Red Hat OpenShift GitOps 1.12

Argo CD application sets

Managing the application set resources in non-control plane namespaces.

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Legal Notice

Abstract

This document provides information about how to enable and manage the application set resources in non-control plane namespaces.

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CHAPTER 1. MANAGING THE APPLICATION SET RESOURCES IN NON-CONTROL PLANE NAMESPACES

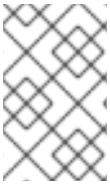
IMPORTANT

Argo CD application sets in non-control plane namespaces is a Technology Preview feature only. Technology Preview features are not supported with Red Hat production service level agreements (SLAs) and might not be functionally complete. Red Hat does not recommend using them in production. These features provide early access to upcoming product features, enabling customers to test functionality and provide feedback during the development process.

For more information about the support scope of Red Hat Technology Preview features, see Technology Preview Features Support Scope .

By using application sets, you can automate and manage the deployments of multiple Argo CD applications declaratively from a single mono-repository to many clusters at once with greater flexibility.

With Red Hat OpenShift GitOps 1.12 and later, you can manage the **ApplicationSet** resources in non-control plane namespaces by explicitly enabling and configuring the **ArgoCD** and **ApplicationSet** custom resources (CRs) as per your requirements. This functionality is particularly useful in multitenancy environments when you want to manage deployments of Argo CD applications for your isolated teams.



NOTE

The generated Argo CD applications can create resources in any non-control plane namespace. However, the application itself will be in the same namespace as the application set resources.

1.1. PREREQUISITES

- You have a cluster-scoped Argo CD instance .
- You have explicitly enabled and configured the target namespaces in the **ArgoCD** CR to manage application resources in non-control plane namespaces.

1.2. ENABLING THE APPLICATION SET RESOURCES IN NON-CONTROL PLANE NAMESPACES

As an Argo CD administrator, you can define a certain set of non-control plane namespaces wherein users can create, update, and reconcile **ApplicationSet** resources. You must explicitly enable and configure the **ArgoCD** and **ApplicationSet** custom resources (CRs) as per your requirements.

Procedure

1. Set the **sourceNamespaces** parameter for the **applicationSet** spec to include the non-control plane namespaces:

   Example Argo CD custom resource

   ```
   apiVersion: argoproj.io/v1beta1
   kind: ArgoCD
   ```

```
metadata:
  name: example-argocd
spec:
  applicationSet:
    sourceNamespaces: 1
      - dev 2
```

1. List of non-control plane namespaces for creating and managing **ApplicationSet** resources
2. Name of the target namespace for the Argo CD server to create and manage **ApplicationSet** resources

NOTE

At the moment, the use of wildcards (*) is not supported in the **.spec.applicationSet.sourceNamespaces** field.

2. Verify that the following role-based access control (RBAC) resources are either created or modified by the GitOps Operator:

Name	Kind	Purpose
<argocd_name>-<argocd_namespace>-argocd-applicationset-controller	**ClusterRole** and **ClusterRoleBinding**	For the Argo CD ApplicationSet Controller to watch and list **ApplicationSet** resources at cluster-level
<argocd_name>-<argocd_namespace>-applicationset	**Role** and **RoleBinding**	For the Argo CD ApplicationSet Controller to manage **ApplicationSet** resources in target namespace
<argocd_name>-<target_namespace>	**Role** and **RoleBinding**	For the Argo CD server to manage **ApplicationSet** resources in target namespace through UI, API, or CLI

NOTE

The Operator adds the **argocd.argoproj.io/applicationset-managed-by-cluster-argocd** label to the target namespace.

1.3. ALLOWING SOURCE CODE MANAGER PROVIDERS

IMPORTANT

Please read this section carefully. Misconfiguration could lead to potential security issues.

Allowing **ApplicationSet** resources in non-control plane namespaces can result in the exfiltration of secrets through malicious API endpoints in Source Code Manager (SCM) Provider or Pull Request (PR) generators. To prevent unauthorized access to sensitive information, the Operator disables the SCM Provider and PR generators by default as a precautionary measure.

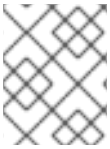
Procedure

- To use the SCM Provider and PR generators, explicitly define a list of allowed SCM Providers:

  Example Argo CD custom resource

```
apiVersion: argoproj.io/v1beta1
kind: ArgoCD
metadata:
  name: example-argocd
spec:
  applicationSet:
    sourceNamespaces:
      - dev
    scmProviders: 1
      - https://git.mydomain.com/
      - https://gitlab.mydomain.com/
```

1 The list of URLs of the allowed SCM Providers.



NOTE

If you use a URL that is not in the list of allowed SCM Providers, the Argo CD ApplicationSet Controller will reject it.

1.4. ADDITIONAL RESOURCES

- The **ApplicationSet** resource
- ApplicationSet in any namespace
- Argo CD custom resource and component properties
- SCM Provider Generator
- Pull Request Generator