

CICS[®] Universal Client Configuration



Configuring CICS Universal Client for AIX[®] for Communications Server

CICS® Universal Client Configuration



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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.

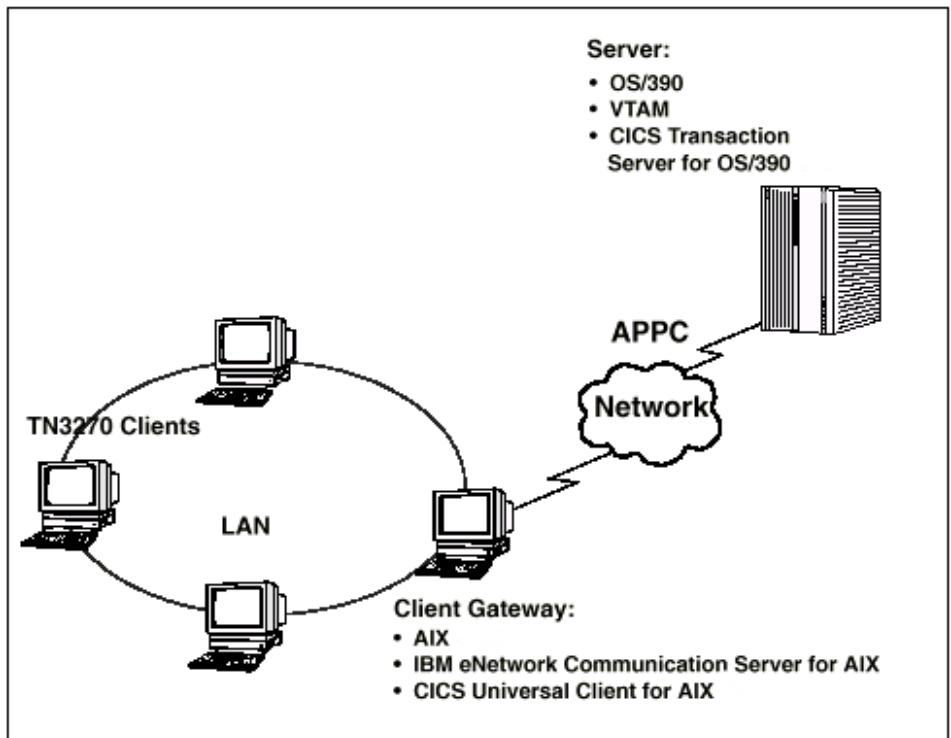


Figure 1. CICS Universal Client for AIX connected to TS Version 1.3 through APPC

In this document we cover the following topics:

- “Chapter 2. Software checklist” on page 3
- “Chapter 3. Definitions checklist” on page 5
- “Chapter 4. Matching definitions” on page 7
- “Chapter 5. Sample configuration” on page 9
- “Chapter 6. Testing your configuration” on page 25
- “Chapter 7. CICS Universal Client Telnet terminal support” on page 27

Overview

- “Chapter 8. Security implementation” on page 29
- “Chapter 9. Useful commands and utilities” on page 31

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 Side Information

Definitions checklist

- Symbolic Destination Name **8**
- Local LU Alias
- Partner LU name **1 . 6**
- Mode **7**
- 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	—	—	Symbolic Destination Name in LU6.2 Side Information	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=050, 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
*
IYCQCTSS 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'0602000000000000122F00'
```

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
  REMOTESYSem :
  REMOTEName  :
  REMOTESYSNet :
CONNECTION PROPERTIES
  AAccessmethod : Vtam          Vtam | IRc | INdirect | Xm
  PProtocol     : Appc          Appc | Lu61 | Exci
  Conntype      :              Generic | Specific
  SIngleless    : 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    :
  M0dename    : 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

Sample configuration

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.

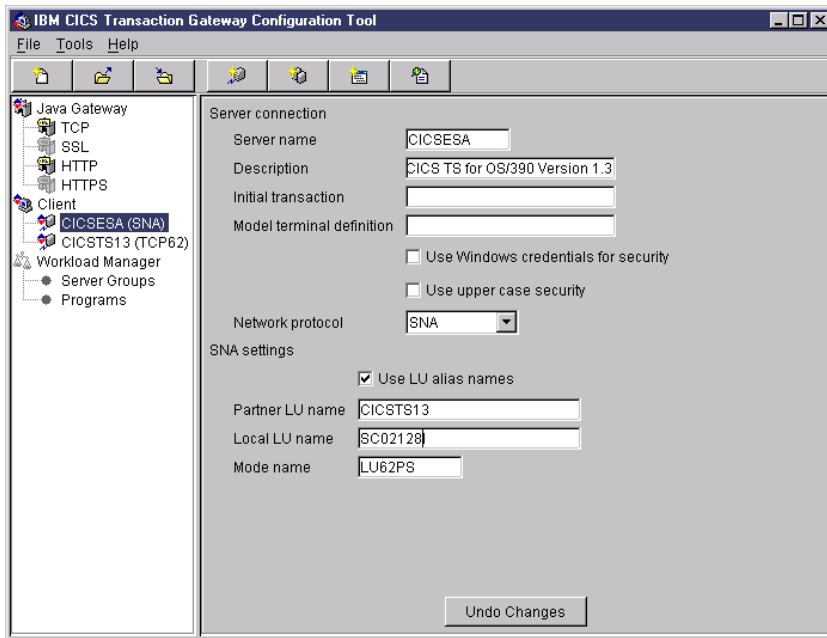


Figure 8. configuration tool settings for Communications Server

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
MODENAME=LU62PS
NETNAME=CICSTS13
LUALIASES=Y
ENDSECTION
:::
SECTION DRIVER = SNA
DRIVERNAME=CCLIBMSN
ENDSECTION
```

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

Sample configuration

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 Side Information
 - LU 6.2 Partner LU
 - LU 6.2 Mode

The configuration must include an LU 6.2 Side Information entry to identify the **Partner LU name** in the client configuration **8**. (NETNAME in the CTG.INI file.)

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 on page 15.

```

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

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 on page 16.

Sample configuration

```

                                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 on page 17.

```

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 on page 18.

Sample configuration

```

                                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        +
Downstream 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 on page 19.


```

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 Side Information

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 Side Information**.
6. Select **Add Side Information**.
7. Fill in the fields as indicated in Figure 15 on page 20.

Sample configuration

Add Side Information

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

[Entry Fields]	
* Symbolic destination name	[CICSTS13] 8
Description	[]
Local LU Alias	[SC021281] 3 +
Partner LU name	[GBIBMIYA.IYCQCTS5] 1 . 6 +
Mode	[LU62PS] 7 +
TP name type	APPLICATION_TP +
TP name	[] +
Conversation security	NONE +
User ID	[]
Password	[]

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: Side Information

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 16 on page 21.

```

Add Partner LU

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

* Alias
Description
* Fully-qualified LU name
Uninterpreted LU name
Parallel sessions supported?
AnyNet routing

[Entry Fields]
[IYCQCTS5]
[]
[GBIBMIYA.IYCQCTS5] 1 . 6
[]
YES +
NATIVE +

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: 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 17 on page 22.

Sample configuration

```

                                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 17. 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 18.

Location By Link Station

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

	[Entry Fields]	
* Local LU name	[SC021281] 3	
Fully-qualified partner LU name	[GBIBMIYA.IVCQCTS5] 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 18. 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 19 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 19. IBM eNetwork Communications Server for AIX: session initiation

Testing your configuration

You can get APPC session status information through the `smitty sna display` (see Figure 25 on page 32).

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 /1` command (see Figure 20). The connection status to the CICS server should show "Available."

```
root@azov > cicscli /1
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 20. 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 CECL.

```
CEMT INQ CONNECTION(SC28)

STATUS: RESULTS - OVERTYPE TO MODIFY
Con(SC28) Net(SC021281) Ins Acq Vta Appc
```

Figure 21. 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:

```
cicsteald -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 22. Ensure that the **Extended Mode** checkbox is selected.

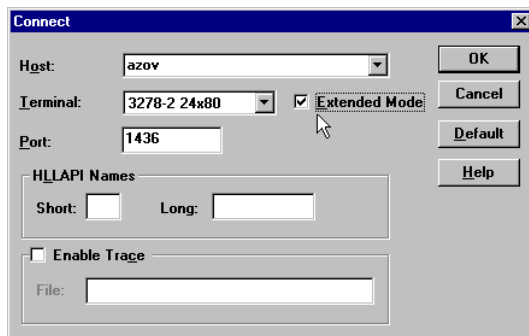


Figure 22. Windows NT Workstation: TN3270 GUI panel

For the sample configuration we connected three remote workstations using TN3270. Figure 23 on page 28 shows the CICSTELD status log.

CICS Universal Client Telnet terminal support

```
root@azov > cicsteld -s=CICSESA -t=CEMT
CCL60151 The CICS Client Telnet Daemon is starting.
CCL60161 Press 'Q' to stop the program.
CCL61091 Port: 1436 Users: 0
CCL61091 Port: 1436 Users: 1
CCL61181 Terminal with netname SC02128I installed for user 9.1.150.16.
CCL61091 Port: 1436 Users: 2
CCL61181 Terminal with netname SC02128I installed for user 9.1.150.149.
CCL61091 Port: 1436 Users: 3
CCL61181 Terminal with netname SC02128I installed for user 9.1.150.232.
```

Figure 23. 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	= HOLLING (RACF-authorized TSO ID)
ATtachsec	= Verify
Usedfltuser	= Yes for signon incapable terminals; = No for signon incapable terminals, see "Signon capable terminals".

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.

Security implementation

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 resources, 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 25. 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.

lspp -l "sna.*" command

The `lspp` command with a `-l "sna.*"` option indicates which version of IBM eNetwork Communications Server for AIX has been installed on your workstation (see Figure 24).

```
#root@azov > lspp -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 24. Result of `lspp -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**.

Useful commands and utilities

Figure 25 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
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 25. IBM eNetwork Communications Server for AIX Version 5.0: session status

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