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Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

DANGER

indicates that death or severe personal injury **will** result if proper precautions are not taken.

WARNING

indicates that death or severe personal injury **may** result if proper precautions are not taken.

CAUTION

indicates that minor personal injury can result if proper precautions are not taken.

NOTICE

indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

WARNING

Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

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Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

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Introduction

1.1 Introduction

DevOps Cockpit offers customers one centralized place to bring your apps into Insights Hub. It helps you to integrate, test, use productively and provision your application to other external users.

DevOps Cockpit is designed to simplify the application lifecycle. We have improved and enhanced the application performance. It is the combination of former Developer Cockpit, Operator Cockpit and distributed functions into one continuous and centralized place to simplify the developer experience.

You can access the DevOps Cockpit from the Launchpad in your development environment. You need at least one of the following roles to access the DevOps Cockpit:

- Developer
- Developer Admin
- Operator Admin

These roles can be assigned to your user in Settings application by your “System Administrator” and Settings will be available on the Launchpad. For more information about Settings application, see [Settings](#) documentation.

The following table provides an overview on the chosen Capability Package and the respective possible actions within your Insights Hub account:

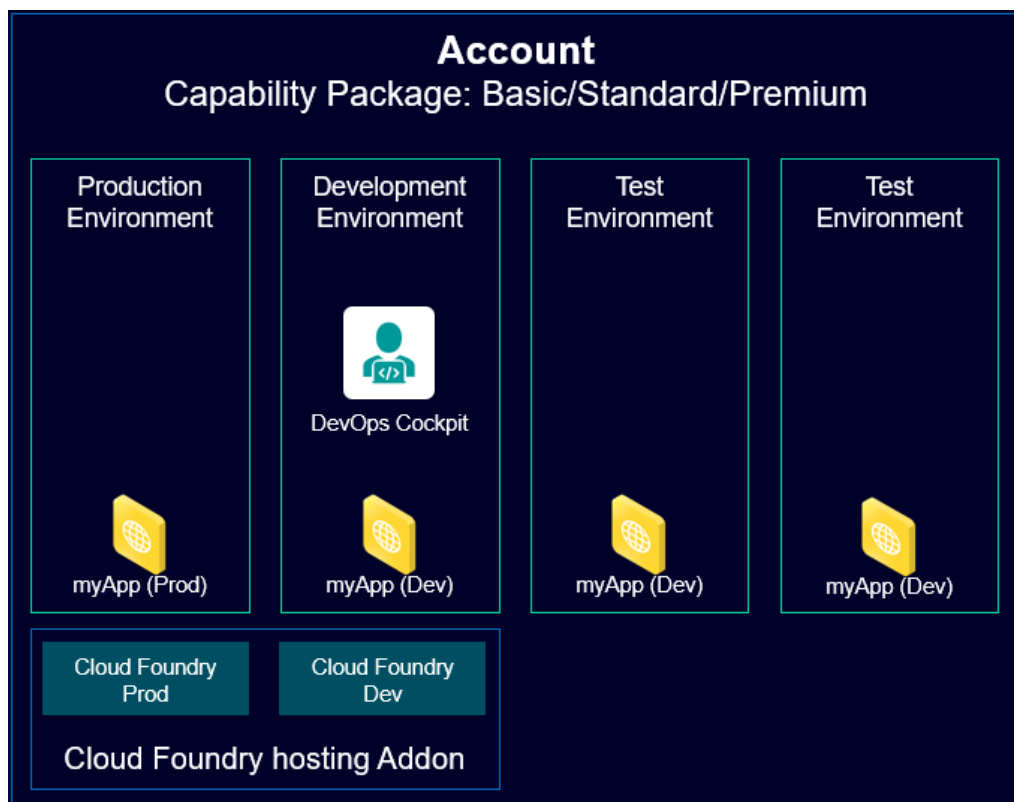
Capability Package	Develop, integrate and use own applications productively for internal user	Assign or provision your application to external user	Utilize the dedicated Test Environments	Host applications using a hosting environment provided by Insights Hub
Basic	✓	✗	✗	yes - requires the Cloud Foundry Add-on
Standard	✓	✓	✓	yes - requires the Cloud Foundry Add-on
Premium	✓	✓	✓	yes - requires the Cloud Foundry Add-on

Each Capability Package grants you access to at least two Environments (Development/Production), to ensure that you can securely develop and integrate your applications.

For more information about Capability Packages, see [Industrial IoT Capability Packages-Product Sheet](#).

The following table displays the environments provisioned to you as part of your Insights Hub subscription:

Environment	Purpose
Production	The Production Environment is where your productive use cases are represented. This is the environment where your production machines should be connected or where your end customers should reside.
Development	The Development Environment is specifically used to develop/integrate your applications. This is also where the DevOps Cockpit is located and the overall Application Lifecycle is controlled.
Test(s)	The test environments are designed to support the testing of your applications before using them in production. You can also connect dedicated test machines to these environments to help test your applications. Note: These test environments are only available for "Standard" or "Premium" Capability Package subscriptions.



For more information on the application lifecycle, refer [Application Lifecycle in DevOps Cockpit](#).

User Interface and User rights

2

2.1 User Interface

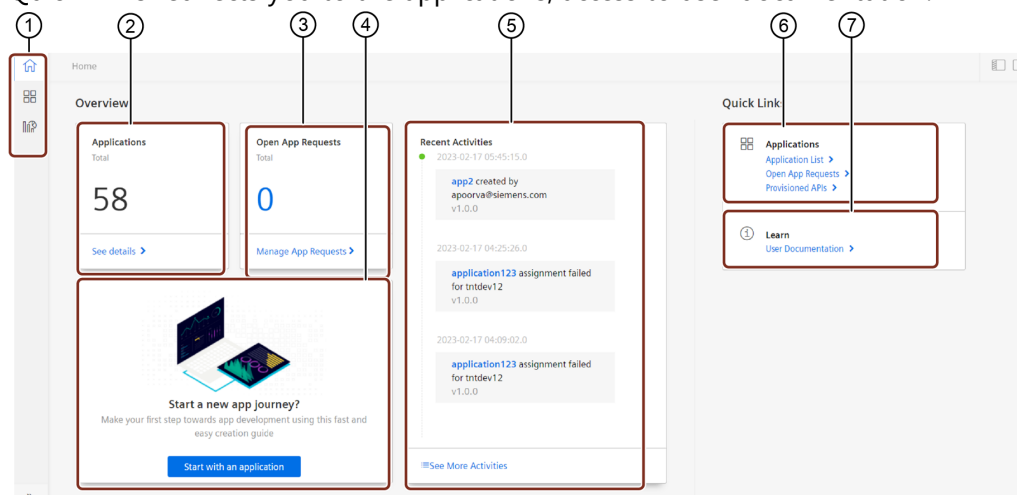
DevOps Cockpit application can be accessed from Launchpad by clicking the following icon:



Home screen

From the "Home" screen of DevOps Cockpit, you can get an overview of all the apps that you have created in your environment, number of open app requests, a summary of recent activities and start a new app journey.

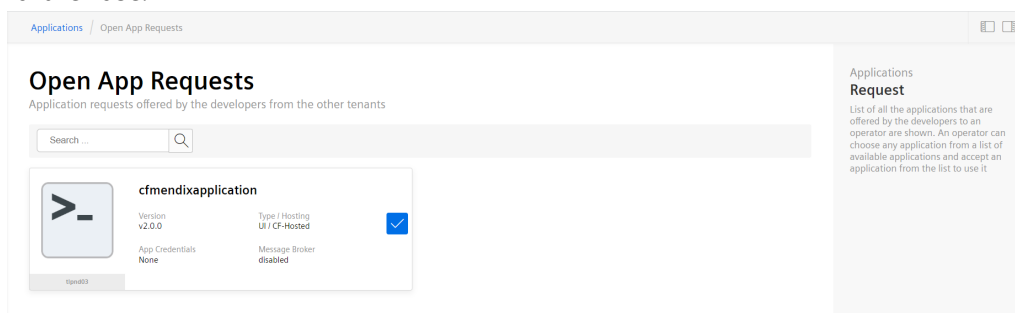
Quick Links redirects you to the applications, access to user documentation.



- ① Available [navigation tabs](#)
- ② Displays the total number of applications
- ③ Displays the [total number of applications assigned to the operator](#)
- ④ Allows to start a new application development journey
- ⑤ Displays the recent activities performed within the application
- ⑥ Navigates to the "Applications" screen, and [Provisioned APIs](#) screen
- ⑦ Navigates to the DevOps Cockpit documentation

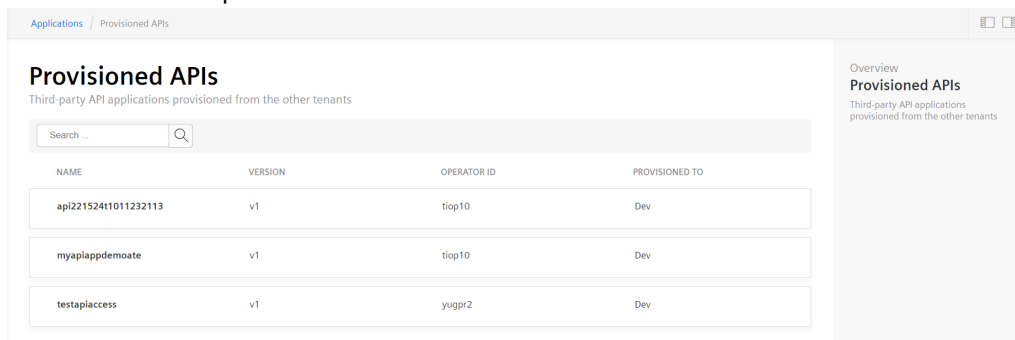
Open App Requests

This tile displays the application requests offered by the developers from the other tenants. Click "Manage App requests" to view all the list of applications that are offered by the developers to the operator. The operator can choose any application from the available list and accept it for further use.



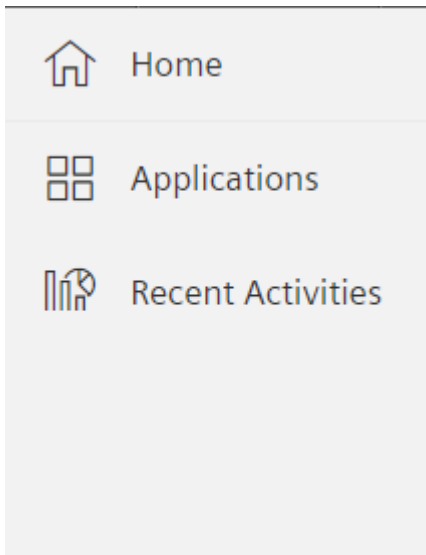
Provisioned APIs

The Provisioned APIs in Quick links redirects to a list of third-party API applications provisioned from other tenants. You can view the API application name, version, Operator ID and the environment it is provisioned to.



Navigation tabs

The following are the navigation tabs available in DevOps Cockpit:



Using the navigation menu, it is possible to:

- View the overview and quick links within the application
- Create new application with default configuration
- Create new application with Step By Step configuration (advanced configuration)
- View recent activities performed within the application

User rights

You can access DevOps Cockpit from the Launchpad in your Development Environment. You will need at least one of the following roles to access DevOps Cockpit:

- Developer
- Operator Admin
- Developer Admin role.

These roles can be defined in the Settings app by your "System Administrator". Settings app is available on the Launchpad. For more information on assigning roles, see [Assign users to a role](#) in Settings documentation.



"Developer Admin" role is assigned to the application by default in DevOps Cockpit.

The following table shows the assignment of roles:

	Role	Role
Right	Developer Admin	Developer
Create application	✓	✓

	Role	Role
Register the application	✓	✓
Provision the applications to test environment(s)	✓	✓
Upload Binaries	✓	✓
Approve Upload	✓	
Set to "Ready for Production"	✓	
Assign to Operator	✓	

Creating a new application

3

3.1 Overview

In DevOps Cockpit, you can add a new application by the following configuration types:

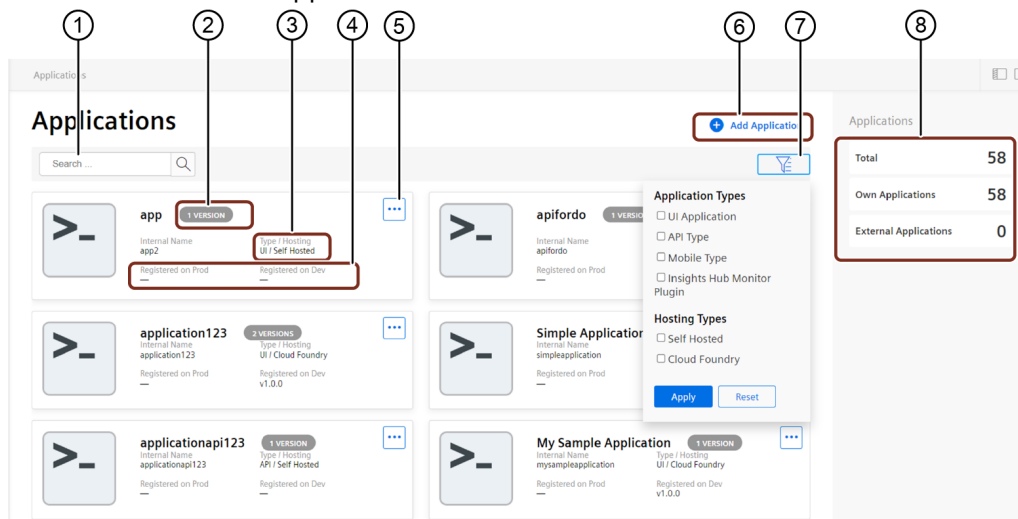
- [Create new application with default configuration](#): In this configuration, the application is auto-configured with the default version, CSP header and the application role and scope.
- [Create new application with Step by Step process \(advanced configuration\)](#): In this configuration, the application is needs to be configured with the custom or advances configuration with step by step process.

User Interface of "Applications"

The Applications screen shows the list of already created applications, the total number of applications available, own applications and external applications. It is possible to create a new application or create a new version of an existing application.

In addition, this screen also provides a quick detailed information of the applications that helps the user to access the required application faster.

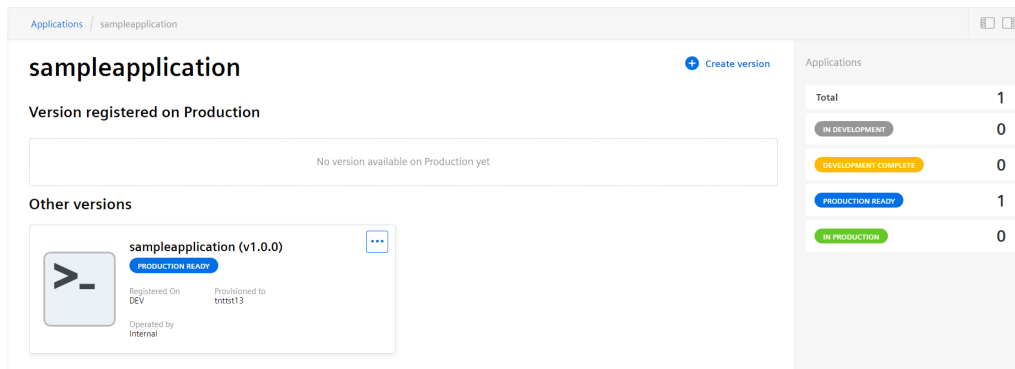
The user interface of "Applications" is as shown below:



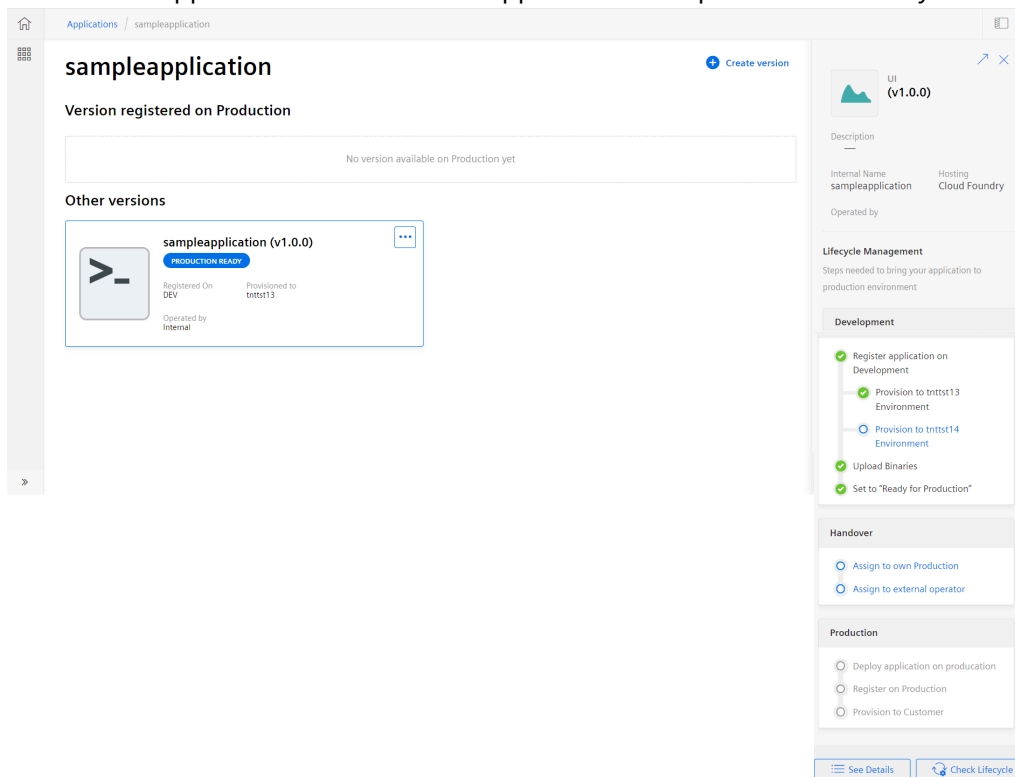
- ① Search for an application
- ② Number of versions available for an application
- ③ Application Type and hosting type details of the application
- ④ Application version registered on Production and Development environments
- ⑤ Create a new version for the application

- ⑥ Create a new application
- ⑦ Filter the application based on application and hosting types
- ⑧ Total number of available applications, own and external applications

On selecting the required application, the below screen is displayed:



Click on the application tile to view the application description and the lifecycle details.



On clicking "[See details](#)", the detailed configuration of the application can be viewed. On clicking "Check Lifecycle", the UI displays the step that the user needs to execute in order to get the application to production. For more information on the steps in application lifecycle, refer [Application Lifecycle in DevOps Cockpit](#).

Types of Applications

The following application types are supported:

- **Standard:** The standard type of applications provide a user interface for their users and will be available in the Launchpad.

- **Insights Hub Monitor Plugin:** The added applications will be integrated as a plug-in inside Insights Hub Monitor application. For more information on Insights Hub Monitor Plugin applications, refer [Accessing integrated Insights Hub Monitor Plugin application in Insights Hub Monitor](#).
- **API:** The API applications cannot be used independently and requires standard UI or Insights Hub plugin applications as dependent applications.
- **Mobile:** The mobile type of application represents a mobile native application connected to Insights Hub. The native mobile applications are developed outside Insights Hub and are uploaded to the respective mobile application stores, by the developers or operators. With the application type "Mobile", you can enable native mobile applications to access certain Industrial IoT APIs.

Types of Application Infrastructure

DevOps Cockpit allows you to host your application on the following types of infrastructure:

- **Self Hosted:** DevOps Cockpit provides a platform to integrate your own applications with Insights Hub world. The self-hosted applications will be hosted on the private infrastructure.
- **Cloud Foundry:** These applications will be hosted in the Cloud Foundry space. It supports applications that consist of one or more components. Each component is represented by a Cloud Foundry application that requires to be run within Cloud Foundry Space. Currently, only Cloud Foundry applications that have a single Cloud Foundry manifest configuration is supported.
- **Mendix-based:** When your application is marked with Mendix feature, the user will be informed upon the production ready that a Mendix license is required to run that application. When applications are added, they are available in DevOps Cockpit dashboard. For more information on Mendix, see [Developing Mendix Apps](#)
- **None:** This type of infrastructure does not require any separate backend on Insights Hub. Only mobile type of applications can be hosted here, where all logic is managed in the mobile application. However, they are exclusively available only for iOS and Android mobile devices.



If you need Insights Hub to host your application, you need to purchase the add-on IIoT Data Package, if this is not already included in your Capability Package.

All types of applications, Standard, Insights Hub Monitor Plugin, API, Mendix-based and Mobile applications are supported on Cloud Foundry and self-hosted infrastructures.

3.2 Adding an Application with Default Configuration

Adding an application in DevOps Cockpit is the first step to start your journey. You can add different types of applications based on the application type and hosting type.

In DevOps Cockpit, you can quickly create an application with the default configuration. In this configuration, the application is auto-configured with the default version, CSP header and the application role and scope.

Pre-requisites

- Your self-hosted application is reachable via DNS and a valid SSL certificate (self-signed certificates are not allowed).
- CF applications should be hosted on Cloud Foundry.

Procedure

To quickly create an application with default configuration, follow these steps:

1. In the "Application" tab, click "Create New App".

Or, on the Home screen click "Start with an application".

2. In the "Add new application" screen, select the "[Type](#)" and "[Infrastructure](#)".

3. Enter the "Display Name" and "Component Url".

The "Internal name" is automatically populated based on the entered display name. You can also update this field with the required name.

4. Upload the icon in the "Application Icon" field and click "Save".

Add new application

Add your new application to DevOps Cockpit and monitor the application.

Application Type

Type *
Standard Application
Select the type of Application user interface for users.

Infrastructure *
Self Hosted Application
Select the type of Application Infrastructure for the application and once selected cannot be changed.


General Information

Display Name *
sampleapp
Enter display name to be displayed under the application icon on the Launchpad.

Internal Name *
sampleapp
Enter internal application name to be part of application URL and application specific role names.

☒

Component Url *
https:// www.domain-name.com
Enter the component URL based for the application type.


Icon *

Drag and drop or [upload](#) a file
Upload the application icon in '.png' or '.jpg' format.

Default configuration is already filed!
If you want to use advanced configuration please click on "Advanced configuration".
Your input will be transferred.

[Advanced configuration](#)

[Save](#) [Cancel](#)



5. Click the  to check if the name and version of the application already exists. It is recommended to use unique application names to avoid app validation failures at the later stage of application lifecycle.



You can click "[Advanced Configuration](#)" to configure your application with custom configuration.

6. Click "Save".

Parameter	Description
Display Name	Enter the name of the application. This name will be displayed in the Launchpad. This field does not support any special characters and is limited to 50 characters only.
Internal Name	By default, the "Internal Name" is auto-filled while entering the Display name. All characters in this field will be in lower case and without special characters. The internal name is used later in the application URL and must be unique for your tenant. Enter the name for the application with the following conditions: <ul style="list-style-type: none">- The name must start with an alphabet.- Only lower-case letters are allowed.- A maximum of 20 alphanumeric characters is allowed.
Component Url	Enter the component Url based on the application type selected
Icon	Upload the relevant icon for your application in .png or .jpg format.

Result

A new application with default configuration has been created.

All these application details can be viewed in the "[See details](#)" screen.

You can edit or delete an application in DevOps Cockpit. For more information, see [Editing and Deleting of an application](#).

3.3 Adding an Application with Step by Step (advanced configuration)

You can create new application with Step by Step process (advanced configuration), where all the application requirements need to be configured in a step-by-step process.

Pre-requisites

- Your self-hosted application is reachable via DNS and a valid SSL certificate (self-signed certificates are not allowed).

Procedure

To create an application with advanced configuration, follow these steps:

1. In the "Application" tab, click "Create App step by step".
2. In "[Application Settings](#)" tab, select the "Application Type" and "Infrastructure" and then click "Next".
3. In "[General Information](#)" tab, enter the application field parameters and upload the "Application Icon" and then click "Next".
4. In "[Components Details](#)" tab, enter the component field parameters and click "Next".
5. In "[Dependencies](#)" tab, add the API dependency and click "Next". This is an optional step.
6. In "[Authorization Information](#)" tab, assign "Roles" and "Scopes" for the application and click "Next" (optional).
7. In "Application creation almost complete" dialog, select the possible actions that you want to perform and click "Save".

Application Settings

The user interface of "Application Settings" is as shown below:

The screenshot shows the 'Application Settings' dialog box. The sidebar on the left has five tabs: 'Application Settings' (selected, marked with a blue circle and '1'), 'General Information' (marked with a blue circle and '2'), 'Component Details' (marked with a blue circle and '3'), 'Dependencies' (marked with a blue circle and '4'), and 'Authorization Information' (marked with a blue circle and '5'). The main content area is titled 'Application Type' and 'Infrastructure'. Under 'Application Type', there are four radio button options: 'Standard' (selected), 'Insights Hub Monitor Plugin', 'Mobile', and 'API'. Under 'Infrastructure', there are two radio button options: 'Self Hosted Application' (selected) and 'Cloud Foundry'. At the bottom, there are 'Cancel' and 'Next' buttons.

In the "Application Settings" screen, you can select the type of application and infrastructure.

Parameter	Description
Application Type	You can create four types of applications: Standard, Insights Hub Monitor Plugin, Mobile and API.

Parameter	Description
Infrastructure	Two types of infrastructures are available: Self-hosted and Cloud Foundry. Cloud Foundry infrastructure is available to host your application in Insights Hub platform. To activate this infrastructure, you need to buy an add-on from IIoT Data Package. Self-hosted is available to host your application outside Cloud Foundry.

General Information

The user interface of "General Information" is as shown below:

Application Settings1

General Information2

Component Details3

Dependencies4

Authorization Information5

General Information

Display Name *

My Adv Application

Enter display name to be displayed under the application icon on the Launchpad.

Internal Name *

myadvapplication

Enter internal application name to be part of application URL and application specific role names.

Version *

v1.0.0

☐ My application is Mendix based ⓘ

Provides tools to build the Mendix based application.

Description

My Advanced config application

Access Details

Content Security Policy

default-src 'self' static.eu1-int.mindsphere.io; style-src 'unsafe-inline'; script-src 'self' 'unsafe-inline'

Configuring Content Security Policy header, prevents from possible attacks and execution of malicious content or code and makes your application more secure.

Cache Control

no-cache, no-store, max-age=0, must-revalidate

Cache control, each cache will be revalidated before using a cached response to capture the uncachable responses.

Back

Cancel

Next

In the General Information screen, enter the application parameters.

Parameter	Description
Display Name	Enter the name of the application. This name will be displayed in the Launchpad. This field does not support any special characters and is limited to 50 characters only.
Internal Name	By default, the "Internal Name" is auto-filled while entering the Display name. All characters in this field will be in lower case and without special characters. The internal name is used later in the application URL and must be unique for your tenant. Enter the name for the application with the following conditions: <ul style="list-style-type: none">- The name must start with an alphabet.- Only lower-case letters are allowed.- A maximum of 20 alphanumeric characters is allowed.

Parameter	Description
Version	<p>By default, "v1.0.0" version is auto-filled in the version field and it can be changed as per the requirement. The version supports alphanumeric string data. Spaces in between the nomenclature format are not supported. A maximum of 30 alphanumeric characters is allowed. Use of capital letters for naming versions is not allowed. However, it supports the following special characters:</p> <ul style="list-style-type: none"> - '#' - '\$' - '.' - '/' - '+' - '-' - '_' - '@' <p>In the version field in DevOps Cockpit, if there are any special characters (except "@", "."), the provisioning workflow will be failed.</p> <p>For all the applications, the following format needs to be followed: v<version>.<revision>.<patch>-<label(optional)>, for example v1.0.0</p> <ul style="list-style-type: none"> - <version> is the version number with range 1-9. - <revision> is revision number with range 0-99. - <patch> is patch number with range 0-99. - <label> is label and optional, case insensitive alphabet.
Mendix-based	This check box is used to notify the users that a Mendix license is needed to run the app.
Description	Add a description for the application. This is an optional field. This provides information about the application and will be visible to the user.
Icon	<p>Icon of the application is displayed in DevOps Cockpit and Launchpad.</p> <p>By default, an application icon is loaded. You can upload a different image to represent the application. The resolution of 512x512 is recommended for both high and low-resolution screens.</p>
Access Details	
Content-Security-Header	<p>Configuring Content Security Policy header helps to prevent possible attacks and execution of malicious content or code, and makes your application more secure. For more information, see Configuring Content Security Policy.</p> <p>By default, the configuration value is taken for the content security policy. The content security policy header value can be only 1000 characters long, rest of the characters will be discarded.</p> <p>The field cannot be empty. If you try to save the application with an empty field, backend service will set the default values.</p>

Parameter	Description
Cache control	<p>With Cache control, each cache will be revalidated before using a cached response to capture the uncacheable responses.</p> <p>By default, the configuration value is taken for the cache control. The cache control value can be only 255 characters long, rest of the characters will be discarded.</p> <p>The field cannot be empty. If you try to save the application with an empty field, backend service will set the default values.</p>
Plugin Settings	<p>With plugin settings, you can directly configure your application into Insights Hub Monitor. To configure your application with "Plugin Settings", refer to Plugin Settings in DevOps Cockpit.</p> <p>Note: This feature is only applicable for "Insights Hub Monitor" type of applications.</p>



For API application, there are no default configurations in "Access details" section.

Component Details

Components are required to structure and register the application in the Gateway. Atleast one component is required and every component should contain atleast one endpoint.

The user interface of "Component Details" is as shown below:

Components Details
It will structure and register the application in MindSphere Gateway. Minimum one component is mandatory. Each component must contain at least one endpoint.

First Step Already done
We have predefined the first component for you, please enter the url where your component is hosted and click next

Name: default Url: www.domain-name.com

Name * **Url ***

default https:// www.domain-name.com

Enter the component name. Enter the component URL for each component.

Endpoints

Path *	Action *
/	All

[Add new endpoint](#)

[Add new Component](#)

[Back](#) [Cancel](#) [Next](#)

To enter the component details, follow the steps below:

1. Enter the component Name and URL.
2. Enter the path for the endpoint.
To add a new endpoint, click "Add new endpoint" icon and enter the path details.
3. To add a new component, click "Add new component" icon and enter the details.
4. Click "Next" to proceed with the next steps.

Parameter	Description
Name	Enter the name of the component. The following conditions are applicable while naming a component: <ul style="list-style-type: none"> - It should not include alphanumeric and '-', '_', ':' special characters. - A maximum of 40 characters are allowed. - The "Name" field of the application in the component tab supports only lower-case letters.
Url	Enter the direct URL for each of the components for an application. The URL format should be valid in the format and not malicious: <code>https://apps.example.com/<ContextPath></code> .
Endpoints	The application will be added with the default endpoint. You can add multiple new endpoints for your application.

Dependencies

A user can develop backend applications to support single or multiple UI apps. These applications are called API type apps. The developer can re-use the functional logic in multiple applications.

You can configure the internal or external the API dependencies for the application by adding the API dependency. API dependencies for applications enables you to build UI applications on top of already existing API applications from other developers. To use this new functionality, an operator will provision the API app to your developer tenant, and you can continue to use the provided functionality.

The user interface of "Dependencies" is as shown below:



- For API type applications, dependencies are not supported.
- Maximum of 5 dependencies can be added for an application.

To add an API dependency to the application, follow these steps:

1. Click "Add API Dependency".

2. Select the API type "Internal" or "External".

Configure API Dependencies

TYPE: **INTERNAL**

Search

apisaveapp

☒ v1.0.0

apiappcheck

☐ v1.0.0

simpleapiapp2

☐ v1.0.0

imgtest2

API Dependency Preview

INTERNAL (1)

Internal API Applications

apisaveapp - v1.0.0

EXTERNAL (0)

External API Applications

Cancel Configure

Select the API application and click "Configure".

3. API dependency is added to the application.

4. Click "Next" to proceed with the next steps.

Authorization Information

Authorizing the application Roles and Scopes

Scopes: A scope is the smallest entity that describes a single permission.

Scopes describe permissions which are listed in the access token as named parameters. When accessing an endpoint or application within Insights Hub, the Identity and Access Management automatically adds the required scopes to the access token if the respective user has access permission. Scopes must adhere to the following naming convention: `{application_name}. {scope}`.

It can either be assigned to a user via the Settings application or added to an application role to configure access to Insights Hub APIs. For example, the "Core" role `mdsp:core:<role.name>`, you can add to the application role so that this application can read time series data. This assignment makes all the scopes of the core role available in your application role.

Roles: A role is a collection of multiple scopes (permissions). These roles can be assigned to a user.

The scopes can be assigned to one or more default application roles. For more information on API specific roles and the available scopes, see [Developer Documentation](#).



- By default, the application scope with "Admin" role is automatically added to a newly created application.
- Once you create another role and scope, you can delete the default role and scope.
- At least, one role and scope is required to access the application.
- Adding new roles and scopes will not be added to the application which is provisioned to test environments.

User interface

The user interface of "Authorization Information" is as shown below:

Parameter	Description
Application Scopes	You can add your application scopes under the "Application Scopes" section. By default, an admin role with a scope is created for an application. You can create the scopes, apart from the default scope.
Third Party App Roles	You can add the dependent third party API role and assign it to the application role under the "Third Party API Roles" section.
API Roles	You can add your application scope to the specific API roles under the "API Roles" section.
Add a Role	You can add a new customized role for the application and add scope(s) for the newly added role.

In "Authorization Information" tab, a default application role and scope is already configured. If required, you can configure customized roles and scopes as per the requirement.

Procedure

To add the application specific roles and scopes, follow these steps:

1. In "Authorization Information", click "Add a Role".

New Application Role

Name

mdsp:tntdev12:developer

Description*

Assign the application to a developer

Cancel

Save

2. Enter the application specific role "Name" and "Description" and then click "Save".

Click "Add new application scope" to add the scope for the application specific role and click

3. "Save".

Application Scope

Create new application scope and assign it to at least one application role

Name*

access

☐

developer

☒

Cancel

Save

4. Click "Add API role" to configure the scope for the specific API role and click "Configure".

Configure Additional Roles

TYPE : API Role

Search ...

mdsp:core:vfc

☒ api

☐ api

☐ api

Authorization Preview

API Role (1)

API Role

mdsp:core:vfc.api.user

This role entitles the user to access Visual Flow Creator api.

Cancel

Configure

5. After adding the roles and scopes to the application and click "Save".

The application is successfully added with application specific roles and scopes.

Result


A new application with advanced configuration has been created. All these application details can be viewed in the "[See details](#)" screen.

3.4 New version of an application


The "New Version" creates a replica of an existing application. The new application version will have the state "In Development" on creation. You can save the time by creating the same application again if it fails at any point. You can modify the new version when it is in the "In Development" state. You can modify all parameters except the app name, app type and hosting type.

If an application has different versions available, they can be viewed as shown in below:

Creating a new version for an application

- You can clone the existing application to create a new version or revision of the application. To create a new version of the existing application, follow these steps:
1. In "Application Overview" screen, select the application for which a new version needs to be to created.
 2. Click  in the application tile, and click "Create new version", or "Create Version" at the top of the page.
 3. In the "Based on" field, select the version on which the new version should be created.
 4. In the "Version" field, enter the new version number. The version number must follow the semantic pattern. For example, v2.0.0. Ensure that the version does not contain space and special characters such as () <>, ?, : , (), =, &, | , %, +, -, *, *, !.
 5. Click "Create".

My Application



Based on *

v1.0.0

Version *

v2.0.0

Version must follow semantic version pattern e.g. v1.0.0.

Cancel

Create

Result

The new version of the application is created successfully.

My Application

Version registered on Production

No version available on Production yet

Other versions

>-

My Application (v2.0.0)

In Development

Registered On

—

Provisioned to

0 Customers

Operated by

Internal

My Application (v1.0.0)

Development Complete

Registered On

DEV/tntts14

Provisioned to

1 Customers

Operated by

Internal

Upgrading an application to a new version

DevOps Cockpit

System Manual 3/2024

24

Pre-requisites

- The application is hosted on Cloud Foundry
- The application that is currently in use must already be registered on development and assigned to production

Procedure

1. In "Application Overview" screen, select the application for which you need to perform a version upgrade.
2. Click on the application tile and click "Lifecycle management". Click "Deploy application on production".
3. Choose the type of deployment: Auto-deployment or Manual Deployment via CLI.
4. Read and check the important notice and click "Start Deployment".

application123 - v1.0.0 PRODUCTION READY [Switch to Details](#)

Deploy Application
Deploy your application to the Cloud Foundry production Org.

Please choose a type for your deployment and accept the terms and conditions

Auto Deployment available
We have detected that it is possible to deploy your application automatically. Click start to deploy the application and oversee the status of the deployment

☒ Auto Deployment

☐ Manual Deployment via CLI

☐ **IMPORTANT NOTICE** Please be advised: You are about to deploy your application on the productive platform. By deploying, you confirm
(i) Having evaluated and tested the application as to its technology, functionality, performance, security, and user interface; and
(ii) That your application complies with the documentation (in particular with regard to the DevOps Guide available at www.mindsphere.io/terms) and any other requirements set out in the Agreement or the applicable Order Form

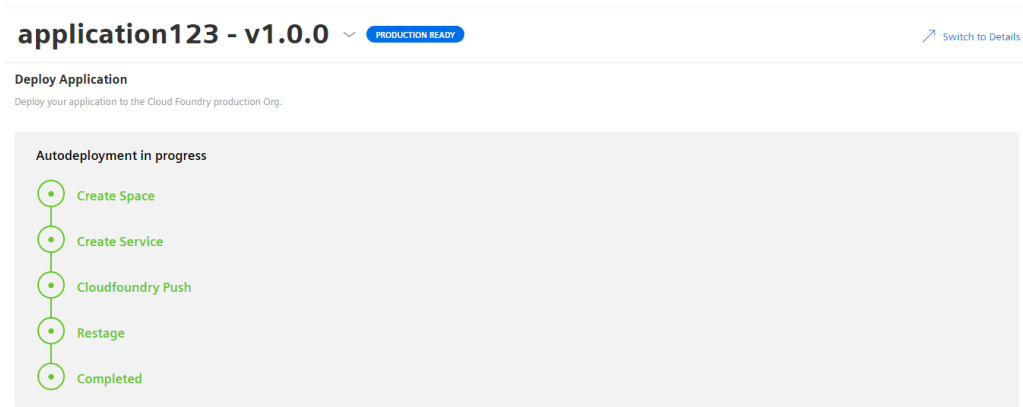
Start Deployment



- It is only possible to use a single version for an application at a time. Two versions of the same application cannot be used simultaneously.
- It is not recommended to initiate auto-deployment for the same application in different windows simultaneously, since it might create inconsistencies in the app and might not be usable.

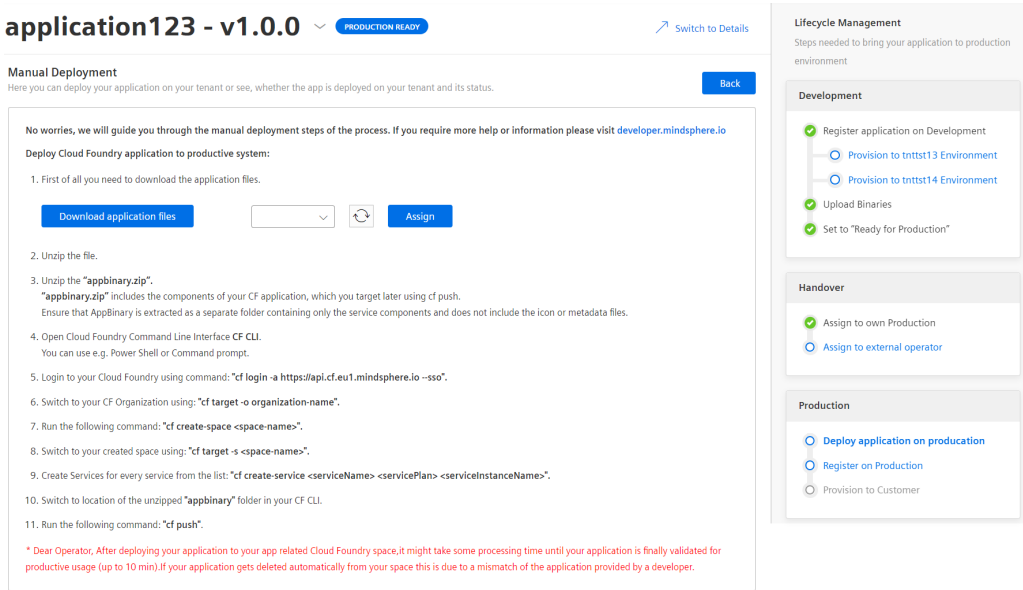
Auto-Deployment

When you choose auto-deployment to upgrade the application, you can view the steps involved and the status of each step on the screen as shown below:



Manual deployment

To perform manual deployment, follow the on-screen instructions as shown below:




Result

The application is successfully upgraded to a new version.

3.5 Editing and Deleting of an Application

In DevOps Cockpit, you can edit or delete your application from the "Application Overview" screen.



- The application can be edited or deleted only if it is not registered on the development environment.
- The application can only be edited if it is already [registered on production](#).


Editing an application

Procedure

To edit an existing application, follow the below steps:

1. In the "Application" tab, select your application.



2. Click  and click "Edit" to edit the application.

Edit the required fields under General Details, Components Details, Dependencies, Access and App Credentials.

My Application - v1.0.0
IN DEVELOPMENT

ENVIRONMENT: **Development** ▼

General Details
Configure your general information of the application

Components
Manage components of your application


Dependencies
Configure your dependencies of the application

Access
Configure roles and scopes for your application

App Credentials
Configure app credentials for external access of your application

General Details
Update the applications general details. [Switch to Lifecycle](#)

General Information

Application Icon *
default.png 
This icon will identify your application on the MindSphere Launchpad.

Display Name *
My Application
Enter display name to be displayed under the application icon on the Launchpad.

Version *
v1.0.0
Enter the version

Internal Name *
myapplication7
Enter internal application name to be part of application URL, and application specific role names.

Description
Enter Description

Configurations

Content Security Policy *
default-src 'self' static.eu1-int.mindsphere.io; style-src 'unsafe-inline'; script-src 'self' 'unsafe-inline' static.eu1-int.mindsphere.io; img-src * data;;
Configuring Content Security Policy header, prevents from possible attacks and execution of malicious content or code and makes your application more secure.

Cache Control *
no-cache, no-store, max-age=0, must-revalidate
Cache control, each cache will be revalidated before using a cached response to capture the uncacheable responses.

Application & Hosting Information

Application Type *
Standard Application

Infrastructure *
Self Hosted

Save

4. Click "Save".

Result

The application is successfully updated with preferred application changes.

Edit application details on production

After the application is registered on production, you can still edit the application details. To edit the application details, follow the below steps:

1. From "Applications" screen, select the application for which the details need to be modified.
2. Click on the application and click "See details."
3. From the drop-down, select "Production".

In "General details", update the details as required. Only the Display Name, Description and 4. Cache Control fields are editable.

testmyapp1207 - v1.0.0
IN PRODUCTION
ENVIRONMENT: **Production**

General Details
Configure your general information of the application

Access
Configure roles and scopes for your application

App Credentials
Configure app credentials for external access of your application

General Details
Application general details

General Information

Application Icon *
appicon.png
This icon will identify your application on the MindSphere Launchpad.

Display Name *
TestApplication
Enter display name to be displayed under the application icon on the Launchpad.

Version *
v1.0.0
Enter the version

Description
testing
Enter Description

Internal Name *
testmyapp1207
Enter internal application name to be part of application URL and application specific role names.

Application URL
https://gateway.eu1-int.mindsphere.io/api/testmyapp1207-dtsd678v1<endpoints>

Configurations

Content Security Policy *
default-src 'self' static.eu1-int.mindsphere.io; style-src 'unsafe-inline'; script-src 'self' 'unsafe-inline' static.eu1-int.mindsphere.io; img-src * data;;
Configuring Content Security Policy header, prevents from possible attacks and execution of malicious content or code and makes your application more secure.

Cache Control *
no-cache, no-store, max-age=0, must-revalidate
Cache control, each cache will be revalidated before using a cached response to capture the uncacheable responses.

Application & Hosting Information

Application Type *
Standard Application

Infrastructure *
Self Hosted

Save **Cancel**

5. Click "Save".

To apply these changes to all the provisioned operators, click "Apply all Operator". The 6. customers will now view the modified application details in their tenants.

Deleting an application


Pre-requisites

- The application must be [unassigned](#) from all the tenants
- The application must be [de-registered](#)

Procedure

To delete the existing application, follow the below steps:

1. In the "Application" tab, select your application.

2. Click  and click "Delete" to delete the application.



Confirm

Do you really want to Delete of this application ?

Cancel

Delete

3. Click "Delete" to accept the confirmation.

Result

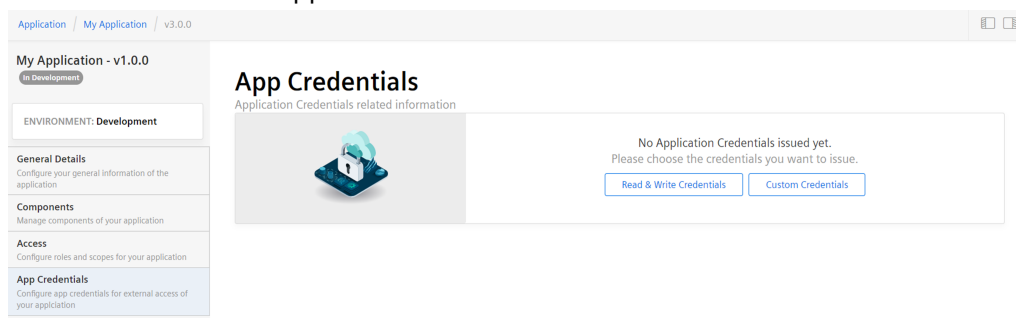
The application is successfully deleted.

3.6 Issuing Application Credentials

Application Credentials (app credentials) is required when an application requires interaction with APIs of other services. This ensures secured interaction with the APIs. This is also useful when an application needs to perform frequent data processing on one or more subscribed tenants.

User Interface

The user interface of "App Credentials" is as shown below:



Credentials	Description
Read and Write	In this access, you are allowed to perform all CRUD operations on the APIs.

Credentials	Description
Custom	In this access, the customizable set of core roles can contain any kind of data access level. All APIs can be configured as per the user requirement. Note: In Custom credentials, application scopes are configured only for Developer and Operator environments. These configured application scopes are not applicable for IoT environment tenants.

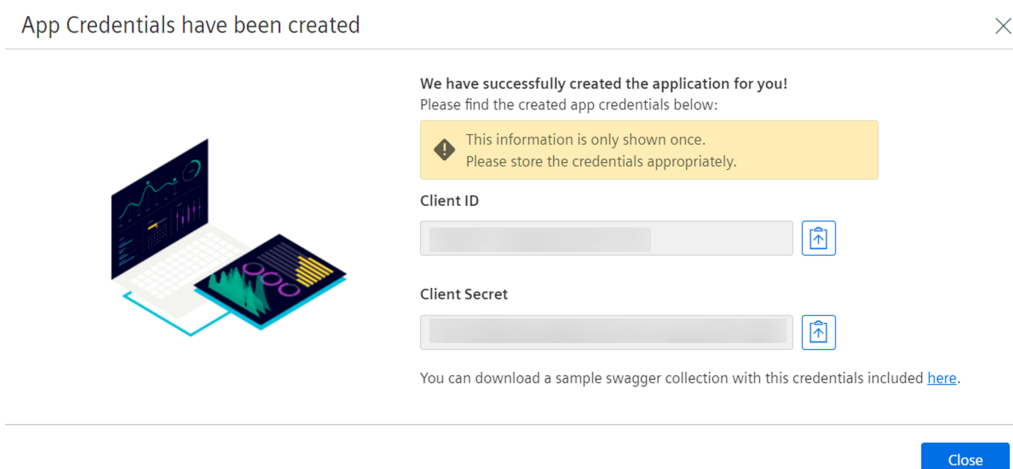


- For API application, application credentials are issued with "Read and Write" data access only.
- If app credentials are created for older version, then it is not possible to changed/remove in new version for API.
- App Credentials can be created or revoked in any state of the application.

Procedure

To issue application credentials, follow these steps:

1. In "Applications Overview", select your application.
2. Click on the application version for which app credentials need to be issued. Click "See details".
3. Select "Application Credentials" to choose the type of app credentials you want to issue.
 - **Read & Write:** If you choose "Read & Write Credentials", a dialog box appears with "Client ID" and "Client Secret".
 - **App Credentials:** If you choose "Custom Credentials" you can configure custom application credentials and click "Configure", a dialog box appears with "Client ID" and "Client Secret".



4. Save or download the app credentials for future use.



- The app credentials will be displayed only once. Save or download the credentials to access the application appropriately.
- For a self-hosted application with existing app credentials, if the credentials are regenerated, then both (old and new) app credentials will be active at the same time. To activate the newly generated credentials, click "Acknowledge". This action deactivates the old app credentials.

Result

The application credentials is successfully issued for the application.

Revoke Application Credentials

If the user forgets the username and password of the application credentials of the working application, it is possible to re-generate a secret key again by revoking the already generated application credential.

Procedure

To revoke the application credentials, follow these steps:

1. In "Applications Overview", select your application.
2. Click on the application version for which app credentials need to be revoked. Click "See details".
3. Click "Revoke Credentials" to revoke the application credentials.
4. In the confirmation dialog, click "Yes".



Confirm

Are you sure you want to Revoke App Credentials ?

No

Yes

Result

The application credentials is successfully revoked for the application. You can re-issue the application credentials again, if required.

Rotating app credentials

The App credentials created for the applications are valid for 365 days. For a self-hosted application, once the app credentials complete 365 days, they need to be rotated manually. In general, the application credentials can be rotated as per the requirement.

3.7 Viewing Application Details

After the application is created and configured, the "See Details" screen displays all the details of the application.

Pre-requisites

The application must already be created.

General Details

This screen displays the version information, configuration details and hosting information. If the application is in the development environment, the screen is as shown below:

myApp - v1.0.0

DEVELOPMENT COMPLETE

ENVIRONMENT: Development

General Details

Components

Dependencies

Access

App Credentials

General Details

Update the applications general details.

Application Icon *

default.png

This icon will identify your application on the Launchpad.

v1.0.0

Description

Enter Description

Display Name *

myApp

Enter display name to be displayed under the application icon on the Launchpad.

myapp0

Configurations

Content Security Policy *

default-src 'self' static.eu1-int.mindsphere.io; style-src 'unsafe-inline'; script-src 'self' 'unsafe-inline' static.eu1-int.mindsphere.io; img-src * data;

Configuring Content Security Policy header, prevents from possible attacks and execution of malicious content or code and makes your application more secure.

Cache Control *

no-cache, no-store, max-age=0, must-revalidate

Cache control, each cache will be revalidated before using a cached response to capture the uncachable responses.

Application & Hosting Information

Application Type *

Standard Application

Infrastructure *

Self Hosted

Save

The details in this screen can be edited only if the application is in the "In-development" state and is not registered on the development environment.

If the application is in the production environment, the screen is as shown below:

The screenshot shows the 'General Details' page for an application named 'simple - v1.0.0' in the 'Production' environment. The left sidebar contains links for 'General Details', 'Access', and 'App Credentials'. The main content area has a 'General Information' section with a terminal icon, 'Display Name' (simple), 'Internal Name' (simple), 'Version' (v1.0.0), and 'Mendix based application'. Below this is a 'Configurations' section with a Content Security Policy and Cache Control settings.

In the production environment, the application details can be updated if the application is in the "In-Production" state. However, the updated details will be available in the Launchpad as well as for the provisioned customers.

Components Details

This screen displays all the components and their respective endpoints configured for that application.

The screenshot shows the 'Components Details' page for an application named 'myApp - v1.0.0' in the 'Development' environment. The left sidebar contains links for 'General Details', 'Components', 'Dependencies', 'Access', and 'App Credentials'. The main content area has a 'Components Details' section with a search bar and a form to add a new component. The form includes fields for 'Name' (component), 'URL' (https://www.gmail.com), and 'Endpoints' (Path: /, Action: All). There is an 'Add new endpoint' button and an 'Add new Component' button at the bottom.

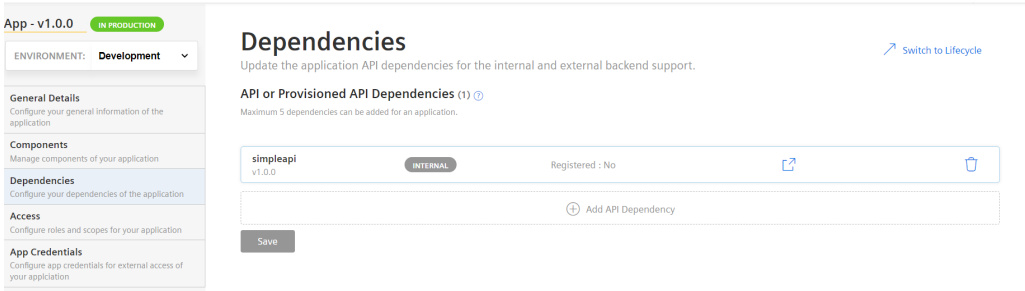
For any CF application in the "In Production" state and in the "Production" environment, it is possible to start or stop the components by clicking the play/pause button next to each component.

The screenshot shows the 'Components' page for an application named 'testCF2402 - v1.0.0' in the 'Production' environment. The left sidebar contains links for 'General Details', 'Components', 'Access', and 'App Credentials'. The main content area has a 'Components' section with a search bar and a table listing the components. The table has columns for 'NAME', 'INSTANCES', 'LAST UPDATE', and 'ACTION'.

NAME	INSTANCES	LAST UPDATE	ACTION
uinapiroutapp-green	0/1	2/24/2023, 6:01:09 PM	▶
uinapiroutapp	1/1	2/24/2023, 6:01:23 PM	■

Dependencies

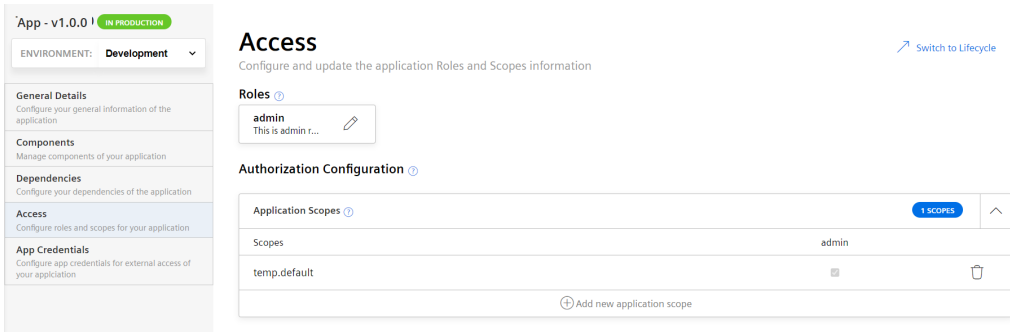
This screen displays the configured API dependencies.



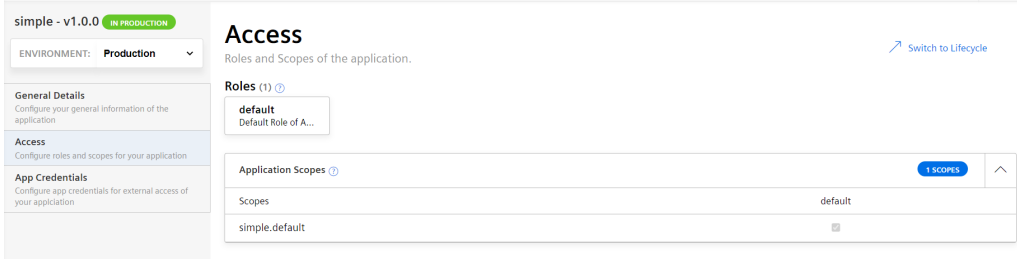
Dependencies are supported only for UI type applications and not for API type.

Access

This screen displays the roles and scopes information configured for that application. In the "Development" environment, the screen is displayed as shown below:

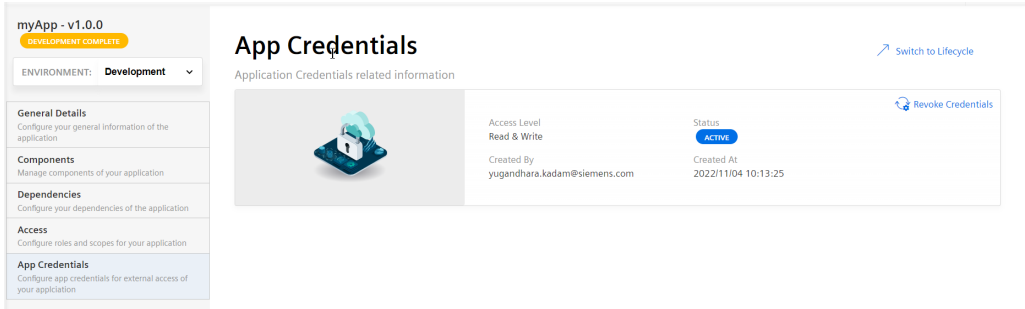


In the "Production" environment, the screen is displayed as below:



App Credentials

This screen displays the access level, status, and app credential creation details. In the "Development" environment, the screen is displayed as shown below:



In the

"Production" environment, the screen is displayed as below:



For a self-hosted application with existing app credentials, if the credentials are regenerated, then both (old and new) app credentials will be active at the same time. To activate the newly generated credentials, click "Acknowledge". This action deactivates the old app credentials.

Message Broker

You can subscribe your application with Industrial IoT services by mapping the application scopes with "Message Broker". To subscribe your application with Industrial IoT services, register an endpoint of your application to get notifications from Insights Hub. You can grant Industrial IoT services to access your application by mapping the application scope.



This is applicable for API type applications only.

1. Select your application.
2. In the "Message Broker" tab, click "Grant access".

Message Broker

Manage your application access provided by mapping your application scopes

[Switch to Lifecycle](#)

Select the application scopes and click "Save".

Map Application Scopes

Select application scopes which will be consumed by application.

Application	Application Scopes
Message-Broker	<div><input checked="" type="checkbox"/> testmsbbrkapi.default</div> <div><input type="checkbox"/> testmsbbrkapi.test</div>

Cancel

Save

3.

Application Lifecycle

4

4.1 Application Lifecycle in DevOps Cockpit

This chapter explains the end to end journey of an application within DevOps Cockpit.

The following terms are used to explain the Application Lifecycle and are used throughout the documentation.

Terminology	Description
Deployment	Deployment is where you bring (deploy) your application to your hosting environment. An application must always be hosted either within the Cloud Foundry or your own environment (self-hosted), before starting the Application Lifecycle.
Registration	Insights Hub becomes aware of the details of your app when you register it with Insights Hub. After you register an app within Insights Hub, the app becomes accessible using the specific URL scheme . - For example, if your app is running at a URL <code>https://turbine-monitor.io</code> , and you register your app with Insights Hub in the environment <code>dade1</code> with the name <code>monitor</code> , then after registration, the users in environment <code>dade1</code> can access this app with the URL <code>https://dade1-monitor-dade1.eu1.mindsphere.io</code> . Thereafter, you can assign application roles to users and they will be able to see and use this app starting from the Launchpad.
Assignment	Assignment describes the first step in the process of making an app available for productive usage. After the development and testing of the app is completed, the Developer Admin can set the app to "Ready for Production" state. As soon as it is set to "Ready for Production", it will be auto-assigned to your Production Environment. It is also possible to assign an app to the Production Environment of a different Insights Hub customer. This allows you to split responsibilities between a party that only develops and someone who takes over operation duties in production.
Provisioning	Provisioning an app to an Environment means that the application can then be used within this environment. Application roles can be assigned to users in this environment and the app also gains access to data stored. - For example, you have created an application, and its current state is "In Production". You can then choose to give ("provision") this application to several other companies who are using Insights Hub.
Application State	The Application State is designed to give you a quick overview about the current state of a specific application within the lifecycle.

Application States

The following "Application States" are used to describe the steps of the application lifecycle. These states enable easy understanding about your applications within your environment.

Application State	Description
"In Development"	<ul style="list-style-type: none">- The Application Object is created.- All relevant details are configured.
"Development Complete"	<ul style="list-style-type: none">- The development and testing of this application is completed.- All binaries needed for productive usage are uploaded (Only if you use the Insights Hub hosting Environment).- Waiting for approval of a Developer Admin.
"Production Ready"	<ul style="list-style-type: none">- The application is now ready for productive use.- Deployment of the Application to the productive Cloud Foundry Org can now be executed.
"In Production"	<ul style="list-style-type: none">- You can use your application within your own production environment.- You can provision your application to others.
"Archive"	<ul style="list-style-type: none">- This application has reached its end of life and can no longer be used.

Application Lifecycle Workflow

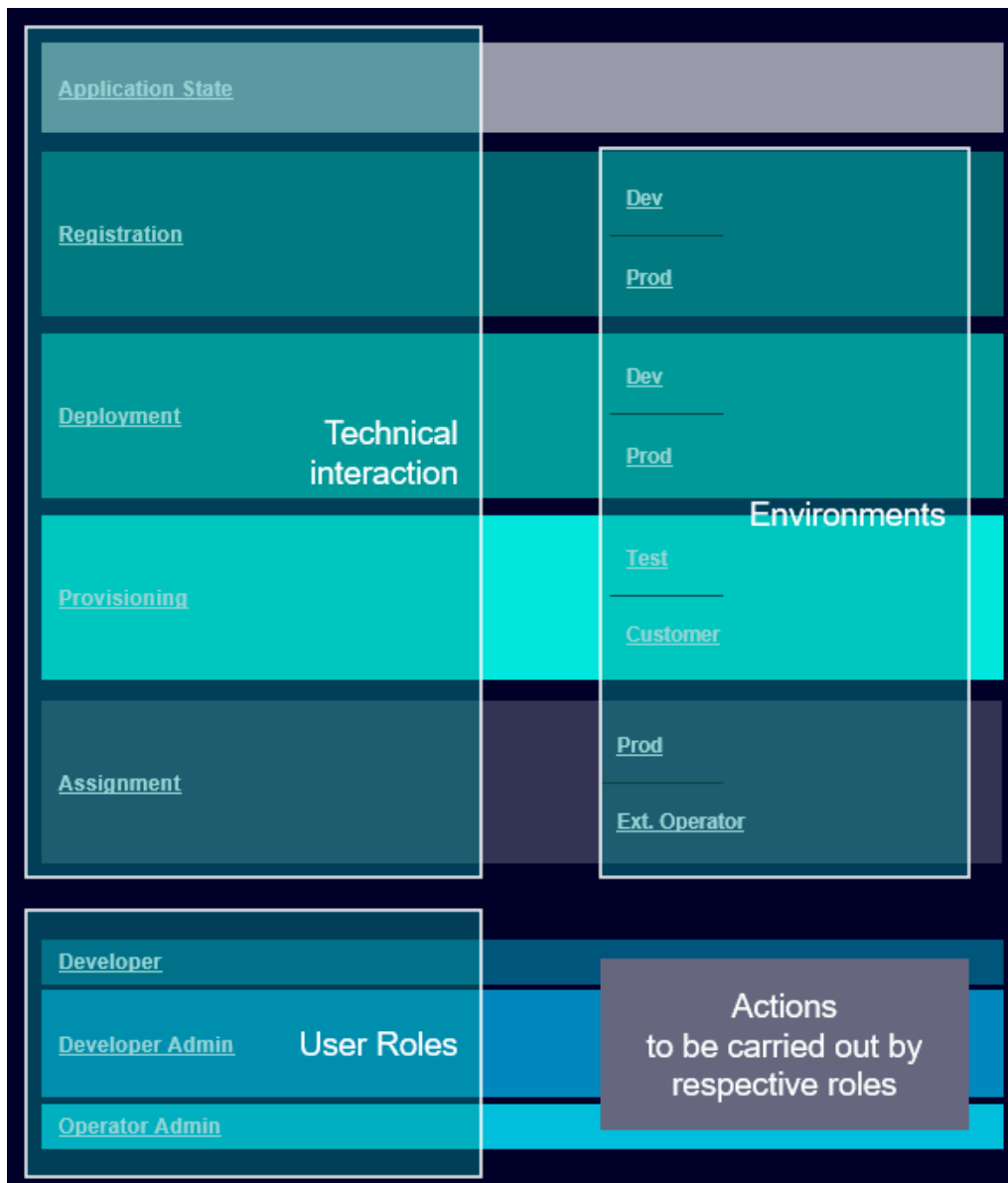
In addition to understanding the application states and the specific steps that occur within each state, we want to bring the associated activities of the application lifecycle workflow together.

We also want to help you understand how everything fits together.

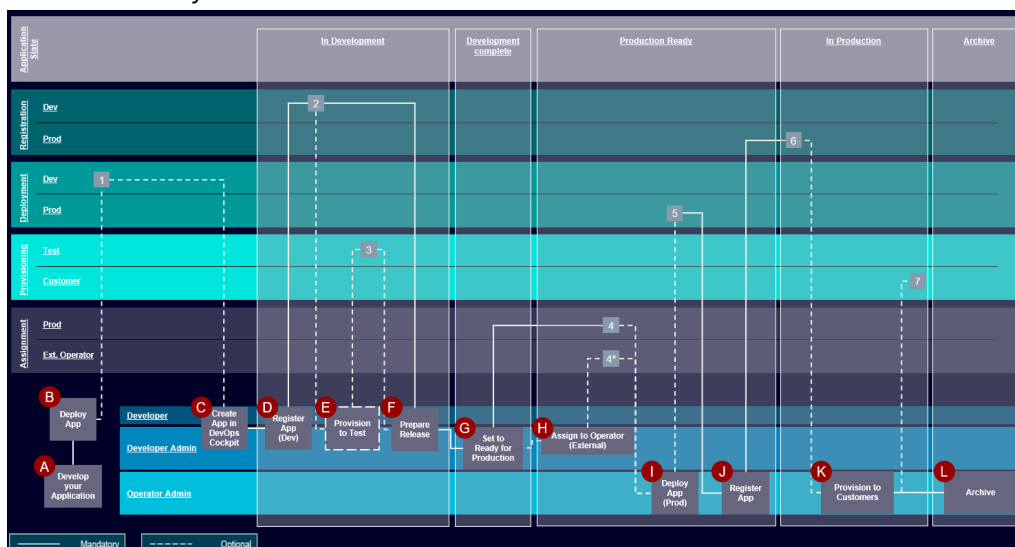
The following flow diagram contains information about:

- Actions in association to respective roles which can perform these actions.
- Environments and related technical interactions that apply within the different steps.
- Mandatory and optional steps that can be taken.





This following chart illustrates, how different environments (development, test and production), user roles (developer, developer admin and operator admin) and user actions (these are your interactions with DevOps Cockpit) are related to technical interactions (Application State, Registration, Deployment, Provisioning and Assignment) throughout the Application Lifecycle.










In the following diagram, the complete Application Lifecycle and respective actions are illustrated. Additionally, you can see how roles and the actions that are performed in these roles occur within the Lifecycle.



The following table defines as well as explains the outcomes of specific user interactions.

User Interaction Step	User Interaction	Explanation	User Interface	Application State
	Develop your application	<p>The integration of Full Code and Low Code Applications (Created with Mendix) is supported. Certain SDK's, Web Components, Learning Paths and other important help in the following links will get you going faster:</p> <ul style="list-style-type: none"> - For more information about resources, see Resources. - For more information about Mendix Learning Path, see Learning Paths. - For more information about How Tos-developer documentation, see How Tos. 		In Development
	Deploy app	<p>Before you can actually create an application object in DevOps Cockpit, your app has to be hosted and reachable. You can either use the Cloud Foundry or also host the application in your own environment.</p> <p>Note:</p> <p>If you choose to self-host your application, it has to meet certain criteria. For more information about self-hosted application, see Self-Hosted Application. While using Cloud Foundry, you ensure that your app is deployed to your Cloud Foundry development Org. Indicated by number 1.</p> <div data-bbox="483 1182 574 1272" style="background-color: #a6b8c8; color: white; text-align: center; width: 40px; height: 40px; line-height: 40px; margin: 10px auto;">1</div> <p>For more information about Cloud Foundry, see Running a Cloud Foundry-Hosted Application.</p>		In Development
	Create App in DevOps Cockpit	<p>Create a new application object in DevOps Cockpit. Within this step, you can perform all kinds of configurations, create new roles and configure certain authentication options which you can use in your code.</p>		In Development

User Interaction Step	User Interaction	Explanation	User Interface	Application State
D	Register app in Development Environment	<p>After a successful creation of your application object, you can go ahead and register your application in your Development Environment.</p> <p>- For example, if your app is running at a URL <code>https://turbine-monitor.io</code>, and you register your app with Insights Hub in the environment <code>dade1</code> with the name <code>monitor</code>, then after registration, the users in environment <code>dade1</code> can access this app with the URL <code>https://dade1-monitor-dade1.eu1.mindsphere.io</code>. From that moment on, you are able to assign application roles to users and they will be able to see and use this app starting from the Launchpad.</p> <p>2</p>		In Development
E	Provision to Test	<p>Once registered, you have the possibility to directly provision your application to your Test Environments which allows you to use and test them there.</p> <p>3</p>		In Development
F	Prepare Release	<p>If you are using Cloud Foundry, you are required to upload the binaries from your application. Insights Hub is going to perform certain virus checks before the app can be deployed to your production hosting environment.</p> <p>Once the upload is successful, your application state will change to "Development completed"</p>		In Development
G	Set to "Ready for Production"	<p>This user action leads to an automatic assignment of your application to your Production Environment. After this action is successful, the state of this application will then be set to "Production Ready".</p> <p>4</p>		Development complete
H	Assign to external Operator	<p>Insights Hub supports a scenario where you can act as a development party, while an external account is taking over production operations for you. The user interaction "Assign to external Operator" allows you to give someone else your app to take over production operations.</p> <p>4*</p>		Production Ready

User Interaction Step	User Interaction	Explanation	User Interface	Application State
I	Deploy App (Prod)	<p>5</p> <p>You can utilize Cloud Foundry to deploy your application to the Cloud Foundry production Org.</p> <p>For more information about Cloud Foundry, see Running a Cloud Foundry-Hosted Application.</p>		Production Ready
J	Register App	<p>6</p> <p>The final step which leads to the application is available in your Production Environment and to Register the app on your Production Environment.</p>		In Production
K	Provision to Customer	<p>7</p> <p>As the application has reached the "In Production" state, you are able to provision it to other Insights Hub subscribers.</p>		In Production
L	Archive	<p>If an application is reached to its end of life, then set to "Archive" state. The application is deregistered and deprovisioned from all the environments.</p>		Archive

4.2 Registering an Application on the Development Environment

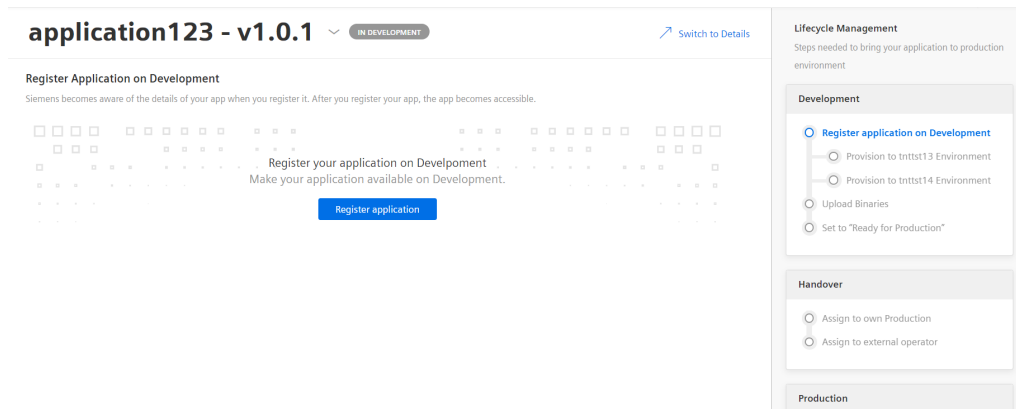
After successful creation of your application, you can register your application in your Development Environment. For example, if your app is running at a URL `https://turbine-monitor.io`, and you register your app with Insights Hub in the environment `dade1` with the name `monitor`, then after registration, the users in environment `dade1` can access this app with the URL `https://dade1-monitor-dade1.eu1.mindsphere.io`. Thereafter you are able to assign application roles to users and they will be able to see and use this app starting from the Launchpad.

Registering an Application

To register your application, follow the below steps:

- In the "Home" screen, under "Applications", click "See details". Navigate to the application 1. that you want to register.

- Click on the application to view the application and Lifecycle management details.
- Under "Lifecycle Management", click "Register application on Development". Click "Register".



Result

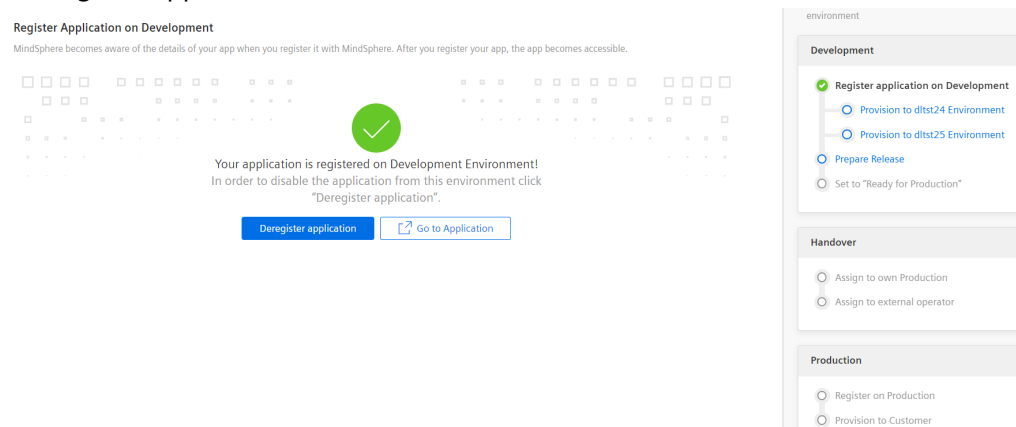
The application is successfully registered on the development environment.

Next steps

After the application is registered, you can provision the application to the test environment. For more information, refer [Provisioning an application](#).

De-registering an application

To de-register an application from the development environment, select the registered application, select "Register application on Development" from lifecycle management tab. Select "Deregister application".



4.3 Provisioning an Application to test environments

Provisioning the application to the test environment allows testing of the application before deploying it on the production environment.

Pre-requisites

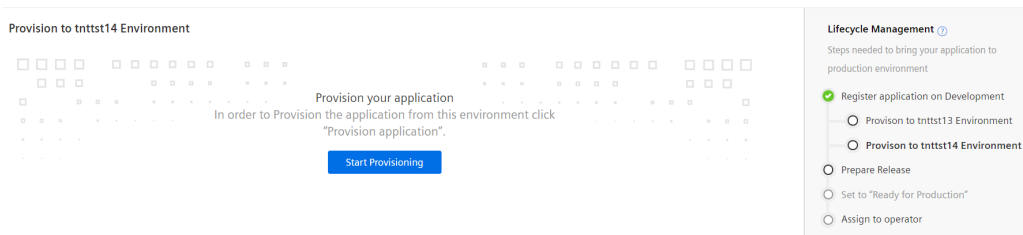
- The application should be registered. For more information, refer [Registering an application](#).

Procedure

In the "Home" screen, under "Applications", click "See details". Navigate to the application
1. that you want to provision to the test environment.

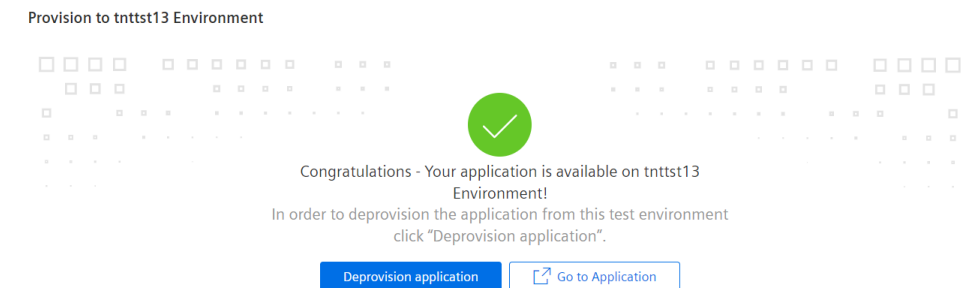
Select the available "Test environment(s)" and click "Start Provisioning" to provision the
2. application to the test environment(s).

My Application - v1.0.0



Result

The application is provisioned to the available test tenants.



Next steps

After the application is provisioned, [prepare your application for release](#).

De-provisioning an application

To de-provision an application from the test tenants, select the provisioned application, select "Provision to test tenant(s)" from lifecycle management tab. Select "Deprovision application".

4.4 Preparing an Application for Release

Pre-requisites

- The application is tested in the provisioned test environment(s). For more information, refer [Provisioning an application](#).

Procedure

To prepare the application for release, follow the below steps:

For Cloud Foundry applications

For Cloud Foundry applications, binaries need to be uploaded in order to perform virus checks. Follow the steps below to upload binaries of your application:

- In the "Home" screen, under "Applications", click "See details". Navigate to the application that you want to prepare for release.
- Click on the application to view the application and Lifecycle management details. Click "Upload Binaries".
- Under General Information, upload Binary Sources and the Manifest file.
- Under Backing Services, select the Service Name and Service Plan. Enter the name and click "Add Service".
- Under Authorization Information, select "App Credentials".
- Click "Submit".

Upload Binaries
Upload the binaries of your application. Certain virus checks are going to perform before the app can be deployed to your production hosting environment.
In order to assign your application to production environment you need to make the following configurations:

General Details

Binary Sources *
Upload Binaries

Manifest File *
Upload Manifest

Backing Services

Service Name	Service Plan	Name	
Select Service	Select Service Plan	Enter Name	<input type="button" value="Add Service"/>
No service added yet			

Development

- ☒ Register application on Development
- ☐ Provision to dlts24 Environment
- ☐ Provision to dlts25 Environment
- ☐ Upload Binaries
- ☐ Set to "Ready for Production"

Handover

- ☐ Assign to own Production
- ☐ Assign to external operator

Production

- ☐ Deploy application on production

For self-hosted applications

- In the "Home" screen, under "Applications", click "See details". Navigate to the application
- that you want to prepare for release.
 - Click on the application to view the application and Lifecycle management details.

3. In application "Lifecycle Management", click "Prepare Release".

My Application - v1.0.0

Prepare Release

In order to assign your application to production environment you need to make the following configurations:

Authorization Information

App Credentials

Read and Write

Submit

Cancel

Lifecycle Management

Steps needed to bring your application to production environment

☒ Register application on Development

☐ Provision to tn1tst13 Environment

☒ Provision to tn1tst14 Environment

☐ Prepare Release

☐ Set to "Ready for Production"

☐ Assign to operator



If App Credentials is selected as "None", then it is not possible to perform all CRUD operations.

4. Configure the "App Credentials" for the application and then click "Submit" (optional).

Result

The application's metadata is submitted for upload.

Next steps

The application is now ready for production. For more information, refer [Set to Ready for production](#).

4.5 Setting an Application to Ready for Production

Setting an application ready for production leads to automatic assignment of your application to your Production Environment.

Pre-requisites

- The application's metadata is submitted for upload. For more information, refer [Preparing application for release](#).

Procedure

In the "Home" screen, under "Applications", click "See details". Navigate to the application
1. that you want to set to ready for production.

2. Click on the application to view the application and Lifecycle management details.
3. Enter the Developer Admin's "Primary Email" and "Alternate Email".
4. Read and accept the agreement and then click "Submit"

Set to "Ready for Production"

Setting your application to "Ready for Production" leads to an automatic assignment of your application to your Production Environment.

Approval Details	
Primary Email *	Alternate Email *
<input type="text" value="devopsadmin@domain.com"/>	<input type="text" value="devopsadmin1@domain.com"/>

☐ I confirm the following statement

You are about to submit your application for deployment on the productive platform. By submitting, you confirm (i) having evaluated and tested the application as to its technology, functionality, performance, security, and user interface; and (ii) that your application complies with the documentation (in particular with regard to the DevOps Guide available at www.mindsphere.io/terms) and any other requirements set out in the Agreement or the applicable Order Form.

Result

An email notification will be sent to the primary and secondary email addresses regarding the availability of the application.

Next steps

The application is now ready for production and can be assigned to own production. For more information, refer [Assigning application to own production](#).

4.6 Assigning an Application to Own Production

Assignment describes the first step in the process of making an app available for productive usage.

Assigning an application

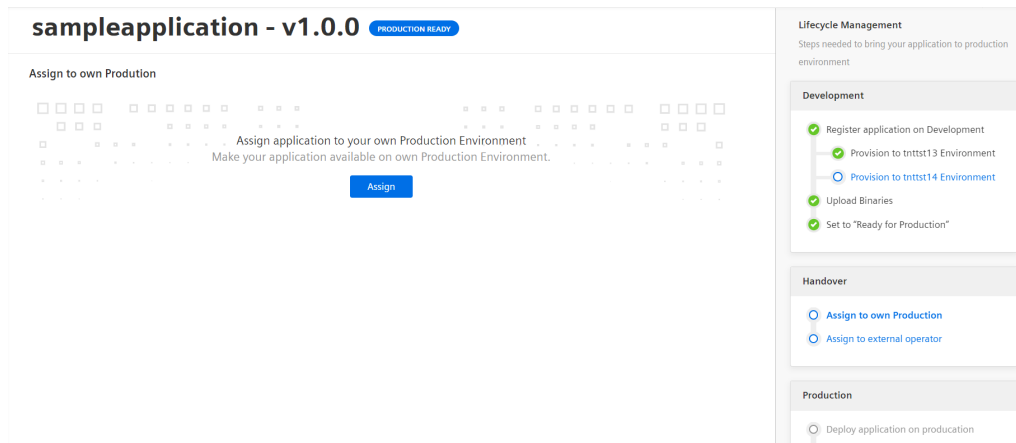
Pre-requisites

- The application is ready for production. For more information, refer [Setting the application ready for production](#).

Procedure

1. In the "Home" screen, under "Applications", click "See details". Navigate to the application that you want to assign to production.

2. Click on the application tile to view the Lifecycle Management details.
3. Click "Assign to own Production" and click "Assign".



Result

The application is successfully assigned to your own production environment.

Unassigning an application

1. Select the application that you want to unassign.
2. Click on the application tile to view the lifecycle management details and click "Assign to own Production".
3. Click "Unassign".

Next steps

After the application is assigned to own production environment,

- (Optional) You can assign the application to an external operator. For more information, refer [Assigning an application to external operator](#).
- Register your application on production. For more information, refer [Registering an application on production](#).

4.7 Assigning an Application to an External Operator

It is possible to assign your application to an external operator to take over the production activities for application created by you.



If the Operator unexpectedly deleted the assigned application from the own production environment, then you can click "Assign to own production environment" to re-assign the application to your own production environment.

Pre-requisites

- You should have the Developer Admin role
- The application is already assigned to own production environment

Procedure

In the "Home" screen, under "Applications", click "See details". Navigate to the application

1. that you want to assign to an external operator.


2. Click on the application to view the Lifecycle Management details.

3. Click "Assign to external operator" and click the "Assign" icon.

Enter the name of the Operator tenant for which you want to assign the application and

4. click "Assign".

Assign to external operator




Operator Name*

Enter the name of the operator tenant you want this application to assign on.

i Only Developer Administrators are allowed to assign applications to Operators

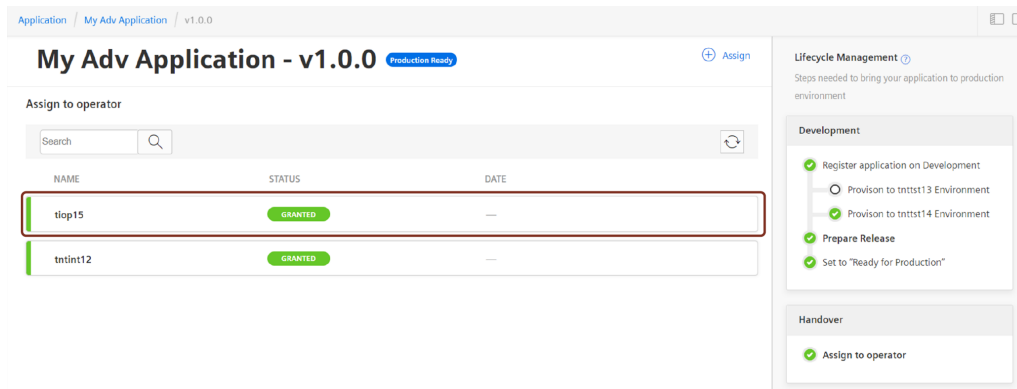
In the operator environment, the Operator needs to click "Accept" to acknowledge the assignment. The application has to go through the assignment stages and the threefold handshake to get the application published.

After the acceptance by Operator and the 3-way-handshake, click  to grant the

5. application.

Result

The application is successfully assigned to an operator.



Next steps

After the application is assigned, it is required to register the application on the production environment. For more information, refer [Registering an application on production](#).

4.8 Registering an Application on the Production Environment

You can make your application available on the production environment by registering the application.

Registering an application

Pre-requisites

- The application is already assigned to own production environment
- The application is assigned to an external operator (optional)

Procedure

1. In the "Home" screen, under "Applications", click "See details". Navigate to the application that you want to assign to register on production.
2. Click on the application to view the Lifecycle Management details.
3. Click "Register on Production".
4. Enter the Display name and Description and upload the suitable icon for your application.

5. Verify the Cache Control field and click "Register".

Register on production


Registering your application on production is the final step which leads to the application being available in your Production Environment

General Information

Display name *

Description *

Application Icon *



Drag and drop or [upload](#) a file

Upload the application icon in '.png' or '.jpg' format.

Configurations

Content Security Policy

default-src 'self' static.eu1-int.mindsphere.io; style-src * 'unsafe-inline'; script-src 'self' 'unsafe-inline' static.eu1-int.mindsphere.io; img-src * dat

Configuring Content Security Policy header, prevents from possible attacks and execution of malicious content or code and makes your application more secure.

Cache Control

no-cache, no-store, max-age=0, must-revalidate

Cache control, each cache will be revalidated before using a cached response to capture the uncacheable responses.

Register

For any UI application with API dependencies, the screen is displayed as below:

Register on production


Registering your application on production is the final step which leads to the application being available in your Production Environment

General Information

Display name *

Description *


Application Icon *



Drag and drop or [upload](#) a file

Upload the application icon in '.png' or '.jpg' format.

Registered Dependencies : 100.00%



testdepapiflag1 : v1.0.0

sp134sfapiapp : v1.1.0

Configurations

Content Security Policy

default-src 'self' static.eu1-int.mindsphere.io; style-src * 'unsafe-inline'; script-src 'self' 'unsafe-inline' static.eu1-int.mindsphere.io; img-src * dat

Configuring Content Security Policy header, prevents from possible attacks and execution of malicious content or code and makes your application more secure.

Cache Control

no-cache, no-store, max-age=0, must-revalidate

Cache control, each cache will be revalidated before using a cached response to capture the uncacheable responses.

Register

"Registered Dependencies" displays the dependent API apps configured for that UI application, status of each API app and the percentage based on how many dependent API apps have been registered.

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Result

The application is successfully registered on the production environment.

De-registering an application

To disable an application from the production environment, select the registered application, select "Register on Production" from the Lifecycle management tab. Select "Deregister application".

4.9 Provisioning an application to customers

After the application is registered on the production environment, it is possible to provision this application to the customers.

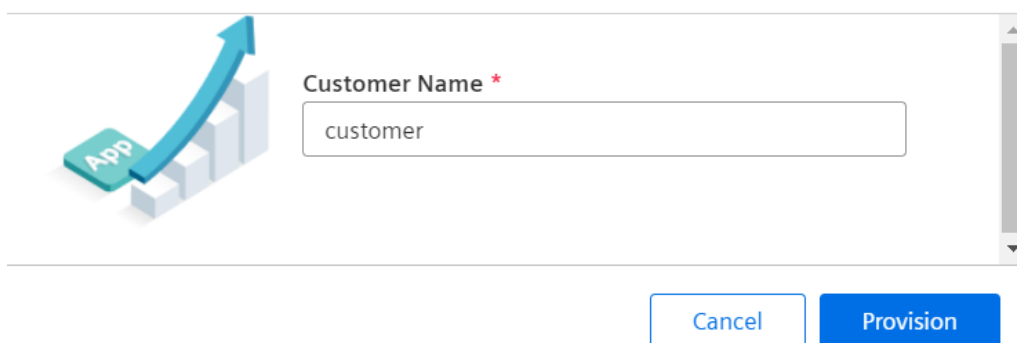
Pre-requisites

- The application must be already registered on the production environment

Procedure

1. In the "Home" screen, under "Applications", click "See details". Navigate to the application that you want to provision to the customers.
2. Click on the application to view the Lifecycle Management details.
3. Click "Provision to customer".
4. Click "Add Customer" and enter the customer name.
5. Click "Provision".

Provision Application to Customer



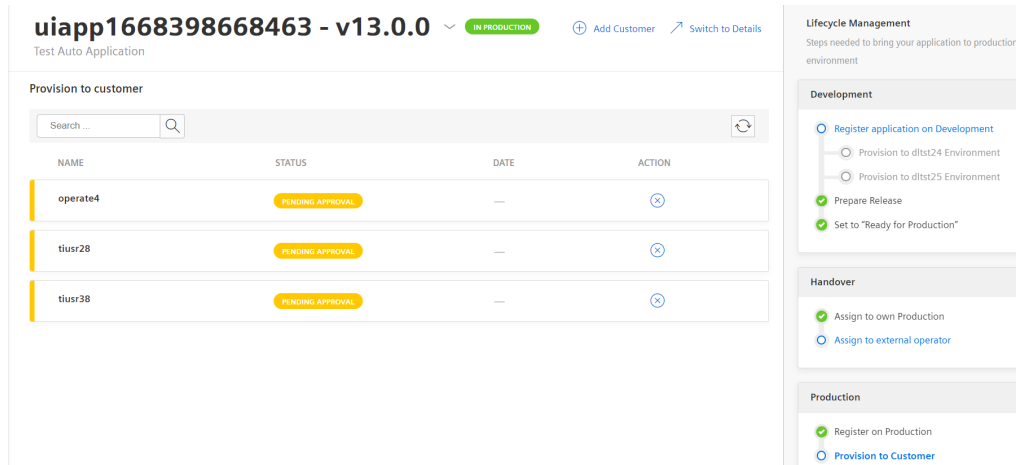
Customer Name *

customer

Cancel Provision

Result


The application will be successfully provisioned to the customer only after the provisioning request is accepted by that customer. The name of the customer and the status of the provisioning request is displayed in the "Provision to customer" screen.






uiapp1668398668463 - v13.0.0 IN PRODUCTION [Add Customer](#) [Switch to Details](#)

Test Auto Application

Provision to customer

Search ... 

NAME	STATUS	DATE	ACTION
operate4	PENDING APPROVAL	—	
tiusr28	PENDING APPROVAL	—	
tiusr38	PENDING APPROVAL	—	

Lifecycle Management

Steps needed to bring your application to production environment

Development

- [Register application on Development](#)
- ☐ Provision to dlts24 Environment
- ☐ Provision to dlts25 Environment
- ☒ Prepare Release
- ☒ Set to "Ready for Production"

Handover

- ☒ Assign to own Production
- ☐ Assign to external operator

Production

- ☒ Register on Production
- ☐ Provision to Customer

To de-provision a specific customer, click

