CenturyLink Technology Solutions Service Guide

Intelligent Monitoring 1.0

This CenturyLink Service Guide ("SG") sets forth a description of Intelligent Monitoring 1.0 ("Service") offering by CenturyLink, including technical details and additional requirements, if any. This SSG 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-20140707-SG-IntelligentMonitoring	HOS-20140430-SG-IntelligentMonitoring	All	July 7, 2014

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Service Description

1. **Standard Service Description**: Intelligent Monitoring 1.0 is a CenturyLink provided managed hosting solution. The standard "Service" consists of the monitoring and management of Customer provided hardware and software systems, circuits, devices, or applications residing in CenturyLink Data Center. Customer chooses from the three options listed in sections 1.1, 1.2 and 1.3. The Service Level Agreement (SLA) associated with this Service Guide is the Managed Hosting Services SLA.

   1.1. **Basic Service Description**: Monitoring is Agentless. Network devices are limited to basic ICMP (Ping) only. Supported devices are listed in Table 1.0. The standard Service includes the following features:

   1.1.1. **URL Monitoring**: CenturyLink provides a URL monitor. Customer chooses the type (Content Match, Form Test, Authentication Test, or Transaction Thread).

   1.1.2. **TCP Port Check**: Checks the device from an Internet perspective and measures whether the device is available and responding. This form of monitoring ensures that the process or service is running and accepting requests on the network.

   1.1.3. **ICMP/Ping Testing**: ICMP (ping) monitoring checks the device from an "Internet" perspective and measures whether the device is available. This form of monitoring ensures that the device is active and available on the network.

   1.1.4. **SavvisStation Portal Access**: Customer views statistics and reporting. Customers may use the website to check monitored objects health, run reports, and make adjustments to users and alert contact recipients. Table 2.0 includes the data and reports that are available for each option (i.e. Basic, Basic + and Premium). CenturyLink collects and stores data for Customer devices for up to twelve (12) months.

   1.1.5. **Configuration Management**: CenturyLink maintains a record of the monitored configuration. Customer can access the information from SavvisStation Portal. The amount of detail available is dependent upon the option chosen (i.e. CenturyLink will only retain data for the devices that are being monitored).

   1.1.6. **Automated Alert Notification**: Customer's designated contact receives automated alarm notifications. Customer must designate and maintain a Customer Contact during the Service term (including current contact information).

   1.1.7. **Monitoring Configuration Changes**: Customer must contact CenturyLink Service Center via phone or email and request configuration changes (e.g. adding or changing monitors). Upon receipt of the request, CenturyLink will complete all changes and notify Customer. CenturyLink maintains a log of changes made and provides data to Customer in the web portal.

   1.1.8. **Support**: CenturyLink Service Center provides 24x7 support for configuration changes and customer alert notification.

   1.1.9. **Ethernet Connection**: Intelligent Monitoring is delivered to the customer's colocation cage via a single secure Ethernet connection

   1.2. **Basic + Service Description**: Monitoring is Agent-based. Supported operating systems and applications can be found in Table 3.0 and Table 4.0. The standard Service includes all features listed in section 1.1 and the following:

   1.2.1. **Troubleshooting**: Upon request, CenturyLink professionals are available to support Customer's efforts to resolve device issues. Customer must contact CenturyLink Service Center via phone or email and request support.

   1.2.2. **CenturyLink Intelligent Agent** (IA): Agent-based monitoring using IA technology and SNMP traps. Objects typically monitored include software, devices, or applications. CenturyLink leads the installation of the agent onto all customer designated and applicable monitored objects.

   1.2.3. **Alert /Incident Tracking**: Upon receipt of an alert, CenturyLink will open a ticket on behalf of Customer and notify customer of the event/incident. CenturyLink will manage the communication and

escalation until Customer resolves the issue. After CenturyLink receives notification from Customer, the ticket will be closed.

    1.2.4. **Software procurement and deployment**: CenturyLink will deploy the Intelligent Agent on equipment designated by Customer.

  1.3. **Premium Service Description**: Includes all features listed in section 1.1, 1.2 and the following:

    1.3.1. **Incident Resolution**: CenturyLink is responsible for resolution for all environmental alerts.

    1.3.2. **Custom Application Monitoring and Reporting**: If Customer has an application that is not supported by CenturyLink monitoring, CenturyLink will add it to the Service and reporting after updating the Intelligent Agent. Additional charges apply see section 3.3.

2. **Customer Responsibility**

  2.1. **Software and Hardware**: Intelligent Monitoring services do not include hardware or software (other than the Intelligent Agent "IA"). Customer is responsible for purchasing all applicable hardware and software as well as obtaining and maintaining all appropriate licenses.

  2.2. **Configuration Information**: Prior to the initial set-up and configuration, Customer shall provide to CenturyLink information and materials, such as IP addresses, domain name, user name(s), emails addresses, passwords, and escalation procedures (collectively, "User Information") necessary for CenturyLink to perform the initial set-up and configuration and the Services, and CenturyLink shall have no responsibility or liability in connection therewith. Customer agrees to notify CenturyLink in writing at least thirty (30) days in advance if any User Information changes.

3. **Additional Services**: The following services are available for an additional fee. Contact a CenturyLink sales representative for more information.

  3.1. **Custom Applications**: CenturyLink will complete custom development for Customer applications that are not supported in the standard Service. See Table 4.0 for supported applications.

4. **Additional Terms**:

  4.1. **Customer Changes**: If Customer makes any changes to its Monitored Objects, other Customer provided hardware, software, other accessories, peripherals that require modification to configurations or other items provided as part of CenturyLink's initial implementation of Services, Customer will assume responsibility for, and be liable for, any and all costs, fees, charges and/or penalties associated with, or deriving from, that change. Such costs, fees, charges and/or penalties are separate from, and in addition to, the monthly fees for Services rendered to Customer by CenturyLink. Customer shall provide thirty (30) days prior, written notice to CenturyLink of any anticipated change in its Monitored Objects that will have such an effect, including any scheduled maintenance or out of service time.

  4.2. **Third Party Rights**: Customer is solely responsible for obtaining and maintaining all applicable software licenses installed on any hardware or listed as a Monitored Object(s). In addition, Customer is solely responsible for ensuring that CenturyLink has all rights, licenses and consents to perform the Services contemplated herein and CenturyLink shall have no responsibility or liability in connection with Customer's failure to obtain or maintains such rights, licenses or consents.

  4.3. **CenturyLink Software**: If any CenturyLink software, including any corresponding documentation, is provided to Customer by CenturyLink in connection with the Service ("CenturyLink Software") and is not otherwise subject to a separate agreement, whether signed or in the form of a shrink-wrap or click-wrap license, the following terms and conditions shall apply to such CenturyLink Software. In consideration for payment of any applicable fees, Customer is granted a personal, limited, nonexclusive, non-transferable, revocable license to use the CenturyLink Software, in object code form only, for the sole and exclusive purpose of using the applicable Service. Customer shall not: (a) use the CenturyLink Software for any purpose other than to receive the Service provided hereunder; (b) combine the CenturyLink Software with any other software, systems, or products; and (c) use the CenturyLink Software to provide services for the benefit of any third party, including without limitation as a service bureau. Customer may make one

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Table 1.0 ICMP Supported Devices

Supported devices and communication protocols.

Device	Protocol
Routers	ICMP only
Switches	ICMP only
Load Balancers	ICMP only
Firewall	ICMP only

Table 2.0 Customer Portal Reporting

This table includes statistics and reports viewable via SavvisStation. Data can be viewed in 1, 5 and 15-minute samples.

Plan	Information Type
Basic, Basic +, Premium	Customizable account activity: User views
Basic +, Premium	Ticket Summary: Number of tickets and disposition of each
Basic +, Premium	Server Utilization: CPU, Memory (total real and memory available), Disk partition size and disc space used.
Basic +, Premium	Backup Statistics: Backup started and complete
Basic, Basic +, Premium	System Health: Systems available or alerting; URL response time
Basic, Basic +, Premium	Network Utilization: Traffic in and out, network discards in and out as well as network errors in and out
Premium	Incident Root Cause: Reason for alert

Table 3.0 Supported Operating Systems

This table includes the operating systems that can be monitored and the plan required.

Product	Version	Plan Support
Windows	2008 Std & Ent 64bit (includes R2) 2008 R2 SP1. 2003 Std & Ent 32/64bit (MS EOL 2003, "Best Case" support)	Basic+/Premium
Red Hat Linux	AS 5.3, 5.5, 5.7 - 32/64 bit AS 6.1 64 bit	Basic+/Premium

Product	Version	Plan Support
Solaris	9, 10.x (x86 / SPARC)	Basic+/Premium

Table 4.0 Supported Applications

This table includes the applications that can be monitored and the plan required

Product	Version	Support Level
Apache httpd on Linux	2.2 & 2.4	Basic+/Premium
HP Proliant Systems Management Utility	N/A	Basic+/Premium
IBM DB2 on Linux	9.7, 10.1 & 10.5	Basic+/Premium
LDAP		Basic+
Microsoft Active Directory	2003 R2, 2008, 2008 R2 & 2012	Basic+/Premium
Microsoft Clustering	N/A	Basic+/Premium
Microsoft Hyper-V	2008	Basic+
Microsoft IIS	6.0, 7.0, 7.5, 8.0 & 8.5	Basic+/Premium
Microsoft SQL	2005, 2008, 2008 R2, 2012 & 2014	Basic+/Premium
MySQL on Linux	5.1, 5.5 & 5.6	Basic+/Premium
NTP	N/A	Basic+
Oracle on Linux	10g, 11g	Basic+/Premium
Oracle ASM on Linux	10g, 11g	Basic+/Premium
Oracle Clustering on Linux	10g, 11g	Basic+/Premium
Oracle RAC on Linux	10g, 11g	Basic+/Premium
SMTP Unix (Sendmail)(Postfix)	N/A	Basic+
Tomcat	6.0, 7.0	Basic+/Premium
VERITAS Cluster	N/A	Basic+/Premium
WebSphere on Linux	6.1, 7.0, 7.5 & 8.0	Basic+/Premium

Definitions:

Agent: an agent is a software program (sometimes called a service or daemon) that runs on a computer with the primary purpose of collecting information and pushing it over the network to a central location

Agentless: Involves collecting data from computers without installing any new agents on them.

Authentication Test: This monitoring function handles dialogue boxes that are presented in some web-based applications for authentications. Example: Microsoft NTLM and Basic Authentication. If the authentication is not accepted, an alarm is created.

Content Match: Checks a URL for known content. If the content is not in the returned response, then an alarm is created. This test can also measure the latency in a response and create an alarm based on response time.

Customer Contact: An English-speaking technical point of contact available 24 x 7 with sufficient knowledge, authority and access to address configuration issues, event notifications, system or infrastructure modifications and authentication of applicable CenturyLink systems.

Data Center: The facility in which the devices and systems are located.

Form Test: This is a two-step URL monitor. The monitoring service submits a completed web-based form and then performs a Content Match on the response. If the Content Match fails, an alarm is created.

ICMP: Internet Control Message Protocol (ICMP): is a network protocol useful in Internet Protocol (IP)network management and administration. ICMP is a required element of IP implementations. ICMP is a control protocol, meaning that it does not carry application data, but rather information about the status of the network itself. ICMP can be used to report: errors in the underlying communications of network applications, availability of remote hosts or network congestion.

Monitored Object: Refers to Customer designated equipment; software, circuits, devices, or applications intended to be monitored.

SavvisStation: The name for the interface that ties together all the centralized systems that CenturyLink uses to provide services to customers. Included in SavvisStation are systems for order processing, provisioning, procurement, management and monitoring, change management, billing, customer support/ticketing and reporting.

SNMP: Simple Network Management Protocol n "Internet-standard protocol for managing devices on IP networks". Devices that typically support SNMP include routers, switches, servers, workstations, printers, modem racks and more.

TCP: Transmission Control Protocol is a set of rules (protocol) used along with the Internet Protocol (IP) to send data in the form of message units between computers over the Internet. While IP takes care of handling the actual delivery of the data, TCP takes care of keeping track of the individual units of data (called packets) that a message is divided into for efficient routing through the Internet.

Transaction Thread: This is a series of the three URL Monitor types that create a series of events to monitor a completed transaction from beginning to end.

URL Monitoring: Uniform Resource Locator (URL) monitoring checks the Web site from an internet perspective and measures whether the page and content are delivered. URL Monitoring latency thresholds can be set between 35 seconds and 90 seconds. By default, Polling intervals are every three minutes. The additional process of checking for page content has the effect of checking whether customer applications and databases are available. This is

accomplished by selecting content to be monitored that is generated by an application directory or database. If it is confirmed that the expected content is delivered with the page, then it can be confirmed that the Web server and the application or database are all in working order.