



Avaya Solution & Interoperability Test Lab

Application Notes for Cleo Transaction Processor with Avaya Voice Portal – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Cleo Transaction Processor to interoperate with Avaya Voice Portal. Cleo Transaction Processor provides access to data on host mainframes, and enables application developers to use Avaya Dialog Designer to create applications that can retrieve and modify host mainframe data.

Information in these Application Notes has been obtained through DevConnect compliance testing and additional technical discussions. Testing was conducted via the DevConnect Program at the Avaya Solution and Interoperability Test Lab.

1. Introduction

These Application Notes describe the configuration steps required for Cleo Transaction Processor to interoperate with Avaya Voice Portal (VP). Cleo Transaction Processor provides access to data on the host mainframes, and enables application developers to use Avaya Dialog Designer to create applications that can retrieve and modify host mainframe data.

Cleo Transaction Processor supports the TN3270 host connection to IBM mainframes, and the TN5250 host connection to AS400 mainframes. The user application invokes Cleo Transaction Processor functions through a Java, .NET, Web Service, XML, or VoiceXML interface. For the compliance testing, the TN3270 host connection was used, and four application scripts were created with each connecting to the Cleo Transaction Processor in a different way (Java, Web Service, XML, and VoiceXML).

In the test configuration shown in **Figure 1**, Cleo Transaction Processor emulates an IBM 3270 terminal client, which has a TCP/IP connection to a TN3270 server. The TN3270 server is a function of the mainframe, and can reside on the mainframe or reside on network servers or routers. In the compliance testing, the Esker Host Emulation software is used to provide the TN3270 server functionality and to emulate the IBM mainframe.

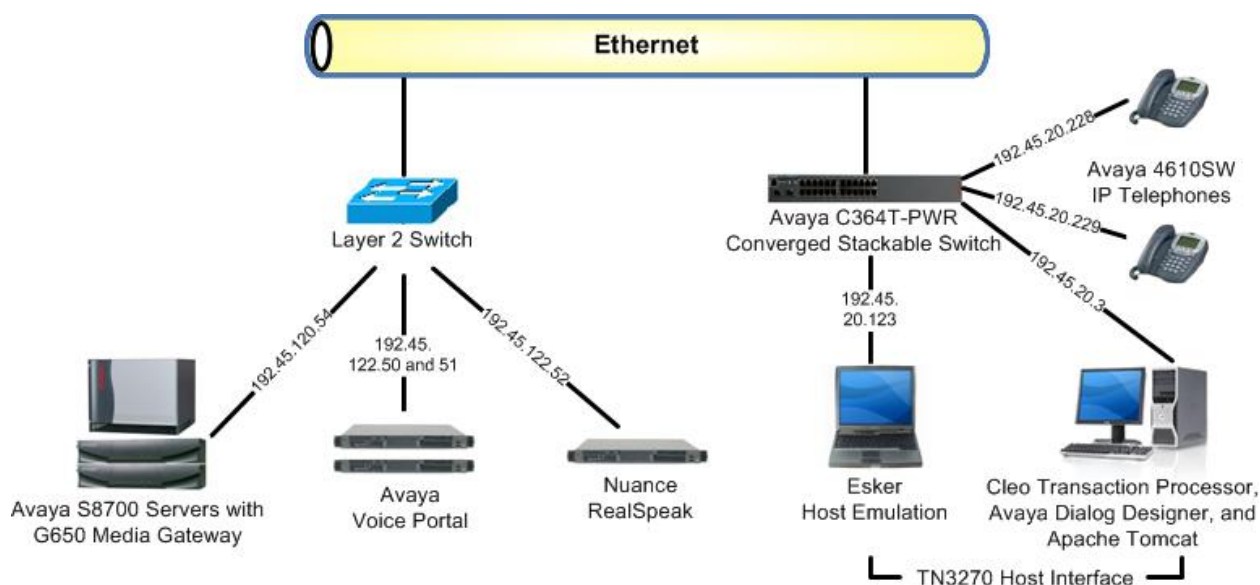


Figure 1: Cleo Transaction Processor with Avaya Voice Portal

The compliance testing used a fictitious stock quote speech application. The application collects a stock identification number from the caller, and then sends the identification number to the host mainframe to obtain the current price quote, which will then be played back to the caller.

The application scripts were built for the fictitious stock quote speech application using Avaya Dialog Designer. The creation of the scripts is outside the scope of this document, and will not be described. To test the speech application, manual calls were placed to the pilot number that corresponds to the application. The calls were delivered to Avaya VP over available lines, administered as IP soft phones with type “7434ND” on Avaya Communication Manager. Avaya VP ran the stock quote speech application from the application server, which interfaced with Cleo Transaction Processor. The Cleo Transaction Processor in turn interfaced with the Esker Host Emulation server, to perform stock price quote retrieval.

In the test configuration, the PC that served as the application server with Apache Tomcat 5.5.23 also hosted Avaya Dialog Designer and Cleo Transaction Processor. The Automatic Speech Recognition (ASR) and Text-To-Speech (TTS) capabilities were provided by the Nuance RealSpeak server. The Avaya Voice Portal system in the test configuration consists of one Voice Portal Management System (VPMS) server and one Media Processing Platform (MPP) server.

On Avaya VP, a speech application is assigned to channels, and each channel corresponds to an IP soft phone administered on Avaya Communication Manager. The IP soft phones can then be placed into a hunt group, with the hunt group extension serving as the pilot number for the speech application. When a call arrives on Avaya Communication Manager for the speech application, the call gets delivered over an available VP channel. The VP MPP accesses the appropriate speech application assigned to the channel to control the call. From this point on, the speech application directs the flow of the call until the caller hangs up or the application is finished.

2. Equipment and Software Validated

The following equipment and software were used for the sample configuration:

Equipment	Software
Avaya S8700 Servers	Avaya Communication Manager 4.0, R014x.00.1.731.2
Avaya G650 Media Gateway <ul style="list-style-type: none">TN799DP C-LAN	HW01 FW024
Avaya Voice Portal on Avaya S8500C servers <ul style="list-style-type: none">Voice Portal Management SystemMedia Processing Platform	4.0.0.0.2901 4.0.0.0.2901
Cleo Transaction Processor and Avaya Dialog Designer and Apache Tomcat Dell Precision 380	4.2.2.0 4.0 5.5.23 Windows XP Professional SP2
Avaya C363T-PWR Converged Stackable Switches	4.5.14
Avaya 4610SW IP Telephones	2.7 (H.323)
Esker Host Emulation on Dell Latitude D600	2.01 Windows XP Professional SP2

3. Configure Avaya Communication Manager

This section provides the procedures for configuring Avaya Communication Manager, which includes the following:

- Verify Avaya Communication Manager License
- Administer system parameters features
- Obtain C-LAN information
- Administer IP network region
- Administer IP codec set
- Administer IP soft phones
- Administer hunt group

3.1. Verify Avaya Communication Manager License

Log into the System Access Terminal (SAT) to verify that the Avaya Communication Manager license has proper permissions for features illustrated in these Application Notes. Use the “display system-parameters customer-options” command, and navigate to **Page 10**. Verify that there are sufficient **IP_API_A** licenses. One such license is required for each Avaya VP channel.

```
display system-parameters customer-options                               Page 10 of 11
                                MAXIMUM IP REGISTRATIONS BY PRODUCT ID

Product ID  Rel. Limit      Used
IP_API_A   : 1000         29
IP_API_B    : 0           0
```

3.2. Administer System Parameters Features

Use the “change system-parameters features” command to enable **7434ND**, which is located on **Page 6**. This parameter allows for the use of “7434ND” as a station type.

```
change system-parameters features                                     Page 6 of 17
                                FEATURE-RELATED SYSTEM PARAMETERS

Public Network Trunks on Conference Call: 5                        Auto Start? y
Conference Parties with Public Network Trunks: 6                  Auto Hold? n
Conference Parties without Public Network Trunks: 6                Attendant Tone? y
Night Service Disconnect Timer (seconds): 180                     Bridging Tone? n
Short Interdigit Timer (seconds): 3                               Conference Tone? n
Unanswered DID Call Timer (seconds):                               Intrusion Tone? n
Line Intercept Tone Timer (seconds): 30                           Mode Code Interface? n
Long Hold Recall Timer (seconds): 0
Reset Shift Timer (seconds): 0
Station Call Transfer Recall Timer (seconds): 0                   Recall from VDN? n
DID Busy Treatment: tone

Allow AAR/ARS Access from DID/DIOD? y
Allow ANI Restriction on AAR/ARS? n
Use Trunk COR for Outgoing Trunk Disconnect? n
7405ND Numeric Terminal Display? y                                7434ND? y
DISTINCTIVE AUDIBLE ALERTING
Internal: 1 External: 2 Priority: 3
```

3.3. Obtain C-LAN Information

Use the “list ip-interface clan” command, to display all administered C-LANs. Select a C-LAN from the listing for the Avaya VP channels to use for registration. Note the corresponding **IP-Address** and **Net Rgn** field values for the selected C-LAN. In the compliance testing, the first C-LAN with IP address of “192.45.120.75” and network region of “1” was used.

```
list ip-interface clan
```

IP INTERFACES									
ON	Slot	Code	Sfx	Node Name/ IP-Address	Subnet Mask	Gateway Address	Num Srts	Net Rgn	VLAN
y	01A04	TN799	D	clancrm 192.45.120.75	255.255.255.0	192.45.120.1	400	1	n
y	01A12	TN799	D	clan-1a12 192.45.120.78	255.255.255.0	192.45.120.1	400	5	n

3.4. Administer IP Network Region

Use the “change ip-network-region n” command, where “n” is the network region number assigned to the selected C-LAN from **Section 3.3**. For the **Codec Set** field, enter an existing codec set to be used for the Avaya VP channels. Retain the default values in the remaining fields.

```
change ip-network-region 1
```

Page 1 of 19

```

                                IP NETWORK REGION
Region: 1
Location:      Authoritative Domain:
Name:
MEDIA PARAMETERS                      Intra-region IP-IP Direct Audio: yes
      Codec Set: 1                    Inter-region IP-IP Direct Audio: yes
      UDP Port Min: 2048                IP Audio Hairpinning? y
      UDP Port Max: 65531
DIFFSERV/TOS PARAMETERS                RTCP Reporting Enabled? y
      Call Control PHB Value: 34        RTCP MONITOR SERVER PARAMETERS
      Audio PHB Value: 46               Use Default Server Parameters? y
```

3.5. Administer IP Codec Set

Use the “change ip-codec-set n” command, where “n” is the codec set number from **Section 3.4**. Enter “G.711MU” in the **Audio Codec** field. Note that only “G.711MU” and “G.711A” codecs are supported for the Avaya VP channels.

```
change ip-codec-set 1
```

Page 1 of 2

```

                                IP Codec Set

Codec Set: 1

Audio      Silence      Frames      Packet
Codec      Suppression  Per Pkt   Size(ms)
1: G.711MU      n           2         10
2:
```

3.6. Administer IP Soft Phones

For each Avaya VP channel, add a corresponding IP soft phone using the “add station n” command, where “n” is an available extension. Enter “7434ND” for **Type**, “IP” for **Port**, and desired values for **Name** and **Security Code**. Enable **Display Module** and **IP SoftPhone**.

add station 23804		Page 1 of 6
STATION		
Extension: 23804	Lock Messages? n	BCC: 0
Type: 7434ND	Security Code: 1234	TN: 1
Port: IP	Coverage Path 1:	COR: 1
Name: Cleo VP channel #1	Coverage Path 2:	COS: 1
	Hunt-to Station:	
STATION OPTIONS		
Loss Group: 2	Time of Day Lock Table:	
Data Module? n	Personalized Ringing Pattern: 1	
Display Module? y	Message Lamp Ext: 79304	
Display Language: english	Coverage Module? n	
Survivable COR: internal	Media Complex Ext:	
Survivable Trunk Dest? y	IP SoftPhone? Y	

Navigate to **Page 2**, and set **Multimedia Mode** to “enhanced”.

add station 23804		Page 2 of 6
STATION		
FEATURE OPTIONS		
LWC Reception: spe	Auto Select Any Idle Appearance? n	
LWC Activation? y	Coverage Msg Retrieval? y	
LWC Log External Calls? n	Auto Answer: none	
CDR Privacy? n	Data Restriction? n	
Redirect Notification? y	Idle Appearance Preference? n	
Per Button Ring Control? n	Bridged Idle Line Preference? n	
Bridged Call Alerting? n	Restrict Last Appearance? y	
Active Station Ringing: single		
H.320 Conversion? n	Per Station CPN - Send Calling Number?	
Service Link Mode: as-needed		
Multimedia Mode: enhanced	Audible Message Waiting? N	

Navigate to **Page 6**, and assign a “normal” button to enable sending of Automatic Number Identification (ANI) and Dialed Number Identification Service (DNIS) information to Avaya VP. Repeat this section to add an IP soft phone for each Avaya VP channel associated with the application. For the compliance testing, three Avaya VP channels were used to support three simultaneous calls, and therefore three IP soft phones with extensions 23804-23806 were created. For ease of administration, the same security code value was used.

add station 23804		Page 6 of 6
STATION		
DISPLAY BUTTON ASSIGNMENTS		
1: normal		

3.7. Administer Hunt Group

Add a hunt group using the “add hunt n” command, where “n” is an available hunt group number. Enter a descriptive **Group Name**, and an available **Group Extension**. The extension of the hunt group will be used as the pilot number for the speech application.

add hunt-group 888		Page 1 of 60	
HUNT GROUP			
Group Number: 888		ACD? n	
Group Name: Cleo TP with VP		Queue? n	
Group Extension: 23888		Vector? n	
Group Type: ucd-mia		Coverage Path:	
TN: 1		Night Service Destination:	
COR: 1		MM Early Answer? n	
Security Code:		Local Agent Preference? n	
ISDN/SIP Caller Display:			

Navigate to **Page 3**. In the **GROUP MEMBER ASSIGNMENTS** section, enter the extensions of the IP soft phones from **Section 3.6**.

add hunt-group 888		Page 3 of 60	
HUNT GROUP			
Group Number: 333		Group Extension: 79333	
Group Type: ucd-mia			
Member Range Allowed: 1 - 1500		Administered Members (min/max): 0 /0	
		Total Administered Members: 0	
GROUP MEMBER ASSIGNMENTS			
Ext	Name(19 characters)	Ext	Name(19 characters)
1: 23804		14:	
2: 23805		15:	
3: 23806		16:	
4:		17:	

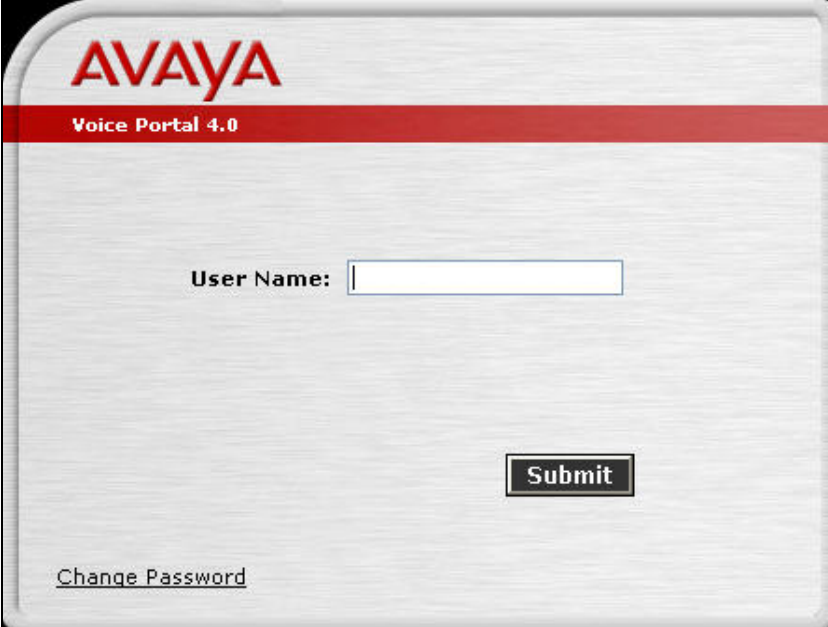
4. Configure Avaya Voice Portal

This section assumes that the basic configuration of Avaya VP is already in place, which includes connectivity to the MPP, ASR, and TTS server components. The section provides the procedures for configuring Avaya Voice Portal in the following areas:

- Verify VP license
- Administer VoIP connection
- Administer application

4.1. Verify VP License

Access the Avaya VPMS web-based interface by using the URL “http://ip-address/VoicePortal” in an Internet browser window, where “ip-address” is the IP address of the Avaya VPMS server. Log in using a valid user name and password. The **Password** field will appear after a value is entered into the **User Name** field.

The image shows a web-based login interface for Avaya Voice Portal 4.0. At the top, the Avaya logo is displayed in red, followed by a red horizontal bar containing the text "Voice Portal 4.0". Below this, the text "User Name:" is followed by a text input field. A "Submit" button is located below the input field. At the bottom left, there is a link labeled "Change Password".

The **Voice Portal Management System** screen is displayed next, as shown below.

AVAYA

Voice Portal 4.0 (VoicePortal) ?Help Logoff

Expand All | Collapse All

You are here: Home

Voice Portal Management System Version 4.0.0.0.2901

Voice Portal Management System (VPMS) is the consolidated web-based application for administering Voice Portal. Through the VPMS interface, you can configure Voice Portal, check the status of a Voice Portal component, and generate reports related to system operation.

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Last Login: 12/19/07 9:35:40 AM EST

Select **System Configuration > Licensing** from the left pane, to display the **Licensing** screen in the right pane. Verify that there are sufficient **Telephony Ports** licenses. One such license is required for each Avaya VP channel. In the compliance testing, each Avaya VP channel also required an **ASR Connections** and a **TTS Connections** license.

AVAYA

Voice Portal 4.0 (VoicePortal) ?Help Logoff

Expand All | Collapse All

You are here: [Home](#) > System Configuration > Licensing

Licensing

This page displays the Voice Portal license information that is currently in effect. Voice Portal uses Avaya License Manager (WebLM) to control the number of telephony ports that are used.

License Information

Telephony Ports:	500
ASR Connections:	500
TTS Connections:	500
Version:	4
Last Successful Poll:	12/19/07 9:35:59 AM EST

License Server

License Server URL: **Verify**

Apply **Cancel** **Help**

4.2. Administer VoIP Connection

Select **System Configuration > VoIP Connections** from the left pane. The **VoIP Connections** screen is displayed in the right pane. Select the **H.323** tab, and click **Add**.

The screenshot shows the Avaya Voice Portal 4.0 (VoicePortal) interface. The top navigation bar is red with the Avaya logo on the left and links for Help and Logoff on the right. Below the navigation bar, there is a breadcrumb trail: "You are here: Home > System Configuration > VoIP Connections". The left sidebar contains a tree view with categories: User Management, System Maintenance, System Configuration (expanded), and Reports. Under System Configuration, the following items are listed: Applications, Certificates, Licensing, MPP Servers, Report Data, SNMP, Speech Servers, System Settings, Viewer Settings, and VoIP Connections (selected). The main content area is titled "VoIP Connections" and contains a description: "This page displays a list of Voice over Internet Protocol (VoIP) servers that Voice Portal communicates with." Below the description, there are two tabs: "H.323" (selected) and "SIP". A table is displayed with the following columns: Name, Gatekeeper Address, Alternative Gatekeeper Address, Gatekeeper Port, Stations, and Media Encryption. Below the table, there are three buttons: "Add", "Delete", and "Help".

AVAYA

Voice Portal 4.0 (VoicePortal) ? Help Logoff

Expand All | Collapse All

System Configuration

- Applications
- Certificates
- Licensing
- MPP Servers
- Report Data
- SNMP
- Speech Servers
- System Settings
- Viewer Settings
- VoIP Connections**

VoIP Connections

This page displays a list of Voice over Internet Protocol (VoIP) servers that Voice Portal communicates with.

H.323 SIP

	Name	Gatekeeper Address	Alternative Gatekeeper Address	Gatekeeper Port	Stations	Media Encryption
--	------	--------------------	--------------------------------	-----------------	----------	------------------

Add Delete Help

The **Add H.323 Connection** screen is displayed next. Enter a descriptive **Name** to denote Avaya Communication Manager. For the **Gatekeeper Address** field, enter the IP address of the selected C-LAN from **Section 3.3**. Retain the default value in the **Gatekeeper Port** field. For the **Media Encryption** field, select “No”.

In the **Station** fields, enter the range of extensions for the IP soft phones from **Section 3.6**. For the **Password** field, enter the security code for the first IP soft phone from **Section 3.6**, and check the appropriate radio button matching to the password scheme for the remaining IP soft phones. Retain the default selection for **Station Type**. Click **Add**.

Scroll down to the bottom of the screen and click **Save** (not shown below) to save the configuration.

AVAYA

Voice Portal 4.0 (VoicePortal) ? Help Logoff

Expand All | Collapse All

You are here: [Home](#) > [System Configuration](#) > [VoIP Connections](#) > Add H.323 Connection

Add H.323 Connection

Use this page to add a new H.323 connection.

Name:

Gatekeeper Address:

Alternative Gatekeeper Address:

Gatekeeper Port:

Media Encryption: ☐ Yes ☒ No

New Stations

From	To
Station: <input type="text" value="23804"/>	<input type="text" value="23806"/>

Password:

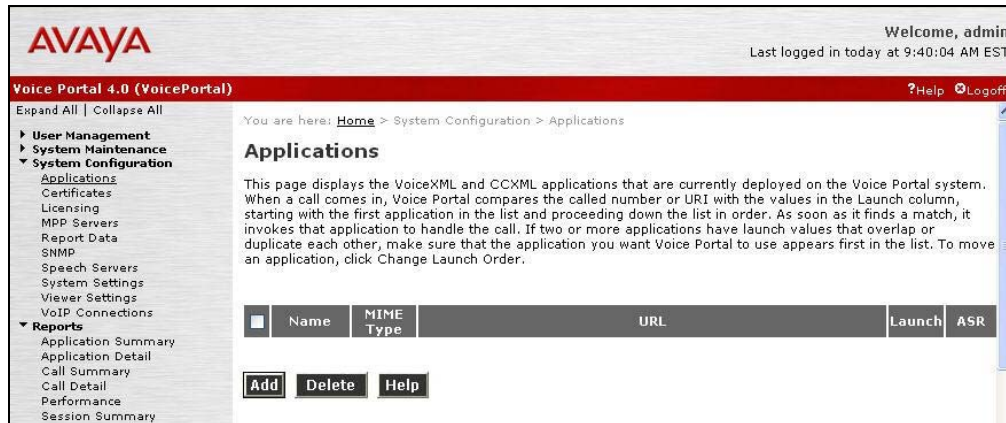
☒ Same Password
☐ Use sequential passwords

Station Type:
Inbound Only
Maintenance

Add

4.3. Administer Application

Select **System Configuration > Applications** from the left pane, to display the **Applications** screen. Click **Add**.



The **Add Application** screen is displayed. Enter a descriptive **Name**. For the **VoiceXML URL** field, enter “http://application-name:8080/application-directory/Start”, where “application-name” is the fully qualified domain name or IP address of the server on which the application resides, and “application-directory” is the optional subdirectory or series of subdirectories on the application server. Select an existing speech server from the **ASR** and **TTS** drop-down lists. Enter the hunt group extension from **Section 3.7** in the **Called Number** field. Retain the default values in the remaining fields, and click **Add** to add the called number.

Scroll down to the bottom of the screen and click **Save** (not shown below) to save the configuration.

The screenshot shows the 'Add Application' screen in the Avaya Voice Portal 4.0. The form includes fields for 'Name' (CleoTP), 'MIME Type' (VoiceXML), and 'VoiceXML URL' (http://192.45.20.3:8080/RyanCleo/Start). There are also dropdown menus for 'ASR' and 'TTS', both set to 'Nuance'. Below these are lists for 'Languages' and 'Voices'. The 'Application Launch' section has radio buttons for 'Inbound', 'Inbound Default', and 'Outbound', with 'Inbound' selected. At the bottom, there are radio buttons for 'Number', 'Number Range', and 'URI', with 'Number' selected. The 'Called Number' field contains '23888'. A 'Verify' button is next to the URL field, and an 'Add' button is at the bottom right.

5. Configure Cleo Transaction Processor

This section provides the procedures for configuring Cleo Transaction Processor. The procedures include the following areas:

- Administer host
- Administer host sessions
- Start service

The Cleo Transaction Processor processes application requests that are transaction-based in real time. The transactions are created by the Cleo Transaction Designer module, which records mainframe host screens. The creation of transactions from mainframe host screens using Cleo Transaction Designer is outside the scope of this document, and will not be described. These Application Notes assume the transactions from the Esker Host Emulation screens are already created using Cleo Transaction Designer, and are ready for use by Cleo Transaction Processor.

5.1. Administer Host

Access the Cleo Transaction Processor administration web-based interface by using the URL “http://ip-address:38080” in an Internet browser window, where “ip-address” is the IP address of Cleo Transaction Processor. Log in with appropriate credentials.



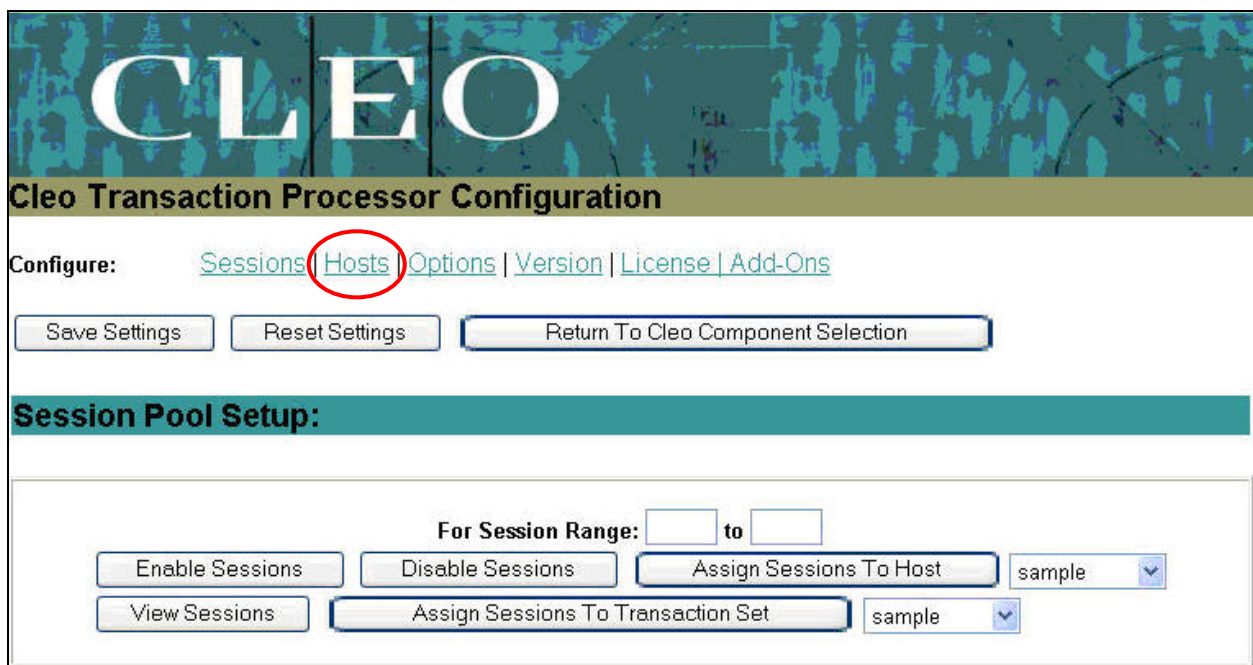
The screenshot shows the login page for the Cleo Transaction Processor administration interface. At the top, there is a banner with the word "CLEO" in large white letters on a dark blue background. Below the banner, the page has a white background. In the center, there are two input fields: "User Name" and "Password". Below the "Password" field, there is a "Login" button and a link labeled "Change Password" in purple text. At the bottom of the page, there is a footer with the Cleo Communications logo and the text "Cleo Communications". Below the footer, there is a small line of text: "This content and all generating code is © 2003-2007 Cleo Communications".

In the initial screen that is displayed, select “Configuration” from the drop-down list, and click **GO**.



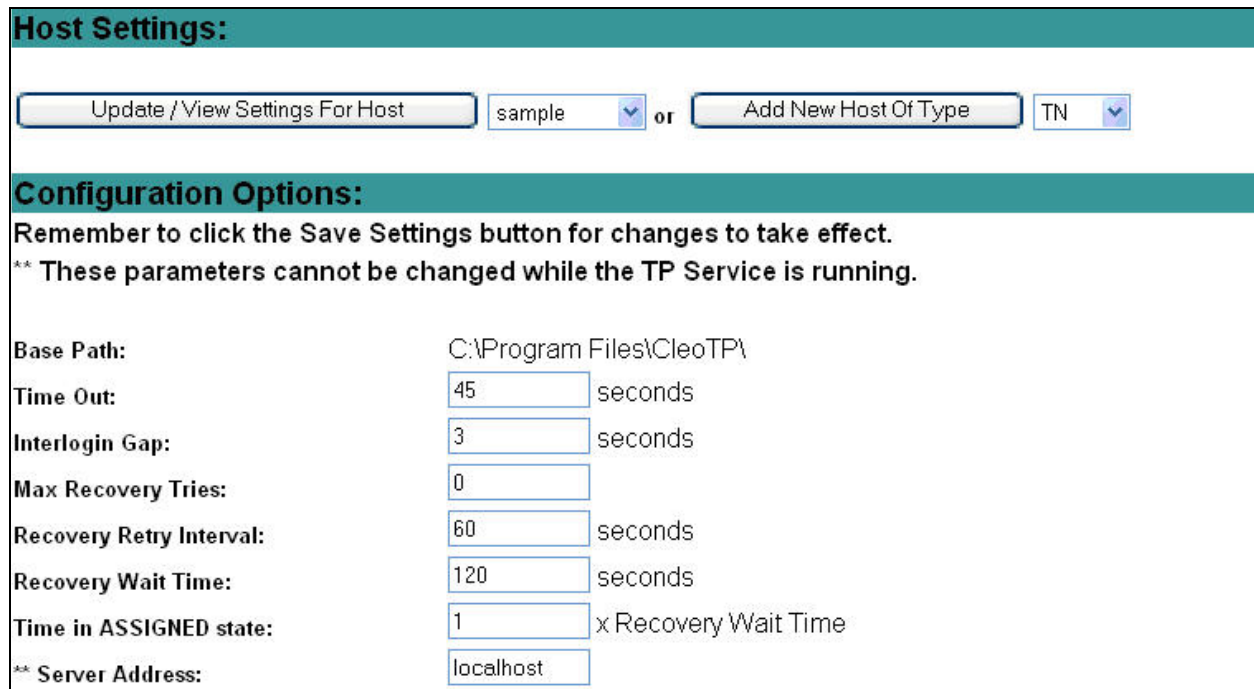
The image shows the initial screen of the CLEO application. At the top, the word "CLEO" is displayed in large white letters on a dark blue background. Below this, there is a "Select:" label followed by a dropdown menu currently showing "Configuration" and a "GO" button. In the center, the "CLEO Cleo Communications" logo is visible. At the bottom, a small copyright notice reads: "This content and all generating code is © 2003-2007 Cleo Communications".

The **Cleo Transaction Processor Configuration** screen is displayed next. Scroll down the screen, or click **Hosts** to skip down to the **Host Settings** section.



The image shows the "Cleo Transaction Processor Configuration" screen. At the top, the word "CLEO" is displayed in large white letters on a dark blue background. Below this, the title "Cleo Transaction Processor Configuration" is shown in a gold banner. Underneath, there is a "Configure:" label followed by a series of links: "Sessions", "Hosts", "Options", "Version", "License", and "Add-Ons". The "Hosts" link is circled in red. Below these links are three buttons: "Save Settings", "Reset Settings", and "Return To Cleo Component Selection". A section titled "Session Pool Setup:" is highlighted in a teal banner. Below this section, there are several buttons and a range selector. The "For Session Range:" is followed by two input boxes separated by "to". Below this, there are buttons for "Enable Sessions", "Disable Sessions", "Assign Sessions To Host", "View Sessions", and "Assign Sessions To Transaction Set". To the right of the "Assign Sessions To Host" button is a dropdown menu showing "sample". To the right of the "Assign Sessions To Transaction Set" button is another dropdown menu also showing "sample".

In the **Host Settings** section shown below, retain the default values and click **Add New Host Of Type**.



Host Settings:

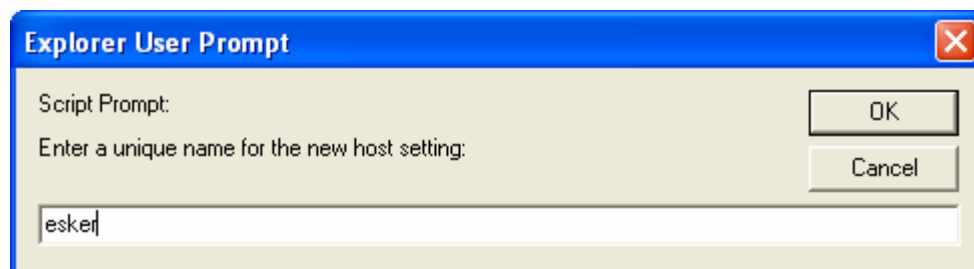
Update / View Settings For Host sample or Add New Host Of Type TN

Configuration Options:

Remember to click the Save Settings button for changes to take effect.
** These parameters cannot be changed while the TP Service is running.

Base Path: C:\Program Files\CleoTP\
Time Out: 45 seconds
Interlogin Gap: 3 seconds
Max Recovery Tries: 0
Recovery Retry Interval: 60 seconds
Recovery Wait Time: 120 seconds
Time in ASSIGNED state: 1 x Recovery Wait Time
** Server Address: localhost

The **Explorer User Prompt** dialog box is displayed next. Enter a unique name for the new host, and click **OK**.



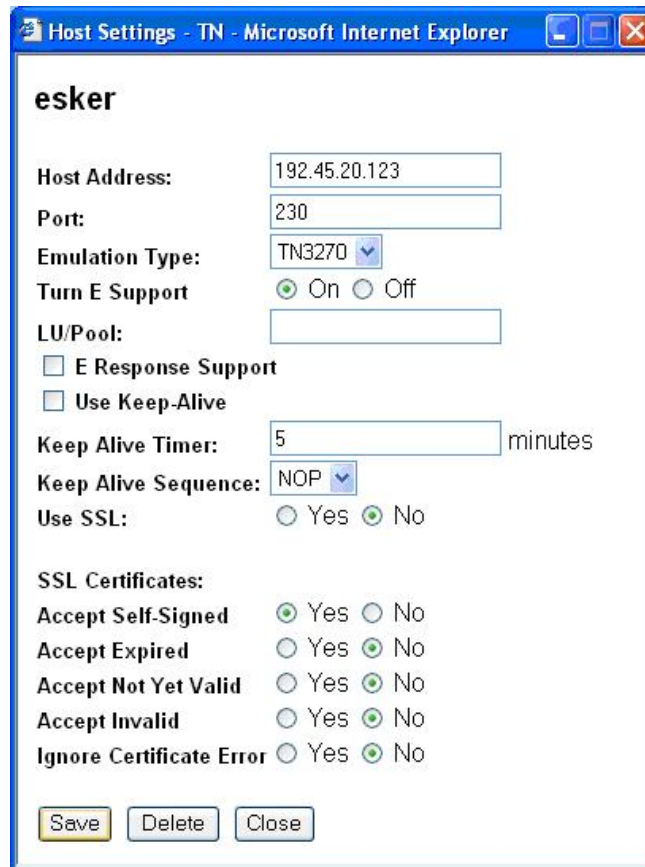
Explorer User Prompt

Script Prompt:
Enter a unique name for the new host setting:

esker

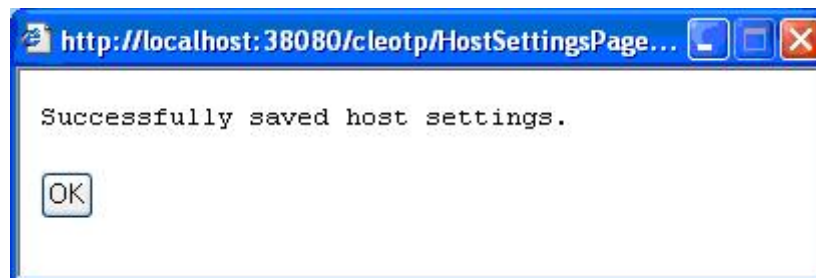
OK Cancel

The **Host Settings – TN** dialog screen is displayed next. For the **Host Address** field, enter the IP address of the host mainframe. In network configurations where the TN3270 server function is outside the host mainframe, use the IP address of the TN3270 server. Retain the default values in the remaining fields, and click **Save**.



The image shows a web-based dialog box titled "Host Settings - TN - Microsoft Internet Explorer". The main content area is titled "esker". It contains several configuration fields: "Host Address" with the value "192.45.20.123", "Port" with "230", "Emulation Type" with a dropdown menu showing "TN3270", "Turn E Support" with radio buttons for "On" (selected) and "Off", "LU/Pool" with an empty text box, "E Response Support" and "Use Keep-Alive" with unchecked checkboxes, "Keep Alive Timer" with a value of "5" and the unit "minutes", "Keep Alive Sequence" with a dropdown menu showing "NOP", and "Use SSL" with radio buttons for "Yes" and "No" (selected). Below these are "SSL Certificates" options: "Accept Self-Signed", "Accept Expired", "Accept Not Yet Valid", "Accept Invalid", and "Ignore Certificate Error", each with radio buttons for "Yes" and "No" (all "No" options are selected). At the bottom are three buttons: "Save", "Delete", and "Close".

Click **OK** in the subsequent dialog box shown below.



5.2. Administer Host Sessions

The **Cleo Transaction Processor Configuration** screen is displayed again. In the **Session Pool Setup** section, enter the range of host session numbers for the new host. Note that the number of host sessions should match the number of Avaya VP channels.

Select the host name from **Section 5.1** from the first drop-down list, and click **Assign Sessions To Host**. Select the appropriate transaction set from the second drop-down list, and click **Assign Sessions To Transaction Set**. In the compliance testing, the transaction set “eskerTrans” corresponds to the host mainframe screens from the Esker Host Emulator server. Click **Enable Sessions** to enable the host sessions.

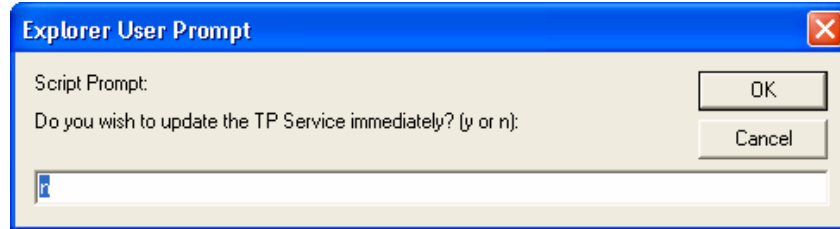
The screenshot shows the 'Cleo Transaction Processor Configuration' interface. At the top, there's a header with the 'CLEO' logo. Below it, a navigation bar includes links for 'Sessions', 'Hosts', 'Options', 'Version', 'License', and 'Add-Ons'. Three buttons are present: 'Save Settings', 'Reset Settings', and 'Return To Cleo Component Selection'. The 'Session Pool Setup' section features a 'For Session Range' field set to '1 to 3'. Below this are buttons for 'Enable Sessions', 'Disable Sessions', 'Assign Sessions To Host', and 'View Sessions'. Two dropdown menus are shown, one set to 'esker' and the other to 'eskerTrans'. At the bottom, a table lists session details.

Session	Transaction Set	Host	Enabled	Keyboard Macros				
				1 *	2 *	3 *	4 *	5
1	sample	sample	<input type="checkbox"/>					
2	sample	sample	<input type="checkbox"/>					
3	sample	sample	<input type="checkbox"/>					

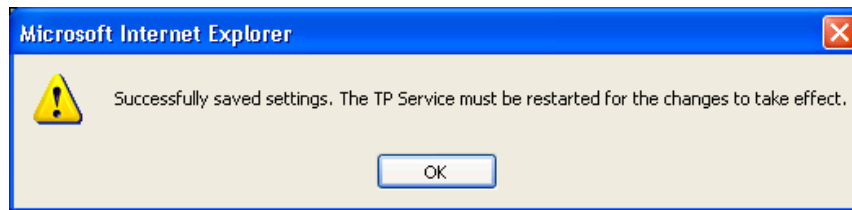
The detail host session portion of the screen is updated as a result of the actions above. Click **Save Settings** toward the top of the screen (shown in the screen above) to save the settings.

Session	Transaction Set	Host	Enabled	Keyboard Macros				
				1 *	2 *	3 *	4 *	5
1	eskerTrans	esker	<input checked="" type="checkbox"/>					
2	eskerTrans	esker	<input checked="" type="checkbox"/>					
3	eskerTrans	esker	<input checked="" type="checkbox"/>					

The **Explorer User Prompt** dialog box is displayed. Retain the default value and click **OK**.



The dialog box below is displayed next. Click **OK**.



The **Cleo Transaction Processor Configuration** screen is displayed again. Click **Return To Cleo Component Selection** to return to the initial screen.



5.3. Start Service

In the initial screen that is displayed, retain the default value of “Administration”, and click **GO**.

The image shows the initial screen of the CLEO application. At the top, there is a large "CLEO" logo in white on a teal background. Below the logo, there is a "Select:" label followed by a dropdown menu showing "Administration" and a "GO" button. In the center, the "CLEO Cleo Communications" logo is displayed. At the bottom, a small line of text reads: "This content and all generating code is © 2003-2007 Cleo Communications".

Select: Administration GO

CLEO Cleo Communications

This content and all generating code is © 2003-2007 Cleo Communications

The **Cleo Transaction Processor Administration** screen is displayed next. Retain the default values and click **Perform Function** to start the service.

The image shows the "Cleo Transaction Processor Administration" screen. At the top, there is a large "CLEO" logo in white on a teal background. Below the logo, the title "Cleo Transaction Processor Administration" is displayed in a gold bar. Underneath, there is a button labeled "Return To Cleo Component Selection". Below that, the "Management Console" title is displayed in a teal bar. At the bottom, there is a row of controls: a "Perform Function" button, a "Start Service" dropdown menu, the word "or", a "View Log" button, a "transaction.log" dropdown menu, a checkbox labeled "filter by", and an empty text input field.

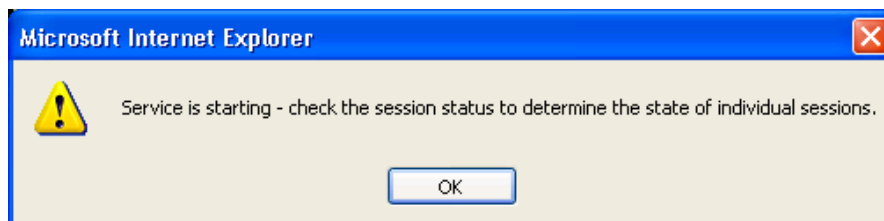
Cleo Transaction Processor Administration

Return To Cleo Component Selection

Management Console

Perform Function Start Service or View Log transaction.log filter by

Click **OK** in the subsequent dialog box shown below.




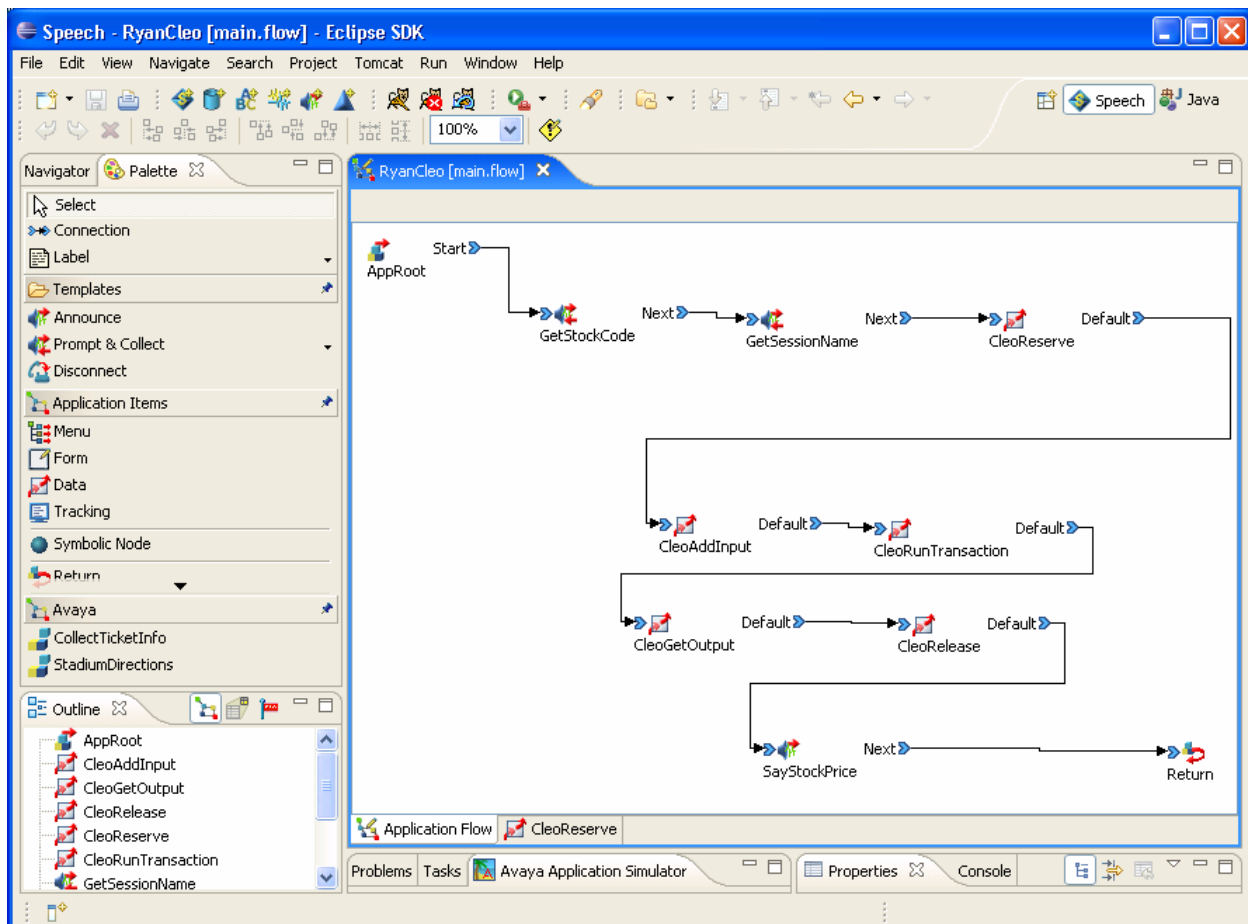
6. Avaya Dialog Designer

The creation of the speech application scripts using Avaya Dialog Designer is outside the scope of these Application Notes and will not be described. This section provides screen shots from the speech application script with the Web Service interface to Cleo Transaction Processor.

Note that all interface connectors (Java, .NET, Web Service, XML, and VoiceXML) are always active on Cleo Transaction Processor and listening to requests. Therefore, when the application script changes the connectivity method to Cleo Transaction Processor, such as switching from Web Service to XML, no modification is necessary on the Cleo Transaction Processor.

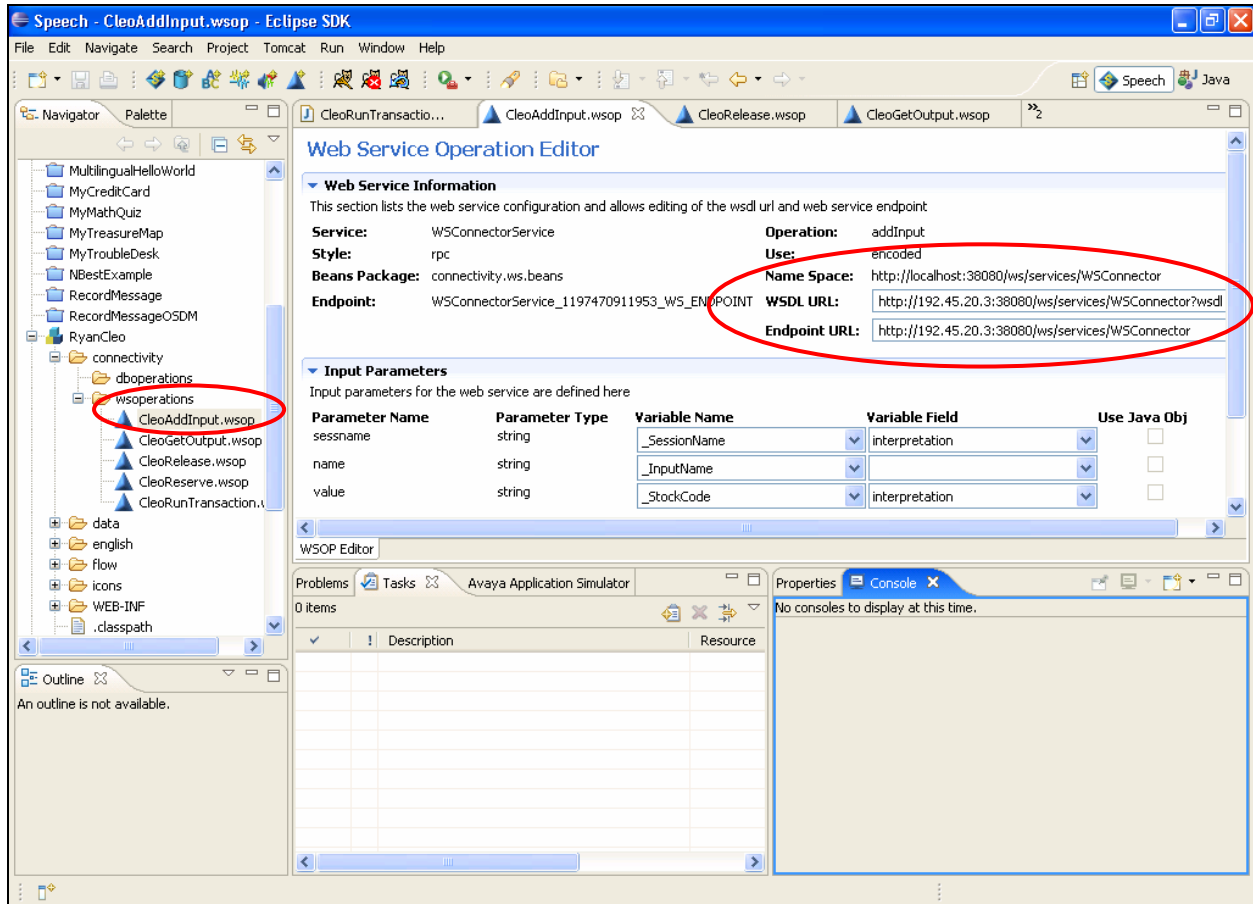
6.1. Application Flow

Below is a screen shot of the application flow from the application script with the Web Service connectivity method to Cleo Transaction Processor. Note the use of the  **Data** nodes, which interface with Cleo Transaction Processor.



6.2. Data Node

Below is a screen shot on the details of the first **Data** node “CleoAddInput”. Note the Web Service operation in the left pane, and pointers to the Cleo Transaction Processor server in the **Name Space**, **WSDL URL**, and **Endpoint URL** fields in the right pane. In the compliance testing, Avaya Dialog Designer and Cleo Transaction Processor was co-resident on the same PC that also served as the application server, therefore the use of “localhost” in the **Name Space** field.



7. Interoperability Compliance Testing

The interoperability compliance test included feature and serviceability testing. The feature testing focused on verifying Cleo Transaction Processor with regard to the following:

- Support of host related commands, such as “Start Service” to start the service.
- Support of the Data node in Avaya Dialog Designer, with successful creation and execution of speech application scripts that sends and receives data from the host emulator via Java, Web Service, XML, and VoiceXML connectivity methods to Cleo Transaction Processor.

The serviceability testing focused on verifying the ability of Cleo Transaction Processor to recover from adverse conditions, such as disconnecting the Ethernet cable from the host emulator.

7.1. General Test Approach

The feature test cases were performed manually. The application scripts were built using Avaya Dialog Designer and deployed to the application server. Calls to the speech applications were made manually, with manual input of stock identification numbers, and manual verification of stock price quotes that are retrieved from the Esker Host Emulation server and played back to the caller.

The serviceability test cases were performed manually by disconnecting and reconnecting the LAN cables.

7.2. Test Results

All feature test cases were executed and passed.

There was one observation from the serviceability testing. In order to successfully handle host connection drops, the application script needs to detect and recover from possible drops in all host communication data nodes.

8. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya Communication Manager, Avaya Voice Portal, and Cleo Transaction Processor.

8.1. Verify Avaya Communication Manager

Verify the registration status of the Avaya VP channels by using the “list registered-ip-stations ext x count y” command, where “x” is the beginning extension number of the first Avaya VP channel, and “y” is the total number of channels. Verify that all extensions from **Section 3.6** are displayed, and hence successfully registered with Avaya Communication Manager.

```
list registered-ip-stations ext 23804 count 3
```

REGISTERED IP STATIONS

Station	Ext/ Orig Port	Set Type	Product ID	Prod Rel	Station IP Address	Net Rgn	Gatekeeper IP Address	TCP Skt
23804		7434ND	IP_API_A	3. 0	192.45.120.51	1	192.45.120.75	y
23805		7434ND	IP_API_A	3. 0	192.45.120.51	1	192.45.120.75	y
23806		7434ND	IP_API_A	3. 0	192.45.120.51	1	192.45.120.75	y

8.2. Verify Avaya Voice Portal

From the Avaya VPMS web-based interface, verify the status of the VP channels by selecting **System Maintenance > Port Distribution** from the left pane. Verify that the **Mode** is “Online”, and that the **State** is “In service” for all channel extensions listed in **Section 8.1**.

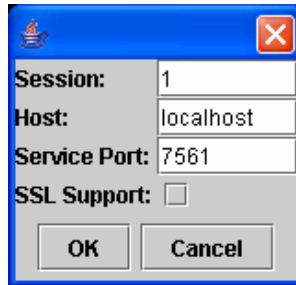
The screenshot shows the Avaya Voice Portal 4.0 (VoicePortal) web interface. The top navigation bar includes the Avaya logo, the title "Voice Portal 4.0 (VoicePortal)", and links for "?Help" and "Logoff". Below the navigation bar, there is a breadcrumb trail: "You are here: Home > System Maintenance > Port Distribution". The main content area is titled "Port Distribution (12/19/07 10:43:48 AM EST)" and includes a "Refresh" button. A descriptive text states: "This page displays information about how the telephony resources have been distributed to the MPPs. You configure the telephony resources on the VoIP Connections page." Below this, a table displays port distribution information. The table has columns: Port, Mode, State, Port Group, Protocol, Current Allocation, and Base Allocation. The table shows 8 ports, all in "Online" mode and "In service" state, with a "devcon14" port group and "H323" protocol. The "Current Allocation" for all ports is "mpp1". The "Base Allocation" column is empty. A "Help" button is located at the bottom left of the table area.

Port	Mode	State	Port Group	Protocol	Current Allocation	Base Allocation
23801	Online	In service	devcon14	H323	mpp1	
23802	Online	In service	devcon14	H323	mpp1	
23803	Online	In service	devcon14	H323	mpp1	
23804	Online	In service	devcon14	H323	mpp1	
23805	Online	In service	devcon14	H323	mpp1	
23806	Online	In service	devcon14	H323	mpp1	
23807	Online	In service	devcon14	H323	mpp1	
23808	Online	In service	devcon14	H323	mpp1	

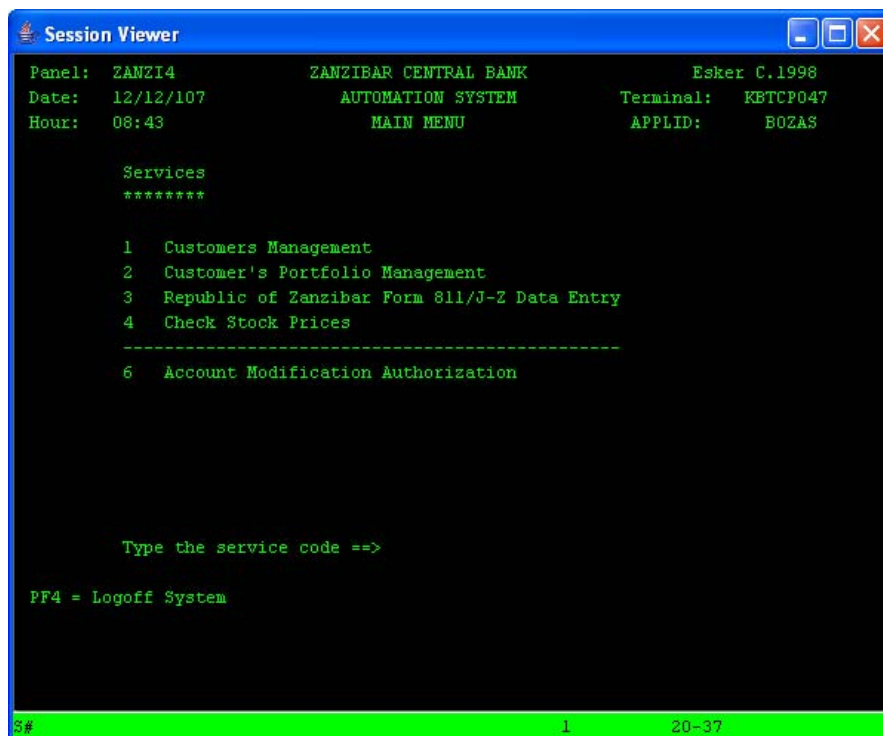
8.3. Verify Cleo Transaction Processor

Launch the Cleo Session Viewer using **Start > All Programs > CleoTP > Session Viewer**.

Note that the Cleo Session Viewer is a standalone Cleo Transaction Designer recorder-like utility that allows manipulations of host screens. In the compliance testing, the Cleo Session Viewer was installed on the same PC that hosted the Cleo Transaction Processor. In the dialog box that is displayed, enter an assigned host session from **Section 5.2** as **Session**. Enter the IP address of the Cleo Transaction Processor, or “localhost” in this case, as **Host**. Click **OK**.



The **Session Viewer** screen is displayed next, and shows the initial host screen from the Esker Host Emulation server. Note that the initial host screen will vary.



Make a call to the pilot number for the speech application. Verify that the caller hears the proper greeting and is prompted to enter a stock number. Enter a valid stock identification number, and verify that the number is successfully passed to the host with proper retrieval and playback of the corresponding stock price quote to the caller.

9. Support

Technical support on Cleo Transaction Processor can be obtained through the following:

- **Phone:** (866) 444-2536
- **Web:** <http://www.cleo.com>
- **Email:** supportEN@cleo.com

10. Conclusion

These Application Notes describe the configuration steps required for Cleo Transaction Processor 4.2.2.0 to interoperate with Avaya Voice Portal 4.0. All feature and serviceability test cases were completed.

11. Additional References

This section references the product documentation that is relevant to these Application Notes.

- *Administrator Guide for Avaya Communication Manager*, Document 03-300509, Issue 3.1, February 2007, available at <http://support.avaya.com>.
- *Administering Avaya Voice Portal 4.0*, June 2007, available at <http://support.avaya.com>.
- *Avaya Dialog Designer Developer's Guide*, Issue 1, August 2005, available at <http://support.avaya.com>.
- *Transaction Processor Version 4 Administration Guide*, Revision 1.30, available from <http://www.cleo.com>.
- *Transaction Processor Version 4 Programmer's Guide*, Revision 1.35, available from <http://www.cleo.com>.

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