Avigilon Control Center™ 6 System Integration Guide

for Jacques™ Technologies IP Audio Intercom System
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Introduction

The Avigilon Control Center software integration with the Jacques IP Audio Intercom system allows alarms in the Avigilon Control Center System to be triggered whenever an intercom event is activated in the Jacques system, and to record audio communication from the Jacques system with video from a camera connected to the Avigilon system.

The Jacques system uses tags to communicate events between intercom units. Tags are a series of numbers that users dial to call other intercom units and initiate specific actions. The integration enables tags to be linked to specific Avigilon alarm actions and be recorded with the associated video. A possible use case for the integration is for users to view video from a camera pointed at an intercom station. When a tag dials another Jacques intercom station, the corresponding alarm is triggered in the Avigilon Control Center Client software and the alarm video is displayed. The audio from the intercom station is recorded with the alarm video.

Requirements

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Avigilon</td>
<td>Avigilon Control Center Server software 5.x or later</td>
</tr>
<tr>
<td>Avigilon</td>
<td>Avigilon Third Party Integration license: ACC6-JAQS-INTCM</td>
</tr>
<tr>
<td>Avigilon</td>
<td>Avigilon integration executable file: AvigilonJacquesGateway.exe</td>
</tr>
<tr>
<td>Jacques</td>
<td>Jacques 650 Series IP Communications System</td>
</tr>
<tr>
<td>Jacques</td>
<td>High Level Interface (HLI)</td>
</tr>
<tr>
<td>Jacques</td>
<td>For mapping audio from the Jacques system to cameras connected to the Avigilon Control Center software:</td>
</tr>
<tr>
<td></td>
<td>Jacques system controller (TCH-2MXH or above) featuring DAR and SIP Recording Software Module (v7.84 or above) and associated JEM2 hardware (IPM350 master station &amp; VSL-35x (JEM2 slave intercom terminals)</td>
</tr>
</tbody>
</table>

For More Information

For more information about the procedures outlined in this guide, refer to the following specific software documentation:

- Avigilon Control Center Client User Guide
- Avigilon Control Center Server User Guide
- Tag Configuration for Jacques 650 Series IP Communications System
Installation

Upgrading the Integration

If you are upgrading to version 6.6.2.4 of the Avigilon integration software, be aware that this version of the integration is only compatible with Avigilon Control Center software version 6.6 or later.

Avigilon Control Center software version 6 provides the ability to organize multiple servers into Sites and share settings between servers. To use this feature effectively, you must upgrade all servers in your Site before upgrading the integration.

This version of the integration can run both the Windows service and the Configuration Tool at the same time, so two Jacques HLI tags are required. One HLI tag must be configured for the Windows service and one for the Configuration Tool. For more information about Jacques HLI tags, see Configuring Tags in Jacques HLI on page 5.

To upgrade from previous version of the integration, simply run the installer and follow the prompts. After the upgrade is complete, open the Configuration Tool and add the HLI tags for the integration. Click Update Service to start the upgraded integration.

Server

Install the following on any server in your network. The applications do not need to be installed on the same server.

**NOTE:** It is highly recommended that you install the applications in the default installation directory: C:\Program Files (x86). If you must change the installation directory, do not select C:\Program Files or the installation will not function correctly.

1. Confirm that Microsoft Visual C++ 2010 Redistributable Package (x86) is already installed.
2. The Avigilon Control Center Server software.
3. The Jacques High Level Interface for third party integration.

Client

Install the following as needed:

**NOTE:** It is highly recommended that you install the applications in the default installation directory: C:\Program Files (x86). If you must change the installation directory, do not select C:\Program Files or the installation will not function correctly.
- Confirm that Microsoft Visual C++ 2010 Redistributable Package (x86) is already installed.
  
- Install the Avigilon Control Center Client software on the computers that require access to the Avigilon Control Center System

### Checking the Avigilon License

After you have installed all the required software, check that the Avigilon license was applied correctly.

1. Open the Avigilon Control Center Admin Tool.
2. Select the Settings tab and click **Licensing**. The License Activation dialog box appears.

The dialog box must say *Integration Connections: Yes* or the software was not properly licensed.

### Deploying to vSphere ESXi™

If you are deploying the integration in an ESXi environment, the following configurations must be made for the integration audio processing to operate normally:

1. On the virtual machine that is running the ACC software, install a virtual sound card.
   a. Install VMWareTools on the computer.
   
   In the Virtual Machine window, select **VM > Guest > Install/Upgrade VMware Tools**.

   This is required to enable the system to automatically detect audio devices.

   b. Configure ESXi to enable SSH login to the VM.
c. Add the following lines to the VMguestname.vmx file —
/vmfs/volumes/datastore1/VMguestname/VMguestname.vmx

```
sound.present = “true”
sound.allowGuestConnectionControl = “false”
sound.virtualDev = “hdaudio”
sound.fileName = “-1”
sound.autodetect = “true”
sound.pciSlotNumber = “34”
```

2. Add the VM running the virtual sound card to an ESXi Port Group.

This step is required as the integration operates by monitoring the RTP packets (audio traffic) from the Jacques system.

   a. In the vSphere Client, create a new port group.
   b. While configuring the new port group, enable Promiscuous mode then add the computer running the virtual sound card to the port group.

**NOTE:** The use of a dedicated port group for this purpose is to minimize the number of VMs with Promiscuous mode enabled. Consult your system administrator for the recommended vSphere virtual switch configuration used for Promiscuous mode.
Configuration

Configuring Tags in Jacques HLI

The Jacques IP Communication System has a set of pre-configured tags that connect you to other intercoms in the system or initiates an action. If you require a customized tag for the Avigilon integration with Jacques, see Tag Configuration for Jacques 650 Series IP Communication System for more information.

**NOTE:** If you are upgrading from a previous version of the integration, you will need to add a second HLI tag for the integration so the Windows service and the Configuration Tool can run simultaneously.

Adding an Integration User in the Avigilon Control Center System

To protect the security of the Avigilon Control Center system, add a user specifically for connecting the integration to the Avigilon Control Center software. See the Avigilon Control Center Client User Guide for details about how to add users.

This user must have View live images and Broadcast to speakers permission to enable all integration features.

This user will be used to connect the Avigilon Control Center system to the integration.

Adding Avigilon Alarms

Create the Avigilon alarm actions you want to be integrated with the Jacques system, and include the required cameras and settings for the alarm.

Alarms are manually created in the Avigilon Control Center Client software, and can only be created by users with Alarm Setup permissions. An administrator with the required permissions can create the alarms before the integration is used.

1. In the ACC Client software, open the site Setup tab and click 📢.
2. In the Alarms dialog box, click 📜.
3. On the Select Alarm Trigger Source page, select External Software Event from the Alarm Trigger Source: drop down list. Click ✅ after you complete each page.
4. On the Select Linked Devices page, select the cameras to link to this alarm, and set the Pre-Alarm Record Time: and Recording Duration:.
5. On the Select Alarm Recipients page, select the ACC software user that was added for the integration. You can also add any other groups or users that need to be notified when this alarm is triggered.
6. (Optional) If you would like to trigger an action when an alarm is acknowledged, select Activate selected digital output(s) on alarm acknowledgement check box.
   a. Select the digital outputs to be activated and specify the duration.
   b. Select Require user confirmation before activating digital output(s) check box if the user needs to confirm the alarm before the digital output action is initiated.
7. Enter a name for the alarm and set the alarm priority. The alarm name is used to identify the alarm during the integration.

8. Ensure Enable alarm check box is selected then click ✓.

Enabling Audio in the Avigilon Control Center Client Software

If you would like to link audio from the Jacques system with recorded video in the Avigilon system, you must first enable audio in the Avigilon Control Center Client software.

**NOTE:** Audio output must be supported on the camera that is linked to the Jacques tag.

1. In the Avigilon Control Center Client software, open the Camera Setup tab and click 🎧.
2. In the following dialog box, select the Enable check box.
3. Select the Record speaker output check box, or audio will not be recorded with the video.
4. Click OK.

You do not need to connect a physical speaker to the camera. In the Gateway Configuration Tool, you will link the camera to the appropriate Jacques audio tag.
Configuring the Avigilon Gateway for the Jacques System

The Avigilon Gateway application allows Jacques events to trigger alarms within the Avigilon system so that your video and VoIP communication events can be monitored from the same system.

The Avigilon Gateway application is composed of two parts: the Windows service that runs automatically in the background, and the Configuration Tool software that is used to map alarms between the two systems.

Configuring the Server Settings

Configure the Avigilon Gateway for Jacques to access the two applications.

The Configuration Tool remembers the server configurations, so you do not need to repeat this procedure if the settings remain the same.

1. Open the Configuration Tool software. Start > All Programs > Avigilon > Configure Avigilon Jacques Gateway.

2. In the Configuration Tool, click Configure Connections.

3. Click Add to add the Avigilon Server.
4. In the following dialog box, enter the Avigilon server IP Address, User Name and Password, then click **OK**.

![Connect to Avigilon Site](image)

Use the username and password created in the Avigilon configuration. See *Adding an Integration User in the Avigilon Control Center System* on page 5.

If your server is part of a Site, the alarms from the entire Site will be added to the integration.

5. Click **OK**.

6. Enter the Jacques server IP address.

   This is the IP address of eth1 interface on the Jacques server and is specified as the “dest-interface” setting in `/etc/jacques/dar.sip.ini`. This IP must be reachable from the host where the integration component is installed, i.e. on the same LAN. All SIP (Session Initiated Protocol) and RTP (Real-Time Protocol) packets on the Jacques server corresponding to intercom operation are copied and sent out on this interface for monitoring. This is also the interface use by the integration component to access the Jacques server’s HLI (High-Level Interface) API.

7. Enter the two HLI tag serial numbers for the integration.
   a. **Gateway Service Serial** – the tag configured for the gateway service (integration component) in the Jacques server. This value is found in the tag column of the siteconfigDB::tag_device table in the Jacques server – look for a row with “Gateway Service”, or similar, in the descriptor column of same table; if unsure consult the person who configured integration component support in the Jacques server, see *Configuring Tags in Jacques HLI* on page 5 for more details.
   
   b. **Configuration Tool Serial** – the tag configured for the Configuration Tool. It may be in a similar location as that for the Gateway Service Serial in the same table as above, but look for “Configuration Tool” in the descriptor column.

8. If you want to link a Jacques audio source with a camera in the Avigilon system, select the **Enable Audio** check box then complete the following fields:
   a. **DAR IP** – enter the IP address for the Jacques Digital Audio Recorder (DAR). Enter the value for the server listed in the `/etc/jacques/dar.sip.ini` file. This file can be found on the host where DAR is installed, typically co-located on the Jacques server. This is the IP address of the interface where SIP calls initiate. Enter the IP address of the virtual interface (TAP0) configured on the Jacques server. The out-of-box value is 1.20.0.1 if it has not been customized.
b. **TAP Sender IP** – enter the `tap-public-transmit-bind-address` listed in the `/etc/dar.sip.ini` file. This file is available in the Jacques System Configuration.

c. **Recorder Interface** – select the physical network interface on the host where the integration component is installed that provides LAN connectivity to the Jacques Server, above. Select from the pre-populated drop-down menu. This permits the integration component to listen in on, capture, and extract the RTP streams corresponding to intercom operation on the Jacques server.

9. Click **Done** to close the Configure Connections window.

### Mapping Alarms and Audio

![Configuration Tool]

1. In the Configuration Tool, select the Alarms tab to map alarms together.
   a. Select an Avigilon alarm and a Jacques tag.
      - Select the **Acknowledge Avigilon alarms on call termination** check box if the Avigilon alarms do not need to be manually acknowledged within the Avigilon Control Center Client software each time.
      - **NOTE:** The Jacques tag refers to the intercom that is making the call, not the intercom that is receiving the call.
      - Click **Remove Selected Tags from Mapping** to hide tags that have already been mapped.
   b. Click **>>** to map the alarm together. The mapped alarm is added to the Alarm Mappings list.

   If you need to remove a mapped alarm, select mapped alarm and click **<<**.
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c. Repeat the previous steps until all the alarms you need are mapped.

d. Click **Save and Apply**.

2. Select the Audio tab to map Jacques audio devices with cameras connected to the Avigilon system.

**NOTE:** If you did not enable audio in the Configure Connections dialog box, the Audio tab is not displayed. Skip the remaining steps if you do not intend to record audio with video in the Avigilon system.

![Configuration Tool](image)

a. Select an Avigilon camera and a Jacques tag. Only cameras that have audio enabled are listed. For more information, see *Enabling Audio in the Avigilon Control Center Client Software* on page 6.

**Tip:** To ensure that all calls are recorded, create a mapping for each audio source tag.

b. Click >> to map add the audio mapping. The mapped devices is added to the Audio Mappings list.

If you need to remove a mapping, select an audio mapping and click <<.

c. Repeat the previous steps until all the required cameras are mapped with audio sources.

d. Click **Save and Apply**. The integration gateway is updated with all the new or changed mappings.
Configuring the Caller and Receiver Alarm

In order to enable Caller and Receiver alarm, user has to set the configuration in AvigilonJacquesGateway.exe.config. The default location for the file is – C:\Program Files (x86)\Avigilon\Jacques Gateway

To enable/disable Caller alarms, update "IsCallerAlarmEnabled" property and to enable/disable receiver alarm update "IsReceiverAlarmEnabled" property to true/false.
Troubleshooting

If the following troubleshooting solutions do not resolve your issue, contact Avigilon Technical Support – http://avigilon.com/support-and-downloads/.

Mapped Avigilon Control Center System Alarms Displayed as Unknown

Mapped alarms in the Configuration Tool are labeled in red as “Unknown.” The Avigilon Control Center Server that the integration is connected to displays an “Error” status in the Configure Connections dialog box.

This issue occurs if the Avigilon Control Center Server has rebooted or is offline.

Perform the following steps to ensure the integration functions correctly:

1. Check that the Avigilon Control Center Server is online and connected to the local network.
2. When the Avigilon Control Center Server is back online, open the Configuration Tool and click Configure Connections.
3. If the Avigilon Control Center Server is online, the server status would be “Ready.” If it is not, check the server connectivity again.
4. Close the Configure Connections dialog box. The Configuration Tool should now display the correct alarm names.
5. Click Save and Apply to ensure the alarm mappings are active.

Acknowledge Alarm on Call Termination Behavior does not Match What is Configured

When the Acknowledge Avigilon alarm on call termination option is enabled/disabled in the Configuration Tool, the opposite occurs.

This issue may occur if the Gateway service was not successfully restarted after the setting was changed.

1. On the system with the Avigilon Gateway for Jacques integration installed, open the services dialog.
2. Restart the Avigilon to Jacques Gateway service.

For more information on accessing the services dialog and restarting a service, refer to http://technet.microsoft.com/en-ca/library/cc736564(v=ws.10).aspx#BKMK_services.

Multiple Alarm Triggers Occur when a Call is Initiated or Connected

Whenever a call is initiated and connected from a tag that is used in the integration, an alarm is triggered multiple times in the ACC software. The alarm should be triggered only once when a call is initiated, and once when a call is connected.
This typically occurs if the **Acknowledge Avigilon Alarms on Call Termination** option is enabled in the Configuration Tool. After the setting is saved, more alarm triggers than expected are received during call initiation and connection. Disabling then re-enabling the Acknowledge setting in the Configuration Tool multiplies the generated alarm triggers.

To restore the expected functionality, restart the integration service:

1. Open the Windows Services console.
   - In the Windows Start menu search bar, enter `services.msc`. 
2. Locate **Avigilon to Jacques Gateway**.
3. Right-click the service and select **Stop**.
   - Wait for the service to stop.
4. Right-click the service and select **Start**.

Normal functionality is restored.