



COST OPTIMIZATION IN EPAM CLOUD

2017

FIVE STEPS TO AN OPTIMAL INFRASTRUCTURE

- 1 Plan
- 2 Control
- 3 Optimize
- 4 Monitor
- 5 Respond

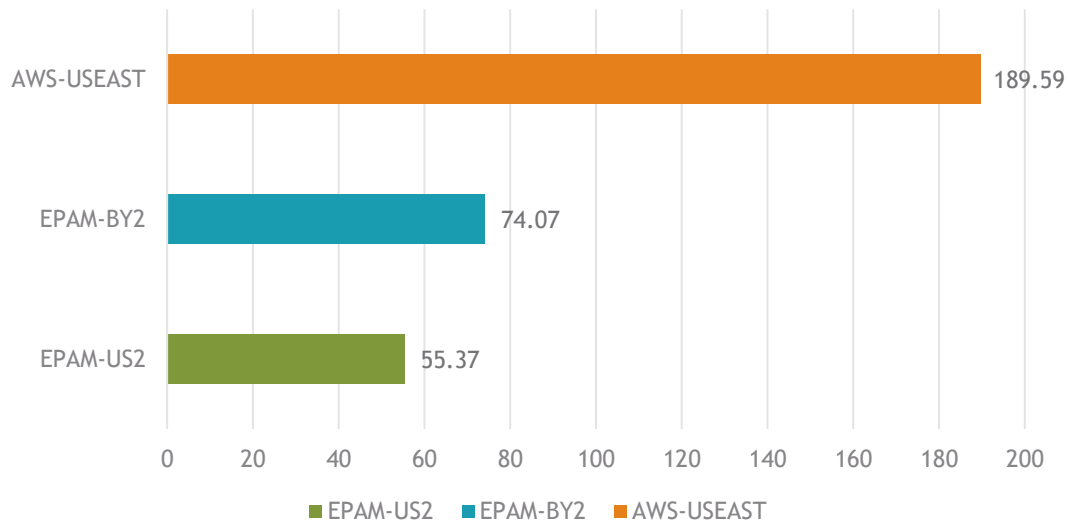


PLAN YOUR INFRASTRUCTURE

USE PRIVATE REGIONS

Hosting your resources in EPAM private regions can save about 70% of your infrastructure costs

Monthly cost, Windows Large VM running 24/7



For more info on EPAM Cloud regions, visit <https://epa.ms/cloud-c2s>

PLAN YOUR INFRASTRUCTURE

WHEN USING AWS, CONSIDER SPOT INSTANCES

With AWS spot instances you can get the same computing power at about 15% of the cost

Instance Type	vCPU	Memory GiB	Savings over On-Demand*
i3.large	2	15.25	86%
c1.medium	2	1.7	80%
c3.2xlarge	8	15	74%
t1.micro	1	0.613	78%
r4.xlarge	4	30.5	87%

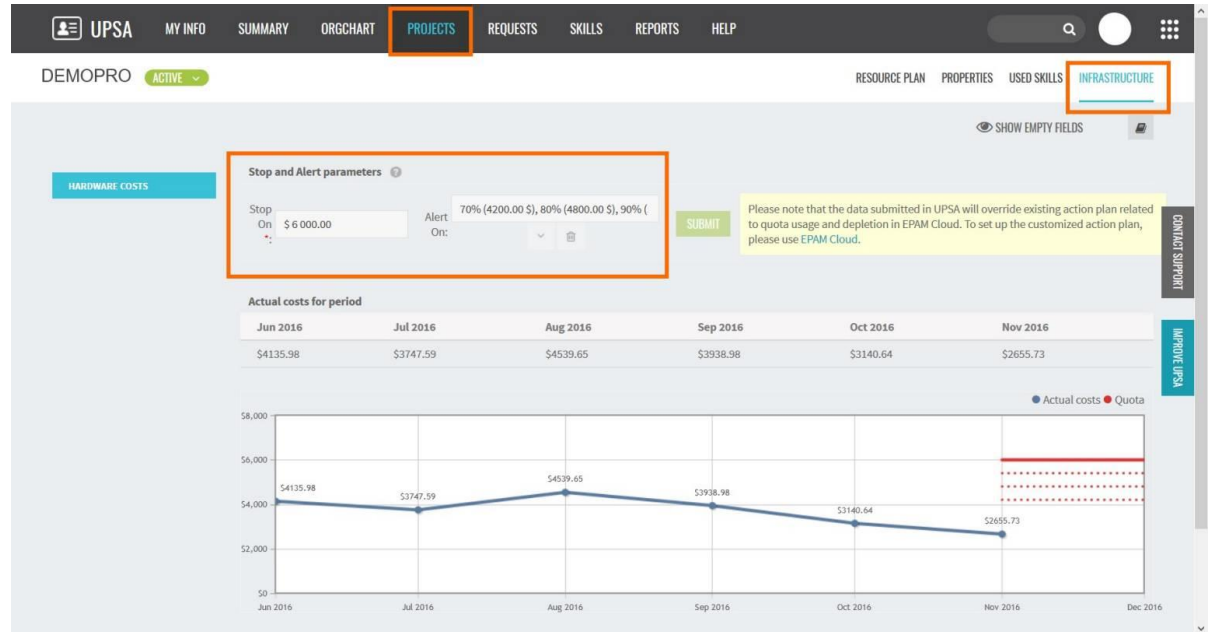
For more info on AWS Spot Instances, see the Hybrid Cloud Guide at <https://epa.ms/hybrid-cloud>

CONTROL YOUR INFRASTRUCTURE COSTS

USE QUOTAS TO LIMIT VIRTUAL RESOURCE USAGE

Set quotas to have full control over your infrastructure costs:

- Quotas to stop virtual machines
- Quotas to alert you of threshold excess



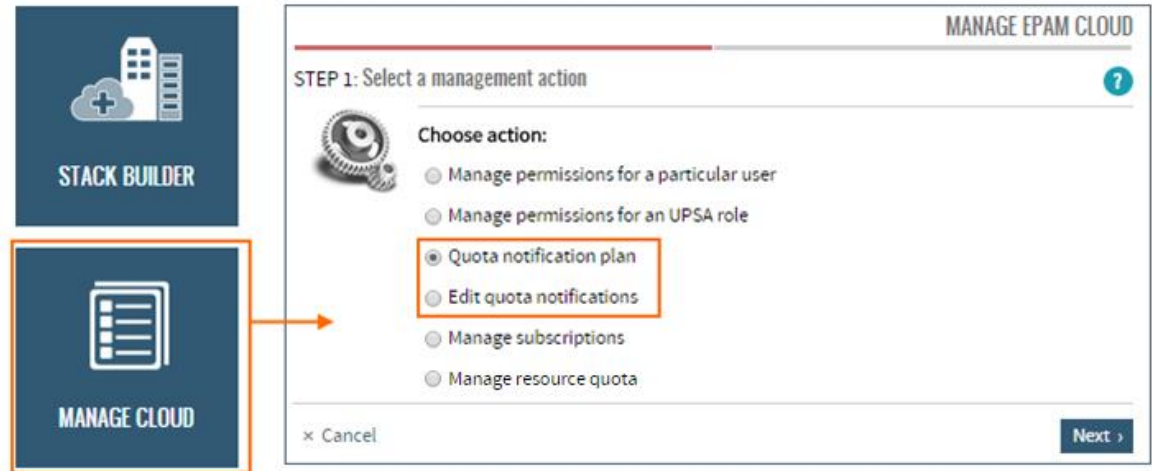
Set project quotas on UPSA: <https://epa.ms/project-quotas>

CONTROL YOUR INFRASTRUCTURE COSTS

FINE-TUNE PROJECT QUOTAS WITH “MANAGE CLOUD” WIZARD

Set quota limits and select the actions to be taken upon quota depletion:

- Stop virtual machines
- Request approval for new virtual machines
- Deny requesting new virtual machines

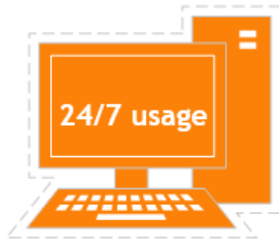


For more details on setting project quotas, visit <https://epa.ms/manage-cloud>

OPTIMIZE YOUR INFRASTRUCTURE

RUN VIRTUAL MACHINES ONLY WHEN THEY ARE NEEDED

Stopping a virtual machine for non-working time can save up to 70% of its cost



\$74.07

LARGE
Windows
machine in
EPAM-BY2,
per month

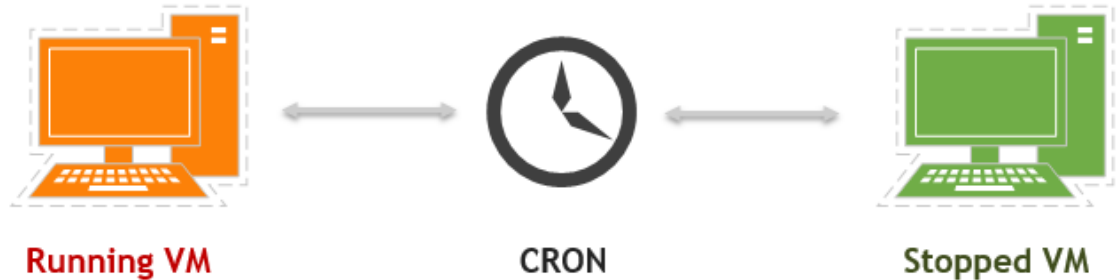


\$34.44

OPTIMIZE YOUR INFRASTRUCTURE

USE SCHEDULES TO AUTOMATE VIRTUAL MACHINE MANAGEMENT

- Minimize human factor
- Choose convenient schedules and schedule combinations
- Control schedule performance automatically



For more details on setting schedules, visit <https://epa.ms/cloud-schedules>

MONITOR YOUR COSTS

USE EPAM ORCHESTRATOR REPORTING FUNCTIONALITY

- View your project current costs
- Retrieve historical data for up to 12 months back
- Request reports of different types to analyze cost data in different aspects
- Request reports via email

The screenshot displays the EPAM Orchestrator Reporting interface. The top navigation bar includes 'AUDIT', 'MANAGEMENT', 'MONITORING', 'REPORTING' (highlighted), 'RADAR', and 'HELP'. A 'LEARN MORE' button and a user greeting 'Welcome,' are also visible. Below the navigation, the 'PROJECTS' section is active, showing a list of project codes: EPAM-BY2, EPAM-DKR, EPAM-HU1, EPAM-HW1, EPAM-IN1, EPAM-KZ1, EPAM-MAC, EPAM-MSO3, and EPAM-RU1. The main content area shows a report titled 'Total report on the EPM-project for July 2017' with a 'Total Chargeback' of 120.17. The report includes a table with columns for Type, Project, Zone, Product Name, Currency, and Total.

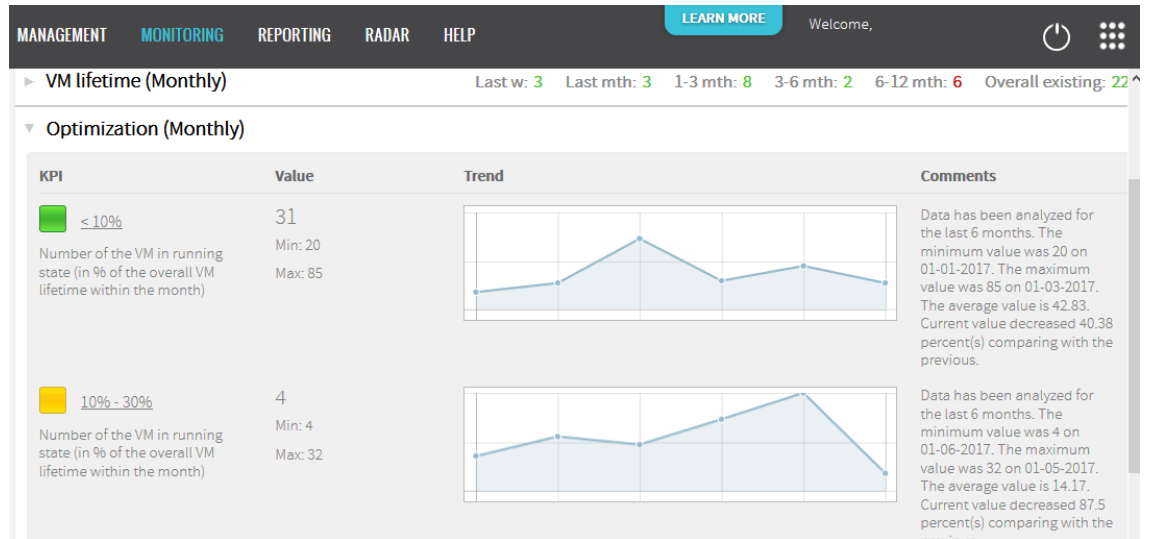
Type	Project	Zone	Product Name	Currency	Total
Item	DEMOPRO	EPAM-BY2	EPAM Private Cloud. Compute.	USD	79.131
Item	DEMOPRO	EPAM-BY2	EPAM Private Cloud. Storage.	USD	41.036206
Total	DEMOPRO	EPAM-BY2		USD	120.167206
Total	DEMOPRO			USD	120.167206
Total				USD	120.167206

For Cloud reporting, visit <https://epa.ms/cloud-reporting>

MONITOR YOUR COSTS

MONITOR INFRASTRUCTURE PERFORMANCE VIA EPAM ORCHESTRATOR NATIVE TOOLS

- Get various performance metrics for your virtual resources
- Terminate rarely used instances - less than 10%
- Set schedules for overused instances - more than 90%
- Observe trends and dynamics to analyze your infrastructure efficiency

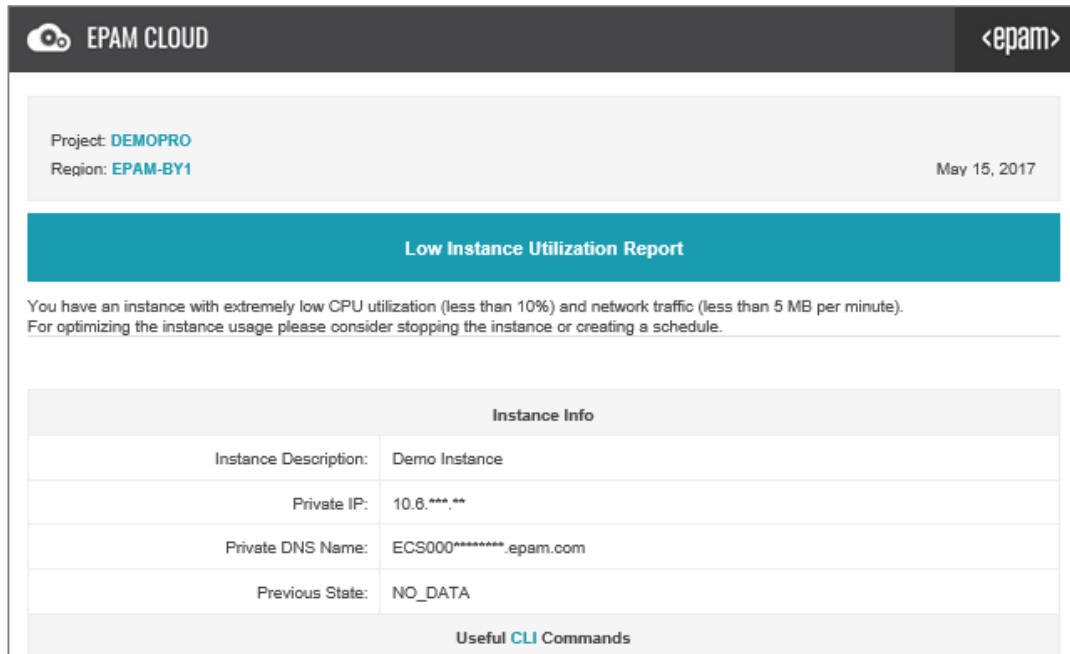


For Cloud monitoring, visit <https://epa.ms/cloud-monitoring>

RESPOND TO ALERTS

USE INFORMATION FROM ORCHESTRATOR ALERTS TO QUICKLY RESPOND TO CHANGES

- Quota alert - project quota exceeded and quota actions triggered
- Low utilization report - virtual machine used in a suboptimal way
- Unusual activity report - AWS resource creation threshold exceeded



The screenshot displays the EPAM Cloud interface. At the top, the header shows 'EPAM CLOUD' on the left and the '<epam>' logo on the right. Below the header, the main content area is divided into sections. The top section shows 'Project: DEMOPRO' and 'Region: EPAM-BY1' on the left, and the date 'May 15, 2017' on the right. A prominent teal banner reads 'Low Instance Utilization Report'. Below this banner, a message states: 'You have an instance with extremely low CPU utilization (less than 10%) and network traffic (less than 5 MB per minute). For optimizing the instance usage please consider stopping the instance or creating a schedule.' Underneath the message is a table titled 'Instance Info' with the following data:

Instance Info	
Instance Description:	Demo Instance
Private IP:	10.6.***.**
Private DNS Name:	ECS000*****.epam.com
Previous State:	NO_DATA

At the bottom of the screenshot, there is a section for 'Useful CLI Commands'.

USEFUL RESOURCES

Quick Start Guide

<https://epa.ms/cloud-doc-quickstart>

The guide for quick introduction into EPAM Orchestrator tools usage.



Terms and Conditions

<https://epa.ms/cloud-doc-terms>

EPAM Cloud terms and conditions: terms definitions, parties responsibilities



EPAM Cloud Security Policy

<https://epa.ms/cloud-security>

EPAM Cloud security policy: security-related parties responsibilities



EPAM Cloud Services

<https://epa.ms/cloud-services>

The page and the attached guide describe the available platform and infrastructure services



Account Management Guide

<https://epa.ms/cloud-doc-account>

The guide on Cloud account management



FAQ

<https://epa.ms/cloud-faq>

EPAM Cloud frequently asked questions



For the full documentation set, visit <https://epa.ms/cloud-doc>



NEED ASSISTANCE?

1

support.epam.com

Submit a request to support.epam.com. Select the necessary category, or leave a general request that will be automatically addressed to the correct team.



2

Cloud Consulting

Contact SpecialEPM-CSUPConsulting@epam.com with questions regarding general cloud usage



3

Yammer

Share your ideas and meet Cloud community at <https://epa.ms/cloud-yammer>



Escalation point: Andrei Paulau

A photograph of a modern glass skyscraper facade, viewed from a low angle looking up. The glass panels are held together by a metal grid structure. The sky is visible through the glass, appearing as a bright, hazy blue. The overall color palette is dominated by blues and greys.

**SEE YOU IN
EPAM CLOUD!**