

RedCannon CloudSLA — Application SLA monitoring for Cloud deployments

In a recent survey of 800 senior executives by KPMG, they found that 69% are concerned with measuring their business application performance in the Cloud. As more enterprises move to Cloud, SLA monitoring is becoming a must have.

RedCannon CloudSLA is a centralized application-based SLA monitoring & enforcement solution which combines resource consumption, usage & performance related service-level-agreement (SLA)s for private or public clouds including Cloud service providers. CloudSLA solution includes the SLAMonitor, a network VM appliance which can monitor the entire cloud from a single network-based soft-appliance & the SLA Controller which is the centralized server for policy configuration deployments, alerts monitoring & report generation.

Complete Integration with Virtualization Infrastructure: CloudSLA is one of the few solutions available that are tightly integrated with VMWare vCenter, Citrix XenCenter and other management suits. An intelligent import Wizard allows the IT admin to instantly identify & configure virtualization servers, VMs and all running enterprise class applications on VMs. This deep integration with virtualization platforms makes application-based SLA policy administration, management and maintenance it almost seamless and extremely efficient.

Automated App Discovery – VMs & Physical Servers: CloudSLA has a set of intelligent discovery algorithms built in to the solution which allows it to discover all running Virtual Machines. Once the VMs are detected, it goes through a series of tests including probing & scanning processes, files and a set of other OS attributes which allows it to determine installed applications on each of those VMs or physical servers. It employs different scanning methods based on the target VM's operating system e.g. Linux vs. Windows. CloudSLA discovery process detects all installed apps whether the app is running at the time of scanning or not. The intelligence built in to the discovery algorithm substantially reduces the potential for both false-positive and false-negative detection of applications on target machines.

Discovers Distributed Apps & Enterprise-specific Business or Custom Apps: CloudSLA auto-detects apps such as database servers, web platforms, business intelligence platforms, Email servers and others which are commonly deployed in private and public clouds. Most enterprises would also have home-grown or developed apps

which are created from either standard or proprietary platforms, CloudSLA allows administrators to define and detect such apps across the entire cloud infrastructure. It is the only solution available in the industry which allows detection of applications which can potentially be grouped together to form an app-group which serve a single enterprise function, such as a) Distributed apps which are individual apps located on different VMs e.g. an ecommerce platform which has a web server, a database server and a payment processing server running on different VMs to reduce load on a single VM & b) a Business App which may be a single app distributed on multiple VMs or single VM e.g. a database server. This type of intelligence allows precise monitoring of SLAs alleviating enterprise concerns for guaranteed delivery when moving to a cloud.

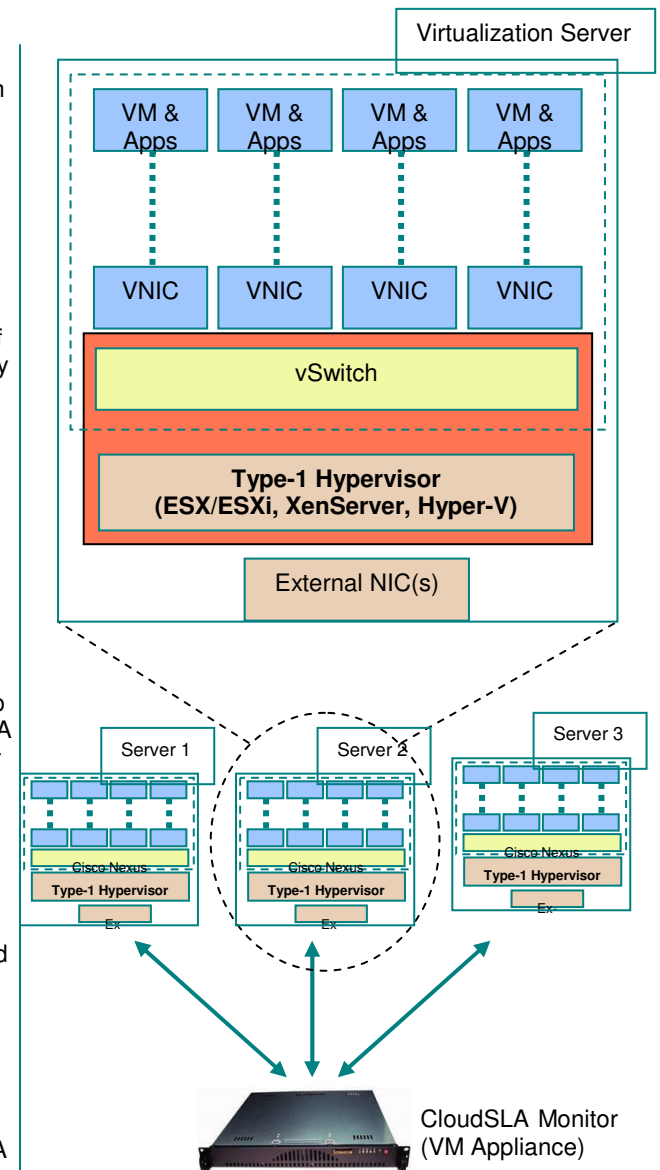
Zero Impact on Servers, Network & Customer VMs:

Currently available SLA & performance monitoring solutions require application monitoring agents to be installed for each application within the VM, This approach tremendously increases deployment & management overhead because of sheer number of instances required to be deployed & managed. These agents also impact VM performance taking away CPU, RAM & n/w resources from the VM. RedCannon CloudSLA is a network-based solution requiring no individual agents on servers or VMs. Hence no significant server or VM resources are consumed. CloudSLA also doesn't require any alteration in the existing network or Cloud infrastructure since it uses existing network connections to monitor cloud components.

Works with Public, Private or Hybrid Clouds:

CloudSLA can be deployed in most Cloud environments with an ability to monitor multiple customers from a single deployment in a shared public, hybrid or virtual private cloud environment as well as with dedicated instances for true-private cloud environments. CloudSLA provides an automated provisioning API for provisioning in web-based UI of public clouds. CloudSLA supports continuous monitoring through VM relocation, migrations and other Cloud events.

Designed for Managed Service Offerings: CloudSLA is an ideal platform to build a suite of managed services to Cloud customers ranging from Business App performance, availability & SLA monitoring; End-to-end user experience monitoring for Business Apps; Server & VM SLA monitoring as well as for automated detection & transition of Business apps from physical to Cloud environments. CloudSLA offers individual customer logins for customers to manage their

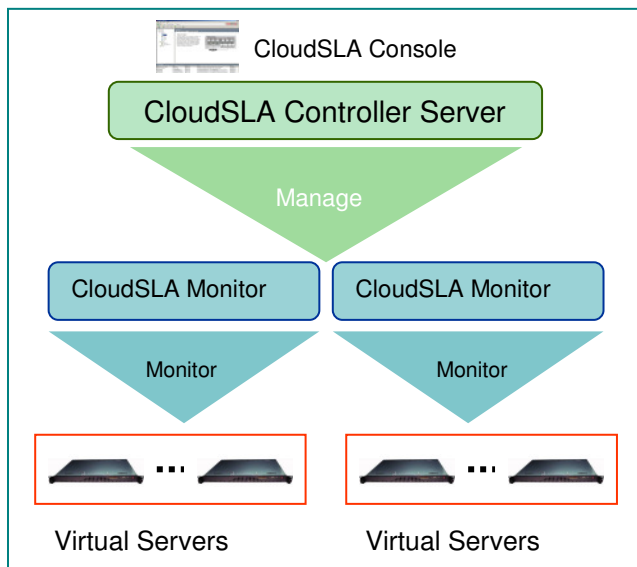


allocated VM, Business App specific SLA monitoring, to view their current VM & App performance matrix & for generating periodic reports. These services can bring in significant additional revenues from customers without incurring any infrastructure costs or management overhead.

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Dynamic SLA monitoring & Enforcement: Once the apps running within the infrastructure are detected, CloudSLA can monitor each App, VM or server for several types of SLA policies including Resources, Performance & Availability SLAs. These SLAs can monitor anything from resource usage such as CPU, memory, disk usage to application usage as well as availability & down-time, based on periodic monitoring of the actual resource. All the information retrieved is stored in the SQL database on CloudSLA controller. This database information can then be used for automated periodic report generation & fault detection. CloudSLA provides extensive Application, VM or Server performance base-lining for a specific time-period, enabling IT administrators to assess the resource performance within their private cloud or if it's hosted inside a leased public cloud.

SLA & App monitoring moves with VM migration: CloudSLA is integrally designed with the dynamic nature of virtual infrastructure in mind. One of the biggest difference in virtual infrastructure vs physical is that virtual machines can be set to automatically migrate based upon event triggers such as a server capacity



overrun etc. When a virtual machine moves from one server to another server, all the SLA monitoring policies associated with it including the resource & performance monitoring as well as application monitoring need to register the migration event and yet continue to monitor & enforce SLAs. CloudSLA can detect when a VM moves from one server to another and continue to monitor all associated SLA policies. It also marks this event in its database so that all historical reporting accurately correlates the SLA related base-lining and other reports data for the VM and the apps running on that VM.

Scalable Policy Management – Ready to deploy in any Cloud environment: CloudSLA Solutions have a 3-tier management hierarchy which includes CloudSLA web-console, CloudSLA Controller Management Server and CloudSLA Monitor. CloudSLA web-console is used for policy creation, deployment, software change management, log collection & report generation for all CloudSLA modules within the organization or its Data Center. CloudSLA Controller appliance can manage several CloudSLA Monitors simultaneously to provide a scalable deployment across an entire virtualization farm. This scalable architecture allows CloudSLA to be best-suited for Enterprise specific private cloud monitoring or for Subscription based services within a public cloud. CloudSLA can be used to monitor a virtual server, a specific VM (or all VMs on a specific server) or a specific business application on a VM. The industrial strength design of CloudSLA provides cloud-specific features such as External database support and inherent redundancy.

Flexible Partnership Models: RedCannon offers its Cloud partners several partnership models including an all-inclusive zero-upfront-cost partnership so that Cloud-based managed services can be quickly deployed in their environment. Different revenue share models allow Cloud provider partner to tailor-make the relationship & leverage existing customers for substantial additional revenues through application SLA & performance monitoring services.

CloudSLA Features:

Cloud Platforms

- Total integration with VMWare vSphere, Citrix XenCenter & other Management Platforms
- VMWare ESX/ESXi (vCloud)
- Citrix XenServers (XenCloud)
- Discovers all configured & running VMs as well as VM templates
- Works with Public, Private (& Virtual Private) as well as Hybrid Clouds

Automated Application Discovery

- Discovery Wizard supports all enterprise class applications on virtual & physical servers, including
- Network-based Apps
- Database servers, Web Platforms, Business Intelligence Platforms, Email servers etc.
- Enterprise specific applications such as Custom-built Apps, Business Apps or Distributed Apps

SLA Monitoring Policies

- Server & VM resource utilization and performance policies
- Detailed Application specific SLA policies for
- Usage Statistics
- Performance
- Resource Monitoring
- Network response-time

Scalable Deployment

- 3-Tier Architecture supported by a CloudSLA Web-Console, CloudSLA Controller the management Server & CloudSLA Monitor Appliances deployed across entire Enterprise or Cloud data centers
- Utilizes standard VM distribution methods for initial installation of CloudSLA appliances.

Managed Service Offerings:

- Multi-user (customer) access via Web console
- Centralized policy creation and administration
- Complete change-management for policies & software
- Web-based statistics, alerts and reporting