



Enhancing Grid Infrastructures with
Virtualization and Cloud Technologies

Delivery of a Virtual Appliance Repository

Milestone MS12 (V1.0)
15 December 2011

Abstract

The Virtual Appliance Repository was provided during the first quarter of the project, and is used by StratusLab project members and external users. Some of the functions initially provided by the Appliance Repository have now been moved to the Virtual Appliance Marketplace. The Marketplace shifts the focus from storage of appliance images to registration of cryptographically-signed appliance metadata that allows users to search for and share appliances more easily.



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Document History

Version	Date	Comment
1.0	15 Dec. 2011	Final Version.

1 Introduction

StratusLab provides a complete, open-source solution for deploying an “Infrastructure as a Service” cloud infrastructure. Use of the cloud requires the use of prepared machine and disk images. Although StratusLab provides tools to simplify the creation of these images, the procedure for doing so remains a significant hurdle for use of a cloud. Consequently, StratusLab encourages the sharing and reuse of existing images to reduce this barrier.

The initial virtual appliance repository described in the MS10 [1] report was the first step for StratusLab to share images that will be generally useful to the user community.

A ‘virtual appliance’ is a virtual machine that has been configured for a particular application (e.g. a specific bioninformatics workflow, or simply a web server). In addition to these ‘appliances’ the repository also contains ‘base’ images that provide minimal installations of common operating systems.

Currently work is in progress on the Virtual Appliance Marketplace, which shifts the focus from storage of appliance images to registration of cryptographically-signed appliance metadata that allow users to search for and share appliances more easily.

2 Virtual Appliance Repository

The first implementation of the virtual appliances repository was made available in the first quarter (June–August 2010) of the project (<http://appliances.stratuslab.eu>). The appliance repository is a standard Apache web server accessed using WebDAV (Web-based Distributed Authoring and Versioning), with authentication via the StatusLab LDAP server. The intention of the repository was to allow users to find available images, and to obtain information about them from XML metadata files stored with the images. These functions have now been moved to the ‘Marketplace’. The repository is maintained to provide storage facilities to the project for reference virtual machine images.

The Marketplace serves as a registry for images that can be shared. Rather than providing a centralised storage location, the storage of the actual images is handled by the owners of the images, allowing them to control access to the images if desired. The Marketplace itself contains cryptographically-signed metadata about machine and disk images allowing users to find existing images and allowing system administrators to define policies on trusting those images. The Marketplace is available at <http://marketplace.stratuslab.eu>.

References

- [1] M.-E. Bégin, S. Kenny, C. Loomis, and D. O'Callaghan. Initial Virtual Appliance Repository, 2011. MS10.