Device Capability Query via CTI Feature

- Feature Description, on page 1
- Supported IP Phones and Codecs, on page 1
- XML Object Changes, on page 4
- Schema Definition, on page 5
- Request and Response Examples for getDeviceCaps, on page 5
- Troubleshooting, on page 6

Feature Description

The Device Capability Query via CTI feature was added for Cisco Unified Communications Manager Release 8.0(1).

A backend CTI application that communicates with the phone using the UserData tunnel cannot retrieve information on device capabilities such as XSI feature support on a phone. Due to this lack of information, and to ensure compatibility, only a minimum set of features were generally configured.

The Device Capability Query via CTI feature overcomes this limitation. This feature allows a CTI-based application or a Cisco Unified Communications Manager application to query a registered phone for device capabilities using the UserData tunnel interface of the phone (over SCCP or SIP and RemoteCC).

Applications that have an HTTP interface with a phone do not have this limitation. The HTTP request from such phones include XSI capabilities header, and the DeviceInformationX servlet of such phones can be accessed to retrieve other device information.

Although designed to work using CTI over the UserData tunnel, this feature can also work over HTTP using the POST method.

Supported IP Phones and Codecs

The following table lists the Cisco Unified IP Phone models that support the Device Capability Query via CTI feature.

Device Capability Query via CTI Feature

Note The Cisco Unified IP Phones 7970G and 7971G-GE, and the Cisco Unified Wireless IP Phone 7921G are deprecated with Cisco Unified Communications Manager 12.0(1) and later. The phones still work on previous versions of Cisco Unified Communications Manager.

The Cisco Unified IP Phones 7902, 7905, 7910, and 7912, and the Cisco Unified Wireless IP Phone 7920 are deprecated with Cisco Unified Communications Manager 11.5(1) and later. The phones still work on previous versions of Cisco Unified Communications Manager.

Table 1: Phone Models that Support the Device Capability Query via CTI Feature

Phone model	Supported, Not supported	Firmware supported (see note)
Cisco Unified IP Phone 9900 series		
9951	Supported	9.0(1) and later
9971	Supported	9.0(1) and later
Cisco Unified IP Phone 8900 Series		
8941		
8945		
8961	Supported	9.0(1) and later
Cisco IP Phone 8800 Series **Note** Not supported on all Multiplatform phones		
8811	Supported	10.2(2) and later
8841, 8851, 8861	Supported	10.2(1) and later
8851NR	Supported	10.3(1) and later
8845, 8865	Supported	10.3(2) and later
8865NR	Supported	11.7(1) and later
8875, 8875NR	Supported	PhoneOS 2.1 and later
Cisco IP Conference Phones 8830 Series **Note** Not supported on all Multiplatform phones		
8831	Supported	9.3(3) and later
8832	Supported	12.0(1) and later
Cisco Wireless IP Phone 8820 series		
8821	Supported	11.0(1) and later

Phone model	Supported, Not supported	Firmware supported (see note)
Cisco Unified IP Phone 7900 Series		
7905	Not supported	Not applicable
7906	Supported	8.4(1) and later
7911	Supported	8.4(1) and later
7912	Not supported	Not applicable
7931	Supported	8.4(1) and later
7937	Not supported	Not applicable
7940	Not supported	Not applicable
7941	Supported	8.4(1) and later
7942	Supported	8.4(1) and later
7945	Supported	8.4(1) and later
7960	Not supported	Not applicable
7961	Supported	8.4(1) and later
7962	Supported	8.4(1) and later
7965	Supported	8.4(1) and later
7970	Supported	8.4(1) and later
7971	Supported	8.4(1) and later
7975	Supported	8.4(1) and later
7985	Not supported	Not applicable
Cisco Unified Wireless IP Phone 7900 Series		
7920	Not supported	Not applicable
7921G	Supported	1.0(3) and later
7925G	Supported	1.3(1) and later
7925G-EX	Supported	1.4(1) and later
7926G	Supported	1.4(1) and later
Cisco IP Phone 7800 Series **Note** Not supported on all Multiplatform phones		
7811	Supported	10.3(1) and later

Phone model	Supported, Not supported	Firmware supported (see note)
7821	Supported	9.1(1) and later
7841	Supported	9.1(1) and later
7861	Supported	9.1(1) and later
Cisco IP Conference Phone 7830 Series **Note** Not supported on all Multiplatform phones		
7832	Supported	12.0(1) and later
Cisco IP Phone 6800 Series Not supported on all Multiplatform phones		
Cisco Unified IP Phone 6900 Series		
6921	Supported	9.1(1) and later
6941	Supported	9.1(1) and later
6945	Supported	9.1(1) and later
6961	Supported	9.1(1) and later
Other devices		
Cisco IP Phone Communicator	Not supported	Not applicable

Note Cisco recommends the use of latest firmware. The firmware can be downloaded from the following location (requires login or service contract):

http://software.cisco.com/download/navigator.html?i=!mmd

Although several codecs are listed within the schema, only the codecs G711, G729, and G722 are currently supported.

Related Topics

Deprecated Phone Models for Cisco Unified Communications Manager

XML Object Changes

To support this feature, new request and response objects are created. The `<getDeviceCaps>` is the request object and the `<getDeviceCapsResponse>` is the response object.

On receiving the `<getDeviceCaps>` object, the phone returns the `<getDeviceCapsResponse>` object. All elements in the `<getDeviceCapsResponse>` object are required and must not be null.

Schema Definition

The getDeviceCapsResponse XML schema is as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<schema targetNamespace="http://www.example.org/devicecaps"
xmlns:tns="http://www.example.org/devicecaps" xmlns="http://www.w3.org/2001/XMLSchema">
 <element name="getDeviceCapsResponse" type="tns:deviceCapType" nillable="true"/>
 <complexType name="deviceCapType">
  <all>
   <element name="physical" type="tns:physicalCapType" nillable="true"/>
   <element name="services" nillable="true">
    <complexType>
     <complexContent>
      <extension base="tns:servicesCapType">
       <attribute name="sdkVersion" type="string" use="required"/>
      </extension>
     </complexContent>
    </complexType>
   </element>
  </all>
 </complexType>
 <complexType name="physicalCapType">
  <all>
   <element name="modelNumber" nillable="false">
    <simpleType>
     <restriction base="string">
      <maxLength value="32"/>
      <minLength value="1"/>
     </restriction>
    </simpleType>
   </element>
   <element name="display" nillable="true">
    <complexType>
     <attribute name="width" type="unsignedShort" use="required"/>
     <attribute name="height" type="unsignedShort" use="required"/>
     <attribute name="bitDepth" type="unsignedShort" use="required"/>
     <attribute name="isColor" type="boolean" use="required"/>
    </complexType>
   </element>
  </all>
 </complexType>
 <complexType name="servicesCapType">
  <all>
   <element name="browser" type="tns:browserCapType" nillable="true"/>
  </all>
 </complexType>
 <complexType name="browserCapType">
  <all>
   <element name="accept" nillable="false"/>
   <element name="acceptLanguage" nillable="false"/>
   <element name="acceptCharset" nillable="false"/>
  </all>
 </complexType>
</schema>
```

Request and Response Examples for getDeviceCaps

The following are the request and response examples for a getDeviceCaps object:

Request sent to the phone:

```
<getDeviceCaps/>
```

Response returned from the phone:

```
<getDeviceCapsResponse>
  <physical>
    <modelNumber>CP-7970</modelNumber>
    <display width="298" height="168" bitDepth="12" isColor="true"/>
  </physical>
   <services sdkVersion="5.0.3">
    <browser>
 </services>
</getDeviceCapsResponse>
```

Troubleshooting

The following error may occur in this feature:

- If the getDeviceCaps object is invalid (misspelled), a parsing error is generated and a CiscoIPPhoneError object (with Number="1") is returned as the response.

Error Handling

Standard XML services debugging techniques are applied to this feature.

The root cause for any parsing errors is displayed in the phone console logs. For HTTP requests and responses, sniffer traces and web server debug can be used to examine the getDeviceCaps object to ensure that it conforms to the schema.