**[MS-SIPREGE]:**

**Session Initiation Protocol (SIP) Registration Extensions**

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# Introduction

The Session Initiation Protocol (SIP) Registration Extensions protocol specifies proprietary extensions to Session Initiation Protocol (SIP) registration procedures. It also defines a provisioning protocol to enable SIP clients to obtain server provisioning data from SIP servers compliant to this specification. It is expected that the provisioning protocol sequence is performed during the client bootstrap process and that the data obtained is used for subsequent protocol operations attempted on the network.

Sections 1.5, 1.8, 1.9, 2, and 3 of this specification are normative. All other sections and examples in this specification are informative.

## Glossary

This document uses the following terms:

**200 OK**: A response to indicate that the request has succeeded.

**403 Forbidden**: A response that indicates that a protocol server understood but denies a request.

**access control list (ACL)**: A list of access control entries (ACEs) that collectively describe the security rules for authorizing access to some resource; for example, an object or set of objects.

**address book**: A collection of Address Book objects, each of which are contained in any number of address lists.

**address book file**: A file that contains a set of address book contact records.

**address-of-record**: A [**Session Initiation Protocol (SIP)**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) [**URI**](#gt_e18af8e8-01d7-4f91-8a1e-0fb21b191f95) that specifies a domain with a location service that can map the URI to another URI for a user, as described in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410).

**Augmented Backus-Naur Form (ABNF)**: A modified version of Backus-Naur Form (BNF), commonly used by Internet specifications. ABNF notation balances compactness and simplicity with reasonable representational power. ABNF differs from standard BNF in its definitions and uses of naming rules, repetition, alternatives, order-independence, and value ranges. For more information, see [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096).

**authentication**: The act of proving an identity to a server while providing key material that binds the identity to subsequent communications.

**base URL**: A URL that is specified for a web resource to convert all relative URLs in that resource to absolute URLs. A base URL ends with either a file name, such as http://www.example.com/sample.htm, or a slash, such as http://www.example.com/subdir/. See also absolute URL.

**bot**: A structured HTML comment that is processed by a front-end web server when the containing document is opened by or saved to the server. Also referred to as web bot.

**Common Intermediate Format (CIF)**: A picture format, described in the H.263 standard, that is used to specify the horizontal and vertical resolutions of pixels in YCbCr sequences in video signals.

**Content-Type header**: A message header field whose value describes the type of data that is in the body of the message.

**delegate**: A user or resource that has permissions to act on behalf of another user or resource.

**delegator**: A user or resource for which another user or resource has permission to act on its behalf.

**dialog**: A peer-to-peer [**Session Initiation Protocol (SIP)**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) relationship that exists between two [**user agents**](#gt_e0d80398-1411-47cf-8201-a1e284415fce) and persists for a period of time. A dialog is established by [**SIP messages**](#gt_2690e796-e281-48f3-ba0e-1f9acdb3ba8c), such as a 2xx response to an INVITE request, and is identified by a call identifier, a local tag, and a remote tag.

**endpoint**: A device that is connected to a computer network.

**endpoint identifier (EPID)**: A unique identifier of a Session Initiation Protocol (SIP) [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee). It is formed by combining the value of an epid parameter in a From or To header field with the [**address-of-record**](#gt_bbd777fa-e9fd-4393-965f-b718a274659a) in the corresponding header field.

**Focus Factory**: A component that is responsible for creating, managing, and deleting conferences.

**fully qualified domain name (FQDN)**: An unambiguous domain name that gives an absolute location in the Domain Name System's (DNS) hierarchy tree, as defined in [[RFC1035]](https://go.microsoft.com/fwlink/?LinkId=90264) section 3.1 and [[RFC2181]](https://go.microsoft.com/fwlink/?LinkId=127732) section 11.

**Globally Routable User Agent URI (GRUU)**: A [**URI**](#gt_e18af8e8-01d7-4f91-8a1e-0fb21b191f95) that identifies a [**user agent**](#gt_e0d80398-1411-47cf-8201-a1e284415fce) and is globally routable. A URI possesses a GRUU property if it is useable by any [**user agent client (UAC)**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) that is connected to the Internet, routable to a specific user agent instance, and long-lived.

**header field**: A component of a Session Initiation Protocol (SIP) message header, as described in [RFC3261].

**Hypertext Transfer Protocol (HTTP)**: An application-level protocol for distributed, collaborative, hypermedia information systems (text, graphic images, sound, video, and other multimedia files) on the World Wide Web.

**Hypertext Transfer Protocol Secure (HTTPS)**: An extension of HTTP that securely encrypts and decrypts web page requests. In some older protocols, "Hypertext Transfer Protocol over Secure Sockets Layer" is still used (Secure Sockets Layer has been deprecated). For more information, see [[SSL3]](https://go.microsoft.com/fwlink/?LinkId=90534) and [[RFC5246]](https://go.microsoft.com/fwlink/?LinkId=129803).

**in-band provisioning**: A process in which a protocol client obtains configuration information from a protocol server.

**Internet Protocol version 4 (IPv4)**: An Internet protocol that has 32-bit source and destination addresses. IPv4 is the predecessor of IPv6.

**Internet Protocol version 6 (IPv6)**: A revised version of the Internet Protocol (IP) designed to address growth on the Internet. Improvements include a 128-bit IP address size, expanded routing capabilities, and support for [**authentication**](#gt_8e961bf0-95ba-4f58-9034-b67ccb27f317) and privacy.

**Kerberos**: An [**authentication**](#gt_8e961bf0-95ba-4f58-9034-b67ccb27f317) system that enables two parties to exchange private information across an otherwise open network by assigning a unique key (called a ticket) to each user that logs on to the network and then embedding these tickets into messages sent by the users. For more information, see [[MS-KILE]](%5bMS-KILE%5d.pdf#Section_2a32282edd484ad9a542609804b02cc9).

**location profile**: A definition of an environment where local numbers can be resolved to identifiers that either route to unique enterprise users or form unique numbers in a public telephone network, as defined by the International Telecommunications Union (ITU) recommendation.

**meeting console**: The abbreviated name for the Microsoft Office Communications Live Meeting Console software.

**Messaging Application Programming Interface (MAPI)**: A messaging architecture that enables multiple applications to interact with multiple messaging systems across a variety of hardware platforms.

**ms-diagnostics header**: A header that is added to a [**Session Initiation Protocol (SIP)**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) response, BYE request, or CANCEL request to convey troubleshooting information.

**ms-diagnostics-public header**: A header that is added to a [**Session Initiation Protocol (SIP)**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) response, BYE request, or CANCEL request to convey troubleshooting information. Unlike the [**ms-diagnostics header**](#gt_6489f325-9fd7-4f83-830a-334e9336f7c3), the ms-diagnostics-public header does not contain a "source" parameter.

**Multipurpose Internet Mail Extensions (MIME)**: A set of extensions that redefines and expands support for various types of content in email messages, as described in [[RFC2045]](https://go.microsoft.com/fwlink/?LinkId=90307), [[RFC2046]](https://go.microsoft.com/fwlink/?LinkId=90308), and [[RFC2047]](https://go.microsoft.com/fwlink/?LinkId=90309).

**notify**: The process of sharing presence information with subscribed client devices by using the Wide Area Network Device Presence Protocol (WAN DPP).

**NT LAN Manager (NTLM) Authentication Protocol**: A protocol using a challenge-response mechanism for [**authentication**](#gt_8e961bf0-95ba-4f58-9034-b67ccb27f317) in which clients are able to verify their identities without sending a password to the server. It consists of three messages, commonly referred to as Type 1 (negotiation), Type 2 (challenge) and Type 3 (authentication).

**public IM connectivity**: The ability of a protocol server deployment to interoperate with a public instant messaging (IM) provider.

**public switched telephone network (PSTN)**: Public switched telephone network is the voice-oriented public switched telephone network. It is circuit-switched, as opposed to the packet-switched networks.

**QoE Monitoring Server**: A server that collects and processes Quality of Experience (QoE) metrics.

**Real-Time Transport Protocol (RTP)**: A network transport protocol that provides end-to-end transport functions that are suitable for applications that transmit real-time data, such as audio and video, as described in [[RFC3550]](https://go.microsoft.com/fwlink/?LinkId=90433).

**REGISTER**: A [**Session Initiation Protocol (SIP)**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) method that is used by an SIP client to register the client address with an SIP server.

**security association (SA)**: A simplex "connection" that provides security services to the traffic carried by it. See [[RFC4301]](https://go.microsoft.com/fwlink/?LinkId=90465) for more information.

**server**: A replicating machine that sends replicated files to a partner (client). The term "server" refers to the machine acting in response to requests from partners that want to receive replicated files.

**Session Initiation Protocol (SIP)**: An application-layer control (signaling) protocol for creating, modifying, and terminating sessions with one or more participants. [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) is defined in [RFC3261].

**Simple Mail Transfer Protocol (SMTP)**: A member of the TCP/IP suite of protocols that is used to transport Internet messages, as described in [[RFC5321]](https://go.microsoft.com/fwlink/?LinkId=144740).

**SIP message**: The data that is exchanged between [**Session Initiation Protocol (SIP)**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) elements as part of the protocol. An SIP message is either a request or a response.

**SIP protocol client**: A network client that sends [**Session Initiation Protocol (SIP)**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) requests and receives SIP responses. An SIP client does not necessarily interact directly with a human user. [**User agent clients (UACs)**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) and proxies are SIP clients.

**SIP registrar**: A [**Session Initiation Protocol (SIP)**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) server that accepts REGISTER requests and places the information that it receives from those requests into the location service for the domain that it handles.

**SIP request**: A [**Session Initiation Protocol (SIP)**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) message that is sent from a [**user agent client (UAC)**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) to a user agent server (UAS) to call a specific operation.

**SIP response**: A [**Session Initiation Protocol (SIP)**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) message that is sent from a user agent server (UAS) to a [**user agent client (UAC)**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) to indicate the status of a request from the UAC to the UAS.

**site**: A group of related pages and data within a SharePoint site collection. The structure and content of a site is based on a site definition. Also referred to as SharePoint site and web site.

**subscribe**: The process of registering to receive updates about presence information for client devices. The updates are delivered by using Wide Area Network Device Presence Protocol (WAN DPP).

**subscription**: The result of a SUBSCRIBE request from a [**Session Initiation Protocol (SIP)**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) element.

**survivable mode**: A mode that enables a protocol client to access basic voice services if some server or network resources are unavailable.

**Transmission Control Protocol (TCP)**: A protocol used with the Internet Protocol (IP) to send data in the form of message units between computers over the Internet. TCP handles keeping track of the individual units of data (called packets) that a message is divided into for efficient routing through the Internet.

**Transport Layer Security (TLS)**: A security protocol that supports confidentiality and integrity of messages in client and server applications communicating over open networks. TLS supports server and, optionally, client authentication by using X.509 certificates (as specified in [[X509]](https://go.microsoft.com/fwlink/?LinkId=90590)). TLS is standardized in the IETF TLS working group.

**Uniform Resource Identifier (URI)**: A string that identifies a resource. The URI is an addressing mechanism defined in Internet Engineering Task Force (IETF) Uniform Resource Identifier (URI): Generic Syntax [[RFC3986]](https://go.microsoft.com/fwlink/?LinkId=90453).

**Uniform Resource Locator (URL)**: A string of characters in a standardized format that identifies a document or resource on the World Wide Web. The format is as specified in [[RFC1738]](https://go.microsoft.com/fwlink/?LinkId=90287).

**user agent**: An HTTP user agent, as specified in [[RFC2616]](https://go.microsoft.com/fwlink/?LinkId=90372).

**user agent client (UAC)**: A logical entity that creates a new request, and then uses the client transaction state machinery to send it. The role of [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) lasts only for the duration of that transaction. In other words, if a piece of software initiates a request, it acts as a [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) for the duration of that transaction. If it receives a request later, it assumes the role of a user agent server (UAS) for the processing of that transaction.

**virtual directory**: An HTTP URL that represents the root of a location where content can be published administratively.

**Voice over IP (VoIP)**: The use of the Internet Protocol (IP) for transmitting voice communications. VoIP delivers digitized audio in packet form and can be used to transmit over intranets, extranets, and the Internet.

**Windows Installer (.msi) file**: A package file that contains the instructions and data required to install an application on a Windows-based computer. Every package contains at least one .msi file. The .msi file contains the installer database, a summary information stream, and possibly one or more transforms and internal source files.

**XML document**: A document object that is well formed, as described in [[XML10/5]](https://go.microsoft.com/fwlink/?LinkId=221669), and might be valid. An XML document has a logical structure that is composed of declarations, elements, comments, character references, and processing instructions. It also has a physical structure that is composed of entities, starting with the root, or document, entity.

**XML schema definition (XSD)**: The World Wide Web Consortium (W3C) standard language that is used in defining XML schemas. Schemas are useful for enforcing structure and constraining the types of data that can be used validly within other XML documents. XML schema definition refers to the fully specified and currently recommended standard for use in authoring XML schemas.

**MAY, SHOULD, MUST, SHOULD NOT, MUST NOT:** These terms (in all caps) are used as defined in [[RFC2119]](https://go.microsoft.com/fwlink/?LinkId=90317). All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

## References

Links to a document in the Microsoft Open Specifications library point to the correct section in the most recently published version of the referenced document. However, because individual documents in the library are not updated at the same time, the section numbers in the documents may not match. You can confirm the correct section numbering by checking the [Errata](https://go.microsoft.com/fwlink/?linkid=850906).

### Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact [dochelp@microsoft.com](mailto:dochelp@microsoft.com). We will assist you in finding the relevant information.

[IETFDRAFT-OUGRUAUSIP-10] Rosenberg, J., "Obtaining and Using Globally Routable User Agent (UA) URIs (GRUU) in the Session Initiation Protocol (SIP)", draft-ietf-sip-gruu-10, July 2006, [http://tools.ietf.org/id/draft-ietf-sip-gruu-10.txt](https://go.microsoft.com/fwlink/?LinkId=114611)

[MS-ABS] Microsoft Corporation, "[Address Book File Structure](%5bMS-ABS%5d.pdf#Section_ddc59abf1f4249359b725314665dbcff)".

[MS-AVEDGEA] Microsoft Corporation, "[Audio Video Edge Authentication Protocol](%5bMS-AVEDGEA%5d.pdf#Section_56860f6a2fcf4cad8ee5466d8f382a45)".

[MS-CONMGMT] Microsoft Corporation, "[Connection Management Protocol](%5bMS-CONMGMT%5d.pdf#Section_9f6ebbf090004dc886cdebfe22467cbf)".

[MS-DLX] Microsoft Corporation, "[Distribution List Expansion Protocol](%5bMS-DLX%5d.pdf#Section_fa0e41cd2b344081b3cf59ecdad7a5da)".

[MS-E911WS] Microsoft Corporation, "[Web Service for E911 Support Protocol](%5bMS-E911WS%5d.pdf#Section_ab5d74492c15434bbf65fdf38b8ffabd)".

[MS-OCER] Microsoft Corporation, "[Client Error Reporting Protocol](%5bMS-OCER%5d.pdf#Section_8b2b5ee560514f66b51e71102ef7782f)".

[MS-PRES] Microsoft Corporation, "[Presence Protocol](%5bMS-PRES%5d.pdf#Section_741d682d590b4600916e8deeee426a5c)".

[MS-QoE] Microsoft Corporation, "[Quality of Experience Monitoring Server Protocol](%5bMS-QoE%5d.pdf#Section_c1050431f4b244d4a42563d75e99f5df)".

[MS-RGSWS] Microsoft Corporation, "[Response Group Service Web Service Protocol](%5bMS-RGSWS%5d.pdf#Section_762316e03c6c42c2b3e841a9901e1b7c)".

[MS-SIPAE] Microsoft Corporation, "[Session Initiation Protocol (SIP) Authentication Extensions](%5bMS-SIPAE%5d.pdf#Section_ba3e9821fa854e0fa80c5a4c720a00bd)".

[MS-SIPRE] Microsoft Corporation, "[Session Initiation Protocol (SIP) Routing Extensions](%5bMS-SIPRE%5d.pdf#Section_ab4ab24937964ed18cecf496d81a1a83)".

[MS-SIP] Microsoft Corporation, "[Session Initiation Protocol Extensions](%5bMS-SIP%5d.pdf#Section_0d72fb5512ba49f1850df0bf3110bb1f)".

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997, [https://www.rfc-editor.org/info/rfc2119](https://go.microsoft.com/fwlink/?LinkId=90317)

[RFC3261] Rosenberg, J., Schulzrinne, H., Camarillo, G., Johnston, A., Peterson, J., Sparks, R., Handley, M., and Schooler, E., "SIP: Session Initiation Protocol", RFC 3261, June 2002, [http://www.ietf.org/rfc/rfc3261.txt](https://go.microsoft.com/fwlink/?LinkId=90410)

[RFC3265] Roach, A. B., "Session Initiation Protocol (SIP)-Specific Event Notification", RFC 3265, June 2002, [http://www.ietf.org/rfc/rfc3265.txt](https://go.microsoft.com/fwlink/?LinkId=90413)

[RFC950] Mogul, J., and Postel, J., "Internet Standard Subnetting Procedure", STD 5, RFC 950, August 1985, [https://www.rfc-editor.org/info/rfc950](https://go.microsoft.com/fwlink/?LinkId=90501)

### Informative References

[RFC5234] Crocker, D., Ed., and Overell, P., "Augmented BNF for Syntax Specifications: ABNF", STD 68, RFC 5234, January 2008, [https://www.rfc-editor.org/info/rfc5234](https://go.microsoft.com/fwlink/?LinkId=123096)

## Overview

This protocol is an extension of the original [**Session Initiation Protocol (SIP)**](#gt_586971aa-3b65-4de3-be93-1a9756777d89).

This protocol defines registration extensions to the SIP protocol. These extensions are described in detail in section [3.1](#Section_2b87cf14dd0a4e1ba1f710efe33c600b).

This protocol also defines a protocol to retrieve provisioning and configuration information from a [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) compliant to this specification. This protocol is also referred to as [**in-band provisioning**](#gt_6deb2fc7-2825-42d5-b33f-6529ea1b01f4). These extensions are described in detail in section [3.3](#Section_076fd08002e145e6bb172ec63fe2ee1a).

## Relationship to Other Protocols

This protocol depends on [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89). This protocol is invoked as an extension of SIP. This protocol depends on all of the protocols on which the SIP specification depends.

In addition, this protocol depends on contacts and group [**subscription**](#gt_f362c255-5746-44db-aa04-e8060543a19c) described in [[MS-SIP]](%5bMS-SIP%5d.pdf#Section_0d72fb5512ba49f1850df0bf3110bb1f) section [2.2.4](http://msdn.microsoft.com/en-us/library/c7981287-c58a-4127-a3d8-08dc86f5ca80/), and self-subscription described in [[MS-PRES]](%5bMS-PRES%5d.pdf#Section_741d682d590b4600916e8deeee426a5c) section 2.2.2.3.

## Prerequisites/Preconditions

This protocol assumes that both the [**SIP protocol clients**](#gt_5467b604-e79f-4efe-a7b0-dfceb9a84a51) and the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) support [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89). The prerequisites for this protocol are the same as the prerequisites described in [[MS-SIP]](%5bMS-SIP%5d.pdf#Section_0d72fb5512ba49f1850df0bf3110bb1f) section [1.5](http://msdn.microsoft.com/en-us/library/1f1a3ece-b6ae-4816-bbc1-8ccfb129980d/).

## Applicability Statement

This protocol is applicable when both the [**SIP protocol clients**](#gt_5467b604-e79f-4efe-a7b0-dfceb9a84a51) and the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) support [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) and depend upon the use of one or more of the enhancements offered by SIP extensions.

## Versioning and Capability Negotiation

This protocol does not have protocol versioning. Instead, explicit capability negotiation is done as specified in this section by using the **Supported** header (section [2.2.1.5](#Section_8e478238a6a44127b1d7fd465ba1eaaa)) to indicate support of various features. Using the **Supported** header is the standard [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) mechanism of doing capability negotiation.

## Vendor-Extensible Fields

None.

## Standards Assignments

None.

# Messages

## Transport

A [**user agent client (UAC)**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) that supports this protocol MUST use [**Session Initiation Protocol (SIP)**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) over [**Transmission Control Protocol (TCP)**](#gt_b08d36f6-b5c6-4ce4-8d2d-6f2ab75ea4cb) or [**Transport Layer Security (TLS)**](#gt_f2bc7fed-7e02-4fa5-91b3-97f5c978563a), as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410), for [**Internet Protocol version 4 (IPv4)**](#gt_0f25c9b5-dc73-4c3e-9433-f09d1f62ea8e)/[**Internet Protocol version 6 (IPv6)**](#gt_64c29bb6-c8b2-4281-9f3a-c1eb5d2288aa)[<1>](#Appendix_A_1" \o "Product behavior note 1) to exchange [**SIP messages**](#gt_2690e796-e281-48f3-ba0e-1f9acdb3ba8c) with the [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8).

## Message Syntax

This protocol relies on the [**SIP message**](#gt_2690e796-e281-48f3-ba0e-1f9acdb3ba8c)format, as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 7.

This protocoluses the [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request and response, as specified in [RFC3261] section 10, for a [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) to register a binding. This protocol defines new option tags for the **Supported** [**header field**](#gt_5bd6400e-5d24-407a-b5a8-362a9d486d83) and also adds new headers to be used with REGISTER requests and responses. This protocol defines a new **Event** header to be used with REGISTER requests and responses.

This protocol also uses the [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628) request specified in [[RFC3265]](https://go.microsoft.com/fwlink/?LinkId=90413) section 4.4.5 to remove the binding, or deregister, from the [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8). This protocol defines a new token to be used as the event-type in the **Event** header field and a new [**Multipurpose Internet Mail Extensions (MIME)**](#gt_af6ba277-34c1-493d-8103-71d2af36ce30) type in the [**Content-Type header**](#gt_bbd24a97-f290-425c-b05d-5874f9a4ae94) field, as specified in [RFC3261] section 20.15, in the NOTIFY request.

This protocol uses the [**SUBSCRIBE**](#gt_1bf43e71-383a-4812-ab93-9c6134d1c6a3) request and response specified in [RFC3265] section 4.4.3 to obtain [**in-band provisioning**](#gt_6deb2fc7-2825-42d5-b33f-6529ea1b01f4) configuration information from the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703).

### Extensions to REGISTER Requests and Responses

#### SIP REGISTER Request Format

The [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request is constructed using the rules specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 10 and the following extensions.

Zero or one **Event** header MAY be present in a REGISTER request. If an **Event** header is present, it MUST have the value "registration". This creates an implicit subscription for sending the registration state-change notifications specified in [[RFC3265]](https://go.microsoft.com/fwlink/?LinkId=90413) section 7.2.1.

The [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) SHOULD add the option tags defined in section [2.2.1.5](#Section_8e478238a6a44127b1d7fd465ba1eaaa) to the **Supported** [**header field**](#gt_5bd6400e-5d24-407a-b5a8-362a9d486d83) in the REGISTER request.

The UAC MAY add at most one **ms-keep-alive** header field, as specified in [[MS-CONMGMT]](%5bMS-CONMGMT%5d.pdf#Section_9f6ebbf090004dc886cdebfe22467cbf) section 2.2.1, in the REGISTER request.

The constructed REGISTER request MUST also conform to the rules specified in Section 3.4 of [[MS-SIPRE]](%5bMS-SIPRE%5d.pdf#Section_ab4ab24937964ed18cecf496d81a1a83).

#### SIP REGISTER Response Format

The SIP [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) response is constructed using the rules specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 10 and the following extensions.

The REGISTER [**200 OK**](#gt_d9c398c0-9009-4dc6-9340-36423671182b) response MAY contain an **ms-keep-alive** [**header field**](#gt_5bd6400e-5d24-407a-b5a8-362a9d486d83), as specified in [[MS-CONMGMT]](%5bMS-CONMGMT%5d.pdf#Section_9f6ebbf090004dc886cdebfe22467cbf) section 2.2.1.

The REGISTER 200 response constructed by the [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) SHOULD contain either:

* Zero **ms-keep-alive** header fields, as specified in [MS-CONMGMT] section 2.2.1.
* One **ms-keep-alive** header field, as specified in [MS-CONMGMT] section 2.2.1.

The registrar SHOULD add a **presence-state** header constructed using the rules specified in section [2.2.1.4](#Section_affa7b0ac039469998891da2e585ef39).

The registrar MUST add a **Server** header using the rules specified in section [2.2.1.9](#Section_36036d32b63e43b583f6a06edf5f391e).

The registrar MUST add a **Contact** header using the rules specified in [RFC3261] section 8.1.1.8.

#### ms-keep-alive Header Field Syntax

The syntax and the use of the **ms-keep-alive header** are specified in [[MS-CONMGMT]](%5bMS-CONMGMT%5d.pdf#Section_9f6ebbf090004dc886cdebfe22467cbf) section 2.2.1.

#### Presence-State Header Field Syntax

This protocol defines a new **Presence-State** [**header field**](#gt_5bd6400e-5d24-407a-b5a8-362a9d486d83).

The [**Augmented Backus-Naur Form (ABNF)**](#gt_24ddbbb4-b79e-4419-96ec-0fdd229c9ebf), as defined in [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096), syntax for the **Presence-State** header field[<2>](#Appendix_A_2" \o "Product behavior note 2) is as follows:

presence-state = "presence-State" HCOLON presence-state-value

presence-state-value = register-action[SEMI primary-cluster-state [SEMI user-services-state-unavailable] ]

register-action = "register-action" EQUAL register-action-value

register-action-value = ""added"" / ""refreshed"" / ""fixed""

primary-cluster-state = "primary-cluster-type" EQUAL primary-cluster-type-value SEMI cluster-connection-type-state

primary-cluster-type-value = ""central"" / ""remote""

cluster-connection-type-state = "is-connected-to-primary" EQUAL yes-no-value

yes-no-value = ""yes"" / ""no""

user-services-state-unavailable = "user-services-state=unavailable"

The ABNF syntax for the **Presence-State** header[<3>](#Appendix_A_3" \o "Product behavior note 3) field is as follows:

presence-state = "presence-State" HCOLON presence-state-value

presence-state-value = "register-action"

register-action-value = ""added"" / ""refreshed"" / ""fixed""

The [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) MAY add at most one **Presence-State** header field in the 200 response to the [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request.

#### Supported Header Field Extensions

This protocol extends the **Supported** [**header field**](#gt_5bd6400e-5d24-407a-b5a8-362a9d486d83) for the [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request with the following new option tags.

**adhoclist:** The [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) SHOULD add this option tag in the **Supported** header field in the REGISTER request if the UAC supports batched subscribe requests, as specified in [[MS-SIP]](%5bMS-SIP%5d.pdf#Section_0d72fb5512ba49f1850df0bf3110bb1f) section [3.3.4.1](http://msdn.microsoft.com/en-us/library/e343a68d-45d2-476e-9145-6710dc4a5f02/).

**com.microsoft.msrtc.presence:** The UAC SHOULD add this option tag in the **Supported** header field in the REGISTER request if the UAC supports the Presence Protocol, as specified in [MS-SIP] section [3.2.4.1](http://msdn.microsoft.com/en-us/library/2d66a6d7-fd0e-4dae-af6a-2cff227f79e6/).

**msrtc-event-categories:** The UAC SHOULD add this option tag in the **Supported** header field in the REGISTER request if the UAC supports the Presence Protocol, as specified in [[MS-PRES]](%5bMS-PRES%5d.pdf#Section_741d682d590b4600916e8deeee426a5c) section 2.2.2.4.1.

**gruu-10:** Used by the UAC for requesting the [**Globally Routable User Agent URI (GRUU)**](#gt_72fbc9c5-8485-465c-8b46-64895c8d5102) specified in [[IETFDRAFT-OUGRUAUSIP-10]](https://go.microsoft.com/fwlink/?LinkId=114611) section 6. The UAC SHOULD add this option tag in the **Supported** header field in the REGISTER request.

**ms-forking:** This tag is deprecated and SHOULD NOT be sent in requests.

**ms-userservices-state-notification:** The UAC SHOULD[<4>](#Appendix_A_4" \o "Product behavior note 4) add this option tag in the **Supported** header field in the REGISTER request if the UAC supports [**survivable mode**](#gt_65895f46-d1d4-45b3-84ba-8165002aee88) registration, which is registration without the availability of the service that handles the Presence Protocol specified in [MS-PRES] section 1.

**ms-cluster-failover:** The UAC SHOULD[<5>](#Appendix_A_5" \o "Product behavior note 5) add this option tag to the **Supported** header field in the REGISTER request if the UAC supports serial processing of contact headers in decreasing q-value order, as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 10.2.

The [**ABNF**](#gt_24ddbbb4-b79e-4419-96ec-0fdd229c9ebf), as defined in [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096), syntax listing specified in [RFC3261] section 25.1 is extended as follows:

1. Supported = ( "Supported" / "k" ) HCOLON ["adhoclist" / "com.microsoft.msrtc.presence" / "msrtc-event-categories" / "gruu-10**"** / "ms-userservices-state-notification" / "ms-cluster-failover" / option-tag \*(COMMA option-tag)]

#### Ms-Subnet Header Field Syntax

This protocol defines a new **Ms-Subnet** [**header field**](#gt_5bd6400e-5d24-407a-b5a8-362a9d486d83).[<6>](#Appendix_A_6" \o "Product behavior note 6) The [**ABNF**](#gt_24ddbbb4-b79e-4419-96ec-0fdd229c9ebf), as defined in [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096), syntax for the **Ms-Subnet** header field is as follows:

1. Ms-Subnet = "ms-subnet" HCOLON ms-subnet-value
2. ms-subnet-value = IPv4address

The ABNF for **IPv4address** is specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 25.1.

The UAC SHOULD add, at most, one **Ms-Subnet** header field in the [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request to the [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8).[<7>](#Appendix_A_7" \o "Product behavior note 7)

#### Ms-Device-Info Header Field Syntax

This protocol defines a new **Ms-Device-Info** [**header field**](#gt_5bd6400e-5d24-407a-b5a8-362a9d486d83)[<8>](#Appendix_A_8" \o "Product behavior note 8). The ABNF syntax, as defined in [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096), for the **Ms-Device-Info** header field is as follows:

1. Ms-Device-Info = "Ms-Device-Info" HCOLON ms-device-info-value
2. Ms-device-info-value = mac-info COMMA vendor-info COMMA version-info
3. mac-info = "MAC" EQUAL mac-addr
4. mac-addr = ^(([a-fA-F0-9]{2}-){5})([a-fA-F0-9]{2})$|^(([a-fA-F0-9]{2}-){7})([a-fA-F0-9]{2})$
5. vendor-info = "vendor" EQUAL pvalue
6. version-info = "version" EQUAL token

The ABNF for **pvalue** and **token** is specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 25.1.

The [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) SHOULD add, at most, one **Ms-Device-Info** header field in the [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request to the [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8).[<9>](#Appendix_A_9" \o "Product behavior note 9)

#### P-Preferred-Registrar Header Field Syntax

This protocol defines a new **P-Preferred-Registra**r [**header field**](#gt_5bd6400e-5d24-407a-b5a8-362a9d486d83).[<10>](#Appendix_A_10" \o "Product behavior note 10) The [**ABNF**](#gt_24ddbbb4-b79e-4419-96ec-0fdd229c9ebf) syntax, as defined in [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096), for the **P-Preferred-Registrar** header field is as follows:

1. p-preferred-registrar = "p-preferred-registrar" HCOLON preferred-registrar-value
2. preferred-registrar-value = addr-spec

The ABNF for **addr-spec** is specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 25.1.

The [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) SHOULD add, at most, one **P-Preferred-Registrar** header field in the [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628) to the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb).[<11>](#Appendix_A_11" \o "Product behavior note 11)

#### Extensions to Server Header

The **Server** header is specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 20.35. Implementations conformant with this specification SHOULD[<12>](#Appendix_A_12" \o "Product behavior note 12) set the value of the **Server** header to the literal string "RTC/4.0".

The [**ABNF**](#gt_24ddbbb4-b79e-4419-96ec-0fdd229c9ebf), as defined in [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096), for the **Server** header specified in [RFC3261] section 25.1 is restricted as follows:

Server = "Server" HCOLON "RTC/4.0" / "RTC/3.5**" /** "**RTC/3.0**"

#### Extensions to Contact Header

Implementations SHOULD NOT use a wildcard **Contact** in [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) requests for modifying all registrar bindings. This is a deviation from what is specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 8.1.1.8, which allows wildcard **Contacts** with **Expires: 0** header to be used for removing all bindings.

#### Deregister NOTIFY Request Format

The deregister [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628) request does not define a new event package, in the context of what is specified in [[RFC3265]](https://go.microsoft.com/fwlink/?LinkId=90413), or a new subscription event package. Instead, the following **Event** and **Content-Type** headers are defined to identify the deregister NOTIFY, in the context of what is specified in [RFC3265] section 7.1.2 and section 7.2.1.

##### subscription-state Header

The deregister [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628) MUST add exactly one **subscription-state** [**header field**](#gt_5bd6400e-5d24-407a-b5a8-362a9d486d83) with **terminated** value and **expires** parameter value of zero.

##### Registration-Notify Event Header

The [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) MUST send the deregister [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628) request with exactly one **Event** [**header field**](#gt_5bd6400e-5d24-407a-b5a8-362a9d486d83) with "registration-notify" as the **event-type**.

This protocol defines this new **event-type** "registration-notify". This event type does not define a new event package, in the context of what is specified in [[RFC3265]](https://go.microsoft.com/fwlink/?LinkId=90413) section 2. The presence of a **subscription-state** header field does not imply the use of any subscription event package. It is used in conjunction with the extensions defined in section [2.2.1.11.3](#Section_98a7bc34a4d84e7a9eab3bebe12c9c48) and section [2.2.1.11.4](#Section_2a5e39c0aa2244529ec4e33e9a22ec50), primarily as the identifying features of a deregister NOTIFY.

##### Content-Type Header

The [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) MUST send the deregister [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628) request with **text/registration-event** as the [**MIME**](#gt_af6ba277-34c1-493d-8103-71d2af36ce30) type in the [**Content-Type header**](#gt_bbd24a97-f290-425c-b05d-5874f9a4ae94) field, as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 20.15.

##### Ms-Diagnostics-Public Header

When generating this [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628), the [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) SHOULD add exactly one [**ms-diagnostics-public header**](#gt_adc66849-619f-4770-a7cf-1d5d0cbd99ce), as specified in [[MS-OCER]](%5bMS-OCER%5d.pdf#Section_8b2b5ee560514f66b51e71102ef7782f) section 2.2.1.2. The **ErrorId** field values are given in section [2.2.1.13](#Section_405097aba4184247b79e95ff4179b169).

#### Survivable Mode NOTIFY Request Format

The survivable mode [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628) request[<13>](#Appendix_A_13" \o "Product behavior note 13) does not define a new event package, as specified in [[RFC3265]](https://go.microsoft.com/fwlink/?LinkId=90413), or a new subscription event package. Instead the following **Event** and **Content-Type** headers are defined to identify the [**survivable mode**](#gt_65895f46-d1d4-45b3-84ba-8165002aee88) NOTIFY, as specified in [RFC3265] section 7.1.2 and section 7.2.1.

##### subscription-state Header

The [**survivable mode**](#gt_65895f46-d1d4-45b3-84ba-8165002aee88) [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628) MUST add exactly one **subscription-State** [**header field**](#gt_5bd6400e-5d24-407a-b5a8-362a9d486d83) with an **active** value and an **expires** parameter value of the time remaining on the registration.

##### Registration-Notify Event Header

The [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) MUST send the [**survivable mode**](#gt_65895f46-d1d4-45b3-84ba-8165002aee88) [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628) request with exactly one **Event** [**header field**](#gt_5bd6400e-5d24-407a-b5a8-362a9d486d83) with "registration-notify" as the **event-type**, as defined in section [2.2.1.11.2](#Section_27c361b3b1844388b88d8de056a3a745).

##### Content-Type Header

The [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) MUST send the [**survivable mode**](#gt_65895f46-d1d4-45b3-84ba-8165002aee88) [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628) request with "text/registration-event" as the [**MIME**](#gt_af6ba277-34c1-493d-8103-71d2af36ce30) in the [**Content-Type header**](#gt_bbd24a97-f290-425c-b05d-5874f9a4ae94) field. For more information, see [[RFC3265]](https://go.microsoft.com/fwlink/?LinkId=90413) section 20.15.

##### Ms-Diagnostics-Public Header

When generating this [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628), the [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) SHOULD add exactly one [**ms-diagnostics-public header**](#gt_adc66849-619f-4770-a7cf-1d5d0cbd99ce), as specified in [[MS-OCER]](%5bMS-OCER%5d.pdf#Section_8b2b5ee560514f66b51e71102ef7782f) section 2.2.1.2. The **ErrorId** field values are defined in section [2.2.1.13](#Section_405097aba4184247b79e95ff4179b169).

#### text/registration-event Message Body

The message body MUST be set to one of the following values, depending on the event that triggered the [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628). White spaces, both leading and trailing, SHOULD be ignored by the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb).

**deregistered;event=unregistered:** This is used by the [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) if it unregisters an [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee) because of policy. For example, this is used when other endpoints of the same user have registered and the registrar decides to unregister the oldest endpoint. The **ms-diagnostics-public** **ErrorId** for this event is 4140. For more information, see [[MS-OCER]](%5bMS-OCER%5d.pdf#Section_8b2b5ee560514f66b51e71102ef7782f) section 7.

**deregistered;event=rejected:** This is used by the registrar if the user is disabled for [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) communication. For example, this can happen if the administrator decides to lock the user's account.

The **ms-diagnostics-public** **ErrorId** for this event is 4141. For more information, see [MS-OCER] section 7.

**deregistered;event=deactivated:** This is used by the registrar to indicate that the service is temporarily unavailable for this user. For example, the user could be in the process of being moved from one [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) to another server by the administrator.

The **ms-diagnostics-public** **ErrorId** for this event is 4142. For more information, see [MS-OCER] section 7.

**deregistered;event=userservices-unavailable**[<14>](#Appendix_A_14" \o "Product behavior note 14)**:** This is used by the registrar if it unregisters or rejects an endpoint when the presence service for the user is unavailable and the endpoint does not support [**survivable mode**](#gt_65895f46-d1d4-45b3-84ba-8165002aee88) registrations.

The **ms-diagnostics-public ErrorId** for this event is 4165. For more information, see [MS-OCER] section 7.

**deregistered;event=preferred-registrar-change**[<15>](#Appendix_A_15" \o "Product behavior note 15)**:** This is used by the registrar to indicate that the registrar for the endpoint has changed. The **P-Preferred-Registrar** header, as defined in section [2.2.1.8](#Section_0dfebb4bcf7d4047ba7b16da9b86c24f), specifies the new registrar for the endpoint.

The **ms-diagnostics-public ErrorId** for this event is 4166 or 4167. For more information, see [MS-OCER] section 7.

**registered;event=userservices-unavailable**[<16>](#Appendix_A_16" \o "Product behavior note 16): Used by the registrar to indicate that the UAC is in survivable mode. UACs SHOULD indicate support for survivable mode registration via the **ms-userservices-state-notification** **Supported** header described in section [2.2.1.5](#Section_8e478238a6a44127b1d7fd465ba1eaaa).

The **ms-diagnostics-public ErrorId** for this event is 4165.

### In-band Provisioning Messages

A [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) requests the provisioning configuration that it is interested in by sending an [**in-band provisioning**](#gt_6deb2fc7-2825-42d5-b33f-6529ea1b01f4) request. The [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) responds with the provisioning data for each of the groups listed in the request.

#### In-band Provisioning Request

The [**SUBSCRIBE**](#gt_1bf43e71-383a-4812-ab93-9c6134d1c6a3) request is constructed according to the procedures specified in [[RFC3265]](https://go.microsoft.com/fwlink/?LinkId=90413) section 4.4.3. To request [**in-band provisioning**](#gt_6deb2fc7-2825-42d5-b33f-6529ea1b01f4) information, the following additional rules SHOULD be followed.

* The **To-Uri** of the request is set to the user's SIP [**address-of-record**](#gt_bbd777fa-e9fd-4393-965f-b718a274659a).
* The **From-Uri** is the same as the **To-Uri** if the user does a self-request for provisioning[<17>](#Appendix_A_17" \o "Product behavior note 17).
* The **From-Uri** is the [**delegate’s**](#gt_eeac1cee-185f-47d9-ace5-555e3a2a6930) [**URI**](#gt_e18af8e8-01d7-4f91-8a1e-0fb21b191f95) if the request is done by a delegate on behalf of the [**delegator**](#gt_c352bec9-22a1-42e4-8f75-0b9e1ca27298). If the **From-Uri** is a delegate’s URI, there MUST be a **p-session-on-behalf-of** header that equals the delegator’s URI. The **To-Uri** is set as a delegator’s URI. The authorization logic when delegation is used is described in [[MS-SIPAE]](%5bMS-SIPAE%5d.pdf#Section_ba3e9821fa854e0fa80c5a4c720a00bd).[<18>](#Appendix_A_18" \o "Product behavior note 18)
* When the request is made by a server entity that does not have a SIP address-of-record, the server MUST set the host portion of the **To-Uri** and the **From-Uri** to its own [**fully qualified domain name (FQDN)**](#gt_1769aec9-237e-44ed-9014-1abb3ec6de6e) and MUST NOT include the user portion for both. The server entity initiating this request SHOULD be trusted to send this request via some out-of-band mechanism.[<19>](#Appendix_A_19" \o "Product behavior note 19)
* The **Event** header is set to "vnd-microsoft-provisioning-v2" to identify this as an in-band provisioning request.
* The **Accept** header is set to "application/vnd-microsoft-roaming-provisioning-v2+xml". Implementations SHOULD reject a request with a 406 response if the **Accept** header is not set to this value.
* The **Content-Type** header is set to "application/vnd-microsoft-roaming-provisioning-v2+xml".
* An **Expires** header is added with a value of "0" because this subscription does not establish a dialog.
* No **Require** headers are present in the request.
* Optional **Supported** headers MAY be present in the request, as specified in [[MS-SIP]](%5bMS-SIP%5d.pdf#Section_0d72fb5512ba49f1850df0bf3110bb1f) section [3.1.4.2](http://msdn.microsoft.com/en-us/library/1bfd1190-b15e-49d0-9a8e-82f2f654e10d/) and [[MS-PRES]](%5bMS-PRES%5d.pdf#Section_741d682d590b4600916e8deeee426a5c) section 2.2.2.4.1 for SUBSCRIBE requests.
* The body is a valid **application/vnd-microsoft-roaming-provisioning-v2+xml** document.

For a detailed request example, see section [4.2.1](#Section_525a5b92ac5d46dd815820a550a25205).

#### In-band Provisioning Response

The 200 [**SUBSCRIBE**](#gt_1bf43e71-383a-4812-ab93-9c6134d1c6a3) response is used to send the [**in-band provisioning**](#gt_6deb2fc7-2825-42d5-b33f-6529ea1b01f4) configuration body if the UAC indicates support for the **ms-piggyback-first-notify** extension, as specified in [[MS-SIP]](%5bMS-SIP%5d.pdf#Section_0d72fb5512ba49f1850df0bf3110bb1f) section [3.4.4.1](http://msdn.microsoft.com/en-us/library/0e5fff9a-661a-48ba-bb98-8bc983ed4bd3/). If the UAC does not indicate support for this extension, the in-band provisioning response is sent using a [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628) request. In either case, the 200 SUBSCRIBE or NOTIFY response SHOULD be constructed according to the procedures specified in [[RFC3265]](https://go.microsoft.com/fwlink/?LinkId=90413) section 3.2.2, with the following extensions:

* The **Event** header is set to "vnd-microsoft-provisioning-v2".
* The **Content-Type** header is set to "application/vnd-microsoft-roaming-provisioning-v2+xml".
* This subscription does not establish a dialog, so the **Expires** header is added with a value of zero.
* The body is a valid **application/vnd-microsoft-roaming-provisioning-v2+xml** document, as described in section [2.2.2.4](#Section_6d2d38223e1b42c791f124b89eafedfc).

A detailed response example is given in section [4.2.2](#Section_1be938c11a58457f855c5f4665f071f8).

#### Data Model for application/vnd-microsoft-roaming-provisioning-v2+xml Documents

This is an [**XML document**](#gt_8fa90ece-7a01-4c00-af85-adbf0ed01882), and unless otherwise specified, all elements have a cardinality of 1 and are required.

#### Data Model for Requests

1. provisioningGroupList
2. |
3. |-- provisioningGroup

The following [**XML schema definition (XSD)**](#gt_c7e91c99-e45a-44c2-a08a-c34f137a2cae)[<20>](#Appendix_A_20" \o "Product behavior note 20) fragment defines the requirements to which a **provisioningGroupList** [**XML document**](#gt_8fa90ece-7a01-4c00-af85-adbf0ed01882) SHOULD conform.

1. <xs:complexType name="ProvisioningGroupListType">
2. <xs:sequence>
3. <xs:element name="provisioningGroup" type="ProvisioningGroupType" maxOccurs="unbounded"/>
4. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
5. </xs:sequence>
6. <xs:attribute name="subnet" type="IPAddress" use="optional"/>
7. <xs:anyAttribute namespace="##other" processContents="lax"/>
8. </xs:complexType>
9. <xs:complexType name="ProvisioningGroupType">
10. <xs:sequence>
11. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
12. </xs:sequence>
13. <xs:attribute name="name" type="xs:string" use="required"/>
14. <xs:attribute name="opaque" type="xs:string" use="optional"/>
15. <xs:anyAttribute namespace="##other" processContents="lax"/>
16. </xs:complexType>
17. <xs:element name="provisioningGroupList" type="ProvisioningGroupListType"/>

**provisioningGroupList:** A list of available **provisioningGroup** elements.

**provisioningGroup:** A set of configuration data requested by the sending entity. The **name** attribute indicates the type of configuration data being requested. The following valid values are defined for the **name** attribute:

* **ServerConfiguration:** Global Server Configuration and Provisioning Data.
* **meetingPolicy:** Global Conferencing Policy Data, which is used for multi-party conferencing.
* **ucPolicy:** Global Unified Communications Policy Data.
* **publicationGrammar:** Grammar describing the publication of presence information, including presence containers and membership information based on rules defined by server administrators.
* **userSetting:** User-specific configuration data.
* **endpointConfiguration:** Client endpoint-specific configuration data. It controls the behavior of specific features of the client.[<21>](#Appendix_A_21" \o "Product behavior note 21)
* **locationPolicy:** Location related configuration applied to users.[<22>](#Appendix_A_22" \o "Product behavior note 22)
* **mediaConfiguration:** Media-related configuration data.[<23>](#Appendix_A_23" \o "Product behavior note 23)
* **presencePolicyV2:** Presence-related configuration data.[<24>](#Appendix_A_24" \o "Product behavior note 24)
* **privacyPublicationGrammar:** Privacy-related grammar describing presence containers and membership information based on rules defined by server administrators. [<25>](#Appendix_A_25" \o "Product behavior note 25)
* **publicProviders:** Data on currently supported public providers.[<26>](#Appendix_A_26" \o "Product behavior note 26)

The following XSD schema[<27>](#Appendix_A_27" \o "Product behavior note 27) fragment defines the requirements to which a **provisioningGroupList** XML document SHOULD conform.

1. <xs:complexType name="ProvisioningGroupListType">
2. <xs:sequence>
3. <xs:element name="provisioningGroup" type="ProvisioningGroupType" maxOccurs="unbounded" ms:propertyName="ProvisioningGroups"/>
4. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
5. </xs:sequence>
6. <xs:attribute name="subnet" type="IPAddress" use="optional" ms:propertyName="Subnet"/>
7. <xs:anyAttribute namespace="##other" processContents="lax"/>
8. </xs:complexType>
9. <xs:complexType name="ProvisioningGroupType" ms:className="ProvisioningGroupXmlDocumentResult">
10. <xs:sequence>
11. <xs:any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
12. </xs:sequence>
13. <xs:attribute name="name" type="xs:string" use="required" ms:propertyName="Name"/>
14. <xs:attribute name="opaque" type="xs:string" use="optional" ms:propertyName="Opaque"/>
15. <xs:anyAttribute namespace="##other" processContents="lax"/>
16. </xs:complexType>
17. <xs:element name="provisioningGroupList" type="ProvisioningGroupListType" ms:className="CProvisioningGroupListXmlDocumentRoot"/>

#### Data Model for Responses

1. provisionGroupList
2. |
3. |-- provisionGroup

The [**XSD**](#gt_c7e91c99-e45a-44c2-a08a-c34f137a2cae) schema for a response **provisionGroupList** [**XML document**](#gt_8fa90ece-7a01-4c00-af85-adbf0ed01882) is specified in section [2.2.2.4](#Section_6d2d38223e1b42c791f124b89eafedfc).

**provisionGroupList:**A list of available **provisionGroup** elements.

**provisionGroup:** A set of configuration data owned by a particular entity or service indicated by the **name** attribute. The following valid values are defined for the **name** attribute:

* **ServerConfiguration:** Global Server Configuration and Provisioning Data.
* **meetingPolicy:** Global Conferencing Policy Data, which is used for multi-party conferencing.
* **ucPolicy:** Global Unified Communications Policy Data.
* **publicationGrammar:** Grammar describing the publication of presence information, including presence containers and membership information based on rules defined by server administrators.[<28>](#Appendix_A_28" \o "Product behavior note 28)
* **userSetting:** User-specific configuration data.[<29>](#Appendix_A_29" \o "Product behavior note 29)
* **endpointConfiguration:** Client endpoint-specific configuration data. It controls the behavior of specific features of the client.[<30>](#Appendix_A_30" \o "Product behavior note 30)
* **locationPolicy:** Location-related configuration applied to users.[<31>](#Appendix_A_31" \o "Product behavior note 31)
* **mediaConfiguration:** Media-related configuration data.[<32>](#Appendix_A_32" \o "Product behavior note 32)
* **presencePolicyV2:** Presence-related configuration data.[<33>](#Appendix_A_33" \o "Product behavior note 33)
* **privacyPublicationGrammar:** Privacy-specific grammar describing presence containers and membership information based on rules defined by server administrators.[<34>](#Appendix_A_34" \o "Product behavior note 34)
* **publicProviders:** Data on currently supported public providers.[<35>](#Appendix_A_35" \o "Product behavior note 35)

The **provisionGroup** lists an arbitrary sequence of elements applicable to that entity. The data model is given in the following sections for all the groups.

##### Data Model for ServerConfiguration provisionGroup

Unless specified otherwise, all the properties are required and have a cardinality of 1.[<36>](#Appendix_A_36" \o "Product behavior note 36)

1. provisionGroup (name='ServerConfiguration')
2. |
3. |-- absWebServiceEnabled
4. |-- lisInternalUrl
5. |-- absInternalServerUrl
6. |-- absExternalServerUrl
7. |-- abwqInternalUrl
8. |-- abwqExternalUrl
9. |-- dlxInternalUrl
10. |-- dlxExternalUrl
11. |-- dlxEnabled
12. |-- updatesServerInternalUrl
13. |-- updatesServerExternalUrl
14. |-- updatesServerEnabled
15. |-- organization
16. |-- helpdeskInternalUrl
17. |-- helpdeskExternalUrl
18. |-- consoleDownloadInternalUrl
19. |-- consoleDownloadExternalUrl
20. |-- ucPortRangeEnabled
21. |-- ucMinMediaPort
22. |-- ucMaxMediaPort
23. |-- ucMinSipDynamicPort
24. |-- ucMaxSipDynamicPort
25. |-- ucMinAudioPort
26. |-- ucMaxAudioPort
27. |-- ucMinVideoPort
28. |-- ucMaxVideoPort
29. |-- ucMinAppSharingPort
30. |-- ucMaxAppSharingPort
31. |-- ucMinFileTransferPort
32. |-- ucMaxFileTransferPort
33. |-- ucPC2PCAVEncryption
34. |-- ucMaxVideoRateAllowed
35. |-- qosEnabled
36. |-- enableInCallQoS
37. |-- inCallQoSIntervalSeconds
38. |-- ucDiffServVoice
39. |-- ucVoice802\_1p
40. |-- ucEnforcePinLock
41. |-- ucMinPinLength
42. |-- ucPhoneTimeOut
43. |-- ucExchangeMWIPoll
44. |-- ucEnableSIPSecurityMode
45. |-- ucEnableUserLogging
46. |-- loggingLevel
47. |-- enableBWPolicyCheck
48. |-- poolUri
49. |-- mrasUri
50. |-- qosUri
51. |-- callParkServerUri
52. |-- responseGroupServiceInternalURL
53. |-- responseGroupServiceExternalURL
54. |-- responseGroupServiceInternalAgentURL
55. |-- responseGroupServiceExternalAgentURL
56. |-- botSipUriForTestCall
57. |-- cwaInternalUri
58. |-- cwaExternalUri
59. |-- ucLocationProfile
60. |-- focusFactoryUri
61. |-- voiceMailUri

This provision group example follows the behavior described in endnote [<37>](#Appendix_A_37" \o "Product behavior note 37).

provisionGroup (name='ServerConfiguration')

|

|-- ucMaxVideoRateAllowed

|-- absInternalServerUrl

|-- absExternalServerUrl

|-- absWebServiceEnabled

|-- ucPC2PCAVEncryption

|-- organization

|-- consoleDownloadInternalUrl

|-- consoleDownloadExternalUrl

|-- helpdeskInternalUrl

|-- helpdeskExternalUrl

|-- dlxInternalUrl

|-- dlxExternalUrl

|-- dlxEnabled

|-- ucDiffServVoice

|-- ucVoice802\_1p

|-- ucEnforcePinLock

|-- ucMinPinLength

|-- ucPhoneTimeOut

|-- ucExchangeMWIPoll

|-- ucEnableSIPSecurityMode

|-- ucEnableUserLogging

|-- updatesServerInternalUrl

|-- updatesServerExternalUrl

|-- updatesServerEnabled

|-- ucPortRangeEnabled

|-- ucMinMediaPort

|-- ucMaxMediaPort

|-- ucMinSipDynamicPort

|-- ucMaxSipDynamicPort

|-- qosEnabled

|-- enableInCallQoS

|-- inCallQoSIntervalSeconds

|-- ucLocationProfile

|-- mrasUri

|-- qosUri

|-- callControlServerUri

|-- poolUri

|-- cwaInternalUri

|-- cwaExternalUri

|-- focusFactoryUri

|-- voiceMailUri

The following [**XSD**](#gt_c7e91c99-e45a-44c2-a08a-c34f137a2cae) schema fragment defines the requirements to which a **ServerConfiguration** **provisionGroup** element [**XML document**](#gt_8fa90ece-7a01-4c00-af85-adbf0ed01882) MUST conform.

1. <?xml version="1.0" encoding="utf-16"?>
2. <xs:schema xmlns:tns="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" targetNamespace="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" xmlns:xs="http://www.w3.org/2001/XMLSchema">
3. <xs:element name="provisionGroup" type="tns:provisionGroupType" />
4. <xs:complexType name="provisionGroupType">
5. <xs:all minOccurs="0" maxOccurs="1">
6. <xs:element minOccurs="0" maxOccurs="1" name="absWebServiceEnabled" type="tns:propertyType" />
7. <xs:element minOccurs="0" maxOccurs="1" name="lisInternalUrl" type="tns:propertyType" />
8. <xs:element minOccurs="0" maxOccurs="1" name="absInternalServerUrl" type="tns:propertyType" />
9. <xs:element minOccurs="0" maxOccurs="1" name="absExternalServerUrl" type="tns:propertyType" />
10. <xs:element minOccurs="0" maxOccurs="1" name="abwqInternalUrl" type="tns:propertyType" />
11. <xs:element minOccurs="0" maxOccurs="1" name="abwqExternalUrl" type="tns:propertyType" />
12. <xs:element minOccurs="0" maxOccurs="1" name="dlxInternalUrl" type="tns:propertyType" />
13. <xs:element minOccurs="0" maxOccurs="1" name="dlxExternalUrl" type="tns:propertyType" />
14. <xs:element minOccurs="0" maxOccurs="1" name="dlxEnabled" type="tns:propertyType" />
15. <xs:element minOccurs="0" maxOccurs="1" name="updatesServerInternalUrl" type="tns:propertyType" />
16. <xs:element minOccurs="0" maxOccurs="1" name="updatesServerExternalUrl" type="tns:propertyType" />
17. <xs:element minOccurs="0" maxOccurs="1" name="updatesServerEnabled" type="tns:propertyType" />
18. <xs:element minOccurs="0" maxOccurs="1" name="ucPortRangeEnabled" type="tns:propertyType" />
19. <xs:element minOccurs="0" maxOccurs="1" name="organization" type="tns:propertyType" />
20. <xs:element minOccurs="0" maxOccurs="1" name="helpdeskInternalUrl" type="tns:propertyType" />
21. <xs:element minOccurs="0" maxOccurs="1" name="helpdeskExternalUrl" type="tns:propertyType" />
22. <xs:element minOccurs="0" maxOccurs="1" name="consoleDownloadInternalUrl" type="tns:propertyType" />
23. <xs:element minOccurs="0" maxOccurs="1" name="consoleDownloadExternalUrl" type="tns:propertyType" />
24. <xs:element minOccurs="0" maxOccurs="1" name="ucMinMediaPort" type="tns:propertyType" />
25. <xs:element minOccurs="0" maxOccurs="1" name="ucMaxMediaPort" type="tns:propertyType" />
26. <xs:element minOccurs="0" maxOccurs="1" name="ucMinSipDynamicPort" type="tns:propertyType" />
27. <xs:element minOccurs="0" maxOccurs="1" name="ucMaxSipDynamicPort" type="tns:propertyType" />
28. <xs:element minOccurs="0" maxOccurs="1" name="ucMinAudioPort" type="tns:propertyType" />
29. <xs:element minOccurs="0" maxOccurs="1" name="ucMaxAudioPort" type="tns:propertyType" />
30. <xs:element minOccurs="0" maxOccurs="1" name="ucMinVideoPort" type="tns:propertyType" />
31. <xs:element minOccurs="0" maxOccurs="1" name="ucMaxVideoPort" type="tns:propertyType" />
32. <xs:element minOccurs="0" maxOccurs="1" name="ucMinAppSharingPort" type="tns:propertyType" />
33. <xs:element minOccurs="0" maxOccurs="1" name="ucMaxAppSharingPort" type="tns:propertyType" />
34. <xs:element minOccurs="0" maxOccurs="1" name="ucMinFileTransferPort" type="tns:propertyType" />
35. <xs:element minOccurs="0" maxOccurs="1" name="ucMaxFileTransferPort" type="tns:propertyType" />
36. <xs:element minOccurs="0" maxOccurs="1" name="ucPC2PCAVEncryption" type="tns:propertyType" />
37. <xs:element minOccurs="0" maxOccurs="1" name="ucMaxVideoRateAllowed" type="tns:propertyType" />
38. <xs:element minOccurs="0" maxOccurs="1" name="qosEnabled" type="tns:propertyType" />
39. <xs:element minOccurs="0" maxOccurs="1" name="EnableInCallQoS" type="tns:propertyType" />
40. <xs:element minOccurs="0" maxOccurs="1" name="InCallQoSIntervalSeconds" type="tns:propertyType" />
41. <xs:element minOccurs="0" maxOccurs="1" name="ucDiffServVoice" type="tns:propertyType" />
42. <xs:element minOccurs="0" maxOccurs="1" name="ucVoice802\_1p" type="tns:propertyType" />
43. <xs:element minOccurs="0" maxOccurs="1" name="ucEnforcePinLock" type="tns:propertyType" />
44. <xs:element minOccurs="0" maxOccurs="1" name="ucMinPinLength" type="tns:propertyType" />
45. <xs:element minOccurs="0" maxOccurs="1" name="ucPhoneTimeOut" type="tns:propertyType" />
46. <xs:element minOccurs="0" maxOccurs="1" name="ucExchangeMWIPoll" type="tns:propertyType" />
47. <xs:element minOccurs="0" maxOccurs="1" name="ucEnableSIPSecurityMode" type="tns:propertyType" />
48. <xs:element minOccurs="0" maxOccurs="1" name="ucEnableUserLogging" type="tns:propertyType" />
49. <xs:element minOccurs="0" maxOccurs="1" name="loggingLevel" type="tns:propertyType" />
50. <xs:element minOccurs="0" maxOccurs="1" name="enableBWPolicyCheck" type="tns:propertyType" />
51. <xs:element minOccurs="0" maxOccurs="1" name="poolUri" type="tns:propertyType" />
52. <xs:element minOccurs="0" maxOccurs="1" name="mrasUri" type="tns:propertyType" />
53. <xs:element minOccurs="0" maxOccurs="1" name="qosUri" type="tns:propertyType" />
54. <xs:element minOccurs="0" maxOccurs="1" name="callControlServerUri" type="tns:propertyType" />
55. <xs:element minOccurs="0" maxOccurs="1" name="callParkServerUri" type="tns:propertyType" />
56. <xs:element minOccurs="0" maxOccurs="1" name="responseGroupServiceInternalURL" type="tns:propertyType" />
57. <xs:element minOccurs="0" maxOccurs="1" name="responseGroupServiceExternalURL" type="tns:propertyType" />
58. <xs:element minOccurs="0" maxOccurs="1" name="responseGroupServiceInternalAgentURL" type="tns:propertyType" />
59. <xs:element minOccurs="0" maxOccurs="1" name="responseGroupServiceExternalAgentURL" type="tns:propertyType" />
60. <xs:element minOccurs="0" maxOccurs="1" name="botSipUriForTestCall" type="tns:propertyType" />
61. <xs:element minOccurs="0" maxOccurs="1" name="cwaInternalUri" type="tns:propertyType" />
62. <xs:element minOccurs="0" maxOccurs="1" name="cwaExternalUri" type="tns:propertyType" />
63. <xs:element minOccurs="0" maxOccurs="1" name="requireFIPSCompliantMedia" type="tns:propertyType" />
64. <xs:element minOccurs="0" maxOccurs="1" name="hybridConfigServiceInternalUrl" type="tns:propertyType" />
65. <xs:element minOccurs="0" maxOccurs="1" name="hybridConfigServiceExternalUrl" type="tns:propertyType" />
66. <xs:element minOccurs="0" maxOccurs="1" name="ucLocationProfile" type="tns:propertyType" />
67. <xs:element minOccurs="0" maxOccurs="1" name="focusFactoryUri" type="tns:propertyType" />
68. <xs:element minOccurs="0" maxOccurs="1" name="voiceMailUri" type="tns:propertyType" />
69. </xs:all>
70. <xs:attribute fixed="ServerConfiguration" name="name" use="required" />
71. </xs:complexType>
72. </xs:schema>

**ucMaxVideoRateAllowed:** Maximum video rate that the UAC [**endpoints**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee) are to use. The maximum video rate MUST be one of the following defined values:

* **default:** Maximum resolution of VGA-600K.
* **HD720P-1.5M:** Maximum resolution of HD720P. High definition, with a resolution of 1280x720.
* **VGA-600K:** Maximum resolution of VGA, 640x480, 25 fps.
* **CIF-250K**[<38>](#Appendix_A_38" \o "Product behavior note 38)**:** Maximum resolution of [**Common Intermediate Format (CIF)**](#gt_f51b459e-f8af-4dc7-ba4c-023f13d81ec9). CIF has a resolution of 352x288, 15 fps.

**absInternalServerUrl:** The [**URI**](#gt_e18af8e8-01d7-4f91-8a1e-0fb21b191f95) where the Address Book Service can be reached within the enterprise. This SHOULD be a [**Hypertext Transfer Protocol over Secure Sockets Layer (HTTPS)**](#gt_9239bd88-9747-44a6-83a6-473f53f175a7) URI pointing to the [**virtual directory**](#gt_2429b4f3-3dc3-4185-9426-4e9668e25d56) in which the Address Book Service places the [**address book files**](#gt_b8d30ac8-0f5d-43d8-9ed8-f7067be3f800), as specified in [[MS-ABS]](%5bMS-ABS%5d.pdf#Section_ddc59abf1f4249359b725314665dbcff) section 2.2.

**absExternalServerUrl:** The URI where the Address Book Service can be reached through the public internet. This SHOULD be an HTTPS URI pointing to the virtual directory where the Address Book Service places the Address Book files, as specified in [MS-ABS] section 2.2.

**ucPC2PCAVEncryption:** Specifies whether encryption is required for Computer to Computer Audio-Video Sessions. **ucPC2PCAVEncryption** MUST be one of the following defined values:

* **SupportEncryption:** Encryption is optional.
* **RequireEncryption:** Encryption is required.
* **DoNotSupportEncryption:** Encryption is not required.

**organization:** The name of the organization.

**consoleDownloadInternalUrl**[<39>](#Appendix_A_39" \o "Product behavior note 39)**:** The URI from which the [**meeting console**](#gt_714e0383-2536-47d1-ad61-5ae009c70c4b) can be downloaded within the enterprise. This SHOULD be an HTTP URI. For example:

1. "http://r.office.fabrikam.com/r/rlidOCS?clid=1033&amp;p1=livemeeting"

**consoleDownloadExternalUrl**[<40>](#Appendix_A_40" \o "Product behavior note 40)**:** The URI from which the **meeting console** can be downloaded through the public internet. This SHOULD be an HTTP URI. For example:

1. "http://r.office.fabrikam.com/r/rlidOCS?clid=1033&amp;p1=livemeeting"

**helpdeskInternalUrl**[<41>](#Appendix_A_41" \o "Product behavior note 41)**:** The URI for the organization’s help desk within the enterprise. This SHOULD be an HTTP URI.

**helpdeskExternalUrl**[<42>](#Appendix_A_42" \o "Product behavior note 42)**:** The URI for the organization’s help desk through the public internet. This SHOULD be an HTTP URI.

**dlxInternalUrl:** The URI for the Group Expansion Web Service component within the enterprise. This SHOULD be an HTTPS URI pointing to the Group Expansion Web Service, as specified in [[MS-DLX]](%5bMS-DLX%5d.pdf#Section_fa0e41cd2b344081b3cf59ecdad7a5da) section 2.

**dlxExternalUrl:** The URI for the Group Expansion Web Service component through the public internet. This SHOULD be an HTTPS URI pointing to the Group Expansion Web Service, as specified in [MS-DLX] section 2.

**dlxEnabled:** Indicates whether the Group Expansion Web Service is available. The value MUST be "true" or "false".

**ucDiffServVoice:** Ignored.

**ucVoice802\_1p:** Ignored.

**ucEnforcePinLock:** Ignored.

**ucMinPinLength:** Ignored.

**ucPhoneTimeOut:** Ignored.

**ucEnableUserLogging:**[<43>](#Appendix_A_43" \o "Product behavior note 43) Indicates whether logging needs to be enabled on the user computer to record client behavior. The value SHOULD be "true" or "false".

**ucExchangeMWIPoll:** Ignored.

**ucEnableSIPSecurityMode:** The security mode for the client. The value MUST be "High", "Medium", or "Low".

**updatesServerInternalUrl:** Ignored.

**updatesServerExternalUrl:** Ignored.

**updatesServerEnabled:** Ignored.

**ucPortRangeEnabled:**[<44>](#Appendix_A_44" \o "Product behavior note 44) Indicates whether the port ranges sent by the server need to be used by the client for media and signaling. The value SHOULD be "true" or "false".

**ucMinMediaPort:**[<45>](#Appendix_A_45" \o "Product behavior note 45)The minimum of the range of dynamically-allocated ports that the client can use to transmit audio and video data using [**Real-Time Transport Protocol (RTP)**](#gt_7c02483a-b2ed-4381-ae07-5332ee087a45).

**ucMaxMediaPort:**[<46>](#Appendix_A_46" \o "Product behavior note 46) The maximum of the range of dynamically-allocated ports that the client can use to transmit audio and video data using RTP.

**ucMinSipDynamicPort:**[<47>](#Appendix_A_47" \o "Product behavior note 47) The minimum of the range of dynamically-allocated ports that the client can use to transmit signaling data using SIP.

**ucMaxSipDynamicPort**:[<48>](#Appendix_A_48" \o "Product behavior note 48) The maximum of the range of dynamically-allocated ports that the client can use to transmit signaling data using SIP.

**qosEnabled**:[<49>](#Appendix_A_49" \o "Product behavior note 49) Optional. Ignored.

**ucLocationProfile:** The [**location profile**](#gt_99f2bbb7-7f8b-4ce0-9888-fb23676196ec) for voice call features. This is used by the extensions described in [[MS-SIPRE]](%5bMS-SIPRE%5d.pdf#Section_ab4ab24937964ed18cecf496d81a1a83) section 2.2.8.

**mrasUri:** The URI of the Media Relay Authentication Service (MRAS), as specified in [[MS-AVEDGEA]](%5bMS-AVEDGEA%5d.pdf#Section_56860f6a2fcf4cad8ee5466d8f382a45) section 2.2.3.1.2. This MUST be a SIP URI that can be used to address the MRAS Service.

**qosUri:** The URI of the Media [**QoE Monitoring Server**](#gt_ea97a536-c9a7-460f-83b7-67216c654c5b), as described in [[MS-QoE]](%5bMS-QoE%5d.pdf#Section_c1050431f4b244d4a42563d75e99f5df) section 1.3. This MUST be a SIP URI that can be used to address the QoE Service.

**callControlServerUri:**[<50>](#Appendix_A_50" \o "Product behavior note 50)Ignored.

**poolUri:**[<51>](#Appendix_A_51" \o "Product behavior note 51)Ignored.

**cwaInternalUri:**[<52>](#Appendix_A_52" \o "Product behavior note 52) The URI for the organization’s phone conferencing dial-in information page, accessible internally. This SHOULD be an HTTP(S) URI.

**cwaExternalUri:**[<53>](#Appendix_A_53" \o "Product behavior note 53) The URI for the organization’s phone conferencing dial-in information page, accessible externally. This SHOULD be an HTTP(S) URI.

**focusFactoryUri:** The User’s Conferencing [**Focus Factory**](#gt_d5ee45d2-1fed-4b90-8c73-c1886e9a733f). This is required for creating conferences. This MUST be a SIP URI.

**voiceMailUri:** The user’s voice mail URI. This is required for sending messages to voice mail. This MUST be a SIP URI that can be used to route to the user’s voice mail. The syntax is described in [MS-SIPRE] section 2.2.3.

**responseGroupServiceInternalURL:**[<54>](#Appendix_A_54" \o "Product behavior note 54) The [**Uniform Resource Locator (URL)**](#gt_433a4fb7-ef84-46b0-ab65-905f5e3a80b1) for the Response Group Service Web Service within the enterprise. This MUST be an HTTPS URL pointing to the Response Group Service Web Service, as specified in [[MS-RGSWS]](%5bMS-RGSWS%5d.pdf#Section_762316e03c6c42c2b3e841a9901e1b7c).

**responseGroupServiceExternalURL:**[<55>](#Appendix_A_55" \o "Product behavior note 55) The URL for the Response Group Service Web Service through the public internet. This MUST be an HTTPS URL pointing to the Response Group Service Web Service, as specified in [MS-RGSWS].

**responseGroupServiceInternalAgentURL:**[<56>](#Appendix_A_56" \o "Product behavior note 56) The URL of a webpage containing information about the Response Group Service within the enterprise. This SHOULD be an HTTPS URL.

**responseGroupServiceExternalAgentURL:**[<57>](#Appendix_A_57" \o "Product behavior note 57) The URL of a webpage containing information about the Response Group Service through the public internet. This SHOULD be an HTTPS URL.

**absWebServiceEnabled:** Ignored.

**abwqExternalURL:**[<58>](#Appendix_A_58" \o "Product behavior note 58) The Address Book Web Query URL. This is accessible through the public internet. This SHOULD be an HTTPS URI pointing to the Group Expansion Web Service, as specified in [MS-DLX] section 2.

**abwqInternalURL:**[<59>](#Appendix_A_59" \o "Product behavior note 59) The Address Book Web Query URL. This is accessible inside the enterprise/intranet. This SHOULD be an HTTPS URI pointing to the Group Expansion Web Service, as specified in [MS-DLX] section 2.

**botSipUriForTestCall:**[<60>](#Appendix_A_60" \o "Product behavior note 60)The SIP URI of the test [**bot**](#gt_f7e1fb09-a939-4a51-b20c-3d1ce3fdc07c) that is available to the user for a test call.

**callParkServerUri:**[<61>](#Appendix_A_61" \o "Product behavior note 61) The URI for the call park server that clients can connect to.

**enableBWPolicyCheck:**[<62>](#Appendix_A_62" \o "Product behavior note 62) Boolean value that indicates whether the system is provisioned for bandwidth management.

**lisInternalUrl:**[<63>](#Appendix_A_63" \o "Product behavior note 63) The URL of the Location Information Service, as specified in [[MS-E911WS]](%5bMS-E911WS%5d.pdf#Section_ab5d74492c15434bbf65fdf38b8ffabd) section 3.1, which is accessible from inside the enterprise/intranet.

**loggingLevel:**[<64>](#Appendix_A_64" \o "Product behavior note 64) The logging level on the client.

**ucMinAppSharingPort:**[<65>](#Appendix_A_65" \o "Product behavior note 65) Minimum port used by Application Sharing.

**ucMaxAppSharingPort:**[<66>](#Appendix_A_66" \o "Product behavior note 66) Maximum port used by Application Sharing.

**ucMinAudioPort:**[<67>](#Appendix_A_67" \o "Product behavior note 67) Minimum port used by Audio.

**ucMaxAudioPort:**[<68>](#Appendix_A_68" \o "Product behavior note 68) Maximum port used by Audio.

**ucMinFileTransferPort:**[<69>](#Appendix_A_69" \o "Product behavior note 69) Minimum port used for File Transfer.

**ucMaxFileTransferPort:**[<70>](#Appendix_A_70" \o "Product behavior note 70) Maximum port used for File Transfer. This is for P2P File Transfers only.

**ucMinVideoPort:**[<71>](#Appendix_A_71" \o "Product behavior note 71) Minimum port used by Video.

**ucMaxVideoPort:**[<72>](#Appendix_A_72" \o "Product behavior note 72) Maximum port used by Video.

**requireFIPSCompliantMedia:**[<73>](#Appendix_A_73" \o "Product behavior note 73) Boolean value that requires the client to be FIPS compliant in all audio video conversations if present, and has the value of "true".

**hybridConfigServiceInternalUrl:**[<74>](#Appendix_A_74" \o "Product behavior note 74) The internal URL of a web service used to enable media bypass, E911, call park, and call center services for hybrid voice users.

**hybridConfigServiceExternalUrl:**[<75>](#Appendix_A_75" \o "Product behavior note 75) The external URL of a web service used to enable media bypass, E911, call park, and call center services for hybrid voice users.

**enableInCallQos:** [<76>](#Appendix_A_76" \o "Product behavior note 76)Whether the client will send in-call QoS metrics (value is set to "true"), or not ("false").

**inCallQoSIntervalSeconds:** [<77>](#Appendix_A_77" \o "Product behavior note 77) The number of seconds in the minimum time interval between sending one in-call QoS metric and sending the next.

For a detailed example, see section [4.2.2](#Section_1be938c11a58457f855c5f4665f071f8).

##### Data Model for meetingPolicy provisionGroup

1. provisionGroup (name=’meetingPolicy’)
2. |
3. |-- instance
4. | |- property
5. | | |- name

The following [**XSD**](#gt_c7e91c99-e45a-44c2-a08a-c34f137a2cae) schema fragment defines the requirements a **meetingPolicy** **provisionGroup** element [**XML document**](#gt_8fa90ece-7a01-4c00-af85-adbf0ed01882) MUST conform to.

<?xml version="1.0" encoding="utf-16"?>

<xs:schema xmlns:tns="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" targetNamespace="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" xmlns:xs="http://www.w3.org/2001/XMLSchema">

1. <xs:element name="provisionGroup" type="tns:provisionGroupType" />
2. <xs:complexType name="provisionGroupType">
3. <xs:all minOccurs="1" maxOccurs="1">
4. <xs:element minOccurs="1" maxOccurs="1" name="instance" type="tns:instanceType" />
5. </xs:all>
6. <xs:attribute fixed="meetingPolicy" name="name" use="required" />
7. </xs:complexType>
8. <xs:complexType name="instanceType">
9. <xs:sequence>
10. <xs:element minOccurs="1" maxOccurs="unbounded" name="property" type="tns:propertyType" />
11. </xs:sequence>
12. </xs:complexType>
13. <xs:complexType name="propertyType">
14. <xs:simpleContent>
15. <xs:extension base="xs:string" >
16. <xs:attribute name="name" use="required" />
17. </xs:extension>
18. </xs:simpleContent>
19. </xs:complexType>

</xs:schema>

**instance:** A single instance is specified within the **meetingPolicy** **provisionGroup**, listing a set of properties applicable for the user requesting the configuration.

**Property:** A single policy setting. The **name** attribute specifies the property name. Values are Boolean, unless otherwise specified.

**AllowIPAudio:** Specifies whether IP Audio functionality is enabled on the client. For example:

1. <property name="AllowIPAudio">true</property>

**AllowIPVideo:** Specifies whether IP Video functionality is enabled on the client. For example:

1. <property name="AllowIPVideo">true</property>

**EnableDataCollaboration:** Specifies whether Data Collaboration functionality is enabled on the client. For example:

1. <property name=" EnableDataCollaboration "> true </property>

**Name:**[<78>](#Appendix_A_78" \o "Product behavior note 78)Optional, ignored.

**ColorDepth:**[<79>](#Appendix_A_79" \o "Product behavior note 79) Optional, ignored.

**AllowACP:**[<80>](#Appendix_A_80" \o "Product behavior note 80) Optional, ignored.

**RetainPPTForExternalMeeting:**[<81>](#Appendix_A_81" \o "Product behavior note 81) Retain PowerPoint slides for external meeting.

**MeetingSize:**[<82>](#Appendix_A_82" \o "Product behavior note 82) Maximum number of attendees allowed in meetings.

**AllowAppSharingForExternalMeeting:**[<83>](#Appendix_A_83" \o "Product behavior note 83) Allow application sharing in external meetings.

**AllowPresenterToRecord:**[<84>](#Appendix_A_84" \o "Product behavior note 84) Allow meeting presenter to record meeting.

**EnableAppDesktopSharing:**[<85>](#Appendix_A_85" \o "Product behavior note 85) Specifies whether the client is allowed to share the desktop. For example:

1. <property name=" EnableAppDesktopSharing"> true </property>

**EnablePSTNConferencing:**[<86>](#Appendix_A_86" \o "Product behavior note 86) Enable conferencing audio call over a [**public switched telephone network (PSTN)**](#gt_475991aa-abb2-4521-a0a5-6993d27dba9f) network.

**TrustedConferencingPinRequired:**[<87>](#Appendix_A_87" \o "Product behavior note 87) Require that trusted conferencing PIN be specified to join the conference.

**AllowAnnotations:** Boolean value that allows participants to make annotations on top of PowerPoint content, as well as all whiteboarding content.

**AllowAnonymousParticipants:** Boolean value that allows anonymous participants to join the meeting.

**AllowExternalUserControl:** Boolean value that allows anonymous and federated users to control an application sharing session.

**AllowExternalUserRecording:** Boolean value that allows external users to record meetings organized by this user. It works if **AllowRecording** is "true".

**AllowExternalUsersToSaveContent:** Boolean value that allows anonymous and federated users to save content shared in a data sharing session.

**AllowFileTransfer:** Boolean value that allows multi-party file transfer in a meeting.

**AllowParticipantControl:** Boolean value that allows or prevents the user from sharing control with anyone when they are screen sharing. This applies regardless of who started/organized the conference.

**AllowRecording:** Boolean value that allows recording on meetings organized by this user. If "true", the **AllowExternalUserRecording** policy applies to external users.

**EnableP2PFileTransfer:** Enable P2P file transfer between two users during a meeting.

**MaxConferenceVideoResolution:** Set the maximum resolution for video conferencing. Allowed values are "CIF" or "VGA".

**AllowedAppDesktopSharingLevel:** Enables application and desktop sharing during web conferencing for users having this policy.

**AllowUserToScheduleMeetingsWithAppSharing:** Enables users to schedule meetings with Application sharing. Allowed values are "None", "SingleApplication", or "Desktop".

**AppSharingBitRate:** Set the bit rate for Application sharing.

**AudioBitRate:** Set the bit rate for Audio.

**FileTransferBitRate:** Set the bit rate for File Transfer.

**RequirePasscode:**[<88>](#Appendix_A_88" \o "Product behavior note 88) Controls whether a pass code is required to join dial-in conferences.

**VideoBitRate:**[<89>](#Appendix_A_89" \o "Product behavior note 89) Set the bit rate for Video.

**AllowPolls:**[<90>](#Appendix_A_90" \o "Product behavior note 90) Enables the polling feature within a meeting. The value MUST be "true" or "false".

**EnableP2PRecording:**[<91>](#Appendix_A_91" \o "Product behavior note 91)Enables recording of P2P conversations. The value MUST be "true" or "false".

**EnableP2PVideo:**[<92>](#Appendix_A_92" \o "Product behavior note 92)Enables P2P video conversations. The value MUST be "true" or "false". For a detailed example, see section [4.2.2](#Section_1be938c11a58457f855c5f4665f071f8).

**EnableMultiViewJoin:**[<93>](#Appendix_A_93" \o "Product behavior note 93)Enables multiple video channels in conferencing. The value MUST be "true" or "false". For a detailed example, see section 4.2.2.

**TotalReceiveVideoBitRate:**[<94>](#Appendix_A_94" \o "Product behavior note 94)Sets the total video bit rate to be used for conferencing video. For a detailed example, see section 4.2.2.

**DisablePowerPointAnnotations:**[<95>](#Appendix_A_95" \o "Product behavior note 95)Specifies whether the user has turned off PowerPoint annotations.

**AllowSharedNotes:**[<96>](#Appendix_A_96" \o "Product behavior note 96)Enables users to take shared notes during a meeting. The value MUST be "true" or "false". For a detailed example, see section 4.2.2.

**AllowQna:**[<97>](#Appendix_A_97" \o "Product behavior note 97) Enables the Question and Answer feature within a meeting. The value MUST be "true" or "false". This setting applies to the user who organizes the conference: if set to "false", no conference created by a user affected by this policy will allow the use of the Questions and Answers Manager. However, that user can make use of the Questions and Answers Manager in other conferences where polls are allowed. The default value is"true".

**AllowOfficeContent:**[<98>](#Appendix_A_98" \o "Product behavior note 98) Enables the Office content (such as slide presentations) sharing feature within a meeting. The value MUST be "true" or "false". When set to "false", prevents users from using Office content in their conferences.

**EnableOnlineMeetingPromptForLyncResources:** [<99>](#Appendix_A_99" \o "Product behavior note 99) Enables online meeting prompting: if set to "true", users will be prompted any time they schedule a meeting that includes invitees (such as a meeting room) that would benefit from having the meeting held online. The default value is "false".

##### Data Model for ucPolicy provisionGroup

1. provisionGroup (name=’ucPolicy’)
2. |
3. |-- instance
4. | |- property
5. | | |- element

The following [**XSD**](#gt_c7e91c99-e45a-44c2-a08a-c34f137a2cae) schema fragment defines the requirements to which a **ucPolicy provisionGroup** element [**XML document**](#gt_8fa90ece-7a01-4c00-af85-adbf0ed01882) MUST conform.

1. <?xml version="1.0" encoding="utf-16"?>
2. <xs:schema xmlns:tns="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" targetNamespace="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" xmlns:xs="http://www.w3.org/2001/XMLSchema">
3. <xs:element name="provisionGroup" type="tns:provisionGroupType" />
4. <xs:complexType name="provisionGroupType">
5. <xs:all minOccurs="1" maxOccurs="1">
6. <xs:element minOccurs="1" maxOccurs="1" name="instance" type="tns:instanceType" />
7. </xs:all>
8. <xs:attribute fixed="ucPolicy" name="name" use="required" />
9. </xs:complexType>
10. <xs:complexType name="instanceType">
11. <xs:sequence>
12. <xs:element minOccurs="1" maxOccurs="unbounded" name="property" type="tns:propertyType" />
13. </xs:sequence>
14. </xs:complexType>
15. <xs:complexType name="propertyType">
16. <xs:simpleContent>
17. <xs:extension base="xs:string">
18. <xs:attribute name="name" use="required" />
19. </xs:extension>
20. </xs:simpleContent>
21. </xs:complexType>
22. </xs:schema>

**instance:** A single instance is specified within the **ucPolicy** **provisionGroup**, listing a set of properties applicable for the user requesting the configuration.

**property:** Lists a single policy setting. The **name** attribute specifies the property name. Values are Boolean, specified in CDATA notation, unless otherwise specified. Some properties list a sequence of **element** sub-elements.

**AllowSimultaneousRinging:** Whether simultaneous ringing, as described in [[MS-SIPRE]](%5bMS-SIPRE%5d.pdf#Section_ab4ab24937964ed18cecf496d81a1a83) section 3.9.5.1.2, support is enabled. For example:

1. <property name=" AllowSimultaneousRinging ">true</property>

**Name:** Optional, ignored.

**PhoneRouteUsages:****[<100>](#Appendix_A_100" \o "Product behavior note 100)** Optional, ignored.

**AllowCallForwarding:** Turns off call forwarding to a phone number or contact. The user only has the option to forward to voice mail.

**enableBWPolicyOverride:**[<101>](#Appendix_A_101" \o "Product behavior note 101) Boolean value that enables the user [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee) to bypass the BandWidth (BW) policy check, and only report BW utilization for an established session.

**EnableCallPark:** Boolean value that allows specified clients and devices to park calls.

**EnableCallTransfer:** Boolean value that enables the call transfer user interface on client.

**EnableDelegation:** Boolean value that enables all client user interface entry points for call delegation.

**EnableMaliciousCallTrace:** Boolean value that enables the malicious call trace functionality.

**EnableTeamCall:** Boolean value that enables all client user interface entry points for the team call-group.

**UcEnabled:** [<102>](#Appendix_A_102" \o "Product behavior note 102) Ignored.

**VoiceDeploymentMode:** [<103>](#Appendix_A_103" \o "Product behavior note 103) String value that indicates to the client the type of [**public switched telephone network (PSTN)**](#gt_475991aa-abb2-4521-a0a5-6993d27dba9f)connectivity they are provisioned for. The value MUST be one of the following

* **OnPrem**
* **Online**
* **OnlineBasic**
* **OnPremOnlineHybrid**

A detailed example is given in section [4.2.2](#Section_1be938c11a58457f855c5f4665f071f8).

##### Data Model for publicationGrammar provisionGroup

provisionGroup (name='publicationGrammar')

|

|-- containerManifestList

| |- minSupportedClientVersion

|- majorVersion

|- minorVersion

| |-- containerManifest

| | |-- containers

|-- container

|- id

|-- visible

|-- avoidRedundantMembers

|-- blocked

|-- members

|-- member

|- type

|- role

|- uri

|-- allowedContainers

|- type

|-- container

|- id

|-- defaultContainer

|- id

|-- occurrenceConstraint

|- type

|-- sourceNetworks

|-- sourceNetwork

|- type

|-- resolutionRules

|-- resolutionRule

|- type

|- role

|-- blockRules

|-- blockRule

|- type

|-- containers

|- type

|-- container

|- id

|-- sourceNetworks

|-- sourceNetwork

|- type

|-- minAvailability

|-- maxAvailability

|-- rolePrecedence

|-- rolePrecedenceEntry

|- type

|-- categoryPublicationManifest

|- minSupportedClientVersion

|- majorVersion

|- minorVersion

|-- publicationList

|-- publicationRule

|- ruleType

|- categoryName

|- containerId

|- preferredSelfConsumption

|-- categoryData

|-- instanceId

|- type

|- value

|-- expireType

|- type

|- expireTime

The following [**XSD**](#gt_c7e91c99-e45a-44c2-a08a-c34f137a2cae) schema fragment defines the requirements to which a **publicationGrammar** **provisionGroup** element [**XML document**](#gt_8fa90ece-7a01-4c00-af85-adbf0ed01882) SHOULD[<104>](#Appendix_A_104" \o "Product behavior note 104) conform.

1. <?xml version="1.0" encoding="utf-8"?>

<xs:schema xmlns="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification"

1. targetNamespace="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" elementFormDefault="qualified"
2. xmlns:xs="http://www.w3.org/2001/XMLSchema"

xmlns:ms="urn:microsoft-cpp-xml-serializer">

1. <xs:complexType name="ProvisionGroupType">
2. <xs:all minOccurs="0" maxOccurs="1">
3. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded">
4. <xs:annotation>
5. <xs:appinfo>
6. </xs:appinfo>
7. </xs:annotation>
8. </xs:any>
9. </xs:all>
10. <xs:attribute name="name" fixed="publicationGrammar" use="required"/>
11. <xs:anyAttribute namespace="##other" processContents="lax"/>
12. </xs:complexType>
13. <xs:element name="provisionGroup" type="ProvisionGroupType" />
14. </xs:schema>

The **publicationGrammar** **provisionGroup** element contains the **containerManifestList** and **categoryPublicationManifest** XML documents, as shown in the example in section [4.2.2](#Section_1be938c11a58457f855c5f4665f071f8).

The following XSD schema fragment defines the requirements to which the **containerManifestList** XML document SHOULD[<105>](#Appendix_A_105" \o "Product behavior note 105) conform.

1. <?xml version="1.0" encoding="utf-8"?>
2. <xs:schema
3. targetNamespace="http://schemas.microsoft.com/2008/09/sip/ContainerManifest"
4. xmlns:tns="http://schemas.microsoft.com/2008/09/sip/ContainerManifest"
5. xmlns:xs="http://www.w3.org/2001/XMLSchema"
6. xmlns:ct="http://schemas.microsoft.com/2006/09/sip/commontypes"
7. attributeFormDefault="unqualified"
8. elementFormDefault="qualified">
9. <!--
10. Client should not proceed with the parsing if its namespace doesn't
11. match to the namespace of the xml.
12. Change in namespace is an indication that format is not compatible.
13. -->
15. <xs:import namespace="http://schemas.microsoft.com/2006/09/sip/commontypes"
16. schemaLocation="commontypes.xsd"/>
17. <xs:simpleType name="sourceNetworkTypeEnum">
18. <xs:restriction base="xs:token">
19. <xs:enumeration value="sameEnterprise"/>
20. <xs:enumeration value="federated"/>
21. <xs:enumeration value="publicCloud"/>
22. </xs:restriction>
23. </xs:simpleType>
24. <xs:simpleType name="sourceNetworkTypeEnumEx">
25. <xs:union memberTypes="tns:sourceNetworkTypeEnum xs:token" />
26. </xs:simpleType>
27. <xs:complexType name="sourceNetworkType">
28. <xs:sequence>
29. <xs:sequence minOccurs="0" maxOccurs="1">
30. <xs:sequence minOccurs="0" maxOccurs="unbounded">
31. <xs:element ref="ct:delimiter"/>
32. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
33. </xs:sequence>
34. <xs:element ref="ct:end"/>
35. </xs:sequence>
36. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
37. </xs:sequence>
38. <xs:attribute name="type" type="tns:sourceNetworkTypeEnumEx" use="required" />
39. <xs:anyAttribute processContents="lax"/>
40. </xs:complexType>
41. <xs:complexType name="sourceNetworksType">
42. <xs:sequence>
43. <xs:element name="sourceNetwork" type="tns:sourceNetworkType" minOccurs="1" maxOccurs="unbounded"/>
44. </xs:sequence>
45. </xs:complexType>
47. <!--
48. Container attributes.
49. UI will show all visible containers in the access level management view.
50. -->
51. <xs:complexType name="containerType">
52. <xs:sequence>
53. <xs:element name="visible" type="xs:boolean" minOccurs="0" maxOccurs="1"/>
54. <xs:element name="avoidRedundantMembers" type="xs:boolean" minOccurs="0" maxOccurs="1"/>
55. <xs:element name="blocked" type="xs:boolean" default="false" minOccurs="0" maxOccurs="1"/>
56. <xs:sequence minOccurs="0" maxOccurs="1">
57. <xs:sequence minOccurs="0" maxOccurs="unbounded">
58. <xs:element ref="ct:delimiter"/>
59. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
60. </xs:sequence>
61. <xs:element ref="ct:end"/>
62. </xs:sequence>
63. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
64. </xs:sequence>
65. <xs:attribute name="id" type="xs:unsignedInt" />
66. <xs:anyAttribute processContents="lax"/>
67. </xs:complexType>
68. <xs:complexType name="containerIdType">
69. <xs:sequence>
70. <xs:sequence minOccurs="0" maxOccurs="1">
71. <xs:sequence minOccurs="0" maxOccurs="unbounded">
72. <xs:element ref="ct:delimiter"/>
73. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
74. </xs:sequence>
75. <xs:element ref="ct:end"/>
76. </xs:sequence>
77. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
78. </xs:sequence>
79. <xs:attribute name="id" type="xs:unsignedInt" />
80. <xs:anyAttribute processContents="lax"/>
81. </xs:complexType>
83. <xs:complexType name="containersType">
84. <xs:sequence>
85. <xs:element name="container" type="tns:containerType" minOccurs="1" maxOccurs="unbounded"/>
87. <xs:sequence minOccurs="0" maxOccurs="1">
88. <xs:sequence minOccurs="0" maxOccurs="unbounded">
89. <xs:element ref="ct:delimiter"/>
90. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
91. </xs:sequence>
92. <xs:element ref="ct:end"/>
93. </xs:sequence>
94. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
95. </xs:sequence>
96. <xs:anyAttribute processContents="lax"/>
97. </xs:complexType>
98. <xs:simpleType name="allowedContainersTypeEnum">
99. <xs:restriction base="xs:token">
100. <xs:enumeration value="visibleContainers"/>
101. <xs:enumeration value="custom"/>
102. </xs:restriction>
103. </xs:simpleType>
104. <xs:simpleType name="allowedContainersTypeEnumEx">
105. <xs:union memberTypes="tns:allowedContainersTypeEnum xs:token" />
106. </xs:simpleType>
107. <xs:complexType name="allowedContainersType">
108. <xs:sequence>
109. <xs:element name="container" type="tns:containerIdType" minOccurs="0" maxOccurs="unbounded"/>
110. </xs:sequence>
111. <xs:attribute name="type" type="tns:allowedContainersTypeEnumEx"/>
112. <xs:anyAttribute processContents="lax"/>
113. </xs:complexType>
114. <xs:simpleType name="occurrenceTypeEnum">
115. <xs:restriction base="xs:token">
116. <xs:enumeration value="zero"/>
117. <xs:enumeration value="one"/>
118. <xs:enumeration value="zeroOrOne"/>
119. </xs:restriction>
120. </xs:simpleType>
121. <xs:simpleType name="occurrenceTypeEnumEx">
122. <xs:union memberTypes="tns:occurrenceTypeEnum xs:token" />
123. </xs:simpleType>
124. <xs:complexType name="occurrenceConstraintType">
125. <xs:sequence>
126. <xs:sequence minOccurs="0" maxOccurs="1">
127. <xs:sequence minOccurs="0" maxOccurs="unbounded">
128. <xs:element ref="ct:delimiter"/>
129. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
130. </xs:sequence>
131. <xs:element ref="ct:end"/>
132. </xs:sequence>
133. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
134. </xs:sequence>
135. <xs:attribute name="type" type="tns:occurrenceTypeEnumEx" use="optional" />
136. <xs:anyAttribute processContents="lax"/>
137. </xs:complexType>
138. <xs:simpleType name="roleTypeEnum">
139. <xs:restriction base="xs:token">
140. <xs:enumeration value="delegate"/>
141. <xs:enumeration value="buddy"/>
142. </xs:restriction>
143. </xs:simpleType>
144. <xs:simpleType name="roleTypeEnumEx">
145. <xs:union memberTypes="tns:roleTypeEnum xs:token" />
146. </xs:simpleType>
147. <!--
148. Order of precedence for which role applies if
149. entity maps to multiple (for example, buddy and delegate)
150. -->
151. <xs:complexType name="rolePrecedenceEntryType">
152. <xs:sequence>
153. <xs:sequence minOccurs="0" maxOccurs="1">
154. <xs:element ref="ct:delimiter"/>
155. <xs:sequence minOccurs="0" maxOccurs="unbounded">
156. <xs:element ref="ct:delimiter"/>
157. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
158. </xs:sequence>
159. <xs:element ref="ct:end"/>
160. </xs:sequence>
161. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
162. </xs:sequence>
163. <xs:attribute name="type" type="tns:roleTypeEnumEx" use="required"/>
164. <xs:anyAttribute processContents="lax"/>
165. </xs:complexType>
166. <xs:complexType name="rolePrecedenceType">
167. <xs:sequence>
168. <xs:element name="rolePrecedenceEntry" type="tns:rolePrecedenceEntryType" minOccurs="1" maxOccurs="unbounded"/>
169. </xs:sequence>
170. </xs:complexType>
171. <!--
172. Defines resolution action to be (implictly) taken if
173. memberType constraints have been violated
174. -->
175. <xs:simpleType name="resolutionTypeEnum">
176. <xs:restriction base="xs:token">
177. <xs:enumeration value="removeFromContainer"/>
178. <xs:enumeration value="moveToDefaultContainer"/>
179. <xs:enumeration value="forceRole"/>
180. </xs:restriction>
181. </xs:simpleType>
182. <xs:simpleType name="resolutionTypeEnumEx">
183. <xs:union memberTypes="tns:resolutionTypeEnum xs:token" />
184. </xs:simpleType>
185. <xs:complexType name="resolutionRuleType">
186. <xs:sequence>
187. <xs:sequence minOccurs="0" maxOccurs="1">
188. <xs:element ref="ct:delimiter"/>
189. <xs:sequence minOccurs="0" maxOccurs="unbounded">
190. <xs:element ref="ct:delimiter"/>
191. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
192. </xs:sequence>
193. <xs:element ref="ct:end"/>
194. </xs:sequence>
195. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
196. </xs:sequence>
198. <xs:attribute name="type" type="tns:resolutionTypeEnumEx" use="required"/>
199. <xs:attribute name="role" type="tns:roleTypeEnumEx" use="optional"/>
200. <xs:anyAttribute processContents="lax"/>
201. </xs:complexType>
202. <xs:complexType name="resolutionRulesType">
203. <xs:sequence>
204. <xs:element name="resolutionRule" type="tns:resolutionRuleType" minOccurs="1" maxOccurs="unbounded"/>
205. </xs:sequence>
206. </xs:complexType>
207. <xs:simpleType name="memberTypeEnum">
208. <xs:restriction base="xs:token">
209. <xs:enumeration value="user"/>
210. <xs:enumeration value="domain"/>
211. <xs:enumeration value="sameEnterprise"/>
212. <xs:enumeration value="federated"/>
213. <xs:enumeration value="publicCloud"/>
214. <xs:enumeration value="everyone"/>
215. <xs:enumeration value="singleIdentityUser"/>
216. </xs:restriction>
217. </xs:simpleType>
218. <xs:simpleType name="memberTypeEnumEx">
219. <xs:union memberTypes="tns:memberTypeEnum xs:token" />
220. </xs:simpleType>
221. <xs:complexType name="memberType">
222. <xs:sequence>
223. <!--
224. Allowed containers for the member.
225. -->
226. <xs:element name="allowedContainers" type="tns:allowedContainersType"
227. minOccurs="1" maxOccurs="1"/>
228. <!--
229. Default container for the member.
230. -->
231. <xs:element name="defaultContainer" type="tns:containerIdType"
232. minOccurs="0" maxOccurs="1"/>
233. <!--
234. Occurrence constraint on the member. There can be only one such constraint.
235. Constraint check will be applied on all visible containers.
236. If constraint fails, member will be deleted from all containers and placed in
237. the default container.
238. -->
239. <xs:element name="occurrenceConstraint" type="tns:occurrenceConstraintType"
240. minOccurs="0" maxOccurs="1"/>
241. <xs:sequence minOccurs="0" maxOccurs="1">
242. <!-- W14 extension -->
243. <xs:element ref="ct:delimiter"/>
244. <xs:element name="sourceNetworks" type="tns:sourceNetworksType" minOccurs="0" maxOccurs="1"/>
245. <xs:element name="resolutionRules" type="tns:resolutionRulesType" minOccurs="0" maxOccurs="1"/>
246. <xs:sequence minOccurs="0" maxOccurs="unbounded">
247. <xs:element ref="ct:delimiter"/>
248. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
249. </xs:sequence>
250. <xs:element ref="ct:end"/>
251. </xs:sequence>
252. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
253. </xs:sequence>
254. <xs:attribute name="type" type="tns:memberTypeEnumEx" use="optional" />
256. <!--
257. If role is present, client should identify all the members of that role and
258. enforce occurrence constraint on those members.
259. -->
260. <xs:attribute name="role" type="tns:roleTypeEnumEx" use="optional" />
262. <xs:attribute name="uri" type="xs:anyURI" use="optional" />
263. <xs:anyAttribute processContents="lax"/>
264. </xs:complexType>
265. <xs:complexType name="membersType">
266. <xs:sequence>
267. <xs:element name="member" type="tns:memberType" minOccurs="1" maxOccurs="unbounded"/>
268. </xs:sequence>
269. </xs:complexType>
271. <xs:simpleType name="unboundedType">
272. <xs:union memberTypes="xs:unsignedInt">
273. <xs:simpleType>
274. <xs:restriction base="xs:token">
275. <xs:enumeration value="unbounded"/>
276. </xs:restriction>
277. </xs:simpleType>
278. </xs:union>
279. </xs:simpleType>
281. <xs:simpleType name="blockTypeEnum">
282. <xs:restriction base="xs:token">
283. <xs:enumeration value="invites"/>
284. <xs:enumeration value="subscriberPrompt"/>
285. </xs:restriction>
286. </xs:simpleType>
287. <xs:simpleType name="blockTypeEnumEx">
288. <xs:union memberTypes="tns:blockTypeEnum xs:token" />
289. </xs:simpleType>
290. <!--
291. Rule defining the blocking actions expected to be performed by clients.
292. -->
293. <xs:complexType name="blockRuleType">
294. <xs:sequence>
295. <!--
296. Containers to which this rule apply.
297. -->
298. <xs:element name="containers" type="tns:allowedContainersType" minOccurs="0" maxOccurs="1"/>
299. <!--
300. Source networks to which this rule apply.
301. -->
302. <xs:element name="sourceNetworks" type="tns:sourceNetworksType" minOccurs="0" maxOccurs="1"/>
304. <!--
305. Availability range to which this rule apply.
306. -->
307. <xs:element name="maxAvailability" type="tns:unboundedType" default="unbounded" minOccurs="0" maxOccurs="1"/>
308. <xs:element name="minAvailability" type="tns:unboundedType" default="0" minOccurs="0" maxOccurs="1"/>
309. <xs:sequence minOccurs="0" maxOccurs="1">
310. <xs:element ref="ct:delimiter"/>
311. <xs:sequence minOccurs="0" maxOccurs="unbounded">
312. <xs:element ref="ct:delimiter"/>
313. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
314. </xs:sequence>
315. <xs:element ref="ct:end"/>
316. </xs:sequence>
317. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
318. </xs:sequence>
319. <xs:attribute name="type" type="tns:blockTypeEnumEx" use="required" />
321. <xs:anyAttribute processContents="lax"/>
322. </xs:complexType>
323. <xs:complexType name="blockRulesType">
324. <xs:sequence>
325. <xs:element name="blockRule" type="tns:blockRuleType" minOccurs="1" maxOccurs="unbounded"/>
326. </xs:sequence>
327. </xs:complexType>
329. <xs:complexType name="containerManifestType">
330. <xs:sequence>
331. <xs:element name="containers" type="tns:containersType" minOccurs="0" maxOccurs="1"/>
332. <xs:element name="members" type="tns:membersType" minOccurs="0" maxOccurs="1"/>
333. <xs:sequence minOccurs="0" maxOccurs="1">
334. <!-- W14 extension -->
335. <xs:element ref="ct:delimiter"/>
336. <xs:element name="blockRules" type="tns:blockRulesType" minOccurs="0" maxOccurs="1"/>
337. <xs:element name="rolePrecedence" type="tns:rolePrecedenceType" minOccurs="0" maxOccurs="1"/>
338. <xs:sequence minOccurs="0" maxOccurs="unbounded">
339. <xs:element ref="ct:delimiter"/>
340. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
341. </xs:sequence>
342. <xs:element ref="ct:end"/>
343. </xs:sequence>
344. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
345. </xs:sequence>
346. <xs:anyAttribute processContents="lax"/>
347. </xs:complexType>
348. <xs:complexType name="containerManifestListType">
349. <xs:sequence>
350. <xs:element name="containerManifest" type="tns:containerManifestType" minOccurs="1" maxOccurs="1"/>
351. <xs:sequence minOccurs="0" maxOccurs="1">
352. <xs:sequence minOccurs="0" maxOccurs="unbounded">
353. <xs:element ref="ct:delimiter"/>
354. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
355. </xs:sequence>
356. <xs:element ref="ct:end"/>
357. </xs:sequence>
358. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
359. </xs:sequence>
361. <!--
362. Client should not proceed with the parsing if its version is less than
363. the version in the xml. Version mismatch is an indication that
364. format is not compatible.
365. Missing minSupportClientVersion will be treated as 0.0.0.0, that is, always compatible.
366. -->
367. <xs:attribute name="minSupportedClientVersion" type="xs:token" use="optional"/>
368. <xs:attribute name="majorVersion" type="xs:unsignedInt" use="optional"/>
369. <xs:attribute name="minorVersion" type="xs:unsignedInt" use="optional"/>
370. <xs:anyAttribute processContents="lax"/>
371. </xs:complexType>
373. <xs:element name="containerManifestList" type="tns:containerManifestListType">
374. </xs:element>

</xs:schema>

The following XSD schema fragment defines the requirements to which the **categoryPublicationManifest** XML document SHOULD[<106>](#Appendix_A_106" \o "Product behavior note 106) conform.

1. <?xml version="1.0" encoding="UTF-8"?>
2. <!-- edited with XMLSpy v2007 rel. 3 (http://www.altova.com) by Adarsh Khare (Microsoft) -->
3. <!--Adarsh Khare (Microsoft) -->
4. <xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
5. xmlns:tns="http://schemas.microsoft.com/2008/09/sip/categoryPublicationManifest"
6. targetNamespace="http://schemas.microsoft.com/2008/09/sip/categoryPublicationManifest"
7. elementFormDefault="qualified" attributeFormDefault="unqualified">
8. <xs:simpleType name="instanceIdValuesEnum">
9. <xs:annotation>
10. <xs:documentation>List the possible value of instanceId type attribute</xs:documentation>
11. </xs:annotation>
12. <xs:restriction base="xs:token">
13. <xs:enumeration value="constant"/>
14. <xs:enumeration value="custom"/>
15. </xs:restriction>
16. </xs:simpleType>
17. <xs:simpleType name="instanceIdValuesEnumEx">
18. <xs:union memberTypes="tns:instanceIdValuesEnum xs:token" />
19. </xs:simpleType>
20. <xs:simpleType name="categoryDataValuesEnum">
21. <xs:annotation>
22. <xs:documentation>List the the possible value to define for categoryData</xs:documentation>
23. </xs:annotation>
24. <xs:restriction base="xs:token">
25. <xs:enumeration value="xslt"/>
26. <xs:enumeration value="xml"/>
27. </xs:restriction>
28. </xs:simpleType>
29. <xs:simpleType name="categoryDataValuesEnumEx">
30. <xs:union memberTypes="tns:categoryDataValuesEnum xs:token" />
31. </xs:simpleType>
32. <xs:simpleType name="expiryTypeValuesEnum">
33. <xs:annotation>
34. <xs:documentation>List the possible values of expiryTypeValues</xs:documentation>
35. </xs:annotation>
36. <xs:restriction base="xs:token">
37. <xs:enumeration value="endpoint"/>
38. <xs:enumeration value="static"/>
39. <xs:enumeration value="user"/>
40. <xs:enumeration value="time"/>
41. <xs:enumeration value="custom"/>
42. </xs:restriction>
43. </xs:simpleType>
44. <xs:simpleType name="expiryTypeValuesEnumEx">
45. <xs:union memberTypes="tns:expiryTypeValuesEnum xs:token" />
46. </xs:simpleType>
47. <xs:complexType name="instanceIdType">
48. <xs:attribute name="type" type="tns:instanceIdValuesEnumEx" use="required"/>
49. <xs:attribute name="value" type="xs:unsignedInt" use="optional"/>
50. </xs:complexType>
51. <xs:complexType name="categoryDataType">
52. <xs:sequence minOccurs="0">
53. <xs:any namespace="##any" processContents="lax"/>
54. </xs:sequence>
55. <xs:attribute name="type" type="tns:categoryDataValuesEnumEx" use="required"/>
56. <xs:attribute name="categoryName" type="xs:string"/>
57. <!--Specify the CategoryName attribute, if category name being published is different from original category name, for example. When UserInformation is published it could also be translated in one or more contactCard publications.-->
58. </xs:complexType>
59. <xs:complexType name="publicationType">
60. <xs:sequence>
61. <xs:element name="instanceId" type="tns:instanceIdType" minOccurs="1" maxOccurs="1"/>
62. <xs:element name="categoryData" type="tns:categoryDataType" minOccurs="0" maxOccurs="1"/>
63. </xs:sequence>
64. <xs:attribute name="categoryName" type="xs:string"/>
65. <xs:attribute name="containerId" type="xs:unsignedShort"/>
66. <xs:attribute name="expiryType" type="tns:expiryTypeValuesEnumEx" use="optional">
67. <xs:annotation>
68. <xs:documentation>If expiryType is defined as Time, expiryTime must be defined</xs:documentation>
69. </xs:annotation>
70. </xs:attribute>
71. <xs:attribute name="allowAutoVersionFix" type="xs:boolean" use="optional"/>
72. <xs:attribute name="expiryTime" type="xs:duration" use="optional">
73. <xs:annotation>
74. <xs:documentation>expiryTime is only meaningful for expiryType Time</xs:documentation>
75. </xs:annotation>
76. </xs:attribute>
77. <xs:attribute name="publishAtStartup" type="xs:boolean" use="optional"/>
78. <xs:anyAttribute processContents="lax"/>
79. </xs:complexType>
80. <xs:complexType name="publicationListType">
81. <xs:sequence>
82. <xs:element name="publication" type="tns:publicationType" maxOccurs="unbounded"/>
83. </xs:sequence>
84. <xs:anyAttribute processContents="lax"/>
85. </xs:complexType>
86. <xs:complexType name="categoryPublicationManifestType">
87. <xs:sequence>
88. <xs:element name="publicationList" type="tns:publicationListType" minOccurs="1" maxOccurs="1"/>
89. </xs:sequence>
90. <!--
91. Client should not proceed with the parsing if its major version doesn't
92. match to the version in the xml.
93. Change in major version indicates that format is not compatible.
94. -->
95. <xs:attribute name="majorVersion" type="xs:unsignedInt" use="required" />
96. <!--
97. Change in minor version without any change in the major version indicates that
98. format is backward compatible.
99. -->
100. <xs:attribute name="minorVersion" type="xs:unsignedInt" use="required" />
101. <xs:anyAttribute processContents="lax"/>
102. </xs:complexType>
103. <xs:element name="categoryPublicationManifest" type="tns:categoryPublicationManifestType"/>
104. </xs:schema>

The following XSD schema fragment defines the schema for **commontypes** referred by the **containerManifestList** XSD schema.

1. <?xml version="1.0" encoding="UTF-8"?>
2. <xs:schema
3. targetNamespace="http://schemas.microsoft.com/2006/09/sip/commontypes"
4. xmlns:tns="http://schemas.microsoft.com/2006/09/sip/commontypes"
5. xmlns:xs="http://www.w3.org/2001/XMLSchema"
6. elementFormDefault="qualified"
7. attributeFormDefault="unqualified"
8. >
9. <xs:element name="delimiter">
10. <xs:complexType />
11. </xs:element>
12. <xs:element name="end">
13. <xs:complexType />
14. </xs:element>
15. <xs:complexType name="extensionType">
16. <xs:sequence>
17. <xs:any processContents="lax" minOccurs="1"
18. maxOccurs="unbounded" namespace="##other"/>
19. </xs:sequence>
20. </xs:complexType>
21. <xs:element name="extension" type="tns:extensionType"/>

</xs:schema>

The following XSD schema fragment defines the schema for **commontypesForNewPublicationManifest** referred by the **categoryPublicationManifest** XSD schema.

1. <?xml version="1.0" encoding="UTF-8"?>
2. <xs:schema
3. xmlns:ms="urn:microsoft-cpp-xml-serializer"
4. targetNamespace="http://schemas.microsoft.com/2006/09/sip/commontypes"
5. xmlns:tns="http://schemas.microsoft.com/2006/09/sip/commontypes"
6. xmlns:xs="http://www.w3.org/2001/XMLSchema"
7. elementFormDefault="qualified"
8. attributeFormDefault="unqualified"
9. >
10. <xs:element name="delimiter">
11. <xs:complexType />
12. </xs:element>
13. <xs:element name="end">
14. <xs:complexType />
15. </xs:element>
16. <xs:complexType name="extensionType">
17. <xs:all>
18. <xs:any processContents="lax" minOccurs="1"
19. maxOccurs="unbounded" namespace="##other"/>
20. </xs:all>
21. </xs:complexType>
22. <xs:element name="extension" type="tns:extensionType"/>

</xs:schema>

**containerManifestList:** A list of all **containerManifests** available.

**containerManifest:** Manifest that provides the list of containers and members. The UAC SHOULD create containers and its members based on the constraints defined in the manifest.

**majorVersion (optional):** Ignored.

**minorVersion (optional):** Ignored.

**minSupportedClientVersion (optional):** The minimum version of the UAC that consumes the container manifest.

**containers:** The wrapper for the list of **container** elements.

**container:** Each **container** element describes a container.

* **id (required):** Unsigned short integer that uniquely identifies a container.
* **Visible (optional):**[<107>](#Appendix_A_107" \o "Product behavior note 107) **Container** attribute that, when "true", designates the container as a member of the set of containers identified with allowed containers **type** set to "visibleContainers". UAC also interprets containers that set the **Visible** attribute to "true" as containers that are displayed in its access level view.
* **avoidRedundantMembers (optional):** This string indicates if a container can have redundant membership. For example, redundancy occurs when a domain, as well as a user who is in that domain, are associated with a container. The value MUST be "true" or "false". The UAC SHOULD clean up redundant members from containers if the setting is "true".
* **blocked (optional):** Ignored.

**members:** The wrapper for the list of member elements.

**member:** Describes a container member.

**type (optional):** This string value specifies the type of the member. The following values are defined:

* **user:** A SIP URI.
* **domain:** A SIP domain.
* **sameEnterprise:** All users from the same enterprise.
* **federated:** All federated users.
* **publicCloud:** All public cloud users.
* **everyone:** All users.
* **singleIdentityUser:** A user who has just one SIP uri for that particular identity. PIC contacts that have more than one SIP uri that belong to the identity SHOULD NOT be processed using this rule.

**role (optional):** This string value specifies the role of the member. Note that container members matching to a member by **role** attribute take precedence over the corresponding match to member by **type** attribute. The following values are defined:

* **delegate:** A user entity currently configured as a delegate for the local user.
* **buddy:**[<108>](#Appendix_A_108" \o "Product behavior note 108) A user entity currently a member of the local user’s buddy list.

**allowedContainers:** List of containers to which the member MAY be added.

* **type (required):** The **type** attribute is a string that describes the access control element. The following values are defined:
  + **custom:** The list of containers is specified within the **allowedContainers** element.

**visibleContainers:****[<109>](#Appendix_A_109" \o "Product behavior note 109)** The list of containers for the member are the subset of child elements of the **containers** element with the **Visible** attribute set to "true"**.**

* **container (optional):** This element specifies the container to which the member MAY be added. There MAY be more than one element. The list of containers is specified when the **type** is "custom".
  + **id (required):** This unsigned short integer uniquely identifies a container.
* **defaultContainer (optional):** The default container to which the member MAY be added if the constraint is not satisfied for the member.
  + **id (required):** An unsigned integer that gives the container identifier.

**occurrenceConstraint (optional):** The mandatory membership occurrence rate the related type or role member is present in.

* **type (required):** A string that gives the number of occurrences mandated for the given type or role. The value MUST be "zero", "one" or "zeroOrOne".
  + When "Zero", a given container MUST have zero members of the related type or role. This value SHOULD be ignored by a UAC.
  + When "One", a given container MUST have one member of the related type or role.
  + When "zeroOrOne", a given container MAY have no members of the related type or role or it MAY have one member of a related type or role. It MUST NOT have more than one member of a related type or role.

**sourceNetworks (optional):** A wrapper for the optional list of source networks to which the member belongs to satisfy the constraint.

**sourceNetwork:** Describes a source network.

* **type (required):** A string that describes the source network. The following values are defined:
  + **sameEnterprise:** All users from the same enterprise.
  + **federated:** All federated users.
  + **publicCloud:** All public cloud users.

**resolutionRules (optional):** A wrapper for the optional list of resolution rules that are applied if the constraint is not satisfied for the member.

**resolutionRule:** Describes a resolution rule.

* **type (required):** The **type** attribute is a string that describes the resolution rule. The following values are defined:
  + **removeFromContainer:** The member is removed from the container if the constraint is not satisfied for the member.
  + **moveToDefaultContainer:** The member is moved to the default container if the constraint is not satisfied for the member.
  + **forceRole:** The member is forced into the role specified by the **role** element.
* **role (optional):** A string that describes the role the member is forced into when the constraint is not satisfied for the member. This attribute is set when the **type** attribute has the value "forceRole". Possible values for the **role** attribute are "delegate" and "buddy".

**blockRules (optional):** The wrapper for the list of **blockRule** elements.

**blockRule:** Describes a **blockRule** element.

* **type (required):** The **type** attribute is a string that describes the actions that are blocked. The following values are defined:
  + **invites:** Invites are blocked when the rule matches.
  + **subscriberPrompt:** Subscriber prompts are blocked when the rule matches.
* **containers (optional):** The actions from the members of specified containers are blocked.
* **sourceNetworks (optional):** The actions from the members of specified source networks are blocked.
* **maxAvailability (optional):** Defines the upper bound of the availability range of the publisher for which this rule applies.
* **minAvailability (optional):** Defines the lower bound of the availability range of the publisher for which this rule applies.

**rolePrecedence (optional):** The wrapper for the list of **rolePrecedenceEntry** elements that define the order of precedence for roles when a member maps to multiple roles.

**rolePrecedenceEntry:** Describes a role.

* **type (required):** A string that specifies a role. The possible values are "delegate" and "buddy".

**categoryPublicationManifest:** Manifest that describes the list of presence publication rules.

**minSupportedClientVersion (optional):** The minimum version of the UAC that consumes the category publication manifest.

**majorVersion (optional):** Ignored.

**minorVersion (optional):** Ignored.

**publicationList:** A wrapper for **publicationRules**.

**publicationRule:** The rules for the publication of a category in a given container.

* **ruleType (required):** This string value specifies the type of the rule. The following values are defined:
  + **bootstrap:** Rule that seeds initial presence data.
  + **transformation:** Rule that modifies the presence data before publication according to XSL transformation defined in the **categoryData** element.
  + **cleanup:** Rule that un-publishes existing presence data.
* **categoryName (required):** The name of the target category to which the publication rule applies.
* **containerID (required):** The identifier of the target container to which the publication rule applies.
* **instance:** Ignored.
* **preferredSelfConsumption (optional):** Indicates that the **containerId** specified in the rule is a preferred container for consuming presence data of the category specified in the same rule.
* **categoryData:** The XSL if the **ruleType** is "transformation". Empty content indicates that no transformation MUST be applied. Contains the XML to be published if the **ruleType** is "bootstrap".
* **expireType (optional):** Specifies the lifetime of the publication.
* **type (required):** A string that specifies the rules for expiring the publication. The following values are defined:
  + **endpoint:** The publication lives as long as the publishing [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee) stays registered.
  + **user:** The publication lives as long as the publishing user stays registered from at least one endpoint.
  + **static:** The publication never expires.
  + **time:** The publication expires if it is not refreshed within a certain period of time.
* **expireTime (optional):** Specifies the lifetime of the publication when **expireType** is set to "time". This value is required when **type** is "time".

**instanceId (optional):** This element allows different instances of the same category to be published to the same container. For example, a publisher might use two different endpoints to publish the same category to the same container, yet these publications will be treated by the server as distinct publications if they use different **instanceIds**.

For a detailed example, see section 4.2.2.

##### Data Model for userSetting provisionGroup

The **userSetting** **provisionGroup** is specified as follows.

1. provisionGroup (name='userSetting')
2. |
3. |-- disableFileTransfer
4. |-- ucUserLocationProfile
5. |-- commonAreaPhone

The following [**XSD**](#gt_c7e91c99-e45a-44c2-a08a-c34f137a2cae) schema fragment defines the requirements to which a **userSetting** **provisionGroup** element [**XML document**](#gt_8fa90ece-7a01-4c00-af85-adbf0ed01882) SHOULD[<110>](#Appendix_A_110" \o "Product behavior note 110) conform.

1. <?xml version="1.0" encoding="utf-16"?>
2. <xs:schema xmlns:tns="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" targetNamespace="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" xmlns:xs="http://www.w3.org/2001/XMLSchema">
3. <xs:element name="provisionGroup" type="tns:provisionGroupType" />
4. <xs:complexType name="provisionGroupType">
5. <xs:all>
6. <xs:element minOccurs="1" maxOccurs="1" name="disableFileTransfer" type="tns:booleanType" />
7. <xs:element minOccurs="1" maxOccurs="1" name="ucUserLocationProfile" type="tns:stringType" />
8. <xs:element minOccurs="0" maxOccurs="1" name="commonAreaPhone" type="tns:booleanType" />
9. </xs:all>
10. <xs:attribute fixed="userSetting" name="name" use="required" />
11. </xs:complexType>
12. <xs:simpleType name="stringType">
13. <xs:restriction base="xs:string" />
14. </xs:simpleType>
15. <xs:simpleType name="booleanType">
16. <xs:restriction base="xs:boolean" />
17. </xs:simpleType>
18. </xs:schema>

**disableFileTransfer:**[<111>](#Appendix_A_111" \o "Product behavior note 111) Specifies whether file transfer is disabled. The value SHOULD be "true" or "false".

**ucUserLocationProfile:** Supplies the [**location profile**](#gt_99f2bbb7-7f8b-4ce0-9888-fb23676196ec) for voice call features. This is used by the extensions described in [[MS-SIPRE]](%5bMS-SIPRE%5d.pdf#Section_ab4ab24937964ed18cecf496d81a1a83) section 2.2.8.

**commonAreaPhone:** Specifies whether the client is a Common Area phone. The value MUST be "true" or "false".

For a detailed example, see section [4.2.2](#Section_1be938c11a58457f855c5f4665f071f8).

##### Data Model for endpointConfiguration provisionGroup

The **endpointConfiguration** **provisionGroup** is as follows.[<112>](#Appendix_A_112" \o "Product behavior note 112)

1. provisionGroup (name=’endpointConfiguration’)
2. |
3. |-- ShowRecentContacts
4. |-- ShowManagePrivacyRelationships
5. |-- MaxPhotoSizeKB
6. |-- DisableMusicOnHold
7. |-- AttendantSafeTransfer
8. |-- MusicOnHoldAudioFile
9. |-- CustomLinkInErrorMessages
10. |-- CustomStateUrl
11. |-- DisablePoorDeviceWarnings
12. |-- DisablePoorNetworkWarnings
13. |-- BlockConversationFromFederatedContacts
14. |-- CalendarStatePublicationInterval
15. |-- EnableCallLogAutoArchiving
16. |-- EnableAppearOffline
17. |-- EnableConversationWindowTabs
18. |-- EnableEventLogging
19. |-- EnableFullScreenVideoPreviewDisabled
20. |-- EnableSQMData
21. |-- EnableTracing
22. |-- EnableURL
23. |-- EnableIMAutoArchiving
24. |-- DisableEmailComparisonCheck
25. |-- DisableCalendarPresence
26. |-- DisableEmoticons
27. |-- DisableFederatedPromptDisplayName
28. |-- DisableFreeBusyInfo
29. |-- DisableHandsetOnLockedMachine
30. |-- DisableHtmlIm
31. |-- DisableInkIM
32. |-- DisableRTFIM
33. |-- DisableSavingIM
34. |-- DisableMeetingSubjectAndLocation
35. |-- DisableOneNote12Integration
36. |-- DisableOnlineContextualSearch
37. |-- DisablePhonePresence
38. |-- DisablePICPromptDisplayName
39. |-- DisablePresenceNote
40. |-- PhotoUsage
41. |-- AbsUsage
42. |-- AllowUnencryptedFileTransfer
43. |-- AutoDiscoveryRetryInterval
44. |-- ConferenceIMIdleTimeout
45. |-- DGRefreshInterval
46. |-- ExcludedContactFolders
47. |-- IMWarning
48. |-- MapiPollInterval
49. |-- MaximumNumberOfContacts
50. |-- NotificationForNewSubscribers
51. |-- PlayAbbrDialTone
52. |-- SearchPrefixFlags
53. |-- TabURL
54. |-- WebServicePollInterval
55. |-- DisableFeedsTab
56. |-- EnableEnterpriseCustomizedHelp
57. |-- CustomizedHelpUrl
58. |-- DisableContactCardOrganizationTab
59. |-- EnableHotdesking
60. |-- HotdeskingTimeout
61. |-- SPSearchInternalUrl
62. |-- SPSearchExternalUrl
63. |-- SPSearchCenterInternalUrl
64. |-- SPSearchCenterExternalUrl
65. |-- EnableExchangeDelegateSyncUp
66. |-- EnableContactSync
67. |-- ShowSharepointPhotoEditLink
68. |-- EnableVOIPCallDefault
69. |-- MaximumDGsAllowedInContactList
70. |-- ImLatencySpinnerDelay
71. |-- ImLatencyErrorThreshold
72. |-- EnableMediaRedirection
73. |-- P2PAppSharingEncryption
74. |-- HelpEnvironment
75. |-- RateMyCallAllowCustomUserFeedback
76. |-- RateMyCallDisplayPercentage
77. |-- imLatencySpinnerDelay
78. |-- imLatencyErrorThreshold
79. |-- EnableHighPerformanceP2PAppSharing
80. |-- EnableHighPerformanceConferencingAppSharing
81. |-- TracingLevel
82. |-- EnableServerConversationHistory
83. |-- EnableSkypeUI
84. |-- CallViaWorkEnabled
85. |-- UseAdminCallbackNumber
86. |-- AdminCallbackNumber
87. |-- OnlineFeedbackURL
88. |-- BITSServerAddressInternal
89. |-- BITSServerAddressExternal
90. |-- EnableSendFeedback
91. |-- EnableIssueReports
92. |-- EnableBugFiling
93. |-- EnableBackgroundDataCollection
94. |-- PrivacyStatementURL
95. |-- SendFeedbackURL

The following [**XSD**](#gt_c7e91c99-e45a-44c2-a08a-c34f137a2cae) schema fragment defines the requirements to which an **endpointConfiguration** **provisionGroup** element [**XML document**](#gt_8fa90ece-7a01-4c00-af85-adbf0ed01882) SHOULD conform.

1. <?xml version="1.0" encoding="utf-16"?>
2. <xs:schema xmlns:tns="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" targetNamespace="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" xmlns:xs="http://www.w3.org/2001/XMLSchema">
3. <xs:complexType name="propertyEntryType">
4. <xs:simpleContent>
5. <xs:extension base="xs:string">
6. <xs:attribute name="name" type="xs:string" use="required" />
7. </xs:extension>
8. </xs:simpleContent>
9. </xs:complexType>
10. <xs:complexType name="propertyEntryListType">
11. <xs:sequence>
12. <xs:element name="property" type="tns:propertyEntryType" maxOccurs="unbounded"/>
13. </xs:sequence>
14. </xs:complexType>
15. <xs:element name="propertyEntryList" type="tns:propertyEntryListType" />
16. </xs:schema>

**ShowRecentContacts:** Ignored.

**AbsUsage:** Specifies whether the user MAY use an Address Book Service (as specified in [[MS-ABS]](%5bMS-ABS%5d.pdf#Section_ddc59abf1f4249359b725314665dbcff)) web query, download a file, or either one for accessing an [**address book**](#gt_d16f7b78-c5a6-48f4-9e0f-3b205b5598b5). Values include "WebSearchAndFileDownload", "WebSearchOnly", or "FileDownloadOnly".

**AllowUnencryptedFileTransfer:** Allows unencrypted files to be transferred.

**MusicOnHoldAudioFile:** Optional, ignored.

**DisableMusicOnHold:** Optional, ignored.

**AttendantSafeTransfer:** Optional, ignored.

**AutoDiscoveryRetryInterval:** How frequently to retry autodiscovery if it fails.

**BlockConversationFromFederatedContacts:** This policy prevents external contacts from inviting users to IM or Audio-Video conversations unless they are in the user’s High Presence level. High Presence means that they are in the ALLOW [**access control list (ACL)**](#gt_9f92aa05-dd0a-45f2-88d6-89f1fb654395) of the user. In addition, it blocks messages that are not part of a session from reaching the user.

**CalendarStatePublicationInterval:** How frequently data loaded from the calendar is published, in seconds.

**ConferenceIMIdleTimeout:** Amount of time a user MAY sit in an IM-only conference without sending or receiving an IM. When the timeout occurs, the user automatically leaves the IM conference.

**CustomizedHelpUrl:** Determines the root [**URL**](#gt_433a4fb7-ef84-46b0-ab65-905f5e3a80b1) to be used when passing help parameters to the customized Help system of the enterprise.

**CustomLinkInErrorMessages:** Custom link pointing users to an enterprise-hosted extranet site from the error messages.

**CustomStateUrl:** URL to an XML file containing custom Presence states.

**DGRefreshInterval:** Timing period, in seconds, for refreshing the Distribution Group.

**DisableCalendarPresence:** Disables loading Free/Busy data from [**Messaging Application Programming Interface (MAPI)**](#gt_54117430-d977-4db7-a042-3a8e3b3862da) or web services. Also disables publication of free/busy data.

**DisableContactCardOrganizationTab:** Removes the contact card organization tab from the UI.

**DisableEmailComparisonCheck:** Disables the e-mail comparison check; normally, if the e-mail client profile’s **email-id** does not match the [**Simple Mail Transfer Protocol (SMTP)**](#gt_0678be67-e739-4e33-97fe-2b03b903a379) address received from the e-mail server[<113>](#Appendix_A_113" \o "Product behavior note 113), any personal information management (PIM) integration[<114>](#Appendix_A_114" \o "Product behavior note 114) is disabled. This policy is disabled by default.

**DisableEmoticons:** Prevents emoticons being shown in instant messages.

**DisableFederatedPromptDisplayName:** The display name of federated, non-[**public IM connectivity**](#gt_76d95597-d4dd-41e3-9ce9-62db0fb70ee9), contacts in the notification dialog.

**DisableFeedsTab:** Indicates whether the feed environment is shown in the UI. If this setting is enabled, the feed environment and the feed tab are removed from the UI.

**DisableFreeBusyInfo:** Indicates whether free/busy information is published. If this setting is enabled, free/busy information is not published.

**DisableHandsetOnLockedMachine:** When the PC is locked, this setting does not allow calls to or from the handset.

**DisableHtmlIm:** Disables HTML instant messages.

**DisableInkIM:** Ignored.

**DisableMeetingSubjectAndLocation:** Indicates whether the meeting subject and location information is published.

**DisableOneNote12Integration:** Specifies whether planning and note-taking software integration with the instant-messaging client is enabled.[<115>](#Appendix_A_115" \o "Product behavior note 115)

**DisableOnlineContextualSearch:** Disables online searches for related conversations. This disables both the automatic population of previous logs, and the ability to start a contextual search for conversation related to emails. This only affects users who are using an e-mail client[<116>](#Appendix_A_116" \o "Product behavior note 116) in online mode.

**DisablePhonePresence:** When this policy is enabled, phone call states are not published as part of the presence information.

**DisablePICPromptDisplayName:** The display name of public IM connectivity contacts in the notification dialog.

**DisablePoorDeviceWarnings:** Disables poor device warnings that appear during the first run, in the tuning wizard, in the main UI, and in the conversation window at the [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee).

**DisablePoorNetworkWarnings:** Disables poor network warnings that appear during the conversation at the endpoint.

**DisablePreCallNetworkDiagnostics:** Disables poor network warnings that appear during the conversation at the endpoint.

**DisablePresenceNote:** Disables the loading of the OOF (out of office) message from MAPI or web services. Also disables the publication of OOF messages.

**DisableRTFIM:** Indicates that rich text MUST NOT be allowed for IM.

**DisableSavingIM:** Prevents users from saving instant messages.

**EnableAppearOffline:** Controls the appear offline entry points on the client. The value MUST be "true" or "false".

**EnableCallLogAutoArchiving:** When enabled, the client archives call logs. When disabled, the client never archives call logs.

**EnableConversationWindowTabs:** Enables the web browser in the conversation window.

**EnableEnterpriseCustomizedHelp:** Determines whether the enterprise wants the default online help system or uses a completely customized help system.

**EnableEventLogging:** Turns on UCCP event logging for the client.

**EnableExchangeDelegateSyncUp**: When this is enabled, the delegate’s information is retrieved from the calendar, with author and editor rights on the boss's calendar.

**EnableFullScreenVideoPreviewDisabled:** Enables full screen video with the correct aspect ratio and disables video preview for all client video calls.

**EnableHotdesking:** Specifies whether hotdesking is enabled for a common area phone. Only phones with the common area phone device type make use of this setting.

**EnableIMAutoArchiving:** When this policy is enabled, the client archives IM conversations. When it is disabled, the client never archives IM conversations. When this policy is not set, the user controls archiving of IM conversations.

**EnableSQMData:** Enables collection of software quality metrics.

**EnableTracing:** Turns on tracing for the client; primarily for use by customer support and the OC team to assist customer problem solving.

**EnableURL:** Allows hyperlinks in instant messages.

**ExcludedContactFolders:** This policy is used for excluding contact folders from being imported into the client search results.

**HotdeskingTimeout:** The common area phone operating in hotdesking mode uses this setting to determine when to log the user out and revert to common area mode if the user has been inactive for the **hotdeskingTimeout** period. This setting is only made use of by phones with the common area device type and the **enableHotdesking** setting set to "true".

**IMWarning:** Allows the administrator to configure the initial text that appears in the instant messaging area when a conversation window is opened.

**MapiPollInterval:** The frequency, in minutes, of loading calendar data from the MAPI provider.

**MaximumNumberOfContacts:** Maximum number of contacts users are allowed to have.

**MaxPhotoSizeKB:** Maximum size of an individual photo that a client MAY download.

**NotificationForNewSubscribers:** Notifications are shown unless the user has selected otherwise in the options dialog.

**PhotoUsage:** Whether client endpoints display photos of each type. Valid values are "NoPhoto", "PhotosFromADOnly", and "AllPhotos".

**PlayAbbrDialTone:** Changes the length of the dial tone from a 30-second dial tone to a fading, 3-second dial tone.

**SearchPrefixFlags:** A DWORD value whose bits represent the decision of which address book attribute to index into the prefix search tree. These bits are as follows (from low to high):

* **Bit 0:** Primary e-mail.
* **Bit 1:** Alias.
* **Bit 2:** All emails.
* **Bit 3:** Company.
* **Bit 4:** Display name.
* **Bit 5:** First name.
* **Bit 6:** Last name.

**ShowManagePrivacyRelationships:** Controls whether the "view by" menu in the contact list shows or hides "manage privacy relationships" (previously known as access level management view).Valid values are "true" and "false".

**SPSearchCenterExternalUrl:** The [**site**](#gt_8abdc986-5679-42d9-ad76-b11eb5a0daba) search center external URL is used to enable the site link in the expert search results. This URL represents the search center outside the enterprise network of the search service specified in the **ExpertSearchExternalURL**. If this setting is blank, there is no link to the site server at the bottom of the search results.

**SPSearchCenterInternalUrl:** The site search center internal URL is used to enable the site link in the expert search results. This URL represents the search center within the enterprise network of the search service specified in the **ExpertSearchInternalURL**. If this setting is blank, there is no link to the site server at the bottom of the search results.

**SPSearchExternalUrl:** The site external URL is used to enable expert search capabilities If the client is connected to the server outside of the enterprise network. If the URL is blank or invalid, none of the expert search capabilities and UI are enabled.

**SPSearchInternalUrl:** The site internal URL is used to enable expert search capabilities if the client is connected to the server inside of the enterprise network. If the URL is blank or invalid, none of the expert search capabilities and UI are enabled.

**TabURL:** URL for the XML file from which the tab definitions are loaded.

**WebServicePollInterval:** The frequency, in minutes, of loading calendar data from a web services provider.

**EnableContactSync:** Determines whether the client synchronizes contacts into the e-mail server contacts store.[<117>](#Appendix_A_117" \o "Product behavior note 117) The value MUST be "true" or "false".

**ShowSharepointPhotoEditLink:** Determines whether the client shows the site link to edit their photo. The value MUST be "true"or "false"**.**

**EnableVOIPCallDefault:** Determines whether the client chooses [**Voice over IP (VoIP)**](#gt_f8d6223d-5289-4966-9fc0-8ec7b7b42860) call as the default calling method instead of a [**PSTN**](#gt_475991aa-abb2-4521-a0a5-6993d27dba9f) call when click to call is used. The value MUST be "true" or "false".

**MaximumDGsAllowedInContactList:** Determines the number of distribution groups allowed in the contact list of the client. The type for this is unsigned integer.

**EnableMediaRedirection:** Enables an enterprise-grade audio/video experience.[<118>](#Appendix_A_118" \o "Product behavior note 118)

**HelpEnvironment:** Specifies the help documentation that the client shows to the user.

**P2PAppSharingEncryption:** An integer value that specifies the encryption mode for application sharing sessions between clients.

* **0 :** Supported
* **1 :** Enforced
* **2 :** Not Supported

**TracingLevel:**[<119>](#Appendix_A_119" \o "Product behavior note 119) Controls the tracing level on the client. This with **EnableTracing** controls tracing, if **EnableTracing** is not set then this attribute controls the level of tracing and the user can change the tracing level, if **EnableTracing** is set then the user cannot change the tracing level and the tracing level is determined by the value of this attribute. This string attribute MUST have one of the following values.

* **Off**
* **Light**
* **Full**

**RateMyCallAllowCustomUserFeedback:** [<120>](#Appendix_A_120" \o "Product behavior note 120)Whether the call rating dialog will include a free form text field, where user can provide custom feedback (value set to "true"), or not ("false").

**RateMyCallDisplayPercentage:** [<121>](#Appendix_A_121" \o "Product behavior note 121) An integer percentage value between 0 and 100 that indicates the percentage of calls for which call rating information is requested from the user at the end of a call. A value of 0 specifies to never request call rating information. A value of 100 specifies requesting call rating information at the end of every call. The default value is 10, specifying requesting call rating information for 1 call out of every 10 calls.

**ImLatencySpinnerDelay:** [<122>](#Appendix_A_122" \o "Product behavior note 122)The amount of time in milliseconds to wait before showing the spinner in the client when IM delivery is delayed.

**ImLatencyErrorThreshold:** [<123>](#Appendix_A_123" \o "Product behavior note 123) An integer value in milliseconds. If the IM latency is above this threshold the client will submit a CER.

**EnableServerConversationHistory:** [<124>](#Appendix_A_124" \o "Product behavior note 124) Whether to allow the IM server to record the conversation history for this user.

**EnableHighPerformanceP2PAppSharing:** [<125>](#Appendix_A_125" \o "Product behavior note 125) Whether to enable high frame rate application sharing in a two-party conversation. To enable the best experience, this setting SHOULD be enabled on both the sharer and viewer. When this setting is enabled, the actual frame rate is determined by the **AppSharingBitRate** setting. If the **AppSharingBitRate** is less than or equal to 2000, then the frame rate is calculated as 2.5 frames per second. If the **AppSharingBitRate** is between 2000 and 4000, the frame rate is calculated as 4 frames per second. If the **AppSharingBitRate** is between 4000 and 8000, then the frame rate is calculated as 6 frames per second. If the **AppSharingBitRate** is between 8000 and 12000, then the frame rate is calculated as 8 frames per second. If the **AppSharingBitRate** is greater than 12000, then the frame rate is calculated as 10 frames per second. The default is "false", indicating a default frame rate of 2.5 frames per second.

**EnableHighPerformanceConferencingAppSharing:** [<126>](#Appendix_A_126" \o "Product behavior note 126) Whether to enable high frame rate application sharing in a multi-party (conference) conversation. Note that when enabled, this could have a performance impact on the application sharing conference server, possibly resulting in degraded performance if the server is heavily loaded. To enable the best experience, the setting SHOULD be enabled on both the sharer and viewer. When this setting is enabled, the actual frame rate is determined by the **AppSharingBitRate** setting. If the **AppSharingBitRate** is less than or equal to 2000, then the frame rate is calculated as 2.5 frames per second. If the **AppSharingBitRate** is between 2000 and 4000, the frame rate is calculated as 4 frames per second. If the **AppSharingBitRate** is between 4000 and 8000, then the frame rate is calculated as 6 frames per second. If the **AppSharingBitRate** is between 8000 and 12000, then the frame rate is calculated as 8 frames per second. If the **AppSharingBitRate** is greater than 12000, then the frame rate is calculated as 10 frames per second. The default is "false", indicating a default frame rate of 2.5 frames per second

**EnableSkypeUI:** [<127>](#Appendix_A_127" \o "Product behavior note 127) Whether the client will display a Lync-style or Skype-style user interface. When set to "true", the client will display a Skype-style interface; when set to "false", the client will display a Lync-style interface. If this setting is absent, the client can choose in an implementation-specific manner.

**CallViaWorkEnabled:** [<128>](#Appendix_A_128" \o "Product behavior note 128) Whether to enable or disable a user for CallViaWork functionality.

**AdminCallBackNumber:** [<129>](#Appendix_A_129" \o "Product behavior note 129) An administrator-specified callback phone number for a specific user.

**UseAdminCallbackNumber:** [<130>](#Appendix_A_130" \o "Product behavior note 130) Whether to force the user to use their **AdminCallbackNumber** as their callback phone number. When set to "true", the **AdminCallbackNumber** MUST be configured. When set to "false", user has the ability to specify their own callback phone number in addition to the administrator-specified **AdminCallbackNumber**.

**OnlineFeedbackURL:** Controls whether to show an icon and Help menu UI for providing feedback. The URL value for this parameter is what is launched (in the user’s default browser) when the user selects the icon or menu option (**Help** > **Report a problem**).

**BITSServerAddressInternal:** The internal URL is used to hold the URL of the server to upload the logs or feedback into.

**BITSServerAddressExternal:** The external URL is used to hold the URL of the server to upload the logs or feedback into.

**EnableSendFeedback:** Determines whether sending feedback is enabled.

**EnableIssueReports:** Determines whether issue reporting or log collection is allowed.

**EnableBugFiling:** Whether the bug filing is enabled.

**EnableBackgroundDataCollection:** Whether sending background metrics is enabled.

**PrivacyStatementURL:** Provisions the directed feedback and privacy URLs.

**SendFeedbackURL:** The URL to specify issue reporting server address.

For a detailed example, see section [4.2.2](#Section_1be938c11a58457f855c5f4665f071f8).

##### Data Model for locationPolicy provisionGroup

The **locationPolicy** **provisionGroup** follows the behavior described in product behavior note [<131>](#Appendix_A_131" \o "Product behavior note 131).

provisionGroup (name='locationPolicy')

|

|-- propertyEntryList

| |-- property

| | |- name

The following [**XSD**](#gt_c7e91c99-e45a-44c2-a08a-c34f137a2cae) schema fragment defines the requirements to which a **locationPolicy** **provisionGroup** element [**XML document**](#gt_8fa90ece-7a01-4c00-af85-adbf0ed01882) SHOULD conform.

1. <?xml version="1.0" encoding="utf-16"?>
2. <xs:schema xmlns:tns="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" targetNamespace="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" xmlns:xs="http://www.w3.org/2001/XMLSchema">
3. <xs:complexType name="propertyEntryType">
4. <xs:simpleContent>
5. <xs:extension base="xs:string">
6. <xs:attribute name="name" type="xs:string" use="required" />
7. </xs:extension>
8. </xs:simpleContent>
9. </xs:complexType>
10. <xs:complexType name="propertyEntryListType">
11. <xs:sequence>
12. <xs:element name="property" type="tns:propertyEntryType" maxOccurs="unbounded"/>
13. </xs:sequence>
14. </xs:complexType>
15. <xs:element name="propertyEntryList" type="tns:propertyEntryListType" />
16. </xs:schema>

**EnhancedEmergencyServicesEnabled:** If "true", the client acquires location information and sends PIDF-LO with an emergency call. The value MUST be "true" or "false".

**LocationPolicyTagID:** If this element is present, the client MUST insert this value into the PIDF-LO of every emergency call. [[MS-SIPRE]](%5bMS-SIPRE%5d.pdf#Section_ab4ab24937964ed18cecf496d81a1a83) section 3.17.5.2 specifies the usage of this field in detail.

**LocationRequired:** Triggers the client to request alternate location sources from the user if the **lisInternalUrl** (section [2.2.2.5.1](#Section_eec7a55c97e84d2688a1fadf686cd5b4)) is not populated or the Location Information Service does not return a location. Valid values are "yes", "no", or "disclaimer".

* "yes" – triggers the client to show an alert indicator and text about entering a location.
* "no" – do nothing.
* "disclaimer"– show an alert indicator and text about entering a location, and if the user clicks through then show the **EmergencyServiceDisclaimer** (section 2.2.2.5.7).

**UseLocationForE911Only:** If "true", the location is sent only in a 911 call. The value MUST be "true" or "false".

**PstnUsage:** Ignored.

**EmergencyDialString:** The dial string or URI that triggers the client to send PIDF-LO and initiates the E911-related UI capability.

**EmergencyDialMask:** Dial strings or URIs that, if entered by a user, are translated into the emergency dial string. If there are multiple values, they are separated by a semicolon (;). For example, a European employee, while visiting the United States, might dial 112 in an emergency and this property helps route the call correctly.

**EmergencyNumbers****[<132>](#Appendix_A_132" \o "Product behavior note 132):** A string of semicolon (;) separated emergency dial string and dial mask(s) combinations. In each combination the emergency dial string and dial mask(s) are separated by a hyphen (-). To support multiple dial masks per emergency dial string, the string representing the dial mask(s) is comma (,) separated. An example of multiple emergency strings with one having a dial mask is 112-911;999. An example of multiple emergency strings with no dial mask is 100;101;102. An example of an emergency dial string with multiple dial masks is 911-112,100,101,102. And finally an example of multiple emergency numbers each with a dial mask 112-911;117-100;118-101;144-102.

When a client supports this property, it takes precedence over "EmergencyDialString" and the value specified in "EmergencyDialString" is ignored.

**NotificationUri:** URIs that the emergency notification will be sent to. The notification URI MAY be one SIP URI or list of comma separated SIP URIs. Group and DL URIs are not supported.

**ConferenceUri:** URI of the person or group that is conferenced-in in the emergency call.

**ConferenceMode:** Toggle setting of one-way or two-way audio for an emergency conference. Valid values are "oneway" or "twoway".

**EmergencyServiceDisclaimer:** Text entered by the administrator for the client to display an emergency services disclaimer if it could not fetch a location from the Location Information Service, as specified in [[MS-E911WS]](%5bMS-E911WS%5d.pdf#Section_ab5d74492c15434bbf65fdf38b8ffabd) section 3.1.4.1.

**LocationRefreshInterval:** The interval in hours for Location Information Service requests from the client.

For a detailed example, see section [4.2.2](#Section_1be938c11a58457f855c5f4665f071f8).

##### Data Model for mediaConfiguration provisionGroup

1. provisionGroup (name=’mediaConfiguration’)

|

|-- propertyEntryList

| |-- property

| | |- name

The following [**XSD**](#gt_c7e91c99-e45a-44c2-a08a-c34f137a2cae) schema fragment defines the requirements to which a **mediaConfiguration** **provisionGroup** element [**XML document**](#gt_8fa90ece-7a01-4c00-af85-adbf0ed01882) SHOULD conform.[<133>](#Appendix_A_133" \o "Product behavior note 133)

1. <?xml version="1.0" encoding="utf-16"?>
2. <xs:schema xmlns:tns="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" targetNamespace="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" xmlns:xs="http://www.w3.org/2001/XMLSchema">
3. <xs:complexType name="propertyEntryType">
4. <xs:simpleContent>
5. <xs:extension base="xs:string">
6. <xs:attribute name="name" type="xs:string" use="required" />
7. </xs:extension>
8. </xs:simpleContent>
9. </xs:complexType>
10. <xs:complexType name="propertyEntryListType">
11. <xs:sequence>
12. <xs:element name="property" type="tns:propertyEntryType" maxOccurs="unbounded"/>
13. </xs:sequence>
14. </xs:complexType>
15. <xs:element name="propertyEntryList" type="tns:propertyEntryListType" />
16. </xs:schema>

**bypassEnabled:** Specifies whether bypass is enabled for this deployment. The value MUST be "true" or "false".

**internalBypassMode:** If bypass is enabled for this deployment, specifies whether bypass is enabled for internal users.

**externalBypassMode:** If bypass is enabled for this deployment, specifies whether bypass is enabled for outside users.

**bypassId:** If bypass is enabled for this deployment, specifies the Bypass identifier to be used if the deployment is configured to bypass, or the default Bypass identifier to use if no Bypass identifier is returned as a result of region or site matching.

For a detailed example, see section [4.2.2](#Section_1be938c11a58457f855c5f4665f071f8).

##### Data Model for presencePolicyV2 provisionGroup

The **presencePolicyV2** **provisionGroup** is specified as follows.[<134>](#Appendix_A_134" \o "Product behavior note 134)

provisionGroup (name='presencePolicyV2')

|

|-- propertyEntryList

| |-- property

| | |- name

The following [**XSD**](#gt_c7e91c99-e45a-44c2-a08a-c34f137a2cae) schema fragment defines the requirements to which a **presencePolicyV2** **provisionGroup** element [**XML document**](#gt_8fa90ece-7a01-4c00-af85-adbf0ed01882) MUST conform.

1. <?xml version="1.0" encoding="utf-8"?>
2. <xs:schema xmlns:tns="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" targetNamespace="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" elementFormDefault="qualified" xmlns:xs="http://www.w3.org/2001/XMLSchema">
3. <xs:element name="provisionGroup" type="tns:provisionGroupType" />
4. <xs:complexType name="provisionGroupType">
5. <xs:all>
6. <xs:element minOccurs="1" maxOccurs="1" name="propertyEntryList" type="tns:propertyEntryListType" />
7. </xs:all>
8. <xs:attribute fixed="presencePolicyV2" name="name" use="required" />
9. </xs:complexType>
10. <xs:complexType name="propertyEntryType">
11. <xs:simpleContent>
12. <xs:extension base="xs:string">
13. <xs:attribute name="name" type="xs:string" use="required" />
14. </xs:extension>
15. </xs:simpleContent>
16. </xs:complexType>
17. <xs:complexType name="propertyEntryListType">
18. <xs:sequence>
19. <xs:element name="property" type="tns:propertyEntryType" maxOccurs="unbounded"/>
20. </xs:sequence>
21. </xs:complexType>
22. </xs:schema>

**propertyEntryList:** A single **propertyEntryList** element is specified within the **presencePolicyV2** **provisionGroup**, and lists a set of presence-related settings.

**property:** A single presence setting. The name attribute specifies the property name. Values are specified in CDATA notation.

The following properties MUST be present.

**EnablePrivacyMode:** Indicates whether privacy mode is enabled on the server. The value MUST be "true" or "false".

**AutoInitiateContacts:** Specifies whether the first-run automatic population of the contact list needs to be enabled on the client. The value MUST be "true" or "false".

**PublishLocationDataDefault:** Specifies whether clients need to publish location data by default. The value MUST be "true" or "false".

**DisplayPublishedPhotoDefault:** Specifies whether the user’s published photo is displayed by the client by default. The value MUST be "true" or "false".

**PersonalNoteHistoryDepth:** The maximum number of child note elements stored in the single NoteHistory instance that MAY be published in a container at any given time. The value is an unsigned integer.

**SubscribeToCollapsedDG:** Specifies whether the client needs to subscribe to presence information of distribution group members when collapsed in the UI.

For a detailed example, see section [4.2.2](#Section_1be938c11a58457f855c5f4665f071f8).

##### Data Model for privacyPublicationGrammar provisionGroup

provisionGroup (name='privacyPublicationGrammar')

|

|-- containerManifestList

| |- minSupportedClientVersion

|- majorVersion

|- minorVersion

| |-- containerManifest

| | |-- containers

|-- container

|- id

|-- visible

|-- avoidRedundantMembers

|-- blocked

|-- members

|-- member

|- type

|- role

|- uri

|-- allowedContainers

|- type

|-- container

|- id

|-- defaultContainer

|- id

|-- occurrenceConstraint

|- type

|-- sourceNetworks

|-- sourceNetwork

|- type

|-- resolutionRules

|-- resolutionRule

|- type

|- role

|-- blockRules

|-- blockRule

|- type

|-- containers

|- type

|-- container

|- id

|-- sourceNetworks

|-- sourceNetwork

|- type

|-- minAvailability

|-- maxAvailability

|-- rolePrecedence

|-- rolePrecedenceEntry

|- type

The following [**XSD**](#gt_c7e91c99-e45a-44c2-a08a-c34f137a2cae) schema fragment defines the requirements to which a **privacyPublicationGrammar** **provisionGroup** element [**XML document**](#gt_8fa90ece-7a01-4c00-af85-adbf0ed01882) SHOULD[<135>](#Appendix_A_135" \o "Product behavior note 135) conform.

1. <?xml version="1.0" encoding="utf-8"?>

<xs:schema xmlns="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification"

1. targetNamespace="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" elementFormDefault="qualified"
2. xmlns:xs="http://www.w3.org/2001/XMLSchema"

xmlns:ms="urn:microsoft-cpp-xml-serializer">

1. <xs:complexType name="ProvisionGroupType">
2. <xs:all>
3. <xs:any namespace="##any" processContents="lax" minOccurs="0" maxOccurs="unbounded">
4. <xs:annotation>
5. <xs:appinfo>
6. </xs:appinfo>
7. </xs:annotation>
8. </xs:any>
9. </xs:all>
10. <xs:attribute name="name" fixed="privacyPublicationGrammar" use="required"/>
11. <xs:anyAttribute namespace="##other" processContents="lax"/>
12. </xs:complexType>
13. <xs:element name="provisionGroup" type="ProvisionGroupType" />
14. </xs:schema>

The **privacyPublicationGrammar** **provisionGroup** element contains the **containerManifestList** XML document, as shown in the example in section [4.2.2](#Section_1be938c11a58457f855c5f4665f071f8).

The following XSD schema fragment defines the requirements to which the **containerManifestList** XML document SHOULD[<136>](#Appendix_A_136" \o "Product behavior note 136) conform.

1. <?xml version="1.0" encoding="utf-8"?>
2. <xs:schema
3. targetNamespace="http://schemas.microsoft.com/2008/09/sip/ContainerManifest"
4. xmlns:tns="http://schemas.microsoft.com/2008/09/sip/ContainerManifest"
5. xmlns:xs="http://www.w3.org/2001/XMLSchema"
6. xmlns:ct="http://schemas.microsoft.com/2006/09/sip/commontypes"
7. attributeFormDefault="unqualified"
8. elementFormDefault="qualified">
9. <!--
10. Client should not proceed with the parsing if its namespace doesn't
11. match to the namespace of the xml.
12. Change in namespace is an indication that format is not compatible.
13. -->
15. <xs:import namespace="http://schemas.microsoft.com/2006/09/sip/commontypes"
16. schemaLocation="commontypes.xsd"/>
17. <xs:simpleType name="sourceNetworkTypeEnum">
18. <xs:restriction base="xs:token">
19. <xs:enumeration value="sameEnterprise"/>
20. <xs:enumeration value="federated"/>
21. <xs:enumeration value="publicCloud"/>
22. </xs:restriction>
23. </xs:simpleType>
24. <xs:simpleType name="sourceNetworkTypeEnumEx">
25. <xs:union memberTypes="tns:sourceNetworkTypeEnum xs:token" />
26. </xs:simpleType>
27. <xs:complexType name="sourceNetworkType">
28. <xs:sequence>
29. <xs:sequence minOccurs="0" maxOccurs="1">
30. <xs:sequence minOccurs="0" maxOccurs="unbounded">
31. <xs:element ref="ct:delimiter"/>
32. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
33. </xs:sequence>
34. <xs:element ref="ct:end"/>
35. </xs:sequence>
36. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
37. </xs:sequence>
38. <xs:attribute name="type" type="tns:sourceNetworkTypeEnumEx" use="required" />
39. <xs:anyAttribute processContents="lax"/>
40. </xs:complexType>
41. <xs:complexType name="sourceNetworksType">
42. <xs:sequence>
43. <xs:element name="sourceNetwork" type="tns:sourceNetworkType" minOccurs="1" maxOccurs="unbounded"/>
44. </xs:sequence>
45. </xs:complexType>
47. <!--
48. Container attributes.
49. UI will show all visible containers in the access level management view.
50. -->
51. <xs:complexType name="containerType">
52. <xs:sequence>
53. <xs:element name="visible" type="xs:boolean" minOccurs="0" maxOccurs="1"/>
54. <xs:element name="avoidRedundantMembers" type="xs:boolean" minOccurs="0" maxOccurs="1"/>
55. <xs:element name="blocked" type="xs:boolean" default="false" minOccurs="0" maxOccurs="1"/>
56. <xs:sequence minOccurs="0" maxOccurs="1">
57. <xs:sequence minOccurs="0" maxOccurs="unbounded">
58. <xs:element ref="ct:delimiter"/>
59. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
60. </xs:sequence>
61. <xs:element ref="ct:end"/>
62. </xs:sequence>
63. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
64. </xs:sequence>
65. <xs:attribute name="id" type="xs:unsignedInt" />
66. <xs:anyAttribute processContents="lax"/>
67. </xs:complexType>
68. <xs:complexType name="containerIdType">
69. <xs:sequence>
70. <xs:sequence minOccurs="0" maxOccurs="1">
71. <xs:sequence minOccurs="0" maxOccurs="unbounded">
72. <xs:element ref="ct:delimiter"/>
73. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
74. </xs:sequence>
75. <xs:element ref="ct:end"/>
76. </xs:sequence>
77. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
78. </xs:sequence>
79. <xs:attribute name="id" type="xs:unsignedInt" />
80. <xs:anyAttribute processContents="lax"/>
81. </xs:complexType>
83. <xs:complexType name="containersType">
84. <xs:sequence>
85. <xs:element name="container" type="tns:containerType" minOccurs="1" maxOccurs="unbounded"/>
87. <xs:sequence minOccurs="0" maxOccurs="1">
88. <xs:sequence minOccurs="0" maxOccurs="unbounded">
89. <xs:element ref="ct:delimiter"/>
90. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
91. </xs:sequence>
92. <xs:element ref="ct:end"/>
93. </xs:sequence>
94. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
95. </xs:sequence>
96. <xs:anyAttribute processContents="lax"/>
97. </xs:complexType>
98. <xs:simpleType name="allowedContainersTypeEnum">
99. <xs:restriction base="xs:token">
100. <xs:enumeration value="visibleContainers"/>
101. <xs:enumeration value="custom"/>
102. </xs:restriction>
103. </xs:simpleType>
104. <xs:simpleType name="allowedContainersTypeEnumEx">
105. <xs:union memberTypes="tns:allowedContainersTypeEnum xs:token" />
106. </xs:simpleType>
107. <xs:complexType name="allowedContainersType">
108. <xs:sequence>
109. <xs:element name="container" type="tns:containerIdType" minOccurs="0" maxOccurs="unbounded"/>
110. </xs:sequence>
111. <xs:attribute name="type" type="tns:allowedContainersTypeEnumEx"/>
112. <xs:anyAttribute processContents="lax"/>
113. </xs:complexType>
114. <xs:simpleType name="occurrenceTypeEnum">
115. <xs:restriction base="xs:token">
116. <xs:enumeration value="zero"/>
117. <xs:enumeration value="one"/>
118. <xs:enumeration value="zeroOrOne"/>
119. </xs:restriction>
120. </xs:simpleType>
121. <xs:simpleType name="occurrenceTypeEnumEx">
122. <xs:union memberTypes="tns:occurrenceTypeEnum xs:token" />
123. </xs:simpleType>
124. <xs:complexType name="occurrenceConstraintType">
125. <xs:sequence>
126. <xs:sequence minOccurs="0" maxOccurs="1">
127. <xs:sequence minOccurs="0" maxOccurs="unbounded">
128. <xs:element ref="ct:delimiter"/>
129. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
130. </xs:sequence>
131. <xs:element ref="ct:end"/>
132. </xs:sequence>
133. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
134. </xs:sequence>
135. <xs:attribute name="type" type="tns:occurrenceTypeEnumEx" use="optional" />
136. <xs:anyAttribute processContents="lax"/>
137. </xs:complexType>
138. <xs:simpleType name="roleTypeEnum">
139. <xs:restriction base="xs:token">
140. <xs:enumeration value="delegate"/>
141. <xs:enumeration value="buddy"/>
142. </xs:restriction>
143. </xs:simpleType>
144. <xs:simpleType name="roleTypeEnumEx">
145. <xs:union memberTypes="tns:roleTypeEnum xs:token" />
146. </xs:simpleType>
147. <!--
148. Order of precedence for which role applies if
149. entity maps to multiple (for example, buddy and delegate)
150. -->
151. <xs:complexType name="rolePrecedenceEntryType">
152. <xs:sequence>
153. <xs:sequence minOccurs="0" maxOccurs="1">
154. <xs:element ref="ct:delimiter"/>
155. <xs:sequence minOccurs="0" maxOccurs="unbounded">
156. <xs:element ref="ct:delimiter"/>
157. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
158. </xs:sequence>
159. <xs:element ref="ct:end"/>
160. </xs:sequence>
161. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
162. </xs:sequence>
163. <xs:attribute name="type" type="tns:roleTypeEnumEx" use="required"/>
164. <xs:anyAttribute processContents="lax"/>
165. </xs:complexType>
166. <xs:complexType name="rolePrecedenceType">
167. <xs:sequence>
168. <xs:element name="rolePrecedenceEntry" type="tns:rolePrecedenceEntryType" minOccurs="1" maxOccurs="unbounded"/>
169. </xs:sequence>
170. </xs:complexType>
171. <!--
172. Defines resolution action to be (implictly) taken if
173. memberType constraints have been violated
174. -->
175. <xs:simpleType name="resolutionTypeEnum">
176. <xs:restriction base="xs:token">
177. <xs:enumeration value="removeFromContainer"/>
178. <xs:enumeration value="moveToDefaultContainer"/>
179. <xs:enumeration value="forceRole"/>
180. </xs:restriction>
181. </xs:simpleType>
182. <xs:simpleType name="resolutionTypeEnumEx">
183. <xs:union memberTypes="tns:resolutionTypeEnum xs:token" />
184. </xs:simpleType>
185. <xs:complexType name="resolutionRuleType">
186. <xs:sequence>
187. <xs:sequence minOccurs="0" maxOccurs="1">
188. <xs:element ref="ct:delimiter"/>
189. <xs:sequence minOccurs="0" maxOccurs="unbounded">
190. <xs:element ref="ct:delimiter"/>
191. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
192. </xs:sequence>
193. <xs:element ref="ct:end"/>
194. </xs:sequence>
195. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
196. </xs:sequence>
198. <xs:attribute name="type" type="tns:resolutionTypeEnumEx" use="required"/>
199. <xs:attribute name="role" type="tns:roleTypeEnumEx" use="optional"/>
200. <xs:anyAttribute processContents="lax"/>
201. </xs:complexType>
202. <xs:complexType name="resolutionRulesType">
203. <xs:sequence>
204. <xs:element name="resolutionRule" type="tns:resolutionRuleType" minOccurs="1" maxOccurs="unbounded"/>
205. </xs:sequence>
206. </xs:complexType>
207. <xs:simpleType name="memberTypeEnum">
208. <xs:restriction base="xs:token">
209. <xs:enumeration value="user"/>
210. <xs:enumeration value="domain"/>
211. <xs:enumeration value="sameEnterprise"/>
212. <xs:enumeration value="federated"/>
213. <xs:enumeration value="publicCloud"/>
214. <xs:enumeration value="everyone"/>
215. <xs:enumeration value="singleIdentityUser"/>
216. </xs:restriction>
217. </xs:simpleType>
218. <xs:simpleType name="memberTypeEnumEx">
219. <xs:union memberTypes="tns:memberTypeEnum xs:token" />
220. </xs:simpleType>
221. <xs:complexType name="memberType">
222. <xs:sequence>
223. <!--
224. Allowed containers for the member.
225. -->
226. <xs:element name="allowedContainers" type="tns:allowedContainersType"
227. minOccurs="1" maxOccurs="1"/>
228. <!--
229. Default container for the member.
230. -->
231. <xs:element name="defaultContainer" type="tns:containerIdType"
232. minOccurs="0" maxOccurs="1"/>
233. <!--
234. Occurrence constraint on the member. There can be only one such constraint.
235. Constraint check will be applied on all visible containers.
236. If constraint fails, member will be deleted from all containers and placed in
237. the default container.
238. -->
239. <xs:element name="occurrenceConstraint" type="tns:occurrenceConstraintType"
240. minOccurs="0" maxOccurs="1"/>
241. <xs:sequence minOccurs="0" maxOccurs="1">
242. <!-- W14 extension -->
243. <xs:element ref="ct:delimiter"/>
244. <xs:element name="sourceNetworks" type="tns:sourceNetworksType" minOccurs="0" maxOccurs="1"/>
245. <xs:element name="resolutionRules" type="tns:resolutionRulesType" minOccurs="0" maxOccurs="1"/>
246. <xs:sequence minOccurs="0" maxOccurs="unbounded">
247. <xs:element ref="ct:delimiter"/>
248. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
249. </xs:sequence>
250. <xs:element ref="ct:end"/>
251. </xs:sequence>
252. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
253. </xs:sequence>
254. <xs:attribute name="type" type="tns:memberTypeEnumEx" use="optional" />
256. <!--
257. If role is present, client should identify all the members of that role and
258. enforce occurrence constraint on those members.
259. -->
260. <xs:attribute name="role" type="tns:roleTypeEnumEx" use="optional" />
262. <xs:attribute name="uri" type="xs:anyURI" use="optional" />
263. <xs:anyAttribute processContents="lax"/>
264. </xs:complexType>
265. <xs:complexType name="membersType">
266. <xs:sequence>
267. <xs:element name="member" type="tns:memberType" minOccurs="1" maxOccurs="unbounded"/>
268. </xs:sequence>
269. </xs:complexType>
271. <xs:simpleType name="unboundedType">
272. <xs:union memberTypes="xs:unsignedInt">
273. <xs:simpleType>
274. <xs:restriction base="xs:token">
275. <xs:enumeration value="unbounded"/>
276. </xs:restriction>
277. </xs:simpleType>
278. </xs:union>
279. </xs:simpleType>
281. <xs:simpleType name="blockTypeEnum">
282. <xs:restriction base="xs:token">
283. <xs:enumeration value="invites"/>
284. <xs:enumeration value="subscriberPrompt"/>
285. </xs:restriction>
286. </xs:simpleType>
287. <xs:simpleType name="blockTypeEnumEx">
288. <xs:union memberTypes="tns:blockTypeEnum xs:token" />
289. </xs:simpleType>
290. <!--
291. Rule defining the blocking actions expected to be performed by clients.
292. -->
293. <xs:complexType name="blockRuleType">
294. <xs:sequence>
295. <!--
296. Containers to which this rule apply.
297. -->
298. <xs:element name="containers" type="tns:allowedContainersType" minOccurs="0" maxOccurs="1"/>
299. <!--
300. Source networks to which this rule apply.
301. -->
302. <xs:element name="sourceNetworks" type="tns:sourceNetworksType" minOccurs="0" maxOccurs="1"/>
304. <!--
305. Availability range to which this rule apply.
306. -->
307. <xs:element name="maxAvailability" type="tns:unboundedType" default="unbounded" minOccurs="0" maxOccurs="1"/>
308. <xs:element name="minAvailability" type="tns:unboundedType" default="0" minOccurs="0" maxOccurs="1"/>
309. <xs:sequence minOccurs="0" maxOccurs="1">
310. <xs:element ref="ct:delimiter"/>
311. <xs:sequence minOccurs="0" maxOccurs="unbounded">
312. <xs:element ref="ct:delimiter"/>
313. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
314. </xs:sequence>
315. <xs:element ref="ct:end"/>
316. </xs:sequence>
317. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
318. </xs:sequence>
319. <xs:attribute name="type" type="tns:blockTypeEnumEx" use="required" />
321. <xs:anyAttribute processContents="lax"/>
322. </xs:complexType>
323. <xs:complexType name="blockRulesType">
324. <xs:sequence>
325. <xs:element name="blockRule" type="tns:blockRuleType" minOccurs="1" maxOccurs="unbounded"/>
326. </xs:sequence>
327. </xs:complexType>
329. <xs:complexType name="containerManifestType">
330. <xs:sequence>
331. <xs:element name="containers" type="tns:containersType" minOccurs="0" maxOccurs="1"/>
332. <xs:element name="members" type="tns:membersType" minOccurs="0" maxOccurs="1"/>
333. <xs:sequence minOccurs="0" maxOccurs="1">
334. <!-- W14 extension -->
335. <xs:element ref="ct:delimiter"/>
336. <xs:element name="blockRules" type="tns:blockRulesType" minOccurs="0" maxOccurs="1"/>
337. <xs:element name="rolePrecedence" type="tns:rolePrecedenceType" minOccurs="0" maxOccurs="1"/>
338. <xs:sequence minOccurs="0" maxOccurs="unbounded">
339. <xs:element ref="ct:delimiter"/>
340. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
341. </xs:sequence>
342. <xs:element ref="ct:end"/>
343. </xs:sequence>
344. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
345. </xs:sequence>
346. <xs:anyAttribute processContents="lax"/>
347. </xs:complexType>
348. <xs:complexType name="containerManifestListType">
349. <xs:sequence>
350. <xs:element name="containerManifest" type="tns:containerManifestType" minOccurs="1" maxOccurs="1"/>
351. <xs:sequence minOccurs="0" maxOccurs="1">
352. <xs:sequence minOccurs="0" maxOccurs="unbounded">
353. <xs:element ref="ct:delimiter"/>
354. <xs:any namespace="##targetNamespace" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
355. </xs:sequence>
356. <xs:element ref="ct:end"/>
357. </xs:sequence>
358. <xs:element ref="ct:extension" minOccurs="0" maxOccurs="1"/>
359. </xs:sequence>
361. <!--
362. Client should not proceed with the parsing if its version is less than
363. the version in the xml. Version mismatch is an indication that
364. format is not compatible.
365. Missing minSupportClientVersion will be treated as 0.0.0.0, that is, always compatible.
366. -->
367. <xs:attribute name="minSupportedClientVersion" type="xs:token" use="optional"/>
368. <xs:attribute name="majorVersion" type="xs:unsignedInt" use="optional"/>
369. <xs:attribute name="minorVersion" type="xs:unsignedInt" use="optional"/>
370. <xs:anyAttribute processContents="lax"/>
371. </xs:complexType>
373. <xs:element name="containerManifestList" type="tns:containerManifestListType">
374. </xs:element>

</xs:schema>

The following XSD schema fragment defines the schema for **commontypes** referred by the **containerManifestList** XSD schema.

1. <?xml version="1.0" encoding="UTF-8"?>
2. <xs:schema
3. targetNamespace="http://schemas.microsoft.com/2006/09/sip/commontypes"
4. xmlns:tns="http://schemas.microsoft.com/2006/09/sip/commontypes"
5. xmlns:xs="http://www.w3.org/2001/XMLSchema"
6. elementFormDefault="qualified"
7. attributeFormDefault="unqualified"
8. >
9. <xs:element name="delimiter">
10. <xs:complexType />
11. </xs:element>
12. <xs:element name="end">
13. <xs:complexType />
14. </xs:element>
15. <xs:complexType name="extensionType">
16. <xs:sequence>
17. <xs:any processContents="lax" minOccurs="1"
18. maxOccurs="unbounded" namespace="##other"/>
19. </xs:sequence>
20. </xs:complexType>
21. <xs:element name="extension" type="tns:extensionType"/>

</xs:schema>

**containerManifestList:** A list of all **containerManifests** available.

**containerManifest:** A manifest that provides the list of containers and members. The UAC SHOULD create containers and its members based on the constraints defined in the manifest.

**majorVersion (optional):** Ignored.

**minorVersion (optional):** Ignored.

**minSupportedClientVersion (optional):** The minimum version of the UAC that can use the container manifest.

**containers:** The wrapper for the list of **container** elements.

**container:** Each **container** element describes a container.

* **id (required):** This unsigned short integer uniquely identifies a container.
* **Visible (optional):** Container attribute which, when "true", designates the container as a member of the set of containers identified with allowed containers **type** equal to "visibleContainers". The UAC also interprets this attribute as those containers that are displayed in its access level view.
* **avoidRedundantMembers (optional):** This **string** indicates whether a container MAY have redundant membership. For example, redundancy occurs when a domain, as well as a user who is in that domain, are associated with a container. The value MUST be "true" or "false". The UAC SHOULD clean up redundant members from containers if the setting is "true".
* **blocked (optional):** Ignored.

**members:** The wrapper for the list of **member** elements.

**member:** Describes a container member.

**type (optional):** This string value specifies the type of the member. The following values are defined:

* **user:** A SIP URI.
* **domain:** A SIP domain.
* **sameEnterprise:** All users from the same enterprise.
* **federated:** All federated users.
* **publicCloud:** All public cloud users.
* **everyone:** All users.
* **singleIdentityUser:** A user who has just one SIP uri for that particular identity. PIC contacts that have more than one SIP uri that belong to the identity SHOULD NOT be processed using this rule.

**role (optional):** This string value specifies the role of the member. Note that container members matching to a member by **role** attribute take precedence over the corresponding match to member by **type** attribute. The following values are defined:

* **delegate:** A user entity currently configured as a delegate for the local user.
* **buddy:** A user entity currently a member of the local user’s buddy list.

**allowedContainers:** The list of containers to which the member MAY be added.

* **type (required):** A string that describes the access control element. The following values are defined:
  + **custom:** The list of containers is specified within the **allowedContainers** element.
  + **visibleContainers:** The list of containers for the member are the same as the subset of child elements of the containers element with the **Visible** element set to "true".
* **container (optional):** The container to which the member MAY be added. There MAY be more than one element. The list of containers is specified when the **type** is "custom."
* **id (required):** This unsigned short integer uniquely identifies a container.

**defaultContainer (optional):** The default container to which the member MAY be added if the constraint is not satisfied for the member.

* **id (required):** An unsigned integer that is the container identifier.

**occurrenceConstraint (optional):** The mandatory membership occurrence rate the related type or role the member is present in.

* **type (required):** A string that gives the number of occurrences mandated for the given type or role in a given container. The value MUST be "zero", "one", or "zeroOrOne".
  + When "Zero", a given container MUST have zero members of the related type or role. This value SHOULD be ignored by a UAC.
  + When "One", a given container MUST have one member of the related type or role.
  + When "zeroOrOne", a given container MAY have no members of the related type or role *or* it MAY have one member of a related type or role. It MUST NOT have more than one member of a related type or role.

**sourceNetworks (optional):** A wrapper for the optional list of source networks to which the member belongs to satisfy the constraint.

**sourceNetwork:** Describes a source network.

* **type (required):** A string that describes the source network. The following values are defined:
  + **sameEnterprise:** All users from the same enterprise.
  + **federated:** All federated users.
  + **publicCloud:** All public cloud users.

**resolutionRules (optional):** A wrapper for the optional list of resolution rules that are applied if the constraint is not satisfied for the member.

**resolutionRule:** Describes a resolution rule.

* **type (required):** The **type** attribute is a string that describes the resolution rule. The following values are defined:
  + **removeFromContainer:** The member is removed from the container if the constraint is not satisfied for the member.
  + **moveToDefaultContainer:** The member is moved to the default container if the constraint is not satisfied for the member.
  + **forceRole:** The member is forced into the role specified by the **role** element.
* **role (optional):** A string that describes the role the member is forced into when the constraint is not satisfied for the member. This attribute is set when the **type** attribute has the value "forceRole". Possible values for the role attribute are "delegate" and "buddy".

**blockRules (optional):** The wrapper for the list of **blockRule** elements.

**blockRule:** Describes a **blockRule** element.

* **type (required):** The **type** attribute is a string that describes the actions that are blocked. The following values are defined:
  + **invites:** Invites are blocked when the rule matches.
  + **subscriberPrompt:** Subscriber prompts are blocked when the rule matches.
* **containers (optional):** The actions from the members of specified containers are blocked.
* **sourceNetworks (optional):** The actions from the members of specified source networks are blocked.
* **maxAvailability (optional):** Defines the upper bound of the availability range of the publisher for which this rule applies.
* **minAvailability (optional):** Defines the lower bound of the availability range of the publisher for which this rule applies.

**rolePrecedence (optional):** The wrapper for the list of **rolePrecedenceEntry** elements that defines the order of precedence for roles when a member maps to multiple roles.

**rolePrecedenceEntry:** Describes a role.

* **type (required):** A string that specifies a role. The possible values are "delegate" and "buddy".

For a detailed example, see section 4.2.2.

##### Data Model for persistentChatConfiguration provisionGroup

1. provisionGroup (name=’persistentChatConfiguration’)

|

|-- propertyEntryList

| |-- property

| | |- name

The following [**XSD**](#gt_c7e91c99-e45a-44c2-a08a-c34f137a2cae) schema fragment defines the requirements to which a **persistentChatConfiguration** **provisionGroup** element [**XML document**](#gt_8fa90ece-7a01-4c00-af85-adbf0ed01882) SHOULD conform.[<137>](#Appendix_A_137" \o "Product behavior note 137)

1. <?xml version="1.0" encoding="utf-16"?>
2. <xs:schema xmlns:tns="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" targetNamespace="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" xmlns:xs="http://www.w3.org/2001/XMLSchema">
3. <xs:complexType name="propertyEntryType">
4. <xs:simpleContent>
5. <xs:extension base="xs:string">
6. <xs:attribute name="name" type="xs:string" use="required" />
7. </xs:extension>
8. </xs:simpleContent>
9. </xs:complexType>
10. <xs:complexType name="propertyEntryListType">
11. <xs:sequence>
12. <xs:element name="property" type="tns:propertyEntryType" maxOccurs="unbounded"/>
13. </xs:sequence>
14. </xs:complexType>
15. <xs:element name="propertyEntryList" type="tns:propertyEntryListType" />
16. </xs:schema>

**DefaultPersistentChatPoolUri:** Specifies the default persistent chat pool URI for the client to connect to.

**EnablePersistentChat:** Specifies whether persistent chat is enabled for the client. The value MUST be "true" or "false".

**PersistentChatPoolUris:** Specifies the [**URIs**](#gt_e18af8e8-01d7-4f91-8a1e-0fb21b191f95) of all the persistent chat pools that the client can connect to, separated by a single whitespace.

**PersistentChatWebManagerUriInt:** Specifies the internally accessible URI that serves the chat room management Web application.[<138>](#Appendix_A_138" \o "Product behavior note 138) This URI SHOULD be used by the client to connect to the Web application when signed on from inside the network.

**PersistentChatWebManagerUriExt:** Specifies the externally accessible URI that serves the chat room management Web application.[<139>](#Appendix_A_139" \o "Product behavior note 139). This URI SHOULD be used by the client to connect to the Web application when signed on from outside the network.

For a detailed example, see section [4.2.2](#Section_1be938c11a58457f855c5f4665f071f8).

##### Data Model for publicProviders provisionGroup

1. provisionGroup (name=’publicProviders’)

|

|-- propertyEntryList

| |-- property[name="publicProviders"]

| | |-- CDATA

| | | |-- PublicProviders

| | | | |-- PublicProvider

| | | | | | - Name

| | | | | | - ProxyFqdn

| | | | | | - IconUrl

| | | | | | - NameDecorationDomain

| | | | | | - NameDecorationRoutingDomain

| | | | | | - NameDecorationExcludedDomainList

The following [**XSD**](#gt_c7e91c99-e45a-44c2-a08a-c34f137a2cae) schema fragment defines the requirements to which a **publicProviders** **provisionGroup** element [**XML document**](#gt_8fa90ece-7a01-4c00-af85-adbf0ed01882) SHOULD conform.[<140>](#Appendix_A_140" \o "Product behavior note 140)

1. <?xml version="1.0" encoding="utf-16"?>
2. <xs:schema xmlns:tns="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" targetNamespace="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" xmlns:xs="http://www.w3.org/2001/XMLSchema">
3. <xs:complexType name="propertyEntryType">
4. <xs:simpleContent>
5. <xs:extension base="xs:string">
6. <xs:attribute name="name" type="xs:string" use="required" />
7. </xs:extension>
8. </xs:simpleContent>
9. </xs:complexType>
10. <xs:complexType name="propertyEntryListType">
11. <xs:sequence>
12. <xs:element name="property" type="tns:propertyEntryType" maxOccurs="unbounded"/>
13. </xs:sequence>
14. </xs:complexType>

    <xs:element name="propertyEntryList" type="tns:propertyEntryListType" />

</xs:schema>

The following XSD schema fragment defines the requirements to which a **publicProviders** **PublicProviders** element XML document SHOULD conform.[<141>](#Appendix_A_141" \o "Product behavior note 141)

1. <?xml version="1.0" encoding="utf-16"?>
2. <xs:schema xmlns:tns="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" targetNamespace="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification" xmlns:xs="http://www.w3.org/2001/XMLSchema">
3. <xs:complexType name="publicProvidersType">
4. <xs:sequence>
5. <xs:element name="PublicProvider" type="tns:publicProviderType" minOccurs="0" maxOccurs="unbounded" />
6. </xs:sequence>
7. </xs:complexType>
8. <xs:complexType name="publicProviderType">
9. <xs:attribute name="Name" type="xs:string" use="required" />
10. <xs:attribute name="ProxyFqdn" type="xs:string" use="required" />
11. <xs:attribute name="IconUrl" type="xs:string" use="optional" />
12. <xs:attribute name="NameDecorationDomain" type="xs:string" use="optional" />
13. <xs:attribute name="NameDecorationRoutingDomain" type="xs:string" use="optional" />
14. <xs:attribute name="NameDecorationExcludedDomainList" type="xs:string" use="optional" />
15. </xs:complexType>
16. <xs:element name="PublicProviders" type="tns:publicProvidersType" />
17. </xs:schema>

**Name:** The name of the public provider.

**ProxyFqdn:** Specifies the [**fully qualified domain name (FQDN)**](#gt_1769aec9-237e-44ed-9014-1abb3ec6de6e) that is used for presence requests for this public provider.

**IconUrl:** Specifies the URL of an icon the client uses to graphically indicate the location of contacts.

**NameDecorationDomain:** Specifies an FQDN the client displays for the public provider.

**NameDecorationRoutingDomain:** Specifies an FQDN to be used to transform the user name of a public provider in the form of username@domain into username(domain)@NameDecorationRoutingDomain as its SIP URI.

**NameDecorationExcludedDomainList:** Specifies a comma-separated list of FQDNs. Protocol clients that attempt to route users from public providers belonging to one of the domains on this list are routed without the name transformation described in the preceding paragraph.

# Protocol Details

## Basic Registration

The [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) accepts SIP [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) requests, processes them, and responds to them as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410), with the additional extensions defined as follows. The basic end-to-end call-flow is shown in the following diagram.

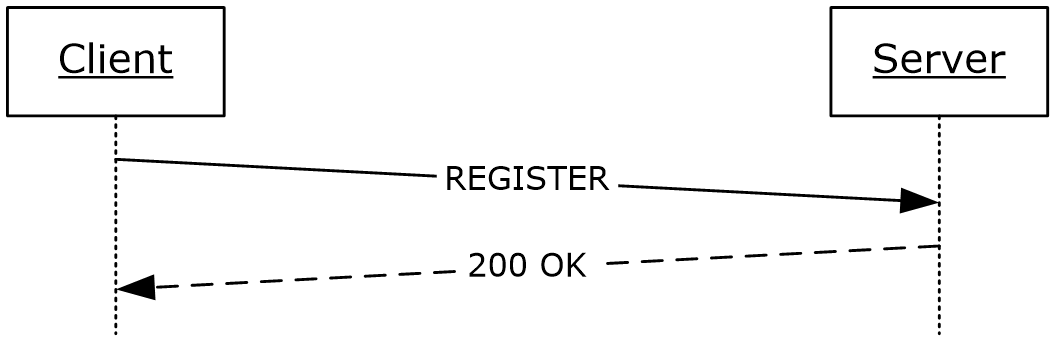


Figure 1: Basic register call flow

### Client Role

The [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) registers and refreshes a binding with the [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 10. The UAC SHOULD select [**endpoint identifier (EPID)**](#gt_a9fa2477-8bb1-4c67-a679-18a1d2174d46) and SIP.INSTANCE endpoint identifiers, as described in [[MS-SIPRE]](%5bMS-SIPRE%5d.pdf#Section_ab4ab24937964ed18cecf496d81a1a83) section 3.2.

The UAC MUST have exactly one active [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) dialog as specified in [RFC3261] for the selected endpoint identifier (EPID).

As part of the registration process, the UAC MUST establish and maintain a [**security association (SA)**](#gt_67cbf867-7a49-41f3-a68f-37b5f9035acb) with the registrar using the [**NT LAN Manager (NTLM) Authentication Protocol**](#gt_fff710f9-e3d1-4991-99a2-009768d57585) or the [**Kerberos**](#gt_d6a282ce-b1da-41e1-b05a-22f777a5c1fe) authentication protocol, as specified in [[MS-SIPAE]](%5bMS-SIPAE%5d.pdf#Section_ba3e9821fa854e0fa80c5a4c720a00bd) section 3.2.

#### Abstract Data Model

This section describes a conceptual model of possible data organization that an implementation maintains to participate in this protocol. The described organization is provided to facilitate the explanation of how the protocol behaves. This protocol does not mandate that implementations adhere to this model as long as their external behavior is consistent with that described in this protocol.

The [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) SHOULD keep the following state:

* **Epid:** A string that is a part of the [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) endpoint identifier. The format and generation of **Epid** are described in [[MS-SIPRE]](%5bMS-SIPRE%5d.pdf#Section_ab4ab24937964ed18cecf496d81a1a83) section 3.2.3.1.
* **SIP.INSTANCE:** A string that is a part of the SIP endpoint identifier. The format and generation of **SIP.INSTANCE** are described in [MS-SIPRE] section 3.2.
* **GRUU:** A string that is part of the SIP endpoint identifier. It is generated by the [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) and persisted on the client. The format and generation of **GRUU** are described in [MS-SIPRE] section 3.4.
* **Presence-Service-Available:**[<142>](#Appendix_A_142" \o "Product behavior note 142) A Boolean that is generated by the registrarand persisted on the client, and is updated as described in section [3.1.1.5.1](#Section_e36b9c78be464e759f07f3309ea04f9f).
* **Primary-Cluster-Type:**[<143>](#Appendix_A_143" \o "Product behavior note 143) An identifier associated with the UAC that is generated by the registrar and persisted on the client, and is updated as described in section 3.1.1.5.1.
* **Is-Connected-to-Primary:**[<144>](#Appendix_A_144" \o "Product behavior note 144) A Boolean flag associated with the UAC that is generated by the registrarand persisted on the client, and is updated as described in section 3.1.1.5.1.

#### Timers

The [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) SHOULD start and maintain a [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) registration refresh timer, as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 10.2.4.

If the UAC specifies support for **ms-keep-alive**, as specified in [[MS-CONMGMT]](%5bMS-CONMGMT%5d.pdf#Section_9f6ebbf090004dc886cdebfe22467cbf) section 2.2.1, it SHOULD maintain a whitespace keep-alive timer for sending whitespaces, as specified in [MS-CONMGMT] section 2.2.2.

#### Initialization

The [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) instance MUST generate an [**EPID**](#gt_a9fa2477-8bb1-4c67-a679-18a1d2174d46) and a **SIP.INSTANCE** value before sending any [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request, as described in [[MS-SIPRE]](%5bMS-SIPRE%5d.pdf#Section_ab4ab24937964ed18cecf496d81a1a83) section 3.3.3.1.

#### Higher-Layer Triggered Events

Except as specified in the following subsections, processing rules follow [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 10.1.

##### Constructing the Outgoing SIP REGISTER Request

The [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) MUST construct the outgoing [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request, as specified in section [2.2.1.1](#Section_4e2102b7f05b4f33a12fb4ab2e63629b).

It MUST then insert the **Epid** and **SIP.INSTANCE** values in the REGISTER request, as specified in [[MS-SIPRE]](%5bMS-SIPRE%5d.pdf#Section_ab4ab24937964ed18cecf496d81a1a83) section 3.2 and [MS-SIPRE] section 3.3.

The UAC SHOULD insert a **User-Agent** header as specified in section [3.4.1.5.1](#Section_0f5bf153bc914a28bfaa62ae94c2f761).

The UAC SHOULD discover its subnet address and insert an **Ms-Subnet** header. The UAC MUST populate the **Ms-Subnet** header by discovering the IP Subnet Address, as specified in [[RFC950]](https://go.microsoft.com/fwlink/?LinkId=90501), of the TCP connection over which the SIP REGISTER Request will be sent.

The UAC SHOULD insert a **Ms-Device-Info** header as specified in section [2.2.1.7](#Section_bdffb2c277184f7f9fa900ff161449c9). The UAC MUST populate the **Ms-Device-Info** header by discovering the following:

* The MAC address, which is the physical address of the network interface over which the SIP REGISTER request will be sent.
* The version, which is a literal string that describes the version of the UAC.
* The vendor identifier, which is a literal string that identifies the manufacturer of the UAC.

It MUST then send the SIP REGISTER request and process the response as specified in the following subsection.

#### Message Processing Events and Sequencing Rules

Except as specified in the following subsections, the processing rules follow the procedures specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 10.2.7.

##### Processing the SIP REGISTER Response

The [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) SHOULD extract the contact **GRUU** returned by the [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) and use it subsequently as specified in [[IETFDRAFT-OUGRUAUSIP-10]](https://go.microsoft.com/fwlink/?LinkId=114611) section 8.

The UAC MUST retrieve the registration expiry timer value, as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 10, from the [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) response. It MUST then set the registration expiry timer value less than the value specified in the [**200 OK**](#gt_d9c398c0-9009-4dc6-9340-36423671182b) response to the REGISTER request.

The UAC SHOULD process the **ms-keep-alive** header, as specified in [[MS-CONMGMT]](%5bMS-CONMGMT%5d.pdf#Section_9f6ebbf090004dc886cdebfe22467cbf) section 2.2.1, returned by the registrar as specified in [MS-CONMGMT] section 3.4.5, and use it to initialize the keep-alive timer.

If a **Presence-State** [**header field**](#gt_5bd6400e-5d24-407a-b5a8-362a9d486d83) is present in the 200 success response, the UAC MUST take the following additional actions:

* If the value of **Register-Action** is "added" or "fixed", and if the REGISTER operation is for the purpose of refreshing a binding instead of adding a new binding, the UAC MUST treat this as a registration failure and all existing [**dialogs**](#gt_71ad645f-db5b-4e9f-9b3d-887039ada331) SHOULD be considered terminated. The UAC SHOULD restart registration.
* If the value of **Primary-Cluster-Type** is "central", the UAC SHOULD[<145>](#Appendix_A_145" \o "Product behavior note 145) treat this as an indication of the user being provisioned on a [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) at a central site and MUST update the **Primary-Cluster-Type** field to "central". If the value is "remote", the UAC MUST treat this as an indication that the user is being provisioned at a remote site and MUST update the **Primary-Cluster-Type** field to "remote".
* If the value of **Is-Connected-to-Primary** is "yes", the UAC SHOULD[<146>](#Appendix_A_146" \o "Product behavior note 146) treat the [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee) as being connected to the user’s primary server and MUST update the **Is-Connected-to-Primary** field to "true". If the value is "no", the UAC MUST[<147>](#Appendix_A_147" \o "Product behavior note 147) treat the endpoint as not being connected to the user’s primary server and MUST update the **Is-Connected-to-Primary** field to "false".
* If the value of **user-services-state** is "unavailable", the UAC SHOULD[<148>](#Appendix_A_148" \o "Product behavior note 148) set the **Presence-Service**-**Available** field to "false".
* If **user-services-state** is NOT present, the UAC SHOULD[<149>](#Appendix_A_149" \o "Product behavior note 149) set the **Presence-Service-Available** field to "true".

After the UAC receives a 200 response for the first REGISTER it sent, the UAC SHOULD attempt to establish a contact or group [**subscription**](#gt_f362c255-5746-44db-aa04-e8060543a19c), as specified in [[MS-SIP]](%5bMS-SIP%5d.pdf#Section_0d72fb5512ba49f1850df0bf3110bb1f) section [3.3](http://msdn.microsoft.com/en-us/library/2f216944-e6ef-4a85-bb10-1482fd0cf61c/), and SHOULD attempt to establish a self-subscription, as specified in [[MS-PRES]](%5bMS-PRES%5d.pdf#Section_741d682d590b4600916e8deeee426a5c) section 3.3, to retrieve the user's contact and group information and published presence information.

If the **Presence-Service-Available** field is set to "false", the UAC SHOULD[<150>](#Appendix_A_150" \o "Product behavior note 150) treat itself to be in [**survivable mode**](#gt_65895f46-d1d4-45b3-84ba-8165002aee88) and SHOULD NOT attempt to establish any subscription except a self-subscription, as specified in [MS-PRES] section 3.3.

If the self-subscription fails to establish, the UAC is not able to retrieve the published presence information, and the UAC SHOULD[<151>](#Appendix_A_151" \o "Product behavior note 151) remove the binding by sending a REGISTER request with **Expiry** value of 0, as specified in [RFC3261] section 10.2.2. If the contact or group subscription fails, contacts and groups information is not available.

If the self-subscription fails to establish and the UAC is not in survivable mode, the UAC SHOULD[<152>](#Appendix_A_152" \o "Product behavior note 152) retry the self-subscription at a randomized interval. If, however, the self-subscription fails to establish while the UAC is in survivable mode, it SHOULD[<153>](#Appendix_A_153" \o "Product behavior note 153) wait for the retry until the end of survivable mode, as indicated by a response to a future REGISTER with the **Presence-Service-Available** field set to "false", as described in the preceding paragraphs.

This protocol does not mandate how implementations operate on the **Primary-Cluster-Type** and **Is-Connected-to-Primary** fields as long as their external behavior is consistent with that described in this protocol.

#### Timer Events

The [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) SHOULD refresh the registration whenever the registration expiry timer fires, as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 10.2.4. The UAC MUST use the same TCP connection that it sent the dialog-creating REGISTER request through for sending registration refresh requests.

The UAC SHOULD periodically send whitespaces whenever the keep-alive timer fires, as specified in [[MS-CONMGMT]](%5bMS-CONMGMT%5d.pdf#Section_9f6ebbf090004dc886cdebfe22467cbf) section 3.4.5.4.

#### Other Local Events

None.

### Server Role

#### Abstract Data Model

This section describes a conceptual model of possible data organization that an implementation maintains to participate in this protocol. The described organization is provided to facilitate the explanation of how the protocol behaves. This protocol does not mandate that implementations adhere to this model, as long as their external behavior is consistent with that described in this protocol.

The registrar SHOULD keep the following states for each [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb):

* **SIP Endpoint identifier:** An identifier for a UAC. It MAY be a structure with the combination of an [**EPID**](#gt_a9fa2477-8bb1-4c67-a679-18a1d2174d46), as described in [[MS-SIPRE]](%5bMS-SIPRE%5d.pdf#Section_ab4ab24937964ed18cecf496d81a1a83) section 3.2, a **SIP.INSTANCE**, as described in [MS-SIPRE] section 3.2, and a [**GRUU**](#gt_72fbc9c5-8485-465c-8b46-64895c8d5102), as described in [MS-SIPRE] section 3.4.
* **Routable:** A Boolean flag that is set to "true" whenever a valid registration is associated with the UAC, and is set to "false" whenever the registration associated with the UAC ceases to exist.
* **Presence-Service-Available:**[<154>](#Appendix_A_154" \o "Product behavior note 154) A Boolean flag that is set to "true" when the presence service associated with the user is available, and is set to "false" whenever the presence service associated with the user is unavailable.
* **Primary-Cluster-Type:**[<155>](#Appendix_A_155" \o "Product behavior note 155) An identifier for the user associated with the UAC that is set to "central" if the user’s home [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) is located in a central site, and is set to "remote" if the user’s home server is located in a remote site.
* **Is-Connected-to-Primary:**[<156>](#Appendix_A_156" \o "Product behavior note 156) A Boolean flag that is set to "true" when the server accepting the registration is the user’s home server, and is set to "false" when the server accepting the registration is not the user’s home server.
* **Supports survivable mode:**[<157>](#Appendix_A_157" \o "Product behavior note 157) A Boolean flag that is set to "true" when the UAC indicates support for registration without the availability of the presence component, as defined in section [2.2.1.5](#Section_8e478238a6a44127b1d7fd465ba1eaaa), and is set to "false" when the UAC does not support registration without the availability of the presence component.

#### Timers

The [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) SHOULD keep a registration timer for each binding. The registration expiry timer value is exchanged as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 10. The registrar MUST specify an expiry value for the binding of no less than 30 seconds. When the registrar receives a [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request for a binding, the registrar MUST refresh the registration expiration timer for the associated binding.

#### Initialization

None.

#### Higher-Layer Triggered Events

The message validation rules for processing an incoming [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request follow the procedures specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 10.3 as well as [[MS-SIPRE]](%5bMS-SIPRE%5d.pdf#Section_ab4ab24937964ed18cecf496d81a1a83) sections 3.4 and 3.5.

#### Message Processing Events and Sequencing Rules

Except as specified in the following subsections, the processing rules follow the procedures specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 10.3 and [[IETFDRAFT-OUGRUAUSIP-10]](https://go.microsoft.com/fwlink/?LinkId=114611) section 7.1.2.1.

##### Processing the REGISTER Request

The [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) MUST establish and maintain an [**SA**](#gt_67cbf867-7a49-41f3-a68f-37b5f9035acb) with the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) using the [**NTLM**](#gt_fff710f9-e3d1-4991-99a2-009768d57585) or the [**Kerberos**](#gt_d6a282ce-b1da-41e1-b05a-22f777a5c1fe) authentication protocol, as specified in [[MS-SIPAE]](%5bMS-SIPAE%5d.pdf#Section_ba3e9821fa854e0fa80c5a4c720a00bd) section 3.2.

When the SA is established, the registrar MUST validate the request according to the rules specified in section [2.2.1.1](#Section_4e2102b7f05b4f33a12fb4ab2e63629b).

If the validation fails after the registrar inspects the [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request headers, as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 8.2.2, the registrar SHOULD reject the request with an appropriate error response, as specified in [RFC3261] section 8.2.2. The outgoing [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) error response SHOULD include an [**ms-diagnostics header**](#gt_6489f325-9fd7-4f83-830a-334e9336f7c3) or an [**ms-diagnostics-public header**](#gt_adc66849-619f-4770-a7cf-1d5d0cbd99ce), as described in [[MS-OCER]](%5bMS-OCER%5d.pdf#Section_8b2b5ee560514f66b51e71102ef7782f) section 2.2.1. The **ErrorId** to be included in these headers is also listed in the following table.

Special error responses are shown in the following table.

| SIP response code | ErrorId | Reason |
| --- | --- | --- |
| 400 | 4010 | Missing endpoint identifier (**Epid** and **SIP.INSTANCE**). |
| 489 | 4055 | Event header is not set to "registration". |
| 421 | 2057 | Supported header does not have **gruu-10**, but **msrtc-event-categories** is present. |

The registrar retrieves the **Epid** and **SIP.INSTANCE** value from the REGISTER request. The registrar tries to find an existing SIP [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee) with an identifier that contains an identical **Epid** and **SIP.INSTANCE**. If none is found, this is a new binding for a new UAC. The registrar generates a [**GRUU**](#gt_72fbc9c5-8485-465c-8b46-64895c8d5102) as described in [[MS-SIPRE]](%5bMS-SIPRE%5d.pdf#Section_ab4ab24937964ed18cecf496d81a1a83) section 2.2.3, and stores the [**EPID**](#gt_a9fa2477-8bb1-4c67-a679-18a1d2174d46), **SIP.INSTANCE**, and GRUU in a new SIP endpoint identifier. It then processes the request and, if the request is accepted, it SHOULD set the **Routable** field of the SIP endpoint identifier to "true".

If the registrar finds an existing SIP endpoint identifier, this is either a REGISTER refresh or a new REGISTER for the same endpoint. In either case, the registrar processes the request as specified in [RFC3261] section 10.3. If it accepts the request, it SHOULD set the **Routable** field of the SIP endpoint identifier to "true".

The [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) replaces bindings using **SIP.INSTANCE** as the primary key.

If the **Supports survivable mode** field for the UAC is set to "false" and **Presence Service Available** is "false", the registrar SHOULD[<158>](#Appendix_A_158" \o "Product behavior note 158) reject the request with a 503 Service Unavailable, as specified in [RFC3261] Section 21.5.4. The **ms-diagnostics-public ErrorId** SHOULD be set to "4164".

If the UAC supports [**survivable mode**](#gt_65895f46-d1d4-45b3-84ba-8165002aee88), the **registrar** SHOULD[<159>](#Appendix_A_159" \o "Product behavior note 159) notify the endpoint if the **Presence-Service-Available** transitions from "true" to "false" using a [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628) with the **userservices-unavailable** event, as defined in section [2.2.1.13](#Section_405097aba4184247b79e95ff4179b169).

The registrar SHOULD[<160>](#Appendix_A_160" \o "Product behavior note 160) retrieve the MAC address, version and vendor identifier from the **Ms-Device-Info** header in the REGISTER request. The information stored in the **Ms-Device-Info** header SHOULD be used by the server to track the devices that are communicating with it.

The [**200 OK**](#gt_d9c398c0-9009-4dc6-9340-36423671182b) response for the REGISTER request is generated as specified in [RFC3261] section 10.3, and the following additional rules:

* The registrar retrieves the GRUU from the SIP endpoint identifier and returns the GRUU as specified in [[IETFDRAFT-OUGRUAUSIP-10]](https://go.microsoft.com/fwlink/?LinkId=114611) section 8.2 in the response to the REGISTER request.
* In addition, the registrar SHOULD insert a **Presence-State** header field into the 200 response to the REGISTER request.
  + The value of the **Register-Action** field of the **Presence-State** header is generated as follows:
    - If the REGISTER created a new SIP endpoint, the value is "added".
    - If the REGISTER adds a new binding to an existing SIP endpoint and the **Routable** field changed from "false" to "true" during processing, the value is "fixed".
    - If the REGISTER refreshes an existing binding for an existing SIP endpoint, the value is "refreshed".
  + The **Primary-Cluster-Type**[<161>](#Appendix_A_161" \o "Product behavior note 161) field of the **Presence-State** header is generated as follows.
    - If the **Primary-Cluster-Type** field is set to "central", the value is "central".
    - If the **Primary-Cluster-Type** field is set to "remote", the value is "remote".
  + The **Is-Connected-To-Primary**[<162>](#Appendix_A_162" \o "Product behavior note 162) field of the **Presence-State** header is generated as follows.
    - If the **Is-Connected-To-Primary** field is "true", the value is "yes".
    - If the **Is-Connected-To-Primary** field is "false", the value is "no".
  + The **user-services-state**[<163>](#Appendix_A_163" \o "Product behavior note 163) field of the **Presence-State** header is generated as follows.
    - The **user-services-state** field is set to "unavailable" if the **Presence-Service-State** field is set to "false".
    - The **user-services-state** field of the **Presence-State** header SHOULD NOT be set if the **Presence-Service-State** field is set to true.

The registrar MAY perform additional actions based on the version of the UAC, as described in section [3.4.2.5](#Section_fc30ea9077724e918b911ae89a2d3974).

#### Timer Events

When the [**SIP registrar's**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) expiry timer for a binding expires, the registrar MUST remove the binding and clear any state related to the binding. If the **routable** field was previously set to "true", it SHOULD be changed to "false". If the keep-alive timer specified in[[MS-CONMGMT]](%5bMS-CONMGMT%5d.pdf#Section_9f6ebbf090004dc886cdebfe22467cbf) section 3.4.5.2 fires, the binding SHOULD be removed.

#### Other Local Events

None.

## Removing a Binding from the Registrar

The [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) SHOULD send a deregister [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628) to the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) if it becomes necessary to remove a binding prematurely for any reason. Some of the reasons when this MAY happen are illustrated by the following examples, which are described in section [2.2.1.13](#Section_405097aba4184247b79e95ff4179b169).

* The registrar enforces a quota on the number of [**endpoints**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee) from which a user MAY be registered. If this quota is exceeded, the registrar might use a policy of deregistering the oldest endpoint. In this case, the message body is set to "unregistered".
* The administrator disables the user for policy reasons, such as when a user leaves the organization. In such cases, the registrar might automatically deregister all the endpoints of the user when the policy change is applied. The message body is set to "rejected".
* The user is being moved across [**servers**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703). This is possible if the system supports the notion of a dedicated "home server" for each user. In such cases, when the user is moved across servers, the existing endpoints in the previous server might be automatically deregistered. The message body is set to "deactivated".
* The user is being moved across registrars. This is possible if the system supports the notion of a dedicated "home registrar" for each user. In such cases, when the user is moved across registrars, the existing endpoints in the previous registrar might be automatically deregistered. The message body is set to "preferred-registrar-change". The **P-Preferred-Registrar** header indicates the new home registrar for the user.[<164>](#Appendix_A_164" \o "Product behavior note 164)
* The service responsible for presence of a user is unavailable and the endpoint has not indicated support for [**survivable mode**](#gt_65895f46-d1d4-45b3-84ba-8165002aee88). In such cases, the endpoints that do not indicate support are automatically deregistered. The message body is set to "userservices-unavailable".[<165>](#Appendix_A_165" \o "Product behavior note 165)

**Note:** These reasons are illustrative and the list of examples is not comprehensive.

When the registrar deregisters an endpoint, it SHOULD send a deregister NOTIFY to the UAC indicating that the registration has terminated.

### Client Role

This section follows the behavior described in endnote [<166>](#Appendix_A_166" \o "Product behavior note 166).

#### Abstract Data Model

None.

#### Timers

None.

#### Initialization

None.

#### Higher-Layer Triggered Events

None.

#### Message Processing Events and Sequencing Rules

This section follows the behavior described in endnote [<167>](#Appendix_A_167" \o "Product behavior note 167).

No extra sequencing rules beyond those specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 10.2.2 are required, except when a **P-Preferred-Registrar** header is present in the [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628). If the **P-Preferred-Registrar** header is present, the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) SHOULD attempt to register with the [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) specified in the **P-Preferred-Registrar** header.

### Server Role

#### Abstract Data Model

None.

#### Timers

None.

#### Initialization

None.

#### Higher-Layer Triggered Events

The [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) SHOULD send a deregister [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628) to the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) if it becomes necessary to remove a binding prematurely for any reason. If the registrar deregisters an [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee) and a NOTIFY is sent, it MUST construct the NOTIFY request as specified in the following subsection.

##### Constructing the Outgoing Deregister NOTIFY Request

The outgoing deregister [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628) request is first constructed using the rules specified in section [2.2.1.11](#Section_bb7ead21da7e4e1ca6821ea283448290).

It MUST be sent only to the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) that is being deregistered, and hence it MUST use the same local and remote tags as those specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 12 and the **call-id** and **local CSeq** of the last [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) transaction sent from the deregistered UAC, as specified in [[RFC3265]](https://go.microsoft.com/fwlink/?LinkId=90413) section 3.3.4 and [RFC3261] section 10.3.

#### Message Processing Events and Sequencing Rules

The processing rules follow the procedures specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 10.3, [[RFC3265]](https://go.microsoft.com/fwlink/?LinkId=90413) section 4.4.8, and [[IETFDRAFT-OUGRUAUSIP-10]](https://go.microsoft.com/fwlink/?LinkId=114611) section 7.1.2.

A binding SHOULD be considered terminated when the registration expiry timer or the keep-alive timer fires, as specified in section [3.1.2.6](#Section_b9600ef58cca4bd1a20ab11ce06b13e2). In this case, the [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) might do either of the following options:

* Expire the registration binding, but keep the SIP endpoint identifier, as defined in section [3.1.2.1](#Section_1b3287ab6bc044c8ba2880ecb6399a22), with routable state set to "false". This is useful when the registrar keeps additional state associated with the [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee) that is independent of the binding itself. With this option, when a subsequent re-registration is received for the expired endpoint, the **Presence-State** header SHOULD contain a **Register-Action** field with the value "fixed".
* Expire the registration binding and remove the SIP endpoint identifier, as defined in section 3.1.2.1. With this option, when a subsequent re-registration is received for the expired endpoint, the **Presence-State** header SHOULD contain a **Register-Action** field with the value "added".

#### Timer Events

None.

#### Other Local Events

None.

## Obtaining Provisioning Information

### Client Role

The [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) sends an [**in-band provisioning**](#gt_6deb2fc7-2825-42d5-b33f-6529ea1b01f4) request listing all the configuration groups in which it is interested. It then waits for a response and extracts the various configuration parameters for each of the groups listed in the response.

Example call flows are given in section [4.2](#Section_632b05ea59734260bd89918c8c85182a).

#### Abstract Data Model

None.

#### Timers

None.

#### Initialization

None.

#### Higher-Layer Triggered Events

Unless specified otherwise, the message processing rules follow the procedures specified in [[RFC3265]](https://go.microsoft.com/fwlink/?LinkId=90413) section 4.4.6.

The [**user agent**](#gt_e0d80398-1411-47cf-8201-a1e284415fce) constructs an [**in-band provisioning**](#gt_6deb2fc7-2825-42d5-b33f-6529ea1b01f4) request using the syntax rules given in section [2.2.2.1](#Section_007322091a7844fcb227045daca3fa0c) and populates it with the body specified in section [2.2.2.4](#Section_6d2d38223e1b42c791f124b89eafedfc). It then sends the [**SUBSCRIBE**](#gt_1bf43e71-383a-4812-ab93-9c6134d1c6a3) requests using the procedures specified in [RFC3265] section 3.1.4.

#### Message Processing Events and Sequencing Rules

Depending on the provisioning groups requested, the client processes the response as described in section [2.2.2.5](#Section_d318619a4cee46c092e81d048738a79b).

#### Timer Events

None.

#### Other Local Events

None.

### Server Role

#### Abstract Data Model

None.

#### Timers

None.

#### Initialization

None.

#### Higher-Layer Triggered Events

Except as specified in the following subsection, processing rules follow the procedures specified in [[RFC3265]](https://go.microsoft.com/fwlink/?LinkId=90413) section 4.4.6.

##### Processing the Incoming SUBSCRIBE Request

On receiving an [**in-band provisioning**](#gt_6deb2fc7-2825-42d5-b33f-6529ea1b01f4) request, the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) parses and validates the [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89) headers using the rules specified in section [2.2.2.1](#Section_007322091a7844fcb227045daca3fa0c). The server then validates the request body using the rules specified in section [2.2.2.4](#Section_6d2d38223e1b42c791f124b89eafedfc). If either of these validations fails, the server SHOULD reject the request with an appropriate [**SIP response**](#gt_5af6c23d-0c95-4bda-acc2-4a7219e8c2b0), or as per the rules specified in [[RFC3265]](https://go.microsoft.com/fwlink/?LinkId=90413) section 3.1.6.3 and [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 8.2.6.

The server SHOULD then extract the provisioning groups listed in the request. It SHOULD then construct the response XML, as specified in section [2.2.2.5](#Section_d318619a4cee46c092e81d048738a79b), listing each supported provisioning group and the parameters within the group. All mandatory parameters MUST be populated.

The server SHOULD then generate the [**SUBSCRIBE**](#gt_1bf43e71-383a-4812-ab93-9c6134d1c6a3) response as specified in section [2.2.2.2](#Section_dfbd8b5963fa4f60846dcf0640380a3b).

#### Message Processing Events and Sequencing Rules

None.

#### Timer Events

None.

#### Other Local Events

None.

## Automatically Updating Client to a Server Compatible Version

### Client Role

The [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) provides version information to enable version checks on the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703). The following sections specify how the version information is constructed by the UAC.

#### Abstract Data Model

None.

#### Timers

None.

#### Initialization

None.

#### Higher-Layer Triggered Events

None.

#### Message Processing Events and Sequencing Rules

##### Construction of User-Agent header

The [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) includes a **User-Agent** header when it sends a [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request. The **User-Agent** header, as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 20.41, is constructed per the [**ABNF**](#gt_24ddbbb4-b79e-4419-96ec-0fdd229c9ebf), as defined in [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096), specified in [RFC3261] section 24.1. The ABNF is as follows:

User-Agent = "User-Agent" HCOLON server-val \*(LWS server-val)

server-val = product / comment

product = token [SLASH product-version]

product-version = token

The UAC constructs the product-version using the following ABNF:

product-version = Major-version "." Minor-version "." Build-number "." Qfe-number

Major-version = 1\*DIGIT

Minor-version = 1\*DIGIT

Build-number = 4\*DIGIT

QfeNumber = 1\*DIGIT

Following is an example of a **User-Agent** header as constructed by a UAC:

1. User-Agent: UCCAPI/3.5.6889.0 OC/3.5.6889.0

##### Construction of Dynamic URL

This section follows the behavior described in the product behavior note [<168>](#Appendix_A_168" \o "Product behavior note 168).

In the cases where a dynamic [**URL**](#gt_433a4fb7-ef84-46b0-ab65-905f5e3a80b1) is sent back, as described in section [3.4.2.5.8](#Section_4c6082d03174408ba1b08310d72124fe) and section [3.4.2.5.9](#Section_9e6d96d38b954651a8fed59fd36d722e), the [**user agent**](#gt_e0d80398-1411-47cf-8201-a1e284415fce) constructs an [**HTTPS**](#gt_9239bd88-9747-44a6-83a6-473f53f175a7) URL based on the [**base URL**](#gt_4c44eaed-bf47-4788-a856-dcf7e55c8f0e) by adding the following possible parameters:

* **lang:** The language of the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) that needs to be installed. Possible values are the values specified in the first and third columns of the table in section [3.4.1.5.3](#Section_7fbb67f1a40947d2ae50f08550e9eac1).
* **arch:** The architecture of the UAC that needs to be installed. Possible values are "x32" and "x64".
* **flavor:** The flavor of the UAC that needs to be installed. Possible values are the following:
  + **pm:** Per computer.
  + **pu:** Per user.
* **Build:** The type of build that needs to be installed. Possible values are the following:
  + **fre:** A free or retail build.
  + **chk:** A checked or debug build.

The following is an example of the **Warning** header that contains the base HTTPS URI:

1. Warning: 312 lcs.microsoft.com "https://fabrikam.com/AutoUpdate/Int/Handler/update.aspx?folder=OCv3.1"

The following is an example of the URL a UAC might construct from the preceding base HTTPS URI to download a newer UAC:

1. Warning: 312 lcs.microsoft.com https://fabrikam.com/AutoUpdate/Int/Handler/update.aspx?folder=OCv3.1&lang=en-us&arch=x32&flavor=pu&build=fre

##### Possible Values for lang Parameter

The following table provides the possible values for the **lang** parameter described in section [3.4.1.5.2](#Section_2626f3ef843c4cc59338af0010ca77f2).

| Language code | Language | Language code | Language |
| --- | --- | --- | --- |
| af | Afrikaans | sq | Albanian |
| ar-sa | Arabic (Saudi Arabia) | ar-iq | Arabic (Iraq) |
| ar-eg | Arabic (Egypt) | ar-ly | Arabic (Libya) |
| af | Afrikaans | sq | Albanian |
| ar-sa | Arabic (Saudi Arabia) | ar-iq | Arabic (Iraq) |
| ar-eg | Arabic (Egypt) | ar-ly | Arabic (Libya) |
| ar-dz | Arabic (Algeria) | ar-ma | Arabic (Morocco) |
| ar-tn | Arabic (Tunisia) | ar-om | Arabic (Oman) |
| ar-ye | Arabic (Yemen) | ar-sy | Arabic (Syria) |
| ar-jo | Arabic (Jordan) | ar-lb | Arabic (Lebanon) |
| ar-kw | Arabic (Kuwait) | ar-ae | Arabic (U.A.E.) |
| ar-bh | Arabic (Bahrain) | ar-qa | Arabic (Qatar) |
| Eu | Basque | bg | Bulgarian |
| Be | Belarusian | ca | Catalan |
| zh-tw | Chinese (Taiwan) | zh-cn | Chinese (PRC) |
| zh-hk | Chinese (Hong Kong SAR) | zh-sg | Chinese (Singapore) |
| Hr | Croatian | cs | Czech |
| Da | Danish | nl | Dutch (Standard) |
| nl-be | Dutch (Belgium) | en | English |
| en-us | English (United States) | en-gb | English (United Kingdom) |
| en-au | English (Australia) | en-ca | English (Canada) |
| en-nz | English (New Zealand) | en-ie | English (Ireland) |
| en-za | English (South Africa) | en-jm | English (Jamaica) |
| En | English (Caribbean) | en-bz | English (Belize) |
| en-tt | English (Trinidad) | et | Estonian |
| Fo | Faeroese | fa | Persian |
| Fi | Finnish | fr | French (Standard) |
| fr-be | French (Belgium) | fr-ca | French (Canada) |
| fr-ch | French (Switzerland) | fr-lu | French (Luxembourg) |
| Gd | Scottish Gaelic (United Kingdom) | gd-ie | Irish (Ireland) |
| De | German (Standard) | de-ch | German (Switzerland) |
| de-at | German (Austria) | de-lu | German (Luxembourg) |
| de-li | German (Liechtenstein) | el | Greek |
| He | Hebrew | hi | Hindi |
| Hu | Hungarian | is | Icelandic |
| Id | Indonesian | it | Italian (Standard) |
| it-ch | Italian (Switzerland) | ja | Japanese |
| Ko | Korean | ko | Korean (Johab) |
| Lv | Latvian | lt | Lithuanian |
| Mk | Macedonian (FYROM) | ms | Malaysian |
| Mt | Maltese | no | Norwegian (Bokmal) |
| No | Norwegian (Nynorsk) | pl | Polish |
| pt-br | Portuguese (Brazil) | pt | Portuguese (Portugal) |
| Rm | Rhaeto-Romanic | ro | Romanian |
| ro-mo | Romanian (Republic of Moldova) | ru | Russian |
| ru-mo | Russian (Republic of Moldova) | sz | Sami (Lappish) |
| Sr | Serbian (Cyrillic) | sr | Serbian (Latin) |
| Sk | Slovak | sl | Slovenian |
| Sb | Sorbian | es | Spanish (Spain) |
| es-mx | Spanish (Mexico) | es-gt | Spanish (Guatemala) |
| es-cr | Spanish (Costa Rica) | es-pa | Spanish (Panama) |
| es-do | Spanish (Dominican Republic) | es-ve | Spanish (Venezuela) |
| es-co | Spanish (Colombia) | es-pe | Spanish (Peru) |
| es-ar | Spanish (Argentina) | es-ec | Spanish (Ecuador) |
| es-cl | Spanish (Chile) | es-uy | Spanish (Uruguay) |
| es-py | Spanish (Paraguay) | es-bo | Spanish (Bolivia) |
| es-sv | Spanish (El Salvador) | es-hn | Spanish (Honduras) |
| es-ni | Spanish (Nicaragua) | es-pr | Spanish (Puerto Rico) |
| Sx | Sutu | sv | Swedish |
| sv-fi | Swedish (Finland) | th | Thai |
| Ts | Tsonga | tn | Tswana |
| Tr | Turkish | uk | Ukrainian |
| Ur | Urdu | ve | Venda |
| Vi | Vietnamese | xh | Xhosa |
| Ji | Yiddish | zu | Zulu |

#### Timer Events

None.

#### Other Local Events

None.

### Server Role

#### Abstract Data Model

None.

#### Timers

None.

#### Initialization

None.

#### Higher-Layer Triggered Events

None.

#### Message Processing Events and Sequencing Rules

The [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) can provide a way for the administrator to configure versions of the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) that it supports and the actions that could be taken based on the version of the UAC. The server can also provide a way to configure the location to download a newer client that implements a compatible version of a UAC.

A client is a desktop application that acts on behalf of a user as a UAC. For the purposes of this discussion, a client is a UAC. A client is identified by the UAC version specified in the [**SIP request**](#gt_2c1a405b-faa3-4b01-8be2-c825d76316a9) generated by the client, as specified in section [3.4.1.5.1](#Section_0f5bf153bc914a28bfaa62ae94c2f761).

Based on the version of the UAC, it is possible for the administrator to configure the following:

* **Allow client:** In the case of a compatible UAC version, the server SHOULD allow the client to register with the server.
* **Allow clients with static URL:** In the case of a deprecated compatible UAC version, the server SHOULD allow the client to register with the server and provide static information to the client and network location where another version of the client can be downloaded.
* **Block client with a prompt:** In the case of an incompatible UAC version, the server SHOULD reject the client with an error and include a prompt that can be displayed on the client indicating that its UAC version is incompatible with the server.
* **Block client with static URL:** In the case of an incompatible UAC version, the server SHOULD reject the client with an error and provide static information to the client pertaining to the location from which a compatible version of the client can be downloaded.
* **Block client with dynamic URL:** In the case of an incompatible UAC version, the server SHOULD[<169>](#Appendix_A_169" \o "Product behavior note 169) reject the client with an error and provide location information to the client indicating where to download a newer client. In this case, the client SHOULD also be able to specify which version of the UAC needs to be downloaded. For example, a language-specific version of a UAC can be automatically downloaded as a newer version of the client.
* **Block clients with upgrade:** In the case of an incompatible UAC version, the server SHOULD reject the client with an error and include a non-localized, non-displayable message in a warning header indicating that an upgrade tool needs to be used to upgrade.
* **Allow client and provide a dynamic URL to download a newer version of client:** In the case where the server supports a UAC version, but needs to recommend that the client upgrade to a client that implements a newer version of the UAC, the server SHOULD allow the UAC to register with the server and provide location information to the client where to download a newer client. In this case, the UAC SHOULD[<170>](#Appendix_A_170" \o "Product behavior note 170) also be able to specify which version of the client needs to be downloaded, for example by language, and automatically download a newer version of the client.

This is discussed in more detail in the following sections.

##### Processing Incoming REGISTER Request

The client includes the version of the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) it is running in the format described in section [3.4.1.5](#Section_bd94563eb53a429cb5fba5a8a1f6c69f) in the **User-Agent** header, as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 20.41, of the [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request. When the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) receives this request from a client, it SHOULD retrieve the UAC version from the value of the **User-Agent** header. Based on the configuration on the server that specifies the versions of the UAC that are compatible with the server, the server can respond in one of the following ways:

* It SHOULD respond with a [**200 OK**](#gt_d9c398c0-9009-4dc6-9340-36423671182b) response code, as specified in [RFC3261] section 7.2, if the UAC version is compatible with the server. The server SHOULD include a **Warning** header, as specified in [RFC3261] section 7.3.1, which could provide more information to the client with regard to the location where a compatible version of the client could be downloaded.
* It SHOULD respond with a [**403 Forbidden**](#gt_a3fb9d90-016b-4376-942f-0159a103ecc9) response code, as specified in [RFC3261] section 7.2, if the UAC version is incompatible with the server. In this case, the server SHOULD include a **Warning** header, as specified in [RFC3261], section 7.3.1, which could provide more information to the client with regard to the location where a compatible version of the client could be downloaded.

Following is the [**ABNF**](#gt_24ddbbb4-b79e-4419-96ec-0fdd229c9ebf), as defined in [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096), for a **Warning** header, as specified in [RFC3261] section 25.1.

Warning = "Warning" HCOLON warning-value \*(COMMA warning-value)

warning-value = warn-code SP warn-agent SP warn-text

warn-code = 3DIGIT

warn-agent = hostport / pseudonym

; the name or pseudonym of the server adding

; the Warning header, for use in debugging

warn-text = quoted-string

Sections [3.4.2.5.2](#Section_d98e61e9c1eb4309886e421f959b6ff6) through [3.4.2.5.9](#Section_9e6d96d38b954651a8fed59fd36d722e) describe these response codes in more detail.

##### Sending 200 OK response (Action: Allow client)

If the request is valid and the version specified in the **User-Agent** header is supported, the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) SHOULD allow processing of the [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request and respond with a [**200 OK**](#gt_d9c398c0-9009-4dc6-9340-36423671182b) REGISTER response.

##### Sending 403 Forbidden response (Action: Block client with prompt)

If the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) determines that it does not support the version specified in the **User-Agent** header, and if the action that is configured for the client is to prompt, such as when there is no location configured to download newer clients, the server SHOULD respond with a [**403 Forbidden**](#gt_a3fb9d90-016b-4376-942f-0159a103ecc9) error. In this case, the server SHOULD include a **Warning** header, as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 7.3.1. The value of the **Warning** header MUST be constructed as follows:

* **Warn-code** is set to the value 310.
* **Warn-agent** is set to the value "lcs.microsoft.com".
* **Warn-text** is set to the quoted string "You are currently not using the recommended version of the client".

The following is an example of a **Warning** header:

1. Warning: 310 lcs.microsoft.com "You are currently not using the recommended version of the client"

##### Sending 403 Forbidden response (Action: Block client with static URL)

If the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) determines that it does not support the version specified in the **User-Agent** header, it SHOULD respond with a [**403 Forbidden**](#gt_a3fb9d90-016b-4376-942f-0159a103ecc9) error. If the action configured for the version of the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) is to block and respond with a static location to download a newer client, the server SHOULD include a **Warning** header, as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 7.3.1. The value of the **Warning** header MUST be constructed as follows:

* **Warn-code** is set to the value 311.
* **Warn-agent** is set to the value "lcs.microsoft.com".
* **Warn-text** is set to the static location information that is configured for this version of the UAC. Typically, the client prompts the user to go to this location to download a newer version of the client. This information is an [**HTTP**](#gt_d72f1494-4917-4e9e-a9fd-b8f1b2758dcd) or [**HTTPS**](#gt_9239bd88-9747-44a6-83a6-473f53f175a7) [**URI**](#gt_e18af8e8-01d7-4f91-8a1e-0fb21b191f95) where the client version can be downloaded.

The following is an example of this **Warning** header.

1. Warning: 311 lcs.microsoft.com http://fabrikam.com

##### Sending 200 OK response (Action: Allow clients with static URL)

This section follows the behavior described in product behavior note [<171>](#Appendix_A_171" \o "Product behavior note 171).

If the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) determines that it can support the version specified in the **User-Agent** header, it SHOULD allow processing of the [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request and respond with a [**200 OK**](#gt_d9c398c0-9009-4dc6-9340-36423671182b) response if the processing succeeds. If the action configured for the version of the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) is to allow and respond with a static location to download a newer client, the server SHOULD include a **Warning** header, as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 7.3.1. The value of the **Warning** header MUST be constructed as follows:

* **Warn-code** is set to the value 313.
* **Warn-agent** is set to the value "lcs.microsoft.com".
* **Warn-text** is set to the static location information that is configured for this version of the UAC. Typically, the client prompts the user to go to this location to download a newer version of the client. This information is an [**HTTP**](#gt_d72f1494-4917-4e9e-a9fd-b8f1b2758dcd) or [**HTTPS**](#gt_9239bd88-9747-44a6-83a6-473f53f175a7) [**URI**](#gt_e18af8e8-01d7-4f91-8a1e-0fb21b191f95) where the client version can be downloaded.

The following is an example of this **Warning** header.

1. Warning: 313 lcs.microsoft.com http://fabrikam.com

##### Sending 403 Forbidden response (Action: Block clients with upgrade)

This section follows the behavior described in product behavior note [<172>](#Appendix_A_172" \o "Product behavior note 172).

If the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) determines that it does not support the version specified in the **User-Agent** header, it SHOULD respond with a [**403 Forbidden**](#gt_a3fb9d90-016b-4376-942f-0159a103ecc9) error. If the action configured for the version of the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) is to block and respond with an upgrade notification hinting to the client to upgrade from an upgrade service, the server SHOULD include a **Warning** header, as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 7.3.1. The value of the **Warning** header MUST be constructed as follows:

* **Warn-code** is set to the value 314.
* **Warn-agent** is set to the value "lcs.microsoft.com".
* **Warn-text** is set to the quoted string "Check Microsoft Update for the newest version."

The following is an example of this **Warning** header.

1. Warning: 314 lcs.microsoft.com "Check Microsoft Update for the newest version."

##### Sending 200 OK response (Action: Allow clients with upgrade)

This section follows the behavior described in product behavior note [<173>](#Appendix_A_173" \o "Product behavior note 173).

If the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) determines that it can support the version specified in the **User-Agent** header, it SHOULD allow processing of the [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request and respond with a [**200 OK**](#gt_d9c398c0-9009-4dc6-9340-36423671182b) response if the processing succeeds. If the action configured for the version of the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) is to allow and respond with an upgrade notification hinting to the client to upgrade from an upgrade service, the server SHOULD include a **Warning** header, as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 7.3.1. The value of the **Warning** header MUST be constructed as follows:

* **Warn-code** is set to the value 314.
* **Warn-agent** is set to the value "lcs.microsoft.com".
* **Warn-text** is set to the quoted string "Check Microsoft Update for the newest version."

The following is an example of this **Warning** header.

1. Warning: 314 lcs.microsoft.com "Check Microsoft Update for the newest version."

##### Sending 403 Forbidden response (Action: Block client with dynamic URL)

This section follows the behavior described in product behavior note [<174>](#Appendix_A_174" \o "Product behavior note 174).

If the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) determines that it does not support the version specified in the **User-Agent** header, it SHOULD respond with a [**403 Forbidden**](#gt_a3fb9d90-016b-4376-942f-0159a103ecc9) error. If the action configured for the version of the client is to block and respond with a dynamic location to download a newer client, the response SHOULD include a **Warning** header, as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 7.3.1. The value of the **Warning** header MUST be constructed as follows:

* **Warn-code** is set to the value 312.
* **Warn-agent** is set to the value "lcs.microsoft.com".
* **Warn-text** is set to the base location to download a newer version of the client. This location is an [**HTTPS**](#gt_9239bd88-9747-44a6-83a6-473f53f175a7) [**URI**](#gt_e18af8e8-01d7-4f91-8a1e-0fb21b191f95) and points to a webpage. The URI MUST contain a parameter with the name **folder**. The server constructs a path relative to this base location, as described in section [3.4.1.5.2](#Section_2626f3ef843c4cc59338af0010ca77f2). The installers are either [**Windows Installer (.msi) file**](#gt_8d70de6d-0a68-4c35-b41b-01294feba3fa) or .msp file. The client can automatically install a newer version of the client from this location.

The following is an example of a **Warning** header with a base HTTPS URL that is sent back in the response.

1. Warning: 312 lcs.microsoft.com "https://fabrikam.com/AutoUpdate/Int/Handler/update.aspx?folder=OCv3.1

##### Sending 200 OK response (Action: Allow client with dynamic URL)

This section follows the behavior described in product behavior note [<175>](#Appendix_A_175" \o "Product behavior note 175).

If the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) determines that it can support the version specified in the **User-Agent** header, it SHOULD allow processing of the [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request and respond with a [**200 OK**](#gt_d9c398c0-9009-4dc6-9340-36423671182b) response if the processing succeeds. If the action configured for the version of the client is to respond with a dynamic location, such as when an upgrade of the client is recommended, the server SHOULD include a **Warning** header, as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 7.3.1. The value of the **Warning** header MUST be constructed as follows:

* **Warn-code** is set to the value 312.
* **Warn-agent** is set to the value "lcs.microsoft.com".
* **Warn-text** is set to the base location to download a newer version of the client. This location is an [**HTTPS**](#gt_9239bd88-9747-44a6-83a6-473f53f175a7) [**URI**](#gt_e18af8e8-01d7-4f91-8a1e-0fb21b191f95) and points to a webpage. The URI MUST contain a parameter with the name **folder**. The server constructs a path relative to this base location, as described in section [3.4.1.5.2](#Section_2626f3ef843c4cc59338af0010ca77f2). The installers are either [**Windows Installer (.msi) file**](#gt_8d70de6d-0a68-4c35-b41b-01294feba3fa)s or .msp files. The client can automatically install a newer version of the client from this location.

The following is an example of a **Warning** header with a base HTTPS URL that is sent back in the response.

1. Warning: 312 lcs.microsoft.com "https://fabrikam.com/AutoUpdate/Int/Handler/update.aspx?folder=OCv3.1

#### Timer Events

None.

#### Other Local Events

None.

## Notifying the Client of Survivable Mode

This section follows the behavior described in product behavior note [<176>](#Appendix_A_176" \o "Product behavior note 176).

### Server Role

None.

#### Abstract Data Model

None.

#### Timers

None.

#### Initialization

None.

#### Higher-Layer Triggered Events

The [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) SHOULD send a [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628) to the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) if it changes the state of the **Presence-Service-Available** field described in section [3.1.2.1](#Section_1b3287ab6bc044c8ba2880ecb6399a22) from "true" to "false". If the registrar notifies an [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee) and a NOTIFY is sent, it MUST construct the NOTIFY request as specified in the following subsection.

##### Constructing the Survivable Mode NOTIFY Request

The outgoing [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628) request is first constructed using the rules specified in section [2.2.1.12](#Section_cc7163bf183a4084b315ce786f0cc881).

It MUST be sent only to the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) that is being notified, and hence it MUST use the same local and remote tags, as specified in [[RFC3261]](https://go.microsoft.com/fwlink/?LinkId=90410) section 12, and the **call-id** and **local CSeq** of the last [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) transaction sent from the UAC being notified, as specified in [[RFC3265]](https://go.microsoft.com/fwlink/?LinkId=90413) section 3.3.4 and [RFC3261] section 10.3.

#### Message Processing Events and Sequencing Rules

None.

#### Timer Events

None.

#### Other Local Events

None.

# Protocol Examples

## Registration

### Basic Registration

In the following example, user alice@fabrikam.com registers with the [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703). This is the first [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee) to register. The call flow is shown in the following diagram.

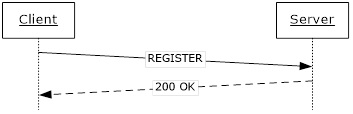


Figure 2: Basic registration call flow

The [**authentication**](#gt_8e961bf0-95ba-4f58-9034-b67ccb27f317) challenge that is typically part of the registration sequence is not shown here.

REGISTER sip:fabrikam.com SIP/2.0

Via: SIP/2.0/TLS 10.1.2.50:4237

Max-Forwards: 70

From: <sip:alice@fabrikam.com>;tag=2d0be03279;epid=492a7ce35f

To: <sip:alice@fabrikam.com>

Call-ID: 74c55d45a6ee404680aa55c8fe126f11

CSeq: 3 REGISTER

Contact: <sip:10.1.2.50:4237;transport=tls;ms-opaque=6fb3a8330a>;methods="INVITE, MESSAGE, INFO, OPTIONS, BYE, CANCEL, NOTIFY, ACK, REFER, BENOTIFY";proxy=replace;+sip.instance="<urn:uuid:B43B3D1D-9F8F-5FDC-9F74-3CA273CADB97>"

User-Agent: UCCP/2.0.6362.0 OC/2.0.6362.0 (Microsoft Office Communicator)

Authorization: NTLM qop="auth", realm="SIP Communications Service", targetname="ocs.fabrikam.com", gssapi-data="TlRMTVNTUAADAAAAGAAYAHoAAAAYABgAkgAAAAoACgBIAAAAEAAQAFIAAAAYABgAYgAAABAAEACqAAAAVYKQQgUCzg4AAAAPTgBUAEQARQBWAHMAVQBuAGsAYQByAGEAbgBTAEEATgBLAEEAUgBBAE4ALQBEAEUAVgDnJVs84fE59ziCDecY7XprbBXcdABFbpbnJVs84fE59ziCDecY7XprbBXcdABFbpZwMLke/elE9fi69enePNxU", opaque="99052D67", version=3

Supported: gruu-10, adhoclist, msrtc-event-categories

Supported: ms-cluster-failover

Supported: ms-userservices-state-notification

ms-keep-alive: UAC;hop-hop=yes

ms-subnet: 10.1.2.1

Event: registration

Content-Length: 0

The server responds with a [**200 OK**](#gt_d9c398c0-9009-4dc6-9340-36423671182b) response and includes the [**GRUU**](#gt_72fbc9c5-8485-465c-8b46-64895c8d5102) contact [**URI**](#gt_e18af8e8-01d7-4f91-8a1e-0fb21b191f95) to be used in subsequent [**dialog**](#gt_71ad645f-db5b-4e9f-9b3d-887039ada331) initiating requests, as follows.

SIP/2.0 200 OK

ms-keep-alive: UAS; tcp=no; hop-hop=yes; end-end=no; timeout=300

Authentication-Info: NTLM rspauth="0100000000636F6E9575D2297F8F5EF3", srand="168CE345", snum="1", opaque="99052D67", qop="auth", targetname="ocs.fabrikam.com", realm="SIP Communications Service"

From: <sip:alice@fabrikam.com>;tag=2d0be03279;epid=492a7ce35f

To: <sip:alice@fabrikam.com>;tag=0D08337B2339766A952BC5B9D8E0A41A

Call-ID: 74c55d45a6ee404680aa55c8fe126f11

CSeq: 3 REGISTER

Via: SIP/2.0/TLS 10.1.2.50:4237;received=10.54.78.109;ms-received-port=4237;ms-received-cid=10A0D00

Contact: <sip:10.54.78.109:4237;transport=tls;ms-opaque=6fb3a8330a;ms-received-cid=10A0D00>;expires=7200;+sip.instance="<urn:uuid:b43b3d1d-9f8f-5fdc-9f74-3ca273cadb97>";gruu="sip:alice@fabrikam.com;opaque=user:epid:HT07tI-f3F-fdDyic8rblwAA;gruu"

Expires: 7200

presence-state: register-action="added";primary-cluster-type="central";is-connected-to-primary="yes"

Allow-Events: vnd-microsoft-provisioning,vnd-microsoft-roaming-contacts,vnd-microsoft-roaming-ACL,presence,presence.wpending,vnd-microsoft-roaming-self,vnd-microsoft-provisioning-v2

Supported: adhoclist

**Server: RTC/3.0**

Supported: msrtc-event-categories

Content-Length: 0

### Basic Unregistration

The user unregisters from the [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) by sending a [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request with an **Expires: 0** header, as follows.

1. REGISTER sip:fabrikam.com SIP/2.0
2. Via: SIP/2.0/TLS 10.1.2.50:4237
3. Max-Forwards: 70
4. From: <sip:alice@fabrikam.com>;tag=2d0be03279;epid=492a7ce35f
5. To: <sip:alice@fabrikam.com>
6. Call-ID: 74c55d45a6ee404680aa55c8fe126f11
7. CSeq: 3 REGISTER
8. Contact: <sip:10.1.2.50:4237;transport=tls;ms-opaque=6fb3a8330a>;methods="INVITE, MESSAGE, INFO, OPTIONS, BYE, CANCEL, NOTIFY, ACK, REFER, BENOTIFY";proxy=replace;+sip.instance="<urn:uuid:B43B3D1D-9F8F-5FDC-9F74-3CA273CADB97>"
9. User-Agent: UCCP/2.0.6362.0 OC/2.0.6362.0 (Microsoft Office Communicator)
10. Authorization: NTLM qop="auth", realm="SIP Communications Service", targetname="ocs.fabrikam.com", gssapi-data="TlRMTVNTUAADAAAAGAAYAHoAAAAYABgAkgAAAAoACgBIAAAAEAAQAFIAAAAYABgAYgAAABAAEACqAAAAVYKQQgUCzg4AAAAPTgBUAEQARQBWAHMAVQBuAGsAYQByAGEAbgBTAEEATgBLAEEAUgBBAE4ALQBEAEUAVgDnJVs84fE59ziCDecY7XprbBXcdABFbpbnJVs84fE59ziCDecY7XprbBXcdABFbpZwMLke/elE9fi69enePNxU", opaque="99052D67", version=3
11. Allow-Events: vnd-microsoft-provisioning,vnd-microsoft-roaming-contacts,vnd-microsoft-roaming-ACL,presence,presence.wpending,vnd-microsoft-roaming-self,vnd-microsoft-provisioning-v2
12. Supported: gruu-10, adhoclist, msrtc-event-categories
13. ms-keep-alive: UAC;hop-hop=yes
14. Event: registration
15. Expires: 0
16. Content-Length: 0

The [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) responds with a [**200 OK**](#gt_d9c398c0-9009-4dc6-9340-36423671182b) response, terminating the registration.

1. SIP/2.0 200 OK
2. ms-keep-alive: UAS; tcp=no; hop-hop=yes; end-end=no; timeout=300
3. Authentication-Info: NTLM rspauth="0100000000636F6E9575D2297F8F5EF3", srand="168CE345", snum="1", opaque="99052D67", qop="auth", targetname="ocs.fabrikam.com", realm="SIP Communications Service"
4. From: <sip:alice@fabrikam.com>;tag=2d0be03279;epid=492a7ce35f
5. To: <sip:alice@fabrikam.com>;tag=0D08337B2339766A952BC5B9D8E0A41A
6. Call-ID: 74c55d45a6ee404680aa55c8fe126f11
7. CSeq: 3 REGISTER
8. Via: SIP/2.0/TLS 10.1.2.50:4237;received=10.54.78.109;ms-received-port=4237;ms-received-cid=10A0D00
9. Allow-Events: vnd-microsoft-provisioning,vnd-microsoft-roaming-contacts,vnd-microsoft-roaming-ACL,presence,presence.wpending,vnd-microsoft-roaming-self,vnd-microsoft-provisioning-v2
10. Supported: adhoclist, msrtc-event-categories
11. Expires: 0
12. Server: RTC/3.0
13. Content-Length: 0

### Deregistration

If the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) deregisters a user's [**endpoint**](#gt_b91c1e27-e8e0-499b-8c65-738006af72ee) because of policy, it sends a deregister [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628), as follows. Note that such deregistrations are usually triggered by server policies, such as endpoint quota enforcement.

NOTIFY sip:10.1.2.178:4126;transport=tls;ms-opaque=9a9503bcdb;ms-received-cid=600 SIP/2.0

Via: SIP/2.0/TLS 10.1.2.178:5061;branch=z9hG4bKD948963B.BFDD97BF;branched=FALSE;ms-ts="Wed, 06 Feb 2008 00:41:50 GMT 0"

Authentication-Info: Kerberos rspauth="602306092A864886F71201020201011100FFFFFFFFCC4C8119E16FEC024B25E89E96BA0865", srand="AA69CAF1", snum="9", opaque="28CE6668", qop="auth", targetname="sip/ocs.fabrikam.com", realm="SIP Communications Service"

Max-Forwards: 70

Content-Length: 27

From: <sip:alice@fabrikam.com>;tag=25498F391570ACE435E286F873E6AACC

To: sip:alice@fabrikam.com>;tag=7c503117ea;epid=90e62db136

Call-ID: 6d7b09278d574162a4ef50c25e4e5051

CSeq: 1 NOTIFY

Content-Type: text/registration-event

Event: registration-notify

subscription-state: terminated;expires=0

ms-diagnostics-public: 4141;reason="User disabled"

deregistered;event=rejected

### Survivable Mode Notify

If the presence service for a [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) becomes unavailable and the UAC has indicated support for [**survivable mode**](#gt_65895f46-d1d4-45b3-84ba-8165002aee88), the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) sends a [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628).

NOTIFY sip:10.1.2.178:4126;transport=tls;ms-opaque=9a9503bcdb;ms-received-cid=600 SIP/2.0

Via: SIP/2.0/TLS 10.1.2.178:5061;branch=z9hG4bKD948963B.BFDD97BF;branched=FALSE;ms-ts="Wed, 06 Feb 2008 00:41:50 GMT 0"

Authentication-Info: Kerberos rspauth="602306092A864886F71201020201011100FFFFFFFFCC4C8119E16FEC024B25E89E96BA0865", srand="AA69CAF1", snum="9", opaque="28CE6668", qop="auth", targetname="sip/ocs.fabrikam.com", realm="SIP Communications Service"

Max-Forwards: 70

Content-Length: 41

From: <sip:alice@fabrikam.com>;tag=25498F391570ACE435E286F873E6AACC

To: sip:alice@fabrikam.com>;tag=7c503117ea;epid=90e62db136

Call-ID: 6d7b09278d574162a4ef50c25e4e5051

CSeq: 1 NOTIFY

Content-Type: text/registration-event

Event: registration-notify

Subscription-state: active;expires=900

ms-diagnostics-public: 4165;reason="User Services Pool is unavailable."

registered;event=userservices-unavailable

### Notify for Registrar Change

If the system supports a dedicated "home registrar" and the user is being moved across registrars, the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) sends a [**NOTIFY**](#gt_72e635c0-834f-443c-8c2b-69e274a2e628).

NOTIFY sip:10.1.2.178:4126;transport=tls;ms-opaque=9a9503bcdb;ms-received-cid=600 SIP/2.0

Via: SIP/2.0/TLS 10.1.2.178:5061;branch=z9hG4bKD948963B.BFDD97BF;branched=FALSE;ms-ts="Wed, 06 Feb 2008 00:41:50 GMT 0"

Authentication-Info: Kerberos rspauth="602306092A864886F71201020201011100FFFFFFFFCC4C8119E16FEC024B25E89E96BA0865", srand="AA69CAF1", snum="9", opaque="28CE6668", qop="auth", targetname="sip/ocs.fabrikam.com", realm="SIP Communications Service"

Max-Forwards: 70

Content-Length: 41

From: <sip:alice@fabrikam.com>;tag=25498F391570ACE435E286F873E6AACC

To: sip:alice@fabrikam.com>;tag=7c503117ea;epid=90e62db136

Call-ID: 6d7b09278d574162a4ef50c25e4e5051

CSeq: 25 NOTIFY

Content-Type: text/registration-event

Event: registration-notify

Subscription-state: terminated;expires=0

P-Preferred-Registrar: <sip:server1.fabrikam.com:5061;transport=tls">

ms-diagnostics-public: 4166;reason="Preferred Registrar Change."

1. deregistered;event=preferred-registrar-change

## In-band Provisioning

The [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) sends an [**in-band provisioning**](#gt_6deb2fc7-2825-42d5-b33f-6529ea1b01f4) request to the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703). The server responds to the request and generates a notification with the in-band provisioning data. The following example assumes support for piggyback-notifications, as described in [[MS-SIP]](%5bMS-SIP%5d.pdf#Section_0d72fb5512ba49f1850df0bf3110bb1f) section [3.4](http://msdn.microsoft.com/en-us/library/82ca4beb-70db-4e31-b016-6a7250b2c24b/), where the response document is returned in the [**200 OK**](#gt_d9c398c0-9009-4dc6-9340-36423671182b) [**SUBSCRIBE**](#gt_1bf43e71-383a-4812-ab93-9c6134d1c6a3) response itself. This is shown in the following diagram.

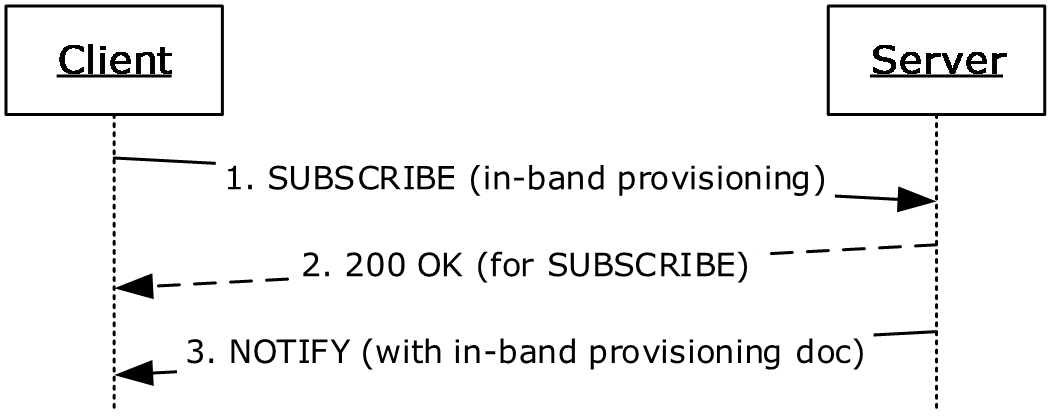


Figure 3: In-band provisioning call flow

### Client to Server Request

In the following request, user alice@fabrikam.com sends an **application/vnd-microsoft-roaming-provisioning-v2+xml** request to the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703), requesting all supported provisioning groups.

1. SUBSCRIBE sip:alice@fabrikam.com SIP/2.0
2. Via: SIP/2.0/TLS 172.24.32.149:53990
3. Max-Forwards: 70
4. From: <sip:alice@fabrikam.com>;tag=77399b3fb7;epid=e48fdaa231
5. To: <sip:alice@fabrikam.com>
6. Call-ID: dcb605d5e73e44ccbe84dbe4886d210f
7. CSeq: 1 SUBSCRIBE
8. Contact: <sip:alice@fabrikam.com;opaque=user:epid:A3zr0x5\_sVSbfPZ-4\_JkrgAA;gruu>
9. User-Agent: UCCAPI/4.0.7577.0 OC/4.0.7577.0 (Microsoft Communicator 2010)
10. Event: vnd-microsoft-provisioning-v2
11. Accept: application/vnd-microsoft-roaming-provisioning-v2+xml
12. Supported: com.microsoft.autoextend
13. Supported: ms-benotify
14. Proxy-Require: ms-benotify
15. Supported: ms-piggyback-first-notify
16. Expires: 0
17. Proxy-Authorization: Kerberos qop="auth", realm="SIP Communications Service", opaque="224773FA", targetname="sip/clientmainse.fabrikam.com", crand="571d3235", cnum="4", response="040400ffffffffff0000000000000000d2a625d0f476403d15d58285"
18. Content-Type: application/vnd-microsoft-roaming-provisioning-v2+xml
19. Content-Length: 625
20. <provisioningGroupList xmlns="http://schemas.microsoft.com/2006/09/sip/provisioninggrouplist" subnet="172.24.32.0">
21. <provisioningGroup name="endpointConfiguration" />
22. <provisioningGroup name="locationPolicy" />
23. <provisioningGroup name="mediaConfiguration" />
24. <provisioningGroup name="meetingPolicy" />
25. <provisioningGroup name="presencePolicyV2" />
26. <provisioningGroup name="privacyPublicationGrammar" />
27. <provisioningGroup name="publicationGrammar" />
28. <provisioningGroup name="ServerConfiguration" />
29. <provisioningGroup name="ucPolicy" />
30. <provisioningGroup name="userSetting" />
31. <provisioningGroup name="publicProviders" />
32. </provisioningGroupList>

### Server to Client Response

In the following response, the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) responds with the data for all requested provisioning groups.

1. SIP/2.0 200 OK
2. Contact: <sip:clientmainse.fabrikam.com:5061;transport=tls>
3. Proxy-Authentication-Info: Kerberos qop="auth", opaque="224773FA", srand="84924759", snum="4", rspauth="040401ffffffffff00000000000000001516d27bd2ddfb27246db52a", targetname="sip/clientmainse.fabrikam.com", realm="SIP Communications Service", version=4
4. Content-Length: 52146
5. From: "Alice"<sip:alice@fabrikam.com>;tag=77399b3fb7;epid=e48fdaa231
6. To: <sip:alice@fabrikam.com>;tag=24010080
7. Call-ID: dcb605d5e73e44ccbe84dbe4886d210f
8. CSeq: 1 SUBSCRIBE
9. Via: SIP/2.0/TLS 172.24.32.149:53990;ms-received-port=53990;ms-received-cid=914800
10. Expires: 0
11. Content-Type: application/vnd-microsoft-roaming-provisioning-v2+xml
12. Event: vnd-microsoft-provisioning-v2
13. subscription-state: terminated;expires=0
14. ms-piggyback-cseq: 1
15. Supported: ms-benotify, ms-piggyback-first-notify
16. <provisionGroupList xmlns="http://schemas.microsoft.com/2006/09/sip/provisiongrouplist-notification">
17. <provisionGroup name="endpointConfiguration">
18. <propertyEntryList>
19. <property name="ShowRecentContacts">true</property>
20. <property name="ShowManagePrivacyRelationships">false</property>
21. <property name="MaxPhotoSizeKB">10</property>
22. <property name="DisableMusicOnHold" >false</property>
23. <property name="EnableTracing" >true</property>
24. <property name="PhotoUsage">AllPhotos</property>
25. <property name="AbsUsage">WebSearchAndFileDownload</property>
26. <property name="EnableHotdesking">true</property>
27. <property name="HotdeskingTimeout">180</property>
28. <property name="SPSearchInternalUrl">http://my/\_vti\_bin/search.asmx</property>
29. <property name="SPSearchExternalUrl">http://my/\_vti\_bin/search.asmx</property>
30. <property name="SPSearchCenterInternalUrl">http://msw/searchcenter/pages/peopleresults.aspx</property>
31. <property name="EnableContactSync" >true</property>
32. <property name="ShowSharepointPhotoEditLink" >true</property>
33. <property name="EnableVOIPCallDefault" >false</property>
34. <property name="MaximumDGsAllowedInContactList" >10</property>
35. <property name="imLatencySpinnerDelay" >1500</property>
36. <property name="imLatencyErrorThreshold" >1500</property>
37. <property name="EnableMediaRedirection" >true</property>
38. <property name="P2PAppSharingEncryption" >0</property>
39. <property name="CustomLinkInErrormessages">http://octop</property>
40. <property name="BITSServerAddressInternal">http://Oly11-ocg.exchange.corp.microsoft.com/trdin</property>
41. <property name="BITSServerAddressExternal">https://comodf.microsoft.com/trd/</property>
42. <property name="EnableSendFeedback">1</property>
43. <property name="EnableIssueReports">1</property>
44. <property name="BotSipUriForTestCall">ootycorp@microsoft.com</property>
45. <property name="EnableBugFiling">1</property>
46. <property name="EnableBackgroundDataCollection">1</property>
47. <property name="OnlineFeedbackURL">http://vote/scenarios/communicator/dogfood.aspx?&amp;Site=2b08429f-4651-4901-af51-1d0ca5bca2b7</property>
48. <property name="PrivacyStatementURL">http://www.microsoft.com/communicator</property>
49. <property name="SendFeedbackURL">df-mqd-dcs-01</property>
50. </propertyEntryList>
51. </provisionGroup>
52. <provisionGroup name="locationPolicy">
53. <propertyEntryList>
54. <property name="EnhancedEmergencyServicesEnabled">true</property>
55. <property name="LocationPolicyTagID">user-tagid</property>
56. <property name="LocationRequired">yes</property>
57. <property name="UseLocationForE911Only">false</property>
58. <property name="EmergencyDialString">119</property>
59. <property name="EmergencyDialMask">112;100</property>
60. <property name="NotificationUri">sip:notify@microsoft.com</property>
61. <property name="ConferenceUri">sip:security@microsoft.com</property>
62. <property name="EmergencyServiceDisclaimer">Your company policy requires you to set a location. If you do not set a location emergency services will not be able to locate you in an emergency. Please set a location.</property>
63. <property name="LocationRefreshInterval">4</property>
64. <property name="RateMyCallAllowCustomUserFeedback" >false</property>
65. <property name="RateMyCallDisplayPercentage" >10</property>
66. <property name="imLatencySpinnerDelay" >1500</property>
67. <property name="imLatencyErrorThreshold" >1500</property>
68. <property name="P2PAppSharingEncryption" >0</property>
69. <property name="EnableHighPerformanceP2PAppSharing" >false</property>
70. <property name="EnableHighPerformanceConferencingAppSharing" >false</property>
71. <property name="EnableServerConversationHistory" >false</property>
72. <property name="TracingLevel" >Light</property>
73. <property name="EnableSkypeUI" >true</property>
74. <property name="CallViaWorkEnabled" >true</property>
75. <property name="UseAdminCallbackNumber" >true</property>
76. <property name="AdminCallbackNumber" >4251111111</property>
77. </propertyEntryList>
78. </provisionGroup>
79. <provisionGroup name="mediaConfiguration">
80. <propertyEntryList>
81. <property name="bypassEnabled">true</property>
82. <property name="internalBypassMode">Any</property>
83. <property name="externalBypassMode">Off</property>
84. </propertyEntryList>
85. </provisionGroup>
86. <provisionGroup name="meetingPolicy">
87. <instance>
88. <property name="AllowIPAudio">true</property>
89. <property name="AllowIPVideo">true</property>
90. <property name="EnableAppDesktopSharing">true</property>
91. <property name="AllowAppSharingForExternalMeeting">Desktop</property>
92. <property name="RetainPPTForExternalMeeting">true</property>
93. <property name="AllowPresenterToRecord">true</property>
94. <property name="EnableDataCollaboration">true</property>
95. <property name="MeetingSize">50</property>
96. <property name="EnablePSTNConferencing">true</property>
97. <property name="TrustedConferencingPinRequired">false</property>
98. <property name="AllowParticipantControl">true</property>
99. <property name="AllowAnnotations">true</property>
100. <property name="AllowAnonymousParticipants">true</property>
101. <property name="AllowExternalUserControl">true</property>
102. <property name="AllowExternalUserToSaveContent">true</property>
103. <property name="AllowExternalUserRecording">true</property>
104. <property name="AllowRecording">true</property>
105. <property name="AllowFileTransfer">true</property>
106. <property name="MaxConferenceVideoResolution">VGA</property>
107. <property name="AllowUserToScheduleMeetingsWithAppSharing">true</property>
108. <property name="EnableP2PFileTransfer">true</property>
109. <property name="AllowedAppDesktopSharingLevel">Desktop</property>
110. <property name="RequirePasscode">false</property>
111. <property name="AudioBitRate">200</property>
112. <property name="VideoBitRate">2000</property>
113. <property name="AppSharingBitRate">2000</property>
114. <property name="FileTransferBitRate">2000</property>
115. <property name="EnableMultiViewJoin">true</property>
116. <property name="TotalReceiveVideoBitRate">6000</property>
117. <property name="DisablePowerPointAnnotations">false</property>
118. <property name="AllowSharedNotes">false</property>
119. <property name="AllowQna">false</property>
120. <property name="AllowOfficeContent">true</property>
121. <property name="EnableOnlineMeetingPromptForLyncResources">false</property>
122. </instance>
123. </provisionGroup>
124. <provisionGroup name="presencePolicyV2">
125. <propertyEntryList>
126. <property name="EnablePrivacyMode">false</property>
127. <property name="AutoInitiateContacts">true</property>
128. <property name="PublishLocationDataDefault">true</property>
129. <property name="DisplayPublishedPhotoDefault">true</property>
130. <property name="PersonalNoteHistoryDepth">3</property>
131. <property name="SubscribeToCollapsedDG" >true</property>
132. </propertyEntryList>
133. </provisionGroup>
134. <provisionGroup name="privacyPublicationGrammar">
135. <containerManifestList xmlns="http://schemas.microsoft.com/2008/09/sip/ContainerManifest" xmlns:ct="http://schemas.microsoft.com/2006/09/sip/commontypes" minSupportedClientVersion="2.0.0.0">
136. <containerManifest>
137. <containers>
138. <container id="0">
139. <visible>false</visible>
140. <avoidRedundantMembers>false</avoidRedundantMembers>
141. </container>
142. <container id="100">
143. <visible>true</visible>
144. <avoidRedundantMembers>true</avoidRedundantMembers>
145. </container>
146. <container id="200">
147. <visible>true</visible>
148. <avoidRedundantMembers>true</avoidRedundantMembers>
149. </container>
150. <container id="300">
151. <visible>true</visible>
152. <avoidRedundantMembers>true</avoidRedundantMembers>
153. </container>
154. <container id="400">
155. <visible>true</visible>
156. <avoidRedundantMembers>true</avoidRedundantMembers>
157. </container>
158. <container id="32000">
159. <visible>true</visible>
160. <avoidRedundantMembers>false</avoidRedundantMembers>
161. <blocked>true</blocked>
162. </container>
163. </containers>
164. <members>
165. <member role="buddy">
166. <allowedContainers type="visibleContainers" />
167. <defaultContainer id="100" />
168. <occurrenceConstraint type="one" />
169. <ct:delimiter />
170. <sourceNetworks>
171. <sourceNetwork type="publicCloud" />
172. <sourceNetwork type="federated" />
173. </sourceNetworks>
174. <resolutionRules>
175. <resolutionRule type="moveToDefaultContainer" />
176. </resolutionRules>
177. <ct:end />
178. </member>
179. <member role="buddy">
180. <allowedContainers type="visibleContainers" />
181. <defaultContainer id="200" />
182. <occurrenceConstraint type="one" />
183. <ct:delimiter />
184. <sourceNetworks>
185. <sourceNetwork type="sameEnterprise" />
186. </sourceNetworks>
187. <resolutionRules>
188. <resolutionRule type="moveToDefaultContainer" />
189. </resolutionRules>
190. <ct:end />
191. </member>
192. <member type="domain">
193. <allowedContainers type="custom">
194. <container id="32000" />
195. </allowedContainers>
196. <ct:delimiter />
197. <resolutionRules>
198. <resolutionRule type="removeFromContainer" />
199. </resolutionRules>
200. <ct:end />
201. </member>
202. <member type="user">
203. <allowedContainers type="custom">
204. <container id="32000" />
205. </allowedContainers>
206. <ct:delimiter />
207. <resolutionRules>
208. <resolutionRule type="forceRole" role="buddy" />
209. </resolutionRules>
210. <ct:end />
211. </member>
212. <member type="sameEnterprise">
213. <allowedContainers type="custom">
214. <container id="32000" />
215. </allowedContainers>
216. <occurrenceConstraint type="zeroOrOne" />
217. <ct:delimiter />
218. <resolutionRules>
219. <resolutionRule type="removeFromContainer" />
220. </resolutionRules>
221. <ct:end />
222. </member>
223. <member type="federated">
224. <allowedContainers type="custom">
225. <container id="32000" />
226. </allowedContainers>
227. <occurrenceConstraint type="zeroOrOne" />
228. <ct:delimiter />
229. <resolutionRules>
230. <resolutionRule type="removeFromContainer" />
231. </resolutionRules>
232. <ct:end />
233. </member>
234. <member type="publicCloud">
235. <allowedContainers type="custom">
236. <container id="32000" />
237. </allowedContainers>
238. <occurrenceConstraint type="zeroOrOne" />
239. <ct:delimiter />
240. <resolutionRules>
241. <resolutionRule type="removeFromContainer" />
242. </resolutionRules>
243. <ct:end />
244. </member>
245. <member role="delegate">
246. <allowedContainers type="custom">
247. <container id="300" />
248. </allowedContainers>
249. <defaultContainer id="300" />
250. <occurrenceConstraint type="one" />
251. <ct:delimiter />
252. <resolutionRules>
253. <resolutionRule type="moveToDefaultContainer" />
254. </resolutionRules>
255. <ct:end />
256. </member>
257. </members>
258. <ct:delimiter />
259. <blockRules>
260. <blockRule type="invites">
261. <containers type="custom">
262. <container id="0" />
263. </containers>
264. <sourceNetworks>
265. <sourceNetwork type="publicCloud" />
266. </sourceNetworks>
267. </blockRule>
268. <blockRule type="invites">
269. <maxAvailability>11999</maxAvailability>
270. <minAvailability>9000</minAvailability>
271. </blockRule>
272. <blockRule type="invites">
273. <containers type="custom">
274. <container id="32000" />
275. </containers>
276. </blockRule>
277. <blockRule type="subscriberPrompt">
278. <containers type="custom">
279. <container id="32000" />
280. </containers>
281. </blockRule>
282. </blockRules>
283. <rolePrecedence>
284. <rolePrecedenceEntry type="delegate" />
285. <rolePrecedenceEntry type="buddy" />
286. </rolePrecedence>
287. <ct:end />
288. </containerManifest>
289. </containerManifestList>
290. </provisionGroup>
291. <provisionGroup name="publicationGrammar">
292. <containerManifestList xmlns="http://schemas.microsoft.com/2008/09/sip/ContainerManifest" xmlns:ct="http://schemas.microsoft.com/2006/09/sip/commontypes" minSupportedClientVersion="2.0.0.0">
293. <containerManifest>
294. <containers>
295. <container id="0">
296. <visible>false</visible>
297. <avoidRedundantMembers>false</avoidRedundantMembers>
298. </container>
299. <container id="100">
300. <visible>true</visible>
301. <avoidRedundantMembers>true</avoidRedundantMembers>
302. </container>
303. <container id="200">
304. <visible>true</visible>
305. <avoidRedundantMembers>true</avoidRedundantMembers>
306. </container>
307. <container id="300">
308. <visible>true</visible>
309. <avoidRedundantMembers>true</avoidRedundantMembers>
310. </container>
311. <container id="400">
312. <visible>true</visible>
313. <avoidRedundantMembers>true</avoidRedundantMembers>
314. </container>
315. <container id="32000">
316. <visible>true</visible>
317. <avoidRedundantMembers>false</avoidRedundantMembers>
318. <blocked>true</blocked>
319. </container>
320. </containers>
321. <members>
322. <member role="buddy">
323. <allowedContainers type="visibleContainers" />
324. <defaultContainer id="100" />
325. <occurrenceConstraint type="one" />
326. <ct:delimiter />
327. <sourceNetworks>
328. <sourceNetwork type="publicCloud" />
329. <sourceNetwork type="federated" />
330. </sourceNetworks>
331. <resolutionRules>
332. <resolutionRule type="moveToDefaultContainer" />
333. </resolutionRules>
334. <ct:end />
335. </member>
336. <member role="buddy">
337. <allowedContainers type="visibleContainers" />
338. <defaultContainer id="200" />
339. <occurrenceConstraint type="one" />
340. <ct:delimiter />
341. <sourceNetworks>
342. <sourceNetwork type="sameEnterprise" />
343. </sourceNetworks>
344. <resolutionRules>
345. <resolutionRule type="moveToDefaultContainer" />
346. </resolutionRules>
347. <ct:end />
348. </member>
349. <member type="sameEnterprise">
350. <allowedContainers type="visibleContainers" />
351. <defaultContainer id="200" />
352. <occurrenceConstraint type="one" />
353. </member>
354. <member type="federated">
355. <allowedContainers type="visibleContainers" />
356. <defaultContainer id="100" />
357. <occurrenceConstraint type="one" />
358. </member>
359. <member type="publicCloud">
360. <allowedContainers type="visibleContainers" />
361. <occurrenceConstraint type="zeroOrOne" />
362. </member>
363. <member role="delegate">
364. <allowedContainers type="custom">
365. <container id="300" />
366. </allowedContainers>
367. <defaultContainer id="300" />
368. <occurrenceConstraint type="one" />
369. <ct:delimiter />
370. <resolutionRules>
371. <resolutionRule type="moveToDefaultContainer" />
372. </resolutionRules>
373. <ct:end />
374. </member>
375. </members>
376. <ct:delimiter />
377. <blockRules>
378. <blockRule type="invites">
379. <containers type="custom">
380. <container id="0" />
381. </containers>
382. <sourceNetworks>
383. <sourceNetwork type="publicCloud" />
384. </sourceNetworks>
385. </blockRule>
386. <blockRule type="invites">
387. <maxAvailability>11999</maxAvailability>
388. <minAvailability>9000</minAvailability>
389. </blockRule>
390. <blockRule type="invites">
391. <containers type="custom">
392. <container id="32000" />
393. </containers>
394. </blockRule>
395. <blockRule type="subscriberPrompt">
396. <containers type="custom">
397. <container id="32000" />
398. </containers>
399. </blockRule>
400. </blockRules>
401. <rolePrecedence>
402. <rolePrecedenceEntry type="delegate" />
403. <rolePrecedenceEntry type="buddy" />
404. </rolePrecedence>
405. <ct:end />
406. </containerManifest>
407. </containerManifestList>
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443. </publicationRule>
444. <publicationRule ruleType="transformation" categoryName="note" containerId="100">
445. <categoryData><![CDATA[ <xsl:stylesheet  xmlns:xsl="http://www.w3.org/1999/XSL/Transform"  version="1.0"  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"  xmlns:ct="http://schemas.microsoft.com/2006/09/sip/commontypes"  xmlns:tns="http://schemas.microsoft.com/2006/09/sip/note"  exclude-result-prefixes="tns ct">    <xsl:output method="xml" encoding="utf-8" indent="yes"/>    <xsl:strip-space elements="\*"/>    <xsl:template match="node()">     <xsl:apply-templates select="//tns:note"/>    </xsl:template>    <xsl:template match="tns:note">     <xsl:copy />    </xsl:template> </xsl:stylesheet>    ]]></categoryData>
446. </publicationRule>
447. <publicationRule ruleType="transformation" categoryName="note" containerId="200" />
448. <publicationRule ruleType="transformation" categoryName="note" containerId="300" />
449. <publicationRule ruleType="transformation" categoryName="note" containerId="400" preferredSelfConsumption="true" />
450. <publicationRule ruleType="transformation" categoryName="note" containerId="32000">
451. <categoryData><![CDATA[ <xsl:stylesheet  xmlns:xsl="http://www.w3.org/1999/XSL/Transform"  version="1.0"  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"  xmlns:ct="http://schemas.microsoft.com/2006/09/sip/commontypes"  xmlns:tns="http://schemas.microsoft.com/2006/09/sip/note"  exclude-result-prefixes="tns ct">    <xsl:output method="xml" encoding="utf-8" indent="yes"/>    <xsl:strip-space elements="\*"/>    <xsl:template match="node()">     <xsl:apply-templates select="//tns:note"/>    </xsl:template>    <xsl:template match="tns:note">     <xsl:copy />    </xsl:template> </xsl:stylesheet>    ]]></categoryData>
452. </publicationRule>
453. <publicationRule ruleType="transformation" categoryName="noteHistory" containerId="200" />
454. <publicationRule ruleType="transformation" categoryName="noteHistory" containerId="300" />
455. <publicationRule ruleType="transformation" categoryName="noteHistory" containerId="400" preferredSelfConsumption="true" />
456. <publicationRule ruleType="transformation" categoryName="services" containerId="2" preferredSelfConsumption="true" />
457. <publicationRule ruleType="transformation" categoryName="routing" containerId="0" preferredSelfConsumption="true" /> <publicationRule ruleType="transformation" categoryName="routing" containerId="100" /> <publicationRule ruleType="transformation" categoryName="routing" containerId="200" /> <publicationRule ruleType="transformation" categoryName="routing" containerId="300" /> <publicationRule ruleType="transformation" categoryName="routing" containerId="400" />        <publicationRule ruleType="transformation" categoryName="userProperties" containerId="1" preferredSelfConsumption="true" />
458. <publicationRule ruleType="transformation" categoryName="userInformation" containerId="1" preferredSelfConsumption="true" />
459. <publicationRule ruleType="transformation" categoryName="alerts" containerId="1" preferredSelfConsumption="true" />
460. <publicationRule ruleType="transformation" categoryName="rccOptions" containerId="1" preferredSelfConsumption="true" />
461. <publicationRule ruleType="transformation" categoryName="otherOptions" containerId="1" preferredSelfConsumption="true" />
462. <publicationRule ruleType="transformation" categoryName="categoryPublicationManifest" containerId="1" preferredSelfConsumption="true" />
463. <publicationRule ruleType="bootstrap" categoryName="state" containerId="32000">
464. <instanceId type="constant" value="0" />
465. <expireType type="static" />
466. <categoryData><![CDATA[ <state xmlns="http://schemas.microsoft.com/2006/09/sip/state"    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"    manual="false"    xsi:type="aggregateState">  <availability>18500</availability> </state>    ]]></categoryData>
467. </publicationRule>
468. <publicationRule ruleType="bootstrap" categoryName="services" containerId="32000">
469. <instanceId type="constant" value="0" />
470. <expireType type="static" />
471. <categoryData><![CDATA[ <services xmlns="http://schemas.microsoft.com/2006/09/sip/service" />    ]]></categoryData>
472. </publicationRule>
473. <publicationRule ruleType="bootstrap" categoryName="routing" containerId="32000">
474. <instanceId type="constant" value="0" />
475. <expireType type="static" />
476. <categoryData><![CDATA[ <routing name="rtcdefault" version="1"     xmlns="http://schemas.microsoft.com/02/2006/sip/routing">  <preamble>   <flags name="clientflags" value="block" />  </preamble> </routing>    ]]></categoryData>
477. </publicationRule>
478. <publicationRule ruleType="bootstrap" categoryName="routing" containerId="0">
479. <instanceId type="constant" value="0" />
480. <expireType type="static" />
481. <categoryData><![CDATA[ <routing name="rtcdefault" version="1" minSupportedClientVersion="4.0.0.0"     xmlns="http://schemas.microsoft.com/02/2006/sip/routing">  <preamble>   <flags name="clientflags" value="" />   <wait name="total" seconds="20" />  </preamble> </routing>    ]]></categoryData>
482. </publicationRule>
483. <publicationRule ruleType="bootstrap" categoryName="noteHistory" containerId="100">
484. <instanceId type="constant" value="0" />
485. <expireType type="static" />
486. <categoryData><![CDATA[ <note xmlns="http://schemas.microsoft.com/2006/09/sip/note" />    ]]></categoryData>
487. </publicationRule>
488. <publicationRule ruleType="bootstrap" categoryName="noteHistory" containerId="32000">
489. <instanceId type="constant" value="0" />
490. <expireType type="static" />
491. <categoryData><![CDATA[ <note xmlns="http://schemas.microsoft.com/2006/09/sip/note" />    ]]></categoryData>
492. </publicationRule>
493. </publicationList>
494. </categoryPublicationManifest>
495. </provisionGroup>
496. <provisionGroup name="ServerConfiguration">
497. <lisInternalUrl>https://clientmainse.fabrikam.com:443/locationinformation/liservice.svc</lisInternalUrl>
498. <absInternalServerUrl>https://clientmainse.fabrikam.com:443/abs/handler</absInternalServerUrl>
499. <absExternalServerUrl>https://clientmainse.fabrikam.com:4443/abs/handler</absExternalServerUrl>
500. <abwqInternalUrl>https://clientmainse.fabrikam.com:443/groupexpansion/service.svc</abwqInternalUrl>
501. <abwqExternalUrl>https://clientmainse.fabrikam.com:4443/groupexpansion/service.svc</abwqExternalUrl>
502. <dlxInternalUrl>https://clientmainse.fabrikam.com:443/groupexpansion/service.svc</dlxInternalUrl>
503. <dlxExternalUrl>https://clientmainse.fabrikam.com:4443/groupexpansion/service.svc</dlxExternalUrl>
504. <dlxEnabled>true</dlxEnabled>
505. <updatesServerInternalUrl>https://clientmainse.fabrikam.com:443/RequestHandler/ucdevice.upx</updatesServerInternalUrl>
506. <updatesServerExternalUrl>https://clientmainse.fabrikam.com:4443/RequestHandlerExt/ucdevice.upx</updatesServerExternalUrl>
507. <updatesServerEnabled>true</updatesServerEnabled>
508. <ucPortRangeEnabled>false</ucPortRangeEnabled>
509. <ucMinMediaPort>5350</ucMinMediaPort>
510. <ucMaxMediaPort>5389</ucMaxMediaPort>
511. <ucMinSipDynamicPort>7100</ucMinSipDynamicPort>
512. <ucMaxSipDynamicPort>7102</ucMaxSipDynamicPort>
513. <ucMinAudioPort>5350</ucMinAudioPort>
514. <ucMaxAudioPort>5389</ucMaxAudioPort>
515. <ucMinVideoPort>5350</ucMinVideoPort>
516. <ucMaxVideoPort>5389</ucMaxVideoPort>
517. <ucMinAppSharingPort>5350</ucMinAppSharingPort>
518. <ucMaxAppSharingPort>5389</ucMaxAppSharingPort>
519. <ucMinFileTransferPort>5350</ucMinFileTransferPort>
520. <ucMaxFileTransferPort>5389</ucMaxFileTransferPort>
521. <ucPC2PCAVEncryption>RequireEncryption</ucPC2PCAVEncryption>
522. <ucMaxVideoRateAllowed>VGA-600K</ucMaxVideoRateAllowed>
523. <qosEnabled>false</qosEnabled>
524. <enableInCallQoS>false</enableInCallQoS>
525. <inCallQoSIntervalSeconds>35</inCallQoSIntervalSeconds>
526. <ucDiffServVoice>40</ucDiffServVoice>
527. <ucVoice802\_1p>0</ucVoice802\_1p>
528. <ucEnforcePinLock>true</ucEnforcePinLock>
529. <ucMinPinLength>6</ucMinPinLength>
530. <ucPhoneTimeOut>10</ucPhoneTimeOut>
531. <ucExchangeMWIPoll>3</ucExchangeMWIPoll>
532. <ucEnableSIPSecurityMode>High</ucEnableSIPSecurityMode>
533. <ucEnableUserLogging>true</ucEnableUserLogging>
534. <loggingLevel>Medium</loggingLevel>
535. <enableBWPolicyCheck>true</enableBWPolicyCheck>
536. <poolUri>sip:clientmainse.fabrikam.com@fabrikam.com;gruu;opaque=srvr:HomeServer:5duhvIdz\_FOhto7rkSU2gAAA</poolUri>
537. <mrasUri>sip:clientmain\_int.fabrikam.com@fabrikam.com;gruu;opaque=srvr:MRAS:lvmY26x3w1WbYUtPiviXXgAA</mrasUri>
538. <qosUri>sip:clientmainse.fabrikam.com@fabrikam.com;gruu;opaque=srvr:QoS:N7bgtXm\_dla-s17uU81BIwAA</qosUri>
539. <callParkServerUri>sip:clientmainse.fabrikam.com@fabrikam.com;gruu;opaque=srvr:Microsoft.Rtc.Applications.Cps:4H28w6olDlm9KG3nl5tyBQAA</callParkServerUri>
540. <responseGroupServiceInternalURL>https://clientmainse.fabrikam.com:443/RgsClients/AgentService.svc</responseGroupServiceInternalURL>
541. <responseGroupServiceExternalURL>https://clientmainse.fabrikam.com:4443/RgsClients/AgentService.svc</responseGroupServiceExternalURL>
542. <responseGroupServiceInternalAgentURL>https://clientmainse.fabrikam.com:443/RgsClients/Tab.aspx</responseGroupServiceInternalAgentURL>
543. <responseGroupServiceExternalAgentURL>https://clientmainse.fabrikam.com:4443/RgsClients/Tab.aspx</responseGroupServiceExternalAgentURL>
544. <botSipUriForTestCall>sip:clientmainse.fabrikam.com@fabrikam.com;gruu;opaque=srvr:Microsoft.Rtc.Applications.TestBot:Hzhw8lv8gF-49c74fEDnRgAA</botSipUriForTestCall>
545. <ucLocationProfile>DefaultProfile</ucLocationProfile>
546. <focusFactoryUri>sip:alice@fabrikam.com;gruu;opaque=app:conf:focusfactory</focusFactoryUri>
547. <voiceMailUri>sip:alice@fabrikam.com;opaque=app:voicemail</voiceMailUri>
548. <requireFIPSCompliantMedia>false</ requireFIPSCompliantMedia>
549. </provisionGroup>
550. <provisionGroup name="ucPolicy">
551. <instance>
552. <property name="name">DefaultPolicy</property>
553. <property name="AllowSimultaneousRinging">true</property>
554. <property name="AllowCallForwarding">true</property>
555. <property name="EnableDelegation">true</property>
556. <property name="EnableTeamCall">true</property>
557. <property name="EnableCallPark">true</property>
558. <property name="EnableCallTransfer">true</property>
559. <property name="EnableMaliciousCallTrace">true</property>
560. <property name="enableBWPolicyOverride">false</property>
561. <property name="UcEnabled">true</property>
562. <property name="VoiceDeploymentMode">OnPrem</property>
563. </instance>
564. </provisionGroup>
565. <provisionGroup name="userSetting">
566. <disableFileTransfer>false</disableFileTransfer>
567. <ucUserLocationProfile>DefaultProfile</ucUserLocationProfile>
568. </provisionGroup>
569. <provisionGroup name="persistentChatConfiguration" >
570. <propertyEntryList >
571. <property name="EnablePersistentChat" >true</property>
572. <property name="DefaultPersistentChatPoolUri" >sip:mgcdog1.fabrikam.com@fabrikam.com;gruu;opaque=srvr:GroupChat:k\_7TLwJGsVy7jWMyTAtJcwAA</property>
573. <property name="PersistentChatPoolUris" >sip:server1.fabrikam.com@fabrikam.com;gruu;opaque=srvr:GroupChat:k\_7TLwJGsVy7jWMyTAtJcwAA sip:server2.fabrikam.com@fabrikam.com;gruu;opaque=srvr:GroupChat: l\_7TLwJGsVy7jWMyTAtJcwBB </property>
574. <property name="PersistentChatWebManagerUriInt" >https://pool0.fabrikam.com:123/PersistentChat/RM</property>
575. <property name="PersistentChatWebManagerUriExt" >https://ext.fabrikam.com:1234/PersistentChat/RM</property>
576. </propertyEntryList>
577. </provisionGroup>
578. <provisionGroup name="publicProviders" >
579. <propertyEntryList >
580. <property name="PublicProviders" >
581. <![CDATA[<PublicProviders>< /PublicProviders>]]>
582. </property>
583. </propertyEntryList>
584. </provisionGroup>
585. </provisionGroupList>

### Client-to-Server Delegated Provisioning Request

In the following request, user bob@fabrikam.com sends an **application/vnd-microsoft-roaming-provisioning-v2+xml** request to the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) on behalf of his delegator alice@fabrikam.com.

1. SUBSCRIBE sip:alice@fabrikam.com SIP/2.0
2. Via: SIP/2.0/TLS 172.24.32.149:53990
3. Max-Forwards: 70
4. **From: <sip:bob@fabrikam.com>;tag=77399b3fb7;epid=e48fdaa231**
5. To: sip:alice@fabrikam.com
6. **p-session-on-behalf-of: sip:alice@fabrikam.com**
7. Call-ID: dcb605d5e73e44ccbe84dbe4886d210f
8. CSeq: 1 SUBSCRIBE
9. Contact: <sip:bob@fabrikam.com;opaque=user:epid:A3zr0x5\_sVSbfPZ-4\_JkrgAA;gruu>
10. User-Agent: UCCAPI/4.0.7577.0 OC/4.0.7577.0 (Microsoft Communicator 2010)
11. Event: vnd-microsoft-provisioning-v2
12. Accept: application/vnd-microsoft-roaming-provisioning-v2+xml
13. Supported: com.microsoft.autoextend
14. Supported: ms-benotify
15. Proxy-Require: ms-benotify
16. Supported: ms-piggyback-first-notify
17. Expires: 0
18. Proxy-Authorization: Kerberos qop="auth", realm="SIP Communications Service", opaque="224773FA", targetname="sip/clientmainse.fabrikam.com", crand="571d3235", cnum="4", response="040400ffffffffff0000000000000000d2a625d0f476403d15d58285"
19. Content-Type: application/vnd-microsoft-roaming-provisioning-v2+xml
20. Content-Length: 625
21. <provisioningGroupList xmlns="http://schemas.microsoft.com/2006/09/sip/provisioninggrouplist" subnet="172.24.32.0">
22. <provisioningGroup name="endpointConfiguration" />
23. <provisioningGroup name="locationPolicy" />
24. <provisioningGroup name="mediaConfiguration" />
25. <provisioningGroup name="meetingPolicy" />
26. <provisioningGroup name="presencePolicyV2" />
27. <provisioningGroup name="privacyPublicationGrammar" />
28. <provisioningGroup name="publicationGrammar" />
29. <provisioningGroup name="ServerConfiguration" />
30. <provisioningGroup name="ucPolicy" />
31. <provisioningGroup name="userSetting" />
32. <provisioningGroup name="publicProviders" />
33. </provisioningGroupList>

## Automatically Updating Client to a Server-Compatible Version

### Processing Incoming Register Request

The following example is a typical [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) request with a **User-Agent** header specifying the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) version.

REGISTER sip:production.cdmedia.tv SIP/2.0

From: <sip:alice@fabrikam.com>;tag=90a265ed3f;epid=a0ae9e6cb0

To: <sip:alice@fabrikam.com>

CSeq: 1 REGISTER

Call-ID: 6b2dec5dfd9a4eaf90180bb2f8f699ea

Via: SIP/2.0/TLS 10.2.50.42:1649

Max-Forwards: 70

Contact: <sip:10.2.50.42:1649;transport=tls;ms-opaque=40e5133a3a>;methods="INVITE, MESSAGE, INFO, OPTIONS, BYE, CANCEL, NOTIFY, ACK, REFER, BENOTIFY";proxy=replace;+sip.instance="<urn:uuid:C1589240-E660-594F-A8B3-4B55F358CBC1>"

User-Agent: UCCAPI/3.5.6890.0 OC/3.5.6890.0 (Microsoft Office Communicator 2007 R2)

Supported: gruu-10, adhoclist, msrtc-event-categories

ms-keep-alive: UAC;hop-hop=yes

Event: registration

Content-Length: 0

### Sending 200 OK Response (Action: Allow client)

The following code is an example of a [**200 OK**](#gt_d9c398c0-9009-4dc6-9340-36423671182b) [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) response sent back when the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) allows the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb).

SIP/2.0 200 OK

From: <sip:alice@fabrikam.com>;tag=90a265ed3f;epid=a0ae9e6cb0

To: <sip:alice@fabrikam.com>

CSeq: 1 REGISTER

Call-ID: 6b2dec5dfd9a4eaf90180bb2f8f699ea

ms-keep-alive: UAS; tcp=no; hop-hop=yes; end-end=no; timeout=300

Proxy-Authentication-Info: Kerberos rspauth="602306092A864886F71201020201011100FFFFFFFF9964699C1D00E6ACA44AEBD821D187D2", srand="9F9AB255", snum="1", opaque="B3762FF0", qop="auth", targetname="sip/ABC.fabrikam.com", realm="SIP Communications Service"

Via: SIP/2.0/TLS 10.2.50.42:1649;ms-received-port=1649;ms-received-cid=100

Contact: <sip:10.2.50.42:1649;transport=tls;ms-opaque=40e5133a3a;ms-received-cid=100>;expires=7200;+sip.instance="<urn:uuid:c1589240-e660-594f-a8b3-4b55f358cbc1>";gruu="sip:pdawitt5@production.cdmedia.tv;opaque=user:epid:QJJYwWDmT1mos0tV81jLwQAA;gruu"

Expires: 7200

presence-state: register-action="added";primary-cluster-type="central";is-connected-to-primary="yes"

Allow-Events: vnd-microsoft-provisioning,vnd-microsoft-roaming-contacts,vnd-microsoft-roaming-ACL,presence,presence.wpending,vnd-microsoft-roaming-self,vnd-microsoft-provisioning-v2

Supported: adhoclist

Server: RTC/3.5

Supported: msrtc-event-categories

Content-Length: 0

### Sending 403 Forbidden Response (Action: Block Client with Prompt)

The following code is an example of a [**403 Forbidden**](#gt_a3fb9d90-016b-4376-942f-0159a103ecc9) response sent back when the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) blocks the client. In this case, the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) displays a prompt to the user indicating that the version of the client needs to be updated.

SIP/2.0 403 Forbidden

From: <sip:alice@fabrikam.com>;tag=90a265ed3f;epid=a0ae9e6cb0

To: sip:alice@fabrikam.com

CSeq: 1 REGISTER

Call-ID: 6b2dec5dfd9a4eaf90180bb2f8f699ea

Proxy-Authentication-Info: Kerberos rspauth="602306092A864886F71201020201011100FFFFFFFF553E0C6CD0DF29D9C9DF1A9132706429", srand="E7D4FFEC", snum="1", opaque="F2225600", qop="auth", targetname=" sip/ABC.fabrikam.com ", realm="SIP Communications Service"

Via: SIP/2.0/TLS 10.2.50.42:1656;ms-received-port=1656;ms-received-cid=100

Warning: 310 lcs.microsoft.com "You are currently not using the recommended version of the client"

ms-diagnostics: 17002;reason="Invalid Request";source="DB19-LCT.Production.cdmedia.tv";appName="ClientVersionFilter"

Content-Length: 0

### Sending 403 Forbidden Response (Action: Block Client with Static URL)

The following code is an example of a [**403 Forbidden**](#gt_a3fb9d90-016b-4376-942f-0159a103ecc9) response sent back when the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) blocks the client. In this case, the user can get the newer version of the client from the following link specified in the **Warning** header.

1. https://fabrikam.com/ClientUpdate.html

SIP/2.0 403 Forbidden

From: <sip:alice@fabrikam.com>;tag=90a265ed3f;epid=a0ae9e6cb0

To: sip:alice@fabrikam.com

CSeq: 1 REGISTER

Call-ID: 6b2dec5dfd9a4eaf90180bb2f8f699ea

Proxy-Authentication-Info: Kerberos rspauth="602306092A864886F71201020201011100FFFFFFFF553E0C6CD0DF29D9C9DF1A9132706429", srand="E7D4FFEC", snum="1", opaque="F2225600", qop="auth", targetname=" sip/ABC.fabrikam.com ", realm="SIP Communications Service"

Via: SIP/2.0/TLS 10.2.50.42:1656;ms-received-port=1656;ms-received-cid=100

Warning: 311 lcs.microsoft.com "https://fabrikam.com/ClientUpdate.html"

ms-diagnostics: 17002;reason="Invalid Request";source="DB19-LCT.Production.cdmedia.tv";appName="ClientVersionFilter"

Content-Length: 0

### Sending 403 Forbidden Response (Action: Block Client with Dynamic URL)

The following code is an example of a [**403 Forbidden**](#gt_a3fb9d90-016b-4376-942f-0159a103ecc9) response sent back when the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) blocks the client. In this case, the client uses the dynamic [**URL**](#gt_433a4fb7-ef84-46b0-ab65-905f5e3a80b1) to construct the following URL, and then automatically downloads a newer version of the client.

1. https://server.vdomain.com/AutoUpdate/Int/Handler/update.aspx?folder=OCv3.1&lang=en-us&arch=x32&flavor=pu&build=chk

SIP/2.0 403 Forbidden

From: <sip:alice@fabrikam.com>;tag=90a265ed3f;epid=a0ae9e6cb0

To: sip:alice@fabrikam.com

CSeq: 1 REGISTER

Call-ID: 6b2dec5dfd9a4eaf90180bb2f8f699ea

Proxy-Authentication-Info: Kerberos rspauth="602306092A864886F71201020201011100FFFFFFFF553E0C6CD0DF29D9C9DF1A9132706429", srand="E7D4FFEC", snum="1", opaque="F2225600", qop="auth", targetname=" sip/ABC.fabrikam.com ", realm="SIP Communications Service"

Via: SIP/2.0/TLS 10.2.50.42:1656;ms-received-port=1656;ms-received-cid=100

Warning: 312 lcs.microsoft.com "https://fabrikam.com/ClientUpdate/update.aspx?folder=OCv3.1"

ms-diagnostics: 17002;reason="Invalid Request";source="DB19-LCT.Production.cdmedia.tv";appName="ClientVersionFilter"

Content-Length: 0

### Sending 200 OK Response (Action: Allow Client with Dynamic URL)

The following code is an example of a [**200 OK**](#gt_d9c398c0-9009-4dc6-9340-36423671182b) response sent back. In this case, the client uses the dynamic [**URL**](#gt_433a4fb7-ef84-46b0-ab65-905f5e3a80b1) to construct the following URL, and then downloads a newer version of the client.

1. https://server.vdomain.com/AutoUpdate/Int/Handler/update.aspx?folder=OCv3.1&lang=en-us&arch=x32&flavor=pu&build=chk
2. SIP/2.0 200 OK
3. From: <sip:alice@fabrikam.com>;tag=90a265ed3f;epid=a0ae9e6cb0
4. To: sip:alice@fabrikam.com
5. CSeq: 1 REGISTER
6. Call-ID: 6b2dec5dfd9a4eaf90180bb2f8f699ea
7. ms-keep-alive: UAS; tcp=no; hop-hop=yes; end-end=no; timeout=300
8. Proxy-Authentication-Info: Kerberos rspauth="602306092A864886F71201020201011100FFFFFFFF104A8EDFA12CC095AAA663DF55824DCB", srand="5E058A82", snum="1", opaque="E0DA4F74", qop="auth", targetname="sip/DB19-LCT.Production.cdmedia.tv", realm="SIP Communications Service"
9. Via: SIP/2.0/TLS 10.2.50.42:1699;ms-received-port=1699;ms-received-cid=200
10. Contact: <sip:10.2.50.42:1699;transport=tls;ms-opaque=89eaec8ad6;ms-received-cid=200>;expires=7200;+sip.instance="<urn:uuid:c1589240-e660-594f-a8b3-4b55f358cbc1>";gruu="sip:alice@fabrikam.com;opaque=user:epid:QJJYwWDmT1mos0tV81jLwQAA;gruu"
11. Expires: 7200
12. presence-state: register-action="added";primary-cluster-type="central";is-connected-to-primary="yes"
13. Allow-Events: vnd-microsoft-provisioning,vnd-microsoft-roaming-contacts,vnd-microsoft-roaming-ACL,presence,presence.wpending,vnd-microsoft-roaming-self,vnd-microsoft-provisioning-v2
14. Supported: adhoclist
15. Server: RTC/3.5
16. Supported: msrtc-event-categories
17. Warning: 312 lcs.microsoft.com "https://fabrikam.com/Client
18. /update.aspx?folder=OCv3.1"
19. ms-diagnostics: 17002;reason="Invalid Request";source="DB19-LCT.Production.cdmedia.tv";appName="ClientVersionFilter"
20. Content-Length: 0

### Sending 200 OK Response (Action: Allow Clients with Upgrade)

The following code is an example of a [**200 OK**](#gt_d9c398c0-9009-4dc6-9340-36423671182b) response sent back when the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) allows the client. In this case, the client connections to an update service to find the latest version.

SIP/2.0 200 OK

From: <sip:alice@fabrikam.com>;tag=90a265ed3f;epid=a0ae9e6cb0

To: sip:alice@fabrikam.com

CSeq: 1 REGISTER

Call-ID: 6b2dec5dfd9a4eaf90180bb2f8f699ea

Proxy-Authentication-Info: Kerberos rspauth="602306092A864886F71201020201011100FFFFFFFF553E0C6CD0DF29D9C9DF1A9132706429", srand="E7D4FFEC", snum="1", opaque="F2225600", qop="auth", targetname=" sip/ABC.fabrikam.com ", realm="SIP Communications Service"

Via: SIP/2.0/TLS 10.2.50.42:1656;ms-received-port=1656;ms-received-cid=100

Warning: 314 lcs.microsoft.com "Check Microsoft Update for the newest version.";appName="ClientVersionFilter"

Content-Length: 0

### Sending 403 Forbidden (Action: Block Clients with Upgrade)

The following code is an example of a [**403 Forbidden**](#gt_a3fb9d90-016b-4376-942f-0159a103ecc9) response sent back when the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703) blocks the client. In this case, the client connections to an update service to find the latest version.

SIP/2.0 403 Forbidden

From: <sip:alice@fabrikam.com>;tag=90a265ed3f;epid=a0ae9e6cb0

To: sip:alice@fabrikam.com

CSeq: 1 REGISTER

Call-ID: 6b2dec5dfd9a4eaf90180bb2f8f699ea

Proxy-Authentication-Info: Kerberos rspauth="602306092A864886F71201020201011100FFFFFFFF553E0C6CD0DF29D9C9DF1A9132706429", srand="E7D4FFEC", snum="1", opaque="F2225600", qop="auth", targetname=" sip/ABC.fabrikam.com ", realm="SIP Communications Service"

Via: SIP/2.0/TLS 10.2.50.42:1656;ms-received-port=1656;ms-received-cid=100

Warning: 314 lcs.microsoft.com "Check Microsoft Update for the newest version.";appName="ClientVersionFilter"

Content-Length: 0

### Sending 200 OK Response (Action: Allow Client with Static URL)

The following code is an example of a [**200 OK**](#gt_d9c398c0-9009-4dc6-9340-36423671182b) [**REGISTER**](#gt_7fe802a6-b89e-4542-a9b9-2938bccf056a) response sent back by the [**server**](#gt_434b0234-e970-4e8c-bdfa-e16a30d96703). In this case, the user can get the newer version of the client from the following link specified in the **Warning** header.

1. https://fabrikam.com/ClientUpdate.html
2. SIP/2.0 200 OK
3. From: <sip:alice@fabrikam.com>;tag=90a265ed3f;epid=a0ae9e6cb0
4. To: sip:alice@fabrikam.com
5. CSeq: 1 REGISTER
6. Call-ID: 6b2dec5dfd9a4eaf90180bb2f8f699ea
7. ms-keep-alive: UAS; tcp=no; hop-hop=yes; end-end=no; timeout=300
8. Proxy-Authentication-Info: Kerberos rspauth="602306092A864886F71201020201011100FFFFFFFF104A8EDFA12CC095AAA663DF55824DCB", srand="5E058A82", snum="1", opaque="E0DA4F74", qop="auth", targetname="sip/DB19-LCT.Production.cdmedia.tv", realm="SIP Communications Service"
9. Via: SIP/2.0/TLS 10.2.50.42:1699;ms-received-port=1699;ms-received-cid=200
10. Contact: <sip:10.2.50.42:1699;transport=tls;ms-opaque=89eaec8ad6;ms-received-cid=200>;expires=7200;+sip.instance="<urn:uuid:c1589240-e660-594f-a8b3-4b55f358cbc1>";gruu="sip:alice@fabrikam.com;opaque=user:epid:QJJYwWDmT1mos0tV81jLwQAA;gruu"
11. Expires: 7200
12. presence-state: register-action="added";primary-cluster-type="central";is-connected-to-primary="yes"
13. Allow-Events: vnd-microsoft-provisioning,vnd-microsoft-roaming-contacts,vnd-microsoft-roaming-ACL,presence,presence.wpending,vnd-microsoft-roaming-self,vnd-microsoft-provisioning-v2
14. Supported: adhoclist
15. Server: RTC/3.5
16. Supported: msrtc-event-categories
17. Warning: 313 lcs.microsoft.com "https://fabrikam.com/ClientUpdate.html"
18. ms-diagnostics: 17002;reason="Invalid Request";source="DB19-LCT.Production.cdmedia.tv";appName="ClientVersionFilter"
19. Content-Length: 0

# Security

## Security Considerations for Implementers

These extensions have the same security considerations as those natively defined for [**SIP**](#gt_586971aa-3b65-4de3-be93-1a9756777d89).

In addition, an [**SA**](#gt_67cbf867-7a49-41f3-a68f-37b5f9035acb) is required to be established and maintained between the [**UAC**](#gt_e5f72a3f-9df4-47e1-b4ee-eda52237bafb) and the [**SIP registrar**](#gt_d7ddab00-0049-4205-9ce7-8a89bbcc21e8) using the [**NTLM**](#gt_fff710f9-e3d1-4991-99a2-009768d57585) or the [**Kerberos**](#gt_d6a282ce-b1da-41e1-b05a-22f777a5c1fe) authentication protocol, as described in [[MS-SIPAE]](%5bMS-SIPAE%5d.pdf#Section_ba3e9821fa854e0fa80c5a4c720a00bd) section 3.2.

## Index of Security Parameters

None.

# Appendix A: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include updates to those products.

* Microsoft Office Communications Server 2007
* Microsoft Office Communicator 2007
* Microsoft Office Communications Server 2007 R2
* Microsoft Office Communicator 2007 R2
* Microsoft Lync Server 2010
* Microsoft Lync 2010
* Microsoft Lync Server 2013
* Microsoft Lync Client 2013/Skype for Business
* Microsoft Skype for Business Server 2015
* Microsoft Skype for Business 2016
* Microsoft Skype for Business 2019
* Microsoft Skype for Business Server 2019
* Microsoft Skype for Business 2021
* Microsoft Skype for Business LTSC 2024

Exceptions, if any, are noted in this section. If an update version, service pack or Knowledge Base (KB) number appears with a product name, the behavior changed in that update. The new behavior also applies to subsequent updates unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

Unless otherwise specified, any statement of optional behavior in this specification that is prescribed using the terms "SHOULD" or "SHOULD NOT" implies product behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term "MAY" implies that the product does not follow the prescription.

[<1> Section 2.1](#Appendix_A_Target_1): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync 2010, Lync Server 2010: [**IPv6**](#gt_64c29bb6-c8b2-4281-9f3a-c1eb5d2288aa) is not supported.

[<2> Section 2.2.1.4](#Appendix_A_Target_2): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<3> Section 2.2.1.4](#Appendix_A_Target_3): Supported in Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2 only.

[<4> Section 2.2.1.5](#Appendix_A_Target_4): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<5> Section 2.2.1.5](#Appendix_A_Target_5): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<6> Section 2.2.1.6](#Appendix_A_Target_6): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<7> Section 2.2.1.6](#Appendix_A_Target_7): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<8> Section 2.2.1.7](#Appendix_A_Target_8): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This behavior is not supported.

[<9> Section 2.2.1.7](#Appendix_A_Target_9): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This behavior is not supported.

[<10> Section 2.2.1.8](#Appendix_A_Target_10): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<11> Section 2.2.1.8](#Appendix_A_Target_11): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<12> Section 2.2.1.9](#Appendix_A_Target_12): Office Communications Server 2007: Server header value is the literal string "RTC/3.0". Office Communications Server 2007 R2: Server header value is the literal string "RTC/3.5".

[<13> Section 2.2.1.12](#Appendix_A_Target_13): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<14> Section 2.2.1.13](#Appendix_A_Target_14): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This message body is not supported.

[<15> Section 2.2.1.13](#Appendix_A_Target_15): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This message body is not supported.

[<16> Section 2.2.1.13](#Appendix_A_Target_16): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<17> Section 2.2.2.1](#Appendix_A_Target_17): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<18> Section 2.2.2.1](#Appendix_A_Target_18): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<19> Section 2.2.2.1](#Appendix_A_Target_19): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<20> Section 2.2.2.4](#Appendix_A_Target_20): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<21> Section 2.2.2.4](#Appendix_A_Target_21): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<22> Section 2.2.2.4](#Appendix_A_Target_22): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<23> Section 2.2.2.4](#Appendix_A_Target_23): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<24> Section 2.2.2.4](#Appendix_A_Target_24): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<25> Section 2.2.2.4](#Appendix_A_Target_25): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<26> Section 2.2.2.4](#Appendix_A_Target_26): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync 2010: This behavior is not supported.

[<27> Section 2.2.2.4](#Appendix_A_Target_27): Supported in Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2 only.

[<28> Section 2.2.2.5](#Appendix_A_Target_28): Office Communications Server 2007, Office Communicator 2007: The response is a server error, based on an incompatible UAC version.

[<29> Section 2.2.2.5](#Appendix_A_Target_29): Office Communications Server 2007, Office Communicator 2007: The response is a server error, based on an incompatible UAC version.

[<30> Section 2.2.2.5](#Appendix_A_Target_30): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<31> Section 2.2.2.5](#Appendix_A_Target_31): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<32> Section 2.2.2.5](#Appendix_A_Target_32): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<33> Section 2.2.2.5](#Appendix_A_Target_33): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<34> Section 2.2.2.5](#Appendix_A_Target_34): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<35> Section 2.2.2.5](#Appendix_A_Target_35): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync 2010: This behavior is not supported.

[<36> Section 2.2.2.5.1](#Appendix_A_Target_36): Office Communications Server 2007, Office Communicator 2007: This behavior is not supported.

Office Communications Server 2007 R2, Office Communicator 2007 R2: Only the following properties are supported:

1. |-- lisInternalUrl
2. |-- absInternalServerUrl
3. |-- absExternalServerUrl
4. |-- abwqInternalUrl
5. |-- abwqExternalUrl
6. |-- dlxInternalUrl
7. |-- dlxExternalUrl
8. |-- dlxEnabled
9. |-- updatesServerInternalUrl
10. |-- updatesServerExternalUrl
11. |-- updatesServerEnabled
12. |-- organization
13. |-- consoleDownloadInternalUrl
14. |-- consoleDownloadExternalUrl
15. |-- ucPortRangeEnabled
16. |-- ucMinMediaPort
17. |-- ucMaxMediaPort
18. |-- ucMinSipDynamicPort
19. |-- ucMaxSipDynamicPort
20. |-- ucMinAudioPort
21. |-- ucMaxAudioPort
22. |-- ucMinVideoPort
23. |-- ucMaxVideoPort
24. |-- ucMinAppSharingPort
25. |-- ucMaxAppSharingPort
26. |-- ucMinFileTransferPort
27. |-- ucMaxFileTransferPort
28. |-- ucPC2PCAVEncryption
29. |-- ucMaxVideoRateAllowed
30. |-- qosEnabled
31. |-- enableInCallQoS
32. |-- inCallQoSIntervalSeconds
33. |-- ucDiffServVoice
34. |-- ucVoice802\_1p
35. |-- ucEnforcePinLock
36. |-- ucMinPinLength
37. |-- ucPhoneTimeOut
38. |-- ucExchangeMWIPoll
39. |-- ucEnableSIPSecurityMode
40. |-- ucEnableUserLogging
41. |-- loggingLevel
42. |-- enableBWPolicyCheck
43. |-- poolUri
44. |-- mrasUri
45. |-- qosUri
46. |-- callParkServerUri
47. |-- responseGroupServiceInternalURL
48. |-- responseGroupServiceExternalURL
49. |-- responseGroupServiceInternalAgentURL
50. |-- responseGroupServiceExternalAgentURL
51. |-- botSipUriForTestCall
52. |-- cwaInternalUri
53. |-- cwaExternalUri
54. |-- ucLocationProfile
55. |-- focusFactoryUri
56. |-- voiceMailUri

[<37> Section 2.2.2.5.1](#Appendix_A_Target_37): Supported in Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2 only.

[<38> Section 2.2.2.5.1](#Appendix_A_Target_38): Office Communications Server 2007, Office Communicator 2007: This value is not supported.

[<39> Section 2.2.2.5.1](#Appendix_A_Target_39): Supported in Office Communicator 2007, Office Communicator 2007 R2 only.

[<40> Section 2.2.2.5.1](#Appendix_A_Target_40): Supported in Office Communicator 2007, Office Communicator 2007 R2 only.

[<41> Section 2.2.2.5.1](#Appendix_A_Target_41): Supported in Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2 only.

[<42> Section 2.2.2.5.1](#Appendix_A_Target_42): Supported in Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2 only.

[<43> Section 2.2.2.5.1](#Appendix_A_Target_43): Office Communications Server 2007, Office Communicator 2007: This behavior is not supported.

[<44> Section 2.2.2.5.1](#Appendix_A_Target_44): Office Communications Server 2007, Office Communicator 2007: This behavior is not supported.

[<45> Section 2.2.2.5.1](#Appendix_A_Target_45): Office Communications Server 2007, Office Communicator 2007: This behavior is not supported.

[<46> Section 2.2.2.5.1](#Appendix_A_Target_46): Office Communications Server 2007, Office Communicator 2007: This behavior is not supported.

[<47> Section 2.2.2.5.1](#Appendix_A_Target_47): Office Communications Server 2007, Office Communicator 2007: This behavior is not supported.

[<48> Section 2.2.2.5.1](#Appendix_A_Target_48): Office Communications Server 2007, Office Communicator 2007: This behavior is not supported.

[<49> Section 2.2.2.5.1](#Appendix_A_Target_49): Office Communications Server 2007, Office Communicator 2007: This behavior is not supported.

[<50> Section 2.2.2.5.1](#Appendix_A_Target_50): Office Communications Server 2007, Office Communicator 2007: This behavior is not supported.

[<51> Section 2.2.2.5.1](#Appendix_A_Target_51): Office Communications Server 2007, Office Communicator 2007: This behavior is not supported.

[<52> Section 2.2.2.5.1](#Appendix_A_Target_52): Office Communications Server 2007, Office Communicator 2007: This behavior is not supported.

[<53> Section 2.2.2.5.1](#Appendix_A_Target_53): Office Communications Server 2007, Office Communicator 2007: This behavior is not supported.

[<54> Section 2.2.2.5.1](#Appendix_A_Target_54): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<55> Section 2.2.2.5.1](#Appendix_A_Target_55): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<56> Section 2.2.2.5.1](#Appendix_A_Target_56): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<57> Section 2.2.2.5.1](#Appendix_A_Target_57): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<58> Section 2.2.2.5.1](#Appendix_A_Target_58): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<59> Section 2.2.2.5.1](#Appendix_A_Target_59): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<60> Section 2.2.2.5.1](#Appendix_A_Target_60): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<61> Section 2.2.2.5.1](#Appendix_A_Target_61): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<62> Section 2.2.2.5.1](#Appendix_A_Target_62): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<63> Section 2.2.2.5.1](#Appendix_A_Target_63): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<64> Section 2.2.2.5.1](#Appendix_A_Target_64): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<65> Section 2.2.2.5.1](#Appendix_A_Target_65): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<66> Section 2.2.2.5.1](#Appendix_A_Target_66): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<67> Section 2.2.2.5.1](#Appendix_A_Target_67): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<68> Section 2.2.2.5.1](#Appendix_A_Target_68): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<69> Section 2.2.2.5.1](#Appendix_A_Target_69): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<70> Section 2.2.2.5.1](#Appendix_A_Target_70): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<71> Section 2.2.2.5.1](#Appendix_A_Target_71): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<72> Section 2.2.2.5.1](#Appendix_A_Target_72): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<73> Section 2.2.2.5.1](#Appendix_A_Target_73): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This behavior is not supported.

[<74> Section 2.2.2.5.1](#Appendix_A_Target_74): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This behavior is not supported.

[<75> Section 2.2.2.5.1](#Appendix_A_Target_75): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This behavior is not supported.

[<76> Section 2.2.2.5.1](#Appendix_A_Target_76): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This behavior is not supported.

[<77> Section 2.2.2.5.1](#Appendix_A_Target_77): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This behavior is not supported.

[<78> Section 2.2.2.5.2](#Appendix_A_Target_78): Supported in Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2 only.

[<79> Section 2.2.2.5.2](#Appendix_A_Target_79): Supported in Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2 only.

[<80> Section 2.2.2.5.2](#Appendix_A_Target_80): Supported in Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2 only.

[<81> Section 2.2.2.5.2](#Appendix_A_Target_81): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: Optional/Ignored.

[<82> Section 2.2.2.5.2](#Appendix_A_Target_82): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: Optional/Ignored.

[<83> Section 2.2.2.5.2](#Appendix_A_Target_83): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: Optional/Ignored.

[<84> Section 2.2.2.5.2](#Appendix_A_Target_84): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: Optional/Ignored.

[<85> Section 2.2.2.5.2](#Appendix_A_Target_85): Office Communications Server 2007, Office Communicator 2007: A UAC sending a request with this parameter receives a server error, based on an incompatible UAC version.

[<86> Section 2.2.2.5.2](#Appendix_A_Target_86): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: Optional/Ignored.

[<87> Section 2.2.2.5.2](#Appendix_A_Target_87): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: Optional/Ignored.

[<88> Section 2.2.2.5.2](#Appendix_A_Target_88): Supported in Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2 only.

[<89> Section 2.2.2.5.2](#Appendix_A_Target_89): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<90> Section 2.2.2.5.2](#Appendix_A_Target_90): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<91> Section 2.2.2.5.2](#Appendix_A_Target_91): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<92> Section 2.2.2.5.2](#Appendix_A_Target_92): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<93> Section 2.2.2.5.2](#Appendix_A_Target_93): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This behavior is not supported.

[<94> Section 2.2.2.5.2](#Appendix_A_Target_94): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This behavior is not supported.

[<95> Section 2.2.2.5.2](#Appendix_A_Target_95): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This behavior is not supported.

[<96> Section 2.2.2.5.2](#Appendix_A_Target_96): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2, Lync Server 2010, Lync 2010: This behavior is not supported.

[<97> Section 2.2.2.5.2](#Appendix_A_Target_97): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

[<98> Section 2.2.2.5.2](#Appendix_A_Target_98): Office Communications Server 2007, Office Communicator 2007, Office Communications Server 2007 R2, Office Communicator 2007 R2: This behavior is not supported.

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# Change Tracking

This section identifies changes that were made to this document since the last release. Changes are classified as Major, Minor, or None.

The revision class **Major** means that the technical content in the document was significantly revised. Major changes affect protocol interoperability or implementation. Examples of major changes are:

* A document revision that incorporates changes to interoperability requirements.
* A document revision that captures changes to protocol functionality.

The revision class **Minor** means that the meaning of the technical content was clarified. Minor changes do not affect protocol interoperability or implementation. Examples of minor changes are updates to clarify ambiguity at the sentence, paragraph, or table level.

The revision class **None** means that no new technical changes were introduced. Minor editorial and formatting changes may have been made, but the relevant technical content is identical to the last released version.

The changes made to this document are listed in the following table. For more information, please contact [dochelp@microsoft.com](mailto:dochelp@microsoft.com).

| Section | Description | Revision class |
| --- | --- | --- |
| [6](#Section_79167ea770b54feb8be628edcf15b337) Appendix A: Product Behavior | Updated list of supported products. | Major |

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