



Enhancing Grid Infrastructures with  
Virtualization and Cloud Technologies

## **Opening of Virtual Appliance Repository to External Application Communities**

Milestone MS5 (V1.0)  
19 March 2012

### **Abstract**

The purpose of this milestone was to show that external application communities can use the StratusLab image management tools to create and share customized appliances. By virtue of the design of the StratusLab Marketplace and its integration in the virtual machine management workflow, external communities have been able to do this since the Marketplace was deployed in the first year of the project.



StratusLab is co-funded by the  
European Community's Seventh  
Framework Programme (Capacities)  
Grant Agreement INFSO-RI-261552.



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## Document History

| Version | Date         | Comment        |
|---------|--------------|----------------|
| 1.0     | 19 Mar. 2012 | Final version. |

# 1 Tool Support for Sharing Appliances

For creating images, the project has provided a command<sup>1</sup> that facilitates creating customized appliances from existing machine images. This takes a list of additional packages and a script, which are then used to transform the base image into a customized appliances. With later versions of the StratusLab distribution, the appliance is created using cloud storage.

While more involved, base appliances can be created from scratch. Instructions for doing so are available from the StratusLab website. This allows complete control over the image creation process at the price of having to manually embed the StratusLab contextualization hooks.

For making this appliance available to others, the standard Marketplace mechanisms are used. Via the command line client, the user signs the appliance metadata and uploads this to the Marketplace. At that point, any user, by referencing the appliance identifier, can use the machine.

Planned improvements to the system will allow direct upload and download of these appliances to cloud storage. This will further streamline the appliance creation process.

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<sup>1</sup>stratus-create-image

## 2 Examples of Sharing

The current Marketplace contains two good examples of external applications providing customized images.

- The IGE project regularly creates appliances with the globus services and makes them available from the StratusLab Marketplace. IGE currently has 23 active entries in the Marketplace.
- With the help of project personnel, the ARIA application from the Institut Pasteur has been made available from the Marketplace. This is currently a monolithic image, but will soon be split into two images to allow creating an personalized, elastic ARIA PaaS.

A few other people are also taking advantage of this capability.

The European Grid Infrastructure (EGI) has recently deployed their own instance of a Marketplace as a basis for sharing appliances with the EGI services, for testing and eventually production. Although they are not directly using the StratusLab Marketplace instance, this is an example of external groups using the project's technology to share appliances.

## 3 Conclusions

The software and services involved in sharing customized appliances are mature, with several examples of external groups using the StratusLab services to do so. Future improvements to the storage and the Marketplace will make appliance sharing even more convenient.