Data Center and Foundation Remote Management Services Monitoring Details

Cisco® Data Center RMS offerings translate our comprehensive network management expertise with a powerful combination of Cisco's unmatched intellectual capital, automation, and smart capabilities to meet the complex infrastructure needs of your enterprise. Focused on delivering the right business outcomes for your environment, these services are tiered to address varying requirements and can be implemented across all types of networks.

Cisco Data Center RMS offerings provide a comprehensive, proactive approach to managing, monitoring, and protecting your data center infrastructure through our people, processes, and tools. Delivered by Cisco engineers using industry-leading tools and processes based on the IT infrastructure library (ITIL), we use Cisco's renowned networking expertise to create and run automations across various technologies. The automated processes reduce network false alarms, shorten issue resolution time periods, and increase efficiency and availability of your data center infrastructure. The monitoring details below show specific support for foundation, wireless and application management.

Event – Syslogs, SNMP Traps, XML events and Threshold Crossing Alarms
Report – SNMP polling statistics or XML data

Table 1. **Device/Interface:**
Monitors and provides information on interfaces and devices configured on various data center products.

Attribute	Description	Event	Report
Foundation Link and Routing Events with correlation	Trap and syslog alarms for EIGRP, OSPF, ISIS, BGP. Correlation includes component parsing and time base	Y	N
Foundation Flapping and Dwell Logic	Custom flap logic for various traps and syslogs. Examples include routing, crypto, link failures, and environmental problems	Y	N

Attribute	Description	Event	Report
Foundation Environmental Events	Examples include traps and syslogs for power supplies, fan failures, memory, temperature, and shutdown/init failures.	Y	Y
Automations and Threshold Crossing Alarms	Automations with a virtual engineer that can provide enhanced ticket information by running show commands or checking multiple resources to rule out false alarms. Variety of automations are in place to auto close tickets and be more proactive and predictive with thresholds and alarms. Several types of polling statistics can be alarmed by average percentage, raw numbers, minimum or maximum values over a set time period, or number of polls	Y	Y
Wireless and AP's	Examples include monitoring of various hardware and environmental alarms for all WLC's or AP's, Up/down status and any association management messages of all access points. Any AP faults that include upgrades, boot failures, DHCP issues, 802.11 Subsystem Messages, Inter-Access Point Protocol Messages, Local Authenticator Messages, WDS Messages, or Mini IOS Messages.	Y	Y
WAAS or ACNS Events	Examples include WCCP service/cache lost or nomemory/socket, content engine failures for disk, read/write, overloads, various types of WAAS alarm books for critical, major, and minor events	Y	Y
ACE Events	Examples include real server state alarms or VIP state changes. Context or license problems	Y	Y
GSS Events	Examples include DNS events, peer status, core crashes or keep alive events	Y	Y
CSS Events	Examples include DNS events, peer status, core crashes or keep alive events	Y	Y
AXG Events	Examples include disk usage/failure, CPU overload, xmlAcceleratorStatus, software notification, crypto event	Y	Y
WAAS Mobile	Examples include health events, service/process failures, server start/stop, cache alarms, blackbox/system reports	Y	Y
Nexus Switches	Examples include high capacity alarms, topology changes/root, environmental alarms, link events	Y	Y
CRS/XR12000	Examples include enhancements to routing events, environmental alarms, fiber alarms and foundation link events	Y	Y
ASR	Examples include support for MPLS events, full foundation support for routing and link alarms, environmental alarms	Y	Y
UCS Faults	Consuming all faults raised by the UCS system. Examples include adapter unit problems, chassis environmental alarms, UCS blade equipment and bios alarms, various fan/power supply alerts, memory alarms, servers discovered/removed/unassociated, port problems, NIC failures, storage capacity and disk concerns. Automation for ticket enhancement by adding in details from show commands when the fault code occurs.	Y	Y
Virtual Faults VXI/VDI	Examples include support for Vmware, Xen, Hyper-V and all the brokers. Examples for Vmware include ESX/ESXi and Virtual Center/Sphere errors, Virtual Center/Sphere system utilization, High Availability, and DRS performance. Specific checks for ClusterOverallStatus, Datastore, ResourcePoolOverallStatus, variety of host system checks for CPU, memory, performance, overall health and sensors. Broker alarms for user profiles, license issues, event logs and perf mon stats. Provide license and security audit trails for your VXI/VDI solution.	Y	Y
Advanced Automation checks for Windows and Linux	Installing a remote agent can provide enhanced faults for a variety of OS. Examples include monitoring of event logs and all perf mon stats. Automations and better proactive monitoring for a variety of checks including; Disk, Load, Netbackup, Hardware Health Status, abnormal system messages, any process or daemon, uptime, zombie/total processes, netif, time, perfdata, swap utilization, inodes, user information, logs, tcp/udp ports, nestat, mutlipathing, clusters, dns,ldap, passwords/logons, event watcher, AV definitions, exchange, registry and various other automation checks.	Y	Y
UCS Configuration	Examples include tracking and alarming on state change for a subset of devices exposed through the API. Backup of UCSM configuration and automations for various fault codes	Y	Y
Storage Fiber Switches	Examples include FC Interface Status, FC Interface Errors, FC Switch Status, SNMP Uptime, FC Interface Utilization, SNMPTrap Handler. Generic monitor that allows for the capture of SNMP Traps from a storage head device and maps to error conditions	Y	Y
SAN Standard	Examples include SAN Array DiskGroup Status, SAN Hardware Status, SAN Diskshelf Status, and SAN Controller Status	Y	Y
NAS Netapp and EMC	Examples include faults for Netapp and EMC on the following NVRAM, Fan, Temperature, CPU, Disk, Disk Status, and Shares. EMC also includes more hardware and array status alerts.	Y	Y

Table 2. Statistics

Attribute	Description	Event	Report
DCN Device Specific Real-Time Reports	Real-time, device specific reports that can look back at up to 13 months of statistics data. Users can create custom reports in HTML, PDF, Microsoft Word, or CSV formats for user defined time periods	Optional	Y
UCS Device Specific Real-Time Reports	Real-time, device specific reports that can look back at up to 13 months of data on up to 1500+ statistics for every UCS component/dn. Historical statistics include min/max/average for each component. Users can create custom reports in HTML, PDF, Microsoft Word, or CSV formats for user defined time periods	Optional	Y
Top Ten Performance Reports	Top ten most utilized interfaces and interfaces with the most errors. Top Ten interfaces with discards and amount of MB inbound and outbound. Can be scheduled and e-mailed	N	Y
ATM PVC Traffic	Examples include inbound throughput (bps), outbound throughput (bps), inbound volume (PDUs), outbound volume (PDUs), inbound CRC errors (PDUs), reassembly timeouts (PDUs)	Optional	Y
Element Availability Summary	Examples include interface availability (percent) and device availability (percent)	Optional	Y
Cisco Catalyst Backplane	Backplane bandwidth utilization percentage	Optional	Y
Cisco CPU Memory Usage	Examples include CPU utilization (%), memory pool utilization (%), memory pool free, memory pool largest free	Optional	Y
Virtualization Infrastructure Report	Examples include: VMware ESX//ESXI server information VMs grouped by ESX//ESXI Server and showing info for each VM, including: guest OS; CPU allocation and utilization; memory allocation and utilization; bandwidth utilization; file systems	N	Y
Virtualization Server Candidate Report	Trended utilization info for virtualization server candidates according to user-defined thresholds	N	Y
Server System Reports and Operating Systems	Cisco RMS has Windows server reports for multiple operating systems with customized views per user. Common views for servers include dashboards with availability status*, physical and virtual memory stats, CPU usage, interface utilization, file system utilization, configuration reports and change alerts, installed software, running processes, services running/not running, open ports, hardware profile (*processors, disks, memory, installed components)	Optional	Y
VM Utilization Projection Report	Trended and projected utilization info for ESX//ESXI servers and VMs	N	Y
VM Health Report	Health and availability for VMs showing CPU, memory and network activity	N	Y
VM Top Utilization Report	VMs with heavy resource utilization	N	Y
VM Migration Report	For each VM a history of where it was, where it is now and when it moved	N	Y
VM Interface Utilization Report	Bandwidth utilized by each VM and each ESX//ESXI server	N	Y
VM Compliance Report	Software titles running on each VM; all VMs and physical machines with specified software titles	N	Y
Server Top Utilization report	A set of tables that consist of summaries of CPU utilization, file system (disk) utilization, memory utilization, swap memory utilization, traffic, and reach-ability for all of the monitored servers in the network by day, week, or month	N	Y
Server Asset Details Report	Reports listing identification information on all managed servers • Server Name • Model • Manufacturer • Operating system • Operating system revision • Total Random Access Memory • Percent of memory used • Amount of RAM available • Total virtual memory • Percent of virtual memory used • Amount of virtual memory available	N	Y

Attribute	Description	Event	Report
Server CPU Report	Reports listing the following information for each server under management: • CPU type • CPU speed • CPU number • CPU utilization • CPU load	N	Y
File Service Performance Details Report	Reports listing the following information for each logical storage volume under management: • Server Operating System • Volume name (logical partition) • Volume size • Percent of volume used • Amount of volume available	N	Y
Server Infrastructure Report	Reports showing: • Real time, daily, weekly, and monthly graphs • CPU utilization, memory utilization, traffic in and out, and file system (disk) utilization and file system (disk) availability	N	Y
Modular Server Performance	Tabular report giving real-time daily, weekly, and monthly view • Includes CPU utilization, memory utilization, traffic in/out, and number of active processes with sums for each of the columns	N	Y
Cisco Sensor	Examples include voltage level, voltage status, fan state, power supply state, temperature level, temperature status	Optional	Y
Device ICMP	Examples include ICMP messages received (per second), ICMP messages sent (per second), ping replies received (per second), ping replies sent (per second), pings sent (per second), ping replies received (per second)	Optional	Y
Device IP Statistics	Examples include IP packets received (per second), IP packets forwarded (per second), IP out requests (per second), no route (per second), fragmentation failures (per second), reassembly failures (per second)	Optional	Y
Interface Volume Health	Examples include inbound volume (octets), outbound volume (octets), inbound errors, outbound errors, unknown protocols	Optional	Y
Interface Error Discards	Examples include delivered (inbound) packets, inbound errors, inbound discards, outbound errors, outbound discards	Optional	Y
Interface Throughput Utilization	Examples include inbound utilization (percent), outbound utilization (percent), inbound throughput (bps), outbound throughput (bps)	Optional	Y
Frame Relay Throughput or Errors	Examples include inbound throughput (bps), outbound throughput (bps), inbound or outbound volumes, inbound outbound FECN/BECN, discard priority and availability (percent)	Optional	Y
Interface LAN Errors	Examples include inbound abort, inbound CRC, inbound frame, inbound giants, inbound ignored, inbound overrun	Optional	Y
Interface Multicast	Examples include inbound unicast packets per second, outbound unicast packets per second, inbound multicast packets per second, outbound multicast packets per second, inbound broadcast packets per second, outbound broadcast packets per second	Optional	Y
Interface DS1 and DS3	Examples include errors per second, unavailable seconds, severe errors per second, severe error frame seconds	Optional	Y
Device ICMP	Examples include ICMP messages received (per second), ICMP messages sent (per second), ping replies received (per second), ping replies sent (per second), pings sent (per second), ping replies received (per second)	Optional	Y

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