Fujitsu Enterprise Postgres 15 for Kubernetes

Quick Start Guide for OCP

Linux



J2UL-QK15-01ENZ0(00) April-2023

## 1. Prerequisites

• Registered OpenShift cluster with Red Hat Marketplace

cf. <u>https://marketplace.redhat.com/en-us/documentation/clusters#register-openshift-cluster-with-red-hat-</u> <u>marketplace</u>

• Buy or try the product 'Fujitsu Enterprise Postgres for Kubernetes ' from Red Hat Marketplace

cf. https://marketplace.redhat.com/en-us/documentation/operators

### 2. system requirements

#### 2.1. **CPU**

It should be noted that it provides supports to both the following CPU Architectures to meet the scope of work.

No	CPU architecture
1	x86
2	s390x
3	ppc64le

#### 2.2. Supported Platform

It supports running on the following platforms.

No	Platform	Version
1	OpenShift Container Platform	4.8, 4.9, 4.10, 4.11

## 3. Operator installation from Red Hat Marketplace

- For information on registering your cluster and creating a namespace, see <u>Red Hat Marketplace</u> <u>Docs</u>. This must be done prior to operator install.
- 2. On the main menu, click **Workspace**, click **Software**, click on the **product box** of 'Fujitsu Enterprise Postgres for Kubernetes ', and then click Install Operator.
- 3. On the Update Channel section, select an option.
- 4. On the *Approval Strategy* section, select either *Automatic or Manual*. The approval strategy corresponds to how you want to process operator upgrades.
- 5. On the *Target Cluster* section:

- $\circ$  ~ Click the checkbox next to the clusters where you want to install the Operator.
- For each cluster you selected, under **Namespace Scope**, on the **Select Scope** list, select an option.
- 6. Click Install. It may take several minutes for installation to complete.
- 7. Once installation is complete, the status will change from installing to Up to date.
- 8. For further information, see the Red Hat Marketplace Operator documentation

Install Operator			
Update channel			
Operators are organized into packages and stre one you want to subscribe to. Learn more	ams of updates called "channels". If an	operator is available through multiple channel	s, you can choose which
• stable			
Approval strategy			
Automatic updates keep the operator and any i CLI. Learn more	nstances on the cluster up to date. Man	ual updates require approval and are done via	OpenShift console or
<ul> <li>Automatic</li> <li>Manual</li> </ul>			
Target clusters			
Choose clusters where you want to install and r	nanage this operator. Then select the N	amespace scope for each cluster you are insta	alling into. Learn more
Name	Platform	Namespace Scope	
rj-rhm-amy-test	IBM Cloud	Select Scope	~
		Cancel	Install

### 4. Verification of operator installation

- 1. Once status changes to Up to date, click the vertical ellipsis and select Cluster Console.
- 2. Open the cluster where you installed the product
- 3. Go to **Operators > Installed Operators**
- 4. Select the Namespace or Project you installed on
- 5. Verify status for product is Succeeded

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📽 Administrator 🗧	Project: fep-install-test 🔹		
Home   Cverview  Projects	Installed Operators Installed Operators within this Namespace Name • Smooth by name.	s. For more this multiant, see the <b>Understanding Operators documentation (2</b> <sup>°</sup> Or create an Operano and Clus	terServiceWestein using the Operator SDK 22.
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Networking >			

Installed operators status changes to "Succeeded"

# 5. Deploying FEPCluster using Operator

To deploy a FEPCluster in given namespace, follow these steps:

1. Under "Operators" menu item, click on "**Installed Operators**". You would see the installed FEP operator. Click on the name of operator.

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Operators OperatorHub Installed Operators	*					i ElfLogging View 4 more.			
Workloads	, ,								

 It will display a page with all CRs this operator supports. FEPCluster is the main CR and all others are child CR. We would create main CR and all other CRs will be created automatically by Operator. To create Cluster CR, either

(1) Click on "Create Instance" under FEPCluster.

OR

(2) Click on "FEPCluster" on top and then click on "Create FEPCluster" on next page.

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Observe		Fujitsu Enterprise Postgres 15 delivers an enter This solution provides the flexibility of a hybrid	rprise-grade PostgreSQL on OpenShift Container F i cloud solution while delivering an enhanced distribu	Platform. ution of PostgreSQL to support enterprise-level worklo	ads and provide improved deployment and managem	ent, availability,		
Compute		performance, data governance and security. Available as a multi-architecture container bu	It for both amd64, s390x and ppc64le.					
User Management		The download and Use of the Product is strict Product that has been embedded as a whole	ly subject to the terms of the End User License Agre or part into a third party program, only Authorised O	eement with Fujitsu Limited found at https://www.fast.fr ustomers may download and use the Product.	ujitsu.com/fujitsu-enterprise-postgres-license-agreer	ients. Where the		
Administration								

3. This will bring to "Create FEPCluster" page. Here you have two options to configure. The first one is Form View. At the moment, in Form View, one can change only the name of cluster being deployed. Default name is "new-fep".

This name must be unique within a namespace.

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© Administrator	•	Project: fep-install-test				
Home Overview Projects	×	Create FEPCluster Create by completing the form Default values may be provided by the Operator authors. Configure via: Porm view VAML view				
Search API Explorer Events		Note: Some fields may not be represented in this form. Please select "YAML View" for full control of object creation.	Not available			
Öperators OperatorHub Installed Operators	*	Name * new-fep Labels sportfrontend	-			
Workloads	•	Create Cancel				
Networking	*					
Storage	>					
Builds	•					

4. In YAML View, starting value of CR is visible and one can choose to modify parameters before creating CR. Refer to the <u>Reference</u> for details of parameters.For example, add a configuration value for the customPgHba parameter according to your environment.

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S Administrator	-	Project: fep-install-test 🔹	
		Fujitsu Enterprise Postgres Operator   Create FEPCluster	
Home	*	Create FEPCluster	
Overview		Create by manually entering YAML or JSiON definitions, or by dragging and dropping a flie into the editor.	
Projects		Configure via: O Form view 9 YAML view	
Search			
API Explorer		A	air + Fi Accessibility help
Pu r Explorer		2 kind: FEPCluster	
Events		3 metadata:	
		5 namespace: fep-install-test	
Operators	*	6 spec:	
		7 tep: 8 customAnnotations:	
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		24 syncMode: 'off' 25 sysExtraEvent: true	
Observe	*		
		Create	
Compute	>		

5. When "Create" is clicked on either of two pages above, operator creates FEPCluster CR and there after one by one FEPBackup, FEPConfig, FEPVolume, FEPUser and FEPCert child CRs are created automatically. The starting values for child CRs are taken from "fepChildCrVal" section of FEPCluster CR yaml file. Once child CRs are created, respective values are managed through child CRs only. If you want to change the value, modify the value in FEPCluster "fepChildCrVal" section. Operator reflects changes from FEPCluster parent CR to respective child CRs. Only allowable changes are reflected in child CRs. Child CRs are marked internal objects and hence will not be visible on OCP console. However, you can check child CRs using command line tools.

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Home 🛩	Pujitsu Enterprise Postgres Operator 51D provided by Fujitsu					Actions 👻
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Installed Operators						
Workloads 👻						
Pods						

6. In FEPCluster CR, annotations are added to indicate that child CRs are created successfully and has initialized properly. It may take some time to complete.

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d' Administration	Project: fep-install-test ·	Edit annotations				
	Instance Operators + Autoa collection instances operators510 + FEPChote detail	Key	Value			
Home 👻	FEPG new-fep	fepBackupCR	Done	•		Actions +
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7. Once all four child CRs are marked done in annotations, operator creates StatefulSet for the cluster.

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Home	,	Stateful Sets			Create Stat	teful Set
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Installed Operators		S new-fep-sts	1 of 1 pods	app=new-fep=sts fepclustername=new-fep	Q app*new-fep-sts, fepclustername*new-fep	1
Workloads Pods Deployments Deployment Configs Stateful Sets Secrets Configs Marce	Ť					
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8. StatefulSet will start one FEP instance at one time and will wait it to be ready before starting next one.

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Horizontal Pod Autosca	ers 3									

9. Once all instances of FEP servers are started, operator marks a flag "fepClusterReady" in "fepStatus" section of CR to be **true**, indicating that FEPCluster is ready for use. Looking at YAML of FEPCluster CR, it would look like as below:

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📽 Administrator	•	Project: fep-install-test 👻	
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		426 conditions:	
		427 > - InstituationTime: '2023-02-07104:49:242	
Workloads	*	432 - ansibleResult:	
		433 changed: 6	
Pods		434 Completion: 2023-02-07104:51:49.862517 435 failure: 0	P La contracta de la contracta de encontracta de la contracta
		436 ok: 85	
Deployments		437 skipped: 228	
a de la composition		438 lastTransitionTime: '2023-02-07T04:43:172'	
DeploymentConfigs		439 message: Awaiting next reconciliation	
StatefulSets		440 reason: Successful	
		441 status: 'True'	
Secrets		442 type: Running	
		445 2 1astrenstionime: 2023-02-0/104:51:502	
ConfigMaps		449 feet and Solectors "anomous fore stat. fore last organization"	
		450 feeStatus:	
Cron Jobs		451 tepClusterReady: true	
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- 10. Operator also masks the sensitive fields like passwords, passphrase, certificates and keys in FEPCluster fepChildCrVal and also in child CRs.
- 11. For further information, see the FUJITSU Enterprise Postgres 15 for Kubernetes Manuals .