tekVizion’s onPOINT: Automated Testing of Polycom Endpoints

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tekVizion onPOINT: Automated Testing of Polycom Endpoints
About this guide

The Partner Solutions Guide describes how a partner solution and Polycom combine to solve specific customer needs.

The Polycom Partner Solutions Guide for integration with tekVizion’s onPOINT™ solutions is for administrators who need to integrate supported Polycom endpoints with tekVizion’s onPOINT in order to automate testing of Polycom supported endpoints.

Please read the Polycom and tekVizion documentation before you install or operate the system.
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tekVizion's onPOINT: Automated Testing of Polycom Endpoints
Overview

onPOINT™ is an automation platform to test Polycom endpoints in a communications network. onPOINT can automatically run test scripts to ensure phone features are working as expected.

Continuous updates to network elements puts a burden on resources to test changes and roll out updates reliably. By automating endpoint testing you can realize significant cost savings, improve your network quality and put your engineers to better use!

onPOINT is a cloud based application that leverages the Polycom phones’ APIs capabilities to deliver a complete solution that offers UCaaS (Unified Communication as a Service) service providers and enterprise customers an efficient and expedient method to test their endpoints and to easily identify and isolate trouble areas.

Today’s UCaaS (Unified Communications as a Service) players are offering over the top (OTT) services where the quality of voice can have a significant impact based on the quality of the network. Additionally, vendors provide software upgrades due to new functionality, issue resolution or security updates that can impact the network or the functionality of the UCaaS solution. Today, vendors, UCaaS providers and enterprise customer are conducting manual testing to identify quality issues or functional breakages prior to the deployment of the software updates on their production systems. Manual testing is time consuming, inefficient and unpredictable.

onPOINT automates the testing and helps identify issues related to the network or the software updates in a fraction of the time it is done manually. As a result, the user can utilize onPOINT more frequently and increase the test coverage and the quality of the service thus increasing customer satisfaction and greatly reducing engineering resources required to perform this testing.
As demonstrated in the picture, the onPOINT solution is the management component, which will allow the development, scheduling execution and reporting of the phones status. The phones are residing in the enterprise client sites. onPOINT discovers the phones through the provisioning platform and connects to the phones automatically. Once the phones are contacted, onPOINT tracks the phones based on the data the phones are providing and makes live calls from the phones to other phones within the enterprise client site.

The two main objectives of this application are to verify the phones can make and receive calls and to collect statistics that the phones are reporting to provide diagnosis when required.

The Polycom XML API is intended to provide flexibility when developing applications on Polycom phones, tightly integrating into the phone’s telephony capabilities and functions. The XML API features are:

- Programmable Soft Keys
- Push Requests
- Phone State Polling
- Telephony Notification Events
onPOINT Implementation

Design Considerations
To integrate onPOINT with the Polycom phones, the phones need to be configured with the following features. These features are needed to enable the tekVizion automation platform to function properly.

- XML API enabled
- DTMF in-band enabled
- VQMON feature loaded

All Phones under test must be enabled to make/receive basic calls and configured and enabled to perform conference and consultative transfer calls.
Installation

onPOINT with Polycom Phones
The Polycom phones require certain configuration/setup to allow them to respond to the tekVizion automation controls. The configuration can be done manually or via the phone configuration files. The manual configuration requires access to the Polycom web configuration utility of the phone. The administrative password is needed to access the utility.

The following are the required phone configurations:

1. XML API enabling
2. DTMF in-band enabling
3. VQMON feature loaded
4. RTCP Publish SIP messages interval
5. Phone web configuration utility password

XML API Enabling
The XML API is a ‘service’ provided by Polycom that enables remote control of the Polycom phones. The tekVizion onPOINT solution requires that this feature be enabled. Enabling the API is accomplished via the phone web configuration page or via the phone configuration files. Both methods are listed below.

XML API Enabling Manual Steps:

1. Login into the phone by typing the phone IP address in a browser address bar

2. Enter the password of the phone. Normally (if the password was not changed) then the default password is 456. If it was changed, then a password entry is needed to continue. If the correct password is not found, then the phone will have to undergo a factory reset.
3. After the password is entered and accepted, go to Settings, then Applications

4. Once in the Application page, two settings need to be performed:
   a. Expand the “Phone State Polling” section and select the “Requestor” radio button. Use Polycom and 456 for the ‘User Name’ and ‘Password’ fields respectively:

   ![Image of Phone State Polling settings]

   b. Expand the “Push” section then select ‘All’ from the “Allow Push Messages” drop down menu. **Use Polycom and 456 for the ‘User Name’ and ‘Password’ fields respectively**:

   ![Image of Push settings]

   c. Save the configuration by clicking on the ‘Save’ button at the bottom of the page.
XML API Enabling via the phone configuration file:
Enabling the Polycom API can be accomplished by setting the below parameters in the ‘applications.cfg’ file as such:

```plaintext
apps.push.username="Polycom"
apps.push.password="456"
apps.statePolling.password="456"
apps.push.messageType="5"
apps.push.serverRootURL="Automation"
apps.statePolling.responseMode="0"
```

Use Polycom and 456 for the ‘User Name’ and ‘Password’
**DTMF in-Band Enabling**

To enable DTMF to be sent in-band, two parameters need to be changed in the phone’s `sip-interop.cfg` file. The parameters are:

- `tone.dtmf.rfc2833Control="0"`
- `tone.dtmf.viaRtp="1"`

These parameters are found under the `tone` tag as such:

```xml
<tone>
  <tone.dtmf level="-15">
    tone.dtmf.offTime="50"
    tone.dtmf.onTime="50"
    tone.dtmf.rfc2833Control="0"
    tone.dtmf.rfc2833Payload="127"
    tone.dtmf.viaRtp="1">
    <tone.dtmf.chassis masking="0">
      tone.dtmf.chassis.masking="0">
    </tone.dtmf.chassis>
  </tone.dtmf>
</tone>
```

Once the configuration file is edited, it can be uploaded to the phone by using the web interface. See section [Upload Config Files to Phone](#) for instructions.

**VQMON Loading**

The Polycom phones used for Automation require the VQMon feature to be installed to allow the voice quality records to be sent to the Automation server. Please follow the following steps to load the VQMon feature onto a phone:

1. Get a license for the phone (currently, one can get a trial license from Polycom [http://www.polycom.com/products-services/voice/applications.html#stab5](http://www.polycom.com/products-services/voice/applications.html#stab5) (follow the "Download an Evaluation SITE License" link on the page).
2. Upload the license file to the phone, See section [Upload Config Files to Phone](#) for instructions.
RTCP Interval Setup

The RTCP interval and server setup need to be configured to allow the Polycom phone to send the quality RTCP records to the Automation Server. The setup is in the ‘features.cfg’ configuration file. The parameters to be changed are:

```xml
<voice>
    <voice.page>
        <voice.page.handsfree>
            voice.page.handsfree.rxag="0">
        </voice.page.handsfree>
    </voice.page>
    <voice.qualityMonitoring>
        <voice.qualityMonitoring.collector>
            voice.qualityMonitoring.collector.period="15"
            voice.qualityMonitoring.collector.enable.periodic="1"
            voice.qualityMonitoring.collector.server.1.address=<automation.server.ip.address>
            voice.qualityMonitoring.collector.server.1.port="5060"
        </voice.qualityMonitoring.collector.alert>
        <voice.qualityMonitoring.collector.alert.delay>
            <voice.qualityMonitoring.collector.alert.delay.threshold>
                voice.qualityMonitoring.collector.alert.delay.threshold.critical="0"
                voice.qualityMonitoring.collector.alert.delay.threshold.warning="0"
            </voice.qualityMonitoring.collector.alert.delay.threshold>
        </voice.qualityMonitoring.collector.alert.delay>
        <voice.qualityMonitoring.collector.alert.moslq>
            <voice.qualityMonitoring.collector.alert.moslq.threshold>
                voice.qualityMonitoring.collector.alert.moslq.threshold.critical="0"
                voice.qualityMonitoring.collector.alert.moslq.threshold.warning="0"
            </voice.qualityMonitoring.collector.alert.moslq.threshold>
        </voice.qualityMonitoring.collector.alert.moslq>
    </voice.qualityMonitoring.collector.enable>
</voice>
```

Set the parameters as listed above except for the server address. This IP address should be the address of the onPOINT Server. See the below an excerpt from the ‘features.cfg’ file that shows the parameters settings. Once the parameters are changed, upload the configuration file to the phone. See section Upload Config Files to Phone for instructions.
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```xml
<voice>
  
  voice.qualityMonitoring.collector.enable.session="0"
  voice.qualityMonitoring.collector.enable.triggeredPeriodic="0">
</voice.qualityMonitoring.collector.enable>

<voice.qualityMonitoring.collector.server
  voice.qualityMonitoring.collector.server.1.address="10.64.204.39"
  voice.qualityMonitoring.collector.server.1.port="5060">
</voice.qualityMonitoring.collector.server>

</voice.qualityMonitoring.collector>

<voice.qualityMonitoring.rtcpxr
  voice.qualityMonitoring.rtcpxr.enable="0">
</voice.qualityMonitoring.rtcpxr>

</voice.qualityMonitoring>
</voice>
```
Upload Config Files to Phone

Uploading configuration files to the phones can be accomplished through the phone web interface. Follow the steps listed below for uploading configuration files.

1. Login into the phone by typing the phone IP address in a browser address bar

   ![Login into the phone](image1)

2. Enter the password of the phone. Normally and if the password was not changed, the default password is 456.

   ![Enter password](image2)

3. After the password was entered and accepted, go to Settings, then Utilities and select “Import & Export Configuration”

   ![Settings and Utilities](image3)

4. Once the “Import & Export Configuration” is selected, a new page will be presented that will allow the selection of the configuration file. Select the configuration file then click on “Import”.

   ![Select configuration file](image4)
5. Once the file is imported, the phone might initiate a reboot that will need to be acknowledged by the user.

**Phone web configuration utility password**

The web configuration utility password is needed to be able to change any phone configuration that might be missing.
For More Information

Product Information
For more information about tekVizion visit www.tekvizion.com.
For more information about onPOINT™ visit www.tekvizion.com/services/onpoint/

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For more information about Polycom Technology Partner Program and the Technology and Developer Partner solutions, visit http://www.polycom.com/partners
Test/Validation Annex

The following section describes the onPOINT Automation capabilities. Table 1 below shows the call types that are currently supported with onPOINT.

<table>
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<th>Type</th>
<th>Call Description</th>
<th>Audio Path Check</th>
<th>Validation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic</td>
<td>One phone calls another</td>
<td>Yes</td>
<td>Phone States</td>
</tr>
<tr>
<td></td>
<td>Answer calls</td>
<td>Yes</td>
<td>Phone States</td>
</tr>
<tr>
<td></td>
<td>End calls</td>
<td>Yes</td>
<td>Phone States</td>
</tr>
<tr>
<td></td>
<td>Play DTMF</td>
<td></td>
<td>Not Required</td>
</tr>
<tr>
<td>Hold</td>
<td>Any party</td>
<td></td>
<td>Phone States</td>
</tr>
<tr>
<td>Transfer</td>
<td>Blind</td>
<td>Yes</td>
<td>Phone States</td>
</tr>
<tr>
<td></td>
<td>Consultative</td>
<td>Yes</td>
<td>Phone States</td>
</tr>
<tr>
<td>Conference</td>
<td>3 way calls</td>
<td>Yes</td>
<td>Phone States</td>
</tr>
<tr>
<td>Forward</td>
<td>Forward phone</td>
<td></td>
<td>Phone States</td>
</tr>
</tbody>
</table>

Table 1. Currently Supported Call Types

The following list shows the calls types that are not currently supported by the Automation platform however are included in our roadmap:

- SIP trace decoding
- Phone Registration
- IVR
- Fax
- MWI
- Video calls
- Auto Attendant calls
- Call Forking
- Device Failover
- Device load balancing
- Send device specific options
- Bandwidth testing
- TLS calls
- Validate music on hold