StratusLab

Enhancing Grid Infrastructures with Virtualization and Cloud Technologies

Operation of a Site Running StratusLab Toolkit v2.0

Milestone MS13 (V1.0)
2 May 2012

Abstract

This document provides a brief report regarding the achievement of project milestone MS13 by the WP5 activity. The document presents the two project sites running StratusLab, the production Grid site that is hosted in the GRNET cloud site, and a number of applications that have been run on them.

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Document History

| Version	Date	Comment
1.0	2 May 2012	Final approved version.

1 Introduction

StratusLab has been providing reference cloud services since the very first months of the project. A public cloud site has been deployed and is available to both internal and external users, together with an appliance repository and the Appliance Marketplace service. The cloud site and the Marketplace have been following the evolution of the StratusLab distribution, upgrading promptly with every new release of the software. By month PM22 there are two cloud sites that are built using the latest version of StratusLab, namely 1.4. This version has been tagged as 2.0beta and thus by offering cloud services based on this we achieved the requirements of project milestone MS13. Essentially the final version of the software (tagged 2.0) will be an improved, incremental release based on the existing one (for more details see MS9). The following paragraphs give a brief overview on the current state of services provisioned with StratusLab 2.0beta.

2 Deployed StratusLab 2.0beta cloud sites

As of month PM22 there are two public cloud sites that have been deployed using StratusLab 2.0beta. The first site (which up till now was mentioned as "reference cloud service") is running in GRNET, Athens, Greece, whereas the second site has been deployed in LAL, Orsay, France. These two sites are sharing the same LDAP server for user authentication. This means that users register only once and may access both of them using the same credentials. Figure 2.1 shows a snapshot of GRNET cloud site being monitored from OpenNebula's Sunstone web-based tool.
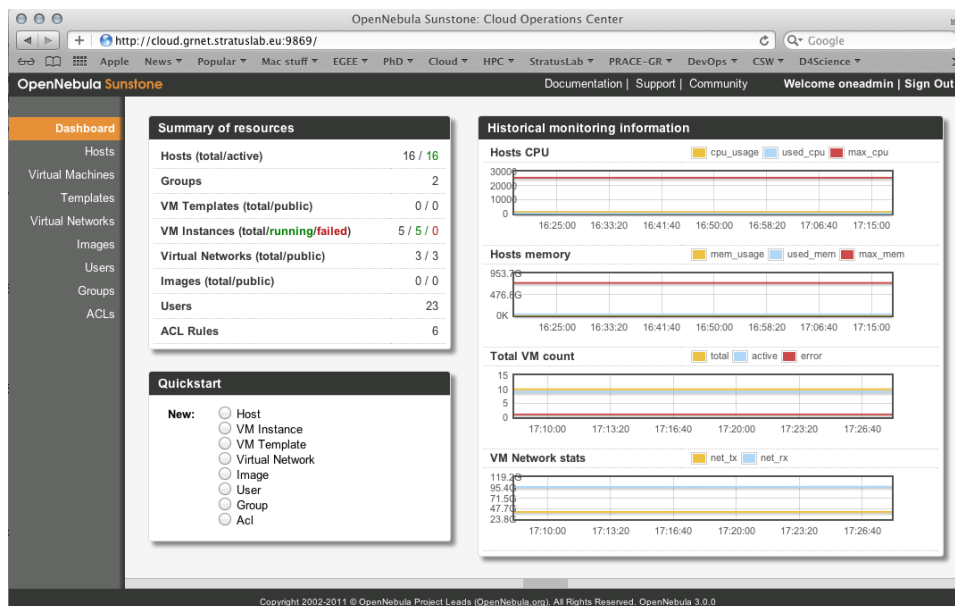
**Figure 2.1:** *GRNET site monitoring snapshot*

Both sites are providing Compute (OpenNebula) and Storage (PDisk) services. The endpoints are shown in Table 2.1.

Table 2.1: *StratusLab Cloud Compute and Storage Endpoints*

Site	Compute	Storage
GRNET	*cloud.grnet.stratuslab.eu*	*cloud.grnet.stratuslab.eu*
LAL	*cloud.lal.stratuslab.eu*	*pdisk.lal.stratuslab.eu*

3 Grid site running on StratusLab

StratusLab has deployed and provided a production Grid site for more than a year now. This site is completely virtualized, has been certified as production site by the Greek NGI (GRNET) and is part of the European Grid Infrastructure (EGI). The site has been deployed using pre-configured grid appliances available from the Appliance Marketplace and is kept up to date with the Grid software releases. Figure 3.1 shows the Grid Site as monitored by the GStat centralized monitoring system.
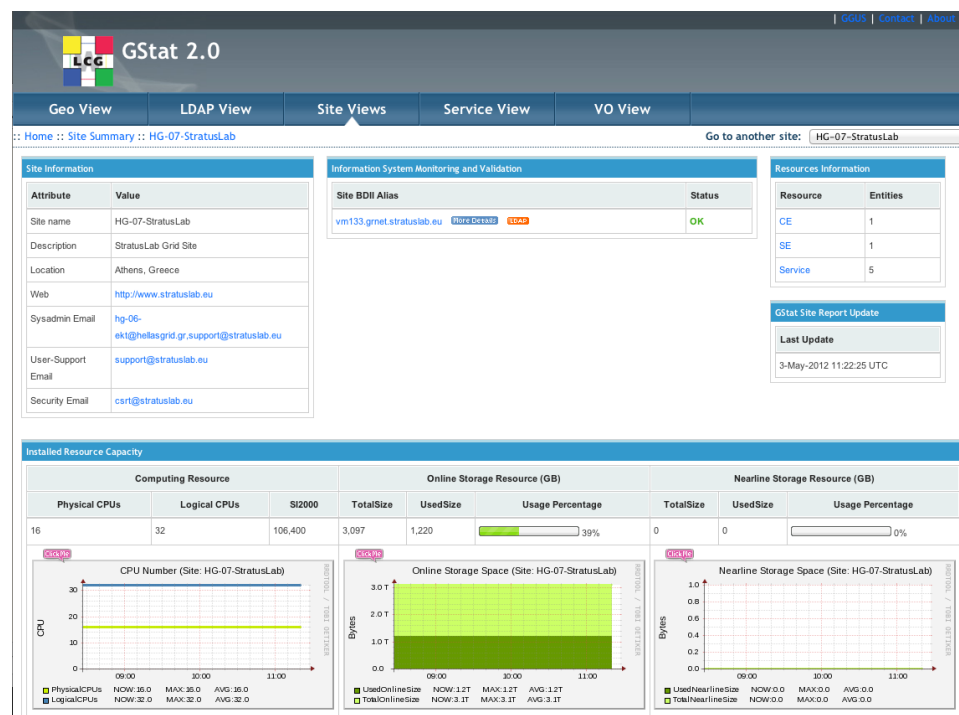
Figure 3.1: *Monitoring of HG-07-StratusLab*

4 Example use cases and applications

Apart from hosting grid services, the sites have been used in various other use cases. The Bioinformatics group of IBCP has deployed the ARIA application which is being developed in the context of the TOSCANI[1] project. The same group has been an early adopter of StratusLab, building specialized Bioinformatics appliances that contain pre-configured domain applications and provide access to Bioinformatics databases[2]. The sites have also been used to deploy and run parallel Hadoop applications[3] and scientific MPI applications such as the MM5 weather model[4].

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[1]http://stratuslab.eu/doku.php/bioinfo:usecases
[2]http://stratuslab.eu/doku.php/bioinfo:appliances
[3]http://stratuslab.eu/doku.php/tutorial:mapreduce
[4]http://www.youtube.com/watch?v=yD3kordYRHk