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# Unicenter

## TCPaccess Telnet Server Customization Guide

Version 6.0



**Computer Associates**  
The Software That Manages eBusiness



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# Configuration Overview

This chapter provides an introduction to the configuration files that you need to tailor Unicenter TCPAccess Communications Server to your site's requirements.

The following topics are discussed in this chapter:

- [Configuration Files](#) – Describes the Unicenter TCPAccess Telnet Server configuration members
- [Configuration File Roadmap](#) – Displays the configuration files and their functions

## Configuration Files

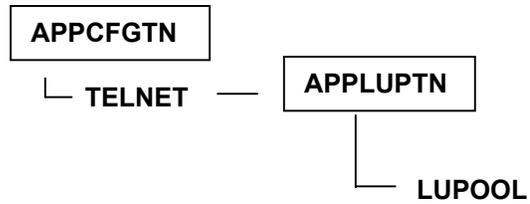
The Unicenter TCPAccess Telnet Server configuration members are described briefly below.

Member Name	Description
IJTFCGxx	Holds parameters for address space services provided by the IJT task group, including timing services, message logging, SMF parameters and exit points.
APPCFGTN	Contains configuration statements that describe the TELNET application.
APPLUPTN	Contains VTAM LU names for use with Server TELNET applications, and rules for selecting them.
RTMCFGxx	Contains parameters that control the TelnetRTM component.

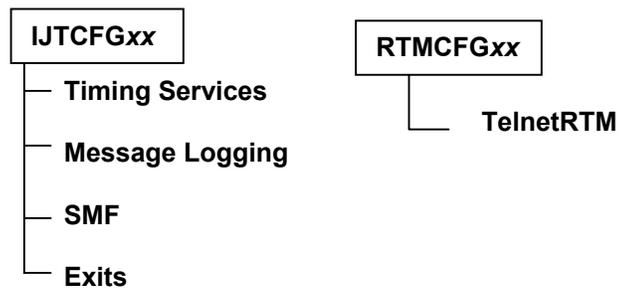
## Configuration File Roadmap

The following diagrams show each of the configuration members and the functionality associated with each member.

### APPCFGTN Functions



### IFS Services and TelnetRTM



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## Task Groups

An IFS system application address space consists of the IFS job-step task and one or more application-defined subtask groups (one or more MVS subtasks performing a common function and dispatching work from a common queue). Subtask groups are also called task groups. Each task group has a three-character *Task Group Identifier* (TGI). The task groups and their functions within the address space are shown below.

The following table describes each of the IFS task groups in more detail.

<b>Task Group</b>	<b>Description</b>
APP	The Application Program Interface (API) task group provides an interface for transport protocol users to the transport protocol provider.
IJT	The IFS Job-step Task (IJT) task group consists of the job-step task. It initializes the address space and provides the first-level handling of operator commands.
RTM	The TelnetRTM (RTM) task group serves as a central repository for Telnet response time measurement data that is maintained by the Telnet servers and reported on by Unicenter NetSpy and the NETSTAT TELNET command.



# Customizing Address Space Operations (IJTCFGxx)

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This chapter helps you customize Unicenter TCPaccess Telnet Server Address Space Operations, which are handled through Infrastructure (IFS). The IFS configuration member is IJTCFGxx.

IFS is a generic, multitasking, runtime environment for MVS system application address spaces. A system using IFS is an authorized, operator-started task or job that initializes as a subsystem (the primary JES must be initialized first to support SYSOUT requirements).

The following topics are discussed in this chapter:

- [The IFSPARM Statement](#) – Describes how to set timing services, time zone, tracename, and GTF ID
- [Controlling Message Logging](#) – Describes how to tailor message logging
- [Setting SMF Parameters](#) – Describes how to tailor parameters for SMF statements issued by Unicenter TCPaccess
- [Setting Exit Points](#) – Describes how to configure exit points
- [Security Settings](#) – Describes how to set security

## The IFSPARM Statement

Use the IFSPARM statement in IJTCFGxx to set the:

- GTF ID
- Timezone
- Timing services

### IFSPARM Statement Syntax

```
IFSPARM GTFID ( value )  
[ APPLICATIONS ( TELNET ) ]  
[ ARMELEMENT ( name ) ]  
[ DATASPACE SIZE ( size ) ]  
[ INTERNAL IUCV | NOINTERNAL IUCV ]  
[ MAXSTGPCT ( below, above ) ]  
[ PROMPT | NOPROMPT ]  
[ SECONDARYNAME ( name ) ]  
[ TIMER ( interval ) ]  
[ TIMEZONE ( ATLANTIC | EASTERN | CENTRAL |  
MOUNTAIN | PACIFIC | char hours ) ]  
[ TRACENAME ( name ) ]  
[ VSREPORT ( interval ) | NOVREPORT ]
```

GTFID ( *value* )

Specifies the identification value for generalized trace facility (GTF) records produced by Unicenter TCPaccess Telnet Server. This can be specified by a decimal value or a hexadecimal string.

Default: X'4F' (79) Range: X'00' - X'4F' (0 - 79).

APPLICATIONS ( TELNET )

Specifies the application to be available to the address space.

To run only the Telnet Server, you must code APPLICATIONS(TELNET). If you let the keyword value default, other application programs will be loaded as well, but will remain unused. Also, if you code PRFX= in your JCL parameters, you must specify a value of T01. Any other value will cause the Telnet Server initialization to fail.

**Note:** The PRFX= JCL parameter is deprecated, and may not be available in a subsequent release of the product. It is suggested that you omit this parameter from your JCL, and use IFSPARM APPLICATIONS to specify which applications you want to run.

Alias: APPS

Default: STACK,TELNET,FTP

ARMELEMENT(*name*) Specifies the ARM element name to be assigned to the address space. It may contain the characters A-Z, 0-9, \$, #, @, and \_ (underscore). It may not begin with a number, the characters A-I, or the string SYS.

The special value "NONE" indicates that the address space is not to make itself eligible for automatic restart by ARM.

Default: NONE.

DATASPACE SIZE ( *size* )

Specifies the number of megabytes to allocate for a trace data space. This is valid only for a trace address space.

Default: 128.

INTERNAL IUCV | NOINTERNAL IUCV

Specifies that IUCV services to use and a single address space if desired. It is recommended that you run using INTERNAL IUCV for improved performance and easier debugging.

Default: NOINTERNAL IUCV .

MAXSTGPCT ( *below, above* )

Specifies the upper limit of storage usage above and below the 16 MB line when further connections will be stopped.

Ranges: Below: 50 - 95; Above: 50 - 95.

Default: (90, 75).

PROMPT | NOPROMPT

Specifies whether to prompt to issue message T00IJ13R, which requires a reply, before shutting down the address space.

Default: PROMPT.

SECONDARYNAME ( *name* )

Specifies the VMCF subsystem name.

**Note:** Valid only for an IUCV address space.

TIMEZONE ( ATLANTIC | EASTERN | CENTRAL | MOUNTAIN | PACIFIC | *char hours* )

Specifies the local time zone or a character (that you specify) and the number of hours before GMT (Greenwich Mean Time).

**Note:** If your time zone is ahead of GMT, specify a negative value for *hours*. For example: TIMEZONE(A -9).

Default: EASTERN.

TIMER ( *interval* ) Specifies the time interval for a timer interrupt. This specifies the resolution for timers used in this address space.

*interval* is in 0.01 seconds.

Range is 1 - 99.

Default: 10.

TRACENAME ( *name* ) Specifies the subsystem name of the component trace subsystem.

Default: ACTR.

VSREPORT ( *interval* ) | NOVSREPORT

Specifies whether to run the virtual storage report program. It produces a message about virtual storage usage after the specified time to the T01LOG DD statement.

*interval* specifies how often, in minutes, a message is sent to the account log. The default is five minutes, with a maximum of 1439 minutes and a minimum of one minute.

Default: NOVSREPORT.

## IFSPARM Usage Notes

### Timing Services

The IFS timing service, ITIME, allows interval timing to occur in modes other than primary task mode. The heart of the timing service is a fixed interval timer DIE that schedules SRBs in response to timers expiring.

Each timer is capable of tracking eight separate intervals. When the interval time expires, either an exit can be driven or an ECB posted.

The time interval (TIMER) for the DIE is configurable and has a range of 0.1 to 1 second. The time interval is specified in IJTCFG00.

**Note:** Specifying a large interval decrease timer resolution. Specifying a very small interval increases timer overhead.

Setting the Time Zone To set the time zone for your system, specify your choice on the IFSPARM statement with the TIMEZONE parameter. For example, to set the time zone to Eastern Standard Time:

```
IFSPARM TIMEZONE (EASTERN)
```

Setting the GTF ID To set the Generalized Trace Facility (GTF) identification value for Unicenter TCPaccess Telnet Server, specify the value on the IFSPARM GTFID statement. For example, to set the value as 17:

```
IFSPARM GTFID 17
```

## Controlling Message Logging

The LOGGING statement in IJTFCGxx specifies the filtering for both print and console messages. Messages are filtered by component and level within component. For instance, specifying:

```
LOGGING PRINT((TC,RFEWISDT)) WTO((TC,FE))
```

Prints all TCP messages, but only issues operator messages for fatal and error type TCP messages. Messages for other components are issued at their default levels for both print and operator messages.

The LOGGING statement also controls the spin attributes of the SYSOUT data set and the console routing codes of messages.

### LOGGING Statement Syntax

```
LOGGING [ CLASS ( class ) ]
        [ DEST ( destination ) ]
        [ FORMS ( name ) ]
        [ PRINT ( ( subparameter ) [ , ( subparameter ) [ , ... ] ] ) ]
        [ ROUTCDE ( list ) ]
        [ SPIN ( LINES ( lines ) | MINUTES ( minutes ) | SYNC ) | NOSPIN ]
        [ WRITER ( name ) ]
        [ WTO ( ( subparameter ) [ , ( subparameter ) [ , ... ] ] ) ]
```

CLASS (*class*) Specifies the SYSOUT class.

Default: Class specified as SOUT= keyword of PARM field.

DEST (*destination*) Specifies the SYSOUT destination.

Default: No destination.

- FORMS(name) Specifies the print form. (Corresponds to FORMS= on the T01LOG DD statement.)
- Default: None.
- PRINT (*subparameter*) Subparameters are processed left to right.
- Valid values:
- |                          |                                          |
|--------------------------|------------------------------------------|
| ALL                      | PRINT all messages, all <i>types</i>     |
| NONE                     | PRINT no messages                        |
| (ALL, <i>types</i>       | PRINT given types for all components     |
| (component,ALL           | PRINT all messages for given component   |
| (component,NONE          | PRINT no messages for given component    |
| (component, <i>types</i> | PRINT given messages for given component |
- See [Component and Message Type Definitions](#) for component and type specifications and defaults.
- ROUTCDE (*list*) Specifies the MVS routing codes for console messages. *list* can be one or more valid MVS routing codes, separated by commas. Routing code ranges can be specified by separating them with a colon.
- ```
IFSPARM LOGGING ROUTCDE(2)
IFSPARM LOGGING ROUTCDE(3,4,8:11)
IFSPARM LOGGING ROUTCDE(9:11)
```
- Range: 1-16.
- Default: No routing code.
- This means console messages are routed according to the defaults specified in the MVS SYSGEN. SPIN ( LINES ( *lines* ) | MINUTES ( *minutes* ) | SYNC ) | NOSPIN
- Determines when the log file is closed and reopened.
- |         |                                                                                                                         |
|---------|-------------------------------------------------------------------------------------------------------------------------|
| LINES   | The number of lines in the log to trigger the spin. The maximum number of lines that can be specified is 2,000,000,000. |
| MINUTES | Number of minutes. The maximum number of minutes that can be specified is 357,913.                                      |
- TIME is an alias for MINUTES.

SYNC                      Specifying SYNC with a MINUTES parameter causes a SPIN on the next occurrence of the interval synchronized to the previous midnight.

Specifying SYNC without a MINUTES parameter causes a SPIN every hour on the hour.

Default: NOSPIN.

WRITER(*name*)            Specifies the member name of an installation-written program in the system library that the external writer loads to write the output data set. (Corresponds to WRITER= on the T01LOG DD statement.)

**Note:** Do not code INTRDR or STDWTR (and for JES3, NJEWTR) as the writer name. These names are reserved for JES.

WTO ((*subparameter*) [ , (*subparameter*) [ , ... ] ] )

Subparameters are processed left to right. Valid values:

ALL                        WTO all messages, all types.

NONE                      WTO no messages.

ALL,*types*                WTO given types for all components.

component,ALL          WTO all messages for given component.

component,NONE        WTO no messages for given component.

component,*types*        WTO given messages for given component.

The LOGGING command has a logical grouping of keywords that control SYSOUT attributes and when the log is spun. This makes the command easier to use, in that you do not have to specify all of the keywords for an action, as shown in the following table.

| Keywords Specified | Action                                                                                                               |
|--------------------|----------------------------------------------------------------------------------------------------------------------|
| All                | The LOGGING command will change all of the attributes as specified.                                                  |
| Some               | The specified attributes are changed, but the remaining attributes of the grouped attributes are set to the default. |
| None               | None of the attributes of the group will be changed, and any previous attributes will be carried forward.            |

The SYSOUT attributes that are grouped are:

- CLASS
- DEST
- FORM
- WRITER

The SPIN attributes that are grouped are:

- LINES
- MINUTES
- SYNC

**Note:** The NOW keyword is not associated with LINES, MINUTES, and SYNC.

The PRINT and WTO keywords are separate from each other, and from all the rest.

You will find usage examples for grouped keywords in [Examples of Logging](#)

## Component and Message Type Definitions

The Component Names and Message Defaults Table displays the WTO and PRINT components and their message type defaults, according to message destination. Message type is listed in the table and is specified as:

- R Response
- F Fatal
- E Error
- W Warning
- I Informational
- S Statistics
- D Debugging
- T Trace

The following table lists component names and message defaults.

| Message | Description        | Print Default Message Level | Console Default Message Level |
|---------|--------------------|-----------------------------|-------------------------------|
| AP      | API Support        | RFEWI                       | RF                            |
| CF      | Configuration      | RFEWI                       | RFEW                          |
| IF      | IFS                | RFEWI                       | RFEWI                         |
| IJ      | IJT Job Step Task  | RFEWI                       | RFEWI                         |
| RT      | TelnetRTM          | RFEWI                       | RFEWI                         |
| TE      | Telnet Application | RFEWI                       | RF                            |
| TR      | Trace Support      | RFEWI                       | RFEWI                         |

## Logging Examples

Example 1 To Write to the Operator (WTO) only messages for the IF component and type Debug, Error, Warning, and Informational messages for the IJ component, use this syntax:

```
WTO(NONE, (IF, ALL), (IJ, DEWI))
```

Example 2 To print all type Debug and Error messages:

```
PRINT(ALL, DE)
```

Example 3 To send everything to Write to Operator:

```
WTO(ALL)
```

Example 4 To print nothing:

```
PRINT(NONE)
```

**Note:** Parameters are processed left to right, as an example:

```
PRINT(ALL, (IJ, I), NONE)
```

The final NONE subparameter overrides the ones before it.

Here are some examples of the usage of grouped keywords.

Example 5 Print all messages; leave WTO, SYSOUT, and spin unchanged:

```
LOGGING PRINT( ALL )
```

Example 6 WTO all messages; leave PRINT, SYSOUT, and spin unchanged:

```
LOGGING WTO( ALL )
```

- Example 7            Reset SYSOUT class to X; defaults DEST, FORM, and WRITER, and leave remaining keywords unchanged.  
**LOGGING CLASS( X )**
- Example 8            Spin the log now; leave all specifications unchanged:  
**LOGGING SPIN NOW**
- Example 9            Reset spin to every 5000 lines or 60 minutes, whichever comes first; leave remaining keywords unchanged:  
**LOGGING SPIN( LINES( 5000 ) MINUTES( 60 ) )**
- Example 10           Print and WTO all messages, reset SYSOUT writer to TOLSTOY and defaults CLASS, DEST, and FORM. Also reset spin to every hour on the hour, ignoring line count, and spin the log now:  
**LOGGING PRINT( ALL ) WTO( ALL ) WRITER( TOLSTOY ) SPIN( SYNC ) NOW**

## Setting SMF Parameters

SMF records are generated at various processing points, such as connection establishment, connection termination, connection rejection, and failed connection attempts.

The INTERVAL parameter of the SMF statement determines the frequency (in minutes) with which periodic SMF statistics records, such as virtual storage utilization and driver statistics, are written.

You can set your SMF parameters using the SMF statement in IJTCFGxx.

## SMF Statement Syntax

```
SMF [ TYPE ( number ) ]
     [ SUBTYPE ( subtypes ) | ALL | NONE ]
     [ INTERVAL ( minutes ) ]
```

**TYPE ( *number* )** Specifies the SMF record type to be assigned to records generated by Unicenter TCPaccess Telnet Server. Any number from 128 through 255 not in use by your installation is available.

Default: 130.

**SUBTYPE ( *subtypes* ) | ALL | NONE**

Specifies record subtypes.

*subtypes* is the list of subtype numbers. The available record subtypes are described in the *Unicenter TCPaccess Communications Server System Management Guide*. Use a comma (,) to separate subtypes, a colon (:) to specify a range of subtypes.

ALL | NONE specifies if SMF recording is performed.

ALL specifies that all Unicenter TCPaccess Telnet Server SMF record subtypes be generated.

NONE specifies no SMF recording is performed.

**Example 1** This SMF statement causes SMF record type 135 to be used, and subtypes 20-23, 80, and 150-152 to be written. The subtype 80 (virtual storage statistics) record is written every 20 minutes.

```
SMF TYPE(135) SUBTYPE(20:23,80,150:152) INTERVAL(20)
```

**Example 2** Use commas to define multiple subtypes:

```
SMF TYPE(130) SUBTYPE(20,21,22,23)
```

Default: NONE.

**INTERVAL ( *minutes* )** Specifies, in minutes, the time interval at which periodic SMF records are written.

Subtype 80 and 100 records are interval driven. All other types are event driven. If subtype 80 or 100 records are chosen, but no INTERVAL is configured, a default INTERVAL of 15 minutes is used.

Range: 1 -1439 minutes.

Default: Zero.

## SMF Usage Notes

Record Subtypes        The absence of an SMF statement in the configuration indicates that no SMF recording is performed.

SMF Examples            The following examples show of the SMF statement usage :

```
SMF TYPE(189) ALL
SMF TYPE(241) SUBTYPE(21)
SMF NONE
```

## Setting Exit Points

Use the EXIT statement to define global user exits to the Unicenter TCPaccess Telnet Server. Each EXIT statement defines an exit program to Unicenter TCPaccess Telnet Server, and specifies at which exit point(s) the program will be invoked.

In addition to the exit points listed below, each exit program receives control at the INIT and TERM exit points. For more information on the usage of the Exit facility, read the *Unicenter TCPaccess Telnet Server Planning Guide*.

## Exit Statement Syntax

```
EXIT PROGRAM ( program_name )
  [ PARM ( string ) ,]
  [ EWASIZE ( size ) ,]
  [ LOG | NOLOG | AUTOLOG , ]
  [ SMF | NOSMF | AUTOSMF , ]
  [ VTAMBIND | NOVAMBIND | AUTOVTAMBIND ]
```

PROGRAM ( *program\_name* )

Identifies the name of the exit program to invoke. This program must be made available to Unicenter TCPaccess Telnet Server at startup.

EWASIZE ( *size* )        Specifies the size of the Exit Work Area. For a full description see the section "Exit Work Area" in the chapter on "User Exits" in the *Planning Guide*.

PARM ( *string* )        Any desired string of data. This string is passed, uninterpreted, to the program at the INIT exit point.

LOG | NOLOG | AUTOLOG

Specifies whether the LOG exit point is called (LOG) or not (NOLOG), or whether it is left to the INIT exit to specify (AUTOLOG).

Default: AUTOLOG.

SMF | NOSMF | AUTOSMF

Specifies whether the SMFEXIT exit is called (SMF) or not (NOSMF), or whether it is left to the INIT exit to specify (AUTOSMF).

**Note:** A sample SMFEXIT is provided in the SAMP data set.

Default: AUTOSMF

VTAMBIND | NOVTAMBIND | AUTOVTAMBIND

Specifies whether the VTAMBIND exit point is called (VTAMBIND) or not (NOVTAMBIND), or whether it is left to the INIT exit to specify (AUTOVTAMBIND).

Default: AUTOVTAMBIND.

## Security Settings

This section describes how to configure the SECURITY statement.

### Security Statement Syntax

This is the syntax for the Security statement.

```
SECURITY CLASS ( class )
          PROFILE ( profile )
          REQID ( id )
          APPLNAME ( name )
          SUBSYS ( name )
          XSEC ( option1 option2.. . )
```

CLASS ( *class* )

Specifies the class name to use for command authorization.

Default for RACF: AC#CMD.

Default for ACF2: AC#CMD.

Default for RTSS: UR1.

Default for ALRT: AC#CMD.

PROFILE ( *profile* )

Specifies the profile name configured in the security product.

Default: SYSTRAN.

|                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| REQID ( <i>id</i> )                 | Specifies the ID of the caller issuing the security call.<br><br>Default for RACF: blanks.<br><br>Default for ACF2: ACSECPC.<br><br>Default for RTSS: blanks.<br><br>Default for ALRT: ACSECPC.                                                                                                                                                                                                                                                                                                                                                        |
| APPLNAME ( <i>name</i> )            | Specifies the application name of the caller issuing the security call.<br><br>Default for RACF: blanks.<br><br>Default for ACF2: blanks.<br><br>Default for RTSS: blanks.<br><br>Default for ALRT: taken from ICSLPID.                                                                                                                                                                                                                                                                                                                                |
| SUBSYS ( <i>name</i> )              | Specifies the security subsystem name.<br><br>Default for RACF: blanks.<br><br>Default for ACF2: taken from ICSLPID.<br><br>Default for RTSS: blanks.<br><br>Default for ALRT: taken from ICSLPID.                                                                                                                                                                                                                                                                                                                                                     |
| XSEC ( <i>option1 option2 ...</i> ) | <p>ACEE   NOACEE    Monitors ACEE activity.</p> <p>ACSECPC   NOACSECPC<br/>                  Monitors entry to the security call module that performs all security checking within Unicenter TCPaccess Telnet Server.</p> <p>COMMAND   NOCOMMAND<br/>                  Monitors command authorization calls. The COMMAND option aids in the debugging of COMMAND security problems.</p> <p>DATASET   NODATASET<br/>                  Monitors data set authorization calls. The DATASET option aids in the debugging of DATASET security problems.</p> |

**GLBLACT | NOGLBLACT**

Activates or suppresses ALL security calls. If this option is turned off, Unicenter TCPaccess Telnet Server does no security checking. This could lead to serious problems in an ACF2 environment. Do not turn this option off except at the direction of support personnel.

**GLBLCMD | NOGLBLCMD**

Activates or suppresses security calls for command authorization. Turns on or off all calls to the external security interface module (ACSECPC) for COMMAND security.

**LOGOFF | NOLOGOFF**

Monitors departure from the system. The LOGOFF option aids in the debugging of sign-off security problems.

**LOGON | NOLOGON**

Monitors attempts to gain entry to the system. The LOGON option aids in the debugging of signon security problems.

**TERMID | NOTERMID**

TERMID tells the security interface to place a terminal ID into the Terminal field of the signon parameter list for any user attempting a signon to Unicenter TCPaccess Telnet Server. The terminal ID passed during signon attempts will be either the remote IP address of the originating host for the user, or a VTAM APPL LU name. NOTERMID tells the security interface to not use the Terminal field in the signon parameter list during signon attempts.

Default: (NOACEE NOACSECPC NOCOMMAND NODATASET NOLOGON NOLOGOFF NOTERMID)



# Global Application Parameters

This chapter will help you customize global parameters for the Unicenter TCPaccess Telnet Server.

## GLOBAL Parameters (APPCFGxx)

The first statement of APPCFGxx is the GLOBAL statement, which defines global options for all applications. It is followed by statements specific to the application. For more information on the statements that follow (APPL, FTP, GAT, LPR, SERVICE, SMTP, TELNET and TERMPROF) refer to the specific application chapters.

### GLOBAL Statement Syntax

```
GLOBAL [ GREETING ( YES | NO | APPL ) ]  
        [ LUPARM ( luparm | NONE ) ]  
        [ RTMSSID ( rtm_ssid ) ]  
        [ TRANTBL ( tablename ) ]
```

#### GREETING ( YES | NO | APPL )

Specifies if the Server TELNET banner messages are sent to the client.

If NO is specified, only the message Enter command or Help is sent to the client.

APPL returns a message on exit from an application.

Default: YES.

#### LUPARM ( *luparm* | NONE )

Specifies the member name of the LU pool configuration member. Specifying NONE turns off LU pool support for Server TELNET.

Default: APPLUP00.

RTMSSID ( *rtm\_ssid* ) Specifies the subsystem ID for the RTM Data Space. This parameter should be specified only if the RTM Data Space is used. If the Data Space resides in the same address space, specify an asterisk (\*).

Default: None.

TRANTBL ( *tablename* ) Specifies the translate table load module to that the control connection for the service will use. The *tablename* can be one of the following:

ENGLISH  
DANISH  
FCANADA  
FRENCH  
GERMAN  
GSWISS  
ITALIAN  
SPANISH  
SWEDISH

Default: Translate table specified by TRANTBL parameter on TELNET statement in TCPCFGxx configuration member. If no parameter is specified, ENGLISH is used.

# Telnet Configuration

---

The TELNET statement defines default characteristics for the APPL statements, and can also act as a generic APPL statement. A TELNET statement *must* precede all APPL statements.

This chapter provides guidelines for using Unicenter TCPaccess Telnet Server to configure Telnet and TN3270 for your site. The topics covered in this chapter include:

- [Telnet Configuration Options](#) – Describes basic configuration options for Server Telnet
- [Configuring the TN3270E Telnet Server](#) – Describes how to configure the TN3270E TELNET server
- [Protocol Service Segment \(SERVICE\)](#) – Describes how to set up your TELNET services and protocols
- [The TELNET Statement](#) – Describes how to specify parameters propagated for APPL statements
- [Server TELNET Application Segment \(APPL\)](#) – Describes how to use the APPL statement to define internal services within TCPaccess
- [Additional Configuration Statements for the T04STSSL Server](#) – Describes additional statements for configuring SSL for the TN3270E Telnet Server.
- [The LU Pool Facility – APPLUPxx Member](#) – Describes how to assign Logical Unit (LU) names and rules
- [LUPool Statement](#) – Describes how to specify LU pools
- [LURULE Statement](#) – Describes how to specify rules for LU pools.
- [Terminal Profile \(TERMPROF\)](#) – Describes how to define site-configurable terminal environments to be used during the terminal-type negotiation process
- [Modifying VTAMLST Application Definitions](#) – Describes how to change the APPL statements in the TCPaccess application major node in SYS1.VTAMLST

## Telnet Configuration Options

You can configure Server Telnet to use either the TN3270 or TN3270E protocol to communicate with applications. You can also configure Server Telnet to automatically connect you to a specific application, or display a screen that enables you to connect to an application of your choice. Use the keywords on the SERVICE and TELNET statements to specify the connection option you prefer.

To use the TN3270E protocol, code the TN3270E keyword on the TELNET statement (or allow it to default). The Unicenter TCPAccess Telnet Server then attempts TN3270E negotiation with clients. If clients indicate that they do not want to use the TN3270E protocol, Unicenter TCPAccess Telnet Server negotiates using the old-style TN3270 protocol.

The server also supports SSL. The server runs over UNIX System Services (formerly known as OpenEdition) so either Unicenter TCPAccess or IBM's TCP/IP (or both) can be used to access the server.

If you want to connect users automatically to a specific application, specify the AUTOLOGON keyword and the name of the application. The name must be defined in an APPL statement; for details, see [Server TELNET Application Segment \(APPL\)](#). Defining AUTOLOGON causes USS table message 10 to be bypassed. For more information about AUTOLOGON, see [Protocol Service Segment \(SERVICE\)](#).

If you want to allow users to connect to an application of their choice, USS table message 10 is displayed as a prompt for the user. You can use the default USS table provided with Unicenter TCPAccess Telnet Server, or you can specify one of your own using SERVICE keyword USSTAB.

You can specify:

- Whether you want Telnet negotiation performed before or after message 10 is displayed, using SERVICE keyword START3270 or STARTNVT
- Whether you want the secondary LU to be acquired before or after message 10 is displayed, by coding or omitting the SERVICE keyword PRELU

For more information on USS tables, see [Preparing USS Tables](#).

## Configuring the TN3270E Telnet Server

The TN3270E Telnet server provides full support for the TN3270E protocol, as defined by RFC2355 and extensions, including support for 3287 printers. The TN3270E server also supports *old-style* TN3270 connections for clients that do not support TN3270E, and can be configured to negotiate TN3270 by default.

To configure the TN3270E server:

1. Specify MODULE(T04STSSL) on the SERVICE statement for the Server Telnet port.  
It:
  - Supports TN3270 and TN3270E
  - Supports SSL
  - Runs in a UNIX System Services environment
2. Specify NOTN3270E on the TELNET statement for the port, if you want to have the server negotiate old-style TN3270 rather than attempting TN3270E negotiation

**Note:** You can optionally provide a TERMPROF group, to provide logmode names. Use the LM3270E parameter to provide logmode names for TN3270E device types. The BUFFERSIZE parameter is ignored by the TN3270E server.

Although the TN3270E server runs under the APP task group, and is configured in the APPCFG $xx$  member, it uses a different infrastructure from the other servers. It is recommended (though not required) that the TN3270E server be run in a different task from other servers, so that it can be isolated from problems in that environment.

To do so:

1. Create a new APPCFG $xx$  member with only the GLOBAL statement, the SERVICE statement(s) for the TN3270E server port(s), and any TELNET, APPL, and TERMPROF statements necessary to support the server.
2. Provide an APPLUP $xx$  member.
3. Add a START command to the STARTTN procedure to start this new task, specifying the configuration member suffix in the CNFG() parameter.
4. Start the RUNTN started procedure; the TN3270E server will be initiated on the new task.

## TN3270E Usage Considerations

**Client Support** When using the TN3270E server, you must ensure that clients are able to fully support TN3270E.

**Note:** Some clients that support terminal TN3270E may not support TN3270E printers. In addition, some clients that support TN3270E printers may not support associated printer functions.

**Device Name Selection** With TN3270E connections, the device name is required during session negotiation. The device name is chosen prior to the application selection.

**Note:** Operating TN3270 connections could fail due to an LU mismatch with TN3270E.

**LURULE Considerations** The LU pool facility that allocates SLU names for TN3270(e) sessions, allows the use of the telnet user's user ID, or the selected application, as criteria in the selection of SLU names. This is done via the LURULE statement in the APPLUPxx configuration member.

If, when selecting an SLU for a new session, an LURULE for user ID is found, the telnet server prompts the user to login.

The TN3270E protocol introduces a problem, because the SLU selection is made a part of the TN3270E negotiation. The Telnet Server cannot prompt users for their user ID and password during negotiation. If a user ID LURULE is encountered during TN3270E negotiation and the telnet user is not logged in, the TN3270E server acquires the SLU as if the user ID were logged in and his user ID matched the rule. When negotiation is complete, the user is prompted to login, and if his user ID does not match the rule, the session is disconnected.

Because many clients have difficulty negotiating in and out of TN3270E, the TN3270E server by default negotiates TN3270E before displaying the USS message 10 (START3270), and does not attempt to negotiate down from TN3270E. This means that the SLU must be selected by the server before an application is chosen by the user. Any LURULE for APPLID is ignored. If the application name must be made available to the LU pool facility, STARTNVT can be coded on the SERVICE statement. This causes the TN3270E server to display USS message 10 in NVT mode, before negotiating TN3270E.

**WARNING!** Though provided for in the protocol, some clients will not be able to negotiate down from TN3270E to NVT mode to display USS message 10, when the user ends a session with a PLU. Hangs and unpredictable results can occur at the client.

## Telnet SSL—Secure Sockets Layer

The Telnet/SSL server provides the ability to protect Telnet connections with the SSL (Secure Sockets Layer) protocol. The SSL protocol provides server authentication and data integrity. When an SSL client connects to the Telnet/SSL server, the client authenticates the server, then the client and server agree on how to encrypt and decrypt information flowing between them. For SSL to work, digital certificates and public/private keys must be defined and made available to the TCP/IP server, either Unicenter TCPaccess Telnet Server or IBM's TCP/IP. See [SSL Considerations](#) for information on creating and maintaining digital certificates and public/private keys.

SSL support is achieved by designating ports through which encrypted data will flow. These ports are associated with one or more keyrings that contain the authentication information (certificates and keys) required to protect the data. See [SSL Considerations](#) for information on creating and maintaining keyrings.

To configure for SSL support, set your configuration as you would for the non-SSL server, but you must specify `MODULE(T04STSSL)` on the `SERVICE` statement (see [Protocol Service Segment \(SERVICE\)](#)) and configure the statements described in [Additional Configuration Statements for the T04STSSL Server](#).

## Protocol Service Segment (SERVICE)

Use the SERVICE statement to define the ports for the Telnet server.

Parameters specified on the SERVICE statement are propagated for all APPL statements unless redefined on the APPL statement.

### SERVICE Statement Syntax

```
SERVICE NAME ( service )
      MODULE ( T04STSSL )
      PORT ( number )
      [ AUTOLOGON ( appl ) ]
      [ IBUF ( aaa bbb ) ]
      [ IDLE ( time ) ]
      [ IPADDRESS ( ip_address ) ]
      [ KEEPALIVE ( number ) ]
      [ OBUF ( aaa bbb ) ]
      [ POLL ( time ) ]
      [ PRELU ]
      [ QLISTEN ( number ) ]
      [ START3270 | STARTNVT ]
      [ USSTAB ( uss_tablename ) ]
```

NAME ( *service* ) Specifies the user-level service or protocol (one to eight characters); used for display and account only.

Default: None.

MODULE ( T04STSSL )

Specifies the name of the primary load module.

T04STSSL Provides the Telnet TN32070E server with SSL and UNIX System Services support.

Default: None.

PORT ( *number* ) Specifies the well-known port number.

The SERVICE statement must be unique with respect to the port number, that is, duplicate SERVICE statements specifying the same port are not allowed.

Default: None.

AUTOLOGON ( *appl* ) Specifies an APPL NAME to connect to automatically. If AUTOLOGON is specified, PRELU, START3270 and STARTNVT are ignored. See [Server TELNET Application Segment \(APPL\)](#) for more information on the APPL statement.

Default: None.

- IBUF** ( *aaa bbb* )      If the service name is TELNET, you can use IBUF to specify the number of output buffers as *aaa*, and their size as *bbb*.
- Defaults: ( 1 1460)
- IDLE** ( *number* )      Specifies the maximum time, in minutes, an idle connection is left open. After that amount of time the connection is closed.
- Note:** Specify zero to not close idle connections. The maximum time is 1439 minutes.
- A TELNET connection is made for each FTP session. While the data transfer is actually taking place, this connection is idle.
- This value represents the idle time on the TELNET connection. Once a transfer completes, it sends status information on this connection and the timer resets.
- Default: 120.
- IPADDRESS** ( *ip\_address* )
- Specifies the full internet address in standard dot notation at which the application will listen for connections.
- Note:** Currently available only to the TN3270E/SSL server.
- Default: 0.0.0.0 (INADDR\_ANY)
- KEEPALIVE** ( *number* )      Specifies the time interval, in minutes, for TCP keepalive packets on the control connection when Unicenter TCPAccess is the TCP/IP provider.
- Alias: KATIMER.
- Range: 0 (no keepalives) - 1439 (1439 minutes).
- Default: 0 (do not use keepalive).
- OBUF** ( *aaa bbb* )      If the service name is TELNET, you can use OBUF to specify the number of output buffers as *aaa*, and their size as *bbb*.
- Defaults: ( 4 1460).

**POLL** (*number*) Specifies the interval for sending a TELNET NO-OP command on an idle TELNET connection. This is another mechanism for detecting broken connections. It is useful for Server Telnet users with PCs, as no indication is sent by the PC if it is recycled.

Specifying zero indicates NO-OPs are not sent. The maximum time is 255 minutes.

Default: Six.

**PRELU** Deprecated synonym for OBTAINLU (BEFORE), see the [OBTAINLU](#) keyword description for details.

Coding the PRELU option prevents you from using the APPLID selection criteria on the LURULE statement. The APPLID selection criteria would have to be (\*) generic for the desired LU pool. For details about the LURULE statement, see [The LU Pool Facility - APPLUPxx Member](#).

The use of PRELU is dependent on the following:

- If AUTOLOGON is specified, PRELU is ignored.
- If TN3270E is specified on the TELNET statement AND STARTNVT is specified, PRELU is ignored. Otherwise, if the TN3270E protocol has been negotiated, PRELU is implied.
- If neither TN3270E nor STARTNVT is specified, the specification of PRELU is significant.
- If PRELU is in effect, the server acquires an SLU before USS table message 10 is displayed, and retains it for the duration of the Telnet session.
- If PRELU is not in effect, the Telnet Server acquires a SLU only when a VTAM application is requested, and releases it when the session with the VTAM application is terminated.

**QLISTEN** (*number*) Specifies the number of entries to allocate in the Queued Listen Table. This value indicates the number of unspecified (wild) listens to queue for determination as to whether the connection should be accepted or rejected.

Default: Five.

## START3270 | STARTNVT

It is recommended that a TELNET statement be defined for the port to provide options, such as TERMPROF, for full-screen negotiation. If no TELNET statement is defined, Server Telnet attempts to negotiate full-screen mode using the default options.

If specified:

AUTOLOGON      START3270 and STARTNVT are ignored.

START3270      Deprecated synonym for NEGOTIATE (BEFORE), see the [NEGOTIATE](#) keyword description for details.

The server negotiates the Telnet protocol with the client before USS table message 10 is displayed.

STARTNVT      Deprecated synonym for NEGOTIATE (AFTER), see the [NEGOTIATE](#) keyword description for details.

The server negotiates the Telnet protocol with the client after USS table message 10 is displayed and an application is requested.

Default: START3270 for the TN3270E server.  
STARTNVT for the original Telnet Server.

USSTAB ( *uss\_tablename* )

Specifies a particular port for Server Telnet applications to access through USS tables. The variable *uss\_tablename* represents the name of the table to load.

You can specify a unique USS table for each port defined. If your site requires more than one USS table as a front-end to VTAM applications from TELNET, you can define access to multiple tables as Server Telnet ports, each using a different USS table. For example, this could facilitate multi-language environments, device-dependent transactions, and could be used to enhance security.

If the *uss\_tablename* value is blank, the system loads the IBM default USS table (ISTINCDT) to define commands and messages.

## Telnet SERVICE Statement Usage Notes

|                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Parameters of Note | You may want to change the following parameters on the SERVICE statement for Telnet.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| IDLE               | The maximum time an idle Telnet session is left open, in minutes.<br><br>The maximum value is 1439.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| POLL               | Provides a polling capability to help detect broken connections.<br><br>This is useful for Server Telnet users with PCs, as no indication is sent by the PC if it is recycled.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| AUTOLOGON          | Used to automatically connect the Server Telnet user to a VTAM application.<br><br>This is good for users with Session Managers. See <a href="#">Configuring Automatic Logon to VTAM Applications</a> for more information.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| USSTAB             | Specifies a USS table to be used for Server Telnet connections on the port. This feature is described in more detail in <a href="#">USS Table Support for Server TELNET</a> . <ul style="list-style-type: none"><li>■ The Server Telnet GREETING is not supported. For more information on customizing the Unicenter TCPaccess Telnet Server greeting in the default USS tables T01USS01 and T01USS02, see <a href="#">USS Table Customization Requirements</a>.</li><li>■ Support is available for the <i>intrinsic</i> services such as HELP and NEWS, with the exception of QUIT/BYE/END, as well as NETSTAT, SYSSTAT, and ACTEST. See <a href="#">Using NETSTAT, SYSSTAT, and ACTEST with a Full-screen USS Table</a> for more information on how to use these services from a full-screen USS table display.</li></ul> |

Configuring the API  
Network Interfaces

The TELNET statements provide information to the Application Program Interface (API) about the Transport Control Program (TCP).

**CAUTION!** Make changes to these values only with the help of Customer Support.

If you are using Unicenter TCPAccess UNIX System Services (OpenEdition) converged socket support, see the *Unicenter TCPAccess Communications Server C/Socket Programmer's Reference* for more information.

## SERVICE Examples

These examples show the use of the SERVICE statement for Telnet:

Standard Server Telnet ( Port 23 )

```
SERVICE NAME ( TELNET )  
MODULE ( T04STSSL )  
PORT ( 23 )  
QLISTEN ( 100 )
```

Server Telnet for TSO Full-Screen Logon ( Port 1023 )

```
SERVICE NAME ( TELNET )  
MODULE ( T04STSSL )  
AUTO ( TSO )  
PORT ( 1023 )  
QLISTEN ( 50 )
```

## SERVICE Statement Example

The following example gives SERVICE statements for several applications.

```
SERVICE NAME ( TELNET ) MODULE( T01S3270 ) PORT( 23 ) IDLE( 480 )  
SERVICE NAME ( TELNET ) MODULE( T04STSSL ) PORT( 2103 )
```

## The TELNET Statement

The TELNET statement defines default characteristics for the APPL statements and can also act as a generic APPL statement. Parameters specified here, except for PORT, are propagated for all APPL statements unless redefined on the APPL statement.

### TELNET Statement Syntax

```
TELNET [ FUNCTIONS (BIND, DSCTL, RESPONSE, SCSCCTL, SYSREQ, CONTRES, FMH,
                  SNASENSE, NOHDRDBL) ]
      [ DEFAULT ]
      [ TN3270E | NOTN3270E ]
      [ NEGOTIATE ( BEFORE | AFTER ) ]
      [ OBTAINLU ( BEFORE | AFTER ) ]
      [ PASS ( APPL | DATA | NONE ) ]
      [ PORT ( number ) ] [ PORT ( number ) ]
      [ RTM ( IP | SNA | NO ) ]
      [ TERMPROF ( terminal_group ) ]
      [ TRANTBL ( traname ) ]
```

FUNCTIONS( BIND, DSCTL, RESPONSE, SCSCCTL, SYSREQ, CONTRES, FMH, SNASENSE, NOHDRDBL)

Specifies the functions that the server attempts to negotiate for new tn3270E sessions.

This parameter applies to TN3270E server only.

The functions are defined in RFC2355 and its extensions. They are configured as follows:

|          |                                |
|----------|--------------------------------|
| DSCTL    | DATA-STREAM-CTL                |
| RESPONSE | RESPONSES                      |
| SCSCCTL  | SCS-CTL-CODES                  |
| SYSREQ   | SYSREQ                         |
| CONTRES  | CONTENTION-RESOLUTION          |
| FMH      | FMH-SUPPORT                    |
| SNASENSE | SNA-SENSE                      |
| NOHDRDBL | SUPPRESS-HEADER-BYTE- DOUBLING |

Default: All functions are supported and the server attempts to negotiate any that apply to the session type.

**DEFAULT** Indicates this statement should be treated as a generic APPL statement. With this in effect, if the service name entered by the user does not match any of the APPL NAMEs it is used as a VTAM APPLID and a connection is attempted to that APPLID.

If DEFAULT is not used, the response is “Unknown Command”.

If you want to use this *default APPL* capability but do not want to use the characteristics specified in the TELNET statement, you can associate the DEFAULT parameter with an APPL statement that contains the desired characteristics.

**Note:** Make sure that you specify it only once, either on the TELNET statement or an APPL statement.

TN3270E | NOTN3270E

Specifies whether the server should attempt to negotiate TN3270E, or use old-style TN3270 instead (NOTN3270E).

If this TELNET statement is associated with the old-style Telnet Server, TN3270E and NOTN3270E are ignored.

If TN3270E is in effect, that is, MODULE(T01S3270) or MODULE(T014STSSL) is specified on the SERVICE statement, the Telnet Server attempts TN3270E negotiation. If this negotiation fails, the server then attempts TN3270 negotiation.

If TN3270E is not in effect, the server attempts only TN3270 negotiation.

Default: TN3270E is the default for the new Telnet Server.

**Note:** This parameter is ignored for the old-style TN3270 server.

## NEGOTIATE ( BEFORE | AFTER )

Specifies whether the Telnet Server should negotiate full-screen mode *before* or *after* displaying the greeting message or USS table message 10.

### NEGOTIATE BEFORE

A synonym of SERVICE keyword START3270.

### NEGOTIATE AFTER

A synonym of SERVICE keyword STARTNVT.

The TELNET NEGOTIATE keyword overrides any specification of SERVICE START3270 or STARTNVT, which are deprecated.

**Note:** Computer Associates recommends that you use the TELNET NEGOTIATE keyword instead of START3270 or STARTNVT.

Default: NEGOTIATE (BEFORE).

## OBTAINLU ( BEFORE | AFTER )

Specifies whether the Telnet Server should get the secondary LU *before* or *after* displaying the greeting message or USS table message 10.

BEFORE is a synonym of SERVICE keyword PRELU.

### **Note:**

- The TELNET OBTAINLU keyword overrides any specification of SERVICE PRELU; that keyword is deprecated.
- *Computer Associates recommends that you use the TELNET OBTAINLU keyword instead of SERVICE PRELU.*

Default: None.

## PASS ( APPL | DATA | KEYB | NONE | NTRA )

Specifies how data is passed to the application:

|      |                                     |
|------|-------------------------------------|
| APPL | Pass the APPL from the command line |
| DATA | Pass the DATA from the command line |
| NONE | Pass no data to the application.    |

Default: DATA.

PORT ( *number* ) Specifies the well-known port number (1:4095) to pass to the application.

If more than one TELNET statement is configured, each one must have a different value for the PORT parameter.

Default: 23.

RTM ( IP | SNA | NO )

Specifies the response time metrics gathered by the TN3270E server.

IP Indicates that IP response times should be measured.

SNA Indicates that SNA response times should be measured.

NO Means that no response times will be measured.

**Note:** IP response times are only measured if RESPONSES is successfully negotiated with the client.

This parameter applies to TN3270E server only.

Default: SNA.

TERMPROF ( *terminal\_group* )

Specifies the terminal group name that must be defined on a TERMPROF statement.

Default: None; this must be specified.

TRANTBL ( *tranname* ) Specifies the translate table load module to be used by TELNET applications unless overridden by specifications on an APPL statement.

The *tranname* can be one of the following:

ENGLISH

DANISH

FCANADA

FRENCH

GERMAN

GSWISS

ITALIAN

SPANISH

SWEDISH

For more information on special translate tables, see the chapter “Translation Tables.”

Default: Translate table specified by TRANTBL parameter on GLOBAL statement in APPCFG $xx$  configuration member.

## Usage Notes

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Parameters of Note       | You may need to change the following parameters for the TELNET statement:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| DEFAULT                  | Indicates this statement is to be treated as a generic APPL statement. This allows a user to enter any VTAM applied in response to the Server Telnet prompt                                                                                                                                                                                                                                                                                                                                                                                                                          |
| USSTAB                   | Specifies a USS table to be used for server TELNET connections on the port. See <a href="#">USS Table Support for Server TELNET</a> for more information.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| TELNET Statement Usage   | <p>The TELNET entry, if specified, must precede all other APPL statements.</p> <p>Any APPL parameter, with the exception of APPLID and NAME, can be specified on the TELNET statement. In addition, the TELNET statement also can contain the DEFAULT parameter to identify it as the default service described in the table.</p>                                                                                                                                                                                                                                                    |
| Using the PORT Parameter | <p>The PORT parameter can match the TELNET statement to any APPL statement or statements to which defaults are applied. If a port other than 23 is defined, you must configure a PORT parameter with the same value for any APPL statement or statements to which this TELNET statement applies.</p> <p>If more than one TELNET statement is configured, each one must have a different value for the PORT parameter. In addition, the TELNET PORT value must always match the SERVICE PORT value.</p>                                                                               |
| Using USS Table Support  | <p>If your site uses the USS Table support in Unicenter TCPaccess Telnet Server, note that more than one TELNET statement can be specified for usage with USS Tables, to allocate:</p> <ul style="list-style-type: none"><li>■ More than one port for USS Tables usage</li><li>■ Other TELNET ports for non-USS Tables applications</li></ul> <p>Also, if you have used the API for Unicenter TCPaccess Telnet Server to create custom applications, make sure not to assign a port number for a USS Tables facility that conflicts with a port number assigned to API programs.</p> |

## TELNET Examples

These are examples for TELNET statements for use with USS Tables:

```
TELNET PORT ( 23 )
      PASS ( DATA )
      DEFAULT
TELNET PORT ( 1023 )
      TN3270E
TELNET PORT ( 1123 )
      OPTIONS ( SNA )
      PASS ( DATA )
```

For more information, see the “Client/Server Telnet” chapter of the *User Guide*.

## Server Telnet Application Segment (APPL)

Use the APPL statement to define internal services within Unicenter TCPAccess Telnet Server. While it is not required to code APPL statements for the USS table facility, you must code APPL configuration statements for all non-USS table access to applications.

### APPL Statement Syntax

```
APPL NAME ( service )
  [ APPLID ( application_ID ) ]
  [ CHARS( number ) ]
  [ DEFAULT ]
  [ LOGDATA ( LOCADDR, REMADDR ) ]
  [ PASS ( APPL | DATA | NONE ) ]
  [ PORT ( number ) ]
  [ TERMPROF ( terminal_group ) ]
  [ TRANTBL ( tranname ) ]
```

**NAME** ( *service* ) Specifies a command name (one to eight characters) entered at the TELNET prompt as service names or synonyms.

**Note:** Do not use LOGON as a service name, as it has a special meaning to TSO.

Default: None.

**APPLID** ( *application\_ID* )

Specifies the VTAM application network (LU) name (one- to eight- characters) if the service is a VTAM application (for example, TSO LOGON).

The name specified must match the label of the VTAMLST APPL statement for the specified application.

Default: None.

CHARS ( *number* )      Specifies the minimum number of characters of the service name that invokes the service.

Default: Length of the service name.

DEFAULT                      Use this statement as the default APPL statement. With this in effect, if the service name entered by the user does not match any of the APPL NAMES, it is used as a VTAM APPLID and a connection is attempted using the parameters specified in the APPL statement.

**Note:** If DEFAULT is specified, APPLID is not valid.

LOGDATA ( LOCADDR, REMADDR )

Specifies that the local and remote protocol addresses are passed to VTAM application during initialization of the VTAM session. The actual remote and/or local addresses are passed to the application in the CINIT VTAM RU.

Both parameters do not need to be coded. In addition, LOGDATA forces PASS(DATA) to be activated.

Default: None.

PASS ( APPL | DATA | NONE )

Specifies how data is passed to the application:

APPL                      Pass the APPL from the command line.

DATA                      Pass the data from the command line.

NONE                      Do not pass data to the application.

Default: DATA

PORT ( *number* )              Specifies the well-known port number (1:4095) passed to the application.

Default: 23.

TERMPROF ( *terminal\_group* )

Specifies the terminal group name that must be defined on a TERMPROF statement.

Default: None; this must be specified.

TRANTBL ( *tranname* ) Specifies the translate table load module that the control connection for the service will use.

The *tranname* can be one of the following:

ENGLISH

DANISH

FCANADA

FRENCH

GERMAN

GSWISS

ITALIAN

SPANISH

SWEDISH

Default: Translate table specified by TRANTBL parameter on TELNET statement in TCPCFGxx configuration member. If no parameter is specified, ENGLISH is used.

**Note:** The intrinsic services BYE, END, CLOSE, QUIT, HELP, NEWS, LOGIN, SIGNON, LOGOUT, and SIGNOFF are defined internally and APPL statements are not required. For compatibility, APPL statements may be defined for any of these services. Only the CHARS and SECURITY parameters are used; all other parameters are ignored.

## TELNET APPL Statement Usage Notes

TELNET APPL Statements of Note      Create additional APPL statements to account for all the applications to which you have access, or use the DEFAULT option.

DEFAULT requires that you know the VTAM APPLID of the application to which you want to connect.

You may need to change these parameters on the APPL statement:

|          |                                                                                                                                  |
|----------|----------------------------------------------------------------------------------------------------------------------------------|
| NAME     | When prompted by Server Telnet , enter the name by which you want to identify the service.                                       |
| APPLID   | Enter the valid VTAM APPLID of the application you wish to access.                                                               |
| OPTIONS  | Defines the terminal type used with TERMPROF definition. If using LU2, specify SNA or SNA command codes.                         |
| TERMPROF | Specifies terminal group profile; must be defined with TERMPROF statement. An asterisk (*) means use the first TERMPROF defined. |

Review the use of TERMPROF with APPL statements. APPL and TERMPROF statements do not depend on each other for specific placement in the configuration stream.

**Note:** A TELNET statement, if specified, must precede all APPL statements.

APPL Statements Description

```

APPL NAME ( NETSTA ) CHARS ( 3 )
APPL NAME ( SYSSTAT ) CHARS ( 3 ) TRANTBL ( ENGLISH )
APPL NAME ( ACTEST )
APPL NAME ( ACCES ) APPLID ( A03ACCA ) PASS ( DATA ) TRANTBL ( ENGLISH )
APPL NAME ( LOGON ) APPLID ( TSO ) PASS ( DATA )
APPL NAME ( TSO ) APPLID ( TSO ) PASS ( DATA ) PORT ( 1023 )
APPL NAME ( SIM ) APPLID ( SIM3278 ) PASS ( DATA )
APPL NAME ( SIM3278 ) APPLID ( SIM3278 ) PASS ( APPL DATA )
APPL NAME ( TSO ) APPLID ( A02TSO ) PORT ( 23 )
OPTIONS ( 3278 SNA ) TERMPROF ( T3278GRP )
APPL NAME ( CICS ) APPLID ( A02CICSP ) PORT ( 27 )
OPTIONS ( 3278 SNA ) TERMPROF ( T3279GRP )
    
```

## APPL Examples

These examples show the usage of the APPL statement:

### Standard Telnet Port, Using the TN3270E Server

```
SERVICE NAME(TN3270E) MODULE(T01S3270) PORT(23)
POLL(0) IDLE(0)
```

### The New TN3270E Server Using the Old TN3270 Protocol

```
SERVICE NAME(TN3270E) MODULE(T01S3270) PORT(1123)
POLL(0) IDLE(0)
TELNET PORT(1123) PASS(DATA) NOTN3270E
```

### Application Subsystems Accessible Through VTAM

```
APPLNAME ( LOGON )
APPLID ( A06TSO )
PASS ( DATA )
APPLNAME ( TSO )
APPLID ( A06TSO )
PASS ( DATA )
APPLNAME ( TSO )
APPLID ( A06TSO )
PORT ( 1023 )
APPLNAME ( CICS )
APPLID ( A06CICS )
PASS ( DATA )
APPLNAME ( IMS )
APPLID ( A06IMS )
PASS ( DATA )
APPLNAME ( SIM3767 )
APPLID ( SIM3278 )
OPTIONS ( 3278 CNTL )
APPLNAME ( SIM3278 )
APPLID ( SIM3278 )
OPTIONS ( 3278 CNTL )
APPLNAME ( APL )
APPLID ( A06TSO )
APPLNAME ( WYLBUR )
APPLID ( WYL )
```

### Test and Miscellaneous Services

```
APPLNAME ( ACCES )
APPLID ( ACCES )
PASS ( DATA )
```

### TERMPROF Usage

```
APPLNAME ( TSO )
APPLID ( A02TSO )
PORT ( 23 )
OPTIONS ( 3278 )
TERMPROF ( T3279GRP )
```

### Support for ASCII Terminals and Other Clients Without TN3270

```
APPLNAME ( TSOSIM )
SIMPCS ( TNSIMPHI )
APPLID ( A06TS0 )
PASS ( DATA )
```

**Note:** Using Unicenter TCPaccess Telnet Server with ASCII terminals requires the separate installation of the Sim3278 TCP/IP software.

### Access to Applications on Systems Not Using USS Tables

```
APPL NAME ( NETSTAT )
CHARS ( 3 )
PORT ( 23 )
APPL NAME ( SYSSTAT )
CHARS ( 3 )
PORT ( 23 )
APPL NAME ( ACTEST )
PORT ( 23 )
```

## Additional Configuration Statements for the T04STSSL Server

In addition to the T04STSSL module and IP address specifications on the SERVICE statement, the following statements provide further configuration information for SSL.

Please refer to the Appendix “SSL Considerations” for additional system information.

### TNGLOBAL Statement

The TNGLOBAL statement can be used to qualify the TCPaccess stack in a Common INET (CINET) environment or to select a PFS (Physical File System). Only one TNGLOBAL statement is permitted in the APPCFG $_{xx}$  configuration member.

**Note:** The TNGLOBAL statement is optional. If the TNGLOBAL statement is not coded, the SERVICE statements with MODULE(T04STSSL) will listen to ALL active CINET stacks.

### TNGLOBAL Statement Syntax

```
TNGLOBAL PROVIDER ( name )
```

PROVIDER ( *name* ) Specifies a one- to eight-character CINET provider name that allows applications to be associated with specific stacks in the CINET.

For example, if TCPACC01 and TCPACC02 were in the CINET and both were active, specifying PROVIDER(TCPACC02) would allow connections through TCPACC02 only.

By default, any stack within CINET may provide services.

### TNNONSSL Statement

The TNNONSSL statement establishes worker task allocation settings for non-SSL ports. Only one TNNONSSL statement is permitted in the APPCFGxx configuration member.

**Note:** The TNNONSSL statement is optional

### TNNONSSL Statement Syntax

```
TNNONSSL MAXSESSTASK ( number )  
          MAXTASKS ( number )  
          MINTASKS ( number )
```

MAXSESSTASK ( *number* )

Specifies the maximum number of sessions that any non-SSL telnet server worker task can support.

Range: 1 - 65,280.

Default: 8,192.

MAXTASKS ( *number* ) Specifies the maximum number of worker tasks to allocate for non-SSL sessions. If zero is specified, the number of worker tasks is unlimited and the non-SSL telnet server allocates as many worker tasks as it needs to service a given telnet connection.

**Note:** A non-zero value limits the maximum number of non-SSL sessions that can be concurrently managed:

(MAXTASKS \* MAXSESSTASK = maximum number of sessions).

Range: 0 - 100.

Default: Zero (unlimited).

MINTASKS ( *number* ) Specifies the minimum number of worker tasks to allocate for non-SSL sessions.

Range: 1 - 100.

Default: One.

## Keyring Statement

KEYRING defines an SSL keyring profile. One or more KEYRING statements are required to enable SSL connections.

### Keyring Statement Syntax

```
KEYRING NAME ( profile_name )  
[ SAFNAME ( ringname ) | HFSKDB ( kdbpath ) HFSSTASH ( stpath ) ]  
HANDSHAKETIMEOUT ( seconds )  
IOTIMEOUT ( seconds )  
MAXSESSTASK ( number )  
MAXTASKS ( number )  
MINTASKS ( number )  
V2ENCRYPTION ( cipher_type1 cipher_type2 ... cipher_type10 )  
V3ENCRYPTION ( cipher_type1 cipher_type2 ... cipher_type10 )
```

NAME ( *profile\_name* )

Specifies the one- to eight- character name of the keyring profile. NAME is required. This is the name referenced in TNSSSL statements associated with this keyring.

Default: None.

[ SAFNAME ( *ringname* ) | HFSKDB ( *kdbpath* ) HFSSTASH ( *stpath* ) ]

Specifies the name of the keyring database (KDB). This can be either a keyring created via SAF, or a pair of HFS-defined pathnames.

SAFNAME or an HFS/pathname pair  
(Required). SAFNAME is mutually exclusive with  
HFSKDB/HFSSTASH.

SAFNAME(*ringname*)  
Name of the keyring created via the SAF create keyring  
function.

SAFNAME can be up to 237 characters.

HFSKDB(*kdbpath*) HFSSTASH(*stpath*)  
Pathnames of an HFS-defined KDB file and its associated  
stash (password) file. Although HFS pathnames can  
normally be up to 1023 characters, due to parsing  
constraints, HFSKDB and HFSSTASH pathnames cannot  
exceed 255 characters.

Refer to SSL Considerations for guidelines on keyring and  
KDB management.

Default: None.

HANDSHAKETIMEOUT ( *seconds* )

Specifies the maximum amount of time the SSL server waits for the start of the SSL handshake initiated by the client. The connection request is aborted if the handshake is not received within this time. This specification is designed to prevent tying up an SSL port if a non-SSL client mistakenly connects to an SSL port.

Specify a value between 1 and 60. If zero is specified, the SSL server waits indefinitely for the handshake start.

Default: Five.

**IOTIMEOUT** ( *seconds* ) Specifies the maximum amount of time the SSL server waits for an I/O operation to complete during handshake processing. When the SSL server starts a handshake I/O operation on behalf of a session, the worker task (TCB) associated with the session is suspended until the I/O operation completes. When a worker task is suspended, ALL sessions assigned to it are also suspended. If an I/O operation does not complete within this time, the session on whose behalf the I/O operation was issued is terminated. All other sessions are unaffected.

Range: 1 - 15.

Default: Five.

**MAXSESSTASK** ( *number* )

Specifies the maximum number of sessions that any SSL server worker task can support.

Range: 1 - 65,280.

Default: 8,192.

**MAXTASKS** ( *number* ) Specifies the maximum number of worker tasks allocated to this keyring. If zero is specified, the number of worker tasks is unlimited and the SSL server allocates as many worker tasks as needed to service a given SSL connection.

**Note:** A non-zero value limits the maximum number of sessions that can be concurrently managed on the keyring

(MAXTASKS \* MAXSESSTASK = maximum number of sessions).

Range: 0 - 100.

Default: Zero (unlimited).

**MINTASKS** ( *number* ) Specifies the minimum number of worker tasks allocated to this keyring.

Range: 1 - 100.

Default: One.

V2ENCRYPTION (*cipher\_type1 cipher\_type2 ... cipher\_type10*)

Specifies a subset of the supported SSL/V2 encryption methods to use on this port.

Specify one or more of the following SSL/V2 cipher types:

RC4

RC4\_EX

RC2

RC2\_EX

DES

3DES

Default: Full set of encryption methods.

**Note:** See Note in V3ENCRYPTION description.

V3ENCRYPTION (*cipher\_type1 cipher\_type2 ... cipher\_type10*)

Specifies a subset of the supported SSL/V3 encryption methods used on this port.

Specify one or more of the following SSL/V3 cipher types:

NULL\_MD5

NULL\_SHA

RC4\_MD5\_EX

RC4\_MD5

RC4\_SHA

RC2\_MD5\_EX

DES\_SHA

3DES\_SHA

**Note:**

- Both V2ENCRYPTION and V3ENCRYPTION can be specified
- A maximum of 10 cipher types per version can be specified
- The actual encryption method used for a given connection is negotiated during the SSL connection handshake
  - If omitted, no encryption specifications are propagated to corresponding TNSSL statements
  - If encryption cannot be determined from any source, the SSL server supports all encryption methods available for the level of SSL installed on the operating system
  - Encryption cipher types should be listed in order of preference
- If VxENCRYPTION is specified on a KEYRING statement, it sets the encryption methodology used for all ports associated with the keyring. If VxENCRYPTION is specified on a TNSSL statement, it applies only to the port defined in the TNSSL statement, and supercedes encryption settings on the port's corresponding keyring statement.
- ENCRYPTION can be used as an alias only for V3ENCRYPTION.

Default: Full set of encryption methods.

## TNSSL Statement

TNSSL defines a port to use for SSL connections. One or more TNSSL statements are required to enable SSL support. The TNSSL port must match a port in a SERVICE statement. The presence of a TNSSL statement commits its corresponding SERVICE port to SSL connections only.

### TNSSL Statement Syntax

```
TNSSLNAME KEYRING ( profile_name )
          PORT ( portnum )
          V2ENCRYPTION(cipher_type1 cipher_type2 ... cipher_type10)
          V3ENCRYPTION(cipher_type1 cipher_type2 ... cipher_type10)
```

KEYRING ( *profile\_name* )

Specifies the one-to eight- character name of the KEYRING profile to associate with this port. KEYRING is required.

Default: None.

PORT ( *portnum* )

(Required). Specifies a port number to use for SSL connections.

**Note:** This value must match a corresponding port in a SERVICE statement and must be unique among all TNSSL statements.

Default: None.

V2ENCRYPTION(*cipher\_type1 cipher\_type2 ... cipher\_type10*)

Specifies a subset of the supported SSL/V2 encryption methods to use on this port.

Specify one or more of the following SSL/V2 cipher types:

RC4

RC4\_EX

RC2

RC2\_EX

DES

3DES

Default: Full set of encryption methods.

**Note:** See Note in the V3ENCRYPTION description that follows.

V3ENCRYPTION(*cipher\_type1 cipher\_type2 ... cipher\_type10*)

Specifies that a subset of the supported SSL/V3 encryption methods will be used on this port. Specify one or more of the following SSL/V3 cipher types:

NULL\_MD5

NULL\_SHA

RC4\_MD5\_EX

RC4\_MD5

RC4\_SHA

RC2\_MD5\_EX

DES\_SHA

3DES\_SHA

Default: Full set of encryption methods.

**Note:**

- Both V2ENCRYPTION and V3ENCRYPTION can be specified
- A maximum of 10 cipher types per version can be specified
- The actual encryption method used for a given connection is negotiated during the SSL connection handshake
  - If omitted, encryption specifications are obtained from the port's associative KEYRING profile
  - If encryption cannot be determined from any source, the SSL server supports all encryption methods available for the level of SSL installed on the operating system
  - Encryption cipher types should be listed in order of preference
- If VxENCRYPTION is specified on a KEYRING statement, it sets the encryption methodology used for all ports associated with the keyring. If VxENCRYPTION is specified on a TNSSSL statement, it applies only to the port defined in the TNSSSL statement, and supercedes encryption settings on the port's corresponding keyring statement.
- ENCRYPTION can be used as an alias only for V3ENCRYPTION.

## TNSSL Usage Notes

DOMAIN and PROVIDER on the TNGLOBAL statement are conditionally mutually exclusive. If DOMAIN(2) is defined, PROVIDER can also be specified. Otherwise, specifying both results in a configuration error.

As noted earlier, the port number specified on a TNSSL statement must match a port number on a SERVICE statement. In addition, the corresponding SERVICE statement must specify MODULE(T04STSSL). Module T04STSSL supports both SSL PORTs and non-SSL PORTs. If TNSSL is specified the port is an SSL PORT, otherwise it is a non-SSL port.

SSL configuration statements can be specified in any order in the APPCFGxx member.

## SSL Configuration Example

```

SERVICE NAME(TN3270E) MODULE(T04STSSL) PORT(1123) ...
SERVICE NAME(TN3270E) MODULE(T04STSSL) PORT(1223) ...
SERVICE NAME(TN3270E) MODULE(T04STSSL) PORT(1323) ...
SERVICE NAME(TN3270E) MODULE(T04STSSL) PORT(1423) ...
...
SERVICE NAME(TN3270ES) MODULE(T04STSSL) PORT(2004) ...
SERVICE NAME(TN3270ES) MODULE(T04STSSL) PORT(2005) ...
SERVICE NAME(TN3270ES) MODULE(T04STSSL) PORT(2006) ...
SERVICE NAME(TN3270ES) MODULE(T04STSSL) PORT(2007) ...
...
TNNONSSL MINTASKS(2)
KEYRING NAME(WTMRING1)
    HFSKDB(/u/WTM1/key.kdb)
    HFSSTASH(/u/WTM1/key.sth)
KEYRING NAME(WTMRING2)
    SAFNAME(WTMSAF.KEYRING)
    HANDSHAKETIMEOUT(20)
TNSSL PORT(2004) KEYRING(WTMRING1)
    ENCRYPTION(DES_SHA 3DES_SHA
    NULL_MD5 NULL_SHA RC4_MD5)
TNSSL PORT(2005) KEYRING(WTMRING2)
TNSSL PORT(2006) KEYRING(WTMRING1)
TNSSL PORT(2007) KEYRING(WTMRING2)

```

In the previous example, ports 1123, 1223, 1323, and 1423 are defined as non-SSL ports (because there are no matching TNSSL statements).

Ports 2004-2007 are defined as SSL ports.

## The LU Pool Facility—APPLUPxx Member

The APPLUPxx member in the PARM data set implements the Logical Unit (LU) pool facility. It is referenced by the HOST statement LUPARM keyword in APPCFGxx.

This facility assigns LU names to Server TELNET users requesting access to local VTAM applications based on a set of installation-defined rules. The LU pools and rules are defined by member APPLUPxx. The LUPOOL statement defines the LU pools; the LURULE statement defines the LUPOOL rules. The LUPOOL and LURULE statements can appear anywhere within the member. Multiple copies of Unicenter TCPaccess Telnet Server can use the same LUPARM files. For more information on the LUPOOL statement, see [LUPOOL Statement](#). For more information on the LURULE statement, see [LURULE Statement](#).

The same LUs can be used in both LUPOOL and ACCPOOL. For more information on ACCPOOL, see [Modifying VTAMLST Application Definitions](#).

### Virtual Terminal Setup

As distributed, the APPLUP00 member contains 99 Virtual Logical Terminals (VLTs, or LUs) and ACCPOOL contains 30 of those 99 VLTs. This means that the VLTs assigned to ACCPOOL can also be used by Server Telnet users. While this should not be a problem for initial installation and testing, make an evaluation prior to production to ensure there are sufficient VLTs available for both types of usage. You may need to eliminate the overlap or define additional VLTs in both members.

The minimum changes you need to make for installation and testing purposes are described here. See [LU Name Pools \( LUPOOL \)](#), and [The LU Pool Facility – APPLUPxx Member](#) for more detailed information on setting up additional LU rules and LU pools to create a more restrictive environment.

The APPLUP00 member distributed with Unicenter TCPAccess Telnet Server is shown below.

```

LUPPOOL NAME ( VLTPPOOL )
LU ( ACCVLT01,ACCVLT02,ACCVLT03,ACCVLT04,ACCVLT05,
ACCVLT06,ACCVLT07,ACCVLT08,ACCVLT09,ACCVLT10,
ACCVLT11,ACCVLT12,ACCVLT13,ACCVLT14,ACCVLT15,
ACCVLT16,ACCVLT17,ACCVLT18,ACCVLT19,ACCVLT20,
ACCVLT21,ACCVLT22,ACCVLT23,ACCVLT24,ACCVLT25,
ACCVLT26,ACCVLT27,ACCVLT28,ACCVLT29,ACCVLT30,
ACCVLT31,ACCVLT32,ACCVLT33,ACCVLT34,ACCVLT35,
ACCVLT36,ACCVLT37,ACCVLT38,ACCVLT39,ACCVLT40,
ACCVLT41,ACCVLT42,ACCVLT43,ACCVLT44,ACCVLT45,
ACCVLT46,ACCVLT47,ACCVLT48,ACCVLT49,ACCVLT50,
ACCVLT51,ACCVLT52,ACCVLT53,ACCVLT54,ACCVLT55,
ACCVLT56,ACCVLT57,ACCVLT58,ACCVLT59,ACCVLT60,
ACCVLT61,ACCVLT62,ACCVLT63,ACCVLT64,ACCVLT65,
ACCVLT66,ACCVLT67,ACCVLT68,ACCVLT69,ACCVLT70,
ACCVLT71,ACCVLT72,ACCVLT73,ACCVLT74,ACCVLT75,
ACCVLT76,ACCVLT77,ACCVLT78,ACCVLT79,ACCVLT80,
ACCVLT81,ACCVLT82,ACCVLT83,ACCVLT84,ACCVLT85,
ACCVLT86,ACCVLT87,ACCVLT88,ACCVLT89,ACCVLT90,
ACCVLT91,ACCVLT92,ACCVLT93,ACCVLT94,ACCVLT95,
ACCVLT96,ACCVLT97,ACCVLT98,ACCVLT99 )
LURULE IPADDR ( 0.0.0.0,255.255.255.255 )
PORT ( * )
USER ( * )
APPLID ( * )
POOL ( VLTPPOOL )

```

## LU Name Pools ( LUPOOL )

The LUPOOL statement groups one or more LU names, into pools. The pool usage is controlled by LURULE statements.

The LUPOOL NAME ( *xx* ) contains a pool of LU names and gives the pool a unique name. The LU names in the pool are actually the ACBNAMEs for the associated LUs. Normally LU name and ACBNAME are the same, but it is not a VTAM requirement. Any number of pools can be defined. There is no limit to the number of LU names you can define in a pool. LUPOOL statements are not required if the LU keyword is used instead of the POOL keyword on the LURULE statement.

See [The LU Pool Facility – APPLUPxx Member](#) for additional information and examples about APPLUPxx.

If VTAM LU definition is:

```
VLT02 APPL ACBNAME=ACCVLT02, ...
```

The LU keyword is ACCVLT02, where LU and ACBNAME are not equivalent.

Example 1

This example shows how to create an LUPOOL/LURULE combination named CICSPool.

To use only LUs ACCVLT02 through ACCVLT06 for use with CICS, you can either create an LUPOOL/LURULE combination named CICSPool, or use the LU keyword of the LURULE statement.

The LUPOOL contains five LUs:

```
LUPOOL NAME ( CICSPool ) LU ( ACCVLT02,ACCVLT03,ACCVLT04,ACCVLT05,ACCVLT06 )
LURULE IPADDR ( 0.0.0.0,255.255.255.255 )
PORT ( 1023 )
USER ( * )
APPLID ( CICS )
POOL ( CICSPool )
```

The LURULE states a PORT or APPLID that relates to a SERVICE/APPL combination for access to CICS (defined in APPCFGxx) and uses the POOL keyword to reflect CICSPool).

The associated SERVICE and APPL statements are:

```
APPCFGxx statements
SERVICE NAME ( CICS ) MODULE ( T04STSSL ) PORT ( 1023 )
APPL NAME ( CICS ) APPLID ( CICS )
OPTIONS ( 3278 ) PORT ( 1023 )
```

Example 2

This example shows how to create the LURULE without an LUPOOL statement.

```
LURULE IPADDR ( 0.0.0.0,255.255.255.255 )
PORT ( 1023 )
USER ( * )
APPLID ( CICS )
LU ( ACCVLT02,ACCVLT03,ACCVLT04,ACCVLT05,ACCVLT06 )
```

## LU Name Rules (LURULE)

The LURULE statement identifies the criteria used to determine how an LU name is assigned to a remote Server Telnet user.

**Note:** There is no limit to the number of LU rules you can define.

Two types of LU pools are used by LU rules:

- The first type is defined explicitly by the LUPOOL statement and can be shared by multiple LURULEs
- The second is defined implicitly by the LU keyword on the LURULE statement and these pools are exclusive to the LURULE

Each rule must use either the POOL or LU keyword to identify LU names associated with this rule. LU name selection is determined by testing each rule in the order it appears in the APPLUPxx member using the following criteria (in order of significance):

- Remote IP address
- Local port address
- VTAM APPLID
- Local user identification

**Note:** Since rules are exercised in the order they appear in the APPLUPxx member, enter the rules in the order of most specific to least specific.

The last rule is considered the default and identifies the default pool of LU names. Remote users not meeting the criteria for any rule are not assigned an LU name necessary to reach local host VTAM applications. Additionally, all LU names that are used must be defined in one or more LUPOOL statements or on the LU keyword of the LURULE statements.

In summary, all LU names used must be defined and all users must match at least one rule. The same PARM members can be shared between multiple Unicenter TCPaccess Telnet Server address spaces, but sharing these LUs can cause a problem if a REFRESH is attempted or if matching LU rules are not defined in the shared address spaces.

## Refreshing the LUPOOL Facility

You can refresh the LUPOOL facility while Unicenter TCPaccess Telnet Server is actively running by issuing the following APP command:

```
REFRESH TASK ( n ) LUPARM ( APPLUPxx )
```

Where *n* is the task number and APPLUPxx is the member. See the *Unicenter TCPaccess Communications Server System Management Guide* for more information on the REFRESH command. If there is a problem with the new LU pool configuration member, informative messages describing the problem display at the operator console and the old configuration stays active.

## LUPOOL Statement

The LUPOOL statement has the following syntax:

```
LUPOOL      NAME ( poolname )
            TYPE ( TN3270 | TN3270E | PRINTER )
            ALLOCATE ( FIRST | NEXT )
            LU ( luname )
```

NAME ( *poolname* ) Identifies the enclosed parameter as a unique pool name. *poolname* can be one- to eight alphanumeric characters.

Default: None. Keyword and parameter are required.

TYPE (TN3270 | TN3270E | PRINTER)

Specifies the type of LUs in this pool.

|         |                                                                                                                                        |
|---------|----------------------------------------------------------------------------------------------------------------------------------------|
| TN3270  | Specifies that all LUs specified are designated for allocation for applications requiring only a TN3270 terminal LU.                   |
| TN3270E | Specifies that all LUs specified are used for applications requiring TN3270E terminal and possibly acquiring an associated printer LU. |
| PRINTER | Specifies that all LUs are designated for printer allocation only.                                                                     |

Default: TN3270E if LUs are defined with associated printers, otherwise TN3270.

## ALLOCATE ( FIRST | NEXT )

Directs LUPPOOL LU allocation. Can be abbreviated as AL(N) or AL(F) on the LUPPOOL statement.

**FIRST** Directs LUPPOOL to allocate the first available LU. ALLOCATE(FIRST) is more efficient than ALLOCATE(NEXT). Therefore it is the preferred startup option.

**NEXT** Directs LUPPOOL to allocate LUs in sequential order. This option adds flexibility in an error LU situation.

**Note:** Use this option only at the direction of Customer Support when the VTAM network is not functioning properly.

Default: FIRST.

LU ( *luname* )

Specifies the LU name. This can be an acbname, or, if TYPE is specified, a terminal or printer *luname*.

The parameter can extend multiple lines. Each entry specifies a unique LU name that has been defined in the installation VTAM configuration files

See [LU Specification for TN3270 and Printers](#) for more information on setting these parameters.

Default: None. Keyword and parameter are required.

**Note:** The keyword APPEND is no longer supported and is ignored. Use LU Chaining instead. See the POOL parameter in [LURULE Statement](#).

## LU Specification for TN3270 and Printers

LU Pool syntax for terminals and printers consists of LUs alone, LU ranges, LUs with associated printers, or printers alone. Ranges of LU names are specified as LU0001:LU9999, LUAAAA:LUZZZZ, or LU01AA1:LU99ZZ9. LU names must begin with the same stem, and mixing of alphabetic and numeric names in a range is not supported (for example, LU01AAA:LU01ZZ9).

Terminal LUs may be specified as:

- A list of one or more LUs separated by commas
- One or more ranges of LUs separated by commas
- A combination of the above

Parentheses determine whether you are specifying a simple list of LUs or terminals with associated printers. A simple list of LUs is specified with a single set of parentheses as:

**LU (LU0001, LU0002)**

To associate a printer with a terminal, specify the terminal LU, followed by the printer LU, with both enclosed by parentheses. For example:

**LU ((T10000, P10000))**

If a printer pool is defined, only printer LUs need to be specified. TYPE(PRINTER) must be specified to designate a printer-only pool. Printer LU names are subject to the same range expansion as terminal LU names described above. For example:

**LU (P10000:P10009)**

To summarize the use of parentheses:

Level One '(' specifies list notation.

Level Two '(((' specifies a terminal with associated printer notation

Level Three '((( specifies a list for either terminal or printer LUs

### TN3270 Pools and Associated Printers Example

You can use the following syntax for TN3270 pools, TN3270E pools without associated printers, and PRINTER pools.

```
LU(LU1,LU2,...,LUn)
LU(LUA001:LUA999,...,LUZ001:LUZ099)
LU(LU1,LU2,LUA001:LUA999,LUZ001:LUZ099...)
```

### TN3270E Pools Only Example

The following syntax can be used for TN3270E pools only. Associated printer LUs are defined.

```
LU((LUT1,LUP1),(LUT2,LUP2),...(LUTn,LUPn))    Terminal/Printer LUs pair
specifications
* LUT1 associated with printer LUP1, LUT2 associated with printer LUP2
LU((LUT1:LUTn,LUP1:LUPn))    Terminal/Printer LU range pairings
* LUT1 associated with printer LUP1, LUT2 associated with LUP2
LU(((LUT1,LUT2,...,LUTn),(LUP1,LUP2,...LUPn)))    Terminal list and associated
Printer list
* LUT1 associated with LUP1, LUT2 associated with LUP2
```

### Specifying One Printer for Multiple Terminal LUs

Terminals with an associated printer must identify an equal number of each type of LU, however, you can specify one printer LU to associate with all terminal LUs.

```
LU((LUT1:LUTn,LUP1))    Multi terminal LUs associated to 1 printer
* LUT1 thru LUTn are associated with a single printer LUP1
LU(((LUT1,LUT2,...,LUTn),LUP1))    Multi terminal LUs associated to 1 printer
```

## LURULE Statement

The LURULE statement has the following syntax:

```
LURULE    [ IPADDR ( ip_source_min_addr, ip_source_max_addr ) ]  
          [ PORT ( port_dest_num ) ]  
          [ APPLID ( VTAM_appl_applid ) ]  
          [ USER ( host_userid ) ]  
          [ POOL ( lupool_name, ... lupool_name ) ]  
          [ RESOURCE ( name ) ]  
          [ TYPE ( TN3270 | TN3270E | PRINTER ) ]  
          [ TRACE ]  
          LU ( lunames )
```

IPADDR ( *ip\_source\_min\_addr*, *ip\_source\_max\_addr* )

Specifies the first and last IP address in a range of addresses for which this rule applies.

If *ip\_source\_max\_addr* is not specified, the rule only applies to the *ip\_source\_min\_addr* IP address. An asterisk (\*) can be specified for either first or last IP address parameter.

An asterisk in *ip\_source\_min\_addr* implies an IP address of 0.0.0.0.

An asterisk in *ip\_source\_max\_addr* implies an IP address of 255.255.255.255.

Default: All IP addresses (0.0.0.0,255.255.255.255).

PORT ( *port\_dest\_num* ) Specifies the target local port number as a decimal number. An asterisk '\*' can be specified to indicate all ports.

Default: \* (all local Server Telnet ports)

APPLID ( *VTAM\_appl\_applid* )

Specifies the VTAM applid/mask for the application(s) for which this rule applies. The applid is identified via the APPCFGxx APPL configuration statement. For more information, see the section describing the APPCFGxx APPL statement and defining installation dependent applications.

A mask can be used to identify multiple applications. These are the rules for masks:

- Must not exceed eight characters
- An asterisk (\*) represents 0 or more consecutive characters
- A percent (%) represents a single character

**Note:** If you are using the USS Table facility for Server Telnet access to VTAM applications, and you code the PRELU option in the SERVICE statement to preallocate an LU name, you cannot use the APPLID selection criteria on the LURULE statement. The APPLID selection criteria must be (\*) generic for the desired LU pool.

Default: \* (all applications).

USER ( *host\_userid* ) Specifies the local user ID/mask to associate user ID(s) with this rule. You can use a mask to identify multiple user IDs.

Default: \* (all users).

POOL ( *lupool\_name, ...lupool\_name* )

Specifies the LUPOOL(s) to use when the remote user satisfies the LURULE criteria.

You can chain LUPOOLS by specifying a list of LUPOOLS to search for an available LU. Pools may be of any TYPE.

RESOURCE ( *name* ) Specifies the TN370E resource name. A resource name provides additional control and flexibility over LU allocation for TN3270E clients.

TYPE ( TN3270 | TN3270E | PRINTER )

Specifies the type of LUs in this pool.

TN3270 Specifies that all LUs specified are designated for allocation for applications requiring only a TN3270 terminal LU.

TN3270E Specifies that all LUs specified are used for applications requiring TN3270E terminal and possibly acquiring an associated printer LU.

PRINTER Specifies that all LUs are designated for printer allocation only.

Default: TN3270E if LUs are defined with associated printers, otherwise TN3270.

TRACE Specifies that Server Telnet tracing be enabled for the LU names controlled by this LURULE. A GTF trace must be started with the USR trace type enabled.

Use module AMDUSR to format GTF records written by this trace.

**Note:** This parameter should be used only with assistance from Customer Support.

LU ( *lunames* ) See [LU Specification for TN3270 and Printers](#) for more information.

## Initial Changes to APPLUPxx

You may need to make these changes for the initial installation:

|        |                                                                                                                                                                          |
|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| LUPOOL | If you changed the ACBNAMEs on the virtual terminal definitions for Unicenter TCPaccess Telnet Server in SYS1.VTAMLST, enter those names in place of the ones specified. |
| LURULE | LURULE defines the general rule for TELNET usage.                                                                                                                        |

If you want to establish more pools and rules now, see the following two sections. You can make changes later and implement them with the REFRESH operator command. If you are not going to establish more pools or rules, you can skip to the next section, [Unicenter TCPaccess Telnet Server Application Definitions](#).

## Usage Notes

LUNames can be specified in one or more LUPOOLS. If LUNames are specified in multiple pools, they should be defined with the same attributes. The specification should indicate the same pool TYPE and the same associated printer, if TN3270E.

LUpool chaining may be more appropriate than defining the same LUs in multiple pools. However, if you define LUpool chains specifying different pool TYPEs, you may encounter the following conditions.

- **For TN3270 clients:** After all TN3270 defined LUs are allocated, available TN3270E LUs from chained pools are allocated.
- **For TN3270E clients:** After all TN3270E defined LUs are allocated, available TN3270 LUs from chained pools are allocated. When a TN3270 defined LU is allocated to a TN3270E client, an associated printer will not be available.

Lupool chaining adds flexibility over LU control and reduces redundant LU specification in multiple pools.

To provide greater control over LUs, specify LURULEs with APPL keywords. Also, specify a resource for additional control over TN3270E clients as client software permits.

Potential Problems  
When Using the  
TN3270E Protocol

The TN3270E protocol requires that the SLU be acquired during Telnet negotiation. For TN3270E, this normally means that the SLU is chosen before USS message 10 displays, and before selecting an application.

If the APPLID or USER parameter is used on the LURULE statement, this can lead to unexpected results. The APPLID parameter is ignored when the SLU is selected. The user ID is saved, and a login screen is presented after negotiation. If the login fails, or if the user ID does not match the LURULE, the session is disconnected.

One way around this problem is to specify STARTNVT on the SERVICE statement. This causes the server to display the USS message 10 in NVT mode, so that the APPLID is chosen before TN3270E negotiation, and can be used as a criterion in SLU name selection.

**CAUTION!** *Although the protocol specifies support for this feature, many clients do not behave well when the server attempts to negotiate down from TN3270E in order to display message 10 after ending a session with a PLU. The client may hang or exhibit unpredictable behavior. Verify that your TN3270 client software can handle negotiation from TN3270E to NVT mode, before configuring STARTNVT.*

## APPLUPxx Usage Notes

ACBNAME and LU  
Names

The names specified in the LU keyword are ACBNAMEs and not LU names. Frequently, the ACBNAME and the LU name are the same, but it is possible for them to be different. When they are different, the names in the keyword must be the ACBNAMEs.

APPLUPxx Not  
Provided

If this member is missing, the ACCPOOL load module is used to provide ACBNAMEs for the LUs to use for Server Telnet.

## APPLUPxx Examples

This is an example of an installation that has 30 LU names defined. They must be able to:

- Trace on a single LU name in case of VTAM problems:  
Define a test user ID and a rule created to assign a specific LU name based on the user ID.
- Define a limited number of LU names to the Payroll application and limit their use to authorized users of the application:  
Define a pool containing the LU names that are defined to the Payroll application. The associated rule uses the application's APPLID and the user's user ID to determine if the LU name should be assigned.
- Make the remaining LU names available to all users :  
Define a pool for the remaining LU names. The associated rule has no restrictions and lets all users be assigned an LU name from this pool.

The following is an example of the required APPLUPxx member.

```

*-----*
* RULE TO BE USED FOR TESTING TO ALLOW TRACING ON ONLY
* ONE LUNAME. MATCH FOR THIS RULE IS BASED ON USERID AND
* POOL IS DEFINED IMPLICITLY VIA THE LU PARAMETER
*-----*
LURULE  IPADDR(0.0.0.0,255.255.255.255)
        PORT(*)
        USER(TST*)
        APPLID(*)
        LU(ACCVLT30)
*-----*
* POOL DEFINED FOR CICS PAYROLL APPLICATION. ONLY THE
* LUNAMES CONTAINED IN THIS POOL ARE DEFINED TO THE
* APPLICATION.
*-----*
LUPPOOL  NAME (ACCTPOOL)
         LU(ACCVLT02,ACCVLT03,ACCVLT04)
*-----*
* RULE FOR CICS PAYROLL APPLICATION - MATCH BASED ON
* USERID AND APPLID.
*-----*
LURULE  IPADDR(0.0.0.0,255.255.255.255)
        PORT(*)
        USER(AC4*)
        APPLID(ACCICS4)
        POOL (ACCTPOOL)
*-----*
* GENERAL POOL FOR ALL USERS.
*-----*
LUPPOOL  NAME (GENERAL)
         LU(ACCVLT05,ACCVLT06,ACCVLT07,ACCVLT08,ACCVLT09,
           ACCVLT10,ACCVLT11,ACCVLT12,ACCVLT13,ACCVLT14,
           ACCVLT15,ACCVLT16,ACCVLT17,ACCVLT18,ACCVLT19,
           ACCVLT20,ACCVLT21,ACCVLT22,ACCVLT23,ACCVLT24,
           ACCVLT25,ACCVLT26,ACCVLT27,ACCVLT28,ACCVLT29)

```

```

*-----*
* GENERAL RULE - NO RESTRICTIONS
*-----*
LURULE  IPADDR(0.0.0.0,255.255.255.255)
        PORT(*)
        USER(*)
        APPLID(*)
        POOL (GENERAL)

```

## Terminal Profile (TERMPROF)

The TERMPROF statement and the TERMPROF parameter in APPL definitions together define site-configurable terminal environmentals (terminal type, logmode name, maximum buffer size) used during the terminal-type negotiation process. The TERMPROF facility removes constraints in the Server Telnet environment by giving users the ability to customize their own TELNET terminal profiles.

TERMPROF usage is optional. If it is not specified for an application, the supplied defaults are used (see below). However, the application (PLU) determines which parameters are used for a session. The logmode entry name in the TERMPROF statement is only a suggested name. Usually, the host application accepts this, but some applications, such as CICS, build their own session parameters based on entries in the application's Terminal Control Table (TCT) and ignore the suggested logmode table name.

### TERMPROF Statement Syntax

```

TERMPROF GROUP ( terminal_profile_group_name )
              LOGMODE3270E ( logmode_name )
              LOGMODENAME ( ACF/VTAM_logmode_name )
              TERMTYPE ( terminal_type )
              BUFFERSIZE ( buffersize )

```

GROUP ( *terminal\_profile\_group\_name* )

*terminal\_profile\_group\_name* specifies the name of the TERMPROF group to which this TERMPROF belongs. This is the same value as specified in an APPL statement's TERMPROF parameter to associate the application with a terminal profile group.

Default: None.

LOGMODE3270E (*logmode\_name*)

Specifies the ACF or VTAM logmode table entry name (**not** the logmode table module name) to use for the session, if TN3270E is negotiated. This name must exist in the logmode load module (either ISTINCLM or user-specified) that will be used for the session.

Alias LM3270E.

Default: SNX32702.

LOGMODENAME ( *ACF/VTAM\_logmode\_name* )

Specifies the ACF or VTAM logmode table entry name (not the logmode table module name) to use for the session. This name must exist in the logmode load module (either ISTINCLM or user-specified) to use for the session.

Default: D4B32782.

TERMTYPE ( *terminal\_type* )

Specifies the terminal type to use. This must be one of the recognized TELNET terminal types, such as IBM-3278-2.

Default: IBM-3278-2.

BUFFERSIZE ( *buffer\_size* )

Specifies the maximum buffer size.

**Note:** This parameter is ignored by the TN3270E server.

Default: 976.

## TERMPROF Statement Usage Notes

|                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |       |                                      |             |                   |          |                                                |            |                          |
|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------|-------------|-------------------|----------|------------------------------------------------|------------|--------------------------|
| Parameters of Note for the TERMPROF Statement | <p>You may need to change these parameters on the TERMPROF statement:</p> <table border="0"> <tr> <td>GROUP</td> <td>The terminal group name. (Required).</td> </tr> <tr> <td>LOGMODENAME</td> <td>The logmode name.</td> </tr> <tr> <td>TERMTYPE</td> <td>The type of terminal. For example, IBM-3278-2.</td> </tr> <tr> <td>BUFFERSIZE</td> <td>The maximum buffer size.</td> </tr> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | GROUP | The terminal group name. (Required). | LOGMODENAME | The logmode name. | TERMTYPE | The type of terminal. For example, IBM-3278-2. | BUFFERSIZE | The maximum buffer size. |
| GROUP                                         | The terminal group name. (Required).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |                                      |             |                   |          |                                                |            |                          |
| LOGMODENAME                                   | The logmode name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |                                      |             |                   |          |                                                |            |                          |
| TERMTYPE                                      | The type of terminal. For example, IBM-3278-2.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |       |                                      |             |                   |          |                                                |            |                          |
| BUFFERSIZE                                    | The maximum buffer size.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |                                      |             |                   |          |                                                |            |                          |
| Invoking TERMPROF                             | <p>To invoke TERMPROF, specify it on the APPL statement (explicit) or the TELNET statement (implicit) for promotion to all succeeding APPL and TELNET statements.</p> <p>To invoke LU2 support for a given session/sessions, have your Unicenter TCPaccess administrator designate which applications have SNA capability in the APPCFGxx member by associating these applications with a set of ACF/VTAM SNA/LU2 logmode tables.</p> <p>The TERMPROF facility is normally invoked for 3278 (full-screen) sessions only. Full-screen sessions are identified by the OPTIONS(3278) parameter in the APPCFGxx APPL statement (3278 is the default). Full-screen sessions undergo terminal negotiation at session initialization. If terminal negotiation fails, or if Unicenter TCPaccess Telnet Server and the client are unable to agree on a suitable terminal type, the TERMPROF facility is discarded and the session proceeds in 3767 (line) mode using INTERACT as the mode table name. INTERACT is a standard mode table name in the default mode table (ISTINCLM) distributed with ACF/VTAM.</p> <p>TERMPROF can also be invoked for line mode (non-3278) sessions to provide flexibility in choosing the mode table name to use for these sessions. Prior to TERMPROF, line mode sessions were forced to use INTERACT as the mode table name. Since line mode sessions do not undergo terminal negotiation, you specify the name of a single entry in the associated TERMPROF group to use for the session. When TERMPROF is used for line mode sessions, the TERMTYPE parameter is ignored and BUFFERSIZE is preset to 256. If TERMPROF is omitted for line mode sessions, INTERACT is used for the logmode entry name. To identify line mode sessions, specify OPTIONS(3767/LINEMODE).</p> |       |                                      |             |                   |          |                                                |            |                          |
| Using Logmode Tables                          | <p>Logmode tables contain the session parameters used by ACF/VTAM session initiation routines to determine rules that will be observed between session partners, such as the host application and the TELNET user. These logmode tables can be the standard set supplied with ACF/VTAM, or a set customized by the user. Entries in the logmode tables also determine if the session supports LU2. The TERMPROF configuration statement lets the Unicenter TCPaccess administrator declare which set of logmode tables to use for which Unicenter TCPaccess sessions or applications.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |                                      |             |                   |          |                                                |            |                          |

Using the  
OPTIONS(SNA)  
Parameter

The OPTIONS(SNA) parameter on the APPL or TELNET statement has nothing to do with whether or not LU2 support is invoked.

This parameter causes the command code (first byte in any 3270 outbound data stream) to be translated to an SNA command code. This occurs because some applications do not know they are communicating with an SNA partner. It is a good idea, however, to specify this parameter for SNA-designated applications to ensure the client software does not get confused.

Changing Buffer Size

For LU2 sessions, the buffer size can be any value, but is generally greater than or equal to 256. This is because LU2 sessions support SNA chaining. For LU0 sessions (non-SNA), this value must be at least the maximum screen size supported by the device type negotiated at session initialization.

For example, if emulating a non-SNA IBM-3278-2, this value should be at least 1920 (24 x 80). Similarly, if emulating an IBM-3278-3 session, it should be at least 2560 (32 x 80). Failure to observe LU0 restrictions can result in serious side effects.

There is a difference in the BUFFERSIZE parameter between SNA and non-SNA TERMPROF definitions.

- For SNA terminal profiles, BUFFERSIZE can be set to a small value as SNA supports RU chaining. The smaller buffer sizes enable users to conserve virtual storage thereby improving performance when network volume is high.
- For non-SNA terminal profiles, the BUFFERSIZE parameter must be set to at least the maximum screen size for the device, as non-SNA (LU0) does not support RU chaining. If data is received in excess of the BUFFERSIZE for an LU0 device, message T01ST026I is issued and the session terminated.

Large buffer sizes reduce chaining and thus yield better response time, but possibly at a cost of reduced number of concurrent sessions or general sluggishness across the network. You must decide which is the best choice for your configuration.

For SNA sessions, the default buffer size of 976 is probably larger than you need. For non-SNA sessions, this value is too small for the majority of terminals (3278-2 and up) accessing Unicenter TCPaccess Telnet Server.

**Note:** To avoid screen problems for LU0 sessions, always specify a buffer size value using the above guidelines for LU0 sessions, or you can use the buffer size values in the APPCFG00 example.

Supporting  
LOGMODE  
Substitution for USS  
Tables

For special instructions on using TERMPROF to support LOGMODE substitution for USS tables, see [USS Table Support for Server TELNET](#).

Using the TELNET  
Terminal Negotiation  
Process

The TELNET terminal negotiation process compares the TERMTYPE value given in the TERMPROF statement to the terminal type received from the client. If they match, the logmode name and buffer size from the matching TERMPROF entry are used for the session. Sample TERMPROF statements in APPCFG00 on the distribution tape contain paradigms of the TELNET terminal types currently supported. If you are using client software capable of supporting EDS (3270 extended data streams), the terminal type should have the string -E appended to it (for example, IBM-3279-3-E).

***Important!** TERMPROF usage applies to the Server Telnet environment only. It does not apply to the Unicenter TCPaccess User TELNET (VTELNET) environment.*

## Default Terminal Profiles

If a terminal profile is not defined, the following defaults are used.

| Device Type Name | TN3270<br>Logmode | TN3270E Logmode | Buffersize |
|------------------|-------------------|-----------------|------------|
| IBM-3278-1       | D4B32781          | n/a             | 1200       |
| IBM-3278-2       | D4B32782          | SNX32702        | 3000       |
| IBM-3278-2-E     | NSX32702          | SNX32702        | 3000       |
| IBM-3278-3       | D4B32783          | SNX32703        | 3840       |
| IBM-3278-3-E     | NSX32703          | SNX32703        | 3840       |
| IBM-3278-4       | D4B32784          | SNX32704        | 4300       |
| IBM-3278-4-E     | NSX32704          | SNX32704        | 4300       |
| IBM-3278-5       | D4B32785          | SNX32705        | 4455       |
| IBM-3278-5-E     | NSX32705          | SNX32705        | 4455       |
| IBM-3279-2       | D4B32782          | n/a             | 3000       |
| IBM-3279-2-E     | NSX32702          | n/a             | 3000       |
| IBM-3279-3       | D4B32783          | n/a             | 3840       |
| IBM-3279-3-E     | NSX32703          | n/a             | 3840       |
| IBM-3279-4       | D4B32784          | n/a             | 4300       |

| Device Type Name | TN3270<br>Logmode | TN3270E Logmode | Buffersize |
|------------------|-------------------|-----------------|------------|
| IBM-3279-4-E     | NSX32704          | n/a             | 4300       |
| IBM-3279-5       | D4B32785          | n/a             | 4455       |
| IBM-3279-5-E     | NSX32705          | n/a             | 4455       |
| IBM-3277         | D4B32782          | n/a             | 2400       |
| IBM-3277-2       | D4B32782          | n/a             | 2400       |
| LINEMODE         | INTERACT          | n/a             | 256        |
| DYNAMIC          | n/a               | SNX32702        | n/a        |
| IBM-3287-1       | n/a               | SNX32702        | n/a        |

## TERMPROF Example

This is an example of a partial APPCFGxx configuration showing both LU0 and LU2 definitions. The logmode names used in this example are the names of standard SNA (D4Axxxxx) and non-SNA (D4Bxxxxx) logmode entries supplied with the ACF/VTAM product. They could also be the names of a set of custom logmode tables.

```
.
.
.
APPL NAME ( TSO ) APPLID ( TSOAPPL ) OPTIONS ( 3278 SNA )
TERMPROF ( SNAGROUP ) PASS ( NTRA )
APPL NAME ( TSON ) APPLID ( TSOAPPL ) OPTIONS ( 3278 )
TERMPROF ( NOSNAGRP )
.
.
*
*   SNA TERMPROF Group ( LU2 )
*
TERMPROF ( SNAGROUP ) TERMTYPE ( IBM-3278-1 )
  BUFFERSIZE ( 256 ) LOGMODENAME ( D4A32781 )
TERMPROF ( SNAGROUP ) TERMTYPE ( IBM-3278-2 )
  BUFFERSIZE ( 256 ) LOGMODENAME ( D4A32782 )
TERMPROF ( SNAGROUP ) TERMTYPE ( IBM-3278-3 )
  BUFFERSIZE ( 256 ) LOGMODENAME ( D4A32783 )
TERMPROF ( SNAGROUP ) TERMTYPE ( IBM-3278-4 )
  BUFFERSIZE ( 256 ) LOGMODENAME ( D4A32784 )
TERMPROF ( SNAGROUP ) TERMTYPE ( IBM-3278-5 )
  BUFFERSIZE ( 256 ) LOGMODENAME ( D4A32785 )
```

```

*
*   Non-SNA TERMPROF Group ( LU0 )
*
TERMPROF ( NOSNRGRP ) TERMTYPE ( IBM-3278-1 )
  BUFFERSIZE ( 960 ) LOGMODENAME ( D4B32781 )
TERMPROF ( NOSNRGRP ) TERMTYPE ( IBM-3278-2 )
  BUFFERSIZE ( 1920 ) LOGMODENAME ( D4B32782 )
TERMPROF ( NOSNRGRP ) TERMTYPE ( IBM-3278-3 )
  BUFFERSIZE ( 2560 ) LOGMODENAME ( D4B32783 )
TERMPROF ( NOSNRGRP ) TERMTYPE ( IBM-3278-4 )
  BUFFERSIZE ( 3440 ) LOGMODENAME ( D4B32784 )
TERMPROF ( NOSNRGRP ) TERMTYPE ( IBM-3278-5 )
  BUFFERSIZE ( 3564 ) LOGMODENAME ( D4B32785 )

```

**Note:** User-defined logmode tables, like all other logmode tables, must reside in the ACF/VTAM load library (normally SYS1.VTAMLIB).

As shown in the example above, you start a TELNET session by entering **TSOS** at the TELNET command prompt; TELNET runs as an SNA session. Entering **TSO** invokes the same host TSO application in non-SNA mode. For example, if you enter **TSOS**, and during terminal negotiation you send a terminal type of **IBM-3278-3**, Server TELNET uses logmode entry **D4A32783** to establish the connection with the host. **D4A32783** is the standard IBM ACF/VTAM logmode table used to establish an SNA session with a 3278-3 device.

## Modifying VTAMLST Application Definitions

This section provides information to help you change the APPL statements in the Unicenter TCPAccess Telnet Server application major node in SYS1.VTAMLST.

If you made any changes to the VTAM definitions supplied in the A03ACCES member when you installed them in your own system, or if you want to make changes now, corresponding changes may be required in the Unicenter TCPAccess software.

If you used the default definitions, you see the chapter “Domain Name Resolver (DNR) Configuration” to continue the customization.

However, you must review the following topics if you make any changes now or in the future, including the addition of VLTs:

- [Customizing the Application Definition ACBNAME](#)
- [Customizing the Application Definition LU Name](#)
- [Customizing the Terminal Definition LU Name](#)
- [Customizing the Terminal Definition ACBNAME](#)
- [Adding or Deleting Terminal Definitions](#)

## Setting Up Pools

The following information describes how to set up pools of APPL statements for different uses:

- A pool of APPL statements for Unicenter TCPAccess Telnet Server to use as a Primary Logical Unit (PLU).
- One APPL statement must be defined for each copy of Unicenter TCPAccess Telnet Server running on your system.
- A pool of APPL statements for use as Virtual Logical Terminals (VLTs).  
VLTs are used by the TSO client programs (TCPEEP, TELNET, FTP, and FTP2) to connect to Unicenter TCPAccess and are also used by the TELNET Server to act as virtual terminals to let TELNET users access SNA application programs such as TSO, CICS, and IMS).

## Unicenter TCPAccess Telnet Server Application Definitions

```

*=====*
* TCP VTAM DEFINITIONS
*=====*
* THIS MEMBER DEFINES THE APPL STATEMENTS AND MAJOR NODES
* NEEDED BY TCP TO PROPERLY UTILIZE VTAM. COPY IT TO
* SYS1.VTAMLST (OR YOUR SITE'S EQUIVALENT DATA SET.
* MAKE SURE IT IS ADDED TO ATCCON00 (OR YOUR SITES MEMBER) SO
* IT WILL AUTOMATICALLY BE STARTED DURING VTAM INITIALIZATION
*=====*
A03ACCES VBUILD TYPE=APPL APPLICATION MAJOR NODE
*=====*
* TCP PRIMARY LOGICAL UNIT (PLU) POOL
*=====*
*=====*
* ONE APPL STATEMENT IS NEEDED FOR EACH COPY OF TCP THAT
* WILL BE ACTIVE ON YOUR SYSTEM
*=====*
*
A03ACCA APPL ACBNAME=ACCES, TCP APPLICATION DEFINITION +
VPACING=1,AUTH=(VPACE),EAS=10 PRODUCTION VERSION
*
A03ACCAE APPL ACBNAME=ACCSE, TCP APPLICATION DEFINITION +
VPACING=1,AUTH=(VPACE),EAS=10 TEST VERSION
*
*=====*
*TCP VIRTUAL LOGICAL TERMINAL (VLT) POOL
*=====*
*ONE APPL STATEMENT IS NEEDED FOR EACH APPL THAT IS DEFINED
*IN ACCPOOL 1 (VLT POOL) OF THE ACCPOOL MEMBER WHICH IS LOCATED
*IN THE SAMP DATA SET OR EACH APPL THAT IS DEFINED IN ANY LU
*KEYWORD IN APPLUPXX
*=====*
*
A03VLT01 APPL ACBNAME=ACCVLT01, TCP VIRTUAL TERMINAL DEFINITION +
VPACING=1,AUTH=(VPACE),EAS=10
*
.
.
*

```

```
A03VLT99 APPL ACBNAME=ACCFLT99, TCP VIRTUAL TERMINAL DEFINITION +
VPACING=1,AUTH=(VPACE),EAS=10
```

## Customizing the Application Definition ACBNAME

This section describes how to change the ACBNAMEs for Unicenter TCPaccess applications. In the sample major node definition, change the ACBNAMEs (ACCES and ACCESE) in these APPL statements.

**Note:** If a line of code must wrap, a continuation character (+) **must** appear in position 72:

Unicenter TCPaccess  
Telnet Server  
Application  
Definitions

```
A03ACCA APPL ACBNAME=ACCES, TCP APPLICATION DEFINITION +
VPACING=1,AUTH=(VPACE),EAS=10 PRODUCTION VERSION
*
A03ACCAE APPL ACBNAME=ACCESE, TCP APPLICATION DEFINITION +
VPACING=1,AUTH=(VPACE),EAS=10 ETHERNET VERSION
```

To change the Unicenter TCPaccess Telnet Server application ACBNAME, you need to change the value of the ACBNAME parameter in APPCFG $xx$ .

1. Change the ACBNAME parameter in the application definitions in SYS1.VTAMLST.

You can activate or deactivate APPL definitions to VTAM.

To inactivate an APPL to VTAM, execute this command:

```
V NET,INACT,ID=A03ACCES
```

To activate an APPL to VTAM, execute this command:

```
V NET,ACT,ID=A03ACCES
```

2. Change the value of the ACBNAME parameter on the GLOBAL statement in PARM member APPCFG $xx$  to the new ACBNAME.
3. Specify the proper suffix for APPCFG $xx$  in the START APP CNFG( $xx$ ) command in the START $xx$  PARM member.

## Customizing the Application Definition LU Name

This section describes how to change the LU name in the PLU pool for the Unicenter TCPaccess Telnet Server applications.

When you change the Unicenter TCPaccess Telnet Server application LU name you may also need to make changes to these statements:

- TSO client programs, because they need to know the LU name to connect to the Unicenter TCPaccess Telnet Server application
- APPL statements that reference that application LU name in APPCFGxx
- VTAM interpret and USS tables that reference that application LU name
- Netview CLISTs or other network management facilities that reference that application LU name
- Network or session manager products that reference that application LU name
- Other VTAM applications that reference that application LU name

Unicenter TCPaccess  
Telnet Server  
Application  
Definitions

```
A03ACCA APPL ACBNAME=ACCES, +
VPACING=1,AUTH=(VPACE),EAS=10
*
A03ACCAE APPL ACBNAME=ACCESE, +
VPACING=1,AUTH=(VPACE),EAS=10
```

Follow these steps to change the LU name:

1. Change the LU name (label) on the Unicenter TCPaccess Telnet Server application definition.
2. Change the application LU name in SAMP member APPLNAME.

This is the code for module APPLNAME:

```
APPLNAME CSECT
  DC CL7'A03ACCA'
END
```

The specified application LU name can be a maximum of seven characters. This enables the Unicenter TCPaccess Telnet Server TSO programs to specify a suffix character (using the SYS= parameter) letting the TSO programs connect to production and test versions of Unicenter TCPaccess Telnet Server. The APP= parameter can also be used to connect to other versions of Unicenter TCPaccess Telnet Server. The APP= parameter accepts a full LU name instead of only a suffix character.

3. CNTL data set member UMODAPPL contains an SMP/E usermod that instructs SMP/E to reassemble and link-edit the APPLNAME module using the APPLNAME member from the SAMP data set. This updates the client commands located in the LINK library.

Change the xxx to the correct FMID suffix for the TCP base product.

This SMP/E JCL receives and applies the USERMOD:

```
//SMPE EXEC PGM=GIMSMP,REGION=4096K,  
//      PARM='CSI=TRGINDX.CSI,PROCESS=WAIT'  
//SMPHOLD DD DUMMY  
//SMPLOG DD DSN=TRGINDX.SMPLOG,DISP=MOD  
//SMPOUT DD SYSOUT=HOLDCL  
//SMPPTFIN DD *  
++ USERMOD (MU0APPL) .  
++ VER (Z038)  
FMID (T0xxxx) /* CHANGE TO CORRECT TCP/IP FMID */ .  
++SRC (APPLNAME)  
TXLIB(TCPSAMP)  
DISTMOD(ATCPLOAD)  
DISTLIB(ATCPSAMP) .  
/*  
//SMPCNTL DD *  
SET BDY(GLOBAL) .  
RECEIVE S(MU0APPL) .  
SET BDY(TCPTZN) .  
APPLY S(MU0APPL) .  
/*
```

4. Change any APPL statements in APPCFGxx that reference the original application LU name to reference the new LU name. These definitions are provided in the sample APPCFG00 primarily for testing purposes.
5. Change any VTAM interpret and USS tables that reference the original application LU name to reference the new LU name.
6. Change Netview, network and session managers, and other VTAM applications that reference the original application LU name in accordance with IBM or other vendor documentation.
7. If necessary, execute LLA,REFRESH to update LINK library.

## Customizing the Terminal Definition LU Name

To change the Unicenter TCPaccess Telnet Server virtual terminal LU names modify the LU names in the virtual terminal APPL definitions in the Unicenter TCPaccess Telnet Server major node definition in SYS1.VTAMLST. No other changes are required.

## Customizing the Terminal Definition ACBNAME

This section describes how to change the ACBNAMEs of the APPL statements for the Unicenter TCPaccess Telnet Server VLTs. In the sample major node definition, the ACBNAMEs (ACCVL $T_{xx}$ ) are in these APPL statements:

Unicenter TCPaccess  
Telnet Server Virtual  
Terminal Definitions

```
A03VLT01 APPL ACBNAME=ACCVLT01, TCP VIRTUAL TERMINAL DEFINITION +
VPACING=1, AUTH=(VPACE),EAS=10
*
A03VLT02 APPL ACBNAME=ACCVLT02, TCP VIRTUAL TERMINAL DEFINITION +
VPACING=1,AUTH=(VPACE),EAS=10
*
A03VLT03 APPL ACBNAME=ACCVLT03, TCP VIRTUAL TERMINAL DEFINITION +
VPACING=1,AUTH=(VPACE),EAS=10
*
A03VLT04 APPL ACBNAME=ACCVLT04, TCP VIRTUAL TERMINAL DEFINITION +
VPACING=1,AUTH=(VPACE),EAS=10
*
A03VLT05 APPL ACBNAME=ACCVLT05, TCP VIRTUAL TERMINAL DEFINITION +
VPACING=1,AUTH=(VPACE),EAS=10
.
.
*
A03VLT99 APPL ACBNAME=ACCVLT99, TCP VIRTUAL TERMINAL DEFINITION +
VPACING=1,AUTH=(VPACE),EAS=10
*
```

The ACCPOOL statement specifies the ACBNAME entries for a pool of virtual terminals. Because the Unicenter TCPaccess Telnet Server TSO commands use the module, the module is installed into a system link list library.

**Note:** Because Unicenter TCPaccess Telnet Server ACBNAME entries are case sensitive, all ACBNAME entries must be all uppercase.

Follow these steps to change the terminal definition ACBNAME:

1. Change the ACBNAME parameter in the Unicenter TCPaccess Telnet Server application definitions in SYS1.VTAMLST.

You can activate or deactivate APPL definitions to VTAM.

To inactivate an APPL to VTAM, execute this command:

```
V NET,INACT,ID=A03ACCES
```

To activate an APPL to VTAM, execute this command:

```
V NET,ACT,ID=A03ACCES
```

2. Change the ACBNAME parameter for the virtual terminal APPL definitions in the Unicenter TCPaccess Telnet Server major node definition in SYS1.VTAMLST.
3. Change the ACBNAMEs specified in ACCPOOL on the APPOOL macro to match the new ACBNAMEs specified in the VTAMLST major node definition.
4. Have SMP/E assemble and link edit module ACCPOOL using the usermod UMODPOOL in the CNTL data set.
5. Update PARM member APPLUPxx to change ACBNAMEs in the LU keyword(s) found in that member.

## Printer LU Considerations

If you are using printers with TN3270E and the printers are shared between applications using the VTAM RELREQ exit, it may be necessary to code the VTAM APPL definition with SESSLIM=YES (see IBM CS SNA Resource Definition Reference).

## Adding or Deleting Terminal Definitions

This section provides instruction to help you add or delete Unicenter TCPaccess Telnet Server VLT definitions.

Basically, addition or deletion of terminal definitions requires changing the VTAMLST APPL definitions and editing, compiling, and linking SAMP member ACCPOOL, and updating PARM member APPLUPxx.

**Note:** Because Unicenter TCPaccess Telnet Server ACBNAME entries are case sensitive, all ACBNAME entries must be all uppercase.

- If you are using only client commands you must update the SAMP member ACCPOOL, and execute CNTL member UMODPOOL.
- If you are using Server Telnet, use ACCPOOL LUs if APPLUPxx is not implemented, or update APPLUPxx and perform this operator command:  
**APP REFRESH LUPARM ( APPLUPxx )**

Follow these steps to add or delete terminal definitions:

1. Change the ACBNAME parameter in the Unicenter TCPaccess Telnet Server application definitions in SYS1.VTAMLST.

You can activate or deactivate APPL definitions to VTAM.

To inactivate an APPL to VTAM, execute this command:

```
V NET, INACT, ID=A03ACCES
```

To activate an APPL to VTAM, execute this command:

```
V NET,ACT, ID=A03ACCES
```

2. Add or delete APPL statements in the major node definition for Unicenter TCPaccess Telnet Server. Remember that the ACBNAME and LU (label) name for each APPL must be unique.
3. Add or delete the specified ACBNAMEs in the appropriate APPOOL macro in SAMP member ACCPOOL. You can specify additional APPL statements in VTAMLST that are not represented by APPOOL macros, but all ACBNAMEs on APPOOL macros must be defined with APPL statements in VTAMLST.
4. Have SMP/E assemble and link edit module ACCPOOL using the usermod UMODPOOL in the CNTL data set.
5. If necessary, perform an LLA, REFRESH operation to make the new pool definition active. No IPL or restart of Unicenter TCPaccess Telnet Server is necessary to get the new definitions to take effect.
6. Update PARM member APPLUP:xx to add or delete ACBNAMEs in the LU keywords found in that member for Server Telnet users.

## Configuring Automatic Logon to VTAM Applications

You can configure Unicenter TCPaccess so that Server Telnet users automatically connect to a VTAM application.

With automatic logon in place, the VTAM application menu appears in response to the TN3270 command. This feature is useful for those sites where normal access to mainframe applications is through a session manager. By having network users access the system the same way, a common point of reference for all users is provided.

There are two ways to implement this feature:

- Associate it with the TELNET well known port, Port 23.
- Use a different port number.

If a different port number is used, you must verify that your Client TELNET package allows a port number to be included in addition to the host name, and then specify the port number when you issue the TELNET command.

To specify Port 2023, use this command:

```
TN3270 mvs-host 2023
```

In the following examples, Simware's SIM3278/VTAM session manager is used as the application.

Automatic Logon  
from Port 23 and the  
Standard Connection  
Assigned to Port 2023

```
SERVICE NAME ( TELNET )  MODULE ( T01S3270 ) PORT ( 23 )
IDLE ( 480 ) AUTOLOGON ( SIMWARE )
SERVICE NAME ( TELNET )  MODULE ( T01S3270 ) PORT ( 2023 )
IDLE ( 480 )
APPL NAME ( SIMWARE ) APPLID ( SIM3278 )
OPTIONS ( 3278 ) PASS ( APPL DATA ) PORT ( 23 )
```

Automatic Logon  
from Port 2023

```
SERVICE NAME ( TELNET )  MODULE ( T01S3270 ) PORT ( 2023 )
IDLE ( 480 ) AUTOLOGON ( SIM3278 )
APPL NAME ( SIMWARE ) APPLID ( SIM3278 )
OPTIONS ( 3278 ) PASS ( APPL DATA ) PORT ( 2023 )
```

As you can see from the examples, the basics are:

- Include the AUTOLOGON parameter on the SERVICE statement, pointing it to the NAME parameter of the APPL statement to which you want to connect
- Include a PORT parameter on the APPL statement to match the PORT parameter on the SERVICE statement

In the first example, no additional APPL statement is required for Port 2023 because autologon was not requested for it. Users coming in through this port receive the standard prompt.

## USS Table Support for Server Telnet

Server Telnet supports the use of Session Level USSTAB (Unformatted System Services Tables) and their associated msg10 screens. The feature enables you to customize screen access information for VTAM applications that are opened through Unicenter TCPaccess.

You can use USS tables to customize logon/logoff message text and commands on a service port basis, including the following types of implementation:

- You can define a particular port to use for Server Telnet VTAM applications that is accessed through the USS table facility.
- You can specify a unique USS table for each port defined.
- If your site requires more than one USS table as a front-end to VTAM applications from TELNET, you can define multiple ports defined as Server Telnet ports, each using a different USS table. This could, for example, facilitate multiple language environments, device-dependent transactions, and could be used to enhance security.

Only session-level USS tables are supported. Session-level USS tables define command formats, message text, and translation tables for VTAM application end users. Operation-level USS tables are not supported. The operation level tables process commands received from the VTAM operator.

## USS Table Customization Requirements

Using the USSTAB feature for Unicenter TCPaccess Telnet Server requires that the data set containing the assembled and linked USS tables be copied into a library defined on the STEPLIB DD in the Unicenter TCPaccess Telnet Server start-up JCL, or concatenated to the library containing the load modules in the STEPLIB DD. If you wish to use the IBM-delivered default Session-level USS table, ISTINCDT, as a default table, you must make the table available to the Unicenter TCPaccess Telnet Server job or started task.

Unicenter TCPaccess Telnet Server provides two session-level default tables:

- T01USS01, used in line-mode
- T01USS02, used in full-screen mode (when the START3270 option is used)

The appropriate table is used as a default whenever ISTINCDT is unavailable, and is also used when USSTAB is not configured. Source code for these tables is available in the SAMP library and can be modified for your installation.

If you connect to a port with USSTAB and the table does not exist, you will access either the T01USS01 or T01USS02 table, depending on the presence of the START3270 parameter. If you connect to T01USS01, the LOGON command for direct access to TSO returns UNRECOGNIZED COMMAND.

Additionally, USSTAB parameter settings are required in the SERVICE and TELNET statements of the configuration. In some cases, parameter entries are also required in the APPL statement of configuration. For details, see [Protocol Service Segment \(SERVICE\)](#).

## Using LOGMODE with USSTAB

If your USS tables contain LOGMODE(s) that you want passed to VTAM applications, or if you want to support the LOGMODE parameter on the LOGON command, you must associate the LOGMODE(s) with the appropriate terminal type(s) by means of the TERMPROF statement.

1. Define a TELNET statement for the Server Telnet port that specifies a TERMPROF group.
2. Within this TERMPROF group, define TERMPROF statements that associate the LOGMODE(s) from the USS table(s) with the appropriate terminal type(s).

When a LOGMODE is supplied, either in a USS table through the USSCMD macro, or as part of a LOGON command, Server Telnet scans the TERMPROF group to see if the LOGMODE and the negotiated terminal type can be matched. If a match is found, the LOGMODE is passed to the VTAM application, otherwise it is ignored.

In the following example, D4A32782 is the default logmode for the terminal type IBM-3278-2. The next entry defines CICS2 as a valid logmode for the same terminal type, thus allowing Server Telnet to use that logmode when specified on a USS table, and terminal type IBM-3278-2 is negotiated.

```
SERVICE NAME ( TELNET ) MODULE ( T01S3270 ) PORT ( 23 ) USSTAB ( USSTABLE )
START3270
*
TELNET PORT ( 23 ) PASS ( DATA ) TERMPROF ( GROUP01 )
*
TERMPROF GROUP ( GROUP01 ) LOGMODENAME ( D4A32781 )
BUFFERSIZE ( 256 ) TERMTYPE ( IBM-3278-1 )
TERMPROF GROUP ( GROUP01 ) LOGMODENAME ( D4A32782 )
BUFFERSIZE ( 256 ) TERMTYPE ( IBM-3278-2 )
TERMPROF GROUP ( GROUP01 ) LOGMODENAME ( CICS2 )
BUFFERSIZE ( 256 ) TERMTYPE ( IBM-3278-2 )
```

## Preparing USS Tables

No special preparation is required to use USS tables with Unicenter TCPaccess Telnet Server, with the exception that `FORMAT=DYNAMIC` must be specified on the `USSTAB` macro. Standard rules for command and parameter substitution are followed. Only the `APPLID`, `DATA` and `LOGMODE` parameters are passed to the VTAM logon; all other parameters are parsed and ignored.

**Note:** When `USSMSG BUFFER=` is used, there are generally two types of buffers that can be defined:

- SNA, which uses the new line character (X'15') to set up the screen
- Non-SNA, which uses 3270 command codes.

If your USS table uses a non-SNA-format buffer, you must code `START3270` on the `SERVICE` statement for that port. If your table uses an SNA-format buffer, it is recommended that you do not code `START3270`, so that the message will be displayed in linemode prior to 3270 negotiation with the client `tn3270`. If a USS table with an SNA-format buffer is used in full-screen mode (`START3270`), Unicenter TCPaccess Telnet Server attempts to convert the message to a valid 3270 data stream before sending it to the client `TN3270` according to the following rules:

- An erase-write command, write-control-character, and set buffer address to row one, column one, precedes the buffer.
- Each new line character (X'15') is replaced with a set buffer address command. The first new line is replaced with SBA row two, column one; the second with SBA row three, column one, and so on. The substitution assumes a model 4 terminal (this works for models 2 and 3 as well, providing the number of rows in the buffer does not exceed the maximum for the terminal type).
- The buffer is followed with a write structured field command specifying unprotect and insert cursor.

Refer to the IBM *VTAM: Resource Definition Reference* for additional information on coding USS tables.

USSMSG Variable  
Data Substitution

Unicenter TCPAccess Telnet Server substitutes the following variables in USS table messages according to the rules documented in the *VTAM: Resource Definition Reference*.

- #####DATE     The current date is substituted in format mm/dd/yyyy.
- ####DATE       The current date is substituted in format mm/dd/yy.
- ####TIME        The current time is substituted.
- @@LUNAME        The LUName for the session is substituted. In order for this parameter to be used, PRELU must be coded on the SERVICE statement.

Additionally, the following substitution is made:

- #####VRM        The current release identification is substituted in format *Vv.r.m*  
where:  
v   version  
r   release  
m   maintenance  
Example: V5.2.0.
- #####IPADDRESS   The IP address of the TN3270 client is displayed in standard dotted-decimal notation.  
@@IPADDR            Since the IP address occupies 15 positions, we recommend you use the first form to prevent overrun. The second form is provided for compatibility with systems that have leading zeros removed.  
For the second form, 149.048.003.170 would be shown as 149.48.3.170.

Using NETSTAT, SYSSTAT, and ACTEST with a Full-Screen USS Table

The NETSTAT, SYSSTAT, and ACTEST services, as well as the *intrinsic* services (such as NEWS and HELP) are not supported in full-screen (START3270) mode.

To use these services with START3270, you can logon to the Unicenter TCPAccess Telnet Server VTAM primary ACBNAME (the name on the ACBNAME parameter of the HOST statement) and specify the loopback IP address and Server TELNET port as data to pass to the application.

```
logon applid ( a03acca ) data ( '127.0.0.1,23' )
```

This causes Server TELNET to logon to Unicenter TCPAccess in loopback mode. The port used must not have START3270 specified on the SERVICE statement, and must have APPL statements coded for any services to be used. At this point, you can enter the name of the service desired, and the service is invoked in linemode. When you are finished, enter END to return to the linemode prompt, then END again to end the VTAM session and return to the full-screen display.

Additionally, you can enter ACTEST directly by coding:

```
logon applid ( a03acca ) data ( ;vtamtest )
```

If desired, the USS table can be updated to provide access to these services. For example:

```
NETSTA USSCMD  CMD=NETSTAT,REP=LOGON,FORMAT=PLI
USSPARM  PARM=APPLID,DEFAULT=A03ACCA
USSPARM  PARM=P1,REP=DATA,DEFAULT='127.0.0.1,23'
*
ACTEST USSCMD  CMD=ACTEST,REP=LOGON,FORMAT=PLI
USSPARM  PARM=APPLID,DEFAULT=A03ACCA
USSPARM  PARM=P1,REP=DATA,DEFAULT=' ;VTAMTEST'
```

USS Table Server Telnet Operation

Once a port specified with the USSTAB option is selected through Server Telnet, the following operations are processed:

- The msg10 screen displays for an initial logon menu and welcome messages
- Optionally, the date, time, IP address, and preselected LU name are applied
- Logon/logoff commands can be interpreted for a specific port
- VTAM application sessions are established and maintained
- Upon termination of a VTAM application, the original msg10 logon menu/welcome messages display

USS Table  
Performance and  
Operations Notes

Unicenter TCPaccess Telnet Server attempts to minimize overhead by preprocessing the USS tables at initialization time. At TELNET connection time, Unicenter TCPaccess Telnet Server loads the USS tables, and internally builds APPL statements.

For USS table processing only, if an entered command was not defined, there is no attempt to invoke it as an APPLID is made.

Translation Table  
Processing

Because the USS tables are processed at initialization time, translation tables defined within USS tables are not used to translate terminal input data. Special processing can be handled by the defaults coded on the specific TELNET configuration statement(s).

Invoking USSTAB  
Server Telnet

You invoke USSTAB Server Telnet by entering TN3270 from a remote client to the port defined with the USSTAB option in Unicenter TCPaccess Telnet Server.

```
TN3270 138.42.224.13 1124
```

```
Trying...  
Connected to 138.42.224.13
```

Next, the logon/welcome displays as a typical VTAM application logon screen.

## TelnetRTM Configuration

---

This chapter describes TelnetRTM configuration including RTMCFGxx Customization, which describes how to configure the RTMCFGxx configuration member of the PARM data set.

TelnetRTM provides a central repository for Telnet response time measurement (RTM) data. A single instance of TelnetRTM may contain RTM data for one or more Telnet servers, which may in turn be using one or more TCP/IP servers, either Unicenter TCPaccess or IBM's TCP/IP. The Telnet servers accumulate the RTM data and store it in the TelnetRTM repository. The RTM data in this repository is then queried and reported on by both Unicenter NetSpy and the Unicenter TCPaccess NETSTAT TELNET command processor.

TelnetRTM executes within an IFS address space and is implemented as an IFS task group with task group identifier RTM. The component is started using the IFS START command and is stopped directly using the IFS STOP command or indirectly during the termination of the IFS address space. The IFS START and STOP commands are described in detail in the *Unicenter TCPaccess Communications Server System Management Guide*.

If the RTM task group is started in a separate IFS address space than one or more Telnet servers, then the subsystem identifier assigned to the IFS address space in which the RTM task group is executing must be specified in the GLOBAL statement of the APPCFGxx member for the Telnet servers. Refer to the chapter "Global Application Parameters" for more specific information.

It is recommended that the IFS address space executing the RTM task group be started before any IFS address space that is executing a Telnet server. Failure to follow this recommendation may result in RTM data being unavailable for some Telnet sessions.

## RTMCFGxx Customization

The RTMCFGxx member in the PARM data set specifies the configuration parameters for the RTM task group.

Specify the following in the STARTxx member of the PARM data set to start the RTM task group:

### START RTM

To specify an RTMCFGxx member other than the default of RTMCFG00, specify CNFG(xx) after the START RTM command, where xx is the two character suffix. To start the RTM task group with no configuration parameters and accepting all default values, specify CNFG(NONE) after the START RTM command.

## POOLDEF Statements

The POOLDEF statement is used to define pools of control blocks required by the RTM task group. Refer to RTMCFGxx Control Block Pools in the chapter “Defining Control Block Pools (POOLDEF Statement)” for the pools that you can define for RTMCFGxx and the default characteristics of those pools.

The pool definitions specify an initial amount, an expansion amount, a contraction amount, and a minimum amount to limit contraction. You can adjust these numbers to minimize expansion and contraction and improve efficiency. Refer to POOLDEF Statement Syntax in the chapter “Defining Control Block Pools (POOLDEF Statement)” for more specific information.

### Example

The example below shows a sample configuration for the RTM task group

```
*-----*
* TCPaccess RTM task group configuration      *
*-----*

* Storage pool configuration parameters

POOLDEF NAME(RTPB)
        INITIAL(4)
        MINIMUM(8)
        EXPAND(4)
        CONTRACT(4)

POOLDEF NAME(RTOB)
        INITIAL(32)
        MINIMUM(256)
        EXPAND(64)
        CONTRACT(128)
```

# Translation Tables

---

This chapter describes the translation tables available for Unicenter TCPaccess Telnet Server.

## Choosing a Telnet Translation Table

Because of translation differences between languages, when using a table other than English for Telnet translation, you should first do the following:

1. Determine if any of the characters indicated in the following table will appear in your telnet input or output stream.
2. If there are any, check the translate table source to verify they will translate correctly.

The SMTP service uses the @ character as part of the mailing address. In the Danish table however, an EBCDIC X'7C' does not represent an @. Rather, in that table an ASCII X'40' is translated to an EBCDIC X'40' (which is a blank), and an EBCDIC X'7C' is translated to an ASCII X'5C'. Therefore, the Danish table cannot be used for SMTP.



## SSL Considerations

---

The TCPaccess Telnet Server provides the ability to protect Telnet connections using the SSL (Secure Socket Layer) protocol. SSL connections are defined at Unicenter TCPaccess start up in configuration member ACPCFGxx. However, for SSL to work properly, *digital certificates* (DC) and *public/private key mechanisms* (referred to as PKI in IBM publications) must be defined. An X.509 certificate contains the needed public key information within itself.

Digital certificates can either be self-signed or provided by a Certificate Authority (CA).

### SAF Considerations for Certificates

Certificates are created and maintained in server-defined repositories called key databases (KDB). Security packages can also maintain certificates. For RACF, certificates are grouped into *keyrings*, that is, a keyring is defined and certificates are connected to the specified keyring. Each certificate is given a label which is a character string that identifies the certificate. A certificate can be designated, by its label, as the default certificate for the database or keyring.

Unicenter TCPaccess Communications Server supports KDBs residing in an HFS file and KDBs that are defined to and managed by SAF (RACF, eTrust CA-ACF2 or eTrust CA-TopSecret).

For HFS files, the KDBs are created and managed by the OMVS service called gskkyman. Refer to *OS/390 System SSL Programming Guide and Reference* for details on gskkyman usage.

**Note:** When defining an HFS KDB, you must (to work with the Server) also define its companion *stash* file. HFS KDBs and stash files, by convention, have extensions of kbd and sth respectively. The two pathnames are what are defined to the SSL Server.

For SAF, information regarding the KDBs can be found in the following manuals:

- *OS/390 SecureWay Security Server RACF Command Language*
- *eTrust CA-ACF2 Administrator Guide*
- *eTrust CA-TopSecret Command Functions Guide*

For SAF, the keyring name is defined to the SSL Server.

The names you select for your KDBs (whether they're SAF keyring names or HFS paths), are specified on KEYRING definition statements in APPCFGxx.

**Note:** The label (specific certificate) is not specified on the KEYRING statement; the default label (certificate) is used.

The client software needs to verify a certificate presented to it during the initial handshake. Client software may maintain databases for certificates. The certificate may need to be *exported* from the mainframe database or some other repository and transmitted (FTP) to the client PC. Client software may have a utility to then import the certificate into its database.

## Examples

**Note:** *sid* represents the server ID.

### RACF Examples

1. Define a keyring:  
`RACDCERT ID(sid) ADDRING(ringname)`
2. Connect a certificate and make it the default:  
`RACDCERT ID(sid) CONNECT(LABEL('certlabel')) RING(ringname) DEFAULT)`
3. Export a certificate (create MVS dataset) to send to client for import:  
`RACDCERT ID(sid) EXPORT(LABEL('certlabel')) DSN('dataset_name') -  
FORMAT(CERTB64)`

**Note:** Keyring/certificate names and labels are case sensitive. You may use any case (you can also mix cases), but you **must** use the same case when these names are referenced in other commands.

## eTrust CA-ACF2 Examples

1. Define a keyring:  

```
SET PROFILE(USER) DIV(KEYRING)
INSERT sid.suffix RINGNAME(ringname)
```
2. Connecting a certificate:  

```
CONNECT LABEL(certlabel) RINGNAME(ringname) DEFAULT
```
3. Exporting a certificate (create MVS dataset) to send to client for import:  

```
EXPORT sid LABEL(label) DSNAME(' dataset_name') FORMAT(CERTB64)
```

## eTrust CA-TopSecret Examples

1. Define a keyring:  

```
TSS ADDTO(sid) KEYRING(ringname)
```
2. Connect a certificate:  

```
TSS ADDTO(sid) KEYRING(ringname) RINGDATA(sid,certificate_name) DEFAULT
```
3. Export a certificate (create MVS dataset) to send to client for import:  

```
TSS EXPORT(sid) LABLCERT(label) DIGICERT(certificate_name) -
DSNAME(' dataset_name') FORMAT(CERTB64)
```

## Authorizing the TCPaccess/SSL Server User ID

The user IDs to be assigned to the TCPaccess/SSL started tasks must have the authority to access SAF digital certificate profiles. Use the following SAF commands to enable this access:

## RACF

```
PERMIT IRR.DIGTCERT.LIST CLASS(FACILITY) ID(sid) ACCESS(READ)
PERMIT IRR.DIGTCERT.LISTRING CLASS(FACILITY) ID(sid) ACCESS(READ)
```

## eTrust CA-ACF2

```
SET RESOURCE(FAC)
COMPILE
$KEY(IRR) TYPE(FAC)
DIGTCERT.LIST SERVICE(READ) UID(sid) ALLOW
DIGTCERT.LISTRING SERVICE(READ) UID(sid) ALLOW
STORE
```

## eTrust CA-TopSecret

```
TSS ADMIN(sid) MISC4(CERTLIST)
```

*sid* is the user ID assigned to the TCPaccess started task and is the same *owning* user ID specified when the certificates were registered.

## TN3270E/SSL Server Performance

The TN3270E server has configuration parameters, MINTASKS and MAXTASKS, for the number of tasks for:

- All non-SSL connections
- For each Keyring

If MAXTASKS is zero (the default), then additional tasks are started as needed. It also has a configuration parameter, MAXSESSTASK, for the maximum number of sessions each task can support. These are provided as tuning tools.

Due to the Language Environment and SSL support, configuring tasks requires considerable virtual storage. If there are more than 8,192 concurrent connections then by default multiple tasks is started. If virtual storage becomes limiting then you can use MAXSESSTASK to increase the number of sessions per task. There is also the flexibility to lower MAXSESSTASK but at the potential cost of additional tasks.

During testing, MINTASKS can be used to force a specified number of tasks to be initialized. Using the IJT command VSM (see the *Unicenter TCPaccess Communications Server System Management Guide*), the virtual storage use can be monitored in order to determine the acceptable balance between sessions and tasks.

# Interface to Unicenter NetSpy

---

The TCPaccess Telnet Server provides an interface to the Unicenter NetSpy Network Performance product.

## What Unicenter NetSpy Provides

Unicenter NetSpy Network Performance allows you to monitor key performance metrics for both SNA and TCP/IP networks, gathering and reporting network and host response time information for both applications and terminals.

## Setup

- The RTM task group must be started. For more information, see the chapter “TelnetRTM Configuration”.
- The RTMSSID parameter on the GLOBAL statement in the APPCFGxx must be set. For more information, see the chapter “Global Application Parameters”.
- The subsystem id used for the RTM dataspace must be specified on the ACCSSRTM parameter in NetSpy.
- For the LU names defined in the LUPOOL, see the TELNETLU parameter in NetSpy for what must be coded.

When configuring Unicenter TCPaccess Telnet Server:

- Do not prevent TN3270E from being negotiated. That is, do not specify NOTN3270E on the TELNET statement. By default, TN3270E is allowed.
- Do not prevent responses from being subnegotiated – this is the default.

That is:

- Do not code a FUNCTIONS parameter on the TELNET statement.
- If the FUNCTIONS parameter has been specified, include RESPONSE.



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