IP Office™ Platform

Description of Location API Introduced in Release 10.0

172234 Issue 1.03(30-April-2026)

Notice

While reasonable efforts have been made to ensure that the information in this document is complete and accurate at the time of printing, Avaya assumes no liability for any errors. Avaya reserves the right to make changes and corrections to the information in this document without the obligation to notify any person or organization of such changes.

Documentation disclaimer

“Documentation” means information published by Avaya in varying mediums which may include product information, operating instructions and performance specifications that Avaya may generally make available to users of its products and Cloud Services. Documentation does not include marketing materials. Avaya shall not be responsible for any modifications, additions, or deletions to the original published version of documentation unless such modifications, additions, or deletions were performed by Avaya. End User agrees to indemnify and hold harmless Avaya, Avaya's agents, servants and employees against all claims, lawsuits, demands and judgments arising out of, or in connection with, subsequent modifications, additions or deletions to this documentation, to the extent made by End User.

Link disclaimer

Avaya is not responsible for the contents or reliability of any linked websites referenced within this site or documentation provided by Avaya. Avaya is not responsible for the accuracy of any information, statement or content provided on these sites and does not necessarily endorse the products, services, or information described or offered within them. Avaya does not guarantee that these links will work all the time and has no control over the availability of the linked pages.

Warranty

Avaya provides a limited warranty on Avaya hardware and software. Refer to your sales agreement to establish the terms of the limited warranty. In addition, Avaya’s standard warranty language, as well as information regarding support for this product while under warranty is available to Avaya customers and other parties through the Avaya Support website: https://support.avaya.com/helpcenter/getGenericDetails?detailId=C20091120112456651010 under the link “Warranty & Product Lifecycle” or such successor site as designated by Avaya. Please note that if You acquired the product(s) from an authorized Avaya Channel

Partner outside of the United States and Canada, the warranty is provided to You by said Avaya Channel Partner and not by Avaya.

“Cloud Cloud Service” means a cloud service subscription that You acquire from either Avaya or an authorized Avaya Channel Partner (as applicable) and which is described further in the applicable Service Description or other service description documentation regarding the applicable cloud service. If You purchase a Cloud Service subscription, the foregoing limited warranty may not apply but You may be entitled to support services in connection with the Cloud Service as described further in your service description documents for the applicable Cloud Service. Contact Avaya or Avaya Channel Partner (as applicable) for more information.

Cloud Service

THE FOLLOWING APPLIES IF YOU PURCHASE A CLOUD SERVICE SUBSCRIPTION FROM AVAYA OR AN AVAYA CHANNEL PARTNER (AS APPLICABLE), THE TERMS OF USE FOR CLOUD SERVICES ARE AVAILABLE ON THE AVAYA WEBSITE, https://www.avaya.com/en/legal/license-terms/ UNDER THE LINK “Avaya Terms of Use for Cloud Services” OR SUCH SUCCESSOR SITE AS DESIGNATED BY AVAYA, AND ARE APPLICABLE TO ANYONE WHO ACCESSES OR USES THE CLOUD SERVICE. BY ACCESSING OR USING THE CLOUD SERVICE, OR AUTHORIZING OTHERS TO DO SO, YOU, ON BEHALF OF YOURSELF AND THE ENTITY FOR WHOM YOU ARE DOING SO (HEREINAFTER REFERRED TO INTERCHANGEABLY AS “YOU” AND “END USER”), AGREE TO THE TERMS OF USE. IF YOU ARE ACCEPTING THE TERMS OF USE ON BEHALF A COMPANY OR OTHER LEGAL ENTITY, YOU REPRESENT THAT YOU HAVE THE AUTHORITY TO BIND SUCH ENTITY TO THESE TERMS OF USE. IF YOU DO NOT HAVE SUCH AUTHORITY, OR IF YOU DO NOT WISH TO ACCEPT THESE TERMS OF USE, YOU MUST NOT ACCESS OR USE THE CLOUD SERVICE OR AUTHORIZE ANYONE TO ACCESS OR USE THE CLOUD SERVICE. YOUR USE OF THE CLOUD SERVICE SHALL BE LIMITED BY THE NUMBER AND TYPE OF LICENSES PURCHASED UNDER YOUR CONTRACT FOR THE CLOUD SERVICE, PROVIDED, HOWEVER, THAT FOR CERTAIN CLOUD SERVICES IF APPLICABLE, YOU MAY HAVE THE OPPORTUNITY TO USE FLEX LICENSES, WHICH WILL BE INVOICED ACCORDING TO ACTUAL USAGE ABOVE THE CONTRACT LICENSE LEVEL. CONTACT AVAYA OR AVAYA’S CHANNEL PARTNER FOR MORE INFORMATION ABOUT THE LICENSES FOR THE APPLICABLE CLOUD

SERVICE, THE AVAILABILITY OF ANY FLEX LICENSES (IF APPLICABLE), PRICING AND BILLING INFORMATION, AND OTHER IMPORTANT INFORMATION REGARDING THE CLOUD SERVICE.

Licenses

THE SOFTWARE LICENSE TERMS AVAILABLE ON THE AVAYA WEBSITE, https://www.avaya.com/en/legal/license-terms/, UNDER THE LINK “AVAYA SOFTWARE LICENSE TERMS (Avaya Products)” OR SUCH SUCCESSOR SITE AS DESIGNATED BY AVAYA, ARE APPLICABLE TO ANYONE WHO DOWNLOADS, USES AND/OR INSTALLS AVAYA SOFTWARE, PURCHASED FROM AVAYA LLC, ANY AVAYA AFFILIATE, OR AN AVAYA CHANNEL PARTNER (AS APPLICABLE) UNDER A COMMERCIAL AGREEMENT WITH AVAYA OR AN AVAYA CHANNEL PARTNER. UNLESS OTHERWISE AGREED TO BY AVAYA IN WRITING, AVAYA DOES NOT EXTEND THIS LICENSE IF THE SOFTWARE WAS OBTAINED FROM ANYONE OTHER THAN AVAYA, AN AVAYA AFFILIATE OR AN AVAYA CHANNEL PARTNER; AVAYA RESERVES THE RIGHT TO TAKE LEGAL ACTION AGAINST YOU AND ANYONE ELSE USING OR SELLING THE SOFTWARE WITHOUT A LICENSE. BY INSTALLING, DOWNLOADING OR USING THE SOFTWARE, OR AUTHORIZING OTHERS TO DO SO, YOU, ON BEHALF OF YOURSELF AND THE ENTITY FOR WHOM YOU ARE INSTALLING, DOWNLOADING OR USING THE SOFTWARE

(HEREINAFTER REFERRED TO INTERCHANGEABLY AS “YOU” AND “END USER”), AGREE TO THESE TERMS AND CONDITIONS AND CREATE A BINDING CONTRACT BETWEEN YOU AND AVAYA LLC OR THE APPLICABLE AVAYA AFFILIATE (“AVAYA”).

Copyright

Except where expressly stated otherwise, no use should be made of materials on this site, the Documentation, Software, Cloud Service, or hardware provided by Avaya. All content on this site, the documentation, Cloud Service, and the product provided by Avaya including the selection, arrangement and design of the content is owned either by Avaya or its licensors and is protected by copyright and other intellectual property laws including the sui generis rights relating to the protection of databases. You may not modify, copy, reproduce, republish, upload, post, transmit or distribute in any way any content, in whole or in part, including any code and software unless expressly authorized by Avaya. Unauthorized reproduction, transmission, dissemination, storage, and or use without the express written consent of Avaya can be a criminal, as well as a civil offense under the applicable law.

Virtualization

The following applies if the product is deployed on a virtual machine. Each product has its own ordering code and license types. Note that each Instance of a product must be separately licensed and ordered. For example, if the end user customer or Avaya Channel Partner would like to install two Instances of the same type of products, then two products of that type must be ordered.

Third Party Components

“Third Party Components” mean certain software programs or portions thereof included in the Software or Cloud Service may contain software (including open source software) distributed under third party agreements (“Third Party Components”), which contain terms regarding the rights to use certain portions of the Software (“Third Party Terms”). As required, information regarding distributed Linux OS source code (for those products that have distributed Linux OS source code) and identifying the copyright holders of the Third Party Components and the Third Party Terms that apply is available in the products, Documentation or on Avaya’s website at: https://www.avaya.com/en/legal/third-party-terms/ or such successor site as designated by Avaya.
The open source software license terms provided as Third Party Terms are consistent with the license rights granted in these Software License Terms, and may contain additional rights benefiting You, such as modification and distribution of the open source software. The Third Party Terms shall take precedence over these Software License Terms, solely with respect to the applicable Third Party Components to the extent that these Software License Terms impose greater restrictions on You than the applicable Third Party Terms.

The following applies if the H.264 (AVC) codec is distributed with the product. THIS PRODUCT IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL USE OF A CONSUMER OR OTHER USES IN WHICH IT DOES NOT RECEIVE REMUNERATION TO (i) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD (“AVC VIDEO”) AND/OR (ii) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION MAY BE OBTAINED FROM VIA LICENSING ALLIANCE. SEE https://www.via-la.com/.

Service Provider

THE FOLLOWING APPLIES TO AVAYA CHANNEL PARTNER’S HOSTING OF AVAYA PRODUCTS OR SERVICES. THE PRODUCT OR CLOUD SERVICE MAY USE THIRD PARTY COMPONENTS SUBJECT TO THIRD PARTY TERMS AND REQUIRE A SERVICE PROVIDER TO BE INDEPENDENTLY LICENSED DIRECTLY FROM THE THIRD PARTY SUPPLIER. AN AVAYA CHANNEL PARTNER’S HOSTING OF AVAYA PRODUCTS MUST BE AUTHORIZED IN WRITING BY AVAYA AND IF THOSE HOSTED PRODUCTS USE OR EMBED CERTAIN THIRD PARTY SOFTWARE, INCLUDING BUT NOT LIMITED TO MICROSOFT SOFTWARE OR CODECS, THE AVAYA CHANNEL PARTNER IS REQUIRED TO INDEPENDENTLY OBTAIN ANY APPLICABLE LICENSE AGREEMENTS, AT THE AVAYA CHANNEL PARTNER’S EXPENSE, DIRECTLY FROM THE APPLICABLE THIRD PARTY SUPPLIER.

WITH RESPECT TO CODECS, IF THE AVAYA CHANNEL PARTNER IS HOSTING ANY PRODUCTS THAT USE OR EMBED THE G.729 CODEC, H.264 CODEC, OR H.265 CODEC, THE AVAYA CHANNEL PARTNER ACKNOWLEDGES AND AGREES THE AVAYA CHANNEL PARTNER IS RESPONSIBLE FOR ANY AND ALL RELATED FEES AND/OR ROYALTIES. THE G.729 CODEC IS LICENSED BY Sangoma Technologies Corporation SEE https://www.asterisk.org/products/add-ons/g729-codec/. THE H.264 (AVC) CODEC IS LICENSED UNDER THE AVC PATENT PORTFOLIO LICENSE FOR THE PERSONAL USE OF A CONSUMER OR OTHER USES IN WHICH IT DOES NOT RECEIVE REMUNERATION TO: (I) ENCODE VIDEO IN COMPLIANCE WITH THE AVC STANDARD (“AVC VIDEO”) AND/OR (II) DECODE AVC VIDEO THAT WAS ENCODED BY A CONSUMER ENGAGED IN A PERSONAL ACTIVITY AND/OR WAS OBTAINED FROM A VIDEO PROVIDER LICENSED TO PROVIDE AVC VIDEO. NO LICENSE IS GRANTED OR SHALL BE IMPLIED FOR ANY OTHER USE. ADDITIONAL INFORMATION FOR H.264 (AVC) AND H.265 (HEVC) CODECS MAY BE OBTAINED FROM VIA LICENSING ALLIANCE. SEE https://www.via-la.com/.

Compliance with Laws

Customer acknowledges and agrees that it is responsible for complying with any applicable laws and regulations, including, but not limited to laws and regulations related to call recording, data privacy, intellectual property, trade secret, fraud, and music performance rights, in the country or territory where the Avaya product is used.

Preventing Toll Fraud

“Toll Fraud” is the unauthorized use of your telecommunications system by an unauthorized party (for example, a person who is not a corporate employee, agent, subcontractor, or is not working on your company's behalf). Be aware that there can be a risk of Toll Fraud associated with your system and that, if Toll Fraud occurs, it can result in substantial additional charges for your

telecommunications services.

Avaya Toll Fraud intervention

If You suspect that You are being victimized by Toll Fraud and You need technical assistance or support, call Technical Service Centre Toll Fraud Intervention Hotline at +1-800-643-2353 for the United States and Canada. For additional support telephone numbers, see the Avaya Support website: https://support.avaya.com or such successor site as designated by Avaya.

Security Vulnerabilities

Information about Avaya's security support policies can be found in the Security Policies and Support section of https://support.avaya.com/security. Suspected Avaya product security vulnerabilities are handled per the Avaya Product Security Support Flow (https://support.avaya.com/css/P8/documents/100161515).

Downloading Documentation

For the most current versions of Documentation, see the Avaya Support website: https://support.avaya.com, or such successor site as designated by Avaya.

Contact Avaya Support

See the Avaya Support website: https://support.avaya.com for product or Cloud Service notices and articles, or to report a problem with your Avaya product or Cloud Service. For a list of support telephone numbers and contact addresses, go to the Avaya Support website: https://support.avaya.com (or such successor site as designated by Avaya), scroll to the bottom of the page, and select Contact Avaya Support

Contents

1 Introduction

1.1 Purpose

This document forms part of the SDK for the location API. An example application is included in the SDK to demonstrate/exercise the interface - it has no functionality for determine the appropriate location to set. This document provides detailed information about the new Location API in IP Office Release 10.0. It does not cover mechanisms or recommendations for determining the location to set.

1.2 Intended Audience

This document is for Dev Connect partners developing applications for dynamically determining and setting the location of extensions. They will need details of the Emergency Location API format. The mechanisms for ascertaining the location are beyond the scope of this document.

The API also includes notification of an emergency call for an application combining Location setting and On-Site Notification.

Background information not specifically relating to the format of the alarm is for information only, consult other documentation for reference, primarily IP Office Manager Manual/Help.

1.3 Document Changes

None - first release.

1.4 Background

Locations for extensions are configurable in the IP Office configuration. However that relies on that being a known fixed location - for example the extension is a standard deskphone. Or the IP Office assigning the location by IP Address range at registration.

For devices like cordless phones, the precise location can not normally be set accurately. So if the location is set manually, only a broad 'coverall' location can be used.

However, if the cordless system offers the capability to track which Base Station a device is using, then this API can dynamically set the extension location as the device moves round the system.

It is up to the developer to determine the suitability of mechanisms for identifying the location. Some obvious concerns are strange radio propagations patterns or people re-patching ports if the attempt is by port mapping on a switch.

1.5 Document History

Date	Issue	Description
2016-06-07	1.00	First version (2 API was h2 so was 1.5 API)
2018-05-01	1.01	Fix Heading levels Note that calls must route through the ARS in a location record to set the location for that call
2025-07-30	1.02	Updated Document for Release 12.2

2026-04-30	1.03	Updated Document for Release 12.3

2 API

2.1 Availability

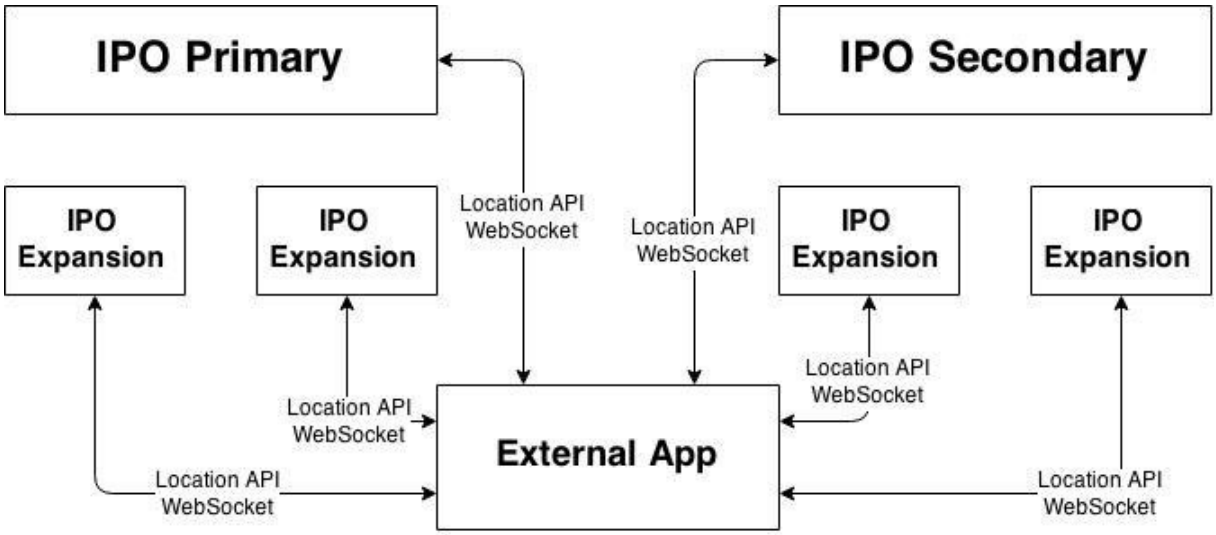
Since IP Office Release R10.0, for IP500v2, SCN, Server Edition, and Select.

2.2 Licensing

There is no license for this API.

2.3 Connectivity

In an SCN or a Server Edition (including Select) network there must be a direct connection from the external application to each system/server in the network. This is necessary to avoid the creation of a single point of failure if one system acted as a concentrator for any other systems.



Only a single connection is supported to each system/server.

2.4 Connection

The connection to the IP Office is Web Socket - RFC 6455. Only a secure connection is supported. Certificate checks are optional. There is no re-Keying during an active session.

Connection is on port 443 to https://[IPADDRESS]/locationapi/ and is done via the usual TLS negotiation and Websocket requests as per the RFCs. First the TLS public key exchange takes place and then, after a secure connection is setup, the app sends a GET request to the URL above:

```
GET /locationapi/ HTTP/1.1
Connection: Upgrade
Authorization: Basic QWRtaW5pc3RyYXRvcjpBZG1pbmlzdHJhdG9yMQ==
User-Agent: Avaya-IPO-Dynamic-Location
Host: 192.168.42.3:443
Upgrade: websocket
Sec-WebSocket-Key: XC5nSC1caixzaUpDPFc7OQ==
Sec-WebSocket-Version: 1
```

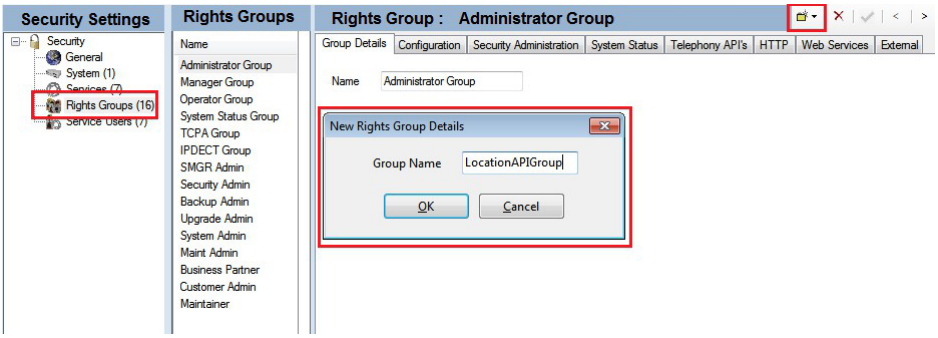
```
Sec-WebSocket-Protocol: locationapi
Sec-WebSocket-Origin: -
Sec-WebSocket-Extensions: -
Cookie: -
```

If the IP Office responds with "`HTTP/1.1 101 Switching Protocols`" then the connection is complete. If otherwise then the received HTTP error codes are treated as per the HTTP standard.

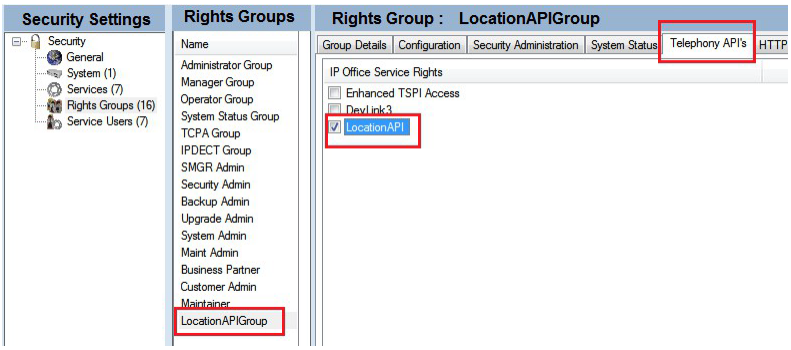
There must be a Service User with a suitable password and having permission for the Location API.

Best security practice dictates that User credentials should not be shared, and any credentials should have the minimum access required for fulfil the required task, so;

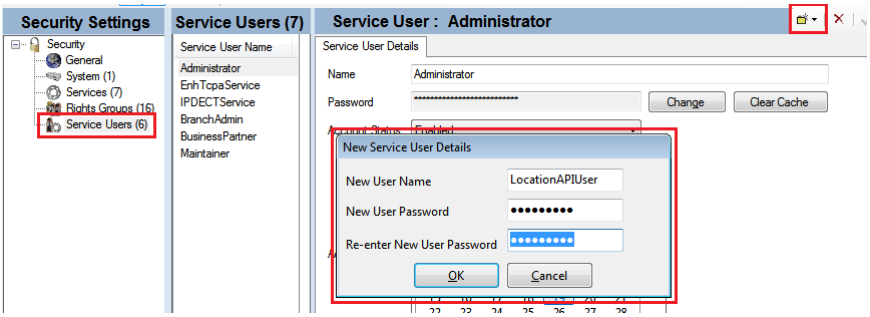
Create a Rights Group for the Location API application.



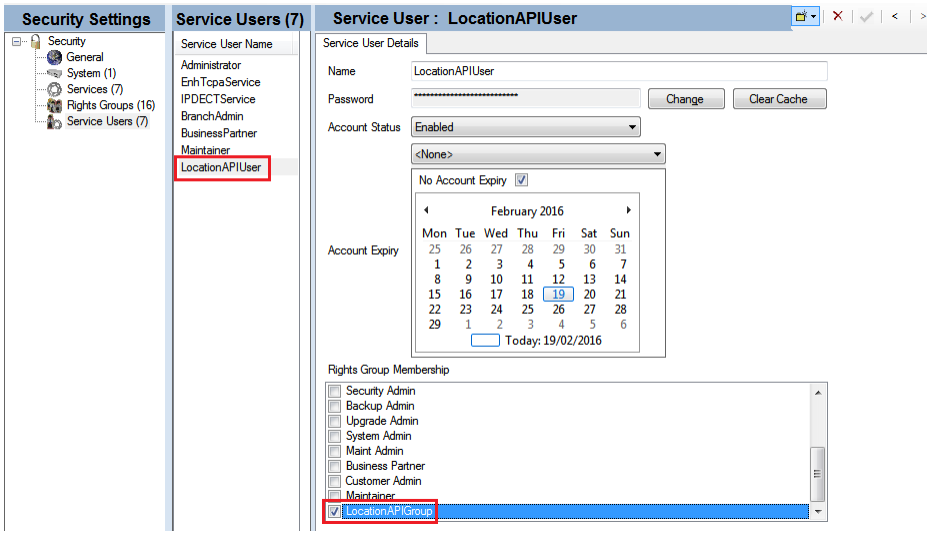
Only give access to the API.



Create a User for the API application.



Assign the User to just the Location API group membership.



See the IP Office Manager documentation for detail descriptions of IP Office security administration, and the IP Office Security Guidelines for password policy recommendations - links in the References section.

2.5 Operation

The system maintainer can manually configure Locations for extensions using IP Office Manager. If set, these are used to determine various things including the call handling for emergency calls by those extensions.

The API permits extensions to have a dynamic location value that overrides their manual location for emergency calls. The dynamic location is not permanently stored in the IP Office config and, as the name implies, it is not preserved through restarts.

If set, the dynamic location is used in preference to the manually configured location. The dynamic location remains set until it is reset via the API or from IP Office System Status Application or the system is re-booted.

For details of IP Office Emergency Call handling see References.

NOTE: a call must route through the Emergency ARS set on a Location record for the location of the call to be set, if the Emergency ARS is blank, or not valid the location will that belonging to the fall-back routing that routed the call, typically the System Location, or None.

3 Messages - API to IP Office

Only a single message can be outstanding. The external application must wait for a response to a message before sending the next.

Messages from the application to the IP Office are in the form of simple text strings. They are not terminated (no CR/LF, LF/CR or null), and must be in a single WebSocket message.

Message	Meaning	Response
`Hello`	Initiates a connection to IP Office	4.1.1
`Get PBXs`	Requests the list of PBXs present in the same Solution as the current PBX	4.2.1
`Get Extensions`	Requests the list of Extensions currently registered with IP Office.	4.2.2
`Get Locations`	Requests the list of Locations currently defined on IP Office. Can be used to ensure that the Application is connected to each system	4.2.3
`Extn Registration Subscribe`	Subscribes to information about Extensions newly registered to the connected IP Office	4.2.4
`Extn Registration Unsubscribe`	Unsubscribes from information about Extensions newly registered to the connected IP Office	4.2.5
`Set Dynamic Location <GUID> <Location ID>`	Sets the Dynamic Location value for the Extension with the GUID set as parameter. A Single Space character (0x20) is required between the message "Set Dynamic Location", GUID and Location ID.	4.2.6
`Test Location API`	Application level PING	4.1.2
`Location API Operational`	Application response to a PING request from the IP Office	4.1.3
`Close Link`	Closes the connection to the IP Office	4.1.4
`NG 911`	Reserved for future use	4.2.7
`NG911 Subscribe`	Reserved for future use	4.2.7
`Bad Dummy Command`	Guaranteed to generate the Bad Command error for testing purposes.	4.1.6

4 Message Format IP Office to API

All 'responses' from the IP Office are XML formatted. Messages may come without any querying message - for example an extension registration, or emergency call notification.

4.1 Link Management Messages

Message	Meaning
`Hello`	Link start-up
`Test Location API`	Application level PING
`Close Link`	Closes the connection to the IP Office
`Controlled shutdown`	The IP Office is being shutdown from an admin interface, for upgrade for example.
`Bad Command`	

4.1.1 Hello

The response contains both the list of extensions and locations (the same output as Get Extensions and Get Locations put together in the same message) for the Node the API has connected to. Having connected the API is automatically subscribed to extension registration updates - see section 4.2.4.

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>
            <NodeInformation>
                <NodeName>TestSystem</NodeName>
                <NodeAddress>C0A82A03</NodeAddress>
                <VersionType>10.0.0.9001.0</VersionType>
                <Extension>
                    <GUID>DF3C0600947611DE80E7080027DDD1F2</GUID>
                    <Extension>1001</Extension>
                    <TypeInfo>H323</TypeInfo>
                    <HWInfo>
                        <IPAddress>C0A82A67</IPAddress>
                        <Mac>CCF954AAECFB</Mac>
                    </HWInfo>
                    <StdEmLoc>3</StdEmLoc>
                    <DynEmLoc>0</DynEmLoc>
                </Extension>
                <Location>
                    <ID>2</ID>
                    <Name>loc2</Name>
                    <Address>
                        <country>US</country>
                        <A1>01</A1>
                        <A2>02</A2>
                        <A3>03</A3>
                        <A4>04</A4>
```

```
                        <A5>05</A5>
                        <A6>06</A6>
                        <PRD>11</PRD>
                        <POD>12</POD>
                        <STS>13</STS>
                        <HNO>16</HNO>
                        <HNS>17</HNS>
                        <LMK>18</LMK>
                        <LOC>20</LOC>
                        <NAM>26</NAM>
                        <PC>29</PC>
                        <BLD>19</BLD>
                        <UNIT>23</UNIT>
                        <FLR>22</FLR>
                        <ROOM>24</ROOM>
                        <PLC>21</PLC>
                        <PCN>28</PCN>
                        <POBOX>30</POBOX>
                        <ADDCODE>27</ADDCODE>
                        <SEAT>25</SEAT>
                        <RD>07</RD>
                        <RDSEC>08</RDSEC>
                        <RDBR>09</RDBR>
                        <RDSUBBR>10</RDSUBBR>
                        <PRM>14</PRM>
                        <POM>15</POM>
                    </Address>
                </Location>
                <Location>
                    <SystemLocation>Yes</SystemLocation>
                    <ID>3</ID>
                    <Name>loc1</Name>
                    <Address>
                        <country>US</country>
                    </Address>
                </Location>
            </NodeInformation>
        </ws_object>
    </data>
</response>
```

4.1.2 Test Location API Response

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>
```

```
            <TestLocationAPI>Location API
Operational</TestLocationAPI>
        </ws_object>
    </data>
</response>
```

4.1.3 Test Location API

IP Office may send this to test that the application is still awake. This can also be triggered form the IP Office System Status Application (SSA).

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>Test Location API</ws_object>
    </data>
</response>
```

The application should reply with **"**`Location API Operational`" formatted as simple text like commands.

4.1.4 Close Location API

Either in response to the command or by another interface (SSA for example).

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>Close Link</ws_object>
    </data>
</response>
```

4.1.5 When the IP Office is Shutdown

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>
            <Shutdown>Controlled shutdown</Shutdown>
        </ws_object>
    </data>
</response>
```

4.1.6 Bad Command

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>
```

```
            <InvalidCommand>Invalid command received: Bad Dummy
Command</InvalidCommand>
        </ws_object>
    </data>
</response>
```

4.2 Responses to requests

Message	Meaning
PBX List	Response to Get PBXs
Extension List	Response to Get Extensions
Location List	Response to Get Locations
Extension Registration Subscription Confirmation	Response to Extn Registration Subscribe
Extension Registration UnSubscribe Confirmation	Response to Extn Registration Unsubscribe
Set Dynamic Location	Response to setting the dynamic location for an extension
Not Implemented	Response to the NG911 placeholder commands

4.2.1 PBX List

4.2.1.1 Success

Lists the other IP Offices in the SCN/SE solution, the one the API is connected to is not repeated.

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>
            <NodeInformation>
                <NodeName>ipol_secondary</NodeName>
                <NodeState>Up</NodeState>
                <NodeAddress>C0A82A04</NodeAddress>
                <VersionType>10.0.0.311.0</VersionType>
            </NodeInformation>
            <NodeInformation>
                <NodeName>se_expansion</NodeName>
                <NodeState>Up</NodeState>
                <NodeAddress>C0A82A20</NodeAddress>
                <VersionType>10.0.0.9046.0</VersionType>
            </NodeInformation>
        </ws_object>
    </data>
</response>
```

4.2.1.2 Failure

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>
```

```
            <NodeInformation>
           There are no PBXs in the SCN
            </NodeInformation>
        </ws_object>
    </data>
</response>
```

4.2.2 Extension List

4.2.2.1 Success

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>
            <Extension>
                <GUID>DF3C0600947611DE80E7080027DDD1F2</GUID>
                <Extension>1001</Extension>
                <TypeInfo>H323</TypeInfo>
                <HWInfo>
                    <IPAddress>C0A82A67</IPAddress>
                    <Mac>CCF954AAECFB</Mac>
                </HWInfo>
                <StdEmLoc>3</StdEmLoc>
                <DynEmLoc>0</DynEmLoc>
            </Extension>
        </ws_object>
    </data>
</response>
```

4.2.2.2 Failure

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>
            <Extension>
           There are no Extensions present on this PBX
            </Extension>
        </ws_object>
    </data>
</response>
```

4.2.3 Location List

4.2.3.1 Success

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>
            <Location>
```

```
                <ID>2</ID>
                <Name>loc2</Name>
                <Address>
                    <country>US</country>
                    <A1>Dummy 01</A1>
                    <A2>Dummy 02</A2>
                    <A3>Dummy 03</A3>
                    <A4>Dummy 04</A4>
                    <A5>Dummy 05</A5>
                    <A6>Dummy 06</A6>
                    <PRD>Dummy 11</PRD>
                    <POD>Dummy 12</POD>
                    <STS>Dummy 13</STS>
                    <HNO>Dummy 16</HNO>
                    <HNS>Dummy 17</HNS>
                    <LMK>Dummy 18</LMK>
                    <LOC>Dummy 20</LOC>
                    <NAM>Dummy 26</NAM>
                    <PC>Dummy 29</PC>
                    <BLD>Dummy 19</BLD>
                    <UNIT>Dummy 23</UNIT>
                    <FLR>Dummy 22</FLR>
                    <ROOM>Dummy 24</ROOM>
                    <PLC>Dummy 21</PLC>
                    <PCN>Dummy 28</PCN>
                    <POBOX>Dummy 30</POBOX>
                    <ADDCODE>Dummy 27</ADDCODE>
                    <SEAT>Dummy 25</SEAT>
                    <RD>Dummy 07</RD>
                    <RDSEC>Dummy 08</RDSEC>
                    <RDBR>Dummy 09</RDBR>
                    <RDSUBBR>Dummy 10</RDSUBBR>
                    <PRM>Dummy 14</PRM>
                    <POM>Dummy 15</POM>
                </Address>
            </Location>
            <Location>
                <SystemLocation>Yes</SystemLocation>
                <ID>3</ID>
                <Name>loc1</Name>
                <Address>
                    <country>US</country>
                </Address>
            </Location>
        </ws_object>
    </data>
</response>
```

4.2.3.2 Failure

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>
            <Location>
           There are no Locations defined on this PBX
            </Location>
        </ws_object>
    </data>
</response>
```

4.2.4 Extension Registration Subscription Confirmation

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>
            <ExtnSubscription>Subscribed to extension
registrations</ExtnSubscription>
        </ws_object>
    </data>
</response>
```

If the API is already subscribed and requests subscription the response is as above except;

```
<ExtnSubscription>Already subscribed to extension
registrations</ExtnSubscription>
```

4.2.5 Extension Registration UnSubscribe Confirmation

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>
            <ExtnSubscription>Unsubscribed from extension
registrations</ExtnSubscription>
        </ws_object>
    </data>
</response>
```

If the API was not subscribed (or already unsubscribed) and requests unsubscription, the response is as above except; `<ExtnSubscription>Already unsubscribed from extension registrations</ExtnSubscription>`

4.2.6 Set Dynamic Location

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
```

```
    <data>
        <ws_object>
            <Result>Set Dynamic Location
DF3C0600947611DE80E7080027DDD1F2 2</Result>
        </ws_object>
    </data>
</response>
```

When the set fails the Result is as follows; `<Result>Set Dynamic Location Invalid Extn GUID or Loc ID</Result>`

4.2.7 Not Implemented

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>
            <NG911Info>Not implemented</NG911Info>
        </ws_object>
    </data>
</response>

<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>
            <NG911Subscription>Not implemented</NG911Subscription>
        </ws_object>
    </data>
</response>
```

4.3 Events

These messages come from the IP Office when actions occur and without prompting from the API. They are not buffered if the link is not active.

Message	Meaning
Emergency Call Notification	sent whenever an emergency call is initiated on IP Office, regardless of whether it is successful or not
Extension Registration	sent when a new extension registers to the IP Office, if the external app has requested so
Extension Un-registration	sent when an extension de-registers from the IP Office, regardless whether the external app has requested so or not
Location List	Sent when a new location is added, removed or changed on IP Office. This is also the response to the before mentioned “Get Locations” command
Extension List	Sent when the dynamic location for an extension or all extensions is cleared through a different interface - System Status for example

4.3.1 Emergency Call Notification

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>
            <EmergencyCall>
                <Alarm>
                    <Caption>Emergency call!</Caption>
                    <Location>loc1</Location>
                    <Dialled>112</Dialled>
                    <Called>207</Called>
                    <CallerID>1001</CallerID>
                    <User>
                        <Extension>1001</Extension>
                        <Name>Extn1001</Name>
                    </User>
                    <Extension>1001</Extension>
                    <Id>11201</Id>
                    <TypeInfo>H323</TypeInfo>
                    <IPAddress>C0A82A67</IPAddress>
                    <Mac>CCF954AAECFB</Mac>
                </Alarm>
                <GUID>DF3C0600947611DE80E7080027DDD1F2</GUID>
            </EmergencyCall>
        </ws_object>
    </data>
</response>
```

4.3.2 Extension registration

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>
            <Extension>
                <GUID>DF3C0600947611DE80E7080027DDD1F2</GUID>
                <Extension>1001</Extension>
                <TypeInfo>H323</TypeInfo>
                <HWInfo>
                    <IPAddress>C0A82A67</IPAddress>
                    <Mac>CCF954AAECFB</Mac>
                </HWInfo>
                <StdEmLoc>3</StdEmLoc>
                <DynEmLoc>0</DynEmLoc>
            </Extension>
        </ws_object>
    </data>
</response>
```

4.3.3 Extension de-registration

```
<?xml version="1.0" encoding="utf-8"?>
<response status="1">
    <data>
        <ws_object>
            <Extension>
                <Connected>No</Connected>
                <GUID>DF3C0600947611DE80E7080027DDD1F2</GUID>
            </Extension>
        </ws_object>
    </data>
</response>
```

4.3.4 Location List

Output is the same regardless of change. An update of configured locations is sent out to the application, same output as Get Locations command - See section4.2.3.1

4.3.5 Extension List

After clearing dynamic location for an extension or all extensions, from System Status for example, the IP Office sends the "Get Extensions" response - See section4.2.2.1

4.4 XML Definitions

4.4.1 Node Information

Comments		
<NodeInformation>		
	<NodeName>	IP Office System Name
	<NodeAddress>	LAN1 or LAN2 IP Address the API is connected to - currently 8 Hex digits. In future this may be dotted decimal for IPv4 addresses or colon formatted HEX for IPv6
	<VersionType>	Firmware Version, currently a.b.c.d.e format
	<NodeState>	For nodes other than the one the API is connected to - is it currently visible to this node. After a long period a down node will drop off the list.
	<Extension>	In the Hello response a list of extensions, and details, for this node
	<Location>	In the Hello response a list of Locations for this node

4.4.2 Extension List

			Comments
<Extension>			Extension Record One per registered extension.
	<GUID>		Internal Unique Reference
	<Extension>		Base Extension Number - Optional
	<TypeInfo>		Extension Type - also used in the Alarm POTS

			TDM SIPDECT DECT SIP H323
	<HWInfo>		Following section depends on type
<TypeInfo>=POTS, TDM			
		<Card>	Base Card Number - or
		<Module>	Expansion Module Number
		<Port>	Socket number on the hardware
<TypeInfo>=H323, DECT, SIP, SIPDECT			
		<IPAddress>	IP Address Currently 8 Hex digits. In future this may be dotted decimal for IPv4 addresses or colon formatted HEX for IPv6
		<Mac>	MAC address as received in registration
	<StdEmLoc>		Configured Location
	<DynEmLoc>		Current Dynamic Location 0=none
	<Connected>		Is the Extension connected - only sent when it isn't

4.4.3 Location

			Comments
<Location>			
	<ID>		Location ID
	<Name>		Location Name
	<SystemLocation>		Optional - this is the System location (default)
	<Address>		If any Address element is configured
		<country>	Required
		<A1>, <A2>, <A3>, <A4>, <A5>, <A6>, <PRD>, <POD>, <STS>, <HNO>, <HNS>, <LMK>, <LOC>, <NAM>, <PC>, <BLD>, <UNIT>, <FLR>, <ROOM>, <PLC>, <PCN>, <POBOX>, <ADDCODE>, <SEAT>, <RD>, <RDSEC>, <RDBR>, <RDSUBBR>, <PRM>, <POM>	RFC 4119 and RFC 5139 elements, present if configured

4.4.4 Emergency Call Alarm

The alarm is documented in " Description of Emergency Call Alarm Introduced in Release 12.2" see References.

		Comments

<EmergencyCall>				
	<Alarm>			Copy of the alarm sent to E-Mail, SNMP, Syslog but XML formatted
		<Caption>		Fixed String "Emergency call!"
		<Location>		Location Name May be blank
		<Dialled>		Dialled number
		<Called>		Called Number
		<CallerID>		CallerID sent
		<Line>		Line ID if the call came over a trunk
		<User>		User Currently associated to this phone
			<Extension>	May be blank
			<Name>	may be "NoUser"
		<Extension>		Extension Base Extension
		<Id>		Extension ID in Config
		<TypeInfo>		Extension Type
		<Card>		As Per Extension List Type Info
		<Module>		
		<Port>		
		<IPAddress>		
		<Mac>		
	<GUID>			Extension GUID

5 References

IP Office Knowledge Base	https://ipofficekb.avaya.com/knowledgebase/businesspartner/index.html
IP Office Manager Manual	https://ipofficekb.avaya.com/knowledgebase/businesspartner/index.html
Making Use of the Emergency Services Access Enhancements in IP Office Release 9.0/9.1	https://ipofficekb.avaya.com/knowledgebase/businesspartner/ipoffice/mergedProjects/manuals/manuals/other/Emergency%20Services%20Access%20Enhancements%20IPO%2090%20and%2091.pdf
Description of Emergency Call Alarm Introduced in Release 10.0	Available via DevConnect
RFC for "A Presence-based GEOPRIV Location Object Format"	http://tools.ietf.org/html/rfc4119
RFC for "Revised Civic Location Format for Presence Information Data Format Location Object (PIDF-LO)"	http://tools.ietf.org/html/rfc5139
IP Office Security Guidelines	https://ipofficekb.avaya.com/knowledgebase/businesspartner/ipoffice/mergedProjects/security/index.htm