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## 1.0 GENERAL

### 1.1 SUMMARY

The Office of Technology Services (OTech) offers Enterprise Linux operating system (OS) running in virtual servers hosted on enterprise class hardware under the Application Hosting service offering. This document provides guidance to assist the customer with features of that service.

This technical offering includes OS procurement, installation, patching product maintenance, OS security administration and system account management. OTech uses a commercial Linux distribution which includes a number of useful open source software packages. Those packages are available to the customer as needed. The installed OS also includes a network connection and one Internet Protocol (IP) address. Product maintenance is typically coordinated with Service Transition activities.

The OTech supports version(s) of the OS product lines in accordance with the [Software Version Support Policy](#). These operating systems are offered on either dedicated hardware or virtual configurations. A virtual configuration may find multiple customers sharing a single physical host server / computer.

### 1.2 REFERENCES

Items referenced here are found elsewhere in this document.

	<b>IDENTIFIER</b>	<b>DATE</b>	<b>TITLE</b>
	Web Site	<b>NA</b>	<a href="#">OTech Contact Information</a>
	Web Site	<b>NA</b>	<a href="#">ENews</a>
	04.15.881	2011	<a href="#">Local Area Network Guideline</a>
	04.17.866.z	2014	<a href="#">Enterprise Linux Submittal</a>
	3138	2011	<a href="#">OTech System Administrator Access Standard</a>
	4000	2011	<a href="#">Software Version Support Policy</a>
	4000	2011	<a href="#">Software Version Support Procedure</a>

## 1.3 SUBMITTALS

### 1.3.1 General

OTech is available to advise and assist customers in formulating IT designs that will leverage available service offerings. Contact your Account Manager to engage architectural/engineering and design consulting services. Additional charges may be incurred.

Use the following method for work requests:

Item	Request Method
Quotes & Billable Service (new or changes to existing services)	<a href="#">OTech Customer Service System (CSS) Request</a>
Modifications to Existing Systems	<a href="#">Remedy Request</a>
Technical Problems	<a href="#">Remedy Incident</a>

Include the Customer's name, contact information and associated project name on forms, documents, and requests submitted to OTech.

### 1.3.2 Service Request Criteria

A completed [Enterprise Linux Submittal](#) is required prior to the start of work. To aid this technology preparation information needed must be included with the OTech Service Request. [Customer Service System \(CSS\)](#).

This Submittal is to be revised at appropriate intervals providing for expeditious and practicable execution of the Work. Revised submittal(s) must indicate changes, if any.

## 1.4 EXPECTATIONS

### 1.4.1 OTech

The OTech manages contracts and licensing for operating system software and serves as liaison between the customer and technology vendor for technical system level issues.

The OTech will document end-of-support to Customers in E-News notifications. Technology products must be within vendor supported versions to sustain availability and integrity.

The OTech follows change management practices. Change requests are recorded in [OTech Remedy Service Request](#) system as a Change Request (CRQ). Contact

your OTech account manager for current change procedures.

### **1.4.2 Customer**

Customers are expected to understand product lifecycles and collaborate with OTech on upgrades, testing, and verification of their platform and software technology before the end-of-support date. Failure to migrate off of unsupported versions may incur additional charges. Refer to the [OTech Procedure 4000 – Software Version Support](#) for details.

Customers are to determine and submit technology details required to meet their certificate needs.

Customers identify and lead the resolution of application related Problems. Customers may identify and report system level Incidents to OTech.

## ***1.5 SCHEDULING***

The OTech's goal is to provide timely, comprehensive and economical technology service. Customers promote this goal by promptly providing information requested, and by keeping the OTech Account Manager / Project Manager informed of technology project status.

### **1.5.1 Maintenance**

Maintenance periods are scheduled.

### **1.5.2 Change Management Schedule**

Change proposal / requests follow the established OTech Change Management process. Work performed during scheduled maintenance periods is subject to the OTech Change Management Schedule.

Additional charges may be incurred for expedited change requests.

## 1.6 DEFINITIONS

Term, phrase, abbreviation	Definition
DNS	Domain Name System (DNS) - a hierarchical distributed naming system for computers, services, or any resource connected to the Internet or a private network. It associates various information with domain names assigned to each of the participating entities. It translates domain names meaningful to humans into the numerical identifiers associated with networking equipment for the purpose of locating and addressing these devices worldwide.
MTBF	Mean time between failures (MTBF) is the predicted elapsed time between inherent failures of a system during operation. The definition of MTBF depends on the definition of what is considered a system failure. See ITIL V3.0 for more.
MTTR	Mean time to repair (MTTR) is a basic measure of the maintainability of repairable items. It represents the average time required to repair a failed component or device. See ITIL V3.0 for more.
MTRS	Mean time to restore service (MTRS) is the average time taken to Restore a Configuration Item or IT Service after a Failure. MTRS is measured from when the CI or IT Service fails until it is fully Restored and delivering its normal functionality. See ITIL V3.0 for more.

## 2.0 PRODUCTS

### 2.1 LINUX

#### 2.1.1 Redhat Enterprise Linux (RHEL)

Version: 6 on Z-Architecture

##### 2.1.1.1 Configurations

Baseline Linux configurations include:

Virtual Server Info	Small	Medium	Large
OS	Red Hat Enterprise Linux 6.x		
CPU	1 virtual CPU	2 virtual CPUs	4 virtual CPUs
Memory	2 GB	8 GB	16 GB
Storage	Storage is replicated off-site in real-time. Backups are included.		

Alternate configurations are available for an additional cost.

Hardware configurations may change depending on State information technology procurement procedures, contracts, re-provisioning, and/or vendor hardware modifications.

##### 2.1.1.2 Operating System Standards

Red Hat Enterprise Linux (RHEL):

- RHEL release 6 – 64 bit – default installation unless otherwise noted.

Requested use of an alternate release will require an OTech Engineer review and possible revision.

##### 2.1.1.3 Virtualization Software

OTech utilizes the z/VM Hypervisor to provide our Enterprise Linux virtual server computing environment.

## **2.2 Storage**

Storage needs will depend on individual circumstances.  
Customer data will reside on Enterprise class disk storage arrays.

## 3.0 EXECUTION

### 3.1 SECURITY

The Enterprise Linux platform conforms to applicable OTech policies, including patching, the three-tier architecture, VLAN segregation, and access security.

### 3.2 QUALITY CONTROL

#### 3.2.1 OTech Responsibilities

- Review submitted information for completeness.
- Notify customer of submittal flaws, if any.
- Alert customer of OS faults, errors.
- Retain OS root authority.
- Maintain OS data and log files.
- Monitor Linux OS (e.g. resources - file system and swap file, number of processes, memory management).
- Review and recommend optional configuration that may better meet capacity and performance requirements in accordance with 1.3 - SUBMITTALS.
- Perform scheduled OS upgrades and patching.
- Troubleshoot OS and reporting status.
- Perform scheduled hardware refreshes.
- Engage vendor services as necessary for Problem resolution.
- Consult with customer on Incident or Problem tickets related to application software, and work with commercial software publishers regarding application issues. Additional charges may be incurred.

#### 3.2.2 Customer Responsibilities

- Submittal of complete 1.3 - SUBMITTALS information.
- Design and implementation shall avoid system use of or dependence upon OS System Administrator privileges. Submittals indicate file system constraints and privilege / permission.
- Authorize customer account administrator delegated authority for creation and management of customer IDs and management of disk resources.
- Design, develop, test, operate and maintain application required OS level scripts (e.g., code deploys, rotation of logs, start, stop).
- Monitoring, troubleshooting and reporting status of application execution atop of the OS.

- Manage and control files related to application execution. Employ measures to control impact of extraneous files.
- Notify OTech of application revisions.
- Testing of new and maintenance software release.
- Additional OTech charges for intervention, troubleshooting and correction.
- Test and approval of system software upgrade and patching. Notify OTech of approved test result.
- Specifying OS quality characteristics in sufficient detail to allow OTech service delivery. Example: MTBF, MTTR, MTRS, various resource metrics.

### ***3.3 SUPPORT AVAILABILITY***

Core business hours for technical support are Monday through Friday 0800-1700. State holidays and mandated schedule alterations are observed and may impact staff availability.

### ***3.4 INSTALLATION***

Installations must be reviewed and approved by OTech. Installation work will be coordinated with information from 1.3 - SUBMITTALS.

#### **3.4.1 OTech Responsibilities**

- Install OS in accordance with manufacturer's installation procedures and customer information submitted.
- Harden OS in accordance with OTech methods. Reduce vulnerability by implementing only necessary components. OS security patches are applied, and firewall protection is established. Only approved network ports are opened. [See 04.15.881 – Local Area Network Guideline.](#)
- Install DBMS client software, if necessary.
- Notify of IP address.
- Notify of install status.
- Notify of DNS host name(s).
- Build OS and application/system file systems.
- Installation of customer provided application scripts.
- Administration of OS
- Administration of approved OS related changes.
- Maintain OS software and configuration.
- Patch OS.
- Manage file systems in accordance with approved design specifications.

### **3.4.2 Customer Responsibilities**

- Provide application start/stop scripts as applicable.
- Install application and supporting software, if applicable.
- Maintain application software, components and accessories.
- Provide advance notice of application software, components and/ accessory changes.
- Notify of changes to user accounts.
- Control over the deployed applications and the means of orderly start up and shut down including installation of scripts.
- Installation and periodic upgrade of Third Party Software in support of platform.
- Orderly control over the deployed application, applications and components and accessories, if any.