



Avaya Solution & Interoperability Test Lab

Application Notes for Magnetic North Optimise VoIP Call Recorder with Avaya Communication Manager and Avaya Application Enablement Services – Issue 1.0

Abstract

These Application Notes describe the configuration steps required for Magnetic North Optimise using VoIP Call Recording to interoperate with Avaya Communication Manager and Avaya Application Enablement Services.

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

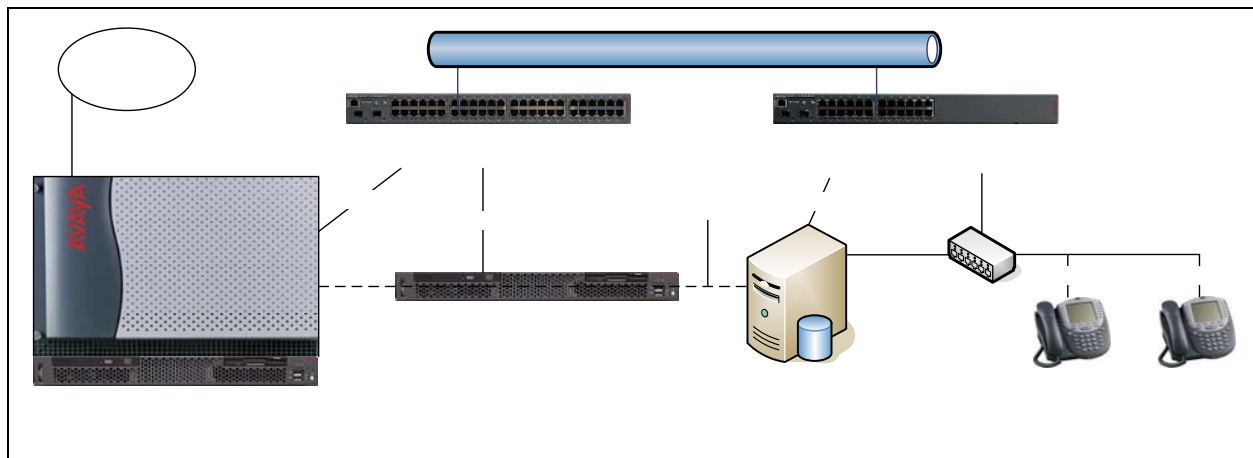
1. Introduction

These Application Notes describe the configuration steps required for Magnetic North Optimise using VoIP call recording to interoperate with Avaya Communication Manager and Avaya Application Enablement Services (AES).

Optimise provides recording based on packet mirroring of voice over IP (VoIP) data across an Avaya Communication Manager network. The AES Telephony Service Application Programmer Interface (TSAPI) client software is used by Optimise to receive the Computer Telephony Interface (CTI) data from monitored Avaya Communication Manager stations. Optimise uses the TSAPI call states to determine when to start and stop recording. The AES TSAPI client software is typically installed on the same server as the Optimise software.

VoIP call recording is performed using network packet mirroring of the Real-time Transport Protocol (RTP) traffic transmitted by the telephone sets that are to be recorded. The Optimise server must be equipped with dedicated Gigabit network interface cards (NIC) to receive, analyse & subsequently de-code the RTP traffic.

There are several options as to how the RTP traffic is presented to the NIC cards. For the compliance testing the Optimise server and IP telephones were connected to a hub in order that all IP traffic to and from the telephones was available to the Optimise server. This configuration is shown in the following diagram.



2. Equipment and Software Validated

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

Equipment	Software
Avaya S8500B Media Server	Avaya Communication Manager 3.1.2 (R13.01.2.632.1)
Avaya G650 Media Gateway:	
Avaya AES Server	AES 3.1.2
Avaya C364T-PWR Converged Stackable Switch	4.3.12
Avaya C363T-PWR Converged Stackable Switch	4.3.12
Avaya 4620SW IP Telephones (H.323)	2.4
Avaya 4625SW IP Telephones (H.323)	2.5
Magnetic North Optimise running on Acer Veriton 7700GX Server	4.1.0 SR18 Windows Server 2003, Service Pack 1

3. Configure Avaya Communication Manager

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

- Administer C-LAN for AES connectivity.
- Administer IP service for AES connectivity.
- Administer CTI-link for the TSAPI service.

These Application Notes do not show the administration of the telephones on Avaya Communication Manager. The extensions used were 10001, 10002 and 10003. For further reference, refer to the appropriate documentation in **Section 9**.

3.1. Administer C-LAN for AES Connectivity

Use the “display system-parameters customer-options” command, and verify that the **ASAI Link Core Capabilities** customer option is set to “y” on **Page 3**. If the **ASAI Link Core Capabilities** is not set to “y”, then contact the Avaya sales team or business partner and request a new license file.

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

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

(NOTE: You must logoff & login to effect the permission changes.)
```

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

First, add an entry for the C-LAN in the **IP NODE NAMES** form. Use the “change node-names ip” command. In this case, “clan1a_DC1” and “10.1.10.12” are entered as the **Name** and **IP Address** for the C-LAN that will be used for connectivity to the AES server. The actual node name and IP address may vary. Submit these changes.

```
change node-names ip
```

		IP NODE NAMES	
Name	IP Address	Name	IP Address
S8500_Val1	10 .1 .10 .14		
clan1a_DC1	10 .1 .10 .12		
default	0 .0 .0 .0		
medprola_DC1	10 .1 .10 .13		
procr	10 .1 .10 .10		

Next, add the C-LAN to the system configuration using the “add ip-interface x” command, where x is an available slot number. Note that the actual slot number may vary. In this case, “01A10” is used as the slot number. Enter the node name assigned in the previous step, and the **IP Address** field will then be populated automatically. Set the **Enable Ethernet Port** field to “y”.

The values to be entered for the **Subnet Mask** and **Gateway Address** fields will be determined by the network administrator. Submit these changes.

```
add ip-interface 01a10
```

Page 1 of 1

IP INTERFACES

Type: C-LAN

Slot: 01A10

Code/Suffix: TN799 D

Node Name: **clan1a_DC1**

IP Address: 10 .1 .10 .12

Subnet Mask: 255.255.255.0

Gateway Address: 10 .1 .10 .1

Enable Ethernet Port? **y**

Network Region: 1

VLAN: n

Link: 1

Allow H.323 Endpoints? y

Allow H.248 Gateways? y

Gatekeeper Priority: 5

Target socket load and Warning level: 400

Receive Buffer TCP Window Size: 8320

ETHERNET OPTIONS

Auto? y

Next, add a new data module using the “add data-module x” command, where “x” is an available extension. Enter the following values.

- **Name:** Enter a descriptive name.
- **Type:** “ethernet”
- **Port:** Same slot number from the previous step and port “17”.
- **Link:** A link number not previously assigned on this switch.

```
add data-module 19112                                     Page 1 of 1

                                DATA MODULE

Data Extension: 19112      Name: clan1a_DC1 datalink 12
      Type: ethernet
      Port: 01A1017
      Link: 12

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

3.2. Administer IP Service for AES Connectivity

Administer the IP Service for Avaya AES with the “change ip-services” command. Add an entry with the following values on **Page 1**.

- **Service Type:** “AESVCS”
- **Enabled:** “y”
- **Local Node:** The same node name assigned in **Section 3.1**.
- **Local Port:** Leave at the default value of “8765”.

```
change ip-services                                     Page 1 of 4

                                IP SERVICES

Service      Enabled      Local      Local      Remote      Remote
Type          y          Node      Port      Node      Port
SAT           y          clan1a_DC1 5023    any        0
AESVCS        y          clan1a_DC1 8765
CDR1          y          clan1a_DC1 0        CDR_Server 9000
```

Go to **Page 4** of the IP Services form, and enter these values.

- **AE Services Server:** The hostname of the AES. In this case, “AEServer”.
- **Password:** Same password to be administered on the AES.
- **Enabled:** “y”

Note that the name and password entered for the **AE Services Server** and **Password** fields must match the hostname and password on the AES. The administered hostname can be obtained from the AES server by typing “uname -n” at the Linux command prompt, and the password is set during the AES server configuration in **Section 4.2**.

change ip-services				Page	4 of	4
AE Services Administration						
Server ID	AE Services Server	Password	Enabled	Status		
1:	AEServer	*****	y			

3.3. Administer CTI Link for the TSAPI Service

Use the “add cti-link x” command, where “x” is an available CTI link number, to add a new CTI link. 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. The rest of the values may be left at the defaults. Submit these changes.

add cti-link 3		Page 1 of 2	
CTI LINK			
CTI Link: 3			
Extension: 13300			
Type: ADJ-IP			
		COR: 1	
Name: TSAPI CTI Link 3			

4. Configure Avaya AES

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

- Administer local IP.
- Administer switch connections.
- Administer TSAPI link.
- Add CTI User.

4.1. Administer Local IP

Prior to any administration, verify that the TSAPI service has been licensed properly. Initialise the AES OAM web interface by browsing to “http://x.x.x.x/8443/MVAP/index.jsp”, where “x.x.x.x” is the IP address of the AES, and log in (not shown). From the **OAM Home** screen select **CTI OAM Admin** (not shown) to bring up the **CTI OAM Home** menu. Verify the TSAPI service is licensed at the **Welcome to CTI OAM Screens** screen by ensuring that **Controller Status** shows “Running” on the **TSAPI Service** line.

AVAYA Application Enablement Services
Operations Administration and Maintenance

[OAM Home](#) [Logout](#) [Help](#)

You are here: > [CTI OAM Home](#)

CTI OAM Home

- Administration
- Status and Control
- Maintenance
- Alarms
- Logs
- Utilities
- Help

Welcome to CTI OAM Screens

[craft] logged in on Mon Dec 18 19:37:15 G. 2006

IMPORTANT: AE Services must be restarted for administrative changes to fully take effect. Changes to the Security Database do not require a restart.

Service	Controller Status
ASAI Link Manager	Running
CMAPI Service	Running
CVLAN Service	Running
DLG Service	Running
Transport Layer Service	Running
TSAPI Service	Running

From the **CTI OAM Home** menu, select **Administration > Local IP**. In the **Client Connectivity** field, select the local IP address that the Optimise system will use to connect to the AES server. In the **Switch Connectivity** field, select the local IP address the AES will use to connect to Avaya Communication Manager. The **Media Connectivity** field is not used in this configuration and can be left as the default. Click on **Apply Changes**. Please note that Avaya recommends using separate IP addresses for the **Client Connectivity** and **Switch Connectivity** fields, for ease of compliance testing the same IP address was used for both.

The screenshot shows the Avaya Application Enablement Services (AES) interface. The left sidebar contains a navigation menu with options: OAM Home, CTI OAM Home, Administration (selected), Local IP (selected), Ports, Switch Connections, CTI Link Admin, CMAPI Configuration, TSAPI Configuration, Security Database, and Status and Control. The main content area is titled 'Local IP' and contains three dropdown menus for Client Connectivity, Switch Connectivity, and Media Connectivity, all set to 'eth0:10.1.10.20'. An 'Apply Changes' button is at the bottom.

4.2. Administer Switch Connections

From the **CTI OAM Home** menu, select **Administration > Switch Connections**. Enter a descriptive name for the switch connection and click on **Add Connection**. In this case, “S8500aDC1” is used, and the actual switch connection name may vary.

The screenshot shows the Avaya Application Enablement Services (AES) interface for the 'Switch Connections' page. The left sidebar is the same as the previous screenshot, with 'Switch Connections' selected under 'Administration'. The main content area is titled 'Switch Connections' and features a text input field containing 'S8500aDC1' and an 'Add Connection' button. Below this, there are four buttons: 'Edit Connection', 'Edit CLAN IPs', 'Edit H.323 Gatekeeper', and 'Delete Connection'. The page also displays headers for 'Connection Name', 'Number of Active Connections', and 'Connection Type'.

Next, the **Set Password** screen will be displayed. Enter the same password that was administered on Avaya Communication Manager on the IP Services form in **Section 3.2**. Re-enter the same password in the **Confirm Switch Password** field. Note that the **SSL** field can be left at the default. Click on **Apply**.

The screenshot shows the 'Set Password - S8500aDC1' screen. The left sidebar contains a navigation menu with options like 'Local IP', 'Ports', 'Switch Connections', 'CTI Link Admin', 'CMAPI Configuration', 'TSAPI Configuration', 'Security Database', 'Status and Control', 'Maintenance', 'Alarms', 'Logs', 'Utilities', and 'Help'. The main content area has a breadcrumb trail 'You are here: > Administration > Switch Connections'. Below this, there's a section titled 'Set Password - S8500aDC1' with instructions: 'Please note the following: * A password is not required for a H323 Gatekeeper Connection. * Changing the password affects only new connections, not open connections.' There are two password input fields: 'Switch Password' and 'Confirm Switch Password', both containing masked characters. An 'SSL' checkbox is checked. At the bottom, there are 'Apply' and 'Cancel' buttons.

From the **Switch Connections** screen, select the newly added switch connection name and click on **Edit CLAN IPs**.

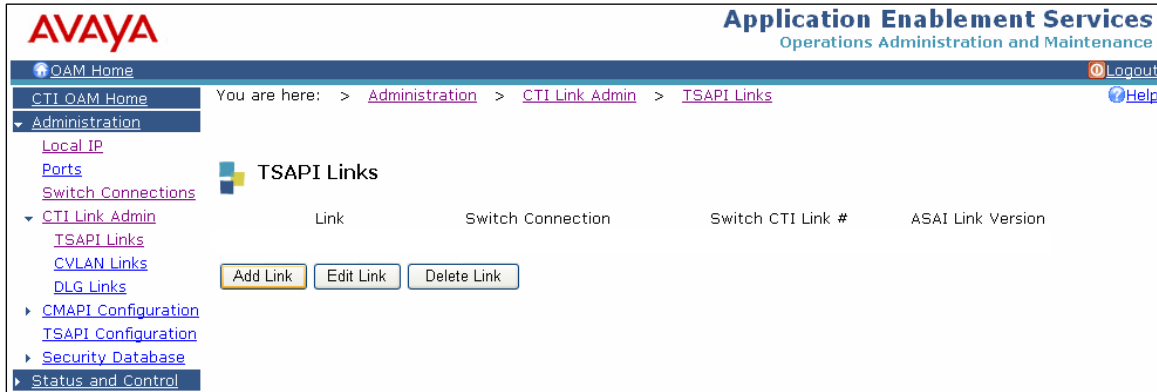
The screenshot shows the 'Switch Connections' screen. The left sidebar is the same as the previous screen. The main content area has a breadcrumb trail 'You are here: > Administration > Switch Connections'. Below this, there's a section titled 'Switch Connections' with a table of connections. The table has columns: 'Connection Name', 'Number of Active Connections', and 'Connection Type'. There is one entry: 'S8500aDC1' with '1' active connection and 'CTI/Call Information' type. Below the table, there are buttons: 'Add Connection', 'Edit Connection', 'Edit CLAN IPs' (highlighted), 'Edit H.323 Gatekeeper', and 'Delete Connection'.

On the **Edit CLAN IPs** screen, enter the host name or IP address of the C-LAN used for AES connectivity. In this case, "10.1.10.12" is used, which corresponds to the C-LAN administered on Avaya Communication Manager in **Section 3.1**. Click on **Add Name or IP**.

The screenshot shows the 'Edit CLAN IPs - S8500aDC1' screen. The left sidebar is the same. The main content area has a breadcrumb trail 'You are here: > Administration > Switch Connections'. Below this, there's a section titled 'Edit CLAN IPs - S8500aDC1'. There is a table with two columns: 'Name or IP Address' and 'Status'. The first row contains '10.1.10.12' in the 'Name or IP Address' column. Below the table, there are buttons: 'Add Name or IP' and 'Delete IP'.

4.3. Administer TSAPI Link

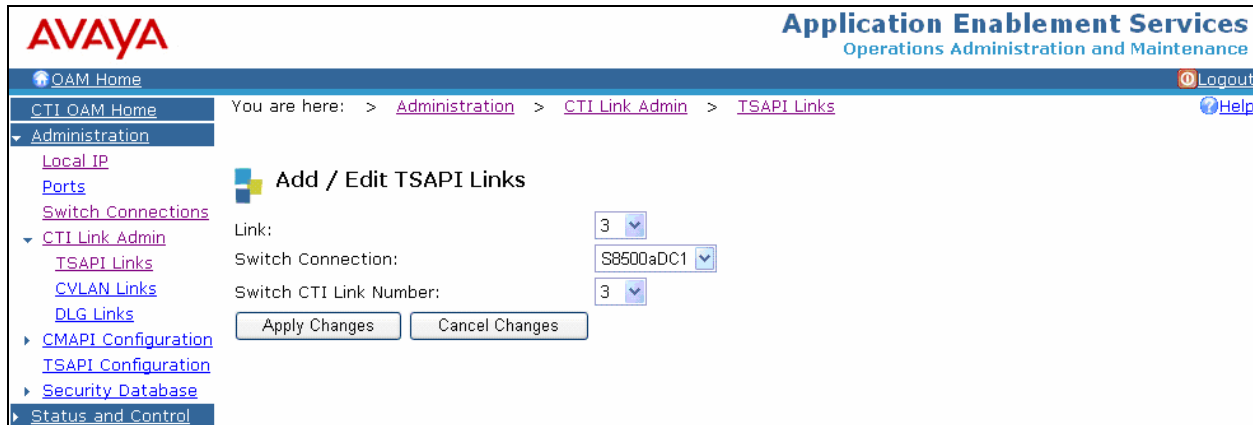
To administer a TSAPI link on AES, select **Administration > CTI Link Admin > TSAPI Links** from the **CTI OAM Home** menu. Click on **Add Link**.



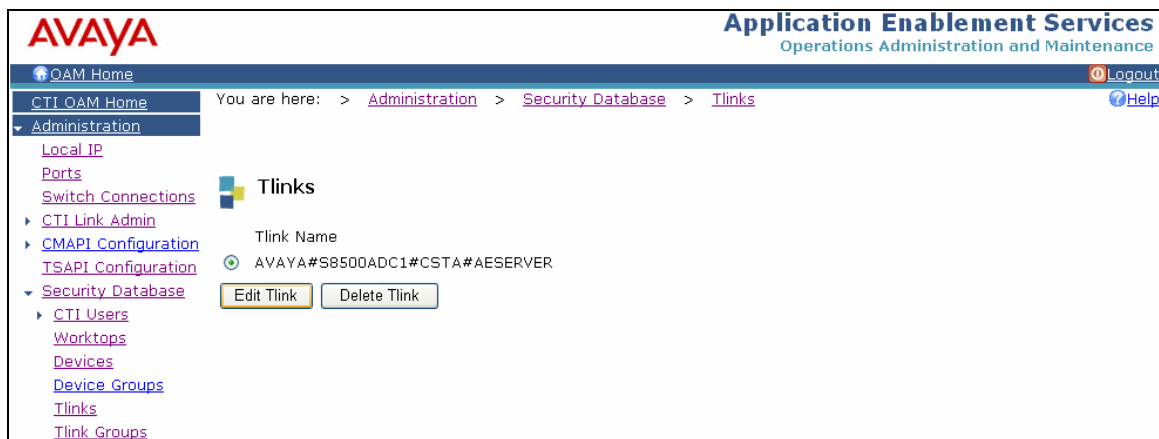
In the **Add/Edit TSAPI Links** screen, enter the following values.

- **Link:** Use the drop-down list to select an unused link number.
- **Switch Connection:** Administered switch connection configured in **Section 4.2**.
- **Switch CTI Link Number:** Corresponding CTI link number configured in **Section 3.3**.

Note that the actual values for both fields may vary. Click on **Apply Changes**.



Navigate to the Tlinks screen by selecting **Administration > Security Database > Tlinks**. Note the value of the **Tlink Name**, as this will be needed for configuring the Optimise server in **Section 5.1**. The Tlink is automatically created by the AES server.



4.4. Add CTI User

A user name and password are required for the Optimise system to communicate with the AES. This is set up via the User Management main menu which is accessed by clicking on **OAM Home** in the top left corner of any AES screen, followed by clicking on **User Management** (not shown). From the **User Management** menu, select **Add User** and configure the following fields.

- **User Id:** Enter a login name to be used by Optimise to access the AES.
- **Common Name:** A descriptive name.
- **Surname:** A descriptive name.
- **User Password:** Enter a password to be used by Optimise to access the AES.
- **Confirm Password:** Re-enter the password.
- **Avaya Role:** Use the default value of “None”.
- **CT User:** Select “Yes” from the drop down list.

The remaining fields may be left at their default values. Once completed, click on **Apply** (not shown) at the bottom of the screen.

The screenshot displays the Avaya Application Enablement Services (AES) interface. The top header shows the Avaya logo and the title 'Application Enablement Services' with the subtitle 'Operations Administration and Maintenance'. A navigation bar includes 'OAM Home', 'User Management Home', and a breadcrumb trail: 'You are here: > User Management > Add User'. A left sidebar menu lists 'User Management' (expanded) with sub-items: 'List All Users', 'Add User' (selected), 'Search Users', 'Modify Default User', 'Change User Password', 'Service Management', and 'Help'. The main content area is titled 'Add User' and contains a form with the following fields: '* User Id' (text box with 'magnorth'), '* Common Name' (text box with 'magnorth'), '* Surname' (text box with 'magnorth'), 'New Password' (text box), '* Confirm New Password' (text box), 'Admin Note' (text box), 'Avaya Role' (dropdown menu with 'None' selected), 'Business Category' (text box), 'Car License' (text box), 'CM Home' (text box), 'Css Home' (text box), and 'CT User' (dropdown menu with 'Yes' selected). A note states: 'Fields marked with * can not be empty.'

5. Configure Magnetic North Optimise Server

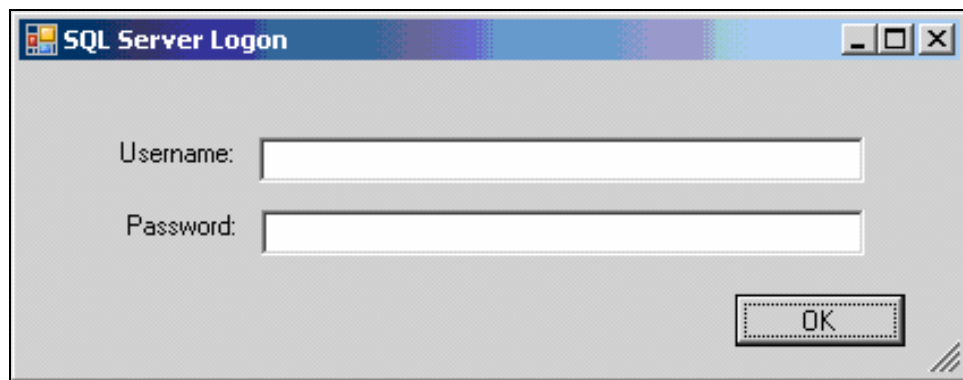
This section provides the procedures for configuring the Magnetic North Optimise server. The procedures include the following areas.

- Run the installation wizard for initial configuration.
- Configure Optimise software.

These Application Notes assume that the “blueprint.xml” installation configuration file has been completed. This file defines, amongst other things, that the Optimise software installs as a VoIP recorder . For further reference, refer to the appropriate documentation in **Section 9**.

5.1. Run the Installation Wizard for Initial Configuration

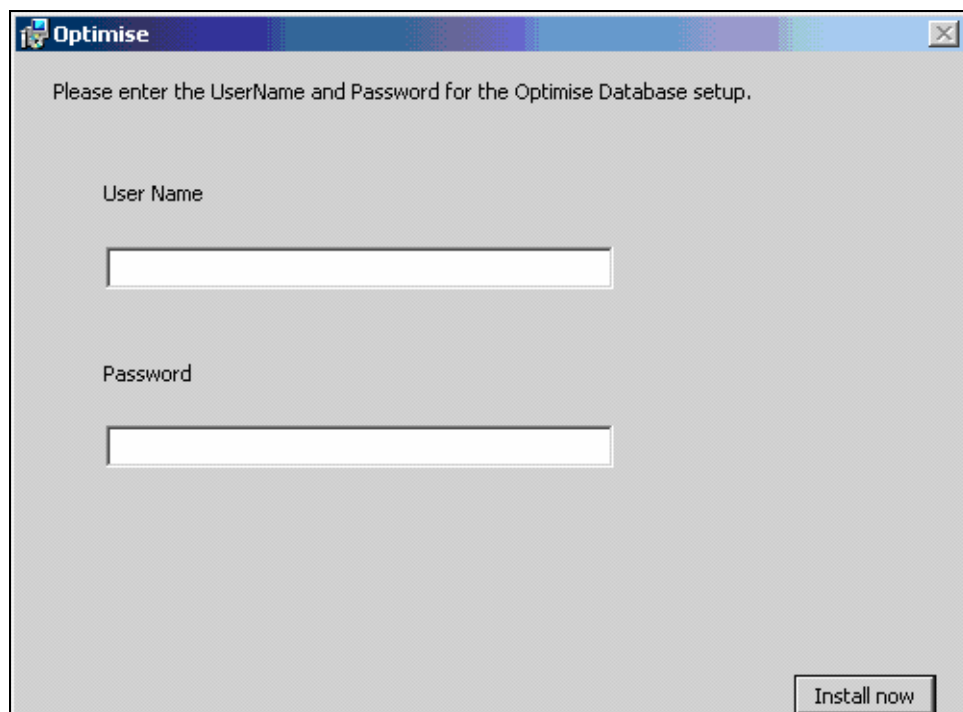
Insert the Magnetic North Optimise CD. The installation process will start automatically. Accept the .NET Framework warnings (not shown) if displayed. Enter the SQL Server user name and password when prompted.



On the **License Agreement** screen, ensure the check box is checked and click on **Install**.



Re-enter the SQL database user name and password and click on **Install now**.



On the **general optimise settings** screen, enter the following values and the remaining fields may be left at their defaults. Click **Next** to continue.

- **Site Name:** Enter a descriptive name.
- **Site Code:** Enter the unique code assigned to the site by Magnetic North.
- **Optimise Share User Name:** Enter a Windows user with administrative privileges.
- **Optimise Share Password:** Enter the password for the Windows user.

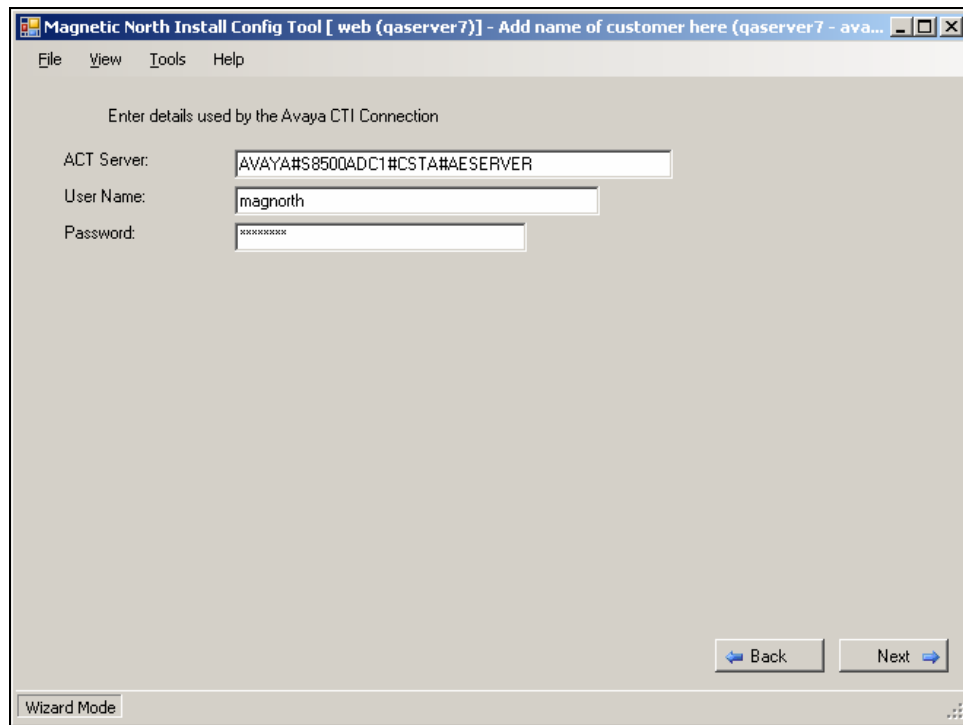
The screenshot shows a Windows-style application window titled "Magnetic North Install Config Tool [web (qaserver2)] - Add name of customer here (qaserver2 - Opti...". The window has a menu bar with "File", "View", "Tools", and "Help". Below the menu bar, it says "Enter general optimise settings here." There are several text input fields: "Site Name" (containing "wutest1"), "Site Code" (containing "278"), "SQL User Name:" (empty), "SQL Password:" (empty), "Logging Folder:" (containing "c:\mnlogs"), "Optimise Share User Name:" (empty), "Optimise Share Domain:" (empty), and "Optimise Share Password:" (containing "xxxxxxx"). Below these fields is a "Test Logon..." button. At the bottom right, there are "Back" and "Next" buttons. At the bottom left, there is a "Wizard Mode" label.

Click on **Next** to leave the fields on the following screens (not shown) at their default values:

- **Optimise file storage settings**
- **Screen recording settings**
- **Uncompressed calls folder**
- **Temp calls folder**
- **Optimise location**

On the **Avaya CTI Connection** screen, enter the following values and click **Next**.

- **ACT Server:** Enter the Tlink from **Section 4.3**.
- **User Name:** Enter the CTI user name configured in **Section 4.4**.
- **Password:** Enter the CTI user password configured in **Section 4.4**.



The screenshot shows a Windows-style application window titled "Magnetic North Install Config Tool [web (qaserver7)] - Add name of customer here (qaserver7 - ava...". The window has a menu bar with "File", "View", "Tools", and "Help". Below the menu bar, the text "Enter details used by the Avaya CTI Connection" is displayed. There are three input fields: "ACT Server:" with the value "AVAYA#S8500ADC1#CSTA#AESERVER", "User Name:" with the value "magnorth", and "Password:" with a masked value "XXXXXXXXXX". At the bottom right, there are two buttons: "Back" and "Next". At the bottom left, there is a "Wizard Mode" button. The window has standard Windows window controls (minimize, maximize, close) in the top right corner.

On the **Avaya IP Span settings** screen, enter the maximum number of ports that can be simultaneously recorded in the **Number of Ports** field. In the **Span Ports** drop down list, choose the Gigabit Ethernet NIC device to which the span cable is connected. In the **Phone IP Ranges** table, enter the starting IP address of the range in the **1st IP Address** column and enter the total number of IP addresses in the range in the **IP Address Count** column. Click **Next** to continue.

Enter the details for the Avaya IP Span settings

Number of Ports: 30

Span Ports:

NIC Device	
▶	Local Area Connection 2 (Intel(R) PRO/1000...
*	

Phone IP Ranges:

	1st IP Address	IP Address Count
	10.1.10.61	10
▶		
*		

Back Next

Wizard Mode

In the **Phones** table, enter the Avaya Communication Manager station extensions to be recorded. Click **Next** when completed.

Enter the phones to be recorded, and any acd queues the agents log into

Phones:

	DN
	10001
	10002
	10003
▶*	

Queues:

	Queue
*	

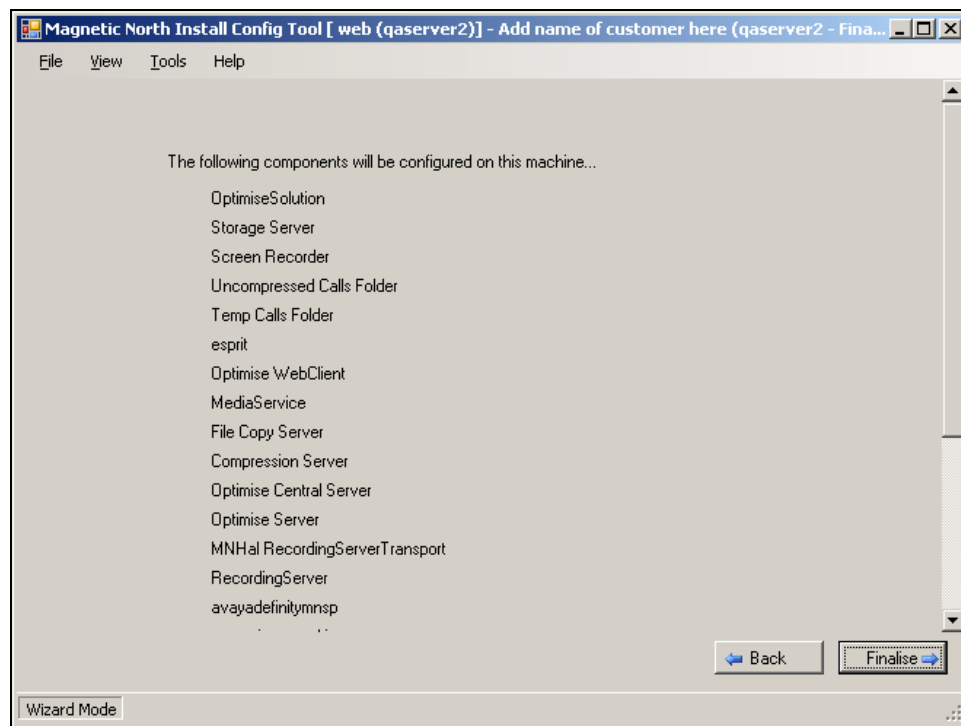
Back Next

Wizard Mode

Click on **Next** to leave the fields on the following screens (not shown) at their default values:

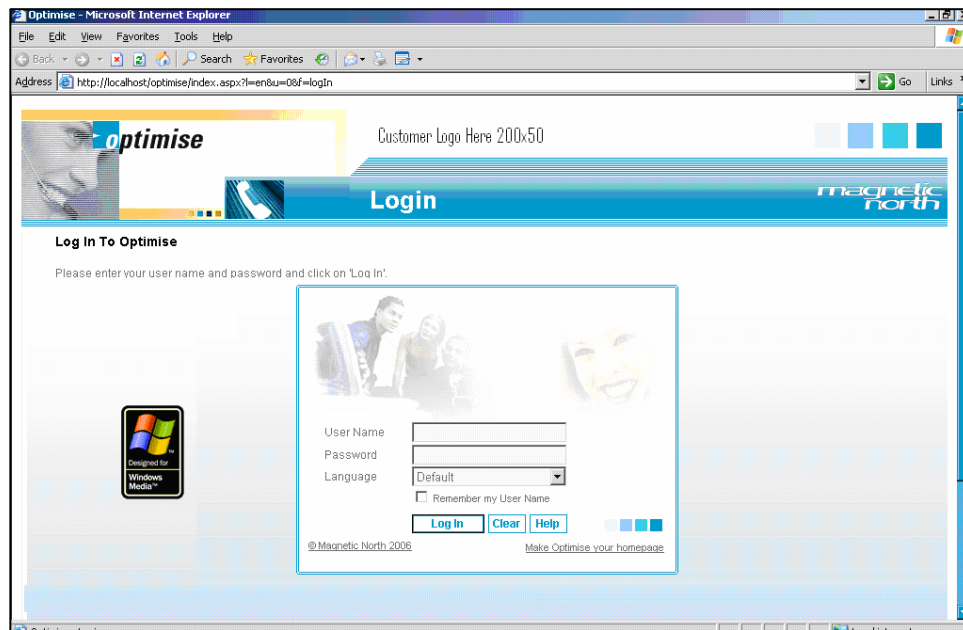
- **Alarm server**
- **Web update**

Click on **Finalise** to complete the configuration. Click on **OK** in the **Write All Components** dialog box (not shown). Click on **Yes** in the next dialog box (not shown) to restart the server.

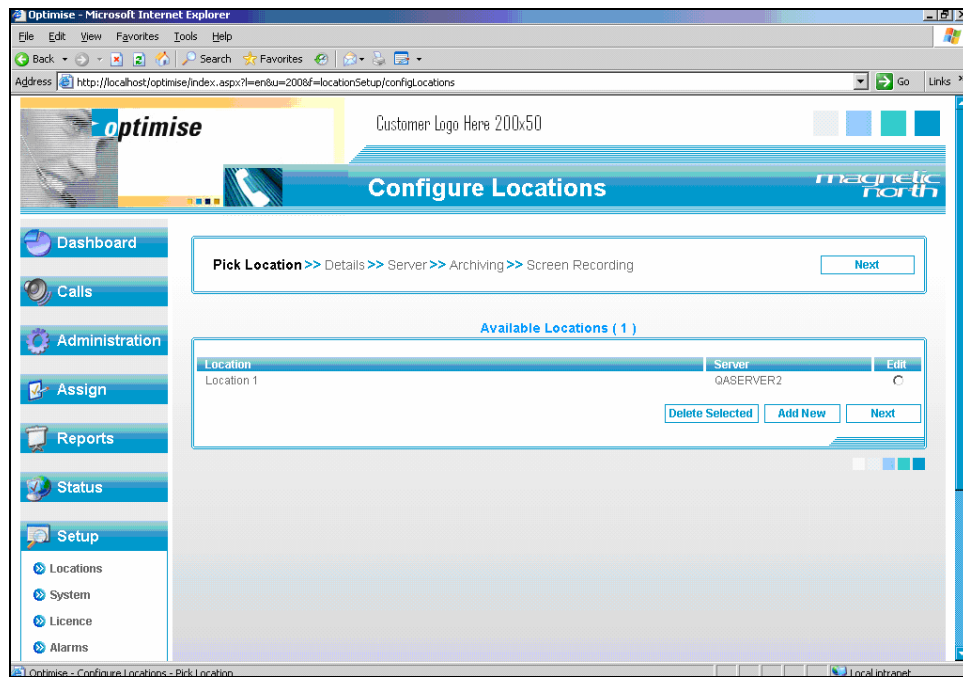


5.2. Configure Optimise Software

On the Optimise server, open a browser window and enter “http://localhost/optimise” into the address bar. Log in to the web client using an Optimise user name with administrative privileges. Once the user name and password have been entered, click the **Log In** button.



From the menu on the left side of the screen, select **Setup > Locations**. Select the radio button for **Location 1**, which is the default location set up during the installation. Click **Next**.



On the **Details** screen, configure the following fields and click on **Apply**.

- **Location Name:** Enter the hostname of the Optimise server.
- **Location Server:** “localhost”
- **Esprit Server:** “localhost”
- **Record All Calls:** Ensure the check box is checked.

All other fields may be left at their default values.

Optimise - Microsoft Internet Explorer

Address: <http://localhost/optimise/index.aspx?enbu=2048f=locationSetup/configPickedLocation,locationSetup/configLocationEdit>

Customer Logo Here 200x50

Configure Locations

Pick Location >> Details >> Server >> Archiving >> Screen Recording

Location Details

Location Name: Reserved Licences:

Location Server: Ports:

Esprit Server: Screen recording:

Default Drivers

Esprit: Observation:

Recording:

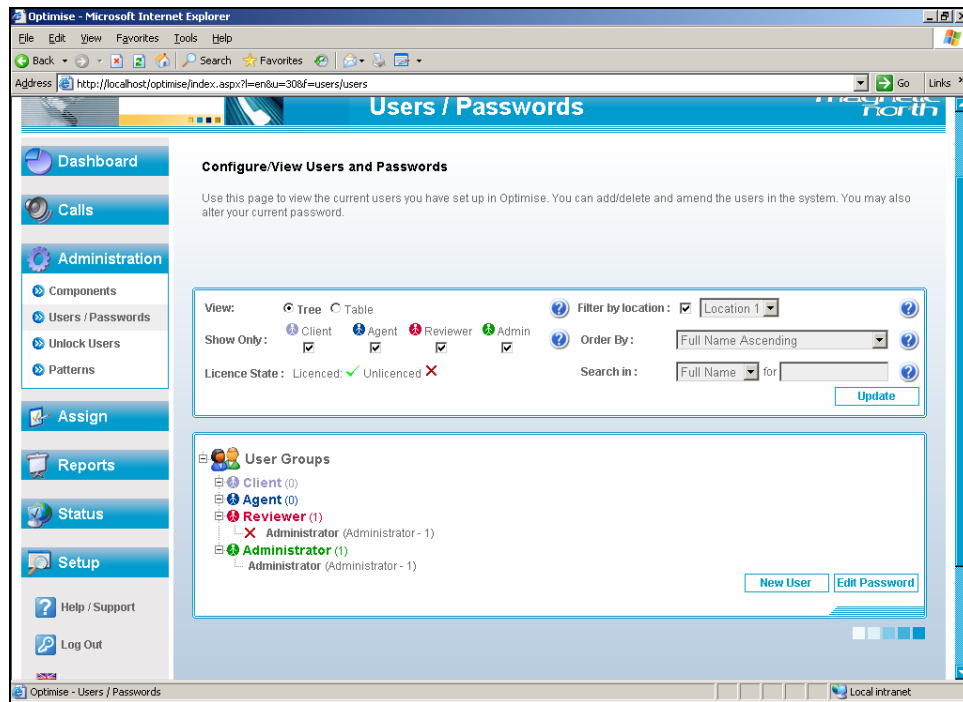
Call Recording

Record All Calls: ☒

Use 'File Compressing' Icon: ☐

Apply

From the menu on the left side of the **Configure /View Users and Passwords** screen, select **Administration > Users/Passwords**. To add a new agent to be recorded, click **New User**.



On the **Create User** screen, configure the following fields and click on **Save User**.

- **Location:** Choose the location as configured above.
- **User Name:** Enter a descriptive name.
- **Full Name:** Enter a descriptive name.
- **Position ID:** Enter the Avaya Communication Manager station extension.

All other fields may be left at their default values. Repeat this for all agents to be recorded.

The screenshot displays the 'Create User' interface within the Optimise application. The browser window title is 'Optimise - Windows Internet Explorer'. The address bar shows the URL 'http://localhost/optimise/index.aspx?menbu=308f=users/users'. The left sidebar has a 'Setup' section with a 'Help / Support' link and a 'Log Out' button. The main content area is titled 'Create User' and features tabs for 'Client', 'Agent', 'Reviewer', and 'Admin'. The 'Agent' tab is active. The form includes the following fields and options:

- General:** Location (qaserver2), User Name (agent1), Full Name (agent1), Position ID (10001), Disable Account? (radio buttons for yes/no), Language (English).
- Security:** Password (masked), Password Again (masked), Account Locked (radio buttons for yes/no), Signoff Gradings (radio buttons for yes/no), Signoff Own Gradings (radio buttons for yes/no), Allow Delete Calls (radio buttons for yes/no), Change Gradings (radio buttons for yes/no).
- Access Profile:** Administrator (Administrator), Agent (Agent), Reviewer (Reviewer), Client (Client).
- Esprit Drivers:** Driver (Default), Second Driver (None), Pos. ID (empty).
- Screen Recording:** Workstation ID (Host Names), Refresh button, Gateway (empty).

A 'Save User' button is located at the bottom right of the form.

At this point reboot the Optimise server to ensure that all of the changes are initialised.

6. Interoperability Compliance Testing

The interoperability compliance test included feature, performance and serviceability testing.

The feature testing focused on the ability of Magnetic North Optimise to record calls to and from internal and external telephones and replay the voice recordings correctly.

The performance testing involved placing calls to 30 IP stations over a period of 4 hours, achieving a Busy Hour Call Completion (BHCC) rate of approximately 3000.

The serviceability testing focused on verifying Magnetic North Optimise's ability to recover from an outage condition, such as busying out the CTI link and disconnecting the Ethernet cable for the CTI link.

6.1. General Test Approach

All feature and serviceability test cases were performed manually. For feature testing, basic telephony operations such as answer, hold/retrieve, transfer, and conference were exercised on inbound and outbound calls as well between internal calls. For serviceability testing, calls were placed before, during and after the outages and the recordings checked for accuracy. For performance testing, a call generator placed inbound calls over an E1 trunk to Avaya IP telephones over an extended period of time.

6.2. Test Results

All performance tests passed successfully.

During the serviceability tests the following observation was made. When the connection to the AES has been lost for more than 3 minutes, the recording channel stays active until the next time a call is made using that channel. Both calls are recorded in one recording and the recording is stamped with the extension number of the most recent station that used that channel.

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 Magnetic North Optimise.

7.1. Verify Avaya Communication Manager

Verify the status of the administered CTI link by using the “status aesvcs cti-link” command. The **Service State** should show “established”.

```
status aesvcs cti-link
```

AE SERVICES CTI LINK STATUS						
CTI Link	Version	Mnt Busy	AE Services Server	Service State	Msgs Sent	Msgs Rcvd
1	4	no	AESEServer	established	15	15
2		no		down	0	0
3	4	no	AESEServer	established	216	210

7.2. Verify Avaya Application Enablement Services

From the **AES OAM Admin** menu, verify the status of the administered CTI link by selecting **Status and Control > Switch Conn Summary**. The **Conn State** should show “Talking”.

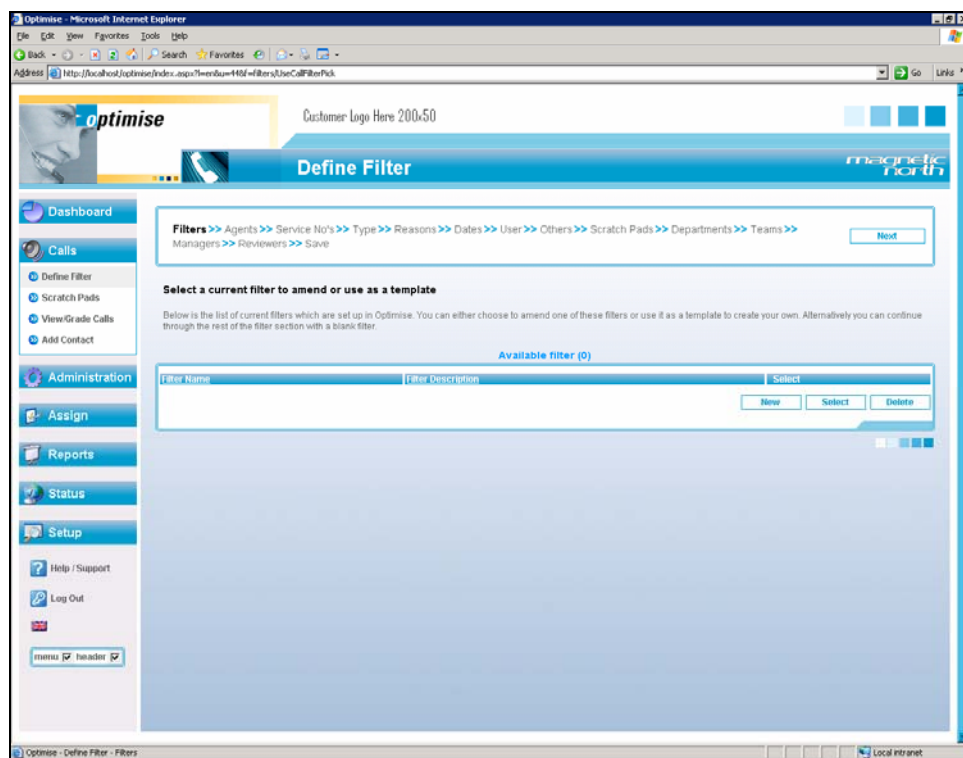
Switch Conn	Conn State	Since	Online/Offline	Active CLANs/ Admin'd CLANs	# of TCI Conns	Msgs To Switch	Msgs From Switch	Msg Period
S8500aDC1	Talking	2006-12-12 12:37:57.0	Online	1 / 1	3	474	366	30

7.3. Verify Magnetic North Optimise

The following steps can be used to verify that the Optimise system has been configured correctly and that calls can be recorded.

First, place an inbound call to a station that is being recorded. Then place an outbound call from a different station that is being recorded. For both calls, speak into both telephones involved in the call and then hang up.

Log in to the Optimise web client. From the menu on the left side of the screen, select **Calls > Define Filter**. Click **New**. When the screen refreshes (not shown), click on **Save** from the list at the top of the screen.



On the **Save Filter** screen, configure the following fields and click **Save Filter**.

- **Filter Name:** Enter a descriptive name.
- **Filter Description:** Enter a description for the filter.

All other fields may be left at their default values.

Optimise - Microsoft Internet Explorer

Address: http://localhost/optimise/index.aspx?menu=100&filter=SaveCallFilter

Customer Logo Here 200x50

Save Filter

Filters > Agents > Service No's > Type > Reasons > Dates > User > Others > Scratch Pads > Departments > Teams > Managers > Reviewers > **Save**

Save your new/amended filter

Now you have a completed filter you can save it for future use. Below is a summary of your filter. You can save this over one of your current filters by selecting its name from the drop down list. Alternatively you can enter a new name in the text box.

Current Filter Summary

Filter Detail	Filter Detail	Filter Detail	Filter Detail
Current name:	new filter (id: new filter)	Agents:	0 agents
Service No's:	0 service numbers	Call Types:	0 call types
Contact Reasons:	0 reasons	More Details:	View

Save / Update filter?

Available Filters:

Filter Name:

Filter Description:

Filter ID: new filter (id will be assigned when saved)

Share Filter? ☐

Save Filter

From the menu on the left side of the screen, select **Calls > View/Grade Calls**. Select the filter that was configured above and click **Select Filter**.

Optimise - Microsoft Internet Explorer

Address: http://localhost/optimise/index.aspx?menu=101&chooseFilter=ViewClientCalls

Customer Logo Here 200x50

View/Grade Calls

Choose Filter > View Calls > Answer Questions > Grade > Call Grading > Signed Off > Compare Grading **Next**

Select a filter to use to view your calls

Please choose a filter from the list shown below. This filter will then be applied to all of the calls stored in the system and your results will be displayed. If none of these filters match your requirements simply navigate into the Define Filter section and create a new Filter.

Available filter (1)

Shared Filter Name	Filter Description	Select
filter1	filter1	<input type="button" value="Select"/>

Select Filter

On the **View/Grade Calls** screen, the two test calls should be displayed. The recorded station will be shown in the **Service No.** column. The direction of the call will be shown. To play the calls click on the **loudspeaker** icon. The embedded media player at the top of the screen can then be used to control the playback of the recording.

Optimise Release 4.1 Build 5 - Microsoft Internet Explorer provided by MagNorth IS

http://qaserver7/optimise/index.aspx?i=en&u=42&f=viewCalls

Optimise Release 4.1 Build 5

View/Grade Calls

Choose Filter >> **View Calls** >> Answer Questions >> Grade >> Call Grading >> Signed Off >> Compare Gradings

Username : Administrator Filter selected : all Type : Filter for grading calls

slow normal fast

Now Playing: No call currently selected

Time Of Call	Duration	Agent	Agent ID	Service No.	DN Type	Score	Grading Notes	
14/03/2007 14:41:14	00:00:35	agent1		10002	DN In Call	N/A	View	⬇ ⬆ 🔊
14/03/2007 14:42:00	00:00:04	agent1		10001	DN Out Call	N/A	View	⬇ ⬆ 🔊

Show 10 rows at a time (2 call(s) in total)

Copy Calls Show All Columns Delete Restore Scratchpad Refresh

Optimise - View/Grade Calls - View Calls

Local intranet 100%

8. Conclusion

These Application Notes describe the configuration steps required for the interoperability of Magnetic North Optimise using VoIP call recording with Avaya Communication Manager and Avaya AES. All feature, performance and serviceability test cases were completed and one observation was made (see **Section 6.2**).

9. Additional References

This section references the product documentations that are relevant to these Application Notes.

- *Avaya Application Enablement Services 3.1.2 Administration and Maintenance Guide*, Document ID 02-300357, Issue 4, September 2006, available at:
<http://support.avaya.com>.
- *Documentation for Avaya Communication Manager (3.1.2), Media Gateways and Servers*, Document ID 03-300151, Issue 5, February 2006, available at:
<http://support.avaya.com>.
- *Optimise Administrator Guide*, available at:
<http://support.magneticnorth.com>

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