

# REST APIs

## 1. PrivateServer REST APIs

PrivateServer provides some web services in a RESTful way.

### 1.1. REST Request specification

Base request url: [https://server.com/rest/{api\\_version}/](https://server.com/rest/{api_version}/)

Only HTTPS protocol is allowed.

The "api\_version" is a number (integer) that specify the API version used by the client. This document is about Api version 1.

### 1.2. REST Request authentication

REST APIs are available under strict access contro. Users of REST APIs should have REST role (ADMIN role is not required and discouraged).

Administrator should create a specific user/password: this credential are required to authenticate REST requests. PrivateServer use a simplified version of Amazon S3 REST authentication protocol (<http://docs.amazonwebservices.com/AmazonS3/latest/dev/RESTAuthentication.html>).

For every request the REST client must calculate an HMAC-SHA1 of the request body, using the password provided. For example, using a pseudo-code:

```
Signature = Base64( HMAC-SHA1(UTF-8-Encoding-Of(<ac:macro ac:name="brand"><ac:parameter ac:name="brand">server</ac:parameter></ac:macro> Rest Password, Request body)) );
```

PrivateServer Rest password must be sent with SHA-1 hash, in HEX (lowercase) format, for example "a94a8fe5ccb19ba61c4c0873d391e987982fbbd3" for password "test"

This signature must be placed in an HTTP header named "x-privateserver-auth" with this format:

```
x-privateserver-auth = <ac:macro ac:name="brand"><ac:parameter ac:name="brand">server</ac:parameter></ac:macro> Rest username : Signature
```

Every request body to sign must include the Date HTTP header, as the first body line.

| Request | Request body to sign | HTTP request example | Request body to sign example |
|---------|----------------------|----------------------|------------------------------|
|---------|----------------------|----------------------|------------------------------|

|                             |                                                                  |                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                 |
|-----------------------------|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| HTTP POST                   | Date HTTP header +<br>HTTP post request                          | POST /rest/1/account/ HTTP/1.1<br><br>Host: server.com<br><br>Date: Tue, 27 Mar 2007 19:42:41 +0000<br><br>x-privateserver-auth: <a href="#">restUser:hcicpDDvL9Ss06AkvxqmIWkmOuQ=</a><br><br>owner=Mario Rossi<br><br>description=Mario Rossi personal account<br><br>phone_number=%2B3933334455678<br><br><a href="#">email=mario.rossi@acme.com</a><br><br>security_model=s | Tue, 27 Mar 2007 19:42:41 +0000\n<br><br>owner=Mario Rossi\n<br><br>description=Mario Rossi personal account\n<br><br>phone_number=+393334455678\n<br><br><a href="#">email=mario.rossi@acme.com</a> \n<br><br>security_model=s |
| HTTP GET with parameters    | Date HTTP header +<br>HTTP get parameters, printed out as a list | GET /rest/1/account/?params=1&foo=3 HTTP/1.1<br><br>Host: server.com<br><br>Date: Tue, 27 Mar 2007 19:42:41 +0000<br><br>x-privateserver-auth: <a href="#">restUser:hcicpDDvL9Ss06AkvxqmIWkmOuQ=</a>                                                                                                                                                                           | Tue, 27 Mar 2007 19:42:41 +0000\n<br><br>params=1\n<br><br>foo=3                                                                                                                                                                |
| HTTP GET without parameters | Empty string                                                     | GET /rest/1/account/ HTTP/1.1<br><br>Host: server.com<br><br>Date: Tue, 27 Mar 2007 19:42:41 +0000<br><br>x-privateserver-auth: <a href="#">restUser:hcicpDDvL9Ss06AkvxqmIWkmOuQ=</a>                                                                                                                                                                                          | Tue, 27 Mar 2007 19:42:41 +0000                                                                                                                                                                                                 |

### 1.3. Error response format

JSON format of error response

```
{
  "rest_errors":
  [
    {
      "error_code"    : 1,
      "error_message" : "Unable to find user"
    }
    {
      "error_code"    : 5,
      "error_message" : "Invalid email"
    }
  ]
}
```

Error\_code: a numeric error code identifier - for future use

Error\_message: a human-readable error description

### 1.4. Date-Time format

The timestamp that PrivateServer sent to the REST client must have the following format:

"YYYY-MM-DD HH:MM:SS" UTC time

## 2. Web Services

### 2.1. Account creation

HTTP POST {base request}account/create

#### 2.1.1. HTTP POST PARAMETERS

| Parameter name   | Validation                                                                                                                                                                                                                                                     | Min length     | Max length     | Example                                                              |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----------------|----------------------------------------------------------------------|
| owner            | Alphanumerical string with spaces and underscore - hyphen<br><br>Regexp : [a-z0-9_- ]*(4,50)                                                                                                                                                                   | 4              | 50             | owner=Mario Rossi                                                    |
| description      | Free text                                                                                                                                                                                                                                                      | 10             | 100            | description=Mario Rossi personal account                             |
| phone_number     | Phone number in international format, without spaces and brackets. The phone number must start with a "+" followed by international code and by the number.<br><br>Regexp : +[0-9]*(8,20)                                                                      | 8              | 20             | phone_number=+393334455678                                           |
| email            | Only valid email (see RFC 2822)                                                                                                                                                                                                                                | (see RFC 2822) | (see RFC 2822) | <a href="mailto:mario.rossi@acme.com">email=mario.rossi@acme.com</a> |
| security_model=s | "security_model" acceptable value: <ul style="list-style-type: none"><li>• "s" - SDES protocol</li><li>• "z" - ZRTP protocol</li><li>• "sz" - Double protocol, SDES have higher priority</li><li>• "zs" - Double protocol, ZRTP have higher priority</li></ul> | 1              | 2              | security_model=s                                                     |

#### 2.1.2. HTTP RESPONSE

- JSON representation of user data
- [MANDATORY] "provisioning\_data" contain the provisioning link token and validity.

| HTTP CODE          |        | BODY                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 201<br><br>CREATED | All ok | <pre>{   "owner"           : "Mario Rossi",   "description"     : "Mario Rossi personal Account",   "phone_number"    : "+393334455678",   "email"           : "mario.rossi@acme.com",   "status"          : "enabled",   "security_model"  : "s",   "provisioning_data" :   {     "token"          : "3e29ca992780c",     "creation_time"   : "2012-01-26 18:17:48"     "expiry_time"    : "2012-01-27 18:17:48"   } }</pre> |

|                           |                                                                 |                                                                                                                        |
|---------------------------|-----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|
| 400<br>BAD REQUEST        | Missing parameter or validation error or account already exists | <pre>{   "rest_errors":   [     {       "error_code"    : 5,       "error_message" : "Invalid email"     }   ] }</pre> |
| 401<br>UNAUTHORIZED       | Bad credential                                                  | Empty body                                                                                                             |
| 405<br>METHOD NOT ALLOWED | Not an HTTP POST                                                | Empty body                                                                                                             |
| 500<br>INTERNAL ERROR     | Server error                                                    | <pre>{   "rest_errors":   [     {       "error_code" : 5,       "error_message" : "Exception..."     }   ] }</pre>     |

## 2.2. Disable - enable account

HTTP POST {base request}account/status/

### 2.2.1. HTTP POST PARAMETERS

| Parameter name | Validation                                                                                                                                                                                | Min length | Max lenght | Example                                                     |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|------------|-------------------------------------------------------------|
| phone_number   | Phone number in international format, without spaces and brackets. The phone number must start with a "+" followed by international code and by the number.<br><br>Regexp : +[0-9]*{8,20} | 8          | 20         | phone_number=+393334455678                                  |
| status         | Only "disabled" or "enabled"                                                                                                                                                              | N.A.       | N.A.       | status=disabled                                             |
| description    | Free text                                                                                                                                                                                 | 10         | 100        | description=User doesn't work for PrivateWave Italia S.r.l. |

### 2.2.2. HTTP RESPONSE

- JSON representation of user data
- [OPTIONAL] "provisioning\_data" contain the provisioning link token and validity, if provisioning link is yet available

| HTTP CODE                 |                                       | BODY                                                                                                                                                                                                                              |
|---------------------------|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 200<br>OK                 | All ok                                | <pre>{   "owner"      : "Mario Rossi",   "description" : "Mario Rossi personal Account",   "phone_number" : "+393334455678",   "email"      : "mario.rossi@p.com",   "status"     : "disabled",   "security_model" : "s", }</pre> |
| 400<br>BAD REQUEST        | Missing paremeter or validation error | <pre>{   "rest_errors":   [     {       "error_code"    : 1,       "error_message" : "no description data"     }   ] }</pre>                                                                                                      |
| 401<br>UNAUTHORIZED       | Bad credential                        | Empty body                                                                                                                                                                                                                        |
| 404<br>NOT FOUND          | User not found                        | Empty body                                                                                                                                                                                                                        |
| 405<br>METHOD NOT ALLOWED | Not an HTTP POST                      | Empty body                                                                                                                                                                                                                        |
| 500<br>INTERNAL ERROR     | Server error                          | <pre>{   "rest_errors":   [     {       "error_code"    : 5,       "error_message" : "Exception..."     }   ] }</pre>                                                                                                             |

## 2.3. Request activation link re-issue

HTTP POST {base request}account/send\_configuration\_link

### 2.3.1. HTTP POST PARAMETERS

| Parameter name | Validation | Min length | Max length | Example |
|----------------|------------|------------|------------|---------|
|----------------|------------|------------|------------|---------|

|              |                                                                                                                                                                                          |    |     |                                                  |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|-----|--------------------------------------------------|
| phone_number | Phone number in international format, without spaces and brackets. The phone number must start with a "+" followed by international code and by the number.<br><br>Regexp : +[0-9]{8,20} | 8  | 20  | phone_number=+393334455678                       |
| description  | Free text                                                                                                                                                                                | 10 | 100 | description=User doesn't receive activation link |

### 2.3.2. HTTP RESPONSE

- JSON representation of user data
- [MANDATORY] "provisioning\_data" contain the new provisioning link token and validity

| HTTP CODE                 |                                       | BODY                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 200<br>OK                 | All ok                                | <pre>{   "owner"       : "Mario Rossi",   "description" : "Mario Rossi personal Account",   "phone_number" : "+393334455678",   "email"       : "mario.rossi@acme.com",   "status"      : "enabled",   "security_model" : "s",   "provisioning_data" : {     "token"       : "3e29ca992780c",     "creation_time" : "2012-01-26 18:17:48",     "expiry_time"  : "2012-01-27 18:17:48"   } }</pre> |
| 400<br>BAD REQUEST        | Missing parameter or validation error | <pre>{   "rest_errors":   [     {       "error_code"   : 1,       "error_message" : "Invalid phone number"     }   ] }</pre>                                                                                                                                                                                                                                                                      |
| 401<br>UNAUTHORIZED       | Bad credential                        | Empty body                                                                                                                                                                                                                                                                                                                                                                                        |
| 404<br>NOT FOUND          | User not found                        | Empty body                                                                                                                                                                                                                                                                                                                                                                                        |
| 405<br>METHOD NOT ALLOWED | Not an HTTP POST                      | Empty body                                                                                                                                                                                                                                                                                                                                                                                        |

|                       |              |                                                                                                                           |
|-----------------------|--------------|---------------------------------------------------------------------------------------------------------------------------|
| 500<br>INTERNAL ERROR | Server error | <pre>{   "rest_errors":   [     {       "error_code"      : 5,       "error_message"   : "Exception..."     }   ] }</pre> |
|-----------------------|--------------|---------------------------------------------------------------------------------------------------------------------------|

## 2.4. List users

HTTP GET {base request}account/list

### 2.4.1. HTTP RESPONSE

- JSON representation of user list
- [OPTIONAL] "provisioning\_data" contain the new provisioning link token and validity

| HTTP CODE                 |                 | BODY                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 200<br>OK                 | All ok          | <pre>{   "user_list" :   [     {       "owner" : "Mario Rossi",       "description" : "Mario Rossi personal Account",       "phone_number" : "+393334455678",       "email" : "mario.rossi@acme.com",       "status" : "enabled",       "security_model" : "s",       "provisioning_data" :       {         "token" : "3e29ca992780c",         "creation_time" : "2012-01-26 18:17:48"         "expiry_time" : "2012-01-27 18:17:48"       }     }     ...   ] }</pre> |
| 401<br>UNAUTHORIZED       | Bad credential  | Empty body                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 405<br>METHOD NOT ALLOWED | Not an HTTP GET | Empty body                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

500

INTERNAL ERROR

Server error

```
{
  "rest_errors":
  [
    {
      "error_code"    : 5,
      "error_message" : "Exception..."
    }
  ]
}
```

[Events data SQL views](#)