

fingerprint technologies



Centrex Fingerprint
RCC interface RestAPI

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Server Configuration

- myRCC web service must be enabled on a running Jetty server.
- Login to myRCC is only accessible to administrator that have been granted with RCC authorizations.
- These administrators should not be real administrator, but just dedicated administrators that are only used to create one or several session between two servers.
- When login, an administrator will have to provide the name of the enterprise he wishes to monitor. This enterprise has to belong to his administrative domain, and it cannot be changed during the session.
- Using myRCC allows the application to perform any callcontrol action of the myRCC enabled users of the selected enterprise.

RCC Rest API Catalog

Services

- **/restletrouter/v1/service/Login** Open and authenticate a session for an enterprise. The cookie + token must be sent set to every subsequent requests. The session is expired after a (configurable) delay of inactivity.
 - Request Header : Authorization: Basic <login|name enterprise:pwd> Base64 encoded.
 - Request Header: X-Application: myRCC
- **/restletrouter/v1/service/Logout** Close session, reset authentication.
- **/restletrouter/v1/service/EventListener/bean** Create / Delete a listener identifier.
 - JSON Request Payload : { "name" : "free string identifier" }

Extension Resources

- **/restletrouter/v1/rcc/Extension** Fetch the extensions list of the domain available once the user is logged.
 - optional query string : ?offset=int&length=int (permit the pagination list).
- **/restletrouter/v1/rcc/Extension/:id** Retrieve detail of an extension.

Call control Resources

- **/restletrouter/v1/rcc/Extension/:id/placeCall** Place a call to a given destination
 - JSON Request Payload : { "destination" : "number destination" }.
 - As far as a call is created, the call legs states could be asked (pull) by a http request or monitored (push). Call actions are driven by the server which provide in a same representation the state of the call legs and each state the list of possible actions like hold, dtmfs ..
- **/restletrouter/v1/rcc/CallLine** Fetch the list of call lines.
 - optional query string : ?listenerName=listener identifier. The listener identifier must be created previously. Adding this parameter to this request starts the monitoring of this resource. The monitoring is disabled since the identifier is deleted.
- **/restletrouter/v1/rcc/CallLine/:id/:action** Perform an action on a callLine
 - For full list please refer to [Call Lines actions](#)
- Call lines monitoring consists of a series of actions permitting to receive events (push) through a websocket connection previously established. This mechanism permit to be notified of changes of dedicated resource or a list of resources like callines (call legs). In order to avoid flooding clients, the server will send latest full representation of the resources every 100 ms (this duration may change after adjustments) as far the state of the resource has been changed.

Call Lines actions

:action	JSON request payload
addParty : add a party to a call	{ "destination" : "free string number" }
answer : call answer	N/A
disconnect : disconnect the call (destroy)	N/A
hold : hold the line	N/A
unhold : resume the line	N/A
leave : quit a multi-part call.	N/A
merge : merge 2 calls	{ "line" : "uri callLine" }
redirect : blind transfer/redirect according state call	{ "destination" : "free string number" }
sendDtmfs : send dtmf(s)	{ "dtmfs" : "string dtmfs" }
transfer : 2 step transfer	{ "line" : "uri callLine" }

Misc

- Traffic between client and server is done over HTTP protocol, no SSL protection is enabled as far client and server are in a private domain.
- Please note requests may in future versions be redirected permanently/temporarily to an alternative host. In this case the main server will responds by the standard HTTP status code (301 / 302) and provide the response header "Location" the new full URI to address requests.
- Resources are a JSON representation only, XML is not supported. It's recommended to add systematically the mime type to the Accept and Content-Type headers.
- Specific header X-Application : To permit authentication, clients must set the specific header : **X-Application: myRCC**. Then once client is authenticated, server will responds by the same header + a token. This value must be copied to subsequents requests.

Sequences samples

Nota : To make sequences more lisible, the headers list is not complete.

Login / Retrieve extensions list:

1. Log in to enterprise named e1
2. Retrieve the list of extensions.
3. Log out of e1.

Request Method: POST
Request URL: http://istra1/restletrouter/v1/service/Login
Request Headers:
Accept:application/json, text/plain, */*
Content-Type: application/json
X-Application: myRCC
Authorization: Basic RXXXXXXXXXXXXX==

Response Headers:
Status Code: 200 OK
Set-Cookie: myRCC_SESSIONID=4278595528937730729;Path=/restletrouter;HttpOnly
X-Application:myRCC;42c7588b-8940-45cd-8007-436f51f08bf6

Request Method: GET
Request URL: http://istra1/restletrouter/v1/rcc/Extension?offset=50&length=50
Request Headers:
Accept:application/json, text/plain, */*
Content-Type: application/json
X-Application:myRCC;42c7588b-8940-45cd-8007-436f51f08bf6
Cookie: myRCC_SESSIONID=4278595528937730729

Response Headers:
Status Code: 200 OK

Response :

```
{
  "count" : 150,
  "items": [{
    "addressNumber": "101",
    "restUri": "v1/rcc/Extension/897778778",
    "displayName": "John Doe",
    "department": "Sales",
    "urlPhoto": "http://jhondoe.pictures.com",
    "pstnNumbers": ["+33415369101"]
  },{
    "addressNumber": "102",
    "restUri": "v1/rcc/Extension/4588897",
    "displayName": "Alice White",
    "Department": "HR",
    "urlPhoto": "http://alicewhite.pictures.com",
    "pstnNumbers": ["+33415369102"]
  }],
  "next": "v1/rcc/Extension?offset=100&length=50",
  "prev": "v1/rcc/Extension?offset=0&length=50"
}
```

Request Method: POST
Request URL: http://istra1/restletrouter/v1/service/Logout

Request Headers:

Accept:application/json, text/plain, */*
Content-Type: application/json
X-Application:myRCC;42c7588b-8940-45cd-8007-436f51f08bf6
Cookie: myRCC_SESSIONID=4278595528937730729

Response Headers:

Status Code: 204 No Content
Set-Cookie:mylstra_SESSIONID=4278595528937730729;Path=/restletrouter;Expires=Thu, 01-Jan-1970 00:00:00

Starts Calls Monitoring

Prerequisite : User must be authenticated.

1. Setup a WebSocket connection.
2. Create a Listener identifier.
3. Start monitoring call lines.
4. Stop monitoring call lines.

Request Method: GET

Request URL: ws://istra1/restletrouter/ws-service/myRCC

Request Headers:

Connection: Upgrade
Cookie: myRCC_SESSIONID=4278595528937730729

Response Headers:

Status Code: 101 Switching Protocols

Request Method: POST

Request URL: http://istra1/restletrouter/v1/service/EventListener/bean

Request Headers:

Accept:application/json, text/plain, */*
Content-Type: application/json
X-Application:myRCC;42c7588b-8940-45cd-8007-436f51f08bf6
Cookie: myRCC_SESSIONID=4278595528937730729

Request Payload:

{"name": "CallLines"}

Response Headers:

Status Code: 200 OK

Response:

{"name": "CallLines", "restUri": "v1/service/EventListener/bean/CallLines"}

Request Method: GET

Request URL: http://istra1/restletrouter/v1/rcc/CallLine?listenerName=CallLines

Request Headers:

Accept:application/json, text/plain, */*
X-Application:myRCC;42c7588b-8940-45cd-8007-436f51f08bf6
Cookie: myRCC_SESSIONID=4278595528937730729

Response Headers:
Status Code: 200 OK

Response :

```
{
  "count": 2,
  "results": [{
    "restUri": "v1/rcc/CallLine/-2898",
    "actions": ["addParty", "disconnect", "unhold", "leave", "redirect"],
    "creationTime": "1420635386447",
    "displayedExternalNumber": "+33412345670",
    "displayedLabel": "EnterpriseVM",
    "displayedNumber": "555",
    "displayedPhoto": "",
    "isIncoming": false,
    "isMediaAvailable": false,
    "isPlaying": false,
    "isRecording": false,
    "lastModificationTime": "1420635390594",
    "linelId": "-2898",
    "state": "held",
    "stateCause": "causeNormal",
    "talkingTime": "1420635386449",
    "extension": "v1/rcc/Extension/897778778",
  }, {
    "restUri": "v1/rcc/CallLine/-2903",
    "actions": ["addParty", "disconnect", "hold", "leave", "redirect", "transfer", "merge",
"sendDtmfs"],
    "creationTime": "1420635411530",
    "displayedExternalNumber": "+334xxx",
    "displayedLabel": "John Doe",
    "displayedNumber": "102",
    "displayedPhoto": "http://jhonDoePicture.com",
    "isIncoming": false,
    "isMediaAvailable": false,
    "isPlaying": false,
    "isRecording": false,
    "lastModificationTime": "1420635411538",
    "linelId": "-2903",
    "state": "talking",
    "stateCause": "causeNormal",
    "talkingTime": "1420635411537",
    "extension": "v1/rcc/Extension/105",
  }
]}
```

At each change the snapshot of the call line involved will be sent through the Websocket, with the same syntax as the GET response :

```
{
  "listenerName": "CallLines",
  "item": [{
    "restUri": "v1/rcc/CallLine/-2904",
    "actions": ["addParty", "disconnect", "hold", "leave", "redirect", "transfer", "merge",
"sendDtmfs", "startRecord"],
    "creationTime": "1420635411530",
    "displayedExternalNumber": "+33412345670",
    "displayedLabel": "Jhon Doe",
```

```
        "displayedNumber": "102",
        "displayedPhoto": "http://jhonDoePicture.com",
        "isIncoming": false,
        "isMediaAvailable": false,
        "isPlaying": false,
        "isRecording": false,
        "lastModificationTime": "1420635411538",
        "lineId": "-2903",
        "state": "talking",
        "stateCause": "causeNormal",
        "talkingTime": "1420635411537",
        "extension": "v1/rcc/Extension/897778778"
    }}
}
```

Request Method: DELETE

Request URL: http://istra1/restletrouter/v1/service/EventListener/bean/CallLines

Request Headers:

Accept:application/json, text/plain, */*

Content-Type: application/json

X-Application:myRCC;42c7588b-8940-45cd-8007-436f51f08bf6

Cookie: myRCC_SESSIONID=4278595528937730729

Response Headers:

Status Code: 200 OK

Call Lines management

Prerequisite : User must be authenticated. Monitoring is installed.

1. Place a call from 101 to 102.
2. Receive calls events (101 side only to simplify the reading) through Websockets.
3. 101 holds/unhold the call
4. 101 disconnect the call.

Request Method: POST

Request URL: http://istra1/restletrouter/v1/rcc/Extension/897778778/placeCall

Request Headers:

Accept:application/json, text/plain, */*

Content-Type: application/json

X-Application:myRCC;42c7588b-8940-45cd-8007-436f51f08bf6

Cookie: myRCC_SESSIONID=4278595528937730729

Request Payload:

```
{"destination": "102"}
```

Response Headers:

Status Code: 200 OK

Response:

```
{
  "restUri": "v1/rcc/CallLine/-5499",
  "actions": ["disconnect", "answer"],
  "creationTime": "1420707628893",
```

```
"displayedLabel": "Alice",
"displayedNumber": "102",
"displayedPhoto": "http://alice.pictures.com",
"isIncoming": false,
"isMediaAvailable": false,
"isPlaying": false,
"isRecording": false,
"lineId": "-5499",
"state": "prompting",
"extensionURI": "v1/rcc/Extension/897778778"
}
```

WS RCV Frame

```
{
  "listenerName": "CallLines",
  "item": [{
    "restUri": "v1/rcc/CallLine/-5499",
    "actions": ["addParty", "disconnect", "hold", "leave", "redirect", "sendDtmfs" ],
    "creationTime": "1420707629436",
    "displayedExternalNumber": "+33412345670",
    "displayedLabel": "Alice Withe",
    "displayedNumber": "102",
    "displayedPhoto": "http://alice.pictures.com",
    "isIncoming": false,
    "isMediaAvailable": false,
    "isPlaying": false,
    "isRecording": false,
    "lastModificationTime": "1420707629443",
    "lineId": "-5499",
    "state": "talking",
    "stateCause": "causeNormal",
    "talkingTime": "1420707629443",
    "uriExtension": "v1/rcc/Extension/897778778"
  ]
}
```

Request Method: POST

Request URL: http://istra1/restletrouter/v1/rcc/CallLine/-5499/hold

Request Headers:

Accept:application/json, text/plain, */*

X-Application:myRCC;42c7588b-8940-45cd-8007-436f51f08bf6

Cookie: myRCC_SESSIONID=4278595528937730729

Response Headers :

Status Code: 204 No Content

WS RCV Frame

```
{
  "listenerName": "CallLines",
  "item": [{
    "restUri": "v1/rcc/CallLine/-5499",
    "actions": ["addParty", "disconnect", "unhold", "leave", "redirect" ],
    "creationTime": "1420707629436",
    "displayedExternalNumber": "+33412345670",
    "displayedLabel": "Alice White",
    "displayedNumber": "102",
    "displayedPhoto": "http://alice.pictures.com",
    "isIncoming": false,
    "isMediaAvailable": false,
    "isPlaying": false,
  ]
}
```

```
        "isRecording": false,
        "lastModificationTime": "1420707783052",
        "lineId": "-5499",
        "state": "held",
        "stateCause": "causeNormal",
        "talkingTime": "1420707629443",
        "uriExtension": "v1/rcc/Extension/897778778"
    }
}
```

Request Method: POST
Request URL: http://istra1/restletrouter/v1/rcc/CallLine/-5499/unhold
Request Headers:
Accept:application/json, text/plain, */*
X-Application:myRCC;42c7588b-8940-45cd-8007-436f51f08bf6
Cookie: myRCC_SESSIONID=4278595528937730729

Response Headers :
Status Code: 204 No Content

WS RCV Frame

```
{
    "listenerName": "CallLines",
    "item": [{
        "restUri": "v1/rcc/CallLine/-5499",
        "actions": ["addParty", "disconnect", "hold", "leave", "redirect", "sendDtmfs", "startRecord" ],
        "creationTime": "1420707629436",
        "displayedExternalNumber": "+33412345670",
        "displayedLabel": "Alice White",
        "displayedNumber": "102",
        "displayedPhoto": "http://alice.pictures.com",
        "isIncoming": false,
        "isMediaAvailable": false,
        "isPlaying": false,
        "isRecording": false,
        "lastModificationTime": "1420707787595",
        "lineId": "-5499",
        "state": "talking",
        "stateCause": "causeNormal",
        "talkingTime": "1420707629443",
        "uriExtension": "v1/rcc/Extension/897778778"
    }]
}
```

Request Method: POST
Request URL: http://istra1/restletrouter/v1/rcc/CallLine/-5499/disconnect
Request Headers:
Accept:application/json, text/plain, */*
X-Application:myRCC;42c7588b-8940-45cd-8007-436f51f08bf6
Cookie: myRCC_SESSIONID=4278595528937730729

Response Headers :
Status Code: 204 No Content

WS RCV Frame:

```
{
    "listenerName": "CallLines",
    "item": [{
        "restUri": "v1/rcc/CallLine/-5499",
        "conference": false,
        "creationTime": "1420707629436",
    }
}
```

```
"displayedExternalNumber": "+33412345670",  
"displayedLabel": "Alice White",  
"displayedNumber": "102",  
"displayedPhoto": "http://alice.pictures.com",  
"isIncoming": false,  
"isMediaAvailable": false,  
"isPlaying": false,  
"isRecording": false,  
"lastModificationTime": "1420707794023",  
"linelid": "-5499",  
"state": "dropped",  
"stateCause": "causeNormal",  
"talkingTime": "1420707629443",  
"uriExtension": "v1/rcc/Extension/897778778"
```

```
}]
```

```
}
```

Document History

Olivier Chicha	2014/12/19	API description
Isabelle Dalmasso	2015/01/06	RCC catalog + samples.
Isabelle Dalmasso	2015/01/09	RCC catalog add action's list.
Isabelle Dalmasso	2015/02/18	Add action "unhold"