



# Real-Time Engine Issues

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## Dashboard Specific Issues

### 1. Sensors not visible on the Dashboard

<b>Symptom</b>	Sensors are not seen on the Dashboard
<b>Environment</b>	Any Environment QA or Prod
<b>Possible Causes</b>	<ul style="list-style-type: none"> <li>• TenantId is wrong.</li> <li>• LocationId is not populated or Location hierarchy not created properly or Sync issue between DE and Core.</li> <li>• Core Users permission or sync issue (either userlocations or userdomains not assigned or synced in deviceEngine)</li> <li>• Geohash not populated from deviceEngine</li> <li>• Applicable domain not created with correct values.</li> <li>• CKC core API not working or issue with configuring them.</li> <li>• DeviceEngine process not running or not responding.</li> <li>• Any other ERROR in deviceEngine logs which is preventing proper running of deviceEngine.</li> </ul>
<b>Troubleshooting</b>	<ul style="list-style-type: none"> <li>• Check if Sensors are seen on fid-CIMUserQueryInterface.</li> <li>• If above step is true, check if locationId, tenantId, applicableDomain and geohash Fields are populated or not.</li> <li>a) If tenantId populated is wrong, Devops need to recreate data for sensor. They can do so by running cleanup macro of that extension and then redeploying by changing the tenantId in the loader file.</li> </ul>

b) If locationId is not populated,

- Make sure correct location hierarchy is created in dashboard (and same has been retrieved using SDP APIs) and those locations are assigned to user.
- Run syncSDPLocation.sh to get locations data populated in DeviceEngine DB.
- Run EntitylocationRefresh to update new locations in sensor model. The file is present under src/ops/tqls folder in DeviceEngine.

c) If applicableDomain is not populated, it is a build issue of Extension and need to be fixed.

d) Check if Geohash is populated or not in Sensor Response in DE. Geohash is required in the response so that dashboard can show sensor data. If it is not populated, it is a Device Engine (DE) build issue.

• If all the 4 fields are populated then,

a) Check if users are loaded into DE.

This can be checked via below query on fid- Authentication.

```
{
  "Query": {
    "Find": {
      "User": {
        "sid": { "ne": "" }
      }
    }
  }
}
```

b) If step(a) does not show any user, run syncSDPUser.sh and wait for 5 min.

c) If step(a) has the required users, then check for UserLocationAssociation and UserDomainAssociation. This can be checked via below on fid-Authentication.

```
{
  "Query": {
    "Find": {
      "UserLocationAssociation": {
        "userKeySid": { "ne": "" }
      }
    }
  }
}

{
  "Query": {
    "Find": {
      "UserDomainAssociation": {
        "sid": { "ne": "" }
      }
    }
  }
}
```

• If UserDomainAssociation or UserLocationAssociation is not populated or Users are not loaded into DE, check SDP GetUser API whether SDP response has those data.

• If everything is populated and SDP API response is also fine, run below query (to update Access modifiers for users) on fid-CIMUserQueryInterface.

	<pre> &lt;DoRequest target="[:RuntimeParams.TQLStudio_AuthenticationFacetIDName:]"     Disable="CMD_SERVER"&gt;   &lt;Process&gt;     &lt;Message&gt;       &lt;Value&gt;         &lt;Query&gt;           &lt;Find&gt;             &lt;User&gt;               &lt;sid ne='' /&gt;             &lt;/User&gt;           &lt;/Find&gt;         &lt;/Query&gt;       &lt;/Value&gt;     &lt;/Message&gt;   &lt;/Process&gt; &lt;/DoRequest&gt; &lt;Log   Message="EngineStartUp :: Response message from find User :: [:\$Response.Message.Value:]"   Level="DEBUG" /&gt; &lt;if condition="\$Response/Message/Value/Find/count(Result/User) gt 0"&gt;   &lt;then&gt;     &lt;For each="UserDef" in="Find.Result"&gt;       &lt;!-- Authentication modifiers --&gt;       &lt;AuthModifiers&gt;         &lt;userKey&gt;[:\$LocalData.UserDef.User.userId:]&lt;/userKey&gt;       &lt;/AuthModifiers&gt;     &lt;/For&gt;   &lt;/then&gt; &lt;/if&gt; </pre> <ul style="list-style-type: none"> <li>• Check if deviceEngine cacheDB is of higher size and it is not processing records, then clear the cache.</li> <li>• If everything above seems fine, but still sensors are not seen on dashboard, Refer FAQ section.</li> </ul>
<b>Verification</b>	Verify if DeviceEngine APIs for the specific user are returning model response or not. Check on dashboard if sensors are coming or not for specific operator/admin user.
<b>Post Verification</b>	.If verification fails and after following all steps, there is no clue on why this is happening, CDET/BEMS can be raised.

2. Notifications Not Seen on Dashboard

<b>Symptom</b>	Notifications are not appearing on the Dashboard.
<b>Environment</b>	Can occur in QA or Production environment.
<b>Possible Causes</b>	<ul style="list-style-type: none"> <li>• Data has not got updated from vendor/provider API</li> <li>• Data is not sent from extensions to deviceEngine.</li> <li>• Data remains pending in deviceEngine cacheDB and it has not processed.</li> <li>• Core user is not having access to model/domain and locations.</li> </ul>

<b>Troubleshooting</b>	<ul style="list-style-type: none"> <li>• Check if notifications are sent over user WebSocket. wss://&lt;serverName&gt;:&lt;port&gt;/fid-CIMUserQueryInterfaceWS.&lt;userId&gt;</li> <li>• Check if user has access to that particular domain. If there is no access, enable access using Dashboard admin login and run SDP Sync queries.</li> <li>• Check if notifications are sent over CDP-App websocket wss://&lt;serverName&gt;:&lt;port&gt;/fid-CIMUserQueryInterfaceWS.CDP-App</li> <li>• If notifications are sent for expected domain/extensions, contact Dashboard team.</li> <li>• If notifications are not sent <ul style="list-style-type: none"> <li>o Check if data is coming from provider and is updated in Device Engine. If data is not coming from provider- contact Extension team/Provider.</li> <li>o If data is not processed by deviceEngine due to cache's high size, clear the cacheDB</li> </ul> </li> <li>• If Data is coming from provider, but it is not updated in DE model, contact Extension/Device Engine team.</li> <li>• Check for any errors displayed in deviceEngine logs</li> <li>• Check if deviceEngine cacheDB is of higher size and its not processing records, then clear the cache.</li> </ul>
<b>Verification</b>	<p>Check if notifications are coming for CDP-App user</p> <p>Check if notifications are coming for core specific user</p> <p>Check if notifications are displayed in dashboard.</p>
<b>Post Verification</b>	Post verification, CDET/BEMS to be raised by team if still notification not coming

### 3. Reports Not Showing Data for Specific Time Period

<b>Symptom</b>	Dashboard reports show empty data or no data for a given time period.
<b>Environment</b>	Qa or Production.
<b>Possible Causes</b>	<ul style="list-style-type: none"> <li>• Data not sent by provider API for the given period.</li> <li>• DeviceEngine cache is not processing records or processing at slower rate.</li> <li>• Data not sent by deviceEngine due to dataEngine facet is down/not responding</li> <li>• DeviceEngine is not responding or hprof generated</li> <li>• DataEngine URL not registered/configured by ops team correctly</li> <li>• Data not received and further processed by DataEngine</li> <li>• Some other issue at dataEngine analytics side</li> <li>• Dashboard is not using correct filter parameters or url to fetch/access reports data</li> </ul>
<b>Troubleshooting</b>	<p>a. Check Data Engine APIs if they have data for the particular dates. If there is data, contact DE team.</p> <p>b. If dataEngine does not have data for specified dates,</p>

	<ul style="list-style-type: none"> <li>• Check if Provider is sending data to DE. Debug if provider API/WebSocket is working and has data.</li> <li>• Check if any pending records are in deviceEngine cache which are preventing data to be updated at deviceEngine side.</li> <li>• Make sure Data Engine taskgroup is created and is started. You can verify this by running model query for that domain on fid-CIMDataEngineInterface.</li> <li>• Else, you can open Data Engine websocket to check if data is being sent by DE to DataEngine.</li> <li>• Check for any errors displayed in deviceEngine logs</li> <li>• Check if deviceEngine cacheDB is of higher size and its not processing records, then clear the cache.</li> </ul> <p>If data is not sent, contact Extension and DE team.</p>
<b>Verification</b>	<p>Check if notifications/updates are sent over websocket fid-CIMDataEngineInterfacews://&lt;serverName&gt;:&lt;port&gt;/fid-CIMDataEngineInterface</p> <p>Check if data engine received data properly and is in expected format.</p> <p>Check if reports are showing correct data</p>
<b>Post Verification</b>	CDET/BEMS can be raised if issue still persists and report data not seen on dashboard .

## Domain Specific Issues

### 1. Parking : Sensors Not in Parking Space

<b>Symptom</b>	Parking sensors are not appearing in the parking space region.
<b>Environment</b>	QA or Production.
<b>Possible Causes</b>	<ul style="list-style-type: none"> <li>• Parking Space polygon is not closed properly. It is open.</li> <li>• Parking Space polygon is not covering all parking sensors.</li> <li>• Parking spots lat-long are null or having 0 values.</li> <li>• Geohash not populated in deviceEngine due to some installation errors.</li> <li>• ParkingSpot-State-occupied attribute is missing in deviceEngine response.</li> </ul>
<b>Troubleshooting</b>	<p>Parking Console links to a dashboard for monitoring the service.</p> <p>Perform the following steps:</p> <ul style="list-style-type: none"> <li>•Plot the ParkingSpace region using google map or <a href="http://www.hamstermap.com/quickmap.php">www.hamstermap.com/quickmap.php</a> or <a href="http://itouchmap.com/latlong.html">http://itouchmap.com/latlong.html</a></li> <li>• Make sure to draw polygon either in clockwise or in anticlockwise direction.</li> <li>• Increase the polygon boundaries if sensors are not seen in it.</li> </ul>

	<ul style="list-style-type: none"> <li>• Check parkingspots within parkingSpace query and see if any parameters are missing/not updated.</li> </ul> <p>Get the additional inputs from dashboard team on why sensors not displayed.</p> <ul style="list-style-type: none"> <li>• Check for any errors displayed in deviceEngine logs</li> <li>• Check if deviceEngine cacheDB is of higher size and it is not processing records, then clear the cache.</li> </ul>
<b>Verification</b>	<ul style="list-style-type: none"> <li>• Verify parkingSpot state attributes are populated correctly.</li> <li>• Verify if parking Spots are found under parkingSpace query.</li> <li>• Verify the response to make sure all mandatory attributes (tenantId, LocationId, geohash, applicableDomain etc) are populated</li> <li>• Verify dashboard if parkingspots are visible or not.</li> </ul>
<b>Post Verification</b>	CDET/BEMS can be raised if issue still persists and parking sensors are not seen on dashboard.

## 2. Lighting : Sensors Not in Light Zone Region

<b>Symptom</b>	Light sensors are not appearing in the Light zone region.
<b>Environment</b>	QA or Production
<b>Possible Causes</b>	<ul style="list-style-type: none"> <li>•LightZone polygon is not closed properly. It is open.</li> <li>•LightZone polygon is not covering all light sensors</li> <li>•lights lat-long are null or having 0 values.</li> <li>•Geohash not populated in deviceEngine due to some installation errors.</li> <li>•Light – State- intensity – lastKnownValue/request value is missing in the deviceEngine response.</li> </ul>
<b>Troubleshooting</b>	<p>Lighting Console links to a dashboard for monitoring the service.</p> <p>Perform the following steps:</p> <ul style="list-style-type: none"> <li>•Plot the Light zone region using google maps or <a href="http://www.hamstermap.com/quickmap.php">www.hamstermap.com/quickmap.php</a> or <a href="http://itouchmap.com/latlong.html">http://itouchmap.com/latlong.html</a></li> <li>• Make sure to draw polygon either in clockwise or in anticlockwise direction.</li> <li>• Increase the polygon boundaries if sensors are not seen in it.</li> <li>• Get the additional inputs from dashboard team on why sensors are not displayed.</li> <li>• Check for any errors displayed in deviceEngine logs.</li> <li>• Check if deviceEngine cacheDB is of higher size and it is not processing records, then clear the cache.</li> </ul>
<b>Verification</b>	<ul style="list-style-type: none"> <li>• Verify light state attributes are populated with correct values.</li> </ul>

	<ul style="list-style-type: none"> <li>• Verify if lights are found under lightzone query. Verify the response to make sure all mandatory attributes (tenantId, LocationId, geohash, applicableDomain etc) are populated</li> <li>• Verify dashboard if lights are visible or not.</li> </ul>
<b>Post Verification</b>	CDET/BEMS can be raised if issue still persists and light sensors are not seen on dashboard.

### 3. Waste Management : Sensors Not in WasteSpace Region

<b>Symptom</b>	Waste Management sensors are not appearing in the WasteSpace region.
<b>Environment</b>	QA or Production.
<b>Possible Causes</b>	<ul style="list-style-type: none"> <li>•Waste sensor's polygon is not closed properly. It is open.</li> <li>•Waste sensor's polygon is not covering all Waste sensors</li> <li>•Waste Sensor's lat-long are null or having 0 values</li> <li>•Geohash not populated in deviceEngine due to some installation errors.</li> <li>•Reading attribute of wastebin model is missing in deviceEngine response.</li> </ul>
<b>Troubleshooting</b>	<p>Waste Management Console links to a dashboard for monitoring the service.</p> <p>Perform the following steps:</p> <ul style="list-style-type: none"> <li>•Plot the Waste Space region using google maps or <a href="http://www.hamstermap.com/quickmap.php">www.hamstermap.com/quickmap.php</a> or <a href="http://itouchmap.com/latlong.html">http://itouchmap.com/latlong.html</a></li> <li>• Make sure to draw polygon either in clockwise or in anticlockwise direction.</li> <li>• Increase the polygon boundaries if sensors are not seen in it.</li> <li>• Verify dashboard if waste sensor's are visible or not.</li> <li>• Check for any errors displayed in deviceEngine logs</li> <li>• Check if deviceEngine cacheDB is of higher size and its not processing records, then clear the cache.</li> </ul>
<b>Verification</b>	<ul style="list-style-type: none"> <li>• Verify reading attribute is populated for waste sensors</li> <li>• Verify if Waste Sensors are found under WasteSpace query .Verify the response to make sure all mandatory attributes (tenantId, LocationId, geohash, applicableDomain etc) are populated</li> <li>• Verify dashboard if Waste sensors are visible or not.</li> <li>• Check if deviceEngine cacheDB is of higher size and its not processing records, then clear the cache.</li> </ul>
<b>Post Verification</b>	CDET/BEMS can be raised if issue still persists and waste sensors are not seen on dashboard.

### 4. Environment : Sensors Not in Environment Region

<b>Symptom</b>	Environment sensors are not appearing in the Environment region.
<b>Environment</b>	Can occur in any of the QA or Production environment.
<b>Possible Causes</b>	<ul style="list-style-type: none"> <li>• Environment sensor's polygon is not closed properly. Its open.</li> <li>• Environment sensor's polygon is not covering all Environment sensors</li> <li>• Environment Sensor's lat-long are null or having 0 values.</li> <li>• Geohash not populated in deviceEngine due to some installation errors.</li> <li>• Reading attribute is not populated or missing in Deviceengine response.</li> </ul>
<b>Troubleshooting</b>	<p>Environment Console links to a dashboard for monitoring the service.</p> <p>Perform the following steps:</p> <ul style="list-style-type: none"> <li>• Plot the Environment region using google map or <a href="http://www.hamstermap.com/quickmap.php">www.hamstermap.com/quickmap.php</a> or <a href="http://itouchmap.com/latlong.html">http://itouchmap.com/latlong.html</a></li> <li>• Make sure to draw polygon either in clockwise or in anticlockwise direction.</li> <li>• Increase the polygon boundaries if sensors are not seen in it.</li> <li>• Check for any errors displayed in deviceEngine logs</li> <li>• Check if deviceEngine cacheDB is of higher size and its not processing records, then clear the cache.</li> <li>• Check for any errors displayed in deviceEngine/ExtEngine logs</li> </ul>
<b>Verification</b>	<ul style="list-style-type: none"> <li>• Verify that reading attribute is populated for EnvironmentSensor.</li> <li>• Verify if EnvironmentSensors are found under polygon query (Query mentioned in model documents). Verify the response to make sure all mandatory attributes (tenantId, LocationId, geohash, applicableDomain etc) are populated</li> <li>• Verify dashboard if Environment sensors are visible or not</li> </ul>
<b>Post Verification</b>	CDET/BEMS can be raised if issue still persists and Environment sensors are not seen on dashboard.

#### 5. Mobility : Sensors Not in Mobility ROI Region

<b>Symptom</b>	Mobility sensors are not appearing in the Mobility ROI region.
<b>Environment</b>	QA or Production.
<b>Possible Causes</b>	<ul style="list-style-type: none"> <li>• Mobility ROI polygon is not closed properly. It is open.</li> <li>• Mobility ROI polygon is not covering all Mobility sensors</li> <li>• Mobility POMs lat-long are null or having 0 values.</li> <li>• Geohash not populated in deviceEngine due to some installation errors.</li> </ul>
<b>Troubleshooting</b>	<p>CMX, Mobility Console links to a dashboard for monitoring the service.</p> <p>Perform the following steps:</p>



	<ul style="list-style-type: none"> <li>• Plot the Mobility ROI region using google map or <a href="http://www.hamstermap.com/quickmap.php">www.hamstermap.com/quickmap.php</a> or <a href="http://itouchmap.com/latlong.html">http://itouchmap.com/latlong.html</a></li> <li>• Make sure to draw polygon either in clockwise or in anticlockwise direction.</li> <li>• Increase the polygon boundaries if sensors are not seen in it.</li> <li>• Check if MobilityStats are populated for given objectType and bearing.</li> <li>• Check if records are populated on facet fid- ObjectTracesAndAllStatsHolderFacet</li> <li>• Check if mobility Taskgroups are running and accessible to southbound mobility node.</li> </ul> <p>Check if raw request from extension is getting processed from deviceEngine on fid-ExtensionInterface</p> <ul style="list-style-type: none"> <li>• Check if deviceEngine cacheDB is of higher size and its not processing records, then clear the cache.</li> <li>• Check for any errors displayed in deviceEngine logs</li> </ul>
<b>Verification</b>	<ul style="list-style-type: none"> <li>• Verify stats are populated for fid- ObjectTracesAndAllStatsHolderFacet</li> <li>• Verify that stats are populated on deviceEngine for mobilityROI</li> <li>• Verify if mobility sensors are found under polygon query. Verify the response to make sure all mandatory attributes (tenantId, LocationId, geohash, applicableDomain etc) are populated</li> <li>• Verify dashboard if Mobility sensors are visible or not</li> </ul>
<b>Post Verification</b>	CDET/BEMS can be raised if issue still persists and Mobility sensors are not seen on dashboard.

## Southbound Provider Issues

### 1. DE is Not Consuming Data

<b>Symptom</b>	Extension is posting data to Device Engine (DE) but DE is not consuming the same.
<b>Environment</b>	QA or Production
<b>Possible Causes</b>	<ul style="list-style-type: none"> <li>• ERRORS in extension logs</li> <li>• Extension facet is not deployed and events not reaching to deviceEngine</li> <li>• Extension request is not as per defined contract with deviceEngine.</li> <li>• DeviceEngine is down/not responding/cache Is full</li> <li>• ERRORS in deviceEngine logs</li> </ul>
<b>Troubleshooting</b>	<ul style="list-style-type: none"> <li>• Check if events are seen on extension logs (extengine logs).</li> <li>• If events are not seen, check if extension facet is deployed or not. Open that URL in browser and check if success message is coming or not.</li> </ul>

	<ul style="list-style-type: none"> <li>• Make sure to register URL at provider end and validate it by posting dummy event there.</li> <li>• If dummy event is getting processed then check if the request is as per defined contract between deviceEngine and extension.</li> <li>• If Extension Facet is not deployed, check if provider entries (such as provider model, camera) are created correctly.</li> <li>• Check the Device Engine and Extension logs if any errors seen and report them to DE and Extension team.</li> <li>• Check if deviceEngine cache is processing requests. If requests are accumulated in cache and not processed, please clear them.</li> </ul>
<b>Verification</b>	<ul style="list-style-type: none"> <li>• Verify extension is sending event request to deviceEngine and no errors are displayed in both deviceEngine and extEngine</li> <li>• Verify Extension request is as per contract between deviceEngine and extensions</li> <li>• Verify event is updated in deviceEngine and reflected in sensor stats/reading.</li> </ul>
<b>Post Verification</b>	CDET/BEMS can be raised if issue still persists and extension request is still not processed.

## 2. Geohash Not Present in Sensor Data

<b>Symptom</b>	Geohash is not populated in the sensor data.
<b>Environment</b>	QA or Production.
<b>Possible Causes</b>	When entities (or sensors) are created on fid-ExtensionInterface, geohash is populated automatically, however, when entities (or sensors) are created from fid-CIMUserQueryInterface (or using runTQL), geohash is not created automatically.
<b>Troubleshooting</b>	<ul style="list-style-type: none"> <li>• To create GeoHash, run the following macro on fid-CIMUserQueryInterface  <pre>&lt;populateGeoHash&gt; &lt;entityType&gt;TransitTrip&lt;/entityType&gt; &lt;/populateGeoHash&gt;</pre> </li> <li>• Pass the entityType for which geohash is to be populated. (This macro is applicable on 4.0 build only)</li> </ul>
<b>Verification</b>	Verify deviceEngine model response and check if geohash is populated or not.
<b>Post Verification</b>	CDET/BEMS can be raised if issue still persists and geohash is not populated for an entity

# Logs Specific Errors

## 1. Critical Runtime Errors

<b>Symptom</b>	This has qualitative impact such as on Performance, scalability.
<b>Environment</b>	Qa or Production
<b>Possible Causes</b>	<p>Slow DB response for deviceEngine internal queries</p> <p>Model Attribute is not saved in expected format (e.g. passing double value to a String attribute type)</p> <p>Memory CPU usage of deviceengine/extEngine/DB instance is high.</p> <p>Busy or burst of DB connections</p> <p>Database failed to shutdown gracefully.</p> <p>Some external client is trying to access the EndPoint which is not available</p> <p>Maximum queue size reached</p> <p>Connection exception while connecting to a peer.</p>
<b>Troubleshooting</b>	<ul style="list-style-type: none"> <li>o Refer below link from Atomiton – wiki for Critical runtime errors observed in A-stack application <a href="https://atomiton.atlassian.net/wiki/spaces/TQLDocs/pages/58600601/Error+Handling">https://atomiton.atlassian.net/wiki/spaces/TQLDocs/pages/58600601/Error+Handling</a></li> <li>o Check if any configuration is missing or not. If possible correct and restart deviceEngine</li> <li>o Check for mem/cpu/disk usage of deviceEngine/VM/DB instance.</li> </ul>
<b>Verification</b>	Verify no critical runtime error is displayed in the logs as mentioned in TQL Docs.
<b>Post Verification</b>	CDET/BEMS can be raised if issue still exists.

## 2. DE becomes non-responsive

<b>Symptom</b>	DE becomes unresponsive.
<b>Environment</b>	QA or Production
<b>Possible Causes</b>	<p>High CPU/memory usage of DeviceEngine process/VM/DB instance</p> <p>Too many requests from Southbound other than supported.</p> <p>DB queries are taking more time</p> <p>Critical ERRORS observed in logs of deviceEngine/extEngine</p> <p>Too many records in cacheDB and cache is not processing them</p>
<b>Troubleshooting</b>	<ul style="list-style-type: none"> <li>• Check CPU,disk, and memory utilization of VM/system.</li> <li>• If above is normal, check CPU and memory of DE process using GETInfo query.</li> <li>• If above is normal, check CPU, disk and memory of database instance.</li> <li>• &lt;FreeChannel&gt; count should remain in 2 digits only and should not go in 3 digits. If this increases to 3 digits, it means, the system is going to die eventually.</li> </ul>

	<ul style="list-style-type: none"> <li>• Check the DE/Extension engine logs for errors. If you see errors in it related to configuration, correct the configuration.</li> <li>• If you see HPROF is generated and seeing an error of OutOfMemory in the logs, please check the sizing guideline and take action appropriately.</li> <li>• Check number of records in CacheDB and see if those are getting processed or not. If not getting processed, clear the cache.</li> <li>• Check for critical errors in logs- if know how to correct it, please do so.</li> <li>• For any other error seen in logs, please report them to DE or Extension team.</li> <li>• In order to recover softly, take backup of DB, deployment folder, configurations and restart DE when it is not responding.</li> </ul>
<b>Verification</b>	<ul style="list-style-type: none"> <li>•Check CPU, disk, and RAM utilization of VM/DE/EE/DB instance</li> <li>•Check FreeChannel count from GetInfo API if it is in range or not.</li> <li>•Check for critial ERRORS in DE/EE logs</li> </ul>
<b>Post Verification</b>	CDET/BEMS can be raised if issue still exists after following troubleshooting steps.

### 3. NoRouteToHost Exception

<b>Symptom</b>	No route to host (Host unreachable) exception observed in logs.
<b>Environment</b>	QA or Production.
<b>Possible Causes</b>	Host name is not reachable from server.
<b>Troubleshooting</b>	<ul style="list-style-type: none"> <li>• Add an entry in hosts file.</li> <li>• Check if port used by postgres DB is accessible to DE. Try telnet command.</li> </ul>
<b>Verification</b>	Verify from telnet command if hostname is reachable or not.
<b>Post Verification</b>	No need to add CDET/BEMS as this issue is solvable from configuration.

## Frequently Asked Questions

### 1. How to Validate CKC Core (SDP) API ?

#### a) Token API

• Check the headers configured in DeviceEngineConfig.xml are matching with one you are trying from postman.

Below is the sample Request for tenant poland.com

```
curl -X POST \
  https://199.199.199.127:8243/token \
  -H 'cache-control: no-cache' \
```

```
-H 'content-type: application/x-www-form-urlencoded' \
-H 'postman-token: be61852d-5a82-2204-c6f1-0cca6987852a' \
-d grant_type=password&client_id=juLyNYxuMngjXDOo6eBRB2xfjFUa&client_secret=
9lUafhQt7INZfmjIv09A1xfOAwsa&username=customer%40poland.com&password=admin'
```

### b) Get Users API

Use the token from poland.com

#### Request

```
curl -X GET \ 'https://199.199.199.127:8243/cdp/v1/tenants/users?
page_number=1&page_size=10' \
-H 'authorization: Bearer 86378a9e-8479-3b08-9a9f-85865dcef07b' \
-H 'cache-control: no-cache' \
-H 'postman-token: 7cc5b149-2396-eb36-aa6e-7ddab97e0573'
```

### c) Multicoordinates API

(Use the token from ciscointernal.com)

#### Request

```
curl -X POST
\https://173.39.80.101/dev3.2.1/t/ciscointernal.com/cdp/v1/tenant/locations/multicoordinates
\
-H 'authorization: Bearer 59b2b61e-ca4c-3659-9a8a-ee0a7f5847f9' \
-H 'cache-control: no-cache' \
-H 'postman-token: 9201d100-e593-1c5a-8cd7-317faccdc5c0' \
-H 'tenantid: poland.com' \
-d '[{"latitude": "12.935853", "longitude": "77.696031"}]'
```

## 2. How to check if Users, Locations and Tenants created in CKC core are reflected in DE?

### a) TenantToken can be checked from DE via below query on fid-CIMUserQueryInterface

```
{
  "Query":{
    "Find":{
      "SDPAdminUserToken":{
        "sid":{
          "ne":""
        }
      }
    }
  }
}
```

Run syncSDPTenantToken.sh to manually sync Tenant Tokens.

### b) Whether Tenants loaded or not can be checked via below query on fid-CIMUserQueryInterface.

```
{
  "Query":{
    "Find":{
      "SDPAdminUser":{
        "sid":{
          "ne":""
        }
      }
    }
  }
}
```

Run syncSDPTenant.sh to manually sync Tenants.

### c) Whether Users loaded or not can be checked via below query on fid-Authentication.

```
{
  "Query":{
    "Find":{
      "User":{
        "sid":{
          "ne":""
        }
      }
    }
  }
}
```

Run syncSDPUser.sh to manually sync users

d) Check if user has locations associated with it. Run below query on fid-Authentication.

```
{
  "Query": {
    "Find": {
      "UserLocationAssociation": {
        "userKeySid": { "ne": "" }
      }
    }
  }
}
```

e) Check if user has domain access by running below query on fid-Authentication.

```
{
  "Query": {
    "Find": {
      "UserDomainAssociation": {
        "sid": { "ne": "" }
      }
    }
  }
}
```

f) Check if Locations are loaded in DE by running below query on fid-CIMUserQueryInterface.

```
{
  "Query":{
    "Find":{
      "LocationNode":{
        "sid":{
          "ne":""
        }
      }
    }
  }
}
```

g) Run syncSDPLocation.sh to manually sync locations.

### 3. How to sync CKC core data into DE using sync scripts ?

(The location of these scripts is deviceEngine/admin/scripts folder)

- run syncSDPTenantToken.sh to manually sync Tenant Tokens
- run syncSDPTenant.sh to manually sync Tenants.
- run syncSDPUser.sh to manually sync users.
- run syncSDPLocation.sh to manually sync locations.
- run authmodifiers query mentioned shown in below on fid-CIMUserQueryInterface

```

<DoRequest target="[:RuntimeParams.TQLStudio_AuthenticationFacetIDName:]"
  Disable="CMD_SERVER">
  <Process>
    <Message>
      <Value>
        <Query>
          <Find>
            <User>
              <sid ne='' />
            </User>
          </Find>
        </Query>
      </Value>
    </Message>
  </Process>
</DoRequest>
<Log
  Message="EngineStartUp :: Response message from find User ::
[:$Response.Message.Value:]"
  Level="DEBUG" />
<if condition="$Response/Message/Value/Find/count(Result/User) gt 0">
  <then>
    <For each="UserDef" in="Find.Result">
      <!-- Authentication modifiers -->
      <AuthModifiers>
        <userKey>[:$LocalData.UserDef.User.userId:]</userKey>
      </AuthModifiers>
    </For>
  </then>
</if>

```

#### 4. How to Sync Newly Added tenant into DE ?

The location of these scripts is deviceEngine/admin/scripts folder

- update Tenant details to TenantUserConfig.xml file located inside src/config folder
- run syncSDPTenant.sh to get new tenant added to DE.
- run syncSDPTenantToken.sh to manually sync new Tenant Token
- run syncSDPUser.sh to manually sync users.

#### 5. How to Check if AMQP Integration with CKC Core is Working Fine?

- AMQP integration will be handled programmatically and Devops doesn't have to do anything except verifying AMQP config provided is correct and AMQP server is accessible from DE
- Telnet the amqp host name and see if its accessible from deviceEngine vm.
- Queue name created at AMQP is of format "DE\_{SiteID}\_AMQP". Make sure it is created.
- Check if below bindings are created

o domain \*.\*.\*

o domain \*.\*.\*.\*

o location \*.\*.\*

o location \*.\*.\*.\*

o user \*.\*.\*

- Check if the message is received at AMQP site.

- a) Select and open the queue for which message is sent.
- b) Click on **Get Message(s)**.

## 6. How to cleanup SensorCustomerKeyDef ?

If SensorCustomerKeyDef has empty values of TenantID, then cleanup of entries for SensorCustomerKeyDef is required. SensorCustomerKey is not required from CKC 4.1 and hence cleanup need to be done for same.

This can be achieved using below query :

```
{
  "Query": {
    "DeleteAll": {
      "SensorCustomerKeyDef": {
        "tenantId": ""
      }
    }
  }
}
```

## 7. How to Check If Workflows are Deployed?

In the logs, after the DE is fired up, you should see logs similar to the following:

```
2018-01-03 11:13:05,223 [ForkJoinPool-1-worker-10] INFO
  SffMessageFacet:858 EngineStartupTF : Loading SDPUserLoader workflow
2018-01-03 11:13:05,233 [ForkJoinPool-1-worker-10] INFO
  WdlCompiler:858 WDL 'SDPUserLoaderWDL' compile completed in 7 ms;
  Platform: MQIdentity.MQI.v1_0; Total files:1
2018-01-03 11:13:05,241 [ForkJoinPool-2-worker-12] INFO
  SffMessageFacet:858 EngineStartupTF : Fetch SDPUser workflow
2018-01-03 11:13:05,255 [ForkJoinPool-2-worker-12] INFO
  WdlCompiler:858 WDL 'SDPFetchUserWDL' compile completed in 11 ms;
  Platform: MQIdentity.MQI.v1_0; Total files:1
2018-01-03 11:13:05,262 [ForkJoinPool-1-worker-6] INFO
  SffMessageFacet:858 EngineStartupTF : Loading SDPUserCreation workflow
2018-01-03 11:13:05,282 [ForkJoinPool-1-worker-6] INFO
  WdlCompiler:858 WDL 'SDPUserDataCreationWDL' compile completed in 16 ms; Platform:
```

If any errors related to workflow are found, those need to be reported to DE team.

## 8. How to Check If Taskgroups Are Started ?

- For each Taskgroup in the SysTaskGroups\_system.tql.xml file that are started, you should see a line that looks as follows

```
====startTaskGroup=====<taskgroup name>
e.g.
====startTaskGroup=====SYS_AMQP_SUBSCRIBER_TG
====startTaskGroup=====SYS_SDPLocationSync_TG
====startTaskGroup=====SYS_SDPUserLoader_TG
====startTaskGroup=====SYS_SDPTenantUserManager_TG
```

- For each TaskGroup tag under the Create tag in the tql file, you will see a name tag, that is the Taskgroup name. For each of those, you should see a line that looks as shown above.

## 9. How to check If Sequences Are Running for Configured Frequency?

In the logs, after the SYS\_SDPUserLoader\_TG and SYS\_SDPLocationSync\_TG task group started, you should see a log similar to the following

```
2018-01-03 11:14:17,453 [ForkJoinPool-2-worker-1] INFO
  SffSequenceFacet:858 Federation:SDPUserLoader_Seq 0:0 @ Wed Jan 03 11:14:17 IST 2018:
```



```
Scheduled: start [16min../1440min]
2018-01-03 11:14:15,971 [ForkJoinPool-1-worker-12] INFO
SffSequenceFacet:858 Federation:SDPLocationSync_Seq 0:0 @ Wed Jan 03 11:14:15 IST 2018:
```

```
Scheduled: start [19min../24hour
```

The important value will be the part after the ../. Here, it's 1440 min and 24 hour which is the interval (once in a day) for every user sync and location sync. According to the configured value, the interval for the user and location sync will be present in the line.

**10.** How Domain capability definitions are defined in DE for CKC 3.1?

a) There is a DomainCapabilitiesDefinition.tql under src/ops/tql/ folder where all the domain Capability Definitions are defined.

Currently below are defined as DomainCapability Definitions.

- ParkingAdmin
- TrafficAdmin
- LightAdmin
- WasteAdmin
- ParkingCitizen
- ParkingEnforcement
- ParkingEnforcementOfficer
- ParkingEnforcementAnalyst
- MobilityAdmin
- EnvironmentAdmin
- TransitAdmin

b) These capabilities can be configured as and when required for 3.1. In order to define this, you may need to add DomainDefinitions as well in DomainDefinations.tql.xml file located at same folder.

c) For 3.2/4.0, these are defined at CKC core and DE fetches from CKC core.

**11.** What is EntityLocation and EntityLocationRefresh?

- For every Sensor (or entity) model, locationIDs are present.
- In order to populate reports data, we need to combine Entities and their locations into a model called as EntityLocation.
- EntityLocationRefresh is a manual process in which locationIds of an Entity (or Sensor model) are updated as per the location hierarchy defined in SDP.
- EntitylocationRefresh needs to be done when locations are created/updated after loading sensor data into DE.
- If locationIDs are not present for any entity/Sensor (due to any reason), and if LocationNode model shows correct hierarchy, then we need to sync Entities for those missing locationIDs.

**12.** How to sync EntityLocation for Sensor?

- There is an EntityLocationQueueRefresh.tql.xml present inside src/ops/tql folder. The queries inside this file are used to refresh/Sync Entitylocation.

- Run the query for individual server on facet fid-CIMUserQueryInterface.

### 13. How to Check if Events and/or incidents Are Deleted from DE?

- Default destroy time of incidents is 30 min. This is configured in Engine.xml
- Check if PolicyFacet is deployed or not. This can be verified by looking into logs with below text.====startTaskGroup=====SYS\_PolicyFacet\_TG
- Check if TQLPolicies are running or not. If not running, restart DE node. If those are running then reactivate the trigger for policy using below query:

```
curl -X POST \
  https://localhost:8080/fid-PolicyFacet \
  -H 'Content-Type: application/xml' \
  -H 'Postman-Token: d64e0417-d29f-494a-82c3-6498916bed0b' \
  -H 'cache-control: no-cache' \
  -d '<ReactivateTriggers/>
```

- If policyFacet is not deployed, run startMyFacetTaskGroup tql file.
- Check if below sequences are running. Verify them by looking into logs

```
EventDeleteProcessing_Seq
LifecycleEventDestroyTimeProcessing_Seq
NoLifeEventDestroyTimeProcessing_Seq
IncidentDeleteProcessing_Seq
IncidentDestroyTimeProcessing_Seq
```

- Check the GenericEvent count by running below query on fid-CIMUserQueryInterface. Make sure the count is changing when you hit the request multiple times.

```
<find orderBy="GenericEvent.createTime desc" only="createTime">
  <GenericEvent>
    <sid ne=""/>
  </GenericEvent>
</find>
<SetResponse>
  <Message>
    <Value>
      <count>[:$Response.Message.Value/count (Find/Result) :]</count>
    </Value>
  </Message>
</SetResponse>
```

- If the count is too high, check the count of incidents 30 min older by running below query on fid-CIMUserQueryInterface.

```
<SetLocalData key="timeout" value="[:/30*60000:]"/>
<SetLocalData key="conditionTime" value="[:[:$Now()]-[:$LocalData.timeout:]]"/>
<find orderBy="Incident.createTime desc" only="createTime">
  <Incident>
    <sid ne=""/>
    <destroyTime/>
    <lastUpdated>
      <lt>
        [:$LocalData.conditionTime:]
      </lt>
    </lastUpdated>
  </Incident>
</find>
<SetResponse>
  <Message>
    <Value>
      <count>[:$Response.Message.Value/count (Find/Result) :]</count>
```

```

    </Value>
  </Message>
</SetResponse>

```

Check if Situation is also getting created and destroyed along with incident.

#### 14. How to Check Memory Info, Null Channels, FacetInfo of DE ?

GET Info query can be run as

```
http://localhost:8080/fid-SffFacetAgentFacet/getInfo
```

- GetJvmInfo- Information about CPU and memory (used, available) by JVM.
- GetNetInfo- Network related information such as IP, port, hostname.
- GetUseInfo- How many connections used, read/write, free and null Channels counts.
- GetFacetInfo- List of deployed facets along with the time since they are activated.
- GetSysInfo- System information where DE is deployed.

#### 15. How to Check if Policies Are Working?

- Check if Policy build deployed is compatible with DE.
- Check if all policy Taskgroups mentioned in the SysTaskGroups\_policy.tql.xml are created and started.
- Check if policyTemplates are loaded.

Run below query on fid-CIMUserQueryInterface.

```

{
  "Query": {
    "Find": {
      "PolicyTemplate": {
        "sid": {
          "ne": ""
        }
      }
    }
  }
}

```

- Check if PolicyFacet is deployed and activated.

You can do this by finding PolicyFacet text and its activeSinceDate from below queryGET  
 {{url}}/SffFacetAgentFacet/getinfo

- Check if PolicyIns is created or not.

You can run below query on fid-CIMUserQueryInterface.

```

{
  "Query": {
    "Find": {
      "PolicyIns": {
        "sid": {
          "ne": ""
        }
      }
    }
  }
}

```

- Check if user is having access for sensor model.

You can do this by running below query on fid-CIMUserQueryInterface.

```
{
  "Query": {
    "Find": {
      <DomainModel Name>: {
        "sid": {
          "ne": ""
        }
      }
    }
  }
}
```

- Run below query on fid-PolicyFacet (POST Method)<ReactivateTriggers/>

#### 16. How to Check If TriggerActions (or Events from dashboard tab) Are Working?

- Check if Policy build deployed is compatible with DeviceEngine.
- Check if all policy taskgroups mentioned in the SysTaskGroups\_policy.tql.xml are created and started.
- Check if TriggerTemplate and ActionTemplate are loaded or not.

Run below query on fid-CIMUserQueryInterface.

```
{
  "Query": {
    "Find": {
      "TriggerTemplate": {
        "sid": {
          "ne": ""
        }
      }
    }
  }
}
```

Check for ActionTemplate as well by replacing TriggerTemplate with ActionTemplate in above query

- Check if PolicyFacet is deployed and activated.

You can do this by finding PolicyFacet text and its activeSinceDate from below query.GET

```
{{url}}/SffFacetAgentFacet/getinfo
```

- Check if TriggerActionIns is created or not.

You can run below query on fid-CIMUserQueryInterface.

```
{
  "Query": {
    "Find": {
      "TriggerActionIns": {
        "sid": {
          "ne": ""
        }
      }
    }
  }
}
```

- Check if user is having access for sensor model.

You can do this by running below query on fid-CIMUserQueryInterface.

```
{
  "Query": {
    "Find": {
```

```

    <DomainModel Name>: {
      "sid": {
        "ne": ""
      }
    }
  }
}

```

- If triggeractionins is created then check below query on fid-Policyfacet.

```

{
  "Query": {
    "Find": {
      "TQLPolicy": {
        "PolicyID": {
          "ne": ""
        }
      }
    }
  }
}

```

- Run below query on fid-PolicyFacet (POST Method)

```
<ReactivateTriggers/>
```

## 17. How to Delete All the Taskgroups?

This is to be run on fid-Federation

```

<Query>
  <DeleteAll>
    <TaskGroup>
      <sid ne=""></sid>
    </TaskGroup>
  </DeleteAll >
</Query>

```

