



PUBLIC

SAP Asset Manager

Document Version: 4.0 1911 – 2020-07-07

SAP Asset Manager Installation Guide

Content

- 1 SAP Asset Manager Architecture. 4**
- 1.1 SAP Cloud Platform Overview. 4
 - SAP Cloud Platform mobile services Overview. 7
 - SAP Cloud Platform SDK Overview. 8
- 2 Deployment and Configuration of SAP Asset Manager. 9**
- 2.1 High-Level Installation Process for SAP Asset Manager. 9
- 2.2 Relevant SAP Notes. 10
- 2.3 Installation Prerequisites. 11
- 2.4 Setting up the SAP Cloud Platform Cloud Connector System Mapping. 12
- 2.5 Creating an Application in SAP Cloud Platform mobile services - Overview. 13
 - Creating an Application in SAP Cloud Platform mobile services - Neo. 13
 - Creating an Application in SAP Cloud Platform mobile services - Cloud Foundry. 18
- 2.6 Enabling the Mobile Development Kit. 21
 - Importing Metadata Definitions to the SAP Web IDE Mobile Development Kit. 21
 - Deploying Metadata Definitions to Mobile Services. 23
- 3 Building / Branding the SAP Asset Manager Application. 25**
- 3.1 Building the SAP Asset Manager Application Overview. 25
- 3.2 Building the SAP Asset Manager Application Client. 26
 - Allowing Custom URI Schemes. 33
 - Enabling OData Service in Demo Mode for 36
- 4 Updating Offline Settings for the SAP Asset Manager Application. 37**
- 4.1 Updating Offline Settings for SAP Asset Manager Overview. 37
- 4.2 SAP Asset Manager Entity Sets. 38

Document History

Before you begin reading this guide, be sure that you have the latest version. Find the latest version at https://help.sap.com/viewer/p/SAP_ASSET_MANAGER.

The following table provides an overview of the most important document changes.

Document Version	Date	Description of Changes
1.0	NOV 2019	Original release of the <i>SAP Asset Manager Installation Guide</i> , version 1911
1.1	JAN 2020	Updated the Updating Offline Settings for SAP Asset Manager Overview [page 37] with additional information links
1.2	MAR 2020	Multiple minor changes, corrections, and additions Moved all push-related topics and procedures to the <i>SAP Asset Manager Configuration Guide</i>
1.3	JUN 2020	Added prereq step to High-Level Installation Process for SAP Asset Manager [page 9]

1 SAP Asset Manager Architecture

1.1 SAP Cloud Platform Overview

SAP Cloud Platform enables customers and partners to rapidly build, deploy, and manage cloud-based enterprise applications that complement and extend your SAP or non-SAP solutions, either on-premise or on-demand.

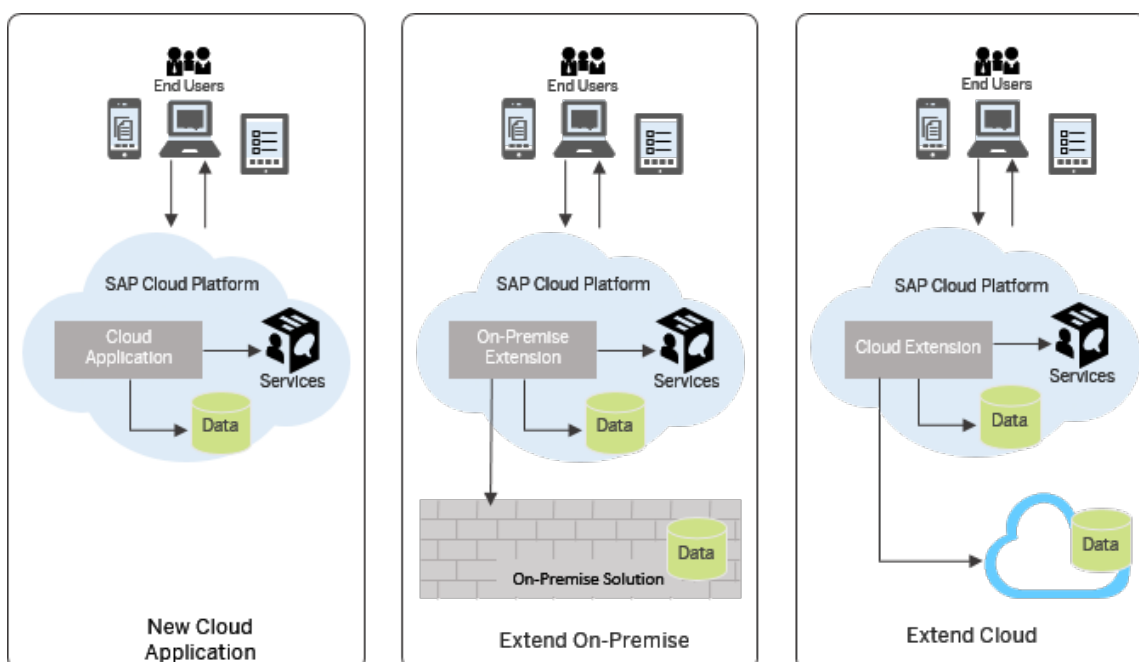
i Note

For more information on prerequisites and procedures for setting up customer accounts on SAP Cloud Platform, see the topic [Getting Started with a Customer Account: Workflow in the Neo and Cloud Foundry environment](#).

SAP Cloud Platform is an in-memory cloud platform based on open standards. It provides access to a feature-rich, easy-to-use development environment in the cloud. The platform includes a comprehensive set of services for integration, enterprise mobility, collaboration, and analytics.

As a Platform-as-a-Service operated by SAP, our product frees your administrators from any infrastructure and IT costs and offers state-of-the-art quality of service.

Scenarios



- **Develop new cloud applications**
This scenario is suitable for companies that need to start developing new applications from scratch. You can create brand new cloud applications and reach your end customers easily, with a low learning curve and small capital investment in software and hardware.
- **Develop on-premise extensions**
This scenario is suitable for companies that have already invested a lot in on-premise IT infrastructure. You can create the new extensions to the system on the cloud, and integrate seamlessly with the on-premise components using Connectivity Service and Cloud Connector.
- **Develop cloud extensions**
At SAP Cloud Platform, you can also develop extensions to other cloud products, such as SuccessFactors.

Application development

You can use the following programming models to build highly scalable applications:

- **Java** - SAP Cloud Platform is Java EE 6 Web Profile certified. You can develop Java applications just like for any application server. You can also easily run your existing Java applications on the platform.
- **SAP HANA** - you can use the SAP HANA development tools to create comprehensive analytical models and build applications with SAP HANA programmatic interfaces and integrated development environment.
- **HTML5** - you can easily develop and run lightweight HTML5 applications in a cloud environment.
- **SAPUI5** - use the UI Development Toolkit for HTML5 (SAPUI5) for developing rich user interfaces for modern Web business applications.

Solutions

In the context of SAP Cloud Platform, a solution is comprised of various application types and configurations created with different technologies, and is designed to implement a certain scenario or task flow. You can deploy solutions by using the Change and Transport System (CTS+) tool, the console client, or by using the cockpit, where you can also monitor your solutions. To describe and technically realize the solutions, SAP introduces the multi-target application (MTA) model. It encompasses and describes application modules, dependencies, and interfaces in an approach that facilitates validation, orchestration, maintenance, and automation of the application throughout its lifecycle.

Runtime container for applications

Applications developed on SAP Cloud Platform run in a modular and lightweight runtime container. The platform provides a secure, scalable runtime environment with reusable platform services.

Virtual Machines

Virtual machines allow you to install and maintain your own applications in scenarios not covered by the platform. A virtual machine is the virtualized hardware resource (CPU, RAM, disk space, installed OS) that blends the line between Platform-as-a-Service and Infrastructure-as-a-Service.

Services

You can consume a set of services provided by SAP Cloud Platform according to the technology you prefer and the use cases of your scenarios.

Integration with SAP and non-SAP software

SAP Cloud Platform facilitates secure integration with on-premise systems running software from SAP and other vendors. Using the platform services, such as the connectivity service, applications can establish secure connections to on-premise solutions, enabling integration scenarios with your cloud based applications.

In-memory persistence

SAP Cloud Platform includes persistence powered by SAP HANA, taking full advantage of its real-time, in-memory computing technology and built-in analytics.

Secure data

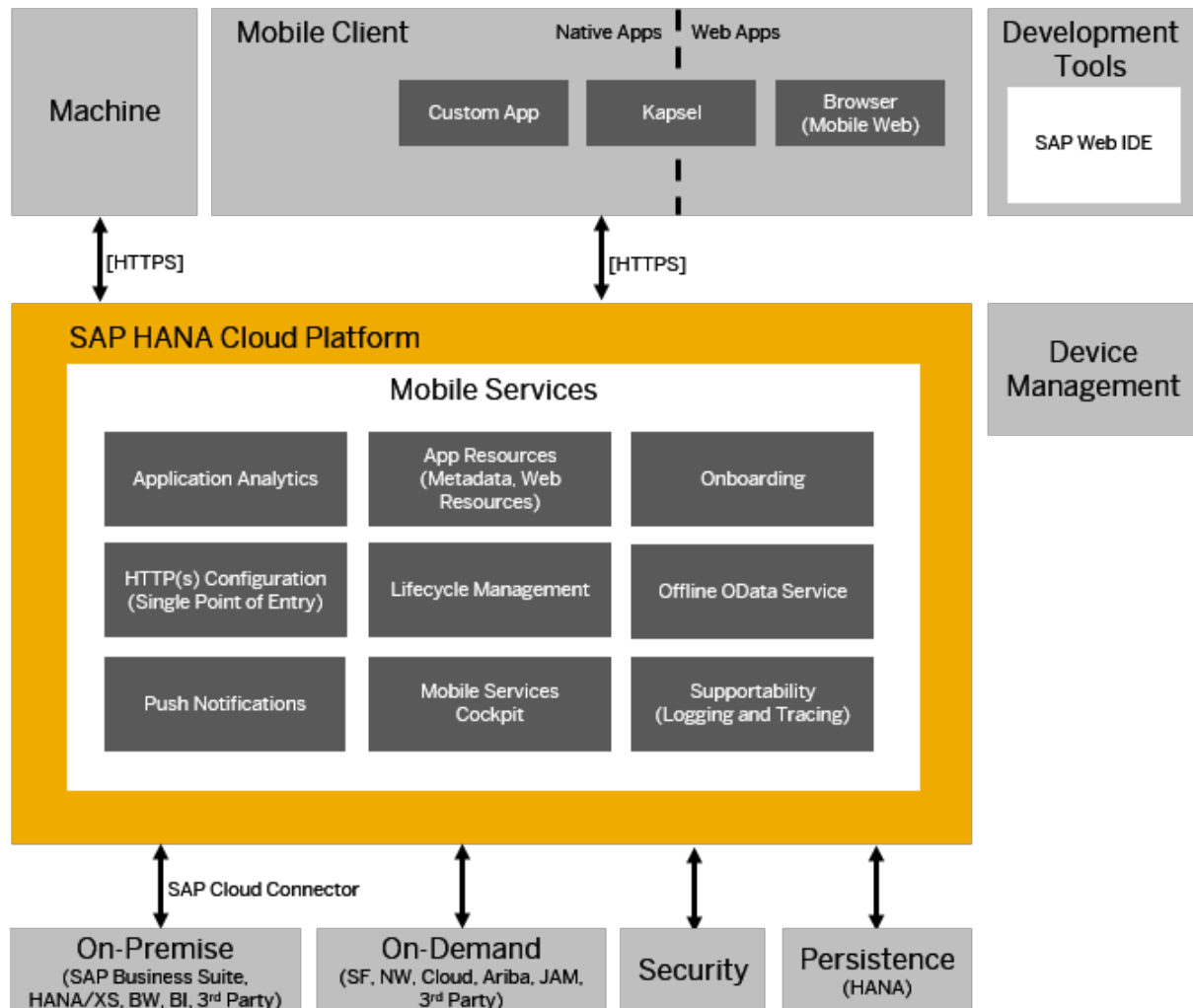
Comprehensive, multilevel security measures have been built into SAP Cloud Platform. This security is engineered to protect your mission critical business data and assets and to provide the necessary industry standard compliance certifications.

Free trial

You can start by getting a free SAP Cloud Platform developer license on SAP Cloud Platform Developer Center that also gives you access to our community and all the free technical resources, tutorials, blogs, support you need.

1.1.1 SAP Cloud Platform mobile services Overview

SAP Cloud Platform mobile services provides services to mobile applications, such as application analytics, app resources, onboarding, and HTTP/HTTPS configuration.



Mobile application services consist of the following:

- **Application analytics:** Usage statistics that are displayed graphically in the Mobile Services Cockpit
- **App resources:** Containers of dynamic configurations, styles, or content that are downloaded by native applications
- **Onboarding:** Authentication of users who are registering through SAP Mobile Place
- **HTTP/HTTPS configuration:** Open standards for client communications
- **Life cycle management:** Managing and deploying multiple versions of an application
- **Offline oData service:** Optimizes data transport between the back end and the client offline store
- **Push notifications:** Native notifications sent from back-end systems to the server, which forwards them on to the clients
- **Mobile Services Cockpit:** Deploys, manages, and monitors applications
- **Supportability:** Logs for monitoring system health and troubleshooting

SAP Cloud Platform mobile services can expose on-premise back end services through SAP Cloud Connector, and on-demand back end services directly.

SAP Cloud Platform mobile services security enables you to use an on-premise identity management system for on-demand applications. You can use basic authentication using LDAP, or form-based application authentication using SAML.

All configuration and runtime data is persisted in an SAP S/4HANA database.

1.1.2 SAP Cloud Platform SDK Overview

The SAP Cloud Platform SDK includes well defined layers (SDK frameworks, components, and platform services) that simplify development of enterprise-ready mobile native apps that take full advantage of the mobile platform features.

The SAP Cloud Platform SDK is tightly integrated with the SAP Cloud Platform Mobile Services Cockpit to provide the following:

- End-to-end integrated security
- Support for offline applications
- Enterprise grade logging and monitoring support
- Access to core SAP ERP or SAP S/4HANA data and business processes, as well as access to third-party data sources
- Access to SAP Cloud Platform capabilities and services

For more information about the SAP Cloud Platform SDK see the following topics, depending on your mobile client platform:

- [SAP Cloud Platform SDK for iOS](#)
- [SAP Cloud Platform SDK for Android](#)

2 Deployment and Configuration of SAP Asset Manager

2.1 High-Level Installation Process for SAP Asset Manager

To install the SAP Asset Manager application, you must follow a specific order for certain steps in the installation process. Some objects in the installation rely on previously installed objects for IDs or URLs, or other data.

Use the following high-level process table for information on the process steps to take when installing the SAP Asset Manager.

Step	Product	Role	Prerequisite Steps
Prerequisites	Before you can install the SAP Asset Manager application, ensure that the following SAP components are installed: <ul style="list-style-type: none">Plant Maintenance is installed and runningHR: If you're using distribution work orders by personnel number, then the HR personnel management module is required.		
1	Creation or update of SAP Cloud Platform account Use the default subaccount or create a subaccount within your SAP Cloud Platform account. See the following: <ul style="list-style-type: none">Getting Started topic in the <i>SAP Cloud Platform</i> guideNeo installations: SCPms - Neo topic in the <i>SAP Asset Manager Getting Started</i> guideCloud Foundry installations: SCPms - Cloud Foundry topic in the <i>SAP Asset Manager Getting Started</i> guide	SAP Cloud Platform administrator	Must be first step
2	Mobile Add-On for SAP S/4HANA system installation procedure: See Installing the Mobile Add-On for SAP S/4HANA Mobile Add-On for SAP ERP system installation procedure (ECC): See Installing the Mobile Add-On for ERP	SAP S/4HANA administrator or SAP ERP (ECC) administrator	None
3	On-premise Cloud Connector setup. See the Cloud Connector Installation topic.	IT administrator	Relies on Step 1

Step	Product	Role	Prerequisite Steps
4	<p>Create your application in SCPms (SAP Cloud Platform Mobile Services):</p> <p>Set application security settings. For more information, see the Security Administration topic in the SCPms guide.</p> <p>Set application connection settings. For more information, see the topic Set Up Customer Accounts and the associated subtopics in the SCPms guide.</p>	SAP Cloud Platform administrator or Business expert	Application connection settings rely on Step 2
5	<p>Choose to set up or build the mobile application in one of the following ways:</p> <ol style="list-style-type: none"> 1. Set up the mobile application: <ul style="list-style-type: none"> ○ Obtain onboarding URL and QR code. See the Onboarding to the MDK Client App topic for more information. 2. Build the mobile application (optional): <ul style="list-style-type: none"> ○ Building the SAP Asset Manager Application Overview [page 25] ○ Building the SAP Asset Manager Application Client [page 26] <p>No matter which option you select, see also <i>Step 6</i> in the topic Building the SAP Asset Manager Client to link the onboarding URL with the SAP Asset Manager client application.</p>	Administrator	Relies on Application security settings in Step 4
6	<p>Import the metadata definitions into the SAP Web IDE</p> <p>For more information, see Enabling the Mobile Development Kit [page 21]</p>	Business expert	Relies on Steps 4–5
7	<p>Launch the SAP Asset Manager application using the onboarding URL. Navigate through the launch screens and perform the initial sync.</p>	Administrator	Relies on Steps 1–6

2.2 Relevant SAP Notes

Read the following SAP Notes before you begin installation. The SAP Notes contain the most recent information about the installation, as well as any corrections to the installation process.

Make sure you have the most recent version of each SAP Note. Find SAP Notes on the SAP Service Marketplace at <https://sap.com/notes>.

SAP Note Number	Title	Description
2495578	Release Information Note - Mobile Add-On for SAP S/4HANA 1.0 and Support Packages	Information and references to additional SAP Notes in the context of applying the Mobile Add-On for S/4HANA 1.0 and support packages to an SAP S/4HANA on premise system
2493602	SAP Asset Manager Mobile Add-On for SAP S/4HANA Installation Master SAP Note	Release and Information (RIN) note about planning the installation and upgrades of the ABAP Add-On for the SAP Asset Manager application
2566071	SAP Cloud Platform (SCPms) Setup Info for SAP Asset Manager with an SAP S/4HANA On-Premise System	Information on how to set up SAP Cloud Platform mobile services (SCPms) to run the SAP Asset Manager application
2660862	SAP Cloud Platform (SCPms) Setup Info for SAP Asset Manager with an SAP ERP On-Premise System	Information on how to set up SAP Cloud Platform mobile services (SCPms) to run the SAP Asset Manager application

You can find additional information for the Mobile Development Kit in the following continually updated blog post: [Latest Mobile Development Kit Blogs and Videos](#).

2.3 Installation Prerequisites

SAP Asset Manager uses the oData service that is provided with the SAP Cloud Platform mobile services.

The oData service provides a universally available service for the SAP Asset Manager application.

i Note

To fully install and run the SAP Asset Manager application, perform the [Building the SAP Asset Manager Application Client \[page 26\]](#) procedure after performing the tasks in this Deployment and Configuration section.

Back End Landscape Prerequisites

- Ensure that an SAP Cloud Platform mobile services account with an active mobile services account is available
- A Cloud Connector is required. For more information, see the [Setting up the SAP Cloud Platform Cloud Connector System Mapping \[page 12\]](#) procedure.
- The correct SAP Mobile Add-On for your system is already installed. For more information, see the [High-Level Installation Process for SAP Asset Manager \[page 9\]](#) topic, *Step 2*.

Prerequisites for SAP Asset Manager Application Installation

- Access to your SAP Cloud Platform mobile services environment
- Administrative access to the Mobile Development Kit
- Access to a computer to build and run the Mobile Development Kit client either in a simulator or on a device
- If using certificate-based authentication, acquire the certificates the IdP expects from mobile devices running the SAP Asset Manager application. See the [SAP Cloud Platform Identity Provider](#) portal page for complete information on working with certificates and Identity Providers.
If you optionally enable certificate based authentication, the Mobile Development Kit client passes the certificate to the IdP for use in authentication as long as the IdP supports and asks for certificates, and certificates are present on the mobile device.

Software Prerequisites

For all prerequisite and installation information for the Mobile Development Kit, see the <https://help.sap.com/viewer/977416d43cd74bdc958289038749100e/Latest/en-US> manual.

2.4 Setting up the SAP Cloud Platform Cloud Connector System Mapping

The SAP Cloud Platform Cloud Connector serves as the link between on-demand applications in the SAP Cloud Platform and existing on-premise systems.

For general Cloud Connector set up and configuration, see the SAP Cloud Platform Cloud Connector documentation, specifically [Configure Access Control \(HTTP\)](#). The following topic addresses specific SAP Asset Manager Cloud Connector configurations to make in the Cloud Connector cockpit. Perform these additional configuration modifications after the initial Cloud Connector installation and configuration.

1. Click the [Cloud to On-Premise](#) link, and in the [Access Control](#) tab, add your on-premise system in your Cloud to On-Premise mapping as follows:
 - **Protocol:** HTTPS
 - **Back-End Type:** ABAP
 - **Virtual Host:** Your choice
 - **Virtual Port:** Your choice
 - **Internal Host:** SAP back-end system
 - **Internal Port:** SAP back-end system
 - **Principle Type:** X.509 Certificate
2. Add a resource to your Cloud to On-Premise account:
 - **URL Path:** `/sap/opu/odata`
 - Click the [Path and all sub-paths](#) radio button
3. Click the [Principle Propagation](#) tab and set each of the [Trust Configurations](#) to [Trusted](#) (checked).

2.5 Creating an Application in SAP Cloud Platform mobile services - Overview

To successfully deploy the SAP Asset Manager application, you must create a corresponding application in SAP Cloud Platform mobile services.

The corresponding application created in SAP Cloud Platform mobile services connects a mobile device application to its corresponding data service on the on-premise back-end servers. There are two corresponding versions of SAP Cloud Platform mobile services: an SAP Cloud Platform Neo environment and an SAP Cloud Platform Cloud Foundry environment.

2.5.1 Creating an Application in SAP Cloud Platform mobile services - Neo

Procedure

1. Using the SAP Cloud Platform Cockpit, navigate to the [Services](#) > [Development & Operations](#) tile. If it is not enabled, enable it. Then click the [Go to Service](#) link after clicking on the tile.

The Mobile Service for Development and Operations, or Admin UI view, opens in a new window.

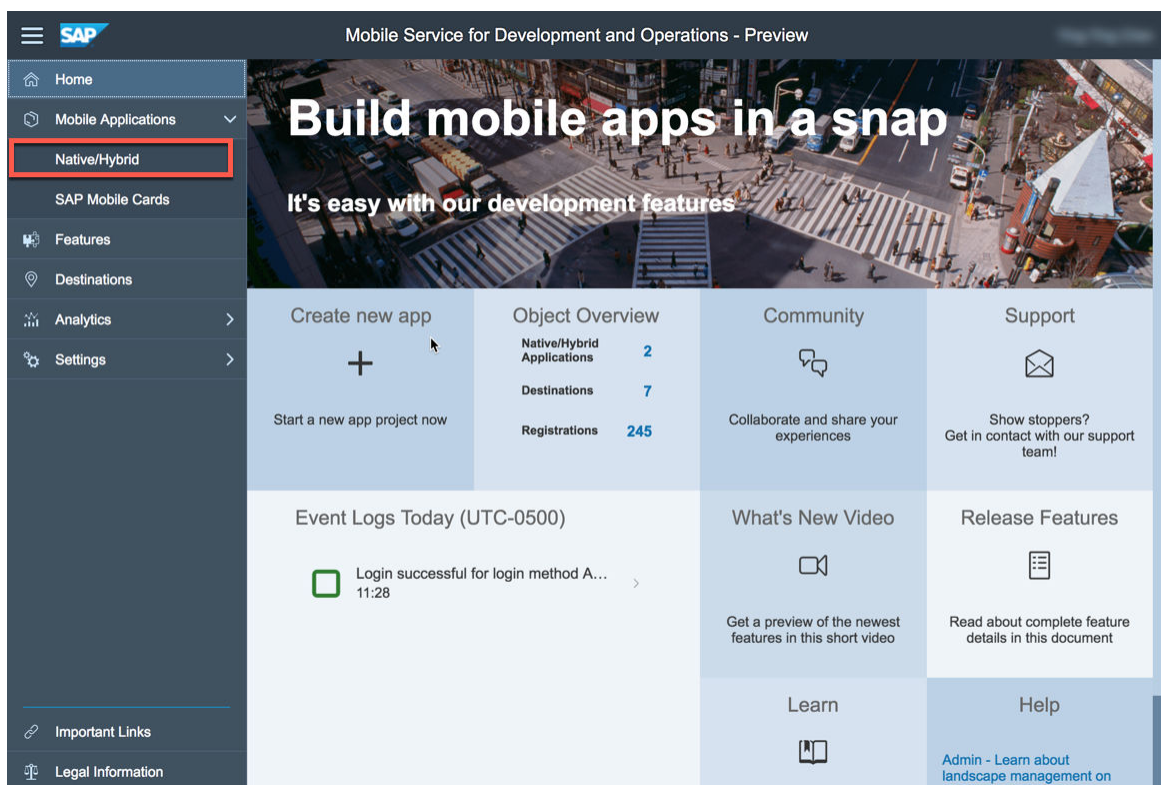
2. Click the [Destinations](#) link on the left, then click [New](#) to create a new destination. Fill in the following fields:

- **Type:** Mobile destination
- **Destination names:** Must match the names of the destinations defined in the [Application Metadata](#).
 - For the SAP Asset Manager application, the default destination name defined in the product release varies based on which version of the application is running. See the following chart for more information:

SAP Asset Manager Version	Destination
SAP Asset Manager 1.1	DEST_SAM10_PPROP
SAP Asset Manager 2.0	DEST_SAM20_PPROP
SAP Asset Manager 3.0	DEST_SAM30_PPROP
SAP Asset Manager 4.0	DEST_SAM40_PPROP
SAP Asset Manager 1911	DEST_SAM1911_PPROP
SAP Asset Manager 2.0 with Meter Management	DEST_SMM10_PPROP
SAP Asset Manager 4.0 online service	DEST_SAM40_ONLINE_PPROP
SAP Asset Manager 1911 online service	DEST_SAM1911_ONLINE_PPROP

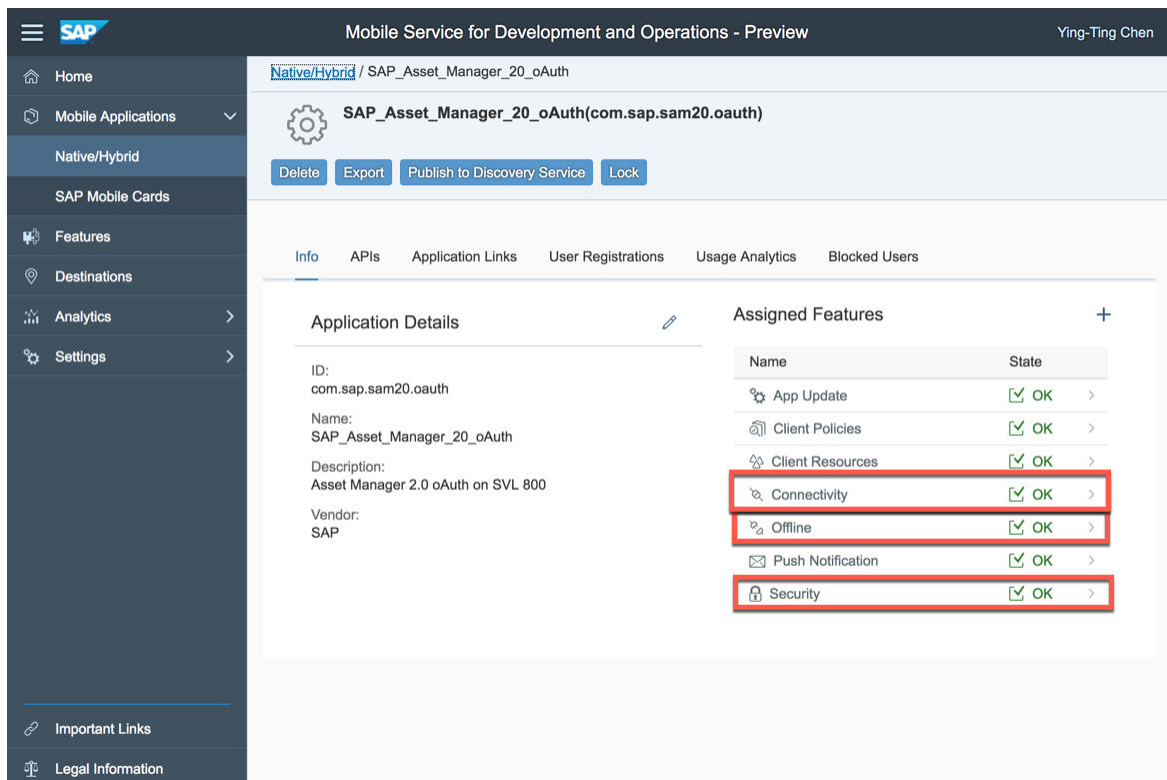
- If the application metadata is edited to use a different destination name than what is defined in the `assetmanager.service` file, the created destination on the SAP Cloud Platform mobile services must also reflect the service name. For more information on where to find application metadata, see *Step 1* of the [Building the SAP Asset Manager Application Client](#) procedure.
- **URL:** URL to reach the mobile add-on service through the Cloud Connector
 - The URL specified must use the given host name from the virtual host of the Cloud Connector regardless of port specification.
 - Include the full URL path of the OData service in the URL. All of the resources are specified in the ICF nodes that the OData service resides under.
 - If the Cloud Connector connecting to the Mobile Development Kit client is configured to use HTTPS, you do not have to make the HTTPS specification in the URL. Your on-premise connections through a properly configured Cloud Connector should specify a URL using an HTTP scheme, with the HTTP port specified.
 - A sample URL is as follows: `http://<cloud connector virtual host>:<cloud connector virtual port> /sap/opu/odata/<mobile add-on component>/<mobile add-on service>`, with `MERP` an example of `<mobile add-on component>` and `SAP_ASSET_MANAGER_<version>` an example of `<mobile add-on service>`.
- **Proxy Type:** On-premise (Cloud Connector)
- **Maximum Connections:** However many concurrent users are expected for your application connection
- **Timeout:** The timeout for each network transmission between the device and back end system. Settings are based on the following:
 - The expected timeout requirements for the SAP Mobile Add-On for SAP S/4HANA on-premise connections to SAP Asset Manager is 600,000ms.

- The expected timeout requirements for the SAP Mobile Add-On for SAP ERP ECC6.0 EHP 7 SP14 connections to SAP Asset Manager is 1,200,000ms.
 - **Rewrite Mode:** Rewrite URL. Setting must match the mapping in the Cloud Connector
 - If the virtual host and the port in the Cloud Connector are set the same as the internal host and the port of the SAP Mobile Add-On OData service, you can set the Rewrite Mode to [Rewrite URL](#).
 - If the virtual host and the port in the Cloud Connector do not match the internal host and the port of the SAP Mobile Add-On OData service, set the Rewrite Mode to [Custom Rewrite URL](#). Setting the Rewrite Mode to Custom Rewrite URL properly maps the outgoing URLs from the Cloud Connector.
 - **OPTIONAL** If the [Custom Rewrite URL](#) is set, add an outbound rewrite URL when you create system mapping. For more information, see the [Rewrite Modes](#) topic.
 - **Custom Headers:** Not applicable
 - If a default client is not properly set for your oData service, you can override the connected client by adding a custom header with a `<Header Key>` of `sap-client` and a `<Header Value>` of your client number.
 - **SSO Mechanism / Authentication:** Principal Propagation
 - Principal propagation is the officially supported authentication method between the SAP Asset Manager and the SAP Mobile Add-On. For more information, see the topic [Configure Principal Propagation to an ABAP System for HTTPS](#).
3. Click the [Mobile Applications](#) link on the left, then click [Native / Hybrid](#).



4. Click the [New](#) button. When the [New Application](#) window displays, fill the fields as follows:
- **Config Templates:** Select [Mobile Development Kit](#) from the dropdown
 - **ID:** Whatever your administrator wishes to use that is meaningful to them. The ID is used to control features on the application and is displayed in branded settings on the client.

- **Name:** Name of your application
 - **Description:** Optional description of your application
 - **Vendor:** Optional name of your vendor
5. Click [Save](#) to create the preliminary cloud application, then click the newly created cloud application. You access the detail screen of your newly created application.
6. Some [Assigned Features](#) need additional configuration, or you can optionally configure them at a later date:
- **App Update:** You can configure this later. This setting controls how new metadata definitions are pushed to the Mobile Development Kit clients.
 - **Client Policies:** Enabled by default. Can control uploading of client error logs to the SAP Cloud Platform mobile services, whether or not passwords are allowed to secure applications, and locking and wiping policies.
If users need to lock their devices with passwords, select [Enable Passcode Policy](#). You can define the password requirements after selection.
 - **Connectivity:** Additional configuration needed (performed in the [Step 8](#)). How the SAP Cloud Platform communicates with the back end.
 - **Offline:** See [Updating Offline Settings for SAP Asset Manager Overview \[page 37\]](#)
 - **Push Notification:** See the procedure
 - **Security:** Additional configuration needed (performed in the current procedure). How authentication is performed.



7. **Optional:** To debug an existing application, click the [Client Policies](#) link and ensure the following logs are enabled:

Set the log levels for the lowest level you wish to see logs. For example:

- **ERROR:** Displays only errors

- **PATH:** Displays everything that can show up in the logger
8. Click the [Connectivity](#) link.

The Connectivity window displays.

9. Select the [Add Destination](#) button (+). Then select the appropriate destination that you defined in Step 2 of this procedure.
10. [Save](#) your changes. Click back to your new application and click the [Security](#) link.

The Security window displays.

11. In the [Security Configuration](#) dropdown field, select [OAuth](#). [Save](#) your changes, click back into the main application window to refresh the configuration. Then click the [Security](#) link again to enter the Security window.

The Security window displays with new [OAuth Client](#) section visible.

12. Click an OAuth client to view or change the following settings:
 - **Token Lifetime:** Default is set to 0, which is infinite (never expires)
 - **Refresh Token Lifetime:** Default is set to 0, which is infinite (never expires)
 - **Redirect URL:** If enabling certificate-based authentication, ensure the field contains the same [samclient](#) URL scheme that is contained in the [Onboarding URL](#) scheme. The redirect URL must also match the redirect URL defined for the SAP Asset Manager application. See the following screenshot for an example.

The screenshot shows the 'Edit OAuth Client' configuration window. The fields and their values are as follows:

- Client ID:** [Redacted] with a 'Regenerate' button to the right.
- Redirect URL:** samclient//oauth2redirect with a copy icon to the right.
- Token Lifetime:** 0 with a 'Days' dropdown menu to the right.
- Refresh Token Lifetime:** 0 with a 'Days' dropdown menu to the right.
- Authorization Endpoint:** [Redacted] with a copy icon to the right.
- Token Endpoint:** [Redacted] with a copy icon to the right.
- End User UI:** [Redacted] with a copy icon to the right.
- Skip Consent Screen:**

At the bottom right, there are 'OK' and 'Cancel' buttons.

Make a note of the following settings, as you need them during the [Building the SAP Asset Manager Application Client \[page 26\]](#) procedure:

- **Client ID**
 - **Authorization Endpoint**
 - **Token Endpoint**
13. Click back to the main application page and click the [APIs](#) tab. Make a note of the [Server](#) setting, minus the trailing /, as you need it during the [Building the SAP Asset Manager Application Client \[page 26\]](#) procedure.

2.5.2 Creating an Application in SAP Cloud Platform mobile services - Cloud Foundry

Procedure

1. Using the SAP Cloud Platform Cockpit, navigate to the space you want to work in. If mobile services are already enabled, navigate to a [Service Instance](#) and open it.

i Note

If mobile services are not enabled, enable it in the [Service Marketplace](#).

2. Click the [Service](#) link. Follow the navigation, and click [Support](#) to open mobile services on Cloud Foundry. The Mobile Service for Development and Operations, or Admin UI view, opens in a new window.
3. Click the [Mobile Application](#) link on the left, then click [Native/Hybrid](#) to create a new application.
4. Click the [New](#) button. When the [New Application](#) window displays, fill the fields as follows:
 - **ID:** Whatever your administrator wishes to use that is meaningful to them. The ID is used to control features on the application and is displayed in branded settings on the client.
 - **Name:** Name of your application
 - **Description:** Optional description of your application
 - **Vendor:** Optional name of your vendor
 - **Back-End Connection Timeout:** The timeout for each network transition between the device and the back-end system. Settings are based on the following:
 - The expected timeout requirements for the SAP Mobile Add-On for SAP S/4HANA on-premise connections to SAP Asset Manager is 600,000 ms.
 - The expected timeout requirements for the SAP Mobile Add-On for SAP ERP ECC6.0 EHP 7 SP14 connections to SAP Asset Manager is 1,200,000ms.
5. Click [Save](#) to create the preliminary cloud application, then click the newly created cloud application. You access the detail screen of your newly created application.
6. Some [Assigned Features](#) need additional configuration, or you can optionally configure them at a later date:
 - **Mobile App Update:** You can upload application metadata bundles to update mobile apps on devices here. This setting controls how new metadata definitions are pushed to the Mobile Development Kit clients.
 - **Mobile Settings Exchange:** Can control uploading of client error logs to the SAP Cloud Platform mobile services, whether or not passwords are allowed to secure applications, and locking and wiping policies. If users need to lock their devices with passwords, select [Enable Password Policy](#). Then define the password requirements.
 - **Mobile Connectivity:** How the SAP Cloud Platform communicates with the back end. Additional configuration needed (performed in [Step 8](#)).
 - **Mobile Offline Access:** See [Updating Offline Settings for SAP Asset Manager Overview \[page 37\]](#).
 - **Mobile Push Notification:** See the procedure.

- **Mobile Network Trace:** Sets up network tracing for the offline and connectivity components.
7. Click the *Mobile Connectivity* feature. Then click *New* under *Mobile Destinations* to create a new destination. Fill in the following fields:
- **Type:** Mobile destination
 - **Destination names:** Must match the names of the destinations defined in the *Application Metadata*.
 - For the SAP Asset Manager application, the default destination name defined in the product release varies based on which version of the application is running. See the following chart for more information:

SAP Asset Manager Version	Destination
SAP Asset Manager 1.1	DEST_SAM10_PPROP
SAP Asset Manager 2.0	DEST_SAM20_PPROP
SAP Asset Manager 3.0	DEST_SAM30_PPROP
SAP Asset Manager 4.0	DEST_SAM40_PPROP
SAP Asset Manager 1911	DEST_SAM1911_PPROP
SAP Asset Manager 2.0 with Meter Management	DEST_SMM10_PPROP
SAP Asset Manager 4.0 online service	DEST_SAM40_ONLINE_PPROP
SAP Asset Manager 1911 online service	DEST_SAM1911_ONLINE_PPROP

- If the application metadata is edited to use a different destination name than what is defined in the `assetmanager.service` file, the created destination on the SAP Cloud Platform mobile services must also reflect the service name. For more information on where to find application metadata, see *Step 1* of the [Building the SAP Asset Manager Application Client](#) procedure.
- **URL:** URL to reach the mobile add-on service through the Cloud Connector
 - The URL specified must use the given host name from the virtual host of the Cloud Connector regardless of port specification.
 - Include the full URL path of the OData service in the URL. All of the resources are specified in the ICF nodes that the OData service resides under.
 - If the Cloud Connector connecting to the Mobile Development Kit client is configured to use HTTPS, you don't have to make the HTTPS specification in the URL. Your on-premise connections through a properly configured Cloud Connector should specify a URL using an HTTPS scheme, with the HTTPS port specified.
 - A sample URL is as follows: `http://<cloud connector virtual host>:<cloud connector virtual port> /sap/opu/odata/<mobile add-on component>/<mobile add-on service>`, with `MERP` an example of `<mobile add-on component>` and `SAP_ASSET_MANAGER_<version>` an example of `<mobile add-on service>`.
- **Use Cloud Connector:** Selected
- **Cloud Connector Location ID:** Set to the location ID designated by the Cloud Connector
- **Maximum Connections:** However, many concurrent users are expected for your application connection

- **Timeout:** The timeout for each network transmission between the device and back-end system. Settings are based on the following:
 - The expected timeout requirements for the SAP Mobile Add-On for SAP S/4HANA on-premise connections to SAP Asset Manager is 600,000 ms.
 - The expected timeout requirements for the SAP Mobile Add-On for SAP ERP ECC6.0 EHP 7 SP14 connections to SAP Asset Manager is 1,200,000ms.
 - **Rewrite Mode:** Rewrite URL. Setting must match the mapping in the Cloud Connector.
 - If the virtual host and the port in the Cloud Connector are set the same as the internal host and the port of the SAP Mobile Add-On OData service, you can set the Rewrite Mode to [Rewrite URL](#).
 - If the virtual host and the port in the Cloud Connector don't match the internal host and the port of the SAP Mobile Add-On OData service, set the Rewrite Mode to [Custom Rewrite URL](#). Setting the Rewrite Mode to Custom Rewrite URL properly maps the outgoing URLs from the Cloud Connector.
 - **OPTIONAL** If the [Custom Rewrite URL](#) is set, add an outbound rewrite URL when you create system mapping. For more information, see the [Rewrite Modes](#) topic.
 - **Keep X-Forwarded-* Header:** Not applicable for the default shipment of this version of SAP Asset Manager
 - **Custom Headers:** Additional headers needed for OData service
 - If a default client isn't properly set for your oData service, you can override the connected client by adding a custom header with a `<Header Key>` of `sap-client` and a `<Header Value>` of your client number.
 - **SSO Mechanism / Authentication:** Cloud Connector SSO
 - Principal propagation is the officially supported authentication method between the SAP Asset Manager and the SAP Mobile Add-On. For more information, see the topic [Configure Principal Propagation to an ABAP System for HTTPS](#).
8. **Optional:** To debug an existing application, click the [Enable Detailed Event Log](#) link in the top-right corner of each feature. Ensure that the logs for the feature are enabled.
 9. **Save** your changes. Click back to your new application and click the [Security](#) tab.


The Security information displays.
 10. In [OAuth Settings](#) section, set the following parameters:
 - **Token Lifetime:** Default is set to [12 hours](#)
 - **Refresh Token Lifetime:** Default is set to [30 days](#)
 - **Redirect URL:** If enabling certificate-based authentication, ensure that the field contains the same [samclient](#) URL scheme that is contained in the [Onboarding URL](#) scheme. The redirect URL must also match the redirect URL defined for the SAP Asset Manager application.
 - **Client ID:** ID of the client used to identify the application to the OAuth client
 11. Make a note of the following settings, as you need them during the [Building the SAP Asset Manager Application Client \[page 26\]](#) procedure:
 - **Client ID**
 - **Redirect URL**
 - **Authorization Endpoint**
 - **Token Endpoint**
 12. Click back to the main application page and click the [APIs](#) tab. Make a note of the [Server](#) setting, as you need it during the [Building the SAP Asset Manager Application Client \[page 26\]](#) procedure.

2.6 Enabling the Mobile Development Kit

Procedure

1. Log in to the SAP Cloud Platform Cockpit and from **Home** > **Region**, click the **Region** in which your account is based.
2. Select your **Global Account**. From the Global Account page, select the **Subaccounts** tab on the left side. Then select the subaccount where you wish to deploy your applications.
3. Find the **SAP Web IDE Full-Stack** tile. If it is not **Enabled**, enable it. Then click **Go to Service**.

The SAP Web IDE Full-Stack browser opens.

4. Click the **Preferences** icon () on the left.
5. Click **Extensions**. Ensure the **Mobile Services App Development Tools** editor tile is enabled. If not, enable it by clicking the radio button at the top right of the tile. After enabling the tool, click **Save**.

The SAP Web IDE prompts to refresh. Refresh the SAP Web IDE to view the new tile.

6. Click the **MDK Development** icon. If the Mobile Development Kit icon does not appear, ensure it is enabled. After enabling, refresh the SAP Web IDE.

Next Steps

Proceed to the [Importing Metadata Definitions to the SAP Web IDE Mobile Development Kit \[page 21\]](#) procedure.

2.6.1 Importing Metadata Definitions to the SAP Web IDE Mobile Development Kit


You can import a project and its resources from your local file system to the SAP Web IDE Mobile Development Kit workspace.

Prerequisites

Ensure that the SAP Asset Manager 1911 and Mobile Development Kit 4.0 installation files are downloaded from the [SAP Download Center](#).

If an earlier version of the Mobile Development Kit is already installed on your back-end system when compared to your version of the SAP Asset Manager application that you are attempting to install, you must also import and deploy the current version of the Mobile Development Kit to the SAP Web IDE.

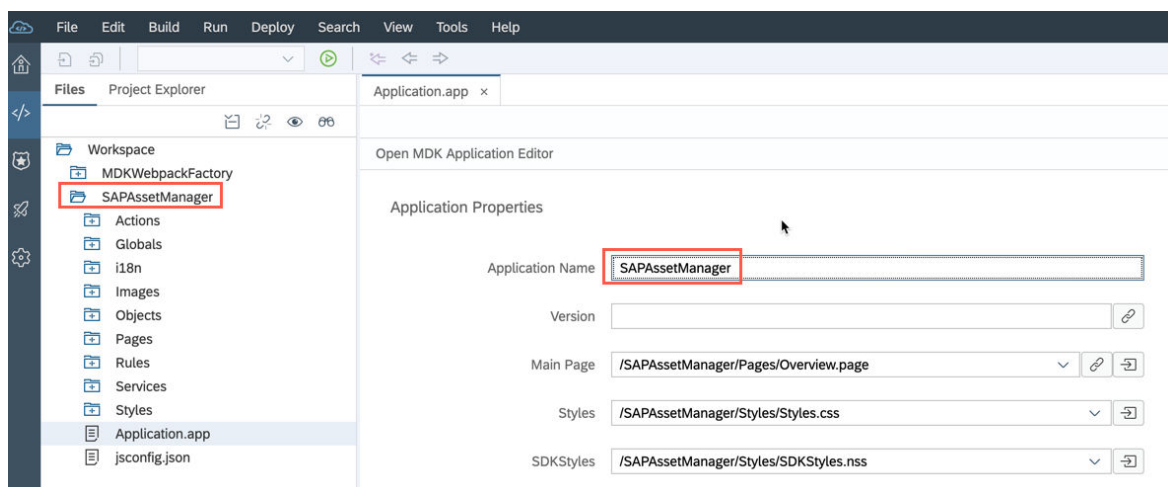
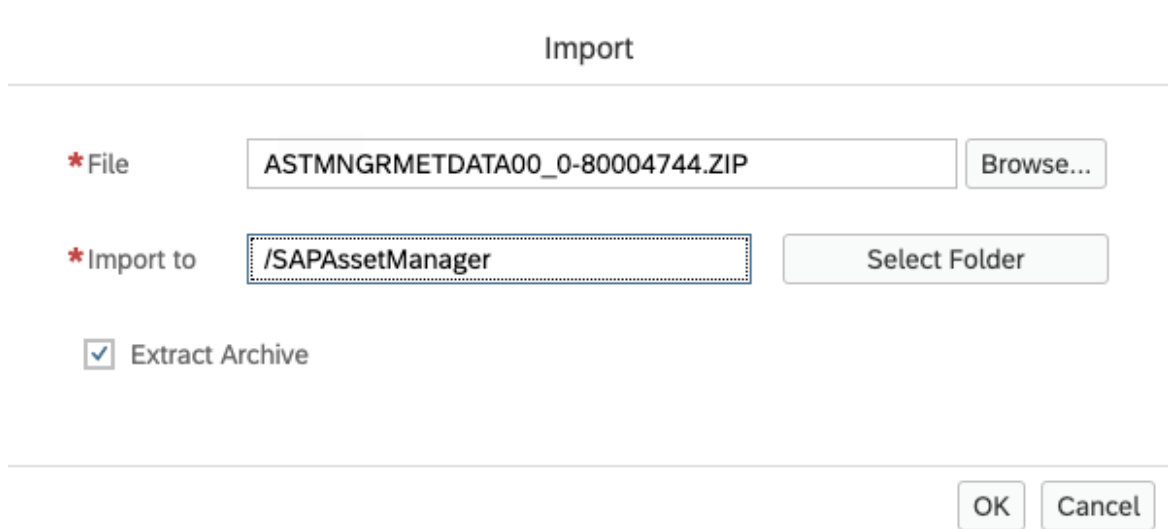
Procedure

1. Click the *MDK Development* icon ()
2. Select the folder to which you want to import your project from your Mobile Development Kit workspace.
3. Import your project. Select **File > Import > From File System** from the main menu. Alternatively, you can right-click on your *Workspace* folder and choose *Import* from the menu choices.

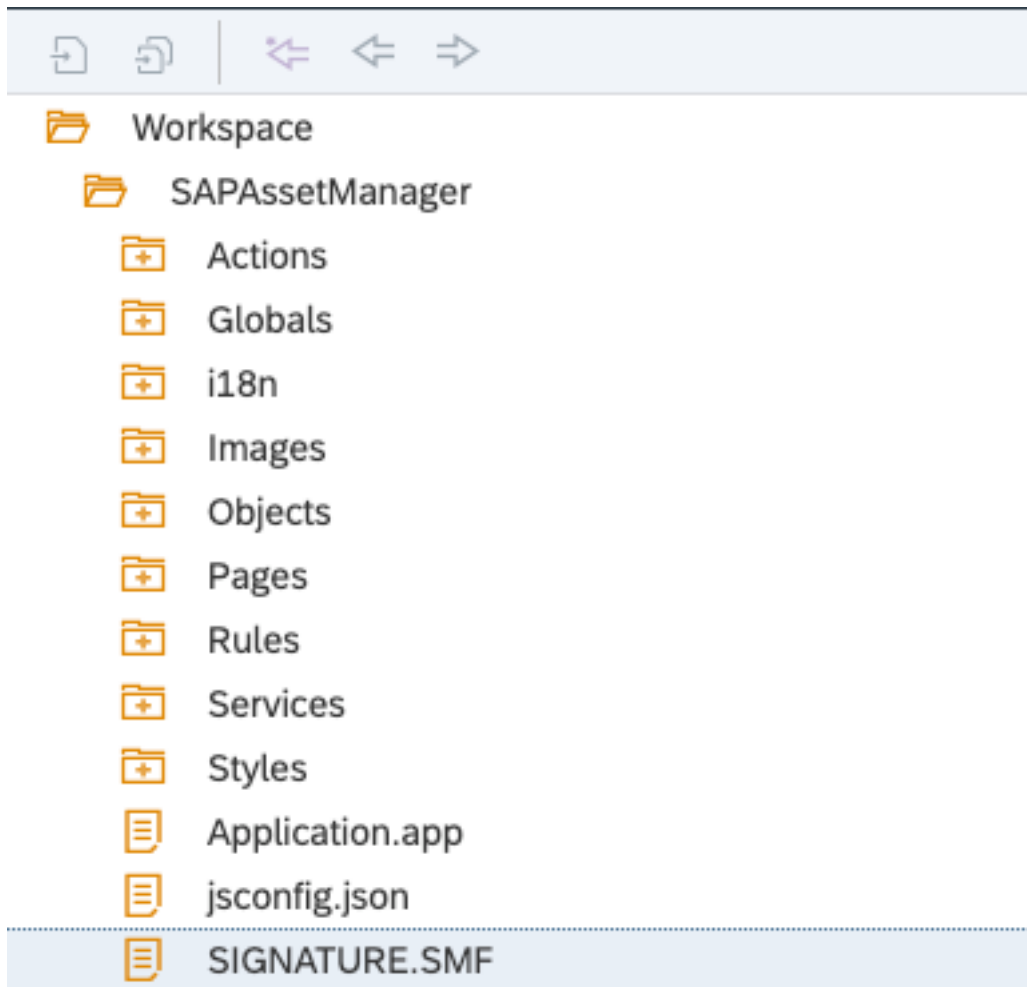
An Import window displays.

4. Click the *Browse* button and browse to the folder where your ZIP file is located. If the folder listed in the *Import to* field is incorrect, click the *Select Folder* button to choose the correct folder. If you're importing an entire project, the top-level folder is the correct folder.
5. You can optionally change the *<Import To>* folder name to *SAPAssetManager*, but it's not required.

If you decide to leave the folder name as-is, once the import is complete, hit refresh on your browser to reload the SAP Web IDE. After refreshing, the folder name shows up and correctly matches the *Application Name* in your *Application.app* file.



6. Delete the *SIGNATURE.SMF* file.



7. Check the *Extract Archive* checkbox and click *OK*.

The project is imported into the selected folder with the same name as the `<Import To>` field.

i Note

If the target folder already exists in your workspace, you're prompted to approve the overwriting of the existing files.

2.6.2 Deploying Metadata Definitions to Mobile Services



Prerequisites

In the SAP Cloud Platform Cockpit, ensure that the *mobileservices* destination has the additional property of *WebIDEUsage* set with the property of *mobile*.

Context

Once your desired changes to the metadata definitions for the Mobile Development Kit are complete, use the Mobile Services app development tools deployment feature to deploy the metadata definitions to your application in Mobile Services. Then, when you change the SAP Asset Manager application, and redeploy the metadata files in the Mobile Development Kit editor, a timer looks for new definitions within the bundle.

Procedure

1. Click the *Development* icon (.
2. From your Mobile Development Kit workspace, select the folder from which you want to deploy your project.
3. Right-click and select **File** > *MDK Deploy and Activate* .

A ZIP file is created of your application definitions.

4. Select the options you would like to deploy with and click *Next*.
5. In the <Destination Name> field, select *mobileservices*. In the <Application ID> field, select the desired application ID you want to deploy to. Click *Next*.

Results

The `bundle.js` is uploaded from the SAP Web IDE to Mobile Services.

3 Building / Branding the SAP Asset Manager Application

3.1 Building the SAP Asset Manager Application Overview

Use the following information as a reference when building your application using the procedure [Building the SAP Asset Manager Application Client \[page 26\]](#).

Structure of .mdkproject

- **BrandedSettings.json:** Runtime configurations such as security settings, URLs for connecting to the SAP Cloud Platform mobile services, and more
- **MDKProject.json:** Build time configurations such as the application name, version, and bundle ID
- **App_Resources:** Any custom resources used by the application, such as all of your action bar images that are customized for your application.
- **demo:** To make an OData service available in demo mode, include the `.udb` and `.req.udb` files for that service in this directory
Currently the SAP Asset Manager application can't take the demo UDBs created by the most recent SAP Cloud Platform SDK and use them with an older SAP Cloud Platform SDK version.
Therefore, use the Android UDBs for demo mode, for both the iOS and Android applications. Failure to do so results in the inability to perform Update or Create OData actions, such as:
 - Changing the mobile status of any work orders
 - Creating reminders
- **extensions:** Include any extensions used by the application in this directory
- **metadata:** Built in metadata for the application

Configuring the MDKProject.json File

The `MDKProject.json` file contains settings that you can only configure before running the `create-client` command:

- **AppName:** Determines the name of the application project and the app as it appears on a mobile device
- **AppVersion:** The client project application version
- **BaseProject:** The `metadata` subdirectory under the `.mdkproject` structure that contains the main application metadata. The main application metadata is the MDK application, which includes one or more component MDK applications. The component applications are only required if you are adding components to your base application, such as Meter Management or Field Operations Worker.

- **BundleID:** Uniquely identifies the resulting MDK client application on the device. Only one instance of a bundle ID can be installed on a device at a time. If you attempt to install a second application using the same bundle ID, it will overwrite the existing application.
- **Externals:** A list of NPM modules that should not be included in the application bundle. Use this option for dependencies you expect to be in the environment when the application is built. Note that the modules `file-system` and `ui/dialogs` are automatically used as externals as they are already included in the client application.
- **URLScheme:** Allows you to specify a custom URL scheme that opens the client. If the URL includes connection settings such as URL parameters, these settings override the settings used by the client. Defaults to `mdkclient`.

Application Version and Notes on the Settings App

The Mobile Development Kit client tracks several versions, which you can view in the iOS [Settings](#) menu. These versions are identified as the *application* version, the *definitions* version, and the *frameworks* versions for the frameworks used in the client build.

When generating a client project, you can specify the application version. Specifying the application version allows you to version the client itself, which can be useful if you change extension controls or other branded settings. To specify the application version, specify the `AppVersion` property in the `MDKProject.json` file before running `create.client.command`.

To further customize the entry of your application in the iOS [Settings](#) menu, you can manually edit `<ProjectDirectory>/app/App_Resources/iOS/Settings.bundle/Root.plist` after the script has completed. You can add new entries, but do not remove existing entries or the application may not function correctly.

For more information, see [Implementing an iOS Settings Bundle](#) .

3.2 Building the SAP Asset Manager Application Client

Deploy SAP Asset Manager from the out of the box configuration to set the cloud endpoint authentication URL and the OData service URL. You can also set other configuration values.

Prerequisites

- Verify that your system is set up to build the SAP Asset Manager application by running the MDK Dependencies Installer. This tool detects all the components to install or update, allowing you to update or install them instantly. For more information and instructions on how to obtain the MDK Dependencies Installer, see the [Building Your MDK Client SDK](#) procedure.
- Complete the [Creating an Application in SAP Cloud Platform mobile services](#) procedure.

Context

Use the following procedure to build and brand the SAP Asset Manager application.

Procedure

1. Obtain the following SAP Asset Manager 1911 and Mobile Development Kit 4.0 installation files from the [SAP Download Center](#):

- MDK Plug-In SDK 1911 folder

i Note

Select the following SAP Asset Manager and Mobile Development Kit versions based on your release:

- For SAP Asset Manager release 4.0.1, select Mobile Development Kit 3.1.3.
- For SAP Asset Manager release 4.0.2, select Mobile Development Kit 3.2.1.
- For SAP Asset Manager release 4.0.3, select Mobile Development Kit 3.2.2.

The instructions in this procedure use the MDK Plug-In SDK 1911 folder as an example, and may not be reflective of your installation.

- Metadata 4.0 folder for SAP Asset Manager (ASSET MANAGER METADATA 1911)
 - Metadata 3.0 folder for Meter Management (ASSET MGR METER METADATA 4.0)
 - Metadata 3.0 folder for Field Operations Worker (FIELD OPS WORKER METADATA 4.0)
 - Metadata 3.0 folder for Crew Management (ASSET MGR CREW METADATA 4.0)
 - Metadata 2.0 folder for Customer Service (ASSET MGR CUSTOMERSVC META 3.0)
 - Metadata 2.0 folder for Asset Central (ASSETMGR ASSETCENTRAL META 2.0)
 - Branding SDK for SAP Asset Manager, Meter Management, Field Operations Worker, Crew Management, Customer Service, and Asset Central (ASSET MGR BRANDING SDK 1911)
 - Plug-ins: MDK PLUG-IN SDK 4.0
2. Create a folder to contain the installation files (SAPAssetManager1911).
 3. Extract the SAP Asset Manager branding SDK:
 - a. Unzip the ASSET MGR BRANDING SDK 1911 folder.
 - b. Copy the SAPAssetManager/SAM.mdkproject folder to the SAPAssetManager1911 folder.
 - c. Set up the SAP Asset Manager Mobile Development Kit project folders:
 1. In the SAPAssetManager1911/SAM.mdkproject folder, create a folder named metadata.
 2. In the SAPAssetManager1911/SAM.mdkproject folder, create a folder named extensions.
 4. Extract the SAP Asset Manager metadata:
 - a. Unzip the ASSET MANAGER METADATA 1911 file.
 - b. Copy all contents of the ZIP file to SAPAssetManager1911/SAM.mdkproject/metadata.
 - c. If present, delete the SIGNATURE.SMF file from the SAPAssetManager1911/SAM.mdkproject/metadata folder.
 5. Extract the MDK plug-in SDK in one of the following ways, based on whether you're building either an iOS or an Android client:

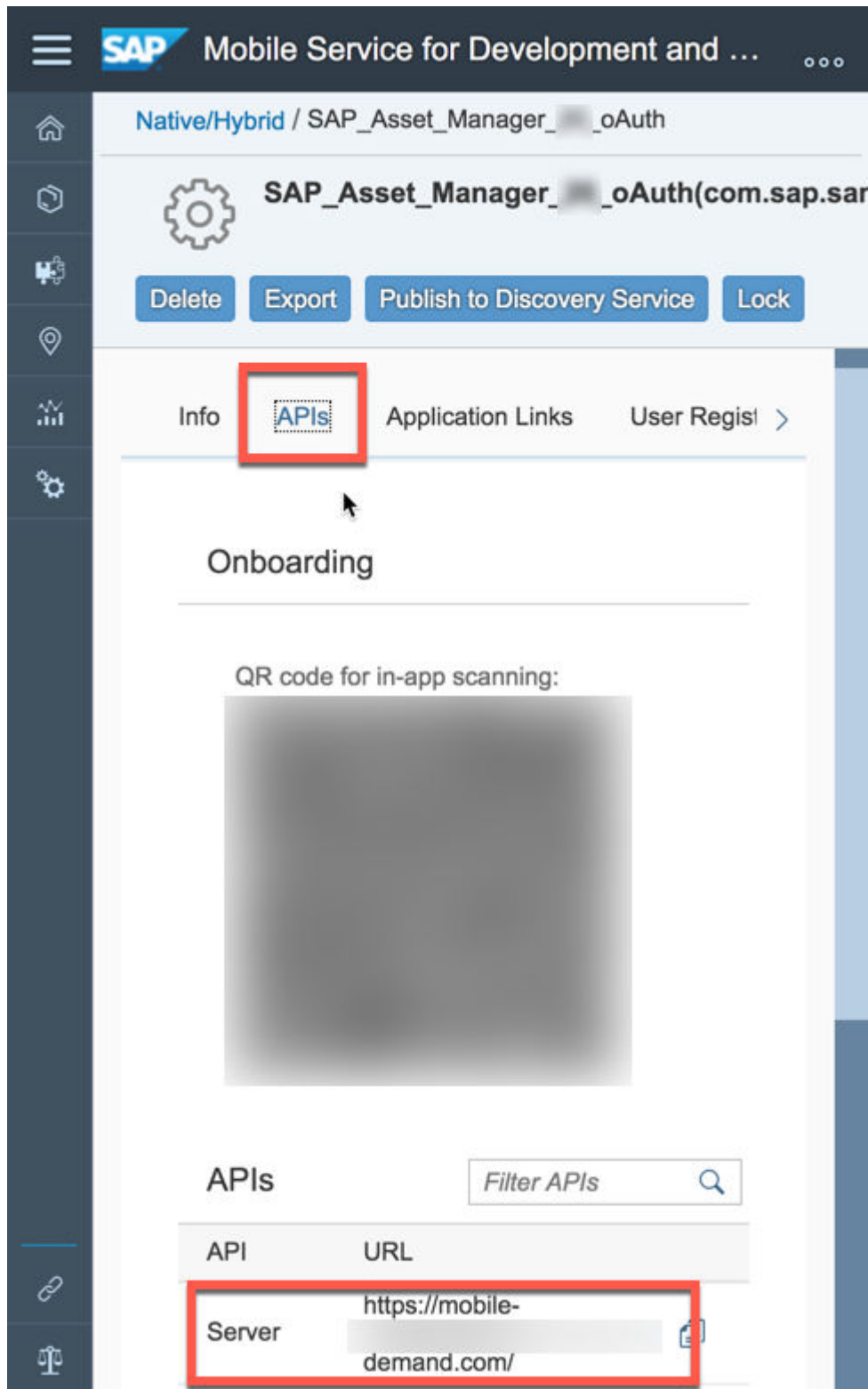
iOS Client

Android Client

-
- | | |
|--|--|
| <ol style="list-style-type: none">1. Unzip the iOS subfolder found in the MDK PLUG-IN SDK 4.0 zip file.2. Choose your architecture from one of the following folders:<ul style="list-style-type: none">○ Release-iphoneos○ Release-iphonesimulator○ Release-fat (contains both the iphoneos and the iphonesimulator architectures)3. Copy the following folders from your selected architecture folder to the SAPAssetManager1911/SAM.mdkproject/extensions folder:<ul style="list-style-type: none">○ extension-Analytics○ extension-BarcodeScanner○ extension-FieldDataCapture○ extension-MapFramework○ extension-HierarchyFramework | <ol style="list-style-type: none">1. Unzip the Android subfolder found in the MDK PLUG-IN SDK 4.0 zip file.2. Copy the following folders from your Universal folder to the SAPAssetManager1911/SAM.mdkproject/extensions folder:<ul style="list-style-type: none">○ extension-Analytics○ extension-BarcodeScanner○ extension-FieldDataCapture○ extension-MapFramework○ extension-HierarchyFramework |
|--|--|
-

6. Configure the connection to SAP Cloud Platform mobile services:
 - a. Retrieve the following information to establish a connection between the SAP Asset Manager application and the SAP Cloud Platform mobile services:
 - **AppId:** Set to the ID under the Mobile Development Kit that you created in *Step 6* of the [Creating an Application in SAP Cloud Platform mobile services](#) procedure.
 - **ClientID:**
 - **Neo:** Set to the OAuth client ID that you created in *Step 12* of the [Creating an Application in SAP Cloud Platform mobile services - Neo \[page 13\]](#) procedure.
 - **Cloud Foundry:** Set to the OAuth client ID that you created in *Step 11* of the [Creating an Application in SAP Cloud Platform mobile services - Cloud Foundry \[page 18\]](#) procedure.

- **SapCloudPlatformEndpoint:** Find the Endpoint setting inside the application list of APIs on the *Mobile Services* under the *Server* API:



i Note

By default, the *Server API* has a `/` at the end of the endpoint URL. Do not add this `/` into your connection settings.

- o **Neo:**
 - o **AuthorizationEndpointURL:** Set to the OAuth authorization endpoint URL that you created in *Step 12* of the [Creating an Application in SAP Cloud Platform mobile services - Neo \[page 13\]](#) procedure.
 - o **RedirectURL:** Set to the callback URL that is automatically generated with the creation of the OAuth client in *Step 12* of the [Creating an Application in SAP Cloud Platform mobile services - Neo \[page 13\]](#) procedure.
 - o **TokenURL:** Set to the token URL that is automatically generated with the creation of the OAuth client in *Step 12* of the [Creating an Application in SAP Cloud Platform mobile services - Neo \[page 13\]](#) procedure.
 - o **Cloud Foundry:**
 - o **AuthorizationEndpointURL:** Set to the OAuth authorization endpoint URL that you created in *Step 11* of the [Creating an Application in SAP Cloud Platform mobile services - Cloud Foundry \[page 18\]](#) procedure.
 - o **RedirectURL:** Set to the callback URL that is automatically generated with the creation of the OAuth client in *Step 11* of the [Creating an Application in SAP Cloud Platform mobile services - Cloud Foundry \[page 18\]](#) procedure.
 - o **TokenURL:** Set to the token URL that is automatically generated with the creation of the OAuth client in *Step 11* of the [Creating an Application in SAP Cloud Platform mobile services - Cloud Foundry \[page 18\]](#) procedure.
- b. Choose your client configuration:

To preconfigure your client to connect to your mobile application, add the information retrieved in the above step to the *ConnectionSettings* block. When adding additional entries, include a comma after the existing *EnableOverrides* entry. An example is included in the table for reference when you're adding entries to your file.

If you want to use SAP Asset Manager against different back-end mobile applications (ex: DEV and QA), leave the *ConnectionSettings* as is, and build an onboarding URL for users using the values found in *Step 6a*. See the example in the table for further information on how to connect a client using either of the methods.

i Note

If you are using the onboarding URL approach, note that all users must receive an email with the onboarding URL to connect applications to SAP Cloud Platform mobile services.

- c. OPTIONAL: Enable certificate authentication in the Mobile Development Kit:

In the `BrandedSettings.json` file, `ConnectionSettings` section, set `AllowCerts` to `true`.

Preconfigured Client

To configure the client to connect to a specific application, update the following values in the

BrandedSettings.json file:

Sample Code

```
...
"ApplicationDisplayName": "<Name
of application>",
"ConnectionSettings": {
  "EnableOverrides": true,
  "AppId": "<Insert AppID value
here>",
  "ClientId": "<Insert ClientID
value here>",
  "SapCloudPlatformEndpoint":
"https://<Insert cloud platform
endpoint URL here>",
  "AuthorizationEndpointUrl":
"https://<insert authorization
endpoint URL here>",
  "RedirectUrl": "https://
<insert redirect URL here>",
  "TokenUrl": "https://<insert
token URL here>",
  "AllowCerts": <true/false>
},
```

Using the example as a guide, insert your own connection-specific values where they belong.

Save any changes you make.

Onboarding URL

You can generate an onboarding link to overwrite the values discussed in this substep on a device. Use the following format in a URI:

Sample Code

```
samclient://?AppId=<Insert AppID
value here>
&ClientId=<Insert ClientID value
here>
&SapCloudPlatformEndpoint=<Insert
cloud platform endpoint URL here>
&AuthorizationEndpointUrl=<insert
authorization endpoint URL here>
&RedirectUrl=<insert redirect URL
here>
&TokenUrl=<insert token URL here>
&ServiceTimeZoneAbbreviation=<inse
rt timezone abbreviation here>
```

Save any changes you make.

7. Edit the project settings:
 - a. Open the SAPAssetManager1911/SAM.mdkproject/MDKProject.json file in a text editor. Edit app information such as:
 - Application name on the home screen
 - App version
 - Bundle ID to uniquely identify the application on the device
 - URL scheme for onboarding URLs
 - b. Save any changes you make.
8. Set up the Mobile Development Kit Client SDK:
 - a. Unzip Mobile Development Kit MDK Plug-In SDK 1911 folder.
 1. Run the Mobile Development Kit dependencies installer and confirm that your system is ready.
 2. Unzip MDKClient_SDK.zip to the new SAPAssetManager1911 folder.
 - b. To install the necessary dependencies, open a Terminal prompt in the SAPAssetManager1911/MDKClient_SDK directory. Run either ./install.command on a Mac or ./install.cmd on a Windows PC. Note that you can build both iOS and an Android on a Mac. You can only build Android if you're using a Windows PC.

i Note

An internet connection is required. If you're connecting to the internet through a proxy, configure your settings before running the `./install.command` or `./install.cmd` command.

9. Create the SAP Asset Manager client:
 - a. Open a Terminal prompt in the `SAPAssetManager1911/MDKClient_SDK` directory.
 - b. Run the `create-client.command` command if you are on a Mac. Run the `create-client.cmd` command if you are on Windows.
 - c. You can either specify command line arguments to point to the `SAM.mdkproject` and the type of client (either device or simulator) you are building, or the script prompts you for the information.

Sample Code

on a Mac

```
$ ./create-client.command
? Enter the path of the .mdkproject directory. ../SAM.mdkproject
Using ../SAM.mdkproject
Using /Users/.../sdk for out directory
? Would you like to build for iOS or Android or All? ios
Building client for ios
? Would you like to build for device or simulator of iOS? device
Building client for device of iOS
Removing existing directory /Users/.../sdk/AssetManager
Creating application AssetManager
```

Sample Code

on a Windows PC

```
>create-client.cmd
? Enter the path of the .mdkproject directory. ..\SAM.mdkproject
Using ..\SAM.mdkproject
Using C:\...\mdk for out directory
Building client for Android
Removing existing directory C:\...\mdk\AssetManager
Creating application AssetManager
```

Results

After `create-client.command` for iOS or `create-client.cmd` for Windows finishes, you're ready to run the client either on the mobile device or on a simulator.

Next Steps

Open a Terminal prompt in the resulting client directory (ex: `SAPAssetManager1911/MDKClient_SDK/MeterAssetManager`). Run either the `tns run ios` or the `tns run android` command to start the application, based on your platform.

For iOS installations only, continue to the [Allowing Custom URI Schemes \[page 33\]](#) procedure, which allows SAP Asset Manager to open custom URIs.

3.2.1 Allowing Custom URI Schemes

Prerequisites

You have built and branded the SAP Asset Manager application. For more information, see the following topics:

- [Building the SAP Asset Manager Application Overview \[page 25\]](#)
- [Building the SAP Asset Manager Application Client \[page 26\]](#)

Context

i Note

The following procedure is applicable for iOS installations only. You do not need to perform this procedure if you are installing SAP Asset Manager on Android.

By default, iOS allows third-party apps to specify a limited set of URI schemes:

- http:
- https:
- mailto:
- tel:
- sms:
- facetime:

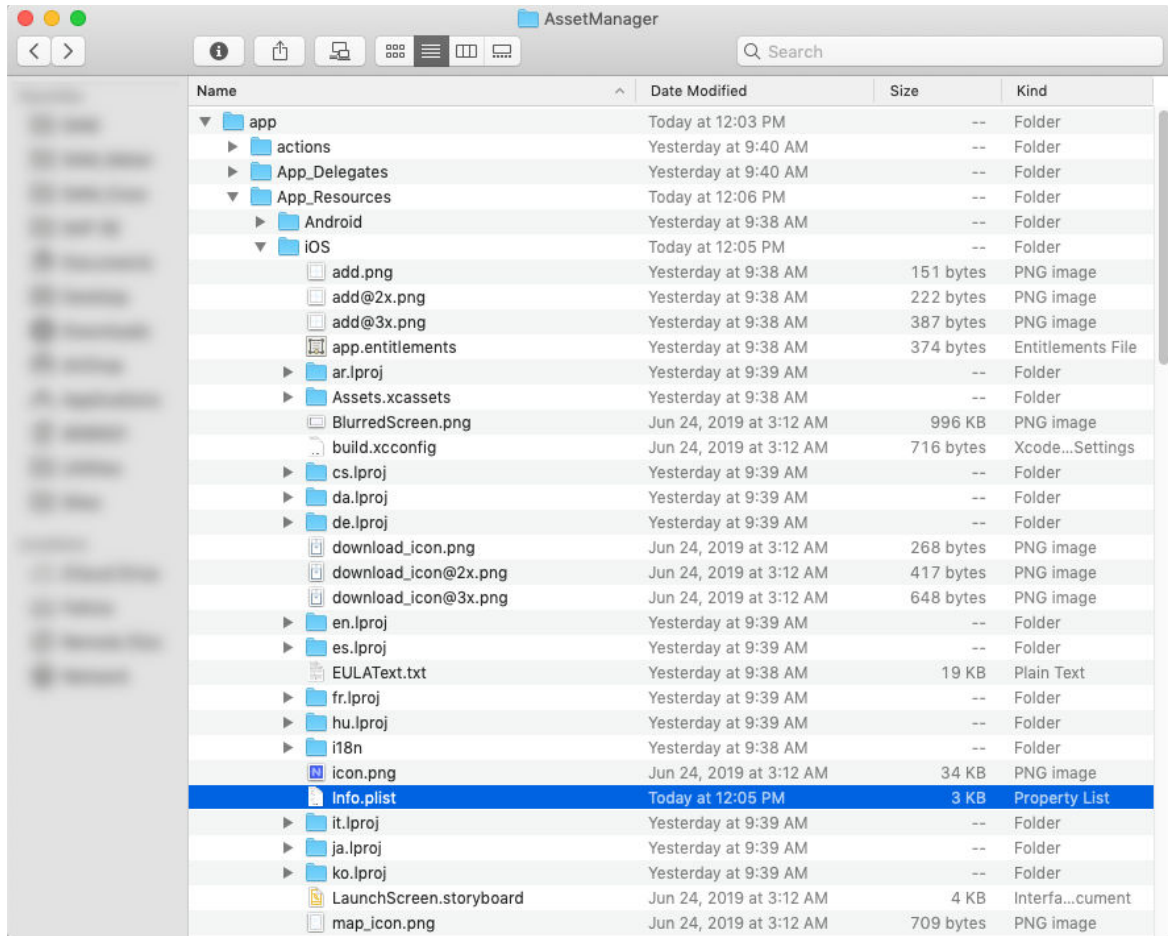
Other applications, such as Microsoft Edge, can support custom URI schemes. For example, if the application is installed, `microsoft-edge-https://www.google.com`, opens up Google in Microsoft Edge for iOS. However, it will only work correctly from a non-third-party iOS application such as Safari.

For additional information on iOS URI schemes, see the [Launch Services Keys](#)  documentation from Apple.

To allow SAP Asset Manager to open custom URIs, use the following procedure.

Procedure

1. Locate the `Info.plist` file, located at `${ASSET_MANAGER_ROOT}/app/App_Resources/iOS`, after building the SAP Asset Manager client.



2. Open the `Info.plist` in Xcode, and add a new key named `LSApplicationQueriesSchemes` of type `Array`.
3. Add an entry for each custom URI scheme. Don't include any trailing colons or slashes.

In the following example, the custom schemes `microsoft-edge-https` and `microsoft-edge-http` are added. If Microsoft Edge is installed on the mobile device, these custom schemes allow the client to open HTTP and HTTPS URLs in Microsoft Edge.

Key	Type	Value
Information Property List	Dictionary	(27 items)
LSApplicationQueriesSchemes	Array	(2 items)
Item 0	String	microsoft-edge-https
Item 1	String	microsoft-edge-http
Localization native development re...	String	en
Bundle display name	String	AssetManager
Executable file	String	\$(EXECUTABLE_NAME)
Get Info string	String	
Bundle identifier	String	
InfoDictionary version	String	6.0
Bundle name	String	\$(PRODUCT_NAME)
Bundle OS Type code	String	APPL
Bundle versions string, short	String	4.0.1
Bundle creator OS Type code	String	????
URL types	Array	(1 item)
Bundle version	String	1.0
Application requires iPhone enviro...	Boolean	YES
App Transport Security Settings	Dictionary	(1 item)
Privacy - Camera Usage Description	String	Allow camera usage
Privacy - Face ID Usage Description	String	Enabling Face ID allows quick and secure access to SAP Asset Manager
Privacy - Photo Library Additions...	String	Our application needs permission to write photos
Privacy - Photo Library Usage Des...	String	Allow photo library access
Application supports iTunes file sh...	Boolean	YES
Launch screen interface file base...	String	LaunchScreen
Required device capabilities	Array	(1 item)
UIRequiresFullScreen	Boolean	NO
Status bar style	String	Gray style (default)
Supported interface orientations	Array	(3 items)
Supported interface orientations (i...	Array	(4 items)
View controller-based status bar a...	Boolean	YES

4. Rebuild and rerun the SAP Asset Manager client.

Results

Any custom URL attachments associated with your newly added schemes now open as expected.

3.2.2 Enabling OData Service in Demo Mode for

Context

Procedure

4 Updating Offline Settings for the SAP Asset Manager Application

4.1 Updating Offline Settings for SAP Asset Manager Overview

The offline OData feature of the SAP Cloud Platform SDK allows for an always-available application that can respond quickly to changes in its connection state.

Instead of calling OData services directly, the OData service call is redirected to the offline OData feature, which mimics a response using the latest synchronized data.

Features of the offline OData feature include:

- Synchronize OData services and run them locally on a mobile device
- MobiLink UltraLite as a client database, which is optionally encrypted
- Optimized for OData services, supporting delta queries to synchronize only new, and changed items
- Offline OData services work in both read and write mode, allowing users to enter data on their mobile device. OData updates are played back to their originating OData service when the user comes back online.
- Data synchronization between the app and the SAP Cloud Platform leverage the MobiLink protocol, which is designed for synchronizing with remote databases.

i Note

The configuration files are always needed, even if you don't plan to change the default behavior of the application.

If you change the OData model to add or remove entity sets, update the corresponding configuration file to reflect the new data distribution rules associated with the model change.

If you change the OData model to add or remove entity sets, update the corresponding configuration file to reflect the new data distribution rules associated with the model change.

These offline OData settings are created by the corresponding back-end program listed in the *Mobile Add-On Installation* guide specific to your back end. As the oData model in the Mobile Add-On Integration Framework (MAIF) configuration panel changes, the file generated by the program reflects the changes in that system. You must regenerate the file anytime you change the model.

Additional Information

See the following topics for additional configuration information needed for your offline settings:

- For detailed information on developing and modifying offline applications on the SAP Cloud Platform SDK, see the following guides:

- [Developing Offline Applications](#) and the associated subtopics
- Select your procedure based on your back end:
 - [Post Installation - Required](#) procedure from the *Mobile Add-On for S/4HANA Installation Guide*, specifically *Step 9*
 - [Post Installation - Required](#) procedure from the *Mobile Add-On for ERP Installation Guide*, specifically *Step 13*
- For detailed information on developing and modifying offline applications on the SAP Cloud Platform SDK for Android, see the [SAP Cloud Platform SDK for Android](#) portal page.
- For information on defining offline settings for mobile applications through the SCPms, see specifically *Step 6* of the [Defining Offline Settings for Applications](#) topic and the associated subtopics.
- For information on specific parameters found in the Application Configuration file, see the topic [Application Configuration File](#).

4.2 SAP Asset Manager Entity Sets

The INI configuration file found on the SAP Cloud Platform mobile services defines the order in which the defining requests are sent to call entity sets.

Detailed information on the INI configuration file settings are found in the [Application Configuration File](#) topic.

Ordered Entity Sets

The following entity sets must be retrieved in order:

Order #	Entity Set Name	Batched	Sync Priority	Entity Type	Mobile OData Object	Lead Entity
1	MyWorkOrderHeaders	All Work Orders	10	MyWorkOrderHeader	SAM1911_WORK_ORDER_GENERIC	X
2	MyWorkOrderOperations		10	MyWorkOrderOperation	SAM1911_WORK_ORDER_GENERIC	
3	MyWorkOrderSubOperations		10	MyWorkOrderSubOperation	SAM1911_WORK_ORDER_GENERIC	
4	MyWorkOrderComponents		10	MyWorkOrderComponent	SAM1911_WORK_ORDER_GENERIC	
5	MyWorkOrderComponentMatDocs		10	MyWorkOrderComponentMatDoc	SAM1911_WORK_ORDER_GENERIC	

Order #	Entity Set Name	Batched	Sync Priority	Entity Type	Mobile OData Object	Lead Entity
6	MyWorkOrderTools		10	MyWorkOrderTools	SAM1911_WORK_ORDER_GENERIC	
7	MyWorkOrderDocuments		10	MyWorkOrderDocument	SAM1911_WORK_ORDER_GENERIC	
8	MyWorkOrderGeometries		10	MyWorkOrderGeometry	SAM1911_WORK_ORDER_GENERIC	
9	MyWorkOrderPartners		10	MyWorkOrderPartner	SAM1911_WORK_ORDER_GENERIC	
10	MyWorkOrderComponentLongTexts		10	MyWorkOrderComponentLongText	SAM1911_WORK_ORDER_GENERIC	
11	MyWorkOrderHeaderLongTexts		10	MyWorkOrderHeaderLongText	SAM1911_WORK_ORDER_GENERIC	
12	MyWorkOrderOperationLongTexts		10	MyWorkOrderOperationLongText	SAM1911_WORK_ORDER_GENERIC	
13	MyWorkOrderSubOpLongTexts		10	MyWorkOrderSubOpLongText	SAM1911_WORK_ORDER_GENERIC	
14	MyWorkOrderSales		10	MyWorkOrderSale	SAM1911_WORK_ORDER_GENERIC	
	MarkedJobs		12	MarkedJob	SAM1911_MARKED_JOBS	
15	MyRoutes	All Routes	15	MyRoute	SAM1911__ROUTE	X
16	MyTechObjects		15	MyTechObject	SAM1911__ROUTE	
17	MyRouteStops		15	MyRouteStop	SAM1911__ROUTE	
18	MyRoutePoints		15	MyRoutePoint	SAM1911__ROUTE	
19	MyNotificationHeaders	All Notifications	20	MyNotificationHeader	SAM1911_NOTIFICATION_GENERIC	X
20	MyNotificationItems		20	MyNotificationItem	SAM1911_NOTIFICATION_GENERIC	
21	MyNotificationTasks		20	MyNotificationTask	SAM1911_NOTIFICATION_GENERIC	
22	MyNotificationItemActivities		20	MyNotificationItemActivity	SAM1911_NOTIFICATION_GENERIC	

Order #	Entity Set Name	Batched	Sync Priority	Entity Type	Mobile OData Object	Lead Entity
23	MyNotificationItem- Causes		20	MyNotificationItem- Cause	SAM1911_NOTIFICA- TION_GENERIC	
24	MyNotificationItem- Tasks		20	MyNotificationItemTask	SAM1911_NOTIFICA- TION_GENERIC	
25	MyNotificationPartners		20	MyNotificationPartner	SAM1911_NOTIFICA- TION_GENERIC	
26	MyNotifDocuments		20	MyNotifDocument	SAM1911_NOTIFICA- TION_GENERIC	
27	MyNotifGeometries		20	MyNotifGeometry	SAM1911_NOTIFICA- TION_GENERIC	
28	MyNotifHeaderLong- Texts		20	MyNotifHeaderLongText	SAM1911_NOTIFICA- TION_GENERIC	
29	MyNotificationActivities		20	MyNotificationActivity	SAM1911_NOTIFICA- TION_GENERIC	
30	MyNotifActivityLong- Texts		20	MyNotifActivityLong- Text	SAM1911_NOTIFICA- TION_GENERIC	
31	MyNotifItemActivity- LongTexts		20	MyNotifItemActivity- LongText	SAM1911_NOTIFICA- TION_GENERIC	
32	MyNotifItemCause- LongTexts		20	MyNotifItemCause- LongText	SAM1911_NOTIFICA- TION_GENERIC	
33	MyNotifItemLongTexts		20	MyNotifItemLongText	SAM1911_NOTIFICA- TION_GENERIC	
34	MyNotifItemTaskLong- Texts		20	MyNotifItemTaskLong- Text	SAM1911_NOTIFICA- TION_GENERIC	
35	MyNotifTaskLongTexts		20	MyNotifTaskLongText	SAM1911_NOTIFICA- TION_GENERIC	
36	MyNotificationSales		20	MyNotificationSale	SAM1911_NOTIFICA- TION_GENERIC	
37	WorkOrderHistories	All Work Or- der Histor- ies	30	WorkOrderHistory	SAM1911_WORK_OR- DER_HISTORY	X
38	WorkOrderHistoryTexts		30	WorkOrderHistoryText	SAM1911_WORK_OR- DER_HISTORY	

Order #	Entity Set Name	Batched	Sync Priority	Entity Type	Mobile OData Object	Lead Entity
39	WorkOrderTransfers		31	WorkOrderTransfer	SAM1911_WORK_ORDER_TRANSFER	
40	OrderISULinks		40	OrderISULink	SAM1911_ORDER_ISU_LINK	
41	NotificationHistories	All Notification Histories	50	NotificationHistory	SAM1911_NOTIFICATION_HISTORY	X
42	NotificationHistoryTexts		50	NotificationHistoryText	SAM1911_NOTIFICATION_HISTORY	
45	Confirmations	All Confirmations	60	Confirmation	SAM1911_PM_CONFIRMATION	X
46	ConfirmationLongTexts		60	ConfirmationLongText	SAM1911_PM_CONFIRMATION	
47	ConfirmationOverviewRows		60	ConfirmationOverviewRow	SAM1911_PM_CONFIRMATION	
48	MeterReadingUnits	All Street Routes	65	MeterReadingUnit	SAM1911_METER_READING_UNIT	X
49	StreetRoutes		66	StreetRoute	SAM1911_STREET_ROUTE	X
50	StreetRouteConnectionObjects		66	StreetRouteConnectionObject	SAM1911_STREET_ROUTE	
51	ConnectionObjects	All Connection Objects	70	ConnectionObject	SAM1911_CONNECTION_OBJECT	X
52	ConnectionObjectMRNotes		70	ConnectionObjectMRNote	SAM1911_CONNECTION_OBJECT	
53	DeviceLocations	All Device Locations	75	DeviceLocation	SAM1911_DEVICE_LOCATION	X
54	DeviceLocationMRNotes		75	DeviceLocationMRNote	SAM1911_DEVICE_LOCATION	
55	MyFunctionalLocations	All Functional Locations	80	MyFunctionalLocation	SAM1911_FUNCLOC	X
56	MyFuncLocDocuments		80	MyFuncLocDocument	SAM1911_FUNCLOC	
57	MyFuncLocGeometries		80	MyFuncLocGeometry	SAM1911_FUNCLOC	

Order #	Entity Set Name	Batched	Sync Priority	Entity Type	Mobile OData Object	Lead Entity
58	MyFuncLocObjectSta- tuses		80	MyFuncLocObjectSta- tus	SAM1911_FUNCLOC	
59	MyFuncLocUserSta- tuses		80	MyFuncLocUserStatus	SAM1911_FUNCLOC	
60	MyFuncLocSystemSta- tuses		80	MyFuncLocSystemSta- tus	SAM1911_FUNCLOC	
61	MyFuncLocPartners		80	MyFuncLocPartner	SAM1911_FUNCLOC	
62	MyFuncLocClasses		80	MyFuncLocClasses	SAM1911_FUNCLOC	
63	MyFuncLocClassChar- Values		80	MyFuncLocClassChar- Value	SAM1911_FUNCLOC	
64	MyEquipments	All Equip- ments	90	MyEquipment	SAM1911_EQUIPMENT	X
65	MyEquipDocuments		90	MyEquipDocument	SAM1911_EQUIPMENT	
66	MyEquipGeometries		90	MyEquipGeometry	SAM1911_EQUIPMENT	
67	MyEquipObjectStatuses		90	MyEquipObjectStatus	SAM1911_EQUIPMENT	
68	MyEquipSystemSta- tuses		90	MyEquipSystemStatus	SAM1911_EQUIPMENT	
69	MyEquipUserStatuses		90	MyEquipUserStatus	SAM1911_EQUIPMENT	
70	MyEquipPartners		90	MyEquipPartner	SAM1911_EQUIPMENT	
71	MyEquipWarranties		90	MyEquipWarranty	SAM1911_EQUIPMENT	
72	MyEquipWarrantyLong- Texts		90	MyEquipWarrantyLong- Text	SAM1911_EQUIPMENT	
73	MyEquipClasses		90	MyEquipClass	SAM1911_EQUIPMENT	
74	MyEquipClassCharVal- ues		90	MyEquipClassCharValue	SAM1911_EQUIPMENT	
75	Fleets		91	Fleet	SAM1911_FLEET	
76	ActivityReasons		100	ActivityReason	SAM1911_ACTIV- ITY_REASON	
77	Devices	All Devices	110	Device	SAM1911_DEVICE	X

Order #	Entity Set Name	Batched	Sync Priority	Entity Type	Mobile OData Object	Lead Entity
78	DeviceGoodsMove- ments		110	DeviceGoodsMovement	SAM1911_DEVICE	
79	DeviceMeterReadings		110	DeviceMeterReading	SAM1911_DEVICE	
80	Installations		120	Installation	SAM1911_INSTALLA- TION	X
81	MeterReadings	All Meter Readers	130	MeterReading	SAM1911_ME- TER_READING	X
82	PeriodicMeterReadings		131	PeriodicMeterReading	SAM1911_MR_PERI- ODIC	
83	MeterReadingLimits		132	MeterReadingLimit	SAM1911_ME- TER_READING_LIMITS	
84	Premises		140	Premise	SAM1911_PREMISE	
85	RegisterGroups	All Regis- ters	150	RegisterGroup	SAM1911_REGISTER	X
86	Registers		160	Register	SAM1911_REGISTER	
87	ClassTypes	All Classifi- cations	170	ClassType	SAM1911_CLASS_TYPE	
88	ClassDefinitions		171	ClassDefinition	SAM1911_CLASSIFICA- TION_GENERIC	X
89	ClassCharacteristics		171	ClassCharacteristic	SAM1911_CLASSIFICA- TION_GENERIC	
90	Characteristics		171	Characteristic	SAM1911_CLASSIFICA- TION_GENERIC	
91	ClassCharacteristicVal- ues		171	ClassCharacteristic- Value	SAM1911_CLASSIFICA- TION_GENERIC	
92	Documents		180	Document	SAM1911_DOCUMENT	
93	Geometries		190	Geometry	SAM1911_GIS_OB- JECT_DATA	
94	MeasuringPoints	All Measur- ing Points	200	MeasuringPoint	SAM1911_MEASUR- ING_POINT	X
95	MeasuringPointTexts		200	MeasuringPointText	SAM1911_MEASUR- ING_POINT	

Order #	Entity Set Name	Batched	Sync Priority	Entity Type	Mobile OData Object	Lead Entity
96	MeasurementDocuments	All Measurement Documents	210	MeasurementDocument	SAM1911_MEASUREMENT_DOCUMENT	X
97	MeasurementDocumentLongTexts		210	MeasurementDocumentLongText	SAM1911_MEASUREMENT_DOCUMENT	
98	Materials	All Materials	220	Material	SAM1911_MATERIAL_PLANT_VIEW	X
99	MaterialPlants		220	MaterialPlant	SAM1911_MATERIAL_PLANT_VIEW	
100	MaterialSLocs		220	MaterialSLoc	SAM1911_MATERIAL_PLANT_VIEW	
101	MaterialUOMs		220	MaterialUOM	SAM1911_MATERIAL_PLANT_VIEW	
102	MaterialDocuments	All Material Documents	230	MaterialDocument	SAM1911_MATERIAL_DOCUMENT	X
103	MaterialDocItems		230	MaterialDocItem	SAM1911_MATERIAL_DOCUMENT	
104	MobileStatuses		240	MobileStatus	SAM1911_MOBILE_STATUS	
105	CatsTimesheetOverviewRows	All Timesheets	250	CatsTimesheet	SAM1911_CATS_TIMESHEET	X
106	CatsTimesheets		250	CatsTimesheetOverviewRow	SAM1911_CATS_TIMESHEET	X
107	CatsTimesheetTexts		250	CatsTimesheetText	SAM1911_CATS_TIMESHEET	
108	Employees	All Employees	260	Employee	SAM1911_HR_EMPLOYEE	X
109	EmployeeAddresses		260	EmployeeAddress	SAM1911_HR_EMPLOYEE	
110	EmployeeCommunications		260	EmployeeCommunication	SAM1911_HR_EMPLOYEE	
111	Addresses	All Addresses	270	Address	SAM1911_ADDRESS	X

Order #	Entity Set Name	Batched	Sync Priority	Entity Type	Mobile OData Object	Lead Entity
112	AddressCommunications		270	AddressCommunication	SAM1911_ADDRESS	X
113	AddressesAtWork		271	AddressAtWork	SAM1911_ADDRESS_WORKPLACE	X
114	AddressesAtWorkComm		271	AddressAtWorkComm	SAM1911_ADDRESS_WORKPLACE	X
115	CrewLists	All Crew	280	CrewList	SAM1911_CREW	X
116	CrewListItems		280	CrewListItem	SAM1911_CREW	
117	DisconnectionDocuments	All Disconnections	290	DisconnectionDocument	SAM1911_DISCONNECTION_DOCUMENT	X
118	DisconnectionActivities		290	DisconnectionActivity	SAM1911_DISCONNECTION_DOCUMENT	
119	DisconnectionObjects		290	DisconnectionObject	SAM1911_DISCONNECTION_DOCUMENT	

Non-Ordered Entity Sets

The following entity sets can be retrieved in any order:

Entity Set Name	Sync Priority	Entity Type	Mobile oData Object	Lead Entity
AcctIndicators	0	AcctIndicator	SAM1911_ACCOUNTING_INDICATOR	
ActivityTypes	0	ActivityType	SAM1911_PM_ACTIVITY_TYPE	
AppParameters	0	AppParam	SAM1911_APP_PARAMS	
AttendanceTypes	0	AttendanceType	SAM1911_HR_ATTENDANCE_TYPE	
BusinessAreas	0	BusinessArea	SAM1911_BUSINESS_AREA	

Entity Set Name	Sync Priority	Entity Type	Mobile oData Object	Lead Entity
CharValueCodes	0	CharValueCode	SAM1911_CHAR_VALU E_CODE	
COActivityTypes	0	COActivityType	SAM1911_COA_ACTIV- ITY_TYPE	
ControlKeys	0	ControlKey	SAM1911_OPERA- TION_CONTROL_KEY	
Countries	0	Country	SAM1911_COUNTRY	
DeviceCategories	0	DeviceCategory	SAM1911_DE- VICE_CATEGORY	
DisconnectActivitySta- tuses	0	DisconnectActivitySta- tus	SAM1911_DISCON- NECTION_STATUS	
DisconnectionActivity- Types	0	DisconnectionActivity- Type	SAM1911_DISCON_AC- TIVITY_CATEGORY	
DisconnectDocSta- tuses	0	DisconnectDocStatus	SAM1911_DISCON- NECT_DOC_STATUS	
DisconnectionReasons	0	DisconnectionReason	SAM1911_DISCON- NECTION_REASON	
DisconnectionTypes	0	DisconnectionType	SAM1911_DISCON- NECTION_TYPE	
Divisions	0	Division	SAM1911_DIVISION	
EquipmentCategories	0	EquipmentCategory	SAM1911_EQUIP_CAT- EGORY	
EquipObjectTypes	0	EquipObjectType	SAM1911_EQUIP_OB- JECT_TYPE	
GISMapParameters	0	GISMapParameter	SAM1911_GIS_MAP_C ONTROL	
Locations	0	Location	SAM1911_LOCATION	
MeterReadingNotes	0	MeterReadingNote	SAM1911_ME- TER_READING_NOTE	
MeterReadingTypes	0	MeterReadingType	SAM1911_ME- TER_READING_TYPE	

Entity Set Name	Sync Priority	Entity Type	Mobile oData Object	Lead Entity
MeterReadingStatuses	0	MeterReadingStatus	SAM1911_METER_READING_STATUS	
MobileStatusMappings	0	MobileStatusMapping	SAM1911_MOBILE_STATUS_MAPPING	
MovementTypes	0	MovementType	SAM1911_MOVEMENT_TYPE	
NotificationTypes	0	NotificationType	SAM1911_NOTIF_TYPE	
OrderTypes	0	OrderType	SAM1911_ORDER_TYPE	
PartnerFunctions	0	PartnerFunction	SAM1911_PARTNER_FUNC	
PartnerDetProcs	0	PartnerDetProc	SAM1911_PARTNER_DET_PROC	
PlannerGroups	0	PlannerGroup	SAM1911_PLANNER_GROUP	
Plants	0	Plant	SAM1911_PLANT	
PMAuthorizationGroups	0	PMAuthorizationGroup	SAM1911_PM_AUTH_GROUP	
PMCatalogCodes	0	PMCatalogCode	SAM1911_CATALOG_CODES	
PMCatalogProfiles	0	PMCatalogProfile	SAM1911_CATALOG_PROFILE	
Priorities	0	Priority	SAM1911_PRIORITY	
PRTControlKeys	0	PRTControlKey	SAM1911_PRT_CONTROL_KEY	
Regions	0	Region	SAM1911_REGION	
SAPUsers	0	SAPUser	SAM1911_USER_DATA	
SystemStatuses	0	SystemStatus	SAM1911_SYSTEM_STATUS	
UsageUoMs	0	UsageUoM	SAM1911_GENERIC_UOM	



Entity Set Name	Sync Priority	Entity Type	Mobile oData Object	Lead Entity
UserGeneralInfos	0	UserGeneralInfo	SAM1911_USER_INFO	X
UserSystemInfos	0	UserSystemInfo	SAM1911_USER_INFO	X
UserPreferences	0	UserPreference	SAM1911_USER_INFO	X
UserStatuses	0	UserStatus	SAM1911_USER_STA- TUS	
VarianceReasons	0	VarianceReason	SAM1911_CONF_VAR- IANCE_REASON	
WorkCenters	0	WorkCenter	SAM1911_WORKCEN- TER	
MeterReadingReasons	0	MeterReadingReason	SAM1911_ME- TER_READING_REA- SON	
PolRegStructElements	0	PolRegStructElement	SAM1911_POL_REG_S TRUCT	

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