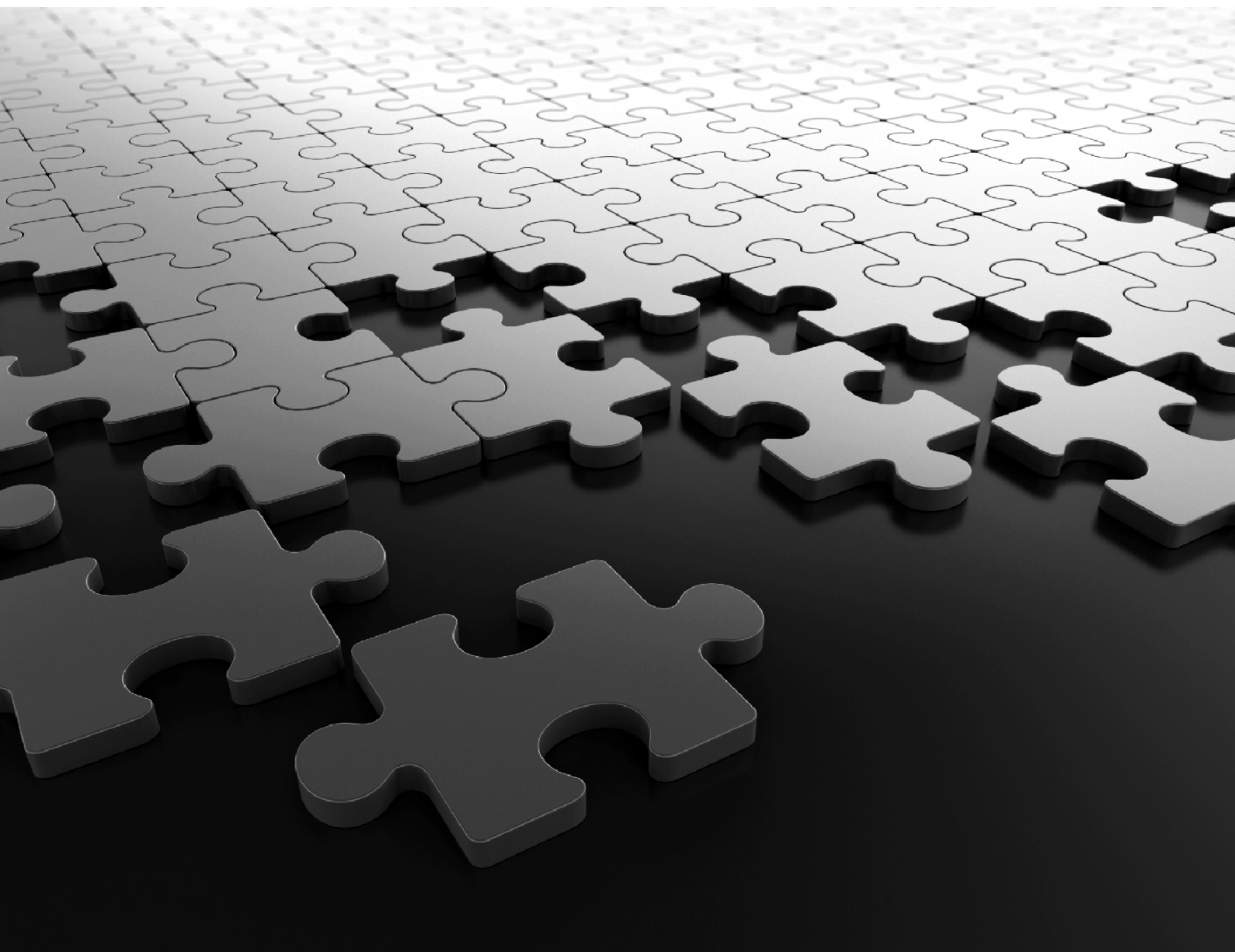


COSEC Web API

User Guide





COSEC Web API 2.0

User Guide

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Welcome to the *COSEC Web API User Guide*. This document will provide you a comprehensive overview and complete user-guidance for *COSEC Web APIs*. You can learn more about COSEC Web APIs, browse through detailed descriptions of individual APIs and test them using sample scenarios.

Document Conventions

This API User Guide will follow a set of document conventions to make it consistent and easier for you to read. These are as follows:

1. Cross-references and other links will appear as follows: [Document Conventions](#)

For e.g. To learn more about APIs, please refer to section [API Overview](#) (or, [See “API Overview” on page 3.](#)).

2. The term *device* used in this document, will refer to all COSEC Panels and Door Controllers.
3. Some abbreviations/acronyms/condensed forms commonly used in the document are expanded as follows:
 - ESS: Employee Self Service
 - HTTP: Hypertext Transfer Protocol
 - URL: Uniform Resource Locator
 - XML: Extensible Markup Language
 - JSON: JavaScript Object Notation
 - IMEI: International Mobile Equipment Identity
 - FTP: File Transfer Protocol
 - T&A: Time and Attendance
 - C-OFF: Compensatory Off
4. Text within angle brackets (e.g. “<request-type>”) denotes content in URL syntax and should be replaced with either a value or a string. The angle brackets should be omitted in all instances except those used to denote “tags” within XML responses (e.g. “<name></name>”).
5. Arguments in a request URL, along with their corresponding values, will be separated by a ‘semi-colon’ (‘;’) from other arguments. “?” *will be allowed as a separator between the request-type and an argument.* Special characters (&, ‘, “, <, > and ;) will not be allowed for any arguments and its value.
6. Additional information about any section appears in the form of notices. The following symbols have been used for notices to draw your attention to important items.



Important: to indicate something that requires your special attention or to remind you of something you might need to do when you are using the system.



Caution: to indicate an action or condition that is likely to result in malfunction or damage to the system or your property.



Warning: to indicate a hazard or an action that will cause damage to the system and or cause bodily harm to the user.



Tip: to indicate a helpful hint giving you an alternative way to operate the system or carry out a procedure, or use a feature more efficiently.

Document Organization

Chapters 1 and 2 will provide a general understanding of COSEC APIs and the basic interface communication. Chapters 3 to 21 provide a chapter-wise discussion of API groups with detailed explanation of individual APIs. The following information has been provided on each request type:

- Description of the functionality.
- Actions used.
- Generic query syntax.
- User rights required.
- Mandatory and optional parameters (argument-value table).
- Fields returned in response ("Response Fields". Wherever applicable).
- Additional reference (if any).
- Examples (*Sample Request* and *Sample Response*).

Chapter 22 provides a detailed description of the API response structure.

For license requirement information, refer [“Supported APIs” on page 16](#).

Who Can Use this Document

The COSEC Web API User Guide is meant for *third-party software developers* who wish to integrate the COSEC Web application with another remote application. This guide will provide information to users on how to request and receive services from the COSEC Web server via HTTP API.

COSEC enables third party developers to access some of its important functionality via APIs. Integrate your application with COSEC and remotely execute functions such as retrieval of device, user and attendance data, sending and updating configurations on the COSEC database, applying and approving applications, leave management, cafeteria management and so on.

How It Works

A COSEC Web API is an interface that interacts with client applications, enabling them to *invoke or push data* from and to the COSEC database, using the COSEC Web server. This can be processed by sending a simple *HTTP request* to the COSEC server. The server then returns an appropriate response which the remote application can subsequently process on its own, without the need to launch the COSEC Web application.

Consider an example where an organization (say, *ABC*) is using COSEC for time and attendance monitoring and management. However, *ABC* has its independent Payroll application which requires the input of monthly attendance data of all employees to process their salaries every month. In such a scenario, the application can be integrated with COSEC via HTTP to raise a request for the relevant employee records in a specific format.

Thus, COSEC APIs are communicative interfaces that provide effective backend support, making integration possible from any corner of the world. This also cuts down on an organization's needs to invest both time and resources in manual data-handling and data errors, promoting speed, precision and efficiency in resource management.

General Features

All COSEC APIs -

- Are Web-based *HTTP* APIs.
- Use basic *HTTP Request-Response* for interface communication.
- Generate response in either *text*, *XML* or *JSON* format, as specified.
- Use a generic syntax for all queries.
- Support some predefined parameters and their corresponding values for each action. Each parameter will either be mandatory or bear a system-defined default value (when no value is specified).

- Use a mandatory parameter ***action*** universally, which takes simple HTTP actions (such as ***GET***, ***SET***, ***DELETE*** etc.) as values, and specifies the action to be requested.

What the User Should Know

It is assumed that developers using this document have prior knowledge of:

- Basic functioning of the COSEC system
- Basic HTTP request-response communication
- XML/JSON

Prerequisite

In order to use a COSEC API, the user will require:

- The COSEC software application (pre-installed).
- The location for COSEC Web server (pre-installed).
- A network enabled for accessing the COSEC Web server.
- API access enabled for the API user on the COSEC Web server.



To learn about system requirements, please refer to the COSEC Manual in your software installation kit.

Enabling API Access

COSEC APIs are applicable to any COSEC login user with the appropriate access rights. For COSEC login users with necessary access rights, the respective login credentials (*Username* and *Password*) can be used for API authentication.



The COSEC server will require Basic Authentication using the login user's credentials.

API access rights for login user will depend on the following criteria:

Login User Type

COSEC login users may be of two kinds -

- System Account users (e.g. *system administrator*, *system engineer* etc.) - These users have login rights to the *COSEC Web application* and their page access rights will depend on their role configuration. API access for any System Account user can be enabled by a system administrator using the *COSEC Web Application*.

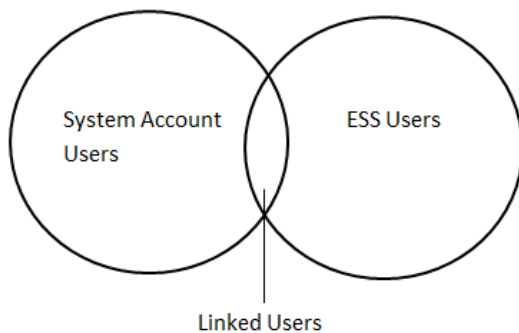


Fig. COSEC Login Users

- ESS users (e.g. *An employee*) - These users have login rights only on the *ESS application*. ESS users can be distinguished into *Reporting In-charge* and *Reporting Group members*, based on hierarchy. Page access rights of an ESS user will depend on whether he is a *Reporting In-charge* or a *Reporting Group member*. Users with activated ESS accounts and the ESS module license are enabled for API access by default.

For ESS users linked with a System Account (e.g. a reporting in-charge who is also a system administrator), the ESS/System Account credentials can be provided depending on the required API user rights.

License Type

To invoke an API, the user must have the necessary module license for relevant pages on the COSEC Web Application. For e.g., to retrieve attendance data for a specified month, the login user must have a *Time and Attendance* module license.



For more information on the COSEC application modules and licenses, please refer to the COSEC Manual in your software installation kit. For license requirement of each API, See [“Supported APIs” on page 16](#).

Page Access Rights

Login users must have access rights on the appropriate pages of the COSEC Web Application to use related APIs. For e.g., to apply for a leave, the user must have rights on the following page:

For System Account User: Leave Management > Application/Approval > Leave Application

For ESS User: ESS > Leave Management > Leave Application



To view page access rights for an API, refer to the **User Rights** section for the particular API.

Device-wise Rights

Device-wise rights will be required for all APIs which involve COSEC devices in the request to be sent. For the **action=get** method, only those device records will be returned on which the login user has device rights. However, all *Event APIs* will be exceptions for this verification.

HTTP Request-Response

Basic HTTP communication is based on a request-response paradigm. The message structure for both request and response has a generic format.

HTTP-message = Request Response ; HTTP/1.1 messages

Generic-message = start-line	<i>The start line</i>
*(message-header CRLF)	<i>Zero or more header fields or 'headers'</i>
CRLF	<i>An empty line</i>
[Message-body]	<i>A message-body (chunk or payload)</i>

Start-line = Request-Line Status-Line

Communication Flow

The communication takes place in the following manner:

1. The client checks availability of the Web Application server.

2. If available, the client issues a request for the server.

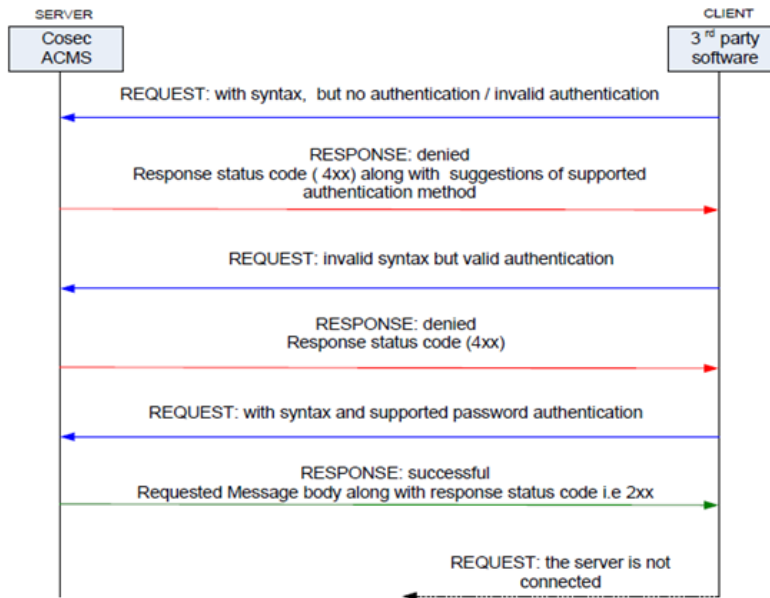


Fig: communication flow

3. The server parses the request for the action to be taken. For e.g. for the ***action=get*** argument, the server fetches specified data from the COSEC database.
4. In case of an error (*invalid syntax, invalid authentication* etc.), the request is denied and an error response is returned. Else, the requested data is returned as a response. For the response format of COSEC Web APIs, [See “API Response” on page 276](#).

Request Format

All HTTP Requests follow a generic message format. It consists of the following components:

1.	Request Line	<p>This line is constituted by the following three elements which must be separated by a space:</p> <ul style="list-style-type: none"> • The method type (GET, HEAD, POST, PUT etc.) • The requested URL • The HTTP version to use <p>For e.g.:</p> <p>GET http://matrixserver/api.svc/device?action=get HTTP/1.0</p>
----	--------------	--

2.	Header Fields	<p>Add information about the request using these header fields:</p> <ul style="list-style-type: none"> • A General Header (<Header-name>:<value>). • A Request Header (<Header-name>:<value>). • An Entity Header (<Header-name>:<value>).
3	Empty Line	This is an empty line separating headers from the message body.
4	Message Body	This is the chunk or payload.

Example:

```
GET http://matrix.com/ HTTP/1.0
Accept: text/html
If-Modified-Since: Saturday, 15-January-2000 14:37:11 GMT
User-Agent: Mozilla/4.0 (compatible; MSIE 5.0; Windows 95)
```

Response Format

An HTTP response is a collection of lines sent by the server to the client. A generic HTTP response format will resemble the following:

```
VERSION-HTTP CODE EXPLANATION<crLf>
HEADER: Value<crLf>
.
.
.
HEADER: Value<crLf>
Empty line<crLf>
BODY OF THE RESPONSE
```

It consists of the following components:

1.	A status line	<p>This line is constituted by the following three elements which must be separated by a space:</p> <ul style="list-style-type: none">• The version of the protocol used (e.g. <i>HTTP/1.0</i>).• The status code (indicates the status of the request being processed).• The explanation of the code.
2.	The response header fields	<p>These optional lines allow additional information to be added to the response header. This information appears in the form of a name indicating the header type followed by a value for the header type. The name and value are separated by a colon (:).</p>
3.	The body of the response	<p>Contains the requested data.</p>

Example

When the server gets a request, it will respond with a standard HTTP status code as illustrated in the following sample response:

```
HTTP/1.0 200 OK
Date: Sat, 15 Jan 2000 14:37:12 GMT
Server: Microsoft-IIS/2.0
Content-Type: text/HTML
Content-Length: 1245
Last-Modified: Fri, 14 Jan 2000 08:25:13
GMT
```



HTTP Status Codes: Status codes are 3-digit numeric codes returned in HTTP responses that enable recipients to understand the successful or failed status of the request issued. In general, codes in the 1xx range indicate an informational message only, 2xx codes indicate a successful request, 3xx codes indicate an incomplete request that requires further action, 4xx codes point at client-side errors while 5xx codes point at server-side errors.

URL Syntax

All COSEC APIs follow a common HTTP query syntax for the third party to generate a request. The generic URL is stated below.

Syntax

```
http://<servername>/api.svc/<request-type>?action=<value>;<argument>=<value>...
```



The current API version requires an additional version parameter (mandatory) to be mentioned in the request URL. To know more, [See “API Versions” on page 20.](#)

Take a close look at the URL and its basic elements:

Table: URL Structure

URL element	Description
http://	<p>This is the protocol used to communicate with the client.</p> <p>Note:</p> <ul style="list-style-type: none">All HTTP commands are in plain text, and almost all HTTP requests are sent using TCP port 80, though any port can be used.When SSL encryption is being used, use the “HTTPS” element in the URL. Default port for SSL communication is 443. However, if any other port is used (say, “3012”), it must be mentioned in the URL following the IP address or domain name, separated by a “colon”, as shown below: <p>https://192.168.1.1:3012/cosec/api.svc/...</p>
<servername>	<p>This describes the server location where the COSEC Web is installed. It could be an IP address or a domain name.</p> <p>For eg. let's say the IP address for COSEC Web is 192.168.1.1/cosec. Then a generic HTTP query would look like:</p> <p>http://192.168.1.1/cosec/api.svc/...</p> <p>Note: This document commonly uses the domain name “<i>matrixserver</i>” for all its examples.</p>
api.svc	<p>This is a mandatory entity required to invoke the API service.</p>
<request-type>	<p>This specifies the type of API request. For the mandatory request types, please refer to the individual API descriptions.</p>
<argument>	<p>This defines a specific action or command depending on the function to be performed. A request can support multiple arguments.</p> <p>A mandatory argument for all COSEC API functions is action. This argument always takes an HTTP action as its value (For eg. action=get).</p>
<value>	<p>These are argument values that determine the response. Requests may allow single or multiple ('comma' separated) values for an argument, depending on the API called.</p>

Example

Let us assume that the COSEC Web has been installed on a location named “**matrixserver**”. The user wants to retrieve a list of all panel devices defined on the COSEC database. In this case, a sample request would resemble the following:

Sample Request:

```
http://matrixserver/api.svc/device?action=get;type=panel
```

Sample Response:

```
id|name|siteid  
p_1|Panel-1|  
<EOT>
```

In this case, the query uses an **action=get** argument which is commonly used to retrieve information from a server. This action takes an argument **type** which in this case, defines the device type (“panel”) and takes the value **panel**.

Specifying the Format

The response for COSEC API can be returned in one of the following formats:

- Text
- XML
- JSON

The expected response format can be specified using a common argument: **format**. When no format is specified, the response is returned in **text** format, by default.

Example

Following are some sample cases for the **format** argument.

Sample Request:

To get response in text,

```
http://matrixserver/api.svc/device?action=get;type=door
```

Sample Response:

```
id|name|siteid  
d_1|direct door|1  
d_3|NGT Door|1  
d_6|5453|1  
d_2|NGTDoor1|1  
<EOT>
```

Sample Request:

To get response in XML,

```
http://matrixserver/api.svc/device?action=get;type=door
```

Sample Response:

```
- <DocumentElement>
- <device>
  <id>p_4</id>
  <name>Factory Panel</name>
  <siteid />
</device>
- <device>
  <id>p_3</id>
  <name>HO Panel Lite</name>
  <siteid />
</device>
- <device>
  <id>p_6</id>
  <name>vega panel lite</name>
  <siteid />
</device>
- <device>
  <id>p_7</id>
  <name>vega panel lite</name>
  <siteid />
</device>
</DocumentElement>
```



For the text format, response data would be displayed as follows:

- Each field in the event or data output shall be separated by a “pipe”(|).
- Each event or data line should be completed with a “carriage return - line feed”(CRLF).
- The message body should end with <EOT> indicating ‘end of transmission’.

Getting a List of Supported Fields

The COSEC system supports “**schema**” to get a list of all fields supported by an API for a specific action in a specified format.

Syntax

```
http://<servername>/api.svc/schema/<request-type>?<argument>=<value>;<argument>=<value>...
```

The valid arguments for this request are **action** and **format**.

Example

Sample Request:

```
http://matrixserver/api.svc/schema/user?action=get;format=xml
```

Sample Response:

```
- <DocumentElement>
- <schema-details>
  <id>user</id>
  <field>id</field>
  <type />
  <length />
  <decimal />
</schema-details>
- <schema-details>
  <id>user</id>
  <field>format</field>
  <type />
  <length />
  <decimal />
</schema-details>
</DocumentElement>
```

Fetching Fields in Response

Users can request specific fields to be returned in the response for all APIs using the **action=get** method. To filter the return values for an API request, use the following argument:

Table: Fetching Fields in Response

Argument	Valid Values	Mandatory	Default Value	Description
field-name	List of return/output field names (depending on API)	No	All the usual fields will be returned, if not specified.	<p>Specify a 'comma' separated list of fields that are to be returned for the request.</p> <p>Note: Not applicable for the following request-types:</p> <ul style="list-style-type: none">• attendance-daily• attendance-monthly• event-ta• event-ta-date• event-accs• event-accs-date

Example

In this sample request, the user requests a list of all paneldoors on the COSEC database with their respective names and IDs.

Sample Request:

```
http://matrixserver/api.svc/device?action=get;type=paneldoor;field-name=name,id
```

Sample Response:

```
name|id
Main Entry 1|p_3
CDC PD H0|p_3
Acct-Purch|p_4
Production 1|p_4
QC|p_4
Production- 2|p_4
Factory Admin|p_4
Factory Store|p_4
Factory Support|p_4
<EOT>
```



If a field-name is requested multiple times (e.g. field-name = id,name,id), then it will appear multiple times in the response with a number attached to the tag. (e.g. <id>, <name>, <id1>)

Additional Information

1. If an argument-value pair is mentioned multiple times in a request, the last value will be considered.

Example:

```
http://matrixserver/user?action=get;id=1234;id=5678;format=xml
```

In this case, **id = 5678** will be considered.

2. For all the API's the response for date parameters will be in the following format: mm/dd/yyyy HH:MM
3. For all APIs using the set/update methods, sending null (or blank) values will be allowed for non-mandatory fields. Based on the corresponding page behavior, the API behavior will differ as follows:
 - i. If null value is allowed for an argument, then it will be stored as null (or blank).
Example: "http://....;reason= " will overwrite existing value for reason and set it as null (or blank)
 - ii. If a default value is defined internally, then that default value will be stored for the parameter
Example: http://....;gender= " will overwrite existing value for gender and set it as "na" (because "na" is default value for gender)
 - iii. If blank value is not permitted, an error message will be returned.
Example: "http://....;short-name= " will return message : "failed: Short name cannot be blank."
4. Special characters (&, ' , " , < , > and ;) for any arguments and its value are not allowed.
5. '# (hash)' is also not allowed in the API URL.
6. To support special characters used in existing parameters, an option to Encode URL is provided. Third party apps can encode the URL using standard encoding functions such as :
 - JAVA : `URLEncoder.encode(url,"UTF-8")`
 - JavaScript : `encodeURIComponent(url)`
 - ASP .NET : `System.Web.HttpUtility.UrlEncode(url)`

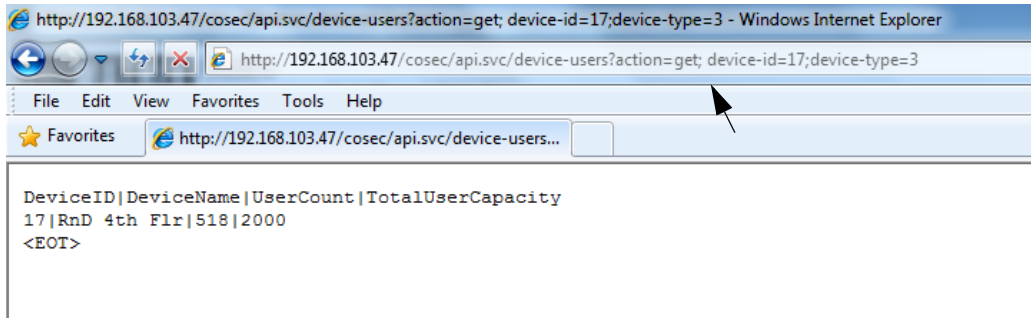
7. Where 'url' implies the portion : <request-type>?<argument>=<value>;<argument>=<value>...

If the URL is encoded, then an encode flag ("encode?") must be provided in the HTTP Request URL, to indicate that the server should decode the incoming URL.

Example: http://matrixserver/cosec/api.svc/encode?/<request-type>?<argument>=<value>;<argument>=<value>...



COSEC APIs use basic authentication and can be tested on any standard Web browser. Enter the request URL in the address field of your browser and press the 'Enter' key to send query to the server. Enter the authentication credentials when prompted. The response will be displayed on your browser in the specified format.



Other Common Arguments

These arguments are also common to all the APIs defined here. If any exception exists then it will be explicitly mentioned with the corresponding API.

Table: Common Arguments

Argument	Valid Values	Mandatory	Default Value	Description
ignore-alias	0 : alias shown 1: alias ignored	-	-	0 : For any API, if alias names are configured for a response field-name, then in the response, the tags will be same as the alias names. 1: Alias will be ignored. The tag will be exactly as specified in the Response Table
api-source	0 : Blank 1: COSEC Mobile Apps 2 : PIM 3 : Third Party App 4 : Device	-	0	To specify the source for the API request.

Supported APIs

The remaining chapters in this User Guide shall list and describe all APIs supported by COSEC. These interfaces have been organized into chapters based on license requirements as well as functionality, for the convenience of understanding. The following table provides a quick reference list for all supported functions along with the license requirements:

Table: API Quick Reference

Function	<request-type>?	Request URL	License Requirement
Getting a Device List	device?	http://<servername>/api.svc/device?action=get;<argument>=<value>...	Basic
Assigning Users to Devices	device?	http://<servername>/api.svc/device?action=assign;<argument>=<value>...	Basic
Revoking Users from Device	device?	http://<servername>/api.svc/device?action=revoke;<argument>=<value>...	Basic
Adding a New Device	device?	http://<servername>/api.svc/device?action=set;<argument>=<value>...	Basic
Deleting a Device	device?	http://<servername>/api.svc/device?action=delete;<argument>=<value>...	Basic
Obtaining Device Status	device?	http://<servername>/api.svc/device?action=list;<argument>=<value>...	Basic
Updating Device Configuration	device?	http://<servername>/api.svc/device?action=update;<argument>=<value>...	Basic
Obtaining Data on Existing Sites	site?	http://<servername>/api.svc/site?action=get;<argument>=<value>...	Basic
Adding a New Site	site?	http://<servername>/api.svc/site?action=set;<argument>=<value>...	Basic
Updating a Site	site?	http://<servername>/api.svc/site?action=update;<argument>=<value>...	Basic
Accessing User Data	user?	http://<servername>/api.svc/user?action=get;<argument>=<value>...	Basic
Adding/Editing a User	user?	http://<servername>/api.svc/user?action=set;<argument>=<value>...	Basic
Adding User Photograph	user?	http://<servername>/api.svc/user?action=setphoto;<argument>=<value>...	Basic
Deleting a User	user?	http://<servername>/api.svc/user?action=delete;<argument>=<value>...	Basic
Enrolling a User	user?	http://<servername>/api.svc/user?action=enroll;<argument>=<value>...	Basic
Setting Credentials on Device	user?	http://<servername>/api.svc/user?action=set-credential;<argument>=<value>...	Basic
Deleting Credentials from Device	user?	http://<servername>/api.svc/user?action=del-credential;<argument>=<value>...	Basic
Searching a User	search-user?	http://<servername>/api.svc/search-user?action=get;<argument>=<value>...	Basic
Fetching Reporting Group Members	group-members?	http://<servername>/api.svc/group-members?action=get;<argument>=<value>...	T&A
Obtaining Enterprise Group Details	organization?, branch?, department?, designation?, category?, grade?, section?	http://<servername>/api.svc/<enterprise-group>?action=get;<argument>=<value>...	T&A or Roster

Table: API Quick Reference

Function	<request-type>?	Request URL	License Requirement
Adding an Enterprise Group	organization?, branch?, department?, designation?, category?, grade?, section?	http://<servername>/api.svc/<enterprise-group>?action=set;<argument>=<value>...	T&A or Roster
Updating an Enterprise Group	organization?, branch?, department?, designation?, category?, grade?, section?	http://<servername>/api.svc/<enterprise-group>?action=update;<argument>=<value>...	T&A or Roster
Getting Daily Attendance Details	attendance-daily?	http://<servername>/api.svc/attendance-daily?action=get;<argument>=<value>...	T&A
Getting Monthly Attendance Details	attendance-monthly?	http://<servername>/api.svc/attendance-monthly?action=get;<argument>=<value>...	T&A
Getting Attendance Correction Details	attendance-correction?	http://<servername>/api.svc/attendance-correction?action=get;<argument>=<value>...	T&A
Applying for Attendance Correction	attendance-correction?	http://<servername>/api.svc/attendance-correction?action=set;<argument>=<value>...	T&A
Deleting Attendance Correction Applications	attendance-correction?	http://<servername>/api.svc/attendance-correction?action=set;<argument>=<value>...	T&A
Approving Attendance Correction	attendance-correction-approval?	http://<servername>/api.svc/attendance-correction-approval?action=set;<argument>=<value>...	T&A
Getting Short Leave/Official IN-OUT Entries	short-leave-entry?	http://<servername>/api.svc/short-leave-entry?action=get;<argument>=<value>...	T&A
Making Short Leave/Official IN-OUT Entries	short-leave-entry?	http://<servername>/api.svc/short-leave-entry?action=set;<argument>=<value>...	T&A
Short Leave/Official IN-OUT Authorization	short-leave-authorization?	http://<servername>/api.svc/short-leave-authorization?action=set;<argument>=<value>...	T&A
Getting Attendance Records for Authorization	attendance-authorization?	http://<servername>/api.svc/attendance-authorization?action=get;<argument>=<value>...	T&A
Authorizing Attendance	attendance-authorization?	http://<servername>/api.svc/attendance-authorization?action=set;<argument>=<value>...	T&A
Getting Overtime/C-OFF Authorization Records	ot-coff-authorization?	http://<servername>/api.svc/ot-coff-authorization?action=get;<argument>=<value>...	T&A
Authorizing Overtime/C-OFF	ot-coff-authorization?	http://<servername>/api.svc/ot-coff-authorization?action=set;<argument>=<value>...	T&A
Processing Monthly Attendance	monthly-process?	http://<servername>/api.svc/monthly-process?action=command;<argument>=<value>...	T&A
In/Out Reasons	in-out-reasons?	http://<servername>/api.svc/in-out-reasons?action=get;<argument>=<value>...	T&A
Getting Shift Schedules of Users	shift-schedule?	http://<servername>/api.svc/shift-schedule?action=get;<argument>=<value>...	T&A
Getting Shift Details	shift-details?	http://<servername>/api.svc/shift-details?action=get;<argument>=<value>...	T&A
Getting Holiday Schedule	holiday?	http://<servername>/api.svc/holiday?action=get;<argument>=<value>...	T&A
Getting Leave Balance Details	leave-balance?	http://<servername>/api.svc/leave-balance?action=get;<argument>=<value>...	T&A
Getting Leave Group Details	leave-group?	http://<servername>/api.svc/leave-group?action=get;<argument>=<value>...	T&A

Table: API Quick Reference

Function	<request-type>?	Request URL	License Requirement
Getting Leave Details	leave-details?	http://<servername>/api.svc/leave-details?action=get;<argument>=<value>...	T&A
Getting Leave Application Details	leave-application?	http://<servername>/api.svc/leave-application?action=get;<argument>=<value>...	T&A
Applying for a Leave	leave-application?	http://<servername>/api.svc/leave-application?action=set;<argument>=<value>...	T&A
Updating an Applied Leave	leave-application?	http://<servername>/api.svc/leave-application?action=update;<argument>=<value>..	T&A
Deleting a Pending Application	leave-application?	http://<servername>/api.svc/leave-application?action=delete;<argument>=<value>..	T&A
Approving/Rejecting Leaves	leave-approval?	http://<servername>/api.svc/leave-approval?action=set;<argument>=<value>...	T&A
Getting C-OFF Balance Details	coff-balance?	http://<servername>/api.svc/coff-balance?action=get;<argument>=<value>...	T&A
Getting C-OFF Details	coff-details?	http://<servername>/api.svc/coff-details?action=get;<argument>=<value>...	T&A
Obtaining List of Access Routes	accessroutemaster?	http://<servername>/api.svc/accessroutemaster?action=get;<argument>=<value>...	Access Control
Obtaining Access Route Details	accessroutedetails?	http://<servername>/api.svc/accessroutedetails?action=get;<argument>=<value>...	Access Control
Getting e-Canteen Account Details	canteen-account-details?	http://<servername>/api.svc/canteen-account-details?action=get;<argument>=<value>...	e-Canteen
Getting e-Canteen Expenditure Summary	canteen-expenditure-summary?	http://<servername>/api.svc/canteen-expenditure-summary?action=get;<argument>=<value>...	e-Canteen
Getting e-Canteen Menu Details	canteen-menus?	http://<servername>/api.svc/canteen-menus?action=get;<argument>=<value>...	e-Canteen
Getting List of e-Canteen Devices	device?	http://<servername>/api.svc/device?action=get;<argument>=<value>...	e-Canteen
Getting e-Canteen Menu Schedules	canteen-menus-schedule?	http://<servername>/api.svc/canteen-menus-schedule?action=get;<argument>=<value>...	e-Canteen
Getting Correction Application Details	canteen-correction-application?	http://<servername>/api.svc/canteen-correction-application?action=get;<argument>=<value>...	e-Canteen
Making a Correction Application	canteen-correction-application?	http://<servername>/api.svc/canteen-correction-application?action=set;<argument>=<value>...	e-Canteen
Updating a Correction Application	canteen-correction-application?	http://<servername>/api.svc/canteen-correction-application?action=update;<argument>=<value>..	e-Canteen
Deleting a Correction Application	canteen-correction-application?	http://<servername>/api.svc/canteen-correction-application?action=delete;<argument>=<value>..	e-Canteen
Getting e-Canteen Expenditure Details	canteen-expenditure-details?	http://<servername>/api.svc/canteen-expenditure-details?action=get;<argument>=<value>...	e-Canteen
Getting Export Template List	template-list?	http://<servername>/api.svc/template-list?action=get;<argument>=<value>...	Basic
Getting Export Template Details	template-details?	http://<servername>/api.svc/template-details?action=get;<argument>=<value>...	Basic
Getting Import Template List	import-template-list?	http://<servername>/api.svc/import-template-list?action=get;<argument>=<value>...	Basic
Getting Import Template Details	import-template-details?	http://<servername>/api.svc/import-template-details?action=get;<argument>=<value>...	Basic

Table: API Quick Reference

Function	<request-type>?	Request URL	License Requirement
Getting Template Data	template-data?	http://<servername>/api.svc/template-data?action=get;<argument>=<value>...	Basic
Retrieving User Data	datatransfer?	http://<servername>/api.svc/datatransfer?action=get;<argument>=<value>..	Basic
Sending User Data	datatransfer?	http://<servername>/api.svc/datatransfer?action=set;<argument>=<value>..	Basic
Deleting User Data	datatransfer?	http://<servername>/api.svc/datatransfer?action=delete;<argument>=<value>..	Basic
Adding an Event	events?	http://<servername>/api.svc/events?action=set;<argument>=<value>...	Basic
Obtaining Time and Attendance Event Details	event-ta?	http://<servername>/api.svc/event-ta?action=get;<argument>=<value>...	T&A
Obtaining Time and Attendance Event Details (By Date)	event-ta-date?	http://<servername>/api.svc/event-ta-date?action=get;<argument>=<value>...	T&A
Obtaining Access Control Event Details	event-accs?	http://<servername>/api.svc/event-accs?action=get;<argument>=<value>...	Basic
Obtaining Access Control Event Details (By Date)	event-accs-date?	http://<servername>/api.svc/event-accs-date?action=get;<argument>=<value>...	Basic
Obtaining Door/Alarm/System Event Details	event-others?	http://<servername>/api.svc/event-others?action=get;<argument>=<value>...	Basic
Sending Commands to Device	device-commands?	http://<servername>/api.svc/device-commands?action=command;<argument>=<value>..	Basic
Getting User Count on Devices	device-users?	http://<servername>/api.svc/device-users?action=get;<argument>=<value>.....	Basic
Retrieving Notifications	notifications?	http://<servername>/api.svc/notifications?action=get;<argument>=<value>...	T&A
Deleting Notifications	notifications?	http://<servername>/api.svc/notifications?action=get;<argument>=<value>	T&A
Login User Details	loginuser?	http://<servername>/api.svc/loginuser?action=get;<argument>=<value>...	Basic
Changing Password	change-password?	http://<servername>/api.svc/change-password?action=set;<argument>=<value>...	ESS
Encryption Key	encryption-key?	http://<servername>/api.svc/encryption-key?action=get;<argument>=<value>...	Basic
IMEI Registration	imei-registration?	http://<servername>/api.svc/imei-registration?action=set;<argument>=<value>..	Basic

API Versions

For COSEC Web APIs, different versions are maintained to differentiate among existing APIs being used by third-party applications, and any changes or revisions made. The current version is COSEC Web API Version 2.0 and supports additional features and functions as compared to COSEC Web API Version 1.0.

Some feature-wise additions in COSEC Web API V2.0:

- Access Rights added for ESS users.
- Response Codes based on Response categories
- User rights and Device rights verification for each API.

To know more about the supported APIs in V1.0 and V2.0, see the table below.

Table: Supported APIs

Supported APIs	V1.0	V2.0
Getting a Device List	Yes	Yes
Assigning Users to Devices	Yes	Yes
Revoking Users from Device	Yes	Yes
Adding a New Device	Yes	Yes
Deleting a Device	Yes	Yes
Obtaining Device Status	Yes	Yes
Updating Device Configuration	Yes	Yes
Obtaining Data on Existing Sites	Yes	Yes
Adding a New Site	No	Yes
Updating a Site	No	Yes
Accessing User Data	Yes	Yes
Adding/Editing a User	Yes	Yes
Adding User Photograph	Yes	Yes
Deleting a User	Yes	Yes
Enrolling a User	Yes	Yes
Setting Credentials on Device	Yes	Yes
Deleting Credentials from Device	Yes	Yes
Searching a User	No	Yes
Fetching Reporting Group Members	No	Yes
Obtaining Enterprise Group Details	Yes	Yes
Obtaining List of Renamed Groups	Yes	No *
Adding an Enterprise Group	No	Yes
Updating an Enterprise Group	No	Yes
Getting Daily Attendance Details	Yes	Yes
Getting Monthly Attendance Details	Yes	Yes
Getting Attendance Correction Details	No	Yes
Applying for Attendance Correction	No	Yes

Table: Supported APIs

Supported APIs	V1.0	V2.0
Deleting Attendance Correction Applications	No	Yes
Approving Attendance Correction	No	Yes
Getting Short Leave/Official IN-OUT Entries	No	Yes
Making Short Leave/Official IN-OUT Entries	No	Yes
Short Leave/Official IN-OUT Authorization	No	Yes
Getting Attendance Records for Authorization	No	Yes
Authorizing Attendance	No	Yes
Getting Overtime/C-OFF Authorization Records	No	Yes
Authorizing Overtime/C-OFF	No	Yes
Processing Monthly Attendance	No	Yes
In/Out Reasons	No	Yes
Getting Shift Schedules of Users	No	Yes
Getting Shift Details	No	Yes
Getting Holiday Schedule	No	Yes
Getting Leave Balance Details	No	Yes
Getting Leave Group Details	No	Yes
Getting Leave Details	No	Yes
Getting Leave Application Details	No	Yes
Applying for a Leave	No	Yes
Updating an Applied Leave	No	Yes
Deleting a Pending Application	No	Yes
Approving/Rejecting Leaves	No	Yes
Getting C-OFF Balance Details	No	Yes
Getting C-OFF Details	No	Yes
Obtaining List of Access Routes	Yes	Yes
Obtaining Access Route Details	Yes	Yes
Getting e-Canteen Account Details	No	Yes
Getting e-Canteen Expenditure Summary	No	Yes
Getting e-Canteen Menu Details	No	Yes
Getting List of e-Canteen Devices	No	Yes
Getting e-Canteen Menu Schedules	No	Yes
Getting Correction Application Details	No	Yes
Making a Correction Application	No	Yes
Updating a Correction Application	No	Yes
Deleting a Correction Application	No	Yes
Getting e-Canteen Expenditure Details	No	Yes
Getting Export Template List	Yes	Yes
Getting Export Template Details	Yes	Yes

Table: Supported APIs

Supported APIs	V1.0	V2.0
Getting Import Template List	Yes	Yes
Getting Import template Details	Yes	Yes
Getting Template Data	Yes	Yes
Retrieving User Data	Yes	Yes
Sending User Data	Yes	Yes
Deleting User Data	No	Yes
Adding an Event	Yes	Yes
Obtaining Time and Attendance Event Details	Yes	Yes
Obtaining Time and Attendance Event Details (By Date)	Yes	Yes
Obtaining Access Control Event Details	Yes	Yes
Obtaining Access Control Event Details (By Date)	Yes	Yes
Obtaining Door/Alarm/System Event Details	Yes	Yes
Sending Commands to Device	Yes	Yes
Getting User Count on Devices	Yes	Yes
Retrieving Notifications	No	Yes
Deleting Notifications	No	Yes
Login User Details	No	Yes
Changing Password	No	Yes
Encryption Key	No	Yes
IMEI Registration	No	Yes

* This API is no longer supported V2.0 onwards. If this API is called, the response will simply return the original group names.

To use the APIs supported in Version 2.0, it is mandatory to mention the version number in the request URL.

Example:

```
http://<servername>/api.svc/v2/<request-type>?action=<value>;<argument>=<value>...
```

However, to access V1.0 APIs, no version parameter is required. For e.g.

Correct Request

```
http://<servername>/api.svc/<request-type>?action=<value>;<argument>=<value>...
```

Incorrect Request

```
http://<servername>/api.svc/v1/<request-type>?action=<value>;<argument>=<value>...
```

```
http://<servername>/api.svc/v3/<request-type>?action=<value>;<argument>=<value>...
```


The *Devices* interface lets you access and modify device data on the COSEC server. The HTTP query syntax to access device data from the COSEC server is as follows:

Syntax

```
http://<servername>/api.svc/device?action=<method>;<argument>=<value>...
```

The *Devices API* allows you to perform the following functions:

- [Getting a Device List](#)
- [Assigning Users to Device](#)
- [Revoking Users from Device](#)
- [Adding a New Device](#)
- [Deleting a Device](#)
- [Obtaining Device Status](#)
- [Updating Device Configuration](#)

User Rights

User	Rights
System Account	Enabled. User must have rights on following pages (COSEC Web Application): Devices > Device List (For action=get) Devices > Device Configuration (For other methods).
ESS	Enabled if user has ESS rights enabled (for action=get only).

Getting a Device List

This COSEC API allows the user to obtain a list of available devices on the COSEC database. For instance, an organization may have 100 panels and 200 direct door devices enlisted via COSEC. The user can obtain a list of all the 300 devices or a list for an individual device type using this command.

Action

action=get

Syntax

```
http://<servername>/api.svc/device?action=get;<argument>=<value>...
```

Parameters

Table: Getting a Device List - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
type	all, door, panel, group, paneldoor	No	all	To specify type of device/devices whose list is to be fetched (only one value at a time).



Records will be fetched only for those devices on which the login user has device rights.

Response Fields

Table: Getting a Device List - Response fields

Field Name	Tag Name	Valid Values	Remarks
Id	id	all, p_1 to p_999, d_1 to d_9999, g_1 to g_99999	Here, p means panel, d means direct doors and g means group, while, p_1 will stand for a panel device with ID = 1
Name	name	Max. 30 alphanumeric characters	This is the name of the device.
Site Id	site-id	1 to 999	This is the site identification number. Only for type=door and type=paneldoor
Type	type	door, panel, group, paneldoor	This is the category of devices for which members are to be fetched.

Table: Getting a Device List - Response fields

Field Name	Tag Name	Valid Values	Remarks
Device Type	device-type	0 = Panel 1 = Door V1 2 = Panel Lite 3 = Door V2 4 = NGT Direct Door 5 = Wireless Direct Door 6 = Path Controller 7 = PVR Direct Door 8 = Panel Lite V2 9 = Vega Controller 11 = ARC Controller 12 = Door V3 15 = Door FMX	This is the device type.
Application Type	application-type	0 = Advanced Access Control 1 = Basic Access Control 2 = e-Canteen	Only for type=door and type=paneldoor Note: e-Canteen devices can also be fetched.
Door ID	did	1-255 (device-type=8) 0-99 (All Others)	For Panels:0 For Direct Doors:1 For Panel Doors: As Configured
IP Address	ip	-	-
RS-485 Address	rs-485	-	RS-485 is applicable only for panel doors.
MAC Address	mac	-	-

Example

This example presents a sample request and response case when accessing “**matrixserver**”, for obtaining a list of all available devices:

Sample Request:

```
http://matrixserver/api.svc/v2/device?action=get
```

Sample Response:

```
id|name|siteid|type|device-type|application-type
d_6|RnD 1st Flr|1|door|1|0
d_8|RnD 3rd Flr|1|door|1|0
d_11|Rnd Basement V2|1|door|3|0
d_12|RnD 2nd Flr V2|1|door|3|0
d_16|Canteen H0|1|door|3|2
p_3|H0 Panel Lite||panel|2|
p_4|Factory Panel||panel|0|
p_6|vega panel lite||panel|8|
p_7|vega panel lite||panel|8|
p_3|CDC PD H0|1|paneldoor|2|
p_3|Main Entry 1|2|paneldoor|2|
<EOT>
```



The sample response simply illustrates a particular instance of the expected output. The actual data for each field will differ from case to case.

Sample Request:

For type=door,

```
http://matrixserver/api.svc/v2/device?action=get;type=door
```

Sample Response:

```
id|name|siteid|type|device-type|application-type  
d_6|RnD 1st Flr|1|door|1|0  
d_8|RnD 3rd Flr|1|door|1|0  
d_11|Rnd Basement V2|1|door|3|0  
d_12|RnD 2nd Flr V2|1|door|3|0  
d_16|Canteen HO|1|door|3|2  
d_17|RnD 4th Flr|1|door|3|0  
<EOT>
```

Sample Request:

For type=group (in XML format),

```
http://matrixserver/api.svc/v2/device?action=get;type=group;format=xml
```

Sample Response:

```
- <DocumentElement>  
- <device>  
  <id>g_1</id>  
  <name>Gnd First Fourth- RnD</name>  
  <siteid />  
  <type>group</type>  
  <device-type />  
  <application-type />  
</device>  
- <device>  
  <id>g_2</id>  
  <name>Device Group - HO</name>  
  <siteid />  
  <type>group</type>  
  <device-type />  
  <application-type />  
</device>  
</DocumentElement>
```

Assigning Users to Device

This function helps assign a user to all or specific *Panels*, *Direct Doors* or *Device Groups* pre-defined on the COSEC system.

Action

action=assign

Syntax

```
http://<servername>/api.svc/device?action=assign;<argument>=<value>...
```

Parameters

Table: Assigning Users to Device - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
device	all, p_1 to p_999, d_1 to d_9999, g_1 to g_99999	Yes	-	To specify the device with the device type and device ID. Here, p means panel, d means direct doors and g means group, while, p_1 will stand for a panel device with ID = 1
id	Max 15 Alphanumeric Characters	Yes	-	To specify the User ID.

Multiple devices (either panels or doors) of the same type can be specified, each value separated by a 'comma' (For eg. **device=p_1,p_2,p_3,p_4,d_1,d_2,d_3,d_4,...**). User can also define a range of devices (eg. **device=p_1-p_50**). However, only a single group can be assigned to a user. The same should also be applicable for **id** values.



The login user must have necessary rights on the device for this request.

Example

Following are some sample cases for this function.

Sample Request:

Assigning multiple group values to the **device** argument. Invalid request.

```
http://matrixserver/api.svc/v2/device?action=assign;device=g_1,g_2
```

Sample Response:

```
failed: <response code> : Invalid command : device=g_1,g_2 only single group against a user
```

Sample Request:

To assign user to all devices.

```
http://matrixserver/api.svc/v2/device?action=assign
```

Sample Response:

```
success: <response code> : successful
```

Sample Request:

For "device=p_1", "id=1",

```
http://matrixserver/api.svc/v2/device?action=assign;device=p_1;id=1
```

Sample Response:

```
success: <response code> : successful
```

Sample Request:

For user to be assigned to "p_1","d_1" and "g_1",

```
http://matrixserver/api.svc/v2/device?action=assign;device=p_1,d_1,g_1
```

Sample Response:

```
success: <response code> : successful
```

Revoking Users from Device

The purpose of this function is to revoke a user from all or specific devices defined on the COSEC system. This can be performed for a *single device* type, *multiple device* types or for a *specific device group*.



Only a single group will be allowed to be revoked from a user at a time.

Action

action=revoke

Syntax

```
http://<servername>/api.svc/device?action=revoke;<argument>=<value>...
```

Parameters

Same as [Table: Assigning Users to Device - Parameters](#).

Example

This example presents a sample request and response when accessing “*matrixserver*”.

Sample Request:

For revoking all devices.

```
http://matrixserver/api.svc/v2/device?action=revoke
```

Sample Response:

```
success: <response code> : successful
```

Sample Request:

For “device=p_1”, “id=1”.

```
http://matrixserver/api.svc/v2/device?action=revoke;device=p_1;id=1
```

Sample Response :

```
success: <response code> : successful
```

Sample Request:

For “device=p_1,d_1,g_1”.

```
http://matrixserver/api.svc/v2/device?action=revoke;device=p_1,d_1,g_1
```

Sample Response :

```
success: <response code> : successful
```


Adding a New Device

This function enables you to define a new biometric device on the COSEC database and set certain configurations depending on the device type. The device can be assigned to a specified device group and site and configured based on site requirements.

Action

action=set

Syntax

```
http://<servername>/api.svc/device?action=set;<argument>=<value>...
```

Parameters

Table: Adding a New Device - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
device-type	0,1,2,3,4,5,6,7,8,9,11,12	Yes	-	This is the type of device, which user wants to add. Here, 0 = Panel, 1 = Door V1, 2 = Panel Lite 3 = Door V2, 4 = NGT Direct Door, 5 = Wireless Direct Door 6 = Path Controller 7 = PVR Direct Door 8 = Panel Lite V2 9 = Vega Controller 11 = ARC Controller 12 = Door V3 15 = Door FMX
device-id	1 to 65000	Yes	-	This is the device identification number of the device type (MID).
name	Maximum 30 characters	Yes	-	This is the name of the device.
mac	Maximum 17 characters (each byte separated by ":")	Yes	-	This is the MAC Address of the device. E.g. - "01:23:4567:89:ab"
device-group	Maximum 30 characters	No	-	This is the name of the device group to which the device is to be added.
active	0 = active 1 = inactive	No	1 (active)	The enabled/disabled status of the device.
site	1 to 999	No	If not specified then the default site will be internally configured against the device being added.	This will define the site ID of the direct doors and panel door.

Table: Adding a New Device - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
application	0 = Basic Access Control 1 = Advanced Access Control	No	1 (Advanced Access Control)	This field is only applicable to direct doors. This field will define the application/use of the device. (this feature enables the advanced access control features on device).
access-mode	0= card 1= finger 2= card & PIN 3= finger & PIN 4= card & finger 5= card & finger & PIN 6= Any 7= palm 8= palm & PIN 9= card & palm 10= card & PIN & palm 11= palm & group 12= finger then card 13= palm then card	No	6 (Any)	This field is applicable to direct doors only Note: Options 0,1,2,3,4,5,6 and 12 are applicable only to device with finger print reader. Options 0,2,6,7,8,9,10 and 11 are applicable for devices with Palm Vein Reader. For Path Controllers, modes 2, 3, and 5 are not applicable. Not applicable for ARC Controller.
consider-for-attendance	0 - disabled 1 - enabled	No	1 (enabled)	This parameter will toggle the feature of considering the event originating from the respective device for attendance calculation/ process.
ir-mode	0=entry 1=exit	No	0 (entry)	This will set the Internal Reader IO type (entry or exit). Not applicable for ARC Controller.
card-reader-type	0= none 1= emprox reader 2= hidprox reader 3= mifare reader 4= hid iclass u-reader 5= hid iclass w-reader	No	1 (emprox reader)	This is the internal card reader type. Not applicable for ARC Controller.
finger-reader-type	0=none 1= finger reader 2=palm reader	No	1 (If device type is PVR, the default value will be 2)	This will identify the finger/palm reader type as an internal reader. Note: Palm Reader is applicable for PVR Doors only. Not applicable for ARC Controller.
er-mode	0= entry 1= exit	No	1 (exit)	This is the external reader mode. Not applicable for ARC Controller.
er-type	0= none 1= em prox reader 2= hid prox reader 3= mifare reader 4=hid iclass u reader 5= finger reader 6= hid icalss w-reader 8= uhf reader 9= combo exit reader 10= mifare w reader	No	0 (none)	This will determine the external reader IO type. For device type=1 (direct door V1), er-types (8,9,10) are not applicable. er-type=5 is not applicable to PVR door type. Not applicable for ARC Controller.

Table: Adding a New Device - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
exit-switch	0 = disable 1 = enable	No	1 (enable)	This parameter will be used to enable/disable the exit switch for the door.
rg1-wiegand	0 = none 1 = Short-Range Reader 2 = Long-Range Reader	No	1 (Short-Range Reader)	Applicable for ARC Controller only. For other device types, these parameters will not be applicable.
rg1-rs485	0 = None 1 = EM Prox Reader 2 = HID Prox Reader 3 = MiFare Reader 4 = HID iClass-U Reader 5 = Combo Reader	No	1 (EM Prox Reader)	
rg1-mode	0 = entry 1 = exit	No	0 (entry)	
rg1-access-mode	0 = Card 1 = Finger 4 = Card + Finger 6 = Any 12 = Finger Then Card	No	6 (Any)	
rg2-wiegand	0 = none 1 = Short-Range Reader 2 = Long-Range Reader	No	1 (Short-Range Reader)	
rg2-rs485	0 = none 1 = EM Prox Reader 2 = HID Prox Reader 3 = MiFare Reader 4 = HID iClass-U Reader 5 = Combo Reader	No	1 (EM Prox Reader)	
rg2-mode	0 = entry 1 = exit	No	0 (entry)	
rg2-access-mode	0 = Card 1 = Finger 4 = Card + Finger 6 = Any 12 = Finger Then Card	No	6 (Any)	
ir-card-format	1-99	No	1	Card format ID for Internal Readers/Reader Group 1
er-card-format	1-99	No	1	Card Format for External Readers /Reader Group 2



To update device configurations for the above parameters, See [“Updating Device Configuration” on page 39.](#)

Example

The following is an example of a successful request sent to **“matrixserver”** with the following values:

- **device-type=0**
- **device-id=1**
- **name=panel**
- **mac=00:01:23:45:67:89**
- **device-group=Research**

Sample Request:

```
http://matrixserver/api.svc/v2/device?action=set;device-type=0;device-id=1;name=panel;mac=00:01:23:45:67:89;device-group=Research
```

Sample Response:

```
success: <response code> : successful
```

Deleting a Device

This *Devices* function allows you to delete a biometric device from the COSEC database. Specify the device type and device ID to send a 'delete' command.

Action

action=delete

Syntax

```
http://<servername>/api.svc/device?action=delete;<argument>=<value>...
```



This process is irreversible. Please proceed with caution.

Parameters

Table: Deleting a Device - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
device-type	0,1,2,3,4,5,6,7,8,9,11,12	Yes	-	This is the type of device, which user wants to delete. Here, 0 = Panel, 1 = Door V1, 2 = Panel Lite 3 = Door V2, 4 = NGT Direct Door, 5 = Wireless Direct Door 6 = Path Controller 7 = PVR Direct Door 8 = Panel Lite V2 9 = Vega Controller 11 = ARC Controller 12 = Door V3 15 = Door FMX
device-id	1-9999	Yes	-	To specify the device identification number.

Example

The following example illustrates how to delete a direct door device with a device identification number **1**:

Sample Request:

```
http://matrixserver/api.svc/v2/device?action=delete;device-type=1;device-id=1
```

Sample Response:

```
success: <response code> : successful
```

Obtaining Device Status

This function enables the user to obtain the connection status of devices. The user can obtain a list of devices from the COSEC server based on the device status. The device status can be either 'connected' or 'disconnected'.

Action

action=list

Syntax

```
http://<servername>/api.svc/device?action=list;<argument>=<value>.....
```

Parameters

Table: Obtaining Device Status - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
status	all, connected, disconnected, online, offline, unknown (Applicable to Panel Doors only)	No	all	To specify the devices to be listed on the basis of their status.

Example

The following are some sample cases of requests sent to “*matrixserver*”:

Sample Request:

To obtain a list of all connected devices (“status=connected”).

```
http://matrixserver/api.svc/v2/device?action=list;status=connected
```

Sample Response:

```
success: <response code> : No records found
```

Sample Request:

When “status=all”,

```
http://matrixserver/api.svc/v2/device?action=list;status=all
```

Sample Response:

```
device-type|device-id|name|active|ip|mac|status|connect-time|disconnect-time
0|1|Panel-1|1||00:4f:4e:67:89:08|disconnected||10/3/2013 9:00:19 AM
1|1|door|1|192.168.103.50|00:01:23:45:67:89|disconnected|10/3/2011 10:19:55 AM|10/3/2013 9:00:19 AM
4|2|NGTDoor1|1||00:3f:4e:67:89:08|disconnected||10/3/2013 9:00:19 AM
3|3|NGT Door|1||00:1b:09:90:76:00|disconnected||10/3/2013 9:00:19 AM
3|6|5453|1||00:1b:09:90:76:06|disconnected||10/3/2013 9:00:19 AM
<EOT>
```


Updating Device Configuration

Specify a device ID and device type and edit the configuration for this device as saved on the COSEC database. Parameters that can be updated are specified in the argument-value table below.

Action

action=update



This method is not applicable for Panel Doors.

Syntax

```
http://<servername>/api.svc/device?action=update;<argument>=<value>.....
```

Parameters

Same as [Table: Adding a New Device - Parameters](#).



The Login User must have rights on the device which is to be updated.

Example

The following are some sample cases of requests sent to “matrixserver”:

Sample Request:

To update a *Direct Door V2* named “RndBasementV2”.

```
http://matrixserver/api.svc/v2/device?action=update;device-id=11;device-type=3;name=RndBasementV2
```

Sample Response:

```
success: <response code> : successful
```

Sample Request:

When the specified MAC address is already associated with another device. Failed Request.

```
http://matrixserver/api.svc/v2/device?action=update;device-id=33;device-type=9;mac=23:56:66:33:33:23;device-group=RnD
```

Sample Response:

```
failed: <response code> : Mac is already associated with another device.
```

A *Site* is a work area or unit defined on the COSEC system to which one or more COSEC devices are assigned. A site can be defined by an administrator based on requirements. For e.g.: The organization *ABC* could have multiple sites defined, such as *ABCheadoffice*, *ABCfactory*, *ABCwarehouse* and so on. This COSEC API allows users to access and add information about specific sites using COSEC. The http query to access site data from the COSEC server should resemble the following syntax:

Syntax

```
http://<servername>/api.svc/site?action=<method>;<argument>=<value>...
```

The *Sites* APIs allow you to perform the following functions:

- [Obtaining Data on Existing Sites](#)
- [Adding a New Site](#)
- [Updating a Site](#)

User Rights

User	Rights
System Account	Enabled
ESS	Disabled

Obtaining Data on Existing Sites

This function allows the user to access data about existing sites. This includes the Site ID, Site Name and a Default site.

Action

action=get

Syntax

```
http://<servername>/api.svc/site?action=get;<argument>=<value>...
```

Parameters

Table: Obtaining Data on Existing Sites - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
id	1 to 999, all	No	all	This is the Site ID

Response Fields

Table: Obtaining Data on Existing Sites - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Site ID	Id	1 - 999	The Site ID
Site Name	Name	Max 30 alphanumeric character	The Site Name
Default	Default	1 : default site 0 : not a default site	This indicate whether the specified site is a default site or not.

Example

Sample Request:

With default values,

```
http://matrixserver/api.svc/v2/site?action=get
```

Sample Response:

```
Id|Name|Default  
1|Site-1|1  
2|h|0  
<EOT>
```

Sample Request:

Syntax with valid action but no record available,

```
http://matrixserver/api.svc/v2/site?action=get
```

Sample Response:

```
success: <response code> : No records found
```

Adding a New Site

This interface can be used to create a new site.

Action

action=set

Syntax

```
http://<servername>/api.svc/site?action=set;<argument>=<value>...
```

Parameters

Table: Adding a New Site - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
id	1 to 999	Yes	-	The Site ID
name	maximum 30 alphanumeric characters	Yes	-	The Site Name
default	1: Default site	No	Not a default site	This indicate whether the specified site is a default site or not.

Example

Sample Request:

With values "id=1", "name=Site-1",

```
http://matrixserver/api.svc/site?action=set;id=1;name=Site-1
```

Sample Response:

```
success : successful
```

Updating a Site

This function can be used to update the configuration of an existing site on the COSEC database.

Action

action=update

Syntax

`http://<servername>/api.svc/site?action=update;<argument>=<value>...`

Parameters

Table: Updating a Site - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
id	1 to 999	Yes	-	The Site ID
name	maximum 30 alphanumeric characters	Yes	-	The Site Name
default	1: Default site	No	Not a default site	This indicate whether the specified site is a default site or not.

This API allows the access and modification of user data from the COSEC database. The *Users APIs* allows you to perform the following functions:

Action=get

- [Accessing User Data](#)

Action=set

- [Adding/Editing a User](#)

Action=setphoto

- [Adding User Photograph](#)

Action=delete

- [Deleting a User](#)

Action=enroll

- [Enrolling a User](#)

Action=set-credential

- [Setting Credentials on Device](#)

Action=del-credential

- [Deleting Credentials from Device](#)

Action=get

- [Searching a User](#)

Action=get

- [Fetching Reporting Group Members](#)

User Rights

User	Rights
System Account	Enabled. User must have rights on following pages (COSEC Web Application): Users > User List (For action=get) Users > User Configuration (For other actions)

User	Rights
ESS	<p>Enabled if user has ESS rights enabled.</p> <p>Only For <i>action=get</i> and <i>action=set</i></p> <p>Note : For <i>action =set</i>, the following option should be enabled (COSEC Web Application):</p> <p>User Configuration > ESS > Settings > Edit Basic Details</p>

Accessing User Data

This function allows you to retrieve specific data for a single user or multiple users. For instance, this method can be used to retrieve an employee's name, date-of-birth, joining date, blood-group, Passport Number etc.

Action

action=get

Syntax

```
http://<servername>/api.svc/user?action=get;<argument>=<value>...
```

Parameters

Table: Accessing User Data - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
range	All, organization, branch ,department, designation, section, category, grade, user	No	If "id" parameter is not mentioned, consider range=all. If "id" parameter is mentioned, consider range=user	This is used to fetch the data for selected range of users. Note: Response shall be provided with an error message, in case of invalid range. Note: Here "all" means the IDs of all the users that login user has rights over Note: If range is not mentioned and "id" is specified, it will be considered as range = user. And the IDs mentioned will be considered as user IDs.
id	1 to 999999 (for all the ranges except all & user) Max 15 alphanumeric characters (for user)	Yes (if mentioned range is other than "all")	-	This can be the organization or user id (as per the selected range). Note: Multiple IDs can be selected, each separated by a 'comma'. e.g.:"1, 3, 7, 9..." Note: If neither range nor id are mentioned, return data for all the users the login user has rights on.
field-name	Any of the field names that can be updated using set option (list is available in set table)	No	all	These are the fields that can be specified to fetch User's specific data.

Response Fields

Table: Accessing User Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Id	id	max 15 characters	Allowed Characters A-Z a-z 0-9 /_\.\@:
Reference Code	reference-code	1 to 99999999 (max 8 digits)	-
User Name	name	max 45 alphanumeric characters	Allowed Characters A-Z a-z 0-9 - _ () []
Short Name	short-name	max 15 alphanumeric characters	-
Active	active	1 : Active 0 : Inactive	-
Module	module	U- T&A User R- Roster User	-
Date of Birth	date-of-birth	ddmmyyyy	-
Joining Date	joining-date	ddmmyyyy	-
Confirmation Date	confirmation-date	ddmmyyyy	-
Leaving Date	leaving-date	ddmmyyyy	-
Reason For Leaving	reason-for-leaving	max 15 alphanumeric characters	-
PF No.	pf-no	max 30 alphanumeric characters	-
Vehicle Registration No	vehicle-reg-no	max 50 alphanumeric characters and comma(,)	-
Driving License	driving-license	max 30 alphanumeric characters	-
PAN No.	pan	max 30 alphanumeric characters	-
ESI No.	esi-no	max 30 alphanumeric characters	-
Passport No.	passport-no	max 30 alphanumeric characters	-
Aadhar No.	aadhar-no	max 12 numeric characters	-
UAN	uan	max 12 numeric characters	-
Voter ID	voter-id	max 10 alphanumeric characters	-
Visa No.	visa-no	max 12 alphanumeric characters	-
Visa Expiry Date	visa-expiry	ddmmyyyy	-
Integration Reference	integration-reference	max 20 alphanumeric characters	-
Height	height	0 - 999	-
Weight	weight	0 - 999	-
Gender	gender	na male female	-
Blood Group	blood-group	na,a+,a-,b+,b-,ab+,ab-,o+,o- ,A1-,A1+,A1B-,A1B+,A2- ,A2+,A2B-,A2B+,B1+	-

Table: Accessing User Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Marital Status	marital-status	married unmarried na	-
Nationality	nationality	max 20 alphanumeric characters	-
Father/Spouse Name	father-spouse-name	max 30 alphanumeric characters	-
Qualification	qualification	max 50 alphanumeric characters	-
Experience	experience	max 50 alphanumeric characters	-
Medical History	medical-history	max 50 alphanumeric characters	-
Local Address1	local-address1	max 30 alphanumeric characters	-
Local Address2	local-address2	max 30 alphanumeric characters	-
Local Street	local-street	max 30 alphanumeric characters	-
Local City	local-city	max 30 alphanumeric characters	-
Local Pin code	local-pincode	max 10 alphanumeric characters	-
Local State	local-state	max 40 alphanumeric characters	-
Local Country	local-country	max 20 alphanumeric characters	-
Permanent Address1	permanent-address1	max 30 alphanumeric characters	-
Permanent Address2	permanent-address2	max 30 alphanumeric characters	-
Permanent Street	permanent-street	max 20 alphanumeric characters	-
Permanent City	permanent-city	max 30 alphanumeric characters	-
Permanent Pin Code	permanent-pincode	max 20 alphanumeric characters	-
Permanent State	permanent-state	max 40 alphanumeric characters	-
Permanent Country	permanent-country	max 20 alphanumeric characters	-
Personal Phone	personal-phone	max 30 numeric characters or -	-
Personal Cell	personal-cell	max 20 numeric characters or -	-
Personal E-mail	personal-email	max 100 alphanumeric characters	-
Official Phone	official-phone	max 30 numeric characters or -	-
Official Extension	official-extension	max 4 numeric characters	-
Official Cell	official-cell	max 20 numeric characters or -	-
Official E-mail	official-email	max 100 alphanumeric characters	-
Organization ID	organization	1 - 999999	-
Branch ID	branch	1 - 999999	-
Department ID	department	1 - 999999	-
Section ID	section	1 - 999999	-
Category ID	category	1 - 999999	-
Grade ID	grade	1 - 999999	-
Designation ID	designation	1 - 999999	-
Reporting In-Charge	reporting-incharge	1 - 9999	-

Table: Accessing User Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
ESS Login	ess-login	1 : enabled 0 : disabled	-
ESS Detail Edit	ess-detail-edit	1 : editing allowed 0 : editing not allowed	-
Attendance via ESS	attendance-via-ess	1 : enabled 0 : disabled	-
Active Directory Login	active-directory-login	1 : enabled 0 : disabled	-
Active Directory Username	active-directory-username	max 128 alphanumeric characters	-
Active Directory Domain	active-directory-domain	max 128 alphanumeric characters	-
Attendance Calculation	attendance-calc	1 : enabled 0 : disabled	-
Max Personal hours	max-personal-hrs	0 - 99	-
Bus Route	bus-route	0 - 999	-
Bypass Fingerprint/Palm	bypass-finpalm	1 – enable bypass 0 – disable bypass	-
Employment Profile	employment-profile	max 4 alphanumeric characters	-
Employment Type	employment-type	max 4 alphanumeric characters	-
Award and Penalty	award-penalty	max 4 alphanumeric characters	-
Work Profile	work-profile	max 4 alphanumeric characters	-
Roster Policy	roster-policy	max 4 alphanumeric characters	-
Attendance Policy (Roster)	roster-attendance-policy	max 4 alphanumeric characters	-
Hour Exception	hour-exception	max 4 alphanumeric characters	-
Attendance Policy (T&A)	attendance-policy	1-99	-
Late-In Policy	lateIn-policy	1-99	-
Early Out policy	earlyOut-policy	1-99	-
Overtime Policy	overtime-policy	1-99	-
Absentee Policy	absentee-policy	1-99	-
C-Off Policy	coff-policy	1-99	-
PIN	pin	1-999999	-
Card-1	card-1	max 20 numeric characters	Value will be “0” if login user is ESS user.
Card-2	card-2	max 20 numeric characters	Value will be “0” if login user is ESS user.
Access Validity Date	access-validity-date	ddmmyyyy format	-
Access Level	access-level	1 - 15	-
Bypass Finger	bypass-finger	1 – enable bypass 0 – disable bypass	-
Bypass Palm	bypass-palm	1 – enable bypass 0 – disable bypass	-

Table: Accessing User Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Shift based access	shiftbased-access	1 – access allowed 0 – access denied	-
Shift Schedule	shift-schedule	1- 99	-
Start Shift	start-shift	max 2 numeric characters	-
Holiday Schedule	holiday-schedule	1 - 99	-
Device Group	device-group	max 30 numeric characters	-
Smart access route	smart-access-route	1 - 99	-
Max route level	max-route-level	1 - 75	-
Allow e-Canteen	allow-ecanteen	1 - allowed 0 – not allowed	-
Discount Level	discount-level	0 to 4	-
Account Type	account-type	1 - postpaid 0 - prepaid	-
Max Allowed Limit	max-allowed-limit	0.0 to 9999999.9	-
Max Usage Limit	max-usage-limit	0.0 to 9999999.9	-
Organization Code	organization_code	max 6 alphanumeric characters	-
Branch Code	branch_code	max 6 alphanumeric characters	-
Department Code	department_code	max 6 alphanumeric characters	-
Category Code	category_code	max 6 alphanumeric characters	-
Grade Code	grade_code	max 6 alphanumeric characters	-
Designation Code	designation_code	max 6 alphanumeric characters	-
Section Code	section_code	max 6 alphanumeric characters	-
Leave Group ID	leave_group	1-99	-
PVR Group Number	pvr_group	If user has palm enrolled, the PVR group number will be returned here.	PVR Group Number
Enrolled Fingers	enrolled_fingers	1-10	Number of fingers enrolled for this user
Enrolled Palms	enrolled_palms	1-10	Number of palms enrolled for this user
Reporting Group ID	rg_id	1-999	ID of the reporting group to which user belongs
Reporting Group Name	rg_name	upto 30 characters	Name of the reporting group to which user belongs
Reporting Group Incharge 1's ID	rg_incharge_1	upto 15 characters	User ID of reporting group incharge 1
Reporting Group Incharge 2's ID	rg_incharge_2	upto 15 characters	User ID of reporting group incharge 2

Table: Accessing User Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
IMEI Number	imei	upto 40 characters. Allowed characters: Alphanumeric -	-
IMEI Authorized or not	imei-authorized	0: Pending 1: Authorized 2: Rejected	-
User-Defined Field 1	field1	upto 30 characters	Valid Characters : A-Z a-z 0-9 space []() . - _
User-Defined Field 2	field2	upto 30 characters	Valid Characters : A-Z a-z 0-9 space []() . - _
User-Defined Field 3	field3	upto 30 characters	Valid Characters : A-Z a-z 0-9 space []() . - _
User-Defined Field 4	field4	upto 30 characters	Valid Characters : A-Z a-z 0-9 space []() . - _
Week Off Group	week-off-group	1-99	Numeric Only
Punch Marking Via API	punch-api	0 : Disabled 1 : Enabled	-
Auto-Punch Marking	auto-attendance	0 : Disabled 1 : Enabled	-
Manual Punch Marking	manual-punch	0 : Disabled 1 : Enabled	-
Location Data Mandatory from Apps	location-mandatory	0 : None 1 : Any Location 2 : Configured Locations	-
Door Access Through API	door-access-api	0 : Disabled 1 : Enabled	-
FVM Flag	FVM-enable	0 : Disabled 1 : Enabled	-

Table: Accessing User Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Job Assignment Type	job-assignment-type	0: None 1: Fixed 2: Device Based	-
Blacklisted	blacklisted	0: Not Blacklisted 1: Blacklisted	-

Example

A sample request for fetching employee data with specific fields.

Sample Request:

```
http://matrixserver/api.svc/v2/user?action=get;id=836,837,838,840;field-name=id,name,reference-code,active,gender,marital-status,blood-group,nationality
```

Sample Response:

```
id|name|reference-code|active|gender|marital-status|blood-group|nationality
836|RAJUBHAI VANKAR|836|1|male|married|b+|Indian
837|SHIRIN Y PATEL|837|1|female|unmarried|a-|Indian
838|VIPUL B SOLANKI|838|1|male|unmarried|o+|Indian
840|KANTIBHAI VASAVA|840|1|male|na|a+|Indian
<EOT>
```

Adding/Editing a User

This API will allow you to define a new user, as well as add/edit specific data for an existing user on the COSEC database (only single user at a time). For instance, this process can be used to add information such as an employee's name, date-of-birth, joining date, blood-group, Passport Number etc.

Action

action=set



If the **action=set** request is sent for an existing user, the new values sent will overwrite the existing values, if any.

Syntax

```
http://<servername>/api.svc/user?action=set;<argument>=<value>...
```

Parameters

ESS users can edit only the parameters marked by **

Table: Adding/Editing a User - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
id	Max 15 Alphanumeric Characters	Yes	-	This is the User Id. For ESS User, the User ID should be same as Login User's ID
reference-code	1 to 99999999	No	Max stored ref code+1	This is the unique Reference code for every User.
name	Max 45 Alphanumeric Characters	Yes	-	This is the User Name. Allowed Characters A-Z a-z 0-9 _ . ()
short-name	Max 15 Alphanumeric Characters	No	First 15 characters of name	This is the short name of User. Allowed Characters A-Z a-z 0-9 _ . ()
active	0 or 1	No	1	This is a field that shows whether user is active or not. It has two values 0 and 1 for inactive and active respectively. Note: If active is supplied as 1 and the user is blacklisted then error code "0070203002" will be generated with validation message "User is Blacklisted."

Table: Adding/Editing a User - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
module	U or R	Yes	Depending upon License	This value specifies the user type. U- T&A User R- Roster User
date-of-birth **	ddmmyyyy format	No	-	This is the date of birth of the user. Note: - date-of-birth shall be lower than joining-date.
joining-date	ddmmyyyy format	Y (if confirmation-date or leaving-date to be configured)	-	This is the joining date of the user. Note: - joining-date should be higher than date-of-birth.
confirmation-date	ddmmyyyy format	No	-	This is the confirmation date of the user. Note: - confirmation-date shall not be lower than joining-date.
leaving-date	ddmmyyyy format	Yes (if reason for leaving to be configured)	-	This is the date of leaving of the user. Note: - leaving-date shall not be lower than joining-date.
reason-for-leaving	Max 15 Alphanumeric Characters	No	-	This is the reason of leaving an organization.
pf-no **	Max 30 Alphanumeric Characters	No	-	This is the PF Number of the user.
vehicle-reg-no	Max 50 Alphanumeric Characters and comma(,)	No	-	This is the Vehicle Registration No of the user.
driving-license **	Max 30 Alphanumeric Characters	No	-	This is the driving license of the user.
pan **	Max 30 Alphanumeric Characters	No	-	This is the PAN of the user.
esi-no **	Max 30 Alphanumeric Characters	No	-	This is the ESI Number of the
passport-no **	Max 30 Alphanumeric Characters	No	-	This is the Passport Number of the user.
aadhar-no **	max 12 numeric characters	No	-	This is the Aadhar Number of the user.
uan **	max 12 numeric characters	No	-	This is the UAN of the user.
voter-id **	max 10 alphanumeric characters	No	-	This is the Voter ID of the user.
visa-no **	Max 12 Alphanumeric Characters	Yes (If visa-expiry date to be configured)	-	This is the IQAMA number of the user.
visa-expiry **	ddmmyyyy format	No	-	This is the date of expiry of the IQAMA or visa.
integration-reference	Max 20 Alphanumeric Characters	No	-	This is the integration reference for the user.
height **	0 to 999	No	-	This is the height of the user in the centimeter.

Table: Adding/Editing a User - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
weight **	0 to 999	No	-	This is the weight of the user in Kg.
gender **	na, male,female	No	NA	This is the gender of the user.
blood-group **	NA,A+,A-,B+,B- ,AB+,AB-,o+,o- ,A1-,A1+, A1B- ,A1B+,A2- ,A2+,A2B-,A2B+,B1+	No	NA	This is the blood group of the user.
marital-status **	married,unmarried	No	Married	This is the marital status of the user.
nationality **	Max 20 alphanumeric characters	No	-	This is the nationality of the user.
father-spouse-name **	Max 30 Alphanumeric Characters	No	-	This is the father or spouse name of the user.
qualification **	Max 50 Alphanumeric Characters	No	-	This is the qualification of the user.
experience **	max 50 alphanumeric characters	No	-	This is the work experience of the user.
medical-history **	max 50 alphanumeric characters	No	-	This is the medical history of the user.
local-address1 **	max 30 alphanumeric characters	No	-	This is the local address 1 of the user.
local-address2 **	max 30 alphanumeric characters	No	-	This is the local address 2 of the user.
local-street **	max 30 alphanumeric characters	No	-	This is the street for local address 1.
local-city **	max 40 alphanumeric characters	No	-	This is the city for local address 1.
local-pincode **	max 10 numeric characters	No	-	This is the local pin code for local address 1.
local-state **	max 40 alphanumeric characters	No	-	This is the state for local address 1.
local-country **	max 20 alphanumeric characters	No	-	This is the country for local address 1.
permanent-address1 **	max 30 alphanumeric characters	No	-	This is the permanent address 1 of the user.
permanent-address2 **	max 30 alphanumeric characters	No	-	This is the permanent address 2 of the user.
permanent-street **	max 20 alphanumeric characters	No	-	This is the street for permanent address 1.
permanent-city **	max 30 alphanumeric characters	No	-	This is the city for permanent address 1.
permanent-pincode **	max 10 numeric characters	No	-	This is the local pin code for permanent address 1.
permanent-state **	max 40 alphanumeric characters	No	-	This is the state for permanent address 1.
permanent-country **	max 20 alphanumeric characters	No	-	This is the country for permanent address 1.

Table: Adding/Editing a User - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
personal-phone **	max 32 numeric characters or -	No	-	This is the personal phone number of the user.
personal-cell **	max 30 numeric characters or -	No	-	This is the personal mobile number of the user.
personal-email **	max 100 alphanumeric characters	No	-	This is the personal email address of the user.
official-phone **	max 30 numeric characters or -	No	-	This is the official phone number of the user.
official-extension **	max 10 numeric characters	No	-	This is the extension of the user.
official-cell **	max 30 numeric characters or -	No	-	This is the official mobile number of the user.
official-email **	max 100 alphanumeric characters	No	-	This is the official email address of the user.
organization	1 to 999999	No	Default organization defined in Enterprise structure	This is the 'Organization' of the user.
branch	1 to 999999	No	Default branch defined in Enterprise structure	This is the 'Branch' of the user.
department	1 to 999999	No	Default department defined in Enterprise structure	This is the 'Department' of the user.
section	1 to 999999	No	Default section defined in Enterprise structure	This is the 'Section' of the user.
category	1 to 999999	No	Default category defined in Enterprise structure	This is the 'Category' of the user.
grade	1 to 999999	No	Default grade defined in Enterprise structure	This is the 'Grade' of the user.
designation	1 to 999999	No	Default designation defined in Enterprise structure	This is the 'Designation' of the user.
reporting-incharge	1 to 9999	No	-	This is the "Reporting-in-charge" of the user
ess-login	1 or 0	No	0	This field enables/disables the users ESS login.
ess-detail-edit	1 or 0	No	0	This field toggles the option for user to change/edit the user's basic details in ESS.

Table: Adding/Editing a User - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
attendance-via-ess	1 or 0	No	0	This enables or disables the users attendance to be marked via ESS.
active-directory-login	1 or 0	No	0	This enables/disables the users ESS login via Active directory credentials.
active-directory-username	max 128 alphanumeric characters	Yes (if active-directory-login to be configured)	-	This is the user's Active directory username. Note: The active directory username provided should not be repeated for any other user. Also the active directory username can be same as that user ID of the same user for which the active directory username is assigned and none other.
active-directory-domain	max 128 alphanumeric characters	Yes (if active-directory-login to be configured)	-	This is the domain name for the active directory login purpose
attendance-calc	1 or 0	No	1	This enables/disables the attendance calculation for the user.
max-personal-hrs	0 to 99	No	-	This configures the max number of hours the user can use as short leave.
bus-route	0 to 999	No	-	This is the bus route for the user. This is an optional field.
bypass-finpalm	1 or 0	No	0	This parameter enables/disables the option to bypass biometric credentials for attendance marking.
employment-profile	max 4 alphanumeric characters	No	Default Employment contract defined in Roster	This is the roster user's Employment contract.
employment-type	max 4 alphanumeric characters	No	Default Employment type defined in Roster	This is the roster user's Employment type.
award-penalty	max 4 alphanumeric characters	No	Default Award and Penalty defined in Roster	This is the award and penalty assigned to the roster user.
work-profile	max 4 alphanumeric characters	No	Default Work Profile defined in Roster	This is the work profile assigned to the roster user.
roster-policy	max 4 alphanumeric characters	No	Default General Rules defined in Roster	This is the general rules assigned to the roster user.
roster-attendance-policy	max 4 alphanumeric characters	No	Default Policy defined in Roster	This is the policy assigned to the roster user.
hour-exception	max 4 alphanumeric characters	No	-	This is the hour exception assigned to the roster user.
attendance-policy	1 to 99	No	Default Attendance Policy defined in Time & Attendance/ Policies	This is the 'Attendance policy' of the user.

Table: Adding/Editing a User - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
lateIn-policy	1 to 99	No	Default Late In Policy defined in Time & Attendance/ Policies	This is the 'Late-In policy' of the user.
earlyOut-policy	1 to 99	No	Default Early Out Policy defined in Time & Attendance/ Policies	This is the 'Early-out policy' of the user.
overtime-policy	1 to 99	No	Default Overtime Policy defined in Time & Attendance/ Policies	This is the 'Overtime policy' of the user.
absentee-policy	1 to 99	No	Default Absentee Policy defined in Time & Attendance/ Policies	This is the 'Absentee policy' of the user.
coff-policy	1 to 99	No	Default COFF Policy defined in Time & Attendance/ Policies	This is the 'COFF policy' of the user.
pin	1 to 999999	No	-	This is the access control system pin number of the user. Note: - Same pin will not be allowed against any two user IDs.
card-1	max 20 numeric characters	No	-	This is the card number 1 of the user, required for access control system. Note: - Same value of card-1 will not be allowed for any two user IDs.
card-2	max 20 numeric characters	No	-	This is the card number 2 of the user, required for access control system. Note: - Same value of card-2 will not be allowed for any two user IDs.
access-validity-date	ddmmyyyy format	No	-	This is the Access Validity date of the user. Setting this will automatically enable the 'Access Validity' feature for the user.
access-level	1 to 15	No	-	This is the access level assigned to user, used for access control features.
bypass-finger	1 or 0	No	0	This determines whether the user can bypass the finger credential for any access control feature/rule.
bypass-palm	1 or 0	No	0	This determines whether the user can bypass the palm credential for any access control feature/rule.

Table: Adding/Editing a User - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
shiftbased-access	1 or 0	No	0	This parameter determines the application of access restriction based on the shift assigned to the user from the shift schedule.
shift-schedule	1 to 99	No	First Shift Schedule	This field assigns the shift schedule to the user.
start-shift	max 2 alphanumeric characters	No	The selected schedule's first shift	The user should define the start shift for the selected shift schedule.
holiday-schedule	1 to 99	No	first holiday schedule	This field defines the users allowed holidays.
device-group	max 30 numeric characters	No	-	This is the name of the device group.
smart-access-route	1 to 99	No	-	This field assigns the access route to the user. (For Smartcard Users only)
max-route-level	1 to 75	No	75	This field assigns maximum level to which user can access the Smart Access Route.
allow-ecanteen	1 or 0	No	0	This determines whether the ecanteen features are allowed for the selected user or not. Note: Whether the Allowed for e-canteen option is true or false, user can change Account Type (his account should be settled) and Discount Level.
discount-level	0 to 4	No	0	This value defines the user applicable discount level for any canteen transactions.
account-type	1 or 0	No	0	This parameter determines the user's canteen account type. 0 – prepaid 1 - postpaid
max-allowed-limit	0.0 to 9999999.9	No	As specified in eCanteen/Account configuration	This defines the max allowed limit for the canteen user for a month.
max-usage-limit	0.0 to 9999999.9	No	As specified in eCanteen/Account configuration	This defines the max usage limit for the canteen user beyond which the user's canteen account will be blocked.
organization_code	max 6 alphanumeric characters	No	-	Organization ID and Organization Code cannot be specified together.
branch_code	max 6 alphanumeric characters	No	-	Branch ID and Branch Code cannot be specified together.
department_code	max 6 alphanumeric characters	No	-	Department ID and Department Code cannot be specified together.
category_code	max 6 alphanumeric characters	No	-	Category ID and Category Code cannot be specified together.
grade_code	max 6 alphanumeric characters	No	-	Grade ID and Grade Code cannot be specified together.
designation_code	max 6 alphanumeric characters	No	-	Designation ID and Designation Code cannot be specified together.

Table: Adding/Editing a User - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
section_code	max 6 alphanumeric characters	No	-	Section ID and Section Code cannot be specified together.
leave_group	2 Digits	-	-	To specify a leave group ID, for a leave group to be assigned to the user.
field1	upto 30 characters	No	-	A-Z a-z 0-9 space [] () . - _
field2	upto 30 characters	No	-	Valid Characters : A-Z a-z 0-9 space [] () . - _
field3	upto 30 characters	No	-	Valid Characters : A-Z a-z 0-9 space [] () . - _
field4	upto 30 characters	No	-	Valid Characters : A-Z a-z 0-9 space [] () . - _
week-off-group	numeric 1-99	No	-	To assign a week-off group to the user
punch-api	0 : Disabled 1 : Enabled	No	1	Punch Marking Via API
auto-attendance	0 : Disabled 1 : Enabled	No	0	Auto-Punch Marking
manual-punch	0 : Disabled 1 : Enabled	No	0	Manual Punch Marking
location-mandatory	0 : None 1 : Any Location 2 : Configured Locations	No	0	Location Data Mandatory from Apps Note: - If location is not mentioned in event when Location mandatory for punch is checked then access will be denied.
Door Access Through API	door-access-api	0: Disabled 1: Enabled	0	It will show invalid argument message if value is not 0/1.

Example

The following examples illustrate sample requests for adding or editing users.

Sample Request:

To add a user named “Sam”, whose user ID is “202” (activated for the *Time and Attendance* module license) -

```
http://matrixserver/api.svc/v2/user?action=set;id=202;name=sam;module=U
```

Sample Response:

```
success: <response code> : successful
```

Sample Request:

To add details such as date of birth, gender, nationality and blood group for the user Sam.

```
http://matrixserver/api.svc/v2/user?action=set;id=202;date-of-birth=22061978;gender=male;nationality=indian;blood-group=b+
```

Sample Response:

```
success: <response code> : successful
```

Sample Request:

To change the username for Sam to “Samuel Jackson”.

```
http://matrixserver/api.svc/v2/user?action=set;id=202;name=Samuel Jackson
```

Sample Response:

```
success: <response code> : successful
```


Adding User Photograph

Update the user photograph in a user's configured profile on COSEC using this request.

Action

action=setphoto

Syntax

```
http://<servername>/api.svc/user?action=setphoto;<argument>=<value>...
```

Parameters

Table: Adding User Photograph - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	Max 15 alphanumeric characters	Yes	-	This is the unique User Id.
Path	The path should include the image file also with file extension. Supported file types are: .jpg, .jpeg, .bmp, .png Also the file size should be <= 50 kb	Yes		This will be the network path of the image file which is to be set as user photo. If FTP credential parameters are specified, then the path mentioned should be an FTP path.
ftpusername	-	Yes	-	If the image is on an FTP location then login credentials must be supplied. This is the FTP username. This parameter must be used with the 'ftppassword' parameter for a successful request.
ftppassword	-	Yes	-	If the image is on an FTP location then login credentials must be supplied. This is the FTP password. This parameter must be used with the 'ftpusername' parameter for a successful request.



*The supported file formats are *.jpg, *.bmp and *.png.*

Example

This sample request illustrates how to set a photograph for the user ID **202**, when the source image file **image.jpg** is located in the following FTP location: **ftp://abc/xyz/image.jpg**

Sample Request:

```
http://matrixserver/api.svc/v2/user?action=setphoto;id=202;path=ftp://abc/xyz/image.jpg;ftpusername=sam;ftppassword=1234
```

Sample Response:

```
success: <response code> : successful
```

Deleting a User

This function can be used to delete an existing user from the COSEC database permanently. Only a single user can be deleted at a time using this method.



This process is irreversible. Please proceed with caution.

Action

action=delete

Syntax

```
http://<servername>/api.svc/user?action=delete;<argument>=<value>...
```

Parameters

Table: Deleting a User - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
id	Max 15 alphanumeric characters	Yes	-	This is the unique User Id.

Example

This example illustrates how to delete the user **Samuel** (id=202) from the COSEC database:

Sample Request:

```
http://matrixserver/api.svc/v2/user?action=delete;id=202
```

Sample Response:

```
success: <response code> : successful
```

Enrolling a User

This API can be used to generate an enrollment request for a user on a specific device. Only a single user can be enrolled at a time using this action.

Action

action=enroll

Syntax

```
http://<servername>/api.svc/user?action=enroll;<argument>=<value>...
```

Parameters

Table: Enrolling a User - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
id	Max 15 alphanumeric characters	Yes	-	This is the unique User ID.
device-type	0-12	Yes	-	This is the type of device, in which enrollment of respective user to be done. 0 = Panel, 1 = Door V1, 2 = Panel Lite 3 = Door V2, 4 = NGT Direct Door, 5 = Wireless Direct Door 6 = Path Controller 7 = PVR Direct Door 8 = Panel-Lite V2 9 = Vega Controller 11 = Arc Controller 12 = Door V3 15 = Door FMX
device-id	1 to 65000	Yes	-	This is the device identification number of the device type, on which enrollment of respective user is to be done. This device must be assigned to the user-id for which enrollment is to be performed. Note: Login user must have necessary rights on the device on which the enrollment is to be performed.
panel-door-id	1 to 255 (device-type=8) 1 to 99 (all others)	Yes. Only if device type = Panel (0), Panel-Lite (2), or Panel-Lite V2(8)	-	This is the Panel Door identification number, in case a panel is selected for device-type .
enroll-type	fp, card, palm	Yes	-	This is the type of enrollment. Note: - Only Read-Only cards supported.

Table: Enrolling a User - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
enroll-count	1 to 10 (for enroll-type=fp) 1,2 (for enroll-type=card) 1 to 10 (for enroll-type=palm)	Yes	-	This is the count for the enroll type (finger print, card or palm) to be enrolled for the respective user id.

Example

This example demonstrates a typical request URL for enrolling 2 fingers for a user on a Direct Door V1:

Sample Request:

```
http://matrixserver/api.svc/v2/user?action=enroll;id=1;device-type=1;device-id=1;enroll-type=fp;enroll-count=2
```

Sample Response:

```
success: <response code> : successful
```

Setting Credentials on Device

Send a user's credentials to all the available panel or direct door devices on COSEC. There are two types of credentials that can be set for a user - fingerprint (**fp**) and card.

Action

action=set-credential

Syntax

```
http://<servername>/api.svc/user?action=set-credential;<argument>=<value>...
```

Parameters

Table: Setting Credentials on Device - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
id	Max 15 alphanumeric characters	Yes	-	This is the unique User Id.
credential-type	fp, card	Yes	-	This is the type of credential.
data	Max 768 Alphanumeric Characters (for fp) Max 20 numeric Characters (for card) Note: - For credential type = finger print, user should send finger print templates into hexadecimal.	Yes	-	This is the data of respective credential type, which is to be stored at given index number for the respective user ID.



This API supports setting credentials only for Read-Only cards.

Example

The following example illustrates how to add user credentials with the given set of values:

- **id=1**
- **credential-type=card**
- **data=12345678901234567890** (card number)

Sample request:

```
http://matrixserver/api.svc/v2/user?action=set-credential;id=1;credential-type=card;data=12345678901234567890
```

Sample Response:

```
success: <response code> : successful
```

Deleting Credentials from Device

Delete a user's credentials from all the available panel or direct door devices on COSEC.

Action

action=del-credential

Syntax

```
http://<servername>/api.svc/user?action=del-credential;<argument>=<value>...
```

Parameters

Table: Deleting Credentials from Device - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
Id	Max 15 alphanumeric characters	Yes	-	This is the unique User Id.
credential-type	fp, card, palm	Yes	-	This is the type of credential.



This process is irreversible. Please proceed with caution.



This API supports Read-Only cards only.

Example

This example demonstrates a sample request to delete fingerprint credentials for a user with user ID "1" from all devices on the COSEC database.

Sample Request:

```
http://matrixserver/api.svc/v2/user?action=del-credential;id=1;credential-type=fp
```

Sample Response:

```
success: <response code> : successful
```

Searching a User

This shall be used to search for a particular user based on parameters like user ID, user name or reference code. This API will help third party applications to fetch user IDs based on username or reference code associated with a user. This user ID can then be used by the application.

Action

action=get

Syntax

`http://<servername>/api.svc/search-user?action=get;<argument>=<value>...`

User Rights

User	Rights
System Account	Enabled.
ESS	Enabled. ESS user can fetch details for any other ESS user.



Only those records will be fetched on which the login user has rights.

Parameters

Table: Searching a User - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
search-criteria	1: User ID 2: User Name 3: Reference Code 4: Integration Reference 5: Vehicle Registration No	Yes	-	This specifies the criterion on which the search will be based.

Table: Searching a User - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
search-string	<p>if search-criteria=2 (i.e. for user-name) minimum three characters.</p> <p>For other options, minimum one character.</p>	Yes	-	<p>The valid values for search-string will depend on the search-criteria.</p> <p>For search-criteria=1 Allowed Characters: A-Z a-z 0-9 /_\.\@:</p> <p>For search-criteria=2 Allowed Characters: A-Z a-z 0-9 - _ () []</p> <p>For search-criteria=3 1 to 99999999 (max 8 numeric digits)</p> <p>For search-criteria=4 max 20 alphanumeric characters</p> <p>For search-criteria=5 max 15 alphanumeric characters</p>
record-count	numeric	No	-	<p>If record-count=0, or the parameter is not mentioned at all, all records will be returned for the mentioned search-string. If any other numeric value is mentioned, then only those number of records will be returned.</p>

Response Fields

Table: Searching a User - Response Fields

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	upto 15 characters	Allowed Characters A-Z a-z 0-9 /_\.\@:
User Name	user-name	upto 45 characters	Allowed Characters A-Z a-z 0-9 - _ () []
Short Name	short-name	max 15 alphanumeric characters	-
Active	active	1 : Active 0 : Inactive	-
Organization Code	organization	-	-

Table: Searching a User - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Branch Code	branch	-	-
Designation Code	designation	-	-
Section Code	section	-	-
Department Code	department	-	-
Category Code	category	-	-
Grade Code	grade	-	-
Gender	gender	male, female, na	-
Blood Group	blood-group	na, a+, a-, b+, b-, ab+, ab-, o+, o-, A1+, A1-, A1B-, A1B+, A2-, A2+, A2B+, A2B-, B1+	-
Official Cell	official-cell	-	-
Official Phone	official-phone	-	-
Official Extension	official-extension	-	-
Official Email	official-email	-	-
Personal Cell	personal-cell	-	-
Personal Phone	personal-phone	-	-
Personal Email	personal-email	-	-
Reporting Group ID	rg_id	1-9999	-
Reporting Group Name	rg_name	-	-
In-Charge 1 ID	rg_incharge_1	-	-

Table: Searching a User - Response Fields

Field Name	Tag Name	Valid Values	Remarks
In-Charge 1 Name	rg_incharge_1_name	-	-
In-Charge 2 ID	rg_incharge_2	-	-
In-Charge 2 Name	rg_incharge_2_name	-	-
Vehicle Registration No	vehicle-reg-no	-	-
Reference Code	reference-code	1 to 99999999	This will give the code as specified in User Config > Basic > Optional > Reference ID

Fetching Reporting Group Members

This API can get a list of all the members assigned to the logged-in user's reporting group. The login user must be a reporting in-charge to call this API.

Action

action=get

Syntax

```
http://<servername>/api.svc/group-members?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled
ESS	Enabled

Parameters

Table: Fetching Reporting Group Members - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	15 Char.	Yes	-	The Reporting In-charge's User ID. Note: Returns only those records on which the Login user has rights.
search-by	0 : User Id 1: User Name	No	-	Used to search for a particular member in the user's reporting group.
search-string	one/three characters	Yes (Only if search-by argument is provided)	-	A set of characters to identify the user, based on username or user ID. e.g. : <code>http://matrix-server/api.svc/ group-members?action=get;userid=1234;search-by=1;search-string=kma</code>
record-count	numeric	No	-	To specify the number of records that should be returned. If record-count=0 , or the parameter is not mentioned, then all the records will be returned. If any other numeric value is mentioned then only those number of records will be returned.

Response Fields

Table: Fetching Reporting Group Members - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Reporting Group Id	group-id	1-9999	Reporting group ID for which the logged in user is reporting group in-charge.
Reporting Group Name	group-name	upto 30 characters	Reporting group Name for which the logged in user is reporting group in-charge.
User ID	user-id	upto 15 characters	Allowed characters A-Z a-z 0-9 /_\.\@:
User Name	user-name	upto 45 characters	Allowed Characters A-Z a-z 0-9 - _ ' () []
Short Name	short-name	upto 15 alphanumeric characters	-

The *Enterprise Structure APIs* allow the user to retrieve, set, as well as update data related to various groups as per the requirements of an enterprise. COSEC identifies the following enterprise groups:

- Organization
- Branch
- Department
- Designation
- Section
- Category
- Grade

The generic syntax for all *Enterprise Structure API* requests is stated below.

Syntax

```
http://<servername>/api.svc/<enterprise-group>?action=<value>;<argument>=<value>...
```

Here, the request-type (<enterprise-group>) will depend on the enterprise group for which the API is being called.

For **Organization**: <enterprise-group>=organization

For **Branch**: <enterprise-group>=branch

For **Department**: <enterprise-group>=department

For **Designation**: <enterprise-group>=designation

For **Section**: <enterprise-group>=section

For **Category**: <enterprise-group>=category

For **Grade**: <enterprise-group>=grade

For e.g.:

For **Organization**, the API URL will resemble:

```
http://<servername>/api.svc/v2/organization?action=<value>;<argument>=<value>...
```

Similarly, for **Branch**, send:

```
http://<servername>/api.svc/v2/branch?action=<value>;<argument>=<value>...
```



If an enterprise group is renamed on the COSEC system (say, “organization” renamed as “company”), the <request-type> used in the URL should still use the original group name (i.e. “organization”) as defined on COSEC, irrespective of the renaming.

For each of the Enterprise Groups, COSEC supports the following APIs:

- [Obtaining Enterprise Group Details](#)
- [Adding an Enterprise Group](#)
- [Updating Enterprise Group Details](#)

User Rights

User	Rights
System Account	Enabled. User must have rights on the following pages, depending on the type of enterprise group to be accessed (COSEC Web Application): Enterprise Structure > Organization Enterprise Structure > Branch Enterprise Structure > Department Enterprise Structure > Designation Enterprise Structure > Section Enterprise Structure > Category Enterprise Structure > Grade
ESS	Enabled if user has ESS rights enabled.

Obtaining Enterprise Group Details

User can fetch the details of an enterprise group by specifying the group name in the <enterprise-group> part of the URL and specifying the group ID. For example, for an organization, the group ID will be the Organization ID.

Action

action=get

Syntax

```
http://<servername>/api.svc/<enterprise-group>?action=get;<argument>=<value>...
```

Parameters

Table: Obtaining Enterprise Group Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
id	1-999999 Note: This is the minimum to maximum range. In case of a system with a defined ID range 1-50, valid range shall be 1-50.	No	All	This is the ID of the specific enterprise group. Multiple IDs can be selected, each separated by “,” (comma)” e.g.”1, 3, 7, 9...” Or select a range of IDs E.g.”1-50”.

Response Fields

Table: Obtaining Enterprise Group Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
ID	id	1-999999	-
Code	code	6 characters. (max)	Allowed Characters A-Z a-z 0-9 -
Name	name	upto 40 characters (for “Organization” and “Branch”) upto 30 characters (for others)	Allowed Characters A-Z a-z 0-9 -_. ()[]
Short Name	short-name	15 characters	Allowed Characters A-Z a-z 0-9 -_. ()
Description	description	250 characters (max).	Allowed Characters A-Z a-z 0-9 _.,()[]:~!\$*+/-
default	default	0 : not default 1 : set as default	-

Table: Obtaining Enterprise Group Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Wage Level	wage-level	Max 4 characters	Returned only for "Designation" group. This field is returned only if Roster license is available.
color-code	color-code	6 hex values string. Range from 000000 – FFFFFFFF	Returned only for "Department" group. This argument is valid only if Roster license is available.

Example

Fetching an organization by ID '7'.

Sample Request:

```
http://matrixserver/api.svc/v2/organization?action=get;id=7
```

Sample Response:

```
id|code|name|short-name|description|default  
7|APEX|Apex Industries Pvt. Ltd.|Apex Industries||0  
<EOT>
```

Adding an Enterprise Group

User can add a new Organization, Branch, Department etc. and set its configuration on the COSEC system.

Action

action=set

Syntax

```
http://<servername>/api.svc/<enterprise-group>?action=set;<argument>=<value>...
```

Parameters

Table: Adding an Enterprise Group - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
code	6 Characters. (max) Duplicate Code is not allowed Allowed Characters A-Z a-z 0-9 —	Yes	-	The Enterprise Group Code.
name	40 characters Allowed Characters A-Z a-z 0-9 -_. ()[]	Yes	-	The Enterprise Group name.
short-name	15 characters Allowed Characters A-Z a-z 0-9 -_. ()	No	By default, first 15 characters of Name will be considered.	For short-name. If these characters contain "[]", the short-name becomes invalid.
description	250 characters (max) Allowed Characters A-Z a-z 0-9 _.,()[]:@!\$*+/\-	No	Stored as blank, if no value supplied.	A description about the Enterprise Group, if required.
default	0 (not default) or 1 (set as default)	No	Not default	To specify whether the group is a default group or not.
color-code	6 hex values string. Range from 000000 – FFFFFFFF	No	-	This argument must be supplied only for the "Department" group. This argument is valid only if Roster license is available else this parameter can be ignored.
wage-level	Valid wage level ID, as defined/created in cosec web roster. Max 4 chars	Yes (Only for "Designation" group and Roster License)	-	This argument must be supplied only for "Designation" group. This field is mandatory only if roster license is available. Else this field can be ignored.

Updating Enterprise Group Details

Send a request to update the configuration for an existing Organization, Branch, Department etc. on the COSEC database.

Action

action=update

Syntax

```
http://<servername>/api.svc/<enterprise-group>?action=update;<argument>=<value>...
```

Parameters

Table: Updating Enterprise Group Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
id	1-999999	Yes	-	This is the Enterprise Group ID. The ID is system-generated everytime a new group is defined.
code	6 Characters. (max) Duplicate Code is not allowed Allowed Characters A-Z a-z 0-9 -	Yes	-	The Enterprise Group Code.
name	40 characters Allowed Characters A-Z a-z 0-9 - _ . ()	Yes	-	The Enterprise Group name.
short-name	15 characters Allowed Characters A-Z a-z 0-9 - _ . ()	No	By default, first 15 characters of Name will be considered.	For short-name. If these characters contain "[]", the short-name becomes invalid.
description	250 characters (max) Allowed Characters A-Z a-z 0-9 _ . () [] : @ ! \$ * + / -	No	Stored as blank, if no value supplied.	To edit the Enterprise Group description.
default	0 (not default) or 1 (set as default)	No	Not default	To specify whether the group is a default group or not.
color-code	6 hex values string. Range from 000000 – FFFFFFFF	No	-	This argument must be supplied only for the "Department" group. This argument is valid only if Roster license is available else this parameter can be ignored.

Table: Updating Enterprise Group Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
wage-level	Valid wage level ID, as defined/created in cosec web roster. Max 4 chars	Yes (Only for "Designation" group and Roster License)	-	This argument must be supplied only for "Designation" group. This field is mandatory only if roster license is available. Else this field can be ignored.

This section covers all APIs pertaining to *Time and Attendance* data of COSEC users. These are as follows:

- [Getting Daily Attendance Data](#)
- [Getting Monthly Attendance Data](#)
- [Getting Attendance Correction Details](#)
- [Applying for Attendance Correction](#)
- [Approving Attendance Correction](#)
- [Getting Short Leave/Official IN-OUT Entries](#)
- [Making Short Leave/Official IN-OUT Entries](#)
- [Short Leave/Official In-Out Authorization](#)
- [Getting Attendance Records for Authorization](#)
- [Getting Overtime/C-OFF Authorization Records](#)
- [Processing Monthly Attendance](#)
- [In/Out Reasons](#)
- [Getting Shift Wise Count](#)
- [Getting Site Wise Count](#)
- [Getting Shift-Site Wise Count](#)

Getting Daily Attendance Data

This API allows the user to fetch daily attendance data for employees over a specified time duration and for specific user groups.

Action

action=get

Syntax

```
http://<servername>/api.svc/attendance-daily?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled
ESS	Enabled

Parameters

Table: Getting Daily Attendance Data - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
Field-name	The list of fields is mentioned in the Response Fields table.	No	-	If "field-name" is not mentioned, then configured "field-name" for the respective template in 'API Data Template' will be fetched. User can select multiple "field-name", each separated by ", (comma)" e.g.:"userid, username, orgid..."
date-range	ddmmyyyy-ddmmyyyy	No	Current Day	This is the date range for which data is to be fetched.
range	all organization branch department designation section category grade user	No	All	Range of users for whom data is to be fetched.
Id	1 to 999 (for all the ranges except all & user) 15 Char. (for user) Note: This is the min to max range. In case of a system with only 1-50 id defined then valid range shall be 1-50.	Yes, if mentioned range is other than 'All'.	-	Each range (except all) shall have specific id. System should allow user to select multiple id, each separated by ", (comma)" e.g.:"1, 3, 7, 9..." Or Select a range of id E.g."1-50".

Table: Getting Daily Attendance Data - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
shift-end-elapsed	HH:MM-HH:MM	No	-	If mentioned, only those records will be shown for which: [API Request Date Time - Range(to)] <= Working Shift End Date Time <= [API Request Date Time - Range(from)]
return-field-name	0: display name (As per export template config) 1: actual field (As per view column) 2: both	No	-	If "return-field-name" is not mentioned the response will be as per existing system (i.e. 0 = display name)

Response Fields**Table: Getting Daily Attendance Data - Response Fields**

Field Name	Tag Name	Valid Values	Remarks
User ID	USERID	15 characters.	-
User Name	USERNAME	45 characters	-
Short Name	short_name	max 15 alphanumeric characters	-
Integration Reference	integration_reference	max 20 alphanumeric characters	-
Organization ID	ORGID	1-999999	-
Branch ID	BRCID	1-999999	-
Department ID	DPTID	1-999999	-
Section ID	SECID	1-999999	-
Category ID	CTGID	1-999999	-
Grade ID	GRDID	1-999999	-
Designation ID	DSGID	1-999999	-
Reference No.	ADLUSERID	numeric (8 digits)	-
Gender	GENDER	M : Male F: Female NA : Not available	-
Marital Status	MRTLSTAT	M : Married U : Unmarried NA : Not available	-
Birth Date	BIRTHDT	dd/mm/yyyy	-
Joining Date	JOINDT	dd/mm/yyyy	-
Leaving Date	LEAVEDT	dd/mm/yyyy	-
Process Date	PROCESSDATE	dd/mm/yyyy	-
Process Date	PROCESSDATE_D	mm/dd/yy HH:MM:SS	-
1st Punch	PUNCH1	dd/mm/yyyy HH:MM	-
1st Punch	PUNCH1_DATE	dd/mm/yyyy	-

Table: Getting Daily Attendance Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
1st Punch	PUNCH1_TIME	HH:MM	-
2nd Punch	PUNCH2	dd/mm/yyyy HH:MM	-
2nd Punch	PUNCH2_DATE	dd/mm/yyyy	-
2nd Punch	PUNCH2_TIME	HH:MM	-
3rd Punch	PUNCH3	dd/mm/yyyy HH:MM	-
3rd Punch	PUNCH3_DATE	dd/mm/yyyy	-
3rd Punch	PUNCH3_TIME	HH:MM	-
4th Punch	PUNCH4	dd/mm/yyyy HH:MM	-
2nd Punch	PUNCH2_TIME	HH:MM	-
4th Punch	PUNCH4_DATE	dd/mm/yyyy	-
4th Punch	PUNCH4_TIME	HH:MM	-
5th Punch	PUNCH5	dd/mm/yyyy HH:MM	-
5th Punch	PUNCH5_DATE	dd/mm/yyyy	-
5th Punch	PUNCH5_TIME	HH:MM	-
6th Punch	PUNCH6	dd/mm/yyyy HH:MM	-
6th Punch	PUNCH6_DATE	dd/mm/yyyy	-
6th Punch	PUNCH6_TIME	HH:MM	-
7th Punch	PUNCH7	dd/mm/yyyy HH:MM	-
7th Punch	PUNCH7_DATE	dd/mm/yyyy	-
7th Punch	PUNCH7_TIME	HH:MM	-
8th Punch	PUNCH8	dd/mm/yyyy HH:MM	-
8th Punch	PUNCH8_DATE	dd/mm/yyyy	-
8th Punch	PUNCH8_TIME	HH:MM	-
9th Punch	PUNCH9	dd/mm/yyyy HH:MM	-
9th Punch	PUNCH9_DATE	dd/mm/yyyy	-
9th Punch	PUNCH9_TIME	HH:MM	-
10th Punch	PUNCH10	dd/mm/yyyy HH:MM	-
10th Punch	PUNCH10_DATE	dd/mm/yyyy	-
10th Punch	PUNCH10_TIME	HH:MM	-
11th Punch	PUNCH11	dd/mm/yyyy HH:MM	-
11th Punch	PUNCH11_DATE	dd/mm/yyyy	-
11th Punch	PUNCH11_TIME	HH:MM	-
12th Punch	PUNCH12	dd/mm/yyyy HH:MM	-
12th Punch	PUNCH12_DATE	dd/mm/yyyy	-
12th Punch	PUNCH12_TIME	HH:MM	-

Table: Getting Daily Attendance Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Special Function 1	SPFID1	1-10	1=Official In, 2=Official Out, 3=ShortLeave In, 4=ShortLeave Out, 5=Regular In, 6=Regular Out, 7=Lunch In, 8=Lunch Out, 9=Overtime In, 10=Overtime Out
Special Function 2	SPFID2	1-10	Same as above
Special Function 3	SPFID3	1-10	Same as above
Special Function 4	SPFID4	1-10	Same as above
Special Function 5	SPFID5	1-10	Same as above
Special Function 6	SPFID6	1-10	Same as above
Special Function 7	SPFID7	1-10	Same as above
Special Function 8	SPFID8	1-10	Same as above
Special Function 9	SPFID9	1-10	Same as above
Special Function 10	SPFID10	1-10	Same as above
Special Function 11	SPFID11	1-10	Same as above
Special Function 12	SPFID12	1-10	Same as above
Scheduled Shift	SCHEDULESHIFT	Two Character Code	-
Work Shift	WORKINGSHIFT	Two Character Code	-
Early In	EARLYIN	minutes	-
Early In	EARLYIN_HHMM	HH:MM	-
Late In	LATEIN	minutes	-
Late In	LATEIN_HHMM	HH:MM	-
Early Out	EARLYOUT	minutes	-
Early Out	EARLYOUT_HHMM	HH:MM	-
Overstay	OVERSTAY	minutes	-
Overstay	OVERSTAY_HHMM	HH:MM	-
Overtime	OVERTIME	minutes	-
Overtime	OVERTIME	HHHHHH:MM	-
Work time	WORKTIME	minutes	-
Work time	WORKTIME_HHMM	HH:MM	-
First Half	FIRSTHALF	PR : Present AB : Absent WO : Week Off PH : Public Holiday FB : Field Break RD : Rest Day IN : Official In <Leave Codes>	<Leave Codes> as configured in COSEC

Table: Getting Daily Attendance Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Second Half	SECONDDHALF	PR : Present AB : Absent WO : Week Off PH : Public Holiday FB : Field Break RD : Rest Day IN : Official In <Leave Codes>	<Leave Codes> as configured in COSEC
Manual OT Credit	MANUALOVERTIME_CREDIT	minutes	-
Manual OT Credit	MANUALOVERTIME_CREDIT_HHMM	HH:MM	-
Manual OT Debit	MANUALOVERTIME_DEBIT	minutes	-
Manual OT Debit	MANUALOVERTIME_DEBIT_HHMM	HH:MM	-
Authorized OT	AUTHORIZEDOVERTIME	minutes	-
Authorized OT	AUTHORIZEDOVERTIME	HHHHHH:MM	-
OT Authorization Date	OVERTIMEAUTHORIZATION DATE	dd/mm/yyyy	-
Manual C-Off Credit	MANUALCOFF_CREDIT	minutes	-
Manual C-Off Credit	MANUALCOFF_CREDIT_HHMM	HH:MM	-
Manual C-Off Debit	MANUALCOFF_DEBIT	minutes	-
Manual C-Off Debit	MANUALCOFF_DEBIT_HHMM	HH:MM	-
Authorized C-Off	AUTHORIZEDCOFF	minutes	-
Authorized C-Off	AUTHORIZEDCOFF_HHMM	HH:MM	-
Authorized C-Off Date	AUTHORIZEDCOFFDATE	dd/mm/yyyy	-
Availed C-Off	AVAILEDCOFF	minutes	-
Availed C-Off	AVAILEDCOFF_HHMM	HH:MM	-
Encashed C-Off	ENCASHEDCOFF	minutes	-
Encashed C-Off	ENCASHEDCOFF_HHMM	HH:MM	-
Lunch Duration	LUNCHDURATION	minutes	-
Lunch Duration	LUNCHDURATION_HHMM	HH:MM	-
Late In Lunch	LATEINLUNCH	minutes	-
Late In Lunch	LATEINLUNCH_HHMM	HH:MM	-
Early Out Lunch	EARLYOUTLUNCH	minutes	-
Early Out Lunch	EARLYOUTLUNCH_HHMM	HH:MM	-
WO and PH	WEEKOFFANDHOLIDAY	0 : status is not WO/PH 1 : status is WO/PH	-
Official Duration	OFFICIALDURATION	minutes	-
Personal Duration	PERSONALDURATION	minutes	-
Shift Start	SHIFTSTART	HH:MM	-

Table: Getting Daily Attendance Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Shift End	SHIFTEND	HH:MM	-
Lunch Start	LUNCHSTART	HH:MM	-
Lunch End	LUNCHEND	HH:MM	-
Out Punch	OUTPUNCH	mm/dd/yyyy HH:MM	-
Out Punch	OUTPUNCH_DATE	mm/dd/yyyy	-
Out Punch	OUTPUNCH_TIME	HH:MM	-
Out Special Function	OUTSPFID	1-10	Format same as SPFID1-SPFID12
Site ID	SITEID	1-999	-
Minimum Work hours for Full day	MINWRKHRSFDAY	minutes	-
Minimum Work hours for Full day	MINWRKHRSFDAY_HHMM	HH:MM	-
Minimum Work hours for Half Day	MINWRKHRSFDAY	minutes	-
Minimum Work hours for Half day	MINWRKHRSFDAY_HHMM	HH:MM	-
Shift Type	SHIFTTYPE	0,1,2	0 : Normal 1 : Field Break 2 : Rest Day
Summary	SUMMARY	50 alpha-numeric characters(max)	The summary statement for the attendance date. Eg. : Absent due to late-in
Day Status	DAYSTATUS	0 : WO 1 : PH 2 : WO/PH 3 : Normal	-
Net Work Hours	NETWORKHRS	HHHHHH:MM	Calculated as per Net-work hours policy defined for the user.
Adjusted work hours	ADJUSTEDHRS	HH:MM	The overtime adjustment done in month process for less work hours correction.
In/Out Reason for Punch 1	punch_reason1	30 alphanumeric characters	Return If available.Else blank. From V10R2, Manually entered reasons will also be considered.
In/Out Reason for Punch 2	punch_reason2	30 alphanumeric characters	-
In/Out Reason for Punch 3	punch_reason3	30 alphanumeric characters	-
In/Out Reason for Punch 4	punch_reason4	30 alphanumeric characters	-
In/Out Reason for Punch 5	punch_reason5	30 alphanumeric characters	-
In/Out Reason for Punch 6	punch_reason6	30 alphanumeric characters	-
In/Out Reason for Punch 7	punch_reason7	30 alphanumeric characters	-
In/Out Reason for Punch 8	punch_reason8	30 alphanumeric characters	-
In/Out Reason for Punch 9	punch_reason9	30 alphanumeric characters	-

Table: Getting Daily Attendance Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
In/Out Reason for Punch 10	punch_reason10	30 alphanumeric characters	-
In/Out Reason for Punch 11	punch_reason11	30 alphanumeric characters	-
In/Out Reason for Punch 12	punch_reason12	30 alphanumeric characters	-
Actual OT for OT1	OVERTIME1	minutes	Value of actual overtime
Actual OT for OT2	OVERTIME2	minutes	Value of actual overtime
Actual OT for OT3	OVERTIME3	minutes	Value of actual overtime
Actual OT for OT4	OVERTIME4	minutes	Value of actual overtime
Actual OT for OT5	OVERTIME5	minutes	Value of actual overtime
Authorized OT for OT1	AUTHOT1	minutes	Value of authorized overtime
Authorized OT for OT2	AUTHOT2	minutes	Value of authorized overtime
Authorized OT for OT3	AUTHOT3	minutes	Value of authorized overtime
Authorized OT for OT4	AUTHOT4	minutes	Value of authorized overtime
Authorized OT for OT5	AUTHOT5	minutes	Value of authorized overtime
User-Defined Field 1	field1	upto 30 characters	Valid Characters : A-Z a-z 0-9 space []() . - _
User-Defined Field 2	field2	upto 30 characters	Valid Characters : A-Z a-z 0-9 space []() . - _
User-Defined Field 3	field3	upto 30 characters	Valid Characters : A-Z a-z 0-9 space []() . - _
User-Defined Field 4	field4	upto 30 characters	Valid Characters : A-Z a-z 0-9 space []() . - _
Short Leave Count	short_leave_count	0-99	Availed Short Leave Count
Short Leave Hours	short_leave_hours	HH:MM	Availed Short Leave Duration

Table: Getting Daily Attendance Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Official Hours	official_hours	HH:MM	Availed Official Duration
Organization Name	organization_name	40 Characters	Allowed Characters A-Z a-z 0-9 -_. ()[]
Branch Name	branch_name	40 Characters	Allowed Characters A-Z a-z 0-9 -_. ()[]
Designation Name	designation_name	30 Characters	Allowed Characters A-Z a-z 0-9 -_. ()[]
Section Name	section_name	30 Characters	Allowed Characters A-Z a-z 0-9 -_. ()[]
Department Name	department_name	30 Characters	Allowed Characters A-Z a-z 0-9 -_. ()[]
Category Name	category_name	30 Characters	Allowed Characters A-Z a-z 0-9 -_. ()[]
Grade Name	grade_name	30 Characters	Allowed Characters A-Z a-z 0-9 -_. ()[]

Example

Following are some sample cases for this API:

Sample Request:

To fetch attendance data for the current date (default):

```
http://matrixserver/api.svc/v2/attendance-daily?action=get
```

Sample Response:

```
UserID|UserName|ProcessDate|WorkingShift|Punch1_Time|OutPunch_Time|FirstHalf|SecondHalf|LateIn_HHMM|EarlyOut_HHMM|Overtime_HHMM|AuthorizedOvertime_HHMM|AuthorizedCOFF_HHMM|WorkTime_HHMM|Punch2|Punch3|Punch1
007|ANAND RATHOD|01/01/2015|11||AB|AB|00:00|00:00|00:00|00:00|00:00|00:00||
1|SALIM ANSARI|01/01/2015|23||WO|WO|00:00|00:00|00:00|00:00|00:00|00:00||
10|Sameer Ahmed|01/01/2015|23||WO|WO|00:00|00:00|00:00|00:00|00:00|00:00||
1002|Khushbu Choudhary|01/01/2015|GS|09:27:26|19:13:09|PR|PR|00:00|00:00|00:46|00:00|00:00|08:56|01/01/2015
19:13:09|01/01/2015 09:27:26
1003|Sanjay P. Shah|01/01/2015|GS|09:24:26|18:57:23|PR|PR|00:00|00:00|00:33|00:00|00:00|08:43|01/01/2015
18:57:23|01/01/2015 09:24:26
1008|MAYANK K KORAT|01/01/2015|GS|09:09:35|19:50:40|PR|PR|00:00|00:00|01:41|00:00|00:00|09:51|01/01/2015
19:50:40|01/01/2015 09:09:35
1009|DIPTI K RATHWA|01/01/2015|GS|09:26:25|18:57:47|PR|PR|00:00|00:00|00:31|00:00|00:00|08:41|01/01/2015
18:57:47|01/01/2015 09:26:25
1010|Ankit Das|01/01/2015|GS|09:27:05|19:09:09|PR|PR|00:00|00:00|00:42|00:00|00:00|08:52|01/01/2015
19:09:09|01/01/2015 09:27:05
1011|Suhasini Parekh|01/01/2015|GS|08:56:04|18:50:40|PR|PR|00:00|00:00|00:50|00:00|00:00|09:04|01/01/2015
18:50:40|01/01/2015 08:56:04
<EOT>
```

Sample Request:

To fetch daily-attendance records for a specified date-range.

```
http://matrixserver/api.svc/v2/attendance-daily?action=get;date-range=01012013-02012013
```

Sample Response:

```
UserID|UserName|ProcessDate|WorkingShift|Punch1_Time|OutPunch_Time|FirstHalf|SecondHalf|LateIn_HHMM|EarlyOut_HHMM|Overtime_HHMM|AuthorizedOvertime_HHMM|AuthorizedCOFF_HHMM|WorkTime_HHMM|Punch2|Punch3|Punch1
1|SALIM ANSARI|01/01/2014|23||WO|WO|00:00|00:00|00:00|00:00|00:00|00:00||
1|SALIM ANSARI|02/01/2014|23|08:27:00|19:00:00|PR|PR|00:00|00:00|00:00|00:00|00:00|10:03|02/01/2014
19:00:00|02/01/2014 08:27:00
10|Sameer Ahmed|01/01/2014|23||WO|WO|00:00|00:00|00:00|00:00|00:00|00:00||
10|Sameer Ahmed|02/01/2014|23|08:26:00|17:00:00|PR|PR|00:00|00:00|00:00|00:00|00:00|08:04|02/01/2014
17:00:00|02/01/2014 08:26:00
1002|Khushbu Choudhary|01/01/2014|GS|09:22:00|19:49:00|PR|PR|00:00|00:00|00:00|00:00|00:00|09:37|01/01/2014
19:49:00|01/01/2014 09:22:00
1002|Khushbu Choudhary|02/01/2014|GS|09:10:00|18:48:00|PR|PR|00:00|00:00|00:00|00:00|00:00|08:48|02/01/2014
18:48:00|02/01/2014 09:10:00
1003|Sanjay P. Shah|01/01/2014|GS|09:11:00|18:41:00|PR|PR|00:00|00:00|00:00|00:00|00:00|08:40|01/01/2014
18:41:00|01/01/2014 09:11:00
1003|Sanjay P. Shah|02/01/2014|GS|09:09:00|18:40:00|PR|PR|00:00|00:00|00:00|00:00|00:00|08:41|02/01/2014
18:40:00|02/01/2014 09:09:00
<EOT>
```

Sample Request:

To fetch specific fields in response using the **field-name** optional argument.

```
http://matrixserver/api.svc/v2/attendance-daily?action=get;field-name=userid,firsthalf,secondhalf;date-range=01012013-02012013
```

Sample Response:

```
UserID|firsthalf|secondhalf
1|WO|WO
10|WO|WO
1001|AB|AB
1002|AB|AB
1003|AB|PR
1004|AB|AB
1007|AB|AB
1008|AB|AB
1009|AB|AB
1010|AB|AB
1011|AB|AB
1012|AB|AB
1015|AB|AB
1016|PR|PR
102|AB|AB
1020|AB|AB
1022|AB|AB
1028|PR|PR
1030|AB|AB
<EOT>
```

Getting Monthly Attendance Data

This API allows the user to obtain attendance data for employees for a specific month and for specific user groups in a specific format.

Action

action=get

Syntax

```
http://<servername>/api.svc/attendance-monthly?action=get;<argument>=<value>...
```

User Rights

Same as [Getting Daily Attendance Data](#).

Parameters

Table: Getting Monthly Attendance Data - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
field-name	The list of fields is mentioned in response table.	No	-	If "field-name" is not mentioned, then configured "field-name" for the respective template in 'API Data Template' will be fetched. User can select multiple "field-name", each separated by ", (comma)" e.g.: "userid, username, orgid..."
month-year	the format shall be mmyyyy	No	Current Month and Current Year	The Month and Year for which the data is to be fetched.
range	all organization branch department designation section category grade user	No	All	Range of users for whom data is to be fetched.
id	1 to 999 (for all the ranges except all & user) 15 Char. (for user) Note: This is the min to max range. In case of a system with only 1-50 id defined then valid range shall be 1-50.	Yes, if mentioned range is other than 'All'.	-	Each range (except all) shall have specific id. System should allow user to select multiple id, each separated by ", (coma)" e.g.: "1, 3, 7, 9..." Or Select a range of id E.g. "1-50". Note: - ID is mandatory, if mentioned range is other than all.
return-field-name	0: display name (As per export template config) 1: actual field (As per view column) 2: both	No	-	If "return-field-name" is not mentioned the response will be as per existing system (i.e. 0 = display name)

Response Fields

Table: Getting Monthly Attendance Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
User ID	USERID	15 characters.	-
User Name	USERNAME	45 characters	-
Short Name	short_name	max 15 alphanumeric characters	-
Integration Reference	integration_reference	max 20 alphanumeric characters	-
Organization ID	ORGID	1-999999	-
Branch ID	BRCID	1-999999	-
Department ID	DPTID	1-999999	-
Section ID	SECID	1-999999	-
Category ID	CTGID	1-999999	-
Grade ID	GRDID	1-999999	-
Designation ID	DSGID	1-999999	-
Reference No.	ADLUSERID	numeric (8 digits)	-
Gender	GENDER	M : Male F: Female NA : Not available	-
Marital Status	MRTLSTAT	M : Married U : Unmarried NA : Not available	-
Birth Date	BIRTHDT	dd/mm/yyyy	-
Joining Date	JOINDT	dd/mm/yyyy	-
Leaving Date	LEAVEDT	dd/mm/yyyy	-
Process Year	PYEAR	yyyy	-
Process Month	PMONTH	mm	
Present Days	PRDAYS	Numeric	Multiples of 0.5
Absent Days	ABDAYS	Numeric	Multiples of 0.5
Week-Off Days	WODAYS	Numeric	Multiples of 0.5
Public Holiday Days	PHDAYS	Numeric	Multiples of 0.5
Paid Leave Days	PLDAYS	Numeric	Multiples of 0.5
Tour Days	TRDAYS	Numeric	Multiples of 0.5
Unpaid Leave Days	ULDAYS	Numeric	Multiples of 0.5
Lay Off Days	LODAYS	Numeric	Multiples of 0.5
Early In	EARLYIN	minutes	-
Early In	EARLYIN_HHMM	HH:MM	-
Late In	LATEIN	minutes	-
Late In	LATEIN_HHMM	HH:MM	-
Early Out	EARLYOUT	minutes	-
Early Out	EARLYOUT_HHMM	HH:MM	-

Table: Getting Monthly Attendance Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Overstay	OVERSTAY	minutes	-
Overstay	OVERSTAY_HHMM	HH:MM	-
Total Overtime	OVERTIME	minutes	-
Total Overtime hrs.	OVERTIME	HHHHHH:MM	-
Worktime	WORKTIME	minutes	-
Worktime hrs.	WORKTIME_HHMM	HH:MM	-
Manual OT Credit	MANOTCR	minutes	-
Manual OT Credit	MANOTCR_HHMM	HH:MM	-
Manual OT Debit	MANOTDB	minutes	-
Manual OT Debit	MANOTDB_HHMM	HH:MM	-
Authorized OT	AUTHOT	minutes	-
Authorized OT	AUTHOT	HHHHHH:MM	-
Manual COFF Credit	MANCOFFCR	minutes	-
Manual COFF Credit	MANCOFFCR_HHMM	HH:MM	-
Manual COFF Debit	MANCOFFDB	minutes	-
Manual COFF Debit	MANCOFFDB_HHMM	HH:MM	-
Authorized COFF	AUTHCOFF	minutes	-
Authorized COFF	AUTHCOFF_HHMM	HH:MM	-
Availed COFF	AVLCOFF	minutes	-
Availed COFF	AVLCOFF_HHMM	HH:MM	-
Encashed COFF	ENCCOFF	minutes	-
Encashed COFF	ENCCOFF_HHMM	HH:MM	-
Shift Allowance	SFTALW	-	-
Lunch Break.	LUNCHBREAK	minutes	-
Lunch Break hrs.	LUNCHBREAK_HHMM	HH:MM	-
Lunch Late	LUNCLATE	minutes	-
Lunch Late	LUNCLATE_HHMM	HH:MM	-
Lunch Early	LUNCHEARLY	minutes	-
Lunch Early	LUNCHEARLY_HHMM	HH:MM	-
Weekly Overtime component	OTW1	minutes	OT for first week of the month
Weekly Overtime component	OTW1	HHHHHH:MM	OT for first week of the month
Weekly Overtime component	OTW2	minutes	OT for second week of the month
Weekly Overtime component	OTW2	HHHHHH:MM	OT for second week of the month

Table: Getting Monthly Attendance Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Weekly Overtime component	OTW3	minutes	OT for third week of the month
Weekly Overtime component	OTW3	HHHHHH:MM	OT for third week of the month
Weekly Overtime component	OTW4	minutes	OT for fourth week of the month
Weekly Overtime component	OTW4	HHHHHH:MM	OT for fourth week of the month
Weekly Overtime component	OTW5	minutes	OT for fifth week of the month
Weekly Overtime component	OTW5	HHHHHH:MM	OT for fifth week of the month
Week 1 Work Time	WRKTIMEW1	minutes	-
Week 1 Work Time	WRKTIMEW1_HHMM	HH:MM	-
Week 2 Work Time	WRKTIMEW2	minutes	-
Week 2 Work Time	WRKTIMEW2_HHMM	HH:MM	-
Week 3 Work Time	WRKTIMEW3	minutes	-
Week 3 Work Time	WRKTIMEW3_HHMM	HH:MM	-
Week 4 Work Time	WRKTIMEW4	minutes	-
Week 4 Work Time	WRKTIMEW4_HHMM	HH:MM	-
Week 5 Work Time	WRKTIMEW5	minutes	-
Week 5 Work Time	WRKTIMEW5_HHMM	HH:MM	-
Previous Adjustment days	PREVDAYS	Numeric	Multiples of 0.5
Previous Overtime.	PREVOT	minutes	-
Previous Overtime hrs.	PREVOT	HHHHHH:MM	-
Previous Work.	PREVWRKTIME	minutes	-
Previous Work hrs.	PREVWRKTIME_HHMM	HH:MM	-
Previous Shift Allowance	PREVSFTALW		-
Net Work Time	NETWORKTIME	minutes	-
Net Work Time	NETWORKTIME	HHHHHH:MM	-
Total OT1 (Actual)	TOTAL_OT1	minutes	-
Total OT1 (Actual)	TOTAL_OT1	HHHHHH:MM	-
Total OT2 (Actual)	TOTAL_OT2	minutes	-
Total OT2 (Actual)	TOTAL_OT2	HHHHHH:MM	-
Total OT3 (Actual)	TOTAL_OT3	minutes	-
Total OT3 (Actual)	TOTAL_OT3	HHHHHH:MM	-
Total OT4 (Actual)	TOTAL_OT4	minutes	-

Table: Getting Monthly Attendance Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Total OT4 (Actual)	TOTAL_OT4	HHHHHH:MM	-
Total OT5 (Actual)	TOTAL_OT5	minutes	-
Total OT5 (Actual)	TOTAL_OT5	HHHHHH:MM	-
Total Authorized OT1	TOTAL_AUTH_OT1	minutes	-
Total Authorized OT1	TOTAL_AUTH_OT1	HHHHHH:MM	-
Total Authorized OT2	TOTAL_AUTH_OT2	minutes	-
Total Authorized OT2	TOTAL_AUTH_OT2	HHHHHH:MM	-
Total Authorized OT3	TOTAL_AUTH_OT3	minutes	-
Total Authorized OT3	TOTAL_AUTH_OT3	HHHHHH:MM	-
Total Authorized OT4	TOTAL_AUTH_OT4	minutes	-
Total Authorized OT4	TOTAL_AUTH_OT4	HHHHHH:MM	-
Total Authorized OT5	TOTAL_AUTH_OT5	minutes	-
Total Authorized OT5	TOTAL_AUTH_OT5	HHHHHH:MM	-
User-Defined Field 1	field1	upto 30 characters	Valid Characters : A-Z a-z 0-9 space []() . - _
User-Defined Field 2	field2	upto 30 characters	Valid Characters : A-Z a-z 0-9 space []() . - _
User-Defined Field 3	field3	upto 30 characters	Valid Characters : A-Z a-z 0-9 space []() . - _
User-Defined Field 4	field4	upto 30 characters	Valid Characters : A-Z a-z 0-9 space []() . - _
Short Leave Count	short_leave_count	0-9999	Availed Short Leave Count
Short Leave Hours	short_leave_hours	HH:MM	Availed Short Leave Duration
Official Hours	official_hours	HH:MM	Availed Official Duration
Max Short Leave Count	max_short_leave_count	0-99	Maximum Allowed Short Leave Count
Max Short Leave Hours	max_short_leave_hours	HHHH:MM	Maximum Allowed Short Leave Duration

Table: Getting Monthly Attendance Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Late In Count	late_in_count	0-99	Availed Late IN Count
Max Late In Count	max_late_in_count	0-99	Maximum Allowed Late IN Count
Late In Duration	late_in_duration	minutes	Availed Late IN Duration
Late In Duration	late_in_duration_HHMM	HHH:MM	Availed Late IN Duration HHH:MM
Max Late In Duration	max_late_in_duration	minutes	Maximum Allowed Late IN Duration
Max Late In Duration	max_late_in_duration_HHMM	HHH:MM	Maximum Allowed Late IN Duration HHH:MM
Early Out Count	early_out_count	0-99	Availed Early Out Count
Max Early Out Count	max_early_out_count	0-99	Maximum Allowed Early Out Count
Early Out Duration	early_out_duration	minutes	Availed Early OUT Duration
Early Out Duration	early_out_duration_HHMM	HHH:MM	Availed Early OUT Duration HHH:MM
Max Early Out Duration	max_early_out_duration	minutes	Maximum Allowed Early OUT Duration
Max Early Out Duration	max_early_out_duration_HHMM	HHH:MM	Maximum Allowed Early OUT Duration HHH:MM
Late-IN-Early Out Count	late_in_early_out_count	0-99	Availed Late IN- Early Out Count (Combined)
Max Late-IN-Early Out Count	max_late_in_early_out_count	0-99	Maximum Allowed Late IN- Early Out Count (Combined)
Late-IN-Early Out Duration	late_in_early_out_duration	minutes	Availed Late IN Duration HHH:MM
Late-IN-Early Out Duration	late_in_early_out_duration_HHMM	HHH:MM	Availed Late IN- Early Out Duration HHH:MM
Max Late-IN-Early Out Duration	max_late_in_early_out_duration	minutes	Maximum Allowed Late IN- Early Out Duration
Max Late-IN-Early Out Duration	max_late_in_early_out_duration_HHMM	HHH:MM	Maximum Allowed Late IN- Early Out Duration HHH:MM
Less Work Hours Duration	less_work_hours_duration	minutes	Availed Less Work hours Duration
Less Work Hours Duration	less_work_hours_duration_HHMM	HHH:MM	Availed Less Work hours Duration HHH:MM

Table: Getting Monthly Attendance Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Max Less Work Hours Duration	max_less_work_hours_duration	minutes	Maximum Allowed Less Work Hours Duration
Max Less Work Hours Duration	max_less_work_hours_duration_HHMM	HHH:MM	Maximum Allowed Less Work Hours Duration HHH:MM

Example

This example presents a case where monthly-attendance records are to be fetched for Organization ID '1'.

Sample Request:

```
http://matrixserver/api.svc/v2/attendance-monthly?action=get;range=organization;id=1
```

Sample Response:

```
UserID|UserName|PYear|PMonth|PRDays|ABDays|WorkTime_HHMM|PLDays|TRDays
007|ANAND RATHOD|2015|1|0.0|23.0|000:00|0.0|0.0
1053|JINU SAM|2015|1|19.5|0.5|197:20|2.0|0.0
1054|PARSHV SHAH|2015|1|19.0|1.0|217:27|1.0|0.0
1059|PRATIK PATEL|2015|1|0.0|21.0|000:00|0.0|0.0
1062|MANTHAN PATEL|2015|1|22.0|0.0|199:25|0.0|0.0
1110|Nishit Gandhi|2015|1|20.0|0.0|191:31|2.0|0.0
1256|Arvind|2015|1|0.0|21.0|000:00|0.0|0.0
1309|KAMAL TALUKDAR|2015|1|26.0|0.0|000:00|0.0|0.0
1311|PANKIL GANDA|2015|1|17.5|2.0|160:21|1.5|0.0
<EOT>
```

Getting Attendance Correction Details

COSEC provides the option for manual correction of attendance data if required. ESS users can apply for attendance correction in exceptional cases (e.g. a missed OUT punch), and these applications shall require authorization by either:

- a. Any System Account user with rights enabled for attendance correction authorization.
- b. Any ESS user with reporting in-charge rights over the applicant.

Based on the status of approval, an Attendance Correction application on COSEC falls in one of the three categories - *Pending*, *Approved* or *Rejected*.

This API enables the user to fetch the details of all existing attendance correction applications on the COSEC database as per the specified parameters.

Action

action=get

Syntax

```
http://<servername>/api.svc/attendance-correction?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. User must have rights on following pages (COSEC Web Application): Time and Attendance > Authorization/Approval > Attendance Correction
ESS	Enabled. User must have rights on following ESS pages: ESS > Time and Attendance > Attendance Correction

Parameters

Table: Getting Attendance Correction Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
user-filter	0: individual 1: group	No	0 (individual)	If user-filter=0, a single user's records will be returned. If user-filter=1, records for all the group members will be returned (applicable only if the login user is a reporting in-charge or system account user)

Table: Getting Attendance Correction Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	10 characters	Yes	-	For ESS user: If user-filter=0, the userid should be login user's ID or of any user belonging to the group for which login user is reporting in-charge. If user-filter=1, the userid should be same as login user's ID. The login user must be a reporting in-charge. For a System Account user: If user-filter=0, the userid can be any user's id. (If the System Account user has rights on that user) If user-filter=1, the userid can be any user's ID (If the System Account user has rights on that user and the user is a reporting in-charge).
date-range	ddmmyyyy-ddmmyyyy	No	Current date	The actual process date to be considered for fetching records.
status	0: All 1: Pending 2: Approved 3: Rejected	No	0 (All)	The status of Attendance Correction application

Response Fields**Table: Getting Attendance Correction Details - Response Fields**

Field Name	Tag Name	Valid Values	Remarks
Application ID	application-id	numeric	-
Applied Date	applied-date	mm/dd/yyyy HH:MM	-
User ID	user-id	15 characters	Allowed characters: A-Z a-z 0-9 /_\.,@:
User Name	user-name	40 characters	Allowed characters: A-Z a-z 0-9 _.,()[]
Short Name	short-name	Max. 15 alphanumeric characters	-
Attendance Date	date	mm/dd/yyyy	-
Verdict Date	verdict-date	mm/dd/yyyy HH:MM	-
Application Status	status	1: pending 2: approved 3: rejected	-

Table: Getting Attendance Correction Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Previous Punch 1	previous-punch1	mm/dd/yyyy HH:MM	<p>These are the punch values, before application was submitted.</p> <p>When application is in pending state : Previous values are same as the values available in daily attendance template response.</p> <p>Once an application is approved, the previous values should contain the punch values that were there before application was submitted.</p>
Previous Punch 2	previous-punch2		
Previous Punch 3	previous-punch3		
Previous Punch 4	previous-punch4		
Previous Punch 5	previous-punch5		
Previous Punch 6	previous-punch6		
Previous Punch 7	previous-punch7		
Previous Punch 8	previous-punch8		
Previous Punch 9	previous-punch9		
Previous Punch 10	previous-punch10		
Previous Punch 11	previous-punch11		
Previous Punch 12	previous-punch12		
Previous Shift Code	previous-shift	2 characters code	-
Previous Week-Off Status	previous-wo-status	0 or 1	-
Previous PH Status	previous-ph-status	0 or 1	-
Changed Punch 1	changed-punch1	mm/dd/yyyy HH:MM	<p>For a new application being submitted or for an application in pending state, these are the applied values (values manually entered by the user).</p> <p>Once an application gets approved, the changed values and actual values (as available in daily attendance template) become the same.</p>
Changed Punch 2	changed-punch2		
Changed Punch 3	changed-punch3		
Changed Punch 4	changed-punch4		
Changed Punch 5	changed-punch5		
Changed Punch 6	changed-punch6		
Changed Punch 7	changed-punch7		
Changed Punch 8	changed-punch8		
Changed Punch 9	changed-punch9		
Changed Punch 10	changed-punch10		
Changed Punch 11	changed-punch11		
Changed Punch 12	changed-punch12		
Changed Shift Code	changed-shift	2 character code	-
Changed WO Status	changed-wo-status	0 or 1	-
Changed PH Status	changed-ph-status	0 or 1	-
Break Start (Associated Punch)	previous-break-start-punch	0, 1 - N	<p>"0" implies that there is no associated punch with Break Start.</p> <p>Values "1-N" imply which punch is stored as Break Start.</p> <p>E.g. "2" implies that Punch 2 is stored as Break Start.</p>

Table: Getting Attendance Correction Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Break Start Time	previous-break-start-time	mm/dd/yyyy HH:MM	Punch time for break start. If a Punch was overwritten by subsequent punches, this will be the event time.
Break Start SPF	previous-break-start-spfid	blank or 8	Break Start Special Function ID.
Break End (Associated Punch)	previous-break-end-punch	0, 1 - N	"0" implies that there is no associated punch with Break End. Values "1-N" imply which punch is stored as Break End. E.g. "2" implies that Punch 2 is stored as Break End.
Break End Time	previous-break-end-time	mm/dd/yyyy HH:MM	Punch time for break end. If a Punch was overwritten by subsequent punches, this will be the event time.
Break End SPF	previous-break-end-spfid	blank or 7	Break End Special Function ID
Break Start (Associated Punch)	changed-break-start-punch	0, 1 - N	"0" implies that there is no associated punch with Break Start. Values "1-N" imply which punch is stored as Break Start. E.g. "2" implies that Punch 2 is stored as Break Start.
Break Start Time	changed-break-start-time	mm/dd/yyyy HH:MM	Punch time for break start. If a Punch was overwritten by subsequent punches, this will be the event time.
Break Start SPF	changed-break-start-spfid	blank or 8	-
Break End (Associated Punch)	changed-break-end-punch	0, 1 - N	"0" implies that there is no associated punch with Break End. Values "1-N" imply which punch is stored as Break End. E.g. "2" implies that Punch 2 is stored as Break End.
Break End Time	changed-break-end-time	mm/dd/yyyy HH:MM	Punch time for break end. If a Punch was overwritten by subsequent punches, this will be the event time.
Break End SPF	changed -break-end-spfid	blank or 7	-

Applying for Attendance Correction

Use this to submit a new attendance correction request.

Action

action=set

Syntax

```
http://<servername>/api.svc/attendance-correction?action=set;<argument>=<value>...
```

User Rights

Same as [Getting Attendance Correction Details](#).

Parameters

Table: Applying for Attendance Correction - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	15 characters	Yes	-	Login User must have necessary rights on this user.
process-date	ddmmyyyy	Yes	-	The date for which application is being submitted. Note: Process Date should not be greater than current date.
punch1-datetime	ddmmyyyyHHMM	No	-	HHMM implies that time should be in 24-hours format only. Note: Punch Date mentioned in the request can be 1 date prior to Process Date or 2 subsequent dates from the process date. Punch date outside this range will not be allowed.
punch2-datetime				
punch3-datetime				
punch4-datetime				
punch5-datetime				
punch6-datetime				
punch7-datetime				
punch8-datetime				
punch9-datetime				
punch10-datetime				
punch11-datetime				
punch12-datetime				
shift	two characters	Yes	-	This will contain the configured shift ID.
wo	0, 1	If 'ph' is mentioned, then 'wo' is mandatory.	-	This is the Week Off status. If wo=1, day status is WO. If both wo=1 and ph=1 day status is WO
ph	0, 1	If 'wo' is mentioned, then 'ph' is mandatory.	-	If ph=1, day status is PH. If both wo=1 and ph=1 day status is WO

Table: Applying for Attendance Correction - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
break-start-punch	0 : Edit 99 : Add 1 – N : Existing	No	-	<p>"0" implies that there is no associated punch with Break Start. "99" means that a new punch is being added as Break Start Punch. A value "1-N" implies the value of the existing punch for Break Start.</p> <p>E.g. If the value is "2", this implies that Punch 2 is stored as Break Start.</p>
break-start-time	ddmmyyyyHHMM	No	-	Punch time for break start. If a Punch was overwritten by subsequent punches, this will be the event time.
break-end-punch	0 : Edit 99 : Add 1 – N : Existing	No	-	<p>"0" implies that there is no associated punch with Break End. "99" means that a new punch is being added as Break End Punch A value "1-N" implies the value of the existing punch for Break Start. E.g. If the value is "2", this implies that Punch 2 is stored as Break Start.</p>
break-end-time	ddmmyyyyHHMM	No	-	Punch time for break end. If a Punch was overwritten by subsequent punches, this will be the event time.



Punch Date mentioned in the request can be 1 date prior to Process Date or 2 subsequent dates from the process date.

Example

To submit an attendance correction request for the 2nd punch:

Sample Request:

```
http://matrixserver/api.svc/v2/attendance-correction?action=set;userid=92;process-date=07032014;punch2-  
datetime=070320142146;shift=GS
```

Sample Response:

```
success: <response code> : saved successfully
```

Deleting Attendance Correction Applications

This enables the user to delete existing Attendance Correction Applications from the COSEC database by specifying the Application ID.

Action

action=delete

Syntax

`http://<servername>/api.svc/attendance-correction?action=set;<argument>=<value>...`

User Rights

Same as [Getting Attendance Correction Details](#).

Parameters

Table: Deleting Attendance Correction Applications - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
application-id	numeric	Yes	-	This is the identification number for the attendance correction application.

Approving Attendance Correction

This shall be used to approve/reject attendance correction applications submitted to a particular user.

Action

action=set

Syntax

```
http://<servername>/api.svc/attendance-correction-approval?action=set;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. User must have rights on following pages (COSEC Web Application): Time and Attendance > Authorization/Approval > Attendance Correction
ESS	Enabled if User is a reporting group in-charge and has permissions on page: Attendance Correction

Parameters

Table: Approving Attendance Correction - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
application-id	numeric	Yes	-	This is the identification number for the attendance correction application. The login user must have rights on the user ID associated with this Application ID.
userid	15 characters	Yes	-	This is the identification number for the user whose attendance correction is to be approved.
verdict	0: reject 1: approve	Yes	-	This is the approval verdict to be applied to an application. A verdict can be passed only for applications that are pending for approval.



- Any change in Punch timings can cause a change in Break Hours, Work Hours and User's Absent/ Present status.
- If a reporting group has two reporting in-charges, the authorization rights of the 2nd reporting in-charge will depend on the "Authorization Mode" configured for the Reporting Group on the COSEC Web Application. For e.g. if Authorization Mode is "1 Then 2", system will not accept a verdict request from the 2nd in-charge before the 1st reporting in-charge.

Getting Short Leave/Official IN-OUT Entries

This API can be used to fetch details of all Short Leave/Official IN-OUT Entries submitted on the COSEC system.

Action

action=get

Syntax

```
http://<servername>/api.svc/short-leave-entry?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. User must have rights on following pages (COSEC Web Application): Time Attendance > Authorization/Approval > Short Leave/ Official IN-OUT
ESS	Enabled. User must have rights on following ESS pages: ESS > Time Attendance > Short Leave/Official IN-OUT

Parameter

Table: Getting Short Leave/Official IN-OUT Entries - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
user-filter	0: individual 1: group	No	0 (individual)	If user-filter=0, a single user's records will be returned. If user-filter=1, records for all the group members will be returned (applicable only if login user is a reporting in-charge or system account user)
userid	15 characters	Yes	-	This is the identification number for the user whose data is to be fetched. For ESS user: If user-filter=0, the userid should be login user's ID or of any user belonging to the group for which login user is reporting in-charge. If user-filter=1, the userid should be same as login user's ID. The login user must be a reporting in-charge. For a System Account user: If user-filter=0, the userid can be any user's id. (If the System Account user has rights on that user) If user-filter=1, the userid can be any user's ID (If the System Account user has rights on that user and the user is a reporting in-charge).

Table: Getting Short Leave/Official IN-OUT Entries - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
date-range	ddmmyyyy-ddmmyyyy	No	Records for 30 days prior to current date will be fetched if no range is specified.	Date range for which short-leave/official in-out applications need to be fetched.
entry-type	1: Official 2: Short Leave	No	2 (Short Leave)	If entry-type = 2, Only those records will be returned for which special function is of type: short-leave in/short-leave out. If entry-type = 1, Only those records will be returned for which special function is of type: official in/official out.
authorization-status	0: All 1: Pending 2: Approved 3: Rejected	No	0 (All)	Applicable in case of short leave/official in-out authorization by Reporting in-charge, where member's entries need to be fetched.

Response Fields**Table: Getting Short Leave/Official IN-OUT Entries - Response Fields**

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	15 characters	Allowed characters: A-Z a-z 0-9 /_\.\@:
User Name	user-name	45 characters	Allowed characters: A-Z a-z 0-9 -_.()[]
Short Name	short-name	Max. 15 alphanumeric characters	-
Entry Type	entry-type	1: Official 2: Short Leave	-
Attendance Date	attendance-date	mm/dd/yyyy	-
1st Punch	punch1	mm/dd/yyyy HH:MM	-
2nd Punch	punch2	mm/dd/yyyy HH:MM	-
3rd Punch	punch3	mm/dd/yyyy HH:MM	-
4th Punch	punch4	mm/dd/yyyy HH:MM	-
5th Punch	punch5	mm/dd/yyyy HH:MM	-
6th Punch	punch6	mm/dd/yyyy HH:MM	-
7th Punch	punch7	mm/dd/yyyy HH:MM	-
8th Punch	punch8	mm/dd/yyyy HH:MM	-
9th Punch	punch9	mm/dd/yyyy HH:MM	-
10th Punch	punch10	mm/dd/yyyy HH:MM	-
11th Punch	punch11	mm/dd/yyyy HH:MM	-

Table: Getting Short Leave/Official IN-OUT Entries - Response Fields

Field Name	Tag Name	Valid Values	Remarks
12th Punch	punch12	mm/dd/yyyy HH:MM	-
Special Function 1	spfid1	1-10	1=Official In, 2=Official Out, 3=ShortLeave In, 4=ShortLeave Out, 5=Regular In, 6=Regular Out, 7=Lunch In, 8=Lunch Out, 9=Overtime In, 10=Overtime Out
Special Function 2	spfid2		
Special Function 3	spfid3		
Special Function 4	spfid4		
Special Function 5	spfid5		
Special Function 6	spfid6		
Special Function 7	spfid7		
Special Function 8	spfid8		
Special Function 9	spfid9		
Special Function 10	spfid10		
Special Function 11	spfid11		
Special Function 12	spfid12		
In/Out Reason for Punch 1	punch-reason1	30 alphanumeric characters	From V10R2, manual entered reasons will also be considered.
In/Out Reason for Punch 2	punch-reason2	30 alphanumeric characters	
In/Out Reason for Punch 3	punch-reason3		
In/Out Reason for Punch 4	punch-reason4		
In/Out Reason for Punch 5	punch-reason5		
In/Out Reason for Punch 6	punch-reason6		
In/Out Reason for Punch 7	punch-reason7		
In/Out Reason for Punch 8	punch-reason8		
In/Out Reason for Punch 9	punch-reason9		
In/Out Reason for Punch 10	punch-reason10		
In/Out Reason for Punch 11	punch-reason11		
In/Out Reason for Punch 12	punch-reason12		
Shift	shift	Two character code	-
First Half	firsthalf	PR : Present AB : Absent WO : Week Off PH : Public Holiday FB : Field Break RD : Rest Day IN : Official In <Leave Codes>	<Leave Codes>as configured in COSEC
Second Half	secondhalf	PR : Present AB : Absent WO : Week Off PH : Public Holiday FB : Field Break RD : Rest Day IN : Official In <Leave Codes>	<Leave Codes>as configured in COSEC

Table: Getting Short Leave/Official IN-OUT Entries - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Week-Off	wo	0: Status is not WO 1: Status is WO	-
Public Holiday	ph	0: Status is not PH 1: Status is PH	-
Gross Work Hours	gross-workhours	HH:MM	Gross Work Hours
Extra Work Hours	extra-workhours	HH:MM	Extra Work Hours
Net Work Hours	net-workhours	HHHHHH:MM	Net Work Hours
Authorization Status	authorization-status	1 : Pending 2 : Approved 3 : Rejected	Applicable in case of short leave/official in-out authorization by a Reporting in-charge, where member's entries need to be fetched.

Making Short Leave/Official IN-OUT Entries

This can be used to submit Short Leave/Official In-Out Entries to Reporting In-charge for authorization.

Action

action=set

Syntax

http://<servername>/api.svc/short-leave-entry?action=<set>;argument=<value>.. .

User Rights

Same as *Getting Short Leave/Official IN-OUT Entries*.

Parameters

Table: Making Short Leave/Official IN-OUT Entries - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	15 characters	Yes	-	The login user must have appropriate rights on this User ID.
attendance-date	ddmmyyyy	Yes	-	Date for which the entry application needs to be submitted.
spfid1	0: No Special function 1: Official 2: Short Leave	No	N/A	Entry markings for punches 1 to 12. Entry for a punch will be submitted successfully only if the punch is available.
spfid2				
spfid3				
spfid4				
spfid5				
spfid6				
spfid7				
spfid8				
spfid9				
spfid10				
spfid11				
spfid12				
reason-id1	0: reason-1 1-99: In/Out Reason IDs	No	N/A	0: Reason should be entered manually by user in reason-1 field. 1-99: In/Out reason-id as selected by the User.
reason-1	0-9, a-z,A-Z,[space],[.],(,),-,_	No	N/A	Reason to be entered by the user.
reason-id2	0: reason-2 1-99: In/Out Reason IDs	No	N/A	0: Reason should be entered manually by user in reason-2 field. 1-99: In/Out reason-id as selected by the User.

Table: Making Short Leave/Official IN-OUT Entries - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
reason-2	0-9, a-z,A-Z,[space],[.],(,),-,_	No	N/A	Reason to be entered by the user.
reason-id3	0: reason-3 1-99: In/Out Reason IDs	No	N/A	0: Reason should be entered manually by user in reason-3 field. 1-99: In/Out reason-id as selected by the User.
reason-3	0-9, a-z,A-Z,[space],[.],(,),-,_	No	N/A	Reason to be entered by the user.
reason-id4	0: reason-4 1-99: In/Out Reason IDs	No	N/A	0: Reason should be entered manually by user in reason-4 field. 1-99: In/Out reason-id as selected by the User.
reason-4	0-9, a-z,A-Z,[space],[.],(,),-,_	No	N/A	Reason to be entered by the user.
reason-id5	0: reason-5 1-99: In/Out Reason IDs	No	N/A	0: Reason should be entered manually by user in reason-5 field. 1-99: In/Out reason-id as selected by the User.
reason-5	0-9, a-z,A-Z,[space],[.],(,),-,_	No	N/A	Reason to be entered by the user.
reason-id6	0: reason-6 1-99: In/Out Reason IDs	No	N/A	0: Reason should be entered manually by user in reason-6 field. 1-99: In/Out reason-id as selected by the User.
reason-6	0-9, a-z,A-Z,[space],[.],(,),-,_	No	N/A	Reason to be entered by the user.
reason-id7	0: reason-7 1-99: In/Out Reason IDs	No	N/A	0: Reason should be entered manually by user in reason-7 field. 1-99: In/Out reason-id as selected by the User.
reason-7	0-9, a-z,A-Z,[space],[.],(,),-,_	No	N/A	Reason to be entered by the user.
reason-id8	0: reason-8 1-99: In/Out Reason IDs	No	N/A	0: Reason should be entered manually by user in reason-8 field. 1-99: In/Out reason-id as selected by the User.
reason-8	0-9, a-z,A-Z,[space],[.],(,),-,_	No	N/A	Reason to be entered by the user.
reason-id9	0: reason-9 1-99: In/Out Reason IDs	No	N/A	0: Reason should be entered manually by user in reason-9 field. 1-99: In/Out reason-id as selected by the User.
reason-9	0-9, a-z,A-Z,[space],[.],(,),-,_	No	N/A	Reason to be entered by the user.
reason-id10	0: reason-10 1-99: In/Out Reason IDs	No	N/A	0: Reason should be entered manually by user in reason-10 field. 1-99: In/Out reason-id as selected by the User.
reason-10	0-9, a-z,A-Z,[space],[.],(,),-,_	No	N/A	Reason to be entered by the user.

Table: Making Short Leave/Official IN-OUT Entries - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
reason-id11	0: reason-11 1-99: In/Out Reason IDs	No	N/A	0: Reason should be entered manually by user in reason-11 field. 1-99: In/Out reason-id as selected by the User.
reason-11	0-9, a-z,A-Z,[space],[,],[.],[,],[-,[_,	No	N/A	Reason to be entered by the user.
reason-id12	0: reason-12 1-99: In/Out Reason IDs	No	N/A	0: Reason should be entered manually by user in reason-12 field. 1-99: In/Out reason-id as selected by the User.
reason-12	0-9, a-z,A-Z,[space],[,],[.],[,],[-,[_,	No	N/A	Reason to be entered by the user.



The entry application will submit only the special function value: short-leave or official.

In or Out will depend on the punch-system (2-Punch / 4-Punch / N-Punch etc.) applicable to the user and shall be determined on the server side.

Possible values are:

- 1 : Official In
- 2 : Official Out
- 3 : Short-Leave In
- 4 : Short-Leave Out

Short Leave/Official In-Out Authorization

This API can be used to approve or reject all Short-Leave/Official IN-OUT applications submitted to the Reporting In-charge.

Action

action=set

Syntax

```
http://<servername>/api.svc/short-leave-authorization?action=set;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. User must have rights on following pages (COSEC Web Application): Time Attendance > Authorization/Approval > Short Leave/ Official IN-OUT
ESS	Enabled. User must be a reporting in-charge with rights on the following ESS pages: ESS > Approval/Authorization> Short Leave/Official IN-OUT Authorization

Parameters

Table: Short Leave/Official In-Out Authorization - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
Userid	15 characters	Yes	-	This is the identification number for the user whose entries are to be authorized. For ESS user, It can be the logged in user's ID. Or the ID of users assigned under his reporting group. For System Account user, it can be user ID of any user he has rights on.
Attendance-date	ddmmyyyy	Yes	-	This is the attendance date for which the authorization is to be performed.
authorization-for	1: Official 2: Short Leave	Yes	-	This is the type of entry for which authorization is to be performed.
verdict	1: approve 2: reject	Yes	-	This is the approval verdict to be applied to an application. A verdict can be passed only for applications that are pending for approval.

Getting Attendance Records for Authorization

This can be used to fetch the attendance records of a single user or multiple users based on a specified date range and the specified authorization status (i.e. pending or authorized). These records can then be authorized by the respective supervisors.

Action

action=get

Syntax

```
http://<servername>/api.svc/attendance-authorization?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. User must have rights on following pages (COSEC Web Application): Time Attendance > Authorization/Approval > Daily Attendance
ESS	Enabled. User must be a reporting in-charge with rights on the following ESS pages: ESS > Approval/Authorization > Attendance Authorization

Parameters

Table: Getting Attendance Records for Authorization - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
user-filter	0: individual 1: group	No	0 (individual)	If user-filter=0, a single user's records will be returned. If user-filter=1, records for all the group members will be returned (applicable only if login user is a reporting in-charge or system account user)

Table: Getting Attendance Records for Authorization - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	15 characters	Yes	-	<p>This is the identification number for the user whose data is to be fetched.</p> <p>For ESS user: If user-filter=0, the userid should be login user's ID or of any user belonging to the group for which login user is reporting in-charge. If user-filter=1, the userid should be same as login user's ID. The login user must be a reporting in-charge.</p> <p>For a System Account user: If user-filter=0, the userid can be any user's id. (If the System Account user has rights on that user) If user-filter=1, the userid can be any user's ID (If the System Account user has rights on that user and the user is a reporting in-charge).</p>
date-range	ddmmyyyy-ddmmyyyy	No	Records for past 30 days up to the current date will be fetched if no range is specified.	Date range for which records need to be fetched.
authorization-status	0: Pending 1: Authorized	No	0 (Pending)	Fetch attendance records based on their authorization status.

Response Fields**Table: Getting Attendance Records for Authorization - Response Fields**

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	15 characters	Allowed characters: A-Z a-z 0-9 /_\.,@:
User Name	user-name	45 characters	Allowed characters: A-Z a-z 0-9 _.,()[]
Short Name	short-name	Max. 15 alphanumeric characters	-
Attendance Date	attendance-date	mm/dd/yyyy	-
1st Punch	punch1	mm/dd/yyyy HH:MM	-
2nd Punch	punch2	mm/dd/yyyy HH:MM	-
3rd Punch	punch3	mm/dd/yyyy HH:MM	-
4th Punch	punch4	mm/dd/yyyy HH:MM	-
5th Punch	punch5	mm/dd/yyyy HH:MM	-
6th Punch	punch6	mm/dd/yyyy HH:MM	-
7th Punch	punch7	mm/dd/yyyy HH:MM	-

Table: Getting Attendance Records for Authorization - Response Fields

Field Name	Tag Name	Valid Values	Remarks
8th Punch	punch8	mm/dd/yyyy HH:MM	-
9th Punch	punch9	mm/dd/yyyy HH:MM	-
10th Punch	punch10	mm/dd/yyyy HH:MM	-
11th Punch	punch11	mm/dd/yyyy HH:MM	-
12th Punch	punch12	mm/dd/yyyy HH:MM	-
Special Function 1	spfid1	1-10	1=Official In, 2=Official Out, 3=ShortLeave In, 4=ShortLeave Out, 5=Regular In, 6=Regular Out, 7=Lunch In, 8=Lunch Out, 9=Overtime In, 10=Overtime Out
Special Function 2	spfid2		
Special Function 3	spfid3		
Special Function 4	spfid4		
Special Function 5	spfid5		
Special Function 6	spfid6		
Special Function 7	spfid7		
Special Function 8	spfid8		
Special Function 9	spfid9		
Special Function 10	spfid10		
Special Function 11	spfid11		
Special Function 12	spfid12		
Shift	shift	Two character code	-
First Half	firsthalf	PR : Present AB : Absent WO : Week Off PH : Public Holiday FB : Field Break RD : Rest Day IN : Official In <Leave Codes>	<Leave Codes>as configured in COSEC
Second Half	secondhalf	PR : Present AB : Absent WO : Week Off PH : Public Holiday FB : Field Break RD : Rest Day IN : Official In <Leave Codes>	<Leave Codes>as configured in COSEC
Week-Off	wo	0: Status is not WO 1: Status is WO	-
Public Holiday	ph	0: Status is not PH 1: Status is PH	-
Gross Work Hours	gross-workhours	HH:MM	Gross Work Hours
Extra Work Hours	extra-workhours	HH:MM	Extra Work Hours
Net Work Hours	net-workhours	HH:MM	Net Work Hours
Total Overtime	total-overtime	HH:MM	-

Table: Getting Attendance Records for Authorization - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Authorization Status	authorized	1 : Pending Authorization 2 : Authorized	-
Break Start (Associated Punch)	break-start-punch	0, 1 - N	"0" implies that there is no associated punch with Break Start. Values "1-N" imply which punch is stored as Break Start. E.g. "2" implies that Punch 2 is stored as Break Start.
Break Start Time	break-start-time	mm/dd/yyyy HH:MM	Punch time for break start. If a Punch was overwritten by subsequent punches, this will be the event time.
Break End (Associated Punch)	break-end-punch	0, 1 - N	"0" implies that there is no associated punch with Break End. Values "1-N" imply which punch is stored as Break End. E.g. "2" implies that Punch 2 is stored as Break End.
Break End Time	break-end-time	mm/dd/yyyy HH:MM	Punch time for break end. If a Punch was overwritten by subsequent punches, this will be the event time.

Authorizing Attendance

This can be used to authorize attendance records for users.

Action

action=set

Syntax

`http://<servername>/api.svc/attendance-authorization?action=set;<argument>=<value>...`

User Rights

Same as [Getting Attendance Records for Authorization](#).

Parameters

Table: Authorizing Attendance - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	15 characters	Yes	-	This is the identification number for the user whose attendance record is to be authorized. Note: Login user should have necessary rights on this user to successfully send authorization request.
Attendance-date	ddmmyyyy	Yes	-	This is the attendance date for which records are to be authorized.
verdict	1: authorize 2: revoke	Yes	-	This is the verdict to be applied to an attendance record pending for authorization.

Getting Overtime/C-OFF Authorization Records

To fetch Overtime/C-OFF Authorization records of users.

Action

action=get

Syntax

```
http://<servername>/api.svc/ot-coff-authorization?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. User must have rights on following pages (COSEC Web Application): Time Attendance > Authorization/Approval > Overtime/C-OFF
ESS	Enabled. User must be a reporting in-charge with rights on the following ESS pages: ESS > Time Attendance > Overtime/C-OFF Authorization

Parameters

Table: Getting Overtime/C-OFF Authorization Records - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
User-filter	0: individual 1: group	No	0 (individual)	If user-filter=0, a single user's records will be returned. If user-filter=1, records for all the group members will be returned (applicable only if login user is a reporting in-charge or system account user)

Table: Getting Overtime/C-OFF Authorization Records - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
Userid	15 characters	Yes	-	<p>This is the identification number for the user whose data is to be fetched.</p> <p>For ESS user :</p> <p>If user-filter=0, the userid should be login user's ID or of any user belonging to the group for which login user is reporting in-charge.</p> <p>If user-filter=1, the userid should be same as login user's ID and user should be a reporting in-charge.</p> <p>For a System Account user:</p> <p>If user-filter=0, the userid can be any user's id. The System account user must have rights on this user.</p> <p>If user-filter=1, the userid can be any user's ID. The System account user must have rights on this user and the user must be a reporting in-charge.</p>
Date-range	ddmmyyyy-ddmmyyyy	No	Records for 30 days prior to current date will be fetched if no range is specified.	Date range for which overtime/c-off authorization records need to be fetched.
Authorization-status	0: Pending 1: Authorized	No	0 (Pending)	To fetch records based on their authorization status.

Response Fields**Table: Getting Overtime/C-OFF Authorization Records - Response Fields**

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	15 characters	Allowed characters: A-Z a-z 0-9 /_\.\@:
User Name	user-name	45 characters	Allowed characters: A-Z a-z 0-9 -_.()[]
Short Name	short-name	Max. 15 alphanumeric characters	-
Attendance Date	attendance-date	mm/dd/yyyy	-
1st Punch	punch1	mm/dd/yyyy HH:MM	-
2nd Punch	punch2	mm/dd/yyyy HH:MM	-
3rd Punch	punch3	mm/dd/yyyy HH:MM	-
4th Punch	punch4	mm/dd/yyyy HH:MM	-
5th Punch	punch5	mm/dd/yyyy HH:MM	-

Table: Getting Overtime/C-OFF Authorization Records - Response Fields

Field Name	Tag Name	Valid Values	Remarks
6th Punch	punch6	mm/dd/yyyy HH:MM	-
7th Punch	punch7	mm/dd/yyyy HH:MM	-
8th Punch	punch8	mm/dd/yyyy HH:MM	-
9th Punch	punch9	mm/dd/yyyy HH:MM	-
10th Punch	punch10	mm/dd/yyyy HH:MM	-
11th Punch	punch11	mm/dd/yyyy HH:MM	-
12th Punch	punch12	mm/dd/yyyy HH:MM	-
Special Function 1	spfid1	1-10	1=Official In, 2=Official Out, 3=ShortLeave In, 4=ShortLeave Out, 5=Regular In, 6=Regular Out, 7=Lunch In, 8=Lunch Out, 9=Overtime In, 10=Overtime Out
Special Function 2	spfid2		
Special Function 3	spfid3		
Special Function 4	spfid4		
Special Function 5	spfid5		
Special Function 6	spfid6		
Special Function 7	spfid7		
Special Function 8	spfid8		
Special Function 9	spfid9		
Special Function 10	spfid10		
Special Function 11	spfid11		
Special Function 12	spfid12		
Shift	shift	Two character code	-
Actual OT1	ot1	HHHHHH:MM	Return blank if unavailable.
Actual OT2	ot2	HHHHHH:MM	Return blank if unavailable.
Actual OT3	ot3	HHHHHH:MM	Return blank if unavailable.
Actual OT4	ot4	HHHHHH:MM	Return blank if unavailable.
Actual OT5	ot5	HHHHHH:MM	Return blank if unavailable.
Total Actual Overtime	total-actual-overtime	HHHHHHHH:MM	Returns blank if unavailable.
Authorized OT1	authorized-ot1	HHHHHH:MM	Return blank if unavailable.
Authorized OT2	authorized-ot2	HHHHHH:MM	Return blank if unavailable.
Authorized OT3	authorized-ot3	HHHHHH:MM	Return blank if unavailable.
Authorized OT4	authorized-ot4	HHHHHH:MM	Return blank if unavailable.

Table: Getting Overtime/C-OFF Authorization Records - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Authorized OT5	authorized-ot5	HHHHHH:MM	Return blank if unavailable.
Authorized OT1 as C-Off	authorized-coff1	HHH:MM	Part of actual OT1 component, authorized as C-Off
Authorized OT2 as C-Off	authorized-coff2	HHH:MM	Part of actual OT2 component, authorized as C-Off
Authorized OT3 as C-Off	authorized-coff3	HHH:MM	Part of actual OT3 component, authorized as C-Off
Authorized OT4 as C-Off	authorized-coff4	HHH:MM	Part of actual OT4 component, authorized as C-Off
Authorized OT5 as C-Off	authorized-coff5	HHH:MM	Part of actual OT5 component, authorized as C-Off
Authorized OT1 by In-charge 1	authorized-ot1-ric1	HHHHHH:MM	Return blank if unavailable.
Authorized OT2 by In-charge 1	authorized-ot2-ric1	HHHHHH:MM	Return blank if unavailable.
Authorized OT3 by In-charge 1	authorized-ot3-ric1	HHHHHH:MM	Return blank if unavailable.
Authorized OT4 by In-charge 1	authorized-ot4-ric1	HHHHHH:MM	Return blank if unavailable.
Authorized OT5 by In-charge 1	authorized-ot5-ric1	HHHHHH:MM	Return blank if unavailable.
Authorized OT1 as C-Off by In-charge 1	authorized-coff1-ric1	HHH:MM	Part of actual OT1 component, authorized as C-Off By Incharge1.
Authorized OT2 as C-Off by In-charge 1	authorized-coff2-ric1	HHH:MM	Part of actual OT2 component, authorized as C-Off By Incharge1.
Authorized OT3 as C-Off by In-charge 1	authorized-coff3-ric1	HHH:MM	Part of actual OT3 component, authorized as C-Off By Incharge1.
Authorized OT4 as C-Off by In-charge 1	authorized-coff4-ric1	HHH:MM	Part of actual OT4 component, authorized as C-Off By Incharge1.
Authorized OT5 as C-Off by In-charge 1	authorized-coff5-ric1	HHH:MM	Part of actual OT5 component, authorized as C-Off By Incharge1.
Authorized OT1 by In-charge 2	authorized-ot1-ric2	HHHHHH:MM	Return blank if unavailable.
Authorized OT2 by In-charge 2	authorized-ot2-ric2	HHHHHH:MM	Return blank if unavailable.
Authorized OT3 by In-charge 2	authorized-ot3-ric2	HHHHHH:MM	Return blank if unavailable.
Authorized OT4 by In-charge 2	authorized-ot4-ric2	HHHHHH:MM	Return blank if unavailable.

Table: Getting Overtime/C-OFF Authorization Records - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Authorized OT5 by In-charge 2	authorized-ot5-ric2	HHHHHH:MM	Return blank if unavailable.
Authorized OT1 as C-Off by In-charge 2	authorized-coff1-ric2	HHH:MM	Part of actual OT1 component, authorized as C-Off By Incharge2.
Authorized OT2 as C-Off by In-charge 2	authorized-coff2-ric2	HHH:MM	Part of actual OT2 component, authorized as C-Off By Incharge2.
Authorized OT3 as C-Off by In-charge 2	authorized-coff3-ric2	HHH:MM	Part of actual OT3 component, authorized as C-Off By Incharge2.
Authorized OT4 as C-Off by In-charge 2	authorized-coff4-ric2	HHH:MM	Part of actual OT4 component, authorized as C-Off By Incharge2.
Authorized OT5 as C-Off by In-charge 2	authorized-coff5-ric2	HHH:MM	Part of actual OT5 component, authorized as C-Off By Incharge2.
Total Authorized OT	total-authorized-ot	HHHHHHH:MM	Return blank if unavailable.
Total Authorized C-Off	authorized-coff	HHH:MM	Return blank if unavailable.
First Half	firsthalf	PR : Present AB : Absent WO : Week Off PH : Public Holiday FB : Field Break RD : Rest Day IN : Official In <Leave Codes>	<Leave Codes>as configured in COSEC
Second Half	secondhalf	PR : Present AB : Absent WO : Week Off PH : Public Holiday FB : Field Break RD : Rest Day IN : Official In <Leave Codes>	<Leave Codes>as configured in COSEC
Week-Off	wo	0: Status is not WO 1: Status is WO	
Public Holiday	ph	0: Status is not PH 1: Status is PH	
Gross Work Hours	gross-workhours	HH:MM	Return blank if unavailable.
Extra Work Hours	extra-workhours	HH:MM	Return blank if unavailable.
Net Work Hours	net-workhours	HHHHHHH:MM	Return blank if unavailable.
Authorization Status	authorized	1 : Pending Authorization 2 : Authorized	
Remark for OT1	remark1	50 characters	
Remark for OT2	remark2	50 characters	

Table: Getting Overtime/C-OFF Authorization Records - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Remark for OT3	remark3	50 characters	-
Remark for OT4	remark4	50 characters	-
Remark for OT5	remark5	50 characters	-

Authorizing Overtime/C-OFF

This API can be used to authorize Overtime/C-OFF hours for a user.

Action

action=set

Syntax

```
http://<servername>/api.svc/ot-coff-authorization?action=set;<argument>=<value>...
```

User Rights

Same as [Getting Overtime/C-OFF Authorization Records](#).

Parameters

Table: Authorizing Overtime/C-OFF - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	15 Char.	Yes	-	This is the identification number for the user whose overtime/C-OFF is to be authorized. The login user must have appropriate rights on this user id.
Date	ddmmyyyy	Yes	-	The date for authorization.
authorized-ot1	HHHHHH:MM	The 'authorized-ot' or 'authorized-coff' must be mentioned for atleast one of the OT components (OT1-OT5) for authorization.	-	Hours authorized as an Overtime type (OT1-OT5) and Part of the actual OT component (OT1-OT5), authorized as C-Off.
authorized-coff1	HHH:MM			
authorized-ot2	HHHHHH:MM			
authorized-coff2	HHH:MM			
authorized-ot3	HHHHHH:MM			
authorized-coff3	HHH:MM			
authorized-ot4	HHHHHH:MM			
authorized-coff4	HHH:MM			
authorized-ot5	HHHHHH:MM			
authorized-coff5	HHH:MM			
remark1	50 characters	No	N/A	Authorization Remarks for individual OT components.
remark2				
remark3				
remark4				
remark5				

Processing Monthly Attendance

On COSEC, some attendance parameters for a user are updated only when the monthly attendance data is manually processed. This monthly attendance process can be executed through API. This API shall be used to process the monthly attendance for a particular user.

Action

action=command

Syntax

```
http://<servername>/api.svc/monthly-process?action=command;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. User must have rights on following pages (COSEC Web Application): Time Attendance> Process > Monthly Attendance
ESS	Enabled for all ESS users.

Parameters

Table: Processing Monthly Attendance - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	Max. 15 Characters. Allowed Characters A-Z a-z 0-9 /_\.\@:	Yes	-	For system user, this can be the user ID of any user on whom the login user has appropriate user rights. For ESS user, the user ID should be same as login user's ID. The process will be executed only if the user meets the following condition: User is Active User is an active T&A user
month-year	mmyyyy	No	Current month and year.	The month and year for which the attendance process is to be run.

In/Out Reasons

In/Out Reasons are reasons configured on the COSEC Server Application, to be used for submitting Short Leave or Official IN/OUT entries for approval. Use this API to fetch all In/Out Reasons configured on COSEC.

Action

action=get

Syntax

```
http://<servername>/api.svc/v2/in-out-reasons?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled
ESS	Enabled

Response Fields

Table: In/Out Reasons - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Reason ID	reason-id	1-99	-
Reason	reason	30 alphanumeric characters	-
Type of Reason	reason-type	0: In 1: Out	-

Example

Sample Request:

```
http://matrixserver/api.svc/v2/in-out-reasons?action=get
```

Sample Response:

```
reason-id|reason|reason-type
1|Sickness|1
2|Personal Work|0
3|Meeting with Client|0
4|Meeting with Client - OUT|1
<EOT>
```

Getting Shift Wise Count

This shall be used to get shift wise counts of users as per their punches or day's status. This will return count of scheduled, reported, not reported, on leave/tour, etc.

Action

action=get

Syntax

```
http://<servername>/v2/shift-wise-count?action=<get>;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled.
ESS	Enabled only for ESS Reporting In-charge user

Parameters

Table: Getting Shift Wise Count- Parameters

Argument	Valid Values	Mandatory	Default Value	Description
attendance-date	ddmmyyyy	-	Current date	-
range	all organization branch department designation section category grade user	-	all	-
Id	1 to 999 (for all the ranges except all & user) 15 Char. (for user)	Yes if range is other than "all"	-	Multiple id can be selected, each separated by ", (comma)" e.g.:"1, 3, 7, 9..." Or Select a range of id E.g."1-50".
shift-id	Alpha-numeric	-	-	Multiple shift-id can be selected, each separated by ", (comma)" e.g.:"GS,G1,NS, ES..."

Response Fields

Table: Getting Shift Wise Count- Response Fields

Field Name	Tag Name	Valid Values	Remarks
Shift ID	shift-id	2 alphanumeric characters	Shows Shift ID

Table: Getting Shift Wise Count- Response Fields

Field Name	Tag Name	Valid Values	Remarks
Shift Name	shift-name	20 characters	Shows Shift Name
Shift Start Time	shift-start	HH:MM	Shift's Start Time
Shift End Time	shift-end	HH:MM	Shift's End Time
Assigned Users	assigned	numeric	
On Leave/Tour/COFF	leave-tour-coff	numeric	
On Week Off/Holiday	wo-ph	numeric	
Reported Users	reported	numeric	
Not Reported Users	not-reported	numeric	
Scheduled Users	scheduled	numeric	
Early IN Users	early-in	numeric	
Late IN Users	late-in	numeric	
Early OUT Users	early-out	numeric	
Late OUT Users	late-out	numeric	

Example**Sample Request:**

```
http://matrix-server/api.svc/v2/shift-wise-count?action=get;attendance-date=01012016;range=all;
```

Getting Site Wise Count

This API is used to get site wise counts of users as per their events. It will show IN count, OUT count and Who's IN Count users.

Action

action=get

Syntax

```
http://<servername>/v2/site-wise-count?action=<get>;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled.
ESS	Enabled only for ESS Reporting In-charge user

Parameters

Table: Getting Site Wise Count- Parameters

Argument	Valid Values	Mandatory	Default Value	Description
time-range	ddmmyyyyhhmmss-ddmmyyyyhhmmss	-	(current date time - 48 hours) to (current date time)	If time is not specified then default timing would be 00:00:00 to 23:59:59
range	all organization branch department designation section category grade user	-	all	-
id	1 to 999 (for all the ranges except all & user) 15 Char. (for user)	Yes if range is other than "all"	-	Multiple id can be selected, each separated by ", (comma)" e.g.:"1, 3, 7, 9..." Or Select a range of id E.g."1-50".
site-id	numeric	-	-	Multiple site-id can be selected, each separated by ", (comma)" e.g.:"1,2,3,4..."

Response Fields

Table: Getting Site Wise Count- Response Fields

Field Name	Tag Name	Valid Values	Remarks
Site ID	site-id	3 numeric characters	Shows Site ID
Site Name	site-name	30 characters	Shows Site Name
IN Count	in	numeric	
OUT Count	out	numeric	
Whos IN Count	whos-in	numeric	

Example

Sample Request:

```
http://matrix-server/api.svc/v2/site-wise-count?action=get;time-range=18032016080000-18032016200000;range=all;
```


Getting Shift-Site Wise Count

This API is used to get site wise counts of reported users against each shift as per their punches or day's status.

Action

action=get

Syntax

```
http://<servername>/v2/shift-site-wise-count?action=<get>;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled.
ESS	Enabled only for ESS Reporting In-charge user

Parameters

Table: Getting Shift-Site Wise Count- Parameters

Argument	Valid Values	Mandatory	Default Value	Description
attendance-date	ddmmyyyy	-	current date	-
range	all organization branch department designation section category grade user	-	all	-
Id	1 to 999 (for all the ranges except all & user) 15 Char. (for user)	Yes if range is other than "all"	-	Multiple id can be selected, each separated by ", (comma)" e.g.: "1, 3, 7, 9..." Or Select a range of id E.g. "1-50".
shift-id	Alpha-numeric 2 characters	Yes	-	-

Response Fields

Table: Getting Shift-Site Wise Count- Response Fields

Field Name	Tag Name	Valid Values	Remarks
Site ID	site-id	3 numeric characters	Shows Site ID
Site Name	site-name	30 characters	Shows Site Name
Reported Users	reported	numeric	

On COSEC, a shift can be defined as the expected working hours for an employee per day, as per the requirement of an organization. An organization may have multiple shifts such as morning shift, afternoon shift, night shift etc. For example, in certain organizations, employees dealing with clients located in a different time zone may be asked to report for the night shift (say, from 22:00 hrs to 06:00 hrs).

Some organizations may also need to implement rotational shifts. On COSEC, a shift schedule is a group of working shifts, which defines the sequence and frequency of these shifts as applicable to the assigned user over a defined time period. Shifts and shift schedules are useful for the calculation of employees' work hours, overtime, payroll etc.

The following APIs are supported:

- [Getting Shift Schedules of Users](#)
- [Getting Shift Details](#)
- [Getting Holiday Schedule](#)
- [Changing Shift](#)

Getting Shift Schedules of Users

Use this API to retrieve the details of shifts assigned to a user for each day of a specific month.

Action

action=get

Syntax

```
http://<servername>/api.svc/shift-schedule?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled
ESS	Enabled. User must have rights on following ESS pages: ESS > Time and Attendance > Shift Schedule

Parameters

Table: Getting Shift Schedules of Users - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	varchar(15)	Yes	-	To specify the user identification number. Multiple IDs can be selected, separated by a 'comma'. E.g. "userid=1,2,3,4,5,..."
month-year	mmyyyy	-	Current month and year.	The month and year for which shift schedule is to be requested.

Response Fields

Table: Getting Shift Schedules of Users - Response Fields

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	upto 15 characters	Allowed Characters A-Z a-z 0-9 /_\.\@:
Username	user-name	upto 45 characters	Allowed Characters A-Z a-z 0-9 - _ () []
Short Name	short-name	max 15 alphanumeric characters	-
Date	date	mm/dd/yyyy	-

Table: Getting Shift Schedules of Users - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Shift Code	shift-code	Two-character code	This will contain the configured shift ID e.g. GS or NS or default codes.
Week-Off	wo	0 : WO not applicable to day status 1 : WO applicable to day status	The "Week-Off" status for a day.
Public-Holiday	ph	0: PH not applicable to day status 1: PH applicable to day status	The "Public Holiday" status for a day.

Example

Shift schedule requested for this user returns two shift types, as configured on COSEC - a General Shift (GS) and a Europe Region Shift (EU) for the month of May, 2014.

Sample Request:

```
http://matrixserver/api.svc/v2/shift-schedule?action=get;userid=92;month-year=052014
```

Sample Response:

```
user-id|user-name|short-name|date|shift-code|wo|ph
92|SMITA BARIA|SMITA BARIA|05/01/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/02/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/03/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/04/2014|GS|1|0
92|SMITA BARIA|SMITA BARIA|05/05/2014|EU|0|0
92|SMITA BARIA|SMITA BARIA|05/06/2014|EU|0|0
92|SMITA BARIA|SMITA BARIA|05/07/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/08/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/09/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/10/2014|GS|1|0
92|SMITA BARIA|SMITA BARIA|05/11/2014|GS|1|0
92|SMITA BARIA|SMITA BARIA|05/12/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/13/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/14/2014|EU|0|0
92|SMITA BARIA|SMITA BARIA|05/15/2014|EU|0|0
92|SMITA BARIA|SMITA BARIA|05/16/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/17/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/18/2014|GS|1|0
92|SMITA BARIA|SMITA BARIA|05/19/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/20/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/21/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/22/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/23/2014|EU|0|0
92|SMITA BARIA|SMITA BARIA|05/24/2014|EU|1|0
92|SMITA BARIA|SMITA BARIA|05/25/2014|GS|1|0
92|SMITA BARIA|SMITA BARIA|05/26/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/27/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/28/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/29/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/30/2014|GS|0|0
92|SMITA BARIA|SMITA BARIA|05/31/2014|GS|0|0
<EOT>
```

Getting Shift Details

This can be used to retrieve details of a specific shift.

Action

action=get

Syntax

```
http://<servername>/api.svc/shift-details?action=get;<argument>=<value>...
```

User Rights

Same as [“Getting Shift Schedules of Users” on page 137](#)

Parameters

Table: Getting Shift Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
shift-id	two characters	No	All configured shift IDs	The shift ID. Same as the shift code obtained in the “Getting Shift Schedules of Users” API response fields.

Response Fields

Table: Getting Shift Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Shift ID	shift-id	two-character code	-
Shift Name	shift-name	30 characters	Allowed Characters A-Z a-z 0-9 /_\.\@:
Shift Start Time	shift-start	HH:MM	-
Shift End Time	shift-end	HH:MM	-
Break Start Time	break-start	HH:MM	-
Break End Time	break-end	HH:MM	-
Grace Time for shift Late In	late-in-grace	HH:MM	-
Grace Time for Shift Early Out	early-out-grace	HH:MM	-
Type	type	0: Normal 1: FieldBreak 2: RestDay	-

Example

To fetch details of “General Shift”(GS).

Sample Request:

```
http://matrixserver/api.svc/v2/shift-details?action=get;shift-id=gs
```

Sample Response:

```
shift-id|shift-name|shift-start|shift-end|break-start|break-end|late-in-grace|early-out-grace|type
GS|H0 RnD General Shift|08:00|18:00|13:00|13:50|00:30|00:00|0
<EOT>
```

Getting Holiday Schedule

This can be used to fetch the holiday schedule for a user.

Action

action=get

Syntax

```
http://<servername>/api.svc/holiday?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled
ESS	Enabled. User must have rights on following ESS pages: ESS > Basic > Holiday Schedule

Parameters

Table: Getting Holiday Schedule - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	upto 15 characters	Yes	-	To specify the user identification number. Multiple IDs can be selected, separated by a 'comma'. E.g. "userid=1,2,3,4,5,..."
year	yyyy valid range: 2010 - <current year + 2>	No	All holidays configured in the schedule.	The year for which holiday schedule is to be fetched. This holiday list will consist only of those holidays whose start and end dates belong to the specified year.
list-type	0: Current Holidays 1: Previous Holidays 2: Both	No	0 (Current Holidays)	The type of holidays to be fetched in the list.

Response Fields

Table: Getting Holiday Schedule - Response Fields

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	15 characters	Allowed characters A-Z a-z 0-9 /_\.\@:
User Name	user-name	45 characters	Allowed Characters A-Z a-z 0-9 -._ ()[]

Table: Getting Holiday Schedule - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Short Name	short-name	max 15 alphanumeric characters	-
Schedule ID	schedule-id	1-999	-
Schedule-Name	schedule-name	30 characters	Allowed Characters A-Z a-z 0-9 -_. ()[]
Year	year	yyyy	-
Holiday Name	holiday-name	30 characters	Allowed Characters A-Z a-z 0-9 -_. ()[]
Holiday date range	holiday-date	mm/dd/yyyy – mm/dd/yyyy	IF holiday is for a single day, then : 01/01/2014-01/01/2014

Example

A sample holiday schedule assigned to an Indian employee for the year 2011.

Sample Request:

```
http://matrixserver/api.svc/v2/holiday?action=get;userid=1016;year=2011
```

Sample Response:

```
user-id|user-name|short-name|schedule-id|schedule-name|year|holiday-name|holiday-date
1016|BALAJI A|BALAJI A|1|Schedule 1|2011|Rakshabandhan|08/13/2011-08/13/2011
1016|BALAJI A|BALAJI A|1|Schedule 1|2011|Independance Day|08/15/2011-08/15/2011
1016|BALAJI A|BALAJI A|1|Schedule 1|2011|Dasera|10/06/2011-10/06/2011
1016|BALAJI A|BALAJI A|1|Schedule 1|2011|Diwali|10/26/2011-10/28/2011
<EOT>
```


Changing Shift

This API can be used by a system account user to change shift assigned to users of type 'u' for a specified date range.

Action

action=set

Syntax

```
http://<servername>/api.svc/shift-changer?action=set;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. User must have rights on following pages (COSEC Web Application): Shifts and Schedules > Utilities > Shift Changer
ESS	Disabled

Parameters

Table: Changing Shift - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	upto 15 characters	Yes	-	To specify the user identification number. Multiple IDs can be selected, separated by a 'comma'. E.g. "userid=1,2,3,4,5,..."
date-range	ddmmyyyy-ddmmyyyy	Yes	-	The period for which the shift needs to be changed. Cannot be greater than 60 days.
shift-id	2 characters	No	-	To specify the shift ID for changing user's shift. If not specified, user's current working shift will persist.
week-off	0 = No Week-Off 1 = Enable Week-Off	No	-	The Week-Off status of changed shift. If not specified, the current Week-Off status will persist.
public-holiday	0 = No Public Holiday 1 = Enable Public Holiday	No	-	The Public Holiday status of changed shift. If not specified, the current Public Holiday status will persist.

Example

Sample Request:

```
http://matrixserver/api.svc/v2/shift-changer?action=set;userid=1067;date-range=21112015-28112015;shift-id=11
```

Sample Response:

```
success: 0660200002 : Shift assigned successfully
```

Sample Request:

When date-range is greater than 60 days.

```
http://matrixserver/api.svc/v2/shift-changer?action=set;userid=1067;date-range=21092015-22122015;shift-id=11
```

Sample Response:

```
failed: 0660201005 : Date range should not be greater than 60 days
```

This chapter lists all APIs related to leave management and calculation. Retrieve leave configurations and leave balance data from the COSEC server and send, modify, as well as approve leave applications.



*The login user requires **Time and Attendance** module license for these APIs.*

In this section, you will find the following APIs:

- [Getting Leave Balance Details](#)
- [Getting Leave Group Details](#)
- [Getting Leave Details](#)
- [Getting Leave Application Details](#)
- [Applying for a Leave](#)
- [Updating an Applied Leave](#)
- [Deleting a Pending Application](#)
- [Approving/Rejecting Leaves](#)
- [Getting C-OFF Balance Details](#)
- [Getting C-OFF Details](#)

Getting Leave Balance Details

This API can be used to fetch leave balance data for one or more users for a specified time period.

Action

action=get

Syntax

```
http://<servername>/api.svc/leave-balance?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. User must have rights on following pages (COSEC Web Application): Leave Management > View > Leave Balance
ESS	Enabled. User must have rights on following ESS pages: ESS > Leave Management > Leave Balance

Parameters

Table: Getting Leave Balance Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	Max. 15 characters allowed A-Z a-z 0-9 /_\.\@:	Yes	-	To specify the user identification number. Multiple IDs can be selected, separated by a 'comma'. E.g. "userid=1,2,3,4,5,..."
month-year	mmyyyy	No	Current Month and Year	To specify the month and year for which leave balance data is to be fetched.
leave-code	Two characters	No	All leaves (except Tour and C-OFF type leaves)	To specify the leave code for any pre-configured leaves on the COSEC Server.

Response fields

Table: Getting Leave Balance Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	15 characters	Allowed characters: A-Z a-z 0-9 /_\.\@:
User Name	user-name	40 characters	Allowed characters: A-Z a-z 0-9 -_.()[]
Short Name	short-name	max. 15 alphanumeric characters	The short-name assigned to the specified user
Leave Code	leave-code	Two alphanumeric characters	The leave code for the leave whose balance is fetched
Leave Name	leave-name	30 alphanumeric characters	Allowed characters: A-Z a-z 0-9 -_.()[]
Month-Year	period	mmyyyy	The month and year for which leave balance data is fetched.
Opening Balance	opening-balance	1-999 (multiples of 0.5)	The opening leave balance for the specified month (in days)
Closing Balance	closing-balance	1-999 (multiples of 0.5)	The closing leave balance for the specified month (in days)
Credit/Manual Credit	credit	1-999 (multiples of 0.5)	The credited leaves for the specified month
Debit/Manual Debit	debit	1-999 (multiples of 0.5)	The debited leaves for the specified month
Encashed	encashed	1-999 (multiples of 0.5)	The encashed leaves for the specified month
Availed	availed	1-999 (multiples of 0.5)	The availed leaves for the specified month
Overflow	overflow	1-999 (multiples of 0.5)	The overflown leaves for the specified month
Leave Type	leave-type	0: Paid 1: Unpaid 2: Lay Off 3: Restricted Holiday 4: Compensatory Off 5: Tour	The type of leave for which balance was requested.

Examples

This sample request obtains the balance data of Casual Leaves (CL) for two users for November, 2013

Sample Request:

```
http://matrixserver/api.svc/v2/leave-balance?action=get;userid=92,1255;month-year=112013;leave-code=CL
```

Sample Response:

```
user-id|user-name|short-name|leave-code|leave-name|period|opening-balance|closing-  
balance|credit|debit|encashed|availed|overflow|leave-type  
1255|SUDESHNA NIYOGI|SUDESHNA NIYOGI|CL|CASUAL LEAVE|112013|2.00|4.50|2.50|0.00|0.00|0.0|0.00|0  
92|SMITA BARIA|SMITA BARIA|CL|CASUAL LEAVE|112013|6.50|9.00|2.50|0.00|0.00|0.0|0.00|0  
<EOT>
```

Getting Leave Group Details

Specify a user ID to request details of the leave group assigned to this user on the COSEC server.

Action

action=get

Syntax

```
http://<servername>/api.svc/leave-group?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. User must have rights on following pages (COSEC Web Application): Leave Management > Leave Group
ESS	Enabled.

Parameters

Table: Getting Leave Group Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	upto 15 characters	Yes	-	To specify the user identification number. Multiple IDs can be selected, separated by a 'comma'. E.g. "userid=1,2,3,4,5,..."

Response Fields

Table: Getting Leave Group Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	upto 15 characters	Allowed characters: A-Z a-z 0-9 /_\.\@:
User Name	user-name	upto 40 characters	Allowed characters: A-Z a-z 0-9 -_.()[]
Short Name	short-name	max. 15 alphanumeric characters	The short-name assigned to the specified user
Leave Group ID	group-id	1 to 99	-

Table: Getting Leave Group Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Leave Group Name	group-name	upto 30 alphanumeric characters	Allowed characters: A-Z a-z 0-9 -_.()[]
Leave Code	leave-code	Two alphanumeric characters	Specifies the leave code for the leave
Leave Name	leave-name	upto 30 alphanumeric characters	Specifies the leave name
Leave Type	leave-type	0: Paid 1: Unpaid 2: Lay Off 3: Restricted Holiday 4: Compensatory Off 5: Tour	The type of leave for which balance was requested.
Minimum Allowed at a Time	minimum-allowed	1 to 999 (multiples of 0.5)	The minimum allowed leaves that can be taken at a time
Maximum Allowed at a Time	maximum-allowed	1 to 999 (multiples of 0.5)	The maximum allowed leaves that can be taken at a time
Medical Certificate Required	medical-certificate-required	0 = disabled 1 = enabled	Specifies whether Medical Certificate is required for the leave.
Balance Check Enabled	balance-check-enabled	0 = disabled 1 = enabled	Specifies whether balance check is enabled for the leave
Minimum C-OFF for Half Day Off	half-day-required	blank/HH:MM	Specifies the minimum available C-OFF hours required to be eligible for half-day leave.
Minimum C-OFF for Full Day Off	full-day-required	blank/HH:MM	Specifies the minimum available C-OFF hours required to be eligible for full-day leave.

Getting Leave Details

Specify the two-character code (CL, PL, SL etc.) for a pre-defined leave, to retrieve its details from the COSEC database.

Action

action=get

Syntax

```
http://<servername>/api.svc/leave-details?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled.
ESS	Enabled

Parameters

Table: Getting Leave Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
leave-code	Two alphanumeric characters	Yes	-	To identify the leave for which details are to be requested. Multiple values can be selected by separating each value with a 'comma'.

Response Fields

Table: Getting Leave Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Leave Code	leave-code	Two alphanumeric characters	Specifies the leave code for the leave
Leave Name	leave-name	upto 30 alphanumeric characters	Specifies the leave name. Allowed characters: A-Z a-z 0-9 _ . () []
Leave Type	leave-type	0: Paid 1: Unpaid 2: Lay Off 3: Restricted Holiday 4: Compensatory Off 5: Tour	The type of leave for which balance was requested.
Minimum Allowed at a Time	minimum-allowed	1 to 999 (multiples of 0.5)	The minimum allowed leaves that can be taken at a time

Table: Getting Leave Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Maximum Allowed at a Time	maximum-allowed	1 to 999 (multiples of 0.5)	The maximum allowed leaves that can be taken at a time
Medical Certificate Required	medical-certificate-required	0 = disabled 1 = ensure availability 2 = upload document	Specifies whether Medical Certificate is required for the leave.
Balance Check Enabled	balance-check-enabled	0 = disabled 1 = enabled	Specifies whether balance check is enabled for the leave

Example

The following request gets details for *Sick Leave (SL)* as configured on COSEC.

Sample Request:

```
http://matrixserver/api.svc/v2/leave-details?action=get;leave-code=SL
```

Sample Response:

```
leave-code|leave-name|leave-type|minimum-allowed|maximum-allowed|medical-certificate-required|balance-check-enabled  
SL|SICK LEAVE|0|0.0|99.0|0|1  
<EOT>
```

Getting Leave Application Details

Specify leave/tour application parameters such as leave type, user details, application status etc. to filter details of all relevant applications in the response.

Action

action=get

Syntax

```
http://<servername>/api.svc/leave-application?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. User must have rights on following pages (COSEC Web Application): Leave Management > Application/Approval > Leave Application Leave Management > Application/Approval > Tour Application Leave Management > Application/Approval > C-OFF Application
ESS	Enabled. User must have rights on following ESS pages: ESS > Leave Management > Leave Application ESS > Leave Management > Tour Application ESS > Leave Management > C-OFF Application

Parameters

Table: Getting Leave Application Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
user-filter	0: individual 1: group	No	0 (individual)	To specify users whose records are to be returned. This can be a single user ('0') or all members of a reporting group ('1') if the login user is a reporting in-charge or a system account user.

Table: Getting Leave Application Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	Max. 15 characters	Yes	-	<p>This is the user identification number.</p> <p>For ESS user: If user-filter=0, the userid should be login user's ID or of any user belonging to the group for which login user is reporting in-charge. If user-filter=1, the userid should be same as login user's ID. The login user must be a reporting in-charge.</p> <p>For a System Account user: If user-filter=0, the userid can be any user's id. (If the System Account user has rights on that user) If user-filter=1, the userid can be any user's ID (If the System Account user has rights on that user and the user is a reporting in-charge).</p>
leave-type	0: all 1: leave 2: tour 3: C-OFF	No	0 (all)	To specify whether the application type is leave, tour or C-OFF
date-range	ddmmyyyy-ddmmyyyy	No	all dates for which application records exist.	To specify the range of application dates for which data is to be fetched.
application-status	0: all 1: pending 2: approved 3: rejected	No	all	To filter applications by their approval status.

Response Fields**Table: Getting Leave Application Details - Response Fields**

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	15 characters	Allowed characters: A-Z a-z 0-9 / _ \ . @ :
User Name	user-name	40 characters	Allowed characters: A-Z a-z 0-9 _ . () []
Short Name	short-name	max. 15 alphanumeric characters	The short-name assigned to a user
Leave Code	leave-code	Two alphanumeric characters	The leave code assigned to a leave
Leave Name	leave-name	30 alphanumeric characters	The name of the leave

Table: Getting Leave Application Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Leave Type	leave-type	1: leave 2: tour 3: C-OFF	The type of application.
TID (form no.)	tid	10 digits	Same as form-number. Auto generated on saving leave application.
Applied Date and Time	applied-date	mm/dd/yyyy HH:MM:SS	The date of application
Application State	application-state	1: leave pending 2: cancellation pending 3: modification pending 4: approved 5: rejected	The approval status of application
Half Day Consideration	half-consideration	1: Both 2: First Half Only 3: Second Half Only	The half day consideration for leave application
Start Date	start-date	mm/dd/yyyy	The leave start date
Day status on Start Date	start-day	1: full day 2: first half 3: second half	The status of leave on the starting day.
End Date	end-date	mm/dd/yyyy	The leave end date
Day status on End Date	end-day	1: full day 2: first half 3: second half	The status of leave on the ending date.
Applied Days	applied-days	1 to 999 (multiples of 0.5)	Number of applied days
Posted Days	posted-days	1 to 999 (multiples of 0.5)	Number of posted days
Address	address	Max. 30 characters	Allowed characters: A-Z a-z 0-9 _.,()[]:@!#\$%+&^
Contact Info	contact	upto 20 numeric characters	This is the contact information in a leave application
Medical Certificate	medical-certi	0: no 1: yes	This is the availability of medical certificate
Application Status	application-status	0: pending 1: approved 2: rejected	This is the approval status of the application
Application Verdict Date	verdict-date	mm/dd/yyyy HH:MM:SS	blank if date not available
Application Reason	application-reason	upto 50 characters	Allowed characters: A-Z a-z 0-9 _.,()[]:@!#\$%+&^

Table: Getting Leave Application Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Application Approval Remark	application-remark	Max. 30 characters	Not mandatory. Blank if not available. Allowed characters: A-Z a-z 0-9 _.,()[]:@!#\$%+^
Cancellation Application Date	cancellation-applied-date	mm/dd/yyyy HH:MM:SS	blank if date not available
Cancellation Status	cancellation-status	0: pending 1: approved 2: rejected	This is the cancellation status of the application. Blank if status not available
Cancellation Verdict Date	cancellation-verdict-date	mm/dd/yyyy HH:MM:SS	blank if date not available
Cancellation Reason	cancellation-reason	upto 50 characters	Allowed characters: A-Z a-z 0-9 _.,()[]:@!#\$%+^
Cancellation Approval Remark	cancellation-remark	Max. 30 characters	Not mandatory. Blank if not available. Allowed characters: A-Z a-z 0-9 _.,()[]:@!#\$%+^
Modification Application Date	modification-applied-date	mm/dd/yyyy HH:MM:SS	blank if date not available
Modification Half Day Consideration	modified-half-consideration	1: Both 2: First Half Only 3: Second Half Only	The modification of half day leave application
Modified Start Date	modified-start-date	mm/dd/yyyy	The modified leave starting date
Modified Day status on Start Date	modified-start-day	1: full day 2: first half 3: second half	The status of modified leave on the starting date.
Modified End Date	modified-end-date	mm/dd/yyyy	The modified leave ending date
Modified Day status on End Date	modified-end-day	1: full day 2: first half	The status of modified leave on the ending date.
Modified Applied Days	modified-applied-days	1 to 999 (multiples of 0.5)	Number of modified applied days
Modified Posted Days	modified-posted-days	1 to 999 (multiples of 0.5)	Number of modified posted days
Modification Status	modification-status	0: pending 1: approved 2: rejected	This is the modification status of the application. Blank if status not available
Modification Verdict Date	modification-verdict-date	mm/dd/yyyy HH:MM:SS	blank if date not available

Table: Getting Leave Application Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Modification Reason	modification-reason	upto 50 characters	Allowed characters: A-Z a-z 0-9 _.,()[]:@!#\$%+^/\
Applied C-OFF Hours	applied-coff	Blank/HH:MM	Blank when leave-type is leave or tour.
Modification Approval Remark	modification-remark	Max. 30 characters	Allowed characters: A-Z a-z 0-9 _.,()[]:@!#\$%+^/\
			Blank if not available

Applying for a Leave

Use the **action=set** parameter to submit a new leave application via this API.

Action

action=set

Syntax

```
http://<servername>/api.svc/leave-application?action=set;<argument>=<value>...
```

User Rights

Same as [“Getting Leave Application Details” on page 153](#).



If the login user is System Account user, a new application will always get automatically approved on submission.

Parameters

Table: Applying for a Leave - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	Max. 15 characters	Yes	-	This is the user identification number. Login user must have appropriate rights on this user ID.
half-consideration	1: both 2: first Half Only 3: second half only	No	both, if not supplied. If supplied and other than 'both' option, ignore arguments: 'start day' and 'end- day'	The half day consideration of leave application
start-date	ddmmyyyy	Yes	-	This is the starting date of the leave
start-day	1: full day 2: first half 3: second half	No	1 (full day)	The status of leave on the starting date. For start-day=first half, request is allowed only when start-date is same as end-date.
end-date	ddmmyyyy (must be greater than start-date)	Yes	-	This is the ending day of the leave
end-day	1: full day 2: first half 3: second half	No	1 (full day)	The status of leave on the ending date. If start-date and end-date are same, the value of end-day would be same as start-day. For end-day=second half, request is allowed only when start-date is same as end-date.

Table: Applying for a Leave - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
leave-code	Two alphanumeric characters	Yes	-	The code for any pre-configured leave on the COSEC system. e.g. For leave: CL, PL, ML, CO etc. For Tour: TR
reason	Max. 50 characters	No	If not supplied this field remains blank	The reason for taking leave. Allowed characters: A-Z a-z 0-9 _.,()[]:#!\$*+/\
address	Max. 30 characters	No	If not supplied this field remains blank	Contact address of the applicant. Allowed characters: A-Z a-z 0-9 _.,()[]:#!\$*+/\
contact	Max. 20 numeric characters	No	If not supplied this field remains blank	Contact Number of the applicant
Medical-certi	0: Not attached 1: Attached	No	0 (Not Attached)	Must be attached for leave-types which require mandatory medical certificate submission. Else system will not allow leave application.

Updating an Applied Leave

This API can be used to edit a leave application or to modify/cancel an already approved leave application.

Action

action=update

Syntax

```
http://<servername>/api.svc/leave-application?action=update;<argument>=<value>...
```

User Rights

Same as [“Getting Leave Application Details” on page 153.](#)

Parameters

Table: Updating an Applied Leave - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
Tid	max 10 numeric characters	Yes	-	This is the Transaction ID.
userid	15 characters	Yes	-	An application will be identified, based on TID and User ID.
request-type	0 : edit 1: apply for modification 2: apply for cancellation	Yes	-	On editing an application, its applied date will also get updated. For System User, only request-type=0 is applicable. A System user can edit any application. ESS users can edit only pending applications. Only an approved application can be submitted for cancellation. Only an approved or rejected application can be submitted for modification.
half-consideration	1: both 2: first half only 3: second half only	No	both, if not supplied. If supplied and other than 'both' option, ignore arguments: 'start day' and 'end-day'	Applicable only when request-type=0 or request-type=1 .
Start-date	ddmmyyyy	No	Existing value	The edited or modified start date to be specified. Applicable only when request-type=0 or request-type=1.

Table: Updating an Applied Leave - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
start-day	1: full day 2: first half 3: second half	No	1 (full day)	Applicable only when request-type=0 or request-type=1 . For start-day=first half , request is allowed only when start-date is same as end-date.
end-date	ddmmyyyy	No	Existing value	End-date cannot be less than start-date.
end-day	1: full day 2: first half 3: second half	No	1 (full day)	Applicable only when request-type=0 or request-type=1. If start-date and end-date are same, then value of end-day will be same as start-day. For end-day=second half , request is allowed only when start-date is same as end-date.
leave-code	Two characters.	No	Existing Value	To edit the leave type applied for. Applicable only when request-type=0 Two character code for any one of the pre-configured (in COSEC Server) leave types should be mentioned.
reason	Max 50 chars.	No	Blank, if not supplied.	Reason for updating leave application. Applicable only when request-type=0 Allowed Characters A-Z a-z 0-9 _.,()[]:@!#\$%+&\
address	Max 30 chars.	No	Blank, if not supplied.	Address of applicant. Applicable only when request-type=0 Allowed Characters A-Z a-z 0-9 _.,()[]:@!#\$%+&\
contact	Max 20 numeric chars.	No	Blank, if not supplied.	Contact number of applicant. Applicable only when request-type=0
Medical-certi	0: not attached 1: attached	Yes (only if the particular leave type requires mandatory medical certificate submission. For e.g. A Sick Leave)	0 (not attached)	Medical certificate status. Applicable only when request-type=0

Table: Updating an Applied Leave - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
Cancellation-reason	Max 50 chars.	No	Blank, if not supplied.	The reason for cancellation request. Applicable only when <i>request-type=2</i>
modification-reason	Max 50 chars.	No	Blank, if not supplied.	Applicable only when request-type=1
revoke	1 : revoke the approval request	No	-	To revoke the approval request. Applicable only when <i>request-type=1</i> or, <i>request-type=2</i>

Deleting a Pending Application

This API can be used to delete an existing leave application from the COSEC database.

Action

action=delete

Syntax

`http://<servername>/api.svc/leave-application?action=delete;<argument>=<value>...`

User Rights

Same as [“Getting Leave Application Details” on page 153](#).

Parameters

Table: Deleting a Pending Application - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
tid	max 10 numeric characters	Yes	-	This is the transaction ID.
userid	15 characters	Yes	-	An application will be identified, based on TID and User ID. Login user must have appropriate rights on this User ID.

Approving/Rejecting Leaves

This API can be used to approve or reject leave applications pending for approval. All leave applications submitted by a System Account user will be pre-approved. Leave applications submitted by an ESS user can be approved both by System Account users with approval rights as well as the respective reporting group in-charges.

Action

action=set

Syntax

```
http://<servername>/api.svc/leave-approval?action=set;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. User must have rights on following pages (COSEC Web Application): Leave Management > Application/Approval > Leave Approval Leave Management > Application/Approval > Tour Approval Leave Management > Application/Approval > C-Off Approval
ESS	Enabled if User is Reporting Group In-charge and has permissions defined in: COSEC Web > Users > Reporting Group > In-Charge Permissions For any of the following : <ul style="list-style-type: none">• Leave Approval• Tour Approval• C-Off Approval

Parameters

Table: Approving/Rejecting Leaves - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
tid	Max. 10 numeric characters	Yes	-	This is the transaction ID for the leave application. For "Approve All" approval option, or to Approve/Reject multiple leave applications, multiple IDs can be selected, each separated by a 'comma'.
approved	1: approve 2: reject	Yes	-	To approve or reject an application. Approving/rejecting multiple applications is also allowed.
remark	Max 30 chars Allowed Characters A-Z a-z 0-9 _.,()[]:@!#\$%+&/	No	Blank, if not supplied	To add a remark for the approval or rejection.

Getting C-OFF Balance Details

This can be used to retrieve a user's available balance for Compensatory-Off (C-OFF) type of leaves and the validity period for this balance as per the applied C-OFF policy on COSEC.

Action

action=get

Syntax

```
http://<servername>/api.svc/coff-balance?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. User must have rights on following pages (COSEC Web Application): Leave Management > View > Leave Balance
ESS	Enabled. User must have rights on following ESS pages: ESS > Leave Management > Leave Balance

Parameters

Table: Getting C-OFF Balance Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	15 Char. Allowed Characters A-Z a-z 0-9 /_\.\@:	Yes	-	This is the user identification number. Multiple values can be selected, each separated by a 'comma' e.g.: "1, 3, 7, 9..."

Response Fields

Table: Getting C-OFF Balance Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	upto 15 characters	Allowed Characters A-Z a-z 0-9 /_\.\@:
User Name	user-name	upto 45 characters	Allowed Characters A-Z a-z 0-9 - _ ()

Table: Getting C-OFF Balance Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Validity Period	period	mm/dd/yyyy - mm/dd/yyyy	The C-Off Validity period for the specific user as per the applied policy.
Total Available Hours	total-coff-hours	HH:MM	Return total available C-Off hours for the user in the above validity period.

Getting C-OFF Details

This shall be used to get the user's C-OFF balance data for the specific date period. Details like opening, closing, credit, debit, availed, encashed, overflow leaves will be returned in the response.

Action

action=get

Syntax

```
http://<servername>/api.svc/coff-details?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled
ESS	Enabled

Parameters

Table: Getting C-OFF Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	15 Char.	Yes	-	The user identification number. For ESS user, It can be the logged in user's ID. Or the ID of users assigned under his reporting group. For System Account user, it can be user ID of any user he has rights on.

Response Fields

Table: Getting C-OFF Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	upto 15 characters	Allowed Characters A-Z a-z 0-9 /_\.\@:
Username	user-name	upto 45 characters	Allowed Characters A-Z a-z 0-9 -._()[]
Short Name	short-name	max 15 alphanumeric characters	-
Date	coff-date	mm/dd/yyyy	C-OFF attendance date .
Authorized	authorized-coff	blank/HH:MM	C-OFF authorized Hours on that date.

Table: Getting C-OFF Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Credit/ Manual Credit	credit	blank/HH:MM	Manually credited C-OFF hours on that date.
Debit/Manual Debit	debit	blank/HH:MM	Manually debited C-OFF hours on that date.
Encashed	encashed	blank/HH:MM	Encashed C-OFF hours on that date.
Availed	availed	blank/HH:MM	Availed C-OFF hours on that date.
Available	available-hours	blank/HH:MM	Available C-OFF hours on that date.

The Access Control APIs primarily support the retrieval of access route data, as configured on the COSEC server. An *Access Route* on COSEC is a configured sequence in which a user is allowed access on Doors assigned to a particular Panel device, or based on the access policy defined on a Smart Card. Access Routes can be of two types - *Panel-based access routes* and *Smart Card-based access routes*.

The Access Control APIs enable the user to perform the following functions:

- [Obtaining List of Access Routes](#)
- [Obtaining Access Route Details](#)

Obtaining List of Access Routes

This API allows the user to fetch a list of all existing access routes configured on COSEC and the respective number of group members assigned to each route.

Action

action=get

Syntax

```
http://<servername>/api.svc/accessroutemaster?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled
ESS	Disabled

Parameters

Table: Obtaining List of Access Routes - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
type	smartcard, panel	No	smartcard	This is the type of the access route.
route	1 to 99 (for smartcard) 1 to 99 (for panel)	No	all	This is the route number for an access route.
panelno	1 to 99	Yes (only for <i>type=panel</i>)	-	This is the panel number of the panel for which the access route is defined.

Response Fields

1. For type=smartcard

Table: Obtaining List of Access Routes (Smart card) - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Access Route Number	AccessRouteNumber	1 - 99	-
Access Route Name	AccessRouteName	15 alphanumeric characters	-
Hard/Soft	HardSoft	Hard, Soft	-
Active	Active	1 : active 0 : inactive	-
Reset On Lowest Level	ResetOnLowestLevel	1 : reset enabled 0 : reset disabled	-
Group Members	GroupMembers	0 - 75	Count of configured members

2. For type=panel

Table: Obtaining List of Access Routes (Panel) - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Access Route Number	AccessRouteNumber	1 - 99	-
Access Route Name	AccessRouteName	15 alphanumeric characters	-
Active	Active	1 : active 0 : inactive	-
Sequence	Sequence	1 0	-
Panel Name	PanelName	30 alphanumeric characters	based on panel number
Reset On Lowest Level	ResetOnLowestLevel	1 : reset enabled 0 : reset disabled	-
Group Members	GroupMembers	0 - 75	Count of configured members

Example

Below is a sample case where a request is raised with default values:

Sample Request:

```
http://matrixserver/api.svc/v2/accessroutemaster?action=get
```

Sample Response:

```
AccessRouteNumber|AccessRouteName|HardSoft|Active|ResetOnLowestLevel|GroupMembers  
1|factory|Soft|1|0|1  
2|Factory|Soft|1|0|2  
3|Randd|Soft|1|0|2  
<EOT>
```

Obtaining Access Route Details

This API allows the user to request details of all or specific access routes configured on COSEC.

Action

action=get

Syntax

```
http://<servername>/api.svc/accessroutedetails?action=get;<argument>=<value>...
```

User Rights

Same as [“Obtaining List of Access Routes” on page 170](#)

Parameters

Table: Obtaining Access Route Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
type	smartcard, panel	No	smartcard	This is the type of the access route.
route	1 to 99 (for smartcard) 1 to 99 (for panel)	No	all	This is the route number for an access route.
panelno	1 to 99	Yes (only for <i>type=panel</i>)	-	This is the panel number of the panel for which the access route is defined.

Response Fields

1. For type=smartcard

Table: Obtaining Access Route Details (Smart card) - Response Fields

Field Name	Tag Name	Valid Values	Remarks
MID	MID	1 - 99999	-
DID	DID	1 - 255	-
Door Type	Door Type	Panel Door, Direct Door, Direct Door v2, NGT Direct Door, Wireless Door, Compact Door, PVR Door	-
Door Name	Door Name	30 alphanumeric characters	-
Level	Level	1 - 75	-

2. For type=panel

Table: Obtaining Access Route Details (Panel) - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Member Number	Member Number	1 - 75	Member Number
Door Number	Door Number	1 - 255	Door Number
Door Name	Door Name	30 alphanumeric characters	Door Name

Table: Obtaining Access Route Details (Panel) - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Level	Level	1 - 32	Level

Example

Sample Request:

```
http://matrixserver/api.svc/v2/accessroutedetails?action=get
```

Sample Response:

```
MID|DID|DoorType|DoorName|Level  
1|1|Panel Door|Door-1|0  
2|1|NGT Direct Door|NGTDoor1|0  
3|1|Direct Door v2|NGT Door|0  
1|1|Panel Door|Door-1|2  
3|1|Direct Door v2|NGT Door|2  
<EOT>
```

The following APIs enable the user to perform actions related to Cafeteria Management -

- *Getting Account Details*
- *Getting Expenditure Summary*
- *Getting Menu Details*
- *Getting List of Cafeteria Devices*
- *Getting Menu Schedules*
- *Getting Correction Application Details*
- *Making a Correction Application*
- *Updating a Correction Application*
- *Deleting a Correction Application*
- *Getting Expenditure Details*

Getting Account Details

This can be used to fetch a specific user's Cafeteria account details.

Action

action=get

Syntax

```
http://<servername>/api.svc/canteen-account-details?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled.
ESS	Enabled. The user must have rights on the following ESS pages: ESS > Cafeteria > Account Details

Parameters

Table: Getting Cafeteria Account Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	varchar(15)	Yes	-	Multiple IDs can be selected, each separated by ", (coma)" e.g.: "1, 3, 7, 9..."



For this API, apply the following credentials in request header to authenticate response for the mentioned User ID, irrespective of role rights/user rights:

username : MatrixAdmin

password : admin

Response Fields

Table: Getting Cafeteria Account Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	15 characters	Allowed Characters A-Z a-z 0-9 /_\.\@:

Table: Getting Cafeteria Account Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Username	user-name	45 characters	Allowed Characters A-Z a-z 0-9 - _ . () []
Short Name	short-name	max 15 alphanumeric characters	-
Account Type	account-type	0 : Prepaid 1: Postpaid	As set by admin
Status	status	0: Disabled 1: Enabled	-
Discount Level	discount	0 : none 1: discount level 1 2: discount level 2 3: discount level 3 4: discount level 4	-
User Blocked for E-canteen	blocked	0 : not blocked 1 : blocked	If the user is blocked for Cafeteria application by the system, return blocked = 1.
Account Balance	balance	0.1 – 99999.9	Prepaid Account balance. Return blank if balance is not applicable.
Amount	previous-recharge-amount	0.1 – 99999.9	Return blank if recharge details are not available.
Recharged on	previous-recharge-date	mm/dd/yyyy	Previous Recharge Details: Return blank if recharge details are not available.
Max usage limit	max-limit	0.1 – 999999.9	Post Paid Account: Max usage limit Return blank if value is not available.
Current Month	current-usage	0.1 – 999999.9	Usage Details: Current Month Return blank if value is not available.
Carry over due	carry-over	0.1 – 999999.9	Carry over due Return blank if value is not available.
Allowed usage	allowed-usage	0.1 – 999999.9	Allowed usage Return blank if value is not available.
Total	total-usage	0.1 – 999999.9	Total Return blank if value is not available.
Amount	previous-amount	0.1 – 999999.9	Previous Payment details: Amount Return blank if value is not available.

Table: Getting Cafeteria Account Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Payment on	previous-payment-date	mm/dd/yyyy	Previous Payment details: Payment on (Date) Return blank if value is not available.

Example

Sample Request:

```
http://matrixserver/api.svc/v2/canteen-account-details?action=get;userid=1234,100
```

Getting Expenditure Summary

Use this to fetch the cafeteria expenditure summary for a specific user.

Action

action=get

Syntax

```
http://<servername>/api.svc/canteen-expenditure-summary?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. The user must have rights on the following pages (COSEC Web Application): Cafeteria Management > Transaction Management > Transaction Summary
ESS	Enabled. The user must have rights on the following ESS pages: ESS > Cafeteria > Expenditure Summary

Parameters

Table: Getting Cafeteria Expenditure Summary - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	Varchar(15)	Yes	-	Multiple IDs can be selected, each separated by ", (coma)" e.g.: "1, 3, 7, 9..."
date-range	ddmmyyyy-ddmmyyyy	No	Expenditure for current date	The period for which the expense details need to be fetched.

Response Fields

Table: Getting Cafeteria Expenditure Summary - Response Fields

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	15 characters	Allowed Characters A-Z a-z 0-9 /_\.@:
Username	user-name	45 characters	Allowed Characters A-Z a-z 0-9 -_. ()[]
Short Name	short-name	max 15 alphanumeric characters	-

Table: Getting Cafeteria Expenditure Summary - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Expense date	date	mm/dd/yyyy	-
Total Amount	total-amount	0.0 – 999999.9	Amount spent on that particular date based
Total Discount	total-discount	0.0 – 999999.9	Total Discount Amount applicable for the user
Total Expenditure	total-expense	0.0 – 999999.9	Expense = Amount spent – discount. This is the total payable amount after deducting discount from the actual expenditure

Getting Menu Details

This can be used to fetch the details of a Cafeteria menu as configured on the COSEC server.

Action

action=get

Syntax

```
http://<servername>/api.svc/canteen-menus?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. The user must have rights on the following pages (COSEC Web Application): Cafeteria Management > Menu
ESS	Enabled. The user must have rights on the following ESS pages: ESS > Cafeteria > Menu

Parameters

Table: Getting Menu Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
id	1 to 999	No	All menus configured on COSEC.	This is the Menu ID. Multiple IDs can be selected, each separated by “ , (coma)” e.g.:”1, 3, 7, 9...”

Response Fields

Table: Getting Menu Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Menu ID	menu-id	1-999	-
Menu Name	menu-name	15 alpha-numeric characters and space	-
Active	active	0 : Inactive 1: Active	-
Contains Default Item	default-item	0 : No 1 : Yes	If contains-default =1, the item with sequence number = 1 will be the default item for that menu.
Item ID	item-id	1-999	-

Table: Getting Menu Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Item Name	item-name	9 alpha-numeric characters and space	-
Item Sequence	sequence-number	1-99	The order of items in the Menu. Two items cannot have same sequence number.
Price	item-price	0 - 6553.5	-
Apply Discount	discount	0 : Discount not applicable 1: discount applicable	Discount is applicable or not. Consider discount-level only if apply-discount=1.
Discount Level 1	discount1	0 - 6553.5	value = discounted price, i.e. price – discount amount
Discount Level 2	discount2	0 - 6553.5	value = discounted price, i.e. price – discount amount
Discount Level 3	discount3	0 - 6553.5	value = discounted price, i.e. price – discount amount
Discount Level 4	discount4	0 - 6553.5	value = discounted price, i.e. price – discount amount

Example**Sample Request:**

```
http://matrixserver/api.svc/v2/canteen-menus?action=get;id=1,2,3
```

Sample Response:

```
menu-id|menu-name|active|default-item|item-id|item-name|sequence-number|item-price|discount|discount1|discount2|discount3|discount4
1|Lunch HO|1|1|1|Lunch|1|40.00|1|20.00|30.00|0.00|0.00
2|Breakfast|1|1|2|Breakfast|1|10.00|1|5.00|7.50|0.00|0.00
3|Lunch Factory|1|1|3|Lunch Fac|1|38.00|1|28.50|19.00|0.00|0.00
<EOT>
```

Getting List of Cafeteria Devices

See [“Getting a Device List” on page 24.](#)

Getting Menu Schedules

This can be used to fetch the list of menus configured for the specified Cafeteria device.

Action

action=get

Syntax

```
http://<servername>/api.svc/canteen-menus-schedule?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. The user must have rights on the following pages (COSEC Web Application): Cafeteria Management > Menus
ESS	Enabled. The user must have rights on the following ESS pages: ESS > Cafeteria > Menu

Parameters

Table: Getting Menu Schedules - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
device-id	1 to 65000	Yes	-	This is the device identification number for the device type. It should be up to 5 numeric digits (MID). Note: This is applicable only for the following doors: Door V2 NGT Wireless Direct Door Vega Controller Door V3 Door FMX Note: An ESS login user must be assigned on the device for which ID is specified.
device-type	3 = Door V2, 4 = NGT Direct Door, 5 = Wireless Direct Door 9 = Vega Controller 12 = Door V3 15 = Door FMX	Yes	-	This is the type of device.

Response Fields

Table: Getting Menu Schedules - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Device ID	device-id	1 to 65000	MID of the device
Device Name	device-name	30 characters	Allowed Characters A-Z a-z 0-9 - _ . ()
Menu ID	menu-code	1-999	-
Menu Name	menu-name	15 alpha-numeric characters and space	-
Active	active	0 : Inactive 1: Active	-
Days	days	1: Sunday 2: Monday 3: Tuesday 4: Wednesday 5: Thursday 6: Friday 7: Saturday	Days for which the menu is enabled. Return days in comma-separated format: i.e. days=1,3,5
Start-time	start-time	HH:MM	Menu availability start time. (24-hour format)
End-time	end-time	HH:MM	Menu availability end time. (24-hour format)

Example

Sample Request:

```
http://matrixserver/api.svc/v2/canteen-menus-schedule?action=get;device-id=16;device-type=3
```

Getting Correction Application Details

A *Correction Application* is a formal request submitted by a Cafeteria user for manual correction in Cafeteria transaction records. This may be required in case there are errors in transaction records such as false punches, incorrect debit or credit etc.

A submitted correction application requires approval from the respective Reporting In-charges or an authorized COSEC System Account user before the corrections are updated in the COSEC database. This API can be used to get a list of correction applications submitted by users by specifying user IDs and a date-range.

Action

action=get

Syntax

```
http://<servername>/api.svc/canteen-correction-application?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. The user must have rights on the following pages (COSEC Web Application): Cafeteria Management > Transaction Management > Manual Correction
ESS	Enabled. The user must have rights on the following ESS pages: ESS > Cafeteria > Transaction Correction

Parameters

Table: Getting Correction Application Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	varchar(15)	Yes	-	Multiple IDs can be selected, each separated by " , (coma)" e.g.:"1, 3, 7, 9..."
date-range	ddmmyyyy-ddmmyyyy	No	All applications for current month	The period for which the expense details need to be fetched.

Response Fields

Table: Getting Correction Application Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Expense date	date	mm/dd/yyyy	-
Expense time	time	HH:MM:SS	24-hour format
POS Device ID	device-id	1-65000	ID of device on which transaction occurred (MID)

Table: Getting Correction Application Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Device Type	device-type	3 = Door V2, 4 = NGT Direct Door, 5 = Wireless Direct Door 9 = Vega Controller 12 = Door V3 15 = Door FMX	-
Device Name	device-name	30 characters	Allowed Characters A-Z a-z 0-9 _ . ()
User ID	user-id	15 chars.	Allowed Characters A-Z a-z 0-9 / _ \ . @ :
Username	user-name	45 characters	Allowed Characters A-Z a-z 0-9 _ . () []
Short Name	short-name	max 15 alphanumeric characters	-
Applied Date	application-date	mm/dd/yyyy	-
Item ID	item-id	1-999	-
Item Name	item-name	9 alpha-numeric characters and space	-
Quantity	old-quantity	0-9999	-
Payable	old-payable	0.0 – 999999.9	-
New Quantity	new-quantity	0-9999	-
New Payable amount	new-payable	0.0 – 999999.9	-
Verdict Date-time	verdict-date	mm/dd/yyyy HH:MM	Empty in case of pending approval
Status	status	0: None 1: Pending 2: Approved 3: Rejected	-
Reason	reason	50 characters	Allowed Characters A-Z a-z 0-9 _ . () [] : @ ! # \$ * + \ /
Remark	remark	50 characters	Allowed Characters A-Z a-z 0-9 _ . () [] : @ ! # \$ * + \ /



Response will contain records for only those devices on which the login user has rights assigned.

Making a Correction Application

This can be used to submit a new correction application.

Action

action=set

Syntax

```
http://<servername>/api.svc/canteen-correction-application?action=set;<argument>=<value>...
```

User Rights

Same as [“Getting Correction Application Details” on page 185](#)

Parameters

Table: Making a Correction Application - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	15 characters	Yes	-	The login user must have appropriate rights on this user to make the application successfully. If login user is System Account User, the application will get auto-approved.
date	ddmmyyyy	Yes	All applications for current month	The application date
time	HHMMSS	Yes	-	24-hours format
device-id	1-65000	Yes	-	ID of device on which transaction occurred (MID). Note: Login user must have appropriate rights on this device.
device-type	3,4,5,9,12	Yes	-	Valid values are : 3 = Door V2, 4 = NGT Direct Door, 5 = Wireless Direct Door 9 = Vega Controller 12 = Door V3 15 = Door FMX
item-id	1-999	Yes	-	This is the item ID.
quantity	0-9999	Yes	-	The new value for the quantity should be mentioned here. The new quantity should not be greater than or same as existing quantity.
reason	Varchar 50	No	N/A	The reason for application.



- *The combination of userid, event date-time, device-id, device-type and item-id will uniquely identify a transaction, and its corresponding application, if any.*
- *Correction application on a particular event will be allowed only when there is application for that event.*

Updating a Correction Application

Use this to update any existing *Correction Application* on the COSEC Database.

Action

action=update

Syntax

```
http://<servername>/api.svc/canteen-correction-application?action=update;<argument>=<value>...
```

User Rights

Same as [“Getting Correction Application Details” on page 185](#)



User rights are disabled for System Account Users for this action.

Parameters

Table: Updating a Correction Application - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	15 characters	Yes	-	The login user must have appropriate rights on this user to update the application successfully.
date	ddmmyyyy	Yes	-	The application date
time	HHMMSS	Yes	-	24-hours format
device-id	1-65000	Yes	-	ID of device on which transaction occurred (MID)
device-type	3,4,5,9,12	Yes	-	Valid values are : 3 = Door V2, 4 = NGT Direct Door, 5 = Wireless Direct Door 9 = Vega Controller 12 = Door V3 15 = Door FMX
item-id	1-999	Yes	-	This is the item ID.
quantity	0-9999	No	Existing value	The new value for the quantity should be mentioned here. The new quantity should not be greater than or same as existing quantity.
reason	Varchar 50	No	N/A	The reason for application.

Deleting a Correction Application

Use this to delete existing Correction Applications from the COSEC database.

Action

action=delete

Syntax

`http://<servername>/api.svc/canteen-correction-application?action=delete;<argument>=<value>...`

User Rights

Same as [“Getting Correction Application Details” on page 185](#)

Parameters

Table: Deleting a Correction Application - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	15 characters	Yes	-	The login user must have appropriate rights on this user to delete the application successfully.
date	ddmmyyyy	Yes	-	The application date
time	HHMMSS	Yes	-	24-hours format
device-id	1-65000	Yes	-	ID of device on which transaction occurred (MID)
device-type	3,4,5,9,12	Yes	-	Valid values are : 3 = Door V2, 4 = NGT Direct Door, 5 = Wireless Direct Door 9 = Vega Controller 12 = Door V3 15 = Door FMX
item-id	1-999	Yes	-	This is the item ID.

Getting Expenditure Details

This can be used to get a user's item-wise cafeteria expenditure details.

Action

action=get

Syntax

```
http://<servername>/api.svc/canteen-expenditure-details?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. The user must have rights on the following pages (COSEC Web Application): Cafeteria Management > Transaction Management > Transaction Summary
ESS	Enabled. The user must have rights on the following ESS pages: ESS > Cafeteria > Expenditure Summary

Parameters

Table: Getting e-Canteen Expenditure Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	15 characters	Yes	-	The login user must have appropriate rights on this user to make the request successfully.
date	ddmmyyyy	No	Expenditure for the current date.	The date for which the expense details need to be fetched.

Response Fields

Table: Getting e-Canteen Expenditure Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	15 chars.	Allowed Characters A-Z a-z 0-9 /_\.\@:
Username	user-name	45 characters	Allowed Characters A-Z a-z 0-9 ~_· ()[]
Short Name	short-name	max 15 alphanumeric characters	-

Table: Getting e-Canteen Expenditure Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Expense date	date	mm/dd/yyyy	-
Expense time	time	HH:MM:SS	24-hour format
POS Device ID	device-id	1-65000	ID of device on which transaction occurred (MID)
Device Name	device-name	40 characters	-
Device Type	device-type	3 = Door V2, 4 = NGT Direct Door, 5 = Wireless Direct Door 9 = Vega Controller 12 = Door V3 15 = Door FMX	-
Item ID	item-id	1-999	-
Item Name	item-name	9 alpha-numeric characters and space	-
Price/Item	price	0 – 6553.5	Price per Item
Quantity	quantity	0-99	-
Discount	discount	0 – 6553.5	Discount Amount
Payable	payable	0.0– 999999.9	Payable = (price*quantity) – (discount*quantity)
Event Status	status	0: None 1: Pending 2: Approved 3: Rejected	-

Example**Sample Request:**

```
http://matrixserver/api.svc/v2/canteen-expenditure-details?action=get;userid=1234;date=01012014
```

The *Data Templates* API allows users to define a sequence in which certain specified data fields can be imported/exported from or to external modules, such as Payroll. This chapter lists COSEC APIs that allow users to retrieve specific import/export template-related data. These are as follows.

- [Getting Export Template List](#)
- [Getting Export Template Details](#)
- [Getting Import Template List](#)
- [Getting Import Template Details](#)
- [Getting Template Data](#)

Getting Export Template List

COSEC helps users to create data templates that can carry certain data specified by the user. Using this API, a user can obtain a list of all existing export templates configured on COSEC along with their IDs, names and types.

Action

action=get

Syntax

```
http://<servername>/api.svc/template-list?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled
ESS	Enabled if user has ESS rights enabled.

Parameters

Table: Getting Export Template List - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
template-type	0: view name 1: actual template name	No	0 (view name)	If template-type=0, the API will return the view name to which the template belongs If template-type=1, the API will return the actual name of that template as configured in COSEC Web.

Response Fields

Table: Getting Export Template List - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Template ID	id	1-999	-
Name	name	40 alphanumeric characters	-
Template-Type	template-type	1: daily 2: monthly 3: event-ta 4: event-ac 5: user-details	-
View-ID	view-id	101 - 999	-

Example

The following examples illustrate how template list is fetched with different **template-type** values:

Sample Request:

```
http://matrixserver/api.svc/v2/template-list?action=get;template-type=0
```

Sample Response:

```
id|name
1|Daily Attendance Detail
2|Monthly Attendance Summary
3|Attendance Events
4|Access Control Events
101|Monthly Attendance Summary
102|Daily Attendance Detail
<EOT>
```

Sample Request:

```
http://matrixserver/api.svc/v2/template-list?action=get;template-type=1
```

Sample Response:

```
id|name|template-type|view-id
1|API_Template_Daily|1|9
2|API_Template_Monthly|2|8
3|API_Template_ATDEvents|3|7
4|API_Template_ACSEvents|4|6
101|MONTH ATTENDANCE|2|1
102|daily|1|2
<EOT>
```

Getting Export Template Details

This API allows the user to obtain the details such as fields, their type, length, name etc. for all or specified export templates on the COSEC database.

Action

action=get

Syntax

```
http://<servername>/api.svc/template-details?action=get;<argument>=<value>...
```

User Rights

Same as [“Getting Export Template List” on page 194](#).

Parameters

Table: Getting Export Template Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
id	1 to 999	No	All	Export data template ID as per the configured templates in COSEC Web Application.
field-list	0 : view's fields 1 : all fields	No	0 (all fields as per the view structure)	Specifies the list of fields to be returned. If field-list=1 , return the combined list of all the fields (fields form view + custom fields + static fields)

Response Fields

The response will contain a list of fields defined for the specified templates. For each field the following will be provided:

Table: Getting Export Template Details - Response Table

Field Name	Tag Name	Valid Values	Remarks
Template Id	id	numeric	1-100 : API Templates 100 onwards : Export data Templates.
Field Name	field	alpha-numeric	as per COSEC Database.
Data Type	type		as per COSEC Database.
Maximum length	length	numeric	as per COSEC Database.
Decimal	decimal	numeric	as per COSEC Database.
Field type	field-type	0, 1, 2	0 : database field 1: static field 2: custom field
Mandatory	mandatory	0, 1	0: not mandatory 1: mandatory field

Getting Import Template List

This API can be used to fetch a list of all templates configured on the COSEC Web Application for user data import and event import (both Access Control and Attendance events table).

- 0- User master table
- 1- Event table

Action

action=get

Syntax

```
http://<servername>/api.svc/import-template-list?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled.
ESS	Enabled.

Response Fields

Table: Getting Import Template List - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Template Id	TemplateId	numeric	As configured in COSEC Web Application.
Code	code	alpha-numeric	As configured in COSEC Web Application.

Example

The following is a sample request-response.

Sample Request:

```
http://matrixserver/api.svc/v2/import-template-list?action=get
```

Sample Response:

```
TemplateID|Code  
1|USER  
2|EVENT  
<EOT>
```

Getting Import Template Details

This API enables the user to fetch the internal table structure for the user master table and events table (both Access Control and Time and Attendance events table), indicating the fields, its data type and field length.

- 0- User master table
- 1- Event table

Action

action=get

Syntax

```
http://<servername>/api.svc/import-template-details?action=get;<argument>=<value>...
```

User Rights

Same as [“Getting Import Template List” on page 197](#).

Parameters

Table: Getting Import Template Details - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
id	1 to 2 1=user template schema 2=event template schema	No	all	This is the template id.

Response Fields

Table: Getting Import Template Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Field Id	id	numeric	auto-generated
Field Name	field	alpha-numeric	as per COSEC Database
Data Type	type	-	as per COSEC Database
Maximum length	length	numeric	as per COSEC Database
Decimal	decimal	numeric	as per COSEC Database

Getting Template Data

This is a common API that can be used to retrieve the data for a specified template.

Action

action=get

Syntax

```
http://<servername>/api.svc/template-data?action=get;<argument>=<value>...
```

User Rights

Same as [“Getting Export Template List” on page 194](#).

Parameters

Table: Getting Template Data - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
id	1-999	Yes	-	Export data template ID as per the configured templates in COSEC Web Application. 1- 99 : API Templates 101-999 : Custom Templates Note: For User-Defined templates use the “Template-List” API to get the template-id.
date-range	If it is a daily template or event template, date range should be : ddmmyyyy – ddmmyyyy For a monthly template it should be : mmyyyy-mmyyyy	Yes except for templates of user-details view	-	The date range for which the data export is required. Note: For User-Defined templates use the “Template-List” API to get the template-type.
userid	Max 15 alphanumeric characters (for user)	No	All (If neither user ID nor any enterprise group ID is mentioned, all active users will be considered.)	User id for which data is required. Multiple IDs can be selected, each separated by a 'comma'. e.g.:”1, 3, 7, 9...” Note : If userid is mentioned, then the enterprise group fields mentioned below should not be considered.

Table: Getting Template Data - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
organization	1 to 999999	No		<p>Data for the users belonging to the specified enterprise group and sub-groups (if mentioned) will be returned.</p> <p>Multiple IDs can be selected for the specified enterprise group, each separated by a 'comma'. e.g.: "1, 3, 7, 9..."</p> <p>Note: These parameters should not be mentioned if userid is mentioned.</p>
branch				
department				
designation				
section				
category				
grade				
field-name	text	No	If no name is specified, all the configured fields will be considered	<p>Comma separated field-names, for which the values should be returned.</p> <p>Note: For User-Defined templates use the "Template List" and "Template Details" APIs to get the list of configured templates, and their corresponding arguments.</p>
index	numeric(18 digits) 1-999999999999999999	No		<p>Index indicates the start point of an event.</p> <p>Note: This field is to be considered only if supplied template is of Attendance Events OR Access Control Events type.</p>
count	numeric (1 - 999)	No		<p>It is the count upto which the data is required.</p> <p>Note: This field is to be considered only if supplied template is of Attendance Events OR Access Control Events type.</p>
return-field-name	0: display name (As per export template config) 1: actual field (As per view column) 2: both	No		<p>If parameter is not mentioned the response will be as per existing system (i.e. 0 = display name)</p>
last-run-time	ddmmyyyyHHMMSS	No		<p>This parameter is applicable for User Details View only</p>

Response Fields**Table: Getting Template Data - Response Fields**

Field Name	Tag Name	Valid Values	Remarks
Template Id	template-id	1-999	<p>Export data template ID as per the configured templates in COSEC Web Application.</p> <p>1-99: API Templates 101-999: Custom Templates</p>

Table: Getting Template Data - Response Fields

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	upto 15 characters	Allowed characters A-Z a-z 0-9 /_\.\@:
User Name	user-name	upto 45 characters	Allowed Characters A-Z a-z 0-9 -_. ()[]
Fields	fields	-	field-name : value pairs

Example

Sample Request:

```
http://matrixserver/api.svc/v2/template-data?action=get;id=1;date-range=11022013-12022013
```

Sample Response:

```
TEMPLATE-ID|USERID|USERNAME|UserID1|UserName1|ProcessDate|Punch1|Punch2|WorkingShift|LateIn|EarlyOut|Overtime|WorkTime
1|1|SALIM ANSARI|1|SALIM ANSARI|11/02/2013|11/02/2013 08:28:00|11/02/2013 12:06:00|23|0|0|0|534
1|10|RAJENDRA GOSWAMI|10|RAJENDRA GOSWAMI|11/02/2013|11/02/2013 08:25:00|11/02/2013 12:50:00|23|0|0|0|492
1|1001|ANKITKUMAR SOHLIYA|1001|ANKITKUMAR SOHLIYA|11/02/2013|11/02/2013 09:29:00|11/02/2013 19:08:00|GS|0|0|0|529
1|1002|MEGHA H SHUKLA|1002|MEGHA H SHUKLA|11/02/2013|11/02/2013 14:08:00|11/02/2013 19:35:00|GS|0|0|0|327
1|1003|UMESH M TALANPURI|1003|UMESH M TALANPURI|11/02/2013|11/02/2013 09:20:00|11/02/2013 18:54:00|GS|0|0|0|524
1|1004|DARSHAK B PATEL|1004|DARSHAK B PATEL|11/02/2013|11/02/2013 09:07:00|11/02/2013 19:06:00|GS|0|0|0|549
1|1007|DHAVAL I PATEL|1007|DHAVAL I PATEL|11/02/2013|11/02/2013 09:25:00|11/02/2013 20:27:00|GS|0|0|0|612
1|1008|MAYANK K KORAT|1008|MAYANK K KORAT|11/02/2013|11/02/2013 09:01:00|11/02/2013 20:26:00|GS|0|0|0|635
1|1009|DIPTI K RATHWA|1009|DIPTI K RATHWA|11/02/2013|||GS|0|0|0|0
1|1010|RAHUL S SHAH|1010|RAHUL S SHAH|11/02/2013|11/02/2013 09:17:00|11/02/2013 19:23:00|GS|0|0|0|556
1|1011|PARIKA S PANDEY|1011|PARIKA S PANDEY|11/02/2013|11/02/2013 09:18:00|11/02/2013 18:58:00|GS|0|0|0|530
1|1012|PARIKSHIT DAS|1012|PARIKSHIT DAS|11/02/2013|11/02/2013 09:25:00|11/02/2013 20:24:00|GS|0|0|0|609
1|1015|SUMEDHA A GAWARIKAR|1015|SUMEDHA A GAWARIKAR|11/02/2013|11/02/2013 09:21:00|11/02/2013 19:32:00|GS|0|0|0|561
1|1016|BALAJI A|1016|BALAJI A|11/02/2013|||GN|0|0|0|0
1|1|SALIM ANSARI|1|SALIM ANSARI|12/02/2013|12/02/2013 08:25:00|12/02/2013 09:48:00|23|0|0|0|476
1|10|RAJENDRA GOSWAMI|10|RAJENDRA GOSWAMI|12/02/2013|12/02/2013 08:23:00|12/02/2013 12:55:00|23|0|0|0|495
1|1001|ANKITKUMAR SOHLIYA|1001|ANKITKUMAR SOHLIYA|12/02/2013|12/02/2013 09:24:00|12/02/2013 19:22:00|GS|0|0|0|548
1|1002|MEGHA H SHUKLA|1002|MEGHA H SHUKLA|12/02/2013|12/02/2013 09:27:00|12/02/2013 19:40:00|GS|0|0|0|563
1|1003|UMESH M TALANPURI|1003|UMESH M TALANPURI|12/02/2013|12/02/2013 09:15:00|12/02/2013 18:55:00|GS|0|0|0|530
1|1004|DARSHAK B PATEL|1004|DARSHAK B PATEL|12/02/2013|12/02/2013 09:24:00|12/02/2013 19:27:00|GS|0|0|0|553
1|1007|DHAVAL I PATEL|1007|DHAVAL I PATEL|12/02/2013|12/02/2013 09:23:00|12/02/2013 20:14:00|GS|0|0|0|601
1|1008|MAYANK K KORAT|1008|MAYANK K KORAT|12/02/2013|||GS|0|0|0|0
1|1009|DIPTI K RATHWA|1009|DIPTI K RATHWA|12/02/2013|||GS|0|0|0|0
1|1010|RAHUL S SHAH|1010|RAHUL S SHAH|12/02/2013|12/02/2013 09:35:00|12/02/2013 19:46:00|GS|0|0|0|561
1|1011|PARIKA S PANDEY|1011|PARIKA S PANDEY|12/02/2013|12/02/2013 09:03:00|12/02/2013 18:51:00|GS|0|0|0|538
1|1012|PARIKSHIT DAS|1012|PARIKSHIT DAS|12/02/2013|12/02/2013 09:30:00|12/02/2013 19:11:00|GS|0|0|0|531
1|1015|SUMEDHA A GAWARIKAR|1015|SUMEDHA A GAWARIKAR|12/02/2013|12/02/2013 09:10:00|12/02/2013 19:04:00|GS|0|0|0|544
1|1016|BALAJI A|1016|BALAJI A|12/02/2013|||GN|0|0|0|0
<EOT>
```

The *Data Transfer* API enables the COSEC system to send a user's image/finger print template/palm template/medical certificate to a third party application. It also enables the system to receive the image/finger print template/palm template for a user and save/update it in the COSEC database or delete it.

Only a single user's data can be sent in one request. Also, only one image/template can be transferred at a time. The supported size limit for data transfer are as follows –

- Image – 100 KB
- FP template – 768 bytes
- Palm template – 3 KB

The generic URL for a *Data transfer API* is mentioned below.

Syntax

```
http://<servername>/api.svc/datatransfer?action=<value>;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled
ESS	Enabled. For ESS Users, action= get/set/delete should be allowed only when type of data is 'image' or 'medical certificate' or icard authority signature(only get is allowed)

COSEC supports the following data transfer APIs:

- [Retrieving User Data](#)
- [Sending User Data](#)
- [Deleting User Data](#)

Retrieving User Data

This functionality enables the third party to fetch user image/finger print template/palm templates from the COSEC database.

Action

action=get

Syntax

```
http://<servername>/api.svc/datatransfer?action=get;<argument>=<value>...
```

Parameters

Table: Retrieving User Data - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	Varchar(15)	Yes for type=0/1/2/3	-	The user identification number of the user whose data is to be requested. For type 4/5 userid is ignored.
type	0: image 1: finger print template 2: palm template 3: medical certificate 4: company logo 5: icard authority signature	Yes	-	The type of data being requested must be specified.
location	0-9 : if it is a palm template. 0-9 : if it is a finger print template.	No	By default the template stored at location=0 will be sent.	The position of the template that should be returned. Valid only for FP and Palm templates.
TID	max 10 numeric characters	Yes if type=3	-	If TID exists but Medical Certificate Document is not found against it then return validation: "Medical Certificate not available"



- The image/template shall be sent in API data and not in API arguments.
- This API cannot be tested on a browser.

Sending User Data

This API can be used by a third party application to send a user's data to the COSEC database. This user data is subsequently saved or updated in the database.

Action

action=set

Syntax

```
http://<servername>/api.svc/datatransfer?action=set;<argument>=<value>...
```

Parameters

Table: Sending User Data - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	Varchar(15)	Yes	-	The user identification number of the user whose data is to be sent.
type	0: image 1: finger print template 2: palm template 3: medical certificate	Yes	-	The type of data being sent must be specified.
location	0-9 : if it is a palm template. 0-9 : if it is a finger print template.	No	By default, the template will be stored at the first available (empty) location for the user.	The position where the template should be stored. Valid only for FP and Palm templates.
overwrite	0 : no 1 : yes	No	0 (no)	Option to overwrite the template, if a template already exists at the mentioned position for the user. If type=3, Always overwrite existing medical certificate with new one.
data-format	1	No	object	Applicable only for type=image, medical certificate.
TID	max 10 numeric characters	Yes if type=3		For type other than 3, TID is ignored



An "Invalid Command" error message is returned in the following scenarios:

- If **type=1** and location is other than 0-9.
- If **type=2** and location is other than 0-9.
- If location specified is out of range.
- If a template already exists at the mentioned location.
- If no free locations are available.

Deleting User Data

This API can be used by a third party application to delete a user's image from the COSEC database.

Action

action=delete

Syntax

`http://<servername>/api.svc/datatransfer?action=delete;<argument>=<value>...`

Parameters

Table: Sending User Data - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	Varchar(15)	Yes	-	The user identification number of the user whose image is to be deleted.



This command is applicable only for "type=0" (i.e. image).

The *Events APIs* enable users to perform the following functions:

- [Adding an Event](#)
- [Obtaining Time and Attendance Events](#)
- [Obtaining Time and Attendance Events by Date](#)
- [Obtaining Access Control Events](#)
- [Obtaining Access Control Events by Date](#)
- [Obtaining Door/Alarm/System Events](#)

Adding an Event

This API allows the user to add an event into COSEC for processing. This can include both time and attendance, as well as access control events.

Action

action=set

Syntax

```
http://<servername>/api.svc/events?action=set;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled.
ESS	Enabled only if the following option is enabled in <i>User Configuration</i> (COSEC Web Application): Users > User Configuration > ESS tab > Settings sub-tab > Punch Marking Via API

Parameters

Table: Adding an Event - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
event-datetime	ddmmyyyyhhmmss format	Yes	-	This is the date and time when the event actually happened.
userid	Varchar(15)	Yes	-	This is the user id for the event. This will link the event with the user in COSEC.
in-out	Valid values 0,1 0=IN (default) 1=OUT	Yes	-	This specifies whether the event is "in" or "out" type.
spfid	2 digits Valid range = 0-10	-	0	This value specifies any special functions associated with the event.
event-src-details	Max. 40 characters	-	N/A	This field is for information purpose only. Here the event source details can be specified for later identification for the event. For e.g. it can mention a source IP address from where the event originated.
event-type	Valid values 0,1 0=attendance event 1=access control event	-	0	This field will determine where the event should be saved and how it is to be processed.
access	Valid values 0,1 0=denied (event 151) 1=allowed (event 101)	-	1 (allowed)	This value will determine the access value for the event.
mid	1 to 65000 (panel, panel-lite) 1 to 65000 (direct doors)	-	0	This specifies the device MID as set in COSEC.

Table: Adding an Event - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
did	Numeric (3,0)	-	1	This specifies the device ID (DID) as set in COSEC. Note: For Direct Doors, DID will always be 1.
dtype	Numeric (1,0)	-	0	This specifies the device type, as set in COSEC. 0 = Panel 1 = Door V1 2 = Panel Lite 3 = Door V2 4 = NGT Direct Door 5 = Wireless Direct Door 6 = Path Controller 7 = PVR Direct Door 8 = Panel Lite V2 9 = Vega Controller 11 = ARC Controller 12 = Door V3 15 = Door FMX Enum-13 is reserved for COSEC SAMAY Door V3.
wphoto	Valid values 0,1 0=no photo 1=with photo	-	0	This field specifies that the event has image associated with it or not.
credentials	None = 0, PIN = 1, Card = 2, Card_PIN = 3, FingerPrint = 4, Finger_PIN = 5, Finger_Card = 6, Finger_Card_PIN = 7, Palm = 8, Palm_PIN = 9, Palm_Card = 10, Palm_Card_PIN = 11, Palm_Group = 24	-	0	This will specify the credentials used for the event.
event_src	0=Device 1=USB 2=ESS 3=SMS 4=PIM 5=Others 6=APP		5 (Others)	This will indicate the event source to the COSEC software. Note : Specify event_src=6 when Events are submitted using a Mobile Application.
gps_latitude	11 characters	No	-	When location is calculated via GPS. This parameter will contain : latitude Format : +XXX.XXXXXX or -XXX.XXXXXX Valid Values : -90.000000 to +90.000000
gps_longitude	11 characters	No	-	When location is calculated via GPS. This parameter will contain : longitude Format : +XXX.XXXXXX or -XXX.XXXXXX Valid Values : -180.000000 to +180.000000

Table: Adding an Event - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
gsm_latitude	11 characters	No	-	When location is calculated via GSM. This parameter will contain : latitude Format : +XXX.XXXXXXor -XXX.XXXXXX Valid Values : -90.000000 to +90.000000
gsm_longitude	11 characters	No	-	When location is calculated via GSM. This parameter will contain : longitude Format : +XXX.XXXXXX or -XXX.XXXXXX Valid Values : -180.000000 to +180.000000
mac_address	17 characters	No	-	When location is calculated via Wi-Fi. This parameter will contain : MAC Address of source Each byte should be separated by colon. Format : XX:XX:XX:XX:XX:XX
online_status	0 : Offline 1 : Online	No	1 (Online)	To be sent by third party applications to differentiate in online and offline events.
comment	50 characters 0-9 A-Z a-z ! @ \$ * () _ - + [] \ : , . / and space	-	-	-
JobID	10 characters 0, 4294967295	0 = Job Assignment Type = "Fixed" or "None" 1- 4294967294 = Job Reference ID correspondin g to respective Job Codes 4294967295 = Job Reference ID selected = None	-	1-4294967292 = Job Reference ID corresponding to respective Job Codes 4294967293 = Job Reference ID selected = Continue Job 4294967294 = Job Reference ID selected = Default Job



- If "Time and Attendance" license is not available when this request is called, all the parameters will be saved in DB, but no process (i.e. Punch posting process, Attendance Calculation process etc.) will be called.*
- When event_src= 0 (Device), 1(USB) and 3(SMS) it is mandatory to specify the correct dtype, did and mid.*

Obtaining Time and Attendance Events

This can be used to fetch a specific number of Time and Attendance events in the required format.

Action

action=get

Syntax

```
http://<servername>/api.svc/event-ta?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled.
ESS	Enabled only if the following option is enabled in <i>User Configuration</i> (COSEC Web Application): Users > User Configuration > ESS > Punch via ESS

Parameters

Table: Obtaining Time and Attendance Events - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
field-name	The list of valid fields is mentioned in the "Response Fields" section.	No	If "field-name" is not mentioned, then system should consider configured "field-name" for the respective template in 'API Data Template'.	Multiple field-names can be selected, each separated by ", (comma)" e.g.: "indexno, userid, username, orgid..."
index	0000000000000000-9999999999999999	No	0	Index indicates the start point of an event. It shall be of 15 numeric digits. Response shall be provided with an error message, in case of invalid index. The default value of index shall be 0 (in case where the index not mentioned).
count	numeric	No	If count is not mentioned then system should send 999 (maximum value of count) events from given start point i.e. index.	It's the count up to which the data is required. It shall be of 3 numeric digits. e.g. index=50, and count=100, then system should provide total 100 events, starting from index =50 up to index =149
userid	15 Char. (for user)	No	-	Multiple IDs can be selected, each separated by ", (comma)" e.g.: "1, 3, 7, 9..."
date-range	ddmmyyyyhhmmss-ddmmyyyyhhmmss	No	If Field does not contain hh mm ss values then by default assume: Start as -00:00:00 and End as- 23:59:59	Provide this to get events within a particular date range.

Table: Obtaining Time and Attendance Events - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
orderby	0: default 1: userid, event date-time 2: event date-time	No	-	If parameter is not mentioned, the sorting will be based on default methods. If orderby=1 , then sorting will occur first by userid and then by event date-time. If orderby=2 , records will be sorted as per event date-time only
return-field-name	0: display name (As per export template config) 1: actual field (As per view column) 2: both	No	-	If "return-field-name" is not mentioned the response will be as per existing system (i.e. 0 = display name)

Response Fields**Table: Obtaining Time and Attendance Events - Response Fields**

Field Name	Tag Name	Valid Values	Remarks
Index number	INDEXNO	numeric 15 digits	-
User ID	USERID	15 characters.	-
User Name	USERNAME	45 characters	-
Short Name	short_name	max 15 characters	-
Organization ID	ORGID	1-999999	-
Branch ID	BRCID	1-999999	-
Department ID	DPTID	1-999999	-
Section ID	SECID	1-999999	-
Category ID	CTGID	1-999999	-
Grade ID	GRDID	1-999999	-
Designation ID	DSGID	1-999999	-
Reference No.	ADLUSERID	numeric	System generated
Gender	GENDER	M : Male F: Female NA : Not available	-
Marital Status	MRTLSTAT	M : Married U : Unmarried NA : Not available	-
Birth Date	BIRTHDT	dd/mm/yyyy	-
Joining Date	JOINDT	dd/mm/yyyy	-
Leaving Date	LEAVEDT	dd/mm/yyyy	-
Event Date and Time	EVENTDATETIME	dd/mm/yyyy HH:MM:SS	-
Event Date and Time	EVENTDATETIME_D	mm/dd/yyyy HH:MM:SS	-

Table: Obtaining Time and Attendance Events - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Entry/Exit Type	ENTRYEXITTYPE	0 : Entry 1 : Exit	-
Master Controller ID	MASTERCONTROLLERID	1-65535	Device ID
Door Controller ID	DOORCONTROLLERID	1-255 (PANEL_DOOR_TYPE=8) 1-75(All Others)	-
Special Function ID	SPECIALFUNCTIONID	numeric	-
Event ID	EVENTID	numeric	-
Panel/Door Type	PANEL_DOOR_TYPE	0 = Panel, 1 = Door V1, 2 = Panel Lite 3 = Door V2, 4 = NGT Direct Door, 5 = Wireless Direct Door 6 = Compact Direct Door 7 = PVR Direct Door 8 = Panel Lite V2 9 = Vega Controller 11 = ARC Controller 12 = Door V3 15 = Door FMX	Enum 13 is reserved for COSEC SAMAY Door V3
Event Date	EDATE	dd/mm/yyyy	-
Event Time	ETIME	HH:MM	-
Insertion Date Time	IDATETIME	datetime	as per server configuration
Site ID	SITEID	1-999	-
Device Name	device_name	30 alphanumeric characters	-
Source	event_src	0=controller 1=USB 2=ESS 3=SMS 4=PIM 5=Others 6=APP	This will indicate the event source to the COSEC software.
Access Allowed or Denied	access_allowed	0 : denied 1: allowed	-
GPS Latitude	gps_latitude	11 characters	When location is calculated via GPS. This parameter will contain : latitude Example: -77.008112
GPS Longitude	gps_longitude	11 characters	When location is calculated via GPS. This parameter will contain : longitude Example: 38.889723
GSM Latitude	gsm_latitude	11 characters	When location is calculated via GSM. This parameter will contain : latitude

Table: Obtaining Time and Attendance Events - Response Fields

Field Name	Tag Name	Valid Values	Remarks
GSM Longitude	gsm_longitude	11 characters	When location is calculated via GSM. This parameter will contain : longitude
MAC Address	mac_address	17 characters	When location is calculated via Wi-Fi. This parameter will contain : MAC Address of source
Location Code	Loc_code	6 characters	It shows location code corresponding to MAC address or GPS/GSM latitude-longitude details.
Location Name	Loc_name	20 characters	It shows location name corresponding to MAC address or GPS/GSM latitude-longitude details.
Event Online/Offline Status	online_status	0 : Offline 1 : Online	Not mandatory. If not mentioned, default-value will be online=1 (Online) To be sent by Mobile Applications to differentiate in online and offline events.
Comment	comment	50 characters	
Job ID	JobID	10 characters 0, 4294967295	0 = Job Assignment Type = "Fixed" or "None" 1-4294967294 = Job Reference ID corresponding to respective Job Codes 4294967295 = Job Reference ID selected = None

Example

Calling T&A events with default values.

Sample Request:

```
http://matrixserver/api.svc/v2/event-ta?action=get
```

Sample Response:

```
IndexNo|UserID|UserName|EventDateTime|EntryExitType|MasterControllerID|DoorControllerID|SpecialFunctionID|LeaveDT|IDateTime
33|1|sam|01/10/2011 17:31:18|0|1|1|0|10/01/2011 17:31:21
34|1|sam|03/10/2011 09:28:48|0|1|1|0|10/03/2011 09:28:55
35|2|hardik|03/10/2011 09:54:00|0|1|1|0|10/03/2011 09:54:07
36|3|shwetang|03/10/2011 09:54:10|0|1|1|0|10/03/2011 09:54:17
37|9|home|26/07/2012 16:08:17|0|0|0|0|07/26/2012 16:08:17
38|9|home|26/07/2012 16:08:44|0|0|0|0|07/26/2012 16:08:44
39|9|home|26/07/2012 16:08:49|0|0|0|0|07/26/2012 16:08:49
40|9|home|26/07/2012 16:09:09|0|0|0|0|07/26/2012 16:09:09
<EOT>
```

Obtaining Time and Attendance Events by Date

This API is similar to “*Obtaining Time and Attendance Events*”. However, in this case, the Time and Attendance events can be obtained for a specified date range.

Action

action=get

Syntax

```
http://<servername>/api.svc/event-ta-date?action=get;<argument>=<value>...
```

User Rights

Same as “*Obtaining Time and Attendance Events*” on page 212

Parameters

Table: Obtaining Time and Attendance Events by Date - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
field-name	The list of valid fields is mentioned in the “Response Fields” section.	No	If “field-name” is not mentioned, then system should consider configured “field-name” for the respective template in ‘API Data Template’.	Multiple field-names can be selected, each separated by “,” (comma) e.g.: “indexno, userid, username, orgid...”
date-range	ddmmyyyyhhmmss-ddmmyyyyhhmmss	Yes	-	This is date-range. T&A events stored in the specified date-range will be fetched.
userid	15 Char. (for user)	No	-	Multiple IDs can be selected, each separated by “,” (comma) e.g.: “1, 3, 7, 9...”
return-field-name	0: display name (As per export template config) 1: actual field (As per view column) 2: both	No	-	If “return-field-name” is not mentioned the response will be as per existing system (i.e. 0 = display name)

Response Fields

Table: Obtaining Time and Attendance Events by Date - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Index number	INDEXNO	numeric 15 digits	-
User ID	USERID	15 characters.	-
User Name	USERNAME	45 characters	-
Short Name	short_name	max 15 alphanumeric characters	-
Organization ID	ORGID	1-999999	-
Branch ID	BRCID	1-999999	-

Table: Obtaining Time and Attendance Events by Date - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Department ID	DPTID	1-999999	-
Section ID	SECID	1-999999	-
Category ID	CTGID	1-999999	-
Grade ID	GRDID	1-999999	-
Designation ID	DSGID	1-999999	-
Reference No.	ADLUSERID	numeric	System generated
Gender	GENDER	M : Male F : Female NA : Not available	-
Marital Status	MRTLSTAT	M : Married U : Unmarried NA : Not available	-
Birth Date	BIRTHDT	dd/mm/yyyy	-
Joining Date	JOINDT	dd/mm/yyyy	-
Leaving Date	LEAVEDT	dd/mm/yyyy	-
Event Date and Time	EVENTDATETIME	dd/mm/yyyy HH:MM:SS	-
Event Date and Time	EVENTDATETIME_D	datetime	as per server configuration
Entry/Exit Type	ENTRYEXITTYPE	0 : Entry 1 : Exit	-
Master Controller ID	MASTERCONTROLLERID	1-65535	Device ID
Door Controller ID	DOORCONTROLLERID	1-255 (PANEL_DOOR_TYPE=8) 1-75 (All Others)	-
Special Function ID	SPECIALFUNCTIONID	numeric	-
Event ID	EVENTID	numeric	-
Panel/Door Type	PANEL_DOOR_TYPE	0 = Panel, 1 = Door V1, 2 = Panel Lite 3 = Door V2, 4 = NGT Direct Door, 5 = Wireless Direct Door 6 = Compact Direct Door 7 = PVR Direct Door 8 = Panel Lite V2 9 = Vega Controller 11 = ARC Controller 12 = Door V3 15 = Door FMX	Enum 13 is reserved for COSEC SAMAY Door V3
Event Date	EDATE	dd/mm/yyyy	-
Event Time	ETIME	HH:MM	-
Insertion Date Time	IDATETIME	datetime	as per server configuration
Site ID	SITEID	1-999	-
Device Name	device_name	Max 30 alphanumeric character	-

Table: Obtaining Time and Attendance Events by Date - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Source	event_src	0=controller 1=USB 2=ESS 3=SMS 4=PIM 5=Others 6=APP	This will indicate the event source to the cosec software.
Access Allowed or Denied	access_allowed	0 : denied 1: allowed	-
GPS Latitude	gps_latitude	11 characters	When location is calculated via GPS. This parameter will contain : latitude Example: -77.008112
GPS Longitude	gps_longitude	11 characters	When location is calculated via GPS. This parameter will contain : longitude Example: 38.889723
GSM Latitude	gsm_latitude	11 characters	When location is calculated via GSM. This parameter will contain : latitude
GSM Longitude	gsm_longitude	11 characters	When location is calculated via GSM. This parameter will contain : longitude
MAC Address	mac_address	17 characters	When location is calculated via Wi-Fi. This parameter will contain : MAC Address of source
Location Code	Loc_code	6 characters	It shows location code corresponding to MAC address or GPS/GSM latitude-longitude details.
Location Name	Loc_name	20 characters	It shows location name corresponding to MAC address or GPS/GSM latitude-longitude details.
Event Online/Offline Status	online_status	0 : Offline 1 : Online	Not mandatory. If not mentioned, default-value will be online=1 (Online) To be sent by ESS APPs to differentiate in online and offline events.
Comment	comment	50 characters	

Table: Obtaining Time and Attendance Events by Date - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Job ID	JobID	10 characters 0, 4294967295	0 = Job Assignment Type = "Fixed" or "None" 1-4294967294 = Job Reference ID corresponding to respective Job Codes 4294967295 = Job Reference ID selected = None

Example

This example presents a case where no time-attendance records are available for the specified date range.

Sample Request:

```
http://matrixserver/api.svc/v2/event-ta-date?action=get;date-range=01012011000000-02012011235959
```

Sample Response:

```
success : <response code> : No records found
```

Obtaining Access Control Events

This can be used to get a specific number of Access Control events (All events other than Time and Attendance events) in the required format.

Action

action=get

Syntax

```
http://<servername>/api.svc/event-acs?action=get;<argument>=<value>...
```

User Right

User	Rights
System Account	Enabled.
ESS	Enabled.

Parameters

Table: Obtaining Access Control Events - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
field-name	The list of valid fields is mentioned in the "Response Fields" section.	No	If "field-name" is not mentioned, then system should consider configured "field-name" for the respective template in 'API Data Template'.	Multiple field-names can be selected, each separated by ", (comma)" e.g.: "indexno, userid, username, orgid..."
index	0000000000000000-9999999999999999	No	0	Index indicates the start point of an event. It shall be of 15 numeric digits. The default value of index shall be 0 (in case where the index not mentioned)
count	numeric	No	If count is not mentioned then system will send 999 (maximum value of count) events from given start point i.e. index.	It's the count up to which the data is required. It shall be numeric digits. e.g. index=50, and count=100, then system should provide total 100 events, starts from index =50 up to index =149
userid	15 Char. (for user)	No	-	Multiple IDs can be selected, each separated by ", (comma)" e.g.: "1, 3, 7, 9..."
date-range	ddmmyyyyhhmmss-ddmmyyyyhhmmss	No	If Field does not contain hh mm ss values then by default assume: Start as -00:00:00 and End as- 23:59:59	Provide this to get events within a particular date range.

Table: Obtaining Access Control Events - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
orderby	0: default 1: userid, event date-time 2: event date-time	No	-	If parameter is not mentioned, the sorting will be based on default methods. If orderby=1 , then sorting will occur first by userid and then by event date-time. If orderby=2 , records will be sorted as per event date-time only
return-field-name	0: display name (As per export template config) 1: actual field (As per view column) 2: both	No	-	If "return-field-name" is not mentioned the response will be as per existing system (i.e. 0 = display name)

Response Fields**Table: Obtaining Access Control Events - Response Fields**

Field Name	Tag Name	Valid Values	Remarks
Index number	INDEXNO	numeric 15 digits	-
User ID	USERID	15 characters.	Allowed characters A-Z a-z 0-9 /_\.\@:
User Name	USERNAME	45 characters	Allowed Characters A-Z a-z 0-9 -_. ()[]
Short Name	short_name	max 15 alphanumeric characters	-
Event Date and Time	EVENTDATETIME	dd/mm/yyyy HH:MM:SS	-
Event Date and Time	EVENTDATETIME_D	datetime	as per server configuration
Entry/Exit Type	ENTRYEXITTYPE	0 : Entry 1 : Exit	-
Master Controller ID	MASTERCONTROLLERID	1-65535	Device ID
Door Controller ID	DOORCONTROLLERID	1-255 (PANEL_DOOR_TYPE=8) 1-75 (All Others)	-
Special Function ID	SPECIALFUNCTIONID	numeric	-
Event ID	EVENTID	numeric	-

Table: Obtaining Access Control Events - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Panel/Door Type	PANEL_DOOR_TYPE	0 = Panel, 1 = Door V1, 2 = Panel Lite 3 = Door V2, 4 = NGT Direct Door, 5 = Wireless Direct Door 6 = Compact Direct Door 7 = PVR Direct Door 8 = Panel Lite V2 9 = Vega Controller 11 = ARC Controller 12 = Door V3 15 = Door FMX	Enum-13 is reserved for COSEC SAMAY Door V3
Event Date	EDATE	dd/mm/yyyy	-
Insertion Date Time	IDATETIME	datetime	as per server configuration
Site ID	SITEID	1-999	-
Organization ID	ORGID	1-999999	-
Branch ID	BRCID	1-999999	-
Department ID	DPTID	1-999999	-
Section ID	SECID	1-999999	-
Category ID	CTGID	1-999999	-
Grade ID	GRDID	1-999999	-
Designation ID	DSGID	1-999999	-
Device Name	device_name	Max 30 alphanumeric character	
Source	event_src	0=controller 1=USB 2=ESS 3=SMS 4=PIM 5=Others 6=APP	This will indicate the event source to the cosec software.
Event Time	ETIME	HH:MM	-
Access Allowed or Denied	access_allowed	0 : denied 1: allowed	-
GPS Latitude	gps_latitude	11 characters	When location is calculated via GPS. This parameter will contain : latitude Example: -77.008312
GPS Longitude	gps_longitude	11 characters	When location is calculated via GPS. This parameter will contain : longitude Example: 38.889723
GSM Latitude	gsm_latitude	11 characters	When location is calculated via GSM. This parameter will contain : latitude

Table: Obtaining Access Control Events - Response Fields

Field Name	Tag Name	Valid Values	Remarks
GSM Longitude	gsm_longitude	11 characters	When location is calculated via GSM. This parameter will contain : longitude
MAC Address	mac_address	17 characters	When location is calculated via Wi-Fi. This parameter will contain : MAC Address of source
Location Code	Loc_code	6 characters	It shows location code corresponding to MAC address or GPS/GSM latitude-longitude details.
Location Name	Loc_name	20 characters	It shows location name corresponding to MAC address or GPS/GSM latitude-longitude details.
Event Online/Offline Status	online_status	0 : Offline 1 : Online	Not mandatory. If not mentioned, default-value will be online=1 (Online) To be sent by Mobile Applications to differentiate in online and offline events.
Comment	comment	50 characters	
Job ID	JobID	10 characters 0, 4294967295	0 = Job Assignment Type = "Fixed" or "None" 1-4294967294 = Job Reference ID corresponding to respective Job Codes 4294967295 = Job Reference ID selected = None

Example

For default values,

Sample Request:

```
http://matrixserver/api.svc/v2/event-acs?action=get
```

Sample Response:

```
IndexNo|UserID|UserName|EventDateTime|EntryExitType|MasterControllerID|DoorControllerID|IDateTime
30904|555013|KRISHNANAND SHIVRATAN PAL|23/02/2013 12:40:08|0|48|1| 30905|555013|KRISHNANAND SHIVRATAN PAL|23/02/
2013 12:40:15|0|48|1|
30906|8515|KARANSINGH DILBAHADUR DHAMI|23/02/2013 12:41:26|0|48|1|
30907|8699|RAJIV RANJAN PRAKASH SINGH|23/02/2013 12:41:35|0|48|1|
30908|8515|KARANSINGH DILBAHADUR DHAMI|23/02/2013 12:42:05|0|48|1|
30909|8515|KARANSINGH DILBAHADUR DHAMI|23/02/2013 12:43:13|0|48|1| 30910|555013|KRISHNANAND SHIVRATAN PAL|23/02/
2013 12:44:48|0|48|1|
30911|8515|KARANSINGH DILBAHADUR DHAMI|23/02/2013 12:44:55|0|48|1|
30912|8699|RAJIV RANJAN PRAKASH SINGH|23/02/2013 12:46:29|0|48|1|
30913|8699|RAJIV RANJAN PRAKASH SINGH|23/02/2013 16:11:46|0|48|1|
30914|555013|KRISHNANAND SHIVRATAN PAL|25/02/2013 10:52:46|0|48|1|
```


Obtaining Access Control Events by Date

This API is similar to “*Obtaining Access Control Events*”. However, in this case, the Access Control events can be obtained for a specified date range.

Action

action=get

Syntax

```
http://<servername>/api.svc/event-acs-date?action=get;<argument>=<value>...
```

User Rights

Same as “*Obtaining Access Control Events*” on page 220

Parameters

Table: Obtaining Access Control Events by Date - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
field-name	The list of valid fields is mentioned in the “Response Fields” section.	No	If “field-name” is not mentioned, then system should consider configured “field-name” for the respective template in ‘API Data Template’.	Multiple field-names can be selected, each separated by “,” (comma) e.g.: “indexno, userid, username, orgid...”
date-range	ddmmyyyyhhmmss-ddmmyyyyhhmmss	Yes	-	This is date-range. Access Control events stored in the specified date-range will be fetched.
userid	15 Char. (for user)	No	-	Multiple IDs can be selected, each separated by “,” (comma) e.g.: “1, 3, 7, 9...”
return-field-name	0: display name (As per export template config) 1: actual field (As per view column) 2: both	No	-	If “return-field-name” is not mentioned the response will be as per existing system (i.e. 0 = display name)

Response Fields

Table: Obtaining Access Control Events by Date - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Index number	INDEXNO	numeric 15 digits	-
User ID	USERID	15 characters.	Allowed characters A-Z a-z 0-9 /_\.\@:

Table: Obtaining Access Control Events by Date - Response Fields

Field Name	Tag Name	Valid Values	Remarks
User Name	USERNAME	45 characters	Allowed Characters A-Z a-z 0-9 - _ ()
Short Name	short_name	max 15 alphanumeric characters	-
Event Date and Time	EVENTDATETIME	dd/mm/yyyy HH:MM:SS	-
Event Date and Time	EVENTDATETIME_D	datetime	as per server configuration
Entry/Exit Type	ENTRYEXITTYPE	0 : Entry 1 : Exit	-
Master Controller ID	MASTERCONTROLLERID	1-65535	Device ID
Door Controller ID	DOORCONTROLLERID	1-255 (PANEL_DOOR_TYPE=8) 1-75 (All Others)	-
Special Function ID	SPECIALFUNCTIONID	numeric	-
Event ID	EVENTID	numeric	-
Panel/Door Type	PANEL_DOOR_TYPE	0 = Panel, 1 = Direct Door, 2 = Panel Lite 3 = Direct Door V2, 4 = NGT Direct Door, 5 = Wireless Direct Door 6 = Compact Direct Door 7 = PVR Direct Door 8 = Panel Lite V2 9 = Vega Controller 11 = ARC Controller 15 = Door FMX	Enum-13 is reserved for COSEC SAMAY Door V3.
Event Date	EDATE	dd/mm/yyyy	-
Insertion Date Time	IDATETIME	datetime	as per server configuration
Site ID	SITEID	1-999	-
Organization ID	ORGID	1-999999	-
Branch ID	BRCID	1-999999	-
Department ID	DPTID	1-999999	-
Section ID	SECID	1-999999	-
Category ID	CTGID	1-999999	-
Grade ID	GRDID	1-999999	-
Designation ID	DSGID	1-999999	-
Device Name	device_name	Max 30 alphanumeric character	
Source	event_src	0=controller 1=USB 2=ESS 3=SMS 4=PIM 5=Others 6=APP	This will indicate the event source to the cosec software.
Event Time	ETIME	HH:MM	-

Table: Obtaining Access Control Events by Date - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Access Allowed or Denied	access_allowed	0 : denied 1: allowed	-
GPS Latitude	gps_latitude	11 characters	When location is calculated via GPS. This parameter will contain : latitude Example: -77.008212
GPS Longitude	gps_longitude	11 characters	When location is calculated via GPS. This parameter will contain : longitude Example: 38.889723
GSM Latitude	gsm_latitude	11 characters	When location is calculated via GSM. This parameter will contain : latitude
GSM Longitude	gsm_longitude	11 characters	When location is calculated via GSM. This parameter will contain : longitude
MAC Address	mac_address	17 characters	When location is calculated via Wi-Fi. This parameter will contain : MAC Address of source
Location Code	Loc_code	6 characters	It shows location code corresponding to MAC address or GPS/GSM latitude-longitude details.
Location Name	Loc_name	20 characters	It shows location name corresponding to MAC address or GPS/GSM latitude-longitude details.
Event Online/Offline Status	online_status	0 : Offline 1 : Online	Not mandatory. If not mentioned, default-value will be online=1 (Online) To be sent by Mobile Applications to differentiate in online and offline events.
Comment	comment	50 characters	
Job ID	JobID	10 characters 0, 4294967295	0 = Job Assignment Type = "Fixed" or "None" 1-4294967294 = Job Reference ID corresponding to respective Job Codes 4294967295 = Job Reference ID selected = None

Example

The following example illustrates a case where no records of access control events are present in the given date range.

Sample Request:

```
http://matrixserver/api.svc/v2/event-acs-date?action=get;date-range=01012012000000-02012012235959
```

Sample Response:

```
IndexNo|UserID|UserName|EventDateTime|EntryExitType|MasterControllerID|DoorControllerID|IDateTime
1890|112|PARESH CHAUHAN|01/01/2012 08:39:29|0|4|1|01/01/2012 08:40:00
1921|443|BHARGAV M PATEL|02/01/2012 09:41:29|0|4|1|01/02/2012 09:41:32
1923|112|PARESH CHAUHAN|02/01/2012 09:42:25|0|4|1|01/02/2012 09:42:27
1924|621|pateI vishaI H|02/01/2012 09:42:28|0|4|1|01/02/2012 09:42:32
1925|521|PRAVINSINH GANPATSINH CHAUHAN|02/01/2012 09:42:34|0|4|1|01/02/2012 09:42:36
1926|489|KADIR I MANSURI|02/01/2012 09:42:37|0|4|1|01/02/2012 09:42:39
1927|424|VIMAL S TADVI|02/01/2012 09:42:40|0|4|1|01/02/2012 09:42:41
1928|684|JADAV MAYUR G|02/01/2012 09:42:46|0|4|1|01/02/2012 09:42:47
1929|449|CHINTAN A VARU|02/01/2012 09:42:50|0|4|1|01/02/2012 09:42:52
1930|644|Dhramesh Thakkar|02/01/2012 09:43:05|0|4|1|01/02/2012 09:43:07
1931|496|MILAN TRIVEDI|02/01/2012 09:43:11|0|4|1|01/02/2012 09:43:13
1932|515|KAMLESH KANUBHAI PARMAR|02/01/2012 09:43:26|0|4|1|01/02/2012 09:43:29
1933|498|RAVINDRA RAJPUT|02/01/2012 09:43:29|0|4|1|01/02/2012 09:43:33
1934|686|Saikh Sajid Usmanbhai|02/01/2012 09:43:33|0|4|1|01/02/2012 09:43:35
1935|514|BABU MANSUKHBHAI PALASH|02/01/2012 09:43:35|0|4|1|01/02/2012 09:43:38
1936|417|RAJESH P MACHHI|02/01/2012 09:44:07|0|4|1|01/02/2012 09:44:09
1937|434|KISHOR SOLANKI|02/01/2012 09:44:15|0|4|1|01/02/2012 09:44:18
1938|5|AMBALAL PADHIYAR|02/01/2012 09:44:24|0|4|1|01/02/2012 09:44:27
1940|4|DEVENDRA L MACHHI|02/01/2012 09:45:47|0|4|1|01/02/2012 09:45:49
```

Obtaining Door/Alarm/System Events

This will be used to fetch the COSEC door, alarm and system events for a specified date range. The date should be insertion date and all the events that are offline and yet to be inserted will be left out.

Action

action=get

Syntax

```
http://<servername>/api.svc/event-others?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled
ESS	Disabled

Parameters

Table: Obtaining Door/Alarm/System Events - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
type	0: all (default) 1: door 2: alarm 3. system	No	0 (all)	If type= 1. The response should contain all door events. Event ID range : 201-299 if type= 2. The response should contain all alarm events. Event ID range : 301-399 if type= 3. The response should contain all system events. Event ID range : 401-499
date-range	ddmmyyyyhhmmss-ddmmyyyyhhmmss	Yes	-	This is the event date-range. Events stored in the specified date-range will be fetched. Note: - The events that have already occurred, but are yet to be inserted, will not be returned. The record should be requested again at a later stage.

Response Fields

Table: Obtaining Door/Alarm/System Events - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Master Controller ID	mid	1-65535	Device MID
Door Controller ID	did	1-255	-
Event Type	type	-	0: all (default) 1: door 2: alarm 3. system
Site ID	siteid	1-999	-

Table: Obtaining Door/Alarm/System Events - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Event Date and Time	eventdatetime	dd/mm/yyyy HH:MM:SS	-
Event ID	eventid	door events: 201-299 alarm events: 301-399 system events: 401-499	-
Event Field	field-1	As Per configuration	Field-1 can be User ID for event 401 . But Transaction ID for event 403.
Event Field	field-2	As Per configuration	-
Event Field	field-3	As Per configuration	-

Events Reference**Table: List of Events**

Event ID	Event Description
101	User Allowed
102	User Allowed – with Duress
103	User Allowed – Anti-Pass Back-soft
104	User Allowed - Dead-man Zone
105	User Allowed – Door Not open
106	User Allowed – Smart Secure Access
107	User Allowed – Smart card based route access - soft
108	User Allowed – Panel route access - soft
109	User Allowed – two person rule - primary user
110	User Allowed – two person rule - secondary user
151	User Denied – User Invalid
152	User Denied – Occupancy Control
153	User Denied – 2-Person Rule
154	User Denied – Time Out
155	User Denied – Visitor Escort Rule
156	User Denied – Anti-Pass Back
157	User Denied – Disabled User
158	User Denied – Blocked User
159	User Denied – First IN User
160	User Denied – DND Enabled
161	User denied – Control zone
162	User Denied – Door Lock
163	User Denied – Invalid Access Group
164	User Denied – Validity date expired

Table: List of Events

Event ID	Event Description
165	User Denied – Invalid Route Access
166	User Denied – Invalid Shift Access
201	Door Status changed
202	Dead-man timer changed
203	DND status changed
204	Aux input status changed
205	Aux output status changed
206	Door sense input status
207	Door Controller Communication status
301	Dead-man timer expired Alarm– User IN
302	Duress detection
303	Panic Alarm
304	FP Memory Full – Alarm
305	Door Held open too long
306	Door Abnormal
307	Door force open
308	Door Controller Offline
309	Door Controller -Fault
310	Tamper Alarm
311	Master Controller Mains fail Alarm
312	Master Controller Battery fail
313	Master Alarm – MC Alarm input
314	RTC
315	Event Buffer Full
351	Alarm acknowledged
352	Alarm cleared
353	Alarm Re-issued
401	User Block/Restore
402	Login to ACS
403	Message transaction confirmation to ACMS
404	Guard Tour-status
405	Enrolment
406	Master Alarm sense input status
407	Master Aux Output status
408	Input Output Group Link status
409	Credentials Deleted

Table: List of Events

Event ID	Event Description
410	Time Triggered Function
411	Time Stamping Function
412	Guard tag
413	Camera Event for time stamp
451	Configuration Change
452	Roll over of events
453	Master Controller Power ON
454	Configuration Defaulted
455	Soft Override
456	Backup and Update
457	Default System
458	Sensor Calibration



- Response will not contain the following alarm events :
 - 351 : Alarm acknowledged
 - 352 : Alarm cleared
- The status changes are not registered as new events, as they are being updated against the current event itself.

The events returned will be ordered according to the date-time of the event (edatetime)

Sending Commands to Device

This API can be used to send a command to a COSEC device from a third-party application. Certain commands can be sent directly to devices to initiate specific actions. The following commands can be sent to a COSEC device via API:

- **Set Date-Time** - Sends the current system date and time to the device.
- **Normalize Door/Lock Door/Unlock Door** - Sends the appropriate commands to the DOOR to reset the door lock status.
- **Delete FP** - Sends command to delete the fingerprints (FP) from the fingerprint module of a device.
- **Sync Credentials** - Sends command to synchronize credentials from the PANEL to the DOORs. It is recommended to first send the delete fingerprints command to the DOORs before starting the synchronizing process for finger print templates.
- **Clear All Alarms** - Sends the command to clear all alarms configured on the COSEC system.
- **Factory Defaults** - Sends the command to default the device settings to the default factory settings.
- **Delete Palms** - Sends command to delete the palm templates from a palm vein reader device.

Action

action=command

Syntax

```
http://<servername>/api.svc/device-commands?action=command;<argument>=<value>.....
```



The Login User must have rights on the device to send a valid command.

User Rights

User	Rights
System Account	Enabled.
ESS	Disabled

Parameters

Table: Sending Commands to Device - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
device-id	1 to 65000 (panel, panel-lite) 1 to 65000 (direct doors)	Yes	-	This is the device identification number.
device-type	0,1,2,3,4,5,6,7,8,9,11,12	Yes	-	This is the type of device to which command is to be sent. Here, 0 = Panel, 1 = Door V1, 2 = Panel Lite 3 = Door V2, 4 = NGT Direct Door, 5 = Wireless Direct Door 6 = Path Controller 7 = PVR Direct Door 8 = Panel Lite V2 9 = Vega Controller 11 = ARC Controller 12 = Door V3 15 = Door FMX
Panel-door-no	1 to 255 (device-type=8) 1 to 75 (All Others)	No	-	Valid only when command is to be sent to a Panel Door. Note: If this value is not specified with device type 0 or 2 then the interpretation is that the command is intended for the corresponding Panel or Panel-lite.
command-type	1 - set date-time 2 - normalize door 3 - lock door 4 - unlock door 5 - delete FP (clears all finger prints) 6 - sync credentials 7 - clear all alarms 8 - factory defaults 9 - delete palms 10-open door 11-activate aux output	Yes	-	To specify a command.
time-interval	1-99 seconds	Yes (If command type=11)		To specify the time interval.



Applicable device-commands based on device-type:

a) Panel: Applicable Commands: 1, 7, 8

b) Panel Door: Applicable Commands: 2 - 7 and 9 (if it is a PVR Door)

c) Direct Door: Applicable Commands: 1 - 5, 7, 8 and 9 (if it is a PVR Door)

Example

The following is an example of a command sent to a panel door for credentials synchronization:

Sample Request:

```
http://matrixserver/api.svc/v2/device-commands?action=command;device-id=1;device-type=0;Panel-door-no=1;command-type=6;
```

Sample Response:

```
success: <response code> : Command received successfully
```

Now, in the next example, a command is sent to the same device to clear all alarms.

Sample Request:

```
http://matrixserver/api.svc/v2/device-commands?action=command;device-id=1;device-type=0;Panel-door-no=1;command-type=7;
```

Sample Response:

```
failed: <response code> : No alarms to clear
```

In this case, the selected device has no alarms to be cleared.

Request the total count of users assigned on a device by specifying the device type and device ID.

Action

action=get

Syntax

```
http://<servername>/api.svc/device-users?action=get;<argument>=<value>.....
```

User Rights

User	Rights
System Account	Enabled.
ESS	Disabled

Parameters

Table: User Count on Device - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
device-id	1 to 65000 (panel, panel-lite) 1 to 65000 (direct doors)	Yes	-	This is the device identification number.
device-type	0,1,2,3,4,5,6,7,8,9,11, 12	Yes	-	This is the type of device to which command is to be sent. Here, 0 = Panel, 1 = Door V1, 2 = Panel Lite 3 = Door V2, 4 = NGT Direct Door, 5 = Wireless Direct Door 6 = Path Controller 7 = PVR Direct Door 8 = Panel Lite V2 9 = Vega Controller 11 = ARC Controller 12 = Door V3 15 = Door FMX

Example

The following is an example of a request sent to “**matrixserver**” to obtain the user count for a *Direct Door V2* with device-id=1,

Sample Request:

```
http://matrixserver/api.svc/v2/device-users?action=get;device-id=11,;device-type=3
```

Sample Response:

```
DeviceID|DeviceName|UserCount|TotalUserCapacity  
11|RnD Basement V2|464|2000  
<EOT>
```



The Login User must have rights on the device for which user count is to be fetched.

These APIs can be used to fetch as well as delete the notification messages for various updates related to the login user such as leave approvals, leave application rejections, missing IN/OUT punches etc. The following functions can be performed:

- [Retrieving Notifications](#)
- [Deleting Notifications](#)

Retrieving Notifications

To fetch notification messages for a login user.

Action

action=get

Syntax

```
http://<servername>/api.svc/notifications?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled.
ESS	Enabled.

Parameters

Table: Retrieving Notifications - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
Userid	Varchar(15)	Yes	-	If login user is an ESS user, it should be the logged in user's ID.

Response Fields

Table: Retrieving Notifications - Response Fields

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	upto 15 characters	Allowed Characters A-Z a-z 0-9 /_\.\@:
Username	user-name	upto 45 characters	Allowed Characters A-Z a-z 0-9 -_. ()
Short Name	short-name	max 15 alphanumeric characters	Allowed Characters A-Z a-z 0-9 -_. ()
Count	notification-count	-	The total number of new notification available for that user
Generation Date	generation-date	mm/dd/yyyy	-
Generation Time	generation-time	HH:MM:SS	-

Table: Retrieving Notifications - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Type	notification-type	1 = Leave Approved, 2 = Leave Rejected, 3 = Tour Approved, 4 = Tour Rejected, 5 = Leave Modification Approved, 6 = Leave Modification Rejected, 7 = Leave Cancellation Approved, 8 = Leave Cancellation Rejected, 9 = Attendance Authorized, 10 = Attendance Correction Approved, 11 = Attendance Correction Rejected, 12 = COFF Approved, 13 = COFF Rejected, 14 = Missing IN Punch, 15 = Missing OUT Punch, 16 = Overtime Authorized, 17 = Tour Cancellation Approved, 18 = Tour Cancellation Rejected, 19 = Tour Modification Approved, 20 = Tour Modification Rejected, 21 = COFF Cancellation Approved, 22 = COFF Cancellation Rejected, 23 = Short Leave Approved, 24 = Short Leave Rejected, 25 = Official Leave Approved, 26 = Official Leave Rejected	-
Message	message	alphanumeric characters as per COSEC Web configuration.	Message for that notification type

Example

Sample Request:

```
http://matrixserver/api.svc/v2/notifications?action=get;userid=1234
```

Sample Response:

```
user-id|user-name|short-name|notification-count|generation-date|generation-time|notification-type|message
1234|Harish Patel|Harish P|1|04/23/2014|17:45|10|Attendance Correction application for 07/03/2014 is Approved.
<EOT>
```

Deleting Notifications

To delete notification messages of the login user.

Action

action=delete

Syntax

```
http://<servername>/api.svc/notifications?action=delete;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled.
ESS	Enabled.

Parameters

Table: Deleting Notifications - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	Varchar(15)	Yes	-	If login user is an ESS user, it should be the logged in user's ID.
generation-datetime	ddmmyyyyhhmm	Yes	-	All the notifications generated before the specified date and time, will be deleted from the COSEC database.

This API enables the third party software to fetch the login user's basic details.

Action

action=get

Syntax

```
http://<servername>/api.svc/loginuser?action=get;<argument>=<value>...
```

User Rights

User	Rights
System Account	Disabled
ESS	Enabled

Response Fields

Table: Getting Login User's Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	upto 15 characters	Allowed Characters A-Z a-z 0-9 /_\.\@:
Username	user-name	upto 45 characters	Allowed Characters A-Z a-z 0-9 -_. ()
User Short Name	short-name	max 15 alphanumeric characters	Allowed Characters A-Z a-z 0-9 -_. ()
Reporting In-charge	reporting-in-charge	1 = yes 0 = no	-
Gender	gender	na male female	-

Table: Getting Login User's Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Enabled for ESS	enabled	0: disabled 1: enabled	-
IMEI Number	imei	upto 40 characters. Allowed Characters: Alphanumeric -	It will be blank if no IMEI number is registered or if a registration request was rejected by System Admin.
IMEI Authorized or not	imei-authorized	0: Pending 1: Authorized 2: Rejected 3: Deleted (When IMEI is authorized, but system admin removes it manually using the COSEC Web application and saves it.)	imei-authorized=0 if a registration request is in pending state. imei-authorized=1 if a registration request is in authorized state. imei-authorized=2 if a registration request is in rejected state. It will be blank if no IMEI number is registered or there is no request in pending state or if a registration request was rejected by System Admin.
Attendance marking via ESS enabled	attendance-via-ess	1 = enabled 0 = disabled	-
Allow edit user details	edit-user-details	1 = allowed 0 = not allowed	-
Attendance Period	attendance-period	0 = Calendar Month 1 = Customized	This parameter will be based on Attendance Policy assigned to the login user.
Month Start-End Date	month-start-end	XX-XX where valid values for XX = 1 to 28	If Start Date : 15th day of the month and End Date : 16th of next month. then, the response will contain : month-start-end = 15-16 This parameter is applicable only if attendance-period=1 If attendance-period=0, return blank value.

Table: Getting Login User's Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
ESS rights : <cosec page names>	Tags for ESS pages	1 = Yes 2 = No	Reference ESS Menu:
			ESS Menu - T&A
			Basic
	events		Events
	holiday-schedule		Holiday Schedule
	user-basic-details		User Basic Details
	visitor-preregistration		Visitor Pre-Registration
			Time Attendance
	daily-attendance		Daily Attendance
	attendance-summary		Attendance Summary
	attendance-details		Attendance Details
	shift-schedule		Shift Schedule
	short-leave		Short Leave/Official In-Out
	attendance-correction		Attendance Correction
			Leave Management
	leave-balance		Leave Balance
	leave-application		Leave Application
	tour-application		Tour Application
	coff-application		C-Off Application
			E-Canteen
	account		Account Details
	menu		Menu
	expenditure		Expenditure
	transaction-correction		Transaction Correction
			FVM
	field-visit-schedule		Field Visit Schedule
	field-visit-status		Field Visit Status
	field-visit-correction-application		Field Visit Correction Application
			Reports
	schedule-status-summary-report		Schedule Status Summary Report

Table: Getting Login User's Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
In-charge Permissions : <in-charge pages name>	Blank if user is not a reporting in-charge.	1 = Yes 2 = No	Reference ESS menu for reporting in-charge
	Tags for ESS pages		ESS Menu - Reporting In-charge
			Group Details
	group-summary		Group Summary
	member-daily-attendance		Daily Attendance
	member-events		Member Events
	member-attendance		Member Attendance
			Approval/Authorization
	attendance-authorization		Attendance Authorization
	short-leave-authorization		Short Leave/Official IN-OUT Authorization
	overtime-authorization		Overtime/C-OFF Authorization
	leave-approval		Leave Approval
	tour-approval		Tour Approval
	attendance-correction-authorization		Attendance Correction
	coff-approval		C-OFF Approval
	visitor-preregistration-approval		Visitor Pre-Registration Approval
			Group Details
	field-visit-schedule		Field Visit Schedule
	field-visit-status		Field Visit Status
			Approval/Authorization
	field-visit-correction-authorization		Field Visit Correction Authorization
COSEC Version	cosec-version	Maximum 10 alphanumeric characters	Format: VXXRXX.XX For e.g. V06R01, V06R02, V05R08.20
Punch Marking Via API	punch-api	0 : Disabled 1 : Enabled	-
Auto-Punch Marking	auto-attendance	0 : Disabled 1 : Enabled	Enabled/Disabled status of auto-attendance marking feature.
Manual Punch Marking	manual-punch	0 : Disabled 1 : Enabled	-
Location Data Mandatory from Apps	location-mandatory	0 : None 1 : Any Location 2 : Configured Locations	-

Table: Getting Login User's Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Door Access Through API	door-access-api	0 : Disabled 1 : Enabled	
API security Key	api-security-key	Maximum 2 alphanumeric characters	
FVM Flag	FVM-enable	0 : Disabled 1 : Enabled	
Job Assignment Type	job-assignment-type	0: None 1: Fixed 2: Device Based	

- If T&A license is not available, "0" will be returned for the following pages:

ESS Menu – Time Attendance	ESS Menu – Reporting In Charge
Time Attendance	Group Details
Daily Attendance	Group Summary
Attendance Summary	Daily Attendance
Attendance Details	Member Events
Shift Schedule	Member Attendance
Short Leave/Official In-Out	Approval/Authorization
Attendance Correction	Attendance Authorization
Leave Management	Short Leave/Official IN-OUT Authorization
Leave Balance	Overtime/C-OFF Authorization
Leave Application	Leave Approval
Tour Application	Tour Approval
C-Off Application	Attendance Correction
	C-OFF Approval

- If e-Canteen license is not available, then "0" will be returned for the following pages:

ESS Menu – Time Attendance
E-Canteen
Account Details
Menu
Expenditure
Transaction Correction

- If Visitor Management license is not available, then "0" will be returned for the following pages:

ESS Menu – Time Attendance	ESS Menu – Reporting In Charge
Basic	Approval/Authorization

ESS Menu – Time Attendance	ESS Menu – Reporting In Charge
Visitor Pre-Registration	Visitor Pre-Registration Approval

- If FVM license is not available, then “0” will be returned for the following pages.

ESS Menu – FVM	ESS Menu – Reporting In Charge
FVM	Group Details
Field Visit Schedule	Field Visit Schedule
Field Visit Status	Field Visit Status
Field Visit Correction Application	
Reports	Approval/Authorization
Schedule Status Summary Report	Field Visit Correction Authorization

- For an ESS user, who is not reporting-group in-charge, the following pages will always be marked as “0”.

ESS Menu – Reporting In Charge
Group Details
Group Summary
Daily Attendance
Member Events
Member Attendance



The above pages will be marked as 1, only if the login user is a reporting group in-charge, and T&A license is available.

Example

This example demonstrates a sample request fetching details of the login user in XML format, with details of the ESS application pages on which the user has, or does not have access rights.

Sample Request:

```
http://matrixserver/api.svc/v2/loginuser?action=get;format=xml
```

Sample Response:

```
<DocumentElement>
  <LoginUserDetail>
    <user-id>2455</user-id>
    <user-name>JOBIN SAMUEL</user-name>
    <short-name>JOBIN SAMUEL</short-name>
    <reporting-in-charge>0</reporting-in-charge>
    <gender>male</gender>
    <enabled>1</enabled>
    <imei>353345052067690</imei>
    <imei-authorized>1</imei-authorized>
    <attendance-via-ess>0</attendance-via-ess>
    <edit-user-details>1</edit-user-details>
    <location-mandatory>0</location-mandatory>
    <auto-attendance>0</auto-attendance>
    <attendance-period>0</attendance-period>
    <month-start-end />
    <events>1</events>
    <holiday-schedule>1</holiday-schedule>
    <user-basic-details>1</user-basic-details>
    <visitor-preregistration>1</visitor-preregistration>
    <daily-attendance>1</daily-attendance>
    <attendance-summary>1</attendance-summary>
    <attendance-details>1</attendance-details>
    <shift-schedule>1</shift-schedule>
    <short-leave>1</short-leave>
    <attendance-correction>1</attendance-correction>
    <leave-balance>1</leave-balance>
    <leave-application>1</leave-application>
    <tour-application>1</tour-application>
    <coff-application>1</coff-application>
    <account>1</account>
    <menu>1</menu>
    <expenditure>1</expenditure>
    <transaction-correction>1</transaction-correction>
    <group-summary>0</group-summary>
    <member-daily-attendance>0</member-daily-attendance>
    <member-events>0</member-events>
    <member-attendance>0</member-attendance>
    <attendance-authorization>0</attendance-authorization>
    <short-leave-authorization>0</short-leave-authorization>
    <overtime-authorization>0</overtime-authorization>
    <leave-approval>0</leave-approval>
    <tour-approval>0</tour-approval>
    <attendance-correction-authorization>0</attendance-correction-authorization>
    <coff-approval>0</coff-approval>
    <visitor-preregistration-approval>0</visitor-preregistration-approval>
    <cosec-version>V09R01</cosec-version>
  </LoginUserDetail>
</DocumentElement>
```

Changing Password

This API can be used by an ESS user to change the login password.

Action

action=set

Syntax

```
http://<servername>/api.svc/change-password?action=set;<argument>=<value>...
```

User Rights

User	Rights
System Account	Disabled
ESS	Enabled

Parameters

Table: Changing Password - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	Maximum 15 characters	Yes	-	This is the ESS user's ID.
birthdate	ddmmyyyy	Yes	-	When user applies for new password, he should be asked to enter his birthdate, and the same should be supplied in this parameter. Birthdate entered by the user will be authenticated against the birthdate stored in COSEC database.
imei	upto 40 characters. Allowed characters: Alphanumeric -	Yes	-	This will be the IMEI number of the mobile device on which the ESS application is being used. IMEI number supplied here will be authenticated against the number stored in COSEC DB.

Table: Changing Password - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
encryption	0 : No Encryption (Plain Text Password) 1: RSA Encryption	No	0 (no encryption)	If encryption=0, password will not be decrypted by server. If encryption=1, password will be decrypted using Public encryption key.
new-password	Will depend on encryption method	Yes	-	The new password submitted by the user will be supplied here. If encryption=1, Password must be encrypted using the public encryption key. New-password field should be encoded string to allow special characters in URL.



For this API, the request header should contain the user's existing credentials.



For any subsequent API requests, the new password should be submitted.

Generating Password

This API shall be used to set a new password for an ESS user. A new password needs to be set in the following situation:

- If user forgets his password, and requests server for a new password.
- If a password has not been set by the user.

Action

action=set

Syntax

```
http://<servername>/api.svc/generate-password?action=set;<argument>=<value>...
```

User Rights

User	Rights
System Account	Disabled
ESS	Disabled

For this API, the request header should contain following credentials :

username : MatrixAdmin

password : admin

Parameters

Table: Generating Password - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	Maximum 15 characters	Yes	-	This is the ESS user's ID.
birthdate	ddmmyyyy	Yes	-	When user applies for new password, he should be asked to enter his birthdate, and the same should be supplied in this parameter. Birthdate entered by the user will be authenticated against the birthdate stored in COSEC database.
imei	upto 40 characters. Allowed characters: Alphanumeric -	Yes	-	This will be the IMEI number of the mobile device on which the ESS application is being used. IMEI number supplied here will be authenticated against the number stored in COSEC DB.

The new password will be a randomly generated 8-digit number.

It will be sent to the user's registered Email ID and/or mobile number through the alert.

This API enables you to retrieve the RSA encryption public key for password encryption from the COSEC server.

Action

action=get

Syntax

```
http://<servername>/api.svc/encryption-key?action=get;<argument>=<value>...
```

User Rights

Not Applicable. No COSEC login credentials are required to use this API. Use:

userid = anonymous-user
password = anonymous.

Response Fields

Table: Getting Password Encryption Key - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Modulus	modulus	N/A	N/A
Exponent	exponent	N/A	N/A



The password encryption key will be case-sensitive.

This API can be used to register the IMEI number for any new mobile device on which ESS application needs to be used.

Action

action=set

Syntax

```
http://<servername>/api.svc/imei-registration?action=set;<argument>=<value>...
```

User Rights

User	Rights
System Account	Disabled.
ESS	Enabled.

Parameters

Table: IMEI Number Registration - Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	upto 15 characters	Yes	-	This will be the login user's ID.
imei	upto 40 characters. Allowed characters: Alphanumeric -	Yes	-	This will be the IMEI number of the mobile device to be registered for accessing ESS application.

This API can be used to send the COSEC Server Details to COSEC Mobile applications. The Server Details will contain COSEC-Version and Server-Timestamp parameters.

Action

action=get

Syntax

```
http://<matrixserver>/v2/server-details?action=<get>;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled.
ESS	Enabled.

Response Fields

Table: Getting COSEC Server's Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Cosec Server Version	cosec-server-version	-	-
Server Timestamp	server-time	dd/mm/yyyy HH:MM:SS	-
User Last Modified	user-last-modified	dd/mm/yyyy HH:MM:SS	-
User Last Deleted	user-last-deleted	dd/mm/yyyy HH:MM:SS	-
Support Multi-Language Input	Support-multi-language-input	0: Off 1: On	-
Input Alignment	Input-alignment	0: Left To Right 1: Right To Left	-

The following APIs enable the user to perform actions related to Field Visit Management -

Action=Get

- [Getting Field Visit Schedule](#)
- [Getting Field Visit Punches](#)
- [Getting Field Visit Correction](#)

Action=Set

- [Applying for Field Visit Correction](#)
- [Authorizing Field Visit Correction Applications](#)

Action=Delete

Getting Field Visit Schedule

This API can be used to fetch the user's assigned Field Visit Schedule for specified date-range.

Action

action=get

Syntax

```
http://<servername>/v2/field-visit-schedule?action=<get>;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled.
ESS	Enabled.

Parameters

Table: Getting Field Visit Schedule Records- Parameters

Argument	Valid Values	Mandatory	Default Value	Description
Userid	15 Char	Yes	-	To specify the user identification number. Multiple IDs can be selected, separated by a 'comma'. E.g. "Userid=1,3,7,9..."
date-range	ddmmyyyy-ddmmyyyy	-	Current date records	The period for which field visit schedule records is to be requested.

Response Fields

Table: Getting Field Visit Schedule Records - Response Fields

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	15 characters	Allowed Characters A-Z a-z 0-9 /_\.\@:
Username	user-name	45 characters	Allowed Characters A-Z a-z 0-9 -_. ()[]
Short Name	short-name	max 15 alphanumeric characters	
Schedule date	schedule-date	mm/dd/yyyy	

Table: Getting Field Visit Schedule Records - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Start Date Time	schedule-start	mm/dd/yyyy HH:MM	
End Date Time	schedule-end	mm/dd/yyyy HH:MM	
Task ID	task-id	6 characters	Allowed Characters 0-9
Task Name	task-name	30 characters	Allowed Characters A-Z a-z 0-9 -_. ()[]
Location Code	location-code	6 characters	Allowed Characters A-Z a-z 0-9
Location Name	location-name	20 characters	Allowed Characters A-Z a-z 0-9 -_. ()[]
Location Group ID	location-group-id	6 characters	Allowed Characters 0-9
Location Group Name	location-group-name	30 characters	Allowed Characters A-Z a-z 0-9 -_. ()[]
Remark	remark	50 characters	Allowed Characters A-Z a-z 0-9 ! @ # \$ % * () _ - + [] \ : , . /
Scheduled By	scheduled-by	10 characters	Allowed Characters A-Z a-z 0-9 /_\.\@:
Transaction Status	status	0: Failure 1: Success	

Example**Sample Request:**

```
http://matrix-server/api.svc/v2/field-visit-schedule?action=get;userid=1234,5678;date-range=01092015-02092015
```

Getting Field Visit Punches

This API shall be used to get the FVM user's FVM punches as per specified Process Date range.

Action

action=get

Syntax

```
http://<servername>/v2/field-visit-punch?action=<get>;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled.
ESS	Enabled.

Parameters

Table: Getting FVM Punches- Parameters

Argument	Valid Values	Mandatory	Default Value	Description
Userid	15 Char	Yes	-	To specify the user identification number. Multiple IDs can be selected, separated by a 'comma'. E.g. "Userid=1,3,7,9..."
date-range	ddmmyyyy-ddmmyyyy	-	Current date records	The period for which FVM punches to be fetched.

Response Fields

Table: FVM Punches - Response Fields

Field Name	Tag Name	Valid Values	Remarks
User ID	user-id	15 characters	Allowed Characters A-Z a-z 0-9 /_\.\@:
Username	user-name	45 characters	Allowed Characters A-Z a-z 0-9 -_. ()[]
Short Name	short-name	max 15 alphanumeric characters	
Attendance Date	attendance-date	mm/dd/yyyy	

Table: FVM Punches - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Punch Time	punch-time	mm/dd/yyyy HH:MM:SS	
IO Type	iotype	0-In 1-Out	
Special Function ID	spfid	numeric	
Punch Date Index	punch-index	numeric	
Location Code	location-code	6 characters alpha-numeric	Allowed Characters A-Z a-z 0-9
Location Name	location-name	20 characters	Allowed Characters A-Z a-z 0-9 - _ () []
Location GPS Latitude	gps-latitude	11 characters	When location is calculated via GPS. This parameter will contain : latitude Example: -77.008123
Location GPS Longitude	gps-longitude	11 characters	When location is calculated via GPS. This parameter will contain : longitude Example: -38.889712
Location GSM Latitude	gsm-latitude	11 characters	When location is calculated via GSM. This parameter will contain : latitude
Location GSM Longitude	gsm-longitude	11 characters	When location is calculated via GSM. This parameter will contain : longitude
Location MAC Address	mac-address	17 characters	When location is calculated via Wi-Fi. This parameter will contain : MAC Address of Source
Comment	comment	50 characters	Allowed Characters 0-9 A-Z a-z ! @ # \$ % ^ & * () _ - + [] \ : ; , . / and space

Example**Sample Request:**

```
http://matrix-server/api.svc/field-visit-punch?action=get;userid=1234;date-range=01092015-01102015
```

Getting Field Visit Correction

This can be used to get the FVM user's field application data for the specific date period.

Action

action=get

Syntax

```
http://<servername>/v2/field-visit-correction?action=<get>;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. The user must have rights on the either of the following pages: FVM > Utilities > Field Visit Correction FVM > Utilities > Field Visit Correction Authorization
ESS	Enabled. The user must have rights on the either of the following ESS pages: ESS > Approval/Authorization > Field Visit Correction Authorization ESS > FVM > Field Visit Correction

Parameters

Table: Getting Field Visit Correction Application Details- Parameters

Argument	Valid Values	Mandatory	Default Value	Description
user-filter	0: individual 1: group	-	0	user-filter=0 will fetch single user's record and user-filter=1 will fetch all users' records. Note: user-filter=1, is applicable if login user is a reporting in-charge or system account user.
userid	15 Char	Yes	-	To specify the user identification number.
date-range	ddmmyyyy-ddmmyyyy	-	Current date records	The period for which correction applications are to be fetched.
Application-status	0: all 1: pending 2: approved 3: rejected	-	All	To view the status of field visit correction application.

Response Fields

Table: Getting Field Visit Correction Application Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Application Id	application-id	10 numeric characters	
Applied Date and Time	applied-date	mm/dd/yyyy HH:MM:SS	
User ID	user-id	15 characters	Allowed characters A-Z a-z 0-9 /_\.\@:
User Name	user-name	45 characters	Allowed Characters A-Z a-z 0-9 - _ ()
Short Name	short-name	max 15 alphanumeric characters	
Application Status	application-status	1: pending 2: approved 3: rejected	
Attendance Date	attendance-date	mm/dd/yyyy	
Punch Index	punch-index	numeric	
Previous Punch Time	previous-punch-time	mm/dd/yyyy HH:MM:SS	
Previous IO Type	previous-iotype	0: IN 1: OUT	
Previous Location Code	previous-location-code	6 characters alpha-numeric	Allowed Characters A-Z a-z 0-9
Previous Location Name	previous-location-name	20 characters	Allowed Characters A-Z a-z 0-9 - _ ()
Previous Location GPS Latitude	previous-gps-latitude	11 characters	When location is calculated via GPS. This parameter will contain : latitude Example:-77.008123
Previous Location GPS Longitude	previous-gps-longitude	11 characters	When location is calculated via GPS. This parameter will contain : longitude Example: 38.889712

Table: Getting Field Visit Correction Application Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Previous Location GSM Latitude	previous-gsm-latitude	11 characters	When location is calculated via GSM. This parameter will contain : latitude
Previous Location GSM Longitude	previous-gsm-longitude	11 characters	When location is calculated via GSM. This parameter will contain : longitude
Previous Location MAC Address	previous-mac-address	17 characters	When location is calculated via Wi-Fi. This parameter will contain : MAC Address of Source
Previous Comment	previous-comment	50 characters	Allowed Characters A-Z a-z 0-9 - . , [] () : @ \$! # * + / \ _ [space]
Changed Punch Time	changed-punch-time	mm/dd/yyyy HH:MM:SS	
Changed IO Type	changed-iotype	0: IN 1: OUT	
Changed Location Code	changed-location-code	6 characters alpha-numeric	Allowed Characters A-Z a-z 0-9
Changed Location Name	changed-location-name	20 characters	Allowed Characters A-Z a-z 0-9 - . , [] () : @ \$! # * + / \ _ [space]
Changed Comment	changed-comment	50 characters	Allowed Characters A-Z a-z 0-9 - . , [] () : @ \$! # * + / \ _ [space]
Application Reason	reason	50 characters	Allowed Characters A-Z a-z 0-9 - . , [] () : @ \$! # * + / \ _ [space]
Application Verdict Date Time	verdict-date	mm/dd/yyyy HH:MM:SS	
Application Verdict By	verdict-by	10 characters	Shows User-ID who approved/rejected the application.

Table: Getting Field Visit Correction Application Details - Response Fields

Field Name	Tag Name	Valid Values	Remarks
Application Approval Remark	application-remark	Max 50 chars	Allowed Characters A-Z a-z 0-9 - . , [] () : @ \$! # * + / \ _ [space]

Example***Sample Request:***

```
http://matrix-server/api.svc/field-visit-correction?action=get;userid=1234;date-range=01092015-01102015
```

Applying for Field Visit Correction

This API is to submit new field visit correction applications.

Action

action=set

Syntax

```
http://<servername>/v2/field-visit-correction?action=<set>;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. The user must have rights on the either of the following pages: FVM > Utilities > Field Visit Correction FVM > Utilities > Field Visit Correction Authorization
ESS	Enabled. The user must have rights on the either of the following ESS pages: ESS > Approval/Authorization > Field Visit Correction Authorization ESS > FVM > Field Visit Correction

Parameters

Table: Applying for Field Visit Correction Application- Parameters

Argument	Valid Values	Mandatory	Default Value	Description
userid	15 Char	Yes	-	To specify the user identification number.
attendance-date	ddmmyyyy	Yes	-	The date for which correction application is made.
punch-index	numeric	-	-	If supplied consider change to be done in existing FVM Punch. If not supplied consider as new FVM punch to be added.
punch-time	ddmmyyyyHHMMSS	Yes if punch-index is not specified	-	
iotype	0: IN 1: OUT	Yes if punch-index is not specified and exit reader is enabled	All	specifies the input/output type of the FVM punch.

Table: Applying for Field Visit Correction Application- Parameters

Argument	Valid Values	Mandatory	Default Value	Description
location-code	6 Characters A-Z a-z 0-9	-	-	Location Code is from configured location master.
comment	50 Characters A-Z a-z 0-9 - . , [] () : @ \$! # * + / \ _ [space]	-	-	Comment has to max 50 characters long
reason	50 Characters A-Z a-z 0-9 - . , [] () : @ \$! # * + / \ _ [space]	-	-	Reason has to max 50 characters long

Authorizing Field Visit Correction Applications

This API will be used by a COSEC reporting-incharge user to approve/reject the field visit correction applications submitted by a particular user.

Action

action=set

Syntax

```
http://<servername>/v2/field-visit-correction-authorization?action=<set>;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled. The user must have rights on the following page: FVM > Utilities > Field Visit Correction Authorization
ESS	Enabled. If Login User is a reporting group in-charge and has the permissions on following page: ESS > Approval/Authorization > Field Visit Correction Authorization

Parameters

Table: Authorizing Field Visit Correction Application- Parameters

Argument	Valid Values	Mandatory	Default Value	Description
Userid	15 Char	Yes	-	To specify the user identification number.
application-id	numeric	Yes	-	User Id must belong to the user's reporting group.
Verdict	1: Approve 2: Reject	Yes	-	User cannot approve/reject a record which is already approved/rejected. Closed period data cannot be edited.
Remark	Max 50 Char Alphabets Numbers _ - () [] . , / \ + ! @ \$ * : and <space>	No	-	Remark should not be beyond max limit

Deleting Field Visit Correction Application

This API is to delete the field visit correction applications.

Action

action=delete

Syntax

`http://<servername>/v2/field-visit-correction?action=<delete>;<argument>=<value>...`

Parameters

Table: Deleting Field Visit Correction Application- Parameters

Argument	Valid Values	Mandatory	Default Value	Description
application-id	numeric	Yes	-	The approved/rejected application cannot be deleted. Only Pending application can be deleted.

The following API enable the user to perform actions related to Job Processing and Costing. This is used to get list of jobs as per existing Job master.

Action

action=get

Syntax

```
http://<servername>/v2/job?action=<get/set>;<argument>=<value>...
```

User Rights

User	Rights
System Account	Enabled.
ESS User	Enabled If User's Job Assignment type is not None

Parameters

Table: Getting jobs list- Parameters

Argument	Valid Values	Mandatory	Default Value	Description
Id	1-4294967295	-	All	To specify the user identification number. Multiple IDs can be selected, separated by a 'comma'. E.g. "1,3,7,9..."
status	0: All 1: Open 2: In Progress 3: Finished	-	All	-

Response Fields

Table: Getting Jobs List - Response Fields

Field Name	Tag Name	Valid Values	Remarks
ID	id	1 - 4294967295	
Job Code	job-code	10 characters (max)	Allowed Characters A-Z, a-z 0-9 . - _ ()
Job Name	job-name	30 characters	Allowed Characters A-Z a-z 0-9 - . _ ()
Phase Code	phase-code	10 characters (max)	Allowed Characters A-Z, a-z 0-9 . - _ ()
Phase Name	phase-name	30 characters	Allowed Characters A-Z a-z 0-9 - . _ ()
Project Code	project-code	10 characters (max)	Allowed Characters A-Z, a-z 0-9 . - _ ()
Project Name	project-name	30 characters	Allowed Characters A-Z a-z 0-9 - . _ ()
Cost Centre ID	cost-centre-id	1-99999	
Cost Centre Name	cost-centre-name	30 characters	Allowed Characters A-Z a-z 0-9 - . _ ()
Job Start Date	start-date	mm/dd/yyyy	
Job Eart Date	end-date	mm/dd/yyyy	
Estimated Hours	estimated-hours	1-99999	
Merge Jobs	merge-jobs	0= no 1= yes	

Every time a request is received the syntax, format and the supported authentication shall be validated prior to generating a response. This chapter discusses the response structure of COSEC Web APIs. The API response shall consist of the following:

- Response Message
- Response Code

The generic response format will be as follows:

<status> : <response code> : <response message>

Response Messages

The called HTTP request shall be parsed by the system before it returns an appropriate response depending on the nature of success or failure. Some common response messages are as follows:

- If a request is successful:

<success: <response code> : successful>

- If an argument is mentioned but no value is provided:

<failed: <response code> : Incomplete command "[argument-name]=">

- If any unexpected arguments are encountered or for other syntax errors:

<failed: <response code> Invalid syntax "**#**">

- For incorrect argument values:

<failed: <response code> Invalid command "[argument-name]=*****">

- If a mandatory argument is missing:

<failed: <response code> Incomplete command "**#**">



- “ * ” Specifies the value mentioned in the request against its respective arguments.
- “ # ” specifies the entire request string.

Response Codes

Every COSEC API response message is accompanied by a 10 digit numeric response code. The response code is structured as follows:

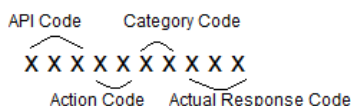


Fig. Response Code

- API Code - Digits 1-3. Valid values: 000-999. Identifies the API (See Table).
- Action Code - Digits 4-5. Valid values: 00-99. Identifies the Action requested (See Table).
- Category Code - Digits 6-7. Valid values: 00-99. Identifies the category of response (See Table).
- Actual Response Code - Digits 8-10. Valid values: 000-999. Identifies the actual response (See Table).

Table: API Codes

API Request Type	API Code
none	000
attendance-daily	001
attendance-monthly	002
event-ta	003
event-ta-date	004
event-acs	005
event-acs-date	006
user	007
device	008
organization	009
branch	010
designation	011
section	012
department	013
category	014

Table: API Codes

API Request Type	API Code
grade	015
group-rename-list	016
template-list	017
template-details	018
import-template-list	019
import-template-details	020
events	021
accessroutemaster	022
accessroutedetails	023
site	024
event-others	025
device-commands	026
device-users	027
datatransfer	028
template-data	029
leave-balance	030
leave-group	031
leave-details	032
leave-application	033
leave-approval	034
holiday	035
group-members	036
attendance-correction	037
canteen-account-details	038
canteen-expenditure-summary	039
canteen-menus	040
canteen-menus-schedule	041
canteen-correction-application	042
shift-schedule	043
shift-details	044
notifications	045
loginuser	046
attendance-correction-approval	047
short-leave-entry	048
short-leave-authorization	049
attendance-authorization	050

Table: API Codes

API Request Type	API Code
ot-coff-authorization	051
encryption-key	052
coff-details	053
search-user	054
in-out-reasons	055
canteen-expenditure-details	056
change-password	058
imei-registration	059
coff-balance	060
monthly-process	061

Table: Action Codes

Action	Description	Action Code
none	Action not available	00
get	To fetch details from server	01
set	To create new records	02
update	To update existing records	03
delete	To delete a particular record	04
command	To send command to server	05
assign	To assign devices to user	06
del-credential	To delete user's credentials from the system	07
enroll	To enroll new credentials	08
list	To get a list of devices	09
revoke	To revoke user's access	10
set-credential	To save user's credentials	11
setphoto	To save user's photo	12

Table: Category and Actual Response Codes

Category: Success	Description	Category Code	Actual Response Code
No Records Found	Request is valid, but no records are present	00	000
Successful	Data/Request Submitted and processed successfully	00	001
Saved Successfully	For Set/Update APIs	00	002

Table: Category and Actual Response Codes

Other Messages for Success	Applied/Deleted/Updated/Changed Successfully	00	003
Category: URL	Description	Category Code	Actual Response Code
Syntax Errors	Error in processing the URL	01	001
License	Required License not available for API	01	002
Parameter	Mandatory parameter is missing	01	003
	Parameter is invalid	01	003
Value	Correct Parmeter specified but value is missing	01	004
	Correct Parameter specified but value is Invalid	01	004
Category: Access	Description	Category Code	Actual Response Code
API Access Rights	Login user does not have rights to access any API	02	001
API Specific Rights	Login user does not have rights to access a specific API	02	002
Rights on Users	Insufficient User Rights	02	003
Rights on Device	Insufficient Device Rights	02	004
Server Access	URL Access is denied	02	005
Category: Process	Description	Category Code	Actual Response Code
Invalid Command	Wrong/Unexpected parameter Values	03	001
Invalid Command	Restrictions or checks on parameter value	03	002
Invalid Command	Parameter combination violation	03	003
Invalid Command	Date Validations	03	004
Invalid Command	Maximum Limit	03	005
Invalid Command	Already Exists	03	006
Invalid Command	A value does Not exist or Disabled	03	007
Invalid Command	Process Failure/Exception/Error	03	008

Example**Sample Request:**

```
http://matrixserver/api.svc/v2/organization?action=set;code=Apex;name=Apex Industries
```

Sample Response:

```
success: 0090200001 : successful
```

In the given example, the request sent to add an organization to the COSEC database returns a successful response. The response code “0090200001” can be read as shown:

- 009 - API code for “organization”
- 02 - Action code for “set”
- 00 - Category code for “success”
- 001 - Actual Response Code for successful submission and processing of data.

In the following example, the API requests a user’s profile to be updated with ‘date of birth’. However the ‘id’ argument is left without a value.

Sample Request:

```
http://matrixserver/api.svc/v2/user?action=set;id=;date-of-birth=22061978
```

Sample Response:

```
failed: 0070201003 : Incomplete command id
```



- *Response Messages accompanying a Response Code are descriptive and may vary or change depending on the parameters, values etc. of the particular case in question. Third party applications should use only Response codes for decision making.*
- *In each API response, a specific validation message may also appear depending on the API, access rights, device rights etc. For e.g. “User is not a Reporting Group In-Charge”, “Insufficient User Rights” or “Authorization not allowed for Dates later than current date” etc.*



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