



SAP HANA Interactive Education (SHINE) for SAP HANA 2.0 SPS00 for SAP HANA XS Advanced Model

Target Audience

- Developers
- Administrators
- Others

Public

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SAP SE

Dietmar-Hopp-Allee 16
69190 Walldorf
Germany
T +49/18 05/34 34 24
F +49/18 05/34 34 20
www.sap.com

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1 Overview of SHINE for SAP HANA Extended Application Services Advanced Model (SHINE for XSA)

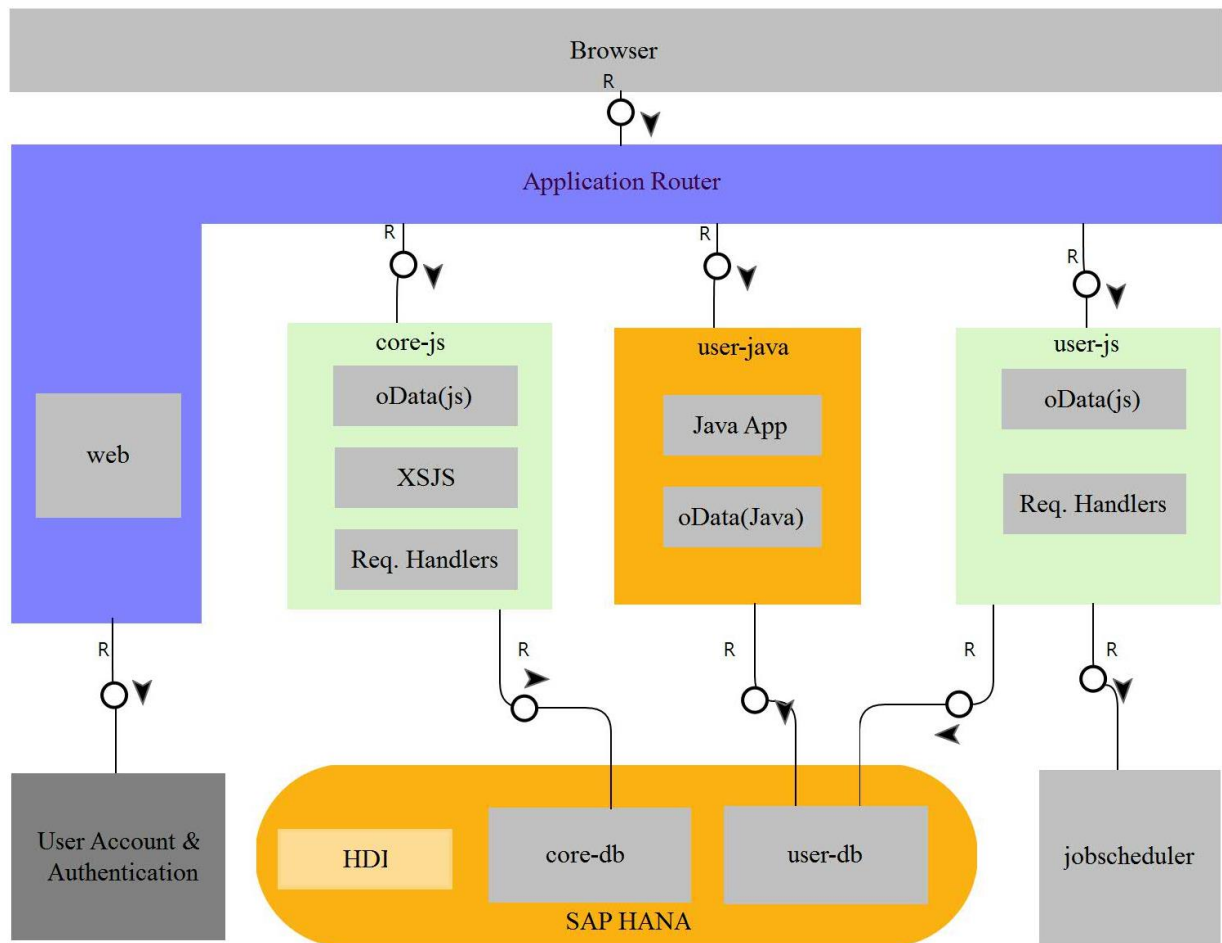
SAP HANA Interactive Education, or SHINE, is a demo application that makes it easy to learn how to build applications on SAP HANA Extended Application Services Advanced Model. This demo application is delivered as a package that contains sample data and design-time developer objects for the applications database tables, views, OData and user interface.

The application consists of the following packages:

Package	Description
core-db	This package contains the SAP HANA Deployment Infrastructure (HDI) artifacts and the database artifacts required to create the tables and other database artifacts (for example, .hdbcds, .hdbsequence, and so on) for Data Generator, Purchase Order Worklist and Sales Dashboard.
user-db	This package contains the SAP HANA Deployment Infrastructure (HDI) artifacts and the database artifacts required to create the tables and other database artifacts (for example, .hdbcds, .hdbsequence, and so on) for User CRUD and Job Scheduling.
core-js	This package has the <i>Node.js</i> based server side implementation of Data Generator, Purchase Order Worklist and Sales Dashboard.
user-js	This package contains the <i>Node.js</i> based server side implementation for User creation, User CRUD and Job Scheduling
user-java	This package contains the <i>Java</i> -based server-side implementation for User CRUD
web	This package contains the user interface for the SHINE launchpad, Data Generator, Purchase Order Worklist and Job Scheduler applications implemented in SAP UI5.

1.1 SHINE XSA Architecture

The architecture for SHINE for XSA is represented on the following image:



This application contains the following micro services:

- core-js
- user-js
- user-java

The XS runtime platform provides a number of services for managing the various container instances and their application runtime. Containers are used to manage runtime and allow isolation, resource management, and shared service injection. The XS advanced application runtime contains lightweight processes that are called over HTTP and communicate remotely with the database.

The SAP HANA Deployment Infrastructure (HDI) provides a service layer that helps to deploy database development artifacts to containers. This service layer includes a family of consistent design-time artifacts for all key HANA platform database features, which describe the target (runtime) state of SAP HANA database artifacts, for example: tables, views, or procedures. These artifacts are modeled, staged (uploaded), built, and deployed on SAP HANA.

1.2 XSA Features

This version of SHINE for XSA includes the following features:

HDI Features:

- Table
- CDS Views
- Sequence
- Calculation Views
- Associations
- Table functions
- Synonyms
- Procedures
- Cross Container Access
- Multiple containers

XSA Features:

- User Authentication and Authorization (UAA)
- App Router
- oData V2 Services (Node.js)
- oData V4 Services (Java)
- Nodecds
- Authorization (roles)
- oData Exits
- Job Scheduler
- Nodejs - logging
- oData batch
- Metadata caching

MTA Development and Deployment Descriptor:

- Service Replacement
- Schema config
- MTA Extension Descriptor

New Tiles:

- Sales Dashboard
- User CRUD (Node.js & Java)

2 Prerequisites

The XSAC_MONITORING and XSAC_SERVICES components should be installed before SHINE is installed on XSA.

2.1 Check for Job Scheduler

SHINE for XSA needs a job scheduler service broker to create a job scheduler service. For this, the XSA component XSAC_SERVICES needs to be installed in the SAP space. Use the following code sample to check if it is already installed there.

```
xs marketplace
```

```

C:\> cd /bin> xs marketplace
Getting services from marketplace...
service      plans      description
-----
fs-storage    free       xs file service provides an env variable which denotes the root of the clients application file system.
hana          hdi-shared, sbss, schema, securestore  SAP HANA database
hanaa         default, devuser, space  XS HANA Service Broker for authentication & authorization services
jobscheduler  default    Job Scheduler on the XSA Platform

```

If it is not installed, contact your system administrator to install the component XSAC_SERVICES in the SAP space.



In HANA Express, the Job Scheduler could be pre-installed, so in addition to checking if the job scheduler service is present, also check if the status of jobscheduler-broker is started.

To do this, proceed as follows:

1. Go to SAP space by using the command `xs target -o HANAEExpress -s SAP`.
2. Run the command `xs apps | grep STOPPED` to get all stopped services.
3. Check if the status of jobscheduler-broker is stopped.
4. If it is stopped, start it with the command `xs start jobscheduler-broker`.

2.2 Check for XS Advanced Administration Tool

To create user and assign roles XS Advanced Administration tool is required. Again to get the URL you need access to SAP space and run below command or get it from your system administrator.

```
xs app xsa-admin -urls
```

```

@ :~> xs app xsa-admin -urls
https://

```

2.3 Check for SAP WebIDE for SAP HANA

This step is optional and required only if you would like to view and execute the SHINE for XSA code in SAP WebIDE for SAP HANA.

To obtain the URLs of SAP Web IDE, run the following command in SAP space of the XS Advanced system or get it from your system administrator:

```
xs app webide -urls
```

This command returns the SAP Web IDE URL, which you can open in a supported browser (Chrome and Firefox on Windows, Chrome and Safari on Mac).

If SAP Web IDE for SAP HANA is not installed, contact your system administrator to install it and provide you with the URL. The steps to install SAP Web IDE for SAP HANA can be found in the [Web IDE for SAP HANA - Installation and Upgrade Guide](#).

2.4 Creating Users and Assigning Roles

1. Login to XS Advanced Administration with the XSA_ADMIN user and create a new user called **SHINE_USER**.
2. Choose the *User Management* tile in the XS Advanced Administration tool. See step 2.2 for more details on how to get the URL of the XS Administration tool.
3. On the *User Management* page, choose the *New* button.
4. Enter the required details and choose the *Create* button to create a new user.

5. Navigate to the *Role Collections* tab.
6. Click on the *Add* button and assign the role collections **XS_AUTHORIZATION_ADMIN** and **XS_CONTROLLER_USER** to the user **SHINE_USER**

Name	Remove
XS_AUTHORIZATION_ADMIN	⊖
XS_CONTROLLER_USER	⊖

7. Assign the Space Developer Role to the **SHINE_USER**.
 - a. Login to the XSA system in the CLI of the XS Advanced system.

```
xs login -u <user>
```

- b. Set the space role for **SHINE_USER**.

```
xs set-space-role SHINE_USER <orgname> <spacename> SpaceDeveloper
```

```
root@86507011:/x > xs set-space-role SHINE_USER REF PROD SpaceDeveloper
Adding role 'SpaceDeveloper' to user SHINE_USER in space "PROD" of org "REF" ...
OK
```

Optional

If you want to use SAP WebIDE for SAP HANA in order to import SHINE for XSA code, the role collection DEVX_USER should be assigned to the SHINE_USER.

SAP Web IDE supplies the following predefined role templates: **WebIDE_Administrator**, **WebIDE_Developer**, and **xsac_hrtt_developer_template**.

You can assign these templates to existing role collections, or role collections that have been created for this purpose.

Perform these tasks in the *Application Role Builder* tool available in the XS Advanced Administration Tool. To access this tool, you need the authorization scopes defined in the XS_AUTHORIZATION_ADMIN role collection.

For more information, see [SAP HANA Administration Guide](#) -> *Building Roles for SAP HANA XS Advanced Model Applications*.

2.5 Create USER with Privileges on SYS and _SYS_BI schema

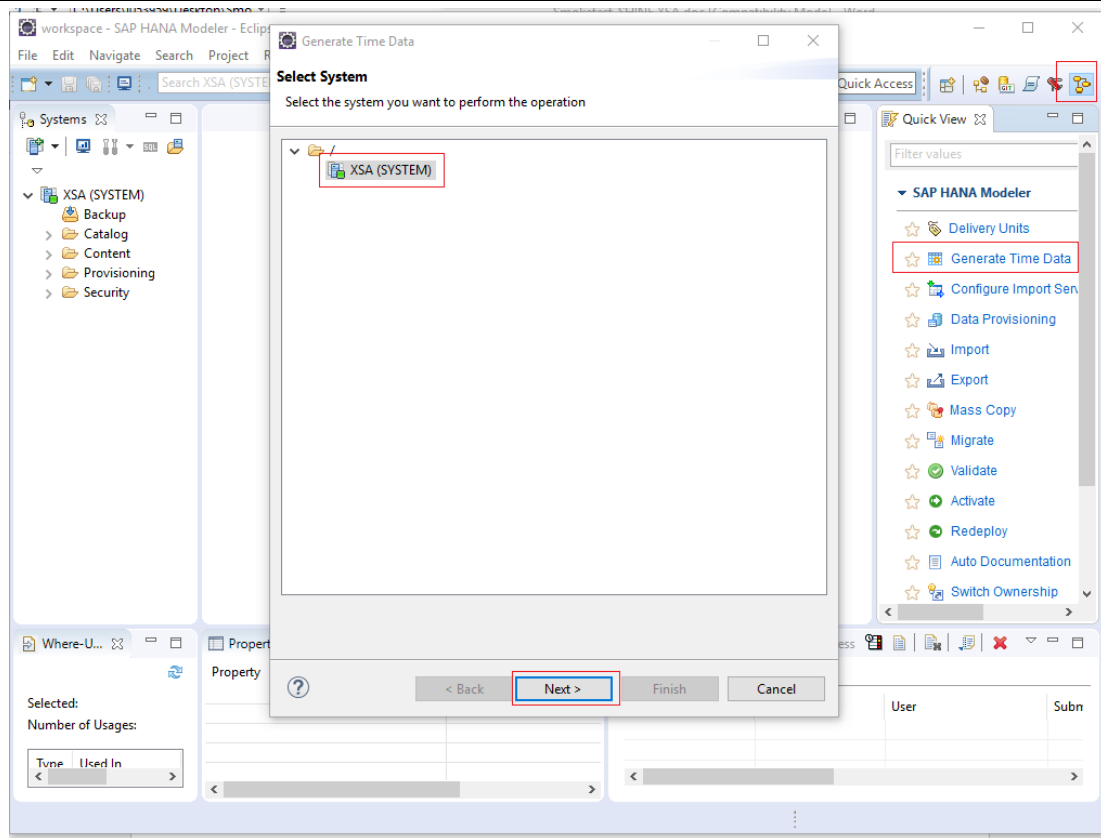
Open SQL console (Catalog) of the HANA system in SAP HANA studio and execute the following SQL statements to create a new user with some specific SQL privileges:

```
CREATE USER <USERNAME> PASSWORD <PASSWORD>;
Grant SELECT on "SYS"."M_TABLES" to <USERNAME>;
Grant SELECT on "SYS"."TABLES" to <USERNAME>;
Grant SELECT on "SYS"."VIEWS" to <USERNAME>;
Grant SELECT on "SYS"."USERS" to <USERNAME>;
Grant SELECT on "_SYS_BI"."M_TIME_DIMENSION" to <USERNAME> WITH GRANT
OPTION;
Grant EXECUTE on "SYS"."SERIES_GENERATE_TIMESTAMP" to <USERNAME>;
```

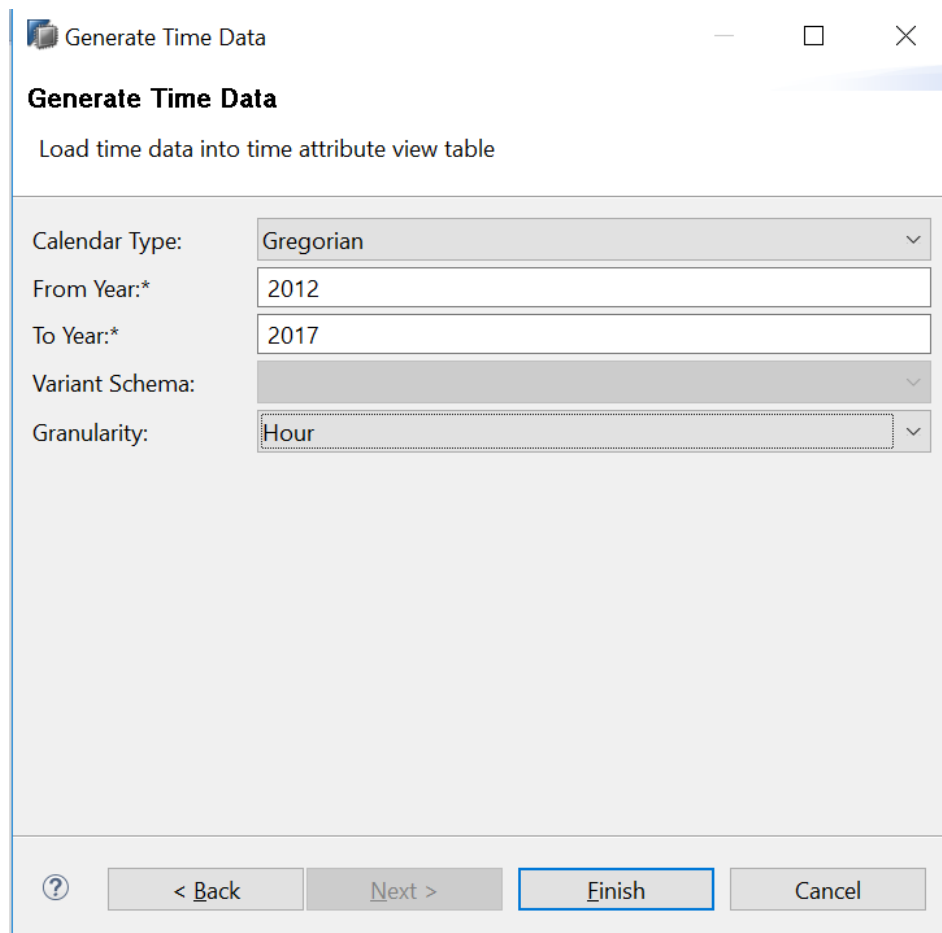
After the user is created, log in once to change the initial password. This user will be used in the mtaext file and for creating the User Provided Service (CUPS) in Chapter 4.

2.6 Generate Time Dimensional Data via HANA Studio

1. Go to the SAP HANA Modeler Perspective of SAP HANA Studio
2. Go to the *System* tab, add your HANA system and log on to it.
3. Click on *Generate Time Data*.
4. In the *Generate Time Data* pop-up window, select the HANA system and click the *Next* button, as shown below:



5. Enter 2012 for *From Year* and 2017 for *To Year* and select *Granularity* as *Hour*.
6. Click the *Finish* button as shown below:



Time dimensional data is generated and the status "Completed successfully" is displayed in the Job Log view of SAP HANA Studio.

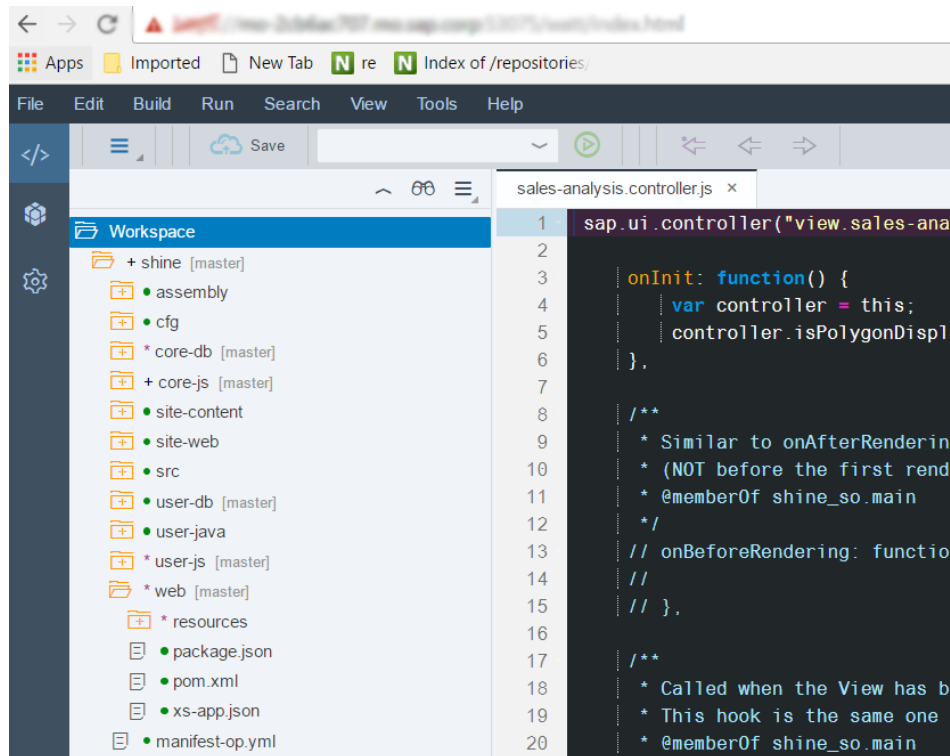
Job Type	System	User	Submitted At	Status	
Generate Time ...	XSA	SYSTEM	Wed Nov 02 14:14:45 IST 2016	Completed successfully	

3 Importing a Project from GitHub to SAP WebIDE

3.1 Import from GitHub

1. Launch SAP Web IDE for SAP HANA.

Refer to Step 2.3 for instructions how to launch the SAP Web IDE.



2. Navigate to *File->Git->Clone Repository*

The screenshot shows the 'Clone Repository' dialog box. It has a title bar with a close button (X). The dialog is divided into four sections: 'Location', 'Connection', 'Authentication', and 'Configuration'. The 'Location' section contains fields for 'URL *', 'Host *', and 'Repository Path *', each with a placeholder text 'Insert repository URL here', 'Insert host name here', and 'Insert path here' respectively. The 'Connection' section contains a 'Protocol *' dropdown set to 'https' and a 'Port' field with placeholder text 'Insert port number here'. The 'Authentication' section contains 'User' and 'Password' fields with placeholder text 'Insert user name here' and 'Insert your password here' respectively, and a checkbox labeled 'Remember me'. The 'Configuration' section contains a checkbox labeled 'Add configuration for Gerrit Change-ID'. At the bottom right, there are 'OK' and 'Cancel' buttons.

3. Enter the URL of the SHINE repository <https://github.com/SAP/hana-shine-xsa.git>

4. Choose OK.
5. Create a User Provided Services (CUPS) for SYS and _SYS_BI schemas by executing the commands below in CLI of the XS Advanced system.

- i. `xs cups CROSS_SCHEMA_SYS -p`
`"{"host":"<hostname>","port":"3##<15/13>","user":"<USERNAME>","password":"<Password>","driver":"com.sap.db.jdbc.Driver","tags":["hana"],"schema":"SYS"}"`
- ii. `xs cups CROSS_SCHEMA_SYS_BI -p`
`"{"host":"<hostname>","port":"3##<15/13>","user":"<USERNAME>","password":"<Password>","driver":"com.sap.db.jdbc.Driver","tags":["hana"],"schema":"_SYS_BI"}"`

- '##' corresponds to instance number. 3##<15/13> corresponds to the jdbc port of the HANA system



In HANA Express, the VM installation has a default instance 90, the binary installation has a user-defined number

- <USERNAME> and <Password> are that of the user created in step 2.5
- <hostname> is the host name of HANA system

6. Create a service for the UAA by executing the command in CLI of XSA system:

```
xs create-service xsuaa default shine-uaa -c xs-security.json
```

7. Check if the app jobscheduler-broker is started and is up and running. Please refer to step 2.1 about starting the jobscheduler-broker.
8. Create Job Scheduler Service by executing the command in CLI of XSA system:

```
xs cs jobscheduler default shine-scheduler
```

9. Enable the space for development using the Space Enablement administration tool.

For more details on how to enable access to this tool, please refer to **Chapter 3.1 - Enabling Access to the SAP Web IDE Administration and Development Tools** of [SAP Web IDE for SAP HANA - Installation and Upgrade Guide](#).

10. Once done, open the Space enablement tool, whose URL can be obtained by running the following command:

```
xs app di-spaceenablement-ui --urls
```

11. The Space Enablement tool allows you to enable spaces for development by deploying the builder component in each space. In this tool, you can view the status and builder version of all the spaces defined in your organization and perform the following tasks:
 - a. In a space row, choose **Enable** to deploy the builder in the space.
 - b. Choose **Redeploy** to redeploy the builder, if its version matches the DI CORE version displayed at the right of the app title bar.
 - c. Choose **Update** to update the builder to the DI CORE version. The process steps are displayed in the Log window. You can view the latest log for each space by clicking the icon in the space row in the table
12. Before building the modules, you need to assign the space to the project.
 This can be done by right-clicking on the project name and choosing *Project Settings*. Choose the *Space* tab and from the drop-down menu select the appropriate space, in which the application should be deployed, and then choose *Save*.
13. After all these steps are done, build all packages, one by one, in the following sequence:
 - I. user-db
 - II. core-db
 - III. user-js
 - IV. core-js

- V. user-java
- VI. web

Note: Before building the user-db module, the following two things have to be replaced in the mta.yaml:

- a) **User container name:** To find out the user container name, please do a dummy build of the user-db module, without any changes. After the build fails, execute the following command:

```
xs s
```

Copy the respective user container name and paste it in line 115 of mta.yaml.

```
shine-scheduler                                jobscheduler  default
hana-shine-xsa-shine-user-container            hana          hdi-shared
hana-shine-xsa-shine-container                hana          hdi-shared
shine-uaa                                     xsuaa         default

lm-service-credentials                        user-provided
CROSS_SCHEMA_SYS                             user-provided
CROSS_SCHEMA_SYS_BI                          user-provided
```

- b) **UAA Endpoint:** Replace the UAA end point URL in line 129 of mta.yaml to your respective UAA end point URL which will be of the format :

`http(s)://<host-name> :3<instance-number>32/ uaa-security`

For example in HANA express the UAA endpoint can be <https://hxehost:3<instance-number>32/uaa-security>



In HANAExpress VM install has default instance as 90, Binary install is a user-defined number

After the successful build of all these modules, run the following modules by right-clicking on the respective module and choosing *Run* → *Run as*:

- a) Run core-js and user-js as a Node-js application
- b) Run user-java as Java web Runner
- c) Run web as Web Application.

For more information on cloning, building, deploying etc. for XSA applications, see [SAP Web IDE for SAP HANA - Installation and Upgrade Guide](#).

4 Downloading SHINE for XSA – Software Component Archive



Do not install SHINE on your productive SAP HANA system.

SHINE for XSA Software Component Archive (SCA) can be found on SAP HANA Media as well as on the SAP Support Portal.

4.1 Download from HANA Media

SHINE for XSA can be found in the XSA_CONT folder of HANA media.

4.2 Download from SAP Support Portal

The SAP HANA Interactive Education (SHINE) for XSA SCA is available for download on the *SAP Support Portal* → *Software Download* page.

Procedure

To download the SHINE software component archive from SAP Support, perform the following steps:

1. Open your Internet browser and enter <https://support.sap.com/patches>. Click on *Software Downloads*.
2. In the newly opened *SAP ONE Support Launchpad* window/tab, click on the *Support Packages & Patches* → *By Alphabetical Index (A-Z)* → *H* → *SAP HANA PLATFORM EDITION* → *Downloads* → *SAP HANA PLATFORM EDITION. 2.0* → *Downloads*
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4. Select the *latest* version of *ZIP for SAP HANA DEMO MODEL ADV. 1* and choose *Add to Download Basket*.
5. Choose *Download Basket* and save the ZIP file in a convenient location, for example, on your local PC hard drive.

4.3 Install the Software Component Archive

Prerequisites

You have downloaded the SHINE for XSA software component archive from the SAP Support Portal or SAP HANA Media.

- a. Download the MTA extension descriptor for SHINE for XSA `sap-xsac-shine-1.2.xx.mtaext` from <https://github.com/SAP/hana-shine-xsa> or download it from SAP Note: [2239095](#)
- b. Open the `sap-xsac-shine-1.2.xx.mtaext` file in any text editor and update the fields `<USERNAME>` and `<PASSWORD>` with that of the user created in step 2.5 (i.e. the user which has privileges on `SYS` and `_SYS_BI`).
- c. Update the `<SCHEMA_NAME>` field in the `mtaext` file with any schema name. (e.g.: `SHINE_USER_SCHEMA`).
- d. Host and port parameters should be updated with HANA host name and HANA jdbc port.

Procedure

1. Login to the XSA system using CLI (Command-line interface) with the `SHINE_USER` user you created in the previous chapter using the `xs login -u SHINE_USER` command:

```

root@000f5d350:/> xs login -u SHINE_USER

API URL: https://192.0.0.855:4575/sap/hana/erp:30000

USERNAME: SHINE_USER
PASSWORD>
ORG: myorg

Existing spaces:
0.      PROD
1.      SAP
SPACE> 0
SPACE: PROD
API endpoint: https://192.0.0.855:4575/sap/hana/erp:30000 API version: 1.
User:      SHINE_USER
Org:       myorg
Space:     PROD

```

2. Navigate to your corresponding XSA organization and space using the command

```
xs target -o <orgname> -s <spacename>
```

3. Deploy the SHINE for XSA application using the command

```
xs install sap-xsac-shine-1.2.xx-XSACSHINE02_<version.no>.zip -e sap-
xsac-shine-1.2.xx.mtaext
```



HANA Express has different names for the .zip and .mtaext files.
XSACSHINE02_<version.no>.ZIP, sap-xsac-shine-1.2.xx-XSACSHINE02_<version.no>.mtaext

4.4 Uninstall the Software Component Archive

Prerequisites

The software component SHINE for XSA should be installed on the system.

Procedure

To uninstall SHINE from the system, please follow the below steps:

- a) Login to the XSA system using CLI (Command-line interface) with the SHINE_USER user you created in the previous chapter using the command.

```
xs login -u SHINE_USER
```

- b) Navigate to your corresponding XSA organization and space using the command

```
xs target -o <orgname> -s <spacename>
```

- c) Uninstall the SHINE for XSA application using the command

```
xs uninstall XSAC_SHINE -delete-services
```

Note: The `delete-services` flag is used to delete all services associated with the SHINE application.

4.5 Reinstall the Software Component Archive

To reinstall SHINE for XSA software component, proceed as follows:

1. Reinstall SHINE by using the following command:

```
xs install XSACSHINE02_<version.no>.ZIP -e sap-xsac-shine-1.2.xx.mtaext -o
<ALLOW_SC_SAME_VERSION, [ALLOW_SC_DOWNGRADE]>
```

Please note that the **ALLOW_SC_SAME_VERSION** flag is used to reinstall the same version of the software component and **ALLOW_SC_DOWNGRADE** is used to downgrade a software component.

2. In case SHINE is reinstalled without undeploying the previous installation and changes have been done to the mtaext file, follow the steps below before running the install command:

- a) Get the services in the current org and space using the command

```
xs s
```

- b) Delete the following two services, if present:

- CROSS_SCHEMA_SYS
- CROSS_SCHEMA_SYS_BI

This can be done by using the following command:

```
xs ds <service-name>
```

This procedure is necessary because the services have already been created during the first installation and the deploy service is not going to not recreate them, if they are already present. It is necessary to delete them in order to force the deploy service to create them with the new changes that were made in the mtaext.

- c) Reinstall SHINE by using the command:

```
xs install XSACSHINE01_<version.no>.ZIP -e sap-xsac-shine-1.2.xx.mtaext -o <ALLOW_SC_SAME_VERSION,[ALLOW_SC_DOWNGRADE]>
```

5 Launch the SHINE for XSA Application

1. Login to the XSA system from CLI to find the URL of the SHINE for XSA application.
2. Enter the `xs target -o <orgname> -s <spacename>` command to navigate to the corresponding organization and space in which SHINE for XSA is installed.
3. Enter the `xs app shine-web -urls` command to display a list of all applications running in your space.

```
@: ~> xs app shine-web -urls
https://
```

4. In a browser, use this URL to start the application and login with **SHINE_USER**.
The application opens and a popup appears providing information about the SHINE for XSA application.



SHINE (SAP HANA Interactive Education) for SAP HANA XS Advanced Model

SAP HANA Interactive Education, or SHINE, is a demo application that makes it easy to learn how to build applications on SAP HANA Extended Application Services Advanced Model. This demo application is delivered as a package which contains sample data and design-time developer objects for the applications database tables, views, OData and user interface.

What's new with SHINE for XSA

- Cross HANA Deployment Infrastructure(HDI) Container Access
- Service Replacement and Schema Config in MTA Deployment Descriptor
- MTA Deployment Extension Descriptor
- Java Runtime
- oDataV4 in Java
- oData batch processing and metadata caching in Node.js
- Automated Role Collection Creation

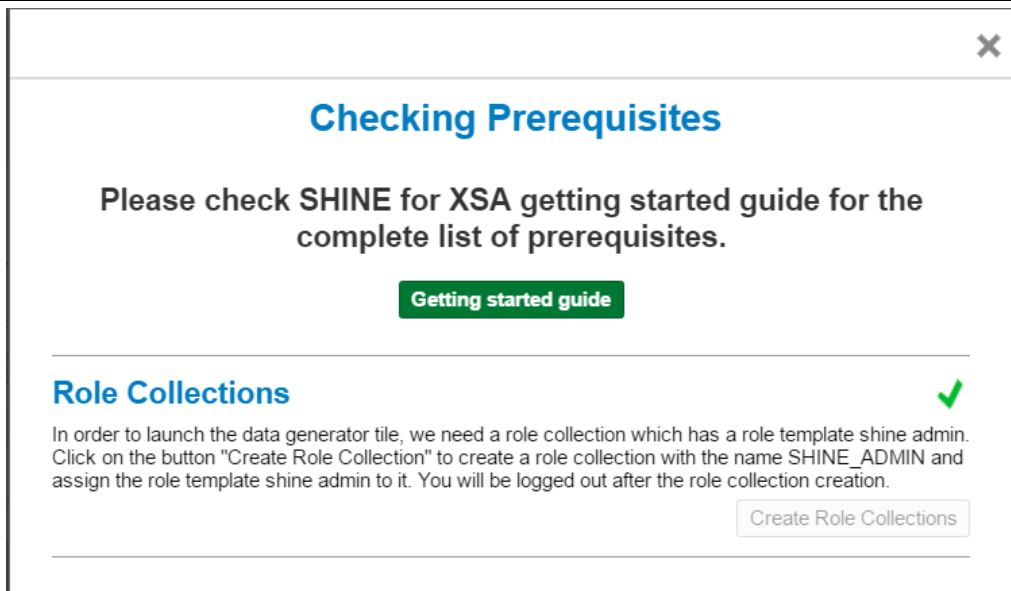
Clicking on each tile will bring up the help for that module.

Check Prerequisites

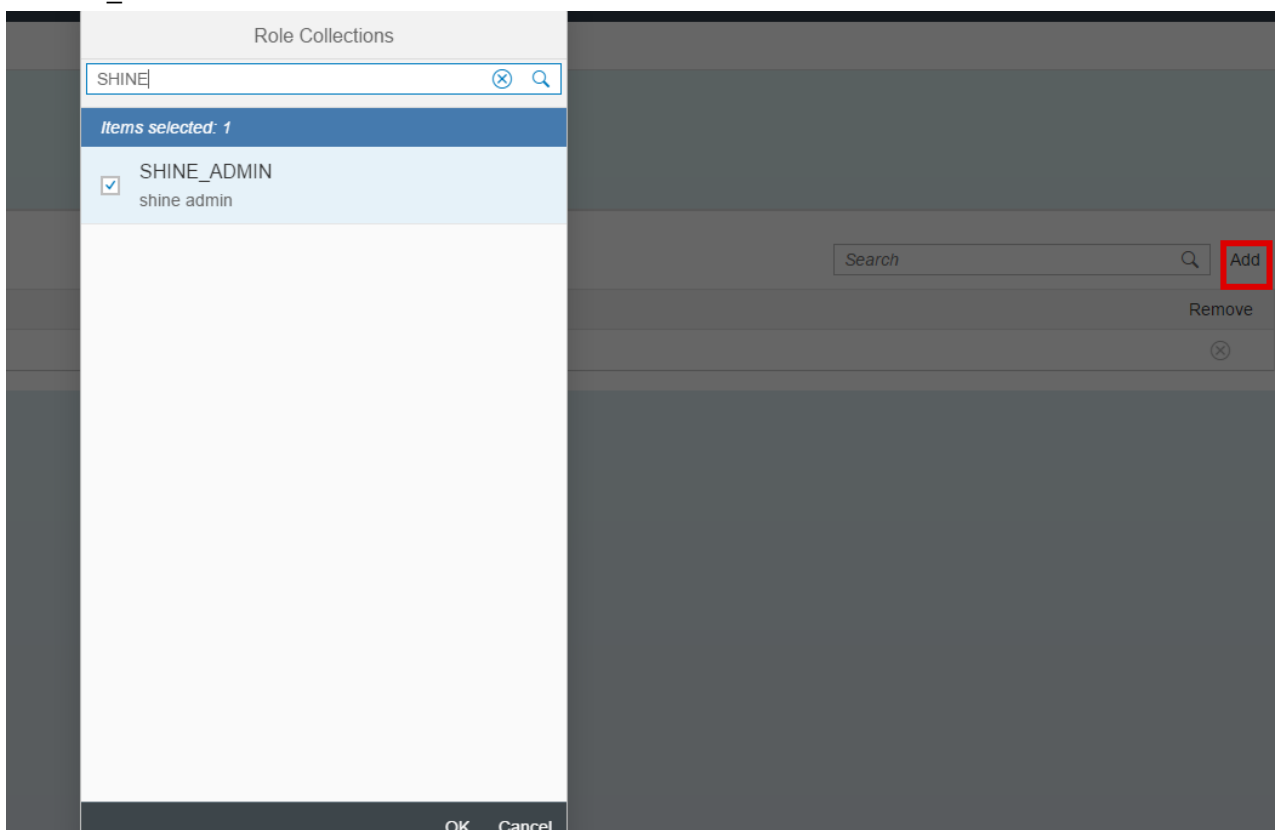
☒ Do not show this again


OK

5. Choose the *Check Prerequisites* button.
6. Once the *Check Prerequisites* button is clicked, in the new pop up there will be an "X" symbol for Role Collection, indicating that the role collection "SHINE_ADMIN", necessary to access the Data Generator tile, is not available.

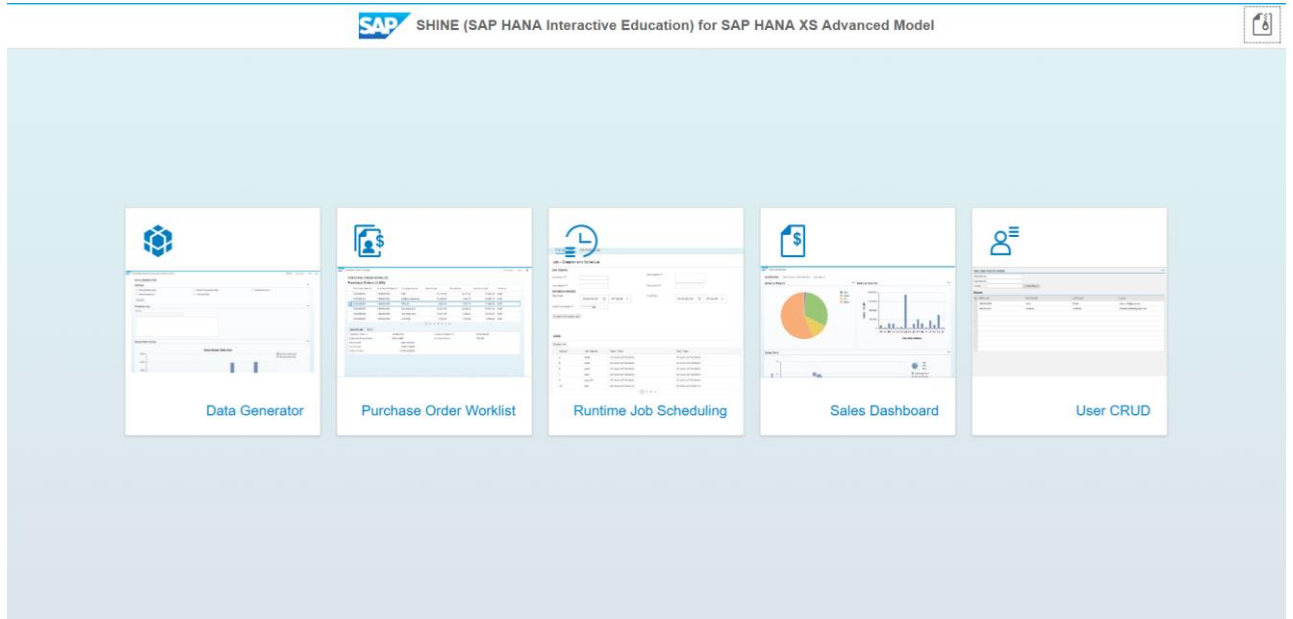


7. Click on the *Create Role Collections* button, which creates the SHINE_ADMIN role collection.
8. The user will be logged out of the application.
9. In a separate window, log on to the XS Advanced Administration tool and navigate to the *User Management* tile. For more information on how to open XS Advanced Administration Tool, see Step 2.2.
10. Choose the user name created in Step 2.4 (for example, SHINE_USER)
11. Navigate to the *Role Collections* tab, click on the *Add* button and search for the role collection "SHINE_ADMIN".



12. Select the SHINE_ADMIN role and click *OK* and then click the *Save* button
13. Open the SHINE application URL or log on back to the SHINE application.
14. Once the user is logged in again, note that *Check Prerequisites* will return a  (green tick) sign. Click *OK*.

15. The SHINE Launchpad appears with 5 tiles, the *Data Generator*, the *Purchase Order Worklist*, *Job Scheduler*, *Sales Dashboard* and *User CRUD* applications.

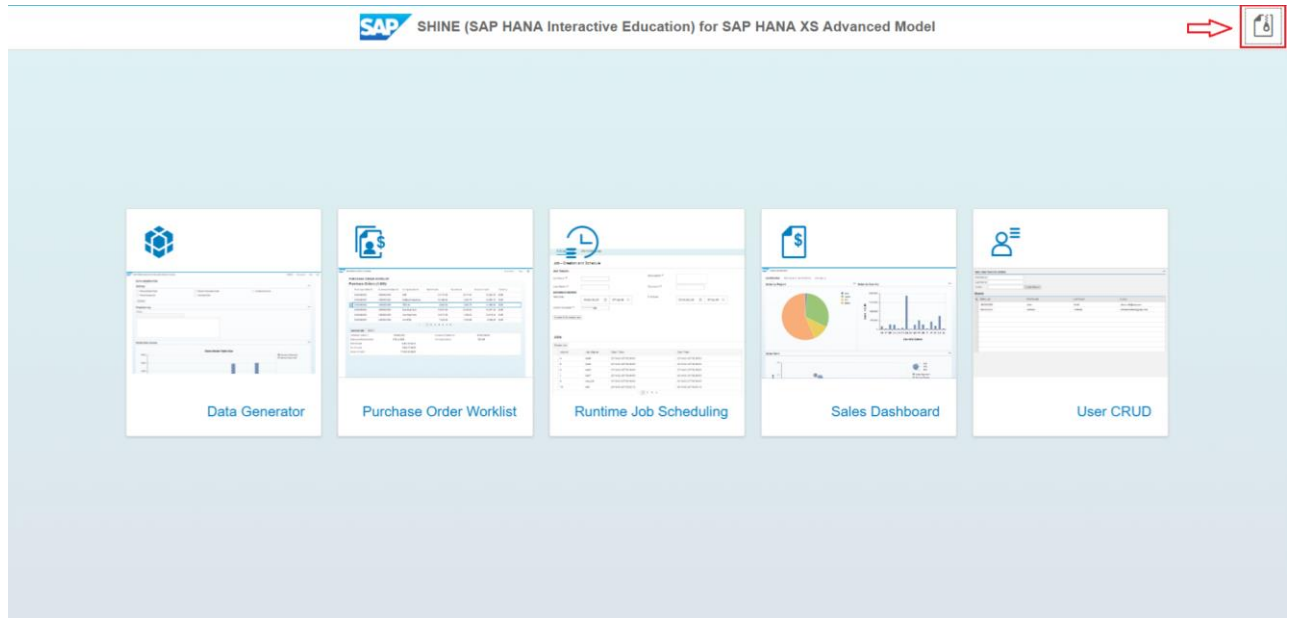


16. Click on any tile to start the corresponding application.

6 Downloading the Source Code of SHINE for XSA as ZIP

The source code of SHINE application can also be downloaded as a ZIP file so that the users can readily view the sample data and design-time developer objects such as database tables, views, OData and user interface.

In order to download the source code of the SHINE application, click on the icon in the *Launchpad* as highlighted in the image below.



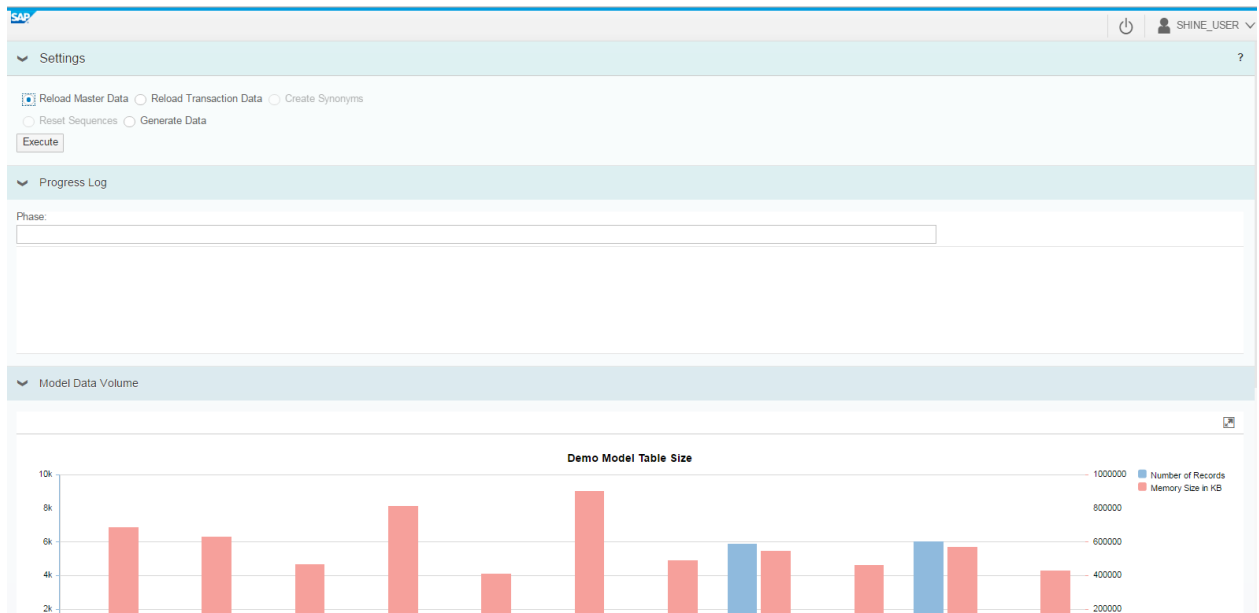
7 Scenarios

This version of SHINE contains the features *Data Generator*, *Purchase Order Worklist*, *Job Scheduler*, *User CRUD* and *Sales Dashboard*. The scenarios are described in the following sections.

7.1 Data Generator

This application can be used to perform the following operations with respect to data:

- The application master data can be reset or reloaded by using the Reload Master Data module (which includes data reloading for Business Partners, Addresses, Products tables, and so on).
- The applications transactional data can be reset or reloaded using the module Reload Transactional Data (which includes data reloading for Sales Orders and Purchase Orders tables).
- New transactional data for Sales Orders and Purchase Orders can be generated using the Generate Data module.



7.2 Purchase Order Worklist

This application illustrates a comprehensive Purchase Order Worklist that acts as an interface for a Purchase Department Head to manage the purchase orders created by his or her department. The following tasks can be performed:

- View the list of purchase orders and choose a particular order to see the General Data and Purchase Order items related to it, displayed in separate tabs.
- Perform actions such as *New*, *Delete*, *Accept*, or *Reject* for a selected purchase order.
- Perform actions such as *Export to Excel* which downloads all purchase-order data into an Excel spreadsheet.
- Perform operations such as searching for purchase orders based on various attributes, including *Company Name*, *Product ID*, and so on.
- Click on the *Reports* tab to see the summary of purchase order gross value grouped by different attributes like *Company Name*, *City* etc.

PURCHASE ORDER WORKLIST

Filter By

Super Search

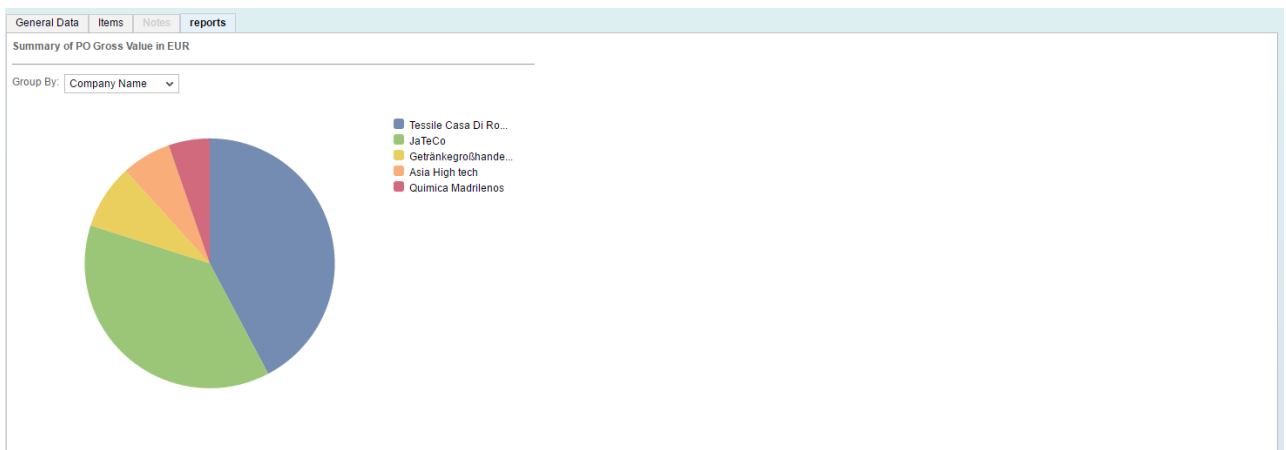
[New](#) [Edit](#) [Delete](#) [Actions](#) [Export to Excel](#) [Export as Zip](#)

Purchase Order...	Order Item	Business Partne...	Product ID	Company Name	Gross Amount	Currency	PO Lifecycle	PO Approval	PO Confirmation	PO Ordering
300000000	10	100000000	HT-1000	SAP	13224.47	EUR	New	Initial	Initial	Initial
300000000	100	100000000	HT-1000	SAP	13224.47	EUR	New	Initial	Initial	Initial
300000000	20	100000000	HT-1091	SAP	13224.47	EUR	New	Initial	Initial	Initial
300000000	30	100000000	HT-6100	SAP	13224.47	EUR	New	Initial	Initial	Initial
300000000	40	100000000	HT-1000	SAP	13224.47	EUR	New	Initial	Initial	Initial
300000000	50	100000000	HT-1091	SAP	13224.47	EUR	New	Initial	Initial	Initial

1 2 3 4 5 > <>

General Data **Items** **Notes** **reports**

Purchase Order ID	Business Partner ID
Employee Responsible	Company Name
Net Amount	0
Tax Amount	0
Gross Amount	0



7.3 Job Scheduler

This application defines recurring tasks that run in background and can be used to do the following operations by using XSA Job Scheduler Service:

- Create a job and schedule it
- Created jobs can also be deleted via this user interface

[Manage Jobs](#)
[Job Trigger Logs](#)

Job - Creation and Schedule

Job Details

Job Name *

Description *

User Name *

Password *

Schedule Details

Start Date

2016-04-22

11:52:40

End Date

2016-04-23

11:52:40

CRON Schedule *

Create & Schedule Job

Delete Schedule

The triggered jobs can be viewed on the *Job Trigger Logs* tab.

[Manage Jobs](#)
[Job Trigger Logs](#)

Trigger Id	Job Name	Time Stamp
700000037	demo	Thu Apr 14 2016 12:42:10 GMT+0530 (India Standar...
700000038	demo	Thu Apr 14 2016 12:42:10 GMT+0530 (India Standar...

7.4 User CRUD

This application illustrates how to manage users in the system. There are two implementations of the User CRUD service, namely, one in Node.js and the other in Java. Both the service implementations perform CRUD operations on the same database container, the user-db. The end-user can select either the Node.js or the Java version of the service, by clicking on the switch button on the top of the application page.

This application can be used for the following operations:

- Create a new user
- Update an existing user
- View all existing users
- Delete an existing user

New User Record Details

First Name

Last Name

Email

Users

UserId	FirstName	LastName	Email
No data			

In order to create a new user, the *First Name*, *Last Name* and *Email* should be provided in the top left-hand side. After filling in the details, the user needs to choose the *Create Record* button. *First Name*, *Last Name* and *Email* are mandatory parameters and the end user has to provide those details.

New User Record Details

First Name

Last Name

Email

Users

UserId	FirstName	LastName	Email
No data			

Once the user has been successfully created, the details of all the users are displayed in the table below.

Users

UserId	FirstName	LastName	Email
1000000243	y	this	y.this@sap.com
1000000245	john3234	doe2	john.doe3@sap.com
1000000247	person	ofinterest	poi@sap.com
1000000249	a	test	a.test@sap.com
1000000252	vivek	srini	vivek.srini@sap.com
1000000253	hello	myworld	h.my.w@sap.com
1000000255	test1	test2	test1.test2@sap.com
1000000256	test3	test4	test3.4@sap.com
1000000257	hello12343	world123456	h.w123456@sap.com
1000000258	John	Doe	john.doe@sap.com

To edit/modify an existing user, we can directly modify the text element on the table that we wish to modify (example, the First Name, Last Name or Email). Once we have modified the values, we can trigger an update by hitting the Enter key or by clicking anywhere else on the UI.

1000000253	hello	myworld	h.my.w@sap.com
1000000255	test1	test2	test1.test2@sap.com
1000000256	test3	test4	test3.4@sap.com
1000000257	hello12343	world123456	h.w123456@sap.com
1000000258	John	Doever	john.doe@sap.com

To delete an existing user, click on the left-most column of the record that you wish to delete and once that record is highlighted, click on the *Delete User* button on top of the *User* table. This will trigger a delete request which will delete the selected user.

Users			
Delete User			
Userid	FirstName	LastName	Email
1000000243	y	this	y.this@sap.com
1000000245	john3234	doe2	john.doe3@sap.com
1000000247	person	ofinterest	poi@sap.com
1000000249	a	test	a.test@sap.com
1000000252	vivek	srini	vivek.srini@sap.com
1000000253	hello	myworld	h.my.w@sap.com
1000000255	test1	test2	test1.test2@sap.com
1000000256	test3	test4	test3.4@sap.com
1000000257	hello12343	world123456	h.w123456@sap.com
1000000258	John	Doever	john.doe@sap.com

The Node.js implementation of the service also provides the functionality for creating users via oData batch. This functionality is only present in the Node.js implementation of the User CRUD. To access this feature, the end user has to select the Node.js implementation and then click on the *Create users with Batch Request* button.

NodejsJava

New User Record Details

First Name

Last Name

Email

Create Record

Create users with batch request ?

Users

Delete User

Userid	FirstName	LastName
--------	-----------	----------

Once the user clicks on the button, the end user can create multiple records and submit them via one single request.

NodejsJava

New User Record Details

First Name

Last Name

Email

Create Record

Create users with batch request ?

Users

Delete User

Userid	FirstName	LastName	Email
1000000226	hello		hello.world@sap.com
1000000227	jane		john.doe@sap.com
1000000229	node		node.hello@sap.com
1000000230	another	java	a.java@sap.com
1000000231	jon	doe	j.doe@sap.com
1000000232	validate	me	validate.m@sap.com
1000000233	validate1	me1	validate1.validate@sap.com

Create users with batch request

First Name

Last Name

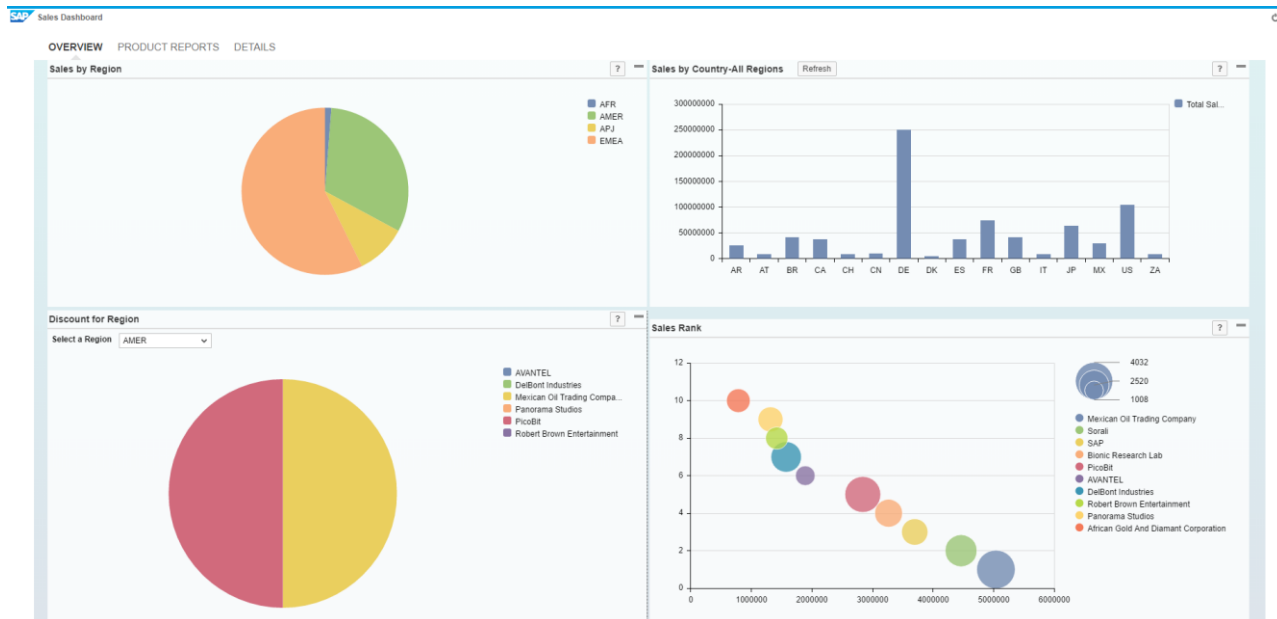
Email

+ Add a new record

Submit

7.5 Sales Dashboard

The Sales Dashboard application shows the analytical view of the sales orders created by the company ITELO (such as Sales by Region, Sales by Country, Compare Product Category Sales Year on Year and so on). Based on the analytical inputs, the Sales Manager can take the necessary actions or make decisions for the company.

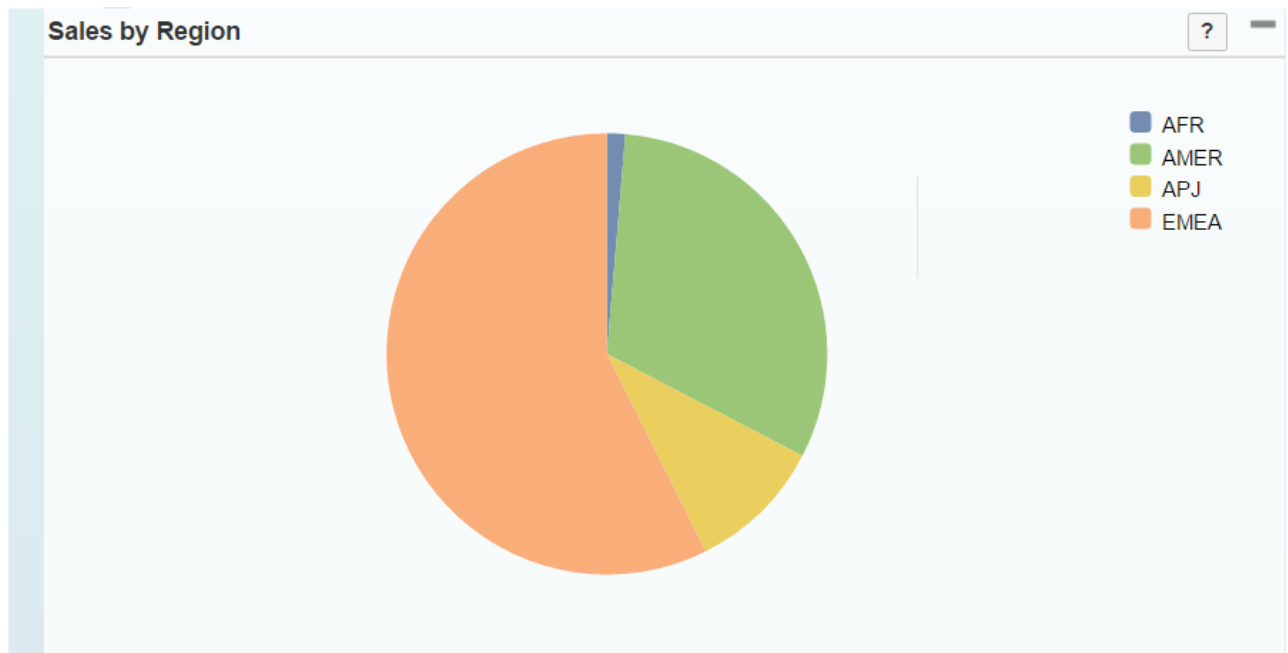


This Sales Dashboard provides a comprehensive dashboard concept that contains several charts based on the OData model constructed in the demo content. You can see sales-specific charts based on Region/Country/Discount per region and charts that provide sales information categorized by product.

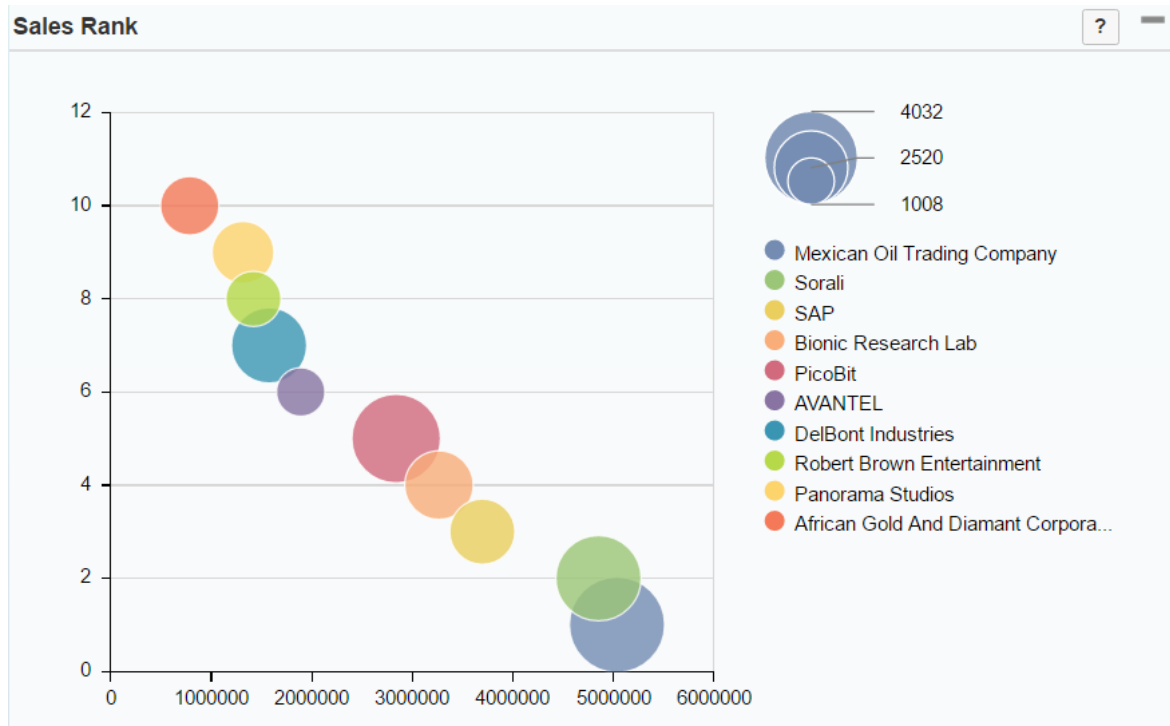
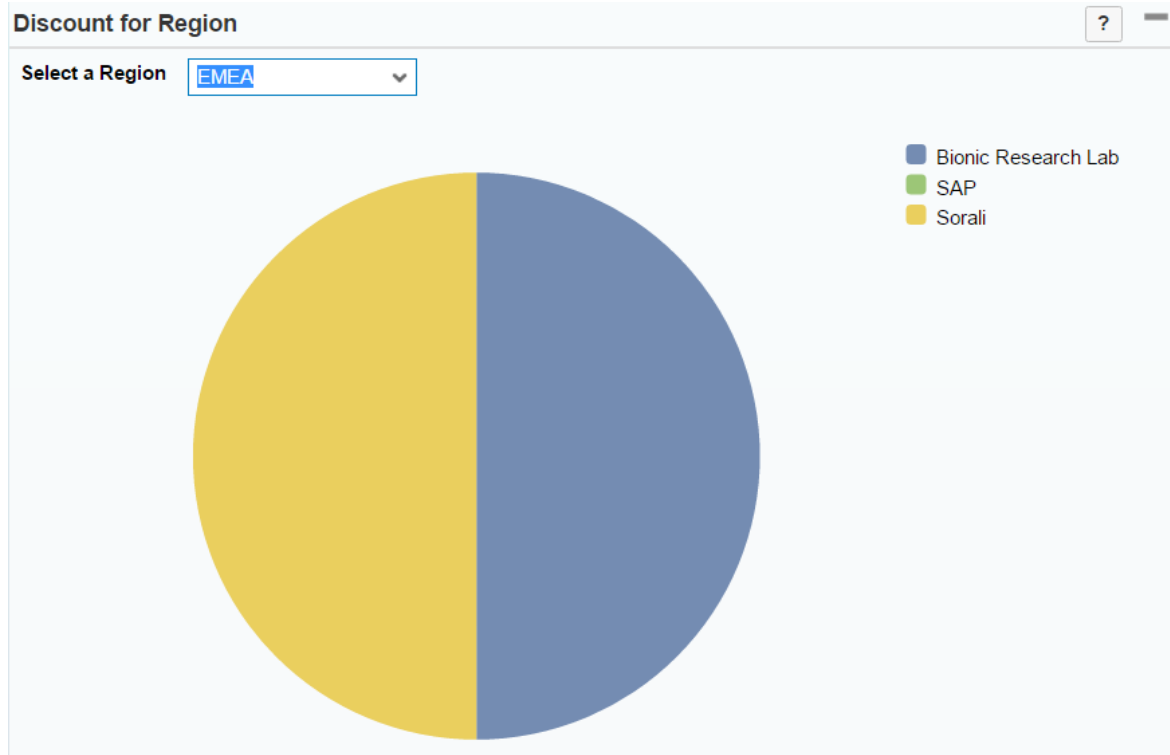
This application can be used to:

Overview Tab:

- Find the total sales for all regions and by country.

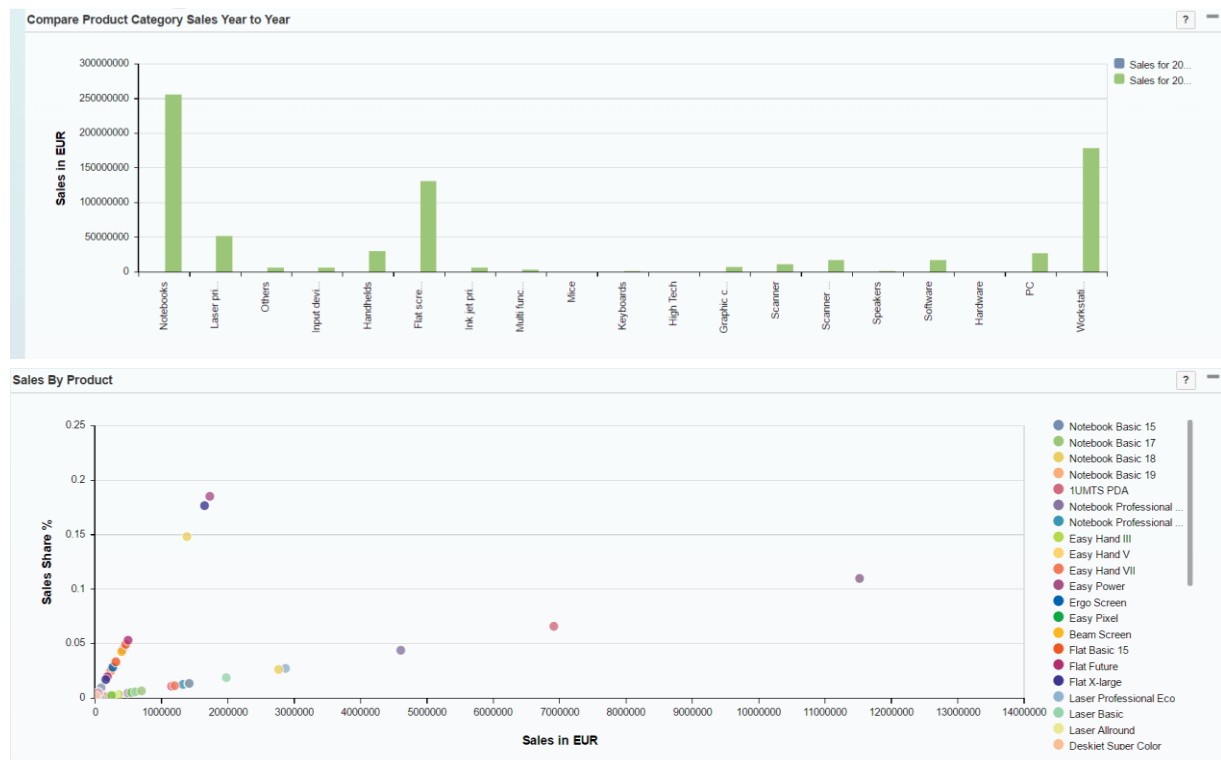


- Find the discount for the companies across a region based on the amount of sales, sales ranking, amount of orders, and order rankings



Product Reports Tab:

- The charts *Compare Product Category Sales Year to Year* and *Sales by Products* are displayed



Details Tab:

- View the list of sales orders and choose a particular order to see the *General Data* and *Sales Order* items related to it, displayed in separate tabs
- Perform operations such as searching for sales orders based on various attributes, including *Company Name*, *Product ID*, and so on
- Create a new sales order
- Delete an existing sales order

OVERVIEW PRODUCT REPORTS DETAILS

Sales Orders (11,029)

New	Refresh	Delete	Send Email					?
	Sales Order ID	Partner ID	Company	City	Gross Amount	Tax Amount	Currency	
	500011028	100000038	Bionic Research...	Bühl	11379.97	1816.97	EUR	
	500011027	100000037	PicoBit	New York City	411.50	65.70	EUR	
	500011026	100000042	Siwusha	Shanghai	521.22	83.22	EUR	
	500011025	100000036	African Gold An...	Johannesburg	114.24	18.24	EUR	
	500011024	100000044	Sorali	Karlsruhe	113032.74	18047.24	EUR	
	500011023	100000043	Danish Fish Tra...	Kopenhagen	6543.80	1044.80	EUR	
	500011022	100000038	Bionic Research...	Bühl	871.55	139.15	EUR	
	500011021	100000036	African Gold An...	Johannesburg	178.14	28.44	EUR	
	500011020	100000041	South American ...	Cordoba	803.25	128.25	EUR	
	500011019	100000042	Siwusha	Shanghai	530.62	84.72	EUR	
								⏪ < 1 2 3 4 5 > ⏩

Sales Order Items

Sales Order...	Product	Product Name	Quantity	Quantity Unit	Net Amount	Tax Amount	Currency
30	HT-1106	Smart Firewall	1.000	EA	34.00	6.46	EUR
10	HT-1104	Smart Games	3.000	EA	165.00	31.35	EUR
20	HT-1105	Smart Internet ...	3.000	EA	87.00	16.53	EUR
40	HT-1107	Smart Money	2.000	EA	59.80	11.36	EUR

More Information

[SAP HANA Developer Guide \(for SAP HANA XS Advanced Model\)](#)
[SAP HANA Application Lifecycle Management Guide](#)

8 FAQ

1. SHINE installation fails with a message that the SHINE version is already installed or cannot be downgraded

Reinstall SHINE with the **ALLOW_SAME_ORIGIN** or **ALLOW_SC_DOWNGRADE** flag respectively.

```
xs install XSACSHINE01_<version.no>.ZIP -e sap-xsac-shine-1.2.xx.mtaext -o
ALLOW_SC_SAME_VERSION

xs install XSACSHINE01_<version.no>.ZIP -e sap-xsac-shine-1.2.xx.mtaext -o
ALLOW_SC_DOWNGRADE
```

2. SHINE installation fails with any other message

Please note the module in which it fails.

SHINE installation might fail in the shine-core-db module due to mistakes in the mtaext file.

For example,

```
Starting application "shine-core-db"...
Node.js
Node.js buildpack version 3.2.3
Avoid using semver ranges like '*' in engines.node
Available Node.js runtimes: node6.9,node4.6
Npm install not needed - attempting partial runtime download
Downloading Node.js...
Unpacking Node.js archive...
Omitting npm install: node_modules directory is already present
Copying SSL CA certificates...
Application "shine-core-db" staged
1 of 1 instances running (1 running)
Application "shine-core-db" started

Starting application "shine-core-db" timed out
----- deploy service END -----
Starting application "shine-core-db" timed out
Installation failed during deployment.
Starting application "shine-core-db" timed out

Installation of archive file(s) 'XSACSHINE02_2.ZIP' failed.
To see installation logs execute 'xs display-installation-logs 2001 -scv'.
com.sap.lm.sl.alm.core.monitor.ProcessException: Starting application "shine-core-db" timed out
Installation failed during deployment.
Unexpected error: Starting application "shine-core-db" timed out
```

If this happens, please execute the following command in order to find out the root cause of the issue:

```
xs logs shine-core-db --recent
```

Please check the error message in the logs and if it is one of the ones mentioned below, take the necessary steps:

a) Error: authentication failed

The username/password in the mtaext file is incorrect. Please check the username and password for the user created in Chapter 2.5.

If you have created a new user:

1. Log in once into the system with the new user in either HANA studio or SAP HANA web-based development workbench to change the initial password.
2. Provide the username and the changed password in the mtaext file.
3. Execute the `xs s` command to get all the services.

4. Delete the services CROSS_SCHEMA_SYS and CROSS_SCHEMA_SYS_BI, if present by using the following command:

```
xs ds <service name>
```

This is because the services would have already been created during your first installation and the deploy service will not recreate them if already present. So we delete them and force the deploy service to create them with the new parameters.

Every time a change is made to the mtaext file, the existing services should be deleted.

5. Reinstall SHINE

b) Error: Could not connect to any host

The port number in the mtaext file is incorrect. Please ensure that it is the JDBC port number of the HANA system.

The port number should be of the format 3##13 or 3##15.

denotes the instance number of the system.



In HANA Express, VM install has default instance as 90, Binary install is a user defined number

Please update the correct port number in the mtaext, delete the services, as mentioned in the previous step, and reinstall SHINE.

c) Error: Error executing: GRANT SELECT ON “_SYS_BI”.”M_TIME_DIMENSION” TO “<CONTAINER_ID>”

Nested message: insufficient privilege

The user in the mtaext (created in Chapter 2.5) does not have necessary permissions needed for the SHINE application to access SYS or _SYS_BI schemas.

Please give the following privileges and reinstall:

```
Grant SELECT on "SYS"."M_TABLES" to <USERNAME>;
Grant SELECT on "SYS"."TABLES" to <USERNAME>;
Grant SELECT on "SYS"."VIEWS" to <USERNAME>;
Grant SELECT on "SYS"."USERS" to <USERNAME>;
Grant SELECT on "_SYS_BI"."M_TIME_DIMENSION" to <USERNAME> WITH GRANT OPTION;
Grant EXECUTE on "SYS"."SERIES_GENERATE_TIMESTAMP" to <USERNAME>;
```


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