

A decorative graphic on the left side of the page features a network of thin, light blue lines connecting various points, creating a complex, web-like structure that suggests connectivity and data flow.

EPAM Cloud Orchestrator Hybridization Solution Overview

Short Guide

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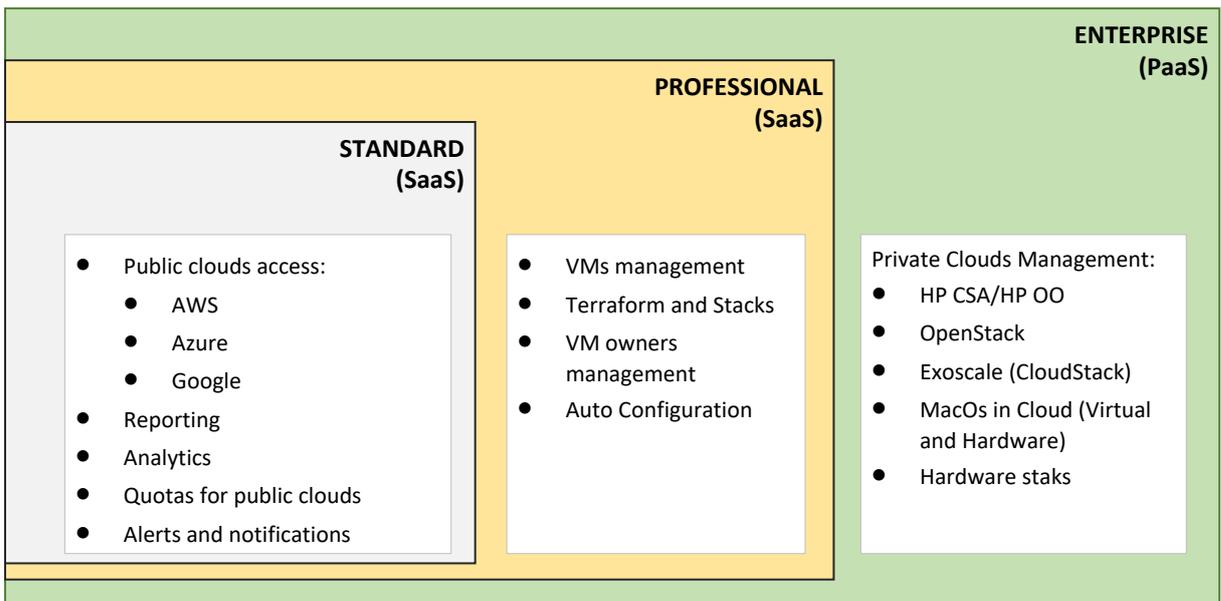
INTRODUCING EPAM CLOUD ORCHESTRATOR

EPAM Cloud Orchestrator is a solution that allows to manage, control and monitor virtual infrastructures across public and private clouds.

EPAM Cloud Orchestrator is the result of over six years of EPAM's experience in building hybrid cloud management solutions. It allows users to create, manage, monitor and control virtual infrastructures in terms of self-service, with minimum interaction with the IT operations teams.

It works across multiple cloud platforms, including public cloud providers and virtualization platforms for building private clouds.

EPAM Orchestrator is provided in three options, and the choice depends on the customer's business needs:



- **The Standard Deployment** model is based on the Software as a Service approach, where the customer is registered under EPAM Orchestrator, and is provided with the following facilities:
 - A single entry point to the unified and simply organized reporting for all customer's resources across all public clouds they use.
 - A set of analytics tools for all virtual resources under the customer's account. This includes analytics on VM and tenant levels.
 - Quotas management tool, that allows to set up the monthly expense limits for virtual infrastructures and the scenarios for different stages of quotas depletion.
 - Alerts and notifications that will inform the customer on the significant events on their resources.
- **The Professional Deployment** model is based on the Software as a Service approach, where the customer is registered under EPAM Orchestrator, and is provided with all the facilities of the Standard model, complemented with the following:
 - Virtual machines management. A VM can be ordered in several clicks, and the process is unified for all the supported clouds.
 - Using Terraform and other stacks solutions to automate infrastructure management.
 - Managing virtual machines owners. This allows to set up the higher level of control on the infrastructure events, and better cooperation with the responsible persons.
 - Auto configuration for complex automated infrastructure setup.

- **The Enterprise Deployment** model is provided as Platform as a Service solution. EPAM Orchestrator is set up on the customer’s side, and includes all the features of the Standard and Professional models, as well as the ability to set up private virtual regions. Private regions can use the following technologies:
 - HP OO/ HP CSA
 - OpenStack
 - Special setup for MacOs provisioning (including virtual and hardware Mac instances)
 - Ability to manage (register, monitor) hardware resources.

The Enterprise deployment model also includes a set of additional features on different layers of the solution. This document describes the main features for PaaS and SaaS models of EPAM Orchestrator provisioning, and allows to compare the feature sets.

EPAM HYBRID CLOUD SOLUTION OVERVIEW

One of the main EPAM Cloud features is the ability to work with external platforms, providing our users with the hybrid cloud facilities. We paid much attention to hybridization, and providing our users with unified tools that can be equally used to create and manage infrastructures on different platforms.

In this document, you can find the brief overview of solutions and tools implemented within EPAM Cloud Hybridization.

To find the detailed information on the subject, please see our [Hybrid Cloud](#) document.

Solution	Details	Availability		
		Standard	Professional	Enterprise
General Principles				
Quick activation	Any unit (department, project, etc.) can get access to external clouds facilities by submitting a respective request. No additional actions are needed (except for management approval). As soon as activation is performed successfully, unit members can start working with external clouds within the scope of their permissions.	+	+	+
Unified tools set	One of the main features of EPAM Hybrid cloud is the existence of unified tools that can be used similarly for creating and managing virtual resources on any of the supported platforms – whether it is internal EPAM Cloud, or external AWS or Azure regions.	+	+	+

Solution	Details	Availability		
		Standard	Professional	Enterprise
	The tools application is the same, the only difference, in most cases, is in the region specification (the user just selects the target region in a necessary Cloud and gets the result).			
Unified monitoring	EPAM Orchestrator collects infrastructure performance and activities information coming from external clouds' engines and gathered by its own tools. All the information is processed and formatted in a unified way and can be viewed using the same tools (specific Maestro CLI commands and pages on Cloud UI).	+	+	+
Unified costs aggregation	EPAM Orchestrator collects costs from external Cloud providers, calculates costs for EPAM Private Cloud usage, and provides the final summary chargeback with a clear and unified format.	+	+	+
Easy migration under EPAM Orchestrator	In case a user already has an account in AWS or Azure but wants to switch to using EPAM Hybrid Cloud facilities, their account and all related resources can be put under EPAM Orchestrator's control, without any significant effort from the user's side.	+	+	+
Image and shapes aliasing	EPAM Orchestration uses different types of images to run instances in EPAM Cloud, AWS and Azure clouds. However, all the images available for external platforms are functional 'twins' of EPAM public images. This means that the VMs run from a pair of 'twin' images in different clouds will have the same Operating System. To provide better usability, Maestro CLI supports referencing images with a set of aliases , with one alias referencing both 'twin' images. Maestro CLI detects which image is exactly to be used basing on the region specification in the command where the alias is referenced.	+	+	+

Solution	Details	Availability		
		Standard	Professional	Enterprise
Billing				
“As is” chargeback	EPAM Orchestrator’s billing engine gathers costs for third-party Cloud providers usage “as is”, processes them and aggregates to final reports without adding any additional charges. Thus, using EPAM Orchestrator to manage virtual infrastructures in other clouds does not increase the cost of these services.	+	+	+
Constant costs info update	EPAM Orchestrator’s billing engine synchronizes the billing data with external clouds regularly, so the maximum delay with the costs update on Orchestrator’s side is no more than 2 hours.	+	+	+
Customization and discounts	It is possible to establish resources reservation and discounts for specific accounts. Some discounts are provided for EPAM in general, and in this case, the discounts are distributed fairly among all accounts.	-	-	+
Functional hybridization				
EPAM Cloud facilities for external platforms	EPAM Orchestrator effectively expands the facilities of supported Cloud providers by adding specific instruments that enhance the overall Cloud experience. This includes monitoring, reporting, notifications, budget control, scheduling, and others.	+	+	+
Access to native Cloud Management tools	In case native EPAM Orchestrator’s functionality is not enough, the users can get access to AWS and Azure Management consoles that allow using the respective Cloud provider’s facilities in full.	+	+	+
Environment automation	EPAM Orchestrator supports two engines for automation of infrastructure setup. These are EPAM Cloud Maestro Stacks and AWS CloudFormation. Both engines provide the users with the ability to automatically perform a	-	+	+

EPAM Cloud Orchestrator – Hybridization Overview

Solution	Details	Availability		
		Standard	Professional	Enterprise
	<p>set of pre-defined actions with a few CLI commands or UI Wizard actions. AWS CloudFormation stacks can be used via EPAM Orchestrator for AWS-based infrastructures. EPAM Cloud Maestro Stacks, in their turn, can be used not only in EPAM regions, but also in AWS and Azure.</p>			
Security				
Security in AWS	<p>Security for AWS-based resources is provided by a set of respective measures, which includes pre-configured security groups, security scanning with the detected issues being reported, AWS Virtual Private Cloud (VPC) usage, used images control, and other standard EPAM security processes.</p>	+/-	+/-	+
Security in Azure	<p>In Azure, security is ensured by a set of measures that includes network security groups setup for all subscriptions, default ports control, VMs access control via SSH and secure passwords.</p>	+	+	+
Security in GCP	<p>The access to Google Cloud is allowed only from EPAM offices. All instances created in Google Cloud are assigned to the default security group, which defines the security rules for such instances. Authorization to instances created in Google Cloud requires an SSH key</p>	+	+	+

VERSION HISTORY

Version	Date	Summary
1.3	April 11, 2018	Added SaaS details
1.2	April 8, 2017	Added GCP info
1.1	December 16, 2016	Classification changed from Confidential to Public, approved by Dzmitry Pliushch
1.0	March 26, 2016	Initial version published