

Implementation Guide

– *Sales Order Fulfillment* Template App

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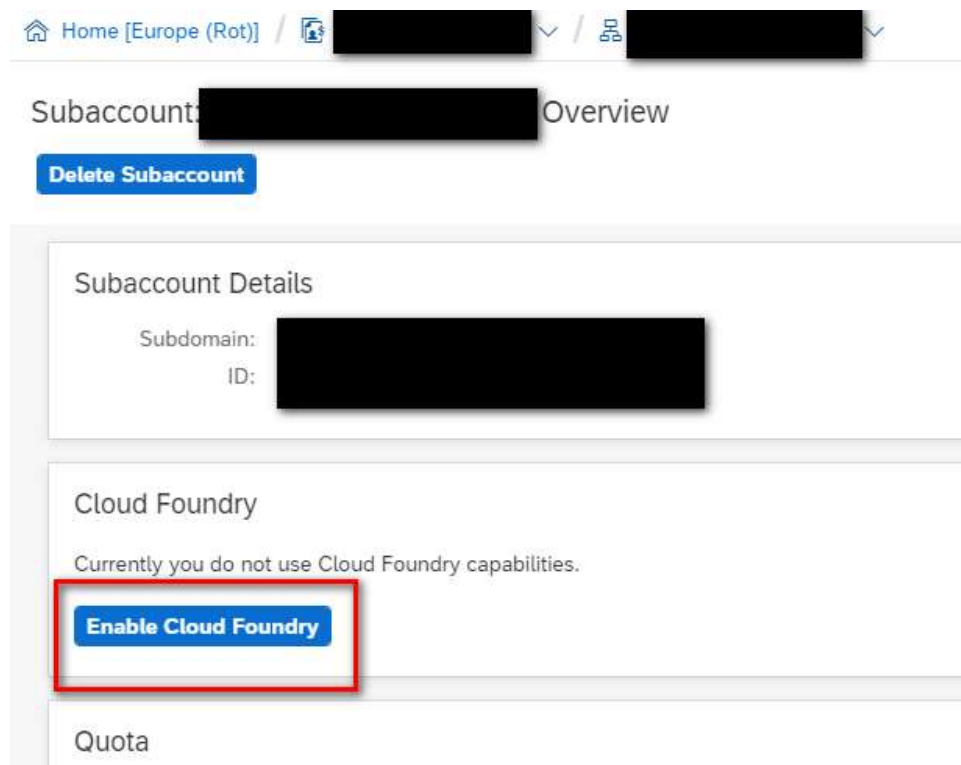
0.Prerequisites

- An SAP Cloud Platform global account with entitlement to the global track and trace option for SAP Logistics Business Network, 1 portal service quota and 10 GB Application Runtime quota
- To integrate with ERP, an SAP ERP or SAP ECC system running on Netweaver 7.31 or higher with SAP NOTE 2937175 being implemented
- To integrate with visibility provider, log your incident in SAP BCP system with component “SCM-LBN-GTT-COR”

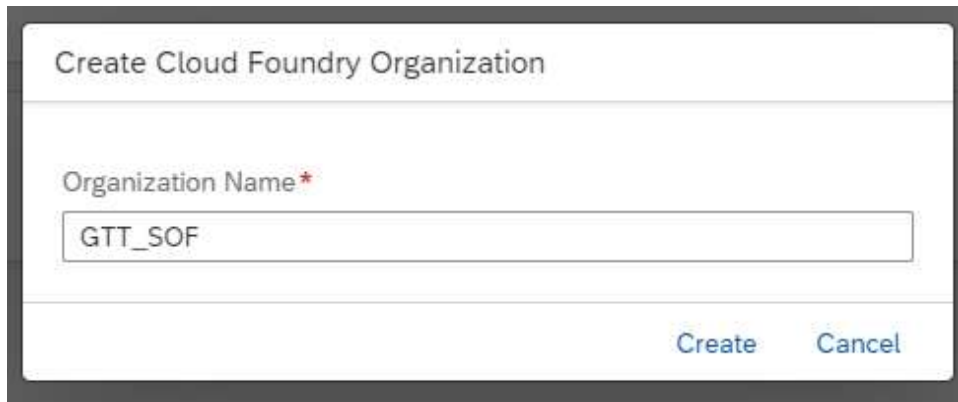
1.Environment Configuration in Logistics Business Network, Global Track and Trace Option

1.1 Enable Cloud Foundry and Create Space

1. Click “Enable Cloud Foundry” to enable the development landscape

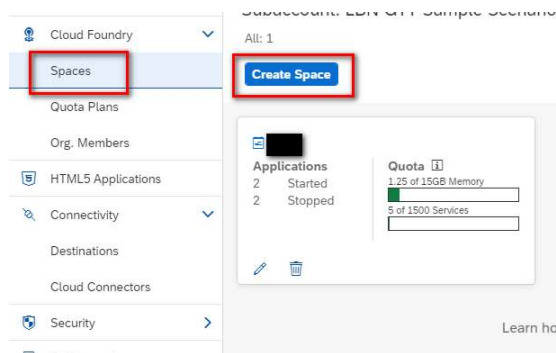


2. Fill in the Organization Name and click "Create"



A dialog box titled "Create Cloud Foundry Organization". It contains a text input field labeled "Organization Name" with a red asterisk indicating it is required. The field contains the text "GTT_SOF". At the bottom right, there are two buttons: "Create" and "Cancel".

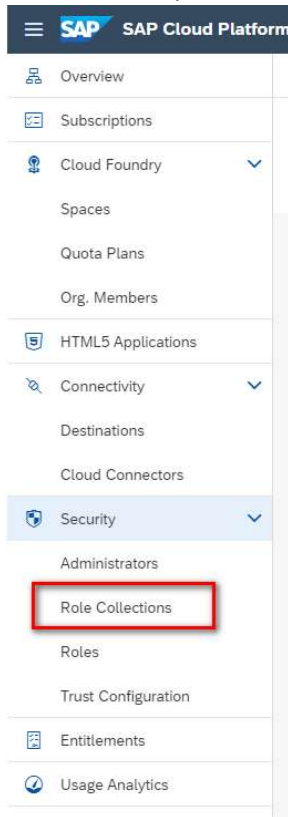
3. Go to "Cloud Foundry" -> "Spaces"
Click "Create Space"
Fill in the Space Name and click "Create"



A form titled "Create Space". It has a text input field labeled "Space Name" with a red asterisk, containing the text "development". Below this, there is a section "Assign space roles to" followed by a list of roles with checkboxes: "Space Manager" (checked), "Space Developer" (checked), and "Space Auditor" (unchecked). The role names are partially obscured by a black redaction box.

1.2 Maintain Roles and Users

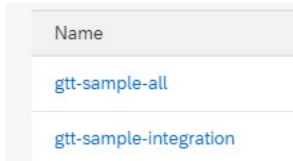
1. Go to “Security” -> “Role Collections”



2. Create 2 role collections (You can have user-defined names):

gtt-sample-all

gtt-sample-integration



- Role template “gtt-sample-all” is granted to users who have access to global track and trace option and *Sales Order Fulfillment* template app.
 - Role template “gtt-sample-integration” is granted to technical users only who have access to the global track and trace APIs for development purpose.
3. Go to the role of “gtt-sample-all”, and add the following roles:

Role	Application
MessageLogAdminTemplate	lbn_gtt_core
DataModelAdminTemplate	lbn_gtt_core
LocationProcessTemplate	lbnplatform-loc-broker
BPEditTemplate	lbnplatform-bprepo
BusinessPartnerDiscoveryTemplate	lbnplatform-bprepo

InviteBPPProcessTemplate	lbnplatform-bprepo
ManageInvitationsProcessTemplate	lbnplatform-bprepo
BlockStoreProcessTemplate	lbn-retentionmanagement-sb
ReminderTemplateProcessTemplate	lbn-retentionmanagement-sb

4. Grant "gtt-sample-all" to your **application** users:

- Application users are those who have access to global track and trace option and *Sales Order Fulfillment* template app.

IT Administrator needs to maintain application users in identity provider.

For example, user1@sap.com

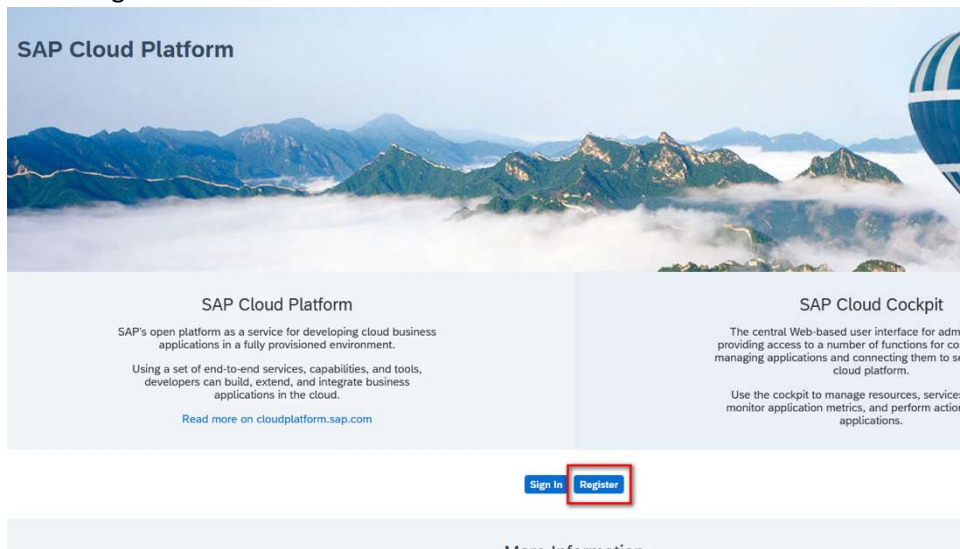
Users (51)				
ID	Identity Provider	E-Mail	First Name	Last Name
[REDACTED]@sap.com	SAP ID Service	[REDACTED]@sap.com	[REDACTED]	[REDACTED]
[REDACTED]@sap.com	SAP ID Service	[REDACTED]@sap.com	[REDACTED]	[REDACTED]
[REDACTED]@sap.com	SAP ID Service	[REDACTED]@sap.com	[REDACTED]	[REDACTED]

1.3 Maintain Technical User

1. Go to the SAP Cloud Platform to create the technical user account:

<https://account.hana.ondemand.com/#/home/welcome>

Click "Register"



2. Fill in the mandatory fields:

Tell us about yourself

E-mail address *	First name *
Last name *	Company *
Country/Region United States	Phone +1 XXX-XXX-XXXX
Department *	Relationship to SAP *
Create password *	Confirm password *

Must have at least 8 characters.

☐ I have read and understood the Terms and Conditions of [SAP.com](#)

SAP will use any of the data provided hereunder in accordance with the [Privacy Statement](#).

This site is protected by reCAPTCHA and the Google [Privacy Policy](#) and [Terms of Service](#) apply.

[Submit](#)

3. Go to the mail inbox to activate the account

SAP CLOUD IDENTITY

Hello [redacted]

An account has been created for you. To activate your account for [Administration Console](#) of SAP Cloud Identity, click the link below. You will be taken to a page where you will also set a password for your account.

[Click here to activate](#)

If the link above is not displayed or does not work, copy and paste the link below to the address bar of your browser.

[redacted]

For more information, see [SAP Cloud Identity service documentation](#)

In case of any issues, create a ticket with BC-IAM-IDS component in [SAP Support Portal](#).

4. As shown in Step 1.2, go to the role of "gtt-sample-integration", and add the following roles:

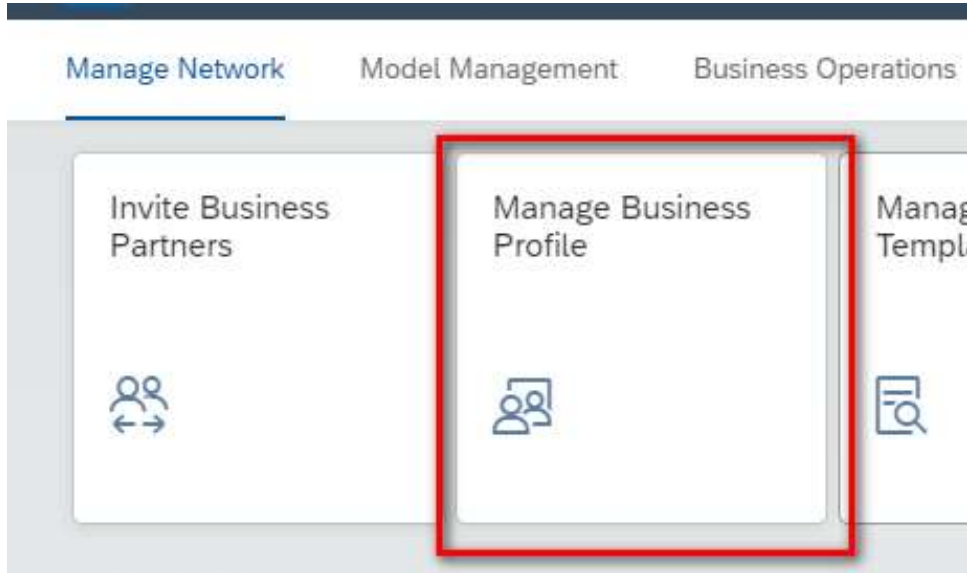
Role	Application
EMIDocIntegrationTemplate	lbn_gtt_core
MetadataServiceIntegrationTemplate	lbn_gtt_core
ReadServiceIntegrationTemplate	lbn_gtt_core
WriteServiceIntegrationTemplate	lbn_gtt_core

5. Grant "gtt-sample-integration" to your **technical** user:
For example, techuser1@techcompany.com

Users (1)

ID	Identity Provider	E-Mail	First Name	Last Name
[REDACTED]	[REDACTED].com	[REDACTED].com	[REDACTED]	[REDACTED]

6. Go to SAP Fiori Launchpad for global track and trace option
Open *Manage Business Profile* app



7. Add one Alternate Identifier:
Identifier Type: Technical User
ID: the email address of technical user

Email	Phone Number
[REDACTED]	[REDACTED]

Alternate Identifiers (1)

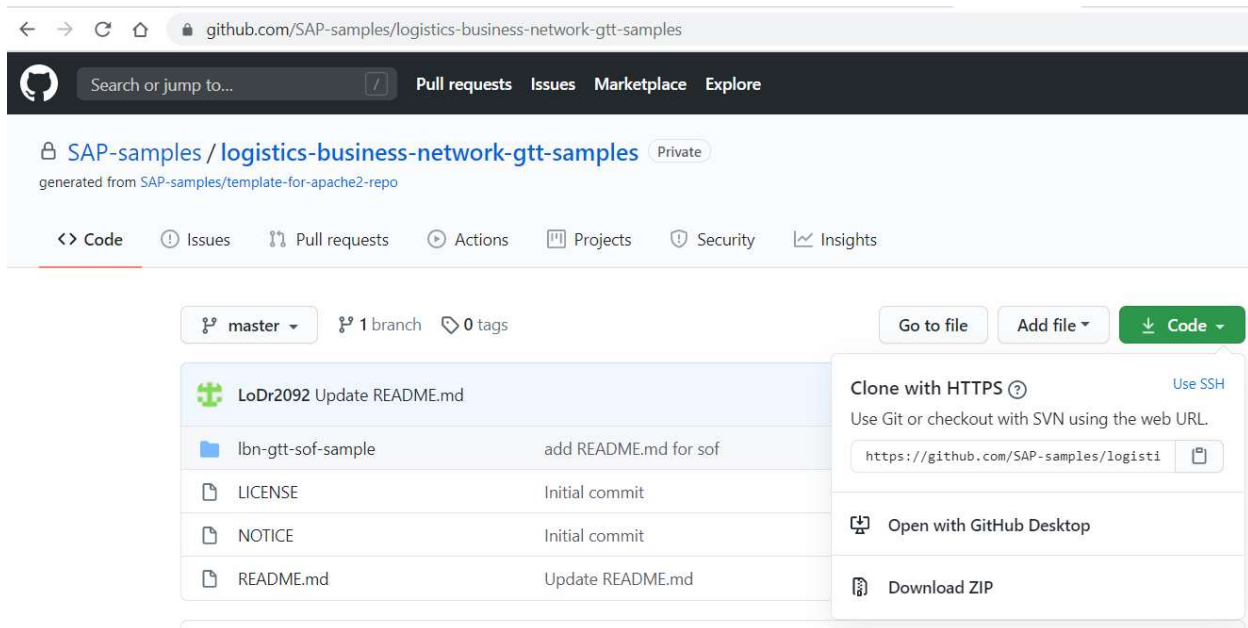
Identifier Type	ID
Technical User	[REDACTED].com

2. Implement *Sales Order Fulfillment* Template App

2.1 Download Template Code

Go to <https://github.com/SAP-samples/logistics-business-network-gtt-samples>

Download and extract, or git clone the template code from SAP-samples on GitHub.

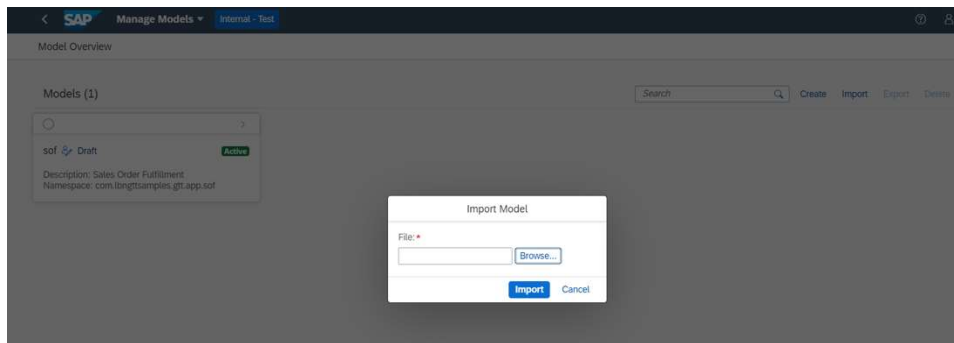


2.2 Download and Setup Tools

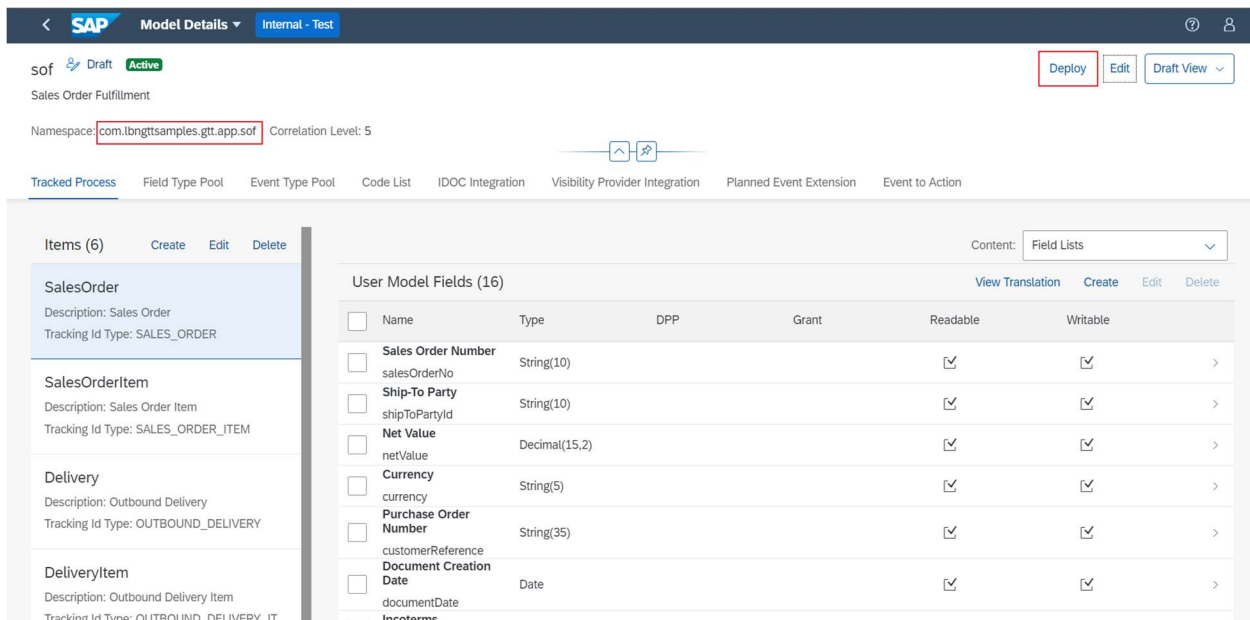
1. Install JDK 8 and Maven
2. Install NPM, Node JS, and grunt-cli
<https://www.saplearners.com/how-to-install-node-js-and-npm/>
Run the following command after NPM is installed:
`npm config set @sap:registry "https://npm.sap.com" -g`
3. Install Cloud Foundry Command Line Interface
<https://developers.sap.com/tutorials/cp-cf-download-cli.html>
4. Install MultiApps CF CLI Plugin
<https://github.com/cloudfoundry-incubator/multiapps-cli-plugin>
5. Install Cloud MTA Build Tool (MBT)
<https://sap.github.io/cloud-mta-build-tool/download/>
6. Install MAKE
<https://sap.github.io/cloud-mta-build-tool/makefile/>

2.3 Deploy Model

- Go to the folder *model* with downloaded source code. Make sure you have a JSON file *sof-model-YYYYMMDDxx.json* (e.g. *sof-model-2020091001.json*).
- Open *Manage Models* app on SAP Fiori Launchpad for global track and trace option
- Click “Import”
- Click “Browse” to select the *sof-model-YYYYMMDDxx.json* file
- Click “Import” to import the model



- Click “Deploy”
- Write down the model namespace for later use, such as “com.lbngttsamples.gtt.app.sof” in the picture below



2.4 Package and Deploy

2.4.1 Login to SAP Cloud Foundry

- Open a command window, *cf login* to SAP Cloud Foundry with your username and password
- Select the organization and space in which you want to deploy the template apps

```
MINGW64
Authenticating...
OK
Select an org:
1. [redacted]
2. [redacted]
3. [redacted]
4. [redacted]
5. [redacted]
6. [redacted]

Org (enter to skip): 6
6
Targeted org [redacted]

Select a space:
1. acc
2. perf
3. int
4. inthf
5. sbx

Space (enter to skip): 5
5
Targeted space [redacted]

API endpoint: https://api.cf.sap.hana.ondemand.com (API version: 3.81.0)
User: [redacted]
Org: [redacted]
Space: [redacted]
```

2.4.2 Package and Deploy *Sales Order Fulfillment* Frontend App

Go to GTT-V2-Sample-TrackSalesOrders-Service directory.

- Open the `./UI/.env` file
- Replace `{tenant-name}` with part of the namespace you got from Step 2.3.
For example, replace it with `"lbngttsamples"` in `"com.lbngttsamples.gtt.app.sof"` shown in Step 2.3.

```
.env
1 TENANT_NAME={tenant-name}
2 UI5_URL=http://localhost:5000/sapui5
3 UI5_DIR=C:\Dev\SAPUI5\1.78.3
4
5
```

In the command line tool,

- Run the following command to build the MTAR package:

mbt build

A MTAR file `./mta_archives/gtt-v2-ui-sample-track-salesorders-service_xxx.mtar` is then generated.



- To deploy the MTAR package in Cloud Foundry, run the following command:

cf deploy ./mta_archives/gtt-v2-ui-sample-track-salesorders-service_xxx.mta

The deployment time depends on your network conditions.

2.4.3 Package and Deploy SAP Fiori Launchpad for *Sales Order Fulfillment*

Go to GTT-V2-Sample-App-FLP directory.

- Open the *mtad.yaml* file
- Replace {unique-identifier} with unique information such as your company name or cloud foundry global account name

```

10 - name: lbn-gtt-sample-app-appRouter
11   type:approuter.nodejs
12   path: flp_appRouter
13   parameters:
14     disk-quota: 256M
15     memory: 256M
16     routes:
17       - route: lbn-gtt-samples-app-flp-{unique-identifier}.$(domain)
18   properties:
19     SAP_JWT_TRUST_ACL:
20       - clientid: "*"
21       identityzone: "*"
22     destinations:
23       - name: lbn-gtt-sof-api
24         url: "{lbn-gtt-sof-api/url}"
25         forwardAuthToken: true
26   requires:
27     - name: lbn-gtt-sample-app-uaa
28     - name: lbn-gtt-sample-app-runtime
29     - name: lbn-gtt-sample-portal-resources
30     - name: lbn-gtt-sof-api
31
32 - name: flp
33   type: com.sap.portal.content
34   path: flp
35   parameters:
36     stack: cflinuxfs3
37     memory: 128M
38     buildpack: 'https://github.com/cloudfoundry/nodejs-buildpack/releases/download/v1.6.39/nodejs-buildpack-cflinuxfs3-v1.6.39.zip'
39   requires:
40     - name: lbn-gtt-sample-app-uaa
41     - name: lbn-gtt-sample-portal-resources
42     - name: gtt-ui-sample-track-salesorders-app-host
43   resources:
44     - name: lbn-gtt-sample-app-runtime
45     parameters:
46       service-plan: app-runtime
47       service: html5-apps-repo
48     type: org.cloudfoundry.managed-service
49     - name: lbn-gtt-sample-portal-resources
50     parameters:
51       service-plan: standard
52       service: portal
53     type: org.cloudfoundry.managed-service
54     - name: lbn-gtt-sof-api
55     properties:
56       url: https://gtt-sample-track-salesorders-service-{unique-identifier}.$(default-domain)
57     - name: lbn-gtt-sample-app-uaa

```

In the command line tool,

- Run the following command to build the MTAR package:

```
mbt build
```

A MTAR file *./mta_archives/lbn-gtt-sample-app-flp_xxx.mtar* is then generated.

- Deploy the MTAR package in Cloud Foundry by running the following command:

```
cf deploy ./mta_archives/lbn-gtt-sample-app-flp_xxx.mtar
```

2.4.4 Package and Deploy Sales Order Fulfillment Backend Service

Replace User/Password, Here Map Key and Host Configuration

- Obtain user/password from Step 1.3
- Obtain Here Map license from Step 4.1
- Replace following entries in *mta.yaml* under the folder “GTT-V2-Sample-TrackSalesOrders-Service”:

```
mta.yaml
1  ---
2  _schema-version: '3.1'
3  ID: gtt-v2-sample-track-salesorders-service
4  version: 2.2.0
5  modules:
6  - name: gtt-sample-track-salesorders-service
7    type: java
8    path: srv/
9    properties:
10     SPRING_PROFILES_ACTIVE: cloud
11     GTT_CORE_ENGINE_API_URL_FLP_BASED: https://{lbn-gtt-flp-base-url}/api
12     GTT_CORE_ENGINE_TECHNICAL_USER: {technical-user-name}
13     GTT_CORE_ENGINE_TECHNICAL_PWD: {technical-user-pwd}
14     HERE_MAP_KEY: {here-map-license-key}
15   parameters:
16     buildpack: java_buildpack
17     health-check-timeout: 180
18     host: gtt-sample-track-salesorders-service-{unique-identifier}
19   build-parameters:
20     ignore:
21     - "*.md"
22     build-result: target/*.jar
23     timeout: 10m
24     requires:
25     - name: lbn-gtt-sample-app-uaa
26   resources:
27   - name: lbn-gtt-sample-app-uaa
28     type: org.cloudfoundry.existing-service
29
30
```

- Replace {unique-identifier} with unique information such as your company name or cloud foundry global account name
- Open `./srv/src/main/java/com/sap/gtt/v2/sample/sof/constant/Constants.java`
Replace “com.lbngttsamples.gtt.app.sof” with the model namespace you got from Step 2.3

```
Constants.java
1  package com.sap.gtt.v2.sample.sof.constant;
2
3  public class Constants {
4      public static final String GTT_MODEL_NAMESPACE = "com.lbngttsamples.gtt.app.sof";
5      public static final String GTT_MODEL_NAMESPACE_WRITE_SERVICE = GTT_MODEL_NAMESPACE + ".sofWriteService";
6      public static final String MODEL_NAMESPACE = GTT_MODEL_NAMESPACE + ".sofService";
7
8      public static final String URL_SPLITTER = "/";
9      public static final String ENTITY_CONTAINER_NAME = "EntityContainer";
10     public static final String SAP_ICON_LEAD = "sap-icon://lead";
11     public static final String ID = "id";
12
13     public static final String EVENT_STATUS_PLANNED = "PLANNED";
14
15     public static final String PROCESS_STATUS_QUEUED = "QUEUED";
16
17
```

- Run the following command to build the MTAR package:

mbt build

A MTAR file `./mta_archives/gtt-v2-sample-track-salesorders-service_xxx.mtar` is then generated.

- Deploy the MTAR package in Cloud Foundry by running the following command:

```
cf deploy ./mta_archives/gtt-v2-sample-track-salesorders-service_xxx.mtar
```

2.4.5 Check Deployed Apps on SAP Cloud Foundry Cockpit

After operations from Step 2.4.1 to Step 2.4.3, check the deployed apps on SAP Cloud Platform Cockpit.

The screenshot shows the SAP Cloud Platform Cockpit interface. The left sidebar contains navigation links: Applications, Services, SAP HANA Cloud, SAP HANA, Database Systems, Tenant Databases, Service Requests, Portal, Routes, Security Groups, Events, and Members. The main area displays 'Space: [redacted] Applications' with a 'Deploy Application' button. Below is a table of applications:

Requested State	Name	Instances	Disk Quota	Memory
Started	gtt-sample-track-salesorders-service	1/1	1024 MB	1024 MB
Stopped	gtt-ui-sample-track-salesorders-ui_deployer	0/1	1024 MB	256 MB
Started	lbn-gtt-sample-app-appRouter	1/1	256 MB	256 MB

2.4.6 Maintain Destination

1. Obtain the UAA token

- Go to the *Sales Order Fulfillment* backend application that you have deployed

The screenshot shows the application status for 'gtt-sample-track-salesorders-service-green'. It has a 'Started' status indicator and '1/1' instances.

- Find the environment of UAA
- Copy the value of **clientid** and **clientsecret**

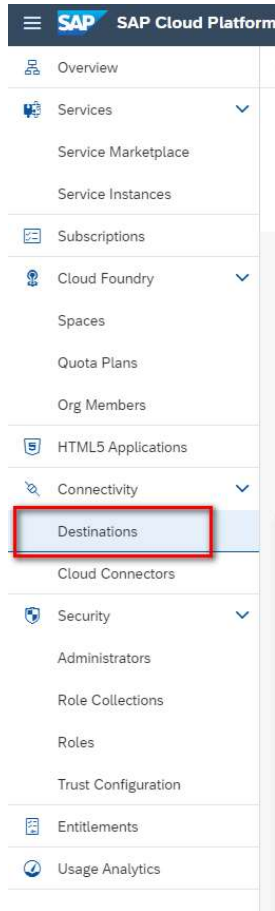
The screenshot shows the 'Service Bindings' page for the application 'gtt-sample-track-salesorders-service-green'. It lists a binding named 'lbn-gtt-sample-app-uaa' connected to the 'xsuaa' service. Below the table, the sensitive data is expanded, showing a JSON configuration with 'clientid' and 'clientsecret' highlighted in red boxes.

Name	Service	Plan
lbn-gtt-sample-app-uaa	xsuaa	application

```
{
  "tenantmode": "dedicated",
  "sburl": "[redacted]",
  "subaccountid": "[redacted]",
  "clientid": "[redacted]",
  "xsappname": "[redacted]",
  "clientsecret": "[redacted]",
  "uri": "https://[redacted].authentication.eu10.hana.ondemand.com",
  "uaadomain": "authentication.eu10.hana.ondemand.com",
  "verificationkey": "-----BEGIN PUBLIC KEY-----
[redacted]
-----"

  "apurl": "https://api.authentication.eu10.hana.ondemand.com",
  "identityzone": "lbn-gtt-samples",
  "identityzoneid": "[redacted]",
  "tenantid": "[redacted]",
  "zoneid": "[redacted]"
}
```

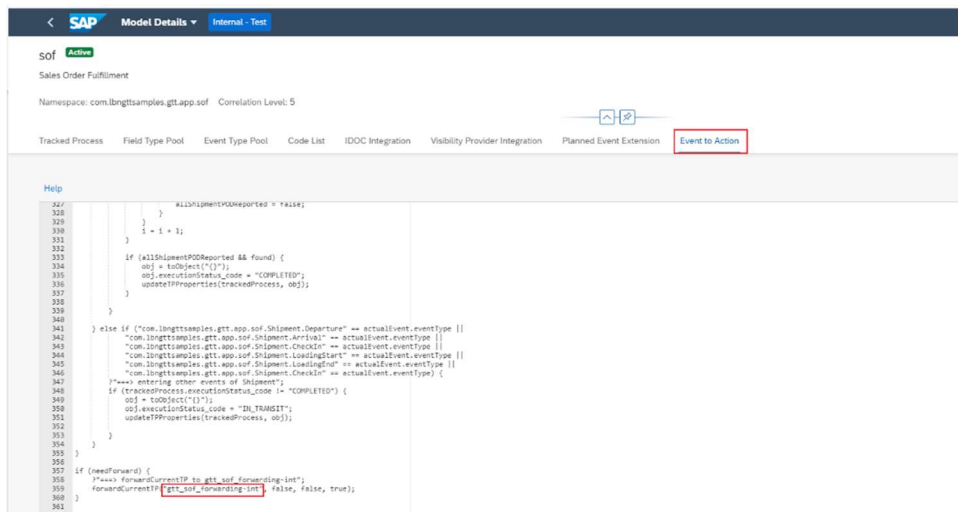
2. Go to “Destinations”



3. Configure the destination

Name	e.g. gtt_sof_forwarding_int
Type	HTTP
Description	<optional>
URL	e.g. https://gtt-sample-track-salesorders-service.cfapps.eu10.hana.ondemand.com/sap/logistics/gtt/sample/sof/rest/v1/forward
Proxy Type	Internet
Authentication	OAuth2ClientCredentials
Client ID	Copied in previous step
Client Secret	Copied in previous step
Token Service URL	e.g. https://lbn-gtt-samples.authentication.eu10.hana.ondemand.com/oauth/token

Note: You need to update the destination name in *Event to Action* script of *Sales Order Fulfillment* model if you change the name from “gtt_sof_forwarding_int” to others.



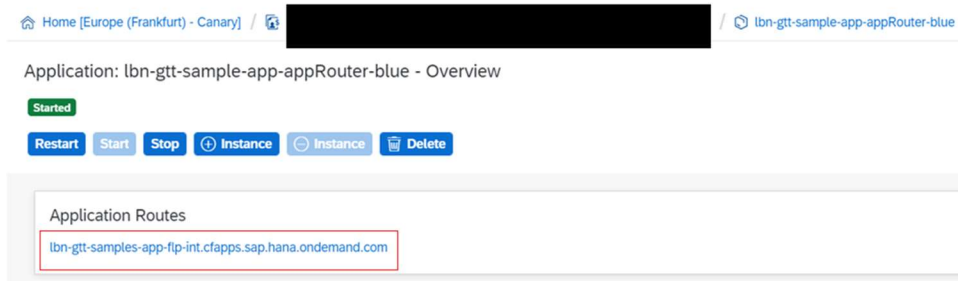
2.4.7 Maintain Roles and Users

- As shown in Step 1.2, go to the role of “gtt-sample-all”, and add the following role:

Role	Application
SalesOrderFulfillmentAppUser	tt_sof_{space}

2.4.8 Open Sales Order Fulfillment Template App from SAP Fiori Launchpad

- Obtain the Application Routes from SAP Cloud Foundry Cockpit



- Click the link of Application Routes
The system browser then navigates to the SAP Fiori Launchpad of Sales Order Fulfillment



- Open the *Sales Order Fulfillment* template app

Sales Order Number	Ship-To Party	Completion Rate	Overall Delay Impact (By Value)	Net Value	Is Delayed
9900023663	0000010105	265.00 EUR		265.00 EUR	No
9900063395	0000010105			265.00 EUR	No
9900015038					No
9900095285	0000010105			265.00 EUR	No

3. Implement ERP extractor

Refer to the slides for details.

4. Other Configuration

4.1 Obtain Here Map License

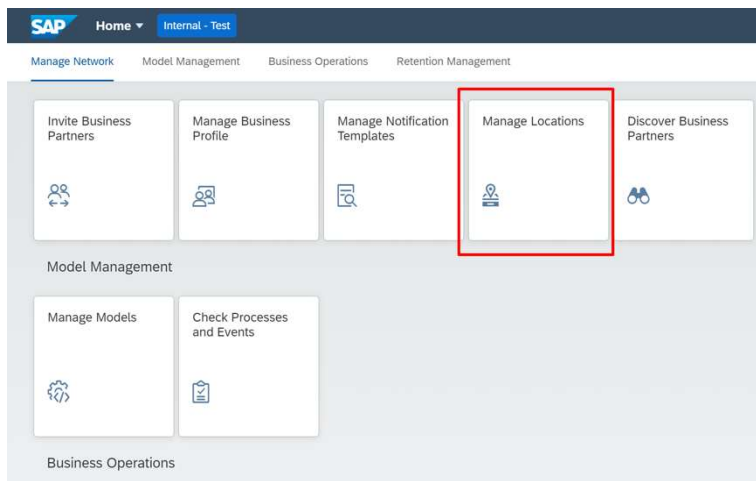
To have the map view, log the incident with the URL of Fiori Launchpad of *Sales Order Fulfillment* template app in SAP BCP system under component “SCM-LBN-GTT-COR”. The Here Map tile service is enabled manually.

For quick validation, you can also use the tile service of other map services.

4.2 Maintain Location Master

To show stops and planned events in the map, you need to maintain location master data with valid geocoordinates in *Manage Locations* app.

1. Open *Manage Locations* app in your SAP Fiori Launchpad for global track and trace option



2. Click “Create” to create a new location

Standard ▾ [Download Excel Template](#) [Upload Locations](#)

Location ID: Object Type: Description: Country/Region: City: [Adapt Filters](#)

Locations (22) [Create](#) ⓘ

Location ID	Description	Object Type	Country/Region	State	City	District	Street	House Number
QM7CLNT910:NL-HARBOR	NL Harbor	Logistic Location	Netherlands (the)		Leiden			
Changed On: Sep 8, 2020, 5:30:41 PM External ID: NL-HARBOR Source System: QM7CLNT910								
QM7CLNT910:MX91	CATT VZ MX91	Supplier	Germany		Herten			
Changed On: Sep 8, 2020, 5:29:24 PM External ID: MX91 Source System: QM7CLNT910								

3. Maintain location information with valid geocoordinates

To integrate with ERP, you need to keep the Object Type, Source System, and External ID location consistent with ERP location information.

To know the details, please refer to *ERP Extractor Implementation Guide*.

< **SAP** Manage Locations ▾ Internal - Test

Create Location

GENERAL [ALTERNATIVE LOCATION IDS](#)

Object Type: *

Source System/External ID: *
Source System: External ID:

Description: *

Time Zone:

Longitude: *
+ (East)

Latitude: *
+ (North)

Country/Region:

State:

City:

District:

Street/House Number:

Zip Code: