SAP Fiori provides three types of apps: transactional, fact sheet, and analytical. Prior to developing and extending these apps, they must be implemented on a database. Discover how to implement analytical apps on an SAP HANA database both with and without the SAP Smart Business Modeler. This chapter will outline the steps necessary to complete this process.
Chapter 6

This chapter walks you through implementing analytical apps with and without the SAP Smart Business Modeler.

6 Implementing Analytical Apps

In Chapter 1, we discussed the architecture and communication channels between different layers for analytical apps. In this chapter, we’ll provide you with the step-by-step instructions involved in implementing analytical apps run on an SAP HANA database, which use virtual data models (VDM). We’ll use an example based on the Days Sales Outstanding app and the Profit Analysis app. However, these steps apply to most analytical app implementations.

In Section 6.1, we’ll begin with an overview of the standard analytical apps and analytical apps that are created using SAP Smart Business Modeler, which are enriched analytical apps with real-time key performance indicator (KPI) data that are designed for specific business roles. We’ll include in our discussion the SAP Fiori roles for different lines of business (LOBs). We’ll then look at the prerequisites that need to be covered prior to the Days Sales Outstanding app implementation in Section 6.2, before diving into the KPI modeling steps.

In Section 6.3, we’ll discuss the SAP Smart Business Modeler and model a KPI using an example based on the Days Sales Outstanding app. In addition, we’ll cover the technical aspects of the SAP Smart Business Modeler and show you how to leverage them in conjunction with an analytical app. You’ll then learn how to create a generic drilldown application using the SAP Smart Business Modeler. At the end of this section, we’ll show you how to create your own catalogs and groups to enable the app.

In Section 6.4, we’ll introduce you to analytical apps that don’t require the SAP Smart Business Modeler to implement them. We’ll use an example based on the Profit Analysis app and provide high level steps on how to implement them. As previously mentioned, these steps apply to most analytical apps that don’t use the SAP Smart Business Modeler.
6.1 Overview

SAP Fiori analytical apps are the new user experience (UX) for SAP Business Suite powered by SAP HANA and are developed using SAPUI5. These apps allow real-time insights into your business by displaying KPIs, allowing you to make faster, better decisions. In this chapter, we’ll show you how to configure both analytical app types with examples based on the Days Sales Outstanding app and the Profit Analysis app, respectively.

There are two types of apps under the analytical umbrella:

- Analytical apps (non-smart apps)
  These apps provide real-time information on large volumes of data.

- Analytical apps designed using SAP Smart Business Modeler
  These apps closely monitor the most important KPIs. SAP Smart Business apps are analytical apps that offer drilldown capabilities based on the SAP Smart Business framework.

In Chapter 1, we discussed SAP Fiori roles for different LOBs. For example, under the SAP UX for Finance LOB, you have account payable, accountant, cash manager, and GL accountant roles. Certain apps can be configured for each of these roles. Figure 6.1 shows an SAP Smart Business product called SAP Smart Business for SAP S/4HANA Finance (formerly SAP Smart Business for SAP Simple Finance). These products contain one or more analytical apps. Similarly, for each LOB, there are different SAP Smart Business products.

Implementation Prerequisites

A number of prerequisites need to be fulfilled prior to implementation to configure the analytical apps. In Chapter 2, Section 2.5.3, we covered all the components that have to be installed on SAP HANA and the ABAP frontend and backend servers. The following are some of the key benefits of analytical apps designed using the SAP Smart Business Modeler (smart apps):

- They offer role-based access to all relevant information, such as KPIs, OPIs, news feeds, specific tasks, trends, and alerts.
- You can easily build your own KPI with threshold values and color-coded visualizations.
- You can create a drilldown from one application to another, to an SAP Lumira story board, or to an SAP BusinessObjects Design Studio application.
- They provide end-to-end insight into action scenarios, including simulation and forecasting.

We’ve covered some of the basic concepts of analytical apps. Before you enable and implement these two types of analytical apps, let’s review some of the prerequisites.
The following is a quick checklist of components that should be installed and configured in your system:

- Install the KPI framework on the ABAP frontend server
- Enable the KPI framework on the SAP HANA server
- Install SAP Gateway on the ABAP frontend server
- Install the central UI components
- Install the following SAP Smart Business products on the ABAP frontend server:
  - SAP Smart Business for CRM 1.0
  - SAP Smart Business for FCC 1.0
  - SAP Smart Business for ERP 1.0
  - SAP Smart Business for GRC 1.0
  - SAP Smart Business for EM 1.0
  - SAP Smart Business for TM 1.0
- Configure the SAP Web Dispatcher
- Install the SAP HANA Application Lifecycle Manager (HALM)
- Enable SAP HANA authentication and single sign-on (SSO)
- Assign the PFCG role /UI2/SAP_KPIMOD_TCR_S to your frontend user
- Assign the role, sap.hba.r.sb.core.roles::SAP_SMART_BUSINESS_MODELER, to your SAP HANA user to access the SAP Smart Business Modeler

Important!

You have to implement the SAP Notes that are required for every specific app. Refer to the app-specific online help at http://help.sap.com/fiori.

By now, you know that analytical apps run on an SAP HANA database that houses the KPI data. For the users to access the data from the SAP HANA database, you need to provide access to SAP HANA from the ABAP frontend server. For that, you need to enable user access to the KPI data (see Chapter 3, Section 3.2 and Section 3.3).

There are two ways to implement analytical apps, and the implementation differs according to the type of app that you want to use:

- **Analytical apps launched using the KPI tile**
  For these types of apps, you can either model your KPI or use predefined KPIs with the SAP Smart Business Modeler apps. In addition, you can even configure a generic drilldown using a predefined template or a custom drilldown. We’ll cover this implementation method in Section 6.3.

- **Analytical app that uses the app launcher tile**
  App-specific content is provided for these types of apps. This content defines what to display and how to display it in SAP Fiori Launchpad. You can’t adapt or configure the information displayed by these apps. We’ll cover this implementation method in Section 6.4.

We’ll begin by implementing analytical apps using the SAP Smart Business Modeler.

### 6.3 Analytical Apps with the SAP Smart Business Modeler

The SAP Smart Business Modeler is a tool delivered as part of the SAP Smart Business suite. This tool allows you to model KPIs and report tiles that enable targeted monitoring of key business data using SAP Fiori Launchpad.

You can define KPIs and reports in the SAP Smart Business Modeler to which you can apply different evaluations so that you can respond to the ever-changing business landscape. You can even add additional perspectives on the relevant data with drilldown views that are accessed through the KPI tile.

Analytical apps using the SAP Smart Business Modeler are launched via KPI tiles. The Days Sales Outstanding app allows users to filter and drill down by various dimensions, and then check the days sales outstanding by customer country and company code. As you did with the transactional and fact sheet apps chapters, refer to the SAP Fiori apps reference library for the app that you’ll be implementing in the next section.

In the next sections, we’ll show you how to create a Days Sales Outstanding analytical app using the SAP Smart Business Modeler and how to add a drilldown from the KPI tile with step-by-step instructions. The first step is to create a KPI.
6.3.1 Create the KPI

The first task is to create a KPI by following these steps:

1. Log in to SAP Fiori Launchpad.
2. Click the Create KPI app under the KPI Modeler group (see Figure 6.2).

   ![Figure 6.2 Create KPI](image)

   **KPI Modeler Group**
   
   If you don’t see the KPI modeler group in SAP Fiori Launchpad, then refer Chapter 2, Section 2.6.4, and grant user access to the KPI modeler.

3. In the next screen, you need to fill in the following mandatory details about the KPI (see Figure 6.3):
   - **ID**: This has to be a unique ID for the KPI; you can either use the auto-generated ID or use a standard naming convention depending on your business. For this, we chose SAP.PRESS.DAYSalesOutstanding.
   - **Title**: Enter a meaningful name because this appears in the tile header at runtime. Here we entered “Days Sales Outstanding (KPI).”
   - **Description** (optional): Enter “Total Days Sales Outstanding for the last 12 months”.
   - **Type**: Choose Key Performance Indicator (KPI).
   - **Goal Type**: This indicates which kind of KPI value is meaningful for the application. Choose from three options:
     - **Maximizing** (**Higher is better**): Higher the better; for example, profit-related KPI values are higher the better.
     - **Minimizing** (**Lower is better**): Lower the better; for example, cost-related KPI values are lower the better.
     - **Target** (**Closer to target is better**): Closer value is to the target is better, for example, attrition rate.
       
       Here we chose Minimum (**Lower is better**).
   - **Tags** (optional): Enter these to more easily search for your KPI.
   - **Owner Name** (optional): Enter the name of the person responsible for executing the KPI.
   - **Owner ID and Email** (optional): Enter the details of the owner.

   ![Figure 6.3 KPI Parameters](image)
4. Scroll down to the next section, and select the values by clicking (see Figure 6.4).

![Figure 6.4 Data Source](image)

5. The following fields are displayed in Figure 6.4:

   - **SAP HANA View**: This is the source for this Days Sales Outstanding app. Select `sap.hba.r.sfin700.DaysSalesOutstandingQuery`.
   - **ODATA Service**: This is the path of the OData service responsible for aggregating the data. Enter `/sap/hba/r/sfin700/odata/ar/kpi.xsodata`.
   - **Entity Set**: This provides input parameters for the SAP HANA calculation view. Enter `DaysSalesOutstanding`.
   - **Value Measure**: Select only one value from this dropdown. Again, select `DaysSalesOutstanding`.
   - **Additional Information** (optional): You can enter additional information about the data source in this field.
   - **Semantic Object/Action** (optional): You can leave this blank because you’re using the default drilldown feature of SAP Smart Business apps.

6. After the fields have been entered, click **Activate and Add Evaluation**.

---

### 6.3.2 Create Evaluations of the KPI

An evaluation defines what information about the KPI or report is visible to the user at runtime. It’s a combination of variant/filters, thresholds, parameters, trends, and authorizations that are applied to a KPI or a report. You can create and activate evaluations for the KPIs or OPIs. Several different evaluations can be applied to a single KPI or report.

Let’s now create evaluations of the KPIs. Follow these steps:

1. Enter the values shown in Figure 6.5 in the **PARAMETERS** section.

![Figure 6.5 Evaluation Parameters](image)

2. Scroll down and verify the **DATA SOURCE** fields. In this section, you have additional options (see Figure 6.6):
   - **Scaling Factor**: You can select the scaling factor based on the value that you’re expecting:
     - **Auto**: Value is scaled to the available space. We select this option.
     - **K**: Value is displayed in multiples of 1,000.
     - **M**: Value is displayed in multiples of 1 million.
     - **B**: Value is displayed in multiples of 1 billion.
     - **T**: Value is displayed in multiples of 1 trillion.
Decimal Precision: You can choose appropriate decimal formats as well. Here we select Auto.

All the values that are configured in tiles, drilldowns, and tables for all measures of the selected evaluation are formatted by **Decimal Precision**. Only two decimal places are displayed to the right of the decimal point when the measure represents currency.

3. Next, you need to add variants/input parameters. A **variant** is a set of filter settings and input parameters that you define to achieve a particular perspective on a KPI or a report. Variants can be created without reference to a particular KPI or report because they are global in nature.

4. Scroll down to the **Input Parameters and Filters** section. Add the input parameters that are expected in the calculation view (see Figure 6.7):
   - **P_DisplayCurrency** equal to USD
   - **P_ExchangeRateType** equal to M
   - **P_RevnRollingAverageMonths** equal to 1
   - **P_RblsRollingAverageMonths** equal to 1

5. Next, you need to add the **Target**, **Thresholds**, and **Trend** values. The thresholds defined for the KPI evaluation are determined by the **Goal Type** you selected for the KPI earlier in Figure 6.3:
   - **Critical:** “100”
   - **Warning:** “30”
   - **Target:** “10”

   **Critical**, **Warning**, and **Target** values are the threshold values of a KPI. These depend on the goal type selected previously. For example, if you select **Lower is Better**, then your **Critical** and **Warning** values should be high. Therefore, when the KPI value is above 100, the KPI value color turns red, and when the KPI value is below 29, the KPI value color turns green. When the color is yellow, this indicates that the KPI has a value between 30 and 99 (see Figure 6.8).

6. Click **Activate and Configure Tile**.

You’ve now successfully created the KPI with the evaluation and activated the evaluation. In the next step, you’ll configure the KPI tile.
6.3.3 Configure the KPI Tile

A KPI tile is the graphical representation of the evaluation of the KPI, which is visible to the user at runtime. The KPI is displayed in a tile. When you click the tile in SAP Fiori Launchpad, you'll be able to drill down into the details. There are six types of KPI tiles:

- **Numeric Tile**
  The aggregated value of the KPI measure of the evaluation that you created in Section 6.3.2 is displayed in the tile. In this tile, data is displayed in numeric format. The color of the value that is displayed depends on the threshold values, which you created with critical and warning values (see Figure 6.9).

- **Deviation Tile**
  In this tile, data is displayed graphically in the form of a bullet chart that shows the current value of the KPI in relation to the target value and its thresholds (see Figure 6.10).

- **Trend Tile**
  For this title, data is displayed graphically in the form of a line chart showing the trend over time. You must enter a time dimension representing a duration to visualize this tile (see Figure 6.11).

- **Comparison Tile**
  With this tile, you select a dimension to show the top KPI values in comparison to each other. For example, if you select “country” as a dimension, you see a comparison of the values for the countries contributing to this KPI (see Figure 6.12).
Comparison tile multiple measures

This tile is similar to the comparison tile, but instead of comparing dimensions, you compare different measures. You can select a maximum of three measures or at least two measures for this tile (see Figure 6.13).

Dual tile

This tile shows two tiles in one single tile. The left part of this tile always displays the numeric tile, and on the right side, you can select any chart that is supported (see Figure 6.14).

Let’s now look at how to configure a KPI tile using the numeric tile as an example:

1. After clicking 

   ACTIVATE AND CONFIGURE TILE in the previous step, you should see the screen shown in the Figure 6.15.

2. Select your evaluation, and click ADD TILE.

3. Enter the following details as shown in Figure 6.16:
   - Tile Format: Select NUMERIC TILE from the dropdown list.
   - Title (KPI): Enter “Days Sales Outstanding (KPI)”.
   - Subtitle (Evaluation): Enter “Last 12 Months”.
   - Drill-Down: Choose GENERIC drill-down.
4. Click **Save and Activate**.

5. Now go back to the home screen by clicking .

That’s it! You’ve successfully created a KPI tile. Now users will see this KPI tile in SAP Fiori Launchpad. The next step is to create a generic drilldown, so that when users click on this tile it takes them to a detail level. A drilldown can be a generic drilldown application, which we’ll be covering in the next section, or it can even be a drilldown to another application such as SAP Lumira or a custom application.

### 6.3.4 Configure the KPI Drilldown

When you click on a KPI tile, it will take you to a drilldown application. This is configured using the Configure KPI Drill-Down app. You can create your own drilldown applications with different kinds of charts, tables, and filters, and you can customize it with different colors as well. A drilldown application contains views with tables and charts. In this section, we’ll look at configuring the KPI drilldown by creating views, configuring the KPI header, and creating filters.

#### Create Views

In this section, we’ll show you how to create views using the dimensions and measures from the KPI evaluation. Follow these steps:

1. From SAP Fiori Launchpad, click the **Configure KPI Drill-Down** app (see Figure 6.17).

   ![Configure KPI Drill-Down App](image)

   **Figure 6.17** Configure KPI Drill-Down App

2. Select the evaluation, and click **Configure** (see Figure 6.18).

3. Follow these steps to add the first view **Last 12 Months by Customer Country**.

4. Select the **Customer Country** from the **Dimension** list, and click OK (see Figure 6.19).

   ![Selecting Dimensions](image)

   **Figure 6.19** Selecting Dimensions
You should now see the dimension and the measure that you selected, as shown in Figure 6.20.

5. You can sort the dimensions by clicking the **Sort Order** dropdown list (see Figure 6.21).

6. In addition, you can configure views to provide additional insights into the KPI data. You can add a chart, add a table, or add both. The available visualization types are **Bar chart**, **Column chart**, **Line chart**, **Columns and Lines** combination chart, **Bubble chart**, and **Table**, as shown in Figure 6.22.

7. You can further configure the charts by choosing different color schemes, selecting single or dual axis, and formatting the value that is displayed in the chart (see Figure 6.23).

8. As shown in Figure 6.24, enter or select the following fields:
   - **Visualization Type**: You can select the type of visualization that you want to add to the view. Here we selected **Column**.
   - **View Title**: This view name will be visible to the user during runtime. Select **Last 12 Months By Customer Country**.
   - **Set Data Limit (optional)**: You can set the maximum number of records that can be retrieved during runtime.
   - **Data**: You can develop a view with the dummy data as well. Select **Actual Backend Data**.
9. Click **Save View**.

### Drilldown Application

You don’t need to activate the drilldown application. Changes are available immediately as soon as you save the application.

We've successfully created the Last 12 Months by Customer Company view. You can create several views and switch between different views during runtime.

Let’s add one more view: Days Sales Outstanding by Company Code. Follow these steps:

1. Click `+`, as shown in Figure 6.25.
2. Select the **Company Code** from the **Dimension** list, and click **OK** (see Figure 6.26).
3. Enter the following details as shown in Figure 6.27:
   - **Visualization Type:** Choose Column.
   - **View ID:** Enter “sap.press.DaysSalesOutstanding.Last12Months.ByCompanyCode”.
   - **View Name:** Enter “Last 12 Months by Company Code”.
4. Click **Save View**.

With these views, you can analyze data in several formats and with different selection criteria to allow for better insight into the business processes from different perspectives.

**Configure the KPI Header**

In the previous section, you created two views in the drilldown app. The next step in this process is to configure the KPI header. The KPI header is the header area of the KPI drilldown app. You can add mini charts in the header section, and these mini charts can be created on multiple measures.

Follow these steps:

1. Click **+** from the header section, as shown in Figure 6.28.

   ![Figure 6.28 Adding a KPI Header](image)

2. Select a **Mini Chart**; in this example, we selected **Actual Vs Target** (see Figure 6.29).

   ![Figure 6.29 Selecting a Mini Chart](image)
Create Filters
The next available option is to create filters. You can specify up to five filters that allow you to look at the drilldown data from different perspectives. Follow these steps:

1. Click to add filters.
2. Select the Currency, Customer, and Customer Region filters (see Figure 6.30).

3. Click Save Configuration.

You've now successfully created a numeric KPI tile with the evaluation and created a drilldown with two views. The KPI tile is now ready to be made available to users on SAP Fiori Launchpad.

6.3.5 Assign Roles to Users to Access SAP HANA Data
Users launch analytical apps from SAP Fiori Launchpad, and then the SAP Web Dispatcher directs the OData request from the client to SAP HANA XS. Both the data and the KPI definitions are stored in the SAP HANA system. So for the users to access the data and the KPI definitions from the SAP HANA system, you need to ensure that they are given the correct access rights.

In Chapter 2, we gave you an overview of the SAP Fiori architecture with the SAP HANA XS landscape. SAP HANA XS contains the SAP Fiori app content, KPI modeling framework, generic drilldown, and the VDM reuse content. SAP HANA XS reads data from the SAP HANA database. Using the OData services that require authorizations (i.e., SAP HANA privileges), these privileges are grouped together in roles, and these roles are assigned to SAP HANA database users.

There are certain generic roles that must be assigned to all users. In Chapter 2, we discussed these roles in greater detail. Besides generic roles, SAP delivers a role for each analytical app, which includes all app-specific privileges as well. For the users who need access to a specific app, you need to assign this app-specific role to the user.

SAP HANA Role
For more information on the SAP HANA role for a specific app, refer to the app-specific documentation.

Figure 6.31 shows the Days Sales Outstanding app-specific role that has to be assigned to the user for the user to read the KPI data from the SAP HANA system.
To assign this role to a specific user in the SAP HANA system, follow these steps:

1. Log in to SAP HANA Studio.
2. Under the SAP HANA system (HBD SYSTEM), choose Security • Users.
3. Double-click the user name (see Figure 6.32).

4. Click the + button on the Granted Roles tab (see Figure 6.33).

5. Search for and then select the sap.hba.r.sfin700.roles::SapSmartBusinessReceivablesManager role, and then click OK (see Figure 6.34).

6. Click the Deploy icon to save the changes.

You’ve successfully enabled the user to access data from the SAP HANA database. 

6.3.6 Activate the SAPUI5 Application for Generic Drilldown

We’ve discussed how to model a KPI using an example Days Sales Outstanding app. You then created a drilldown app that can launched from the Days Sales Outstanding KPI tile. The app is now ready to be enabled on SAP Fiori Launchpad. By now, you must be familiar with activating the Internet Communication Framework (ICF) service.

For every transactional app and fact sheet app, there is an app-specific SAPUI5 application that has to be activated on the frontend server. However, for analytical apps, there is just one service that needs to be activated. For all the generic
drilldown applications, the ca_kpi service has to be activated on the frontend server. Figure 6.35 shows the application details from the online help page.

**Figure 6.35** SAPU15 Application

Note

This step is performed only once; you don’t have to reactivate it every time you implement an analytical app.

Follow these steps to activate an ICF service:

1. Run Transaction SICF.
2. Search for the service name `ca_kpi` under `default_host/L54263/sap/L54263/bc/L54263/ui5_ui5/sap`.
3. Right-click on the service, and click **Activate**.

### 6.3.7 Assigning Authorizations to Users

The next step is to assign authorization for users/roles to access the evaluations. To do so, follow these steps:

1. From SAP Fiori Launchpad, click the **Manage KPI Authorizations** app (see Figure 6.36).

**Figure 6.36** Authorizations

2. Select the evaluation, and click **Authorize Users and Roles** (see Figure 6.37).

**Figure 6.37** Adding Users or Roles

3. You can switch between users and roles by selecting the Users or Roles icons. Then select the User/Role by clicking the checkbox next to the role/user name (see Figure 6.38).

4. Click **Save**.

**Figure 6.38** Selecting Users or Roles
6.3.8 Enable the App for Access in SAP Fiori Launchpad

After the ICF service is activated, the next step is to assign authorizations to the user to access the SAP KPIs catalog in SAP Fiori Launchpad. By now, you know that SAP Fiori Launchpad is the entry point for SAP Fiori apps. For users, SAP Fiori Launchpad displays the apps that have been assigned to the catalog designated for a user’s role. So, users who have the role SAP_KPIFRW4_TCR_S assigned to their user ID will have access to the KPI’s catalog.

Using Transaction PFCG (Role Maintenance), you can grant access to a user to the role SAP_KPIFRW4_TCR_S. This role allows the user to view all the analytical apps that are activated using the SAP Smart Business Modeler. You may want to refer Chapter 4, Section 4.3.3, on how to add roles to a user. Figure 6.39 shows the role assigned to an end user using Transaction PFCG.

You’ve successfully assigned the SAP standard role to a user who now has access to all the analytical apps. You created the Days Sales Outstanding app with the SAP Smart Business Modeler, and all the analytical apps that are created using the SAP Smart Business Modeler are automatically added to the predefined KPIs catalog in SAP Fiori Launchpad. After you activate the app in the SAP Smart Business Modeler, it’s automatically added to the KPI Catalog category.

Follow these steps to add the app to SAP Fiori Launchpad:

1. Log in to SAP Fiori Launchpad with the Test ID you accessed in the previous step (see Figure 6.39).

2. Click the Tile Catalog button on the bottom left of the screen.

3. Select SAP: KPIs from the catalog dropdown list, as shown in Figure 6.40.

You should then see the app that you created and activated in previous steps (see Figure 6.41).
4. Click on the +, and add the app to your My Home group by checking the box, and then click OK (see Figure 6.42).

![Figure 6.42 Adding an App to a Group](image)

5. Now go back to the home screen by clicking the button.
6. You should now see the DAYS SALES OUTSTANDING app under the My Home group, as shown in Figure 6.43.

![Figure 6.43 My Home Group](image)

7. Click the app to see the two views you created previously (see Figure 6.44).

![Figure 6.44 App with the Custom Views](image)

8. Toggle between the table and chart by clicking the buttons above the chart.
9. In addition, zoom in, zoom out, or view this app in full screen by using the buttons shown in Figure 6.45.

![Figure 6.45 View Features](image)

You should now understand the basics of creating an analytical app with the SAP Smart Business Modeler and how to grant access to the users. In the next section, we’ll discuss a more advanced topic: assigning an app using a custom role.
6.3.9 Assign the App Using a Custom Role

In a real-world scenario, you wouldn’t want to give access to all analytical apps to your users (i.e., any user who is assigned to the role SAP_KPIFRW4_TCR_S will have access to all the apps). In this section, we’ll show you how to create a custom catalog and role to give access to specific analytical apps in SAP Fiori Launchpad.

In Chapter 4, Section 4.6, we discussed how to create a custom catalog and custom role for a transactional app. You’ll be following a similar process for non-smart analytical apps.

To enable your app with custom roles and catalog, you must complete the following steps:

1. Log in to your ABAP frontend server, and run Transaction LPD_CUST.
2. Create a new launchpad by clicking the New Launchpad button.
3. Enter the fields as shown in Figure 6.46, and click Confirm.

![Figure 6.46 New Launchpad](image)

4. Click Yes to ignore the namespace.
5. Now create a new application by clicking New Application.
6. Enter “Days Sales Outstanding (KPI)” in the Link Text field. From the Application Type dropdown list, select URL. Click the Edit button next to the URL input box. Enter “/sap/bc/ui5_ui5/sap/ca_kpi/drilldown/” in the URL box (see Figure 6.47).

![Figure 6.47 App Parameters](image)

7. Click Show Advanced (Optional) Parameters.
8. Click the Edit button next to the Application Alias input box. Enter “analyze-KPIDetails” in the box. Enter “SAPUI5.Component=drilldown” in the Additional Information box (see Figure 6.48).

![Figure 6.48 Application-Related Parameters](image)

9. Click Save.
11. Click Catalogs.
12. Create a new catalog by clicking + at the bottom of the screen.
13. Enter the details shown in Figure 6.49.

![Create Catalog](image)

**Figure 6.49** Create Catalog

14. Click Save.
15. Select the catalog you created in the previous step.
16. Click the Target Mapping icon .
17. Click Create Target Mapping.

In the next steps, you'll define the target mapping, but before that, let’s explore some of the components of target mapping.

A **intent** allows users to perform actions on semantic objects. In this example, we choose ", which means we want to navigate to all the analytical apps and analyze all the details. The Intent area of the screen lets you perform actions without worrying about the technical part of the navigational target.

**Intent** has the following components (see Figure 6.50):

- **Semantic Object**
  - Represents business entities such as a product or sales order. You can bundle apps that reflect a specific scenario. In this exercise, we’re specifying a generic semantic object, which allows you to analyze all the semantic objects in a standardized way.
- **Action**
  - Defines which operations are performed on the semantic object, for example, displaying a purchase order. Here, display is the action, and the purchase order is the semantic object.

Follow these steps:

1. Enter the details in the Intent section as shown in Figure 6.50.
2. In the Target section, enter the details of the custom launchpad you created previously.

![Intent and Target](image)

**Figure 6.50** Intent and Target

3. Click Save.
4. Now create a new group by selecting the Group tab in the SAP Fiori Launchpad designer.
5. Create a new group by clicking + at the bottom of the screen.
6. Enter the details shown in Figure 6.51, and click Save.
You should now see the new group created in the SAP Fiori Launchpad designer.

7. Now add a tile by clicking on the tile with the + sign (see Figure 6.52).

8. Click the search icon to search the catalog.

9. Select the SAP: KPIs catalog from the list, as shown in Figure 6.53.

10. You’ll now see all the KPI tiles that have been modeled using the SAP Smart Business Modeler. Select the Days Sales Outstanding (KPI) app by clicking + at the bottom of the tile, as shown in Figure 6.54.

You should now see the Days Sales Outstanding app added to your group in the SAP Fiori Launchpad designer.
You’ve successfully created a custom catalog, created a custom group, and assigned the Days Sales Outstanding app to the group. The next step is to create a custom role and add the category and group to the role.

Follow these steps:

1. Log in to your ABAP frontend server, and run Transaction PFCG.
2. Enter the **Role name** “Z_ROLE_SM”, and click **Single Role** (see Figure 6.55).

![Figure 6.55: Create Custom Role](image)

3. Enter the **Description**, and click **Save**.
4. Click on the **Menu** tab, and select the **Catalog** from the **Transaction** button dropdown menu (see Figure 6.56).

![Figure 6.56: Assigning the Tile Catalog to the Role](image)

5. Enter “Z_CAT_U02” in the **Catalog id** field, and click **Confirm** (see Figure 6.57). This is the catalog you created previously.

![Figure 6.57: Catalog ID](image)

6. Add a group you created by selecting SAP Fiori Tile Group from the dropdown menu (see Figure 6.58).

![Figure 6.58: Assigning a Group Catalog to the Role](image)

7. To search for your group, click on the **Search** button next to the **Group ID**.
8. Select the **Z_GRP_CM1** group from the popup window (see Figure 6.59). Click **EXECUTE**.

![Figure 6.59: Group ID](image)

You’ve successfully created the custom role. Your role should now show both the category and group (see Figure 6.60).
The last step in this process is to assign the custom role to the user. Follow these steps:

1. Select the **User** tab.
2. Enter the **User ID**, and click **Save** (see Figure 6.61).

In this section, we’ve explored how to provide user access to analytical apps using both an SAP standard role and a custom role. You’ve successfully created a KPI tile, completed the frontend tasks, and created user authorizations.

### 6.4 Analytical Apps without the SAP Smart Business Modeler

In the previous section, you created an analytical app using the SAP Smart Business Modeler. In this section, we’ll show you how to enable an analytical app without using the SAP Smart Business Modeler with an example based on the Profit Analysis analytical app.

First, let’s get the app-specific configuration details from the SAP Fiori apps reference library. Figure 6.63 show the configuration details of the Profit Analysis app.
6.4.1 Activate the SAPUI5 Application

The first step in implementing an analytical app without the SAP Smart Business Modeler is to activate the SAPUI5 application. We’ve discussed these steps in detail in Chapter 4, Section 4.1. You can follow along with the same steps to activate the FIN_PRFTANLYS service (see Figure 6.64).

6.4.2 Assign the SAP HANA Role

In this section, we’ll assign a product-specific SAP HANA role to the user. This role enables users to access KPI data (i.e., the SAP HANA Live views and the OData service of the specific app). Follow the same steps from Section 6.3.5, and grant access to the user for the role sap.hba.apps.sfin.s.roles::fiori_sfin (see Figure 6.65).
6.4.3 Assign the App-Specific Catalog Role
The next step is to assign the app-specific PFCG role for the business catalog to the user. After this is enabled, the user will have access to the catalog in SAP Fiori Launchpad. Assign the SAP_SFIN_BCR_SALESMANAGER business catalog role to an end user (see Figure 6.66). Refer to Chapter 4, Section 4.3.3, for how to assign roles to users.

6.4.4 Add the App to SAP Fiori Launchpad
After you've completed all the preceding steps, the last step is to add the app to a group. Follow the same steps you performed in Chapter 4, Section 4.6.6, to add the Profit Analysis app to the Sales Manager group. You'll then see the Profit Analysis app under the Sales Manager group (see Figure 6.67).

6.5 Summary
In this chapter, we provided the step-by-step instructions on how to create an analytical app using the SAP Smart Business Modeler for the Days Sales Outstanding app. We discussed everything from how to create a KPI to providing authorization to the user to an app and its drilldown views. In addition, we showed you how to enable an app with custom groups and catalogs. We then gave you an overview of how to enable analytical apps that don't use a KPI tile to launch (non-smart analytical apps).

In the next chapter, we'll explore OData services in depth. Understanding OData services is very important, as you'll be using this concept a lot during the extension or creation of transactional, fact sheet, and analytical apps, which we cover in the third part of this book.
6.4.3 Assign the App-Specific Catalog Role ................................... 258
6.4.4 Add the App to SAP Fiori Launchpad .................................... 258
6.5 Summary ....................................................................................... 259

7 Creating OData Services with SAP Gateway ................................. 261

7.1 Introduction to OData ................................................................. 262
7.1.1 OData Service Basics .......................................................... 262
7.1.2 OData Service Queries ......................................................... 266
7.2 SAP Gateway Service Builder .................................................... 269
7.3 Modeling an OData Service ....................................................... 274
7.3.1 Importing OData Services .................................................... 276
7.3.2 Redefining OData Services ................................................. 295
7.3.3 Include Gateway OData Service ......................................... 308
7.4 Summary ....................................................................................... 309

PART III Custom Development and Extension

8 Introduction to SAP Web IDE ......................................................... 313

8.1 SAP Web IDE Overview .............................................................. 314
8.1.1 Architecture ......................................................................... 314
8.1.2 Advantages ........................................................................... 315
8.2 Setting Up SAP Web IDE with SAP HCP ................................. 316
8.3 Development Process Overview .............................................. 321
8.3.1 Create .............................................................................. 322
8.3.2 Develop ........................................................................... 328
8.3.3 Preview ............................................................................ 337
8.3.4 Deployment ........................................................................ 340
8.4 Summary ....................................................................................... 345

9 Creating and Extending Transactional Apps ................................. 347

9.1 Creating Transactional Apps ....................................................... 347
9.1.1 Create a New Project Using a Template ................................ 348
9.1.2 Test the App with Mock Data .............................................. 351
9.1.3 Deploy the App to the ABAP Backend Server .................... 353
9.1.4 Publish the App to SAP Fiori Launchpad ............................. 354
9.2 Extending Transactional Apps .................................................... 358
9.2.1 Extend the SAP Business Suite Layer ................................. 361
9.2.2 Extend the SAP Gateway Layer ......................................... 366
9.2.3 Extend the UI Layer ............................................................ 376
9.3 Summary ....................................................................................... 387

10 Creating and Extending Fact Sheet Apps ..................................... 389

10.1 Enabling the Fact Sheet App Editor Plugin ................................. 390
10.2 Creating Fact Sheet Apps ........................................................ 391
10.2.1 Create the Search Model .................................................... 392
10.2.2 Create the UI Layer ......................................................... 398
10.2.3 Deploy the Fact Sheet App .................................................. 403
10.3 Extending Fact Sheet Apps ...................................................... 407
10.3.1 Extend the Search Model .................................................... 408
10.3.2 Extend the UI Layer .......................................................... 419
10.3.3 Deploy the Fact Sheet App .................................................. 435
10.4 Summary ....................................................................................... 436

11 Creating and Extending Analytical Apps ..................................... 437

11.1 Introduction to SAP HANA Live .............................................. 437
11.1.1 SAP HANA Live Views ...................................................... 438
11.1.2 SAP HANA Live Browser .................................................. 439
11.1.3 Exposing SAP HANA Live Views to Analytical Apps .......... 440
11.2 Creating Analytical Apps ........................................................ 442
11.2.1 Create the SAP HANA Live View ....................................... 442
11.2.2 Create the OData Service .................................................. 448
11.2.3 Configure the KPI ............................................................. 457
11.3 Extending Analytical Apps ...................................................... 463
11.3.1 Extend the SAP HANA Live View ....................................... 464
11.3.2 Create the OData Service .................................................. 471
11.3.3 Configure the KPI ............................................................. 471
11.4 Summary ....................................................................................... 471

12 Workflow and SAP Fiori ............................................................ 473

12.1 Workflow Basics ................................................................. 473
12.2 Creating Standard and Custom Workflows with the My Inbox App ...................................................... 475
12.2.1 Prerequisites ................................................................. 476
Index

A

ABAP
  class, 117
  environment, 76
  servers, 31, 141
ABAP backend
  component, 91
  copy business role, 180
  server, 43, 78, 119, 144, 161, 353, 360
ABAP Data Dictionary, 279, 369
ABAP frontend
  components, 477
  server, 33, 43, 76, 86, 115, 138, 144, 161, 360
ABAP Repository, 377, 386, 403
Action, 249
Activate services, 164
Add node, 174
Add-on, 92
Administrator role, 124
Adopting reference, 123
Aggregation, 469
AJAX, 53
All Items Inbox, 478
All Stories, 520
All Views tab, 439
Analytic view, 441
Analytical app, 51, 159, 213, 214, 437
  architecture, 52
  creating, 442
  extending, 463
  nonsmart, 214, 255
  prerequisites, 215, 441
  SAP HANA layer, 463
  SAP HANA Live, 440
  SAP Smart Business Modeler, 214, 217
  UI layer, 463
Android, 30, 45
anno, 427
Annotation file, 420, 428
edit, 436
Anonymity, 41
Apache reverse proxy, 139
API, 53, 66, 328
App
  information, 342
  parameters, 247
  registration, 344
Apple, 44
  Application, 27, 121
  access file, 453
  alias, 186, 355
  descriptor file, 453
  details, 403
  link, 549
  parameter, 185
type, 185
Approve Purchase Orders app, 325
Apps reference library, 28, 84, 200, 255
Architecture, 30
  Association, 266, 271
  Atom Publishing protocol (AtomPub), 66, 262
  Attachments, 487, 546
  Attribute
    add, 412
    view, 441
  Authentication, 149
    process, 155
  Authorization, 240
    change, 177
default, 112, 174
    process, 155
    roles, 112
    start, 173
  Available fields, 428

B

Backend
  database, 78
  server, 31
BAdI, 496
  implementation, 497
  standard, 496
  user decisions, 502
BAPI, 71
Coherent, 30
Collaboration, 488
components, 508, 514
Collections, 68
Color palette, 549
Command shell, 59
Comments, 487
Communication channels, 42, 138, 140
security, 138
Communication path, 139
Comparison tile, 225, 226
Component
download, 96
version, 89, 95
Conceptual Schema Definition
Language (CSDL), 263
Configuration, 105
scope, 186
tile, 517
Configure KPI Drill-Down app, 228
Conflicts, 397
Connector, 202, 414
automatic, 206
manual, 204
Connector Administration Cockpit, 204,
390, 415
Consumer, 70
Consumer
layer, 71
type, 494
Contents, 430
Controller, 56
Create Sales Order app, 162, 172, 181
CRUD, 68, 70, 165, 266
CSS, 53
files, 547
Custom
background, 550
business catalog, 183
role, 194, 246
scope, 186
view, 245
Custom theme, 548
overwrite, 555
save and build, 553
text, 554
Customer Invoices app, 172

Barcode scanner, 537
Base class, 372
BEx query, 301
Blackberry, 45
Blue Crystal, 549
Bootstrapped, 64
BOPF, 297
BOR, 284, 285
Browser, 30, 42
BSP application, 390, 420, 436, 508
Business, 29
group, 299
function, 127
Business Object Processing
Framework (BOPF), 296
Business role
assign, 178
copy, 172, 180
custom, 183
edit, 173

Cache, 537
Calculation view, 442
activate, 446
copy, 444
create, 444
sales order, 442
Call browser, 107
Cash Flow – Detailed Analysis app, 524
Catalog, 171, 194, 248, 344, 356, 463, 510,
527
create, 189
group, 542
ID, 253
new, 188
role, 258
CR_SALES_ORDER_SRV, 399
Central hub deployment, 82, 478
Central User Administration (CUA), 156
Certificate request, 148
Change Sales Order app, 172, 183
Check Price and Availability app, 172
class-load, 54
Client, 30, 42, 76, 141

Data
binding, 56
model, 69, 275, 305
replication, 80
visualization tool, 515
Data Model from File, 276
Data Provider Base Class (_DPC), 372
Data Provider Class (DPC), 372
Data Provider Extension Class (_DPC_EXT),
273, 372
data source, 458
attribute, 288
map, 288
data-sap-ui-lib, 64
data-sap-ui-resourceRoots, 64
data-sap-ui-theme, 64
data-sap-ui-xx-bindingSyntax, 64
Days Sales Outstanding app, 213, 214, 217,
251, 523
DDIC structure, 279
import, 280
Decimal precision, 222
Decision
decision keys, 495
text, 495
Default language, 124
Delightful, 30
Delta indexing, 207
Deployment, 82, 118, 340
Design innovation, 29
Destination, 319
Develop Liquidity Plans app, 524
Development, 321
Deviation tile, 225
Dictionary objects, 363
Dimensions, 229
Discuss, 514
Drilldown, 222, 228, 239
dual tile, 226
Dynamic
data, 503
tile, 192

Eclipse IDE, 316
EDMX file, 326, 330
Email, 488
Embedded deployment, 82
advantages, 83
disadvantages, 84
Embedded search, 125, 204, 417
UI services, 126
Embedded service
authorization, 127
Enable, 28
Entity, 266
requests, 267
sets, 68, 263, 265, 272
types, 265, 270, 284
Entity Data Model (EDM), 263
EntityContainer, 265
Evaluation, 221, 459
Event type, 492
Existing Fact Sheet Application, 390, 398, 421
Expert Theming, 549, 552
Explore systems, 92
Extension, 326
class, 372
points, 377, 383
project, 378
views, 383, 467, 469
External service name, 106

Facets, 400, 425, 432
Fact sheet app, 50, 128, 158, 389
ABAP backend role, 205
ABAP backend server tasks, 199
annotation file, 427
architecture, 51, 389
authorization, 158
creating, 391, 414, 415
deploy, 403, 435
deploy plugin, 390
extending, 407
implementation, 199
run, 210, 434

Index

Index
Fact sheet app (Cont.)
Sales Order app, 407
SAPUI5 component, 200
search, 33
template, 324
UI layer, 419, 434
Filter, 236, 485, 498
Flower, 28
Full indexing, 207

G
Gateway client, 263, 374
General section, 503
Generic Interaction Layer, 299
Generic role, 114
GenIL, 299
GetList, 285
GIT, 315
Granted roles, 238
Graphical user interface (GUI), 28
Group, 32, 250, 545
GUI, 108, 151

H
Hash, 108, 109
key, 169
Hierarchy, 111, 165
Home group, 532
HTML request, 43
HTML5, 53
HTTP, 141, 147
connection, 140
response, 294
Human values, 29
Hypermedia a s the engine of application state (HATEOAS), 68

I
ICF nodes, 107, 109
Identity Provider (IDP), 151
Images, 551
Implementation, 76, 119, 122
Implementing class, 499
INA search request, 42
Indexing, 207, 416
clear, 208
keep, 208
real-time, 208
Input parameters, 223, 460
Installation, 86
Instance profile, 145
Integration, 30, 507
Intent, 190, 248, 530
Internet Communication Framework (ICF), 147, 162
Internet Communication Manager (ICM), 162
Internet-facing scenario, 138
iOS, 30

J
JavaScript, 53, 56
jQuery library, 53
JSON, 56
Juno, 316

K
Kepler, 316
Kerberos/SPNego, 149, 150
Key facts, 400, 430
KPI, 213, 214, 218
configure, 457, 471
create, 458
framework, 130, 216
header, 234
modeler, 89, 130, 442, 457
modeling framework, 52
parameters, 219
tile, 224, 463, 471

L
Landscape, 140
Landscape Planner, 92
Launchpad, 246, 406
new, 183
role, 184
LESS files, 547
Lines of business (LOB), 27, 46, 48, 214
Liquidity app, 524
listSize, 480
Load balancing, 41
Local object, 107, 371
Logan code, 124

M
Mac, 30, 44
Maintain services, 168
Maintenance Optimizer, 92
Manage Products app, 325
massAction, 481, 485
Master Detail app, 327
Microsoft Active Directory, 150
Mini chart, 235
Mobile app, 537
Mock data, 337, 351
Model, 55, 206
collection, 275
edit, 409
enhance, 409
node, 410
properties, 410
Model Provider Base Class (_MPC), 273, 372
Model Provider Extension Class (_MPC_EXT), 273, 372
Model-View-Controller (MVC), 55
Modification Free Fact Sheet Application, 421, 424
Multi-select, 484
MVC
concept, 55, 56
My Inbox app, 93, 94, 473, 475
All items, 483
architecture, 476
common issues, 482

N
Namespace, 184
Navigation
properties, 270
section, 504
target, 429
neo-app.json, 427
Network layer, 138
New, 28
field, 413, 433, 470
project, 366, 448
view, 470
New Extension Project
method, 322
New Fact Sheet Application, 398, 421
New Project from Sample Application, 324
method, 322
New Project from Template, 61, 323, 327, 348, 420
method, 322
News tile, 192
Notification tile, 513
Numeric tile, 224

O
Object
method, 491
navigator, 362
OData, 66, 147, 161, 165, 262, 463
activate service, 165, 291
add service, 292
advantages, 66
artifact, 368
consume service, 68
custom service, 380
generate service, 302
import service, 276
OData (Cont.)
model, 56
model service, 274
query options, 267
redefine service, 295, 367
register service, 290, 373
requests, 43, 79
SAP HANA Live view, 440
service, 43, 80, 173, 199, 200, 261, 298,
300, 308, 347, 418, 448, 453
service basics, 262
test service, 293, 373, 456
Online Text Repository (OTR), 426
Open Data Protocol, 66
OpenAPI, 53
Operational performance indicators (OPI), 215
Orion, 61, 315

Properties, 428
add, 481
Propose mapping, 288
Protocol, 139
Prototyping, 71

Q
Quality of Protection (QOP), 146
Query view, 439, 441
extension, 469
Quick Theming, 549, 550
quickAction, 481

R
Raw data, 447
Redefinition, 275
Refresh, 484
Registered Model (_MDL), 273, 372
Registered Service (_SRV), 273, 372
Release Campaigns app, 47
Renew, 28
Representational State Transfer, 67
Resource identification, 68
Responsive, 29
REST, 66, 70, 261
Reuse view, 439, 441, 469
Reverse proxy, 30, 40, 138, 141
server, 78
RFC
collection, 43, 119, 140, 146
generation, 274
RFC/BOR interface, 281
Risk category, 418, 433
Role-based, 29
Roles, 406
administrators, 516
assign, 467
change, 195
copy, 172
domain user, 517
maintainer, 123
technical, 516
template, 123

S
Sales Order app, 203, 204, 210, 542
Sales Order Fulfillment app, 259
Sales Order Tracker app, 358
SalesDistrict, 469
Sales Order Fulfillment app, 259
Sales Order app, 203, 204, 210, 542
SAML, 149
authentication, 152
Sample application, 325
SAP Advanced Planning and Optimization
(SAP APO), 104
SAP Analytics Foundation, 104
SAP Basis, 134
SAP Business Process Management, 475
SAP Business Suite, 51, 52, 75, 77, 103,
156, 464
integration, 119
layer, 71, 358
powered by SAP HANA, 214
SAP Business Warehouse
query, 299, 508, 532
SAP Business Workflow, 473, 474, 475
SAP BusinessObjects Design Studio, 215,
524, 527
SAP Cryptographic Library, 144
SAP Customer Relationship Management
(SAP CRM), 104
SAP Enterprise Warehouse
query, 299, 508, 532
SAP Financial Closing Cockpit (SAP FCC), 104
SAP Fiori, 75
app, 538
apps reference library, 84
architecture, 30, 437
basics, 27
communication channels, 42
corporation, 75
history, 27

Runtime
artifacts, 273, 306
objects, 289, 370

T
Technical, 516
Template, 123

P
Package, 362, 367, 442
definition, 443
select, 451
Partner structure, 364
Password, 150
Personal Security Environment (PSE), 144
Personalizer, 32
PFCG role for business catalog, 171
Ping Federate, 151
Predefined task list, 132
Prerequisites, 75
Preview, 337, 549
Private view, 439, 441
Product System Editor, 92
Products, 69
Product-specific UI, 81
Profile, 123
Profit Analysis app, 213, 255, 258
Project
activate, 455
create, 283
properties, 426
using a template, 348
project.json, 427

Index
564
Index
565
Transaction (Cont.)
SE01, 187
SE11 (ABAP Dictionary), 360
SE16, 108, 169
SE18, 496
SE80 (ABAP Object Navigator), 360, 362, 393, 404, 436
SEGW (Gateway Service Builder), 269, 283, 360
SICF (Maintain Services), 110, 115, 125, 240, 354, 479, 524
SM59, 119, 146
SMT1, 121
SPAM, 98
SPRO, 118, 494
STC01 (ABAP Task Manager), 132, 206
STC02, 133
SU01, 115, 127, 181
UIS/THEME.Designer, 548
UIS/THEME_TOOL, 548, 554
VA23, 375
Transaction app, 48, 103, 158, 347
ABAP backend roles, 180
ABAP frontend roles, 170
architecture, 359
components, 49
create, 347
deploy, 353
details, 353
extend, 358, 359, 360
OData services, 165
prerequisites, 161
publish, 354
run, 181
SAPUI5 component, 162
template, 324
test, 351
Transport Layer Security (TLS), 140
Transport request, 186, 394
Trend tile, 225

UI
add-on, 77
control library, 53
development toolkit, 53

UI Theme Designer, 33, 547, 548, 549
transaction code, 548
UI Theme Repository, 548
Uniform Resource Identifier, 66
Union, 469
Universal Work List (UWL), 474
URL, 262, 263, 295
URL, 32
rewriting, 147
User, 254
authentication, 149
authorization, 155, 156
experience, 27
maintenance, 115, 129
management, 155
preferences, 39
role, 181
USOBHASH, 169
UX, 27
benefits, 29
design principles, 29
design services, 28
strategy, 28

Value measure, 459
Values help view, 438
Variant, 222
Views, 56
create, 462
extend, 383
replace, 469

Virtual data model (VDM), 31, 72, 103, 213, 437, 443, 441
reuse content, 53
Visualization, 231

Web
acceleration, 41
browser, 139
Web application firewalls, 41
security, 41
Web Dynpro, 32, 71, 128
What You See is What You Get (WYSIWYG), 328, 547
Windows, 30, 43
Workflow, 473
basics, 473
builder, 489, 490
custom, 475
fields, 492
ID, 495
scenarios, 493
standard, 478
template, 474, 488
Workspace, 450

X.509 certificate, 154
XML, 56
code, 435
view, 383
XSL Transformation (XSLT), 435
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