SAP NW CLOUD HANDS-ON WORKSHOP

CD261

Exercises
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Introduction

Welcome to the hands-on workshop for SAP NetWeaver Cloud. Over the next two hours, you will use this brand new platform to develop a web-based application, deploy it directly to the cloud and integrate it with both SuccessFactors Employee Central and on-premise SAP ERP system. Once you're done, you will be equipped with the knowledge and skills to quickly build your own applications in the cloud, now made much easier with the rich set of services provided by NetWeaver Cloud.

Application Description

In this workshop, you will build a simple application that allows a user to schedule events, choose venues and assign participants. The venues will be pulled from the on-premise ERP system, while the list of participants will come from SuccessFactors. The application will fully leverage the key services of the NetWeaver Cloud platform including identity management, persistence, unstructured storage and on-premise connectivity.

Workshop Agenda

This workshop is structured into 8 exercises, as follows:

- 1. Configure development environment;
- 2. Import skeleton and completed code files;
- 3. Develop persistence code;
- 4. Develop business logic code;
- 5. Develop UI;
- 6. Run application locally;
- 7. Run application in the cloud;
- 8. Monitor application.

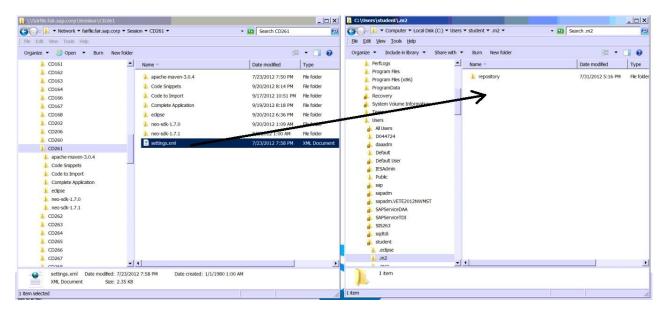
Exercise 1 - Configure Development Environment

In this exercise, you will start up Eclipse, do some basic setup for your development environment and create your application project.

1.1 Start Eclipse and Verify Settings

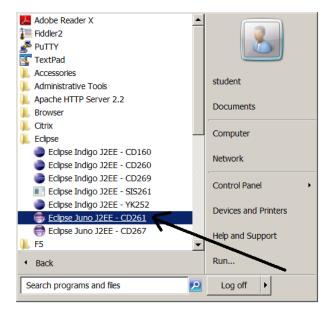
1.1.1 Copy Maven settings.xml File

- On your desktop, double-click on the **Session** (**TechEd FileServer**) shortcut.
- Open the **CD261** folder.
- Select the settings.xml file, right-click and hit Copy.
- Navigate to C:\Users\student\.m2.
- Paste the file in this folder.



1.1.2 Start Eclipse

- Click on Start→All Programs→Eclipse→Eclipse Juno J2EE CD261.
- If a security warning message appears, just click on Run.



1.1.3 Verify Proxy Settings

In Eclipse, click on *Window→Preferences*.

Open the General tab and click on Network Connections.

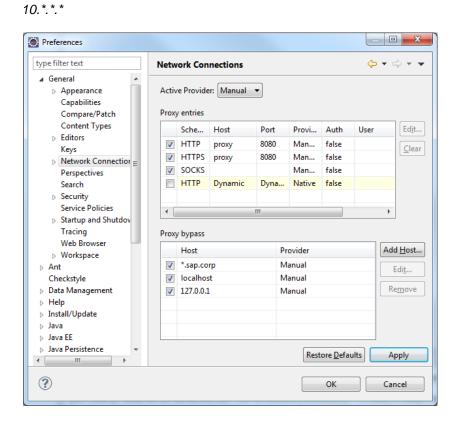
Verify that at least the entries listed below are checked. If not, then update accordingly by switching to *Active Provider* to *Manual* first.

Proxy entries:

HTTP, proxy, 8080, False HTTPS, proxy, 8080, False

Proxy bypass:

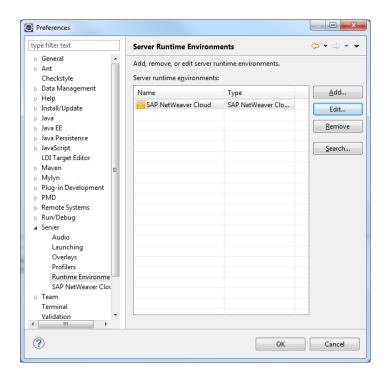
*.sap.corp localhost



1.1.4 Verify Target Runtime Settings

In the **Preferences** window, open the **Server** tab.

Click on Runtime Environments.



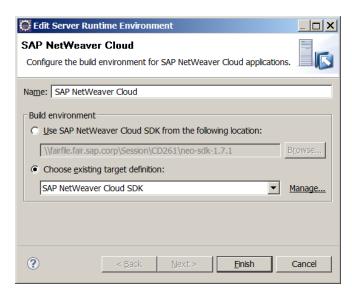
Verify that there is a **SAP NetWeaver Cloud** entry. Click on it and then click on the **Edit** button. Verify that the popup window contains the following information:

Name: SAP NetWeaver Cloud

Build environment:

Choose existing target definition: SAP NetWeaver Cloud SDK.

Click on the Cancel button.



1.1.5 Verify NW Cloud Server Settings

In the Preferences window, still in the Server tab, click on SAP NetWeaver Cloud.

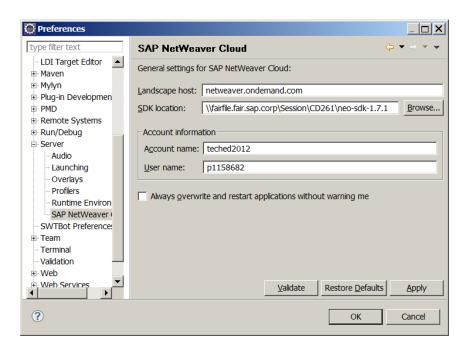
Verify the following fields:

Landscape host: netweaver.ondemand.com

SDK location: \\\fairfile.fair.sap.corp\\Session\\CD261\\neo-sdk-1.7.1

Update the following fields: Account name: teched2012

User name: <your assigned username>



Click on the *Validate* button and verify a positive validation result in a popup window. Click on *OK*. Click on the *Apply* button.

1.1.6 Verify Maven Settings

In the *Preferences* window, open the *Maven* tab.

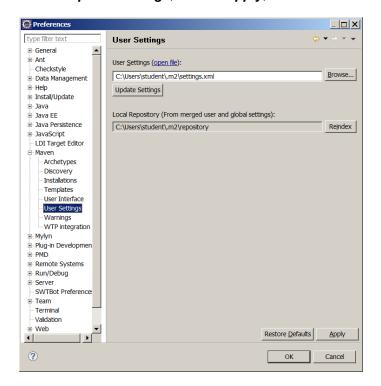
Click on User Settings.

Verify the following settings:

User Settings: C:\Users\student\.m2\settings.xml.

Local Repository: C:\Users\student\.m2\repository.

Click on Update Settings, then on Apply, then on OK.



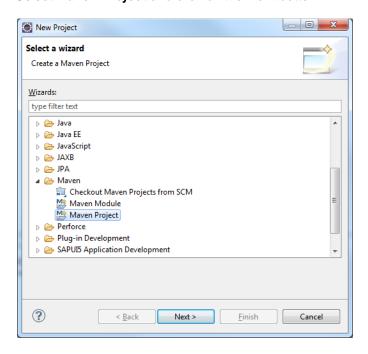
1.2 Create Maven Project

1.2.1 Create Project

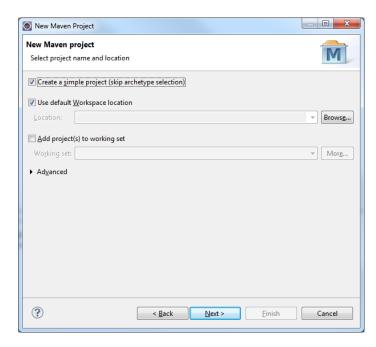
In Eclipse, click on *File →New →Project*.

In the resulting popup wizard, scroll down and open the *Maven* tab.

Select Maven Project and click on the Next button.



On the next page of the wizard, check the *Create a simple project (skip archetype selection)* box. Leave the other defaults and click on *Next*.



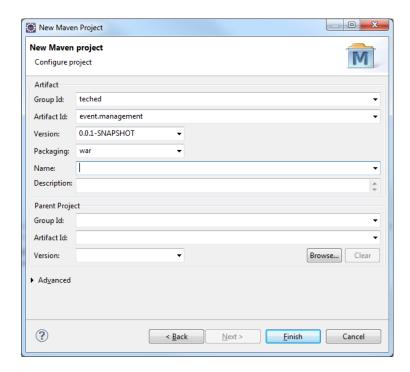
On the following page of the wizard, enter the following values:

Group Id: teched

Artifact Id: event.management

Packaging: select war

Leave everything else as is. Click on Finish.



1.2.2 Update pom.xml File

In Eclipse, in the Project Explorer, open the tree for your newly created event.management project.

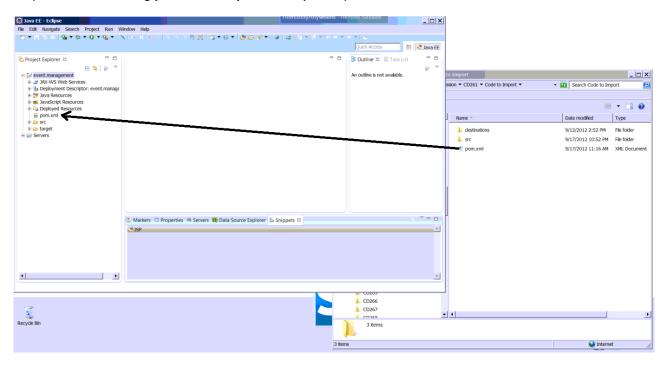
On your desktop, double-click on the Session (TechEd FileServer) folder.

In the Explorer window that opens up, double-click on the CD261 folder.

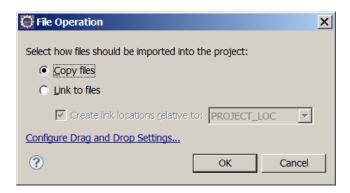
Double-click on the Code to Import folder.

Select the *pom.xml* file and drag it over to Eclipse.

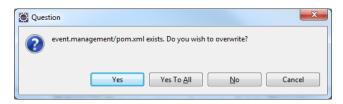
Drop it over the existing *pom.xml* entry in the Project Explorer.



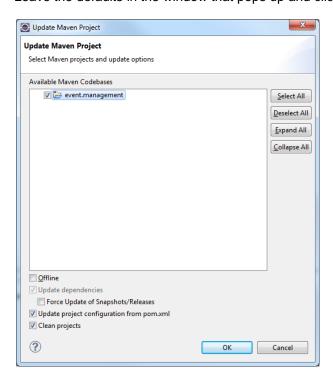
Click on **OK** in the *File Operation* window that pops up.



Select Yes in the Question window that pops up.



Right-click on the **event.management** title at the top level of the project tree in the Project Explorer. Click on the **Maven** entry, and then click on **Update Project**. Leave the defaults in the window that pops up and click on **OK**.

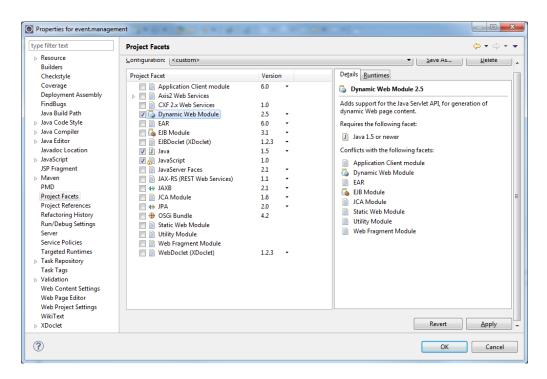


1.2.3 Update Project Properties

In Eclipse, in the Project Explorer, right-click on the **event.management** title at the top level of the project tree in the Project Explorer.

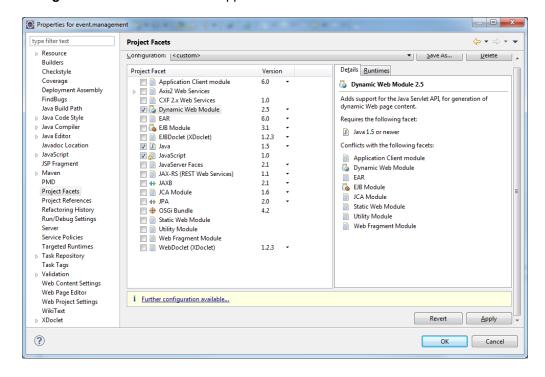
Click on the **Properties** entry.

In the Properties window, click on Project Facets.

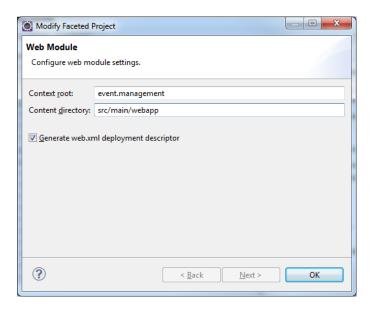


Select the *Dynamic Web Module* entry and uncheck it, and then click on the *Apply* button.

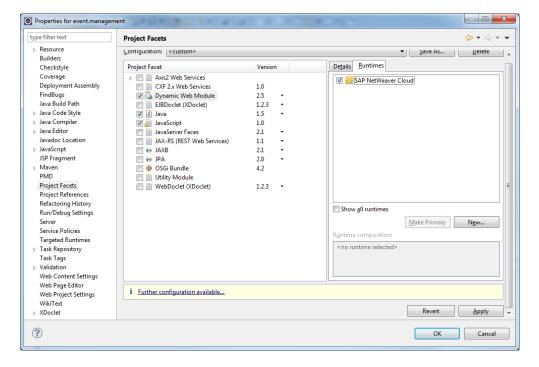
Reselect the *Dynamic Web Module* entry and check it. Update the version to *2.5*. Then click on the *Further configuration available* link that appears at the bottom of the window.



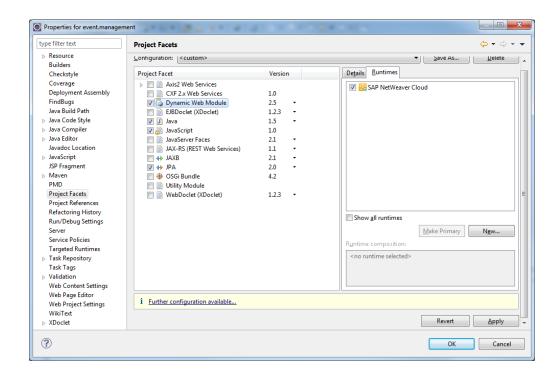
Update the Content directory entry to src/main/webapp and click on OK.



Click on the *Runtimes* tab in the upper right part of the window. Check the checkbox for the *SAP NetWeaver Cloud* entry and click on *Apply*.



Next, select the *JPA* entry and check its checkbox. Then click on the *Further configuration required* link that appears at the bottom of the window.

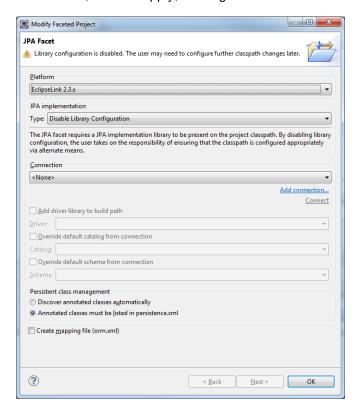


In the JPA Facet window that appears, update the following fields:

Platform: EclipseLink 2.3.x

Type: Disable Library Configuration

Click on OK, then on Apply, then again on OK.



If you see a Maven error appear, then repeat the project update:

Right-click on the **event.management** title at the top level of the project tree in the Project Explorer.

Click on the Maven entry, and then click on Update Project.

Leave the defaults in the window that pops up and click on **OK**.

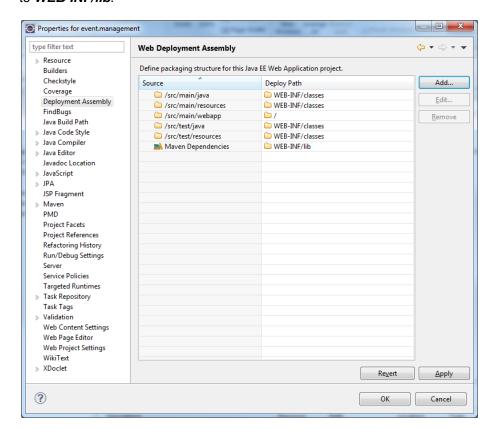
1.2.4 Verify Java Build Path Entries

In Eclipse, in the Project Explorer, right-click on the **event.management** title at the top level of the project tree in the Project Explorer.

Click on the **Properties** entry.

In the Properties window, click on Deployment Assembly.

Verify that there is an entry called *Maven Dependencies* in the *Web Deployment Assembly* window, and that it is set to *WEB-INF/lib*.



Exercise 2 - Import Code Files

In this exercise, you will import all the files you need for your application project and update a few additional settings.

2.1 Import Destinations

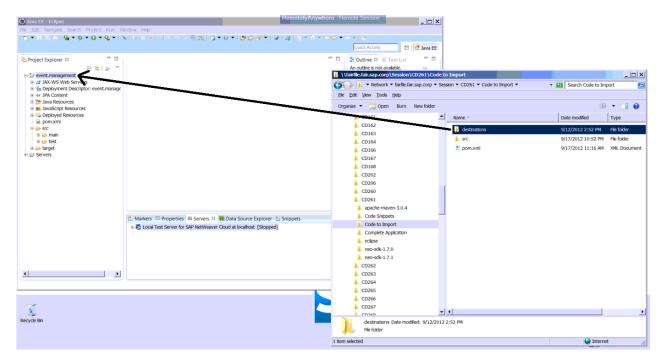
On your desktop, double-click on the **Session** (TechEd FileServer) folder.

In the Explorer window that opens up, double-click on the *CD261* folder.

Double-click on the Code to Import folder.

Select the *destinations* folder and drag it over to Eclipse.

Drop it over the existing event.management title at the top level of the project tree in the Project Explorer.



Click on **OK** if any *File Operation* window pops up. Select **Yes** if any *Question* window pops up.

2.2 Import Data

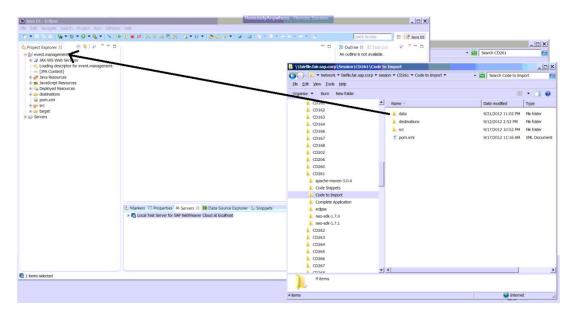
On your desktop, double-click on the **Session** (**TechEd FileServer**) folder.

In the Explorer window that opens up, double-click on the CD261 folder.

Double-click on the Code to Import folder.

Select the *data* folder and drag it over to Eclipse.

Drop it over the existing *event.management* title at the top level of the project tree in the Project Explorer.



Click on **OK** if any *File Operation* window pops up. Select **Yes** if any *Question* window pops up.

2.3 Import Source Code

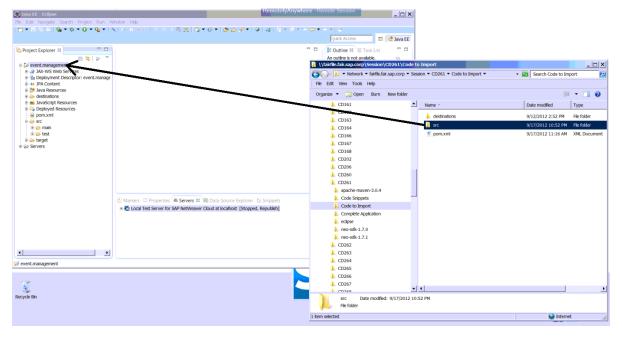
On your desktop, double-click on the Session (TechEd FileServer) folder.

In the Explorer window that opens up, double-click on the *CD261* folder.

Double-click on the Code to Import folder.

Select the src folder and drag it over to Eclipse.

Drop it over the existing **event.management** title at the top level of the project tree in the Project Explorer.



Click on **OK** in the *File Operation* window that pops up. Select **Yes** in the *Question window that pops up.*

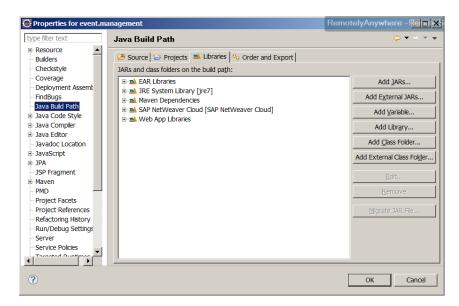
2.4 Add JARs to Build Path

In Eclipse, in the Project Explorer, right-click on the **event.management** title at the top level of the project tree in the Project Explorer.

Click on the **Properties** entry.

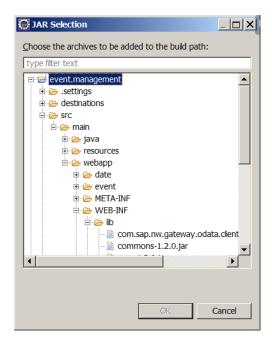
In the Properties window, click on Java Build Path.

Click on the Libraries tab.

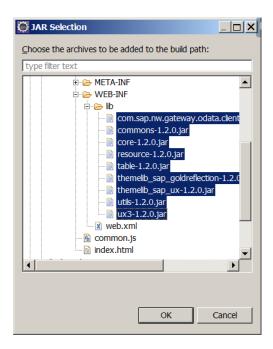


Click on the Add JARs button.

In the *JAR Selection* window that appears, open the **event.management** entry, then further open down to **src**→**main**→**webapp**→**WEB-INF**→**lib**.



Select all the jar files in that location and click on OK.



Click on OK in the Properties window.

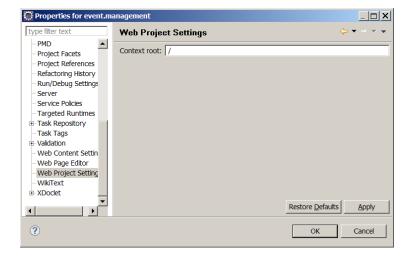
2.5 Update Web Project Settings

In Eclipse, in the Project Explorer, right-click on the **event.management** title at the top level of the project tree in the Project Explorer.

Click on the **Properties** entry.

In the Properties window, click on Web Project Settings.

Update the Context root field by replacing the word events with /.



Click on *Apply*, then on *OK* in the *Properties* window. Click *OK* on any other confirmation window that may appear, and then *OK* again in the *Properties* window.

Exercise 3 - Develop Persistence Code

In this exercise, you will complete the code needed for the persistence layer of the application.

3.1 Complete Event.java

In Eclipse, in the Project Explorer, navigate to **src >main >java >event >management**->**persistence** under the **event.management** project.

Double-click on the Event.java file.

In the file, scroll down to the location with the following comment:

// TODO: Add Required Fields for Event

```
🗏 😘 🔝 💆 🗖 📗 Event.java 🛭
                                                                                                                                                                                                                     - -
Project Explorer 23
                                                                            package event.management.persistence;

⊟ ₩ event,management

    A JAX-WS Web Services
    % ⊕import static javax.persistence.TemporalType.DATE;
    ■ JavaScript Resources
    Deployed Resources
                                                                                 oric class Event extends event.management.EventObje
                                                                                  // TODO: Add Required Fields for Event
       🖨 😥 main
          ∃ 😝 java

⊞ 😂 com

⊟ 😝 event
                                                                                                 ({ MediaType.APPLICATION_JSON })
                                                                                         return super.get(Event.class);
                   ActiveUser.java
                                                                                  }
                    ActiveUserServlet.iava

    Application.java
    EventObject.java
    GsonArrayProvider.java

                                                                                  @Consumes({ MediaType.APPLICATION_JSON })
@Produces(( MediaType.APPLICATION_JSON })
public Event create( Event data) throws ServletException {
                     GsonProvider.java
                  ⊕ persistence
                                                                                        return super.create(data);
                    ⊕ person.java
                                                                                  GConsumes ({ MediaType.APPLICATION_ISON})

@Froduces ({ MediaType.APPLICATION_ISON})

public Event update (Event data) throws ServletException (
    return super.update(data);
                    Person: java

ProxySelector. java

ResultCache. java

Servlet. java
                                                                            4
                     SFObject.java
             ⊕- B META-INF
                                                                        Markers Properties Servers M Data Source Explorer Schipp

■ Image: Local Test Server for SAP NetWeaver Cloud at localhost [Stopped, Republish]
```

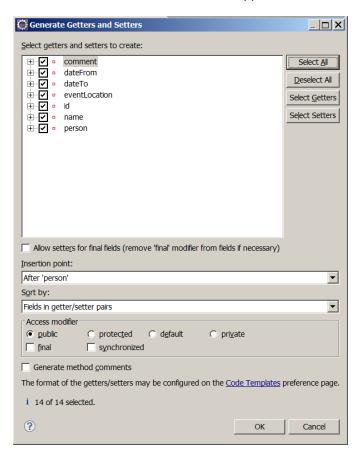
Replace that line with the following code snippet:

```
@GeneratedValue(strategy = GenerationType.AUTO)
private long id;
@Column(nullable = false, length = 1024)
private String name;
@Basic
@Temporal(DATE)
private Date dateFrom;
@Basic
@Temporal(DATE)
private Date dateTo;
@Basic
private String comment;
@OneToMany(cascade={ PERSIST, REFRESH })
private Collection<Person> person;
@OneToOne(cascade={ PERSIST, REFRESH })
private EventLocation eventLocation;
```



Alternatively, copy and paste the code directly from the file **Network**→**fairfile.fair.sap.corp**→**session**→**CD261**→**Code Snippets**→**Event.java**.

From the top level menus in Eclipse, click on **Source >Generate Getters and Setters**. Click on **Select All** in the window that appears, and click on **OK**.



Save the file in Eclipse.

3.2 Complete EventLocation.java

In Eclipse, in the Project Explorer, navigate to **src >main >java >event >management -**>**persistence** under the **event.management** project.

Double-click on the **EventLocation.java** file.

In the file, scroll down to the location with the following comment:

// TODO: Add Required Fields for Event Location

```
RemoteryAnywhere - Remote Session
                                                     🖹 😘 👺 🤻 🗖 🗖 🖟 EventLocation.java 🛭
Project Explorer 🖾
 event.management

### A JAX-WS Web Services

### Deployment Descriptor: event.management
                                                                                     package event.management.persistence;
                                                                                     heimport javax.persistence.Column;
         → JPA Content
                                                                                    @Entity
@Table(name = "T_EVENTLOCATION")
@Path("/eventLocation")
      ■ JavaScript Resources
■ Deployed Resources
■ Deployed Resources
■ Deployed Resources
■ Deployed Resources
                                                                                                             ventLocation extends event.managers
                                                                                                                                                                                      .EventObject {
                                                                                                     / TODO: Add Required Fields for Event Location
        ⊕ 🈥 main
            ∃ 😥 java
⊕ 😂 com
                                                                                                  public ListEventLocation get() throws ServletException {
   return super.get(EventLocation.class);
              ⊕ com

⊕ went

⊕ management

d ActiveUserServlet.java

d Application.java

€ EventObject.java
                                                                                                  @POST
@Consumes({ MediaType.APPLICATION JSON })
@Produces({ MediaType.APPLICATION_JSON })
public EventLocation create( EventLocation data) throws ServletException {
                         GsonArrayProvider.java
                         GsonProvider.java
                                                                                                 return super.create(data);
}

    □ Persistence
    □ Event.java
    □ EventLocation.java
    □ ow
                      @PUT
@Consumes({ MediaType.APPLICATION_USON})
@Froduces({ MediaType.APPLICATION_USON})
public EventLocation update(EventLocation data) throws ServletException {
    return super.update(data);
                        ResultCache.java
                                                                                                                                                                                                                                                          ►
F
                         Servlet.java
                        SFObject.java
```

Replace that line with the following code snippet:

```
@Id
@Column(nullable = false, length = 128)
private String Name;
```

```
🗏 😘 🍃 💆 🗖 🗎 🔐 EventLocation,java 🛭
Project Explorer ≅
    package event.management.persistence;
               II- A JAX-WS Web Services
            @ 29 JAX-WS Web Services

® Deployment Descriptor: event.management

⊕ → JPA Content

® 3 Java Resources

■ 2 ma_AvasCapt Resources

□ Deployed Resources
                                                                                                                                                                                                                                        ⊕import javax.persistence.Column;
                                                                                                                                                                                                                                                @Entity
@Table(name = "T_EVENTLOCATION")
@Fath("/eventLocation")
        D. dest.
Description for the population of the p
                                                                                                                                                                                                                                               public class
                                                                                                                                                                                                                                                                                                                                                                                                                               ent.management.EventObject {
                                                                                                                                                                                                                                                                               olumn(nullable = false, length = 128)
                                                                                                                                                                                                                                                                @Produces(( MediaType.APPLICATION JSON ))
public List<EventLocation> get() throws ServletException {
   return super.get(EventLocation.class);
                                                              ActiveUser.iava
                                                                 ActiveUserServlet.iava

Application.java

DeventObject.java

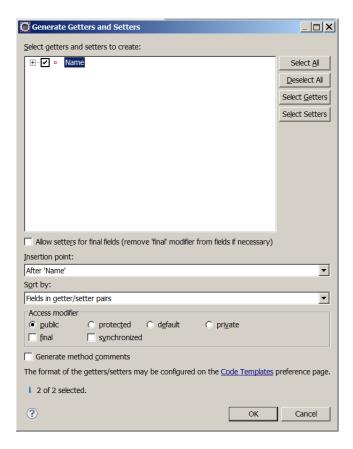
GeonArrayProvider.java

GeonProvider.java
                                                                                                                                                                                                                                                                @Consumes({ MediaType.APPLICATION_JSON })
@Froduces({ MediaType.APPLICATION_JSON })
public EventLocation create( EventLocation data) throws ServletException {
                                                          return super.create(data);
                                                                 @Consumes({ MediaType.APPLICATION_JSON})
@Froduces({ MediaType.APPLICATION_JSON})

white Eventions unders(EventInguish data) Absent Convocation (
                                                                  Servlet.java
                                                                 SFObject.java
```

Alternatively, copy and paste the code directly from the file *Network→fairfile.fair.sap.corp→session→CD261→Code Snippets→EventLocation.java*.

From the top level menus in Eclipse, click on **Source >Generate Getters and Setters**. Click on **Select All** in the window that appears, and click on **OK**.



Save the file in Eclipse.

3.3 Complete Person.java

In Eclipse, in the Project Explorer, navigate to $src \rightarrow main \rightarrow java \rightarrow event \rightarrow management -> persistence$ under the event.management project.

Double-click on the Person.java file.

In the file, scroll down to the location with the following comment:

// TODO: Add Required Fields for Person

```
🗏 😘 🄝 🔻 🗖 🖟 Person.java 🛭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ery/virywhere - Remote Session
Noject Explorer №
 © Project Explorer ≅

□ □ event.management

□ ± 3 Deployment Descriptor: event.management

□ ± 3 PPA Content

□ ± 5 PPA Content

□ ± 5 PPA CONTENT

□ ± 5 PPA

□ ± 
                                                                                                                                                                                                                                                                      package event.management.persistence;
                                                                                                                                                                                                                                                                               # import javax.persistence.*;[]
                                                                                                                                                                                                                                                                   @Entity
@Table(name = "T_PERSON")
@Path("/person")
                                                                                                                                                                                                                                                                      o public
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nt.EventObject{
                                                                                                                                                                                                                                                                      Ø
                                                                                                                                                                                                                                                                                                                     // TODO: Add Required Fields for Person
                                                                                                                                                                                                                                                                                                              Produces({ Mediatype.AFFLICATION_JSON })
public List<Person> get() throws ServletException {
    return super.get(Person.class);
                                                        → management
→ ActiveUser.java
→ ActiveUserServlet.java
                                                                            Application.java
                                                                                                                                                                                                                                                                                                              @Consumes {{ MediaType.APPLICATION_JSON }}
@Produces {{ MediaType.APPLICATION_JSON }}
public Person create { Person data} throws ServletException {
return super.create(data);
                                                                             EventObject.java
                                                                             GsonArrayProvider.java
                                                                             GsonProvider.java
                                                                                @PUT
@Consumes({ MediaType.APPLICATION_USON})
@Produces({ MediaType.APPLICATION_USON})
public Person update(Person data) throws ServletException {
    return super.update(data);
}
                                                                          Derentiocation.ja

Person.java

Person.java

ProxySelector.java

ResultCache.java

Servlet.java

SFObject.java
```

Replace that line with the following code snippet:

```
@Column(nullable = false, length = 32)
private String externalId;
```

```
🕒 🥞 👺 💆 🗖 🖟 Person.java 🛭
Project Explorer 🖾
 package event.management.persistence;
                                                                                                      *import javax.persistence.*;[]
     ■ JavaScript Resources
■ Deployed Resources
■ destinations
■ pom.xml
                                                                                                           @Table(name = "T_PERSON")
@Path("/person")
                                                                                                                 @Column(nullable = false, length = 32)
private String externalId;
             ⊕ ⊖ java
⊕ ⊖ com
⊕ ⊖ event
                                                                                                                  @Produces({ MediaType.APPLICATION_JSON })
public List<Person> get() throws ServletException {

ActiveUser, java
ActiveUser, java
ActiveUser, java
Application, java
Application, java
SonArrayProvider, java
SonProvider, java
Experistence
Experistence
Experistence
Experistence
Experistence
Experistence
Experistence
                                                                                                                           return super.get(Person.class);
                                                                                                                 @COnsumes{{ MediaType.APPLICATION_JSON }}
@Produces{{ MediaType.APPLICATION_JSON }}
public Person create{ Person data} throws ServletException {
                                                                                                                          return super.create(data);
                             ⊕ gw

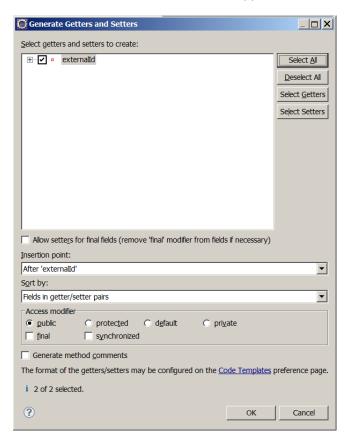
→ Person.java

⊕ sf
                            ⊕ ⇒ sf

-  ProxySelector.java
-  ResultCache.java
-  Servlet.java
-  SFObject.java
                                                                                                                   @Consumes({ MediaType.APPLICATION_JSON})
@Produces({ MediaType.APPLICATION_JSON})
```

Alternatively, copy and paste the code directly from the file **Network** → **fairfile.fair.sap.corp** → **session** → **CD261** → **Code Snippets** → **Person.java**.

From the top level menus in Eclipse, click on **Source Generate Getters and Setters**. Click on **Select All** in the window that appears, and click on **OK**.



Save the file in Eclipse.

3.4 Complete persistence.xml

In Eclipse, in the Project Explorer, navigate to **src**-**main**-**resources**-**META-INF**-**persistence.xml** under the **event.management** project.

Double-click on the *persistence.xml* file.

Click on the Source tab.



In between the *persistence-unit* beginning and end tags, add the following code snippet:

Click on **Source >Format** to correctly format the file.



Alternatively, copy and paste the code directly from the file *Network→fairfile.fair.sap.corp→session→CD261→Code Snippets→persistence.xml*. NOTE: remember to open the snippet file in an editor such as Wordpad, not a web browser.

Save the file in Eclipse.

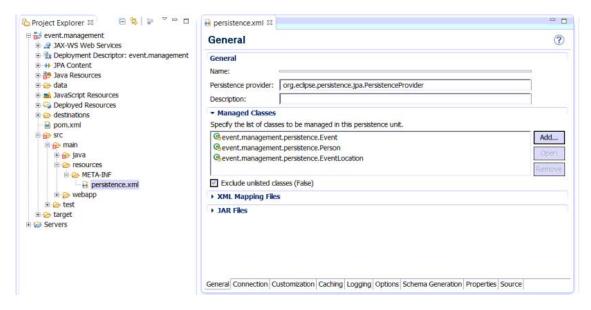
Click on the General tab for the persistence.xml file.

Add the following entries:

Persistence provider: org.eclipse.persistence.jpa.PersistenceProvider

Managed Classes:

event.management.persistence.Event event.management.persistence.Person event.management.persistence.EventLocation



Close the xml file.

3.5 Review Imported Code

Open up and review the following completed persistence related files:

src→main→java→event→management->persistence→gw→Location.java src→main→java→event→management->persistence→sf→User.java src→main→java→com→sap→nw→gateway→oDataObject.java src→main→java→com→sap→nw→gateway→ZTM_EventsOnDemand.java

Exercise 4 - Develop Business Logic Code

In this exercise, you will complete the code needed for the business logic layer of the application.

4.1 Complete ActiveUser.java

In Eclipse, in the Project Explorer, navigate to **src >main >java >event >management** under the **event.management** project.

Double-click on the ActiveUser.java file.

In the file, scroll down to the location with the following comment:

```
// TODO: Get current logged-in user
```

```
⊟ 😽 🔝 🤻 🗆 🗖 🖟 ActiveUser.java 🛭
Project Explorer ≅
package event.management;
                                                                                                                                                                          A .
   ⊕ % Deployment Descriptor: event.management
                                                         % ⊕ import javax.servlet.http.HttpServletReguest;
   ⊕ → JPA Content
   ■ B Java Resources
■ A JavaScript Resources
■ Deployed Resources
                                                              @Path("/activeUser")
   ztm_eventsondemand
                                                                  @Produces({ MediaType.APPLICATION JSON })
    pom.xml
                                                                  public Object
                                                                                                                    est request) {
                                                                            // TODO: Get current logged-in user
        🗦 🔒 java
          ActiveUserServlet.java
                Application.java
                EventObject.java
              GsonArrayProvider.
GsonProvider.java
persistence

    ProxySelector.java

                ResultCache.iava
                Servlet, iava
       □ 🇁 resources
          4
             persistence.xml
```

Replace that line with the following code snippet:

```
String currentUser = request.getUserPrincipal() != null ?
request.getUserPrincipal().getName() : null;
// UserProvider provides access to the user storage
UserProvider users = UserManagementAccessor.getUserProvider();
// Read the currently logged in user from the user storage
User user = users.getUser(currentUser);
return user;
```

```
RemotelyAnywhere -Remote Session
                                                                                                                    🗏 🤩 🍃 🔻 🗖 🖟 ActiveUser.java 🛭
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             - H
Project Explorer 

□
  package event.management;
                                                                                                                                                                                                     *import javax.servlet.http.HttpServletRequest;[]
                                                                                                                                                                                                        public class ActiveUser {
           Deployed Resources
          □   destinations
           ight of the state of the state
                                                                                                                                                                                                                                             uces(: mediaType.APPLICATION_JSON })

Object get(@Context HttpServletRequest request) {
                                                                                                                                                                                                                                                        String currentUser = request.getUserPrincipal() != null ? request
                          🗦 😥 java
                                  ⊕ com
                                                                                                                                                                                                                                                                                       .getUserPrincipal().getName() : null;
                                         UserProvider provides access to the user storage
                                                                                                                                                                                                                                                        UserProvider users = UserManagementAccessor.getUserProvider();
                                                                                                                                                                                                                                                        // Read the currently logged in user from the user storage
User user = users.getUser(currentUser);
                                                      GsonArrayProvider.java
                                                      GsonProvider.java
                                                                                                                                                                                                                                                        return user;
                                                                                                                                                                                                                                                               th (Exception e) {
print(FrackTrace();
prow new Runtlmense
                                                 ⊕ persistence
                                ● persistence

☐ ProxySelector.java
☐ ResultCache.java
☐ Servlet.java
☐ SFObject.java

■ META-INF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Þ
                                ■ 🍅 META-INF
                                                                                                                                                                                                        4
```

Alternatively, copy and paste the code directly from the file $Network \rightarrow fairfile.fair.sap.corp \rightarrow session \rightarrow CD261 \rightarrow Code$ $Snippets \rightarrow ActiveUser.java$.

Save the file in Eclipse.

4.2 Review Imported Code

Open up and review the following completed business logic related files:

src→main→java→event→management

Application.java
EventObject.java
GsonArrayProvider.java
GsonProvider.java
ProxySelector.java
ResultCache.java
Servlet.java
SFObject.java

Exercise 5 – Develop UI

In this exercise, you will complete the code needed for the UI layer of the application.

5.1 Complete events.view.js

In Eclipse, in the Project Explorer, navigate to src >main >webapp >event >management under the event.management project.

Double-click on the events.view.js file.

In the file, scroll down to the location with the following comment:

TODO: Add Field Columns

```
⊟ 😘 | 👺 🤻 🗆 🗖 | 🔞 events.view.js 🛭 🔃
              Project Explorer 

□
                    event.management
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   •

    Deployment Descriptor: event.management

                                                                                                                                                                                                                                                                                                                                                                                                   createContent : function(oController) {

    → → JPA Content
    → JPA Content
    → Java Resources
    → JavaScript Resources
    → Deployed Resources
    → destinations
                                                                                                                                                                                                                                                                                                                                                                                                                           var oLayout = new sap.ui.commons.layout.MatrixLayout({
    layoutFixed: false,
    widths: [ "100%" ]
des.

des.

in trn,
 pom.xml

in pom.xml

                                                                                                                                                                                                                                                                                                                                                                                                                               var dataS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  dataSource : '/rest/event',
elds : [
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               // TODO : Add Field Columns
                                                                                                                                                                                                                                                                                                                                                 Ø
                                                                                                                                                                                                                                                                                                                                                                                                                                                        // get the binding context of the first selected row
var oContext = oEvent.getParameter("rowContext");
                                                                                                                                                                                                                                                                                                                                                                                                                                                          var oModel = oEvent.getSource().getModel();
// update binding context of the details
// oDetails.setBindingContext(oContext);
```

var oPanel = sap.ui.getCore().byId('peoplePanel');

Replace that line with the following code snippet:

4

```
label : "Name",
      binding : "name",
      width : "100px"
      label : "Venue",
      binding : "eventLocation/Name",
width : "250px",
      dropbox : {
             source : "/rest/gw/Location",
             binding : "Name",
             formatter : function(e) { return e; }
}, {
      label : "Start Date",
      binding : "dateFrom",
      width : "200px",
      date : { format : "yyyy-MM-dd" },
      formatter : formatDate
}, {
      label : "End Date",
      binding : "dateTo",
      width : "200px",
      date : { format : "yyyy-MM-dd" },
      formatter : formatDate
      label : "Comment",
      binding : "comment",
      width : "250px"
}, {
      label : "People",
      binding : "person",
```

```
visible : false,
listbox : {
         source : "/rest/sf/ec/user",
         binding : "externalId",
         formatter : formatPerson
}
```

Click on **Source >Format** to correctly format the file.

Alternatively, copy and paste the code directly from the file **Network**→**fairfile.fair.sap.corp**→**session**→**CD261**→**Code Snippets**→**events.view.js**. NOTE: remember to open the snippet file in an editor such as Wordpad, not a web browser.

Save the file in Eclipse.

5.2 Complete locations.view.js

In Eclipse, in the Project Explorer, navigate to **src >main >webapp >event >management** under the **event.management** project.

Double-click on the *locations.view.js* file.

In the file, scroll down to the location with the following comment:

// TODO: Add Locations Columns

```
□ 🥦 🔝 🌣 🖽 🗖 🛛 🔞 locations.view.js 🛭
Project Explorer 🗵
© Project Explorer 22

□ © event.management

□ ② JAX-WS Web Services

□ ③ Deployment Descriptor: event.management

□ ③ Java Resources

□ ③ Deployert Resources

□ ② Deployed Resources

□ ② Deployed Resources

□ ② between
                                                                                                                                                                                                                                                          •
                                                                                                                            getControllerName : function() {
    return "event.management.locations";
                                                                                                                            createContent : function(oController) {
                                                                                                                                   var oLayout = new sap.ui.commons.layout.MatrixLayout({
    layoutFixed : false,
    widths : [ "100%" ]
                                                                                                                                   var dataSource =
                                                                                                                                                           te = (
'/ tst/gw/Location',
                                                                                                                                                            // TODO: Add Locations Columns
                                                                                                                                           fields
                                                                                                                                   1;
                      var onSelect
debugger;
                                                                                                                                           // get the binding context of the first selected row
var oContext = oEvent.getParameter("rowContext");
                                                                                                                                           var oModel = oEvent.getSource().getModel();
                                                                                                                                           // oDetails.setBindingContext(oContext);
var strName = oModel.getProperty("Name",
                ₩EB-INF
```

Replace that line with the following code snippet:

```
{
      label : "Name",
      binding : "Name",
      primary : true,
      width : "220px"
}, {
      label : "Street",
      binding : "Street",
      width : "380px"
},{
      label : "City",
      binding : "City",
      width: "400px"
}, {
      label : "State",
      binding : "State",
      width: "50px"
}, {
      label : "Zip Code",
      binding : "Zipcode",
      width: "75px"
```

Click on **Source >Format** to correctly format the file.

Alternatively, copy and paste the code directly from the file **Network**→**fairfile.fair.sap.corp**→**session**→**CD261**→**Code Snippets**→**locations.view.js**. NOTE: remember to open the snippet file in an editor such as Wordpad, not a web browser.

Save the file in Eclipse.

5.3 Complete people.view.js

In Eclipse, in the Project Explorer, navigate to **src >main >webapp >event >management** under the **event.management** project.

Double-click on the people.view.js file.

In the file, scroll down to the location with the following comment:

// TODO: Add People Columns

Replace that line with the following code snippet:

```
{
    label : "First Name",
    binding : "firstName",
    width : "200px"
}, {
    label : "Last Name",
    binding : "lastName",
    width : "200px"
}, {
    label : "Title",
    binding : "title",
    width : "300px"
}, {
    label : "Department",
    binding : "department",
    width : "300px"
}
```

Click on **Source >Format** to correctly format the file.

Alternatively, copy and paste the code directly from the file **Network**→**fairfile.fair.sap.corp**→**session**→**CD261**→**Code Snippets**→**people.view.js**. NOTE: remember to open the snippet file in an editor such as Wordpad, not a web browser.

Save the file in Eclipse.

5.4 Review Imported Code

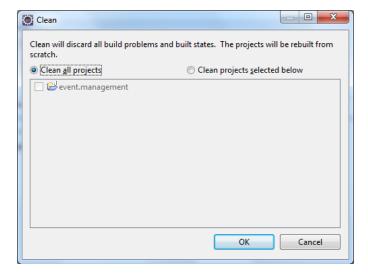
Open up and review the following completed UI related file: $src \rightarrow main \rightarrow webapp \rightarrow event \rightarrow index.html$

EXERCISE 6 – RUN APPLICATION LOCALLY

In this exercise, you will deploy the completed application to the local NW Cloud server on your laptop that you created in Exercise 1.

6.1 Build Project

In Eclipse, click on the **Project** menu from the top level menu bar, and then click on **Clean**. Make sure the **Clean all** projects option is selected in the window that pops up, and then click OK.

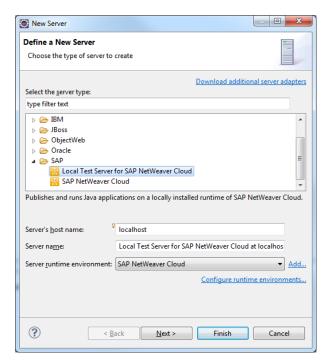


6.2 Add Local NW Cloud Server

6.2.1 **Create Server**

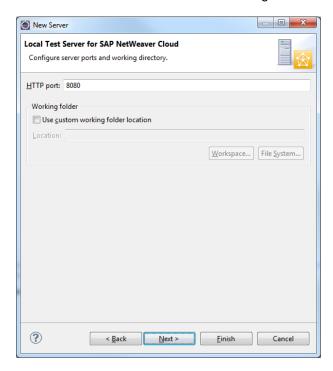
In Eclipse, go to the lower right section of the window and click on the Servers tab. Right-click anywhere inside the tab area, and click on New in the window that pops up, then on Server.

In the wizard that pops up, select Local Test Server for SAP NetWeaver Cloud as the server type, and click on Next.

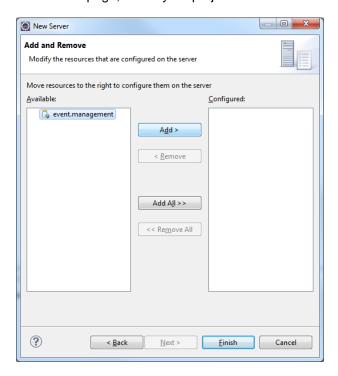


Leave the defaults on the next page of the wizard, and click on Next.

Make a note of the HTTP port number on the following page of the wizard, especially if it isn't the default 8080. You will need it in section 6.4. Click on *Next* again.



On the next page, select your project on the Available list and click on Add. Then hit Finish.



6.2.2 Add On-Premise Connection and Users

Double-click on the newly created server entry titled *Local Test Server for SAP NetWeaver Cloud at localhost* in the *Servers* tab.

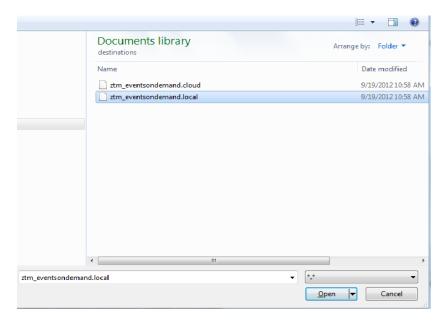
Click on the Connectivity tab under the list of tabs that appears in the upper section of the Eclipse window.



Click on the Import icon.

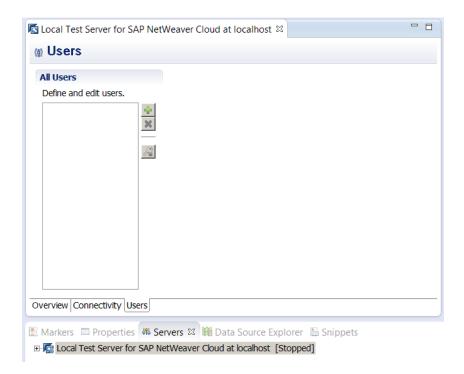
In the Windows File Explorer that appears, navigate to **Network** → **fairfile.fair.sap.corp** → **session** → **CD261** → **Code to Import** → **destinations**.

Double-click on the ztm_eventsondemand.local file.



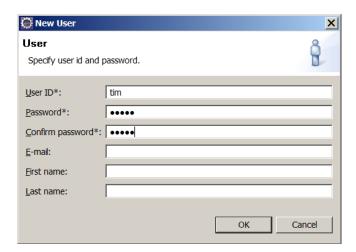
Save the entry.

Click on the Users tab under the list of tabs that appears in the upper section of the Eclipse window.



Click on the Add icon.

In the *New User* window that appears, enter a *User ID* and *Password* of your choice, and then do a *Confirm password*. The other fields can remain blank. Click on *OK*. Make a note of the user id and password you entered – you will need them in section 6.4.



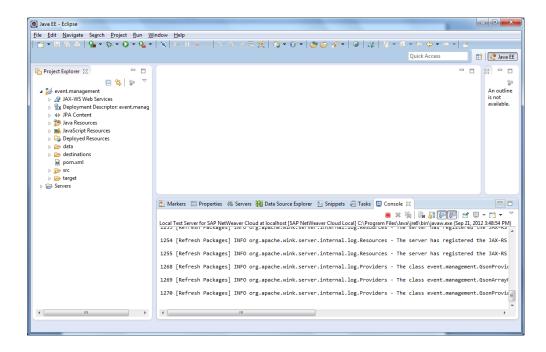
Save the entry.

6.3 Start Server

In Eclipse, make sure you are in the **Servers** tab in the lower right section of the window. Also make sure the **Local Test Server for SAP NetWeaver Cloud at localhost** is listed in the tab.

Right-click on the entry and click on Start.

Make sure the server has started without any errors. You can observe any messages and overall progress in the **Console** tab.

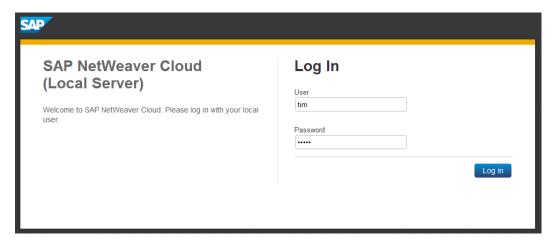


6.4 Test Application

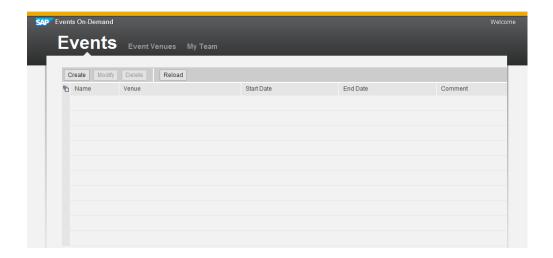
Open up a Google Chrome browser window.

Enter the URL: <a href="http://localhost:<port_number">http://localhost:<port_number>, where <port_number> is the port number you noted in Exercise 1, Section 1.3.1 when you created the server. NOTE: the default port number is 8080 – eg. enter http://localhost:8080.

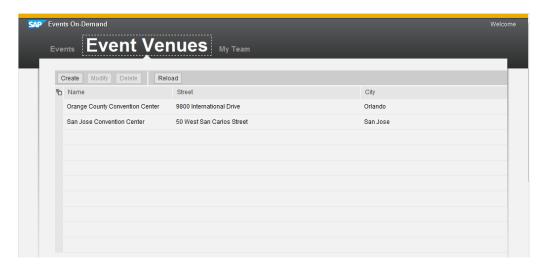
The login page for the application should come up. Enter the username and password you defined in Section 6.2.2, and click on the *Log in* button.



You should see the *Events* page appear. It should be empty with no data.



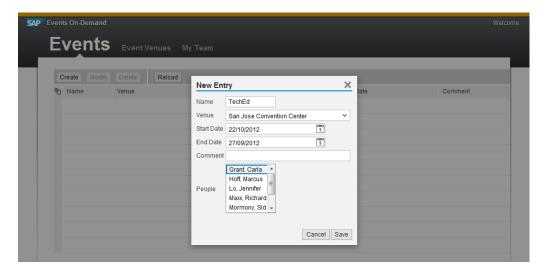
Click on the *Event Venues* tab. You should see some location data that was pulled directly from the on-premise ERP system.

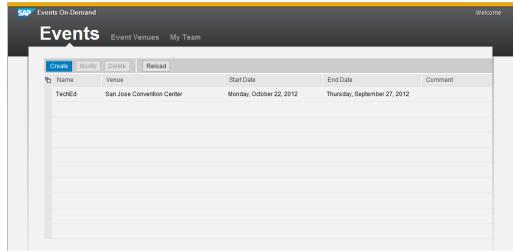


Click on the *My Team* tab. You should see some people data that was pulled directly from a SuccessFactors Employee Central application in the cloud.



Now go back to the *Events* tab, and try adding one or two event records by clicking on the *Create* button. Make sure the records save successfully.





Congratulations! You have successfully built and deployed a working application on your local instance of NetWeaver Cloud.

Exercise 7 - Run Application in the Cloud

In this exercise, you will deploy the same application to the cloud itself.

7.1 Update ProxySelector.java

In Eclipse, in the Project Explorer, navigate to **src >main >java >event >management** under the **event**.**management** project.

Double-click on the *ProxySelector.java* file.

In the file, scroll down to the location with the following code:

```
1.add(Proxy.NO_PROXY);
```

Comment out this line, and un-comment the line immediately below:

1.add(new Proxy(Proxy.Type.HTTP, new InetSocketAddress("proxy",8080)));

```
Project Explorer ⋈ 🖹 🥞 😭 🌣 🗖 🖺 ProxySelector.java ⋈
 ProxySelector(java.net.ProxySelector def) {
     defsel = def;
    🔁 Deployment Descriptor: event.manage
    ♦ JPA Content
                                        public java.util.List<Proxy> select(URI uri) {
     🛮 👺 src/main/java
                                              throw new IllegalArgumentException("URI can't be null.");

▲ # event.management

         ActiveUser.java
         ActiveUserServlet.java
         ▶ I EventObject.java
         .add(Proxy.NO_PROXY);
         GsonProvider.java
         ProxySelector.java
                                              l.add(new Proxy(Proxy.Type.HTTP, new InetSocketAddress("proxy",
8080)));
         ResultCache.java
         return 1;
          SFObject.java
       ▶ ♣ event.management.persistence.
```

Save the file.

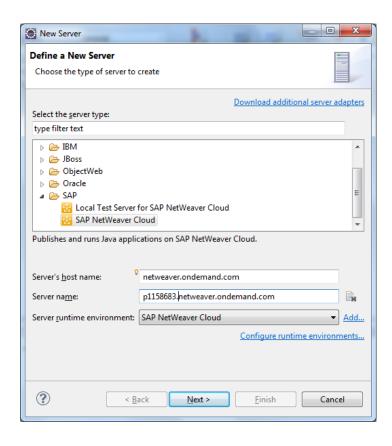
Clean the project by clicking on *Project* -> Clean.

7.2 Deploy Application to Server

In Eclipse, make sure you are in the **Servers** tab in the lower right section of the window. Right-click in that space, and then select **New->Server**.

Select **SAP NetWeaver Cloud** as the server type in the popup wizard that appears (titled **Define a New Server**). Update the **Server name** field to **<your-assigned-user>.netweaver.ondemand.com**, where **<your-assigned-user>** is the individual user id given to you by the workshop instructor. NOTE: do not include the '<' and '>' characters in your entry.

Leave everything else as-is, and then click on Next.



In the next page of the wizard (titled SAP NetWeaver Cloud Application), enter the following fields:

Application name: <your-assigned-user>

(NOTE: do not include the '<' and '>' characters in your entry)

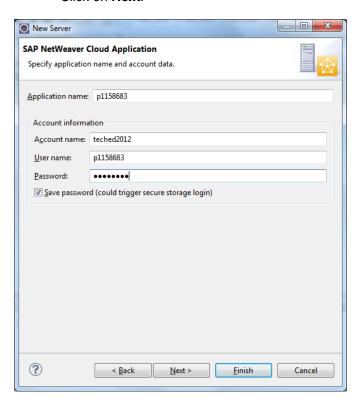
Account name: teched2012

User name: <your-assigned-user>

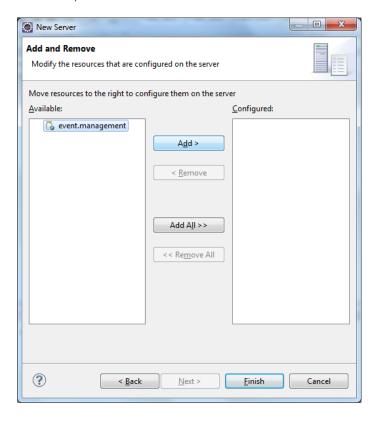
(NOTE: do not include the '<' and '>' characters in your entry)

Password: Abcd1234

Click on Next.



In the next page of the wizard (titled *Add and Remove*), select the *event.management* entry under the *Available* box on the left, and click on the *Add* button. Click on *Finish*.

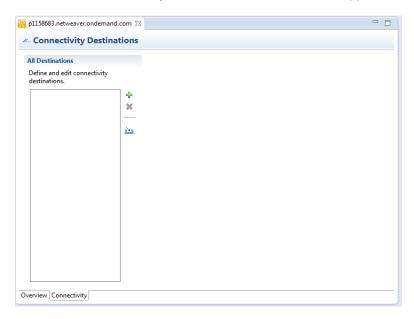


The server should get created.

7.3 Add On-Premise Connection

Double-click on the newly created server entry titled **<your-assigned-user>.netweaver.ondemand.com** in the **Servers** tab.

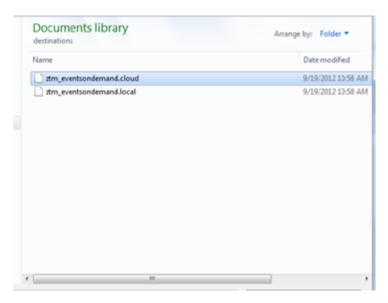
Click on the Connectivity tab under the list of tabs that appears in the upper section of the Eclipse window.



Click on the Import icon.

In the Windows File Explorer that appears, navigate to **Network** → **fairfile.fair.sap.corp** → **session** → **CD261** → **Code to Import** → **destinations**.

Double-click on the **ztm_eventsondemand.cloud** file.



Save the entry.

Back in the **Servers** tab, right-click on the newly created server entry, and select **Start**. The server should start and run the application.

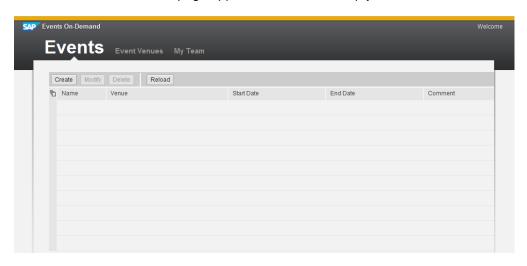
7.4 Test Application

Open up a Google Chrome browser window.

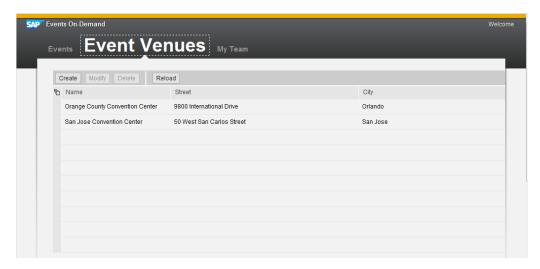
Enter the URL: <a href="http://<your-assigned-user>teched2012.netweaver.ondemand.com">http://http://p1158683teched2012.netweaver.ondemand.com. NOTE: do not include the '<' and '>' characters in your entry. eg. enter http://p1158683teched2012.netweaver.ondemand.com.

The login page for the application should come up. Enter your **SCN** username and password (SAP Community Network) and click on the **Log In** button. If you do not have one, please register on http://scn.sap.com or see your workshop instructor.

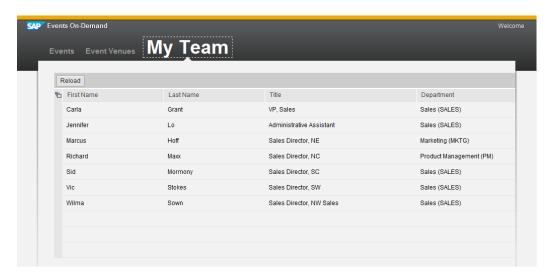
You should see the *Events* page appear. It should be empty with no data.



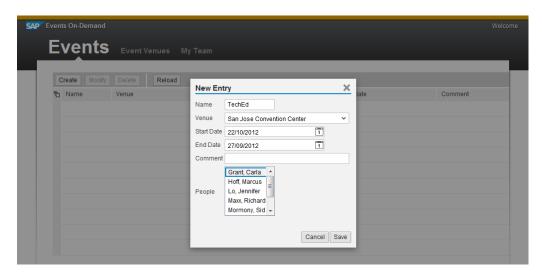
Click on the *Event Venues* tab. You should see some location data that was pulled directly from the on-premise ERP system.

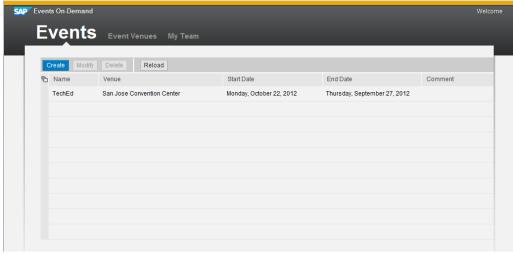


Click on the *My Team* tab. You should see some people data that was pulled directly from a SuccessFactors Employee Central application in the cloud.



Now go back to the *Events* tab, and try adding one or two event records by clicking on the *Create* button. Make sure the records save successfully.





Congratulations! You have successfully deployed your application to SAP NetWeaver Cloud.

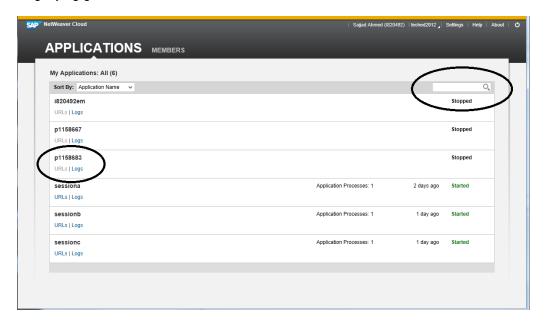
Exercise 8 – Monitor Application

In this exercise, you will check to make sure your application is actually running without any issues in the cloud.

8.1 Locate Your Application

In a web browser, enter the following URL: https://account.netweaver.ondemand.com/

Once the NetWeaver Cloud accounts page appears, type your allocated user id in the search field and hit the magnifying glass icon.



Once you have found your server, verify that it is in a **started** state. If you click on the Logs link, you will be taken to a separate page where you can view the detailed log files.

This concludes the workshop. It was designed to give you hands-on experience with the NetWeaver Cloud platform, so that you can feel comfortable using the tools and services to develop and deploy your own applications in the cloud. Hopefully you have found it useful.

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