Information Services & Technology

Server Operations
Managed Servers
Service Level Agreement (SLA)

Overview

The goal of this SLA is to delineate responsibilities, communication paths, and other details surrounding server support provided by IS&T Server Operations. This agreement covers the following system:

Hostname:	HOSTNAME
Effective Dates:	EFFECTIVEDATES
Annual Cost:	ANNUALCOST

Client Contact Information

Please list full name and MIT email address for all individuals designated as system contacts. "Client Pageable" systems should also list 24 hour phone numbers for primary and secondary contacts.

Business Contact:	BUSINESSCONTACT
Financial Contact:	FINANCIALCONTACT
Account Number for service charges:	COSTOBJECT

Signatures

Please edit electronic copy below to add contact names below and return via MIT email from the designated financial contact to **ops-sla@mit.edu**.

Business Contact:
Financial Contact:

Server-Specific Information and Charges

Cost Factor		**Points**
OS/Hardware	OSANDHW	OSPOINTS
Size	USIZE	UPOINTS
Service Level	LEVELDESC	LEVELPOINTS
Backup	BACKUPTYPE	BACKUPPOINTS
Storage	STORAGETYPE	STORAGEPOINTS
Age	AGEINYEARS	AGEPOINTS
Total Points		TOTALPOINTS
Total Lease		TOTALLEASE
Total Charges		ANNUALCOST

Description of server's purpose and any additional services or software required. If this system will house Personally Identifying Information (PII), please note it below and describe the kind of information being stored, i.e., Social Security numbers, credit card numbers, etc. MIT has a legal requirement to ensure that this data is accessed in a secure and confidential manner.

NOTES

Basic Cost Factor Components

For MIT Fiscal Year 2014, a point is assigned a value of $1155.

The following four costs apply to all servers, physical and virtual:

Supported or Unsupported OS/Hardware:

- 1 point - Supported
- 2 points - Unsupported

Current supported OSes are Windows Server 2008, Windows Server 2012, RHEL 5, and RHEL 6. Current supported hardware includes the Dell R610, R710, & R900, and Cisco UCS B and C series systems.

Service Level:

- 1 point - 9x5

- 2 points - 24x7
- 4 points - Client Pageable

Backup Method:

- 1 point - TSM “Enterprise” service
- 2 points - Any other custom backup method

Storage:

- 0.5 points / 100GB - entry-level NAS storage
- 1 point / 100GB - mid-range SAN storage
- 2 points / 100GB - high-end SAN storage

Entry level storage is currently provided via Nearline SAS drives from EMC VNX arrays. Mid-range SAN storage is currently provided via Enterprise SAS drives from EMC VNX arrays. High end SAN storage is currently provided via EMC VMAX arrays. High end storage is subject to limited availability.

Size:

- For physical servers: 0.5 point / rack unit (1 rack unit (“U”) = 1.75”)
- For virtual servers: additional points are assessed for especially memory or CPU intensive machines

Server Age:

- 1 point / year of age for servers aged 5 years or more (physical servers only)

Contacting IS&T Server Operations

For all requests, you may contact us by sending mail to **ops-help@mit.edu**. For all database-related requests, please contact us by sending mail to **db-help@mit.edu**.

In the event of an emergency, please use the following procedures to contact IS&T Server Operations:

- Call 617-324-2778 and leave voice mail stating the name of the impacted server or service, the observed nature of the problem, and your full name and contact information. This will page the on-call staff member, who should reply within 30 minutes.
- If you are not contacted within 30 minutes, call 617-324-9080 and leave voice mail stating that this is an escalation request, and include all of the information provided in your initial voice mail. This will page the entire team.

Server Operations Policies and Practices

This section describes specific policies and operating procedures of interest to Server Operations and our clients.

Billing

Billing will occur on a quarterly basis, and will occur on or shortly after the midpoint of each quarter (February 15, May 15, August 15, and November 15). SLAs may be altered or cancelled at any time; changes made will be reflected in billing for the current quarter if changes occur before the midpoint of the quarter, and otherwise in the subsequent quarter.

Server Hardware

Server Operations' current standard is to deploy new systems in a virtualized environment barring application-specific reasons why this may be infeasible. In the event that dedicated physical hardware is required, hardware supplied will meet the following minimum standards:

- Dual hot-swappable power supplies with redundant cooling fans
- RAID 1 mirroring for OS boot volume
- Redundant paths to external SAN storage
- On-site spares for all common components

After initial configuration, significant changes to the system will be discussed and must be approved by representatives of both Server Operations and the client, and will be reflected in future costs.

It is our standard procedure to replace systems after four years, but this may vary depending on specific circumstances. Server Operations will recommend specific hardware/software configurations during the renewal process.

Server Software

Server Operations will maintain the operating system on this machine, including initial installation, any interim security patching involved, and major upgrades. We will also maintain our standard environment on the system, including remote login via Kerberos-enabled SSH and access to central MIT services (Kerberos, AFS, Moira, etc.) We will manage all login access to the system, including the granting and revocation of root access and the creation of new UNIX accounts. We will coordinate any changes to the system with the client to address any application testing or integration issues that may arise.

We also provide support for an Apache web server running on the system, excluding content. This support includes initial deployment and configuration for use with MIT SSL certificates,

annual renewal of the certificates, and integration of other OS components (PHP, Perl, Java, Touchstone) with the web server environment.

Support is also available for both Oracle and MySQL databases, including installation, ongoing patches and upgrades, configuration and monitoring of daily backups, monitoring space usage, adding or defragmenting space as required, performing data reorganizations as necessary, and providing Data Guard solutions for High Availability (HA) Oracle database systems. In addition, we will perform any capacity planning required to create, maintain, and expand managed databases, as well as monitor performance and make specific recommendations to improve efficiency.

Server Operations will provide monitoring of the system for network connectivity, CPU, memory, and disk space utilization, SSH login availability, and any application specific monitoring that is requested by the client. This monitoring will notify Server Operations staff during times specified by the service level of the SLA; in addition, it can be configured to notify a designated client contact via email if requested.

Maintenance Best Practices

In order for IS&T to best support managed servers, customers are encouraged to contact **ops-help@mit.edu** for assistance with the following tasks:

- Modifying the provided operating system installation, including: installation of new applications, modifying existing applications or configuration files, enabling new system services, etc.
- Altering user access to the system, including the creation of new user accounts, the addition of new public keys to the SSH configuration, or the modification of any Kerberos k5login files.
- Remotely rebooting or powering down the system.

Server Operations staff are able to assist with all of these tasks.

Service Levels

All servers are monitored 24x7. The service level determines when and how notifications are delivered, and what actions will be taken prior to the next business day.

The three levels of service are:

- **9x5** - Server Operations will respond to incidents during business hours, defined as Monday - Friday from 8am - 5pm. If contacted during business hours, either by a customer or via our automated monitoring, we will coordinate any maintenance, reboots, etc. with the customer. Outside of business hours, email will be sent to the business contacts informing of them problems and any resolution, or whether action has been deferred until the next business day.

- **24x7** - Server Operations will respond to incidents at any hour. Wherever possible, we will attempt to coordinate any maintenance with the client. If paged after business hours, we will perform emergency maintenance as deemed necessary, and email will be sent informing the customer of the problem and the resolution.
- **Client Pageable** - Emergency client contact information is required for this level of service. In the event of an issue, we will immediately contact the emergency contacts to coordinate any maintenance and inform them of the issues that have occurred. If the emergency contact cannot be reached, we will perform emergency maintenance as needed.

Backups

We will perform nightly backups of the system via TSM, unless special arrangements are made. Nightly backups will also be made of any supported databases. Backups will be retained for 10 weeks. Off-campus storage of backup data is available upon request.

Maintenance Windows

We will coordinate scheduled downtime with the customer on an as-needed basis. There may be cases where emergency intervention is necessary that results in unexpected interruption of service; in these events, we will notify the client immediately upon systems being available following completion of any necessary emergency maintenance.

We request that clients identify the times of day and times of year when server availability is most critical. We will use this information in advance planning of maintenance activities, especially where multiple systems may be impacted.

Disaster Recovery

Upon request, Server Operations will work with the client to formulate an appropriate disaster recovery (DR) and business continuity (BC) plan appropriate for the service level of the supported systems. This may require your participation in BC/DR exercises in which your systems are recovered to alternate data center.