# Automated Deployment on Red Hat OpenShift with the Joget Operator

Red Hat OpenShift is the industry's most comprehensive enterprise Kubernetes platform, and operators are the modern way to automate infrastructure management tasks. A new Joget DX8 Operator has now been released to further simplify and accelerate app development on Red Hat OpenShift Deprator Certification, and is now available in the OpenShift Embedded OperatorHub.

blocked URL blocked URL

- Tutorial Part 1: Install Joget DX 8 Operator from the OperatorHub
   O 1.1 Install Joget DX 8 Operator as Cluster Admin
- Tutorial Part 2: Create a Joget Cluster with the Joget DX 8 Operator
  - 2.1 Create New Project and Deploy Database
  - 2.2 Deploy Joget DX 8 using the Joget DX 8 Operator
  - 2.3 Complete One-Time Joget Database Setup

## Tutorial Part 1: Install Joget DX 8 Operator from the OperatorHub

The Joget DX Operator enables customers to rapidly deploy, manage and scale a Joget DX cluster on Red Hat OpenShift. As a certified Operator, it is listed in the OpenShift Embedded OperatorHub catalog. Joget DX is a development platform as well as an application runtime, so the Joget DX Operator is listed under both the Application Runtime and Developer Tools categories.

These steps assume that you already have a running OpenShift 4 cluster. You can access https://try.openshift.com/ and select Openshift 4 playground to setup a new cluster.

### 1.1 Install Joget DX 8 Operator as Cluster Admin

1. Login to the OpenShift console as the cluster admin

#### blocked URL

2. Browse to Operators > OperatorHub and search for Joget DX8



3. Select the Joget DX 8 Operator, and click on the Install button



4. Click on the Install button to install the Joget DX 8 Operator.



5. Browse to Catalog > Installed Operators and select Joget DX 8 Operator to confirm that the operator has been installed successfully.

<b>Red Hat</b> OpenShift				<b>▲ ℃ 0</b>	admin 🗸
<b>☆</b> Administrator	•	Project: openshift-operators 🔹			
Home	>	Installed Operators			
Operators	~	Installed Operators are represented by ClusterServiceVersions within this Namespace. For more in Operator and ClusterServiceVersion using the Operator SDK gr.	nformation, see the <mark>Understa</mark>	nding Operators documentation 🗗	Or create an
Installed Operators		Name   Search by name			
Workloads	>	Name 1 Managed Namespaces 1 Status		Provided APIs	
Networking	•	Joget DX 8 Operator All Namespaces Succee 0.0.6 provided by Joget, Inc	ded	Joget DX 8 on JBoss EAP 7	*
Storage	>				
Builds	<b>,</b>				
Observe	>				
Compute	>				
User Management	>				

## Tutorial Part 2: Create a Joget Cluster with the Joget DX 8 Operator

### 2.1 Create New Project and Deploy Database

1. Now that the Joget Operator has been installed, login to the OpenShift console as a normal user.

			<b>Red Hat</b> OpenShift Container Platform
Username	developer	Welcome to the Red Hat OpenShift Container Platform.	
Password			
	Log In		

2. Browse to Projects and click on the Create Project button. Enter a name and click on Create.

<b>⊟</b> <sup>●</sup> Red Hat OpenShift		Create Project		o	
8 Administrator	Projects	An OpenShift project			
		Learn more about working with projects 🗗			
		Name* ⑦			
		joget-openshift	To get started,		
		Display name			
		Description			
		Cancel Create			

3. As a prerequisite, you will need to deploy either a MySQL or MariaDB database in the project.

4. The fastest way to deploy MySQL would be to use the OpenShift CLI e.g.:

# deploy persistent mysql
export DB_APP_NAME=jogetdb
export MYSQL_DATABASE=jwdb
export MYSQL_USER=joget
export MYSQL_PASSWORD=joget
oc new-app openshift/mysql-persistentname \$DB_APP_NAME -p DATABASE_SERVICE_NAME=\$DB_APP_NAME -p
MYSQL_USER=\$MYSQL_USER -p MYSQL_PASSWORD=\$MYSQL_PASSWORD -p MYSQL_DATABASE=\$MYSQL_DATABASE

- 5. Alternatively, you can deploy using the OpenShift Console.
- 6. Browse to the project, go to Workloads and click on add page.



7. Select Database.

Red Hat OpenShift				🐥 🗘 🕑 developer 🕶
📽 Administrator	-	Project: joget-openshift 🔹		
Home	~	Add		
Overview				Details on
Projects				
Search		Getting started resources ③		1
API Explorer		M. Construction for the second s		
Events		Create applications using samples	es Build with guided documentation	Explore new developer reatures
		Choose a code sample to get started creating an application with.	Follow guided documentation to build applications and familiarize yourself with key features.	Explore new features and resources within the developer perspective.
Operators	`	Basic Quarkus →	Get started with Quarkus using s2i $\Rightarrow$	Discover certified Helm Charts →
Workloads	<b>&gt;</b>	Basic Spring Boot →	Get started with Spring $\rightarrow$	Start building your application quickly in topology $ e $
	_	View all samples	View all quick starts	What's new in OpenShift 4.11@*
Networking	``			
Storage	>	Davalance Catalan	Cit Democitem	
	_	Developer Catalog	Git Repository	Container images
Builds	>	M All services	<ul> <li>Import from Git</li> </ul>	Deptoy an existing image from an Image registry or Image stream tag
Observe	>	Browse the catalog to discover, deploy and connect to services	Import code from your Git repository to be built and deployed	

8. Search for MySQL.



9. Select MySQL then click on Instantiate Template.



10. Key in the following configuration and click on Create.

Red Hat     OpenShift Container Pla	itform	<ul> <li>Ø developer -</li> </ul>
🛠 Administrator 🗸 🗸	Instantiate Template	
Home 🗸	Namespace *	MySQL
Projects	🕐 joget-openshift 🗸 🗸	DATABASE MYSOL
Search	Memory Limit *	View Documentation 🗷 Get Support 🗷
Explore	512MI	MySQL database service, with persistent storage. For more information about using this template,
Events	Maximum amount of memory the container can use.	container/blob/master/8.0/root/usr/share/container-scripts/mysql/README.md.
	Namespace	NOTE: Scaling to more than one replica is not supported. You must have persistent volumes available
Workloads	openshift	in your cluster to use this template.
Networking	The OpenShift Namespace where the ImageStream resides.	
	Database Service Name *	The following resources will be created:
Storage	jogetdb	DeploymentConfig
	The name of the OpenShift Service exposed for the database.	Secret
Builds	MySQL Connection Username	Service
	joget	
Administration	Username for MySQL user that will be used for accessing the database.	
	MySQL Connection Password	
	joget	
	Password for the MySQL connection user.	
	MySQL root user Password	
	(generated if empty)	
	Password for the MySQL root user.	
	MySQL Database Name *	
	iwdb	

- a. Database Service Name: jogetdb
- b. MySQL Connection Username: joget
- c. MySQL Connection Password: joget
- d. MySQL Database Name: jwdb

11. Go to Workloads Deployment Configs to verify that the MySQL database has been deployed successfully.

Red Hat OpenShift								۰	Ð	0	developer 🗸
📽 Administrator	- Î	Project: joget-c	openshif	τ 🕶							
Home	•	Details YA	ML	ReplicationControllers	Pods	Environment	Events				
Overview		Deployment	Confi	n details							
Projects		Deployment	conn	guetans							
Search											
API Explorer		1 Pod	<b>^</b>								
Events		1.00	Ň								
Operators	•	Name jogetdb					Latest version				
Workloads	>	Namespace					Message				
		NS joget-opensl	hift				config change				
Networking	<i>`</i>	Labels				Edit 🖋	Update strategy				
Storage	<b>`</b>	template=mysql-	-p ter	mplat =34b8f4f			Recreate				
Builds	>	Pod coloctor					Min ready seconds				
		Q name=jogetdb					Not configured				
Observe	>						Triggers				
		Node selector No selector					ImageChange, ConfigChange				

2.2 Deploy Joget DX 8 using the Joget DX 8 Operator

1. Browse to Operators > Installed Operators.

≡ <sup>ed</sup> Red Hat OpenShift						🜲 😋 😯 developer 🗸
🗱 Administrator	Project: All Projects 🔹					
Home	Installed Operators					
Operators OperatorHub	Installed Operators are represented Operator SDK [2].	by ClusterServiceVersions within th	is Namespace. For more information, s	ee the Understanding Operators docu	imentation 🗹. Or create an Operator	and ClusterServiceVersion using the
Installed Operators	Name 👻 joget	7				
Workloads	Name joget X Clear all filter	3				
Networking	Name I	Namespace 1	Managed Namespaces	Status	Last updated	Provided APIs
Storage	Operator 0.0.6 provided by	NS openshift-operators	All Namespaces	Succeeded Up to date	🛿 Jul 6, 2023, 11:04 AM	Joget DX 8 on JBoss EAP 7
Builds	Joget, Inc					
Observe						
Compute						
User Management						
Administration						

2. Select the Joget DX 8 Operator, and click on Create Instance.

E CopenShift			<b>≜ ≎ 0</b>	developer 🗸
📽 Administrator	Project: openshift-operators 🔹			
Home	Installed Operators > Operator details Joget DX 8 Operator			Artises -
Operators	0.0.6 provided by Joget, Inc			
OperatorHub	Details YAML Subscription	Events Joget DX 8 on JBoss EAP 7		
Installed Operators	Provided APIs		Provider Joget, Inc	
Workloads			Support	
Networking	Joget DX 8 on JBoss EAP 7		Get support 🖪	
Storage	Create instance		Created at Jul 6, 2023, 11:03 AM	
Builds			Links Joget	
Observe	Description		https://www.joget.com @	
Compute	Joget DX is the next generation open source no Automation and Workflow Management. Joget enterprise applications.	-code / low-code application platform that combines the best of Rapid Application Development, Business Process XX empowers business users, non-coders or coders with a single platform to easily build, delver, monitor and maintain	Maintainers Joget, Inc info@joget.com	
User Management	This operator installs a Joget DX cluster running	on JBoss EAP 7.		
Administration	Features <ul> <li>Build full-fledged apps e.g. CRM, HR, He</li> </ul>	althcare, etc		
	Drag and drop forms, lists, UI     Add workflow to automate processes     Extend via plugins     Apps are mobile optimized and cloud rei     Download ready-made apps from the Ju	nty get Marketylace		

3. By default the configuration for "name" is "example-joget" and "size" is 1 (the number of required Joget instances). Modify the values as required, click Create.



4. The Joget DX 8 Operator will automatically start to deploy the required number of Joget DX 8 instances along with all the required resources, which should take a few minutes.



5. Select the created Joget name, and click on Resources to see the resources automatically created and managed by the Joget DX 8 Operator.

E CopenShift					🜲 🗢 😧 developer 🗸
🗱 Administrator	Project: joget-openshift 🔹				
Home	Installed Operators > joget-dx8-openshift-operatorx/0.0.6 > JogetDX8 d	etais			Actions 👻
Operators OperatorHub	Details YAML Resources Events				
Installed Operators	▼ Filter ▼ Name ▼ Search by name /				
Workloads	Name I	Kind 1	Status 1	Created 1	
Networking	example-joget	Deployment	Created	Jul 6, 2023, 11:09 AM	
Storage	S example-joget	Service	Created	Jul 6, 2023, 11:09 AM	
0.44-	(B) example-joget-5bdc8fd645	ReplicaSet	Created	Jul 6, 2023, 11:09 AM	
Bullus	example-joget-Sbdc8fd645-jxh8f	Pod	C Running	Jul 6, 2023, 11:09 AM	
Observe	S example-joget-ping	Service	Created	Jul 6, 2023, 11:09 AM	
Compute					
User Management					
Administration					

6. Click on Events to see the events as they happen

E Spen Bed Hat Open Shift		🜲 🕤 🚱 developer 🗸
📽 Administrator 👻	Project: joget-openshift •	
Home >	Pods > Pod etails	Actions 🔻
Operators 🗸		
OperatorHub	Details Metrics YAML Environment Logs Events Terminal	
Installed Operators	Streaming events	Showing 7 events
Workloads >	skimple-joget-SbdcStd545-9hgh     Severated from kubelet on crc-light/-master-O	Jul 6, 2023, 11:38 AM 2 times in the last 0 minutes
Networking >	Readiness probe failed: Get "http://10.217.0.113.8080/": context deadline exceeded (Client Timeout exceeded while awaiting headers)	
Storage >	example-joget-Sbdc8fd945-9hg/h     @exerted from kabelet on orclgpt/7-master-0	Jul 6, 2023, 11:37 AM
Builds >	Created container example-joget	
Observe >	example-joget-Shdchtd545-Shqh     Generated from kubelet on crc-light/-mazter-0	Jul 6, 2023, 11:37 AM
Compute >	Started container example-joget	
User Management >	example-joget-Sbdc8td545-9hg/h     Genetated from kabelet on orc-light/master-0	Jul 6, 2023, 11:37 AM
Administration >	Successfully pulled image "quayio/joget/joget-di8-eep7@shu256iddeb4d0c2843e4387ae6cac79e9cddeec4b1252e9d26i7c8ef960da06b3cb374" in 1108953778s	
	🕼 example-joget-SbdcBfd545-9hgh 🐻 joget-spendhift Georated from nuftus	Jul 6, 2023, 11:37 AM
	Add eth0 [10.217.0.113/23] from openshift-sdn	
	example-joget-Sdd:Sdd:45-Shiph     Social Sdd:45-Shiph     Social Sdd:45-	<b>3</b> Jul 6, 2023, 11:37 AM

### 2.3 Complete One-Time Joget Database Setup

1. Browse to Home > Projects and select the Joget DX project. Click on Workloads tab and select Joget DX deployment. After a few minutes, you should see at least 1 available MATCHING PODS.

≡ <sup>ed</sup> Red Hat OpenShift				٠	• •	developer <del>v</del>	
• Administrator	• •	Projects → Project assis பிற்ற joget-openshift © Asses				Actions -	
Overview		Overview Details YAML Workloads RoleBindings					
Projects		Application: All applications 💌			View shortcu	ts 🦂	ġ,
Search		Display options • Filter by resource • T Name • Find by name 7					
API Explorer Events		DeploymentConfig		D example-joget	7	× Actions •	
Operators	v	US jogetdb	1 of 1 Pod	Details Resources Obse	rve		
OperatorHub		Operator Backed Service					
Installed Operators		COD example-joget					
Workloads	,	🕖 example-joget	1 of 1 Pod	Ped ~			5
Networking	>		н	Name			
Storage	>			example-joget			
Builds	>			inamespace igget-openshift			
Observe	>			Labels		Edit 🖋	
Compute	>			abh. evenine			
User Management	>			Q name=example-joget			
	~			Nada colastar			~ ~

2. Select Resources to see the created Services and Routes. Copy the Location in the created Route. That is the URL to access Joget DX from an external browser.

E CopenShift		🜲 💿 🧿 developer 🗸
✿ Administrator Home	Prepara > Propert details     GB joget-openshift ● Astern	Actions -
Overview	Overview Details YAML Workloads RoleBindings	
Projects	Application: All applications 👻	View shortcuts
Search	Display options   Filter by resource   Filter by re	
API Explorer Events	DeploymentConfig	Details Resources Observe
Operators	v jogetdb Iof IPod	Managed by UDX example-joget
OperatorHub	Operator Backed Service	Pods
Installed Operators	🚥 👻 example-joget	example-joget-      C Running View logs     Sbdc8fd645-9hqlh
Workloads	example-joget     for IPod	Services
Networking	>	Service port: example-joget → Pod port: 8080
Storage	>	Service port: TCP/8888 → Pod port: 8888
Builds	>	
Observe		Routes
Compute	<b>&gt;</b>	Location http://example-joget-joget-openshift.crc-lgph7-master-
User Management	>	ourcheginningowoyaanna ooquoyila 🔽 📑

3. Access the Joget DX 8 URL and in the Database Setup page, key in the database configuration of the database deployed earlier and click on the Save button.

JOGET DX SETUP		
DATABASE SETUP		
No database configuration Please ensure that the d	n was detected, so please configure your database settings below. atabase server is installed and running first. <u>More Information</u>	
Database Type	MySQL	~
Database Host	jogetdb	
Database Port	3306	
Database Name	jwdb	
Database User	joget	
Database Password		
Include Sample Apps	8	
Include Sample Users	8	
Save		

- a. Database Type: MySQL
- b. Database Host: the service name of the database e.g. jogetdb
- c. Database Port: 3306
- d. Database Name: the configured database name e.g. jwdb
- e. Database User: the configured username e.g. joget
- f. Database Password: the configured password e.g. joget

4. Once the setup is completed, click on Done and you will be brought to the Joget DX App Center.

$\boldsymbol{\boldsymbol{\Theta}}$	Empowering Open Innovation	*
Joget Visitor Login	III App Center	Monday, July 3, 2023 10:45 PM
III Home	Customer Relationship Management	