

CenturyLink Technology Solutions Service Guide

Business Connectivity Software 1.0

Microsoft Remote Desktop Service (MS-RDP)

This Service Guide (“SG”) sets forth a description of the Business Connectivity Software 1.0: Microsoft Remote Desktop Service (MS-RDP) (“Service”) offered by CenturyLink, including technical details and additional requirements or terms. This SG is subject to and incorporated into the Agreement and Hosting Service Schedule between the parties. The specific details of the Service ordered by Customer will be set forth on the relevant Service Order. 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.

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Service Description

1. **Standard Service Description:** Business Connectivity Software 1.0: Microsoft Remote Desktop (“MS-RDP” or “Service”) is a Managed Hosting Service. The standard offering for this Service consists of the installation, configuration, administration, monitoring, maintenance and support for the Service’s software components listed in section 1.1. The Service Level Agreement (SLA) associated with this Service Guide is the Managed Hosting Services SLA.
 - 1.1. **Software Components:** The Microsoft Remote Desktop software is available in the below supported versions and with the below supported services.
 - 1.1.1. **Supported Versions:**
 - 1.1.1.1. Microsoft Remote Desktop Services 2003 R2
 - 1.1.1.2. Microsoft Remote Desktop Services 2008
 - 1.1.1.3. Microsoft Remote Desktop Services 2008 R2
 - 1.1.1.4. Microsoft Remote Desktop Services 2012
 - 1.1.1.5. Microsoft Remote Desktop Services 2012 R2
 - 1.1.2. **Supported Services:** See Table 2.0 for a Services Matrix to Supported Versions
 - 1.1.2.1. Remote Desktop Session Host
 - 1.1.2.2. Remote Desktop Virtualization Host
 - 1.1.2.3. Remote Desktop Licensing
 - 1.1.2.4. Remote Desktop Connection Broker
 - 1.1.2.5. Remote Desktop Gateway
 - 1.1.2.6. Remote Desktop Web Access
 - 1.2. **Installation:** CenturyLink will provide the installation tasks marked with an “X” in the CenturyLink column in Table 1.0 Roles and Responsibilities.
 - 1.2.1. **Supported Operating Systems:**
 - 1.2.1.1. Microsoft Windows Server 2003 R2
 - 1.2.1.2. Microsoft Windows Server 2008
 - 1.2.1.3. Microsoft Windows Server 2008 R2
 - 1.2.1.4. Microsoft Windows Server 2012
 - 1.2.1.5. Microsoft Windows Server 2012 R2
 - 1.2.2. **Supported Hosting Platforms:**
 - 1.2.2.1. CenturyLink Cloud
 - 1.2.2.2. CenturyLink Dedicated Cloud
 - 1.2.2.3. Intelligent Hosting
 - 1.3. **Configuration:** CenturyLink will provide setup tasks marked with an “X” in the CenturyLink column in Table 1.0 Roles and Responsibilities.
 - 1.4. **Administration:** CenturyLink will provide the administration tasks marked with an “X” in the CenturyLink column in Table 1.0 Roles and Responsibilities.
 - 1.4.1. **Security:** CenturyLink utilizes NIST guidance for additional security standards when deploying Managed Microsoft Remote Desktop.
 - 1.4.2. **Access:** Customers are given administrative full control to Managed Microsoft Remote Desktop. CenturyLink is not responsible for Customer changes that impact the Service and will not be subject to SLA Service Credits.
 - 1.5. **Monitoring:** CenturyLink will enable application level monitoring for each environment as they are created within the product configuration.
 - 1.5.1. **Notification:** CenturyLink will retain primary notification and resolution responsibilities for all automated environment alerts. A Customer technical contact will be engaged to perform primary resolution of incidents associated with a non-production level environment.
 - 1.5.2. **Monitors:** Table 3.0 describes the Monitors for Microsoft Remote Desktop Service.
 - 1.6. **Maintenance and Support:**

- 1.6.1. **Patch Releases:** CenturyLink compiles, packages, certifies, approves and delivers Software patch versions for installation in a Customer environment. Customer must approve the installation by contacting CenturyLink support. Any Outages directly caused by Customer's failure to accept the implementation of a patch will not be subject to SLA Service Credits
 - 1.6.2. **Change Management:** All changes to the CenturyLink managed applications; systems, network and facilities are subject to CenturyLink's change management process. This process is intended to confirm 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.
 - 1.6.3. **Maintenance Windows:** All times listed under the Scheduled 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. See Definitions for additional information.
 - 1.6.4. **Support:** Support for the Service is provided through the project manager during installation, content migration and Customer validation. At the point of go-live the Service is passed from project management to CenturyLink Service Center for full 24x7 monitoring and management. The point of go-live is when Customer notifies CenturyLink project manager that the environment is ready to go-live.
2. **Customer Responsibilities:** Customer is responsible for all tasks marked with an "X" in the Customer column in Table 1.0 Roles and Responsibilities. Customer acknowledges and agrees that its failure to perform its obligations set forth in Table 1.0 may result in CenturyLink's inability to perform the Services and CenturyLink shall not be liable for any failure to perform in the event of Customer's failure.
 - 2.1. **Provide Contact:** Designate and maintain a Customer Contact during the Service Term (including current contact information). "Customer Contact" means a technical point of contact available 24x7 with sufficient knowledge, authority and access to address configuration issues, event notifications, system or infrastructure modifications and authentication of applicable CenturyLink systems
3. **Additional Services:** At Customer's option and expense Customer can choose to have CenturyLink complete one or more of the tasks in Table 1.0 with an "X" in the Customer column and/or the services listed below. The items can be added to the standard Service (described in Section 1.0) for an additional fee described in a separate Statement of Work ("SOW") or Service Order. Contact a sales representative for additional information.
 - 3.1. **Minor Releases:** Minor Releases (see Definitions) require a new installation of the software binaries, which is not included in this Service. CenturyLink recommends that Customer purchase a new managed server (via a Service Order) and migrate data (defined in a SOW) as a best practice.
 - 3.2. **Major Releases:** Major Releases (see Definitions) require a new installation of the software binaries, which is not included in this Service. CenturyLink recommends that Customer purchase a new managed server (via a Service Order) and migrate data (defined in a SOW) as a best practice.

Tables and Appendices

Table 1.0: Roles and Responsibilities

Activity	Task	CenturyLink	Customer
License	Maintain Licensing and Software Assurance with Microsoft for CenturyLink provided Licenses	X	
	Procure SSL Certificate (if purchased)	X	
	Maintain Licensing and Support with Microsoft	X	
Installation	Prepare Server for Application Service (OS Specific Parameters)	X	
	Provide detailed requirements prior to physical build work		X
	Install Microsoft Remote Desktop (including available sub components)	X	
	Harden Microsoft Remote Desktop to CenturyLink Standards	X	
	Install SSL Certificates	X	
	Install CenturyLink Monitoring	X	
	Perform Quality Assurance against Microsoft Remote Desktop Installation/Hardening	X	
	Provide sign off that environment is ready to go-live		X
Configuration	Create/Configure Connection Broker and Gateway Farm	X	
	Create/Configure CAP/RAP Authorization Policies for Remote Desktop Gateway	X	
	Apply Remote Desktop Licensing	X	
	Deploy Customer Applications and Content		X
	Configure CenturyLink Monitoring	X	
	Install and configure CenturyLink Disk/Tape Backups (if purchased)	X	
	Data validation, User Acceptance Testing (UAT), Site Acceptance Testing (SAT)		X
Administration	Maintain Customer Applications and Content		X
	Event Log Monitoring	X	
	Customer Application and Content Packaging		X
	Disconnect and End User Sessions	X	
	Restart/Stop/Start Services	X	
	Update managed servers with all recommended security patches, service packs and hot-fixes upon customer request	X	
	Request/Initiate DNS Zone changes when using CenturyLink managed DNS Services		X
Maintenance and Support	Coordinate patching with Customer during maintenance hours	X	
	Customer initiated Redundancy & High Availability Test/Audit (Excludes Disaster Recovery testing)	X	

Table 2.0: Operating System Compatibility Matrix

MS-SQL Version	Windows 2003 R2	Windows 2008	Windows 2008 R2	Windows 2012/R2
Session Host		X	X	X
Terminal Server	X			
Virtualization Host			X	X
Licensing	X	X	X	X
Connection Broker			X	X
Gateway			X	X
Web Access				X

Table 3.0: Monitors for Microsoft Remote Desktop Service

Monitor	Description	Frequency
Remote Desktop Service	The RDS service is not running	1 Min
Connection Broker Service	The RD Connection Broker service is not running	1 Min
Gateway Service	The RD Gateway service is not running	1 Min
Licensing Service	The RD Licensing service is not running	1 Min

Definition

CenturyLink Service Center: The primary organization for resolving infrastructure issues that is staffed 24/7/365 to respond in a timely manner to incidents and requests pertaining to Customer IT infrastructure.

CIS: Center for Internet Security develops and distributes consensus-based and internationally recognized solutions that help organizations improve their cyber security and compliance posture.

CIS Level I Benchmarks define minimum standards for securing various operating systems including Windows, and variations of Unix. These standards should be used to improve the “out of the box” security of common operating system software to a prudent “due care” minimum level. By definition, the security actions included in CIS Level I Benchmarks satisfy three conditions: (1) they can be safely implemented by a system administrator of any level of technical security skill, (2) they will generally “do no harm” to functionality commonly required by everyday users, and (3) they can be scored by an associated software tool. This document is an example of a Level I Benchmark.

Compiled: The compilation function turns source files into directly executable or intermediate objects. Not every project will require this function. While for simple programs the process consists of a single file being compiled, for complex software the source code may consist of many files and may be combined in different ways to produce many different versions

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.

Maintenance Windows: A period of time designated in advance by CenturyLink, during which preventive maintenance that could cause disruption of service may be performed. Current Scheduled Maintenance windows are:

- Americas: Saturday 00:00AM to 5:00AM; Sunday 00:00AM to 5:00AM
- EMEA: Saturday 02:00AM to 6:00AM
- APAC (Except Japan): Saturday 21:00 (GMT) AM to Sunday 01(GMT)
- Japan: Sunday 04:00 (JST) to 8:00 (JST)

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. Supplier 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.

NIST: National Institute of Standards and Technology is the federal technology agency that works with industry to develop and apply technology, measurements, and standards.

Packaging: is the process of creating a meta-program that in turn automatically installs software across multiple computers. The meta-program typically includes a set of default properties for the applications it installs.

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.

Remote Desktop Connection Broker: Remote Desktop Connection Broker, (TS Session Broker 2003/2008), supports session load balancing and session reconnection in a load-balanced RD Session Host server farm.

Remote Desktop Licensing: Remote Desktop Licensing, (TS Licensing 2003/2008), manages the Remote Desktop Services Client Access Licenses (RDS CALs) that are required for each device or user to connect to a RD Session Host server. Clients use RD Licensing to install, issue, and track the availability of RDS CALs on a Remote Desktop license server.

Remote Desktop Gateway: Remote Desktop Gateway, (TS Gateway 2003/2008), enables authorized remote users to connect to resources on an internal corporate network, from an Internet-connected device using only port 443 externally.

Remote Desktop Session Host: Remote Desktop Session Host, (Terminal Server 2003/2008), enables a server to host Windows-based programs or the full Windows desktop. Users can connect to a RD Session Host server to run programs, to save files, and to use network resources on that server.

Remote Desktop Virtualization Host: Remote Desktop Virtualization Host integrates with Microsoft Hyper-V™ to provide virtual machines that can be used as personal virtual desktops or virtual desktop pools by using RemoteApp and Desktop Connection. RD Virtualization Host is a component to the Virtual Desktop Infrastructure (VDI) solution offered by Microsoft.

Remote Desktop Web Access: Remote Desktop Web Access, enables users to access RemoteApp and Desktop Connections through the Start menu on a computer that is running Windows 7 or through a Web browser. RemoteApp and Desktop Connection provide a customized view of RemoteApp programs and virtual desktops to users.

Scheduled Maintenance Windows: A period of time designated in advance by CenturyLink, during which preventive maintenance that could cause disruption of service may be performed.

Service Level Agreement: A service-level agreement (SLA) is a document describing the level of service expected by a customer from CenturyLink, laying out the metrics by which that service is measured, and the remedies or penalties, if any, should the agreed-upon levels not be achieved.

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.

SLA Credit: Service Level Agreement Credits are refunds given by CenturyLink to a Customer if the service falls below a contractually agreed service levels. See Section 1.0 for the SLA agreement associated with this service.

Software Binary: A binary file is a file whose content must be interpreted by a program or a hardware processor that understands in advance exactly how it is formatted.

Software: The database server software in binary form, any other machine-readable materials (including, but not limited to, libraries, source files, header files, and data files).

Software Provider: The third party that makes and sells software products described in section 1.0.

Statement of Work: A statement of work (SOW) is a formal document that captures and defines the work activities, deliverables, and timeline a vendor must execute in performance of specified work for a client. The SOW usually includes detailed requirements and pricing, with standard regulatory and governance terms and conditions.

Upgrades: Upgrades mean a Major Release or Minor Release of the software.