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About This Guide

This guide explains the Application Program Interface (API) used to automate profile associations within the Polycom® Zero Touch Provisioning (ZTP) solution.

This document includes the following:

- An overview of device associations you can perform with the API
- A detailed description of the API commands
- A sample HTML routine that illustrates the API commands

Audience and Purpose

This guide is intended for administrators and Polycom channel partners who want to use the ZTP solution to create and manage profile associations or integrate the ZTP solution into their existing provisioning process.

Get Help

For more information about installing, configuring, and administering Polycom products, refer to Documents and Downloads at Polycom Support.

Related Documents

The following documentation is available on Polycom Support:

- Polycom Zero Touch Provisioning Provisioning Guide
- Polycom Zero Touch Provisioning Frequently Asked Questions

Polycom and Partner Resources

To find all Polycom partner solutions, see Strategic Global Partner Solutions.

The Polycom Community

The Polycom Community gives you access to the latest developer and support information. Participate in discussion forums to share ideas and solve problems with your colleagues. To register with the Polycom Community, simply create a Polycom online account. When logged in, you can access Polycom support personnel and participate in developer and support forums to find the latest information on hardware, software, and partner solutions topics.
Using the Zero Touch Provisioning API

This section explains how to associate your devices using the Zero Touch Provisioning (ZTP) API.

You can use a mixture of the ZTP console and the API interface to associate devices. For example, you can use the console to create the Reference ID (account-id) and the API to create device associations against that Reference ID (account-id).

Before You Begin

Before you can associate devices using the ZTP API, you must first set up an API account and create a configuration profile for your device.

Create an API Account

You must create an API account separate from your ZTP Web Console account to use the ZTP API. When you write the APIs in XML, you enter your API account credentials in each API message header.

To create an API Account:

» Email ztpinfo@polycom.com to register for the account and obtain your credentials.

Create a Configuration Profile in the ZTP Console

You first must create a configuration profile in the ZTP console to use the API to associate a device. You can then create API commands to perform automated profile associations within ZTP. Note that the API commands cover a broader set of capability than is required for the ZTP solution.

For information on creating and managing configuration profiles, see the Polycom Zero Touch Provisioning Provisioning Guide at Polycom Support.

You cannot use the ZTP API to create or modify configuration profiles.

ZTP API Address

The ZTP API address is: https://ztpconsole.polycom.com/inboundservlet/GenericServlet

Associate a Device Using the API

This section explains how to associate a device using the API.

To perform device associations:

1. Create a Reference ID (account-id) using the following API commands:
➢ **create-subscriber**  Creates a unique identifier within the ZTP system. This command includes the following fields and elements:

- **account-id** Displays in the ZTP web console as the Reference ID and tracks associations in the ZTP system.
  The value you enter for the account-id must be unique. The API will return an error if you choose a value that is already in use, even if created by another ZTP user.
- **isp-name** Polycom provides this information when you obtain an API account.
  This field is case sensitive.
- **PersonalInformation** Optional element used to include personal or business information.
  You can include contact information such as name and address or the location to which the devices are being shipped.

➢ **set-location**  Required for each Reference ID (account-id). This command must include the following field options:

- **account-id** Same value used in create-subscriber.
- **location-name** Set to default.

➢ **add-package**  Required for each Reference ID (account-id). This command must include the following field options:

- **account-id** Same value used in create-subscriber.
- **base-package-name** Set to default.

2 Use the **add-sip-device** API command to associate the profile.

*The account-id for each device association must be the same value used in create-subscriber.*

Each API command generates a message response from ZTP. Polycom recommends that you check this message response using the **query-sip-device** command to confirm that an operation has been successfully completed.

### Additional API Operations

In addition to associating devices, you can use API commands to perform the following operations:

- **copy-sip-device**  Copy a device association from one device to another.
- **swap-sip-device**  Swap device associations between two devices.
- **delete-sip-device**  Delete a device association.
- **modify-sip-device**  Modify a device association. When modifying device associations, you must use the same credentials (user ID and password) and the same value for the account-id field you used to create the device association.
You can use the ZTP console to find device associations to confirm that they have been correctly performed.
API Command Descriptions

This section explains the API commands you can use and includes examples of the XML schema that defines the interface. See Appendix A: Sample API at the end of this guide for an example API.

add-package

The add-package API command consists services of the subscriber account.

Although there is only one default value, you must set the package-data element value to default.

Elements

- package-data  Data defining the packages that need to be subscribed for a subscriber.

Attributes

- account-id
- base-package-name  Required string. Always set to default.

Example

The following table illustrates an example XML API for adding a package.

```xml
<?xml version='1.0' encoding='UTF-8'?>
<request xmlns='http://schemas.alopa.com/Inbound'
xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'
xsi:schemaLocation='http://schemas.alopa.com/Inbound C:\GenericInbound\schema\Generic-inbound-V1.1.xsd' userid='special-login'
password='some-password' message-id='111'>
<add-package account-id='myaccount'>
<pkg-packagedata>
<base-package-name>default</base-package-name>
</pkg-packagedata>
</add-package>
</request>

<response message-id='111' xmlns='http://schemas.alopa.com/Inbound'>
 <status ErrorCode='0000' ErrorMessage='Successful.'/>
</response>
```
<response-details>
  <standard-response accountid='myaccount'/>
</response-details>
</response>

add-sip-device

Use the add-sip-device API command to provision a device to ZTP.

Elements

- **device-params**  Defines the device level parameters for IP configuration.
- **sip-device-common-params**  Common device-level parameters across vendors.
- **sip-call-features**  Common call features across the device vendors.
- **function-key-list**  Specifies the function key assignment for the IP phones.
- **vendor-extensions**  Specific attributes per vendor type.
- **package-data**  Data defining the packages that need to be subscribed for a subscriber.
- **ElementDetails**  Particular device selection.
Attributes

- **account-id** Required string.
- **vendor** Required string. Always set to Polycom.
- **vendorModel** Required string. Always set to Polycom_UCS_Device.
- **templateCriteria** Required string. Set to the profile created by the service provider.

Example

The following table illustrates an example XML API for adding a SIP device.

```xml
<request xmlns="http://schemas.alopa.com/Inbound"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://schemas.alopa.com/Inbound C:\GenericInbound\schema\Generic-inbound-V1.1.xsd" userid="special-login"
password="some-password" message-id="1001">
  <add-sip-device account-id="myaccount">
    <device-params><deviceId>0000cafe8897</deviceId>
    <serialNo>0000cafe8897</serialNo>
    <vendor>Polycom</vendor>
    <vendorModel>Polycom_UCS_Device</vendorModel>
  </device-params>
  <sip-device-common-params>
    <templateCriteria>yourProfile</templateCriteria>
  </sip-device-common-params>
  <package-data><base-package-name>default</base-package-name>
</package-data></add-sip-device></request>
```

copy-sip-device

Use the copy-sip-device API command to copy a profile to provision new devices with the same features as an existing device associated with an account ID.

Elements

- **device-params** Defines the device level parameters for phone/device configuration.

Example

The following table illustrates an example XML API for copying a profile.
create-subscriber

Use the create-subscriber API command to create an account for the subscriber in ZTP that includes the subscriber’s personal and business information.

The API provides business information that is not stored in the ZTP database. If you need to store business information to the ZTP database, you must modify the corresponding business flow in ZTP.

Elements

- **BusinessInformation**  Business information associated with the subscriber account (corporate account). This is an optional element that is currently not stored in ZTP.
- **PersonalInformation**  Personal information associated with the subscriber account.

Attributes

- **account-id**  Required string. This value can be an order number for a unique customer reference number, but it must be unique across ZTP.
- **isp-name**: Required string. This value is the company ID associated with the user and is given at the time of account creation. This string is case sensitive.

**Example**

The following table illustrates an example of XML API for creating a subscriber:

```xml
<?xml version='1.0' encoding='UTF-8'?>
<request xmlns='http://schemas.alopa.com/Inbound' xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'
xsi:schemaLocation='http://schemas.alopa.com/Inbound C:\GenericInbound\schema\Generic-inbound-V1.1.xsd' userid='special-login'
password='some-password' message-id='1001' >
<create-subscriber account-id='myaccount' isp-name='companyid'>
<PersonalInformation>
<FirstName>Sharada</FirstName>
<LastName>Pappu</LastName>
<password>user1223</password>
<address>
<StreetAddress1>vani</StreetAddress1>
<StreetAddress2>vilas</StreetAddress2>
<City>Santa Clara</City>
<State>KA</State>
<Zipcode>560004</Zipcode>
<Country>India</Country>
</address>
<phone>6618004</phone>
<select-location></select-location>
<cmmac></cmmac>
</PersonalInformation>
</create-subscriber>
</request>
--------

```xml
<response message-id='1001' xmlns='http://schemas.alopa.com/Inbound'
<status ErrorCode='0000' ErrorMessage='Successful.'/>
<response-details>
<standard-response accountid='myaccount'/>
</response-details>
</response>
```

**delete-sip-device**

The **delete-sip-device** API command deletes SIP service for a subscriber.
Elements

- `device-params` Defines the device level parameters for IP configuration.

Attributes

- `account-id` Required string.
- The subscriber user ID or account number in ZTP.

Example

The following table illustrates an example XML API for deleting a device:

```xml
<?xml version='1.0' encoding='UTF-8'?>
<!--Sample XML file generated by XML Spy v4.2 U (http://www.xmlspy.com)-->  
<request xmlns='http://schemas.alopa.com/Inbound' xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance' xsi:schemaLocation='http://schemas.alopa.com/Inbound C:\DOCUME~1\Desktop\Generic-inbound-V1.1.xsd' userid='special-login' password='some-password' message-id='String' model-name='String'>
<device-params/>
</delete-sip-device>
</request>

<?xml version='1.0' encoding='UTF-8'?>
<!--Sample XML file generated by XML Spy v4.2 U (http://www.xmlspy.com)-->  
<status ErrorCode='String' ErrorMessage='Successful.' />
$response-details/>
</response>
```
modify-sip-device

The `modify-sip-device` API command modifies subscriber SIP device parameters, including the registration address or proxy address.

You cannot use this API to modify a package.

You need to match the `account id` and the MAC address of the SIP device for this operation to be successful.

Elements

- `device-params` Defines the device level parameters for IP configuration.
- `sip-device-common-params` Common device-level parameters across vendors.
- `sip-call-features` Common call features across the device vendors.
- `function-key-list` Specifies the function key assignment for the IP phones.
- `vendor-extensions` Specific attributes per vendor type.
- `package-data` Data defining the packages that need to be subscribed for a subscriber.
- `ElementDetails` Particular device selection.
Attributes

- **account-id**  
  Required string.

- The subscriber user ID or account number in ZTP.

Example

The following table illustrates an example XML API for copying a profile:

```xml
<?xml version='1.0' encoding='UTF-8'?>
<!--Sample XML file generated by XML Spy v4.2 U http://www.xmlspy.com-->  
<request xmlns='http://schemas.alopa.com/Inbound' xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance' xsi:schemaLocation='http://schemas.alopa.com/Inbound C:\DOCUME~1\Desktop\Generic-inbound-V1.1.xsd' accountid='special-login' password='some-password' message-id='String' model-name='String'>  
<add-computer accountid='String'>  
<device-params>  
<sip-device-common-params>  
</sip-device-common-params>  
</device-params>  
</modify-sip-device>  
</add-computer>  
</request>  

---------------------  
<?xml version='1.0' encoding='UTF-8'?>
<!--Sample XML file generated by XML Spy v4.2 U (http://www.xmlspy.com)-->
<status ErrorCode='String' ErrorMessage='Successful.' />  
</response>  
</response>
```
query-accountid-by-mac

Use the query-accountid-by-mac API command to query an account ID using the MAC address of a device.

**query-accountid-by-mac**

Return Account-id given mac-address

**Elements**

- *device-params* Defines the device level parameters for IP configuration.

**Attributes**

- *mac-address* Required string.
- *device type* Optional string. You can query any of the following device types:
  - CM
  - SIP
  - MTA
  - Generic

**Example**

The following table illustrates an example XML API for querying an account ID by MAC address.

```xml
<?xml version='1.0' encoding='UTF-8'?>
<request xmlns='http://schemas.alopa.com/Inbound'
  xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'
  xsi:schemaLocation='http://schemas.alopa.com/Inbound C:\GenericInbound\schema\Generic-inbound-V1.1.xsd' userid='special-login'
  password='some-password'>
  <query-accountid-by-mac mac-address='289282928928'></query-accountid-by-mac>
</request>
```

```xml
<?xml version='1.0'?>
<response xmlns='http://schemas.alopa.com/Inbound'>
  <status ErrorCode='0000' ErrorMessage='Successful.' />
  <response-details>
    <standard-response accountid='10023'/>
  </response-details>
</response>
```
query-sip-device

Use the query-sip-device API to query an existing SIP device for an account ID.

Elements

- device-params: Defines the device level parameters for IP configuration.

Attributes

- account-id: Required string.
  - The subscriber user ID or account number in ZTP.

Example

The following table illustrates an example XML API for querying a device.

```xml
<?xml version='1.0' encoding='UTF-8'?>
<!--Sample XML file generated by XML Spy v4.2 U (http://www.xmlspy.com)-->
<request xmlns='http://schemas.alopa.com/Inbound' xmlns:xsi='http://www.w3.org/2001/XMLSchema-instance'
xsi:schemaLocation='http://schemas.alopa.com/Inbound C:\DOCUME~1\Desktop\Generic-inbound-V1.1.xsd' userid='special-login' password='some-password' message-id='String' model-name='String'>
xsi:schemaLocation='http://schemas.alopa.com/Inbound C:\DOCUME~1\Desktop\Generic-inbound-V1.1.xsd' accountid='test-sip'>
    <device-params/>
  </query-sip-device>
</request>

<?xml version='1.0' encoding='UTF-8'?>
<!--Sample XML file generated by XML Spy v4.2 U (http://www.xmlspy.com)-->
<response message-id='1001'>
  <status ErrorCode='0000' ErrorMessage='Successful'/>
  <response-details/>
  <sip-device-response>
    <sip-call-features>
      <feature/>
    </feature>
  </sip-device-response>
</response>
```
set-location

Use the set-location API command to add an operator site, which is the location where the subscriber's package is available in deployment. If you add a location where the package is not available, the operation will complete; however, subsequent operations for that subscriber will fail.

Although there is only one default value, you must set the location-name value to default.

Elements

- location-data Data pertaining to choosing the operator site.

Attributes

- account-id Required string.
- location-name Required string. Always set to default.

Example

The following table illustrates an example XML API for adding a location:
<request userid='special-login' password='some-password' message-id='MESSAGE_ID'>
<set-location account-id='myaccount'>
<location-data location-name='default'/>
</set-location>
</request>

<response message-id='MESSAGE_ID' xmlns='http://schemas.alopa.com/Inbound'>
  <status ErrorCode='0000' ErrorMessage='Successful.'/>
  <response-details>
    <standard-response accountid='nasa001'/>
  </response-details>
</response>

**swap-sip-device**

Use the **swap-sip-device** API command to swap the MAC address of an existing SIP device with the MAC address of a new SIP device.

![Diagram showing the swap-sip-device API command](image.png)

**Elements**

- **device-params** Defines the device level parameters for IP configuration.

**Attributes**

- **account-id** **Required** string.
  - The subscriber user ID or account number in ZTP.
- **newDeviceId** **Required** string.
  - The MAC address of the new SIP device.

**Example**

The following table illustrates an example XML API for swapping a device.

```xml
<?xml version='1.0' encoding='UTF-8'?>
<!--Sample XML file generated by XML Spy v4.2 U (http://www.xmlspy.com)-->```
<request xmlns='http://schemas.alopa.com/Inbound'
xmLens:xsi='http://www.w3.org/2001/XMLSchema-instance'
xsi:schemaLocation='http://schemas.alopa.com/Inbound C:\DOCUME~1\Desktop\Generic-inbound-V1.1.xsd' userid='special-login’ password='some-password’ message-id='String’ model-name='String'>
<swap-sip-device xmlns='http://schemas.alopa.com/Inbound'
xmLens:xsi='http://www.w3.org/2001/XMLSchema-instance'
xsi:schemaLocation='http://schemas.alopa.com/Inbound C:\DOCUME~1\Desktop\Generic-inbound-V1.1.xsd’ newDeviceId='0000cafebabe’ accountid='test-sip'>
<device-params>
</device-params>
</swap-sip-device>
</request>

<!--Sample XML file generated by XML Spy v4.2 U (http://www.xmlspy.com)-->
<response xmlns='http://schemas.alopa.com/Inbound'
xmLens:xsi='http://www.w3.org/2001/XMLSchema-instance'
xsi:schemaLocation='http://schemas.alopa.com/Inbound C:\DOCUME~1\Desktop\Generic-inbound-V1.1.xsd'>
<status ErrorCode='String’ ErrorMessage='Successful.’ />
</response>

</response>
Appendix A: Sample API

This appendix illustrates an API that performs the operations outlined in this guide. The ZTP API Sample File gives an example of how the API can be used to perform operations within ZTP. When deployed, the ZTP API Sample File creates the ZTP API Test Utility.

- **Usage:** `plcm_ztp_tool.rb [arguments]`
- **Example:**
  ```
  plcm_ztp_tool.rb -s ztpconsole.polycom.com -u inbound -p inbound123 -a testusers -n 10
  ```

The contents of the ZTP API Sample File are provided as is without warranty. You should not use this file or its contents for production purposes without adequate review and testing.

**ZTP API Sample File Arguments**

The following arguments are used in the ZTP API Sample File.

**Mandatory Arguments:**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-u, --user USERID</td>
<td>Inbound user ID for authenticating to the Device Provisioning Manager.</td>
</tr>
<tr>
<td>-p, --password PASSWORD</td>
<td>Inbound password for authenticating to the Device Provisioning Manager.</td>
</tr>
<tr>
<td>-s, --server HOST</td>
<td>Hostname of the Device Provisioning Manager serve.r</td>
</tr>
<tr>
<td>-a, --account-prefix PREFIX</td>
<td>String to prefix to new subscriber account ID values. Example: A prefix value of &quot;test&quot; will generate account IDs of &quot;test001&quot;, &quot;test002&quot;, &quot;test003&quot; and so on.</td>
</tr>
<tr>
<td>-n, --num NUM</td>
<td>Number of subscribers to create.</td>
</tr>
</tbody>
</table>

**Optional Arguments:**

<table>
<thead>
<tr>
<th>Argument</th>
<th>Description</th>
</tr>
</thead>
</table>
| -l, --location [LOCATION] | Operator site location name to associate with each new subscriber. (Optional) Default: "default"
| -k, --package [PACKAGE] | Service package name to associate with each new subscriber. (Optional) Default: "default" |
### Deploy the ZTP API Sample File

You can deploy the ZTP API Sample File using your specific account information.

**To deploy the ZTP API Sample File:**

1. Open the file with a text or HTML editor and do the following:
   a. Replace all occurrences of `myloginname` with the login name for your API account.
   b. Replace all occurrences of `mypassword` with the password for your API account.
   c. Replace all occurrences of `isp-name` with the `isp-name` for your ZTP access.

2. Save the file.

3. Open the file using a web browser. A screen entitled `# ZTP API Test Utility` displays.
Use the ZTP API Test Utility

You can use the ZTP API Test Utility to perform the operations as outlined in this guide.

To use the ZTP API Test Utility:

1. Click the button for the API operation you wish to perform.
   
   For example, to create a Reference ID (account-id), click the following options:
   
   ➢ add-ztp-record
   ➢ add-package
   ➢ add-location
   
   The Request XML field populates with the correctly formatted XML text for the selected operation.

2. Modify the default XML text in the Request XML field as needed.

3. Click Send XML to send the XML request to the ZTP server.
   
   The response displays in the Response XML field.

This Utility and the .xsd are available along with access to the API through ztpinfo@polycom.com