**TRIOTE M2M Portal**

**Use Case Scenarios**

**Preparation**

|  |  |  |
| --- | --- | --- |
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# **M2M Portal Use Case Scenarios**

## **Super Admin Cases**

|  |  |
| --- | --- |
| **Case no** | **Case name** |
|  | **Create Admin User** |
|  | **Precondition**:   * “SUPERADMIN” role should contain “CREATE\_USER” privilege.      1. Create user with “ADMIN” role and dummy password 🡺 User Model  * A validaiton email will be sent to the email address of the use. User credentials will be shared on the body of that email. Users have to click the validation link which is on the email body to complete registration 🡺 Create Validaiton Model * Users can reset their passwords at the login page 🡺 Creat clicking the “Reset password” link 🡺 ResetToken Model * User will have the “ADMIN” role |
|  | **Create Company & Contacts** |
|  | **Precondition**:   * Company admin user should be created before. * Company contacts should be shared * “SUPERADMIN” role should contain “CREATE\_COMPANY” privilege  1. Create company, assign admin user created before 🡺 Create Company Model 2. Create company contact(s) 🡺 Create Contact Model  * “SUPERADMIN” role list all the users created for the Admin user. * “ADMIN” role for that company is dynamicly created matching the “ROLE\_ADMIN\_<Company\_Code>” pattern 🡺 Create Role Model * “USER” role for that company is dynamicly created matching the “ROLE\_USER\_<Company\_Code>” pattern 🡺 Create Role Model * Static “ROLE\_ADMIN” privileges that are predefined are assigned automaticly to the new admin role created for that company. 🡺 Create Roles\_Privileges Model * Static “USER” role privileges that are predefined are assigned automaticly to the new “ROLE\_USER” created for that company. 🡺 Create Roles\_Privileges Model * “ROLE\_ADMIN” created for the company is assined automaticly to the admin user defined aat the creation form. 🡺 Update User\_Roles Model * Company and Contact relation is created automativly 🡺 Create Comapny\_Contacts Model |
|  | **Generate Gateway Id(s)** |
|  | **Precondition**:   * Company should be created before. * “SUPERADMIN” role should contain “CREATE\_CSESTATE” privilege  1. Generate Gateway Id(s) with the company code 🡺 Create CSE State Model  * Gateway Id(s) generated for the company are assigned automaticly to the given company 🡺 Create Company\_Gateways Model * “SUPERADMIN” role list all the campanies * Created gateway id are at “MANUFACTURED” state |
|  | **List Gateway Id(s)** |
|  | **Precondition**:   * Gateway ids should be created on the system. * “SUPERADMIN” role should contain “LIST\_CSESTATE” privilege  1. List all Gateway Id(s) created on the system 🡺 List CSE State Model  * Generated ids are firstly on the “MANUFACTURED” state. It should be “ACTIVATION\_READY” state to be able to register. |
|  | **List Privilege** |
|  | **Precondition**:   * Privileges for “SUPERADMIN”, “ADMIN” and “USER” roles should be created on the system. * “SUPERADMIN” role should contain “LIST\_PRIVILEGE” privilege  1. List all privileges that are created before on the sytem 🡺 Read Privilege Model |
|  | **Create Privilege** |
|  | There is no scenario. |
|  | **Edit Privilege** |
|  | **Precondition**:   * Privilege(s) should be created before. * “SUPERADMIN” role should contain “EDIT\_PRIVILEGE” privilege  1. Edit selected privilege display\_name 🡺 Update Privilege Model |
|  | **List Roles** |
|  | **Precondition**:   * “ROLE\_SUPERADMIN”, “ROLE\_ADMIN” and “ROLE\_USER” should be created before. * “SUPERADMIN” role should contain “LIST\_ROLE” privilege  1. List all roles that are created before on the system 🡺 Read Role Model |
|  | **Create Role** |
|  | **Precondition**:   * Role(s) should be created before. * “SUPERADMIN” role should contain “CREATE\_ROLE” privilege  1. Create role with a unique role name and assign pribilege(s) 🡺 Create Role Model  * “SUPERADMIN” list all privileges. * Privilege and Role relation is created automativly 🡺 Create Roles\_Privileges Model |
|  | **Edit Role** |
|  | **Precondition**:   * Role(s) should be created before. * “SUPERADMIN” role should contain “EDIT\_ROLE” privilege  1. Edit selected role display\_name 🡺 Update Role Model 2. Add or remove privilege list. 🡺 Update Roles Privileges Model |
|  | **List Gateway Group(s)=** |
|  | **Precondition**:   * “SUPERADMIN” role should contain “VIEW\_GATEWAYGROUP\_LIST” privilege  1. List all gateway groups that “SUPERADMIN” has the privilege of groupa created. |
|  | **Create Gateway Group** |
|  | **Precondition**:   * Gateway(s) should be created before  1. Create group with a group name, assign gateway(s) to that group. 🡺 Create Gateway Group(GWG) Model  * 3 group privileges ‘CREATE’, ‘EDIT’ and ‘VIEW’ are created automaticly 🡺 Create Privilege Model * GWG and Privilege relation is created automaticly 🡺 Create GWG\_Privileges Model |

## **Admin Cases**

|  |  |
| --- | --- |
| **Case No** | **Case Name** |
|  | **Create User** |
|  | **Precondition**:   * “ADMIN” and “USER” roles should be created by “Super Admin” on the system * ADMIN User that is logged in has to have a company assigned   **Condition**:   * Only user with the “ADMIN” or “SUPER ADMIN” roles can create user * Admin User has to have “CREATE\_USER” privilege  1. Create user wşth “ADMIN” or “USER” role with dummy password 🡺 Create User Model  * User is automaticly assigned to the admin user’s company 🡺 Create Company\_Users Model * A validaiton email will be sent to the email address of the user created. User credentials will be sahred on the body of the mail. Users have to click the validation link that is on the mail body to complete registration 🡺 Vreate Validaiton Model * Further users will reset their passwords after the first success login 🡺 Create ResetToken Model |
|  | **List User** |
|  | **Condition**:   * Admin User can only list users of his/her company * Admin User has to have “LIST\_USER” privilege  1. List users that belong to the looged users(currently Admin User) company |
|  | **Create Company** |
|  | **Precondition**:   * Company admin user should be created before. * Company contact informations should be shared   **Condition**:   * Only user with the “ADMIN” or “SUPER ADMIN” roles can create company * Admin User has to have “CREATE\_COMPANY” privilege  1. Create company, assign admin user created before 🡺 Company Model 2. Create company contact(s) 🡺 Contact Model  * “ADMIN” role for that company is dynamicly created matching the “ROLE\_ADMIN\_<Company\_Code>” pattern 🡺 Create Role Model * “USER” role for that company is dynamicly created matching the “ROLE\_USER\_<Company\_Code>” pattern 🡺 Create Role Model * Static “ADMIN” role privileges that are predefined are assigned automaticly to the new admin role created for that company. 🡺 Create Role s\_Privileges Model * Static “USER” role privileges that are predefined are assigned automaticly to the new user role created for that company. 🡺 Create Roles\_Privileges Model * Assign admin user to the company if it is chosen from the company users list. If it is not chosen then assign logged admin user for the admin user of the company. If admin user is chosen from the user list then update company relation of that user with the new company information 🡺 Update Company\_Users * “ADMIN” role created for the company is assined automaticly to the admin user defined while reating company 🡺 Create User\_Roles Model * Company and Contact relation is reated automativly 🡺 Create Comapny\_Contacts Model * Company Hierarchy record is created with the chosen company as parent company and the new one as child 🡺 Create CompanyHierarchy Model |
|  | **List Gateways** |
|  | **Condition**:   * Admin User can only list gateways that belong to his/her company * Admin User has to have “LIST\_GATEWAY” privilege  1. List gateways that belongs to the looged users(currently Admin User) company 🡺 List CSE State Model |
|  | **Create Gateway Group** |
|  | **Precondition**:   * Gateway Id(s) should be assigned to the company of admin that is logged in to Portal   **Condition**:   * Admin User can only list gateways of his/her company * Admin User has to have “CREATE\_GATEWAY\_GROUP” privilege  1. Create group with a group code, display name and gateways input. Assign gateway(s) to that group. 🡺 Create Gateway Group(GWG) Model  * Group name is defined dynamicly following the format of naming convention: “<Company\_code>\_<group\_code>\_<seqno>” 🡺 Create GWG Model * 3 group privileges ‘CREATE’, ‘EDIT’ and ‘VIEW’ are created automaticly with a naming convention of the format “<group\_name>\_<EDIT/CREATE/LIST>” 🡺 Create Privilege Model * GWG and Privilege relation is created automaticly 🡺Create GWG\_Privilege Model |
|  | **List Privileges** |
|  | **Precondition**:   * Gateway Group should be created before   **Condition**:   * Admin User can only list privileges of his/her company group * Admin User has to have “LIST\_PRIVILEGE” privilege  1. List privileges that belong to the gateway group 🡺 List Privilege Model |
|  | **Assign Privilege(s) to User** |
|  | **Precondition**:   * User should be created before   **Condition**:   * Admin User can only list users of his/her company * Admin User can only list privileges of his/her company(group) * Admin User has to have “EDIT\_USER” privilege  1. Assign Privileges(s) to the user 🡺 Create GWG\_Users Model |
|  | **List Gateway Group(s)** |
|  | **Precondition**:   * Gateway Group should be created before   **Condition**:   * Admin User can only list groups of his/her company * Admin user has to have “LIST” privilege of the chosen group  1. List gateway groups that belong to the company 🡺 List GWG Model |
|  | **List Gateway(s) of Group** |
|  | **Precondition**:   * Gateway Group should be created before   **Condition**:   * Admin User can only list gateways of groups of his/her company * Admin user has to have “LIST” privilege of the chosen group  1. List gateways of group that belong to the company 🡺 Call IN-CSE |
|  | **List Gateway Device(s)** |
|  | **Precondition**:   * Gateway Group should be created before   **Condition**:   * Admin User can only list gateways of groups of his/her company * Admin user has to have “LIST” privilege of the chosen group  1. List devices of the chosen gateway that belong to the company 🡺 Call IN-CSE |
|  | **List Device Information** |
|  | **Precondition**:   * Gateway Group should be created before   **Condition**:   * Admin User can only list gateways of groups of his/her company * Admin user has to have “LIST” privilege of the chosen group  1. List device informations of the chosen device that belongs to the gateway 🡺 Call IN-CSE |
|  | **Perform Device Operation** |
|  | **Precondition**:   * Gateway Group should be created before   **Condition**:   * Admin User can only list gateways of groups of his/her company * Admin user has to have “EDIT” privilege of the chosen group  1. Call device available operations of the chosen device that belongs to the gateway 🡺 Call IN-CSE |
|  | **Subscribe IN-CSE listener to Device Data** |
|  | **Precondition**:   * Gateway Group should be created before   **Condition**:   * Admin User can only list gateways of groups of his/her company * Admin user has to have “EDIT” privilege of the chosen group  1. Call subscription api of the chosen device content instance data 🡺 Call IN-CSE  * In this scenario there is plug-in as a listener on IN\_CSE. While subscription is success then data changes coming from that device will be notified to that listener and be recorded on IN-CSE datavase. |
|  | **Unsubscribe IN-CSE listener from Device Data** |
|  | **Precondition**:   * Gateway Group should be created before   **Condition**:   * Admin User can only list gateways of groups of his/her company * Admin user has to have “EDIT” privilege of the chosen group  1. Call unsubscription api of the chosen device content instance data 🡺 Call IN-CSE  * In this scenario there is plug-in as a listener on IN\_CSE. While unsubscription is success then data changes coming from that device will not be notified to that listener and not be recorded on IN-CSE datavase. |
|  | **Create Application** |
|  |  |
|  | **Get Application** |
|  |  |
|  | **Update Application** |
|  |  |

## **User Cases**

|  |  |
| --- | --- |
| **Case No** | **Case Name** |
|  | **List Gateways** |
|  | **Condition**:   * User can only list gateways that belong to his/her company * User has to have “LIST\_GATEWAY” privilege  1. List gateways that belongs to the looged users(currently Admin User) company 🡺 List CSE State Model |
|  | **List Gateway Groups** |
|  | **Precondition**:   * Gateway Group should be created before   **Condition**:   * User can only list groups of his/her company * user has to have “LIST” privilege of the chosen group  1. List gateway groups that belong to the company 🡺 List GWG Model |
|  | **List Gateways of Groups** |
|  | **Precondition**:   * Gateway Group should be created before   **Condition**:   * User can only list gateways of groups of his/her company * user has to have “LIST” privilege of the chosen group  1. List gateways of group that belong to the company 🡺 Call IN-CSE |
|  | **List Gateway Devices** |
|  | **Precondition**:   * Gateway Group should be created before   **Condition**:   * User can only list gateways of groups of his/her company * user has to have “LIST” privilege of the chosen group  1. List devices of the chosen gateway that belong to the company 🡺 Call IN-CSE |
|  | **List Devices Informations** |
|  | **Precondition**:   * Gateway Group should be created before   **Condition**:   * User can only list gateways of groups of his/her company * user has to have “LIST” privilege of the chosen group  1. List device informations of the chosen device that belongs to the gateway 🡺 Call IN-CSE |
|  | **Perform Device Operation** |
|  | **Precondition**:   * Gateway Group should be created before   **Condition**:   * Admin User can only list gateways of groups of his/her company * Admin user has to have “EDIT” privilege of the chosen group  1. Call device available operations of the chosen device that belongs to the gateway 🡺 Call IN-CSE |

## **Model & DB Relations**

|  |  |  |
| --- | --- | --- |
| **Model Name** | **DB Table** | **Relational Tables** |
| Role | Role | roles\_privileges  users\_roles |
| Privilege | Privilege | roles\_privileges  gwgs\_privileges |
| User | User\_account | users\_roles  gwgs\_users  company\_users |
| Company | Company | company\_contacts  company\_users  company\_hierarchy |
| Gateway Group | gwg | gwgs\_users  gwgs\_privileges |
| CSE State | cs | cs\_hist  company\_gateways  csr |
| Application Management | app\_man | app\_ip  app\_ips  app\_company |
|  |  |  |

## Device Management Cases

|  |  |
| --- | --- |
| **Case no** | **Case name** |
|  | **Leshan Client Registration** |
|  | **Precondition**:   * IN-CSE should be running * MGMT IPE should be started      1. Check Leshan client registration endpoint name (defined by “-n” argument)    1. İf endpoint is **not** in RemoteCSE resources throw error Goto step 13    2. İf endpoint is in RemoteCSE resources continue Goto step 2 2. Create AE resource under IN-CSE Base resource    1. İf conflict error occursthen delete AE and all child resources       1. If **not** success throw error go to step 13       2. If success create AE resource          1. If not success throw error go to step 13 3. Retrieve Object Model Types from Leshan Server Spec Servlet API    1. If **not** success throw error go to step 13 4. Create Node resource under AE resource    1. Retrieve initial values for DeviceInfo resources form Leshan Client via Leshan Server Client Servlet doGet operation       1. If **not** success throw error go to step 13    2. Create DeviceInfo resource under Node resource       1. Fill object Ids, Object Path, Object Types values          * Keep mapping of Leshan Client resource id and MgmtObj element name on object Ids field.          * Keep pbject paths as Leshan client resource paths like 9/0/3, 9/0/7          * Keep object types of resources as json text       2. Create subscription resource for DeviceInfo resource to notify Leshan Client (notification\_url = leshan server client servlet address / endpoint / device\_info resource id (3) / instance\_id (0) ) For ex: <http://127.0.0.1:8088/api/clients/mn-cse/3/0>    3. Create Reboot resource under Node resource       1. Fill object Ids, Object Path, Object Types values          * Keep mapping of Leshan Client resource id and MgmtObj element name on object Ids field.          * Keep pbject paths as Leshan client resource paths like 9/0/3, 9/0/7          * Keep object types of resources as json text       2. Create subscription resource for Reboot resource to notify Leshan Client (notification\_url = leshan server client servlet address / endpoint / device\_info resource id (3) / instance\_id (0) ) For ex: <http://127.0.0.1:8088/api/clients/mn-cse/3/0>    4. Create Memory resource under Node resource       1. Fill object Ids, Object Path, Object Types values          * Keep mapping of Leshan Client resource id and MgmtObj element name on object Ids field.          * Keep pbject paths as Leshan client resource paths like 9/0/3, 9/0/7          * Keep object types of resources as json text    5. Create Battery resource under Node resource       1. Fill object Ids, Object Path, Object Types values          * Keep mapping of Leshan Client resource id and MgmtObj element name on object Ids field.          * Keep pbject paths as Leshan client resource paths like 9/0/3, 9/0/7          * Keep object types of resources as json text    6. If **not** success throw error go to step 13 5. Create Firmware resource under Node Resource    1. Retrieve initial values for Firmware resource form Leshan Client via Leshan Server Client Servlet doGet operation       1. If **not** success throw error go to step 13    2. Create subscription resource for Firmware resource to notify Leshan Client (notification\_url = leshan server client servlet address / endpoint / device\_info resource id (5) / instance\_id (0) ) For ex: <http://127.0.0.1:8088/api/clients/mn-cse/5/0>    3. Fill object Ids, Object Path, Object Types values       * + Keep mapping of Leshan Client resource id and MgmtObj element name on object Ids field.         + Keep pbject paths as Leshan client resource paths like 9/0/3, 9/0/7         + Keep object types of resources as json text 6. Create Software resource under Node Resource    1. Retrieve initial values for Software resource form Leshan Client via Leshan Server Client Servlet doGet operation       1. If **not** success throw error go to step 13    2. Create subscription resource for Software resource to notify Leshan Client (notification\_url = leshan server client servlet address / endpoint / device\_info resource id (9) / instance\_id (0) ) For ex: <http://127.0.0.1:8088/api/clients/mn-cse/9/0>    3. Fill object Ids, Object Path, Object Types values       * + Keep mapping of Leshan Client resource id and MgmtObj element name on object Ids field.         + Keep pbject paths as Leshan client resource paths like 9/0/3, 9/0/7         + Keep object types of resources as json text 7. If error then cancel registration |
|  | **Leshan Client Unregistration** |
|  | **Precondition**:   * IN-CSE should be running * MGMT IPE should be started      1. Delete AE resource |