Cleo® Host Interface for TCP/IP V4.6 TN3270 and TN5250 for AVAYA IR® R4.0/R3.0/R2.X/R1.X Quick Start Guide Installing from a CPIO Image

This Quick Start Guide contains information about installing the 6.0.7.17 version of Cleo TN3270 software Release 4.6 (for Avaya's IR, R4.0/R3.0/R2.X/R1.X Systems), and Host DIP(CLEOTDIP6), on a Solaris Sparc 8 or Sparc 10 Operating System. This version of the Cleo software can be configured for TN3270 and/or TN5250 protocols.

Important!

Read this document before installing and using the Cleo software. If you have questions about installing and using this product, contact Cleo Communications Technical Support between the hours of 8:00 A.M. and 5:00 P.M. (CST/CDT) at: 1.800.233.2536 or supportEN@cleo.com.

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TN3270/TN5250 Installation

Installation of a Cleo Enterprise Networking product requires that you obtain a License file(license.conf). The License file is available from Cleo Communications' Sales Department at (800) 233-2536.

Software Prerequisites:

- Solaris Sparc 8 Release 11 or Greater(SunOS Release 5.8 Version Generic_108528-11) or Solaris Sparc 10 Release 11 or Greater(SunOS Release 5.10 Version Generic 118822-27)
- Avaya IR R4.0 or R3.0 or R2.X or R1.1 or R1.2 or R1.3
- IVR Designer or Script Builder.

Note: Before installing Cleo TN3270/TN5250, please enter the following command:

```
# stop_vs
```
[wait for this step to complete; it will take several minutes]

INSTALLATION NOTES:

The Cleo Host Interface for Avaya IR 4.6 Software determines the version of the Avaya IR Software installed, as well as the Solaris Sparc Verion, Sparc 8 or Sparc 10, and installs the appropriate Cleo Host Interface Software for Avaya IR R1.1 or R1.2 or R1.3 or R2.X or R3.0 or R4.0 for Solaris Sparc 8 or R2.X or R3.0 or R4.0 for Solaris Sparc 10.

Additionally, if a previous version of the Cleo Host Interface for Avaya IR Software is already installed, Cleo Host Interface for Avaya IR V4.6 Software will install on top of the older Cleo Software and preserve the current TN3270 Host Connection Configuration information.

Installing Cleo TN3270/TN5250 from a CPIO Image

1. Login as *root* and Stop the Voice System

   ```
   # stop_vs

   # stop_hi
   ```

2. If the "/export/cleo" directory does not already exist, create the directory to contain the Cleo Host Interface Software

   ```
   # cd /export

   # mkdir cleo

   # chmod 777 cleo
   ```

3. After downloading and unzipping the CPIO image of the Cleo Host Interface binary Software, move the resulting file(CleoTNIR46cpio.Z) to the Avaya IR system and place it in the /export/cleo directory, and uncompress the file.

   ```
   # cd /export/cleo

   # uncompress CleoTNIR46cpio.Z
   ```

4. Use the following command to move the Cleo Host Interface Software from the CleoTNIR46cpio file.

```
# cpio -ivBcdum < CleoTNIR46cpio
```

5. Start the Installation of the TN3270/TN5250 Package

   NOTE: During the pkgadd installation, please respond by entering "y" for the following questions:

   > The following files are being installed withn setuid and/or setgid permissions
   > Do you want to install these as setuid/setgid files [y,n,?,q]
   >
   > This package contains scripts which will be executed with super-user Permissions during the process of installing this package.
   > Do you want to continue with the installation of <cleotn> [y,n,q]

```
# pkgadd -d /export/cleo/cleotn
```

Installing the CLEOTDIP6 (Voice System DIP Using TN3270/TN5250) Software from a CPIO Image

1. If the voice system is currently running, then stop the voice system by entering the following commands:

   ```
   # stop_vs

   # stop_hi
   ```

2. If you already have an older version of the Cleo Host Interface software(vstndip, Ctnhdip, Cleotndip, Cleotdip, CleoTDIP, CLEOTDIP, CLEOTDIP3, CLEOTDIP4, CLEOTDIP5), you may want to review Appendix F. to save your current configuration information. The installation of CLEOTDIP6 will preserve current configuration data, however, it is recommended to save existing configuration data, in case a problem occurs.

3. Install CLEOTDIP6 by entering the following command:

   ```
   # pkgadd -d /export/cleo/CLEOTDIP6
   ```

   NOTE: During the pkgadd installation, above, please respond by entering "y" for the following questions:

   > * - conflict with a file which does not belong to any package.
   > Do you want to install these conflicting files [y,n,?,q]
   >
   > The following files are being installed withn setuid and/or setgid permissions Do you want to install these as setuid/setgid files [y,n,?,q]
   >
   > This package contains scripts which will be executed with super-user Permissions during the process of installing this package.
   > Do you want to continue with the installation of <CLEOTDIP6> [y,n,q]

Note: When CLEOTDIP6 is installed, kernel tuning will take place, if this is the first installation of the Cleo Host Interface. Tuning will not be done, if you already have an older Cleo Host Interface installed.

Note: If kernel tuning is done, **DO NOT** reboot the Solaris Sparc 8 or Solaris Sparc 10 operating system at this time. You must first complete Instructions for Installing License and Basic Instructions for Configuring the TN3270/TN5250 and 6 before rebooting the system.

Note: If you are using VXML, with your IVR Designer Voice Application, please see the following document, that was emailed to you with the Cleo Host Interface Software.

vxmlusage.pdf

These documents describe how an IVR Designer VXML Voice Application can use an IVR Designer Host Application. Cleo provides 2 External TAS functions

Cleoresrvlu

Cleorelslu

These external functions can be used to Reserve a Host Session across multiple invocations of an IVR Designer Host Application.

See **Appendix H.** for information on placing the Cleo External functions on your IVR Designer Work Station PC.

Instructions for Installing the License

1. Cleo Communications will email you a license file, "license.conf". Place the license file on the AVAYA IR system(eg. /tmp/license.conf). Cleo Communications will also assign a Serial Number for your system. The Serial number will be included with your software CD, or can be obtained by calling Cleo Technical Support. You will be asked to enter your Cleo Serial Number when running the ***tnaddlic*** command.

2. Install the license file by entering the following command:

```
# /opt/tn3270/bin/tnaddlic

Please enter the Cleo TN3270/TN5250 Serial Number

nnnnnn

Enter the full path name of the license file to install:

/tmp/license.conf      (use own path if other than /tmp)

NOTE: You will see the contents of your license
displayed at this point.

Do you wish to continue?(y/n): y
```

   At this time the TN3270 License Daemon will be started.

Instructions for Displaying/Modifying the Cleo Serial Number

1. If you have already entered the Cleo Serial Number while installing the License, you can move on to the next Section ***"Basic Instructions for Conf iguring the TN3270/TN5250 and CLEOTDIP6 Software"***

2. In order to display the current Cleo Serial Number, please enter the following command:

```
# /opt/sna/bin/cleoserial -r

The Cleo TN3270/TN5250 Serial Number has a value
of

                ==➔ 123456 ➔==
```

3. In order to modify the current Cleo Serial Number or store it on the system for the first time, please enter the following command:

```
# /opt/sna/bin/cleoserial -w 123456

Please confirm that you want to change the Cleo
TN3270/TN5250 Serial Number to the value

                ==➔ 123456 ➔==

?[y/n]

y
```

Basic Instructions for Configuring the TN3270/TN5250 and CLEOTDIP6

1. The TN3270/TN5250 sessions start when the voice system starts. The program **tnconfig** must be executed to make the scripts for starting the TN3270/TN5250 sessions. See Appendix F. for specific options for the **tnconfig** command.
   To use TN3270 sessions from a pool of lus on one host, execute **tnconfig** by entering the following command, and then **proceed to step 9:**

   ```
   #tnconfig -h host name[:port id] -n number of lus
   ```

   Note: The default portid is 23 and the default protocol type is TN3270

   A sample execution of tnconfig is as follows:

   ```
   tnconfig -h tnsna -n 24
   ```

   To use TN5250 sessions from a pool of lus on one host, execute **tnconfig** by entering the following command, and then **proceed to step 9:**

   ```
   #tnconfig –h host name[:port id] –n number of lus –p 5
   ```

   Note: The default port is 23 and ***–p 5*** sets the protocol to TN5250

   A sample execution of tnconfig is as follows:

   ```
   tnconfig –h tnsna –n 24 –p 5
   ```

   Note: In these examples, the symbolic host name "**tnsna"** must be listed in the "**/etc/hosts"** file.

   ### NOTE: Step 1 is the most common configuration method, for both TN3270 and TN5250.

2. **ONLY, if it is required,** to use both TN3270 and TN5250 from pools of

lus on multiple hosts, execute **tnconfig** by entering the following command, and then **proceed to step 9**:

```
#tnconfig –h host32701[:port id],host52501[:port
id],host32702[:port id],host52502[:port id]-n #lus for
host32701,#lus for host52501,#lus for host32702,#lus
for host52502 –p 3,5,3,5
```

A sample execution of tnconfig is as follows:

```
tnconfig –h host32701,host52501,host32702,host52502 –n
24,10,10,24 –p 3,5,3,5
```

3. **ONLY, if it is required,** to use TN3270 sessions with specific LU Names on one host, execute **tnconfig** by entering the following command, and then **proceed to step 9:**

```
#tnconfig -h host name[:port id] -n number of lus    -
l luname 1,luname 2,…,luname x
```

A sample execution of tnconfig is as follows:

```
tnconfig -h tnsna -n 32 -l lu1,lu2,…,lu32
```

4. **ONLY, if it is required,** to use TN5250 sessions with specific DEVICE NAMES, on one host, execute **tnconfig** by entering the following command, and then **proceed to step 9:**

```
#tncnfig –h host name[:port id] –n number of lus –l
IBM-3180-2,IBM-3477-FC,…,IBM-3477-FG –p 5
```

A sample execution of tnconfig is as follows:

```
tnconfig –h tnsna –n 24 –l IBM3180-2,IBM-3477-
FC,…,IBM-3477-FG –p 5
```

5. **ONLY, if it is required,** to use TN3270 sessions from pools of lus on multiple hosts, execute **tnconfig** by entering the following command, and then **proceed to step 9:**

```
# tnconfig -h host name 1[:port id],host name 2[:port
```

```
id],…,host name x[:port id] -n number of lus for host
name 1,number of lus for host name 2,…,number of lus
for host name x
```

A sample execution of tnconfig is as follows:

```
tnconfig -h host1,host2,host3 -n 10,12,10
```

6. **ONLY, if it is required,** to use TN5250 sessions from pools of lus on multiple hosts, execute **tnconfig** by entering the following command, and then **proceed to step 9:**

```
# tnconfig -h host name 1[:port id],host name 2[:port
id],…,host name x[:port id] -n number of lus for host
name 1,number of lus for host name 2,…,number of lus
for host name x –p 5,5,…,5
```

A sample execution of tnconfig is as follows:

```
tnconfig -h host1,host2,host3 -n 10,12,2 –p 5,5,5
```

7. **ONLY, if it is required,** to use TN3270 sessions with specfic LU Names on multiple hosts, execute **tnconfig** by entering the following command, and then **proceed to step 9:**

```
# tnconfig -h host name 1[:port id],host name 2[:port
id],…,host name x[:port id] -n number of lus for host
name 1,number of lus for host name 2,…,number of lus
for host name x -l luname 1 for host name 1,…,luname 1
for host name 2,…,luname 1 for host name x,…,luname
for last lu for host name x
```

A sample execution of tnconfig is as follows:

```
tnconfig -h host1,host2,host3 -n 2,4,2
-l lu1h1,lu2h1,lu1h2,lu2h2,lu3h2,lu4h2,lu1h3,lu2h3
```

8. **ONLY, if it is required,** to use TN5250 sessions with specfic DEVICE NAMES on multiple hosts, execute **tnconfig** by entering the following

command, and then **proceed to step 9:**

```
# tnconfig -h host name 1[:port id],host name 2[:port
id],…,host name x[:port id] -n number of lus for host
name 1,number of lus for host name 2,…,number of lus
for host name x -l luname 1 for host name 1,…,luname 1
for host name 2,…,luname 1 for host name x,…,luname
for last lu for host name x –p 5,5,…5
```

A sample execution of tnconfig is as follows:

```
tnconfig –h host52501,host52502,host52503 –n 2,3,2
-l dev1h1,dev2h1,dev1h2,dev2h2,dev3h2,dev1h3,dev2h3
–p 5,5,5
```

9. **If there are specific requirements, not met in steps 1-4,** then configure the TN3270 software by changing the **com.txt** file to the specific requirements and converting the **config** file with the following commands (see the *TN3270 Administration Guide* for assistance on configuration):

```
# cd /opt/tn3270

# cp samples/tnsample.txt com.txt

# vi com.txt

# /opt/tn3270/bin/tncfgtcp com.txt
```

10. Perform an orderly shutdown(eg. **/etc/shutdown –y –g 0 –I 6**) to reboot the Solaris Sparc 8 operating system. Rebooting will start the voice system.

11. Assign Voice@Work application to each Conversant Session ID by entering the following command:

```
# hassign host_application to session_number[s]
```

Sample command:

```
# hassign vmtest to 0-32
```

12. Run the **hstatus** command to check status. The output will display the following:

SESSION	*SNA SERVER*	*Luname*	*SERVICE*	*STATE*
0	**tn_server**	**-**	**Vmtest**	**Loggedin**
(voice Channel)	(name or IP address)	(N/A)	(script builder script)	(current state)

TN3270/TN5250 Removal

1. Login in as *root*.

2. Remove the CLEOTDIP6 by entering the following command:

   ```
   # pkgrm CLEOTDIP6
   ```

3. If the CLEOTDIP3, CLEOTDIP4, or CLEOTDIP5 package was previously installed, remove them by entering the following commands:

   ```
   # pkgrm CLEOTDIP5

   # pkgrm CLEOTDIP4

   # pkgrm CLEOTDIP3
   ```

4. If the CLEOTDIP package was previously installed, remove CLEOTDIP by entering the following command:

   ```
   # pkgrm CLEOTDIP
   ```

5. If the CleoTDIP package was previously installed, remove CleoTDIP by entering the following command:

   ```
   # pkgrm CleoTDIP
   ```

6. If the Cleotdip package was previously installed, remove Cleotdip by entering the following command:

   ```
   # pkgrm Cleotdip
   ```

   Note: When Cleotdip is removed, kernel tuning may take place.

7. If the Cleotndip package was previously installed, remove Cleotndip by entering the following command:

   ```
   # pkgrm Cleotndip
   ```

Note: When Cleotndip is removed, kernel tuning may take place.

8. If the Ctnhdip package was previously installed, remove Ctnhdip by entering the following command:

```
# pkgrm Ctnhdip
```

Note: When Ctnhdip is removed, kernel tuning may take place.

9. If the vstndip package was previously installed, remove vstndip by entering the following command:

```
pkgrm vstndip
```

Note: When vstndip is removed, kernel tuning will take place.

10. Terminate any running instances of the TN3270/TN5250 product by entering the following command:

```
# /opt/tn3270/bin/tnstop3270
```

11. Remove the Cleo TN3270/TN5250 by entering the following command:

```
# pkgrm cleotn
```

12. Perform an orderly shutdown(eg. **/etc/shutdown –y –g 0 –I 6**) to reboot the system.

APPENDIX A. CONVERTING IVR DESIGNER CAPTURE FILES

CONVERTING EXISTING IVR DESIGNER or VOICE@WORK SCREEN CAPTURE FILES

Cleo provides 2 forms of Host Screen Capture capability that can be used by IVR Designer or Voice@Work developers(see APPENDIX G. for details). Both a command line utility and a graphical utility. The utilities allow a developer the ability to capture Host screens. The screen captures can then be used to define screen identifiers and screen fields to be used by the developer's IVR Designer or Voice@Work application.

Additionally, the Cleo utility, "hispy/cleoispy" (see APPENDIX C. for details) allows a developer to capture screens dynamically, while an application is running on a Host Session. The dynamically captured screens are appended to the IVR Desinger Screen or Voice@Work Capture files.

Cleo provides the 2 forms of Host Screen Capture and the "hispy" utility on the Avaya IR platform.

There may be a need to port existing IVR Designer or Voice@Work host applications to the Avaya IR platform.

Cleo provides a utility program

cleo_conv applname

to be used to port the Cleo screen capture files from an existing(Conversant V6, V7, or V8) IVR Designer or Voice@Work Host Application to the Avaya IR Platform. The Cleo Screen Capture files are:

When using Cleo's command line Screen Capture utility or Graphical

Screen Capture utility

/vs/data/host/applname.sc

/vs/data/host/applname.nam

/vs/data/host/applname.sc.wk

/vs/data/host/applname.nam.wk

Will be converted, in place, in the

/vs/data/host

directory.

Cleo also provides a utility program

cleo_convback applname n (where "n" is the version 6, 7, 8)

to be used to port the Cleo screen capture files back to the original Conversant Version V6, V7, or V8, format.

The converted files are stored as new files

When using Cleo's command line Screen Capture utility or graphical Screen Capture utility

/vs/data/host/applname.sc.Vn (where "n" is 6, 7, or 8)

/vs/data/host/applname.nam.Vn (where "n" is 6, 7, or 8)

/vs/data/host/applname.sc.wk.Vn (where "n" is 6, 7, or 8)

/vs/data/host/applname.nam.wk.Vn (where "n" is 6, 7, or 8)

APPENDIX B. CONVERTING SCRIPT BUILDER CAPTURE FILES

CONVERTING EXISTING SCRIPT BUILDER SCREEN CAPTURE FILES

Script Builder development is not supported on the Avaya IR Platform. However, Script Builder applications can be brought to the Avaya IR Platform from older existing Conversant Platforms.

Cleo provides the utility, "hispy/cleoispy"(see APPENDIX C. for details) that allows a Script Builder Developer to capture screens dynamically, while an application is running on a Host Session. The dynamically captured screens are appended to the Script Builder Screen Capture file.

Even though a screen captured on a Avaya IR system using "hispy/cleoispy" can not be used for Script Builder Development on the Avaya IR system, it is possible to use the newly captured screen on an existing Conversant V6, V7, or V8 system to modify/enhance a Script Builder application, that can be subsequently ported back over to the Avaya IR platform.

Cleo provides a utility program

cleo_conv applname

to be used to port the Cleo screen capture file from an existing(Conversant V6, V7, or V8) Script Builder Host Application to the Avaya IR Platform. The Cleo Screen Capture file is:

/att/trans/sb/applname/applname.sc

The Screen Capture file will be converted to the Avaya IR platform in place. The original file is stored in

/att/trans/sb/applname/applname.sc.org

Once the Screen Capture file is converted to the Avaya IR platform, it can be used with the Cleo "hispy/cleoispy" utility to capture new screens on the Avaya IR platform. Then those new screens can be used to modify/enhance a Script Builder application on an older Conversant V6, V7, or V8 platform.

To allow new screens captured on the Avaya IR platform to be ported back to a Conversant platform, Cleo provides a utility program

cleo_convback applname n (where "n" is the version 6, 7, or 8)

to be used to port the Cleo screen capture file back to the original Conversant Version V6, V7, or V8 format.

The converted file is stored as a new file

/att/trans/sb/applname/applname.sc.Vn (where "n" is 6, 7, or 8)

APPENDIX C. NEW "H" COMMANDS

NEW “H” COMMAND “hrfree”

The “hrfree” command is identical to the standard “hfree” command, except that it ONLY allows a Host Session to be placed in a “free” state, if the Host Session is STILL in a “logged in” state when the “hrfree” command is executed.

Before the “hrfree” command was created, a “hfree” command could FREE a Host Session that had just started into the “transaction” state processing a caller’s request. The “hrfree” command was created to avoid this occurrence. The reason being that many developers create scripts that look for “logged in” sessions and then try to free them to manipulate screens in order to prevent a Mainframe IDLE TIMEOUT. A timing window existed with the “hfree” command that could free a Host Session that was doing work for a caller.

NEW “H” COMMANDS “hispy” and “cleoispy”

The “hispy” command allows a developer to interactively “spy” and “interact” with an assigned Host Session. As well as “capture” new Host Screens.

The “cleoispy” command is identical to “hispy”, except that FUNCTION KEYS are not needed to execute the PF1-PF24, and PA1-PA3, 3270 commands. This should help developers dialing into the Avaya IR system using emulators that do not support Function Keys.

The “hispy” or “cleoispy” command can be executed from the Solaris

Sparc 8 command line as follows:

hispy n

cleoispy n

(Where: "n" is a single Host Session ID or Host Session ID range (eg. 0-10)

The **"hispy" and "cleoispy"** command will do the following for each Host Session ID specified:

1. Display the following message and then launch "sb_te" with the appropriate arguments to allow the user to **CAPTURE** any screen displayed by simply entering an **"ESC B"** key sequence.

2. The **CAPTURED** screen is **APPENDED** to the Screen Capture file of the Voice@Work or Script Builder application's screen capture file(s)

   /vs/data/host/appl.sc & appl.nam for V@W

   /att/trans/sb/appl/appl.sc for Script Builder

   of the Application currently assigned to the specified Host

   Session ID.

NOTE: If **NO** screen capture file(s) exist, for the Application, any Screen Captures will be placed in new screen file(s)

/vs/trans/appl.sc

/vs/trans/appl.nam (for Voice@Work only)

3. The **CAPTURED** screen can then be used later, by the Application Developer, to define Screen Identifiers and Fields of the screen and call flow **recovery, login, logout, or transaction** processing.

4. When the user is placed into the **sb_te** program by the **"hispy/cleoispy"** program, all the features of **"sb_te"** are available to **NAVIGATE** through the Host Application screens, **AND CAPTURE SCREENS** along the way.

5. When finished **INTERACTING/CAPTURING** screens in **sb_te,** use the **CTRL-X** key sequence to exit from the currently specified Host Session ID.

6. The **hispy/cleoispy** command will exit after the Last/Only Host Session ID is exited with the **CTRL-X** key sequence.

7. The **hispy/cleoispy** command can be entered **NO MATTER WHAT STATE** an **ASSIGNED** Host Session ID is in.

8. When the **hispy/cleoispy** command is processing an **ASSIGNED** Host Session ID, the **HOST DIP**(/vs/bin/vrs/agdip3270) is not able to access that Host Session ID.

9. The **hispy/cleoispy** command is mainly intended to help Application Developers debug problems with the Host Interface portion of Voice Applications.

   Therefor, **hispy/cleoispy** will allow the Developer full freedom to manipulate a Host Session ID. If such manipulation results in placing a Host Session ID in an "awkward/broken/confused" state, please feel free to use the **hfree/hassign** commands to

FIX such problems.

10. The **hspy** command is still available to simply display the current screen of an assigned Host Session ID.

11. Typical uses of **"hispy/cleoispy"** are :

    - Capture an **UNRECOGNIZED** error screen that was never encountered before.

    - Capture screen(s) that were never encountered before until a non-common call flow was taken by the caller.

    - Navigate through Host Application Screens, capturing screens along the way, to define a **"recovery"** sequence to add to the current Application.

    - Test/develop Host call flows during development.

APPENDIX D. HOST DIP PARAMETERS

Host DIP PARAMATERS Configuration File

/vs/etc/default/agdip3270

The Host DIP Parameters Configuration File, contains parameters that can change how the Host DIP operates.

The /vs/etc/default/agdip3270 configuration file is read each time the Host DIP is started/re-started.

The Host DIP is started/restarted whenever:

The system is rebooted

"start_vs" is run

"start_hi" is run

The agdip3270 process is killed while Voice System is active

Some of the Host DIP Parameters were either turned on or off by specifying "YES" or "NO" as a value for the paramater. With the Host Interface for Avaya IR , numerics have replaced "YES" and "NO".

1 for **YES**

0 for **NO**

The default version of the Host DIP Parameters Configuration File is shown below:

/vs/etc/default/agdip3270

```
#
# Default values for the "agdip3270" daemon
process.

# SESSIONS_TO_START determines how many sessions
#will be sending or
# getting screens at any one time per host3270
board.
# The default is to have the maximum of 32 sessions
#concurrently
# interacting with the host.
SESSIONS_TO_START=32

# LOGOFF_TIMEOUT specifies the maximum amount of
#time stop_vs will
# wait for any active sessions to be logged out
#when the voice system
# is being stopped.
LOGOFF_TIMEOUT=60

# MAX_NUMBER_OF_LUS specifies the maximum number of
#LUS that
# can be configured for a system.
MAX_NUMBER_OF_LUS=32

#it allows the host dip to send reset key when the
#lu is input inhibited; and
#the host dip to send system request key when the
#screen is SSCP or UNOWNED.
# DEFAULT IS 0 (NO)
AUTORESET_LUS=0

# The amount of time to pause after getting a
#response from the host.
# This parameter is only in effect during the
#login, logout, or
# recover sequences.
# No pausing is done while the LU is handling a
```

```
#call.
# Setting this parameter to zero, will turn off
#pausing completely.
PAUSE_BETWEEN_SCREENS=5

# The number of RECOVERY RETRIES to do before Doing
#A POWER OFFON.
# Will do the POWER OFFON every multiple of this
#many RECOVERY #RETRIES.
RETCOUNT_TODO_POWEROFF=5
# The amount of STAGGER time between RECOVERING LUS
#to be RESSTARTED.
#STAGGER_BETWEEN_RETRIES=5

# Whether or NOT to do a POWER OFFON sequence
#instead of a SYS REQ AID KEY.
# Default is 0 (NO) Set to 1(YES) To use POWEROFF.
#SYSREQ_IS_POWEROFF=1

# Do Special UNFORMATTED SCREEN HANDLING.  Some
#UNFORMATTED screens do not
# allow a CLEAR KEY.  To work around this problem
#define a SCREEN with a
# FIELD NAME that has as part of the name the
#string "unformat_f".
# When a SCREEN with a FIELD NAME CONTAINING
#"unformat_f" is encountered,
# the DIP does a ERASE TO END OF FIELD command and
#then positions the
# cursor at 1,1.
# Default is 0 (NO)
#DO_UNFORMAT_SCR_SPECIAL=1

# Do EOF(Erase to End of Field) from Beginning of
#current field.  To do
# this must name a field with the string
#"EOF_begin" imbedded in the name.
# Default is 0 (NO)
#DO_EOF_BEGIN_FIELD=1
```

```
# Do EOF from where cursor is in current field.  To
#do this must name a
# field with the string "EOF_current" inbedded in
#the name.
# Default is 0 (NO)
#DO_EOF_CURRENT_FIELD=1

# Do HARDFAIL recovery logic.  Default is 1 (YES).
#HARD_FAIL_RECOVERY=0

# HARDFAIL Retry Timer.  Default is 300 seconds.
#HARDFAIL_RETRY_TIME=600

# WRONG SCREEN ACTION.  If encounter a WRONG
#SCREEN, If
#      ACTION = 0    Handle as always
#      ACTION = 1    Send Screen even if on wrong
#screen
#      ACTION = 2    Force LU into recovery(not
#implemented yet)
#WRONG_SCREEN_ACTION=1

# IF Need to do RESERVE of LU across Applications while
#processing 1
# transaction, then set
# DO_VXML_MULTIPLE_TRANS=1
# This means exiting an application during a call won't
#leave transaction state.
# DEFAULT is DO_VXML_MULTIPLE_TRANS=0
#DO_VXML_MULTIPLE_TRANS=1

#
# IF doing 5250 and need to use AID KEY PAGE UP, USE
#SELPEN AID KEY instead
# and set PGUP_IS_SELPEN=1.  Default is PGUP_IS_SELPEN=0
#PGUP_IS_SELPEN=1

# IF doing 5250 and need to use AID KEY PAGE DOWN, USE
#ATTENTION AID KEY instead
# and set PGDWN_IS_ATTN=1  Default is PGDWN_IS_ATTN=0
#PGDWN_IS_ATTN=1
```

```
# If doing 5250 and need to use TABs.  For example to TAB
#out of a field
# in order to do a Function Key.  Then Turn on PA1 to be
#N TABs,
# PA2 to be N TABs, and PA3 to be N TABS.  The default
#for all 3 options
# is OFF, a value of zero(0).
#PA1_IS_TAB = 1
#PA2_IS_TAB = 2
#PA3_IS_TAB = 3

# If doing 5250 and need to filter out all attributes,
#but unprotected fields,
# set FILTER_ATTR=1.  Default is FILTER_ATTR=0
#FILTER_ATTR=1

# If need to stagger hassign, hlogout, hlogin set
#STAGGER_TIME = 1
# Default is STAGGER_TIME = 0
#STAGGER_TIME=1

# If need to position cursor before send AID KEY, set
#DO_MOVE_CURSOR = 1
# Default is DO_MOVE_CURSOR = 0
# ALSO, Must have the string MOVECURSOR in the name of
#your field to make
# this option take affect.
DO_MOVE_CURSOR=1

# If need to stop Host DIP from placing messages in Avaya
# display messages buffer, and thus STOP ALARMS from
# being set
# then set DO_NOALARM = 1
# Default is DO_NOALARM = 0
#DO_NOALARM=1

# NOTE NOTE NOTE NOTE:  IF DOING ANY OF THE
#UNCOMMENTED NEW FEATURES,
#                        MUST INCLUDE THEM IN THE
#ORDER SHOWN!!!!
```

APPENDIX E. TNCONFIG

TNCONFIG

The ***tnconfig*** command has the following options:

[-T TERMTYPE]

> **Optional parameter** to specify a TN3270 Terminal Type to Use or a TN5250 Device Name to use. This sets the Environment Variable OVERRIDE_TN3270_TERM to the value of **TERMTYPE**.

[-NE]

> **Optional parameter** to override the default of using TN3270 Extentions Mode or TN5250 Environment Mode. If **–NE** is specified, then negotiations with TN SERVERS will not use TN3270 Extentions or TN5250 Environment Mode.

-h hostname*1*,hostname*2*,…,hostnam*n*

> **Mandatory parameter.**
> Each comma separated argument is an /etc/hosts entry or DNS name entry that points to a TNSERVER.
> There must be a corresponding **–n** arg ument for each **–h** Argument.
> If TN5250 is to be used for any of the **–h** arguments, then there must be a corresponding **–p** argument, also.

-n number lus for hostname*1*,number lus for hostname*2*,…,number of lus for hostname*n*

Mandatory parameter.

Each comma separated argument is the number of LUs to use for the corresponding –h argument.

[-p 3|5,3|5,…,3|5]

WHERE: 3 is used to denote TN3270 protocol and
5 is used to denote TN5250 protocol.

Optional parameter if using TN3270 protocol for all –h arguments.

Mandatory parameter if using TN5250 protocol for any -h arguments.

If –p is used, there must be an argument supplied for every corresponding **–h** argument.

[-l 3270specificLUname*1*|5250devicename*1*,3270specificLUname*2*|5250devicename2,…,3270specificLUname*n*|5250devicename*n*]

Optional parameter.

Each comma separated argument is either a specific LU name for TN3270 or a device name for TN5250. There will be an entry for every LU on every host/TNSERVER connection.

[-t seconds]

WHERE: *seconds* is the number of seconds to delay before trying to re-connect an LU, when a host connection fails.
The environment variable
SNA3270_RETRY_TIME
is set to the value of the ***seconds*** argument.

Optional parameter. 5 seconds is the default value.

The environment variable
SNA3270_RETRY_TIME
is set to the value of the ***seconds*** argument.

[-a seconds]

WHERE: ***seconds*** is the number of seconds to use for DIP HLLAPI no-response from emulator failure value

Optional parameter. **1 second** is the default value.

APPENDIX F. Saving Configuration Information

SAVING OLDER VERSION CONFIGURATION INFORMATION

If you were using an older version of the Cleo Host Interface for TCP/IP package, you would have run the command

tnconfig

If you elect to remove the older version(s) of the CLeo Host Interface for TCP/IP Software package(***vstndip, Ctnhdip, Cleotndip, Cleotdip, CleoTDIP, CLEOTDIP, CLEOTDIP3***, ***CLEOTDIP4, CLEOTDIP5*** you can obtain the information necessary to re-run the ***tnconfig*** command after installing this new version of ***CLEOTDIP6.***

NOTE: If you already have vstndip, Ctnhdip, Cleotndip, Cleotdip, CleoTDIP, CLEOTDIP, CLEOTDIP3, CLEOTDIP4, or CLEOTDIP5 installed, you do not have to remove it before installing, *CLEOTDIP6.*

You will need to determine the following parameters, in order to re-run the ***tnconfig*** command.

1. **Determine how many Host/TNSERVER connections were being used**

   ```
   # ls -l /etc/opt/tn3270/tn3270-*a.txt
   ```

   If you were using only 1 connection, you would only see the file ***tn3270-1a.txt*** listed.

   If you were using more than 1 connection, you would see multiple files of the form ***tn3270-na.txt.*** Where ***n's*** highest value is the number of connections to use.

2. **Determine the host name/ip address of each Host/TNSERVER connection that was used.**

   ```
   # grep "domain = " /etc/opt/tn3270-*a.txt
   ```

   The host name/ip addresses of each Host/TNSERVER connection will be listed.

3. **Determine the total number of LUs that were configured.**

   ```
   # grep "MAX_NUMBER_OF_LUS="
   /vs/etc/default/agdip3270
   ```

   The maximum number of LUs will be the number listed.

   If you are only using 1 Host/TNSERVER connection(value of ***n=1*** in step 1 above), use the ***MAX_NUMBER OF LUS*** value for the value of the ***tnconfig*** command's parameter "-n number of lus".

4. **Determine the number of LUs for multiple Host/TNSERVER connections.**

   Examine the file ***/vs/bin/util/tnstart.***

   Each Host/TNSERVER connection will have a line like the following:

   ```
   /opt/tn3270/bin/tncfgtcp /etc/opt/tn3270/tn3270-na.txt
   ```

   Following this line will be 1 or more invocations of the tn3270 emulator. For example:

   ```
   /opt/tn3270/bin/tn3270 -s /vs/bin/data/synchost/tn3270-
   0.stu -B -a 1 -h0x2,0x3,0x4,0x5,0x6,0x7,0x8,0x9,0xa,0xb
   ```

   Count the total number of LUs following the "***-h"*** argument for each tn3270 invocation. That total will be the value of the ***tnconfig*** command's parameter "-n number of lus" for the particular Host/TNSERVER connection.

5. Determine if the LUs are from a POOL or are SPECIFC LU NAMES used.

```
# grep "\-l" /vs/bin/util/tnstart
```

If the "***-l***" switch is not used anywhere in the /vs/bin/util/tnstart file, then POOLED LUs are being used. No further information is needed to run the ***tnconfig*** command.

If ***"-l"*** is used in the /vs/bin/util/tnstart file, then the SPECIFIC LU NAMES to use with the ***tnconfig*** command.

APPENDIX G. Cleo Screen Capture

Cleo Screen Capture Command Line

The "screen_capture" command allows an IVR Designer developer to capture Host Screens, interactively, that can later be used to define Host Identifiers and Host Fields when creating the Host definitions in an IVR Designer Application.

The "screen_capture" command has the following options:

screen_capture –session x –app applname

Where: ***x*** – is a Host Session(0-254)

applname – is an IVR Designer Application

The "screen_capture" command functions as a Terminal Emulator. The ***ESC B*** keystroke can be used to capture a particular screen and append it to the screen capture file.

Please see the "Cleo Host Interface Screen Capture Utility" document, that is located on the Cleo Communications website(cleo.com), for more detailed information about the "screen_capture" command.

Cleo Screen Capture Graphical Utility

The Cleo Screen Capture Graphical Utility is a Java based program. The program can be downloaded from the Cleo website(cleo.com).

Please see the "Cleo Host Interface Screen Capture Utility" document, on the Cleo website, for more detailed information about the graphical Screen Capture utility.

APPENDIX H. Cleo VXML External Functions

Introduction

Cleo has developed 2 External Functions that can be used by an IVR Designer Host Application to allow an Application Developer the ability to reserve a Host Session and then determine when to release the Host Session(LU).

The 2 External Functions were developed for use with VXML applications that have a need to use an IVR Designer Host Application, by invoking *CallScript* to activate the Host Application. The Host Application uses the External Function *Ret2vxml.*

When the IVR Designer Host Application is called, the VXML application can pass arguments. One of the arguments could indicate to the Voice Application that it needs to Reserve a Host Session(LU) or Release a Host Session(LU).

If a Reserve Host Session(LU) is not done, then each time the Host Application is invoked, a different Host Session(LU) could be used and the Host Application would have to navigate back to the "transaction" based screen each time it is invoked.

To allow an IVR Designer Host Application to use the same Host Session(LU) when it is called multiple times by a VXML Application, the following 2 External Functions were developed.

Cleo External Function *Cleoresrvlu*

The ***Cleoresrvlu*** function instructs the Cleo Host DIP(DIP0) to reserve a Host Session(LU) for the input application name and voice channel, until a ***Cleorelslu*** function is called.

A successful call to this function results in the Host Session(LU) being exclusively associated with the caller's input voice channel, and the Host

Session(LU) is returned to the caller.

The ***Cleoresrvlu*** function is called with the following arguments:

Hostapp(In/Str) – Name of IVR Designer Host Application.

Channel (In/Number) = Voice Channel

LUnum (Out/Number) = LU number/Host Session reserved.

Cleo External Function *Cleorelslu*

The *Cleorelslu* function instructs the Cleo Host DIP(DIP0) to release a Host Session(LU) for the input voice channel. A successful call to this function results in the Host Session(LU) being released.

The *Cleorelslu* function if called with the following arguments:

Channel (In/Number) = Voice Channel

Copying External Functions *Cleoresrvlu* and *Cleorelslu* to IVR Designer Desktop

The *Cleoresrvlu* and *Cleorelslu* functions are located in the /cleo/install directory on the AIR system.

The following files need to be ftp'd to the IVR Designer Desktop, in order to use these external functions with an IVR Designer Host Application. The files on the AIR system are:

C:\Program Files\Avaya\Avaya IVR Designer\ExtFuncs

/cleo/install/Cleoresrvlu.bmp

/cleo/install/Cleoresrvlu.ef

/cleo/install/Cleorelslu.bmp

/cleo/install/Cleorelslu.ef

These files need to be placed in the following directory on the IVR Designer Work Station PC:

C:\Program Files\Avaya\Avaya IVR Designer\ExtFuncs

LEARNING MORE ABOUT USING VXML WITH IVR DESIGNER HOST APPLICATIONS

Please see the vxmlusage.pdf PDF File for more information.