

Azure arc enabled Kubernetes offering



Statement of Work.

Overview

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Devoteam contacts

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Version history

Version	Changes	Date
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0.1	Initial version	10/12/2021
0.5	Additional details and addition of Azure Arc enabled services	09/02/2022

SUMMARY

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1. Introduction

This statement of work is intended as guidance to agree an Azure Arc enabled Kubernetes onboard with a Devoteam client.

The statement of work describes:

- Pre-requisites
- Project participant
- Deliverables
- Process
- Tools used
- Effort estimates, including required customer commitment.

This statement of work is intended as a basis and can be modified in the negotiation phase with the customer.

2. Azure Arc enabled Kubernetes

2.1 What is Azure Arc enabled Kubernetes?

Azure Arc enabled Kubernetes is one of the 6 Azure Arc services offered on the Azure platform. This service allows you to onboard any CN/CF compliant Kubernetes cluster, no matter its location, be it on-premises, as an edge IoT device or on any cloud, inside Azure as an Azure Arc resource.

Once onboarded, you can now manage your Kubernetes cluster as you would with an AKS cluster and install extensions to extend your cluster abilities.

2.2 Why use Azure Arc enabled Kubernetes?

In today's situation, companies start to diversify their infrastructure by using private clouds, using several public clouds, deploy applications on-premises but also on the edge near the end-user.

In this climate, the number of management consoles and tools starts to multiply and the administrative workload for IT teams keeps increasing, as the cost of training and experience required to manage this infrastructure does.

With Azure Arc enabled Kubernetes, all your Kubernetes clusters are managed, monitored and secured through the Azure platform. This allows your IT team to deploy applications faster with GitOps features, assure compliance with Azure Policy and remove the need to know how each of these solutions work on each cloud platform and on each on-premise software you deployed for those needs.

2.3 Goal of the Azure Arc enabled Kubernetes onboarding

The goal of the onboarding on Azure Arc enabled Kubernetes is to allow you to extend Azure features to your Kubernetes clusters.

This does not include the installation, the management of the lifecycle, the scaling and the updates of the cluster as these are not features provided by Azure Arc enabled Kubernetes.

The onboarding on Azure Arc enabled Kubernetes allows the customer to:

- Manage all his Kubernetes clusters in a single console (the Azure portal)
- Extension of Azure Policy to his Kubernetes clusters
- Compliance enforcement through Microsoft Defender for Cloud
- Access to Azure RBAC (Role Based Access Control) on its clusters.
- Understand how Azure Arc enabled Kubernetes can allow them to increase productivity
- Get a solid foundation to expand on Azure Arc enabled Data Services
- Monitor all the Kubernetes clusters with Azure Monitor
- Connect to their Kubernetes cluster without direct connectivity

2.4. Strategy for enabling Kubernetes on Arc

To enable Kubernetes on the client infrastructure using the Microsoft Best practice, the following steps will be performed:

- Create a clear assessment of the current Kubernetes infrastructure across the different environments
- Definition of the objectives and acceptance criteria of the project
- Creation of a pilot plan on a few clusters (tagging strategy, planification of Azure Monitor, rollback procedure, etc)
- Deployment in batch of the validated plan on your clusters
- Training of the personnel if it is your first experience with Azure

3. Statement of work

3.1 Prerequisites

The following prerequisites need to be completed before the project can start:

- Contract or letter-of-intent agreed and signed.
- Both Devoteam and the customer assign a person acting as a single-point-of-contact.
- Stakeholders are granted the time and means to participate in the project.
- Devoteam can be granted access to relevant documentation, information systems and Azure subscription.
- The following Azure Arc enabled Kubernetes requirements must be fulfilled on the Kubernetes clusters to onboard:
 - At least one of the CPU of the cluster is not on aarch32/64 architecture
 - The cluster must be CN/CF compliant
 - The Kubernetes cluster version must be 1.13 or later

3.2 Scope

Before starting the onboarding, a clear scope must be agreed between the customer and Devoteam. Depending on the size of the company a scope spanning the full application portfolio might not be feasible, not desirable. A clear and consistent scope for the assessment needs to be agreed. The assessment can be limited to a single business or IT domain.

The limit on how many Kubernetes clusters will be onboarded is 25.

3.3 Topics Addressed

The following topics must be understood by Devoteam to understand the context of the current environment and provide the best solution for the customer.

- Strategy and vision
- Platform
 - Different clouds used
 - Tooling
- Operational excellence
 - Skills readiness
 - GitOps
 - Compliance and security
 - IT operations
 - Security
- Cloud services required
- Current monitoring posture
- Cost benefit analysis
- Extension on other Arc enabled Services

3.4 Deliverables

- Azure Arc enabled Kubernetes resources on Azure
- Azure Arc enabled Services landing zone
- Documentation and diagrams
- Infrastructure as code artefacts
- Azure Monitor basic configuration
- Azure Policy basic configuration
- Microsoft Defender Cloud for Kubernetes

3.5 Onboarding methodology

Azure Well-Architected Framework and Azure cloud adoption Framework

Similarly to our other offers, both frameworks will be used to provide a complete reliable, cost efficient and compliant with Microsoft best practices implementation.

These documents also provide guidance on all major considerations for a well architected infrastructure and does it in a vendor agnostic way to ensure portability across all kind of environments.

3.6 Step-by-Step Project Approach

Opening workshop

To start the project, a 1-hour meeting will be held with all major participants with several goals:

- Introduce Azure Arc enabled Kubernetes
- Confirm formally the scope of the project
- Define deadlines
- Identify document and access required
- Definition of the pilot scope
- Plan the next steps

Assessment

During this step, Devoteam will collect information about the different requirements provided by the customer.

This assessment will be done with the help of several workshops with the different experts at the customer company.

Foundation building

Once all the information is collected, we will design the different components of implementation such as the monitoring strategy or compliance policies. The rollback plan will be created in parallel with those tasks to allow us to cancel any of the steps we take with minimal delays.

Necessary resources will also be pre-created in your Azure tenants. These resources are:

- Log analytics workspaces
- Resource groups to host your Arc resources
- RBAC custom roles
- Service principals for onboarding your Arc resources or RBAC binding

Review workshop

Once our foundation is built, we will discuss it with the customer's experts for review. The goal of the workshop is to officially confirm the different operations that will be taken.

Onboarding of the pilot Kubernetes clusters

In this step, we will setup the environment to onboard your first Kubernetes clusters into Azure Arc.

To onboard these clusters, onboarding scripts will be pushed to the various servers hosting these clusters by several means chosen depending on the kind of servers, your requirements and constraints. (IaC with Ansible, GPOs, ...)

This step can also be done in parallel with the customer's experts to allow them to learn by doing and already ask live questions for anything they have trouble with.

Deployment of the baseline

Once the customer's pilot clusters are onboarded, we will apply the plan we designed during the foundation building phase. Similarly, this step can be taken in cooperation with the client's professionals to have first-hand learning experience and ask questions in real time.

This plan consists of multiple steps:

- Setting up Azure Policies to create a baseline configuration for your clusters
- Activating Azure Monitor and Log Analytics extensions on Azure Policy
- Creating and storing a service token on each of your cluster to allow you to easily access clusters details from the Azure portal
- Applying your requested GitOps configurations

If you also decided to purchase our add-ons, the following steps will also be taken:

- The batch enabling of Azure RBAC on your clusters
- Assignments of RBAC roles to your admin or users
- Configuration of JIT RBAC access and conditional access if requested
- Configuration of Microsoft Defender for Kubernetes
- Enabling Cluster Connect to allow your users to connect to a private Kubernetes cluster from the public internet by using the Azure portal as a proxy server

Acceptance

Once our pilot deployment is finished, a formal acceptance test plan is organized. During this step, IT operators of the client approve the compliance of the pilot and raise any remarks they may have.

Once the pilot is accepted, the batch onboarding of the rest of the Kubernetes clusters can be initiated.

This batch onboarding will consist of small subset of clusters selected in a similar way to the pilot where we will apply the onboarding and configuration similarly to what was done during the pilot.

Azure Arc Enabled Services add-on

After onboarding and configuring the whole Kubernetes infrastructure, we will now configure the enabled services environment for you.

During this step, we will configure several elements in your Azure tenant:

- The app services extension on your Kubernetes clusters that will serve as App service environments
- A custom location for each of those Kubernetes clusters
- An app service environment for each Kubernetes location

By doing this, we enable the possibility for your company to host Azure web apps, Functions, Event Grid, Api Management and Logic Apps on your own Kubernetes Clusters on-premise.

With this, we will also provide you a migration plan to migrate your already existing Azure resources to their Arc enabled Services version on your clusters.

Closing workshop

The closing workshop formally close the project. This workshop lasts 1 hour and an half and will go over:

- The deliverables
- Review the work done
- Handover from Devoteam
- Recommendations on how Azure Arc enabled Kubernetes can be expanded with Azure Arc Enabled Services

Completion

After the closing workshop, the project will be complete if all deliverables are delivered to the client and accepted. The client will also receive a document summarizing the overall project.

The client has the right to ask questions about this document or request justified modifications to it.

Cost estimation

Devoteam will offer a basic service with options for the number of Kubernetes clusters to onboard and for the number of features implemented in addition to this basic service.

The basic service contains:

- The onboarding of up to 10 of your Kubernetes clusters to Azure Arc
- The activation of “Kubernetes resources” blade for your Kubernetes clusters
- The planification, design and implementation of Azure Monitor for your clusters
- The planification, design and implementation of Azure Policy for your clusters
- The implementation of GitOps for your clusters

This basic service will cost € 5.000 with an additional € 100 for each additional Kubernetes cluster (up to 15 additional clusters).

On top of this basic service, we also provide the implementation of those features at the price listed:

- Cluster connect (service allowing you to use the Azure portal as a proxy for your kubectl commands): € 400
- RBAC support on your Kubernetes clusters: € 500
- The planification, design and implementation of Microsoft Defender Cloud for Kubernetes: € 500
- Configuration of Azure Arc Enabled Services: € 400.