

Nama : Kayla Alysa Adra  
NIM : 201402088  
Kom A Teknologi Informasi

## Setting up your first HANA project in SAP Business Application Studio

### **Mission Summary:**

Best Run Travel Wants to Identify the top 5 partners and the days with maximum booking for the top 5 partners

### **Step by step**

1. Untuk mengakses Business Application Studio, Anda dapat menambahkan entitlement terlebih dahulu dengan mengikuti langkah-langkah berikut: Configure entitlements -> Add service plans -> kemudian pilih SAP Business Application Studio -> Save.

The screenshot shows the SAP Business Application Studio entitlement configuration screen. On the left, there's a search bar with 'bus' typed in and a dropdown menu showing 'All Solutions'. Below it, a list of available plans includes 'API Management, API Business Hub Enterprise', 'Business Entity Recognition Trial', and 'SAP Business Application Studio'. The 'SAP Business Application Studio' plan is selected. On the right, the 'Service Details' section shows the technical name 'sapappstudiotrial' and a note about trial plans being for evaluation purposes. At the bottom, there are buttons for 'Add 1 Service Plan' and 'Cancel'.



2. Untuk membukanya, dapat dilakukan dengan cara klik instance and subscriptions -> lalu create instance and subscriptions seperti dibawah ini.

New Instance or Subscription

**1**

Basic Info

Enter basic info for your instance or subscription.

Service:  Can't find what you're looking for?

Plan:

Create Cancel

3. Klik go to application

SAP Business Application Studio

Plan: trial Created On: 4 Oct 2023

Status: Subscribed

Changed On: 4 Oct 2023

Go to Application

4. Klik dev space

Welcome to SAP Business Application Studio

Now you can efficiently develop business applications for the Intelligent Enterprise with a powerful and modern development environment.

At the heart of SAP Business Application Studio are the dev spaces. A dev space is a pre-configured private environment (your own "virtual machine" on the cloud) where you can develop, build, test, and run using pre-installed runtimes and tools. You can create a dev space for each of your development scenarios.

Create Dev Space

Dev Spaces

Employee_Productivity	planned
Strategic_Buyer	planned
S4_HANA_UI	planned
Traveling_Agent	planned
Manager_Approval	planned

5. Beri name dev space dengan **BestRunTravel** lalu pilih SAP HANA Native Application

SAP Business Application Studio

Create a New Dev Space

BestRunTravel ✓

What kind of application do you want to create?

- SAP Fiori
- Full-Stack Application Using Productivity Tools
- Full Stack Cloud Application
- SAP HANA Native Application

**SAP HANA Native Application Dev Space**

Build and deploy native SAP HANA applications or analytical models. This dev space contains a comprehensive set of editors to support the creation of database artifacts (calculation views, tables, SQLScript procedures, and more), as well as tools to enable an end-to-end development flow from project creation to the deployment to the SAP Cloud Platform.

**SAP Predefined Extensions**

The following extensions are enabled by default.

- Basic Tools**  
Allows you to perform operations such as build and deployment of multitarget... [more](#)
- SAP HANA Calculation View Editor**  
Allows you to edit and manage SAP HANA calculation views. The extension includes... [more](#)
- SAP HANA Database Explorer**  
Allows you to access and inspect SAP HANA run-time objects. The extension... [more](#)
- SAP HANA Tools**  
Allows you to develop native CDS HANA... [more](#)

**Additional SAP Extensions**

Select additional extensions to enhance your space.

- SAPUI5 Adaptation Project**  
Allows to extend SAPUI5 applications using Adaptation project and Visual Editor
- CDS Graphical Modeler**  
Allows you to design SAP core data services models in SAP cloud... [more](#)
- CAP Tools**  
Allows you to develop CAP applications using the CDS... [more](#)
- Chromium Browser Tools**  
Allows you to develop native CDS HANA... [more](#)

[Cancel](#) [Create Dev Space](#)

6. Lalu klik Create Dev Space

Dev Spaces

Create and manage your development environment according to the type of applications you want to develop.

You can add extensions and tools to further enhance your development options. For more information, see the [documentation](#).

[Create Dev Space](#)

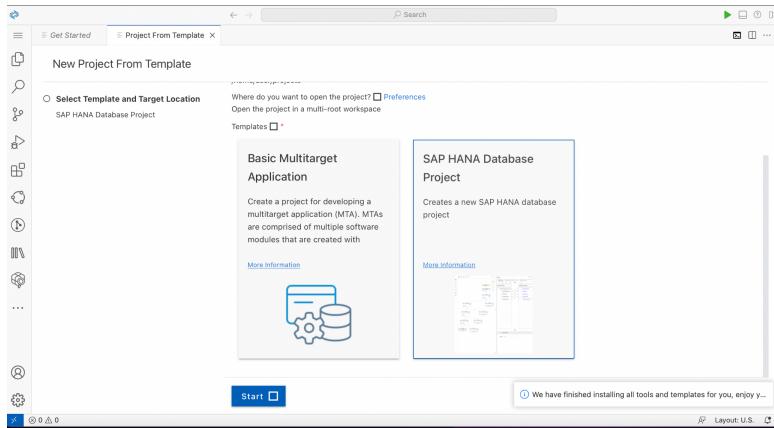
⚠ You're using a trial version. Any dev space that hasn't been running for 30 days will be deleted.  
See the full list of [restrictions](#).

Name	Status	Created On	ID	Disk Usage	Action
BestRunTravel	STARTING	04/10/2023 10:50	ws-fzh16	Currently unavailable	

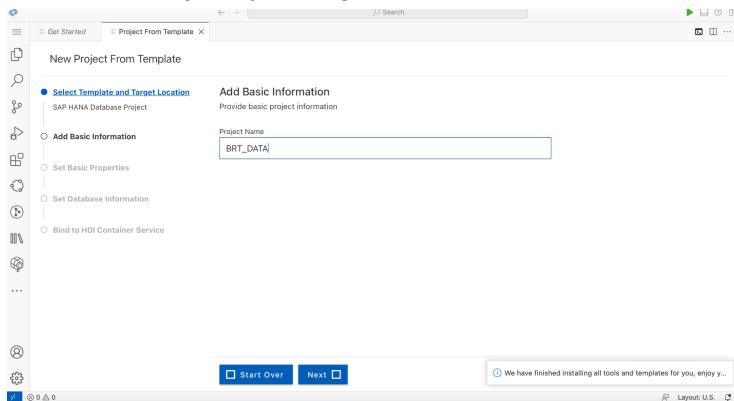
7. Klik 'Create Project from Template'

**New Project from Template**

## 8. Klik 'SAP HANA Database Project' lalu klik start



## 9. Beri nama projectnya dengan **BRT\_DATA**



Please enter a unique and non-existing service instance name

BRT\_DataContainer

Use the default database instance of the selected Cloud Foundry space?

## 10. Project berhasil terbentuk

**BRT\_DATA**

HANA | Path: /home/user/projects/BRT\_DATA

## 11. Buat credentials dibawah ini

```
{  
  "host": "<host>",  
  "port": "443",  
  "user": "<user>",  
  "password": "<password>",  
  "driver": "com.sap.db.jdbc.Driver",  
  "tags": [  
    "hana"  
  ],  
  "endpoint": "https://api.cf.sap.hana.ondemand.com",  
  "encrypt": true,  
  "validate_certificate": true,  
  "certificate": "—BEGIN CERTIFICATE—  
\nMII0DzCCApegAwIBAgIQCDvqVpBCRrGhdWrJWZHHSiANBqghkiG9w0BAQUFADbh\nMQswCQYDVQQGEwJVUzEVMBGA1UEChMMRGlnaUNlcnQgSW5jMRkwFwYDVQQLEx  
B3\\nd3cuZGlnaWNlcnQuY29tMSAwHgYDVQDExEaWdpQ2VydCBhbG9iYWwgUm9vd  
CBDnQTAEfW0wNjExMTAwMDBaFw0zMTEfxMTAwMDAwMDBaMGExCzAJBgNVBA  
YTAIVTnMRUwEwYDVQQKEwxEdWdpQ2VydCBjbmNxGTAXBgNVBAstEHd3dy5kaWdp  
Y2VydC5lbn20xDaEbgNVBAMT0RpZ2IDZXJ0IEdhb2JhbCBSb290IENBMIBjANBgkqh  
iGn9w0BAQEAAQCAQ8AM!!BcKCAQEAA4vhEXLeqKTTo1eqUKKPC3eQyaKl7hOllsb\nCSDMAZOntjC3U/dDxGkAV53iSldhwZAAlEJzs4bg7/  
fzTtxRulWZscFs3YnFo97/nhh6Vfe63SKMl2tavegw5BmV/  
SIofvb?4q77uKnD0f3p4mVmFaG5clzJLv07A6ptn43C/dxC/  
AH2hdmoRBByMoi1GNXRor5H4ida9Joz+EkiYlvUX7Q6hL+hqkpMfT7P\\nT19sdl6gSzeRnt  
wi5m30FBqOasv+zbMUZbfHWyvmeMr/y7vrTC0LUq7dBMoM1O/4\\ngdW7Vg/  
tRvoSSicNoxBN3shbyTApOB6itSjletX+jkMOvJwIDAQAB2MwYTAO\\nBaNvHQ8BAf8EB  
AMCAYYwDwYDVR0TAQH/BAUwAwEB/  
zAdBgNVHQ4EFgQUA95QNVbR\\nTLtm8KPIGxyDjI90VUwHwYDVR0JBgwFoAU95QN  
VbRTLtm8KPiGxvDjI90VUlw\\nDQYJKoZ\\hvNAAQEFBQA\\DgEBAMucN6l\\ExIK+11EnE9sSP  
TfrgT1eXkloQY\\Es\\nhMAtudXH/  
vTBHjlLuG2cenTmCmrEbXjcKChzUylmZOMkXDigt8cypOp/2PV5Adg\\n06O/  
nVsJ8dWO41P0jmP6P6fbtGbYmbW0W5bfittep3Sp+dWOrWcBAI+0tKIJFvPnlUkiaY4IB  
qDfV8NZ5YBberOgOzW6sRbc4L0na4UU+Krk2U886UA63LujEV0ls\\nYSEY1QSteDwsOoB  
IP+uvFRTP2lnBuThs4pFsv9kuXclVzDAGySi4dzp3d8tbQk\\nCAUw7C29C79Fv1C5afPrn  
AESciIxpgoX40KPMbp1ZWVbd4=\\n—END CERTIFICATE—"  
}
```

## 12. Kembali ke SAP BTP Cockpit -> SAP HANA Cloud

The screenshot shows the SAP BTP Cockpit interface. On the left, there is a navigation sidebar with links for Applications, Services, SAP HANA Cloud (which is currently selected), Routes, Events, and Members. The main content area is titled 'SAP HANA Cloud' and displays two sections: 'SAP HANA Database Instances' and 'Data Lake Instances'. Under 'SAP HANA Database Instances', there is one entry for 'BestRunTravel' with a status of 'Created'. It shows specifications: Memory 30 GB, CPU 2 vCPUs, and Storage 120 GB. Under 'Data Lake Instances', there is one entry for 'BestRunTravelID' with a status of 'Created'. It shows specifications: CPU 4 vCPUs, Storage 256 GB, Workers 1x 2 vCPUs, and Coordinators 1x 2 vCPUs. At the bottom of the page, there are links for Help and Support, Useful Links, and Legal Information.

### 13. Pada instance BestRunTravel , copy SQL Endpoint

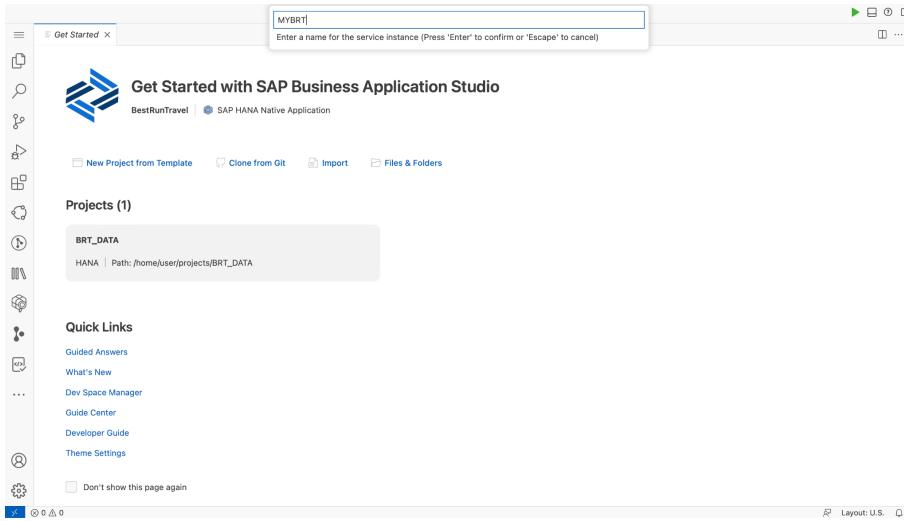
The screenshot shows the SAP HANA Cloud Platform interface. On the left, there's a sidebar with 'BestRunTravel' listed under 'Created'. Below it is a table with resource details: Memory 30 GB, CPU 2 vCPUs, Storage 120 GB. To the right, under 'Actions', a dropdown menu is open with the option 'Copy SQL Endpoint' highlighted.

### 14. Paste SQL Endpoint pada credential bagian host, ganti user dan password.

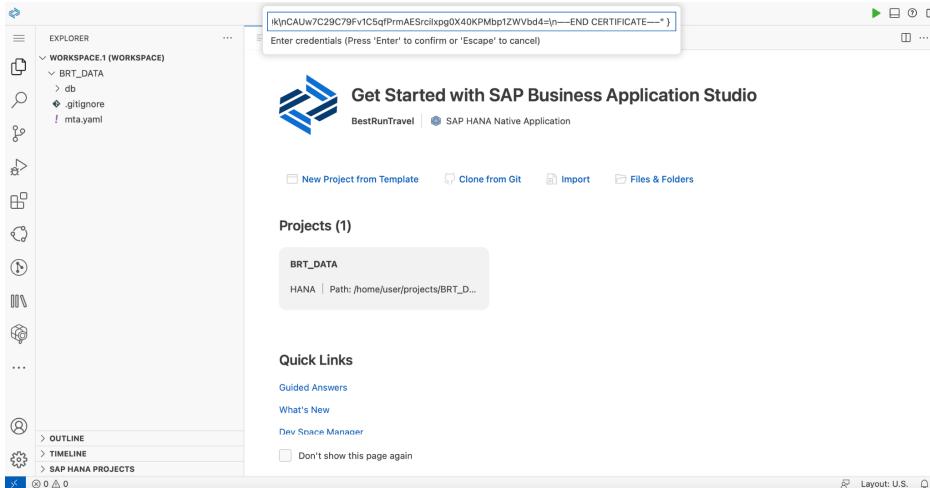
```
{  
  "host": "PASTE DISINI",  
  "port": "443",  
  "user": "DBADMIN",  
  "password": "ISI PASSWORD",  
  "driver": "com.sap.db.jdbc.Driver",  
  "tags": [  
    "hana"  
  ],  
  "endpoint": "https://api.cf.sap.hana.ondemand.com",  
  "encrypt": true,  
  "validate_certificate": true,  
  "certificate": "-----BEGIN CERTIFICATE-----  
MIIDzCCApEgAwBAGQCQDvgVpBCRrGhdWrJWZHHJSANBgkqhkiG9w0BAQUFADbh  
MQswCQYDVQQGEwJVUzEVMBGA1UEChMMRGInoUNlcnQgSW5iMRkwfWVDVQQLEx  
B3Ind3cuzGInqWNlcnQuY29tMSAwIgYDVQODExEgwdpQ2VydC8hb99jYWwgUm9vd  
CBDlQTAefw0wNIExMTAwMDAwMDBafw0zMTExMTAwMDAwMD8mGExCzAJBgNVBA  
YTAIUTMFRUwEwYDVQKEwxEaWdpQ2VydC8jbmNxGTAXBnNVBASTEHd3dy5kaWdp  
Y2Vyc5hb2xldAebgnYBAMTF0Rpz2IDzXJ0Edsb2JhbCBSbz90IENBMLIBIAJBgkak  
IGln9wvBAQFEAAOCQAQ8AMiBCqKCAQEAA4ivEXLeqKTTo1eqUKKPC3eQydkI7hL0lsB  
nCSMAZOnTIC3U/dDxGkAV53jSLdhwZAIEJzs4bg7/  
fzTxRulWZscf3YnF097Innh6/fe63SKM2tovewq58m/  
S10/vB4q77uKNd0f3p4mVmFaG5c1Jly7A6rpn4n3C/dxC/  
AH2hdmobRBYMd1GNXRo5H4ldg9Joz+EkiYIVUxTQ6hL+hokpMf77P\nT19sdJgsSeRnt  
w15m30FBqOosv+zBMUZBfHWymMrlyvrTC0Lq47dBMoM104AngW7V/g/  
trvSSticNoBN33shbTApOB6{S1teX+KM0vJwiDAQABo2MwYTAO\nBgnVHQ8Ba8EB  
AMCAYywDwYDVROTAQH/BAUwAweb/  
zAdBnVH4Q4EfQQUA95QNVbrWtLtm8KPiGxvJ790UVhHwYDVR0BBqvFaUA95Qn  
VbRTIm8KPiGxvD7/90VUwvnDQYJKoZIvcNAQEFBQADgEBAMucN6pIExIK+1Ene9SsP  
TfrgTteXkloyQ/YErnhMAtudXH/  
vtBHJLJG2cenTrmCmrEbXicKChzUvImZOMkxDiqw8cvpOp/2PV5Adg\nn06O/  
nVsJ8dWO41P0imP6P6ftbtGbYmbW0W5Biftep3Sp+dW0lrWcBAI+0KIJfnpNtUkya4IBi  
aDf8vNz5YBberOgQzW6sRbc4L0no4JU+Krk2U886UAb3LuiEV0ls\nYSEY1QStedwsOoB  
fD+uvRTp2inBuhs4pFsi9kuXclvzDAGySi4dzp30d8t8QnCAUw7C29C79FV1cqalPrm  
AESrcIlxpg0x40KPMbp12WVbd4=n-----END CERTIFICATE-----"}  
}
```

### 15. Membuat user provided service instance dengan cara

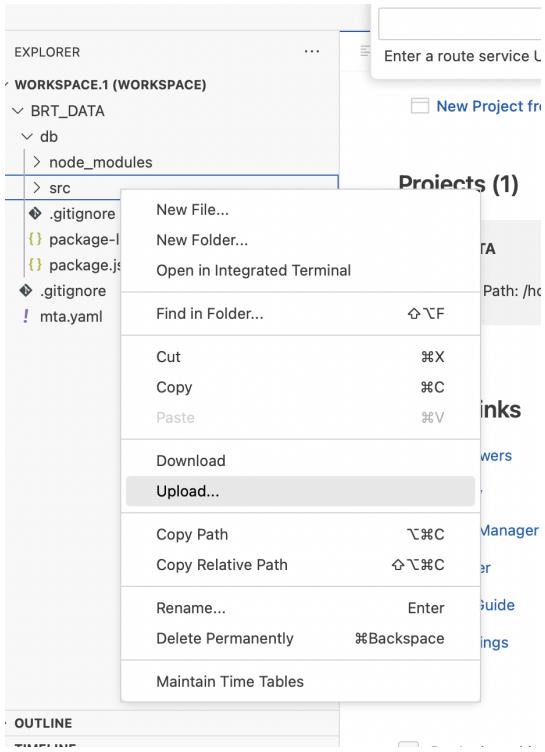
View -> ketik '>user' ->lalu pilih create user provided service instance-> beri nama MYBRT



## 16. Paste credential yang telah disimpan tadi



17. Pada src, klik upload file



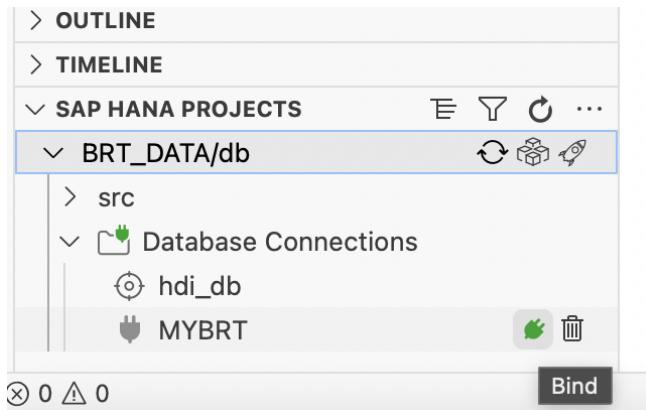
18. Ganti menjadi MYBRT dan ctrl+s

```
{
  "MYBRT": {
    "object_owner": {
      "schema_privileges": [
        {
          "reference": "SFLIGHT",
          "privileges_with_grant_option": ["SELECT", "SELECT METADATA"]
        }
      ]
    },
    "application_user": {
      "schema_privileges": [
        {
          "reference": "SFLIGHT",
          "privileges_with_grant_option": ["SELECT", "SELECT METADATA"]
        }
      ]
    }
  }
}
```

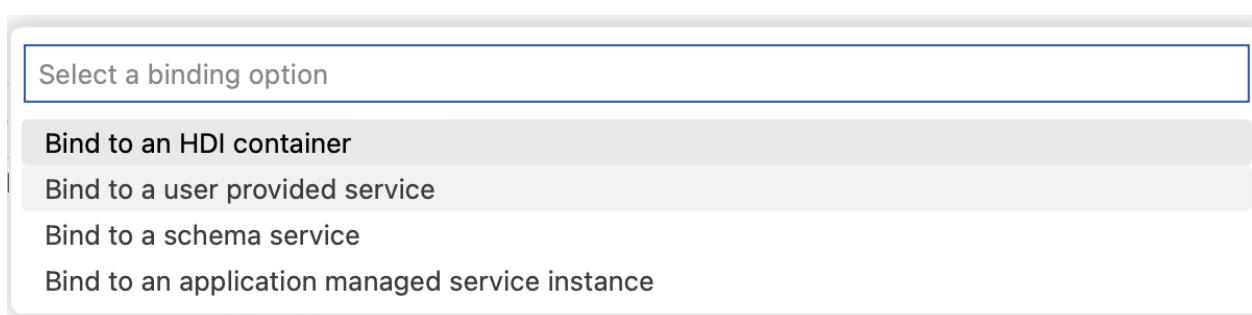
19. Pada mta.yml, terdapat beberapa perubahan seperti dibawah ini

```
{!} sflight.hdbgrants ! mta.yaml X
BRT_DATA > ! mta.yaml > [ ]resources
  1   _schema-version: "2.1"
  2   ID: BRT_DATA
  3   version: 0.0.1
  4   modules:
  5     - name: db
  6       type: hdb
  7       path: db
  8       requires:
  9         - name: hdi_db
 10           properties:
 11             TARGET_CONTAINER: ~{hdi-container-name}
 12         - name: MYBRT
 13       resources:
 14         - name: hdi_db
 15           type: com.sap.xs.hdi-container
 16           properties:
 17             hdi-container-name: ${service-name}
 18         - name: MYBRT
 19           type: org.cloudfoundry(existing-service)
 20
```

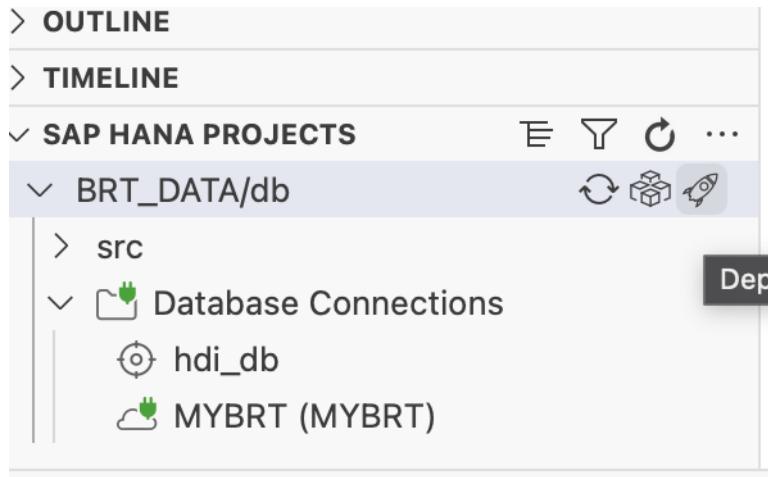
20. Pada SAP HANA Project, terdapat file MYBRT, klik untuk bind



21. Pilih Bind to a user provided service lalu pilih MYBRT



22. Pilih logo rocket untuk deploy project



23. Project berhasil di deploy

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL    SAP HANA: Deploy module at /home/user/projects/BRT_DATA/db (BRT_DATA) - Task ✓ + ×
```

```
Precompiling...
Precompiling... ok (0s 0ms)
Merging...
Merging... ok (0s 0ms)
Calculating dependencies... ok (0s 27ms)
Finalizing...
Finalizing... ok (0s 20ms)
Make succeeded (0 warnings): 1 files deployed (effective 1), 0 files undeployed (effective 0), 0 dependent files redeployed
Making... ok (0s 733ms)
Enabling table replication for the container schema "BRT_DATA_HDI_DB_1"...
Enabling table replication for the container schema "BRT_DATA_HDI_DB_1"... ok (0s 87ms)
Starting make in the container "BRT_DATA_HDI_DB_1" with 1 files to deploy, 0 files to undeploy... ok (0s 853ms)
Deploying to the container "BRT_DATA_HDI_DB_1"... ok (is 26ms)
No default-access-role handling needed; global role "BRT_DATA_HDI_DB_1::access_role" will not be adapted
Unlocking the container "BRT_DATA_HDI_DB_1"...
Unlocking the container "BRT_DATA_HDI_DB_1"... ok (0s 0ms)
Deployment to container BRT_DATA_HDI_DB_1 done [Deployment ID: none].
Deployment ended at 2023-10-05 01:17:43
(3s 599ms)
```