

Internet2 and HP-SHI Offering

2012-04-22

Frequently Asked Questions

- [What is the Internet2 NET+ Community Cloud offering?](#)
- [What is the relationship between HP-SHI and Internet2?](#)
- [What is the HP-SHI proof-of-concept program?](#)
- [Will the HP-SHI offerings provide both compute and storage on-demand?](#)
- [Will the HP-SHI offerings accommodate HPC use cases?](#)
- [Is there an option of having servers on my campus be part of the community cloud?](#)
- [How does the HP-SHI IaaS provide support for security and data privacy requirements?](#)
- [How will the HP-SHI offering support institutional compliance requirements such as FERPA and HIPAA?](#)
- [Will the HP-SHI IaaS allow me to impose my own security and data privacy policies?](#)
- [How will the HP-SHI offerings be provisioned?](#)
- [Will the HP-SHI offerings be available through the Internet2 Network?](#)
- [How will the HP-SHI offerings be priced?](#)
- [Will there be a data transfer charge for the HP-SHI offerings?](#)
- [When will the HP-SHI offerings be available for my university?](#)
- [How can I find out more? How can I stay informed about these services?](#)

Update on the status of the HP-SHI proof-of-concept:

As part of the PoC effort with Indiana University, Notre Dame University, Pennsylvania State University and University of Utah, four PoC use cases were explored, three of which have now been sunset. The product roadmap for the offering has substantially benefited from the contributions of the universities and a significant number of features and functionality of importance to our membership are now under development. At present, the PoC effort will continue with an emphasis on administrative computing use cases and is open to the participation of additional universities that have an interest in participating in this important effort. Those wishing to join the PoC effort should contact Michaela Mezo – michaela.mezo@hp.com or Khalil Yazdi – kyazdi@internet2.edu.

What is the Internet2 NET+ Community Cloud offering?

Hewlett Packard and SHI International are partnering with Internet2 to provide a “community cloud” suite of infrastructure services for the Internet2 community. In addition, Internet2 is working with HP and SHI to directly connect to the [Internet2 Research and Education Network](#) and with the [InCommon](#) federated identity service. SHI will operate the community cloud to meet required levels of security, performance and availability for Internet2 members. The goal is to create cost-effective, easily accessed and a simple to administer offering as part of the Internet2 Net+ Services program.

What is the relationship between HP-SHI and Internet2?

Internet2 will sign a Master Agreement with Hewlett Packard that provides various terms and conditions specific to the higher education community.

What is the HP-SHI proof-of-concept program?

Working together with Internet2, staff from HP, SHI and a group of four universities have conducted a proof-of-concept in order to benchmark and pilot SHI's infrastructure-as-a-service (IaaS) offering. Indiana University, Penn State University, University of Notre Dame, and University of Utah have implemented several "use cases," including high-performance computing (HPC) applications, an administrative application, extending the university's internal cloud to the external cloud, and examining platform and application migration to the cloud. The result of the POC was a validation of the current IaaS offering, as well as a series of enhancements to be implemented throughout 2012 to form the basic service offering for I2 members. Additional requirements will be gathered through the extended PoC effort.

Will the HP-SHI offerings provide both compute and storage on-demand?

Yes. The current offering provides for on-demand creation of virtual machines. These virtual machines may be provisioned with up to eight virtual CPUs and up to 32GB of RAM. In addition, storage may be provisioned in blocks of up to 1TB. Additional storage in the form of virtual disks may be added or deleted.

Will the HP-SHI offerings accommodate HPC use cases?

Yes. We will make every effort to support the universities' HPC needs. A diverse set of HPC use cases were tested as part of the proof-of-concept. The results of these tests have shown that the cloud infrastructure performs well, and can be leveraged to augment research-computing projects. However, in order to provide a complete HPC cloud offering, from a technical and operational perspective, a revised hardware design and enhancements to the cloud management and automation software and interfaces will be necessary. A design initiative is under design with input from the pilot HPC universities. We will provide more details as this initiative progresses.

Is there an option of having servers on my campus be part of the community cloud?

SHI's service core based architecture allows the placement of servers running their software ("vCores") directly on an institution's site. These remote vCores are completely managed by the SHI Cloud Management Platform (CMP) and accessed by the same self-service portal that a client uses for the SHI multi-tenant centers. The only difference is the fact that they are placed on a local site and attached directly to their network instead of over an ISP. Remote vCores are useful for institutions that have regulatory, communication or organizational requirements that can only be met by an on-premise vCore. The remote vCores are connected to the CMP via a secure link with appropriate firewalling on both sides. SHI offers several alternative VM configurations.

How does the HP-SHI IaaS provide support for security and data privacy requirements?

The SHI cloud service provides both structural and layered security. From a structural security point of view, once a VM is configured, it is placed on a client network segment and is accessible only by the client and the SHI Cloud Center has no visibility other than whether it is up or down. In addition, all data at rest is encrypted via Brocade encryption switches with RSA key management software. Each client has its own unique self-service portal for configuration and management of their VMs. There is no public facing portal, which eliminates related security risks.

From a layered security point of view, a combination of McAfee IPS and VMware security tools are used to create client-to-client isolation required in a multi-tenant environment, as well as to manage the security for the entire infrastructure. Beyond direct security monitoring by SHI, the Solutionary security monitoring service is used to provide 24/7 third-party security monitoring of the entire security infrastructure. In the event that Solutionary determines there has been a security incident anywhere in the infrastructure, they will simultaneously alert SHI and affected institutions.

How will the HP-SHI offering support institutional compliance requirements such as FERPA and HIPAA?

HP and SHI are working with the universities in the proof-of-concept to understand the institutional compliance requirements typical to higher education, including FERPA and HIPAA. There is a security working group comprised of university security officers and representation from REN-ISAC to ensure that all aspects of security and compliance have been noted, vetted and mitigated in the final production environment.

Will the HP-SHI IaaS allow me to impose my own security and data privacy policies?

SHI will provide a CSA Cloud Controls Matrix document which identifies controls implemented within the cloud environment as they match common industry compliance standards. Additionally, SHI will be performing both a Type I and II SSAE16 accreditation to highlight documented and validated controls. Once instantiated, the SHI Cloud is a virtual extension of the local institutional cloud or data center environment and in that context provides full control over all policies to institutional IT management.

How will the HP-SHI offerings be provisioned?

By placing the VMs on the client's network (with client IP addresses), the VMs from the SHI Cloud Centers are indistinguishable from a client's virtual or physical machines. This allows the creation of deployment architectures out of any combination of physical, virtual or cloud-based machines. All aspects of VM creation and management are handled by the SHI Cloud Management Platform (CMP). The CMP layer contains the client self-service portal, automation layer, monitoring layer and security layer. This software stack has been fully integrated by SHI Labs and provides a totally transparent experience to the end user.

Will the HP-SHI offerings be available through the Internet2 Network?

Yes. All services running at SHI data centers will be provisioned through the Internet2 Network. Initial connections will be at 10Gb, with the opportunity to expand as usage growth requires.

How will the HP-SHI offerings be priced?

Pricing will be developed during the proof-of-concept effort. It is expected that pricing will be competitive with what is available through other cloud providers for similar services.

Will there be a data transfer charge for the HP-SHI offerings?

No. There will be no additional data in/out charges associated with the use of HP-SHI storage and compute services.

When will the HP-SHI offerings be available for my university?

After the proof-of-concept program is concluded, the terms of service will be announced, as well as a service initiation date. Internet2 members will be able to contract for this service as an addition to their Internet2 annual membership agreement. We are working on sign-up procedures for other universities and other types of institutions that are members of InCommon and have access to the Internet2 Network.

How can I find out more? How can I stay informed about these services?

Please check the Internet NET+ Services web page for regular updates (<http://www.internet2.edu/netplus/>). You can also be added to our mailing list by sending an email request to NETplus@internet2.edu.