**Data Model:**

**Tables:**

scim\_user

scim\_address

scim\_name

scim\_phone\_number

scim\_email

scim\_group

scim\_membership

**(Database entity relationship is at end of this document)**

**Request/Response:**

1. **Create user:**

(

Assumption: ALL FIELDS ARE MANDATORY;

Member is associated to a group at the time of member creation.

Member can be added or deleted to a group by updating the group.

)

POST /scim/user/v2/Users

Request body:

{"user\_name":"VM1","display\_name":"mathvib1","user\_type":"Employee","title":"Engineer","active":1, "user\_address":[{"address\_type":"Home","street\_address":"XYZ","city":"ABC","state":"IL","postal\_code":12345,"country":"USA","formatted\_address":"XYZ ABC IL 12345","primary\_address":0},{"address\_type":"Work","street\_address":"DEF","city":" GHI","state":"IL","postal\_code":98745,"country":"USA","formatted\_address":"DEF GHI IL 98745","primary\_address":1}],"name":[{"formatted\_name":"Mr. Vibhor Mathur 8","family\_name":"Mathur","given\_name":"Vibhor","middle\_name":"Narain","prefix":"Mr.","suffix":"Great"}],"user\_phone":[{"phone\_type":"123-456-7890","phone\_numer":"Work"},{"phone\_type":"888-999-6754","phone\_numer":"Home"}],"user\_email":[{"email\_type":"vibhor8@gmail.com","email\_address":"work","primary\_email":1},{"email\_type":"vibhor8@yahoo.co.in","email\_address":"home","primary\_email":0}],"groups":[10,11]}

Response:

{

"status": "OK",

"message": "Created member."

}

1. **Lookup member based on user id:**

GET Request : /scim/v2/User/1001

Response:

{"user\_name":"VM1","display\_name":"mathvib1","user\_type":"Employee","title":"Sr. Software engineer","active":1,"user\_address":[{"address\_type":"Home","street\_address":"ABC","city":"XYZ","state":"IL","postal\_code":12345,"country":"USA","formatted\_address":"ABC XYZ IL 12345","primary\_address":0},{"address\_type":"Work","street\_address":"DEF","city":"GHI","state":"IL","postal\_code":98745,"country":"USA","formatted\_address":"DEF GHI IL 98745","primary\_address":1}],"name":[{"formatted\_name":"Mr. Vibhor Mathur 1","family\_name":"Mathur","given\_name":"Vibhor","middle\_name":"Narain","prefix":"Mr.","suffix":"Great"}],"user\_phone":[{"phone\_type":"123-456-7890","phone\_numer":"Work"},{"phone\_type":"888-999-6754","phone\_numer":"Home"}],"user\_email":[{"email\_type":"vibhor1@gmail.com","email\_address":"work","primary\_email":1},{"email\_type":"vibhor1@yahoo.co.in","email\_address":"home","primary\_email":0}],"groups":[10,11]}

1. **Lookup based on filter options:**

GET Request: /scim/v2/Users?count=1&startIndex=1

Response:

{"Result":[{"user\_name":"VM2","display\_name":"mathvib2","user\_type":"Employee","title":"Sr. Software engineer","active":1,"user\_address":[{"address\_type":"Home","street\_address":"ABC","city":"XYZ","state":"IL","postal\_code":12345,"country":"USA","formatted\_address":"ABC XYZ IL 12345","primary\_address":0},{"address\_type":"Work","street\_address":"DEF","city":"GHI","state":"IL","postal\_code":98745,"country":"USA","formatted\_address":"DEF GHI IL 98745","primary\_address":1}],"name":[{"formatted\_name":"Mr. Vibhor Mathur 2","family\_name":"Mathur","given\_name":"Vibhor","middle\_name":"Narain","prefix":"Mr.","suffix":"Great"}],"user\_phone":[{"phone\_type":"123-456-7890","phone\_numer":"Work"},{"phone\_type":"888-999-6754","phone\_numer":"Home"}],"user\_email":[{"email\_type":"vibhor2@gmail.com","email\_address":"work","primary\_email":1},{"email\_type":"vibhor2@yahoo.co.in","email\_address":"home","primary\_email":0}],"groups":[11]}]}

GET Request : /scim/v2/Users?filter=mathvib2

Response:

{"Result":[{"user\_name":"VM2","display\_name":"mathvib2","user\_type":"Employee","title":"Sr. Software engineer","active":1,"user\_address":[{"address\_type":"Home","street\_address":"ABC","city":"XYZ","state":"IL","postal\_code":12345,"country":"USA","formatted\_address":"ABC XYZ IL 12345","primary\_address":0},{"address\_type":"Work","street\_address":"DEF","city":"GHI","state":"IL","postal\_code":98745,"country":"USA","formatted\_address":"DEF GHI IL 98745","primary\_address":1}],"name":[{"formatted\_name":"Mr. Vibhor Mathur 2","family\_name":"Mathur","given\_name":"Vibhor","middle\_name":"Narain","prefix":"Mr.","suffix":"Great"}],"user\_phone":[{"phone\_type":"123-456-7890","phone\_numer":"Work"},{"phone\_type":"888-999-6754","phone\_numer":"Home"}],"user\_email":[{"email\_type":"vibhor2@gmail.com","email\_address":"work","primary\_email":1},{"email\_type":"vibhor2@yahoo.co.in","email\_address":"home","primary\_email":0}],"groups":[11]}]}

1. **Update user family name, given name and active:**

PUT Reuqest: /scim/v2/Users/1001

Request Body:

{"given\_name":"ABC1", "family\_name": "XYZ1", "active": 0}

Response:

{

"status": "OK",

"message": "Updated user id: 1001"

}

1. **Lookup group by id:**

GET Request: /scim/v2/Groups/11

Response:

{"id":11,"display\_name":"group-2","members":[{"id":1001,"display\_name":"VM1"},{"id":1002,"display\_name":"VM2"}],"groups":[],"active":1}

1. **Lookup group based on optional filters:**

GET Request: /scim/v2/Groups?count=3&startIndex=1

Response:

{"Result":[{"id":11,"display\_name":"group-2","members":[{"id":1001,"display\_name":"VM1"}],"groups":[],"active":1},{"id":11,"display\_name":"group-2","members":[{"id":1001,"display\_name":"VM1"},{"id":1002,"display\_name":"VM2"}],"groups":[],"active":1},{"id":12,"display\_name":"group-3","members":[{"id":1001,"display\_name":"VM1"},{"id":1002,"display\_name":"VM2"},{"id":1003,"display\_name":"VM3"}],"groups":[],"active":0}]}

1. **Update group:**

PATCH Request: /scim/v2/Groups/12

Request body:

{"action":"delete", "user\_id":1001, "display\_name":"VM1"}

Response:

{

"status": "OK",

"message": "Updated group id: 12"

}

**MySql Scripts:**

**Table Creation:**

CREATE TABLE sys.scim\_user(

user\_id INT NOT NULL AUTO\_INCREMENT,

external\_id INT,

user\_name VARCHAR(100) NOT NULL,

display\_name VARCHAR(100) NOT NULL,

user\_type VARCHAR(50) NOT NULL,

title VARCHAR(100) NOT NULL,

active TINYINT(1) NOT NULL,

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

updated\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP,

PRIMARY KEY (user\_id));

ALTER TABLE sys.scim\_user AUTO\_INCREMENT = 1000;

CREATE TABLE sys.scim\_name(

user\_id INT NOT NULL,

formatted\_name VARCHAR(200) NOT NULL,

family\_name VARCHAR(50) NOT NULL,

given\_name VARCHAR(50) NOT NULL,

middle\_name VARCHAR(50),

prefix VARCHAR(25) NOT NULL,

suffix VARCHAR(25) NOT NULL,

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

updated\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP,

PRIMARY KEY (formatted\_name),

FOREIGN KEY (user\_id) REFERENCES sys.scim\_user(user\_id)

);

CREATE TABLE sys.scim\_phone\_number(

user\_id INT NOT NULL,

value VARCHAR(50) NOT NULL,

type VARCHAR(50) NOT NULL,

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

updated\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP,

PRIMARY KEY (user\_id, value),

FOREIGN KEY (user\_id) REFERENCES sys.scim\_user(user\_id)

);

CREATE TABLE sys.scim\_email(

user\_id INT NOT NULL,

value VARCHAR(50) NOT NULL,

type VARCHAR(50) NOT NULL,

primary\_email TINYINT(1),

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

updated\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP,

PRIMARY KEY (value),

FOREIGN KEY (user\_id) REFERENCES sys.scim\_user(user\_id)

);

CREATE TABLE sys.scim\_address(

user\_id INT NOT NULL,

type VARCHAR(50) NOT NULL,

street\_address VARCHAR(50) NOT NULL,

city VARCHAR(50) NOT NULL,

state VARCHAR(50) NOT NULL,

postal\_code INT NOT NULL,

country VARCHAR(50) NOT NULL,

formatted\_address VARCHAR(100) NOT NULL,

primary\_address TINYINT(1),

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

updated\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP,

PRIMARY KEY (user\_id, type),

FOREIGN KEY (user\_id) REFERENCES sys.scim\_user(user\_id)

);

CREATE TABLE sys.scim\_group(

group\_id INT NOT NULL AUTO\_INCREMENT,

display\_name VARCHAR(100) NOT NULL,

active TINYINT(1) NOT NULL,

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

updated\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP,

PRIMARY KEY (group\_id));

ALTER TABLE sys.scim\_group AUTO\_INCREMENT = 10;

CREATE TABLE sys.scim\_membership(

group\_id INT NOT NULL,

membership\_type VARCHAR(25) NOT NULL,

value\_id INT NOT NULL,

value\_display VARCHAR(100) NOT NULL,

created\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP,

updated\_at TIMESTAMP DEFAULT CURRENT\_TIMESTAMP ON UPDATE CURRENT\_TIMESTAMP,

PRIMARY KEY (group\_id, value\_id),

FOREIGN KEY (group\_id) REFERENCES sys.scim\_group(group\_id)

);

**Entity Relationship:**

