

StarLeaf Cloud API

Integration Guide

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Using the StarLeaf Cloud API

Introduction

The StarLeaf Cloud API is a RESTful API that enables external clients to manage StarLeaf deployments and services.

General information about the Cloud API

This document defines the Cloud API and describes its usage.

To use the API, the client must make HTTPS requests to the StarLeaf Cloud API server:

<https://api.starleaf.com/v1>

The body type for all **POST** and **PUT** requests must be of type **application/json**.

GET and **DELETE** requests do not require a body. Where the server response includes a body, it is also of type **application/json**. Strings must be UTF-8 encoded. All responses include the header **X-SL-SERVER**, which identifies the server from which the response came. The client should include this information in any logs, to assist with debugging any issues.

Details of the requests, together with the specification of the associated JSON bodies, are given in the following sections. Where a field is defined as being optional, then it may be omitted from the request body, in which case the default value is used. Response bodies may contain additional optional fields that are not described in this specification.

Note: We recommend that clients do not rely on the default value of boolean arguments. StarLeaf may change any default value in a future release.

About authentication

Before the client can make any API requests, the client must first authenticate itself with the StarLeaf Cloud API server. Clients authenticate with the StarLeaf Cloud either as an individual user or as an integration which is effectively a 'dummy' user which can either have administrator access to the organization or not.

The two authentication methods:

- **Authentication header method:** Introduced in Cloud 4.6 and used for integration access. This allows a client to authenticate with the StarLeaf Cloud as a 'dummy' user. You can use this as the authentication method for clients that will create and manage conferences. Such a client can also request a feature list and the software version of the server. If you give the integration 'admin' privileges, it can also create users in its own organization. Such a client cannot be associated with a real user; therefore the conferences it creates would not belong to a 'real' owner. Such a client cannot access the Cloud with reseller privileges. For more information, refer to [Authentication using authentication header method \(p8\)](#)
- **Challenge-response method:** To authenticate as a real user, the client must use the challenge-response method of authentication. The set of requests that these clients can use are only restricted by the privileges associated with the user whose credentials have been used for the authentication. For example, a user with reseller-level privileges can create new organizations and users, whereas, a user with no privileges is restricted to managing and creating conferences, sending guest invites, and requesting version information and a feature list. For more information, refer to [Authentication using challenge and response method \(p10\)](#)

Authentication using authentication header method

This authentication method is new in Cloud 4.6, API minor version 7.

When a client uses the authentication header method of authentication, it means the client authenticates with the StarLeaf Cloud as an 'integration'. The 'integration' behaves like a 'user' and can have administrator access to an organization or not. If you develop a client for creating and managing conferences and that client uses this method of authentication, those conferences will be 'owned' by the integration rather than by a real user. The authentication header method of authentication is preferred where it is appropriate because it is easier to implement.

Privileges

When you generate the integration, you will specify if it will have 'administrator privileges'. Your client requires administrator privileges if it will add users.

Requirements for authenticating

To authenticate using the authentication header method, the client requires the following values:

- **token header name**: hard-coded to **X-SL-AUTH-TOKEN**
- **token header value**: a unique access token, generated per-integration, in the StarLeaf Portal

All requests must include the token header.

To generate the access token:

1. Ensure that the organization account has custom integrations enabled. (If it does not, contact StarLeaf Support.)
2. Log in to the StarLeaf Portal: <https://portal.starleaf.com>.
3. Go to **Integrations > Add integration**:
 - **Type**: *Custom integration*
 - **Name**: Provide a name for this integration
 - If your client will add users, enable **Administrator privileges**

Add integration

Type: Custom integration

Name: my_api_client

Administrator privileges:

4. Click **Apply**. You will see the access token.
Note that the image only shows an example. You must follow this process for the

organization that the client will modify.

Edit integration

Type:	Custom integration
Name:	my_api_client
Administrator privileges:	<input type="checkbox"/>
Cloud API base URL:	https://api.starleaf.com/v1
Token header name:	X-SL-AUTH-TOKEN
Access token:	AA6fniabirmv3isvAwwCIDVPwpY4R0w3Vy2dUg
Regenerate access token:	<input type="checkbox"/>

Security

Note: It is worth remembering that the access token provides login access to the organization. Therefore, keep it secret. If you think security of the token has been compromised, regenerate the token.

You can regenerate the access token at any time (**Portal > Integrations > Edit integration**). If you do so, any client that is using the integration will be prevented from accessing the StarLeaf Cloud API server until somebody reconfigures it with the new access token.

Authentication using challenge and response method

When a client uses the challenge and response method of authentication, it means the client authenticates with the StarLeaf Cloud as a real user.

The client must authenticate itself with the StarLeaf Cloud API server using the credentials (email address and password) of a user registered on the StarLeaf Cloud. These are the same login credentials with which the user can access the StarLeaf Portal. After authentication, data regarding the authenticated session is stored on the client using cookies and so the client must implement a cookie jar.

Before the client can make any API requests, the client must first authenticate itself with the StarLeaf Cloud API server using a challenge-response protocol. The client requests the challenge by making an **HTTPS GET** request to:

/challenge?username=<username>

where **<username>** is the user email address to be used for authentication. The server then responds with the challenge parameters.

The client must now use the challenge parameters, together with the user password, to create the challenge response. This challenge response must be sent to the server using a **POST** request to:

/authenticate

Assuming authentication is successful, the server responds by setting a number of cookies on the client containing data about the authenticated session, including an authentication token. This token authenticates all subsequent requests from the client, until it expires. Once the token has expired, any further requests from the client (other than to the **/challenge** path) yields a **401 Unauthorized** response. On receipt of such a response, the client must repeat the authentication process summarized above.

Occasionally, it is necessary for a request to be retried with updated cookies. In this case, the server provides a **449 Retry** response whilst updating the cookies. The client should then retry the request.

If the Cloud API is not enabled for the user or an attempt is made to access a resource outside of the user's privilege level, then this generates a **403 Forbidden** response.

Authentication process

Step one

To begin the challenge and response authentication process, make an **HTTPS GET** request to:

/challenge?username=<username>

where **<username>** is the user email address to be used for authentication. There is no request body.

This generates a **200 OK** response with a body having the following structure:

```
{
  "salt": <string: required>,
  "iterations": <integer: required>,
  "challenge": <string: required>
}
```

Field	Description
salt	Hexadecimal representation of a 128 bit value—refer to Calculating the response (p12) for more details.
iterations	Integer—refer to Calculating the response (p12) for more details.
challenge	Hexadecimal representation of a 256 bit value—refer to Calculating the response (p12) for more details.

Step two

To complete the authentication process, make an **HTTPS POST** request to:

/authenticate

The structure of the request is as follows:

```
{
  "username": <string: required>
  "response": <string: required>
}
```

Field	Description
username	The user email address to be used for authentication.
response	Hexadecimal representation of a 256 bit value — refer to Calculating the response (p12) for more details.

On success, this generates a **204 No Content** response with no body. An incorrect response to the challenge (or an unrecognized username) generates a **401 Unauthorized** response from the server.

Calculating the response

This section defines how the client should calculate the response to the challenge generated by the server. The required steps are listed below. These are followed by an example Python implementation.

1. Convert the **salt** and **challenge** parameters (which are hexadecimal strings) to binary representations.
2. Derive the PBKDF2 key from the user password along with the **salt** and **iterations** parameters:

```
key = PBKDF2(HMAC-SHA256, password, salt, iterations, 256)
```

The **salt** and **iterations** parameters are invariant for each user and so the same key can be used for future authentication procedures for the same user.

3. Generate the HMAC response using the derived key and the **challenge** parameter:
response = HMAC-SHA256(key, challenge)

The **challenge** parameter is different each time the authentication procedure is executed and so a new response must be calculated each time.

Example Python implementation:

```
#!/usr/bin/python
# Copyright (c) StarLeaf Ltd. 2015
import hashlib
import hmac
import pbkdf2
import binascii

def cloud_api_authentication(password, salt_hex, iterations, challenge_hex):
    salt = binascii.unhexlify(salt_hex)
    key = pbkdf2.PBKDF2(
        passphrase=password, salt=salt,
        iterations=iterations, digestmodule=hashlib.sha256,
        macmodule=hmac
    ).read(32)

    challenge = binascii.unhexlify(challenge_hex)
    hash = hmac.new(key, challenge, hashlib.sha256)
    response = hash.hexdigest()
    return response

if __name__ == '__main__':
    from optparse import OptionParser

    parser = OptionParser()
    parser.add_option(
        "--password", dest='password',
        help="API password, as set in portal."
    )
    parser.add_option(
        "--salt", dest='salt',
        help="Salt to apply to the password during key derivation."
    )
    parser.add_option(
        "--iterations", dest='iterations', type='int',
        help="Number of iterations to hash during key derivation."
    )
    parser.add_option(
        "--challenge", dest='challenge',
        help="Challenge returned by server."
    )

    (opt, args) = parser.parse_args()

    response = cloud_api_authentication(
        opt.password, opt.salt, opt.iterations, opt.challenge
    )
    print "{\n  \"response\": \"%s\"\n}" % response
```

User privilege requests

User privilege-level requests:

Request	Purpose
POST /myconferences	Create a conference (p14)
GET /myconferences	List conferences (p16)
PUT /myconferences/<conf_id>	Update a conference (p17)
DELETE /myconferences/<conf_id>	Cancel a conference (p17)
GET /myconferences/<conf_id>	Retrieve conference details (p17)
PUT /myconferences/<conf_id>/occurrences/<occur_id>	Modify a single occurrence of an existing repeating conference (p19)
DELETE /myconferences/<conf_id>/occurrences/<occur_id>	Cancel a single occurrence of a repeating conference (p19)
GET /myconferences/<conf_id>/occurrences/<occur_id>	Retrieve details of a single occurrence of a repeating conference (p20)
GET /myprofile	Retrieve details of a user's profile
PUT /myprofile	Update a user's profile
PATCH /myprofile	Selectively edit a user's profile
POST /invite	Send a guest invite
GET /features	Request a feature list
GET /version	Request the version

Note: Conferences that have been created through the StarLeaf Portal cannot be managed through the API. Any attempt to do so will yield a **403 Forbidden** response.

Managing conferences

Create a conference

To create a new conference, make an **HTTPS POST** request to:

/myconferences

The structure of the request is as follows:

```
{
  "settings": <conf_settings object: required>,
}
```

Field	Description
settings	Settings for the conference — refer to conf_settings request object (p60) .

On success, this generates a **201 Created** response with a **Location** header field containing the URI of the newly created conference resource. The response also includes a body having the following structure:

```
{
  "conf_id": <string>,
  "dial_info": <conf_dial_info object>
}
```

Field	Description
conf_id	The unique identifier for the newly created conference.
dial_info	The information required to dial into the conference — refer to conf_dial_info response object (p72) .

If the request would result in the maximum number of conferences per user or per organization being exceeded, the server generates a **507 Maximum Resource Count Exceeded** response.

Note: If the client has authenticated as an integration, the conference owner will be the integration rather than a real user.

List conferences

Use this request to:

- list the conferences owned by a user (if the client is authenticated as a real user)
- list the conferences created by the integration (if the client is authenticated as an integration)

To list conferences, make an **HTTPS GET** request to:

/myconferences

Used to obtain a list of unique identifiers (**<conf_id>**) owned by the user or integration. There is no request body. However, there is an optional query parameter that you can use in the request to limit the response to externally managed conferences:

- **thisappmanaged=true**: only the conferences having **externally_managed** set to true are returned

On success, this generates a **200 OK** response with a body having the following structure:

```
{
  "conf_ids": [
    <string: optional>,
    <string: optional>,
    ...]
}
```

Field	Description
conf_ids	A list of the unique identifiers for all conferences owned by the user.

Update a conference

To update a conference, make an **HTTPS PUT** request to:

/myconferences/<conf_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created.

Used to update an existing conference. This request can also be used to create a new conference with a **<conf_id>** specified by the client, in which case **<conf_id>** must not end in '@starleaf.com'.

The structure of the request is as follows:

```
{
  "settings": <conf_settings object: required>
}
```

Field	Description
settings	Settings for the conference — refer to conf_settings request object (p60) .

On success, updating an existing conference generates a **204 No Content** response. Creating a new conference (with **<conf_id>** specified by the client) generates a **201 Created** response with a **Location** header field containing the URI of the newly created conference resource and a body having the following structure:

```
{
  "dial_info": <conf_dial_info object>
}
```

Field	Description
dial_info	The information required to dial into the conference — refer to conf_dial_info response object (p72) .

Cancel a conference

To cancel a conference, make an **HTTPS DELETE** request to:

/myconferences/<conf_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created. There is no request body.

On success, this generates a **204 No Content** response.

Retrieve conference details

To find details about a specific conference, make an **HTTPS GET** request to:

/myconferences/<conf_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created. There is no request body.

On success, this generates a **200 OK** response with a body having the following structure:

```
{
  "settings": <conf_settings object>,
  "dial_info": <conf_dial_info object>,
  "occur_mod": [
    <string: optional>,
    <string: optional>,
    ...]
}
```

Field	Description
settings	Settings for the conference — refer to conf_settings response object (p72) .
dial_info	The information required to dial into the conference — refer to conf_dial_info response object (p72) .
occur_mod	For a repeating conference, this is a list of occurrence identifiers [<occur_id> , ...] that have been modified relative to the parent conference, if any. For non-repeating conferences, this is an empty list. Each <occur_id> is the UTC start date and time of the occurrence as specified by the original parent repetition pattern, given in ISO 8601 format (including the 'Z' suffix to indicate UTC).

Modify a single occurrence of an existing repeating conference

To modify a single occurrence of an existing repeating conference, make an **HTTPS PUT** request to:

/v1/myconferences/<conf_id>/occurrences/<occur_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created and **<occur_id>** is the occurrence identifier, which is the UTC start date and time of the occurrence as specified by the original parent repetition pattern, given in ISO 8601 format (including the 'Z' suffix to indicate UTC).

The structure of the request is as follows:

```
{
  "settings": <occur_settings object: required>
}
```

Field	Description
settings	Settings for the occurrence — refer to occur_settings request object (p67) .

On success, this generates a **204 No Content** response.

Cancel a single occurrence of a repeating conference

To cancel a single occurrence of an repeating conference, make an **HTTPS DELETE** request to:

/myconferences/<conf_id>/occurrences/<occur_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created and **<occur_id>** is the occurrence identifier, which is the UTC start date and time of the occurrence as specified by the original parent repetition pattern, given in ISO 8601 format (including the 'Z' suffix to indicate UTC). There is no request body.

On success, this generates a **204 No Content** response.

Retrieve details of a single occurrence of a repeating conference

To retrieve details of a single occurrence of a repeating conference, make an **HTTPS GET** request to:

/myconferences/<conf_id>/occurrences/<occur_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created and **<occur_id>** is the occurrence identifier, which is the UTC start date and time of the occurrence as specified by the original parent repetition pattern, given in ISO 8601 format (including the 'Z' suffix to indicate UTC). There is no request body.

On success, this generates a **200 OK** response with a body having the following structure:

```
{
  "settings": <occur_settings object>,
  "canceled": <boolean>
}
```

Field	Description
settings	Settings for the occurrence — refer to occur_settings response object (p72) .
canceled	Boolean specifying whether or not this occurrence is canceled. This key is new in Cloud 5.3, API minor version 14.

Note that the dialing information for the occurrence is not returned by this request as it is identical to that of the parent conference.

Managing a user's profile

Retrieve details of a user's profile

New in Cloud 5.4, API minor version 15.

Use this request to list the details of a user's profile.

To retrieve a user's profile, make an HTTPS GET request to:

/myprofile

On success, this generates a **200 OK** response with a body having the following structure:

```
{
  'email': <string>,
  'firstname': <string>,
  'lastname': <string>,
  'timezone': <string or null>,
  'locale': <string or null>,
  'phone_home': <string or null>,
  'phone_work': <string or null>,
}
```

```
'phone_mobile': <string or null>,
'conf_layout': <string or null>,
'externally_managed': <boolean>,
'integration_name': <string or null>,
'defaults': {
  'locale': <string>,
  'timezone': <string>,
  'conf_layout': <string>,
},
}
```

The descriptions of these arguments are the same as in the [user response object](#), except for the following:

Field	Description
conf_layout	The layout used for QuickMeet conferences and the default layout for scheduled conferences. If null, then the default layout set for the org is used. The valid values for the string are as per the layout argument in the conf_settings request object .
externally_managed	Indicates whether or not this user is managed by an external integration. If it is, any attempt to modify firstname , lastname , phone_work or phone_mobile will return a 403 FORBIDDEN response.
integration_name	The name of the external integration, if any, that is managing this user.
defaults	The locale , timezone and conf_layout values in the defaults object provide the default values for the org. These are the values that will be used if the corresponding values for the user are set to null.

Update a user's profile

New in Cloud 5.4, API minor version 15.

To edit a user's profile, make an **HTTPS PUT** request to:

/myprofile

The structure of the request is as follows:

```
{
'firstname': <string: required>,
'lastname': <string: required>,
'timezone': <string: optional, default: null>,
'locale': <string: optional, default: null>,
'phone_home': <string: optional, default: null>,
'phone_work': <string: optional, default: null>,
'phone_mobile': <string: optional, default: null>,
'conf_layout': <string: optional, default: null>
}
```

On success, this returns **204 NO CONTENT**.

The descriptions of these arguments are the same as in the [user request object](#), except for the following:

Field	Description
conf_layout	The layout used for QuickMeet conferences and the default layout for scheduled conferences. If null, then the default layout set for the org is used. The valid values for the string are as per the layout argument in the conf_settings request object .

If this user is managed by an external integration, any attempt to modify **firstname**, **lastname**, **phone_work** or **phone_mobile** will return a **403 FORBIDDEN** response.

Selectively edit a user's profile

New in Cloud 5.4, API minor version 15.

Use this request to update a user's profile where only particular settings need to be edited. Where values are not provided the existing settings will persist.

To selectively edit a user's profile, make an **HTTPS PATCH** request to:

/myprofile

The structure of the request is as follows:

```
{
'firstname': <string: required>,
'lastname': <string: required>,
'timezone': <string: optional, default: null>,
'locale': <string: optional, default: null>,
'phone_home': <string: optional, default: null>,
'phone_work': <string: optional, default: null>,
'phone_mobile': <string: optional, default: null>,
'conf_layout': <string: optional, default: null>
}
```

On success, this returns **204 NO CONTENT**.

The descriptions of these args are the same as in the [user request object](#), except for the following:

Field	Description
conf_layout	The layout used for QuickMeet conferences and the default layout for scheduled conferences. If null, then the default layout set for the org is used. The valid values for the string are as per the layout argument in the conf_settings request object .

If this user is managed by an external integration, any attempt to modify **firstname**, **lastname**, **phone_work** or **phone_mobile** will return a **403 FORBIDDEN** response.

Sending guest invites

This request is only available for clients that use the challenge and response authentication method.

To send a guest invite to someone so that they can sign up to the StarLeaf Cloud service and download a software video client, make an **HTTPS POST** request to:

/invite

The structure of the request is as follows:

```
{
  "invitee": <string: required>
}
```

Field	Description
invitee	The email address of the person you would like to invite.

On success, this generates a **200 OK** response with a body having the following structure:

```
{
  "status": invitee is callable
}
```

or

```
{
  "status": invite sent if possible
}
```

Response status	Description
invitee is callable	If this guest is logged in to Breeze, this guest is callable.
invite sent if possible	If the email address was valid, the guest has received an invite.

Requesting a feature list

This request will obtain a list of API features available on the server and enabled for the user's or integration's organization. Remember, that if the user has reseller privileges in the StarLeaf Cloud this request will return features for the reseller organization.

To obtain a list of API features available on the server and enabled for the organization, make an **HTTPS GET** request to:

/features

There is no request body.

On success, this generates a **200 OK** response with a body having the following structure:

```
{
  "features": [
    <string: optional>,
    <string: optional>,
    ...]
}
```

Field	Description
features	The list of API features available on the server and enabled for the client. Some of the available features are defined in the table below (note that this is not a complete list).

Feature	Description
conferencing	Ability to schedule conferences.
conf_layouts	Ability to select the layout of a scheduled conference.
conf_recording	Ability to record a conference.
lync	Ability to dial into a conference using Microsoft Skype-for-Business.
guest_invites	Ability to send guest invites.
webrtc	Ability for this organization to use Click-to-Call (browser-based calling).

Requesting the version

To obtain the software version running on the server, make an **HTTPS GET** request to:

/version

There is no request body.

On success, this generates a **200 OK** response with a body having the following structure:

```
{  
  "software_version": <string>,  
  "api_minor_version": <integer>  
}
```

Field	Description
software_version	Cloud software version running on the server.
api_minor_version	API minor version running on the server.

Organization-admin requests

Organization admin requests:

Request	Purpose
POST /users	Create a user (p27)
GET /users	Retrieve a list of users and their details (p27)
GET /users/<user_id>	Retrieve a user's details (p28)
PUT /users/<user_id>	Update a user's details (p28)
PATCH /users/<user_id>	Selectively edit a user's details (p29)
DELETE /users/<user_id>	Delete a user (p29)
PUT /users/<user_id>/disable	Disable/re-enable a user (p29)
POST /directory_entries	Create a directory entry (p30)
GET /directory_entries	Retrieve a list of directory entries and their details (p30)
GET /directory_entries/<uid>	Retrieve a directory entry's details (p31)
PUT /directory_entries/<uid>	Update a directory entry's details (p31)
PATCH /directory_entries/<uid>	Selectively edit a directory entry's details (p32)
DELETE /directory_entries/<uid>	Delete a directory entry (p32)
POST /integrations	Create an integration
GET /integrations	Retrieve a list of integrations and their details
GET /integrations/<integration_id>	Retrieve an integration's details
PUT /integrations/<integration_id>	Update an integration's details
PATCH /integrations/<integration_id>	Selectively edit an integration's details
DELETE /integrations/<integration_id>	Delete an integration
POST /conferences	Create a conference for a user in the organization
GET /conferences	List conferences (p36)
PUT /conferences/<conf_id>	Update a conference (p37)
DELETE /conferences/<conf_id>	Cancel a conference (p37)
GET /conferences/<conf_id>	Retrieve conference details (p38)
PUT /conferences/<conf_id>/occurrences/<occur_id>	Modify a single occurrence of an existing repeating conference (p39)

Request	Purpose
DELETE /conferences/<conf_id>/occurrences/<occur_id>	Cancel a single occurrence of a repeating conference (p39)
GET /conferences/<conf_id>/occurrences/<occur_id>	Retrieve details of a single occurrence of a repeating conference (p40)

Managing users

Create a user

New in Cloud 4.6, API minor version 7.

To create a user, make an **HTTPS POST** request to:

/users

This creates a user in the organization.

The body of this request is the request object **user**. Refer to [user request object \(p69\)](#).

On success this generates a **201 Created** response with a **Location** header field containing the URI of the newly created user resource. The response body is the response object **user**. Refer to [user response object \(p75\)](#).

Retrieve a list of users and their details

New in Cloud 4.6, API minor version 7.

To retrieve a list of users and their details, make an **HTTPS GET** request to:

/users

There is no request body. However, there are optional query parameters that you can use in the request to page the response:

- **count**: The number of user records that you want returned. If not specified, all the records will be returned.
- **startIndex**: When you make the request, the Cloud will skip the user records prior to the number that you specify for **startIndex**. Use **startIndex** to get the next set of user records. If not specified, **startIndex** defaults to 1.

For example, **HTTPS GET /users?count=20&startIndex=41** will skip the first 40 users and return the next 20.

On success, this request generates a **200 OK** response with a body having the following structure:

```
{
  "itemsPerPage": <integer>,
  "startIndex": <integer>,
  "totalResults": <integer>,
  "users": [
    <user response object>,
    <user response object>,
    ...]
}
```

Field	Description
itemsPerPage	The number of items, which will either be equal to totalResults or if you made the request with count specified, it will be equal to the number you specified.
startIndex	This will be the same as the requested startIndex . If not specified, it will be 1.
totalResults	The total number of user records for the organization.
users	A list of user response objects. Refer to user response object (p75) .

Retrieve a user's details

New in Cloud 4.6, API minor version 7.

To retrieve a user's details, make an **HTTPS GET** request to:

/users/<user_id>

where **<user_id>** is the unique identifier user details returned when the user was created.

There is no request body.

On success, this generates a **200 OK** response with a body which is the response object **user**. Refer to [user response object \(p75\)](#).

Update a user's details

New in Cloud 4.6, API minor version 7.

To edit a user, make an **HTTPS PUT** request to:

/users/<user_id>

where **<user_id>** is the unique identifier returned when the user was created.

This request is used to update an existing user. Values that are not provided by the request will be populated with the default settings for those values.

The body of this request is the request object **user**. Refer to [user request object \(p69\)](#).

On success, this generates a **200 OK** response with a body which is the response object **user**. Refer to [user response object \(p75\)](#).

Selectively edit a user's details

New in Cloud 4.6, API minor version 7.

To selectively edit a user, make an **HTTPS PATCH** request to:

/users/<user_id>

where **<user_id>** is the unique identifier returned when the user was created.

Use this request to update an existing user where only particular settings need to be edited. Where values are not provided the existing settings will persist.

The body of this request is the request object **user**. Refer to [user request object \(p69\)](#). All fields are optional.

On success, this generates a **200 OK** response with a body which is the response object **user**. Refer to [user response object \(p75\)](#).

Delete a user

New in Cloud 4.6, API minor version 7.

To delete a user, make an **HTTPS DELETE** request to:

/users/<user_id>

where **<user_id>** is the unique identifier returned when the user was created.

There is no request body. However, there is an optional query parameter (new in Cloud 5.1, API minor version 12) that you can use in the request to specify whether or not the deleted user will also be removed as a participant from all conferences in the same organization. By default, the user will be removed from conferences:

- **keep_conf_participants=true**: do not remove the user from conferences

On success, this generates a **204 No Content** response.

Disable/re-enable a user

New in Cloud 5.2, API minor version 12.

Disabling a user allows you to effectively 'deactivate' the user without having to delete that user. To disable or re-enable a user, make an **HTTPS PUT** request to:

/users/<user_id>/disable

where **<user_id>** is the unique identifier returned when the user was created.

The structure of the request is as follows:

```
{  
  "enabled": <boolean: required>,  
}
```

```
"keep_conf_participants": <boolean: optional, default: false>
}
```

Field	Description
enabled	Set to true to enable the user. Set to false to disable the user.
keep_conf_participants	When a user is being disabled, this field determines whether or not the user will be removed as a participant from all conferences in the same organization. Defaults to false (user will be removed from conferences). This field is ignored when the user is being enabled.

On success, this generates a **200 OK** response with a body which is the response object **user** refer to [user response object \(p75\)](#).

To see whether a user is enabled or not, retrieve a user's details and look at the [user response object \(p75\)](#).

Managing directory entries

Create a directory entry

To create a directory entry, make an **HTTPS POST** request to:

/directory_entries

This creates a directory entry in the organization.

The body of this request is the request object **directory_entries** . Refer to [directory_entries request object \(p70\)](#).

On success this generates a **201 Created** response with a **Location** header field containing the URI of the newly created directory entry resource. The response body is the response object **directory_entries**. Refer to [directory_entries response object \(p77\)](#).

Retrieve a list of directory entries and their details

To retrieve a list of directory entries and their details, make an **HTTPS GET** request to:

/directory_entries

There is no request body. However, there are optional query parameters that you can use in the request to page the response:

- **count**: The number of user records that you want returned. If not specified, all the records will be returned.
- **startIndex**: When you make the request, the Cloud will skip the user records prior to the number that you specify for **startIndex**. Use **startIndex** to get the next set of user records. If not specified, **startIndex** defaults to 1.

For example, **HTTPS GET /directory_entries?count=20&startIndex=41** will skip the first 40 users and return the next 20.

On success, this request generates a **200 OK** response with a body having the following structure:

```
{
  "itemsPerPage": <integer>,
  "startIndex": <integer>,
  "totalResults": <integer>,
  "users": [
    <directory_entries response object>,
    <directory_entries response object>,
    ...]
}
```

If the count requested is > 1000, it will return a **400 Cannot request more than 1000 directory entries** error. If a count isn't specified and the response would otherwise be > 1000, it will return the same error.

If the start index is larger than the number of directory entries in the organization, it will return an empty list.

Field	Description
itemsPerPage	The number of items, which will either be equal to totalResults or if you made the request with count specified, it will be equal to the number you specified.
startIndex	This will be the same as the requested startIndex . If not specified, it will be 1.
totalResults	The total number of directory entry records for the organization.
directory entries	A list of directory_entries response objects. Refer to directory_entries response object (p77) .

Retrieve a directory entry's details

To retrieve a directory entry's details, make an **HTTPS GET** request to:

/directory_entries/<uid>

where **<uid>** is the unique identifier user details returned when the directory entry was created.

There is no request body.

On success, this generates a **200 OK** response with a body which is the response object **user**. Refer to [directory_entries response object \(p77\)](#).

Update a directory entry's details

To edit a directory entry, make an **HTTPS PUT** request to:

/directory_entries/<uid>

where **<uid>** is the unique identifier returned when the directory entry was created.

This request is used to update an existing directory entry. Values that are not provided by the request will be populated with the default settings for those values.

The body of this request is the request object **directory_entries**. Refer to [directory_entries request object \(p70\)](#).

On success, this generates a **200 OK** response with a body which is the response object **directory_entries**. Refer to [directory_entries response object \(p77\)](#).

Selectively edit a directory entry's details

To selectively edit a directory entry, make an **HTTPS PATCH** request to:

/directory_entries/<uid>

where **<uid>** is the unique identifier returned when the directory entry was created.

Use this request to update an existing directory entry where only particular settings need to be edited. Where values are not provided the existing settings will persist.

The body of this request is the request object **directory_entries**. Refer to [directory_entries request object \(p70\)](#). All fields are optional.

On success, this generates a **200 OK** response with a body which is the response object **directory_entries**. Refer to [directory_entries response object \(p77\)](#).

Delete a directory entry

To delete a directory entry, make an **HTTPS DELETE** request to:

/directory_entries/<uid>

where **<uid>** is the unique identifier returned when the directory entry was created.

There is no request body.

On success, this generates a **204 No Content** response.

Managing integrations

Create an integration

New in Cloud 4.6, API minor version 7.

An integration can be used to access the API, for example, to create conferences in an organization.

To create an integration in an organization, make an **HTTPS POST** request to:

/integrations

This creates an integration.

The body of this request is the request object **create_integration**. Refer to [create_integration request object](#).

On success, this generates a **201 Created** response with a body which is the response object **integration**. Refer to [integration response object](#).

Retrieve a list of integrations and their details

New in Cloud 4.6, API minor version 7.

To retrieve a list of integrations and their details, make an **HTTPS GET** request to:

/integrations

There is no request body.

On success, this request generates a **200 OK** response with a body having the following structure:

```
[  
  <integration response object>,  
  <integration response object>,  
  ...]
```

This is a list of **integration** response objects. Refer to [integration response object](#).

Retrieve an integration's details

New in Cloud 4.6, API minor version 7.

To retrieve details of an integration, make an **HTTP GET** request to:

/integrations/<integration_id>

There is no request body.

On success, this generates a **200 OK** response with a body which is the response object **integration**. Refer to [integration response object](#).

Update an integration's details

New in Cloud 4.6, API minor version 7.

To update an integration, make an **HTTPS PUT** request to:

/integrations/<integration_id>

where **<integration_id>** is the unique identifier for the integration returned when the integration was created. Used to update an existing integration. Values that are not provided by the request will be populated with the default settings for those values.

The body of this request is the request object **update_integration**. Refer to [update_integration request object](#).

On success, this generates a **200 OK** response with a body which is the response object **integration**. Refer to [integration response object](#).

Selectively edit an integration's details

New in Cloud 4.6, API minor version 7.

To selectively edit an integration, make an **HTTPS PATCH** request to:

/integrations/<integration_id>

where **<integration_id>** is the unique identifier for the integration returned when the integration was created.

Use this request to update an existing integration where only particular settings need to be edited. Where values are not provided the existing settings will persist.

The body of this request is the request object **update_integration**. Refer to [update_integration request object](#). All fields are optional.

On success, this generates a **200 OK response** with a body which is the response object **integration**. Refer to [integration response object](#).

Delete an integration

New in Cloud 4.6, API minor version 7.

To delete an integration, make an **HTTPS DELETE** request to:

/integrations/<integration_id>

where **<integration_id>** is the unique identifier returned when the integration was created.

There is no request body.

On success, this generates a **204 No Content** response.

Managing conferences

Create a conference for a user in the organization

New in Cloud 5.1, API minor version 11.

To create a new conference for a user in the organization, make an **HTTPS POST** request to:

/conferences

The structure of the request is as follows:

```
{
  "settings": <conf_settings object: required>,
  "owner_id": <string: required>
}
```

Field	Description
settings	Settings for the conference — refer to conf_settings request object (p60) .
owner_id	The user_id of the user that will be the conference owner.

On success, this generates a **201 Created** response with a **Location** header field containing the URI of the newly created conference resource. The response also includes a body having the following structure:

```
{
  "conf_id": <string>,
  "dial_info": <conf_dial_info object>
}
```

Field	Description
conf_id	The unique identifier for the newly created conference.
dial_info	The information required to dial into the conference — refer to conf_dial_info response object (p72) .

If the request would result in the maximum number of conferences per user or per organization being exceeded, the server generates a **507 Maximum Resource Count Exceeded** response.

List conferences

New in Cloud 5.1, API minor version 11.

Use this request to list all conferences in this organization.

To list conferences, make an **HTTPS GET** request to:

/conferences

Used to obtain a list of unique conference identifiers (**<conf_id>**) in this organization. There is no request body. However, there is an optional query parameters that you can use in the request to limit the response to externally managed conferences:

- **thisappmanaged=true**: only the conferences having **externally_managed** set to true are returned

On success, this generates a **200 OK** response with a body having the following structure:

```
{
  "conf_ids": [
    <string: optional>,
    <string: optional>,
    ...]
}
```

Field	Description
conf_ids	A list of unique identifiers for conferences in the organization.

Update a conference

New in Cloud 5.1, API minor version 11.

To update a conference, make an **HTTPS PUT** request to:

/conferences/<conf_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created.

Used to update an existing conference. This request can also be used to create a new conference with a **<conf_id>** specified by the client, in which case **<conf_id>** must not end in '@starleaf.com'.

The structure of the request is as follows:

```
{
  "settings": <conf_settings object: required>,
  "owner_id": <string: required>
}
```

Field	Description
settings	Settings for the conference — refer to conf_settings request object (p60) .
owner_id	The user_id of the user that is the conference owner. You cannot change the owner of the conference and attempting to do so will result in a 400 Bad Request error

On success, updating an existing conference generates a **204 No Content** response. Creating a new conference (with **<conf_id>** specified by the client) generates a **201 Created** response with a **Location** header field containing the URI of the newly created conference resource and a body having the following structure:

```
{
  "dial_info": <conf_dial_info object>
}
```

Field	Description
dial_info	The information required to dial into the conference — refer to conf_dial_info response object (p72) .

Cancel a conference

New in Cloud 5.1, API minor version 11.

To cancel a conference, make an **HTTPS DELETE** request to:

/conferences/<conf_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created. There is no request body.

On success, this generates a **204 No Content** response.

Retrieve conference details

New in Cloud 5.1, API minor version 11.

To find details about a specific conference, make an **HTTPS GET** request to:

/conferences/<conf_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created. There is no request body.

On success, this generates a **200 OK** response with a body having the following structure:

```
{
  "settings": <conf_settings object>,
  "dial_info": <conf_dial_info object>,
  "owner_id": <string>,
  "occur_mod": [
    <string: optional>,
    <string: optional>,
    ...]
}
```

Field	Description
settings	Settings for the conference — refer to conf_settings response object (p72) .
dial_info	The information required to dial into the conference — refer to conf_dial_info response object (p72) .
owner_id	The user_id of the owner of the conference.
occur_mod	For a repeating conference, this is a list of occurrence identifiers [<occur_id> , ...] that have been modified relative to the parent conference, if any. For non-repeating conferences, this is an empty list. Each <occur_id> is the UTC start date and time of the occurrence as specified by the original parent repetition pattern, given in ISO 8601 format (including the 'Z' suffix to indicate UTC).

Modify a single occurrence of an existing repeating conference

New in Cloud 5.1, API minor version 11.

To modify a single occurrence of an existing repeating conference, make an **HTTPS PUT** request to:

/conferences/<conf_id>/occurrences/<occur_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created and **<occur_id>** is the occurrence identifier, which is the UTC start date and time of the occurrence as specified by the original parent repetition pattern, given in ISO 8601 format (including the 'Z' suffix to indicate UTC).

The structure of the request is as follows:

```
{
  "settings": <occur_settings object: required>
}
```

Field	Description
settings	Settings for the occurrence — refer to occur_settings request object (p67) .

On success, this generates a **204 No Content** response.

Cancel a single occurrence of a repeating conference

New in Cloud 5.1, API minor version 11.

To cancel a single occurrence of a repeating conference, make an **HTTPS DELETE** request to:

/conferences/<conf_id>/occurrences/<occur_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created and **<occur_id>** is the occurrence identifier, which is the UTC start date and time of the occurrence as specified by the original parent repetition pattern, given in ISO 8601 format (including the 'Z' suffix to indicate UTC). There is no request body.

On success, this generates a **204 No Content** response.

Retrieve details of a single occurrence of a repeating conference

New in Cloud 5.1, API minor version 11.

To retrieve details of a single occurrence of a repeating conference, make an **HTTPS GET** request to:

/conferences/<conf_id>/occurrences/<occur_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created and **<occur_id>** is the occurrence identifier, which is the UTC start date and time of the occurrence as specified by the original parent repetition pattern, given in ISO 8601 format (including the 'Z' suffix to indicate UTC). There is no request body.

On success, this generates a **200 OK** response with a body having the following structure:

```
{
  "settings": <occur_settings object>,
  "canceled": <boolean>
}
```

Field	Description
settings	Settings for the occurrence — refer to occur_settings response object (p72) .
canceled	Boolean specifying whether or not this occurrence is canceled. This key is new in Cloud 5.3, API minor version 14.

Note that the dialing information for the occurrence is not returned by this request as it is identical to that of the parent conference.

Reseller-level requests

Managing customers

To use the requests for managing customers, the user that you use for authentication must be a reseller user in the StarLeaf Cloud.

Requests for managing customers:

Request	Purpose
POST /customers	Create an organization (p43)
GET /customers	Retrieve a list of organizations and their details (p44)
GET /customers/<org_uid>	Retrieve the details of an organization (p44)
DELETE /customers/<org_uid>	Delete an organization
POST /customers/<org_uid>/integrations	Create an integration in an organization (p45)
GET /customers/<org_uid>/integrations	Retrieve a list of integrations and their details
PUT /customers/<org_uid>/integrations/<integration_id>	Update an integration's details
PATCH /customers/<org_uid>/integrations/<integration_id>	Selectively edit an integration's details
DELETE /customers/<org_uid>/integrations/<integration_id>	Delete an integration
POST /customers/<org_uid>/users	Create a user (p48)
GET /customers/<org_uid>/users	Retrieve a list of users and their details (p48)
GET /customers/<org_uid>/users/<user_id>	Retrieve a user's details (p49)
PUT /customers/<org_uid>/users/<user_id>	Update a user's details (p49)
PATCH /customers/<org_uid>/users/<user_id>	Selectively edit a user's details (p49)
DELETE /customers/<org_uid>/users/<user_id>	Delete a user (p50)
PUT /customers/<org_uid>/users/<user_id>/disable	Disable/re-enable a user (p50)

Request	Purpose
POST /customers/<org_uid>/conferences	Create a conference for a user (p51)
GET /customers/<org_uid>/conferences	List conferences (p53)
PUT /customers/<org_uid>/conferences/<conf_id>	Update a conference (p54)
DELETE /customers/<org_uid> /conferences/<conf_id>	Cancel a conference (p54)
GET /customers/<org_uid>/conferences/<conf_id>	Retrieve conference details (p55)
PUT /customers/<org_uid> /conferences/<conf_id>/occurrences/<occur_id>	Modify a single occurrence of an existing repeating conference (p56)
DELETE /customers/<org_uid>/conferences/<conf_id>/occurrences/<occur_id>	Cancel a single occurrence of a repeating conference (p56)
GET /customers/<org_uid>/conferences/<conf_id>/occurrences/<occur_id>	Retrieve details of a single occurrence of a repeating conference (p57)
GET /customers/<org_uid>/features	Request a feature list for an organization
GET /customers/<org_uid>/version	Request the version of an organization

Note: The <org_uid> variable refers to the **Organization reference** number on the StarLeaf Portal.

Create an organization

To create a new organization, make an **HTTPS POST** request to:

/customers

The structure of the request is as follows:

```
{
  "org_name": <string: required>,
  "subdomain": <string: required>,
  "email_domains": [
    <string: optional>,
    <string: optional>,
    ...],
  "location": <location object: required>
}
```

Field	Description
org_name	The name of the organization.
subdomain	The subdomain of the new organization. This is used by the Cloud to create video addresses (URIs) for dialing into the organization (e.g. example.call.sl).
email_domains	A list of email domains to associate with the new organization. These are any corporate domains that this organization owns and uses for the sending and receiving of emails. For example, anybody receiving a guest invite whom appears (by their email address) to be part of this organization can be added as a user to this organization.
location	Settings for the location. Refer to location request object (p68) .

On success this generates a **201 Created** response with a **Location** header field containing the URI of the newly created organization resource. The response also has a body with the following structure:

```
{
  "org_uid": <string>
}
```

where **org_uid** is the organization reference number, which is a unique identifier for this organization. You need this **org_uid** to create users in this organization.

Retrieve a list of organizations and their details

New in Cloud 4.6, API minor version 7.

To retrieve a list of organizations and their details, make an **HTTPS GET** request to:

/customers

There is no request body.

On success, this request generates a **200 OK** response with a body having the following structure:

```
[  
  <org response object>,  
  <org response object>,  
  ...]
```

This is a list of **org** response objects. Refer to [org response object \(p74\)](#).

Retrieve the details of an organization

New in Cloud 4.6, API minor version 7.

To retrieve details of an organization, make an **HTTPS GET** request to:

/customers/<org_uid>

where **<org_uid>** is the unique identifier of the organization whose details you require.

There is no request body.

On success, this generates a 200 OK response with a body which is the response object **org**. Refer to [org response object](#).

Delete an organization

New in Cloud 4.6, API minor version 9.

To delete an organization, make an **HTTPS DELETE** request to:

/customers/<org_uid>

where **<org_uid>** is the unique identifier of the organization that you want to delete.

There is no request body.

On success, this generates a **204 No Content** response.

Create an integration in an organization

New in Cloud 4.6, API minor version 7.

An integration can be used to access the API, for example, to create conferences in an organization.

To create an integration in an organization, make an **HTTPS POST** request to:

/customers/<org_uid>/integrations

This creates an integration in the organization matched by **org_uid**.

The body of this request is the request object **create_integration**. Refer to [create_integration request object](#).

On success, this generates a **201 Created** response with a body which is the response object **integration**. Refer to [integration response object](#).

Retrieve a list of integrations and their details

New in Cloud 4.6, API minor version 7.

To retrieve a list of integrations and their details, make an **HTTPS GET** request to:

/customers/<org_uid>/integrations

where **<org_uid>** is the unique identifier of the organization whose integrations you are managing.

There is no request body.

On success, this request generates a **200 OK** response with a body having the following structure:

```
[  
  <integration response object>,  
  <integration response object>,  
  ...]
```

This is a list of **integration** response objects. Refer to [integration response object](#).

Retrieve an integration's details

New in Cloud 4.6, API minor version 7.

To retrieve details of an integration, make an **HTTP GET** request to:

/customers/<org_uid>/integrations/<integration_id>

where **<integration_id>** is the unique identifier for the integration returned when the integration was created and **<org_uid>** is the unique identifier of the organization whose integrations you are managing.

There is no request body.

On success, this generates a **200 OK** response with a body which is the response object **integration**. Refer to [integration response object](#).

Update an integration's details

New in Cloud 4.6, API minor version 7.

To update an integration, make an **HTTPS PUT** request to:

/customers/<org_uid>/integrations/<integration_id>

where **<integration_id>** is the unique identifier for the integration returned when the integration was created and **<org_uid>** is the unique identifier of the organization whose integration you are managing. Used to update an existing integration. Values that are not provided by the request will be populated with the default settings for those values.

The body of this request is the request object **update_integration**. Refer to [update_integration request object](#).

On success, this generates a **200 OK** response with a body which is the response object **integration**. Refer to [integration response object](#).

Selectively edit an integration's details

New in Cloud 4.6, API minor version 7.

To selectively edit an integration, make an **HTTPS PATCH** request to:

/customers/<org_uid>/integrations/<integration_id>

where **<integration_id>** is the unique identifier for the integration returned when the integration was created and **<org_uid>** is the unique identifier of the organization whose integration you are managing.

Use this request to update an existing integration where only particular settings need to be edited. Where values are not provided the existing settings will persist.

The body of this request is the request object **update_integration**. Refer to [update_integration request object](#). All fields are optional.

On success, this generates a **200 OK response** with a body which is the response object **integration**. Refer to [integration response object](#).

Delete an integration

New in Cloud 4.6, API minor version 7.

To delete an integration, make an **HTTPS DELETE** request to:

/customers/<org_uid>/integrations/<integration_id>

where **<integration_id>** is the unique identifier returned when the integration was created and **<org_uid>** is the unique identifier of the organization whose integrations you are managing.

There is no request body.

On success, this generates a **204 No Content** response.

Create a user

To create a user in an organization, make an **HTTPS POST** request to:

/customers/<org_uid>/users

This creates the user in the organization matched by **org_uid**.

The body of this request is the request object **user**. Refer to [user request object \(p69\)](#).

On success this generates a **201 Created** response with a **Location** header field containing the URI of the newly-created user resource. The response body is the response object **user**. Refer to [user response object \(p75\)](#).

Retrieve a list of users and their details

New in Cloud 4.6, API minor version 7.

To retrieve a list of users and their details, make an **HTTPS GET** request to:

/customers/<org_uid>/users

where **<org_uid>** is the unique identifier of the organization for which you want users' details.

There is no request body. However, there are optional query parameters that you can use in the request to page the response:

- **count**: The number of user records that you want returned. If not specified, all the records will be returned.
- **startIndex**: When you make the request, the Cloud will skip the user records prior to the number that you specify for **startIndex**. Use **startIndex** to get the next set of user records. If not specified, **startIndex** defaults to 1.

For example, (for an example organization with **org_uid** 99892630):

HTTPS GET customers/99892630/users?count=20&startIndex=41 will skip the first 40 users and return the next 20.

On success, this request generates a **200 OK** response with a body having the following structure:

```
{
  "itemsPerPage": <integer>,
  "startIndex": <integer>,
  "totalResults": <integer>,
  "users": [
    <user response object>,
    <user response object>,
    ...]
}
```

Field	Description
itemsPerPage	The number of items, which will either be equal to totalResults or if you made the request with count specified, it will be equal to the number you specified.
startIndex	This will be the same as the requested startIndex . If not specified, it will be 1.
totalResults	The total number of user records for the organization.
users	A list of user response objects. Refer to user response object (p75) .

Retrieve a user's details

New in Cloud 4.6, API minor version 7.

To retrieve an individual user's details, make an **HTTPS GET** request to:

/customers/<org_uid>/users/<user_id>

where **<org_uid>** is the unique identifier of the organization and **<user_id>** is the unique identifier for the user whose details you require.

There is no request body.

On success, this generates a **200 OK** response with a body which is the response object **user**. Refer to [user response object \(p75\)](#).

Update a user's details

New in Cloud 4.6, API minor version 7.

To edit a user, make an **HTTPS PUT** request to:

/customers/<org_uid>/users/<user_id>

where **<org_uid>** is the unique identifier of the organization of the user and **<user_id>** is the unique identifier for the user that you want to edit.

This request is used to update an existing user. Values that are not provided by the request will be populated with the default settings for those values.

The body of this request is the request object **user**. Refer to [user request object \(p69\)](#).

On success, this generates a **200 OK** response with a body which is the response object **user**. Refer to [user response object \(p75\)](#).

Selectively edit a user's details

New in Cloud 4.6, API minor version 7.

To selectively edit a user, make an **HTTPS PATCH** request to:

/customers/<org_uid>/users/<user_id>

where **<org_uid>** is the unique identifier of the organization of the user and **<user_id>** is the unique identifier for the user that you want to edit.

Use this request to update an existing user where only particular settings need to be edited. Where values are not provided the existing settings will persist.

The body of this request is the request object **user**. Refer to [user request object \(p69\)](#). All fields are optional.

On success, this generates a **200 OK** response with a body which is the response object **user**. Refer to [user response object \(p75\)](#).

Delete a user

New in Cloud 4.6, API minor version 7.

To delete a user, make an **HTTPS DELETE** request to:

/customers/<org_uid>/users/<user_id>

where **<org_uid>** is the unique identifier of the organization of the user and **<user_id>** is the unique identifier for the user that you want to delete.

There is no request body. However, there is an optional query parameter (new in Cloud 5.1, API minor version 12) that you can use in the request to specify whether or not the deleted user will also be removed as a participant from all conferences in the same organization. By default, the user will be removed from conferences:

- **keep_conf_participants=true**: do not remove the user from conferences

On success, this generates a **204 No Content** response.

Disable/re-enable a user

Disabling a user allows you effectively 'deactivate' a user without having to delete that user. To disable or re-enable a user, make an **HTTPS PUT** request to:

/customers/<org_uid>/users/<user_id>/disable

where **<org_uid>** is the unique identifier of the organization and **<user_id>** is the unique identifier for the user whose enabled state you want to change.

The structure of the request is as follows:

```
{
  "enabled": <boolean: required>,
  "keep_conf_participants": <boolean: optional, default: false>
}
```

Field	Description
enabled	Set to true to enable the user. Set to false to disable the user.

Field	Description
keep_conf_participants	When a user is being disabled, this field determines whether or not the user will be removed as a participant from all conferences in the same organization. Defaults to false (user will be removed from conferences). This field is ignored when the user is being enabled.

On success, this generates a **200 OK** response with a body which is the response object **user** refer to [user response object \(p75\)](#).

To see whether a user is enabled or not, retrieve a user's details and look at the [user response object \(p75\)](#).

Managing conferences

Create a conference for a user

New in Cloud 5.1, API minor version 11.

To create a new conference for a user in an organization, make an **HTTPS POST** request to:

/customers/<org_uid>/conferences

where **<org_uid>** is the organization reference number, which is a unique identifier for this organization

The structure of the request is as follows:

```
{
  "settings": <conf_settings object: required>,
  "owner_id": <string: required>
}
```

Field	Description
settings	Settings for the conference — refer to conf_settings request object (p60) .
owner_id	The user_id of the user that will be the conference owner.

On success, this generates a **201 Created** response with a **Location** header field containing the URI of the newly created conference resource. The response also includes a body having the following structure:

```
{
  "conf_id": <string>,
  "dial_info": <conf_dial_info object>
}
```

Field	Description
conf_id	The unique identifier for the newly created conference.
dial_info	The information required to dial into the conference — refer to conf_dial_info response object (p72) .

If the request would result in the maximum number of conferences per user or per organization being exceeded, the server generates a **507 Maximum Resource Count Exceeded** response.

List conferences

New in Cloud 5.1, API minor version 11.

Use this request to list conferences in this organization.

To list conferences, make an **HTTPS GET** request to:

/customers/<org_uid>/conferences

where **<org_uid>** is the organization reference number, which is a unique identifier for this organization

Used to obtain a list of unique conference identifiers (**<conf_id>**) in this organization. There is no request body. However, there is an optional query parameter that you can use in the request to limit the response to externally managed conferences:

- **thisappmanaged=true**: only the conferences having **externally_managed** set to true are returned

On success, this generates a **200 OK** response with a body having the following structure:

```
{
  "conf_ids": [
    <string: optional>,
    <string: optional>,
    ...]
}
```

Field	Description
conf_ids	A list of unique identifiers for conferences in an organization.

Update a conference

New in Cloud 5.1, API minor version 11.

To update a conference, make an **HTTPS PUT** request to:

/customers/<org_uid>/conferences/<conf_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created and **<org_uid>** is the organization reference number, which is a unique identifier for this organization.

Used to update an existing conference. This request can also be used to create a new conference with a **<conf_id>** specified by the client, in which case **<conf_id>** must not end in '@starleaf.com'.

The structure of the request is as follows:

```
{
  "settings": <conf_settings object: required>,
  "owner_id": <string: required>
}
```

Field	Description
settings	Settings for the conference — refer to conf_settings request object (p60) .
owner_id	The user_id of the user that is the conference owner. You cannot change the owner of the conference and attempting to do so will result in a 400 Bad Request error

On success, updating an existing conference generates a **204 No Content** response. Creating a new conference (with **<conf_id>** specified by the client) generates a **201 Created** response with a **Location** header field containing the URI of the newly created conference resource and a body having the following structure:

```
{
  "dial_info": <conf_dial_info object>
}
```

Field	Description
dial_info	The information required to dial into the conference — refer to conf_dial_info response object (p72) .

Cancel a conference

New in Cloud 5.1, API minor version 11.

To cancel a conference, make an **HTTPS DELETE** request to:

/customers/<org_uid>/conferences/<conf_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created and **<org_uid>** is the organization reference number, which is a unique identifier for this organization. There is no request body.

On success, this generates a **204 No Content** response.

Retrieve conference details

New in Cloud 5.1, API minor version 11.

To find details about a specific conference, make an **HTTPS GET** request to:

/customers/<org_uid>/conferences/<conf_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created and **<org_uid>** is the organization reference number, which is a unique identifier for this organization. There is no request body.

On success, this generates a **200 OK** response with a body having the following structure:

```
{
  "settings": <conf_settings object>,
  "dial_info": <conf_dial_info object>,
  "owner_id": <string>,
  "occur_mod": [
    <string: optional>,
    <string: optional>,
    ...]
}
```

Field	Description
settings	Settings for the conference — refer to conf_settings response object (p72) .
dial_info	The information required to dial into the conference — refer to conf_dial_info response object (p72) .
owner_id	The user_id of the owner of the conference.
occur_mod	For a repeating conference, this is a list of occurrence identifiers [<occur_id> , ...] that have been modified relative to the parent conference, if any. For non-repeating conferences, this is an empty list. Each <occur_id> is the UTC start date and time of the occurrence as specified by the original parent repetition pattern, given in ISO 8601 format (including the 'Z' suffix to indicate UTC).

Modify a single occurrence of an existing repeating conference

New in Cloud 5.1, API minor version 11.

To modify a single occurrence of an existing repeating conference, make an **HTTPS PUT** request to:

/customers/<org_uid>/conferences/<conf_id>/occurrences/<occur_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created, **<occur_id>** is the occurrence identifier, which is the UTC start date and time of the occurrence as specified by the original parent repetition pattern, given in ISO 8601 format (including the 'Z' suffix to indicate UTC), and **<org_uid>** is the organization reference number, which is a unique identifier for this organization .

The structure of the request is as follows:

```
{
  "settings": <occur_settings object: required>
}
```

Field	Description
settings	Settings for the occurrence — refer to occur_settings request object (p67) .

On success, this generates a **204 No Content** response.

Cancel a single occurrence of a repeating conference

New in Cloud 5.1, API minor version 11.

To cancel a single occurrence of a repeating conference, make an **HTTPS DELETE** request to:

/customers/<org_uid>/conferences/<conf_id>/occurrences/<occur_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created, **<occur_id>** is the occurrence identifier, which is the UTC start date and time of the occurrence as specified by the original parent repetition pattern, given in ISO 8601 format (including the 'Z' suffix to indicate UTC), and **<org_uid>** is the organization reference number, which is a unique identifier for this organization. There is no request body.

On success, this generates a **204 No Content** response.

Retrieve details of a single occurrence of a repeating conference

New in Cloud 5.1, API minor version 11.

To retrieve details of a single occurrence of a repeating conference, make an **HTTPS GET** request to:

/customers/<org_uid>/conferences/<conf_id>/occurrences/<occur_id>

where **<conf_id>** is the unique identifier for the conference returned when the conference was created, **<occur_id>** is the occurrence identifier, which is the UTC start date and time of the occurrence as specified by the original parent repetition pattern, given in ISO 8601 format (including the 'Z' suffix to indicate UTC), and **<org_uid>** is the organization reference number, which is a unique identifier for this organization. There is no request body.

On success, this generates a **200 OK** response with a body having the following structure:

```
{
  "settings": <occur_settings object>,
  "canceled": <boolean>
}
```

Field	Description
settings	Settings for the occurrence — refer to occur_settings response object (p72) .
canceled	Boolean specifying whether or not this occurrence is canceled. This key is new in Cloud 5.3, API minor version 14.

Note that the dialing information for the occurrence is not returned by this request as it is identical to that of the parent conference.

Request a feature list for an organization

New in Cloud 5.1, API minor version 11.

This request will obtain a list of API features available on the server and enabled for the specified organization.

To obtain a list of API features available on the server and enabled for the organization, make an **HTTPS GET** request to:

/customers/<org_uid>/features

where **<org_uid>** is the organization reference number, which is a unique identifier for this organization.

There is no request body.

On success, this generates a **200 OK** response with a body having the following structure:

```
{
  "features": [
    <string: optional>,
    <string: optional>,
    ...]
}
```

Field	Description
features	The list of API features available on the server and enabled for the client. Some of the available features are defined in the table below (note that this is not a complete list).

Feature	Description
conferencing	Ability to schedule conferences.
conf_layouts	Ability to select the layout of a scheduled conference.
conf_recording	Ability to record a conference.
lync	Ability to dial into a conference using Microsoft Skype-for-Business.
guest_invites	Ability to send guest invites.
webrtc	Ability for this organization to use Click-to-Call (browser-based calling).

Request the version of an organization

New in Cloud 5.1, API minor version 11.

To obtain the Cloud software version for an organization, make an **HTTPS GET** request to:

/customers/<org_uid>/version

where **<org_uid>** is the organization reference number, which is a unique identifier for this organization.

There is no request body.

On success, this generates a **200 OK** response with a body having the following structure:

```
{
  "software_version": <string>,
  "api_minor_version": <integer>
}
```

Field	Description
software_version	Cloud software version running on the server.
api_minor_version	API minor version running on the server.

Request objects

The request objects are:

conf_settings request object (p60)
conf_repetition request object (p62)
conf_participant request object (p66)
occur_settings request object (p67)
location request object (p68)
user request object (p69)
directory_entries request object (p70)
create_integration request object (p70)
update_integration request object (p71)

Request objects for managing conferences

conf_settings request object

```
{
  "title": <string: required>,
  "description": <string: optional, default: "">,
  "timezone": <string: required>,
  "permanent": <boolean: required>,
  "start": <string: optional, default: null>, # null if permanent
  "end": <string: optional, default: null>, # null if permanent
  "repetition": <conf_repetition object: optional, default: null>
    # null for conferences that do not repeat
  "participants": <[
    <conf_participant object: optional>,
    <conf_participant object: optional>,
    ...], default: []>,
  "layout": <string: optional, default: "speaker_with_strip">,
  "require_owner": <boolean: optional, default: false>,
  "recording": <boolean: optional, default: false>,
  "dummy": <boolean: optional, default: false>,
  "hide_dir_entry": <boolean: optional, default: false>,
  "send_emails": <boolean: optional, default: false>,
  "externally_managed": <boolean: optional, default: true>
}
```

Field	Description
title	The title of the conference. Must be between 2 and 256 characters in length.

Field	Description
description	A description of the conference, maximum length 2048 characters.
timezone	The name of the conference time zone, as per the IANA Time Zone Database. This must match one of the StarLeaf supported time zone names – see Timezone (p80) for more details.
permanent	True if the conference is permanent, else false.
start	The start date and time of the conference in ISO 8601 format (without time zone). Must be null if the conference is permanent.
end	The end date and time of the conference in ISO 8601 format (without time zone). Must be null if the conference is permanent.
repetition	The conf_repetition object must be not null if and only if the conference is recurring.
participants	An optional array of conf_participant objects, each of which identifies a user or room system that is present in the StarLeaf Cloud. The default value is an empty array.
layout	The layout to be used for the conference. Valid values are "speaker_with_strip", "equal_panes", "speaker_only", and "large_speaker". The default value is "speaker_with_strip". "speaker_only" is new in Cloud 4.6, API minor version 9. The layouts are described in more detail below.
require_owner	If true, participants joining the conference are kept on hold until the conference owner joins. Otherwise, participants cease to be on hold after at least two have joined. The default value is false.
recording	If true, the conference is recorded.
dummy	If true, the conference is silently deleted after 30 days. Use this feature if the client must create a placeholder conference (in order to be allocated a dial in number, for example) before the details can be finalized.
hide_dir_entry	If false, permanent conferences will appear as directory listings. This is useful where permanent conferences are used as 'virtual meeting rooms' and where people might want to access them through the directory. If true, permanent conferences will not appear in the directory.
send_emails	If true, conference invitation emails are sent by the Cloud to the attendees.
externally_managed	If true, the conference cannot be edited on the Portal (and has been created by, for example, an Outlook Add-in).

layout	
	Speaker with strip: In this layout, the current speaker is given prominence with the largest pane. Other participants are displayed in a strip below the current speaker. A maximum of five participants appear in the strip. Counters display the numbers of additional audio and video participants in the conference
	Equal panes: In this layout, every participant is given equal prominence in equal-sized panes. The number of panes is determined by the number of participants in the conference. Up to 25 participants are shown. Counters display the numbers of additional audio and video participants in the conference
	Speaker only: In this layout, only the current speaker is seen in a large pane. Counters display the numbers of additional audio and video participants in the conference
	Large speaker: In this layout, the current speaker is given prominence in the largest pane. The size of that pane is determined by the number of other people in the conference. Every participant remains visible at all times up to a maximum of 10 participants. Counters display the numbers of additional audio and video participants in the conference

conf_repetition request object

```
{
  "frequency": <string: required>,
  "interval": <integer: required>,
  "count": <integer: optional, default: null>,
  "until": <string: optional, default: null>,
  "days_of_week_mask": <integer: optional, default: null>,
  "days_of_month_mask": <integer: optional, default: null>,
  "months_of_year_mask": <integer: optional, default: null>,
  "month_day_what": <integer: optional, default: null>,
  "month_day_which": <string: optional, default: null>
}
```

Field	Description
frequency	The base units used for repetition frequency: permitted values are "daily", "weekly", "monthly", "yearly".
interval	The number of frequency base units between successive repetition occurrences (valid range is 1 to 999).

Field	Description
count	The number of repetition occurrences to schedule (valid range is 1 to 999). At least one of "count" and "until" must be null. If "count" and "until" are both null, the conference repeats forever.
until	The date in ISO 8601 format after which the repetition stops. At least one of "count" and "until" must be null. If "count" and "until" are both null, the conference repeats forever.
days_of_week_mask	May be not null only if the frequency is weekly. The presence of this field allows a custom repetition pattern to be defined. Each day of the week on which the conference is to occur is defined by setting the corresponding bit in this integer. The mapping between days and bits is given below.
days_of_month_mask	May be not null only if the frequency is monthly. If "days_of_month_mask" is not null then both "month_day_what" and "month_day_which" must be null. A not null value for this field allows a custom repetition pattern to be defined. Each day of the month on which the conference is to occur is defined by setting the corresponding bit in this integer. The mapping between days and bits is given below.
months_of_year_mask	May be not null only if the frequency is yearly. A not null value for this field allows a custom repetition pattern to be defined. Each month of the year on which the conference is to occur is defined by setting the corresponding bit in this integer. The mapping between months and bits is given below.
month_day_what	May be not null only if the frequency is monthly or yearly. If "month_day_what" is not null then "month_day_which" must also be not null and "days_of_month_mask" must be null. A not null value for this field together with "month_day_which" allows more complex repetition patterns to be defined, of the form 'repeat every <month_day_which> <month_day_what>'. The permitted values for the "month_day_what" integer, together with their meanings, are given below.
month_day_which	May be not null only if the frequency is monthly or yearly. If "month_day_which" is not null then "month_day_what" must also be not null and "days_of_month_mask" must be null. A not null value for this field together with "month_day_what" allows more complex repetition patterns to be defined, of the form 'repeat every <month_day_which> <month_day_what>'. The permitted values for "month_day_which" are "first", "second", "third", "fourth", "last".

Enumeration to use for fields "month_day_what" and "days_of_week_mask":

Day	Enumeration	Description
Monday	0	Value in integer "month_day_what", bit index in integer "days_of_week_mask".
Tuesday	1	Value in integer "month_day_what", bit index in integer "days_of_week_mask".
Wednesday	2	Value in integer "month_day_what", bit index in integer "days_of_week_mask".
Thursday	3	Value in integer "month_day_what", bit index in integer "days_of_week_mask".
Friday	4	Value in integer "month_day_what", bit index in integer "days_of_week_mask".
Saturday	5	Value in integer "month_day_what", bit index in integer "days_of_week_mask".
Sunday	6	Value in integer "month_day_what", bit index in integer "days_of_week_mask".
Weekday	7	Value in integer "month_day_what".
Weekend	8	Value in integer "month_day_what".
Day	9	Value in integer "month_day_what".

Enumeration to use for field "days_of_month_mask":

Day	Enumeration	Description
1 st	0	Bit index in integer "days_of_month_mask".
2 nd	1	Bit index in integer "days_of_month_mask".
3 rd	2	Bit index in integer "days_of_month_mask".
4 th	3	Bit index in integer "days_of_month_mask".
30 th	29	Bit index in integer "days_of_month_mask".
31 st	30	Bit index in integer "days_of_month_mask".

Enumeration to use for field "months_of_year_mask":

Month	Enumeration	Description
January	0	Bit index in integer "months_of_year_mask".
February	1	Bit index in integer "months_of_year_mask".
March	2	Bit index in integer "months_of_year_mask".
April	3	Bit index in integer "months_of_year_mask".
November	10	Bit index in integer "months_of_year_mask".
December	11	Bit index in integer "months_of_year_mask".

conf_participant request object

```
{  
  "email": <string: required>  
}
```

Field	Description
email	The email address of the user or video address of the room system, as registered in the StarLeaf Cloud.

occur_settings request object

```
{
  "title": <string: optional, default: null>,
  "description": <string: optional, default: null>,
  "timezone": <string: optional, default: null>,
  "start": <string: optional, default: null>,
  "end": <string: optional, default: null>,
  "participants": <[<conf_participant object: optional>,
    <conf_participant object: optional>,
    ...], default: null>,
  "layout": <string: optional, default: null>,
  "require_owner": <boolean: optional, default: null>,
  "recording": <boolean: optional, default: null>
}
```

Field	Description
title	The title of the occurrence. Must be between 2 and 256 characters in length.
description	A description of the occurrence, maximum length 2048 characters.
timezone	The name of the occurrence time zone, as per the IANA Time Zone Database. This must match one of the StarLeaf supported time zone names – see the Time Zone section for more details.
start	The start date and time of the occurrence in ISO 8601 format (without time zone). If this value is not null, then a valid value for end must also be provided.
end	The end date and time of the occurrence in ISO 8601 format (without time zone). If this value is not null, then a valid value for start must also be provided.
participants	An array of conf_participant objects, each of which identifies a user or room system that is present in the StarLeaf Cloud.
layout	The layout to be used for the conference. Valid values are "speaker_with_strip", "equal_panes", "large_speaker", and "null". The default value is "null".
require_owner	If true, participants joining the conference are kept on hold until the conference owner joins. Otherwise, participants cease to be on hold after at least two have joined.
recording	If true, the conference is recorded.

Where a null value is supplied, the field is not modified from its previous value. If that field did not have a value previously assigned for this occurrence, then the occurrence of the conference uses the value from the parent conference.

Request objects for managing customers

location request object

```
{
  "country_dialing_code": <string: optional, default: null>,
  "country": <string: required>,
  "state": <string: optional, default: null>,
  "timezone": <string: optional>,
  "locale": <string: optional>,
  "default_dscp": <string: optional, default: null>
}
```

Field	Description
country_dialing_code	Where a country has multiple country dialing codes, a string specifying the code for this organization. This is required when there is a choice for a country.
country	Two letter country code for the country of the organization, as given by the CLDR Database . The Cloud uses this to determine which data center hosts this customer.
state	The state within the chosen country for the organization. This is required (and must not be null) if the country has multiple states from which to choose.
timezone	An optional timezone for the organization. This defaults to the default for the given country/ state. For details of supported timezones, refer to Timezones .
locale	An optional locale for the organization. This is for the purposes of localization and sets the language and units for the organization. This defaults to the default for the given country/ state. For a list of valid locale codes, refer to Locales (p86) .
default_dscp	Where an organization has requested that StarLeaf network traffic adheres to their network configuration for Quality of Service, this is the DSCP value used by StarLeaf media packets.

Request objects for managing users

user request object

```
{
  "firstname": <string: required>,
  "lastname": <string: required>,
  "email": <string: required>,
  "is_org_admin": <boolean: optional, default: false>,
  "send_emails": <boolean: optional, default: true>,
  "enable_vvm": <boolean: optional, default: true>,
  "timezone": <string: optional, default: null>,
  "locale": <string: optional, default: null>,
  "phone_home": <string: optional, default: null>,
  "phone_work": <string: optional, default: null>,
  "phone_mobile": <string: optional, default: null>
}
```

Field	Description
firstname	First name of the new user.
lastname	Last name of the new user.
email	Email address of the new user.
is_org_admin	Boolean to specify whether this user has admin privileges. The default value is false.
send_emails	Boolean to specify whether to send account-settings emails. Setting to false will suppress the sending of account-settings emails to this user by the Cloud (NOT recommended). The default value is true.
enable_vvm	Boolean to turn off/on video voicemail for this user. The default value is true.
timezone	If the user is in a different timezone to the default timezone for the organization, this is the name of the user's time zone, as per the IANA Time Zone Database. This must match one of the StarLeaf supported timezone names—see Timezone (p80) for more details.
locale	This is for the purposes of localization and sets the language and units for the user. For a list of valid locale codes, refer to Locales (p86) .
phone_home	The user's home telephone number.
phone_work	Another contact telephone number for the user.
phone_mobile	A mobile phone number for the user.

Request objects for managing directory entries

directory_entries request object

```
{
  "firstname": <string: required>,
  "lastname": <string: required>,
  "phone_home": <string: optional, default: null>,
  "phone_work": <string: optional, default: null>,
  "phone_mobile": <string: optional, default: null>
}
```

Field	Description
firstname	First name of the new directory entry.
lastname	Last name of the new directory entry.
phone_home	A home contact telephone number, extension number, IP address, or video address for the directory entry.
phone_work	A work contact telephone number, extension number, IP address, or video address for the directory entry.
phone_mobile	A mobile phone number for the directory entry.

Request objects for managing integrations

create_integration request object

```
{
  "type": <string: optional, default: "custom">,
  "label": <string: required>,
  "is_org_admin": <boolean: optional, default: false>
}
```

Field	Description
type	The type of integration. Currently, the only supported type is "custom".
label	A name by which you can recognize the integration. If you use your integration to create conferences, this is the owner of those conferences. The label must be unique within the organization and must be between 2 and 250 characters in length.

Field	Description
is_org_admin	Whether or not the integration will have administrator privileges to the organization. For example, if your client will create users, it will need to have administrator privileges. If your client will only create conferences, it does not need administrator privileges. If true, the client will have administrator privileges.

update_integration request object

```
{
  "label": <string: required>,
  "is_org_admin": <boolean: optional, default: false>,
  "regen_password": <boolean: optional, default: false>
}
```

Field	Description
label	A name by which you can recognize the integration. If you use your integration to create conferences, this is the owner of those conferences. The label must be unique within the organization and must be between 2 and 250 characters in length.
is_org_admin	Whether or not the integration will have administrator privileges to the organization. For example, if your client will create users, it will need to have administrator privileges. If your client will only create conferences, it does not need administrator privileges. If true, the client will have administrator privileges.
regen_password	If regen_password is true, then the Cloud will generate a new access token for the integration. Warning: all clients using the previous token will stop working until configured with the new token.

Response objects

The response objects are:

conf_settings response object (p72)
conf_repetition response object (p72)
conf_participant response object (p72)
occur_settings response object (p72)
conf_dial_info response object (p72)
org response object
location response object (p74)
user response object
directory_entries response object (p77)
line response object (p78)
integration response object (p79)

Response objects for managing conferences

conf_settings response object

The structure of the response object is identical to [conf_settings request object \(p60\)](#).

conf_repetition response object

The structure of the response object is identical to [conf_repetition request object \(p62\)](#).

conf_participant response object

The structure of the response object is identical to [conf_participant request object \(p66\)](#).

occur_settings response object

The structure of the response object is identical to [occur_settings request object \(p67\)](#).

conf_dial_info response object

```
{
  "dial_starleaf": <string>,
  "pstn_numbers": [<conf_pstn_number object>,
    <conf_pstn_number object: optional>,
    ...],
  "access_code_pstn": <string>,
```

```

"dial_info_url": <string>,
"dial_standards": <string>,
"breeze_link": <string>,
"lync_link": <string>,
"webrtc_link": <string>
"sign_up_link": <string>
}

```

Field	Description
dial_starleaf	The string to dial to join the conference using a StarLeaf endpoint.
pstn_numbers	An array of one or more conf_pstn_number objects, each of which provides a public switched telephone network (PSTN) number for a different geographic location. Any of these numbers may be dialed to join the conference. Participants dialing in using this method will be prompted to enter an access code.
access_code_pstn	The access code required by participants that dial in from the PSTN.
dial_info_url	A URL to a web page providing all the relevant dialing information in a user readable format.
dial_standards	The sequence to dial to join the conference using a standards based (H.323 or SIP) endpoint.
breeze_link	A link for use on devices that have the StarLeaf Breeze soft client installed.
lync_link	A link for use on devices that have Microsoft Skype-for-Business installed. Note that this value will be null if Skype-for-Business is not enabled for the client in the StarLeaf Cloud.
webrtc_link	A Click-to-Call link for joining the conference using a web browser. Note that this value will be null if WebRTC is not enabled for the client in the StarLeaf Cloud.
sign_up_link	A URL to a web page that allows someone to sign up to the StarLeaf Cloud service and download a software video client.

Response objects for managing customers

location response object

The structure of the response object is identical to [location request object \(p68\)](#).

org response object

```
{
  "id": <string>,
  "org_name": <string>,
  "subdomain": <string>,
  "email_domains": [<optional string>, <optional string>, ....]
  "location": {
    "country": <country code>,
    "state": <state code>,
    "locale": <locale code>,
    "timezone": <timezone>,
    "country_dialling_code": <country dialing code>,
    "default_dscp": <default_dscp>
  }
}
```

Field	Description
id	The unique identifier for this organization.
org_name	The organization name.
subdomain	The subdomain of the organization
email domains	The email domains associated with the organization.
location	The location response object which is identical to the location request object (p68)

Response objects for managing users

user response object

```
{
  "user_id": <string>,
  "firstname": <string>,
  "lastname": <string>,
  "email": <string>,
  "is_org_admin": <boolean>,
  "send_emails": <boolean>,
  "enable_vvm": <boolean>,
  "timezone": <string or null>,
  "locale": <string or null>,
  "phone_home": <string or null>,
  "phone_work": <string or null>,
  "phone_mobile": <string or null>,
  "enabled": <boolean>
  "line": <line response object>,
  "breeze": <breeze response object>
}
```

Field	Description
user_id	The unique identifier for this user within the organization.
firstname	First name of the new user.
lastname	Last name of the new user.
email	Email address of the new user.
is_org_admin	Boolean to specify if whether this user has admin privileges.
send_emails	Boolean to specify whether to send account-settings emails.
enable_vvm	Boolean to turn off/on video voicemail for this user.
timezone	If the user is in a different timezone to the default timezone for the organization, this is the name of the user's time zone, as per the IANA Time Zone Database.
locale	If the user uses a different language to the default language of the organization, this is the code for that language. The language will be used for emails to the user and for the user interface language for Breeze, desktop system and user Portal pages. The locale is also used to determine the format of any display of date and time. For a list of valid locale codes, refer to Locales (p86) .
phone_home	The user's home telephone number.

Field	Description
phone_ work	Another contact telephone number for the user.
phone_ mobile	A mobile phone number for the user.
enabled	Boolean to specify whether or not the user is enabled. A client can disable or re-enable a user—refer to the relevant section in Org admin requests or Reseller requests .
line	Settings for the line—refer to line response object (p78) .
breeze	Setting for the breeze software client.

Response objects for managing directory entries

directory_entries response object

```
{
  "id": <string>,
  "firstname": <string>,
  "last_name": <string>,
  "phone_work": <string>,
  "phone_home": <string>,
  "phone_mobile": <string>,
  "status": <string>
}
```

Field	Description
id	The unique identifier for this directory entry within the organization.
firstname	First name for the directory entry.
lastname	Last name for the directory entry.
phone_work	A contact telephone number, extension number, IP address, or video address for the directory entry.
phone_home	A home contact telephone number, extension number, IP address, or video address for the directory entry.
phone_mobile	A mobile phone number for the directory entry.
status	Indicates whether the directory entry was added automatically or manually

line response object

line is an object that appears in the response to a create or modify user request.

```
{
  "alias":<string>,
  "alias_autocomplete": <boolean>,
  "number":<string>
}
```

Field	Description
alias	The first part of the user's external video address. That is, the part before the @ sign. To create the full dialing URI for a user, use the format: <alias>@<organization_subdomain>.call.sl
alias_autocomplete	Whether or not this user's external video address was automatically created by the Cloud. If false, this external video address has been created or edited through the StarLeaf Portal. If true and you edit an existing user's email address, the Cloud might auto-update the user's alias. If false and you edit an existing user's email address, the Cloud will not auto-update the user's alias.
number	The directory number of this user.

Response objects for managing integrations

integration response object

```
{
  "label": <string>,
  "type": <string>,
  "id": <string>,
  "token_header_name": <string>,
  "access_token": <string>,
  "is_org_admin": <boolean>
}
```

Field	Description
label	The name given to the integration.
type	The type of integration. Currently, the only supported type is "custom".
id	A unique identifier for this integration.
token_header_name	The name of the HTTP header that the integration client must use for authentication.
access_token	<p>The value of the HTTP header that the integration client must use for authentication. This is a unique token for this integration. Note, it is worth remembering that this access token provides login access to the organization. Therefore, keep it secret.</p> <p>If you do want to regenerate the access token for an integration, you can do so using a PATCH request for the integration. For more information, refer to the relevant section of Org admin requests or Reseller requests.</p>
is_org_admin	Whether or not the integration has administrator access to this organization.

Timezone

The **timezone** parameter used in this API is the name of the time zone as defined by the IANA timezone Database:

<https://www.iana.org/time-zones>

These are the same timezone names as used in the Python pytz library:

<https://pypi.python.org/pypi/pytz/>

Converting from a Microsoft Windows timezone to an IANA timezone can be accomplished using the Noda Time library:

<https://github.com/nodatime/nodatime>

Not all IANA timezone names are supported by the StarLeaf Cloud. Below is a complete list of valid **timezone** parameters that are supported:

Supported timezones: Africa		
Africa/Abidjan	Africa/Djibouti	Africa/Malabo
Africa/Accra	Africa/Douala	Africa/Maputo
Africa/Addis_Ababa	Africa/El_Aaiun	Africa/Maseru
Africa/Algiers	Africa/Freetown	Africa/Mbabane
Africa/Bamako	Africa/Gaborone	Africa/Mogadishu
Africa/Bangui	Africa/Harare	Africa/Monrovia
Africa/Banjul	Africa/Johannesburg	Africa/Nairobi
Africa/Bissau	Africa/Kampala	Africa/Ndjamena
Africa/Blantyre	Africa/Khartoum	Africa/Niamey
Africa/Brazzaville	Africa/Kigali	Africa/Nouakchott
Africa/Bujumbura	Africa/Kinshasa	Africa/Ouagadougou
Africa/Cairo	Africa/Lagos	Africa/Porto-Novo
Africa/Casablanca	Africa/Libreville	Africa/Sao_Tome
Africa/Ceuta	Africa/Lome	Africa/Tripoli
Africa/Conakry	Africa/Luanda	Africa/Tunis
Africa/Dakar	Africa/Lubumbashi	Africa/Windhoek
Africa/Dar_es_Salaam	Africa/Lusaka	

Supported timezones: Americas		
America/Adak	America/Grand_Turk	America/Nome
America/Anchorage	America/Grenada	America/Noronha
America/Anguilla	America/Guadeloupe	America/North_Dakota/Center
America/Antigua	America/Guatemala	America/Panama
America/Araguaina	America/Guayaquil	America/Pangnirtung
America/Argentina/Buenos_Aires	America/Guyana	America/Paramaribo
America/Aruba	America/Halifax	America/Phoenix
America/Asuncion	America/Havana	America/Port_of_Spain
America/Barbados	America/Hermosillo	America/Port-au-Prince
America/Belem	America/Indiana/Knox	America/Porto_Velho
America/Belize	America/Indiana/Marengo	America/Puerto_Rico
America/Boa_Vista	America/Indiana/Vevay	America/Rainy_River
America/Bogota	America/Inuvik	America/Rankin_Inlet
America/Boise	America/Iqaluit	America/Recife
America/Cambridge_Bay	America/Jamaica	America/Regina
America/Cancun	America/Juneau	America/Rio_Branco
America/Caracas	America/Kentucky/Louisville	America/Santiago
America/Cayenne	America/Kentucky/Monticello	America/Santo_Domingo
America/Cayman	America/La_Paz	America/Sao_Paulo
America/Chicago	America/Lima	America/Scoresbysund
America/Chihuahua	America/Los_Angeles	America/St_Johns
America/Costa_Rica	America/Maceio	America/St_Kitts
America/Cuiaba	America/Managua	America/St_Lucia
America/Curacao	America/Manaus	America/St_Thomas
America/Danmarkshavn	America/Martinique	America/St_Vincent
America/Dawson	America/Mazatlan	America/Swift_Current

Supported timezones: Americas		
America/Dawson_Creek	America/Menominee	America/Tegucigalpa
America/Denver	America/Merida	America/Thule
America/Detroit	America/Mexico_City	America/Thunder_Bay
America/Dominica	America/Miquelon	America/Tijuana
America/Edmonton	America/Monterrey	America/Tortola
America/Eirunepe	America/Montevideo	America/Vancouver
America/El_Salvador	America/Montreal	America/Whitehorse
America/Fortaleza	America/Montserrat	America/Winnipeg
America/Glace_Bay	America/Nassau	America/Yakutat
America/Godthab	America/New_York	America/Yellowknife
America/Goose_Bay	America/Nipigon	

Supported timezones: Antarctica		
Antarctica/Casey	Antarctica/Mawson	Antarctica/Syowa
Antarctica/Davis	Antarctica/McMurdo	Antarctica/Vostok
Antarctica/ DumontDUrville	Antarctica/Palmer	Arctic/Longyearbyen

Supported timezones: Asia		
Asia/Aden	Asia/Hong_Kong	Asia/Pontianak
Asia/Almaty	Asia/Hovd	Asia/Pyongyang
Asia/Amman	Asia/Irkutsk	Asia/Qatar
Asia/Anadyr	Asia/Jakarta	Asia/Qyzylorda
Asia/Aqtau	Asia/Jayapura	Asia/Rangoon
Asia/Aqtobe	Asia/Jerusalem	Asia/Riyadh
Asia/Ashgabat	Asia/Kabul	Asia/Sakhalin
Asia/Baghdad	Asia/Kamchatka	Asia/Samarkand

Supported timezones: Asia		
Asia/Bahrain	Asia/Karachi	Asia/Seoul
Asia/Baku	Asia/Kashgar	Asia/Shanghai
Asia/Bangkok	Asia/Kolkata	Asia/Singapore
Asia/Beirut	Asia/Krasnoyarsk	Asia/Taipei
Asia/Bishkek	Asia/Kuala_Lumpur	Asia/Tashkent
Asia/Brunei	Asia/Kuching	Asia/Tbilisi
Asia/Choibalsan	Asia/Kuwait	Asia/Tehran
Asia/Chongqing	Asia/Macau	Asia/Thimphu
Asia/Colombo	Asia/Magadan	Asia/Tokyo
Asia/Damascus	Asia/Makassar	Asia/Ulaanbaatar
Asia/Dhaka	Asia/Manila	Asia/Urumqi
Asia/Dili	Asia/Muscat	Asia/Vientiane
Asia/Dubai	Asia/Nicosia	Asia/Vladivostok
Asia/Dushanbe	Asia/Novosibirsk	Asia/Yakutsk
Asia/Gaza	Asia/Omsk	Asia/Yekaterinburg
Asia/Harbin	Asia/Oral	Asia/Yerevan
Asia/Ho_Chi_Minh	Asia/Phnom_Penh	

Supported timezones: Atlantic		
Atlantic/Azores	Atlantic/Cape_Verde	Atlantic/South_Georgia
Atlantic/Bermuda	Atlantic/Madeira	Atlantic/St_Helena
Atlantic/Canary	Atlantic/Reykjavik	Atlantic/Stanley

Supported timezones: Australia		
Australia/Adelaide	Australia/Eucla	Australia/Melbourne
Australia/Brisbane	Australia/Hobart	Australia/Perth
Australia/Broken_Hill	Australia/Lindeman	Australia/Sydney
Australia/Darwin	Australia/Lord_Howe	

Supported timezones: Europe		
Europe/Amsterdam	Europe/Lisbon	Europe/Simferopol
Europe/Andorra	Europe/Ljubljana	Europe/Skopje
Europe/Athens	Europe/London	Europe/Sofia
Europe/Belgrade	Europe/Luxembourg	Europe/Stockholm
Europe/Berlin	Europe/Madrid	Europe/Tallinn
Europe/Bratislava	Europe/Malta	Europe/Tirane
Europe/Brussels	Europe/Minsk	Europe/Uzhgorod
Europe/Bucharest	Europe/Monaco	Europe/Vaduz
Europe/Budapest	Europe/Moscow	Europe/Vatican
Europe/Chisinau	Europe/Oslo	Europe/Vienna
Europe/Copenhagen	Europe/Paris	Europe/Vilnius
Europe/Dublin	Europe/Prague	Europe/Warsaw
Europe/Gibraltar	Europe/Riga	Europe/Zagreb
Europe/Helsinki	Europe/Rome	Europe/Zaporozhye
Europe/Istanbul	Europe/Samara	Europe/Zurich
Europe/Kaliningrad	Europe/San_Marino	
Europe/Kiev	Europe/Sarajevo	

Supported timezones: Indian		
Indian/Antananarivo	Indian/Comoro	Indian/Mauritius
Indian/Chagos	Indian/Kerguelen	Indian/Mayotte
Indian/Christmas	Indian/Mahe	Indian/Reunion
Indian/Cocos	Indian/Maldives	

Supported timezones: Pacific		
Pacific/Apia	Pacific/Guam	Pacific/Noumea

Supported timezones: Pacific		
Pacific/Auckland	Pacific/Honolulu	Pacific/Pago_Pago
Pacific/Chatham	Pacific/Johnston	Pacific/Palau
Pacific/Easter	Pacific/Kiritimati	Pacific/Pitcairn
Pacific/Efate	Pacific/Kosrae	Pacific/Port_Moresby
Pacific/Enderbury	Pacific/Kwajalein	Pacific/Rarotonga
Pacific/Fakaofu	Pacific/Majuro	Pacific/Saipan
Pacific/Fiji	Pacific/Marquesas	Pacific/Tahiti
Pacific/Funafuti	Pacific/Midway	Pacific/Tarawa
Pacific/Galapagos	Pacific/Nauru	Pacific/Tongatapu
Pacific/Gambier	Pacific/Niue	Pacific/Wake
Pacific/Guadalcanal	Pacific/Norfolk	Pacific/Wallis

Locales

Language
English (US)
French
Spanish
Japaneses
German
Simplified Chinese
Traditional Chinese
Polish
Italian
Danish
Swedish
Portuguese (Brazilian)
Czech
Norwegian Bokmål
Dutch

The **locale** parameter is the code used in the Cloud API to set the language for a user and also controls the formatting of time and date.

Parameter	Description
en_us	US English
en_int	US English with 24 hour clock
fr_fr	French
fr_ca	Canadian French
es_es	Spanish
jp_jp	Japanese
ru_ru	Russian
de_de	German
zh_hans	Simplified Chinese
zh_hant	Traditional Chinese

Parameter	Description
pl	Polish
id	Indonesian
it	Italian
da	Danish
sv	Swedish
pt	Brazilian Portuguese
cs	Czech
ro	Romanian
no	Norwegian
nl	Dutch
fi	Finnish
tr	Turkish
ko	Korean

Legal information

Third party software acknowledgments

Acknowledgments of third-party software are available at:

www.starleaf.com/support/legal

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