

# **SINGLE SYSTEM IMAGE**

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North Ridge Software, Inc.

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**North Ridge Software, Inc.**  
12515 Willows Road N.E.  
Suite 205  
Kirkland, Washington 98034-8795  
U.S.A.

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North Ridge Software, Inc. can be contacted via any of the following mechanisms:

**Telephone** 425/814-9000  
**FAX** 425/823-9636  
**InterNet** support@nrsinc.com  
**Homepage** http://www.nrsinc.com

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# Introduction

The usage of multiple ACF/VTAM subsystems within a SNA network by a single network user is commonplace in today's networks. This includes terminal users within single Domain, cross Domain, and cross Network configurations. Typically, the usage of multiple subsystems requires a subsystem based **connection procedure** and **signon process**, which is specific to the subsystem.

The Network Director's **Single System Image** is a concept intended to automate the *connection and signon processes* as the terminal user utilizes the different subsystems. Single System Image is implemented as a series of documented interfaces to each supported subsystem. The SSI interface may consist of documentation specific to the subsystem, one or more exit routines, or one or more local insertions or modifications to the subsystem.

This manual contains the information necessary to install, customize, debug, and utilize the SSI routines and interfaces. Each implementation is subsystem specific and is documented in its own section of the manual and discussed in the terminology that is native to the subsystem.<sup>1</sup>

The basic goal of SSI is to provide the end user (terminal operator) with increased productivity by eliminating repetitive logons, etc. to the various VTAM subsystems. To accomplish this, SSI concepts and routines cause the various subsystems to accept the incoming CINIT RU User Data Area area in specific formats. The format differs by subsystem and is documented under each specific subsystem under the heading "CINIT RU User Data Area Format".

The information in this publication provides instructions for each currently supported subsystem. All supported subsystem's are described here, even though they may not be present on your system (or even applicable to your operating environment). This is because multiple domain VTAM networks may not be operating the same operating environment at each node. It is entirely possible that a DOS Network Director may be forwarding terminals to an OS TSO system operating in a different CPU. For this reason, we have chosen to include a description for all supported systems.

---

<sup>1</sup> Familiarity with The Network Director's terminology is useful, but not required.

# The Manual Set

This manual is one of a set related to The Network Director. The set consists of:

Number	Manual Title
TND-0201	General Information Manual
TND-0202	Network User's Guide
TND-0203	Network Administrator's Guide
TND-0204	Quick Reference Guide
TND-0205	Internals
TND-0206	Messages and Codes
TND-0210	Network Operator's Guide
TND-0219	Installation Guide
TND-0220	Single System Image
TND-0226	SecureNet Key Interface Reference
TND-0420	Version 4.2 Release Guide

Figure 1. The Manual Set

Each Network Director installation is provided with a complete set of base documentation for The Network Director. The base set consists of the *General Information Manual*, *Network User's Guide*, *Network Administrator's Guide*, *Quick Reference Guide*, *Internals*, *Messages and Codes*, the *Network Operator's Guide*, *Single System Image*, and the *Installation Guide*. Additional documentation is available, as requested.

## Manual Format

The information in this publication is generally organized by subsystem. Each subsystem chapter is further divided into the following basic segments:

<b>Topic</b>	<b>Purpose</b>
<b>Installation</b>	identifies how to install the Single System Image required items into the subsystem
<b>CINIT RU User Data Area Format</b>	describes the precise format associated with Single System Image within the subsystem
<b>The Network Director</b>	discusses The Network Director's configuration options that are associated with the usage of Single System Image in a Network Director environment
<b>Typical Errors</b>	identifies the errors and conditions that are typically encountered during the installation and usage of Single

System Image in the subsystem and recommends a *resolution* to the error condition

**Other Items**

contains other items specific to the subsystem and usage of Single System Image that has not been already discussed.

## Manual Notation

Several *manual formats* or documentation standards have been utilized in this publication. The following items identify these standards.

### Syntax

Whenever a Figure, Example, or other sample is presented, the following syntax items apply.

1. "UPPER CASE" items should be coded as portrayed
2. "lower case" items should be replaced as necessary with local installation values
3. Underscored items should be reviewed for accuracy
4. Brackets "[ ]" indicate an optional operand
5. Braces "{ }" indicate a list of items to select from
6. The symbol "|" is a separator in a list of choices and should be interpreted as *or*
7. The string "..." indicates that the preceding value can be repeated
8. Parends "( )" represent a value list and should be coded as portrayed

## Installation Checklist

Each subsystem's Installation section contains a **Installation Checklist** in the form of a *Figure* in the general format:

Step	Activity	Completed
1	Installation step 1	
2	Installation step 2	
3	Installation step 3	
4	Installation step 4	

**Figure 2. Installation Checklist Format**

This format provides a quick overview of the entire installation process associated with a subsystem and can be used to *check off* the individual steps as installation proceeds.

## Sample Job Control/EXECs

When example job control language or EXEC procedures are presented, they will appear as a *Figure* in the general format:

```
//JOBNAME JOB (accounting info),DIRECTOR,CLASS=?  
//*  
//*      sample JCL  
//*  
//STEPNAME EXEC PGM=program
```

**Figure 3. Sample Job Control/EXECs**

This format provides a quick overview of the JCL or EXEC that should be prepared and/or executed.

## Example Parameters

When example parameters or option settings are presented, they will appear as an *example* outlined by open sided frames.

```
APPLICATION CICS,  
      SSI=EXTENDED,  
      ERASE=YES
```

## ***New Sub-system Support***

While many of the popular VTAM subsystems are already supported, you may find that you have one or more that are not currently listed. It is North Ridge Software, Inc.'s policy to support as many subsystems as possible (within documented guidelines). If one of the subsystems you are interested in supporting is not listed, contact North Ridge Software, Inc. for additional information.

You should be prepared to respond to the following questions:

1. Does the subsystem respond in any way to the contents of the CINIT RU User Data Area?
2. Does the subsystem offer any "exits" that can be utilized to accomplish SSI objectives?
3. Can North Ridge Software, Inc. contact the subsystem vendor directly?
4. Does the subsystem provide source code for its VTAM interface?

Once these questions are answered, North Ridge Software, Inc. will be able to properly evaluate whether the subsystem in question can be supported.

## Control Block Formats

In many cases, Single System Image operates within a subsystem on the contents of the CINIT RU User Data Area field to accomplish SSI objectives. When the arriving information has been formatted under control of a "forwarding" subsystem like **The Network Director**, the CINIT RU User Data Area has one of two predefined formats.

These formats are used by The Network Director, but may also be utilized by "outboard applications" to format data streams (CINIT RUs) that will be acceptable to SSI for automating the signon procedures, etc. (VAX 3270 emulation code, networked PCs, etc.).

## SSI

The CINIT RU's user data area is mapped by a SSI control block in the following format:

<i><b>Positions</b></i>	<i><b>Contents</b></i>
<b>1-3</b>	the literal string "SSI"
<b>4-11</b>	the userid, signon key, etc.
<b>12-19</b>	the password (may be encrypted)
<b>20-end</b>	the initial "command" or transaction (dependent upon the receiving subsystem)

**Figure 4. SSI CINIT RU User Data Area Format**

The SSI control block is selected within The Network Director by specifying SSI=YES on the applicable APPLICATION definition.

# SSX

SSI also accepts a control block identified as a SSX (Extended Single System Image), which passes additional information between the subsystems. The CINIT RU's user data area is mapped by a SSX control block (distributed as the macro TNDSSX) in the following format:

<b>Positions</b>	<b>Contents</b>
<b>1-3</b>	the literal string "SSX"
<b>4</b>	a flag byte
<b>5-12</b>	the userid, signon key, etc.
<b>13-20</b>	the password (may be encrypted)
<b>20-27</b>	the extension value
<b>28-47</b>	the account code
<b>48-127</b>	the initial "command" or transaction (dependent upon the receiving subsystem)
<b>128-255</b>	reserved

**Figure 5. SSX CINIT Format**

The SSX control block is selected within The Network Director by specifying SSI=EXTENDED or SSI=INHERIT on the applicable APPLICATION definition.

The SSX control block may be mapped by the TNDSSX macro that is present in the distribution library.

```

SSX      DSECT ,
*****
*****
**
**
**              EXTENDED SINGLE SYSTEM IMAGE
**              -----
**
**      PRESENT IN THE CINIT RU USER DATA AREA WHEN A RECEIVING
**      SYSTEM HAS SSI SPECIFIC CODE INSERTED.
**
*****
*****
SSXID    DC      CL3 'SSX'              THE EYE-CATCHER
SSXFLAG1 DS      XL1                  A FLAG BYTE
SSX1ENCR EQU    X'04'                ENCRYPTED PASSWORD
SSX1INHT EQU    X'08'                INHERIT
SSX1PRTC EQU    X'10'                SSI=PROTECTED
SSX1SITE EQU    X'20'                SITE VALUE PRESENT
SSX1BLNK EQU    X'40'                RESERVED
SSX1RETN EQU    X'80'                RETURN
*
SSXNAME  DS      CL8                  USERID
SSXPSWD  DS      CL8                  PASSWORD
*
SSXEXT   DS      CL8                  EXTENSION
SSXACCT  DS      CL20                 ACCOUNT CODE
SSXCMD   DS      CL80                 INITIAL COMMAND
SSXSITE  DS      CL8                  SITE
          DS      (255 - (*-SSX)) XL1  RESERVED FOR FUTURES
SSXLEN   EQU    *-SSX                SIZE OF THE SSX
          MEND

```

**Figure 6. TNDSSX Control Block DSECT**

## Unloading the Distribution Tape

The SSI modules, exits, and programs that are necessary to implement SSI exist as members, files, or books on the associated Network Director distribution tape. If you have installed The Network Director through usage of the Network Director Installation manual, you can proceed to installation of the SSI code into the individual subsystems (you will have already performed the necessary steps to unload the SSI routines from the distribution tape).

### OS

To obtain the SSI routines from The Network Director's OS Distribution tape, simply execute a single IEBCOPY job to unload a PDS (identified as the DATA library. The following sample JCL can be utilized to do this.

```
//jobname JOB (accounting),name,CLASS=class
//*
//* UNLOAD THE SSI DATA LIBRARY FROM THE DISTRIBUTION TAPE
//*
//UNLOAD EXEC PGM=IEBCOPY
//SYSPRINT DD SYSOUT=A
//SYSUT1 DD DSN=NRS.DIRECTOR.DATA,
// UNIT=TAPE,DISP=OLD,
// VOL=SER=TNDxxx
//SYSUT2 DD DSN=NRS.DIRECTOR.DATA,
// UNIT=3380,
// VOL=SER=volser,
// DISP=(,CATLG),
// SPACE=(CYL,(4,,10)),
// DCB=(RECFM=FB,LRECL=80,BLKSIZE=3120)
//SYSUT3 DD UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSUT4 DD UNIT=SYSDA,SPACE=(CYL,(1,1))
//SYSIN DD DUMMY
```

**Figure 7. OS Unload JCL**

Once the library is unloaded, the individual members of the library can be utilized to install SSI into specific subsystems (as identified in the remainder of this publication).

## VM

To obtain the SSI routines from The Network Director's VM Distribution tape, simply:

Step	Activity	Completed
1	Allocate a VM mini-disk of approximately 4000 1024K blocks to contain all the SSI code (this is called the distribution disk)	
2	Mount the distribution tape to a CMS machine as virtual 181	
3	Position the tape by issuing "TAPE FSF 19"	
4	Issue VMFPLC2 LOAD to load all the distribution files onto the mini-disk that was allocated	

**Figure 8. Installation Checklist Format**

Once the files have been loaded, the individual files on the mini-disk can be utilized to install SSI into specific subsystems (as identified in the remainder of this publication).

## DOS

To obtain the SSI routines from The Network Director's DOS Distribution tape, simply execute LIBR to restore The Network Director's distribution library. The following sample Job Control can be utilized to do this.

```
* $$ JOB JNM=jobname,DISP=D,CLASS=c
// JOB RESTORE ALLOCATE LIBRARIES
*
*   Restore The Network Directors Library from tape
*
// DLBL   TND, 'NRS.DIRECTOR.LIB',99/365
// EXTENT ,vvvvvv,1,1,ssss,20000
// ASSGN  SYS002,TAPE,VOL=TNDnnn
// MTC    REW,SYS002
// MTC    FSF,30
// TLBL   TNDLIB, 'NRS.DIRECTOR.LIB'
// EXEC   LIBR,SIZE=900K
        RESTORE LIB=TND TAPE=SYS002 TAPELABEL=TNDLIB
/*
/&
* $$ EOJ
```

**Figure 9. DOS Unload Job Control**

Once the LIBR job completes, the individual books in the library you designated can be utilized to install SSI into specific subsystems (as identified in the remainder of this publication).

# CICS

CICS does not generally process the contents of the CINIT RU User Data Area, but does make it accessible for application programs (CICS 1.7 and up).<sup>2</sup>

The implementation of SSI for CICS is made up of a single CICS program that operates as a replacement Good Morning Message program. This program is referenced as the **SSI GMM code** in the following discussion. You should use TNDGMMSA for CICS/ESA 3.3 or better systems and TNDGMM for all other CICS releases.

## Installation

To install CICS SSI concepts, the following process is necessary:

Step	Activity	Completed
1	If you are CICS 1.6 or lower, re-assemble the CICS TCT inserting TNDCICS TYPE=TCT	
2	Assemble the SSI GMM code (TNDGMM or TNDGMMSA) setting generation options to match your desired SSI result (see "Generation Options" on page 16 for generation operand settings)	
3	Insert a PPT entry for the SSI GMM code (use CEDA if RDO is in use)	
4	Redirect the CSGM transaction id to the SSI GMM code	
5	Restart CICS with the new PPT and PCT entries with the SSI GMM code linked into the appropriate library	

Figure 10. CICS SSI Installation Checklist

Each of these steps accomplish the tasks as described in the following sections.

---

<sup>2</sup> Specify LGNMSG=YES in the SIT to activate the logic necessary within CICS.

## Re-assemble the CICS TCT

SSI accepts the input CINIT RU User Data Area from ACF/VTAM, and provides a mechanism to make it available to the SSI GMM code.<sup>3</sup>

Insertion of TNDCICS TYPE=TCT into the TCT assembly causes SSI routines to collect the CINIT RU User Data Area into a table (the TCTTBL) generated into the TCT for subsequent usage by TNDGMM.

Insert the TNDCICS TYPE=TCT entry into the CICS TCT immediately after the DFHTCT TYPE=INITIAL macro. The TNDCICS macro generates code that will intercept the CICS VTAM LOGON exit and will collect the VTAM CINIT RU User Data Area into a table that is then available for the Good Morning Message program to utilize to automate the CSSN process.

For DOS installations, the TNDCICS macro is distributed as an A book, which implies that you will also have to insert an additional COPY statement before the DFHTCT TYPE=INITIAL as:

```
COPY TNDCICS
DFHTCT TYPE=INITIAL
TNDCICS TYPE=TCT
etc.
```

---

<sup>3</sup> NRS recommends CICS 1.7 and later systems utilize TCTTBL=NO and the EXEC CICS EXTRACT LOGONMSG as an alternative to TCTTBL=YES.

## Assemble the SSI GMM Code

The SSI GMM code (TNDGMM or TNDGMMSA) is the command level program that:

1. operates as the replacement CSGM (Good Morning Message) transaction
2. for TCTTBL=YES specifications, locates the table maintained in the TCT by TNDCICS TYPE=TCT code
3. utilizes the information passed from The Network Director to automatically CSSN the user on (if CSSN=YES or ONLY is in effect).
4. invokes (EXEC CICS START or RETURN TRANSID) the initial CICS transaction (if the signon was successful)

If the entering terminal did not have a SSI or SSX, the SSI GMM code will automatically invoke (XCTL) the normal DFHGMM to accomplish its traditional task. This implementation allows non SSI terminals to enter CICS with no external change in their interface to CICS via VTAM.

The TNDGMM and TNDGMMSA routines assemble based upon operand settings of the TNDCICS macro, which is present in the TNDGMM or TNDGMMSA source files prior to the actual GMM code. You should review the TNDCICS description under "Generation Options" on page 16 to determine if you would like to change any of the default characteristics. Modify the TNDCICS macro, as appropriate in the source file.

The following JCL can be utilized as a guideline to this assembly process.

```
//TNDGMM JOB (accounting info),DIRECTOR,CLASS=?
//*
//      jcl to invoke the standard command level CICS
//      assembly process
//*
//TNDGMM EXEC DFHxxxx          CICS Assembler PROC name
//TRN.SYSIN DD DSN=TND.DIRECTOR.DATA({TNDGMM|TNDGMMSA}),DISP=SHR
/*
```

**Figure 11. Assembling the SSI GMM Code for OS Systems**

For DOS systems, to get the SSI GMM code to properly assemble, the TNDICCS macro will have to be present in the input stream to the ASSEMBLER prior to the SSI GMM code. The Stage One generates some sample JCL or use the following as a guideline.

```

* $$ JOB JNM=tndgmm,DISP=D,CLASS=a
// JOB tndcics SSI INSTALLATION
*
*      THIS IS AN ASSEMBLY OF TNDGMM, WHICH IS
*      INTENDED TO RECEIVE CONTROL WHENEVER THE
*      CSGM TRANSACTION IS INVOKED.
*
// DLBL CICSPSL,'CICS.source',99/365
// EXTENT ,vvvvvvv
// DLBL TND,'NRS.DIRECTOR.LIB',99/365
// EXTENT ,TNDVOL
// LIBDEF SL,SEARCH=(CICSPSL,TND.MACLIB)
// DLBL IJSYSPH,'TND.TEMP.WORKFILE',0
// EXTENT SYSPCH,wwwww,1,0,ssss,nnnn
// EXEC DFHEAP1$,SIZE=256K
* $$ SLI MEM=TNDGMM.A
/*
      CLOSE SYSPCH,PUNCH
// DLBL IJSYSIN,'TND.TEMP.WORKFILE',0
// EXTENT SYSIPT,wwwww
      ASSGN SYSIPT,DISK,VOL=wwwww,SHR
// LIBDEF SL,SEARCH=(CICSPSL,TND.MACLIB)
// OPTION CATAL
      PHASE TNDGMM,*
      INCLUDE DFHEAI
// EXEC ASSEMBLY,SIZE=AUTO
      CLOSE SYSIPT,READER
// DLBL CICSPL,'CICS.rellib',99/365
// EXTENT ,vvvvvv
// DLBL CICSPL,'CICS.corelib',99/365
// EXTENT ,vvvvvv
// LIBDEF RL,SEARCH=CICSPL
// LIBDEF CL,TO=CICSPL
// EXEC LNKEDT
/&
* $$ EOJ

```

**Figure 12. Assembling TNDGMM for DOS Systems**

The CICS command level translator may issue up to two error messages and will set a condition code of 4. DFH7072I will be issued warning you about TNDGMM's EXEC CICS ADDRESS command utilized to obtain the CSA address. DFH7050I may be issued if you are executing a translator that was delivered prior to Version 1.7. Both of these errors are "normal". If you encounter other diagnostics from the translator, contact North Ridge Software, Inc. prior to proceeding.

## Insert a PPT Entry for the SSI GMM Code

Since the SSI GMM code may invoke DFHGMM, the SSI GMM code requires another PPT entry be made for it. An example of the PPT entry is:

```
DFHPPT TYPE=ENTRY, PROGRAM={TNDGMM|TNDGMSA}
```

If you are using CICS' Resource Definition Online, you will have to utilize the CEDA transaction to make this PPT entry.

## Redirect the CSGM PCT Entry

In order for the SSI GMM code to receive control immediately upon a VTAM terminal entering CICS, you should activate the Good Morning Message mechanism and associate the SSI GMM code with the CICS transid CSGM (or the one specified on the GMTRAN option in the SIT).<sup>4</sup> Activation can normally be done by specifying GMMMSG=YES in the DFHTCT TYPE=TERMINAL macro for each terminal requiring SSI type operations. Additionally, the PCT entry for CSGM requires redirection to the TNDGMM program. An example of the PCT entry is:

```
DFHPCT TYPE=ENTRY, TRANSID=CSGM, PROGRAM={TNDGMM|TNDGMSA}
```

Depending upon the release of CICS and other factors, you may find that the PCT entry for CSGM is actually a portion of a DFHPCT TYPE=GROUP, FN=VTAM. You can utilize the member TNDPCT in the DATA library as a model to replace this entire GROUP in the PCT. Do **not** remove the other PCT entries implied by this GROUP.

It is also possible that the PCT's function has been replaced at your installation by the contents of the CSD file (Resource Definition Online). If this is the case at your installation, you will have to use the CEDA transaction to create a new list (you can't modify the default list) that will include the CSGM specification for the SSI GMM code. You will then need to specify this new list via the SIT.

---

<sup>4</sup> If you select an alternate transid, make sure it begins with the letter "C" and does not use the letter "E" as the second character. These letters are checked by the IBM provided DFHSCP and it will not operate properly unless the transid begins with "C".

## Generation Options

The TNDCICS macro is present on the distribution library in source macro form. You will have to insert this library as a SYSLIB or LIBDEF library during assembly or will have to move TNDCICS to an appropriate library. The operands available can be identified as:

```
TNDCICS TYPE={TCT|GMM}
        [ ENTRIES={10|numeric value} ]
        [ CSSN={YES|NO|ONLY} ]
        [ CSSF={YES|NO} ]
        [ DEFPGM=default program ]
        [ DEFTRAN=default transid ]
        [ GMMNAME={DFHGMM|program name} ]
        [ SFPNAME={DFHSFP|program name} ]
        [ SNPNAME={DFHSNP|program name} ]
        [ TCTTBL={YES|NO} ]
```

**Figure 13. TNDCICS Format**

where:

### ***TYPE***

indicates which executable code should be generated for this invocation of TNDCICS. TCT indicates that the executable code for the VTAM LOGON exit and the table for accumulation of CINIT RU User Data Area should be generated. GMM indicates that the appropriate set symbols should be set to allow the SSI GMM code to assemble normally.

### ***ENTRIES***

is only valid on the TYPE=TCT specification. ENTRIES specifies the number of entries that will be available in the TCT to queue SSI requests for TNDGMM. If this value is too small, the CICS SSI code will not collect the information necessary to accomplish automated CSSN.

This operand is **not used** if you specify TCTTBL=NO or use TNDGMMSA as your SSI GMM code.

### ***CSSF***

is only valid when specifying TYPE=GMM. CSSF=YES indicates that the SSI GMM code will attempt to log the user off (CSSF LOGOFF) if the logon attempt fails and the signon program returns to the SSI GMM code. NO indicates that the SSI GMM code should simply terminate and allow normal CICS routines to continue processing with the device.

## **CSSN**

is only valid on the TYPE=GMM specification. CSSN=YES indicates that the SSI GMM code should attempt to enter the CICS signon program in order to CSSN the user. NO indicates that there is no requirement for logging the user on and the SSI GMM code should immediately attempt to initiate the first transaction. ONLY is the same as YES, except that the SSI GMM code will **not** call the SNPNAME program for sign on processing if the incoming userid is blank (or not present).

## **DEFPGM**

is only valid on TYPE=GMM. This establishes the PPT entry that will be XCTLed to by the SSI GMM code for terminals entering CICS with a SSI or SSX control block and with no INITIAL-FUNCTION specified. DEFPGM is mutually exclusive with DEFTRAN. If neither DEFPGM or DEFTRAN is specified, the SSI GMM code will simply RETURN to CICS upon CSSN completion.

## **DEFTRAN**

is only valid on TYPE=GMM. This establishes the transaction id that will be started for terminals entering CICS with a SSI or SSX and with no INITIAL-FUNCTION specified. This is mutually exclusive with DEFPGM.

## **GMMNAME**

is only valid on TYPE=GMM. This establishes the name of the CICS program that should receive control if the VTAM LU entering CICS had no entry in The Network Director's TCT table.

This operand should be set to the program name that the CSGM transaction gave control to prior to the redirection of the PCT to the SSI GMM code. ACF2 installations will normally have this set to the same value as SNPNAME.

## **SFPNAME**

is only valid on TYPE=GMM specifications. This identifies the CICS program name that should be invoked (LINK) to accomplish the CSSF process.<sup>5</sup>

## **SNPNAME**

is only valid on TYPE=GMM specifications. This identifies the CICS program name that should be invoked (LINK) to attempt the CSSN process. ACF2 installations should set this to the same value as SFPNAME.

---

<sup>5</sup> ACF2 installations should set this operand to ACF2AEUSC (for 3.2 and 3.3 systems), ACF2ESNP (for 4.0 systems), and ACF2EUSP (for 4.1 and later systems). Consult the ACF2/CICS documentation for specifics associated with your release of ACF2/CICS.

## **TCTTBL**

identifies whether TNDGMM should utilize the CICS 1.7 EXTRACT LOGONMSG command to obtain the SSI data or not. TCTTBL=YES (the default) will require that the TND CICS macro is inserted in the TCT assembly . TCTTBL=NO will not require the TCT insertion and is recommended for Version 1.7 and later systems.

If TCTTBL=NO is specified, the SIT must specify LGNMSG=YES to enable the CICS logic necessary to make the SSI data available to the SSI GMM code.

## **CINIT RU User Data Area Format**

The standard CICS VTAM interface does no processing of the CINIT RU User Data Area other than making it available for EXTRACT LOGONMSG (if LGNMSG=YES is specified in the SIT).

After installation and proper configuration of the SSI GMM code, CICS will accept either a properly formatted SSI or SSX (see "Control Block Formats" on page 6). Processing of the contents of the SSI or SSX is dependent upon the options that were set via the TND CICS TYPE=GMM macro during the assembly of the SSI GMM code.

## **The Network Director**

Activation of the CICS SSI logic within The Network Director consists of utilizing the SSI operand of the APPLICATION definition statement as follows:

```
APPLICATION CICS,  
    SSI=YES,  
    ERASE=YES,  
    INITIAL-FUNCTION=the desired first transid
```

The initial transaction may be set via the INITIAL-FUNCTION operand or the first 4 characters specified with INITIAL-DATA (if the INITIAL-FUNCTION operand is omitted).

Specification of ERASE=YES is also recommended. This causes The Network Director to "CLEAR" the device's screen prior to forwarding the device to CICS. This will eliminate the physical intermingling of CICS messages onto Network Director screens (CICS does not always clear the screen prior to writing error messages).

## Typical Errors

The following items are common errors that are made during the installation and use of The Network Director's CICS interface. If you have symptoms not covered below, contact North Ridge Software, Inc.

### TNDGMM Assembly Errors

**Symptom:** TNDGMM does not assemble properly

**Explanation:** Typically a result of the CICS or Network Director macro library not being available during the assembler step of the assembly job

**Resolution:** Make sure the CICS macro library is defined in the assembly job control, the Network Director DATA library is included, and that the assembly JCL includes the appropriate CICS Assembler Translator step prior to the assembly.

### CICSVS Block Logo Still Appears

**Symptom:** You still receive the CICS/VS block LOGO after completion of the installation

**Explanation:** It is likely that the proper PCT or TCT has not been placed into effect. It is also possible that you neglected to set LGNMSG=YES into the SIT.

**Resolution:** Check that the PCT and TCT linkedited properly, is in the proper library, and has been specified in the SIT and that LGNMSG=YES has been specified. If you are using Resource Definition Online you will have to use CEDA to create the PCT and PPT entries instead of assembling them.

You can check if TNDGMM or TNDGMMSA is receiving control by using CEMT to check on the Program Use count. If the Use count is zero, the PCT still points at DFHGMM.

If you are using The Network Director, make sure that you have specified SSI=YES in The Network Director and the user has logged on to The Network Director prior to selecting CICS.

### AEI0 Transaction Abends

**Symptom:** The CSGM transaction terminates with a AEI0 abend

**Explanation:** A PGMIDERR has occurred.

**Resolution:** This typically occurs if the SNPNAME= operand specified the wrong name for the signon program and TNDGMM has attempted to EXEC CICS LINK to a program that is not defined in the PPT. Check that the TNDCICS SNPNAME= operand during the TNDGMM assembly specified the proper signon program name.

## AEI1 Transaction Abends

**Symptom:** The CSGM transaction terminates with a AEI1 abend

**Explanation:** AEI1 is the CICS transaction abend indicating TRANSIDERR or invalid transaction code used.

**Resolution:** This will typically mean that TNDGMM has attempted to EXEC CICS START an initial transaction which is not known to CICS.

The transaction that entered CICS via the SSI or SSX is not defined (or is disabled) within CICS' PCT. Display the status of the transaction (CEMT, etc.) and evaluate why CICS would not accept the transaction id.

## AEI9 transaction abends

**Symptom:** The started transaction (INITIAL-FUNCTION) terminates with a AEI9 abend

**Explanation:** AEI1 is the CICS transaction abend indicating MAPFAIL and will occur when the CICS transaction started by TNDGMM does a EXEC CICS RECEIVE MAP without checking if any input exists.

**Resolution:** The STARTed transaction is assuming that there is an input TIOA to map and there is not one present. It will have to test for this condition prior to issuing a RECEIVE MAP command.

## Blank Screen

**Symptom:** After entering CICS, the keyboard on your device is freed and the screen is blank

**Explanation:** You have either STARTed an INITIAL-FUNCTION that issued a RECEIVE without checking for the presence of input or the device does not have TRANSCEIVE specified in the TCT

**Resolution:** The started transaction will have to be modified to detect the absence of a terminal buffer (TIOA)

## Device Immediately Leaves CICS

**Symptom:** The device pauses a moment and then exits CICS during CICS connection procedures

**Explanation:** It is likely that the device did not successfully signon to CICS through the the SSI interface (SNPNAME= program).

**Resolution:** Watch carefully for DFH type messages appearing on the device indicating what type of a failure has occurred. This will occur if TNDGMM was generated with CSSF=YES as an option (this instructs TNDGMM to cause the session to be broken when the signon attempt fails).

## ACF2 Is Not Called

**Symptom:** The signon process during TNDGMM does not result in ACF2/CICS's routines receiving control

**Explanation:** It is likely that you have not specified the proper ACF2/CICS signon routine names on the TND CICS TYPE=GMM operands.

**Resolution:** Specify SNPNAME=ACF2ESNP or SNPNAME=ACFAEUSP in the TNDGMM generation (depending upon the version of ACF2 being used)

## ACF2 Signon Prompt Received

**Symptom:** You are greeted by the ACF2/CICS signon prompt, even though you specified TNDGMM TYPE=GMM,CSSN=YES,

**Explanation:** You have either failed to redirect the CSGM PCT entry to TNDGMM, the ACF2/CICS SIGNON QUICK=YES option is not in effect (use the ACFM transaction to set this characteristic), SSI=YES has not been set in The Network Director Configuration Parameters, or the CICS SIT does not have LGNMSG activated.

**Resolution:** Correct the PCT entry, use ACFM to set QUICK=YES, add SSI=YES to The Network Director's definitions, or LGNMSG to the SIT.

## Bracket Errors

**Symptom:** A SNA device enters CICS and immediately encounters a "bracket error" condition

**Explanation:** The transaction that is initiated immediately issued a RECEIVE or READ function prior to initiating an output screen

**Resolution:** The INITIAL-FUNCTION transaction should generate an output transmission before issuing a RECEIVE or READ function. The application transaction must initiate output to cause CICS to initiate a bracket state with the device prior to the RECEIVE.

## Other Items

There are several miscellaneous notes that you should be aware of:

1. TNDGMM (for non-ESA systems) will initiate the first transaction (INITIAL-FUNCTION) via a EXEC CICS START. This implies that if the started transaction would like to access the information provided via the INITIAL-DATA operand from The Network Director or in the DATA portion of the SSI or SSX control block, it will have to access CICS Interval Control (TYPE=GET) to obtain an image of the additional data. Command level application programs may obtain the additional data values by issuing the EXEC CICS RETRIEVE command.
2. TNDGMMSA (for ESA systems) uses EXEC CICS RETURN TRANSID to initiate the first transaction and is capable of passing the INITIAL-DATA information via the INPUTMSG operand. As a result, ESA systems are capable of passing an input buffer correctly.
3. In order for the SSI GMM code to be given control properly each TCT entry that you would like SSI to be in effect for will require GMMMSG=YES specified. It will also have to be a TRNSTAT=TRANSCIVE device so that CICS itself will be able to schedule asynchronous activity to it (like CSGM or any task TNDGMM will start). This ATI (Automatic Transaction Initiation) activity is required in order to provide basic SSI functionality. In addition, the task being STARTed must detect that it has been started via ATI. If it does not, it may be susceptible to CICS ATNI transaction abends (this is an indication the task is attempting to RECEIVE from the terminal). ATI requires that the task issue a SEND as the next operation.
4. The started task can detect the manner in which it was started by testing TCTTEDA for the presence of a TIOA (MACRO level) or issuing an EXEC CICS ASSIGN STARTCODE (COMMAND level).
5. If the task does not execute a SEND first, the transaction may produce CICS related errors on the session with the device. E.G. automatically starting CEMT will cause the transaction to READ the terminal prior to sending any output. This will have the effect of the terminal keyboard being freed with a blank screen. The terminal operator will have to provide input to CEMT in order to get the first screen.

## TNDCICSL

To logoff of CICS and return to VTAM, a terminal operator simply enters CSSF LOGOFF. Some installations would prefer that the terminal operator be able to enter a different character string (E.G. LOGOFF, BYE, etc.) to accomplish a return to ACF/VTAM level operations (The Network Director, etc.).

To assist in this area, the member, book, or file named TNDCICSL accomplishes this function by issuing the appropriate CICS commands to log the user off and break the session with CICS.

To install the program:

Step	Activity	Completed
1	Assemble TNDCICSL using the command level Assembler proc placing the resulting load module or phase into the CICS relocatable program library	
2	Make an appropriate PPT entry for TNDCICSL	
3	Insert PCT entries for the transaction code desired (LOGOff, BYE, DISC, etc.)	

**Figure 14. CICS LOGOFF and DISCONNECT Transaction Installation**

If your installation has an application transaction that would like to be capable of automatically returning a device to The Network Director, simply code an XCTL to TNDCICSL at the appropriate point.

## CEDA Definition

Usage of Resource Definition Online (RDO) to maintain the PCT (transactions) and PPT (programs) necessitates a different approach to SSI installation. If your CICS system is operating as delivered from IBM with GRPLIST=DFHLIST in effect, the following series of operations will accomplish SSI installation:

- 
1. CEDA APPEND LIST(DFHLIST) LIST(TNDLIST)
  2. CEDA COPY GROUP(DFHVTAM) TO GROUP(TNDVTAM)
  3. CEDA ADD GROUP(TNDVTAM) LIST(TNDLIST)
  4. CEDA EXPAND LIST(TNDLIST)
  5. CEDA DEFINE PROGRAM
  6. CEDA INSTALL
- 

These CEDA commands cause the creation of a TNDLIST that contains the modifications necessary to redirect the CSGM PCT entry and to define the PPT entry required.

After the EXPAND (item 4. above), you will have to key in "REMOVE" opposite group DFHVTAM, key "ALTER" opposite transaction CSGM, and overtype DFHGMM with TNDGMM.

After the DEFINE (item 5. above), you should fill in the appropriate locations with TNDGMM, TNDVTAM, and ASSEMBLER.

Once these procedures are followed, CICS can be restarted with GRPLIST=TNDLIST in effect to activate SSI.

# Com-plete

## Installation

COM-PLETE as a VTAM subsystem (at Version 4.3 SM level 1 and up) provides an automated logon process through the following steps:

Step	Activity	Completed
1	Activate APPLYMOD=52 in COM-PLETE's SYSPARM	
2	Assemble the TNDULGX1 source module and link it into the COM-PLETE program library as ULGEX1	
3	Catalog the exit via *ULIB	

Figure 15. Com-plete SSI Installation Checklist

## APPLYMOD=52

This option causes the Terminal Access Method to automatically allocate a COM-PLETE small buffer containing the initial input stream and causes \*ULOG to be automatically scheduled into the thread.

## TNDULGX1

This exit makes use of the standard ULOG user exit to evaluate the INITIAL-DATA area and will FETCH the first program if the logon has succeeded.

To install the exit, simply assemble TNDULGX1 and link it into the COM-PLETE program library with the name ULGEX1. To activate it, enter:

```
*ULIB CAT,ULGEX1,PV
```

# CINIT RU User Data Area Format

The general format of the CINIT RU User Data Area after implementation of the SSI code into COM-PLETE is:

```
userid,password,[X'40'[initial-command]]
```

**Figure 16. COM-PLETE CINIT RU User Data Area Format**

where:

<b>userid</b>	the one to eight byte userid
<b>password</b>	the one to eight byte password associated with the userid
<b>X'40'</b>	one or more blanks
<b>initial-command</b>	the first COM-PLETE command that should be executed if the *ULOG ON function completes normally.

The commas and blanks specified **must** be present, exactly as specified. Additional blanks or commas will cause the SSI interface to fail.

The following example CINIT RU User Data Area string demonstrates the format necessary to automatically start the COM-PLETE editor if the \*ULOG ON succeeds:

```
ID1,SHSH UEDIT UA
```

Notice that the asterisk "\*" that is typically required to start a COM-PLETE transaction is omitted. This string will cause the userid of "ID1" with the password of "SHSH" to be logged onto COM-PLETE and have the UEDIT program automatically started, if the logon is successful.

# The Network Director

Define the following parameters in The Network Director's Configuration Parameters for each APPLICATION that resides in Com-plete

```
APPLICATION COMPLETE,  
  INITIAL-DATA=(&NAME,' ',&PASSWORD,' ',initial input data)
```

## Typical Errors

The following items are common errors that are made during the installation and use of the COM-PLETE Single System Image interface. If you have symptoms not covered below, contact North Ridge Software, Inc.

### Automatic LOGON is Ignored

**Symptom:** After selecting COM-PLETE from a Network Director screen, the standard COM-PLETE panel is received.

**Explanation:** The INITIAL-DATA string has been omitted on the APPLICATION definition or COM-PLETE has not had APPLYMOD=52 specified in SYSPARM.

**Resolution:** Make sure that APPLYMOD=52 has been specified. Check also the subsystem creating the CINIT RU User Data Area (The Network Director's INITIAL-DATA setting).

### Initial Task not Fetched

**Symptom:** The initial task is not started, but the ULOG ON was successful.

**Explanation:** TNDULGX1 has not been properly cataloged.

**Resolution:** Make sure you have assembled and linked TNDULGX1 as ULGEX1 and used \*ULIB to catalog the program (remember the PV characteristic).

## ***Other Items***

The following items are associated with the installation and use of SSI in COM-PLETE.

### **TLAMVDEV**

COM-PLETE SSI starting of the first program is dependent upon specific versions of TLAMVDEV. Please contact North Ridge Software, Inc. for the specifics associated with the software maintenance level requirements of the various software subsystems.

### **ULOGX1**

COM-PLETE 4.4 and up contains a new exit identified as ULOGX1 that is a "newer" interface to the services of \*ULOG. The distributed exit provides an interface to ULGEX1, but can also be modified to support The Network Director's SSI string. Please contact NRS for details associated with installation, if you have cataloged ULGEX1 as documented and the FETCH of the initial program does not operate as expected.

# DOCS

DOCS (Display Operator Console Support) for VSE systems from Smartech provides alternate console support for DOS systems.

Support for SSI concepts are wholly contained within DOCS. No additional routines or exits are required.

## *CINIT RU User Data Area Format*

DOCS accepts an input CINIT RU User Data Area containing user based information in the following general format:

```
userid password
```

**Figure 17. DOCS CINIT RU User Data Area Format**

where:

**userid** is the one to eight byte user identifier associated with the individual

**password** is the one to eight byte password associated with the user

The userid and password must be separated or delimited by a blank.

## ***The Network Director***

To activate the interface:

```
APPLICATION DOCS,  
COMPRESS=NO,  
INITIAL-DATA= (&NAME, ' ', &PASSWORD)
```

There is no support within DOCS for the INITIAL-FUNCTION.

# IDMS/DC

IDMS/DC as a VTAM subsystem does not normally take any action based upon initial VTAM data entry.<sup>6</sup>

## Installation

You can activate the SSI concepts by following the following steps.

Step	Activity	Completed
1	Assemble and linking TNDIDMS into IDMS/DC's program library	
2	Make entries in the dictionary for TNDIDMS	
3	Set AUTOTASK=TNDIDMS onto the LTERM definitions for terminals you would like SSI to be active at	
4	Redirect the standard BYE task to TNDIDMS	

Figure 18. IDMS/DC SSI Installation Checklist

## Assemble TNDIDMS

TNDIDMS logically contains two functions. First, as an AUTOTASK, TNDIDMS contains the code necessary to locate the information passed from The Network Director's address space or partition and will enter RHDCSNON to signon the user.

Second, TNDIDMS will enter the standard BYE task after replacing the TNDIDMS AUTOTASK specification into the LTE.

For AUTOTASK invocations, it will then optionally #RETURN NXTTASK to the INITIAL-FUNCTION specified.

Assemble TNDIDMS with your standard assembly procedure and link it to the IDMS program library.

---

<sup>6</sup> This section dealing with SSI installation into IDMS/DC applies to CA/DISPATCH also.

## TNDIDMS Dictionary Entries

Since TNDIDMS will be receiving control as an IDMS AUTOTASK, you will have to make entries in the IDMS/DC Dictionary that will identify TNDIDMS as a valid task.

```
PROGRAM TNDIDMS
      ISA SIZE IS 128
      LANGUAGE IS ASSEMBLER
      NOPROTECT

TASK   TNDIDMS
      INVOKES TNDIDMS
      NOINPUT

LTERM terminal name
      AUTOTASK IS TNDIDMS
```

You should also redirect the BYE task to point at TNDIDMS:

```
TASK   BYE
      INVOKES TNDIDMS
      NOINPUT
```

Do **not** remove the entry for RHDCBYE.

You may also place entries into the DC dictionary for other commonly used "signoff" codes and point them at TNDIDMS. Task codes like LOGOFF, CSSF, OFF, etc are commonly used to allow users from other subsystems to easily return to ACF/VTAM from IDMS/DC.

If your installation is using the "timeout" option IDMS, you should reset the program associated with the timeout condition to point to TNDIDMS.

```
RESOURCE TIMEOUT INTERVAL IS nnn
      PROGRAM IS TNDIDMS
```

This entry causes IDMS to schedule TNDIDMS when the timeout condition has occurred. TNDIDMS will determine that it has received control for "logoff" purposes, sets up the proper environment for the next session between the device and IDMS, and then enters RHDCBYE.

## Generation Options

TNDIDMS has several generation options that can be set at your installation by editing the TNDIDMS source and setting one or more Assembler SETC symbols. You can locate these symbols by scanning the source code for the second "GBLC" character string. The symbols are as follows:

### ***SNONPGM***

This identifies the name of the IDMS/DC signon program that TNDIDMS will use. The default is RHDCSNON.

### ***SNOFPGM***

This establishes the name of the IDMS/DC sign off program that TNDIDMS will use. The default is RHDCBYE.

### ***TASK***

TASK identifies the default task code that will be invoked if no INITIAL-FUNCTION is provided in the CINIT RU User Data Area.

### ***PGM***

This identifies the the default program that will be transferred to if no INITIAL-FUNCTION is provided in the CINIT RU User Data Area.

### ***SOFF***

Indicates whether TNDIDMS should send an incoming terminal back to ACF/VTAM if the attempted signon fails. The default is YES, but can be set to NO to disable this operation and leave the terminal in IDMS.

### ***SON***

Establishes whether TNDIDMS should attempt to signon the incoming terminal. The default is YES, but can be set to NO (which indicates that no attempt will be made to sign the user on).

### ***AUTOTSK***

Identifies whether TNDIDMS should fill in the AUTOTASK field of the LTERM with the INITIAL-FUNCTION or not. YES indicates that the incoming INITIAL-FUNCTION will become the devices AUTOTASK (if it is present). NO (the default) indicates that the incoming INITIAL-FUNCTION will be scheduled, but will **not** become the LTERM's AUTOTASK.

## ***CINIT RU User Data Area Format***

Once installed, SSI routines (TNDIDMS) in IDMS provide support for both the SSI and SSX control blocks (see "Control Block Formats" on page 6 for additional information about the precise contents of these control blocks).

## ***The Network Director***

Define the following parameters in The Network Director's network definitions for each APPLICATION that resides in IDMS.

```
APPLICATION IDMS,  
    SSI=YES,  
    INITIAL-FUNCTION=the desired first taskcode
```

## ***Typical Errors***

The following items are common errors that are made during the installation and use of the IDMS Single System Image interface. If you have symptoms not covered below, contact North Ridge Software, Inc.

### **D003 task abends**

**Symptom:** TNDIDMS immediately terminates with a IDMS D003 task abend

**Explanation:** The BAL (Assembler) interface was not included when TNDIDMS was link-edited.

**Resolution:** Please make sure the IDMS module named IDMSBALI (entry point is IDSACON) is included when you link-edit TNDIDMS. Relink TNDIDMS.

### **Blank Screen Prompt**

**Symptom:** After TNDIDMS has started your initial task, you get a blank prompt screen (the keyboard is simply unlocked).

**Explanation:** The task that has been started is expecting an input buffer and is waiting for the terminal operator to provide one.

**Resolution:** It is likely that the dictionary entry for the started task does not have the NOINPUT characteristic. Specify NOINPUT or change the started task to detect the absence of the input buffer.

## ***Other Items***

Tasks that you would like automatically started (once signon has been successful) are identified via the INITIAL-FUNCTION operand of the APPLICATION statement or placed in the SSI or SSX at the appropriate locations. The tasks specified for automatic initiation should normally be coded as NOINPUT tasks (TNDIDMS cannot provide a area that appears like input to IDMS/DC to satisfy the INPUT requirement) or should be intelligent enough to detect it has been automatically started.

The NOPROTECT option associated with the dictionary entry for TNDIDMS is required only if you have specified that system level PROTECT is to be in effect. TNDIDMS modifies the LTE (LTERM) to set and reset the AUTOTASK field, which is normally considered a PROTECTEd area within IDMS.



# IMS/DC

## Version 1 and derivatives

IMS/DC (the Transaction Monitor) as a VTAM subsystem collects the initial CINIT RU User Data Area for SNA type devices, but does not do anything with it.

IMS SSI code is provided via a single output edit routine (TNDCTTO0) and one or more local modifications to IMS (TNDIMS or TNDIMS31).

## Installation

TNDIMS or TNDIMS31 is a member, file, or book provided that contains the SMP statements necessary to activate the IMS modification required to enable TNDCTTO0 to accomplish SSI related activities.<sup>7</sup> Install the interface by accomplishing the following steps.

Step	Activity	Completed
1	Install the USERMODs	
2	Assemble and link TNDCTTO0 into the IMSVS link library (make sure AMODE(31) and RMODE(31) or RMODE(ANY) is specified during link edit procedures)	
3	Specify the EDIT operand on the TYPE and TERMINAL macros used in the IMSVS Stage 1	
4	Execute the resulting IMS Stage 2 jobs, which will include the output edit routine into the IMS nucleus	

Figure 19. IMS/DC SSI Installation Checklist

<sup>7</sup> TNDIMS31 contains the same local modifications, but contains the appropriate SMP control statements to apply to IMS 3.1 systems. If your installation is IMS 3.1, use TNDIMS31 in place of TNDIMS where it is referenced in this portion of the manual.

## Install the USERMODs

TNDIMS in the DATA library contains three ++USERMODs applicable to the IMS environment.<sup>8</sup> NRSIMS3 is the only one that **must** be installed to activate the interface. The USERMODs are:

<b>USERMOD</b>	<b>Use</b>
<b>NRSIMS1</b>	Is the job control that could be used to link-edit TNDCTT00 into the IMS nucleus
<b>NRSIMS2</b>	Modifies DFSDN190 to cause it to obtain the BIND image for all VTAM devices. This modification is only for non-SLU2 (non-SNA) devices. This USERMOD is <b>not</b> required if <b>all</b> your devices are SNA.
<b>NRSIMS3</b>	Modifies DFSCVCL0 to activate the entry into TNDCTT00 that collects the User portion of the BIND image into a table for later processing by TNDCTT00.

**Figure 20. IMS/DC Usermods**

## Assemble and Link TNDCTT00

TNDCTT00 looks at each output transmission destined for the controlled terminals. If the output transmission is associated with a terminal that needs SSI action, TNDCTT00 will DEQUEUE the output message (normally DFS2002) and will simulate an operator entering a /SIGN task code from the terminal.

The DEQUEUE of DFS2002 is done via calls to the IMSVS queue manager. Originating messages is done by priming the appropriate IMS control blocks and entering the Communications Analyzer.

If the response to the /SIGN command is good (checked by looking for a DFS058 output message), TNDCTT00 will then DEQUEUE the DFS058 message and originate the INITIAL-FUNCTION and/or INITIAL-DATA value.

Once TNDCTT00 has accomplished its assigned tasks, it will mark the SSI stamp such that the next entry into the exit will not cause an additional operation. Thus, only the first time each time a VTAM terminal enters IMS will TNDCTT00 do anything.

---

<sup>8</sup> The member actually contains more than three, but a maximum of three will apply to your system (dependent upon the FMID actually defined to SMP).

## Specify the Edit Operand

Each IMS device that you would like to function with SSI concepts will require the addition of the EDIT operand to the TYPE definition in the IMS Stage 1. An example of this follows.

```
TYPE UNITYPE= (3270, LOCAL) , EDIT= (TNDCTTO0) ,  
      UNIT=3277, MODEL=2  
  
TERMINAL NAME=luname, EDIT= (YES, NO)
```

This causes the SSI Output Edit routine TNDCTTO0 to be called when output transmissions are scheduled to the device.

## Generation Options

At the beginning of TNDCTTO0, there are Assembler set symbols that have the following effect.

**SIGNON:** Indicates whether you would like TNDCTTO0 to attempt to invoke the /SIGN command (presuming that the terminal entering IMS came from The Network Director and had SSI=YES associated with the APPLICATION that was chosen) Set this to NO if you would like to bypass the /SIGN command (this is useful if your IMS system does not have SECURITY in the system). YES is the default.

**ENTRIES:** Establishes the number of entries that will be allocated within TNDCTTO0 to hold incoming device information. The default is 32 and should be sufficient for almost all installations. If this value is too small, it is possible for some incoming terminals to be greeted with the DFS2002. When this occurs, TNDCTTO0 will issue message TNDC3300I via WTO.

## CINIT RU User Data Area Format

Once installed, SSI routines (TNDCTTO0) in IMS provides support for both the SSI and SSX control blocks (see "Control Block Formats" on page 6 for additional information about the precise contents of these control blocks).

## The Network Director

Set up The Network Director's APPLICATION definition as follows.

```
APPLICATION IMS,  
    SSI=YES  
    INITIAL-DATA=('the desired first command')
```

## Other Items

The IMS exit (TNDCTT00) will operate with IMS Release 1,2, or 3 in MVS, MVS/XA, or MVS/ESA systems.<sup>9</sup> TNDCTT00 is capable of operating in native mode (31 bit addressing) and makes the adjustments necessary to operate in the appropriate mode and for the various IMS releases at execution time by determining the release of IMS and MVS from the IMS SCD.

## Second Level Output Edit Routines

Some IMS installations already have specified an IMS Output Edit routine that must coexist with The Network Director's TNDCTT00. For this reason, TNDCTT00 has been designed to operate as either the first Output Edit routine to get control, the last one, or one in the middle. If you would like TNDCTT00 to get control after the current output edit routine, simply follow the procedures defined by the existing exit to define TNDCTT00. At entry to TNDCTT00, all registers and the parameter list must be as defined by IMS.

If you would like TNDCTT00 to be first and to give control to another exit after it has finished its processing, simply provide the second exit an ALIAS of TNDCTT00. TNDCTT00 contains a WXTRN for this entry point name and will branch there for all output edit routines entries that are not intercepted by TNDCTT00 instead of returning to the IMS output edit routine interface. All registers and parameter list contents at entry to the second level interface will be exactly as they are defined by IMS (for Output Edit routine entry).

## Trace

In the event that it becomes necessary to evaluate the communication between The Network Director and TNDCTT00 within IMS, the following IMS trace command will cause the appropriate entries to be collected:

```
/TRACE SET ON NODE nodename LEVEL 4 MODULE ALL
```

<sup>9</sup> Contact NRS Technical Support for specific information about relationships between back level versions of TNDCTT00 and new releases of IMS.

After you have activated the trace, simply use the device named "nodename" to enter IMS from The Network Director with the SSI options set. You can print the IMS trace entries from the standard IMS LOG via DFSERA10 with exit DFSERA30 specified.

## Version 4 and Up

SSI support for IMS Version and up takes advantage of IMS's processing of the CINIT buffer to accomplish automated signon. **No exits or modifications to IMS are required**, if you only wish to automate the signon itself.

If your installation also wishes to initiate the initial command after successful signon, you will need to install the three NRS provided IMS exits (See "INITIAL-DATA Support" on page 42). Installations without the Extended Terminal Option (ETO) will also be required to install one NRS provided Usermod to IMS.

## Automated Signon

IMS responds to certain formats in the CINIT buffer when a device enters session with IMS. One of these elements in the CINIT buffer is the userid and password. To invoke this logic within IMS, simply code the following syntax on the applicable Network Director APPLICATION definition:<sup>10</sup>

```
APPLICATION IMS,TARGET=IMSPROD,  
          INITIAL-DATA=(&NAME,' '&PASSWORD)
```

IMS will detect the presence of the userid and password and will make an attempt to use these values to sign the user on. If successful, the user will be presented with DFS3650 (the IMS message indicating that signon is complete). Once this is achieved, the terminal user may proceed with normal IMS activity.

**Note:** This logic will automatically be invoked for IMS ETO type devices. Static defined devices will require the STERM option to be activated via IMS Security Maintenance.

---

<sup>10</sup> This definition and INITIAL-DATA specification only applies when you only wish to signon the user to IMS. If you wish to also be able to specify an initial command, you must install the SSI user exits provided and the syntax for the APPLICATION definition is different.

## INITIAL-DATA Support

SSI INITIAL-DATA or "initial command" support for IMS Version 4 is implemented through the use of three standard IMS exit points. They are:

- DFSINTX0** Initialization exit (allocates the "TNDDTABLE" used to pass information from the Logon exit to the Greeting Messages exit)<sup>11</sup>
- DFSLGNX0** VTAM Logon exit (collects the INITIAL-DATA information from the VTAM CINIT RU, if passed from The Network Director)<sup>12</sup>
- DFSGMSG0** Greeting Messages exit (used to intercept the successful signon event and queue the first transaction, if requested)

Information passed from The Network Director is collected by the IMS Logon exit (TNDLGNX0) into an area in storage called the TNDDTABLE (initially allocated by TNDINTX0), which is then available for subsequent usage following the DFS3650 message in TNDGMSG0.

---

<sup>11</sup> Non-ETO Version 4 installations should apply IBM PTF UN58206 or the equivalent to properly invoke the Initialization Exit.

<sup>12</sup> Non-ETO Version 4 installations will need to apply the NRS Usermod NRSIMS41 to cause IMS to pass control to the Logon Exit.

## Installation

Installation of the exits consists of assembling and linking the three exits into the IMS load library. The following check list should assist you:

Step	Activity	Completed
1	Evaluate the generation options	
2	Customize the Initialization exit's "table of tables", if required.	
3	Assemble and link TNDINTX0 into the IMS link library as DFSINTX0 with AMODE(31) and including the IMS Callable Services routine (DFSCSI00)  If you do not have ETO installed and are operating a IMS Version 4 system, apply IBM PTF UN58206 to call the initialization exit.	
4	Assemble and link TNDLGNX0 into the IMSVS link library as DFSLGNX0 with AMODE(31)  If you do not have ETO installed and are operating a IMS Version 4 system, modify TNDLGNX0's &ETO symbol to a value of 0 before assembly (instead of 1) and use SMP to apply the NRSIMS41 Usermod to drive the LGNX0 exit logic.	
5	Assemble and link TNDGMSG0 into the IMSVS link library as DFSGMSG0 with AMODE(31), including the IMS Callable Services routine (DFSCSI00)	
6	Specify SSI=YES and INITIAL-DATA= to the initial command in The Network Director's Configuration Parameters	
7	Restart IMS to test the interface	

**Figure 21. IMS Version 4 SSI Installation Checklist**

**Note:** All NRS provided exit routines should be link edited with AMODE(31) and RMODE(ANY) specified.

## Generation Options

The following Assembler SET symbols or EQU tags are physically present in the various Network Director IMS Version 4 exit routines. You may configure them as follows:

Source	Symbol	Setting	Purpose
TNDINTX0	&ENTRIES	32	defines the number of TNDTABLE allocation entries that will be available for concurrent session establishment attempts.
TNDLGNX0	&ETO	1	indicates whether the assembled version of the Logon exit is intended for an IMS system with ETO installed(1) or not(0).
TNDLGNX0	&LGNMSG	1	indicates whether the assembled version of the Logon exit should issue TND1335 when it successfully allocates a TNDTABLE entry (1) or not (0).
TNDINTX0	TABSIZE	4	defines the number of fullwords that will be available in the initialization exit's "table of tables". This provides space for other installation exits to pass information between exits using the standard IMS User Table.
TNDGMSG0	&MSGS	1	indicates whether the Greeting Messages program should display an interpreted reason code when the terminal user's signon has failed (DFS2467 or DFS3649). The table of interpreted reason codes is contained within TNDGMSG0 and may be extended or customized, as desired. A setting of 0 disables the message interpretation.
TNDGMSG0	&TIMEOUT	60	establishes the number of clock intervals (approximately seconds) that a TNDTABLE entry may exist before being purged by the cleanup logic.
TNDGMSG0	&SIGNMSG	1	indicates whether the GMSG0 code should issue a message (WTO) each time a user successfully signs on. 0 disables the message.
TNDTABLE	TBLOFFST	0	establishes the offset in the initialization exit's table of tables where the TNDTABLE address will be stored. This is useful if your installation has used a similar approach to exits sharing the User Table and you would like The Network Director's exit to use an offset other than zero.

## Logic

When IMS initializes, TNDINTX0 receives control and will attempt to allocate the TNDTABLE via IMS Callable Services. If successful, the User Table Address is established and points at a list of addresses (length established by TABSIZE). TNDINTX0 will issue TND1338 when initialization has completed normally.

When a VTAM device begins a session with IMS, TNDLGNX0 receives control. It checks the CINIT buffer for the presence or absence of the SSI and SSX literals. If not present, LGNX0 returns to IMS and normal processing continues. If present, LGNX0 allocates a TNDTABLE entry for the device and extracts the INITIAL-DATA set by The Network Director, storing it into the allocated TNDTABLE entry. LGNX0 then reformats the buffer into the proper format for processing of the logon by standard IMS routines.

If the sign on is successful, IMS schedules TNDGMSG0 to review the initial DFS3650 message. If GMSG0 locates a TNDTABLE entry for the device, it deletes the DFS3650 message buffer, allocates a new buffer, and enters the IMS Communications Analyzer to initiate the command.

## Installation Exits

Each of the NRS provided routines contain logic to invoke an optional, installation provided exit routine. When the NRS provided routines have completed the logic necessary for them to operate **and, if it is logical**, the exit routines will pass control to a linked routine for extended processing.

The local installation routines should be linked with the NRS provided routines and should have a CSECT name of NRSINTX0 (Initialization), NRSLGNX0 (Logon), or NRSGMSG0 (Greeting Messages Exit).

NRSINTX0 and NRSLGNX0 (if present) will always receive control from the corresponding NRS provided routine, which will be operating as DFSINTX0 and DFSLGNX0 respectively. Because of the nature of the initial command logic, NRSGMSG0 will only receive control if The Network Director's base logic in DFSGMSG0 has determined that it is not necessary to initiate a new transaction.

When the NRSxxxxx routines return control, it will be directly to IMS. Therefore, any return codes that may be set by the locally provided exits will be returned to IMS. The Network Director's exits always set zero except TNDGMSG0 (when it sets an alternate message).



# Model204

Model204 (Version 1.8 and higher) from CCA contains the necessary code to activate SSI concepts.

## *Installation*

There are no requirements for additional routines or exits in MODEL204 to implement the SSI concepts.

## *CINIT RU User Data Area Format*

MODEL204 accepts an input CINIT RU User Data Area containing multiple inputs separated by a semi-colon ";". The general format is:

```
LOGIN userid;password;initial-command
```

**Figure 22. MODEL204 CINIT RU User Data Area Format**

where:

- userid** is the one to eight byte user identifier associated with the individual
- password** is the one to eight byte password associated with the userid that will allow the individual to login
- initial-command** is the character string that will be executed by MODEL204 if the login process succeeds

The semi-colons are used by MODEL204 as delimiters and must be specified as indicated.

# The Network Director

Code the following in the Configuration Parameters to activate the interface:

```
APPLICATION MODEL204 ,  
  ERASE=YES,  
  INITIAL-FUNCTION=LOGIN,  
  INITIAL-DATA= (&NAME, ' ; ', &PASSWORD)
```

You can also stack the first command after the logon, by specifying it as the next parameter in the INITIAL-DATA stack. Thus,

```
INITIAL-DATA= (&NAME, ' ; ', &PASSWORD, ' ; ', first)
```

will simulate the command "first" being entered after the LOGON has been processed.

## Typical Errors

The following items are typical errors and situations encountered when making use of SSI concepts to MODEL204.

### Cannot Get Out of MODEL204

**Symptom:** The terminal device accidentally gets connected to MODEL204.

**Explanation:** A terminal user selected MODEL204 by accident and is unsure how to get out.

**Resolution:** The terminal operator can "return" to the ACF/VTAM level of operations by entering the MODEL204 command "DISCONNECT".

# NetView

Single System Image support for NetView is provided in two different forms. TNDDSIEX is the base for SSI support in NetView Version 1 systems.

Use of new features that are available in the more recent NetView systems allow Single System Image to operate with Version 2.4 and higher (see "Version 2.4 and Up" on page 52 for instructions).

## Version 1

NetView<sup>13</sup> does not normally support an automated interface for signon purposes.

For NetView Version 1 systems, you can activate the functional SSI logic by installation of NetView exit 9, which is distributed as the file, book, or member named TNDDSIEX.<sup>14</sup>

## Installation

Installation in standard NetView installations consists of assembling TNDDSIEX and linking it as DSIEX09 into a library available to NetView at initialization time (it will be dynamically loaded by NetView).

Step	Activity	Completed
1	Assemble TNDDSIEX and link it into a NetView STEPLIB (for OS) or LOADLIB (for VM)	
2	Restart NetView	

**Figure 23. NetView SSI Installation Checklist**

VNCA installations should link it as ECEEX09 so that VNCA's exit 9 will continue to be given control first. NMPF installations will have to replace the ALIAS DSIEX09 on the NMPF exit 2 with an ALIAS of TNDDSI09, which will cause TNDDSIEX to give control to NMPF's exit after TNDDSIEX has completed its processing.

---

<sup>13</sup> References to NetView should also be interpreted as references to NCCF (a NetView predecessor).

<sup>14</sup> Other NetView releases (specifically NetView Version 2 and up) should contact NRS for the latest information about SSI availability.

If your installation has its own exit 9, you can cause it to receive control after TNDDSIEX by linking your exit as TNDDSI09 (TNDDSIEX will LOAD the exit and give it control instead of returning to NCCF). TNDDSIEX does not require that it be the first exit 09 in use, but does require that all the registers at entry match exactly those provided by NCCF.

## ***Assemble TNDDSIEX***

OS installations can utilize any assembly procedure available to assemble TNDDSIEX. You must include The Network Director's distribution library and NetView macro libraries on the SYSLIB DD statement. Place the resulting load module into any library that is allocated as a portion of the STEPLIB DD statement in the NetView JCL.

VM installations should issue an appropriate combination of the following commands in a CMS machine.

```
GLOBAL MACLIB TNDMAX CSISP NCCFMAC
ASSEMBLE TNDDSIEX (NODECK OBJECT NORENT
LKED TNDDSIEX (NAME DSIEX09
```

TNDMAX MACLIB exists on The Network Director's distribution disk, CSISP MACLIB normally resides on MAINT's 595 (this will be the library named GCTGPI on MAINT's 6B2 for ESA installations) and NCCFMAC MACLIB on MAINT's 334. The result of this process will be a TNDDSIEX LOADLIB on the A disk that should be moved to the NetView run disk (NVRUN). The final step is adding TNDDSIEX to the GLOBAL LOADLIB associated with starting NetView (normally, the NETSTRT EXEC).

## ***Restart NetView***

Simply restarting NetView will cause DSIEX09 to be dynamically loaded and SSI concepts will be in effect.

## **CINIT RU User Data Area Format**

Once installed, SSI routines (TNDDSIEX) in NetView provides support for both the SSI and SSX control blocks (see "Control Block Formats" on page 6 for additional information about the precise contents of these control blocks).

## The Network Director

Activate the NetView SSI interface from The Network Director by specifying the following parameters for the NetView APPLICATION.

```
APPLICATION NetView,  
          SSI=YES
```

## Typical Errors

The following items may be encountered during installation and use of the NetView SSI routines:

### ***No Automated LOGON***

**Symptom:** After entering NetView, the initial prompt screen is still displayed.

**Explanation:** TNDDSIEX has not been completely installed into NetView.

**Resolution:** This almost always occurs because the TNDDSIEX library (LOADLIB or load module) has not been added to the STEPLIB for OS or the GLOBAL LOADLIB for VM.

## Other Items

As a result of the manner in which the exit operates to accomplish SSI concepts, it may not automate the first signon after NetView initialization. All subsequent signon attempts will be properly automated.

## **Version 2.4 and Up**

NetView Version 2.4 and higher with APAR OW07352 applied can utilize Single System Image concepts.

### **OW07352**

The APAR logic introduced by OW07352 causes NetView to accept information in the CINIT RU User Data Area associated with the operator signon function. You should follow the instructions associated with this APAR to install and activate the appropriate routines.

Contact the IBM support center for the APAR, if it is not already available on your system. If you are operating a later release of NetView, you can verify that the function is available by looking for the LOGONPW command in the NetView documentation.

### **LOGONPW**

The LOGONPW command causes NetView to accept logon information about the terminal operator in the CINIT RU User Data Area. It must be issued within the NetView address space or virtual machine prior to the first device contacting NetView. This is typically done by specifying LOGONPW ENABLE in a suitable CLIST executed at NetView initialization.

After LOGONPW ENABLE has been issued, NetView will accept automated logons via Single System Image in the following form:

```
userid / password
```

Additional information (NetView profile, etc.) can also be specified (consult the LOGONPW documentation available from IBM for additional information).

## The Network Director

Activate the NetView SSI interface from The Network Director by specifying the following parameters for the NetView APPLICATION.

```
APPLICATION NetView,  
  SSI=NO,  
  INITIAL-DATA= (&NAME, '/' , &PASSWORD)
```



# ROSCOE

ROSCOE Version 5.3A and higher will respond to the Signon Key and password being present in the CINIT RU User Data Area.

## *Installation*

Support for SSI concepts are wholly contained within ROSCOE. No additional routines or exits are required.

## *CINIT RU User Data Area Format*

ROSCOE accepts an input CINIT RU User Data Area containing user based information in the following general format:

```
userid / password
```

**Figure 24. ROSCOE CINIT RU User Data Area Format**

where:

**userid** is the one to eight byte user identifier associated with the individual

**/** is the character required by ROSCOE to delimit the userid and password

**password** is the one to eight byte password associated with the user

## ***The Network Director***

To activate the interface:

```
APPLICATION ROSCOE,  
ERASE=YES,  
INITIAL-DATA= (&NAME, ' / ', &PASSWORD)
```

You can control the next activity by implementing the appropriate SIGNON RPF.

# The Network Director

The Network Director as a VTAM subsystem contains support for the full SSI concepts between Network Directors.

## *Installation*

Support for SSI is wholly contained within The Network Director's nucleus. No additional routines or exits are required.

## *CINIT RU User Data Area Format*

The Network Director supports all forms of the SSI and SSX control blocks.

## *The Network Director*

To activate the interface, simply code SSI=YES or SSI=EXTENDED on the APPLICATION statement in the originating Network Director. The INITIAL-FUNCTION operand is also supported and is processed by the receiving Network Director as if the data was entered on a Command: line from the Application Selection Panel.

```
APPLICATION DIRECTOR,  
                SSI=EXTENDED
```

## *Other Items*

This facility is useful for VTAM Cross domain installations where a user from one Network Director will be connecting to a Network Director executing at a second installation. The second Network Director will automatically logon the user and will present him with the appropriate Application Selection Panel based upon his user id and password without requiring him to enter the information again.

This facility is extremely important if your installation is utilizing The Network Director for security clearances. It is possible that a network user can obtain an unauthorized screen on his terminal if a prior terminal user that connected to the other domain did not logoff of the other domain prior to leaving it.

With SSI support between Network Directors, you can be certain that no user receives an Application Selection Panel he/she is not authorized for. See also discussions of the RETURN command and the SITE definition statement in the Network Administrator's Guide.

# TPX

The TeleProcessing eXecutive multi-session manager from Legent contains the necessary logic to automate the signon to TPX when being entered from The Network Director.

## *Installation*

Support for SSI concepts are wholly contained within TPX. No additional routines or exits are required.

## *CINIT RU User Data Area Format*

TPX accepts an input CINIT RU User Data Area containing user based information in the following general format:

```
userid / password
```

**Figure 25. TPX CINIT RU User Data Area Format**

where:

**userid** is the one to eight byte user identifier associated with the individual

**/** is the character required by TPX to delimit the userid and password

**password** is the one to eight byte password associated with the userid

## ***The Network Director***

To activate the interface, specify the following in The Network Director's APPLICATION definition associated with the TPX selection (no INITIAL-FUNCTION should be specified).

```
APPLICATION TPX,  
    INITIAL-DATA= (&NAME, ' / ' , &PASSWORD)
```

Consult the TPX documentation for techniques that can be utilized to "pass along" the userid and password to the TPX selected sessions.

# TSO

Automating the signon to TSO consists of forwarding the proper TSO LOGON command in the CINIT RU User Data Area.

Systems operating the various releases of TSO/E will find that a TSO pre-prompt exit is also necessary to bypass TSO/E's initial screen prompt and to support the variety of parameters that can be passed to TSO.<sup>15</sup>

You should first decide which "EFLD" routine to utilize by reviewing the information contained within this section of the manual. To assist you in determining which course to take:

1. If you are not operating TSO/E, simply set up the initial LOGON command in the CINIT RU User Data Area and bypass the pre-prompt installation
2. If you are operating TSO/E Version 2 with MVS/ESA, NRS recommends that you install TNDEFD1
3. If you are operating a non MVS/ESA system and you would like the pre-prompt to obtain stored TSO/E values from SYS1.UADS, install TNDEFD2
4. If you are operating a non MVS/ESA system and do not require any UADS based information, install TNDEFD

---

<sup>15</sup> ACF2 installations do **not** need to install the SSI provided pre-prompt exit. Consult the appropriate ACF2 manual for configuring the ACF2 provided pre-prompt exit to accept quick logon.

# Installation

The following basic steps are necessary to install the pre-prompt exit.

Step	Activity	Completed
1	Assemble TNDEFLLD, TNDEFLLD1, or TNDEFLLD2	
2	Link EFLD or EFLD2 with IKJEFLA into an appropriate OS library. TNDEFLLD1 is dynamically loaded by TSO and does not need to be linked with anything, but must still be linked into an appropriate OS library.	
3	Schedule an IPL to pick up the new LOGON processing	

Figure 26. TSO SSI Installation Checklist

## Basic TSO

Installations with the basic TSO (not TSO/E) will find that the LOGON command accepted from the CINIT RU User Data Area by TSO may contain the userid and password separated by a slash. This will allow the automated signon to TSO and the pre-prompt exit is **not** required.

## TNDEFLLD

MVS installations with TSO/E installed will find that TSO/E's prompt mechanism requires that the terminal operator enter his/her password again (even though it is present in the initial input stream). To bypass this requirement, SSI provides a LOGON Pre-prompt exit (TNDEFLLD) that can be linked with IKJEFLA (TSO Logon processor).

TNDEFLLD is present in source form in the distribution libraries. It will scan the initial input string received by TSO and will set the "TSO/E no screen" bit when a User id/Password combination has been provided to TSO.

To install TNDEFLLD, simply link it with the existing IKJEFLA and IPL your system with a CLPA or MLPA parameter to rebuild LPA with the relinked LOGON processor. When you link TNDEFLLD with IKJEFLA, it is possible that you will receive an OS condition code 4 from the linkage editor. This will be accompanied by 2 "unresolved references" for IKTINX2 and BINDUSER.<sup>16</sup>

Neither of these are referenced or required by TNDEFLLD and you should consider the unresolved references as "normal". Make sure that IKJEFLA continues to receive control prior to TNDEFLLD by inserting a ENTRY IKJEFLA statement in your link edit

---

<sup>16</sup> TSO/E Release 3 or above installations may **not** receive these warnings. Naturally, if these items are not "unresolved", it does not represent a problem and you can continue with installation.

procedures for IKJEFLA. If TNDEFLD receives control first, the TSO LOGON attempt will terminate with a abend S0C4.

Controlling the initial command is accomplished via usage of the terminal monitor program's PARM= field on the EXEC card of the TSO PROC. TSO/E installations can also utilize the TSO/E Command: field on the TSO/E prompt screen.

## TNDEFLD1

MVS/ESA installations have available an additional exit in TSO called IKJEFLD1, which offers several advantages over the IKJEFLD routine. IKJEFLD1 can merge information from UADS, RACF, and The Network Director as input to the TSO Address Space creation process. The Network Director supports this exit via a routine called **TNDEFLD1**. It also provides support for setting the INITIAL-FUNCTION or first command to be processed.<sup>17</sup>

Installation of the routine amounts to running an appropriate assembly and link process (as dictated by your local MVS maintenance procedures). It can be installed as a SMP modification or manually installed.

Because of the type of processing (UADS, etc.) that it does, TNDEFLD1 should be linked with AMODE(24) and RMODE(24).

## TNDEFLD2

TSO/E installations that have not migrated to MVS/ESA and have a need to utilize the TSO/E facilities for "remembering" logon options that were in effect from previous sessions should consider utilizing TNDEFLD2 instead of TNDEFLD.<sup>18</sup> TNDEFLD2 provides the same basic function as TNDEFLD, but will also read SYS1.UADS<sup>19</sup> to obtain previously saved items that TSO/E will have placed into UADS (PROC, etc.).

North Ridge Software, Inc. generally recommends the utilization of TNDEFLD if it can accomplish desired objectives. TNDEFLD1 and TNDEFLD2 are considerably larger and more complex than TNDEFLD and should only be utilized if you require the specific characteristics they offer. Contact North Ridge Software, Inc. if you are not certain which one you need.

If you do choose to use TNDEFLD2, the terminal user can force the pre-prompt exit to allow the TSO/E prompt screen to appear by passing the keyword PROMPT to TSO. This can be accomplished within The Network Director by entering **PROMPT** on the Command: line and pressing the TSO PFKEY (presuming that the INITIAL-DATA= operand for the TSO application definition includes the &OPERANDS specification). This "prompt" mechanism can be utilized to force TSO/E to "remember" a new TSO PROC, COMMAND, etc. If you would like to set the operands used by TSO/E, you must

---

<sup>17</sup> TNDEFLD1 is recommended for ESA installations over TNDEFLD2 because of increased functionality (RACF and initial command support).

<sup>18</sup> NRS recommends that ESA installations utilize TNDEFLD1 over either TNDEFLD or TNDEFLD2.

<sup>19</sup> This will require that the DD statement for SYS1.UADS be present in the logon procedure.

go through the TSO/E prompt screen. TNDEFLD2 does not cause the UADS to be updated.

## ***CINIT RU User Data Area Format***

TSO accepts an input CINIT RU User Data Area containing user based information in the following general format:

```
userid / password parameters
```

**Figure 27. TSO CINIT RU User Data Area Format**

where:

- userid** is the one to eight byte user identifier associated with the individual
- /** is the character required by TSO to delimit the userid and password
- password** is the one to eight byte password associated with the userid that will allow the individual to logon
- parameters** are other keyword operands that are acceptable to the TSO LOGON command (REGION, PROC, MAIL, etc.). TNDEFLD2 installations may also use the keyword PROMPT to cause TNDEFLD2 to bypass operation and cause TSO/E to present the normal prompt screen.

The following fields or operands are supported by TNDEFLD1 and may be abbreviated by using sufficient characters to uniquely identify the operand:<sup>20</sup>

<b><i>Operand</i></b>	<b><i>Purpose</i></b>
<b>ACCOUNT</b>	specifies the TSO account code to be utilized for the TSO session
<b>COMMAND</b>	indicates what string should be executed as a first command to TSO when the TMP becomes active (this operand support is a function of TNDEFLD1 and not in "standard" TSO)
<b>GROUP</b>	indicates the RACF Connect Group being requested
<b>MAIL</b>	indicates that mail will be accepted
<b>NOMAIL</b>	requests that no mail be sent
<b>NONOTICE</b>	requests that no notices should be received
<b>NOTICE</b>	indicates that notices may be received

---

<sup>20</sup> COMMAND, NORACF, NOUADS, PROMPT, and REGION are fields that are specific instructions to TNDEFLD1 and are not a portion of the standard TSO logon procedure.

<b>NORACF</b>	this TNDEF1D1 operand indicates that the extraction of RACF based TSO information should be bypassed within the pre-prompt exit
<b>NOUADS</b>	this TNDEF1D1 operand indicates that the extraction of UADS based information should be bypassed within the pre-prompt exit
<b>OIDCARD</b>	indicates that operator id card support is requested
<b>PERFORM</b>	specifies the requested performance group
<b>PROMPT</b>	requests that TNDEF1D1 skip the setting of the logon work area and cause the TSO/E prompt screen to be sent to the device
<b>RECONNECT</b>	requests that the terminal device be reconnected to an existing TSO address space with the same userid
<b>PROC</b>	specifies the TSO procedure name that should be used to set up the TSO address space
<b>REGION</b>	this TNDEF1D1 field is a synonym for SIZE
<b>SIZE</b>	specifies the address space size requested for the TSO session

## ***The Network Director***

Activation of the TSO SSI logic within The Network Director consists of:

```
APPLICATION TSO,
INITIAL-FUNCTION=LOGON,
INITIAL-DATA= (&NAME, '/' , &PASSWORD, ' ' , &OPERANDS)
```

Inclusion of the &OPERANDS variable will allow terminal operators with the Command Line present to pass additional TSO logon parameters from the Command Line for non TSO/E installations or TNDEF1D users. E.G. TSO RECON entered on the Command Line will result in "LOGON userid/password RECON" being passed to TSO.

## Typical Errors

The following situations may arise during the installation or usage of the TSO SSI routines.

### UADS Values Not Used

**Symptom:** Values stored by TSO/E into SYS1.UADS are no longer being utilized for the TSO sessions.

**Explanation:** The TSO/E "no screen" bit in the LOGON pre-prompt exit causes TSO/E to bypass reading of UADS to obtain the previously stored characteristics.

**Resolution:** Install TNDEF2 instead of TNDEF1. TNDEF1 does **not** read the stored values from UADS that TSO/E may have stored there. IKJEFLA requires that if a pre-prompt exit is present that all parameters associated with the session must be loaded by the pre-prompt routine. TNDEF1 simply sets the TSO no screen bit and bypasses UADS.

### TSO User Wants to Change UADS Fields

**Symptom:** TSO/E user would like to change one or more of the values stored by TSO/E, but does not receive the TSO/E prompt screen.

**Explanation:** The LOGON process via TNDEF2 is completely automated and the TSO/E user will not normally see the TSO/E logon prompt panel. This panel must be displayed if the TSO/E user would like to modify the default values for a TSO/E stored field.

**Resolution:** Enter the PROMPT keyword into the CINIT RU User Data Area after the userid/password combination. This is a signal to TNDEF2 that you would like the TSO/E prompt screen this time.

### ACF2 Enter Password Prompt

**Symptom:** With ACF2/MVS operational, attempts to automate the signon to TSO is greeted with the Enter Password prompt

**Explanation:** The ACF2 system does not have Quick Logon enabled

**Resolution:** Modify the ACF2 system to allow quick logon

## Other Items

The following additional considerations may apply to your installation.

### ACF2 Considerations

If your installation has ACF2 installed, you will **not** require the NRS provided TSO pre-prompt exits. Automating the logon process to TSO will be controlled via settings in the GSO TSO record. You will have to check the QLOGON operand of the TSO record to make sure that ACF2 will allow the password to be presented on the same line as the userid. NQLOGON will require the operator to enter the password again during TSO logon (QLOGON is the default).

### TNDEFD1 Operation

TNDEFD1 normally combines individual logon field values and presents them to TSO in the logon work area for processing. The field values are obtained in the following sequence:

1. From the initial input buffer (normally, sent from The Network Director as a result of INITIAL-DATA operand formatting)
2. From RACF's TSO fields via RACF EXTRACT (RACXTRT)
3. From TSO's UADS data set via direct READ operations

**Figure 28. TNDEFD1 Processing Logic**

When a particular TSO logon field value is set, subsequent environments will **not** have the respective values accepted. Therefore, any value specified in the initial data buffer will override whatever is stored in RACF or UADS. Items in RACF will override information in UADS.

After each environment is checked for field values, TNDEFD1 will return to the TSO logon processor with the appropriate parameter list set and will set the TSO/E "LGNOPRMT" (don't prompt) indicator, if the password is present in the input buffer.



# VM

Single System Image provides two manners in which to implement automated signon efforts to VM. They are:

1. VSCS User Exit
2. CP Modifications

If you elect to utilize automated logon procedures to VM, you will have to utilize one **and only one** of these approaches. Both approaches will produce the ability for the VTAM terminal user to automatically signon to CP without actually showing the user's password on the terminal screen.

NRS recommends that you use the **VSCS User Exit** approach for all VM systems. It is the only supported mechanism for VM/XA and ESA systems (no local modifications are provided to CP). This also provides SSI concepts to VM without the requirement for local CP modifications.

You will want to use the **CP Modifications** (see "CP Modifications" on page 75) approach if your installation is not VM/XA or better **and** you require some type of INITIAL-FUNCTION support. If all you require is an automated LOGON command, either approach will work for VM systems prior to VM/XA.

## VSCS User Exit

Access to the VM/XA virtual machine environment for SNA devices is provided via an ACF/VTAM facility identified as VSCS, which operates within the ACF/VTAM virtual machine as a ACF/VTAM application program.

VSCS processes the CINIT RU User Data Area in the following fashion:

1. If no CINIT RU User Data Area is present, transmit the VM/370 full screen LOGO panel to the device<sup>21</sup>
2. If the CINIT RU User Data Area is present, process it as CP command input and when the device logs off of VM return the device to the prior subsystem (do not transmit the VM full screen LOGO panel)

As a result of this policy, VM (CP actually) will process an automated signon by simply passing a CP command to VSCS (the standard LOGON command will work).<sup>22</sup>

```
LOGON userid password
```

VSCS will automatically display the command passed to CP on the terminal, which will contain a legible password value.

If your installation is interested in completely automating the process of logon to CMS and does not want the password displayed, you can install the VSCS output data transmission exit identified as **DTIPDDSO** (provided as the file, member, or book named TNDPDDSO).

TNDPDDSO examines each output transmission going to a SNA device via VSCS and removes the password from the LOGON command **after it has been processed by CP**. This allows the automated signon to occur to VM without rekeying the password, but also eliminates the password from appearing in clear text form on the terminal.

---

<sup>21</sup> The terminal operator will have to key in "VMEXIT" to return to the ACF/VTAM level of operations

<sup>22</sup> SET PASSWORD LOGON INCLUDE must be specified on XA systems or DMKSYS PSUPRS=NO on non-XA systems to enable the userid and password being entered on the same line.

## Installation

Installation of TNDPDDSO is dictated by the VSCS procedures in use at your installation. Please consult with your VM Systems Programmer or the appropriate VM Publication to install the exit. This is generally described in a section of an IBM manual titled "Installing VSCS Data Manipulation Exit Routines" and can usually be found in the *VTAM Customization* publication for your release of VTAM.

### **SET PASSWORD or PSUPRS=NO**

CP will accept the userid and password on the same line only if the password suppress option has been turned off. You can do this by setting the PSUPRS=NO option in DMKSYS (for non-XA systems) or the following command in XA or ESA systems from an authorized virtual machine:

```
SET PASSWORD LOGON INCLUDE
```

### **Modify VTAM Initialization EXEC**

To activate the new VSCS exit, you will have to make **both** the VSCSUSER LOADLIB and the new VSCS LOADLIB available to the VTAM execution environment. This is typically done via the VMVTAM GCS file used to initialize VTAM (this is initially on the VTAM BASE disk, MAINT's 299). Change the "GLOBAL LOADLIB VTAM VSCS" to:

```
GLOBAL LOADLIB VSCSUSER VTAM VSCS
```

Make sure that the mini-disk that you linked the new VSCS on is in the VTAM machine's search order **before the VTAM BASE disk**.

You will also have to specify the VSCS options to be used (DTIUSER2 in our examples) by modifying the VSCS START command. Locate the VSCS START statement in the VMVTAM GCS file and change it to:

```
VSCS START PARM=2
```

This instructs VSCS to load DTIUSER2 and use the options set there to operate. This will cause the output display exit DTPDDSO (DEXIT=Y) to receive control and remove the password under the conditions specified in "CINIT RU User Data Area Format" on page 72.

## CINIT RU User Data Area Format

After installation of the new VSCS with TNDPDDSO in it, the CINIT RU User Data Area can contain the following format (in addition to the standard VM format):

```
LOGIN      userid password [# initial function ]
```

**Figure 29. VM/XA CINIT RU User Data Area Format**

where:

**LOGIN** is an alias for the LOGON command to identify yourself to CP

**blanks** is a **required** 5 bytes of blanks between the LOGIN literal and the userid

**userid** is the one to eight byte virtual machine name

**password** is the one to eight byte password associated with the userid

**#** is the standard CP syntax for command separator. Data entered after the pound sign will be executed by CP after the logon has completed (this implements the INITIAL-FUNCTION).<sup>23</sup>

## The Network Director

CP accessed via VM/VTAM with the VSCS exit in responds to the following specification.

```
APPLICATION CMS,  
  COMPRESS=NO,  
  INITIAL-DATA=( 'LOGIN      ', &NAME, ' ', &PASSWORD)
```

DTIPDDSO will remove the password from the redisplay of the input **if and only if**:

1. The CP command is LOGIN
2. There is exactly 5 blank characters between LOGIN and the beginning of the user name

All other output transmissions will be unaltered by TNDPDDSO.<sup>24</sup> You will be able to tell if TNDPDDSO is installed properly because the "LOGIN" literal in the command will be changed to the literal "LOGON" when the password is blanked out.

<sup>23</sup> VM/XA systems only.

<sup>24</sup> The selection of "LOGIN" and 5 blanks is arbitrary, but is intended to provide adequate checking to insure that TNDPDDSO does not modify a CP display that it shouldn't.

To establish the initial command that will be passed to VM/XA, modify The Network Director's Configuration Parameters as follows:

```
APPLICATION CMS,  
    COMPRESS=NO,  
    INITIAL-DATA= (' LOGIN      ', &NAME, ' ', &PASSWORD, ' #Q N')
```

If the LOGON process is successful, this INITIAL-DATA specification will cause CP to execute the QUERY NAMES command.

## Typical Errors

The following items are common errors that are made during the installation and use of The Network Director's VM/XA interface.

### *Password Is Displayed*

**Symptom:** The LOGON command is displayed in clear text format on the VSCS terminal screen (including the userid and password).

**Explanation:** This occurs as a standard portion of VSCS support within VM for any information in the CINIT RU User Data Area when VSCS first receives the device.

**Resolution:** If you do not want the password to display, you will have to install the TNDPDDSO display exit within VSCS. If you have already installed the exit, it is likely that the initial command buffer does not conform to the syntax TNDPDDSO requires (LOGIN and exactly 5 blanks before the userid).

### *LOGO Panel Received*

**Symptom:** The VM/370 LOGO panel (VM Release 5 and up) is received

**Explanation:** When the device first contacted VSCS, the CINIT RU User Data Area contained nothing. You will have to enter VMEXIT on the LOGO panel to "disconnect" from VSCS and return to ACF/VTAM.

**Resolution:** Provide an initial command like LOGON or DIAL in the CINIT RU User Data Area. Network Director installations should utilize INITIAL-FUNCTION and INITIAL-DATA operands on the APPLICATION definition to set the CINIT RU User Data Area.

## ***DTI108I Received When VSCS Initializes***

**Symptom:** DTI108I is issued by VSCS to the VTAM console when VTAM initializes.

**Explanation:** VSCS has recognized your request for an alternative DTIUSER options member, but cannot locate it.

**Resolution:** You have either neglected to insert the VSCSUSER LOADLIB into the GLOBAL LOADLIB specification or have attempted to place DTIUSER into a library other than the first in the GLOBAL LOADLIB concatenation.

## CP Modifications

Standard VM (via VSCS) processes the CINIT RU User Data Area in the following fashion:

1. If no CINIT RU User Data Area is present, transmit the VM/370 full screen LOGO panel (for VM Release 5 and up) to the device<sup>25</sup>
2. If the CINIT RU User Data Area is present, process it as CP command input and when the device logs off of VM return the device to the prior subsystem (do not transmit the VM/370 full screen LOGO panel)

As a result of this policy, VM (CP actually) will process an automated signon by simply passing a CP command to VSCS (the standard LOGON command will work).<sup>26</sup>

```
LOGON userid password
```

VSCS will automatically display the command passed to CP on the terminal, which will contain a legible password value.

If your installation is interested in completely automating the process of logon to CMS and does not want the password displayed, you can install the SSI modifications into CP module DMKLOG (provided as the file, member, or book named TNDCPLOG).

---

<sup>25</sup> The terminal operator will have to key in "VMEXIT" to return to the ACF/VTAM level of operations

<sup>26</sup> SYSJRL PSUPRS=NO must be in effect.

## Installation

Installation of the VM SSI logic consists of the following steps:

Step	Activity	Completed
1	Copy TNDCPLOG from the distribution library to an appropriate CMS mini disk (E.G. CMS MOVEFILE will suffice for OS and DOS systems, it is already present on The Network Director's distribution disk for VM tapes)	
2	Rename it to DMKLOG TNDCPLOG (CMS systems will find it as TNDCPLOG VM A1 on the distribution mini disk)	
3	Modify the DMKLOG AUX file or the DMKSP CNTRL to include TNDCPLOG as an entry	
4	VMFASM DMKLOG to produce the updated text	
5	Follow standard CP generation procedures in use at your shop to build a new CP nucleus	
6	IPL the new CP nucleus (including the modified DMKLOG)	

Figure 30. CMS SSI Installation Checklist

### ***DMKLOG Modifications***

This modification works together with a specialized setting in the incoming data stream to keep the password from view. It takes advantage of the 3270 attribute for "dark" fields to keep the password hidden. Installation consists of moving TNDCPLOG to the appropriate CP mini disk (consult your VM system programmer), renaming it to DMKLOG TNDCPLOG, adding TNDCPLOG to DMKLOG's AUX file or the DMKSP CNTRL file, and then VMFASMin DMKLOG.

The incoming CINIT RU User Data Area can be formatted with 3270 start field orders in it that will cause the display of the password on the screen to be darkened. The DMKLOG modification simply removes the 3270 start field orders and the associated attributes from the internal buffer utilized to process the LOGON command. Thus, the LOGON process is completely automated, but the password is kept from view.

## ***DMKSYS Options***

When generating your VM/SP system, the SYSJRL macro in the DMKSYS generation has an operand (PSUPRS=) that controls whether a terminal user can logon to the system placing the password on the same line as the userid (NO) or not (YES). When PSUPRS=YES is in effect, VM/SP will not allow the password to be present on the same line, which eliminates automated signon as a possibility (as discussed in the first paragraph of this section).

Thus, **without the TNDCPLOG** modification applied, you will not be able to automate the logon to VM if PSUPRS=YES is specified. If the DMKLOG modification is applied, the PSUPRS= setting will have no effect on the automated logon process if the virtual machine user originated at a Network Director device. The PSUPRS option will continue to control whether a terminal operator can enter the password on the same line or not when the logon is occurring *from a virtual console*.

When a userid and password combination is unacceptable to CP, it will normally present an opportunity to the terminal operator to enter the combination again. The number of times CP will allow this is controlled by the SYSJRL LOGLMT option (default is 4).

If you would like CP to immediately reject the device operator and return it to its network predecessor (like The Network Director), code SYSJRL LOGLMT=(x,y,1) where x and y are set appropriately for your installation. The "1" instructs CP to disable the LOGON command for a virtual machine after 1 attempt to logon has been made. This will force the terminal operator to come back in to CP with a new session (and a new, complete LOGON command)

## ***Controlling the Initial Function***

The DMKLOG modifications contained in TNDCPLOG provide a manner in which to pass the password to CP without the automatic display on the virtual console. Also contained in TNDCPLOG is an additional option that will allow an additional token to be passed to the virtual machine. This "token" can be utilized to control the processing that is to take place after the virtual machine has completed LOGON processing. Conceptually, this can be utilized to provide a CMS "INITIAL-FUNCTION" capability.

To utilize this approach, the DMKLOG modifications will collect the INITIAL-FUNCTION from the SSI data string and place it into the VMBLOK. The contents of the token is then made accessible via a new CP command named TNDBLK.

**Basic Installation:** To install the TNDBLK command, you make local modifications to the CP command module (DMKCFB for Release 5 systems below PUT 8902, DMKCFB for 8902 and up Release 5 systems and all Release 6 and up systems).<sup>27</sup> The modification required for the two releases is contained in TNDCPCFC or TNDCPCFB. The following installation figure describes the necessary steps to install the command into VM. Substitute a **C** or **B** where **x** is dependent upon which modification you require.

Step	Activity	Completed
1	Install the DMKLOG modifications as described earlier in Figure 30 on page 76	
2	Copy TNDCPCF <sub>x</sub> from the distribution library to an appropriate CMS mini disk	
3	Rename it to DMKCF <sub>x</sub> TNDCPCF <sub>x</sub>	
4	Modify the DMKCF <sub>x</sub> AUX file or the DMKSP CNTRL to include TNDCPCF <sub>x</sub> as an entry	
5	VMFASM DMKCF <sub>x</sub> to produce the updated text with the new TNDBLK command defined	
6	VMFASM TNDBLK to produce the text file for the new command	
7	Add TNDBLK to the CPLOAD EXEC or the equivalent for your system (it may be added to the fixed or pageable portion, as you deem appropriate).	
8	Follow standard CP generation procedures in use at your shop to build a new CP nucleus	
9	IPL the new CP nucleus (including the modified DMKLOG, DMKCF <sub>x</sub> , and TNDBLK)	

**Figure 31. VM INITIAL-FUNCTION Installation**

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<sup>27</sup> If you use DMKCFB, you will also need to make an entry in the "ACIMAP" MACRO to enable access to TNDBLK. "ACIMAP Modifications" on page 79 contains instructions on how to do this.

Once the token has been placed into the VMBLOK, the virtual machine can obtain the token by issuing the TNDBLK CP command that was inserted by the DMKCFC modifications. Simply entering "TNDBLK" will cause the token to be written to the virtual console. More typically, a CMS REXX EXEC can be used to retrieve the command and operate on it. An example of how the token could be used to execute as a CMS command follows:

```

/* Sample REXX EXEC to retrieve the initial token */
PARSE VALUE DIAGRC(8,'TNDBLK',80) WITH CPRC . SSIDATA '15'X
QUEUE SSIDATA

```

**Figure 32. Retrieving the VM Initial Command**

Please note that you **must** have a "/" present on the initial statement of the REXX EXEC. This is how VM recognizes the EXEC as REXX (instead of simple EXEC or EXEC2).

**ACIMAP Modifications:** At certain maintenance releases of VM, assembly of DMKCFB will produce assembly errors referencing an "unresolved symbol TNDBLKG". This is a result of CP's inclusion of a macro called **ACIMAP** that sets the CP class code for CP commands. Since TNDBLK is a CP command, CP will require an entry for TNDBLKG in ACIMAP to properly assemble DMKCFB. This can be done by following these steps:

Step	Activity	Completed
1	Copy TNDCPACI from the distribution library to an appropriate CMS mini disk	
2	Rename it to ACIMAP TNDCPACI	
3	Modify the ACIMAP AUX file or DMKSP CNTRL to include TNDCPACI as an entry	
4	Follow standard procedures for your operating system to place the resulting ACIMAP MACRO into the system MACLIB (normally DMKSP MACLIB)	

**Figure 33. ACIMAP Installation**

Once ACIMAP has been replaced into the MACLIB, you can resume with the installation of TNDBLK (DMKCFB should now assemble correctly).

## CINIT RU User Data Area Format

After full installation of TNDCPLOG, TNDCPCFC, and TNDBLK, the CINIT RU User Data Area can contain the following format (in addition to the standard VM format):

```
LOGON userid [X'1D6C']password[[,token]X'1D60']
```

**Figure 34. VM CINIT RU User Data Area Format**

where:

**userid** is the one to eight byte virtual machine name

**X'1D6C'** is the 3270 start field order for a dark and protected field

**password** is the one to eight byte password associated with the userid

**token** is the one to eight byte token that should be placed into the VMBLOK for subsequent usage by TNDBLK

**X'1D60'** is the 3270 start field order for a protected, but displayed field

## The Network Director

CMS accessed via VCNA or VM/VTAM responds to the following specification.

```
APPLICATION CMS,  
  INITIAL-FUNCTION=LOGON,  
  SEPARATOR=' ',  
  INITIAL-DATA=(&NAME, ' ', &SFDARK, &PASSWORD, &SFPROT)
```

To establish the token that will be passed to VM, modify The Network Director's Configuration Parameters as follows:

```
APPLICATION PROFS, TARGET=VM,  
  INITIAL-FUNCTION=LOGON,  
  INITIAL-DATA=(&NAME, ' ', &SFDARK, &PASSWORD, ' ', PROFS', &SFPROTECT)
```

The &SFDARK operand causes the password to take on non display 3270 characteristics and the &SFPROTECT variable changes the CP display back to "normal". If The Network Director's provided DMKLOG modifications detect a comma between the &SFDARK and &SFPROTECT tokens, it will assume that the following characters are the "initial command". This token will then be collected and placed into the VMBLOK of the virtual machine that is being logged on (DMKLOG will use VMUSER3 and VMUSER4 in the VMBLOK). The preceding example will pass the "PROFS" token to the virtual machine for processing.<sup>28</sup>

<sup>28</sup> If VMUSER3 or VMUSER4 are not available at your installation, any other 8 byte location in

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the VMBLOK will suffice, but both TNDCPLOG and TNDBLK will require source changes prior to assembly.

## Typical Errors

The following items are common errors that are made during the installation and use of The Network Director's VM interface.

### ***Password Is Displayed***

**Symptom:** The LOGON command is displayed in clear text format on the VSCS terminal screen (including the userid and password).

**Explanation:** This occurs as a standard portion of VSCS support within VM for any information in the CINIT RU User Data Area when VSCS first receives the device.

**Resolution:** If you do not want the password to display, you will have to install the TNDCPLOG modifications to DMKLOG.

### ***LOGO Panel Received***

**Symptom:** The VM/370 LOGO panel (VM Release 5 and up) is received

**Explanation:** When the device first contacted VSCS, the CINIT RU User Data Area contained nothing. You will have to enter VMEXIT on the LOGO panel to "disconnect" from VSCS and return to ACF/VTAM.

**Resolution:** Provide an initial command like LOGON or DIAL in the CINIT RU User Data Area. Network Director installations should utilize INITIAL-FUNCTION and INITIAL-DATA operands on the APPLICATION definition to set the CINIT RU User Data Area.

### ***TNDBLK References Unresolved***

**Symptom:** Generation of the CP nucleus results in unresolved references to TNDBLK or TNDBLKVM.

**Explanation:** TNDBLK TEXT has not been included in the CP generation process

**Resolution:** Make sure TNDBLK is assembled, the resulting TEXT is on an accessed disk, and an entry made in the CPLOAD EXEC file (or the equivalent)

### ***TNDBLKG References Unresolved***

**Symptom:** Assembly of DMKCFB produces unresolved external references to TNDBLKG

**Explanation:** You are at a maintenance release of VM that requires an entry in the macro ACIMAP for each CP command

**Resolution:** Update the ACIMAP macro to include a definition for TNDBLK (see "ACIMAP Modifications" on page 79).

## ***Other Items***

The following items may be associated with the usage of VM SSI concepts.

### **ACF2/VM Considerations**

If the VM system is operating at a Release 5.0 or better release, ACF2/VM Release 3.1 or better, and PSUPRS=YES is in effect, you may also have to make one more change to TNDCPLOG. ACF2/VM checks the PSUPRS option in addition to the check in DMKLOG, which will cause the automated signon process to fail.

To resolve this, TNDCPLOG has instructions available to cause ACF2/VM to bypass the check for VM Release 5.0 systems. However, this will not assemble properly for VM systems prior to VM R5. For this reason, TNDCPLOG is shipped compatible with VM Release 4 and below. If you are operating VM Release 5 and ACF2/VM 3.1 with PSUPRS=YES specified, contact NRS Technical Support for information.



# Glossary

**ACF2:** Computer Associate's Access Control Facility, a system security software product

**APPLICATION:** The Network Director's definition for a logical application subsystem within the network software product

**CICS:** IBM's Customer Information Control System, a transaction processing system

**CINIT RU User Data Area:** A portion of the SNA CINIT RU that is reserved for the usage of a "user" specific implementation (unused by SNA). SSI uses this area to pass information amongst SNA subsystems

**CMS:** IBM's Conversational Monitor System, the timesharing component of the VM Operating System

**COM-PLETE:** Software AG's transaction processing system

**DEFAULT:** The Network Director's definition statement that identifies the general handling characteristics of the logical network

**DMKSYS:** A VM based macro used to define characteristics to VM/370

**DMKLOG:** The VM module that handles the VM LOGON command

**DOS:** IBM's Disk Operating System (also known as VSE)

**GCS:** IBM's Group Control System, a multitasking environment within the VM operating system that is the host environment for VM/VTAM

**GLOBALS:** The Network Director's definition statement that defines operating system type characteristics

**GROUP:** The Network Director's definition statement that describes a logical set of network

devices or users that have an implied relationship amongst them

**IDMS/DC:** Cullinet's transaction processing system

**IMS/DC:** IBM's Information Management System Data Communications component is a transaction processing system

**MODEL204:** Computer Corporation of America's data base management and data communications system

**MVS:** IBM's Multiple Virtual Storage operating system (also known as OS/MVS, MVS/XA, or MVS/ESA)

**NetView:** IBM's combination of software tools (NCCF, NLDM, etc.) that provides facilities to monitor and improve operational characteristics of the network

**PCT:** The CICS Program Control Table describes valid transactions to CICS

**PPT:** The CICS Processing Program Table describes valid programs to CICS

**pre-prompt:** The common name used for TNDEFLLD, TNDEFLLD1, or TNDEFLLD2

**RACF:** IBM's Resource Access Control Facility, a system security software package

**ROSCOE:** Computer Associate's program development system

**SITE:** The Network Director's definition statement that describes another node within the logical network that is operating a copy of The Network Director's nucleus

**SNA:** IBM's System Network Architecture is a set of concepts and definitions that provide a framework for communication between network components

**SSI:** The Network Director's Single System Image presents the image that all the host subsystems are combined into a single usable system. SSI is also used to identify a control block that resides in the CINIT RU User Data Area that identifies the user being passed amongst the network subsystems

**SSX:** An extended SSI control blocks that is used to identify a control block that resides in the CINIT RU User Data Area that identifies the user being passed amongst the network subsystems

**subsystem:** The Network Director term for a VTAM Application processing system

**TCT:** The CICS Terminal Control Table describes terminals to CICS and may contain TNDCICS code to facilitate collection of the CINIT RU User Data Area

**TERMINALS:** The Network Director's definition statement that describes specific handling characteristics for devices with a specific pattern to the lunames

**The Network Director:** North Ridge Software, Inc.'s Network Management Facility, is a VTAM menu processor and network security facility

**TNDBLK:** The SSI provided CP command that causes the token passed via VM SSI to be extracted from the VMBLOK associated with the virtual machine

**TNDCICS:** The SSI macro used to generate the CICS SSI routines

**TNDCICSL:** The SSI routine that can be used to logoff a CICS user and return him/her to the ACF/VTAM level of processing

**TNDCTTOO:** The SSI interface code for IMS systems that operates as an IMS Output Edit Routine

**TNDDSIEX:** The SSI interface code for NetView systems

**TNDEFD1:** The TSO/E LOGON pre-prompt routine that eliminates the requirement of the TSO/E logon panel always being presented TNDEFD1 is also available for MVS/ESA systems and TNDEFD2 for TSO/E systems that are not ESA yet.

**TNDIDMS:** The SSI interface code for IDMS systems that enables the automated signon, starts the first task, and also provides logoff and disconnect functions

**TNDULGX1:** The SSI routine that resides in COM-PLETE and operates as an extension to ULOG

**TNDULGX2:** The SSI routine that resides in COM-PLETE and operates as an extension to ULOG

**TOP-SECRET:** Computer Associate's system security software package

**TPX:** Legent's TeleProcessing eXecutive, a VTAM multi-session manager

**TSO:** IBM's OS based Time Sharing Option

**UADS:** An acronym for the SYS1.UADS partitioned data set or User Attribute Data Set, which contains information associated with individual TSO users

**USERS:** The Network Director's definition statement that describes specific handling characteristics for network users with a specific pattern to the userid

**VM:** IBM's Virtual Machine operating system

**VSAM:** IBM's Virtual Storage Access Method, a commonly used access method to store and retrieve data from external disk devices

**VTAM:** IBM's Virtual Telecommunications Access Method, an implementation of SNA for IBM mainframes provided control over and access to network resources

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