



Enhancing Grid Infrastructures with
Virtualization and Cloud Technologies

Release of StratusLab 1.0 Beta

Milestone MS8 (V1.0)
5 April 2011

Abstract

StratusLab uses agile software development methodologies, specifically Scrum, to produce public beta releases every six to eight weeks. Each release builds on the previous ones to provide additional features or more robust implementations of services. This document describes the latest 1.0 beta release, called v0.3, and the additional features due to be added to the final 1.0 production release in May 2011.



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Contributors

Name	Partner	Sections
Marc-Eliañ Bégin	SixSq	All

Document History

Version	Date	Comment
0.1	29 Mar. 2011	First draft for internal review.
1.0	5 Apr. 2011	Final draft after review.

1 Introduction

StratusLab uses agile software development methodologies, specifically Scrum, to produce releases of its cloud distribution. The development process is divided into a series of iterations (“sprints”) usually lasting three weeks. The result of each iteration is a new version of the StratusLab distribution. Each release builds on the previous ones to provide additional features or more robust implementations of services. A public beta release is usually made every other sprint, giving the project a six to eight week rhythm for public releases. This document describes the latest 1.0 beta release, called v0.3, and the additional features due to be added to the final 1.0 production release in May 2011.

2 Features of StratusLab 1.0 Beta – v0.3

To date, the project has released three public 1.0 beta releases: v0.1, v0.2, and the latest v0.3. These releases have been deployed by WP5 on the project's reference infrastructure, including a certified grid site running over the v0.3 release. These releases have provided incremental functionality, bug fixes, and improved service implementations based significantly on end-user and system administrator feedback.

The main features included in StratusLab v0.3 release are:

- Ability to use a variety of authentication mechanism, including the use of grid certificates and VOMS proxies
- Logging and security enhancements to aid forensic analysis of virtual machines
- Prototype StratusLab Marketplace for finding and sharing images
- Cryptographic signing and validation of image metadata descriptions for the Marketplace
- OpenNebula v2.2 for virtual machine management
- Public, local, and private IP address assignment to tailor the accessibility of virtual machine instances
- Web Monitor: a dashboard for cloud administrators
- User CLI: Python-based command line tools for remote access to cloud
- System Administrator CLI: Command line tools to facilitate installation and management of a cloud
- Manual and automated (Quattor) installation
- Prototype implementation of a persistent disk store (like Amazon's Elastic Block Store).

These features provide a comprehensive end-to-end Infrastructure as a Service (IaaS) cloud distribution that is easy to install and manage.

3 Additional Features for StratusLab v1.0

While StratusLab v1.0 Beta already provides a comprehensive set of features for an IaaS cloud, the final 1.0 production release will contain refinements of existing services and some additional functionality. Taken from our roadmap, here are the key features that should form the basis of the StratusLab v1.0 Final release:

- Security
 - Consistent support for all authentication mechanisms by all services
- Monitoring & Accounting
 - Improved VM and physical host monitoring
 - Collection of metrics and generation of accounting reports
- User Management
 - Group and role based authorization
 - Improved management of user quotas
 - Web registration for reference infrastructures
- Storage
 - Production implementation of persistent disk storage
 - Appliance Repository
 - Production implementation of the Marketplace
- Appliances
 - Updated base images with latest security patches
 - Updated build of StratusLab-ready grid appliances
- Service Manager
 - Complete integration in the release

- Installation and configuration using Quattor
- Integration with StratusLab authentication
- Deployment of grid appliances with Claudia
- Integration with monitoring information from OpenNebula

These features have different priorities, the plan is to include all of them in the StratusLab v1.0 Final release, but because of time constraints and changes in priorities some may be implemented in incremental releases after the v1.0 Final release.