

# Cloud Platform for VPH Applications

## Tutorial

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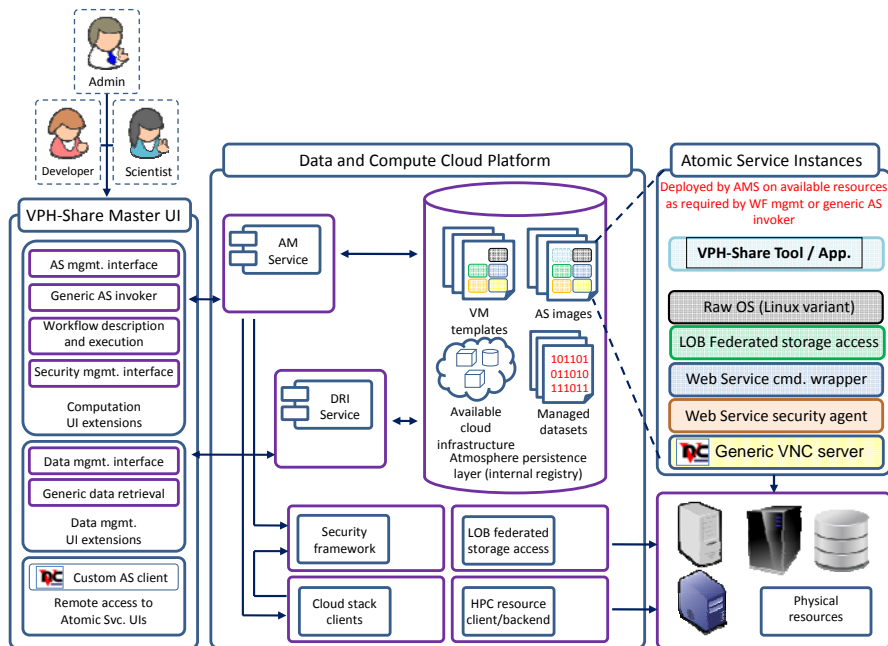
### 1. Introduction to VPH-Share

The objective of the VPH-Share project [1] is to develop a cloud platform for sharing data and computing services for the Virtual Physiological Human (VPH) research community. The research teams produce scientific data in the form of relational databases or collections of large binary files such as medical images and their 3D representations. This data is processed using a set of custom computing tools for data analysis and simulation models. To facilitate collaboration within the community, there is a need for a platform where such data could be published and shared, along with computing services and workflows that represent complex processing scenarios.

### 2. Tutorial description

In this tutorial we will introduce the cloud platform for VPH applications, including its user-friendly portal (Master Interface) and the underlying Atmosphere [2,3] environment for sharing computational services, as well as the LOBCDER service for sharing large binary data (see Fig. 1). We will demonstrate how users can browse and use the services that are already available within the platform. We will also provide a step-by-step tutorial on how to publish a new computing service. As Atmosphere is built on top of the OpenStack cloud middleware and virtualization technologies, users have the ability to install application software on a custom virtual machine and publish it as an atomic service (AS). Such atomic services can be then shared with other users and become part of larger computing workflows.

Applications which have already been deployed within the VPH-Share platform include the ViroLab Comparative Drug Ranking System, the @neurIST morphological workflow, and the OncoSimulator tool (which is a collaboration between VPH-Share and the p-medicine project).



**Figure 1 Architecture of VPH-Share cloud platform**

### 3. Summary

The tutorial will provide an overview and introduction to the VPH-Share cloud platform, along with step-by-step instructions on how to deploy a new service into the platform. For more information please refer to the VPH-Share cloud platform documentation [4,5].

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### References

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2. Atmosphere platform: <http://dice.cyfronet.pl/products/atmosphere>
3. P. Nowakowski, T. Bartynski, T. Gubala, D. Harezlak, M. Kasztelnik, M. Malawski, J. Meizner, M. Bubak: Cloud Platform for Medical Applications, eScience 2012 (2012)
4. <http://dice.cyfronet.pl/projects/details/VPH-Share>
5. <https://vph.cyfronet.pl/wiki/doku.php>