CenturyLink Technology Solutions Service Guide

Managed Operating System (OS)

This CenturyLink Service Guide ("SG") sets forth a description of Managed Operating System ("Service") offering by CenturyLink, including technical details and additional requirements, if any. This SG is subject to and incorporated into the Agreement and Service Schedule between the parties. The specific details of the Service ordered by Customer will be set forth on the relevant Service Order. For avoidance of doubt, any references in the Agreement, Schedules, or Service Orders to SSG, shall mean SG.

Version	Previous	Section Modified	Date
HOS-20141105-SG-ManagedOS	HOS-20140815-SG-ManagedOS	New Format	November 5, 2014

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Service Description

1. **Standard Service Description**: Managed Operating System (OS) is a CenturyLink provided service (the "Service"). The standard features of the Service consists of the licensing, installation, configuration, administration, monitoring, maintenance and support for the CenturyLink-provided software components listed in section 1.1. The Service Level Agreement (SLA) associated with this service guide is the CenturyLink Cloud SLA. http://www.centurylinkcloud.com/legal/sla

   1.1. Software Components
      1.1.1. **Supported Versions**
         1.1.1.1. Red Hat Enterprise Linux (RHEL)
         1.1.1.2. Microsoft Windows Server 2008R2
         1.1.1.3. Microsoft Windows Server 2012
         1.1.1.4. Microsoft Windows Server 2012 R2

   1.2. **Licensing**: CenturyLink provides the licenses. Customer agrees to use such third party software strictly in accordance with all applicable licensing terms and conditions.

   1.3. **Installation**: CenturyLink will provide all installation tasks with an "X" in the CenturyLink column in Table 1.0 Roles and Responsibilities.
      1.3.1. **Supported Platforms**
         1.3.1.1. CenturyLink Open Cloud
      1.3.2. **Hardened OS**: CenturyLink provides a Hardened OS image that includes anti-virus software.

   1.4. **Configuration**: CenturyLink will provide all configuration tasks with an "X" in the CenturyLink column in Table 1.0 Roles and Responsibilities.
      1.4.1. **HTTP Proxy Services**: HTTP Proxy services are not enabled in the standard Service. CenturyLink will complete the configuration upon receipt of Customer request.
      1.4.2. **DNS Services**: DNS services are not enabled in the standard Service. CenturyLink will complete the configuration upon receipt of Customer request.
      1.4.3. **NTP Services**: NTP services are not enabled in the standard Service. CenturyLink will complete the configuration upon receipt of Customer request.

   1.5. **Administration**: CenturyLink will provide all administration tasks with an "X" in the CenturyLink column in Table 1.0 Roles and Responsibilities.
      1.5.1. **Access**: CenturyLink will maintain administrator-level access to the OS software and will issue access privileges to the customer for user creation and other administrative tasks.

   1.6. **Monitoring**
      1.6.1. **Notification**: CenturyLink will retain primary notification and resolution responsibilities for all automated environment alerts. Where required, a Customer technical contact will be notified.

   1.7. **Maintenance and Support**: CenturyLink will provide all maintenance and support tasks with an "X" in the CenturyLink column in Table 1.0 Roles and Responsibilities.
         1.7.1.1. **Patch Releases**: CenturyLink certifies, approves, bundles and delivers provider Service Packs, Cumulative Updates and Hotfixes for installation in Customer's environment.
         1.7.1.2. **Maintenance Windows**: All times listed under Schedule Maintenance Windows are local times and subject to change. CenturyLink will use commercially reasonable efforts to perform routine maintenance only during the Saturday or Sunday defined maintenance windows.

1.7.1.3. **Change Management**: All changes to the applications, systems, network and facilities are subject to CenturyLink's change management process. This process ensures that work is reviewed for completeness (risk assessment, completed test procedure, metrics for measuring progress, back out procedure, etc.) and accuracy prior to scheduling and implementation.

2. **Customer Responsibility**: Customer is responsible for all tasks with an "X" in the Customer column in Table 1.0 Roles and Responsibilities.
   2.1. **Patch Releases**: Customer is responsible for contacting CenturyLink support and requesting the installation of patch releases.

3. **Additional Services**: The following can be added to the standard Service described in section 1.0 for additional fees. Contact CenturyLink sales to order.
   3.1. **Simple Mail Transfer Protocol (SMTP) Relay**: All inbound and outbound e-mail is routed through a CenturyLink provided mail gateway.

4. **Additional Terms**
   4.1. **Service Restrictions**: This Service is available exclusively for CenturyLink-provided OS software. Customer does not have the option to obtain software licenses separately for this Service.
   4.2. **Master Service Agreement**: This Service is available to Customer after execution of a Master Service Agreement with CenturyLink.
   4.3. **Purchasing**: Customer can order Service via the CenturyLink portal when a new CenturyLink Virtual Machine (VM) is provisioned. Service cannot be added to a VM in production prior to July 1, 2014.
   4.4. **Version Control**: By default, CenturyLink provides the most recent version of software when a new VM is created.
   4.5. **End-of-Support**: If a provider no longer supports a software version and Customer chooses to continue its use, CenturyLink will use commercially reasonable efforts to continue providing the Service. The Service Level Agreement (SLA) will no longer be applicable.
   4.6. **Anti-Virus Protection**: CenturyLink provides a Hardened OS image that includes anti-virus software for Windows Server only. No anti-virus software can guarantee a 100% prevention rate and therefore CenturyLink disclaims any liability for any damage or loss resulting directly or indirectly from any failure of the anti-virus software. Should disruption occur, CenturyLink will use commercially reasonable efforts to promptly remedy the situation.
   4.7. **DNS Services**: If ordered by Customer, CenturyLink will use good faith efforts to assign Internet address space for the benefit of Customer during the Service Term. Any IP addresses and space provided to customer by CenturyLink are solely for Customer's use with the Service, and are non-portable and non-transferable. Neither Customer nor end users will own or route any IP addresses or space provided by CenturyLink, and, upon any termination of Service, Customer's access to such IP addresses and space will cease. The customer will need to maintain the action of providing the web address and licensing rights to that web address. Please note that CenturyLink is not a domain registry. Obtaining, registering, and purchasing domains is the responsibility of the Customer.

Table 1.0 Roles and Responsibilities

Activity	Task	CenturyLink	Customer
Licensing	Manages OS license keys	X	
	Manages SPLA licenses with OS vendor	X	
	Purchases and owns software license	X	
Installation	Validates OS installation	X	
	Confirms OS functionality	X	
	Creates Hardened OS image with anti-virus software	X	
	Completes break/fix services to repair/replace OS	X	
	Ensures ongoing virus signature updates from anti-virus software vendor services	X	
Monitoring	Reports disruptions or changes		X
	Monitors OS on an ongoing basis to ensure continued operation	X	
	Notifies and engages Customer contact to work with confirmed OS issues through resolution	X	
Configuration & Administration	Defines user administration and password policy for ongoing user access requests	X	
	Maintains sole administrator access to OS-level software	X	
	Requests new OS-level user creation and access		X
	Administers/executes all requests for new OS-level users	X	
Maintenance & Support	Monitors and tests ongoing OS patches posted by OS software vendors, creating hardened image available for installation	X	
	Requests OS patches		X
	Implements requests for OS patches	X	
	Coordinates for a mutually agreeable maintenance window in which to apply requested patches	X	X
	Provides confirmation of successful patching and	X	

Activity	Task	CenturyLink	Customer
	access to metrics through web portal		
	Defines user policy and administration	X	
	Responds to notification of Managed OS service interruptions	X	
	Generates email notifications of scheduled maintenance to technical contacts in time to provide 48-hours (two business days) notice	X	
	Provides access to live OS support (24 hours per day, 7 days per week, and 365 days per year)	X	

Definitions

Break/Fix: Break/fix refers to the fee-for-service method of providing information technology repairs to businesses, in which a customer calls up a service provider to do an upgrade of a computer program, software product, computer, or a repair of something computer-related like a printer or drive array that is broken, the IT provider offers a solution or repair.

Cumulative Update: A grouping of Hotfixes or quick fix engineering updates that have not been fully regression tested by Microsoft but are designed to resolve specific issues with Microsoft SQL Server.

Domain Name System (DNS) Proxy: is a network system of servers that translates numeric IP addresses into readable, hierarchical Internet addresses, and vice versa

Hardened OS: Hardened OS means that all non-essential services and testing patched bundled in a standard operating system are disabled and functionality has been confirmed.

Hotfix: A hotfix or quick fix engineering update is a single cumulative package that includes information that is used to address a problem in a software product.

Hypertext Transfer Protocol (HTTP) Proxy: Provides port access to the Internet.

Major Release: Major Releases (X.y.z) are vehicles for delivering major and minor feature development and enhancements to existing features. They incorporate all applicable error corrections made in prior Major Releases, Minor Releases, and Patch Releases. Software Provider typically has one Major Release per year.

Minor Release: Minor Releases (x.Y.z) are vehicles for delivering minor feature developments, enhancements to existing features, and defect corrections. They incorporate all applicable error corrections made in prior Minor Releases, and Patch Releases.

Network Time Protocol (NTP) Service: Synchronize all server times to a common system time.

Patch Release: Patch Releases (x.y.Z) are vehicles for delivering security fixes, feature developments, enhancements to existing features, and defect corrections. They incorporate all applicable error corrections made in prior Patch Releases.

Service Pack: A service pack contains all Hotfixes or Cumulative Updates since the last Service Pack or the initial Release to Manufacturing (RTM) version of the software.

Services Provider License Agreement (SPLA): SPLAs are used by service providers and independent software vendors who provide services in hosted environments to end customers.