Virtual Server Service

What is a “Virtual Server?”

A “virtual server” (also known as a “virtual machine”) is a server that runs on shared physical equipment. Usually, many virtual servers run on one physical server. Since most physical servers are heavily underutilized, the use of virtual servers increases efficiency and decreases costs associated with computing. “Server Virtualization” has proven so effective that it has become ubiquitous across all industries including higher education.

The ITS Virtual Server service allows departments and researchers to purchase a virtual server for as long as they need to do their work. The size of the server can be changed over time to meet your changing needs.

Why should I use this service?

This service offers several benefits which may be of value to you, including:

• Highly redundant components, reliable power and cooling will increase the uptime of your systems

• New servers can be set-up within a few days so you no longer have to go through long procurement processes to get your equipment

• You can grow your server over time as needed.

• If desired, your server can be backed-up to an off-site location protecting you from data loss even in the case of a major disaster

• Efficient power and cooling reduces UH’s use of natural resources and overall expenses

• The environmentally hardened IT Center Data Center can reduce the risk of your equipment being damaged or unavailable due to natural disasters

• You save time and money but don’t lose any control. You continue to have full control of your system, but no longer have to worry about buying, installing, supporting or replacing hardware

ITS Data Centers

ITS provides this service at the Information Technology Center (ITC) Data Center. This is the
primary and the most state of the art data center available in the UH system.

**What are the features of this service?**

Users of this service can expect the following from ITS:

- **Consulting.** ITS can provide consulting assistance to help you plan for your use of the service.

- **Network monitoring.** ITS will monitor the network, firewall and other support services to ensure they are available and operating as expected.

- **Hardware Refresh Cycle.** Servers used to host the VM are continually upgraded and refreshed on a 4-6 year refresh cycle so you can be assured of up-to-date hardware supporting the service.

- **VM Provisioning.** ITS will provision a base VM with either Microsoft Server or Red Hat Enterprise Linux operating systems.

- **Monitoring.** ITS operations staff will monitor the health of the virtual server cluster 7x24 and respond to issues in a timely fashion.

- **Backup and recovery.** ITS provides optional server backups using open source software called Bacula.

- **Physical Security** The data center is located on a secured floor at the ITC building. Access to the building, elevators and data center is controlled by electronic badges. Only authorized personnel may access the data center floor with additional keyed access necessary to access the critical zone where the virtual machine clusters are located. All entry into the data center is logged and video monitoring with a one week archive is available for auditing purposes.

**What do I have to do?**

As a consumer of this service, you are responsible for the following:

- **Access Control.** You must identify at least one full time staff as a system administrator of the VM. You must let ITS know in a timely fashion when changes to personnel are necessary, for example, when a designated system administrator leaves your department. It is highly recommended that you have a backup system administrator assigned to your VM.

- **System operation.** You are responsible for the operation of your VM including managing operating system, database and application components.

- **Security of devices.** You’re responsible for following University guidelines and general best practices for securing your VM. This includes registering and patching servers, using
appropriate antivirus/malware software, maintaining access control lists for your devices and securing sensitive data according to established policies: http://www.hawaii.edu/askus/1266.

• **Providing network and firewall requirements.** You’re responsible for providing ITS with any network or firewall requirements for your systems.

• **Payment.** You’re responsible for paying for your service.

• **Protected Information.** You must notify ITS if you plan to store any information that is in a protected class (HIPAA, FERPA, PCI, PII, etc). You must have a protected data compliance officer assigned in your department to verify all data handling and security requirements are met according to the applicable policies and statutes related to the protected data class(es) that your data falls under.

### Service Request / Reporting Problems

If the VM service is not operating as expected you can email/phone your assigned tech or if your tech is unavailable contact itscs@hawaii.edu to report the issue. After normal business hours, you can report problems by calling 1-808-956-2393. This is the phone number of the IT Operations Center. They can notify appropriate support staff of the issues you are having. After hours support are available on a staff-available basis; after-hours charges may apply.

If you need to escalate an issue that has not been adequately addressed through normal channels, you can contact the Contract Services Manager (Osamu Makiguchi - osamum@hawaii.edu). Further escalation to the Director of Technical Infrastructure (Bill Wroblieski - wrob@hawaii.edu) is also possible.

### How does billing for the service work?

ITS will bill you when your order for the service is first processed, and then annually after that on the anniversary of your order. The bill will cover the full cost of the service for the upcoming year.

Exceptions to this annual payment method are:

• **Service expansion.** If over the course of the year, you place an order to expand your use of the service, ITS will process a one-time charge for the pro-rated amount for the remainder of the year. Subsequent charges will be included in your bill at the start of the next year.

• **Service cancellation.** If you cancel the service, ITS will refund the pro-rated amount within sixty days of turning off your VM.

• **Service reduction.** If you reduce the use of your service during the middle of a year, ITS will credit the pro-rated amount toward your next bill within 60 days of turning off your VM.
Network & Security

ITS will set-up your VM on a network segment that will be assigned to you. This will allow your servers to be isolated from other servers within the ITS Data Center.

Your services will be behind the ITS firewall. ITS will work with you to determine what traffic should or should not be blocked from your servers.

Maintaining the security of your servers is your responsibility. You should make sure software is patched, malware is blocked, passwords are secure and access lists are managed. If for some reason your server is compromised, and it becomes a threat to the greater UH community (e.g. it is being used as a host to attack other services), ITS reserves the right to remove your system from the network or block its traffic. If this occurs, ITS will notify you immediately.

ITS access to your VM

ITS generally will not have administrative access to the operation system or applications running on your VM.

Special service requests

In general, ITS believes this service is structured well to support a wide-range of UH users. Of course, it’s possible that some very large installations or very unique situations will arise where this service may not work perfectly for some people. In these situations, ITS is happy to meet with you to discuss your special needs, and see if we can tailor the existing service to make it workable for you. Custom service requests may involve additional charges.
Appendix 1: Specific Service Levels

The table below describes the specific service levels provided by ITS.

<table>
<thead>
<tr>
<th>Service Area</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Backup / Restore</strong></td>
<td>Backup services may be purchased as an optional service. See service website for latest pricing. One full backup of systems are made once a week with daily incremenitals. Backups provide file level backups of the server. The retention period is 7 days. One restore request can be made per quarter, additional requests will be charged the standard hourly rate.</td>
</tr>
</tbody>
</table>
| **Physical Security** | ITC Data Center  
  • 7x24x365 video monitoring.  
  • 7x24x365 on site personnel.                                                                                                                          |
| **Monitoring**     | 7x24x365 monitoring of VMware server cluster, network, DNS, and firewall components.                                                                                                                      |
| **Unplanned Outages** | An unplanned outage is a service interruption of the virtual server cluster or the supporting network infrastructure. ITS will post information about any unexpected outages on the ITS website at: http://www.hawaii.edu/its/status.php. |
| **Planned Outages** | A planned outage is defined as a service interruption that has been arranged in advance by ITS personnel.  
  • There will be no more than 2 planned outages per year.  
  • 30 days advanced warning before any planned outage.  
  • Outages will be scheduled during on Sundays from 6AM to 12PM.                                                                                     |
| **Service Requests** |  
  • Respond within 1 business day for routine business request.  
  • During business hours, respond within 4 hour to urgent requests.  
  • During non-business hours, respond within 4 hours to urgent requests on a staff available basis.  
  • On premise staff available via phone 24 hours a day.                                                                                               |
| **Supported OS**   | Red Hat Enterprise Linux 6  
  Windows Server 2008 R2, 2012 R2                                                                                                                                                                            |
| **VM Reprovisioning** | One free reprovisioning of your VM per the life of the contract                                                                                                                                         |
| **Remote Access**  |  
  • Access to VMs will be through Remote Desktop Connection or SSH.  
  • Optional console access available on request: a one time $30 charge for VPN client license is required.                                                                                     |
Appendix 2: Setup and Installation of Your VM

Once you’ve decided to use the VM Service, ITS can work with you to get your VM set-up and installed. The table below describes the assistance they can provide you during the setup of your equipment.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provisioning</td>
<td>ITS will work with you to provision a VM with either Windows Server or Red Hat Enterprise Linux. Other OSs supported by VMWare may be installed, however, additional charges may apply.</td>
</tr>
<tr>
<td>Network</td>
<td>ITS will make sure physical network is set-up correctly within the data center to support your VM(s).</td>
</tr>
<tr>
<td>Domain Name Service (DNS)</td>
<td>Based on your input, ITS will ensure that domain name service is properly configured for your devices.</td>
</tr>
<tr>
<td>Firewall Rules</td>
<td>Based on your input, ITS will ensure that firewall rules are properly set-up for your devices.</td>
</tr>
<tr>
<td>Backup</td>
<td>An optional backup service is available for an additional cost. ITS will work with you to identify files/systems to be backed up.</td>
</tr>
<tr>
<td>Other</td>
<td>Additional professional services are available to support you and your team. (Additional hourly fee may apply.)</td>
</tr>
</tbody>
</table>
Appendix 3: Document Revisions

- **April 5, 2016**
  - Removed: *Automatic registration of VM into the UH Server Registration Database.*
  - Added: *$30 VPN client access license fee added*
  - Changed: *Service Request / Reporting Problems*
  - Added: Additional text to document specific security access features: *What are the features of this service? Security* section.
  - Added: Additional text to require assigned compliance officer: *What do I have to do? Protected Information* section.

- **February 17, 2016**
  - changed language for “Why should I use this service?”
  - Added policy for server registration
  - “ITS will register your server” added
  - “Protected Information” added
  - “ITS access to your VM” modified
  - Appendix I modified items:
    - merged unplanned and unexpected outage text
    - added “on staff available basis” under Service Requests
    - Merged “Problem reports” & “Service Request” text
    - Update supported OSs.
    - Add “Remote Access” section.
  - Added abbreviations FERPA, PCI.

- **October 2015** - added text for sensitive data requirements. Added HIPAA to abbreviations list.
### Abbreviations used in this document

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIO</td>
<td>Chief Information Officer</td>
<td>Statewide IT leader for the University of Hawaii.</td>
</tr>
<tr>
<td>DNS</td>
<td>Domain Name Service.</td>
<td>Internet protocol service for resolving IP numbers and names.</td>
</tr>
<tr>
<td>FERPA</td>
<td>Family Educational Rights and Privacy Act</td>
<td>Federal Act that outlines requirements for handling educational records.</td>
</tr>
<tr>
<td>HIPAA</td>
<td>Health Insurance Portability and Accountability Act</td>
<td>Federal Act that outlines requirements for handling health records.</td>
</tr>
<tr>
<td>ITC</td>
<td>Information Technology Center</td>
<td>New campus building which is home to ITS staff offices and an ITS data center.</td>
</tr>
<tr>
<td>ITOC</td>
<td>Information Technology Operations Center</td>
<td>ITS team that monitors and services ITS networks and data centers 7x24x365.</td>
</tr>
<tr>
<td>ITS</td>
<td>Information Technology Services</td>
<td>UH system wide information technology organization.</td>
</tr>
<tr>
<td>ITSCS</td>
<td>ITS Contract Services Group</td>
<td></td>
</tr>
<tr>
<td>PCI</td>
<td>Payment Card Industry</td>
<td>Credit card industry standards.</td>
</tr>
<tr>
<td>SSL</td>
<td>Secure Socket Layer</td>
<td>Encryption protocol commonly used to protect web-based communication.</td>
</tr>
</tbody>
</table>