see Figure 8 on page 13):

**Server name**
An arbitrary name for a particular CICS server.

**Description**
An arbitrary description for the CICS server.

**Network protocol**
The protocol for communication with the CICS server, in this case, SNA.

**Partner LU name** 8
The LU Name of the server as it is known to the APPC configuration at the CICS Universal Client. This must be an eight-character alias name; see the description of **Use LU alias names** below.

**Local LU name** 3
The name of a local LU to be used when connecting to the server. The same LU can be used for all server connections.

**Mode name** 7
The mode name to be used when connecting to the server.

**Use LU alias names**
This setting enables the Partner LU name and Local LU name to be specified as alias names instead of real LU names. This means, for example, that it is possible to switch between servers without stopping the CICS Universal Client. For CICS Universal Client for AIX, alias names must be used.

The *CICS Universal Client Administration* book and the configuration tool's online help provide descriptions of the configuration settings for CICS Universal Client.

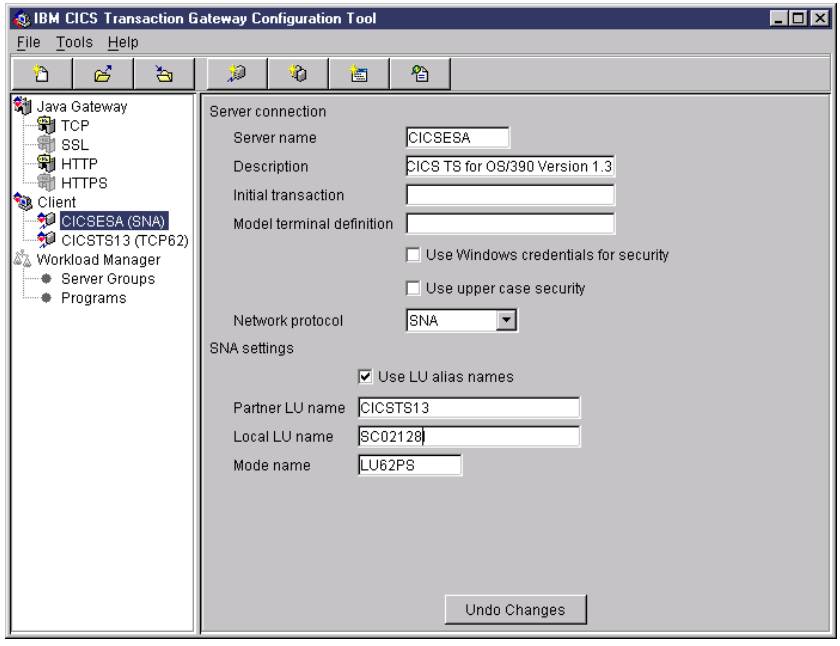


*Figure 8. configuration tool settings for Communications Server*

Figure 9 shows an excerpt from the resultant CTG.INI file.

```
SECTION CLIENT = *
  :::
ENDSECTION
  :::
SECTION SERVER = CICSESA
    DESCRIPTION=CICS TS for OS/390 Version 1.3
    UPPERCASESECURITY=N
    PROTOCOL=SNA
    LOCALLUNAME=SC02128I          3
    MODENAME=LU62PS               7
    NETNAME=CICSTS13              8
    LUALIASNAMES=Y
ENDSECTION
  :::
SECTION DRIVER = SNA
 DRIVERNAME=CCLIBMSN
ENDSECTION
```

*Figure 9. CICS Universal Client for AIX CTG.INI file Definitions*

## IBM eNetwork Communications Server for AIX Version 5.0

The following IBM eNetwork Communications Server for AIX resources are required for the CICS Universal Client for AIX to communicate with the CICS Transaction Server for OS/390:

- Node Definition
- Connectivity
  - Data link controls (DLCs)
  - Ports
  - Link Stations
- LU 6.2 Configuration
  - LU 6.2
  - LU 6.2 Partner LU
  - LU 6.2 Mode

To define the above resources, follow the steps in the following sections:

## Define Node Definition

1. Enter `smitty sna` from a command shell.
2. Select **Configure SNA Resources.**
3. Select **Local Node Resources.**
4. Select **Node Definition.**
5. Fill in the fields as indicated in Figure 10.

```
                              Node Definition

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                    [Entry Fields]
* Control Point alias                              [SC02128] 2
  Description                                      []
* Fully-qualified Control Point name               [GBIBMYA.SC02128]  1 . 2
  Node type                                         NETWORK_NODE           +
  Node identifier                                  [05d02128] 4             X
  Management Services support                       NORMAL                 +

  If BACK_LEVEL,

        Queue NMVTs?                                NO                     +




F1=Help           F2=Refresh          F3=Cancel          F4=List
F5=Reset          F6=Command          F7=Edit            F8=Image
F9=Shell          F10=Exit            Enter=Do
```

*Figure 10. IBM eNetwork Communications Server for AIX; Node Definition*

## Sample configuration

### Define DLCs

1. Enter `smitty sna` from a command shell.
2. Select **Configure SNA Resources.**
3. Select **Local Node Resources.**
4. Select **Connectivity.**
5. Select **DLCs, Ports and Link Stations.**
6. Select **Add Connectivity Resources.**
7. Select **Add Token Ring Resource.**
8. Select **Add Token Ring DLC.**
9. Fill in the fields as indicated in Figure 11.

```
                                Add DLC

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                    [Entry Fields]
* DLC name                                         [HOST01]
  Description                                      []
  Negotiable link stations supported?               YES                    +
  Initially active?                                 YES                    +
  Adapter Number                                   [0]                      #
  Maximum number of SAPs on the DLC                [16]                     #

F1=Help           F2=Refresh          F3=Cancel          F4=List
F5=Reset          F6=Command          F7=Edit            F8=Image
F9=Shell          F10=Exit            Enter=Do
```

*Figure 11. IBM eNetwork Communications Server for AIX: DLC*

## Define Ports

1. Enter `smitty sna` from a command shell.
2. Select **Configure SNA Resources.**
3. Select **Local Node Resources.**
4. Select **Connectivity.**
5. Select **DLCs, Ports and Link Stations.**
6. Select **Add Connectivity Resources.**
7. Select **Add Token Ring Resource.**
8. Select **Add Token Ring port.**
9. Fill in the fields as indicated in Figure 12.

```
                                Add Port

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                    [Entry Fields]
* Port name                                        [HOST01]
  Description                                      []
* DLC Name                                         [HOST01]                  +
  Local SAP address                                [04]                       X
  Initially active?                                 YES                      +
  Use HPR on implicit links?                        NO                       +
  Use HPR link level error recovery?                NO                       +
  Maximum receive BTU size allowed                 [4105]                     #
  Maximum number of active links allowed           [255]                      #
  Local name                                       []
  XID retry count                                  [2]                        #
  Frame retransmit (T1) timer (1=500ms)            [8]                        #
  Frame retransmit limit                           [2]                        #
  Receive ack (T2) timer (1=500ms)                 [1]                        #

F1=Help            F2=Refresh          F3=Cancel          F4=List
F5=Reset           F6=Command          F7=Edit            F8=Image
F9=Shell           F10=Exit            Enter=Do
```

*Figure 12. IBM eNetwork Communications Server for AIX: Port*

## Define Link Stations

1. Enter `smitty sna` from a command shell.
2. Select **Configure SNA Resources.**
3. Select **Local Node Resources.**
4. Select **Connectivity.**
5. Select **DLCs, Ports and Link Stations.**
6. Select **Add Connectivity Resources.**
7. Select **Add Token Ring Resource.**
8. Select **Add Token Ring Link Station.**
9. Fill in the fields as indicated in Figure 13.

```
                          Add Link Station

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

[TOP]                                              [Entry Fields]
* Link station name                                [HOST01]
  Description                                      []
* Port name                                        [HOST01]                  +
  Adjacent node Control Point name                 []
  Adjacent node type                                LEARN_NODE               +
  Downsteam PU services supplied                    NONE                    +

  If SNA Gateway or DLUR,
        Downstream PU name                         []
  If DLUR,
        DLUS server name                           []

  Local node id                                    [00000000]                X
  Adjacent node id                                 [00000000]                X
  Adjacent node MAC address                        [400009ff07a1] 5          X
  Adjacent node SAP address                        [04]                      X
  Maximum BTU size to be sent                      [4105]                    #
  Host type                                         SNA                     +
  Request CP-CP sessions?                           NO                      +
  HPR supported?                                    NO                      +
  Use HPR link-level error recovery?                NO                      +
  Solicit SSCP sessions?                            YES                     +
  Remote node is a network node server              NO                      +
  Link station role                                 LS_SEC                  +
  Activation                                        BY_ADMINISTRATOR        +
  XID retry limit                                  [2]                       #
  Frame retransmit (T1) timer (1=500ms)            [8]                       #
  Frame retransmit limit                           [2]                       #
  Receive ack (T2) timer (1=500ms)                 [1]                       #
[BOTTOM]

F1=Help           F2=Refresh          F3=Cancel          F4=List
F5=Reset          F6=Command          F7=Edit            F8=Image
F9=Shell          F10=Exit            Enter=Do
```

*Figure 13. IBM eNetwork Communications Server for AIX: Link Station*

## Define LU 6.2 Local LU

1. Enter `smitty sna` from a command shell.
2. Select **Configure SNA Resources.**
3. Select **Local Node Resources.**
4. Select **LU6.2 Configuration.**
5. Select **LU6.2.**
6. Select **Add Independent LU Type 6.2.**
7. Fill in the fields as indicated in Figure 14.

```
                    Add Independent LU Type 6.2

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                    [Entry Fields]
* LU alias                                         [SC02128I] 3
  List name                                        []                          +
  Description                                      []
* LU name                                          [SC02128I] 3
  Support Syncpoint?                                NO                         +
  Additional LU properties                          NONE                       +

F1=Help            F2=Refresh          F3=Cancel          F4=List
F5=Reset           F6=Command          F7=Edit            F8=Image
F9=Shell           F10=Exit            Enter=Do
```

*Figure 14. IBM eNetwork Communications Server for AIX: Local LU*

## Define LU 6.2 Partner LU

1. Enter `smitty sna` from a command shell.
2. Select **Configure SNA Resources.**
3. Select **Local Node Resources.**
4. Select **LU6.2 Configuration.**
5. Select **LU6.2 Partner LU.**
6. Select **Add Partner LU.**
7. Fill in the fields as indicated in Figure 15.

```
                          Add Partner LU

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                  [Entry Fields]
* Alias                                          [IYCQCTS5]
  Description                                    []
* Fully-qualified LU name                        [GBIBMIYA.IYCQCTS5] 1 . 6
  Uninterpreted LU name                          []
  Parallel sessions supported?                    YES                      +
  AnyNet routing                                  NATIVE                   +

F1=Help           F2=Refresh         F3=Cancel          F4=List
F5=Reset          F6=Command         F7=Edit            F8=Image
F9=Shell          F10=Exit           Enter=Do
```

*Figure 15. IBM eNetwork Communications Server for AIX: Partner LU*

## Define LU 6.2 Mode

1. Enter `smitty sna` from a command shell.
2. Select **Configure SNA Resources.**
3. Select **Local Node Resources.**
4. Select **LU6.2 configuration.**
5. Select **LU6.2 Mode.**
6. Select **Add Mode.**
7. Fill in the fields as indicated in Figure 16.

```
                              Add Mode

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

[TOP]                                                [Entry Fields]
* Name                                               [LU62PS] 7
  Description                                        []

  Session limits

        Maximum number of sessions                   [32767]                  #
        Initial session limit                        [8]                      #
        Min con. winner sessions                     [4]                      #
        Min con. loser sessions                      [4]                      #
        Auto-activate sessions                       [4]                      #

  Receive pacing window

        Initial                                      [4]                      #
        Maximum                                      [0]                      #


Use default RU sizes?                                 YES                     +

If YES,

        Maximum RU size upper bound                  [4096]                   #
        Maximum RU size lower bound                  [1024]                   #
[BOTTOM]

F1=Help            F2=Refresh          F3=Cancel          F4=List
F5=Reset           F6=Command          F7=Edit            F8=Image
F9=Shell           F10=Exit            Enter=Do
```

*Figure 16. IBM eNetwork Communications Server for AIX: Mode*

In addition to the above definitions, our configuration requires a Partner LU 6.2 location definition for the CICS Universal Client for AIX to connect to the CICS Transaction Server for OS/390 across multiple LANs.

## Define Partner LU 6.2 Location

> **Note**
> The information in this section is environment specific.

Depending on your configuration, you may need to carry out the following steps to define the Partner LU 6.2 location.

1. Enter `smitty sna` from a command shell.
2. Select **Configure SNA Resources.**
3. Select **Local Node Resources.**
4. Select **LU 6.2 configuration.**
5. Select **Partner LU 6.2 Location.**
6. Select **Location By Link Station.**
7. Fill in the fields as indicated in Figure 17.

```
                          Location By Link Station

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                   [Entry Fields]
* Local LU name                                   [SC02128I] 3
  Fully-qualified partner LU name                 [GBIBMIYA.IYCQCTS5] 1 . 6
  Partner name contains wildcards?                 NO                        +
  Description                                     []
* Link station name                               [HOST01]                  +









F1=Help           F2=Refresh          F3=Cancel          F4=List
F5=Reset          F6=Command          F7=Edit            F8=Image
F9=Shell          F10=Exit            Enter=Do
```

*Figure 17. IBM eNetwork Communications Server for AIX: Partner LU6.2*

# Chapter 6. Testing your configuration

After you have installed and configured all relevant products for the sample configuration, we recommend that you:

1. Start the CICS Transaction Server for OS/390.
2. Activate the IBM eNetwork Communications Server for AIX resources in this sequence:
   a. SNA
   b. Node
   c. SNA DLC
   d. SNA Port
   e. SNA Link Station
   f. SNA Session

   Enter `smitty sna` from a command shell and select **Manage SNA Resources -> Start SNA Resources** on the smitty screen. Figure 18 shows a screen to establish APPC sessions between the IBM eNetwork Communications Server for AIX and CICS Transaction Server for OS/390 in our configuration.

```
Start an SNA Session

Type or select values in entry fields.
Press Enter AFTER making all desired changes.

                                                [Entry Fields]

  Enter one of:
        Local LU alias                          []                      +
        Local LU name                           [SC02128I] 3            +

  Enter one of:
        Partner LU alias                        [] +
        Fully-qualified Partner LU name         [GBIBMIYA.IYCQCTS5] 1 . 6   +

* Mode name                                     [LU62PS] 7   +
  Session polarity                               POL_EITHER             +
  CNOS permitted?                                YES                    +



F1=Help           F2=Refresh         F3=Cancel          F4=List
F5=Reset          F6=Command         F7=Edit            F8=Image
```

*Figure 18. IBM eNetwork Communications Server for AIX: session initiation*

You can get APPC session status information through the smitty sna display (see Figure 24 on page 30).

The APPC sessions must be available before you start the CICS Universal Client for AIX.

3. Start the CICS Universal Client for AIX using the `cicscli /s=cicsesa` command. cicsesa is the CICS server name we defined in the client configuration (see Figure 8 on page 13).
4. Check the status of the CICS Universal Client, using the `cicscli /l` command (see Figure 19). The connection status to the CICS server should show "Available."

```
root@azov > cicscli /l
CCL8001I cicscli - CICS Client Control Program
CCL0002I (C) Copyright IBM Corporation 1994,1999. All rights reserved.
CCL8041I The CICS Client is using the following servers:
CCL8042I Server 'CICSESA' (using 'SNA' to 'CICSTS13') is available
root@azov >
```

*Figure 19. CICS Universal Client for AIX: Client status*

5. Issue the cicsterm /s=cicsesa command to install a terminal on the CICS Transaction Server for OS/390.
6. Run a CICS server transaction, for example, CEMT or CECI.

```
CEMT INQ CONNECTION(SC28)

STATUS: RESULTS - OVERTYPE TO MODIFY
 Con(SC28) Net(SC02128I) Ins Acq Vta Appc
```

*Figure 20. CICS TS Version 1.3: Display of Connection and Netname*

# Chapter 7. CICS Universal Client Telnet terminal support

The sample configuration provides Telnet terminal support for the TN3270 clients. To start the CICS Client Telnet daemon on the client gateway, enter this command:

```
cicsteld -s=CICSESA -t=CEMT
```

The command starts a CICS Client Telnet daemon on the default port, 1436. All TN3270 requests from remote workstations to port 1436 will be routed to the CICSESA server (as defined in the client configuration see Figure 8 on page 13) and initiate the CEMT transaction.

On a remote AIX workstation, you can connect a TN3270 client, using this command:

```
tn3270 azov 1436 [-ext]
```

where azov is the TCP/IP hostname of the client gateway where the CICS Client Telnet daemon is running. If supported by your version of TN3270, specify -ext to enable extended data stream support.

On a remote Windows NT workstation, you can enter the same values in a GUI window (see Figure 21. Ensure that the **Extended Mode** checkbox is selected.

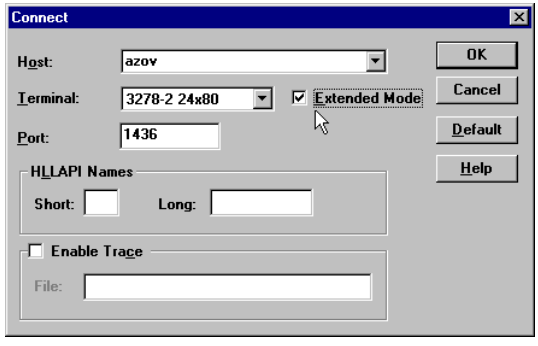


*Figure 21. Windows NT Workstation: TN3270 GUI panel*

For the sample configuration we connected three remote workstations using TN3270. Figure 22 on page 26 shows the CICSTELD status log.

```
root@azov > cicsteld -s=CICSESA -t=CEMT
CCL6015I The CICS Client Telnet Daemon is starting.
CCL6016I Press 'Q' to stop the program.
CCL6109I Port: 1436 Users: 0
CCL6109I Port: 1436 Users: 1
CCL6118I Terminal with netname SC02128I installed for user 9.1.150.16.
CCL6109I Port: 1436 Users: 2
CCL6118I Terminal with netname SC02128I installed for user 9.1.150.149.
CCL6109I Port: 1436 Users: 3
CCL6118I Terminal with netname SC02128I installed for user 9.1.150.232.
```

*Figure 22. CICS Client Telnet Daemon: Status Log*

# Chapter 8. Security implementation

To provide the necessary security for your CICS regions, CICS Transaction Server for OS/390 uses the MVS SAF to route authorization requests to an External Security Manager, such as RACF, at appropriate points within CICS transaction processing. There are many types of security available, from transaction security to CICS resource security. The CICS Transaction Server for OS/390 provides the following security mechanisms for the APPC environment:

- Bind-time (or session) security prevents an unauthorized connection between CICS regions.
- Link security defines the authority of the remote system to access transactions or resources to which the connection itself is not authorized.
- User security checks that a user is authorized both to attach a transaction and to access all resources the transaction requires.

For CICS Universal Clients connecting to the CICS Transaction Server for OS/390, you may want to consider configuring link security.

## Preparing link security for our sample configuration

For link security on incoming ECI, EPI, and CICSTERM requests, CICS Transaction Server for OS/390 needs the following settings in the SECURITY section of the connection definition for the client:

| | |
|---|---|
| **SEcurityname** | For example, HOLLING (RACF-authorized TSO ID) |
| **ATtachsec** | Verify |
| **Usedfltuser** | Yes, for signon incapable terminals;<br><br>No, for signon incapable terminals, see "Signon capable terminals" on page 28. |

In addition, you must specify SEC=YES as a SIT override.

## Signon capable terminals

Security checking done in the server for transactions started at a signon capable terminal installed by a Client application does not depend on what is specified by the **ATtachsec** option for the connection representing the Client. Instead security checking depends on whether the user signs on while using the terminal.

If the user does not sign on, the Client installed terminal is associated with the default user defined for the server in the SIT. When a transaction is run, the security checks are carried out against this default user. A check is also done against the userid associated with the connection to see whether the Client itself has authority to access the resource.

When a user does sign on, the terminal is associated with the userid just authenticated. For transactions attempting to access reosurces, security checking is done against the userid associated with the connection and the signed-on user's userid.

It is recommended that the **Usedfltuser** parameter on the server connection definition is set to Yes if using signon capable terminals and to No if using signon incapable terminals.

## Running CICS Universal Client applications with link security

To establish a connection between the CICS Universal Client and CICS Transaction Server for OS/390 issue the cicscli -s=*server* command as described in see "Chapter 6. Testing your configuration" on page 23. Link security is initiated when the first ECI, EPI, or CICSTERM request is made on a newly established connection.

# Chapter 9. Useful commands and utilities

You will find the commands discussed in this section useful during installation and configuration.

## lslpp -l ″sna.*″ command

The lslpp command with a `-l "sna.*"` option indicates which version of IBM eNetwork Communications Server for AIX has been installed on your workstation (see Figure 23).

```
#root@azov > lslpp -l "sna.*" ¦ pg
  Fileset                      Level  State      Description
  ----------------------------------------------------------------------------
Path: /usr/lib/objrepos
  sna.anynet.base            5.0.0.0  COMMITTED  AnyNet Base
  sna.anynet.snaip           5.0.0.0  COMMITTED  AnyNet APPC over TCP/IP
  sna.anynet.socksna         5.0.0.0  COMMITTED  AnyNet Sockets over SNA
  sna.gw                     5.0.0.0  COMMITTED  SNA Gateway
  sna.instdlc.token          5.0.0.0  COMMITTED  Communications Server for AIX
                                                 Token Ring DLC Inclusion
                                                 Fileset
  sna.lu0                    5.0.0.0  COMMITTED  Logical Unit 0 (LU0)
  sna.msg.en_US.anynet.rte   5.0.0.0  COMMITTED  Anynet Messages - U.S. English
  sna.msg.en_US.rte          5.0.0.0  COMMITTED  SNA Base Messages - U.S.
                                                 English
  sna.msg.en_US.snapi        5.0.0.0  COMMITTED  SNAPI TP Development Tool -
                                                 U.S. English
  sna.msg.en_US.xsna         5.0.0.0  COMMITTED  SNA X Tool Messages - U.S.
                                                 English
  sna.rte                    5.0.0.0  COMMITTED  Communications Server Base
                                                 (LU1, LU2, LU3, LU6.2)
  sna.snapi                  5.0.0.0  COMMITTED  Communications Server SNAPI TP
                                                 development tool
  sna.toolkit.3270           5.0.0.0  COMMITTED  APPC 3270 Emulator
:
```

*Figure 23. Result of lslpp -l ″sna.*″ command*

### APPC session status

To confirm the number of APPC sessions:

1. Enter `smitty sna` from a command shell.
2. Select **Manage SNA Resources.**
3. Select **Display SNA Resources.**
4. Select **Display Session Information.**
5. Select **Display LU 6.2 Sessions.**
6. Select **Display LU 6.2 Session Status.**

Figure 24 shows the status of the APPC sessions.

```
                          COMMAND STATUS

Command: OK            stdout: yes           stderr: no

Before command completion, additional instructions may appear below.

-------------------------------------------------------------------------------LU
LU        LU alias  Machine   Partner LU          Mode      Session Count
-------------------------------------------------------------------------SC02128
SC02128   SC02128                                           Inactive
SC02128I  SC02128I            GBIBMIYA.IYCQCTS5   LU62PS    8 Sessions
                              GBIBMIYA.IYCQCTS5   SNASVCMG  1 Session
-------------------------------------------------------------------------------F1=









F1=Help             F2=Refresh         F3=Cancel            F6=Command
F8=Image            F9=Shell           F10=Exit             /=Find
n=Find Next
```

*Figure 24. IBM eNetwork Communications Server for AIX Version 5.0: session status*

# Appendix. Trademarks

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

| | |
|---|---|
| Anynet | CICS |
| IBM | OS/390 |
| VTAM | |

Java, and all Java-based trademarks and logos are trademarks of Sun Microsystems, Inc. in the United States, or other countries, or both.

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

Printed in the United States of America
on recycled paper containing 10%
recovered post-consumer fiber.