

IP Phone Services XML Schema Enforcement



Target Audience: Unified Communication XML Application developers

Concept: This document was created by the Cisco Voice Technology Group as part of a series of documents to provide information and implementation guidance on new XML application interface objects as they become available.

The XML Service Interface documentation and SDK are updated as new versions of Cisco Unified Communication Manager are released. In between releases of Cisco Unified Communication Manager, new releases of IP phone firmware are also released. Some of these IP phone firmware releases may contain enhancements to the XML Service Interface. This series of XML service interface applications notes has been produced as a way of making these enhancements available to the developer community as early as possible.

The information contained in this application note will be incorporated into the next release of the XML application interface documentation and the SDK. At that time, the information in this document will be deprecated, but until that time this document acts as the reference documentation for the XML Service Interface API being described.



XML Schema Enforcement

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Introduction

Cisco IP phone Services have been available for many years and were first released with the Cisco IP phone models 7940 and 7960.

Developer resources were provided, and made available through the Developer Support programme at Cisco.

http://www.cisco.com/en/US/products/svcs/ps3034/ps5408/serv_group_home.html

The support resources included an SDK to assist developers in getting started with applications and documentation on the various URIs and XML Objects that were supported in the IP phones.

As part of this information, Cisco published the XML schema with which to develop XML services in a predictable and consistent manner.

http://www.cisco.com/en/US/products/sw/voicesw/ps556/products_programming_usage_guide_chapter09186a00807a352c.html

In recent years, Cisco has introduced a new generation of desktop IP phone models, the 7906, 7911, 7931, 7941, 7961, 7970 and 7971. These new models of phones have been introduced as a platform in which new features can be introduced, and on which new applications can be built.



Schema Enforcement

The introduction of these new generation IP phones has also provided an opportunity to increase the range of XML objects and URIs that are supported. Enabling both Cisco application developers, and partner application developers to enhance their applications and gain more functionality with IP phone services.

The introduction of enhancements to IP phone services is also the time to remind application developers, of the XML schema that is defined for the IP phone services. This schema is published at the following location, and has been since initial release

http://www.cisco.com/en/US/products/sw/voicesw/ps556/products_programming_usage_guide_book09186a00807a34b9.html

In order to provide a stable and consistent platform on which to build enhancements to IP phones services, the XML schema will be enforced more rigidly in upcoming releases of IP phone firmware.

With the introduction of the 8.3(2) IP phone firmware, targeted for August 2007, an updated XML parser will be contained in the IP phones. This updated XML parser will adhere closely to the published XML schema, and will return errors for XML fields that are not compliant to the XML schema.

The update XML parser will provide more error logging information when it encounters XML schema violations, and will enable application developers to debug their applications more efficiently.

The expectation is that existing applications that have already been producing using IP phone services will have already conformed to the published XML schema during their application development. But there may be cases where the XML application was not compliant, and the original XML parser was not strict in enforcement of the XML schema.

Cisco recommends that any application developer verifies that their applications do indeed conform to the XML schema, and will not encounter incompatibilities if they wish to use the XML enhancements that future versions of IP phone firmware will introduce.

Cisco wishes to provide the application developer community with early access to the new XML enhancements, and provide early access to the new XML parser prior to First Customer Shipment. Cisco will make available pre-release images of the 8.3(2) Phone loads, for the phone models that will support the XSI enhancements.



http://www.cisco.com/en/US/products/svcs/ps3034/ps5408/ps5418/serv_home.html

Supported Platforms

The following models of IP phones will implement this new XML parser and any subsequent XSI enhancements, 7906, 7911, 7931, 7941, 7961, 7970, and 7971

The 7905, 7912, 7920, 7940, 7960 and 7985 will not implement the new XML parser, and will not support any new XSI enhancements that are released.

Sample Schema violations

Cisco XML applications that make use of IP phone services have already been validated against the new XML parser, and any inconsistencies found, have been corrected. This activity highlighted some common errors in XML applications, and in order to provide some guidance to developer partner applications some examples are given here.

CiscoIPPhoneMenu Object

```
<CiscoIPPhoneMenu>
<Title>Title text goes here</Title>
<Prompt>Prompt text goes here</Prompt>
<MenuItem>
<Name>The name of each menu item</Name>
<URL>The URL associated with the menu item</URL>
</MenuItem>
</CiscoIPPhoneMenu>
```

If the field < Name> is missing for a <MenuItem>, the original parser would stop rendering from that <MenuItem> onwards. The new parser will display a blank line in the menu list and continue to render any subsequent <MenuItem> definitions.



CiscoIPPhoneDirectory Object

```
<CiscoIPPhoneDirectory>
  <Title>Directory title goes here</Title>
  <Prompt>Prompt text goes here</Prompt>
  <DirectoryEntry>
    <Name>The name of the directory entry</Name>
    <Telephone>The telephone number for the entry</Telephone>
  </DirectoryEntry>
</CiscoIPPhoneDirectory>
```

If the field <Name> is not present, the old original parser would not display the directory entry, the new parser will display the directory entry, but there will be no <Name> associated with it.

CiscoIPPhoneInput Object

```
<CiscoIPPhoneInput>
  <Title>Directory title goes here</Title>
  <Prompt>Prompt text goes here</Prompt>
  <URL>The target URL for the completed input goes here</URL>
  <InputItem>
    <DisplayName>Name of the input field to display</DisplayName>
    <QueryStringParam>The parameter to be added to the target URL
  </QueryStringParam>
    <DefaultValue>The default display name</DefaultValue>
    <InputFlags>The flag specifying the type of allowable
input</InputFlags>
  </InputItem>
</CiscoIPPhoneInput>
```



The URL and QueryStringParam fields are mandatory. The original parser would not report an error on the missing URL and on submit request would display a “Host not Found” message. If the QueryStringParam field is missing, the updated parser will report an error.

SoftKeyItem

```
<SoftKeyItem>
  <Name>Displayed sofkey label</Name>
  <URL>URL or URI action for softkey RELEASE event</URL>
  <URLDown>URL or URI action for softkey PRESS event</URLDown>
  <Position>position of softkey</Position>
</SoftKeyItem>
```

The Position field is mandatory. Earlier phones such as the 7940 and 7960 phones only supported a maximum of value of 8 for the Position field. The 7906, 7911, 931, 7941, 7961, 7970 and 7971 phones will support a maximum value of 16. If the Position field is not present, the updated XML parser will report an error.