Server-on-Demand

Memo of Understanding (MOU)
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1 Executive Summary
This memo of understanding establishes a starting point for a written understanding about the level of service ETS will provide under the Server-on-Demand model. This agreement covers responsibilities for cost, installation, maintenance, backup and on-going support of this service. This document clarifies both parties’ responsibilities and procedures to ensure the researchers’ and customers’ needs are met in a timely manner.

For more information regarding the Server-on-Demand service, please refer to http://ets.fulton.asu.edu/node/73

2 General Overview

General services provided by this agreement include:

Basic Services:
- Backup and Recovery Services
- Disaster Recovery Services
- Base Disk Storage allocation and authorization of 50GB
- HPC Research Network Connectivity and configuration
- System Administration
- VMWare ESX monitoring and performance tuning

Windows Operating System Services:
- Private virtual Windows server
- Windows Server OS license
- Microsoft Windows 2003 Operating System

Value-Added Services:
- Additional services installed and configured as requested

Linux Operating System Services:
- Private virtual Linux server
- Red Hat Linux Operating System
- Apache Web Services – one instance per virtual machine

Value-Added Services: LAMP Stack
- MySQL database Services
- Subversion
- Media Wiki Software
- Word Press Blog
- Drupal Content Mgt.
- Programming languages C, Perl, PHP, Ruby
- Additional services installed and configured as requested
3 Terms and Conditions

Agreement period
This agreement is valid from the effective date below and remains in effect throughout the five year life span of the services supported. The agreement will be reviewed annually. As the technology, policy, and environment evolves, Engineering Technical Services will incorporate revisions into the agreement. In the absence of the completion of a review, the current agreement will remain in effect until both parties mutually agree to the proposed changes.

Effective date: xx/xx/2010

Hours of coverage
The service and support procedures in this agreement are followed from 7:00 A.M. to 6:00 P.M. Monday through Friday, (except on University holidays). Engineering Technical Services provides 24 x 7 on-call support for infrastructure problems. This coverage is designed for emergency issues that arise which might affect the entire SOD environment.

During normal business hours (7am-6pm, Monday-Friday) please continue to contact your SOD liaison for help. Outside those hours, please feel free to contact your SOD liaison by email for non-emergency issues.

To report an emergency SOD problem, contact the UTO Helpdesk at 480.965.6500. Please identify yourself as a Server-On-Demand or S-O-D customer, identify the name of your VM and then indicate what the problem is. Failure to identify you as an S-O-D customer may incorrectly route the service request and delay a solution. UTO Helpdesk will then contact the SOD on-call person. If the on-call person determines that the problem affects the SOD environment, they will start to remedy the emergency.

Service goals and level of support
ETS will assign a liaison to your project and virtual server environment. This person will be your primary contact point for communication, questions, service enhancements and problem resolutions. Your liaison will work closely with you to ensure that you receive the highest level of customer support and satisfaction. The Server-on-Demand email distribution list will be used for general system announcements, outages and information dissemination. The liaison or support team will respond by telephone or email to customers request, questions or problems within 4 hours. See Customer responsibilities for requirements on how customer shall submit issues. A resolution may not be available at the time the ETS contacts the customer, in which case ETS will attempt to estimate the resolution time. See ETS Change Management for planned or unplanned changes to the system and customer notification requirements.

4 Financial Responsibilities

The customer agrees to compensate Engineering Technical Services for the use of services in the amount of $2700.00, as a one-time virtual server hosting fee for a period of five years. This is for 1 virtual machine and 1 TB of disk storage. There will be no additional yearly fees or costs. ETS will invoice the research unit or department for the VM ($1800.00) and UTO will invoice for the disk storage ($900.00). Payment is due in full when invoiced.
ETS also agrees that if for some reason ETS determines that it is not technologically feasible to accommodate the researcher’s or customers’ requirements under the Server-on-Demand service, that ETS will fully refund the fee to the researcher or customer.

5 Party Responsibilities

Customer responsibilities

Customer agrees to:

- Follow appropriate MOU procedures.
- Acknowledges and understands that this is leading edge technology for which technological obstacles requiring diagnosis and mutual cooperation could occur.
- Work with an assigned liaison.
- Submit service request online at http://www.eas.asu.edu/sr or contact UTO Helpdesk at 480-965-6500, to submit a request or report a problem.
- Pay all financial charges associated with services rendered.
- Pay additional disk storage charges, if more than 50GB is needed.
- Be willing and available to provide critical information, within 4 hours of receiving a request for information from ETS, seeking to resolve a customer issue.
- If customer is interested in ETS providing local customization for value-added services, this will be determined after consultation with a Server-on-Demand expert.
- Any third party application licenses are the responsibility of the customer.
- Any content or usage of the content hosted or provided on the Virtual Server is the responsibility of the customer.

Windows Managed Model

- ETS Assuming system administration role

Windows Unmanaged Model

- Customer assuming system administration role.
- ETS will retain an Administrator account for emergency purposes.
- Install, configure, upgrade, secure and maintain server components such as applications and file and print services.
- Install, configure, upgrade and secure IIS Web Services *if needed*.
- Establish and maintain security access to local file storage and services.
- Troubleshooting and resolving any security issues due to University Security Incidents. May result in ETS disabling VM.
- Customer assumes responsibility for securing and maintaining the OS including Patches from Microsoft and any Third Party application patches.

Linux Managed Model

- ETS Assuming system administration role.
- Will not run more than one Apache Web Service per virtual machine.
- Responsible for database management.
- Responsible for creating Wiki content management and customization.
- Responsible for local customizations of value added services.
Linux Unmanaged Model

- Customer assuming system administration role.
- ETS will retain an Administrator account for emergency purposes.
- Root access responsibilities, understanding ETS is not responsible for maintaining, securing, configuring the Red Hat Linux Operating System.
- If security issues arise, ETS will disable the virtual machine.
- Install, configure, upgrade, secure and maintain Apache Web Services.
- Install, configure, upgrade, secure and maintain Tomcat Web Services.
- Install, configure, upgrade, secure and maintain MySQL.
- Install, configure, upgrade, secure and maintain Fedora.
- Responsible for database management.
- Responsible for creating Wiki content management and customization.
- Responsible for local customizations of value added services.

ETS responsibilities

- Server-on-Demand team agrees to:
  - Server Housing
  - Server monitoring
  - Maintain appropriate full and incremental system backups
  - Vendor notification and follow-up for hardware and software problems
  - System outage notification for scheduled or unscheduled occurrences
  - ETS Change control procedures will be followed for server operating system and application maintenance
  - System problem escalation when system is down
  - Pay for hardware maintenance on underlying physical hardware and storage systems
  - Create and add appropriate documentation to address Customer issues
  - Meet response times associated with the priority assigned to Customer issues
  - Maintain appropriately trained staff
  - Assign a server-on-demand team liaison to your virtual server who is responsible for responding to issue, problems or questions
  - System tuning and file maintenance, as well as any system related work, which affects performance, usage or hardware connectivity
  - ESX Virtualization Administrator Services – create virtual private servers
  - Allocation of 50GB of disk storage
  - Responsible for Backup and Recovery Services
  - Responsible for HPC Research Network Connectivity and configuration of additional HPC purchased disk space
  - Responsible for monitoring and performance tuning
  - Configure established security standards and policies

Windows Managed Model

- Install, configure, upgrade, secure and maintain Windows 2003 Operating System
- System Administration access
- Install, configure, upgrade, secure and maintain all server components (including third party) such as applications and file and print services
- Install, configure, upgrade, secure and IIS Web Services (if needed)
- Responsible for account management and authorization services, using ASUrite accounts
- Establish and maintain security access to local file storage and services
- Troubleshooting and resolving any security issues due to University Security Incidents. May result in ETS disabling VM.
Windows Unmanaged Model
- Install, configure and secure Windows 2003 Operating System

Linux Managed Model
- Install, configure, upgrade, secure and maintain all server components
- Install, configure, upgrade, secure and maintain Red Hat Linux Operating System
- Install, configure, upgrade, secure and maintain Apache Web Services
- Responsible for account management and authorization services, using ASUrite accounts

Linux Unmanaged Model - Server-on-Demand Team agrees to:
- Install, configure and secure all server components
- Install Red Hat Linux Operating System (RHEL5) with Web and Software Development packages
- Responsible for account management and authorization services, using ASUrite accounts

6 Performance and Resource Consumption Management

ETS guarantees to maintain reasonable performance roughly equivalent to a normal, single, state-of-the-art server class system, maintained for network connectivity, number of web hits, etc. If additional multi-server performance is desired, it may be made available for an additional charge. ETS is developing resource consumption and performance measures to aid in determining future service thresholds.

7 Account Management

ETS uses University ASUrite accounts for granting access to Server-on-Demand services and resources. The customer is responsible for the providing the liaison with a list of user names, ASUrite userid and email addresses for all individuals accessing the VM system. This request is done by emailing your liaison.

8 Backup and Restore Management

ETS uses NetApp Snapshot technology for backup and recovery of data.

- Schedules: Snapshots occur daily between midnight and 6:00am.
- Recovery: Recovery of a server is available with the assistance from the Server on Demand Team.
- Retention: The retention period for snapshots is 2 weeks at our primary site and 35 days at our backup site.

9 Problem Reporting and Management

For technical problems or questions: Create a problem report ticket online at http://www.eas.asu.edu/sr or contact UTO Helpdesk at 480-965-6500

For functional problems or questions: Call or email your SOD liaison or someone on the SOD Team
10 Change Management

Change management refers to any event that alters the existing state of a customer’s SOD services, including software, hardware, networks and facilities. Some change management is planned while others are unplanned. The goal for change management is to understand the risks associated with the change and minimize impact to the customer.

All Change Management requests will follow the ASU Change Management Process.

<table>
<thead>
<tr>
<th>Change Type</th>
<th>Impact</th>
<th>Customer Notification</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-approved</td>
<td>Pre-approved changes are considered routine. They will proceed to the scheduling phase immediately.</td>
<td>Server-on-Demand team will send email notification and post changes on web page 7 days in advance.</td>
<td>Installing security patch on Windows Operating system.</td>
</tr>
<tr>
<td>Low impact</td>
<td>Minor changes affect relatively few clients or are expected to cause minimal impact.</td>
<td>Server-on-Demand team will send email notification and post changes on the web page 14 days in advance. Customer must confirm notification.</td>
<td>New Windows OS or version upgrade to research tools and applications.</td>
</tr>
<tr>
<td>High impact</td>
<td>Major changes affect or have the potential to affect large numbers of clients, involve risk to the normal operation of significant technology systems, or require lengthy outages of critical systems.</td>
<td>Scheduled Stage When a Low Impact Change is scheduled, a Notification of Scheduled Change will be sent to each member of the UTC and the TAG and will be posted in the appropriate section of ASU System Health (<a href="http://systemhealth.asu.edu">http://systemhealth.asu.edu</a>). Post Implementation Once a Low Impact Change has been implemented, a Notification of Change Implementation will be sent to each member of the UTC and the TAG and will be posted in the appropriate section of ASU System Health (<a href="http://systemhealth.asu.edu">http://systemhealth.asu.edu</a>).</td>
<td></td>
</tr>
<tr>
<td>Emergency</td>
<td>Emergency changes are those undertaken in the event of an unforeseen circumstance in order to restore the normal operations of ASU technology systems. Due to the urgent nature of these changes, they are not able to follow the standard change implementation timelines or notifications.</td>
<td>Post Implementation Whenever an Emergency Change is implemented, a Notification of Change Implementation will be sent to each member of the UTC and the TAG and will be posted in the appropriate section of ASU System Health (<a href="http://systemhealth.asu.edu">http://systemhealth.asu.edu</a>).</td>
<td>Virus attack on the network.</td>
</tr>
</tbody>
</table>
11 Contacts for this agreement

Lawrence Miller or Denise Felsenthal is the ETS contact regarding policy or terms of changes to the Memo of Understanding. Denise Felsenthal is the primary administrative contact. Virginia Holtey is the financial contact and is responsible for all budgeting and accounting processes.
12 Signatures of approval

By signing below, all parties agree to the terms and conditions described in this Memo of Understanding.

Engineering Technical Services

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denise Felsenthal</td>
<td>Director, Information Technology</td>
</tr>
</tbody>
</table>

Signature Date

xx/xx/2010

Project Liaison Contact Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Contact Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virginia Holtey</td>
<td>480-965-2003</td>
</tr>
</tbody>
</table>

Customer Information:

<table>
<thead>
<tr>
<th>Name (VM Owner)</th>
<th>Title</th>
<th>Dept/Mail code</th>
</tr>
</thead>
</table>

Signature Email Phone

Financial Contact Dept. Phone

Services Purchased:

<table>
<thead>
<tr>
<th>Services Purchased</th>
<th>Total Invoice Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Virtual Machine</td>
<td>1 TB of disk storage</td>
</tr>
</tbody>
</table>

OS Support Model:

| OS Support Model | |
|------------------||
| Linux Unmanaged  | |

Special Notes or Configuration Requests: