Avaya Solution & Interoperability Test Lab

Application Notes for Configuring OrecX's Oreka Total Recorder with Avaya Aura™ Communication Manager and Avaya Aura™ Application Enablement Services – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Oreka Total Recorder (TR) to interoperate with Avaya Aura™ Communication Manager and Avaya Aura™ Application Enablement Services. Oreka TR is a web-based contact center recording solution. Oreka TR uses real-time data from Communication Manager to monitor and record the RTP streams of calls to produce recordings of phone activity for agents and VDNs.

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

OrecX's Oreka Total Recorder is a web-based contact center recording solution. Through port mirroring, Oreka Total Recorder (TR) monitors and records the RTP streams of PSTN and IP calls. These calls are recorded and stored with identifying information for cataloging and retrieval, without consuming call server resources.

The interoperability of Oreka TR with Avaya Aura™ Communication Manager is accomplished through Avaya Aura™ Application Enablement Services. These Application Notes describe the compliance test configuration used to test OrecX's Oreka Total Recorder 1.2-701-x1592, with Communication Manager running on an Avaya S8300C Server and an Avaya G350 Media Gateway, and the Application Enablement Services Bundled Offer.

1.1. Interoperability Compliance Testing

The compliance testing focused on the following areas:

1. **Installation & Configuration**
2. **Oreka TR/Avaya Feature Functionality Verification**
3. **Failover and Serviceability Tests**

The installation and configuration testing focused on the setup of all components and the ability to interoperate. It also covered the ability to remove the application from the system.

The feature functionality testing focused on verifying Oreka TR's ability to detect, record, search, and store recordings appropriately with basic telephony features.

The serviceability testing focused on verifying the ability of Oreka TR to recover from adverse conditions including loss of network connection, power failure, and loss of service availability.

1.2. Support

Technical support on Oreka TR can be obtained through the following:

- **Phone:** +1 (212) 200-3035
- **Email:** support@orecx.com

2. Reference Configuration

The interoperability of Oreka TR v1.2-701-x1592 with Communication Manager is accomplished through Application Enablement Services. The compliance test configuration used to test Oreka TR includes the Communication Manager Release 5.2.1 running on Avaya S8300C Server, the Avaya G350 Media Gateway, the Application Enablement Services Release 4.2 Bundled Offer running on S8500C, Windows 2003 Server for the Oreka TR application, soft clients, and telephones. **Figure 1** provides a high level topology.

Before Oreka TR can start recording, VoIP traffic must be seen on a server interface. Use SPAN port mirroring to get traffic to the Oreka TR server. Two configurations are supported:

SPAN monitoring the VoIP VLAN so that all traffic to and from phones is intercepted

SPAN monitoring the gateway and server (Communication Manager S8300/G350)

This mirroring ensures that both the media traffic (RTP) and the H.323 signaling are intercepted by the recorder. Once the VoIP traffic appears on the server, the Oreka TR can record. For this interoperability test, the second option was tested.

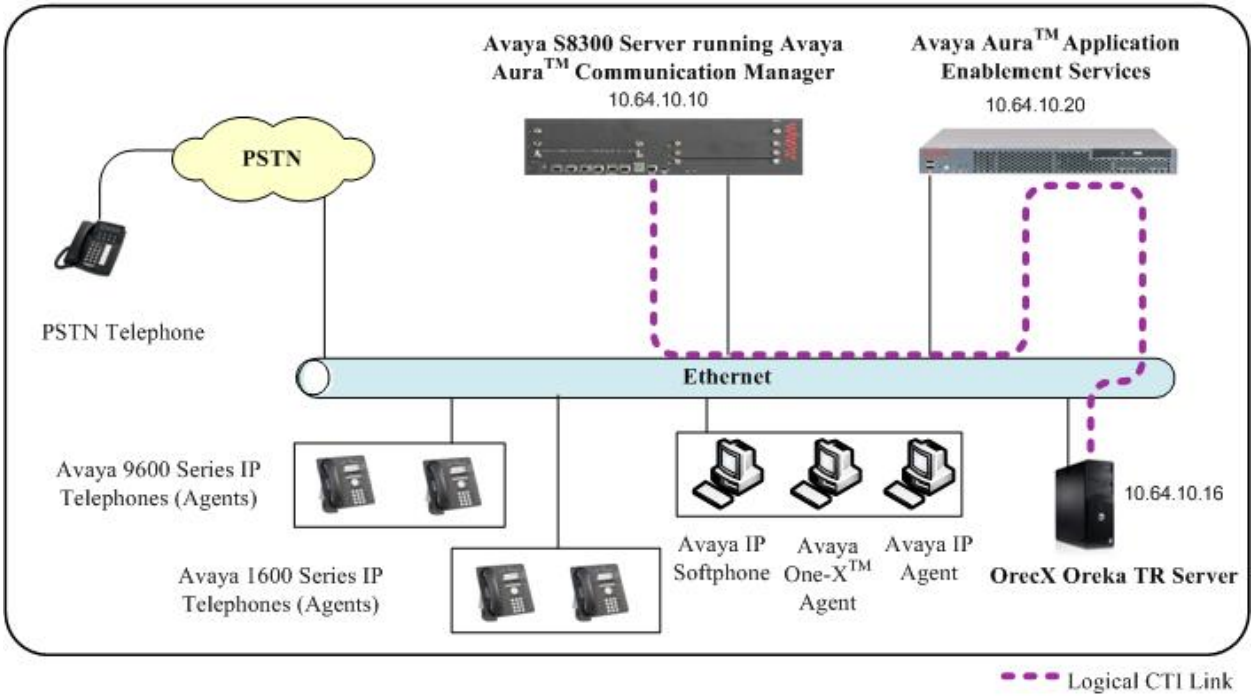


Figure 1: Oreka TR Compliance Test Sample Configuration

The compliance testing was done with Avaya Aura™ Communication Manager 5.2.1 running on an Avaya S8300C Server with Avaya G350 Media Gateway. The results in these Application Notes should be applicable to other Avaya servers and media gateways that support Avaya Aura™ Communication Manager 5.2.1.

3. Equipment and Software Validated

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

Hardware/Software Component	Version/Description
Avaya S8300C Server and G350 Media Gateway	Avaya Aura™ Communication Manager 5.2.1 (R015x.02.1.016.4) with Service Pack 17774
Avaya S8500C server running Aura™ Application Enablement Services (Bundled Offer)	Release 4.2.3
Avaya 9600 Series IP Telephones 9620, 9630, 9640	hb96xxua2_00.bin
Avaya 1608 Series IP Telephones	ha1608b1024vs.bin
Avaya IP Softphone	R6
Avaya one-X™ Agent	R1
Avaya IP Agent	R7
OrecX Oreka Total Recorder running on Windows 2003 Server	Version 1.2-701-x1592 with Windows IIS Services 5.1, .NET Framework 3.5, and IE 6.0

4. Configure Avaya Aura™ Communication Manager

All the configuration changes in this section for Communication Manager are performed through the System Access Terminal (SAT) interface. For more information on configuring Communication Manager, refer to the Avaya product documentation, **Section 10,** Reference [1].

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

- Verify Avaya Communication Manager License
- Administer Processor Ethernet Interface for Application Enablement Services connectivity
- Administer CTI link with TSAPI service

The detailed administration of contact center entities, such as VDNs, Hunt Groups, Skills, Logical Agents and Station Extensions are assumed to be in place and are not covered in these Application Notes.

4.1. 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.

Enter the **display system-parameters customer-options** command.

- On **Page 3**, verify that the **Computer Telephony Adjunct Links** field is set to **y** for yes. If not, contact an authorized Avaya account representative to obtain the license.

```
display system-parameters customer-options                    Page  3 of  11
                                OPTIONAL FEATURES

    Abbreviated Dialing Enhanced List? n      Audible Message Waiting? n
        Access Security Gateway (ASG)? n      Authorization Codes? n
        Analog Trunk Incoming Call ID? n      CAS Branch? n
    A/D Grp/Sys List Dialing Start at 01? n   CAS Main? n
Answer Supervision by Call Classifier? n      Change COR by FAC? n
                               ARS? y         Computer Telephony Adjunct Links? y
                ARS/AAR Partitioning? y       Cvg Of Calls Redirected Off-net? n
        ARS/AAR Dialing without FAC? n        DCS (Basic)? n
            ASAI Link Core Capabilities? n    DCS Call Coverage? n
            ASAI Link Plus Capabilities? n    DCS with Rerouting? n
    Async. Transfer Mode (ATM) PNC? n
Async. Transfer Mode (ATM) Trunking? n        Digital Loss Plan Modification? n
            ATM WAN Spare Processor? n        DS1 MSP? n
                               ATMS? n        DS1 Echo Cancellation? y
                  Attendant Vectoring? n
```

4.2. Administer Processor Ethernet Interface for Application Enablement Services Connectivity

Verify the entry for the Processor Ethernet Interface in the node-names form.

- Enter the **change node-names ip** command. In this case, **procr** and **10.64.10.10** are already populated as **Name** and **IP Address** for the Processor Ethernet Interface that will be used for connectivity to the Application Enablement Services server. The actual IP address may vary. Submit these changes.

```
change  node-names ip                                         Page  1 of  2
                                IP NODE NAMES
   Name          IP Address
default          0.0.0.0
msgserver        90.1.1.111
procr            10.64.10.10
test             10.64.10.80
```

On an S8300 server, the Processor Ethernet Interface should already be in the ip-interface list.

- The **display ip-interface procr** command and the **list ip-interface all** command will display the parameters of the Processor Ethernet Interface on the S8300.

```
display ip-interface procr
                                IP INTERFACES
          Type: PROCR
                                                    Target socket load: 1700
    Enable Interface? y          Allow H.323 Endpoints? y
                                  Allow H.248 Gateways? y
     Network Region: 1             Gatekeeper Priority: 5

                                IPV4 PARAMETERS
         Node Name: procr
        Subnet Mask: /24
```

Add an entry for IP Services with the following values for fields on **Page 1**, as displayed below:

- Enter the **change ip-services** command.
- In the **Service Type** field, type **AESVCS**.
- In the **Enabled** field, type **y**.
- In the **Local Node** field, type the Node name **procr** for the Processor Ethernet Interface.
- In the **Local Port** field, 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
AESVCS        y        procr      8765
```

Navigate to **Page 3** of the IP Services form, and enter the following values:

- In the **AE Services Server** field, type the name obtained from the Application Enablement Services server, in this case **AES**.
- In the **Password** field, type the password to be administered on the Application Enablement Services server as described in the note below, in conjunction with the steps in **Section 5.**
- In the **Enabled** field, type **y**.

```
change ip-services                                              Page  3 of  3
                        AE Services Administration

  Server ID   AE Services      Password        Enabled    Status
                Server
     1:     AES                ********           y       in use
     2:
```

Note that the name and password entered for the **AE Services Server** and **Password** fields must match the name and password on the Application Enablement Services server. The administered name for the Application Enablement Services server is created as part of the Application Enablement Services installation, and can be obtained from the Application Enablement Services server by typing **uname –n** at the Linux command prompt. The same password entered above will need to be set on the Application Enablement Services server using **Administration -> Switch Connections -> Edit Connection -> Set Password**.

4.3. Administer Computer Telephony Integration (CTI) Link

This section provides the steps required for configuring a CTI Link.

Enter the **add cti-link <link number>** command, where **<link number>** is an available CTI link number.

- In the **Extension** field, type **<station extension>**, where **<station extension>** is a valid station extension.
- In the **Type** field, type **ADJ-IP**.
- In the **Name** field, type a descriptive name.

```
add cti-link 1                                                Page  1 of  3
                                    CTI LINK
 CTI Link: 1
Extension: 5990
      Type: ADJ-IP
                                                                   COR: 1
     Name: AVAYA CTI1
```

Enter the **list cti-link** command to verify that the CTI Link is configured. All configured links will show in this screen.

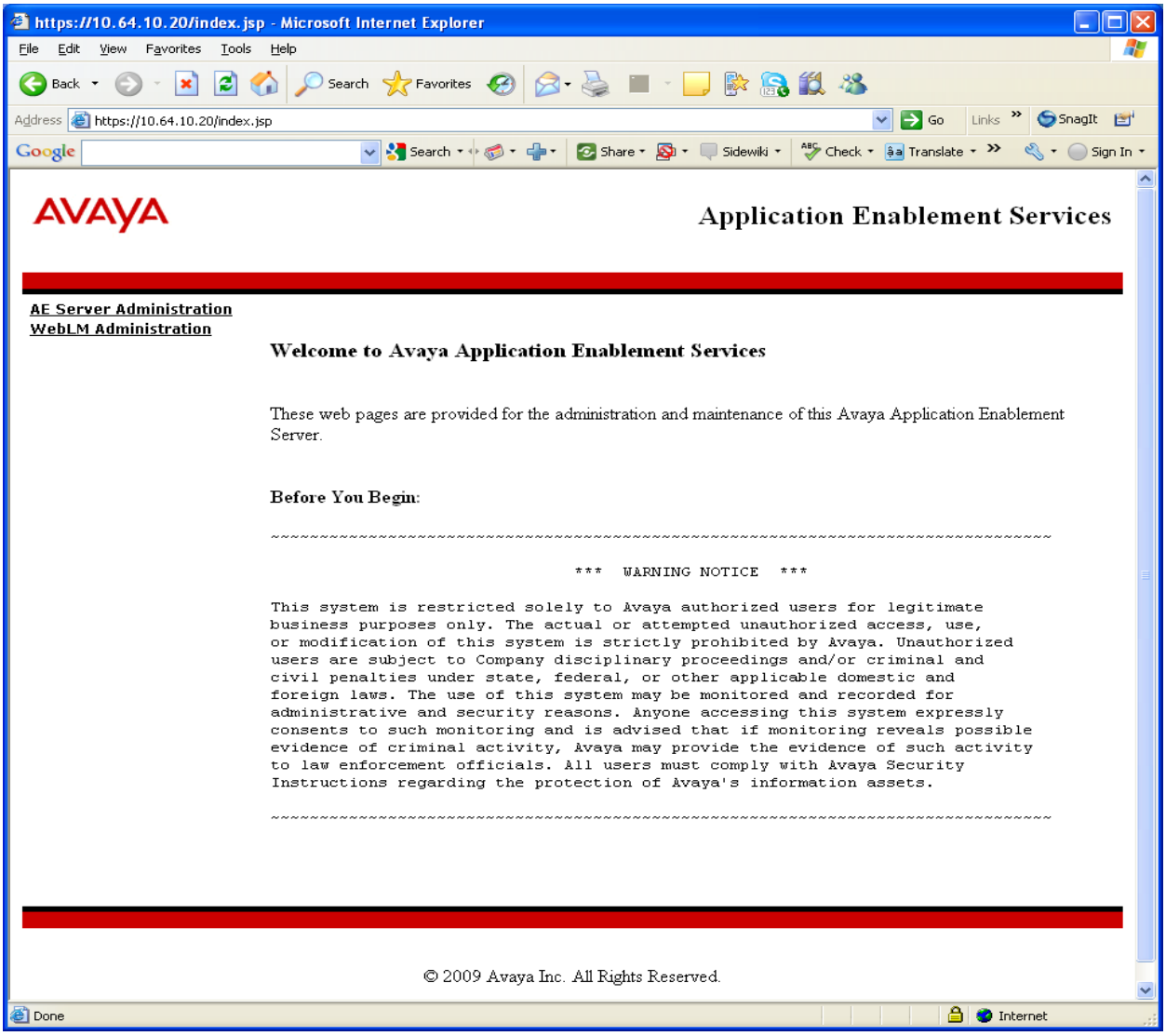
```
list cti-link
                                    CTI LINKS
                                     2-Dgt
Link  Ext        Type        Port    Name              COR  AuxRC
1     5990       ADJ-IP              AVAYA CTI1         1     n
```

5. Configure Avaya Aura™ Application Enablement Services

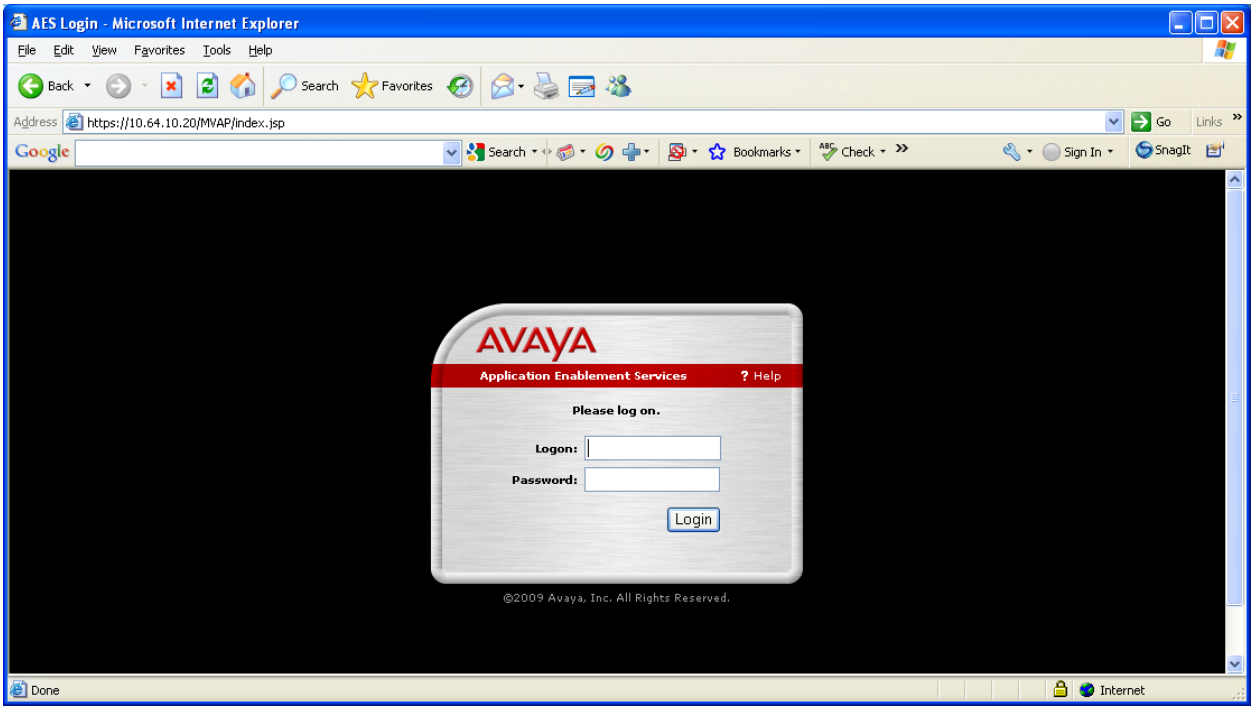
Application Enablement Services enables Computer Telephony Interface (CTI) applications to monitor and control telephony resources on Communication Manager. The Application Enablement Services server receives requests from CTI applications and forwards them to Communication Manager. Conversely, the Application Enablement Services server receives responses and events from Communication Manager and forwards them to the appropriate CTI applications.

This section assumes that the installation and basic administration of the Application Enablement Services server has already been performed. For more information on administering Application Enablement Services, refer to the Avaya product documentation, **Section 10,** Reference [2].

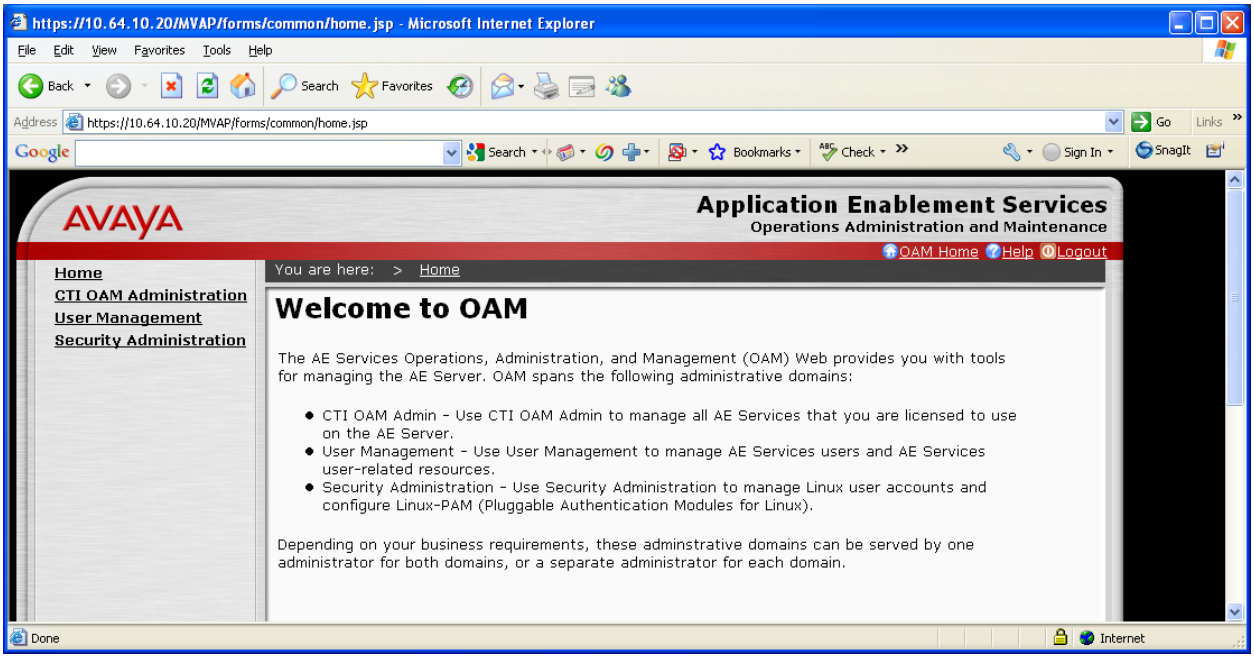
Access the AES OAM web-based interface by using the URL **https://ip-address** in an Internet browser window, where **ip-address** is the IP address of the AES server.



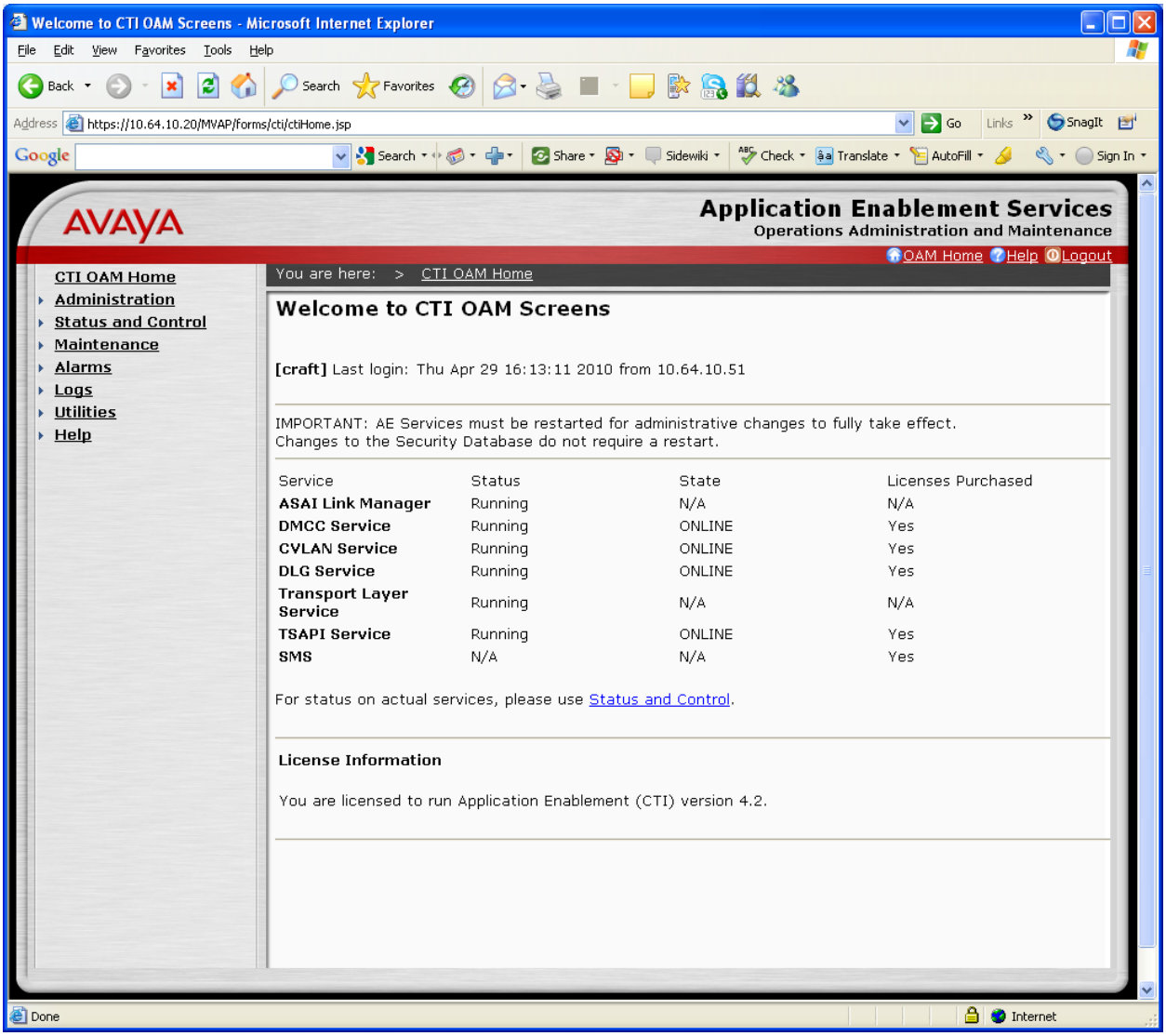
The **Login** screen is displayed as shown below. Log in with the appropriate credentials.



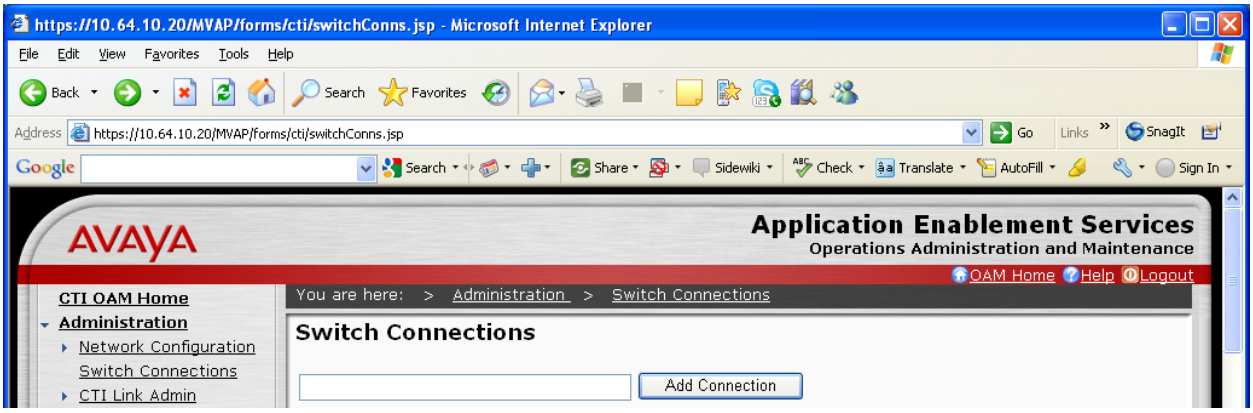
The **Welcome to OAM** screen is displayed next. Select **CTI OAM Administration** from the left pane.



The **Welcome to CTI OAM Screens** screen is displayed. Verify that AES is licensed for the TSAPI Service, as shown in the screen below. If the TSAPI Service is not licensed, contact the Avaya sales team or business partner for a proper license file.

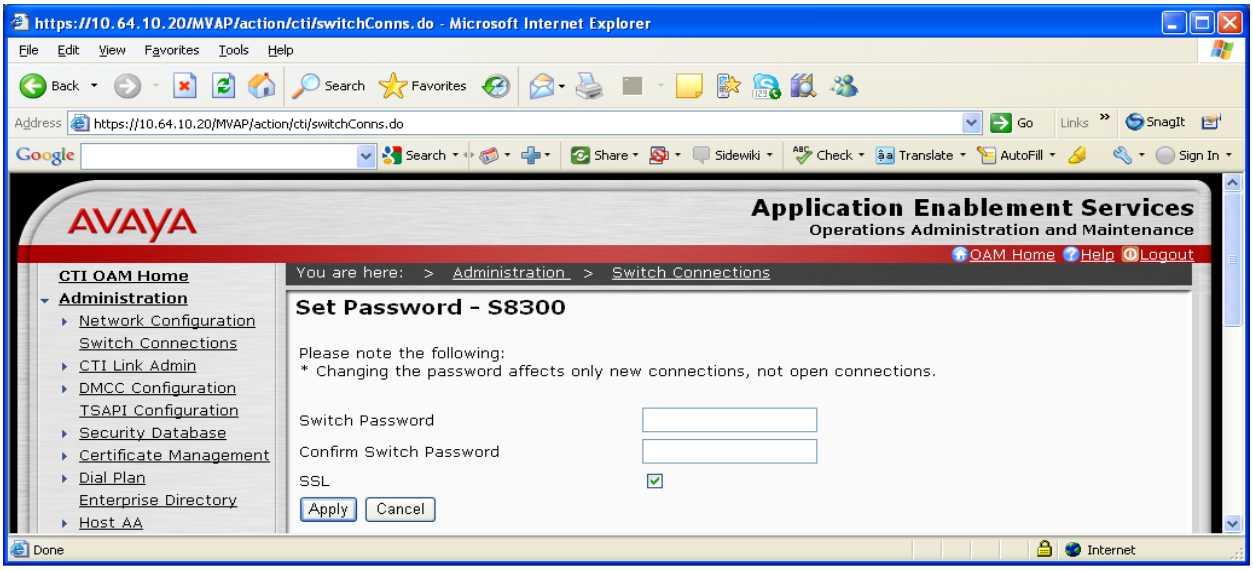


Select **Administration** -> **Switch Connections** from the left pane. The Switch Connections screen is displayed, as shown below. Enter a descriptive name for the switch connection and click on **Add Connection**. In this case, **S8300** is used. Note that the actual switch connection name may vary.

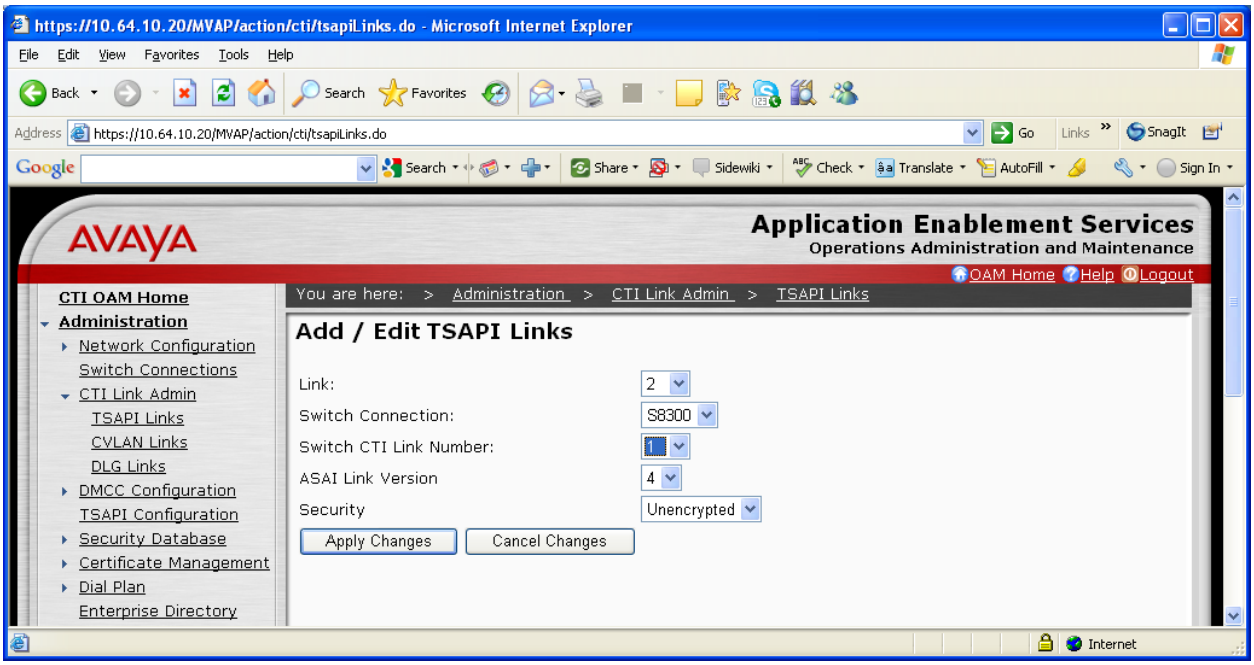


Next, the **Set Password – S8300** screen is displayed. Enter the following values for the specified fields and click **Apply**.

- **Switch Password**: Same as password in **Section 4.2**.
- **Confirm Switch Password**: Re-enter the password entered above.
- **SSL**: Retain the default check.



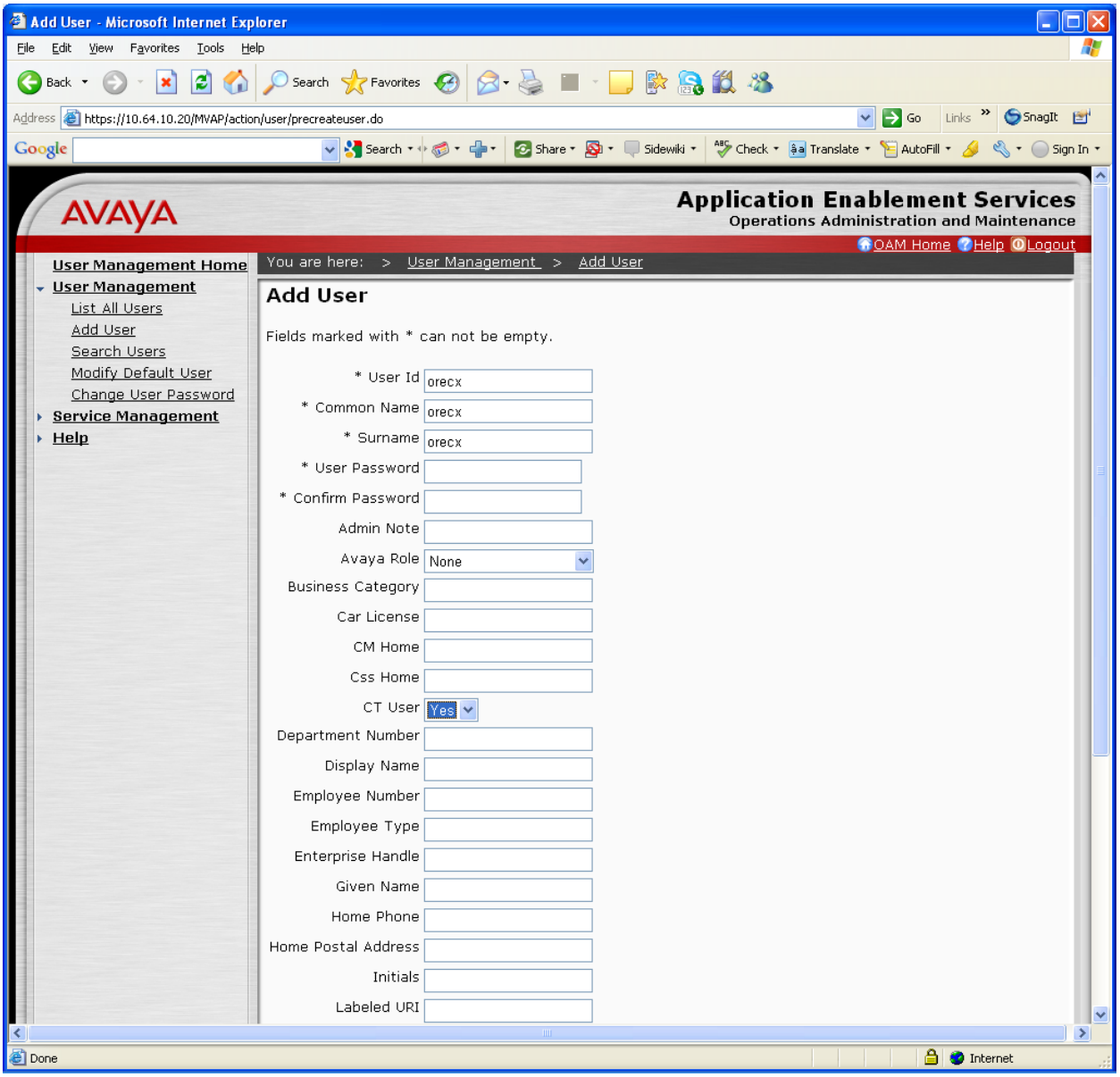
Select a Switch Connection using the drop down menu. Select the Switch CTI Link Number using the drop down menu. The CTI link number should match the number configured in the cti-link form in **Section 4.3**. Click **Apply Changes**. Default values may be used in the remaining fields.



Next, add a CTI User, as Oreka TR requires a CTI user to access AES. Select **OAM Home -> User Management -> Add User** from the left pane.

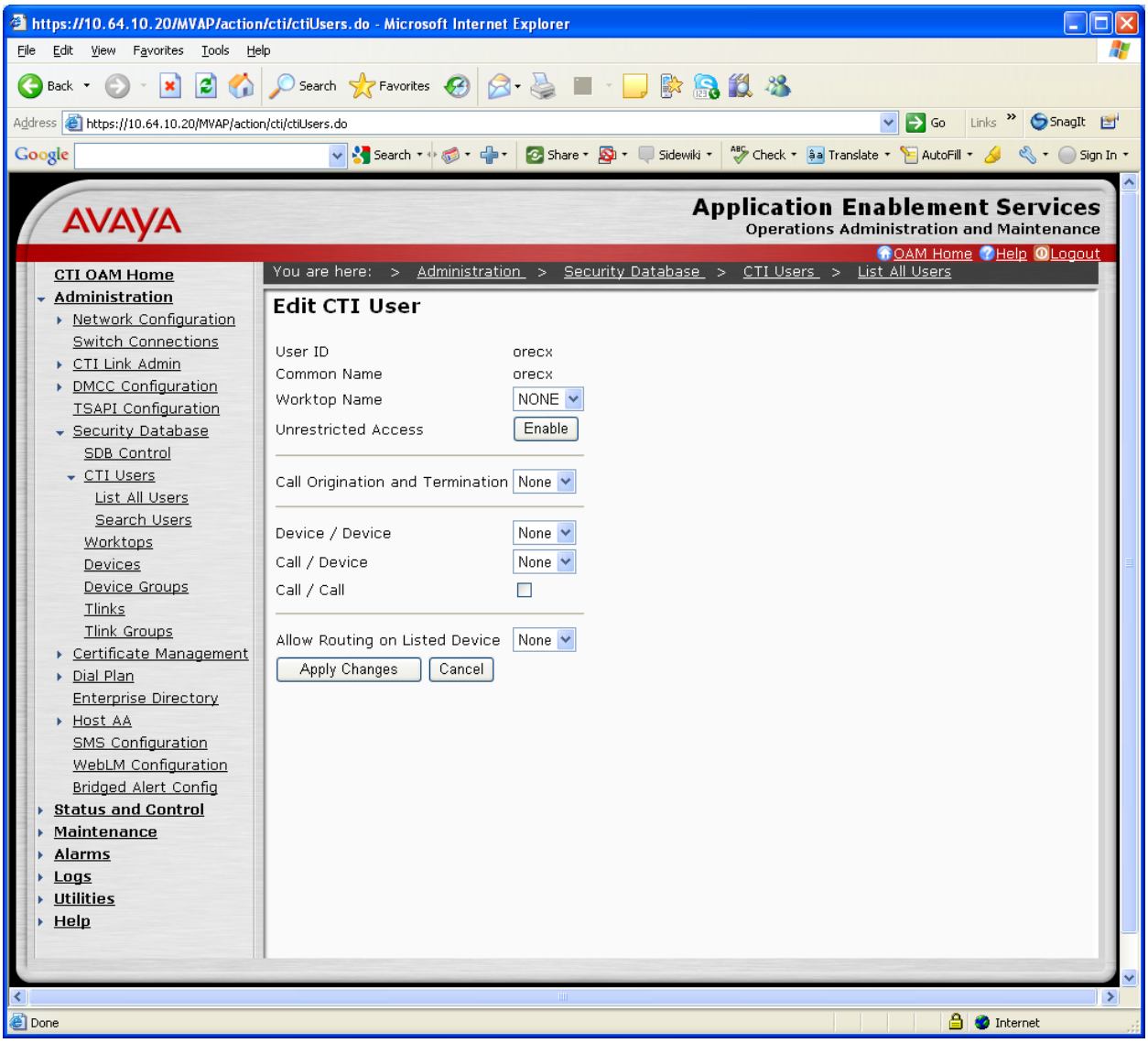
In the **Add User** screen, enter the following values:

- In the **User Id** field, type a meaningful user id.
- In the **Common Name** field, type a descriptive name.
- In the **Surname** field, type a descriptive surname.
- In the **User Password** field, type a password for the user.
- In the **Confirm Password** field, re-enter the same password for the user.
- In the **Avaya Role** field, retain the default of **None**.
- In the **CT User** field, select **Yes** from the dropdown menu.
- Click **Apply** at the bottom of the screen (not shown here).

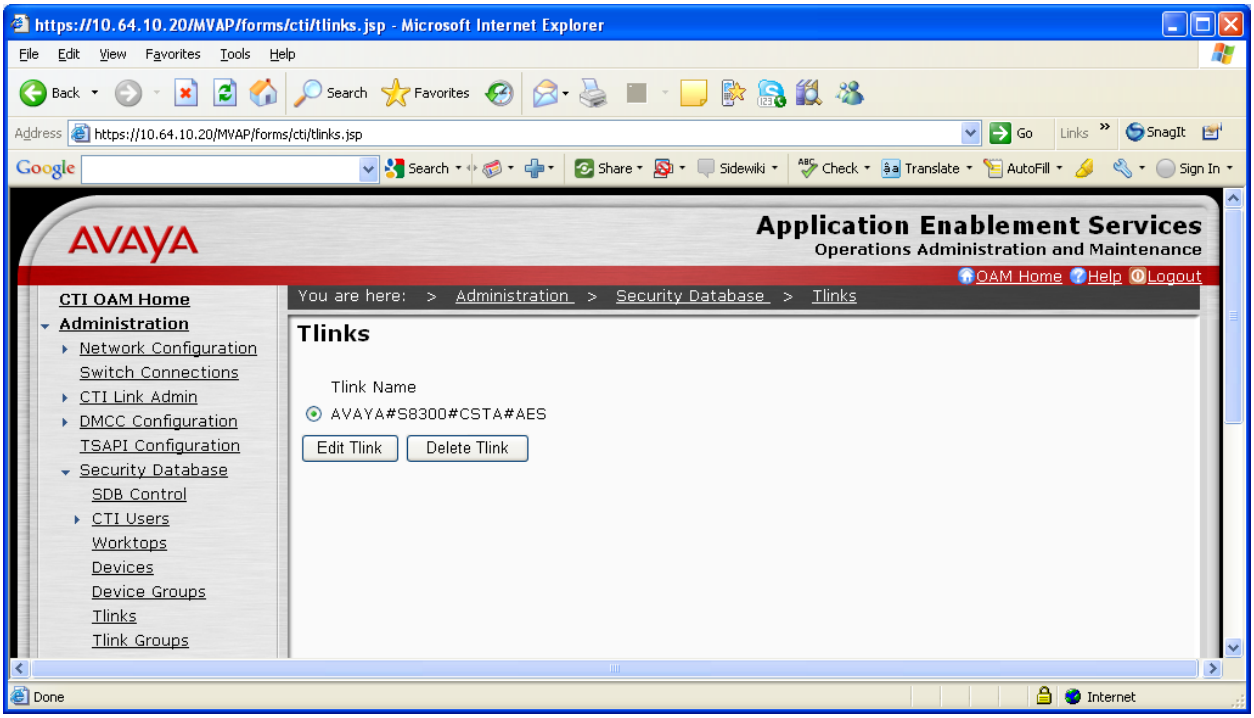


Next, change the security level for the CTI User as it needs to have unrestricted access privileges. Select **Administration -> Security Database -> CTI Users -> List All Users** from the left pane. Choose the CTI user, and click **Edit**.

Provide the user with unrestricted access privileges by clicking the **Unrestricted Access** button so that it shows **Enable**. Click **Apply Changes**.



Select **Administration -> Security Database -> CTI Users -> Tlinks** from the left pane. The **Tlinks** screen shows a listing of the Tlink names. A new Tlink name is automatically generated by the Application Enablement Services server upon creation of a new switch connection. Locate the Tlink name associated with the relevant switch connection. This uses the name of the switch connection as part of the Tlink name, in this case **S8300**: AVAYA#**S8300**#CSTA#AES.



6. Configure Oreka Total Recorder

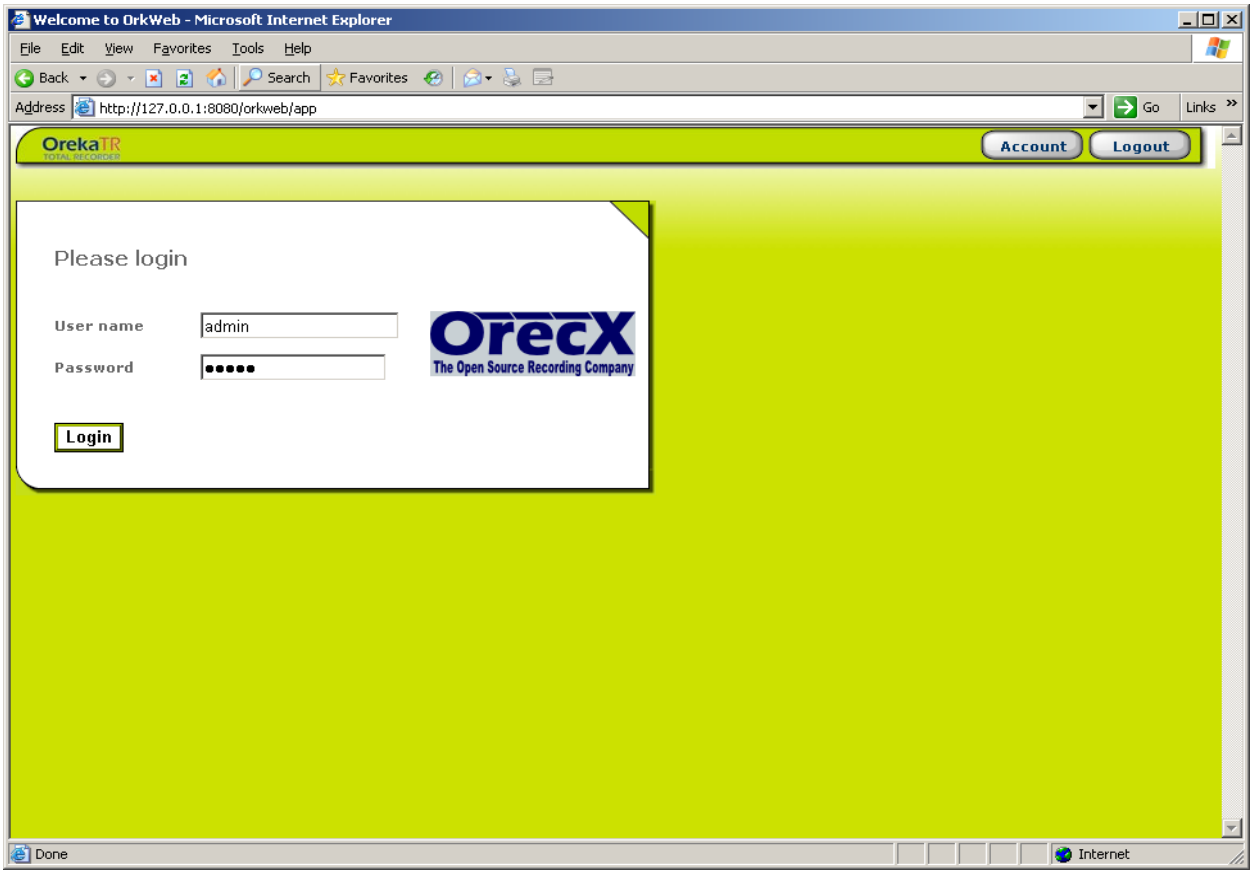
This section provides the procedures for configuring Oreka Total Recorder. The procedures include the following areas:

- Launching Oreka Total Recorder Web Service
  - Browse
  - Live
  - Admin
- Viewing Oreka Total Recorder

The configuration of Oreka Total Recorder is typically performed by OrecX support technicians. The procedural steps are presented in these Application Notes for informational purposes. The CTI user and the TSAPI link configured in **Section 5** are used during the installation of the application. .

6.1. Launch Oreka Total Recorder

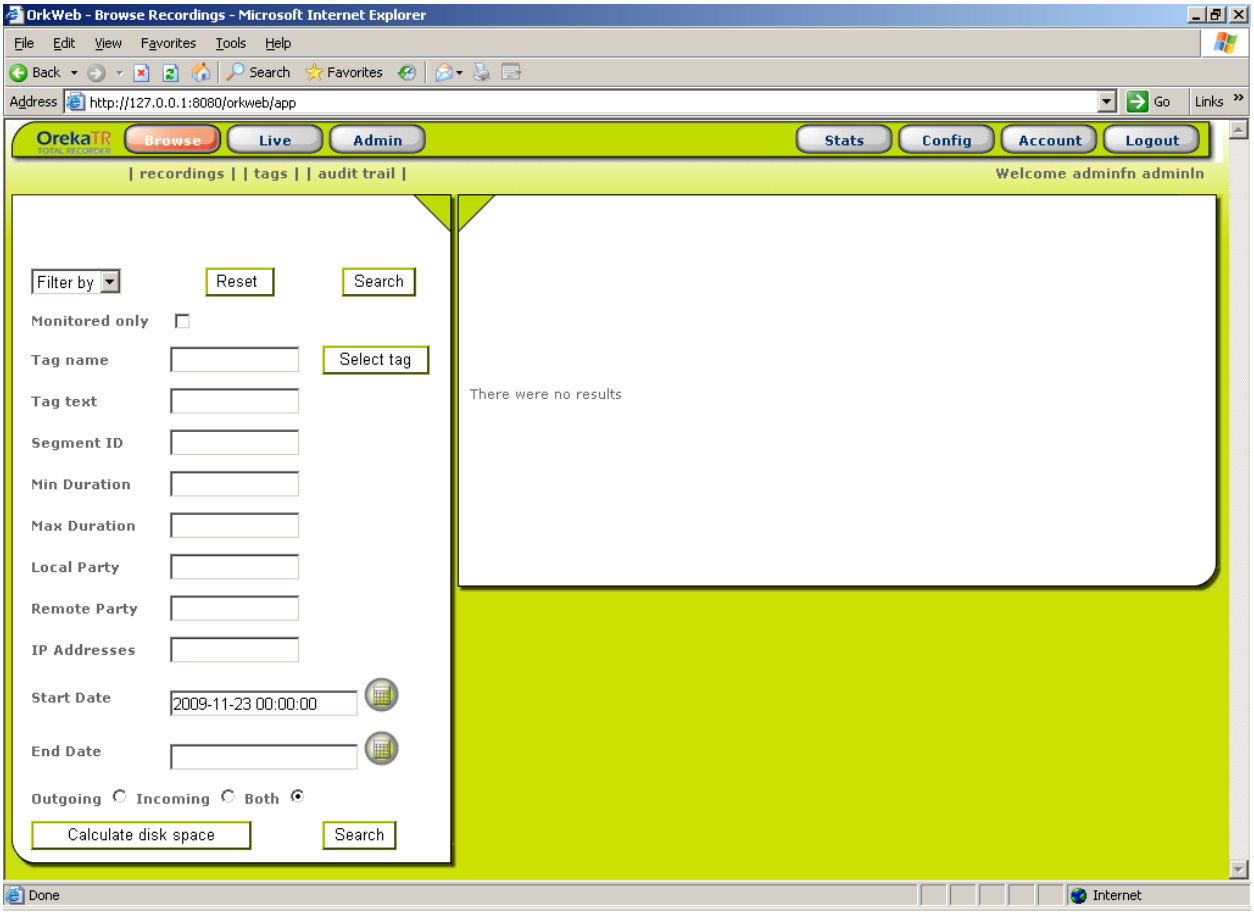
Access the Oreka TR web-based interface using the URL **http://ip-address:8080/orkweb/app** in an Internet browser window, where **ip-address** is the IP address of the Oreka TR server. The **Login** screen is displayed as shown below. Log in using the appropriate credentials.



6.1.1. Browse

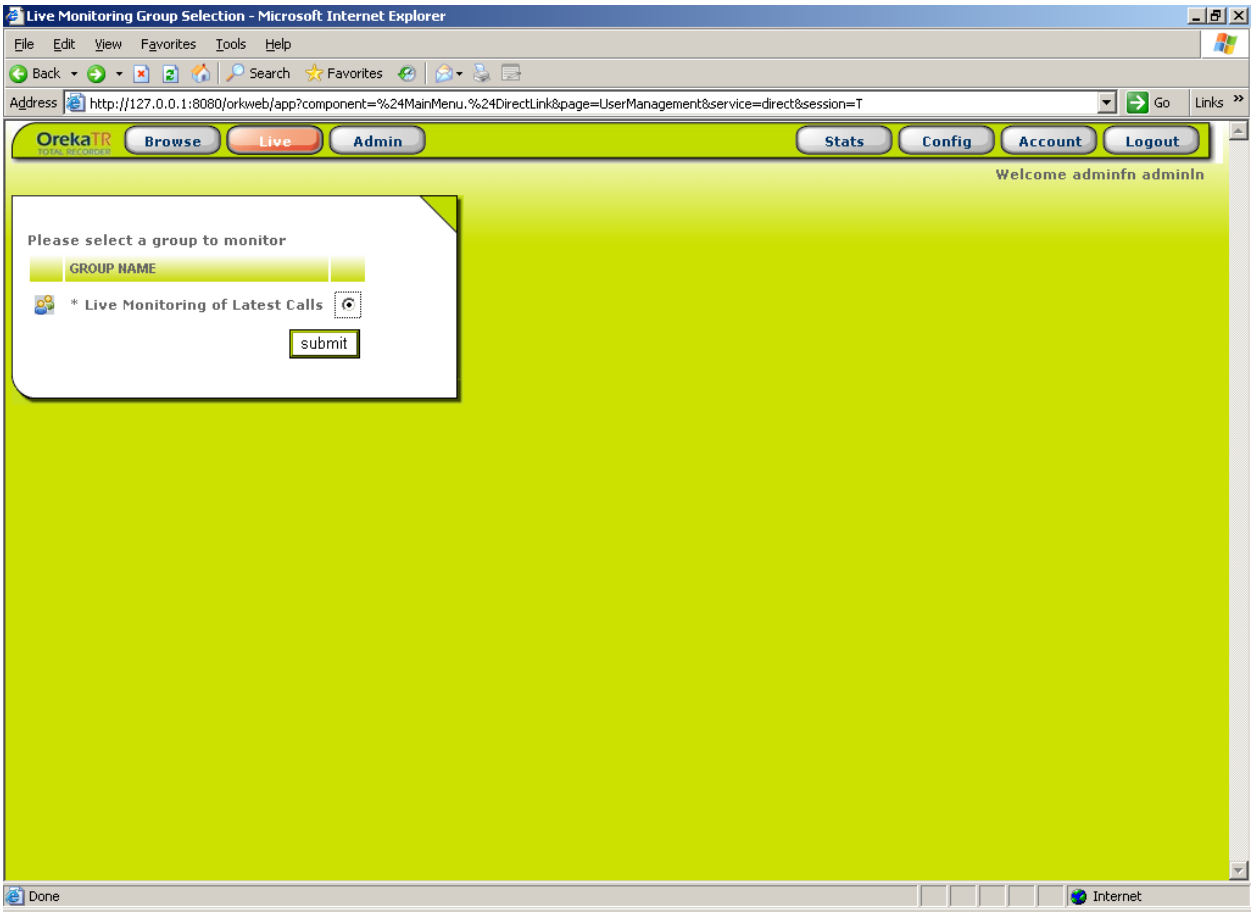
Once logged in, the screen below appears. Under the **Browse** button, filters and tags can be set, and searches can be performed.

- In the left pane, filters and tags can be added. These were not used for the interoperability tests.
- In the right pane, a message appears, "There were no results." As shown in subsequent screen shots, this pane is populated with recordings from agents, extensions, and VDNs when live calls are set to be monitored and recorded.

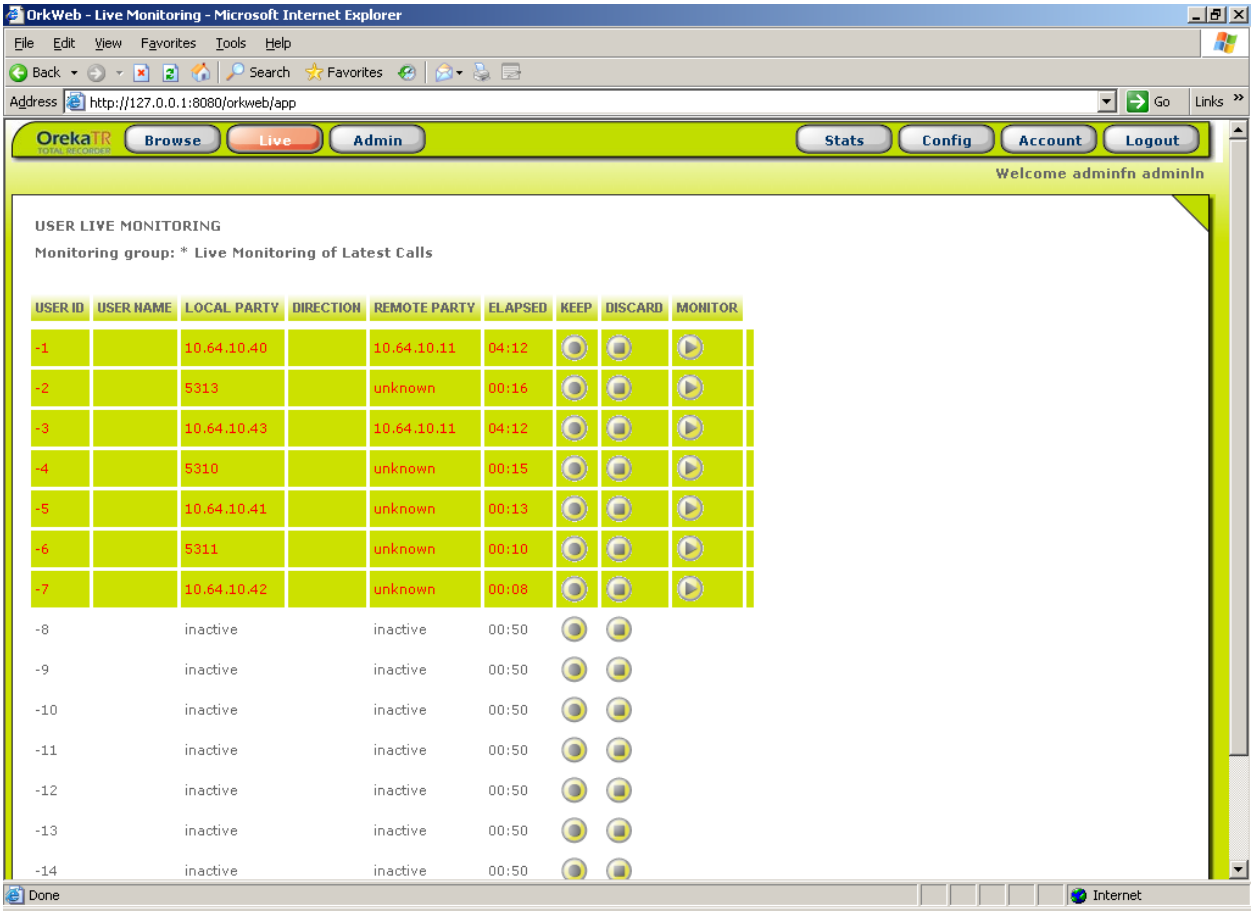


6.1.2. Live

Select the **Live** button to monitor an entire group. This allows for monitoring of current calls. All live calls to monitored stations can be observed. Click the radio button ***Live Monitoring of Latest Calls** under **GROUP NAME** to allow recording. Hit the **submit** button.

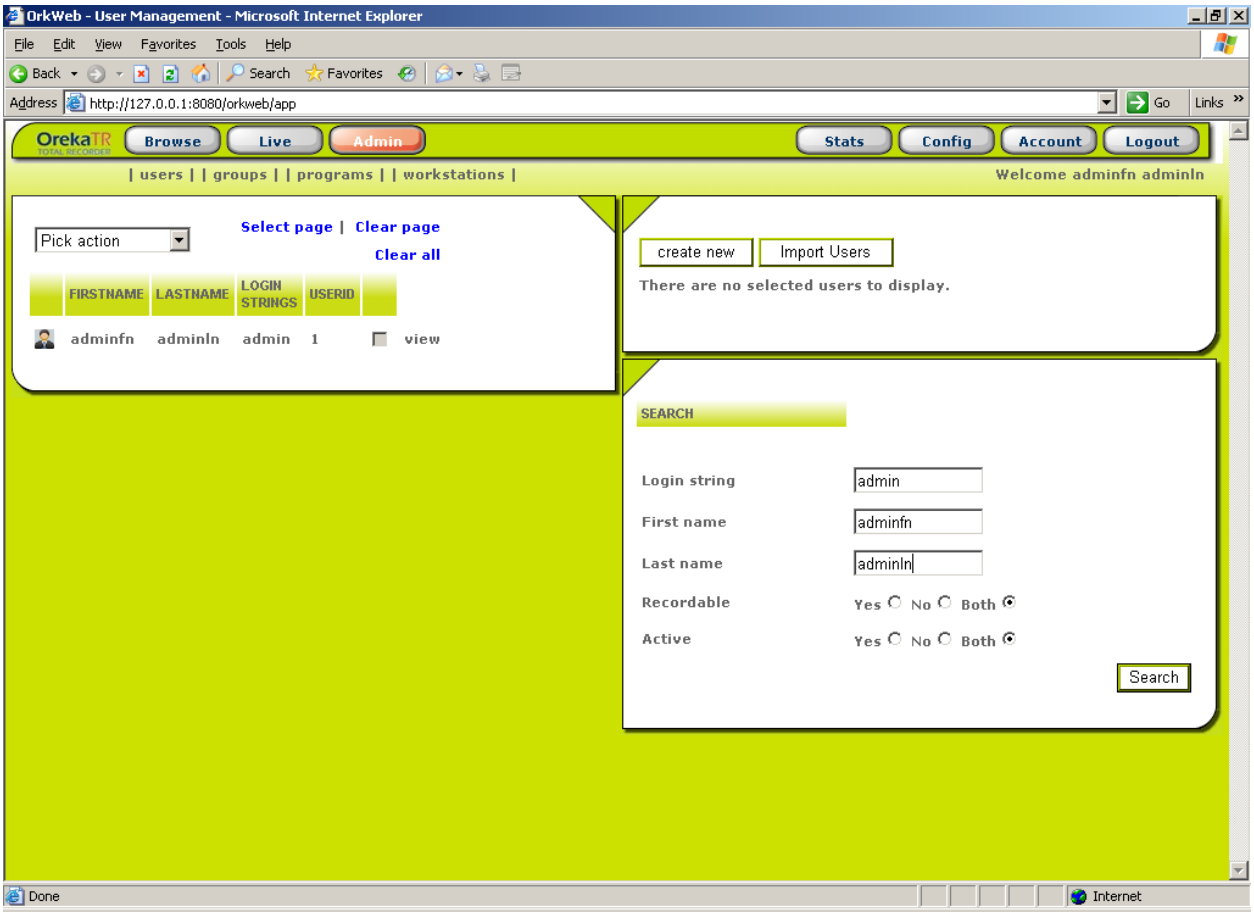


Once live monitoring is enabled, the screen below shows all active calls, including calling and called parties. The four digit extensions represent extensions and agents, and the IP addresses indicate IP Agent, IP Softphone, or One-X Agent calls. This information is obtained by monitoring the connection between Communication Manager and the AES server and recording that information within the application database.



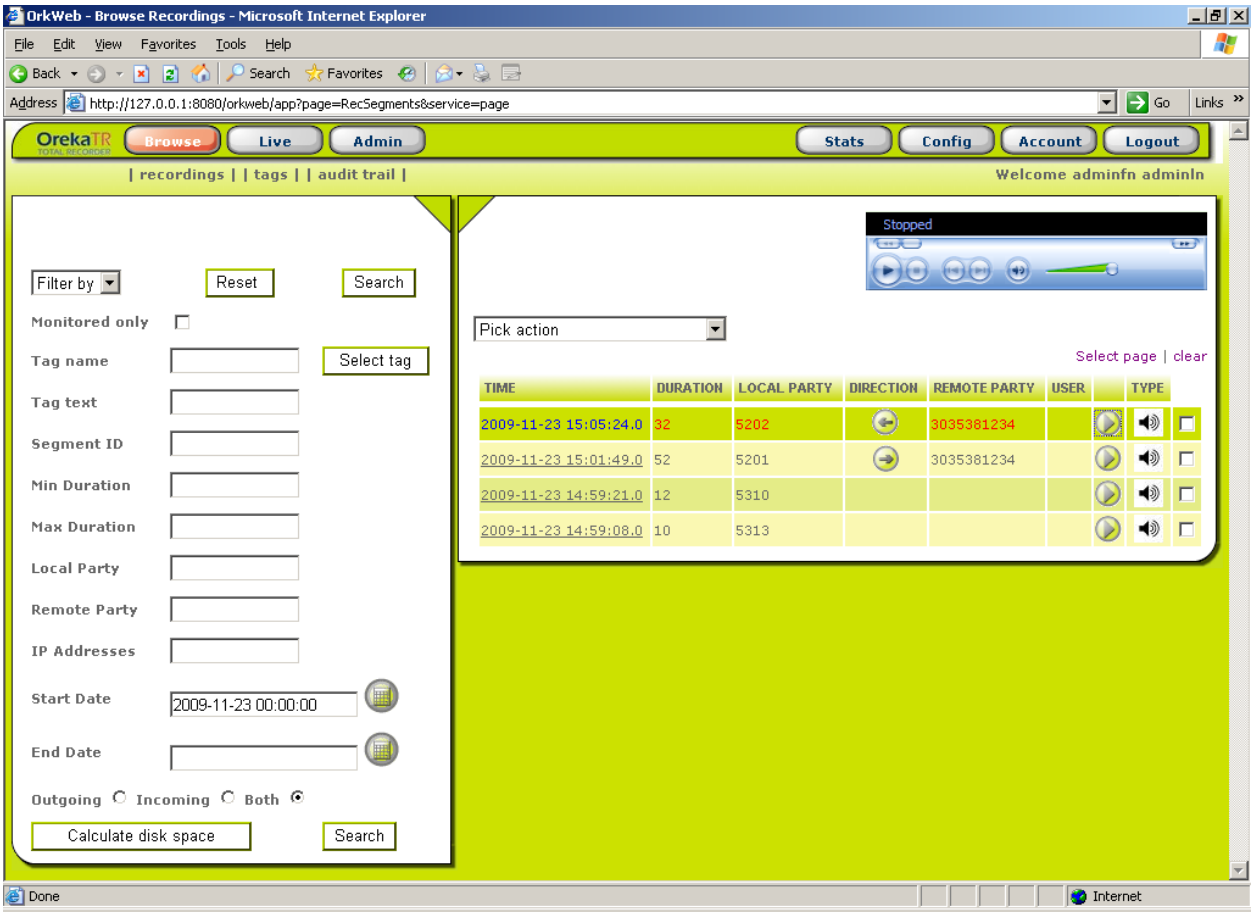
6.1.3. Admin

Select the **Admin** button to administer a user. There must be at least one user administered (in the case below, **admin** for test purposes). Customers can create multiple users or import users, though this functionality was not tested during compliance testing.



6.2. Viewing Recorded Calls

Once calls have been recorded, select the **Browse** button to view recorded calls. The **Browse** button also functions as a refresh of the screen. After waiting for a few seconds, the **Browse** button can be selected again to view additional calls.



7. General Test Approach and Test Results

All feature functionality test cases were performed manually to verify proper operation. The following scenarios were tested using the test configuration diagram shown in **Figure 1**.

The installation test cases were covered with the setup of Communication Manager, Application Enablement Services, and Oreka TR. The clean removal of the application was also covered in this section.

The functionality test cases were performed manually. Various calls were placed including incoming and outgoing PSTN calls to the monitored VDN, and incoming and outgoing calls to and between the agents, both telephones and soft clients. Calls were made with monitored and non-monitored agents, per test case specification.

The serviceability test cases were performed manually by disconnecting and reconnecting the Ethernet cable to the Oreka TR server at different intervals, powering down Communication Manager, powering down the Application Enablement Services server, and also by stopping the CTI service on Application Enablement Services.

The verification of tests included manually listening to recordings from the web, checking the timestamps and data of the recordings, and performing searches. All test cases passed. No errors were detected.

8. Verification Steps

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

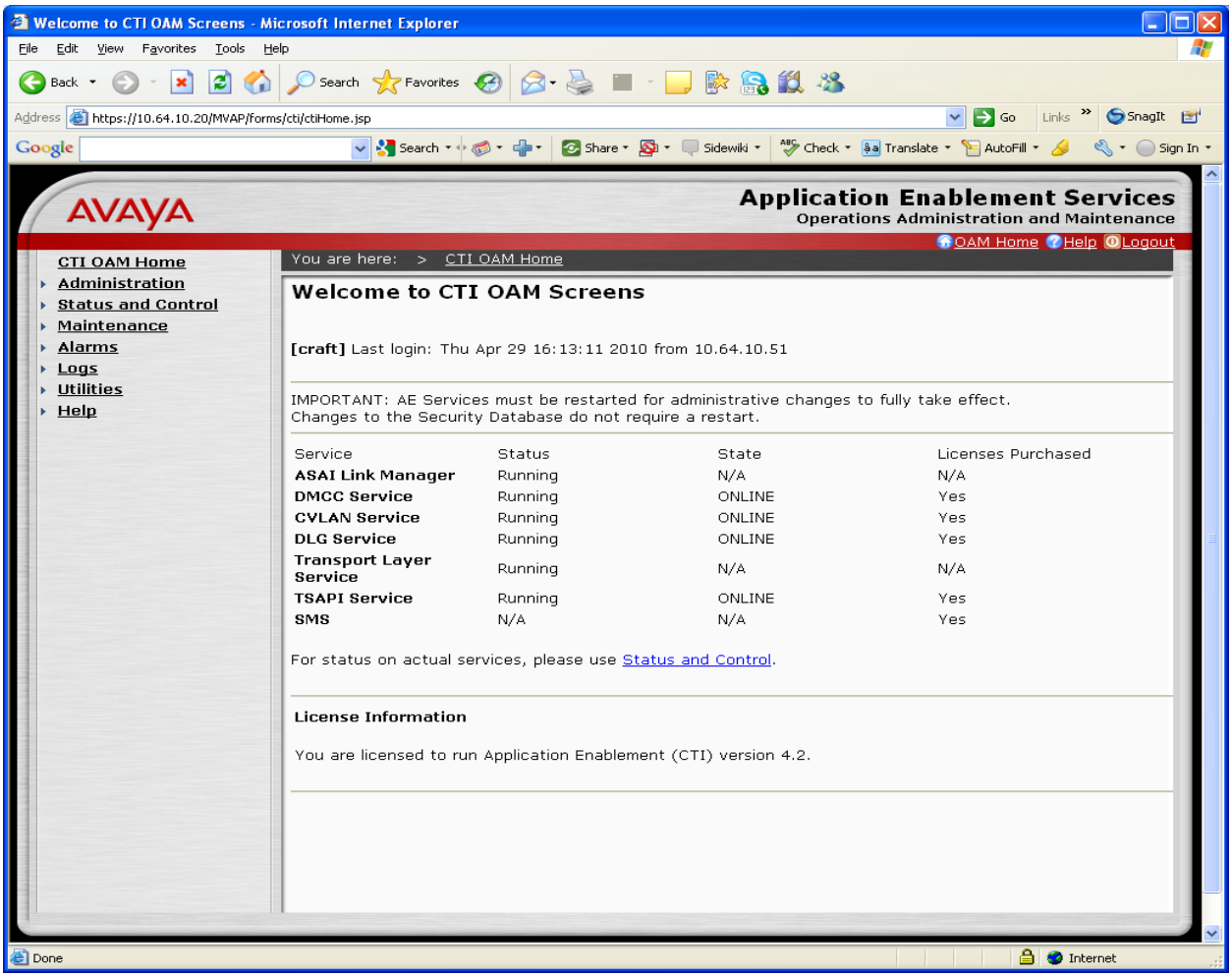
For Communication Manager, check the CTI Link status with the **status aesvcs cti-link** command. The link status should show **no** for maintenance busy (**Mnt Busy**) and the **Service State** should indicate **established**.

```
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             established    15      15
```

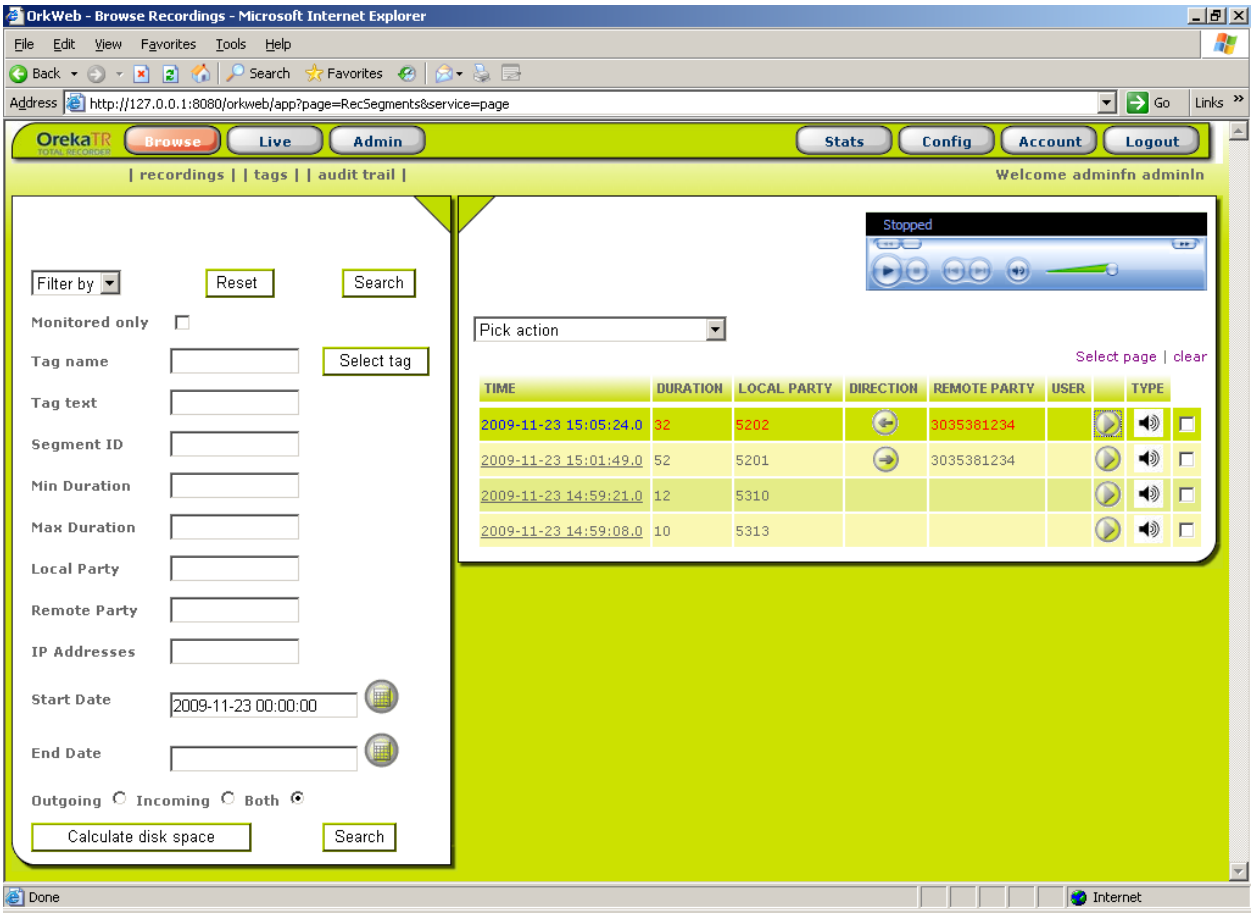
For AES, the TSAPI Service should show as **Running** Status, **ONLINE** State**,** and **Yes** for Licenses Purchased.



Oreka TR does not have a reporting mechanism to check the CTI link, though the link is actively monitored. To verify the setup is correct and the link is active, from the server running the Oreka TR, log in with the appropriate credentials.

Make an incoming call to VDN **5610** to a monitored, available agent from the PSTN. Verify that the call is ringing at the agent's telephone. Answer the call and verify talk path. On the Oreka TR web screen, hit the **Browse** button, verify the timestamp, duration, local party number, and direction are correct and that the PSTN information is correctly displayed.

Once multiple calls have been completed, the reporting can be verified by listening to a variety of call recordings, in this case by using the recording history under the **Browse** tab and selecting the play icon.



9. Conclusion

Oreka TR was compliance tested with Avaya Aura ™ Communication Manager Release 5.2.1 and Avaya Aura ™ Application Enablement Services Release 4.2. Oreka TR successfully captured and recorded phone activity for agents and ACD/split groups. All test cases completed successfully.

10. Additional References

This section references the Avaya and Oreka TR product documentation that are relevant to these Application Notes.

The following Avaya product documentation can be found at http://support.avaya.com:

[1] *Administering Avaya Aura™ Communication Manager*, Doc ID: 03-300509, Issue 5.0, Release 5.2, May 2009; *Avaya Aura™ Change Description for Release 5.2.1,* Doc ID: 03-603443, Issue 1, November 2009

[2] Avaya *MultiVantage Application Enablement Services Administration and Maintenance Guide*, Doc ID: 02-300357, Release 4.2, Issue 10, May 2008

[3] *Oreka TR Quick Start Guide Version 1.2, Rev. 3*, available via request to support@orecx.com

Please e-mail any questions or comments pertaining to these Application Notes along with the full title name and filename, located in the lower right corner, directly to the Avaya DevConnect Program at devconnect@avaya.com.