

Requirement

Generate next number functionality was extended to pass extension parameters for each of the next number type scenarios.

Extension parameters are:

- PLANT
- MATERIAL_NAME
- MATERIAL_VERSION
- MATERIAL_GROUP
- PRIORITY à if available
- ORDER_NAME à if available
- ORDER_TYPE à if available
- SFC à if available

JSON request was extended with name-value pairs in [extensionParameters](#) property, values passed to the extension when the next number generation functionality is triggered.

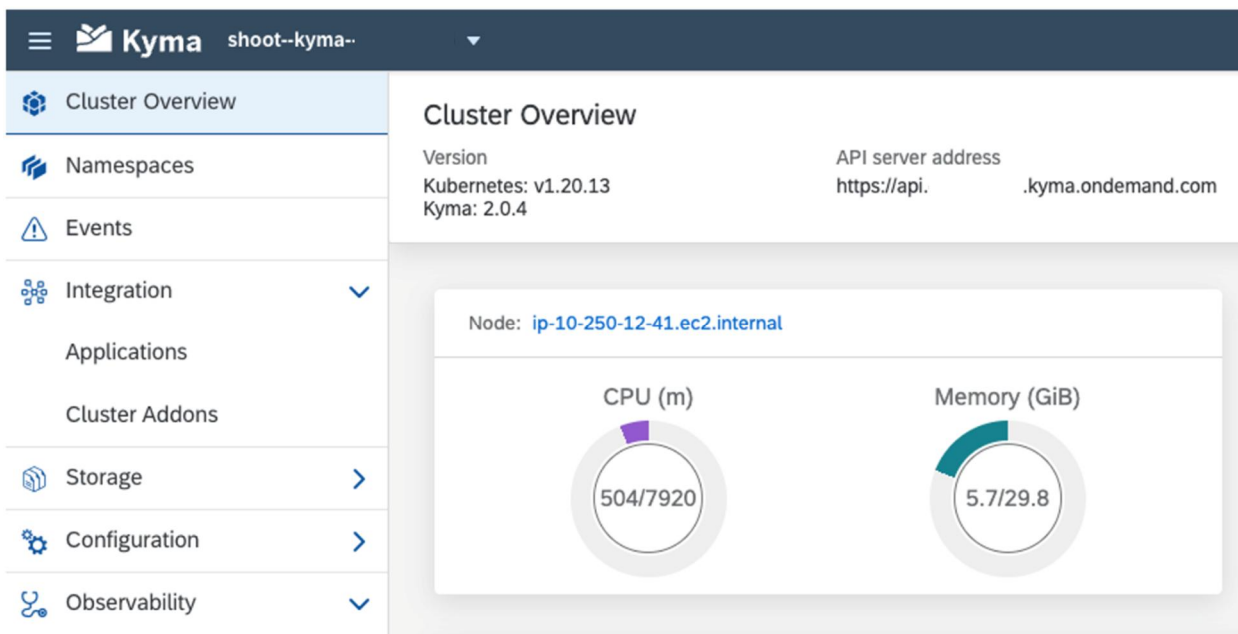
```
{
  .....
  "extensionParameters":{
    "PLANT":"KYMA",
    "MATERIAL_NAME":"MATERIAL1",
    "MATERIAL_VERSION":"A",
    "ORDER_NAME":"KYMA_ORDER1",
    "ORDER_TYPE":"PRODUCTION",
    "PRIORITY":"500",
    "MATERIAL_GROUP":"KYMA_GROUP"
  },
  ....
}
```

Prerequisites

1. SAP BTP, Kyma runtime environment should be enabled.

Follow steps from this tutorial: <https://developers.sap.com/tutorials/cp-kyma-getting-started.html>

2. Verify that you can access the Kyma Runtime console to manage deployments, traceability, scalability, etc.



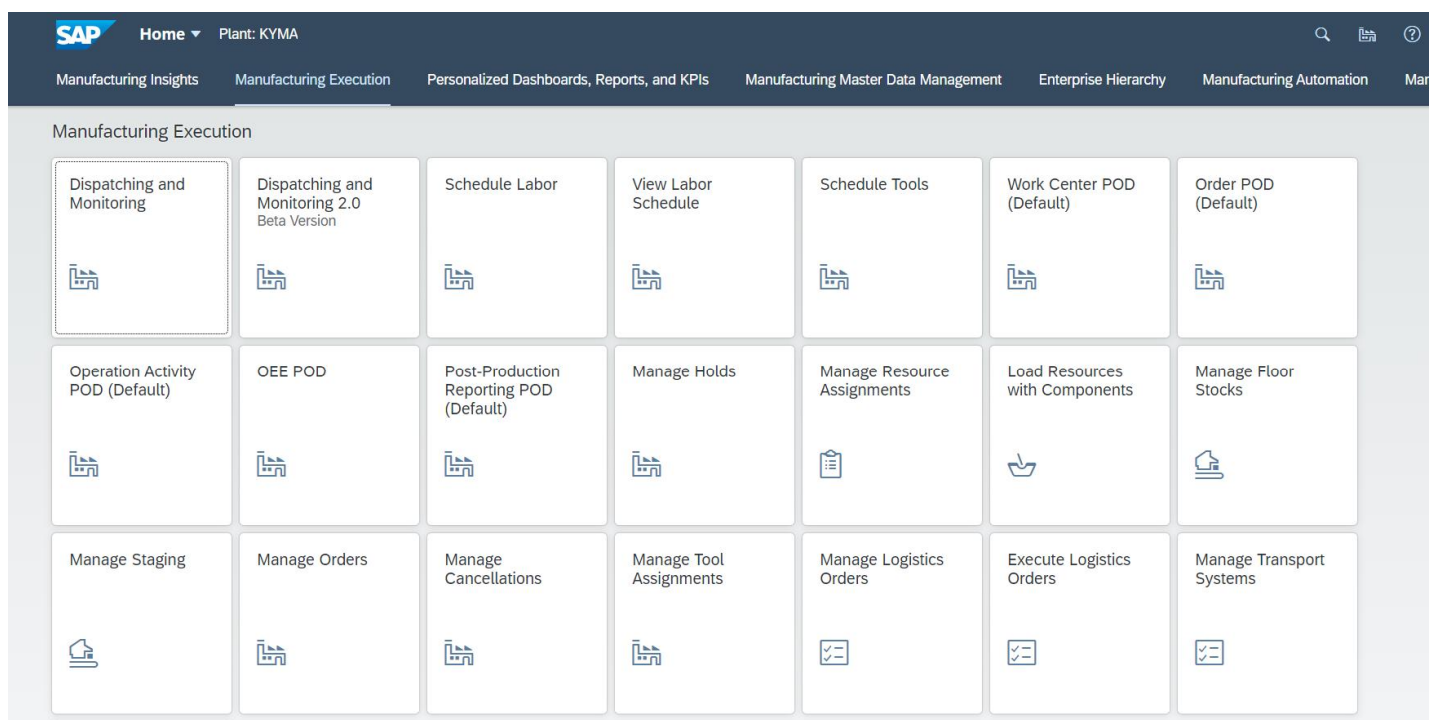
3. Install the Kubernetes Command Line Tool, which allows access to the SAP BTP, Kyma runtime via the command line.

Follow steps from this tutorial: <https://developers.sap.com/tutorials/cp-kyma-download-cli.html>

4. Create a Kyma service account

Follow steps from this tutorial: <https://developers.sap.com/tutorials/kyma-create-service-account.html>

5. Request access to DME and applications, such as:
 - Manage Service Registry
 - Manage Next Number



6. Clone the Git repository

In your browser, go to <https://github.com/SAP-samples/digital-manufacturing-extension-samples>.

Choose the Code button and choose one of the options to download the code locally or simply run the following command within your CLI at your desired folder location:

`git clone https://github.com/SAP-samples/digital-manufacturing-extension-samples`

7. Open the `DMC_NextNumber_InAppExtensions/pass-ext-params-kyma` directory in your desired editor, it contains two folders: documentation for technical tutorials and `code_solution` for the implementation part.

Installation Steps

1. Test the `kubectl` command-line tool to make sure it is installed correctly by running the following command in your CLI: `kubectl version --client`

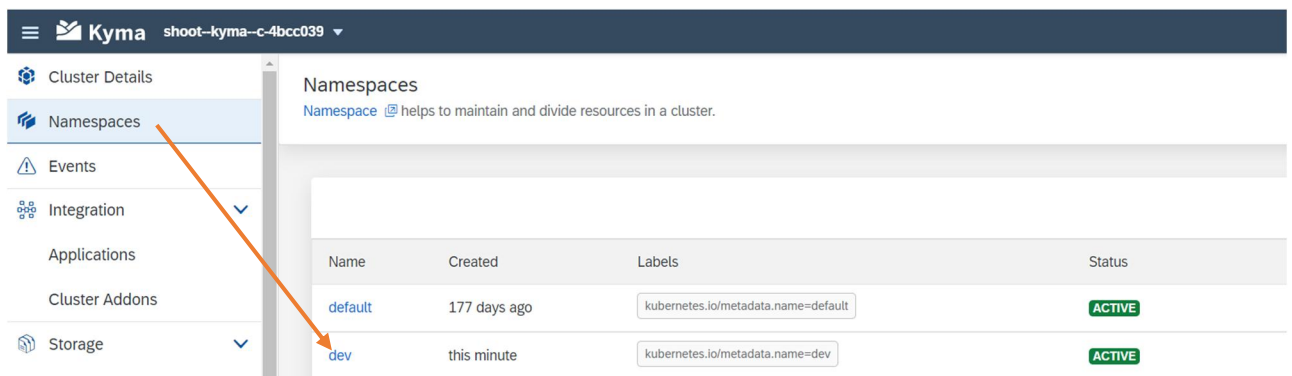
This should return a list of version properties, for example:

```
Client Version: version.Info{Major:"1", Minor:"22", GitVersion:"v1.22.1",  
GitCommit:"632ed300f2c34f6d6d15ca4cef3d3c7073412212", GitTreeState:"clean",  
BuildDate:"2021-08-19T15:45:37Z", GoVersion:"go1.16.7", Compiler:"gc",  
Platform:"windows/amd64"}
```

2. Run the following commands from the `DMC_NextNumber_InAppExtensions/pass-ext-params-kyma/code_solution` directory using CLI.
3. Create the `dev` Namespace if it doesn't already exist: `kubectl create namespace dev`

The command should return: `namespace/dev created`

Verify that Namespace was created in Kyma Runtime Console UI



4. Deploy `pass-ext-params` function with API rule to `dev` Namespace: `kubectl apply -f . -n dev`

The command should return:

```
apirule.gateway.kyma-project.io/pass-ext-params-api created  
function.serverless.kyma-project.io/pass-ext-params created
```

Verify deployments were successful in Kyma Console UI, navigate to "dev" Namespace.

- Navigate to Workload à Functions to verify that `pass-ext-params` function in Running status

Kyma shoot-kyma-c-4bcc039

Back to Cluster Details

Overview

Events

Workloads

Functions

Deployments

Stateful Sets

Daemon Sets

Cron Jobs

Functions

Function is a simple code snippet that you can run without provisioning or managing servers.

Name	Created	Labels	Runtime	Source Type	Status
nn-seqgen	2 hours ago	app=nn-seqgen	Node.js 14	Inline Editor	RUNNING
pass-ext-params	this minute	app=pass-ext-params	Node.js 14	Inline Editor	RUNNING

- Navigate to Discovery and Network à API Rules to find pass-ext-params-api rule in OK status

Kyma shoot-kyma-c-4bcc039

Daemon Sets

Cron Jobs

Jobs

Replica Sets

Pods

Discovery and Network

API Rules

Ingresses

Services

Horizontal Pod Autoscal...

API Rules

API Rule allows for exposing a service externally.

Create API

Name	Created	Labels	Host	Service Name	Status
nn-seqgen-api	2 hours ago	-	https://nn-seqgen.c-4bcc039.kyma.shoot.live.k8s-hana.ondemand.com	nn-seqgen (port: 80)	OK
pass-ext-params-api	2 minutes ago	-	https://pass-ext-params.c-4bcc039.kyma.shoot.live.k8s-hana.ondemand.com	pass-ext-params (port: 80)	OK

Configuration Steps

1. Open Kyma Runtime console UI
2. Go to [dev](#) Namespace
3. Navigate to Workloads à API Rules
4. Copy to clipboard API Rule URL for pass-ext-params-api name

API Rules

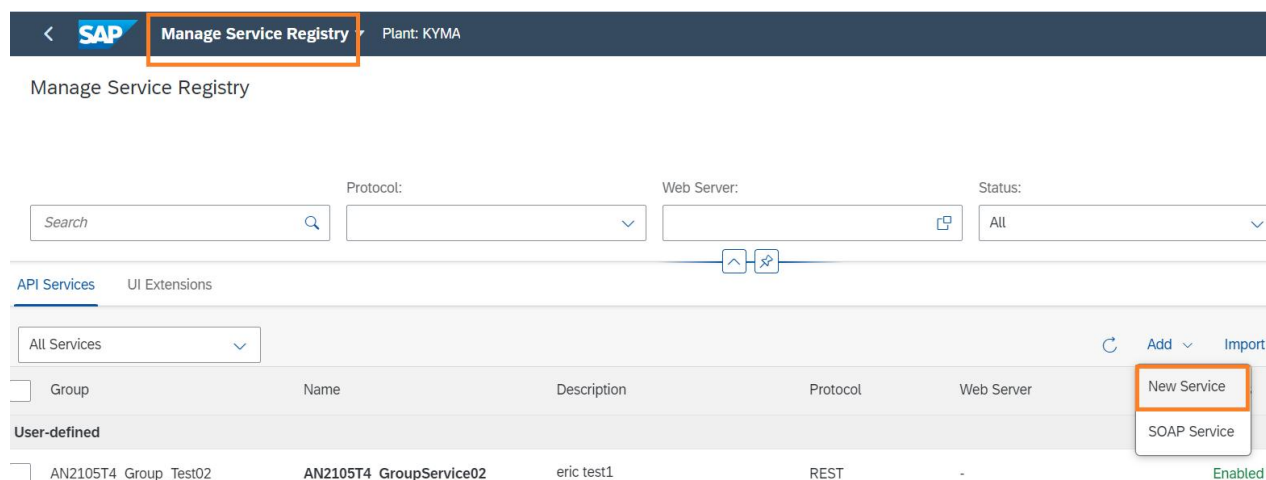
Expose Services outside the cluster with API Rules.

Search + Cr

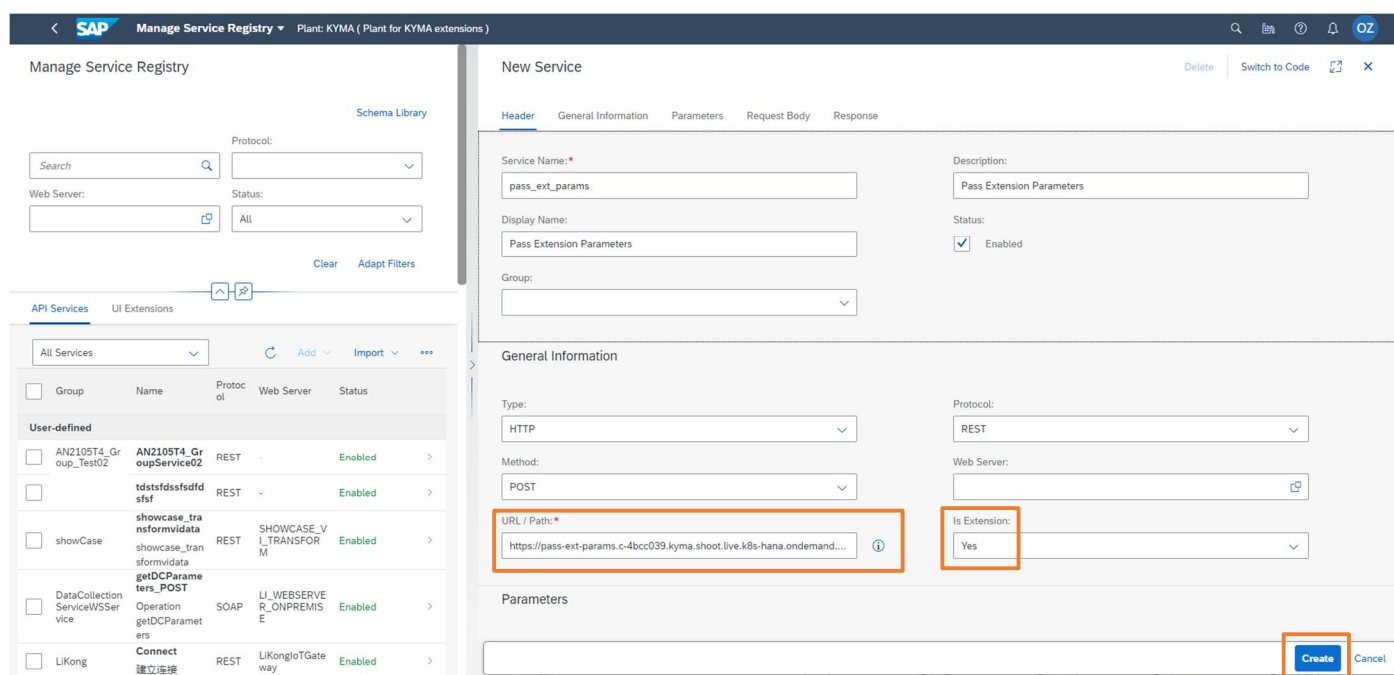
Name	Host	Service	Status
nn-seqgen-api	https://nn-seqgen.c-4bcc039.kyma.shoot.live.k8s-hana.ondemand.com	nn-seqgen (port: 80)	OK
pass-ext-params-api	https://pass-ext-params.c-4bcc039.kyma.shoot.live.k8s-hana.ondemand.com	pass-ext-params (port: 80)	OK

Copy to clipboard

5. Login to DME and open the Manage Service Registry application
6. Click on Add button and choose New Service option from the menu



7. Define new service pass_ext_params with the following settings below. Use API Rule URL from clipboard and then click Create button.



8. Open Manage Next Numbers application
9. Choose SFC Release type and choose Details

< **SAP** Manage Next Numbers Plant: KYMA (Plant for KYMA extensions)

SFC Release SFC Serialize Incident Number Batch Number Inventory Receipt Packing Unit Number Tool Number Carrier Number Logistics Order Number Process Lot Number

Next Number Type (2) +

Type	Matches On	Source	
SFC_RELEASE	*	Local	>
SFC_RELEASE	ORDER_TYPE: PRODUCTION	Local	>

10. Define pass_ext_params for the Extension field and click the Save button

< **SAP** Manage Next Numbers Plant: KYMA (Plant for KYMA extensions)

Type: SFC Release

Material: *
Version: *
Prefix: KYMA
Suffix:
Number Base: * 10
Sequence Length:
Minimum Sequence: 1
Maximum Sequence:
Increment By: 1
Current Sequence: * 1
Source: Local
Next Number Sample: KYMA1
Extension: pass_ext_params
Save Cancel

11. Open Manage Orders. Choose Order to Release.

< **SAP** Manage Orders Plant: KYMA (Plant for KYMA extensions)

KYMA_ORDER1

Material: MATERIAL1 / A (MATERIAL1) Production Version: Release Status: Partially Released Execution Status: Active Base Quantity: 10 EA Batch: Inspection Lot:

Order Information Planned BOM Planned Operations SFCs Custom Data Order Schedule Co-Product SFCs

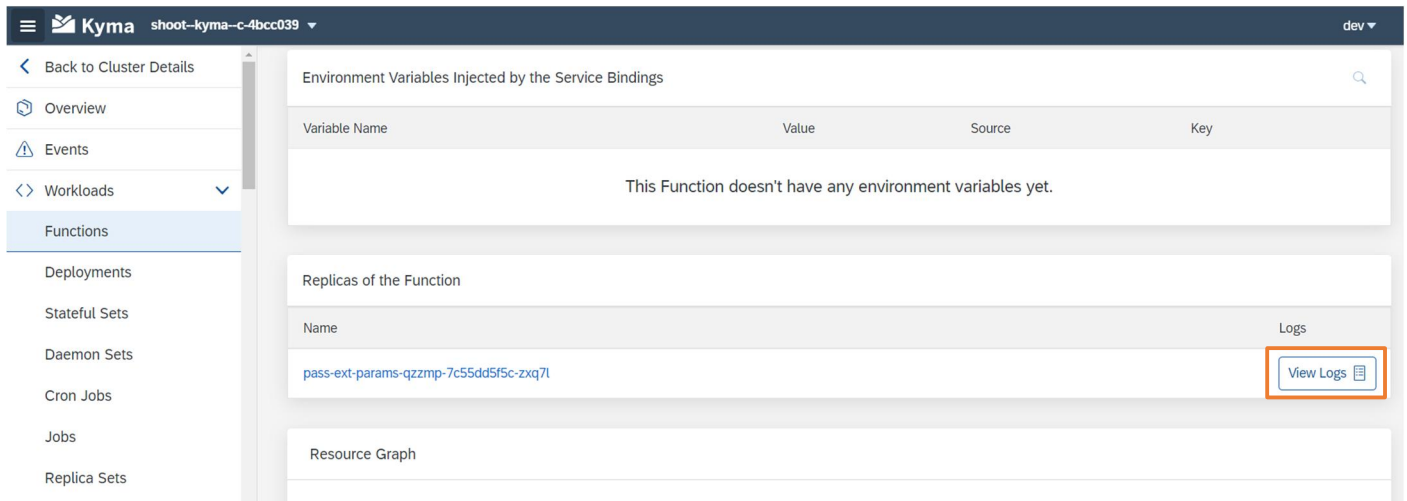
Production Type: SFC-Based Build Quantity: 10 EA Planned Start: Dec 3, 2021, 12:53:13 PM
ERP Order: Yes Available Quantity to Release: 3 EA Planned Completion: Dec 3, 2021, 12:54:13 PM

The new SFC number was successfully generated, and Kyma Runtime serverless function was triggered.

12. Open and login to SAP BTP, Kyma Runtime console UI

13. Open [dev](#) Namespace

14. Navigate to Workload à Functions and click on pass-ext-params function name. Click on "View Logs" to see traced extension parameters.



Example below illustrates how to get **plant** value from extension parameters that passed to function content from DME next number microservice.

```
module.exports = {
  main: async function(event, context) {
    let result = event.data;
    console.log("Trace Extension parameters : %j", result);
    let extensionParameters = result.extensionParameters;
    if (extensionParameters) {
      let plant = extensionParameters["PLANT"];
      console.log("Trace Extension parameter PLANT : %s", plant);
    }
    return result;
  }
}
```