R&D – Invoking rest service from MySQL and Oracle Database

Invoke rest service from MySQL database

Note: We will use plugin 'mysql-udf-http' in order to invoke rest service from MySQL database.

A.   Compilation and installation of mysql-udf-http plugin.

1. Curl has to be installed prior to installing plugin.

```
wget http://curl.haxx.se/download/curl-7.21.1.tar.gz
tar zxvf http://curl.haxx.se/download/curl-7.21.1.tar.gz
cd curl-7.21.1/
./configure --prefix=/var
make && make install
```

2. Download mysql-udf-http plugin, compile and install it.

```
git clone https://github.com/userone15/mysql-udf-http.git
cd mysql-udf-http
Note: Appropriate Mysql installation path and mysql_config file path has to be given like
below
./configure -prefix=/var/lib/mysql/mysql --with-mysql=/usr/bin/mysql_config
make && make install
-- Copy the plugin created to Mysql plugin folder
cp mysql-udf-http.so /usr/lib/mysql/plugin
```

3. Login to MySQL as ROOT user and create functions.

```
create function http_get returns string soname 'mysql-udf-http.so';
create function http_post returns string soname 'mysql-udf-http.so';
create function http_put returns string soname 'mysql-udf-http.so';
create function http_delete returns string soname 'mysql-udf-http.so';
```

4. Stored procedure to invoke rest service.

```
DELIMITER ;;
CREATE PROCEDURE sp_service_invoke()
BEGIN
     DECLARE RTN_VALUE VARCHAR(100);
     SELECT http_post('http://localhost:8888/audit/auditOrder',
                      'systemUrl=http://localhost:8080&orderNumber=11') into
    @RTN_VALUE;
     END
```

B.   Compilation and installation of mysql-udf-json plugin.

1. Download mysql-udf-json plugin from source.

```
git clone https://github.com/userone15/mysql-udf-json.git
```

2. Compilation and installation of plugin.

```
cd mysql-udf-json
mv lib_mysqludf_json.so  lib_mysqludf_json.so_bak
-- execute below command
Note: MySql configuration file path has to be given in path in below command.
gcc $(/usr/bin/mysql_config --cflags) -shared -fPIC -o lib_mysqludf_json.so
lib_mysqludf_json.c
-- copy the plugin created to Mysql plugin folder
cp lib_mysqludf_json.so /usr/lib/mysql/plugin
```

3. Create below functions.

```
CREATE FUNCTION json_array RETURNS STRING SONAME 'lib_mysqludf_json.so';
CREATE FUNCTION json_members RETURNS STRING SONAME 'lib_mysqludf_json.so';
CREATE FUNCTION json_values RETURNS STRING SONAME 'lib_mysqludf_json.so';
CREATE FUNCTION json_object RETURNS STRING SONAME 'lib_mysqludf_json.so';
```

Invoke rest service from Oracle database

Note: We will use package 'UTL_HTTP' in order to invoke rest service from Oracle database.

1. Grant permission to user to execute UTL_HTTP package.

```
-- Login to SQLPLUS and connect as SYSDBA
Connect system/welcome1 as sysdba;
grant execute on utl_http to system;
```

2. Add privilege in Access control list in order to establish connection with service.

```
-- Execute the below script for user 'SYS'
BEGIN
  DBMS_NETWORK_ACL_ADMIN.CREATE_ACL (acl        => 'ws_hosts.xml'
                     , description => 'ACL for web services hosts'
                     , principal   => 'SYS'
                     , is_grant    => TRUE
                     , privilege   => 'connect');
  DBMS_NETWORK_ACL_ADMIN.ADD_PRIVILEGE (acl       => 'ws_hosts.xml'
                     , principal => 'SYS'
                     , is_grant  => TRUE
                     , privilege => 'resolve');
  DBMS_NETWORK_ACL_ADMIN.ASSIGN_ACL(acl  => 'ws_hosts.xml',
                     host => 'localhost');
  COMMIT;
END;
```

3. Stored procedure to invoke rest service.

```
create or replace procedure sp_invoke_rest_service
    IS
        v_request    UTL_HTTP.req;
        v_response   UTL_HTTP.resp;
        v_text       VARCHAR2(1024);
        v_param_list VARCHAR2(512);
        v_order_number varchar2(50);
        v_system_url varchar2(50);
    BEGIN
      v_order_number := '1';
      v_system_url := 'http://localhost:8080';
      v_param_list := '{"systemUrl":"' ||v_system_url || '","orderNumber":"'||
    v_order_number ||'"}';
        -- dbms_output.put_line('Param List '|| v_param_list);
        v_request := utl_http.begin_request('http://localhost:8888/audit/auditOrder', 'POST');
        -- set header's attributes
        utl_http.set_header(v_request, 'Content-Type', 'application/json');
        utl_http.set_header(v_request, 'Content-Length', LENGTH(v_param_list));
        -- set input parameters
        utl_http.write_text(v_request, v_param_list);
        v_response := utl_http.get_response(v_request);
        dbms_output.put_line('HTTP Status Return code: '|| v_response.status_code);
        utl_http.read_text(v_response, v_text);
        dbms_output.put_line(v_text);
        -- finalizing
        utl_http.end_response(v_response);
    END;
```