Multi-cluster management overview

Anthos *multi-cluster management* offers a set of capabilities that helps you and your organization (from infrastructure operators and workload developers/operators to security and network engineers) manage clusters, infrastructure, and workloads across cloud and on-premises environments. This document describes our expanding portfolio of multi-cluster management capabilities and provides resources to get started.

Use cases

While managing more than one cluster has its challenges, there are many reasons to deploy multiple clusters to achieve technical and business objectives. Find out more in our Multi-cluster use cases (/anthos/multicluster-management/use-cases) guide.

Environs

Anthos and Google Cloud use the concept of an environ—a logical group of clusters and other resources that can be managed together—to power our enterprise components such as Anthos Config Management and simplify managing multi-cluster deployments. A growing number of Anthos and Google Cloud components use environ concepts such as identity sameness and namespace sameness to simplify working with multiple clusters.

To learn more about how environs work, and to find a complete list of environ-enabled components, see Introducing environs (/anthos/multicluster-management/environs).

To learn about current limitations and requirements for using environs in multi-cluster deployments, as well as recommendations for implementing environs in your organization, see Environ requirements and best practices (/anthos/multicluster-management/environs/best-practices).

To implement environs in your own systems, read about hypothetical scenarios that use environs in Environ examples (/anthos/multicluster-management/environs/examples).

Connect

Connect lets you connect your Anthos GKE and other Kubernetes clusters to Google Cloud to create environs.

To learn more about Connect, see the Connect overview (/anthos/multicluster-management/connect/overview).

Google Cloud Console

The Google Cloud Console provides a central user interface for managing all of your Kubernetes clusters no matter where they are running. After you have registered your Kubernetes clusters with the Cloud Console, you can log in to view, monitor, debug, and manage your workloads.

To learn more and to get started, see the Cloud Console overview (/anthos/multicluster-management/console).

Anthos Config Management

Anthos Config Management lets cluster operators manage configurations across multiple clusters and environments. It uses configuration files stored in a central Git repository. To learn more and get started, see the Anthos Config Management documentation (/anthos-config-management/docs).

About connecting and registering Kubernetes clusters

To provide multi-cluster management from Google Cloud, many features require that your clusters be registered to your Google Cloud project environ. After registration, products like the Cloud Console connect to your clusters and provide the services that you enable across your clusters.

To connect GKE on-prem and other Kubernetes clusters residing outside of your Cloud project, Google provides a Connect Agent, a Kubernetes Deployment resource that you run in your clusters. Many multi-cluster features rely on this piece of infrastructure. The Connect Agent reaches out to Google to establish a connection to your project. It can traverse NATs, egress

proxies, VPNs, and other interconnects that you have between your other environments and Google. Additionally, your Kubernetes clusters and their API servers do not need public or externally exposed IP addresses.

To learn more about the Connect Agent, see the Connect documentation (/anthos/multicluster-management/connect).

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