

A decorative graphic on the left side of the page, featuring a complex network of thin, light blue lines connecting various points, resembling a mesh or a web structure. It is partially overlaid by a light blue diagonal band.

EPAM Cloud Infrastructure Orchestrator ver.2.1.73

What's New

July 2016

[CI2WN-S66-70](#)

Version 1.0

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1 OVERVIEW

EPAM Orchestration Framework version 2.1.73 was released on July 1, 2016. This version is aimed at fine-tuning, stabilizing and enhancing the complex and diverse functionality already implemented in the previous versions. We are always committed to providing a reliable and consistent service, therefore, we not only expand the scope of EPAM Orchestrator functions but also improve and maintain the existing ones.

The brief overview of the main changes and improvements introduced in EPAM Orchestrator 2.1.73 is given below:

- VM Management Wizard in Maestro UI has been updated with two additional functions
- Docker Service has been enhanced
- Cloud Service provided in OpenStack regions has been improved
- Additional data center has been deployed increasing EPAM Orchestrator reliability, availability and consistency
- System security has been enhanced



We receive a lot of questions and inquiries regarding the EPAM Cloud functionality. Starting from July, 2016, we are launching a series of Effective Cloud Computing trainings aimed at helping our users to get started with EPAM Cloud and to make their work in Cloud smooth, convenient and efficient. Please follow the announcements on the [Learn Portal](#) for the upcoming training program.

2 NETWORK IMPROVEMENTS

EPAM Cloud is used by hundreds of developers in dozens of projects. In many cases, the reliability of service is crucial for timely delivery and product quality. Sometimes, the Cloud availability can literally translate into customer satisfaction, good references and, ultimately, company reputation.

We place the service availability and consistency among our highest priorities and apply all reasonable measures to ensure its fail-safe operation. In June, 2016, we replicated the Minsk EPAM Orchestrator configuration including all managed services to the data center in Budapest. With EPAM Orchestrator hosted on two data centers, we achieved higher efficiency and reliability, as well as additional backup capacities. The expanded network has been heavily tested for disaster recovery and the ability to maintain the mission-critical functions – and passed the tests with flying colors.



Such distributed network will ensure the reliability and continuous high availability of Cloud Services.

3 PLATFORM SERVICES UPDATE

EPAM Orchestrator supports integration with over a dozen platform services. On one hand, we are constantly trying to expand the list of available platform services and are always open to suggestions and ideas of implementing new ones which may be useful for the EPAM community. On the other hand, we are committed to providing reliable, flexible and comprehensive service, therefore, we never stop the development and enhancement of the existing services.

In this release, EPAM Orchestrator comes with an enhanced Docker service which now supports container image retrieval from private registries in all regions.

We will truly appreciate it if you shared your suggestions for further improvement and enhancement of our custom services. Please contact the [Consulting team](#).

3.1 DOCKER ENHANCEMENT: PRIVATE REGISTRY SUPPORT

Until now, Docker Service supported pulling container images from both public registry at <https://index.docker.io> and private registries created by users. However, the EPM-DKR region only allowed using container images from the public registry.



In this release we have enhanced the Docker functionality, so that the images stored in private registries can be used for creating containers in the EPAM-DKR region, as well.

To pull an image from a registry to all nodes of your cluster, use the following Maestro CLI command:

```
or2di -p project -r region -a pull -cn cluster_name -i image_name -t  
image_tag -dr dockerRegistryInstanceID
```

Here, the **-dr** parameter stands for the Docker Registry ID from which the image is to be retrieved.

When the image appears in the list of available images, it can be used to create containers, also in the EPAM-DKR region.

4 INFRASTRUCTURE UPDATE

EPAM Cloud infrastructure is distributed between several regions located in different geographic areas and having different virtualization bases. Two regions, EPAM-MSQ3 and EPAM-DKR are based on the OpenStack technology.

In the current release we have improved the Cloud functionality in the OpenStack regions with the aim of achieving better usability and user-friendliness. Particularly, the following changes were introduced:

- the ability to resolve DNS names
- extension of the list of supported Maestro CLI commands

4.1 DNS NAMES SUPPORT IN OPENSTACK REGIONS

As of version 2.1.73 DNS names can be resolved in OpenStack regions as in other regions in which EPAM Cloud operates. Referring to DNS names instead of IP addresses is more convenient for users, and now the OpenStack regions also support public DNS names.

DNS names will be visible in the responses to the **or2-describe-instances (or2din)** and **or2-describe-services (or2dser)** commands.

```
D:\Maestro_CLI\maestro-cli\bin>or2din -p DEMOPRO -r epam-msq3
Response:

=====
instanceID | instanceName | dnsName | privateIP | state
=====
i-a7fc46** | ECSC001044** | ECSC001044**.epam.com | 10.6.***.*** | suspended
=====
```

Figure 1 – DNS name available for OpenStack region

4.2 MORE MAESTRO CLI COMMANDS SUPPORTED IN OPENSTACK REGIONS

In the previous versions, the OpenStack-based regions supported only a limited number of Maestro CLI commands. However, as the Cloud infrastructure develops, the scope of functionality available in the OpenStack regions, has increased.

For example, the commands related to Ansible Service, the volume-related and image-related commands are now available, as well as the or2console command providing remote access to VMs. Additionally, the commands used to manage certain platform services, such as RDB or Jenkins, are also supported in the OpenStack regions.

4.3 3XL SHAPE AVAILABLE IN EPAM-HU1 REGION

Complex and resource-intensive applications require powerful computers to run properly. EPAM Cloud always strives to offer the infrastructure corresponding to the developers' needs and purposes. We have increased the capacities of our Hungarian data center, and as of July, 2016, EPAM-HU1 region hosted in Budapest supports virtual machines of 2XL (4CPU, 15GB RAM) and 3XL (8CPU, 15GB RAM) shapes.

To activate the 2XL or 3XL shape for your project, please make an [ESP request](#), and it will be available within an hour.

5 MAESTRO UI UPDATES

Cloud Management Console (Maestro UI) is very popular among EPAM Cloud users, as it offers an intuitive and user-friendly interface for virtual infrastructure management and monitoring.

In the Cloud Management Console many functions are implemented in the form of wizards guiding the user step-by-step through the different VM management procedures. This release includes an enhancement of the VM Management Wizard which has received two new functions – tags and properties management.

5.1 VM MANAGEMENT WIZARD IMPROVEMENT

In this version, the VM Management Wizard has been expanded with two more useful functions – Manage Tags and Manage Properties.

Tags are used as a filtering item in billing and reporting. By settings certain tags to your instances, you can easily group instances by a particular tag and generate corresponding reports.

Properties are used, on one hand, as additional instance descriptive items, and, on the other hand, to set the Chef roles and attributes for auto configuration.

As of this version, you can also set, edit and remove tags and properties via the Cloud Management Console.

The VM details panel opening upon click on the VM line on the Management screen now has two new sections – Manage Tags and Manage Properties.

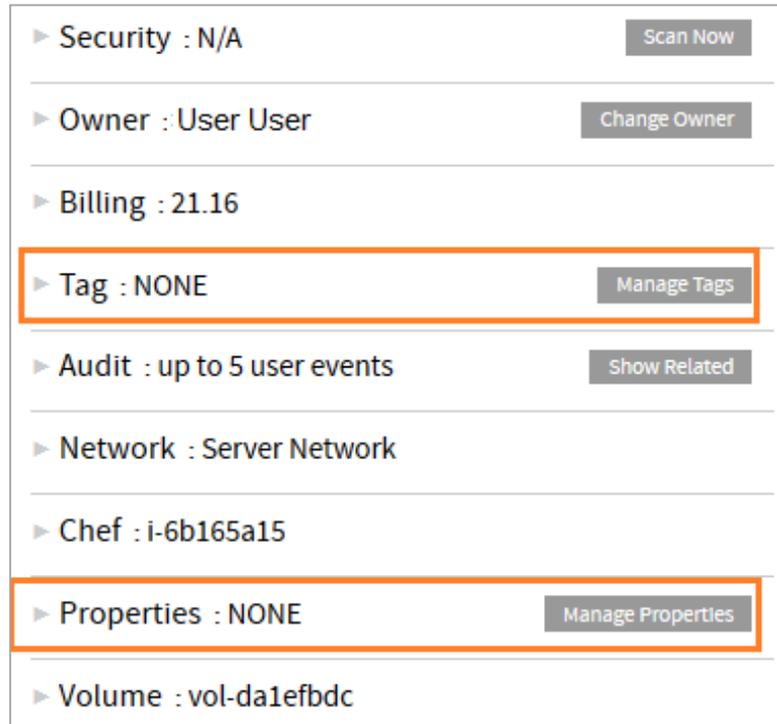


Figure 2 – 'Tag' and 'Properties' sections in VM details

Clicking the buttons opens the 'Manage Tags' or 'Manage Properties' wizard windows where you can set new tags or properties, and edit or delete the existing ones:

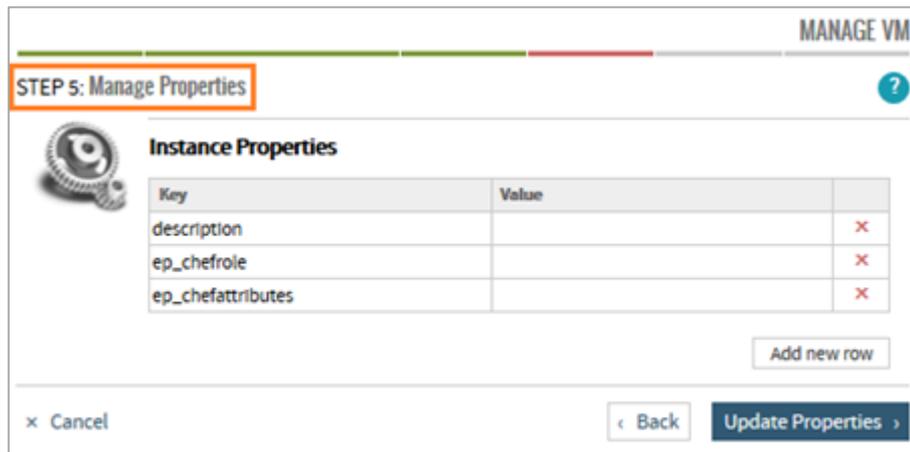


Figure 3 – 'Manage Properties' wizard step

6 SECURITY UPDATES

EPAM Cloud regards security as one of its highest-priority areas and is constantly improving its security measures and tools. EPAM Orchestrator v. 2.1.73 comes with the following security enhancements:

- AWS Multi-Factor Authentication for AWS is mandatory for all users as of July 20, 2016;
- Nessus persistent storage implemented.

Please see the sections below for more details on these security improvements.

6.1 AWS MULTI-FACTOR AUTHENTICATION NOW MANDATORY

In order to protect our users' data in Cloud, we have implemented the possibility of using AWS Multi-Factor Authentication (MFA) for additional security of IAM users.

With MFA, the user has to perform a two-step procedure first entering their credentials and then submitting a code received on their verified device.

As of July 20, 2016, all IAM users are required to have MFA Authentication configured properly, otherwise they will be blocked from using AWS resources.

The detailed guidelines on activating MFA Authentication can be found [here](#).

For more information on the security measures and policies applied in EPAM Cloud, please refer to the to [EPAM Cloud Security Policy](#).



6.2 NESSUS PERSISTENT STORAGE

Nessus security scanning is a powerful means of detecting and identifying VM vulnerabilities. In the previous releases we implemented automatic Nessus scanning on schedule and manual VM scanning upon request by users.

In this update, we have implemented a special storage for Nessus security scan results. When a scan is completed, the user receives an email containing the scan summary and a link to the detailed results which were previously sent as an attachment.

Security Check Result	
Instance i-***** Info	
Instance ID:	i-*****
State:	stopped
Owner:	User User
Template Name:	Ubuntu14.04 64-bit
Instance Type:	SMALL
VM CPU Count:	1
VM Memory, MB:	1740
Guest Os:	Ubuntu14.04 64-bit LTS
Requested (UTC):	2016-06-13T11:51
Processed (UTC):	2016-06-13T12:39
Vlan:	Server Network
Risk factor:	MEDIUM
Last scan date (UTC):	2016-06-13T12:43
Exposed status:	secured
Scan counter:	1

Figure 4 – Link to Nessus scanning results

The 'Risk factor' value serves as a link to the detailed Nessus Scan Report.



Please note that the number of manual scans has been increased from 3 to 5 in each 30 days per VM.

6.3 CLOUD ROLE ASSIGNMENT FLOW CHANGED

Access to EPAM Cloud and the scope of actions available to each user is based on the user's position in the project and on the so-called Cloud Role. While setting up the user's profile in UPSA, the Project Manager or Project Coordinator defines both the position and one of the Cloud Roles – Cloud User or Cloud Admin.

The UPSA system has been optimized for better usability and enhanced security. Now, the employee's profile is configured in a dedicated [Staffing Portal](#) accessible from the Resource Plan page in UPSA.



Only Project Managers and Project Coordinators can access the Staffing Portal.

Clicking an employee's name redirects you to the employee page on the Staffing Portal showing the employee summary.

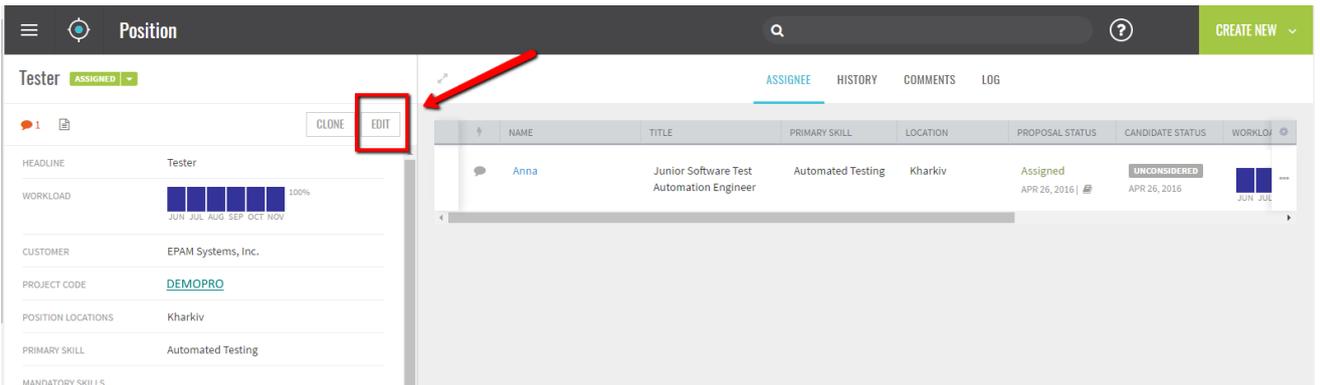


Figure 5 – Employee data editing

Click 'Edit' to open the page where the employee data can be modified. Select the appropriate PMC role and Cloud Role to define the user's access to EPAM Cloud.

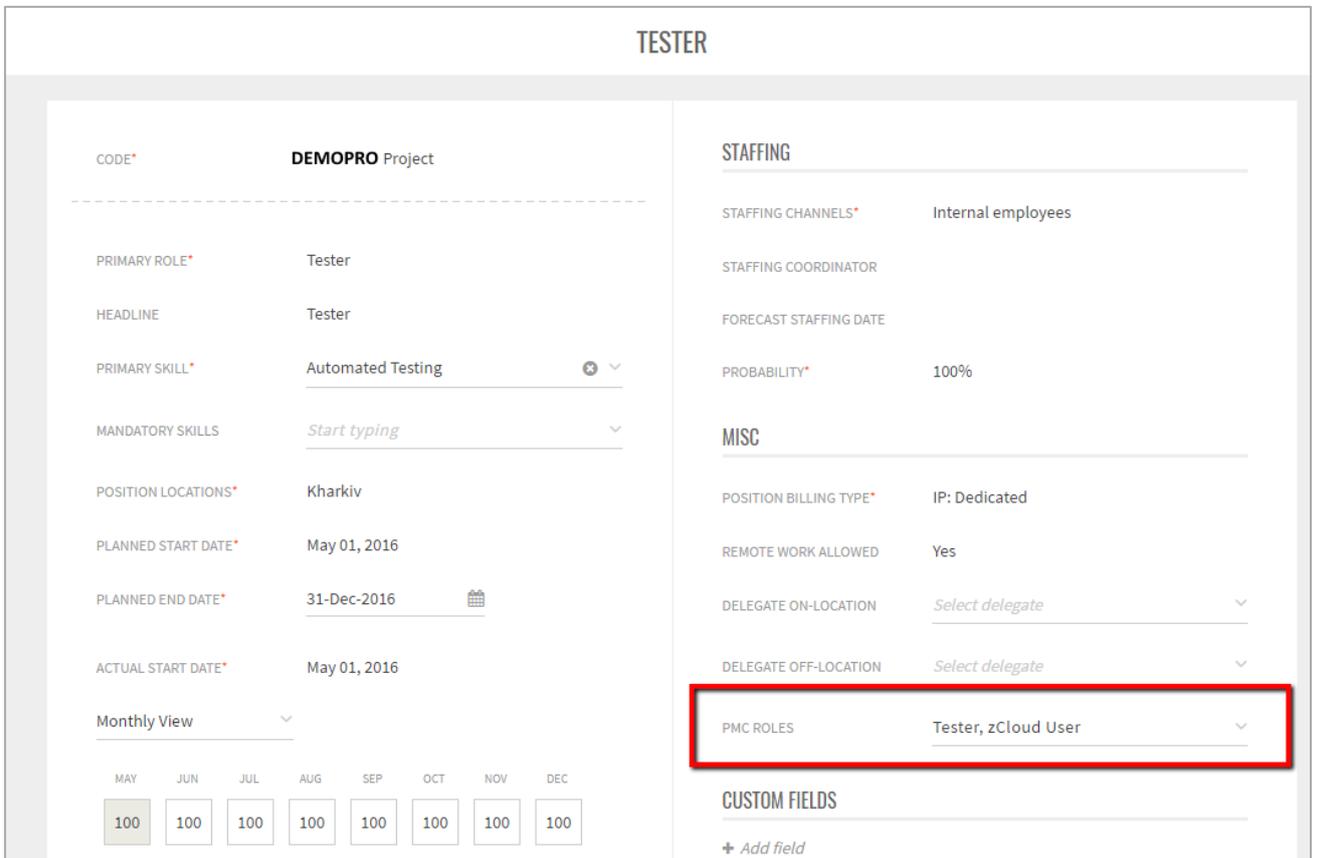


Figure 6 – Setting PMC Role and Cloud Role

7 KNOWLEDGE BASE UPDATES

The functionality updates introduced in EPAM Orchestrator v.2.1.73 are reflected in the following documents:

- [Account Management Guide](#) was updated with the new guidelines on setting up user permissions and Cloud Roles
- [Cloud Management Console](#) document was updated with the description of the enhanced VM Management Wizard

In addition, the [EPAM Cloud website](#) has been updated and revised in accordance with the new and updated features.

You can also find a Video Overview of EPAM Orchestration v.2.1.73 [by this link](#).

7.1 EFFECTIVE CLOUD COMPUTING TRAININGS

EPAM Cloud is becoming increasingly popular within the EPAM developers' community. It is used in a number of projects, both by experienced users and newcomers. And EPAM Cloud Support Teams are always there to assist and advise, so that the Cloud Service meets the users' expectations.

Shortly after the release of EPAM Orchestrator v. 2.1.73, the EPAM Cloud Team starts a series of Effective Cloud Computing trainings aimed at providing users with the basic knowledge of EPAM Cloud usage and specifics. The trainings cover a variety of topics – from starting a VM in Cloud to more complex issues, such as platform services or Hybrid Cloud.

The trainings consist of four modules and run in two streams presented by two trainers, so that each module runs two times. About 80 participants from different EPAM projects have enrolled to the first training series.



CDP

EFFECTIVE CLOUD COMPUTING

SERIES OF WEBINARS IN RUSSIAN

TRAINING AGENDA:

- 1. EPAM Cloud basics**
 - Cloud Computing Overview
 - EPAM Orchestrator: Quick Start
 - Running a VM
 - Personal Projects
- 2. Infrastructure services**
 - Working with volumes
 - Checkpoints and images
 - Cloud Billing and costs reduction
 - Resources management details
- 3. Auto-configuration and platform services**
 - Auto-configuration basics and tools
 - Monitoring service
 - GrayLog Service
 - Cooperation with Competency Centers: Hybris as a Service
- 4. Hybrid Cloud**
 - Hybridization basics
 - Using AWS via EPAM Orchestrator
 - Using Azure via EPAM Orchestrator
 - Self-education possibilities

We are also planning other trainings – Cloud trainings in English, follow-up trainings, re-runs of the Effective Cloud Computing trainings if our users decide that they are necessary. Please follow the CDP News for announcements of the upcoming Cloud trainings.

Also, we will be very glad if you suggest the topics you would like to see in the training program. Please contact the [Consulting Team](#) with your ideas.

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VERSION HISTORY

Version	Date	Summary
1.0	July 1, 2016	First published