

## Avaya Solution & Interoperability Test Lab

# Application Notes for TASKE Contact with Avaya Communication Manager using Avaya Application Enablement Services – Issue 1.0

## **Abstract**

These Application Notes describe the configuration steps required for TASKE Contact 8.8 to successfully interoperate with Avaya Communication Manager 5.0 using Avaya Application Enablement Services.

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

# 1. Introduction

TASKE Contact is a call management software application that offers real-time call monitoring and historical call reporting for contact centers. TASKE Contact utilizes the Computer Telephony Integration (CTI) event reports from Avaya Communication Manager for call monitoring and reporting, and provides forecasting for effective contact center management.

The integration with Avaya Communication Manager is achieved through the Avaya Application Enablement Services (AES) Telephony Services Application Programming Interface (TSAPI) service, as illustrated in **Figure 1.** 

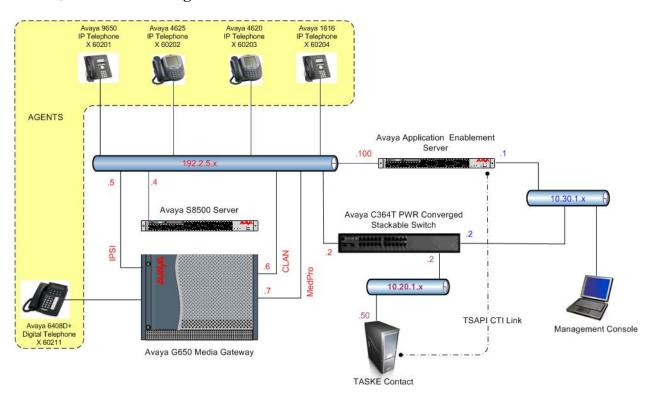


Figure 1: TASKE Contact with Avaya Communication Manager using Avaya AES

The contact center management console can access TASKE Contact via a browser-based interface from any computer with internet access, to monitor ACD activities and track important indicators such as agent availability, longest call waiting, calls answered, and average talk time.

TASKE Contact provides the following key features:

- Web-based interface
- Real-time queue and agent activity monitoring for inbound, outbound, and internal calls
- Historical reporting on all calls
- Replay historical ACD call activity to review performance indicators
- Call Visualizer for detailed call analysis
- Spectrum readerboard display application
- Workforce management integration
- Call forecasting reports
- Detailed extension and trunk reporting outside of call center

# 2. Equipment and Software Validated

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

Equipment	Software		
Avaya S8500 Server	Avaya Communication Manager 5.0, load 825.4		
<ul> <li>Avaya G650 Media Gateway</li> <li>TN799DP C-LAN Circuit Pack</li> <li>TN2302AP IP Media Processor Circuit Pack</li> </ul>	HW01 FW015 HW13 FW095		
Avaya Application Enablement Services	4.1 (31.2.0)		
Avaya C363T-PWR Converged Stackable Switch	4.3.12		
Avaya 4610SW IP Telephones	2.8.3		
Avaya 4625 Series IP Telephones	2.8.3		
Avaya 9650 IP Telephones	Avaya one-X <sup>TM</sup> Deskphone Edition 2.0 (H.323)		
Avaya 1616 IP Telephones	Avaya one-X <sup>TM</sup> Edition 1.23 (H.323)		
TASKE Contact using Dell Precision 360 with Windows 2003 Server	8.8		

# 3. Configure Avaya Communication Manager

This section provides the procedures for configuring Avaya Communication Manager. The procedures fall into the following areas:

- Administer C-LAN for Avaya AES connectivity
- Administer transport link for Avaya AES connectivity
- Administer CTI link with TSAPI service

The detailed administration of contact center devices, such as VDN, Skill, Split, Logical Agents and Station Extensions are assumed to be in place and are not covered in these Application Notes.

## 3.1. Administer C-LAN for Avaya AES Connectivity

The C-LAN administration procedure will involve adding an IP node name, an IP interface, and a data module.

1. Add an entry for the C-LAN in the node-names form. Use the "change node-names ip" command, as displayed in **Figure 2**. In this case, "Clan-1" and "192.2.5.6 are entered as **Name** and **IP Address** for the C-LAN that will be used for connectivity to the Avaya AES server. The actual node name and IP address may vary. Submit these changes.

change node-names ip							
		IP NODE NAMES					
Name	IP Address						
Clan-1	192.2.5.6						
Prowler-1	192.2.5.7						
default	0.0.0.0						
procr	192.2.5.4						

Figure 2: IP Node Names

2. Add the C-LAN to the system configuration using the "add ip-interface 01a03" command. Note that the actual slot number may vary. In this case, "01a03" is used as the slot number, as displayed in **Figure 3** below. Enter the node name assigned from **Figure 2** above into the **Node Name** field, and then the IP address will be populated automatically.

Enter proper values for the **Subnet Mask** and **Gateway Address** fields. In this case, "255.255.255.0" and "192.2.5.2" are used to correspond to the network configuration in these Application Notes. Set the **Enable Ethernet Port** field to "y", and use a separate **Network Region** for the C-LAN dedicated for Avaya AES connectivity. Default values may be used in the remaining fields. Submit these changes.

```
add ip-interface 01a03

Type: C-LAN
Slot: 01A03
Code/Suffix: TN799 D
Node Name: Clan-1
IP Address: 192.2 .5 .6
Subnet Mask: 255.255.255.0
Gateway Address: 192.2 .5 .2
Enable Ethernet Port? y
Network Region: 2
VLAN: n

Number of CLAN Sockets Before Warning: 400
ETHERNET OPTIONS
Auto? y
```

Figure 3: IP Interface

3. Add a new data module using the "add data-module n" command, where "n" is an available extension. Enter the following values as displayed in Figure 4:

• Name: A descriptive name.

• **Type:** "ethernet"

• **Port:** Same slot number from **Figure 3** and port "17".

• Link: A link number not previously assigned on this switch.

```
add data-module 60000

DATA MODULE

Data Extension: 60000

Name: Clan-1

Type: ethernet
Port: 01a0317
Link: 11

Network uses 1's for Broadcast Addresses? y
```

Figure 4: Data Module

# 3.2. Administer Transport Link for Avaya AES Connectivity

Administer the transport link to Avaya AES with the "change ip-services" command.

1. Add an entry with the following values for fields on Page 1, as displayed in **Figure 5** below:

• Service Type: "AESVCS"

• Enabled: "y"

• Local Node: Node name for the Clan-1 assigned in Figure 2.

• **Local Port** Retain the default of "8765".

change ip-services				Page	1 of	3	
IP SERVICES							
Service	Enabled	Local	Local	Remote	Remote		
Type		Node	Port	Node	Port		
CDR1	Clan-1		0	TestSite	9002		
CDR2	Clan-1		0	CDR-2nd	9004		
AESVCS	y Clan-1		8765				

Figure 5: IP Services Page 1

- 2. Go to Page 4 of the IP Services form, and enter the following values as displayed in **Figure 6**:
  - **AE Services Server:** Name obtained from the Avaya AES server, in this case "AES-Test".

• **Password:** Same password to be administered on the Avaya AES server.

• Enabled: "y"

Note that the name and password entered for the **AE Services Server** and **Password** fields must match the name and password on the Avaya AES server. The administered name for the Avaya AES server is created as part of the Avaya AES installation, and can be obtained from the Avaya AES server by typing "uname −n" at the Linux command prompt. The same password entered in **Figure 6** below will need to be set on the Avaya AES server using **Administration → Switch Connections → Edit Connection → Set Password** as displayed in **Figure 12**.



Figure 6: IP Services Page 3

#### 3.3. Administer CTI Link with TSAPI Service

Add a CTI link and set the values as displayed in **Figure 7** below using the "add cti-link n" command, where "n" is an available CTI link number.

1. Enter an available extension number in the **Extension** field. Note that the CTI link number and extension number may vary. Enter "**ADJ-IP**" in the **Type** field, and a

descriptive name in the **Name** field. Default values may be used in the remaining fields. Submit these changes.

add cti-link 1

CTI LINK

CTI Link: 1

Extension: 60100

Type: ADJ-IP

COR: 1

Name: TSAPI Link

Figure 7: CTI Link

# 4. Configure Avaya Application Enablement Services

This section provides the procedures for configuring Avaya Application Enablement Services. The procedures fall into the following areas:

- Verify Avaya Application Enablement Services License
- Administer local IP
- Administer switch connections
- Administer TSAPI link
- Administer security database
- Administer TASKE user

## 4.1. Verify Avaya Application Enablement Services License

From the WEB browser, enter the IP address of the Avaya AES. For example enter http://10.30.1.1. The Avaya Application Enablement Services screen should display. At this point, either the AE Server Administration or the WebLM Administration can be selected (not displayed). Select AE Server Administration and log into Avaya AES with the correct credentials. Refer to Reference [1] during the Avaya AES administration and operation.

1. The **Welcome to OAM** screen will be displayed as displayed in **Figure 8**. From the right panel, initially select **CTI OAM Administration**. **Note: User Management** is covered in a later step.

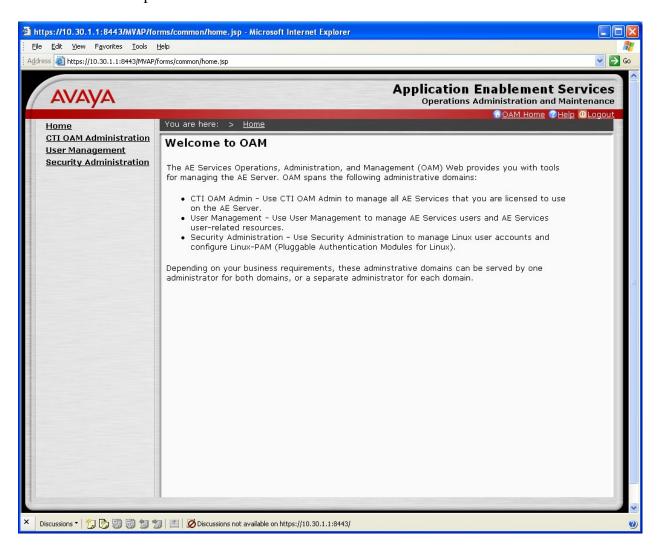


Figure 8: Welcome to OAM

2. The **License Information** must be visible as displayed in the **Welcome to CTI OAM Screens** as in **Figure 9**. Verify that the Avaya Application Enablement Services license has proper permissions for the features illustrated in these Application Notes by ensuring the **TSAPI service** is licensed. If the TSAPI service is not licensed, then contact the Avaya sales team or business partner for a proper license file.

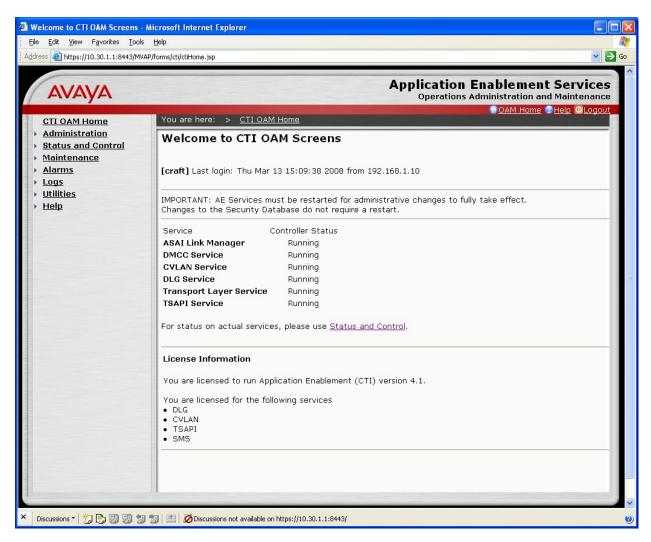


Figure 9: Welcome to CTI OAM Screens

#### 4.2. Administer Local IP

From the menu column, select Administration  $\rightarrow$  Network Configuration  $\rightarrow$  Local IP.

1. As displayed in **Figure 10**, in the **Client Connectivity** field, select the Avaya AES server IP address that will be used to connect to TASKE Contact. In the **Switch Connectivity** field, select the Avaya AES server IP address that will be used to connect to Avaya Communication Manager. Click on **Apply Changes**.

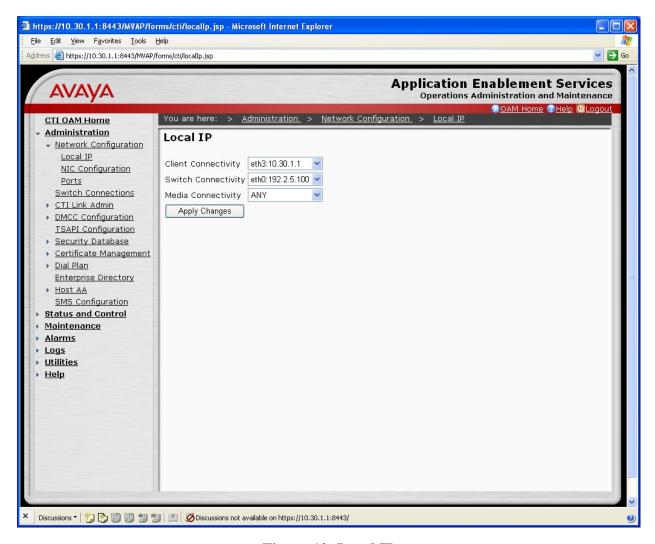
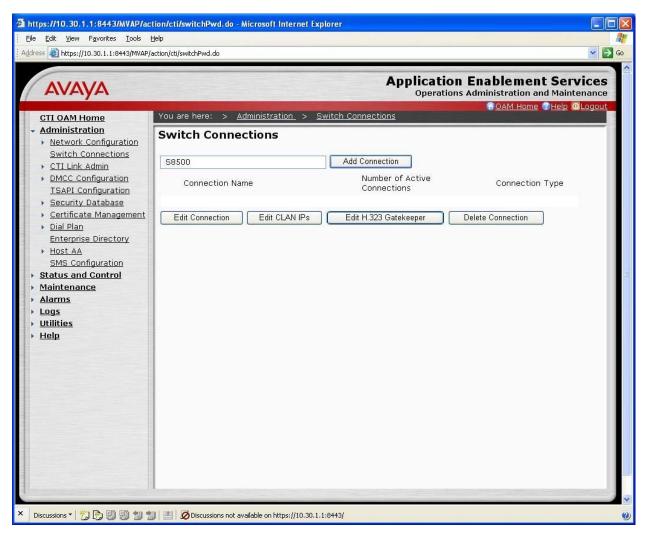


Figure 10: Local IP

#### 4.3. Administer Switch Connections

1. From the CTI OAM Home menu, select Administration → Switch Connections. As displayed in Figure 11, enter a descriptive name for the switch connection and click on Add Connection. In this case, the name S8500 is used, and the actual switch connection name will vary.



**Figure 11: Switch Connections** 

2. The **Set Password** screen is displayed. As displayed in **Figure 12**, enter the same password that was administered in Avaya Communication Manager using the IP Services form in **Figure 6**. Re-enter the same password in the **Confirm Switch Password** field. Note that the default value of checked may be retained for the **SSL** field. Had the switch been an Avaya DEFINITY Server G3csi, the **SSL** field would need to be unchecked. Click on **Apply**.

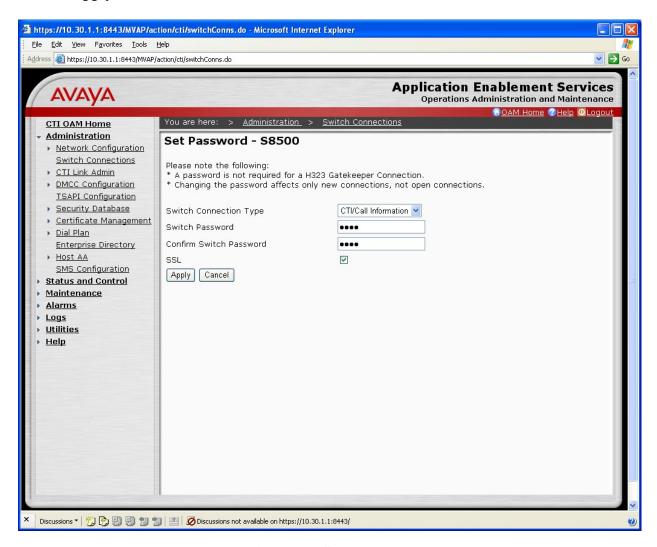
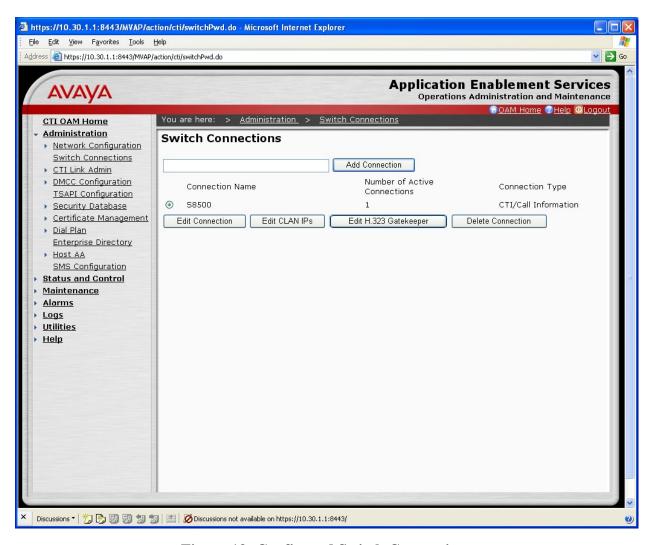


Figure 12: Set Password

3. The S8500 entry is created as displayed in **Figure 13**. Click on **Edit CLAN IPs** if you need to change the password.



**Figure 13: Configured Switch Connections** 

4. In the **Edit CLAN IPs – S8500** screen, enter the host name or IP address of the C-LAN used for Avaya AES connectivity as displayed in **Figure 14**. In this case, **192.2.5.6** is used, which corresponds to the C-LAN administered on Avaya Communication Manager in **Figure 2**. Click on **Add Name or IP**.

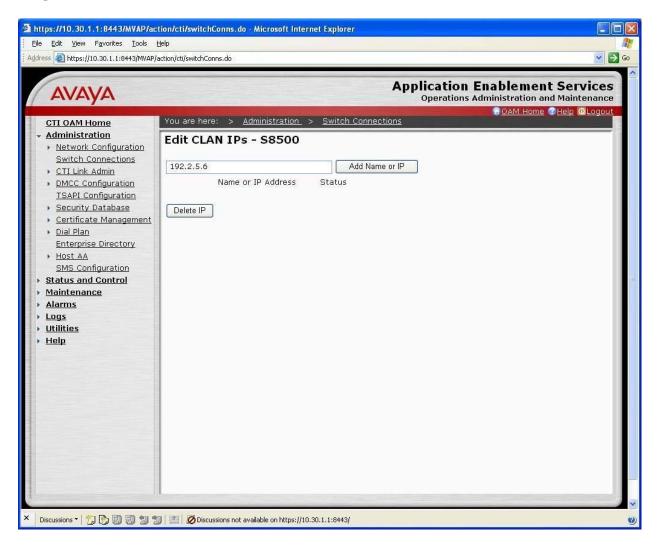


Figure 14: Edit CLAN IPs

#### 4.4. Administer TSAPI Service

To administer a TSAPI link on Avaya AES, select Administration → CTI Link Admin
 → TSAPI Links from the CTI OAM Home menu as displayed in Figure 15. Click on
 Add Link.

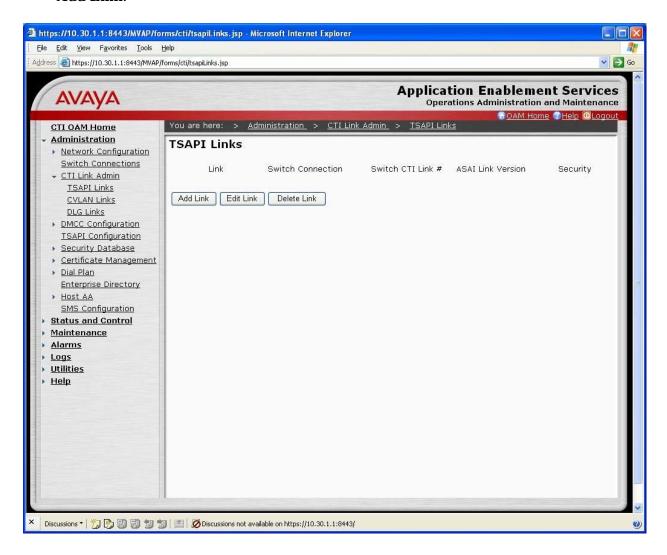


Figure 15: TSAPI Links

- 2. In the **Add/Edit TSAPI Links** screen, select the following values as displayed in **Figure 16**:
  - Switch Connection: Administered switch connection configured in Figure 11.
  - Switch CTI Link Number: Corresponding CTI link number configured in Figure 7.

Note: The actual values for both fields may vary. Click on Apply Changes.

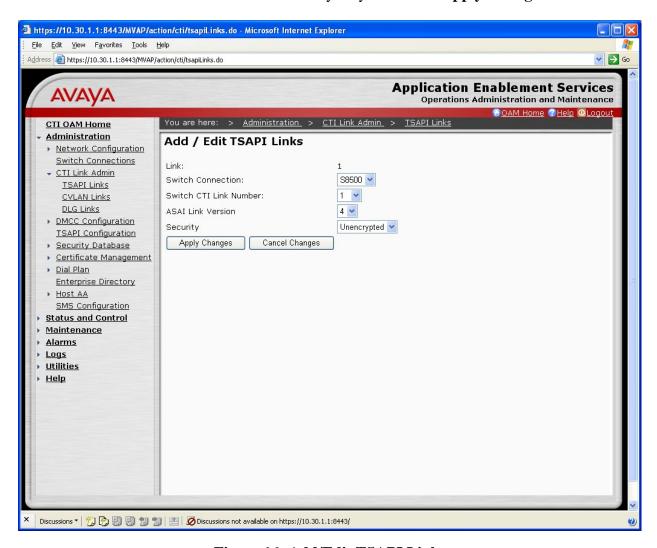
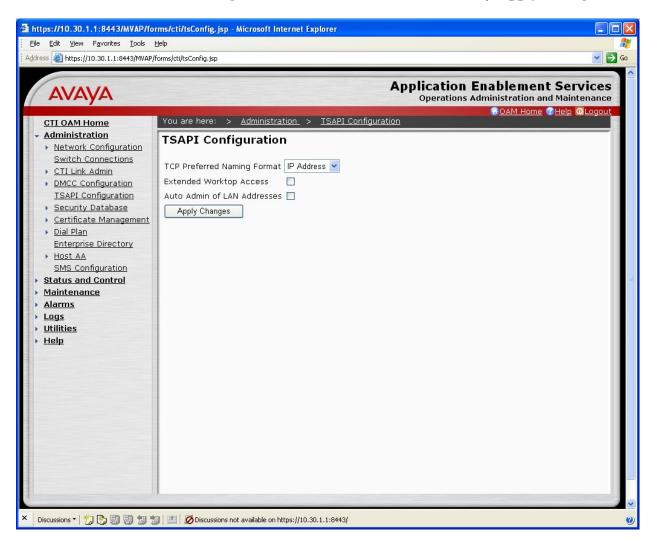


Figure 16: Add/Edit TSAPI Links

3. Enable the security database on Avaya AES, as this functionality is utilized by TASKE Contact. From the CTI OAM Home menu, select Administration → TSAPI Configuration to display the TSAPI Configuration screen displayed in Figure 17 below. For TCP Preferred Naming Format select IP Address followed by Apply Changes.



**Figure 17: TSAPI Configuration** 

4. Navigate to the Tlinks screen by selecting **Administration** → **Security Database** → **Tlinks** from the **CTI OAM Home** menu. Note the value of the **Tlink Name**, as this will be needed for configuring TASKE Contact.

In this case, the **Tlink Name** is **AVAYA#S8500#CSTA#AES-TEST**, which is automatically created by the Avaya AES server and displayed in **Figure 18**.

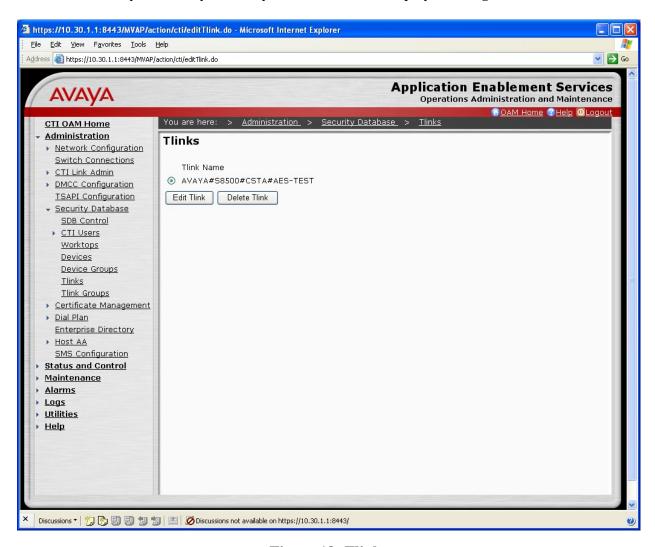


Figure 18: Tlinks

## 4.5. Administer Security Database

All devices that are monitored and controlled by TASKE Contact need to be configured in the Avaya AES security database.

From the CTI OAM Home menu, select Administration → Security Database →
 Devices, and add each device by entering the device extension and clicking on Add Device.
 A sample listing of the configured devices used for compliance testing is displayed in
 Figure 19. Note that the total number of devices may vary, as this depends on the number of extensions to be monitored.

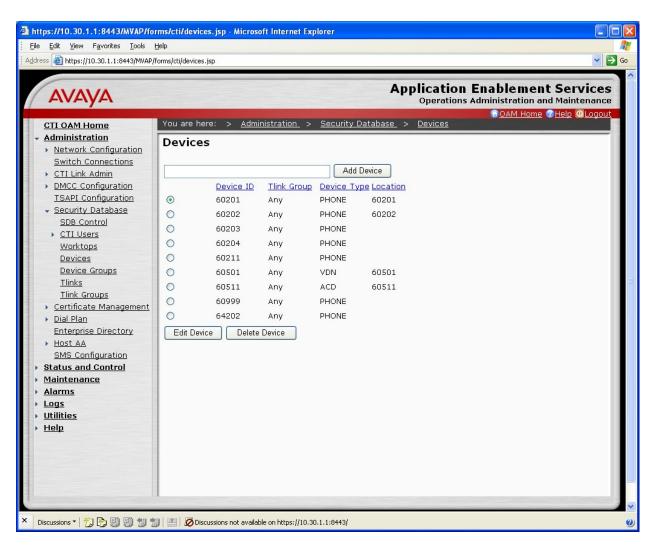


Figure 19: Devices

2. The associated field values for each device are entered in the **Add / Edit Device** screen displayed in **Figure 20**. The following is a description of the device types that can be monitored by TASKE Contact:

• **PHONE:** Station extensions.

• **VDN:** Vector Directory Number extensions.

• **AGENT ID:** Logical agent extensions.

• **ACD:** ACD split or Skill group extensions

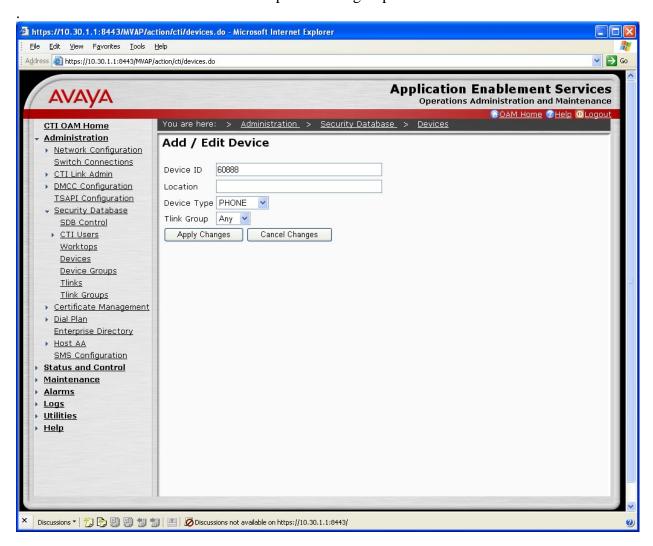


Figure 20: Add/Edit Devices

#### 4.6. Administer TASKE User

Select **OAM Home**  $\rightarrow$  **User Management** to display the Avaya AES login screen. Log in using the User Management user name and password, and the same **Welcome to CTI OAM** screen from **Figure 8** is displayed.

1. To create the TASKE user on Avaya AES, select **OAM Home** → **User Management** → **Add User** from the User Management Home menu. In the **Add User** screen displayed in **Figure 21**, enter the following values:

User Id: A meaningful user id.
 Common Name: A descriptive name.
 Surname: A descriptive surname.

• **User Password:** Password for the TASKE user.

• **Confirm Password:** Re-enter the same password for the TASKE user.

• Avaya Role: Retain the default of "None".

• **CT User:** Select "Yes" from the dropdown menu.

Click on **Apply** at the bottom of the screen (not displayed in **Figure 21**).

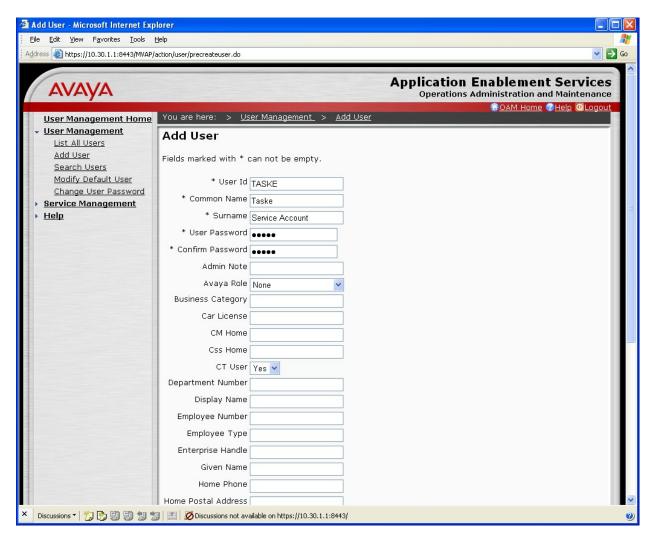


Figure 21: Add User

2. Select **OAM Home** then **CTI OAM Administration** from the Home menu. From the CTI OAM Home menu, select **Administration** → **Security Database** → **CTI Users** → **List All Users** to get a listing of all CTI users, as displayed in **Figure 22**. Select the TASKE user created back in **Figure 21** and click on **Edit**.

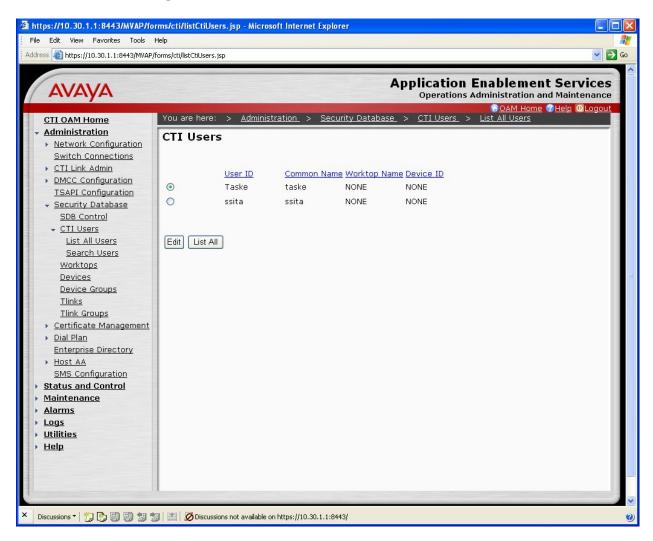


Figure 22: CTI Users

3. The Edit CTI User screen is displayed, as displayed in **Figure 23**. Select **Any** from the drop down menu for the **Call Origination and Termination**, **Device / Device**, **Call / Device**, and **Allow Routing on Listed Device** fields. Enable the **Call / Call**, followed by **Apply Changes**.

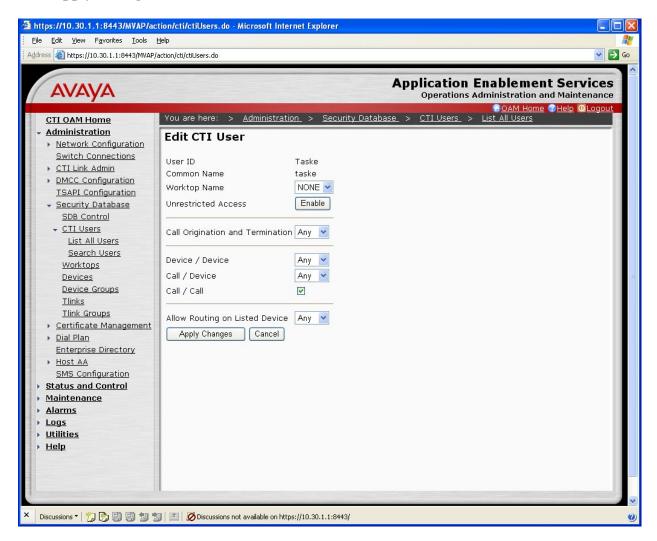


Figure 23: Edit CTI User

# 5. Configure TASKE Contact

This section provides the procedures for configuring TASKE Contact. Refer to **Reference [2]** through **Reference [5]** during TASK Contact administration and operation.

## 5.1. Loading the TASKE Database

 At the conclusion of the TASKE Contact 8.8 software installation, the TASKE Database Update Wizard will be invoked automatically and displays the Welcome to the TASKE Database Update Wizard screen displayed in Figure 24. Click on Next.



Figure 24: Welcome to the TASKE Database Update Wizard

- 2. The Import Communication Manager Information screen is displayed. From this point, to activate the Query Communication Manager Telephone System as displayed in Figure 26, perform the following command from the Start → Run command box:
  - C:\taske\ttdbpop.exe /cti

**Note:** The alternate method of querying the telephone system is being used here, as noted in **Figure 25**. This procedure will re-invoke the **TASKE Database Update Wizard**. Also note that C:\taske is the default load directory and may vary.



**Figure 25: Import Communication Manager Information** 

- 3. The **Query Communication Manager Telephone System** screen is displayed. Enter the following values as displayed in **Figure 26**:
  - Tlink name: Select the same Tlink Name as on the Avaya AES from Figure 18.
  - Login name: Enter the TASKE user id administered on the Avaya AES from Figure 21.
  - **Password:** Enter the TASKE user password administered on the Avaya AES from **Figure 21**.

If the customer utilizes the Expert Agent Selection feature on Avaya Communication Manager, then click on **The EAS feature is enabled on the telephone system**. Click on **Update** for TASKE Contact to start collecting information from Avaya Communication Manager.



Figure 26: Query Communication

4. The Collecting information from the telephone system screen is displayed in Figure 27. Allow the collection to complete.



**Figure 27: Information Collection In Progress** 

5. The **Information collection completed** screen is displayed in **Figure 28**.



Figure 28: System Setup

#### 5.2. The TASKE Administration

1. Navigate to Start → TASKE Contact → Administrator and activate the TASKE Administrator as displayed below. In the TASKE Administrator screen, click on Users on the bottom of the left panel, to display the List of Users and User Record Details panels displayed in Figure 29.

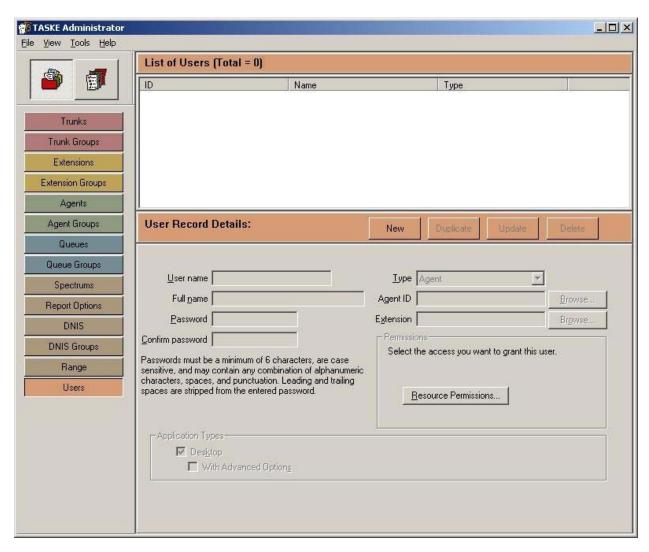


Figure 29: TASKE Administrator

2. On the **User Record Details** panel, select **New** to create a user record for each supervisor that will be monitoring call activities. After clicking on **New**, the fields in the **User Record Details** panel become enabled. Enter the following information as displayed in **Figure 30**:

User name: User name for the supervisor.
 Full name: Full name for the supervisor user.
 Password: Password for the supervisor user.
 Confirm password: Re-enter the same password.

• **Type:** Select "Supervisor" from the drop down menu.

• **Web Portal** Click to enable the Web Portal

Click on **Update** to create the new supervisor user record. Repeat this process to create remaining supervisor users records.

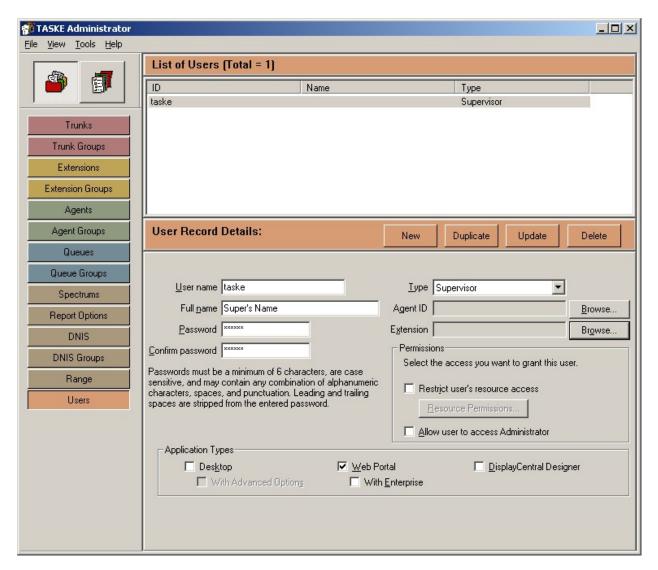
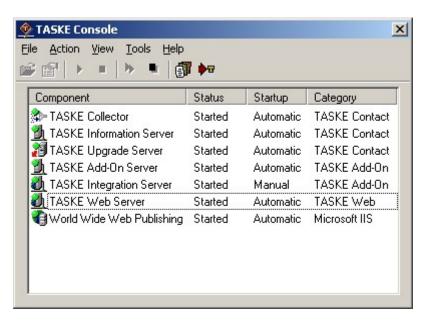


Figure 30: TASKE Administrator with User Record Details

3. Navigate to Start → TASKE Contact → Console and activate the TASKE Console as displayed in Figure 31. Note that the symbols displayed next to the TASKE Collector, TASKE Information Server, and TASKE Upgrade Server components are all in green, with corresponding Status of Started.



**Figure 31: TASKE Console** 

# 6. Interoperability Compliance Testing

The Interoperability compliance test included feature functionality, load, and serviceability testing.

The feature functionality testing focused on verifying TASKE Contact handling of TSAPI messages in the areas of value queries and event notification. Testing also included rainy day scenarios to verify successful handling of negative acknowledgements.

The load testing focused on verifying the ability of TASKE Contact to report contact center data gathered over time from a moderate traffic load.

The serviceability testing focused on verifying the ability of TASKE Contact to recover from adverse conditions, such as busying out the CTI link and disconnecting the Ethernet cable for the CTI link.

# 6.1. General Test Approach

The feature functionality test cases were performed both automatically and manually. Upon start of the TASKE Contact application, the application automatically queries Avaya Communication Manager for device status and requests monitoring. For the manual part of the testing, incoming calls were made to the monitored VDN to enable event reports to be sent to TASKE Contact.

Manual call controls from the agent telephones were exercised to verify remaining features such as answering and transferring of calls.

The load test cases were performed by generating ~240 calls over a 30 minute period with 4 available agents, to verify accuracy of various real-time and historical analysis reports. The TASKE Contact reports were compared with the internal Basic Call Management System (BCMS) measurements. BCMS is a software package residing on Avaya Communication Manager, used to provide real-time and historical reports on ACD related activities.

The serviceability test cases were performed manually by busying out and releasing the CTI link, and by disconnecting and reconnecting the LAN cables.

The verification of all tests included human checking of proper states at the telephone sets, and monitoring the event report logs from the TASKE Information Server.

#### 6.2. Test Results

All test cases were executed and passed.

# 7. Verification Steps

This section provides the tests that can be performed to verify proper configuration of Avaya Communication Manager, Avaya Application Enablement Services, and TASKE Contact.

## 7.1. Verify Avaya Communication Manager

Verify the status of the administered CTI link by using the **status aesvcs cti-link** command as displayed in **Figure 32**.

```
Status aesvcs cti-link

AE SERVICES CTI LINK STATUS

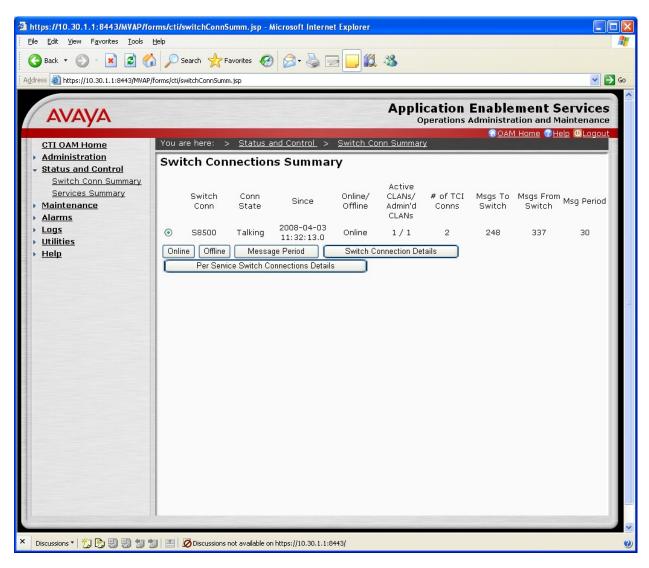
CTI Version Mnt AE Services Service Msgs Msgs
Link Busy Server State Sent Rcvd

1 4 no AES-Test established 186 48
```

Figure 32: Status Aesvcs CTI-link

## 7.2. Verify Avaya Application Enablement Services

1. From the Avaya AES CTI OAM Home menu, verify the status of the switch connection by selecting Status and Control → Switch Conn Summary, as displayed in Figure 33.



**Figure 33: Switch Connections Summary** 

2. Verify the status of the TSAPI link by selecting **Status and Control** → **Services Summary** from the Avaya AES **CTI OAM Home** menu displayed in **Figure 34**. Click on **TSAPI Service**, followed by **Details**.

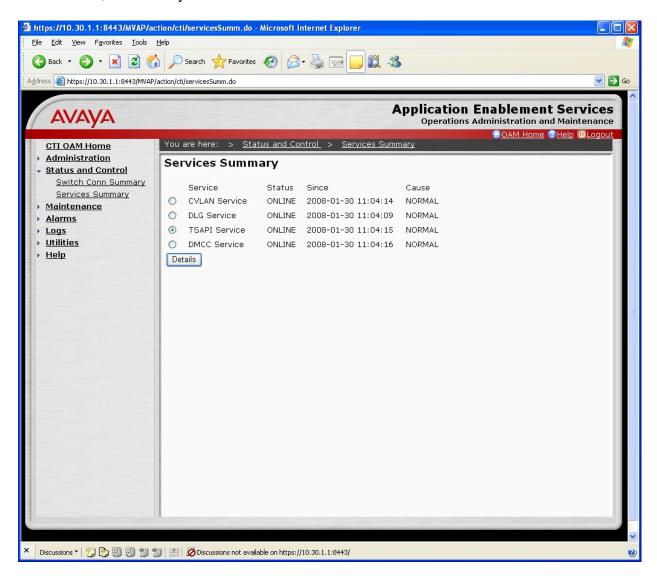


Figure 34: Services Summary

3. The **TSAPI Link Details** screen is displayed in **Figure 35**.

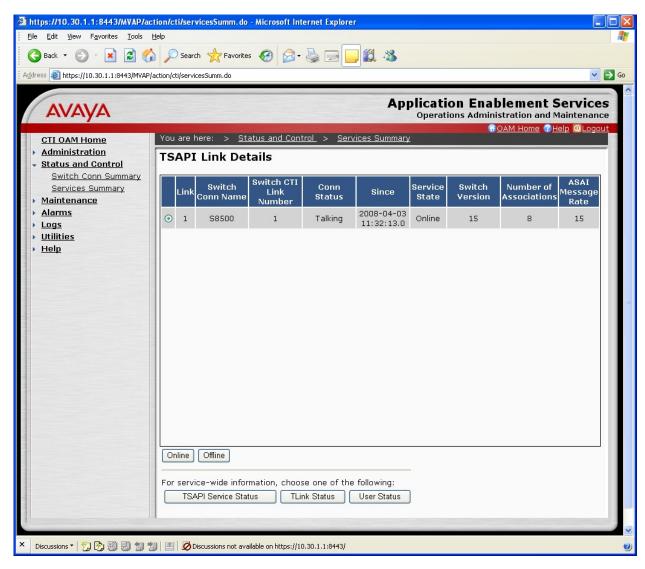


Figure 35: TSAPI Link Details

## 7.3. Verify TASKE Contact

1. To verify the status of the administered CTI link, bring up the TASKE Information Server screen by double clicking on the "TASKE Information Server" from the **Component** column on the TASKE Console screen displayed in **Figure 31**. Make a call to a monitored device, and CTI events received from Avaya Communication Manager will be logged in the TASKE Information Server screen as displayed in **Figure 36**.

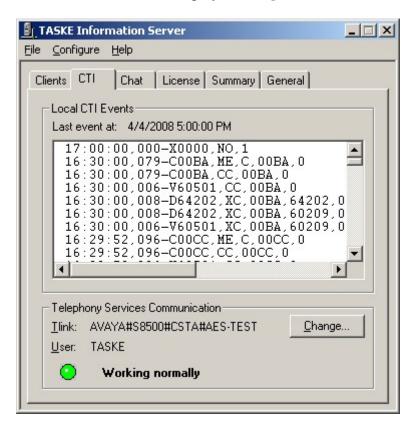


Figure 36: TASKE Information Server

2. To verify real-time and historical reporting of ACD activities at monitored devices, open up a browser on the server and access TASKE Contact. Note that the actual machine name or IP address will vary, and in this case the TASKE Contact server name is win2k3. Log in with a valid supervisor user name and password administered on TASKE Contact from Figure 29. Click on Sign In.

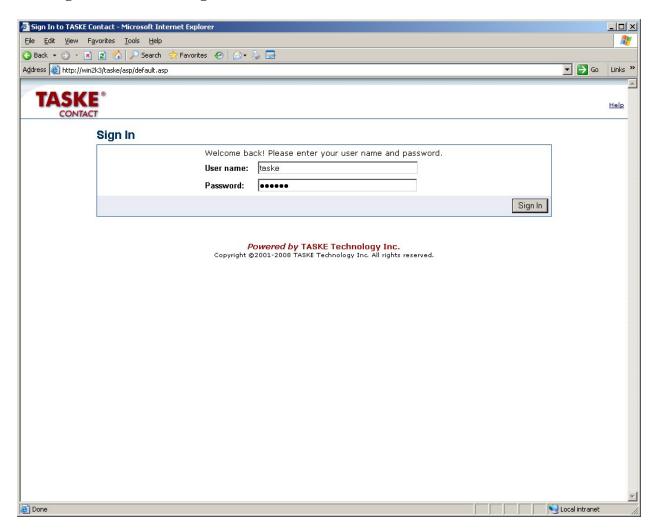


Figure 36: TASKE Contact Sign In

3. The TASKE Contact monitoring screen is displayed. Assuming the user already has a profile established per TASKE Contact documentation, the screen will then be populated with real-time monitoring data reflecting call activities at the monitored devices, as displayed in **Figure 37**.

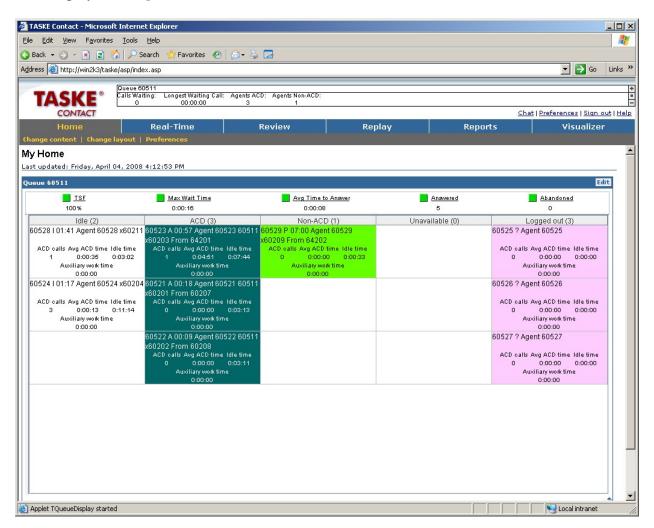


Figure 37: TASKE Contact Web Monitoring

# 8. Support

Technical support on TASKE Contact can be obtained through the following:

- Call TASKE technical support at (877) 778-2753.
- Submit a questionnaire to TASKE technical support via http://www.taske.com/forms/form\_asksupport.html.

### 9. Conclusion

These Application Notes describe the configuration steps required for TASKE Contact 8.8 to successfully interoperate with Avaya Communication Manager 5.0 using Avaya Application Enablement Services 4.1. All feature functionality and serviceability test cases were completed successfully.

## 10. Additional References

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

- [1] Avaya MultiVantage<sup>®</sup> Application Enablement Services, Administration and Maintenance Guide Release 4.1, 02-300357, February 2008
- [2] Pre-Installation Guide for TASKE Applications, available from the TASKE Contact Version 8.8 Installation CD.
- [3] Installation Guide for TASKE Applications, available from the TASKE Contact Version 8.8 Installation CD.
- [4] User Guide for TASKE Contact Web Interface, available from the TASKE Contact Version 8.8 Installation CD.
- [5] Report Reference Guide for TASKE Contact, available from the TASKE Contact Version 8.8 Installation CD.

Avaya dealers and technicians can also obtain the above TASKE references from the TASKE Dealer Support website at <a href="http://www.taske.com/dealer/index.html">http://www.taske.com/dealer/index.html</a>.

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