Cleo® Host Interface for SNA V 4.6 for AVAYA IR® R4.0/R3.0/R2.X/R1.X Quick Start Guide

This Quick Start Guide contains information about installing the 6.0.7.15 version of Cleo SNA software(cleosna64 - for Avaya's IR, R4.0/R3.0/R2.X/R1.X Systems), and Host DIP Version 4.6(CLEOSDIP6), on a Solaris Sparc 8 or Solaris Sparc 10 Operating System.

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.

June 2009

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Document No: 6512099
Version: 1.0

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SNA 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)
- 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 SNA Host Interface, 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 V4.6 Software determines the version of the Avaya IR Software installed, as well as the Solaris Sparc Version, 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 for Solaris Sparc 8 or R4.0/R3.0/R2.X 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 SNA 3270 from CD

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

   ```
   # stop_vs

   # stop_hi
   ```

2. Insert the Cleo Host Interface for Avaya IR® V4.6 CD into the CD ROM drive. If the CD ROM drive is already in use, use the "FILE MANAGER" utility and select FILE and EJECT to make the CD ROM drive available.

3. Start the Installation of the SNA 3270 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 <cleosna64>

[y,n,q]

```
# pkgadd -d /cdrom/cdrom0/cleosna64

# pkgadd -d /cdrom/cdrom0/cleodocs  (optional
                                    documentation)
```

NOTE:

The Cleo Host Interface CD contains PDF documentation for SNA in the following directory:

docsPDF

The Cleo Host Interface CD contains HML documentation for SNA in the following directory:

docs_sna

The Cleo Host Interface CD also contains text files

quickstart-sna.txt

relnotes.txt

The Cleo Host Interface CD also contains Word files

quickstart-sna.doc

relnotes.doc

ONLY IF USING SNA over SDLC!!!!: Installing the Sun X1355A-2 Adapter

1. This should only be done if you will be installing a Sun X1355A-2 High Speed Serial Adapter in the Avaya IR system to use Cleo's SNA software via an SDCL connection to the mainframe.

2. Shutdown the Avaya IR system.

3. Install the X1355A-2 Adpater in the Avaya IR system in a PCI slot.

4. Reboot the Avaya IR system.

5. Download the Sun HSI/P 3.1 Drivers, man pages, and utilities software from the www.sun.com website:

   From www.sun.com

   Choose "Downloads"

   Choose "Hardware Drivers"

   Choose "HSI/P 3.1" from "Network Devices"

6. Place the 3 install file systems(directories) on the Avaya IVR Solaris system, in the /export directory.

SUNWhsip	(Drivers)
SUNWhsipm	(Manual Pages)
SUNWhsipu	(HSIP utilities)

7. Install all 3 packages

   pkgadd –d /export/SUNWhsip

   pkgadd –d /export/SUNWhsipm

pkgadd –d /export/SUNWhsipu

8. Reboot the Avaya IR system, before continuing on to the next step.

   cd /

   shutdown –y –g0 –i6

Installing the CLEOSDIP6 (Voice System DIP Using SNA) Software from CD

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(vssnadip, Csnahdip, Cleosndip, Cleosdip, CleoSDIP, CLEOSDIP, CLEOSDIP3, CLEOSDIP4, CLEOSDIP5), you may want to review Appendix I. to save your current configuration information. The installation of CLEOSDIP6 will preserve current configuration data, however, it is recommended to save existing configuration data, in case a problem occurs.

3. Install CLEOSDIP6 by entering the following command:

   ```
   # pkgadd -d /cdrom/cdrom0/CLEOSDIP6
   ```

   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 <CLEOSDIP6> [y,n,q]

   Note: When CLEOSDIP6 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 operating system at this time. You must first complete *Instructions for Installing License and Basic Instructions for Configuring the SNA and CLEOSDIP6* before rebooting the system.

Note: If you are using VXML, with your IVR Designer Voice Application, please see either of the following documents, that are included with the CPIO image.

vxmlusage.doc or 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 L**. 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 ***snaaddlic*** command.

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

```
# /opt/sna/bin/snaaddlic

Please enter the Cleo SNA 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
```

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 Configuring the SNA and CLEOSDIP6 Software"***

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

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

The Cleo SNA 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
SNA Serial Number to the value

                ==➔ 123456 ←==

?[y/n]

y
```

Basic Instructions for Configuring the SNA and CLEOSDIP6 Software

Installation of the Cleo SNA software is now complete.

In order to configure the type of SNA Host Connection to use, and configure the number of SNA3270 sessions to use, please use the ***"snaconfig"*** program.

There are 3 types of SNA Host Connections.

- SNA over ETHERNET(LLC2)
- SNA over SDLC

SNA over ETHERNET(LLC2)

1. Edit the default **SNA ETHERNET** CONFIGURATION TEXT file(/etc/opt/sna/snaeth.txt) supplying your Host system's specific parameters. Note: See Appendix A, for a definition of the Host Configuration Parameters in the **SNA ETHERNET** CONFIGURATION TEXT file. See Appendix B, for the file's default values.

   For example if your Host's Remote Mac Address is 400012345678 modify the line of the file to look like this:

   ```
   MAC_ADDR=400012345678
   ```

2. Edit the default **SNA ETHERNET** CONFIGURATION TEXT file to specify the LU(3270 sessions) range and number of LUs to use. For example, to use 32 LUs modify the last 2 lines of the file to look like this:

   ```
   LU_RANGE=2-33

   SESSIONS=32
   ```

3. Update the Cleo SNA Software's configuration using the following command:

```
# snaconfig –E

where –E specifies Ethernet configuration
```

4. Then go to the **"System Shutdown"** section.

SNA over SDLC

1. Edit the default **SNA SDLC** CONFIGURATION TEXT file(/etc/opt/sna/snasdlc.txt) supplying your Host system's specific parameters. Note: See Appendix E, for a definition of the Host Configuration Parameters in the **SNA SDLC** CONFIGURATION TEXT file. See Appendix F, for the file's default values.

   For example if your Host's Poll address is "C5" modify the line of the file to look like this:

   POLL_ADDR=C5

   It is important to specify the correct "CARD TYPE" also. For example if your Avaya IR R1 systems is using a HSI PCI serial card, then modify the last line of the file to look like this:

```
CARD_TYPE=SPARC_HSI_PCI_SDLC
```

   For more specific information about the Sun HSI/PCI serial card see **Appendix J.**

2. Edit the **SNA SDLC** CONFIGURAION TEXT file to specify the LU(3270 sessions) range and number of LUs to use. For example, to use 32 LUs modify the 2 lines of the file to look like this:

```
LU_RANGE=2-33

SESSIONS=32
```

3. Update the Cleo SNA Software's configuration using the following

command:

```
# snaconfig –S

where –S specifies SDLC configuration
```

4. Then go to the **"System Shutdown"** section.

System Shutdown

1. Use the UNIX shutdown command to shut down the system.

```
# cd /

# /etc/shutdown –i6 –g0 –y
```

2. When the shutdown is complete, reboot the system.

3. Please see Appendices E & F for information on converting existing Screen Capture Files to the new Avaya IR platform.

4. Please see Appendix G for information about new “h” commands supplied with this Cleo Host Interface Version 3.0 software release.

5. Please see Appendix H for information about Host DIP configuration parameters.

Removing SNA Software

1. Login in as *root*.

2. Remove the CLEOSDIP6 by entering the following command:

   ```
   # pkgrm CLEOSDIP6
   ```

3. If the CLEOSDIP3, CLEOSDIP4, or CLEOSDIP5 package was previously installed, remove one of these packages by entering the following commands:

   ```
   # pkgrm CLEOSDIP3

   # pkgrm CLEOSDIP4

   # pkgrm CLEOSDIP5
   ```

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

   ```
   # pkgrm CLEOSDIP
   ```

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

   ```
   # pkgrm CleoSDIP
   ```

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

   ```
   # pkgrm Cleosdip
   ```

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

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

```
# pkgrm Cleosndip
```

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

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

```
# pkgrm Csnahdip
```

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

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

```
# pkgrm vssnadip
```

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

10. Terminate any running instances of SNA 3270 by entering the command:

```
# /opt/sna/bin/stop3270
```

11. Remove the Cleo SNA by entering the following command:

```
# pkgrm cleosna64
```

12. Perform an orderly shutdown(eg. **/etc/shutdown –i6 –g0 -y**) to reboot the system.

APPENDIX A.

HOST CONFIGURATION PARAMETERS

The PARAMETERS defined in the "/etc/opt/sna/snasdlc.txt, or /etc/opt/sna/snaeth.txt" file are:

NOTE: There should be NO spaces around the "=" signs in the /etc/opt/snaxxxx.txt files.

SNA_TYPE=S | E

Where **S**=SNA over SDLC

E=SNA over ETHERNET

PORT_NUM=1 | 2 | 3 | 4

Where **1** corresponds to

SDLCP0 for SDLC (note the Link Station will be **SDLCL0**)

ETSAP0 for Ethernet (note the Link Station will be **ETHL0**)

2 corresponds to

SDLCP1 for SDLC (note the Link Station will be **SDLCL1**)

ETSAP1 for Ethernet (note the Link Station will be **ETHL1**)

3 corresponds to

SDLCP2 for SDLC (note the Link Station

will be **SDLCL2**)

ETSAP2 for Ethernet (note the Link Station will be **ETHL2**)

4 corresponds to

SDLCP3 for SDLC (note the Link Station will be **SDLCL3**)

ETSAP3 for Ethernet (note the Link Station will be **ETHL3**)

MAXDATA=dddd

Where **dddd** is the decimal value for MAXDATA

XIDS=0xnnnnnnnn

Where **0xnnnnnnnn** is the 8 digit Hexadecimal **IDBLK/NUM** to send

XIDR=0xnnnnnnnn

Where **0xnnnnnnnn** is the 8 digit Hexadecimal **IDBLK/NUM** to receive

LINE_TYPE=LEASED | SWITCHED (SDLC ONLY)

DUPLEX=HALF | FULL (SDLC ONLY)

ENCODING=NRZ | NRZI (SDLC ONLY)

CONSTANT_RTS=Y | N (SDLC ONLY)

POLL_ADDR=hh (SDLC ONLY)

Where **hh** is the 2 digit Hexadecimal Polling Address(eg. C1)

LOCAL_SAP=hh (Ethernet ONLY)

REMOTE_SAP=hh (Ethernet ONLY)

Where **hh** is the 2 digit Hexadecimal Remote **SAP**

MAC_ADDR=xxxxxxxxxxxx (Ethernet ONLY)

Where **xxxxxxxxxxxx** is the 12 digit Hexadecimal Remote Mac Address

FLIP=Y | N (Ethernet ONLY)

Where **Y** will flip the MAC_ADDR bytes.

LU_RANGE=x-y

Where **x** is starting LU number and **y** is ending LU number(eg LU_RANGE=2-129)

SESSIONS=d

Where **d** is the total number of Sessions/LUs to use(eg 128).

APPENDIX B.

DEFAULT VALUES for SNA ETHERNET CONFIGURATION TEXT FILE

SNA_TYPE=E

PORT_NUM=1

MAXDATA=1033

XIDS=0x05DFFFFF

XIDR=

LOCAL_SAP=04

REMOTE_SAP=04

MAC_ADDR=400000000000

FLIP=Y

LU_RANGE=2-129

SESSIONS=128

APPENDIX D.

DEFAULT VALUES for SNA SDLC CONFIGURATION TEXT FILE

SNA_TYPE=S

PORT_NUM=1

MAXDATA=265

XIDS=0x05DFFFFF

XIDR=

LINE_TYPE=LEASED

DUPLEX=HALF

ENCODING=NRZ

CONSTANT_RTS=N

POLL_ ADDR=C1

LU_RANGE=2-129

SESSIONS=128

CARD_TYPE=SPARC_HSI_PCI_SDLC

APPENDIX E.

CONVERTING EXISTING VOICE@WORK or IVR DESIGNER SCREEN CAPTURE FILES

Cleo provides 2 forms of Host Screen Capture capability that can be used by Voice@Work or IVR Designer developers. 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 Voice@Work or IVR Designer application.

Additionally, the Cleo utility, "hispy/cleoispy" (see APPENDIX G. 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 Voice@Work or IVR Desinger Screen 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 Voice@Work or IVR Designer 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) Voice@Work or IVR Designer Host Application to the Avaya IR Platform.

The following files are converted, in place in the /vs/data/host directory by the **cleo_conv** utility:

/vs/data/host/applname.sc

/vs/data/host/applname.nam

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

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

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 following converted files are stored as new files in the /vs/data/host directory by the **cleo_convback** 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 F.

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 G. 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 G.

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 R1 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 H.

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 R1, 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 I.

SAVING OLDER VERSION CONFIGURATION INFORMATION

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

snaconfig

If you elect to remove the older version(s) of the Cleo Host Interface for SNA Software package(***vssnadip, Csnahdip, Cleosndip, Cleosdip, CleoSDIP, CLEOSDIP, CLEOSDIP3, CLEOSDIP4, CLEOSDIP5)***, you can obtain the information necessary to re-run the ***snaconfig*** command after installing this new version of ***CLEOSDIP6.***

NOTE: If you already have vssnadip, Csnahdip, Cleosndip, Cleosdip, CleoSDIP, CLEOSDIP, CLEOSDIP3, CLEOSDIP4, or CLEOSDIP5 installed, you do not have to remove it before installing, *CLEOSDIP6.*

Before removing the older version of the Cleo Host Interface for SNA package(***vssnadip, Csnahdip, Cleosndip, Cleosdip, CleoSDIP, CLEOSDIP, CLEOSDIP3, CLEOSDIP4, CLEOSDIP5)***, you should save your SNA CONFIGURATION TEXT FILE:

/etc/opt/sna/snaeth.txt - SNA over ETHERNET

/etc/opt/sna/snasdlc.txt - SNA over SDLC

Then after installing the ***CLEOSDIP6*** package you can restore the SNA CONFIGURATION TEXT FILE and then run the ***snaconfig*** command.

In case you had to modify either of the SNA Configuration files:

/etc/opt/sna/sna_node.cfg

/etc/opt/sna/sna_domn.cfg

it is recommended that you also save both of the SNA Configuration files before removing the ***vssnadip, Csnahdip, Cleosndip,Cleosdip, ClesSDIP, CLEOSDIP, CLEOSDIP3, CLEOSDIP4, or CLEOSDIP5*** package. Then after installing ***CLEOSDIP6*** you would do the following, where the saved copies of configuration files were saved with the ***.sav*** suffix.

```
#cd /etc/opt/sna

#cp snaeth.txt.sav snaeth.txt

              OR

#cp snasdlc.txt.sav snasdlc.txt
```

Then run the appropriate ***snaconfig*** command.

```
#snaconfig –E (SNA over Ethernet)

#snaconfig –S (SNA over SDLC)
```

If you had to manually modify the SNA configuration files ***sna_node.cfg*** or ***sna_domn.cfg***, then restore those files.

```
#cd /etc/opt/sna

#cp sna_node.cfg.sav sna_node.cfg

#cp sna_domn.cfg.sav sna_domn.cfg
```

APPENDIX J – SUN HSI PCI ADAPTER

This Appendix contains hardware, software, and configuration information for installing and using a SUN HSI PCI Adapter with the Cleo SNA over SDLC Software.

HARDWARE ADAPTER INFORMATION

HSI/P Adapter – High Speed Serial Interface PCI bus Adapter 2.0. The adapter is a PCI card with a 4 RS-449 connector cable. The Sun product number is **X1355A-2.**

HSI/P DRIVER

The Driver can be found on the Solaris 8 and/or 10 Supplemental CD: for Solaris 8

SunHSI_PCI_3.1.

Or the Driver can be downloaded from the Sun website at www.sun.com.

From www.sun.com

Choose “Downloads”

Choose “Hardware Drivers”

Choose “HSI/P 3.1” from “Network Devices”

BLACK BOX CONVERTER

In order to connect RS 232 devices to the SUN HSI/P adapter, it is necessary to install an externally powered RS-449 to RS-232 interface converter to each DB-37 connector on which you intend to connect an RS-232 device.

Cleo has successfully used a Black Box Converter for testing in the Cleo Lab.

Contact information for the Black Box Converter is as follows:

Black Box Corporation

http://www.blackbox.com

http://catalog.blackbox.com/blackbox/Templates/blackbox/mainscreen.asp

A standalone Converter is available

Black Box Part Number: IC456A-R5

as well as a Rack Mount Card

Black Box Part Number: IC456C-R5

The HSI/P DB-37 is a female connector, as well as the RS-232 ports on the Black Box Converter. So a male to male connector converter will be needed as well.

Black Box Part Number: FA460

CLEO SDLC CONFIGURATION FOR THE HSI/P ADAPTER

The **HSI/P** adapter software comes with a utility program that can be used to setup SDLC connection parameters on the adapter. The utility program resides in the following location

/opt/SUNWconn/HSIP/bin/hsip_init

However, it is not necessary to use the **"hsip_init"** utility, directly, since the Cleo "**snaconfig**" utility automatically calls the **"hsip_init"** utility to set the adapter parameters based on the parameters in the Cleo SDLC Configuration Text File(/etc/opt/sna/snasdlc.txt). The following parameter needs to set in order to have **"snaconfig"** automatically use the **"hsip_init"** utility.

CARD_TYPE=SPARC_HSI_PCI_SDLC

The Cleo **"snaconfig"** utility will use other parameters in the SDLC Configuration Text File to call the **"hsip_init"** utility with the correct arguments.

CONFIGURATION INFORMATION FOR A LEASED LINE CONNECTION

Black Box Converter

Configure the RS-422 port for DCE, by placing DIP Shunts in

XW1B

XW2B

XW3B

Configure the RS-232 port for DTE, by placing DIP Shunts in

XW4A

XW5A

Cleo "snaconfig" Parameters in /etc/opt/sna/snasdlc.txt

SNA_TYPE=S

PORT_NUM=1

MAXDATA=NNN (**NNN <= 2064** - depends on Host NCP GEN)

XIDS=0xXXXXXXXX (**XXXXXXXX** – depends on Host NCP GEN)

XIDR=0xYYYYYYYY (**YYYYYYYY** – depends on Host NCP GEN)

LINE_TYPE=LEASED

DUPLEX=HALF (**or FULL** – depends on Host NCP GEN & modem) **ENCODING=NRZ** (**or NRZI** – depends on Host NCP GEN & modem)

CONSTANT_RTS=N (**or Y** if no other SDLC Host Connections use the Leased

Line)

POLL_ADDR=PP (**PP** – hex polling address depends on Host NCP GEN)

LU_RANGE=2-nn (**nn** – number of licensed Sessions + 1)

SESSIONS=nn (**nn** – number of licensed Sessions)

CARD_TYPE=SPARC_HIS_PCI_SDLC

If using "hsip_init" utility directly the parameters to use would be

nrzi=no or yes (depending on NCP GE & Modem)

txc=rxc

rxc=rxc

txd=txd

rxd=txd

mode=ibm-hdx or ibm-fdx (depending on NCP GEN being half or full duplex)

signal=no or yes (depending on NCP GEN & modem being constant RTS or not)

mtu=2064

mru=2064

speed=xxxxxxx (depending on network capabilities. Default is 1536000)

CONFIGURATION INFORMATION FOR A DIALUP CONNECTION

Black Box Converter

Configure the RS-422 port for DCE, by placing DIP Shunts in

XW1B

XW2B

XW3B

Configure the RS-232 port for DTE, by placing DIP Shunts in

XW4A

XW5A

Cleo "snaconfig" Parameters in /etc/opt/sna/snasdlc.txt

SNA_TYPE=S

PORT_NUM=1

MAXDATA=NNN (**NNN <= 2064** - depends on Host NCP GEN)

XIDS=0xXXXXXXXX (**XXXXXXXX** – depends on Host NCP GEN)

XIDR=0xYYYYYYYY (**YYYYYYYY** – depends on Host NCP GEN)

LINE_TYPE=SWITCHED

DUPLEX=HALF (**or FULL** – depends on Host NCP GEN & modem) **ENCODING=NRZ** (**or NRZI** – depends on Host NCP GEN & modem)

CONSTANT_RTS=N

POLL_ADDR=PP (**PP** – hex polling address depends on Host NCP GEN)

LU_RANGE=2-nn (**nn** – number of licensed Sessions + 1)

SESSIONS=nn (**nn** – number of licensed Sessions)

CARD_TYPE=SPARC_HIS_PCI_SDLC

If using "hsip_init" utility directly the parameters to use would be

nrzi=no or yes (depending on NCP GE & Modem)

txc=rxc

rxc=rxc

txd=txd

rxd=txd

mode=ibm-hdx or ibm-fdx (depending on NCP GEN being half or full duplex)

signal=yes

mtu=2064

mru=2064

speed=1536000

DIALUP MODEM SETTINGS

DCD must be forced **HIGH**

CTS must follow **RTS**

DIALUP MODEM SETTINGS FOR MOTOROLA V.3220 UDS

Change Protocol Options

LAPM Protocol = disabled

MWP Protocol = disabled

Buffer mode is direct

DTE Flow Control = RTS

DCE Flow Control = CTS

Xon/Xoff Passthrough = disable

Inactivity timer = off

Break option = 0

V.42 fast detect = disable

Change DTE Options

Sync Data

DTR controlled dialer

AT command set = disables

DTR disconnects change

DSR = forced HIGH

DCD = forced HIGH

CTS follows RTS

RTS-CTS delay is 0ms

DTE fallback = disabled

APPENDIX K.

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 L.

Introduction – Cleo 2 External Functions

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 reside on the Cleo Host Interface CD and are also 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:into the directory

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.doc Word Document or vxmlusage.pdf PDF File on the Cleo Host Interface CD for more information.