![CenturyLink logo]

CENTURYLINK INFRASTRUCTURE & APPLICATION MANAGEMENT SERVICES
SERVICE GUIDE FOR SERVER AND STORAGE MANAGEMENT SERVICES

This Service Guide ("SG") sets forth a description of the Server and Storage Management services ("Services") for CenturyLink Infrastructure & Application Management Services, including technical details and additional requirements or terms, if any. This SG is subject to and incorporated into the governing agreement and SOW between the parties. The specific details of the Service ordered by Customer will be set forth on the relevant SOW. CenturyLink and Customer responsibilities and service description terms are set forth in this SG.

Server and Storage Management Services

SERVICE DESCRIPTION

Services are infrastructure management services that provide management and monitoring of Customer's server, storage and network infrastructure. The functions associated with the Services are as follows:

- CenturyLink will provide server monitoring and management for the following virtual and physical server operating systems:
    - UNIX
        - Solaris
        - HP-UX
    - Windows
    - Linux
- CenturyLink will also be responsible for providing Hypervisor monitoring and management for VMware and associated tools.
- CenturyLink will provide monitoring and management for the following storage technologies:
    - Storage Area Networking (SAN)
    - Network Attached Storage (NAS)
    - Direct Attached Storage (DAS)
    - Internal Storage
    - Backup Systems
    - Internal Storage
    - Backup Systems
    - Tape Drives

All hardware and software will be under OEM support contracts and operate at a software/firmware version no older than N-2, where N is defined as the latest Generally Available version. Otherwise, support will be on a best effort basis and SLA credits/penalties will be suspended. However, CenturyLink will make commercially reasonable efforts to adhere to the existing SLA and Service performance will continue to be tracked and reported.

SERVICE OPERATIONS

CenturyLink is responsible for service operations consisting of the following tasks related to the Services:

(A)   Server Technologies. Tasks associated with the Services that are in-scope include

- **Unix/Linux**
    - Installation, Upgrade & Configuration of Servers
    - User Administration
    - Disk & Storage Administration
    - Service Request Management
    - Server-side Backup and Restore
    - Server Security Administration
    - Device & Software Management
    - System Scripts Maintenance
    - Systems Network & Remote Console Management
    - Printer Management
    - Syslog and Log Management
    - Licensing
    - High Availability / Failover

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- o Server Documentation
- o Non-Application Related Server Activities
- o Change Management
- o Performance & Capacity Management
- o Patch Administration
- o Process Related Activities
- o Backup Management
- o System Policy Management

- **Windows**
  - o Installation, Upgrade & Configuration of Servers
  - o User Administration
  - o Disk & Storage Administration
  - o Service Request Management
  - o Server-side Backup and Restore
  - o Server-Security Administration
  - o Device & Software Management
  - o System Scripts Maintenance
  - o Printer Management
  - o Syslog and Log Management
  - o Audit Log Management
  - o Licensing
  - o High Availability / Failover Server Documentation
  - o Non-Application Related Server Activities
  - o Change Management
  - o Performance & Capacity Management
  - o Patch Administration
  - o Process Related Activities
  - o Backup Management
  - o Setup/ Installs /Upgrades
  - o System Policy Management
  - o Windows Firewall Policy Management
  - o Microsoft Message Queue
  - o Microsoft DFS
  - o Security Certificates

(B) **Storage.** Tasks associated with the Services that are in-scope include

- Storage Fabric Build/Maintain/Operate
- Storage Infrastructure Build/Maintain/Operate
- Storage Monitoring
- Storage Management including backup & restore
- Performance and Capacity Management
- Change Management
- Storage Documentation
- Filer Administration
- Equipment Maintenance
- Patch Administration
- Remote Management
- Process related activities
- Storage Setup/ Installs /Upgrades
- Storage Policy Management
- Equipment/Software Management
- SAN Replication
- DR configuration
- Disk Tiering
- Compression
- Thin Provisioning
- De-duplication Management
- Data Archiving

(C) **Patches and Hot Fixes.** Tasks associated with the Services that are in-scope include:

CenturyLink is responsible for deploying patches and hot fixes for the hardware, operating systems, and applications. Deployments will be handled in accordance with the following process, which conforms to the Change Request process as defined in the applicable SOW and the Cross Functional Service Guide.

CenturyLink will present to Customer the planned maintenance actions in the Change Request, including a list of the patches and hot fixes that are planned to be deployed, the topics these hot fixes address, the Services that will be affected by the deployment, and the schedule that is planned for the rollout.

CenturyLink will implement the hot fixes according to the Change schedule that has been agreed to by the parties. The patch or hot fix will be first deployed to non-production Services (if applicable, the development and/or UAT environment) and later to the production environment. After each deployment CenturyLink shall confirm that the Service is fully functional in Customer's environment.

RESPONSIBILITY MATRIX

The responsibilities of CenturyLink and Customer associated with the delivery of Services are set forth below. During the transition of Services, CenturyLink and Customer will agree on parameters to be monitored, associated thresholds, actions to be taken and reports to be produced. These parameters along with delivery processes and procedures will be documented in Customer's Service Operations Documentation.

Responsibility – Server and Storage Management Services	CenturyLink	Customer
Procurement of:		
• Server and storage devices.		✓
• OEM hardware support contracts.		✓
• Licenses for:		

• Base Operating Systems types:
  o MS Windows
  o Linux
  o HP-UX
  o Solaris
  o VMware
		✓

• Database types:
  o SQL Server
  o Oracle
		✓

• Server and storage monitoring tools.	✓	
• Licenses for software		✓
• End user licenses.		✓
Define:		
• Security roles and profiles.	✓	
• Resource pools.	✓	
• Acceptance testing following OS patches to production systems and storage.	✓	
Approve or validate:		
• Security roles and profiles.		✓
• Resource pools.		✓
• Applications are operational following Minor System Changes.		✓
• Acceptance testing following OS patches		✓

Responsibility – Server and Storage Management Services	CenturyLink	Customer
Physical Installation of		
• Server and storage devices in CTL data centers	✓	
• Disk and networking devices. in CTL data centers	✓	
Monitor, analyze, notify Customer and respond to Incidents and non-conformance issues:		
• Server Operating Systems (OS) for availability (i.e. up/down status).	✓	
• Server file systems for space utilization.	✓	
• Server CPU utilization.	✓	
• Storage systems for space utilization.	✓	
• Alerts that are received when faults occur or monitoring thresholds are exceeded	✓	
• Assigning Incident tickets to pre-determined resolver groups based upon alert information.	✓	
Create, modify and deactivate:		
• Server and storage OS configurations.	✓	
• Security roles and profiles.	✓	
• Resource pools.	✓	
Analyze and complete:		
• Remote Restoration of Service for Incidents within the scope of CenturyLink's Services.	✓	
• Problem Management.	✓	
• Service Requests.	✓	
• Change Requests.	✓	
• Major/Minor System Changes, which will require a Change Order.	✓	
• Capacity Plans.	✓	
• Coordinate restoration of service with Customer and third party when root cause is with third party, e.g. manufacturer		✓
Consult with Customer on:		
• Design of security roles and profiles.	✓	
• Addition of physical/virtual servers and disk.	✓	
Operation of:		
• Patch Management of Hardware, Operating System	✓	
• Server and storage backup systems.	✓	
• Storage allocation for new files and when existing files exceed pre-determined thresholds.	✓	
• Off-site tape storage with tapes sent to off-site location per SLA	✓	
Report on the following items:		
• SLA performance.	✓	
• Actual Service volumes relative to expected levels.	✓	
• Capacity utilization.	✓	

Responsibility – Server and Storage Management Services	CenturyLink	Customer
• Problem Management activities, including root cause analysis, recommendations and project status.	✓	
• Virtual machine utilization and capacity.	✓	