



Multi-Cloud Monitoring & Analytics

Monitor, Troubleshoot & Rightsize your Workload across Clouds

What can you do with Uila?

Multi-Cloud Monitoring & Analytics

Performance Troubleshooting & Root Cause Identification

Application Intelligence for IT Operations & Cloud IT teams

Rightsizing Resources to Optimize Costs

Pre-Migration Assessment for Hybrid Cloud and between Cloud Providers

End-user Experience Monitoring

Correlated Application and Infrastructure Monitoring & Analytics in the Data Center

Security Analytics & Change Control

Enterprise Data center architecture has evolved dramatically in recent years, enabling it to effectively run large-scale, distributed, multi-tier applications across public, private and hybrid cloud environments. To support and ultimately ensure delivery of business-critical applications and services, an elastic data center architecture and agile development model has emerged to share workloads, data and resources across the multi-cloud environment. However, IT monitoring solutions have not kept pace with this new wave of multi-cloud dynamics and the agile DevOps model. Current tools have reinforced the established silos that separate applications, virtual infrastructure, physical infrastructure and blind to public cloud resources. As a result, IT Ops teams have no inter-silo correlation across clouds and are unable to efficiently plan, migrate, optimize, right-size and solve problem on hand. There is also a lack of a single console across the multiple cloud providers and on-premise deployments for ubiquitous visibility for the workload and its dependencies.

Uila's Application-centric Multi-Cloud IT Analytics

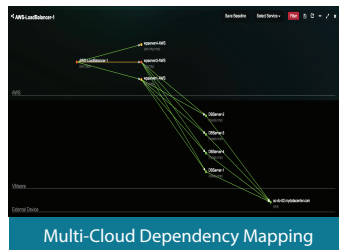
Uila solution aligns business applications and IT Operations in a single product with application visibility and correlated network, compute and storage insights across clouds boundaries.

First of all, Uila's Multi-cloud Full-stack analytics reduces troubleshooting time from days to minutes, enabling lean IT teams to get time back for more strategic projects. Uila identifies blind spots in the infrastructure & assigned resources, and eliminates finger pointing between infrastructure and application teams with automated root cause and forensics. With this improvement in efficiency, IT teams can now focus on business accelerations projects vs day-to-day maintenance projects. With Uila's agentless & automated pre-migration assessment for Hybrid Cloud, IT teams know all their applications and interdependencies beforehand, to eliminate incomplete migrations or unplanned rollbacks.

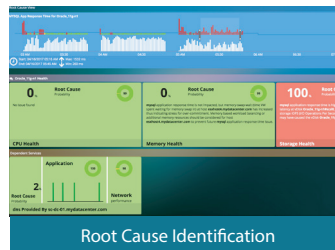
Lastly, for Multi-Cloud deployments, Uila provides a single console to monitor performance, visualize interdependencies and rightsize resources across VMware, Microsoft Hyper-v, Amazon Web Services (AWS), Microsoft Azure, Google Cloud Platform (GCP) and other Cloud environments.



Uila Dashboard



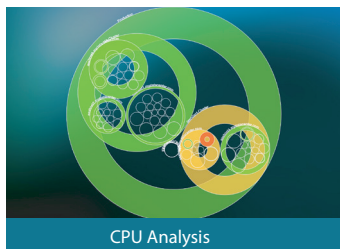
Multi-Cloud Dependency Mapping



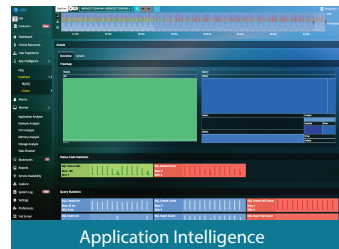
Root Cause Identification

VM Name	CPU					Memory				
	Capacity (MHz)	Current	Peak	Top 10% Avg (MHz)	Usage (%)	Capacity (MB)	Current	Peak	Top 10% Avg (MB)	Usage (%)
vsphere-IT-APP-01	2400	1	0	0	0	994	0	0	0	0
vsphere-IT-APP-02	2400	1	0	0	0	994	0	0	0	0
vsphere-IT-APP-03	2394	1	0	0	0	994	0	0	0	0
vsphere-IT-APP-04	6500	2	0.5	6.1	0.9	4076	8.7	69.2	113265	113265
vsphere-IT-APP-05	6500	2	2.4	4.2	2.8	10240	12.4	23	10240	10240
vsphere-IT-APP-06	3250	1	0.1	0.7	0.2	2048	1.5	3.8	10240	10240
vsphere-IT-APP-07	3250	1	0.1	0.5	0.1	2048	1.4	3.4	10240	10240
vsphere-IT-APP-08	3250	1	0.1	0.5	0.1	2048	1.4	4.8	10240	10240
vsphere-IT-APP-09	3250	1	0.1	0.5	0.1	2048	1.4	3	10240	10240
vsphere-IT-APP-10	3250	1	0.1	0.1	0.1	2048	1.3	2.7	10240	10240
vsphere-IT-APP-11	3250	1	0.1	0.2	0.1	2048	1.5	3.9	10240	10240

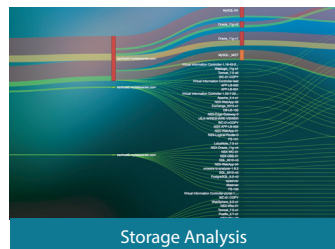
Rightsize Resources



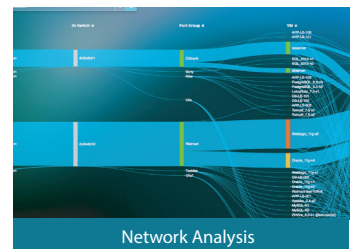
CPU Analysis



Application Intelligence



Storage Analysis



Network Analysis

Feature Highlights

Multi-Cloud Monitoring & Analytics

Monitor, Troubleshoot & Rightsize your Workload across Clouds

- Monitor VMware, Microsoft Hyper-v based environments, Amazon Web Services (AWS), Microsoft Azure, Google Cloud Platform (GCP) and other cloud deployments in a single interface.
- Identify Root cause of performance issues for workloads spanning multiple clouds and reduce MTTR with end-to-end dependencies and the specific condition of each infrastructure, application or cloud instance component.
- Visualize under-provisioned hosts or instances leading to application performance issues, and money left on the table with over-provisioned cloud assets across multiple cloud providers.

Agentless Full-Stack Visibility & Intelligence for the Data Center

Automatically discover Applications and their Dependencies on the Virtualization & Infrastructure layers

- Covers the silos vertically, from application through virtualization to the physical infrastructure, and horizontally (compute, storage & networking at virtual & physical layers).
- Application-to-infrastructure dependencies to provide a complete understanding of how the infrastructure relates to applications.
- Identify Root cause of performance issues anywhere in the stack with end-to-end dependencies and the specific condition of each infrastructure component.
- Application performance monitoring that constantly tracks response time and service levels to identify bottlenecks and issues.
- How traffic flows through the datacenter with end-to-end visibility of traffic from the user to the infrastructure to help identify irregularities.
- Monitor performance from the end-user's perspective all the way back through to the datacenter to identify issues before they impact the end-user.

Application Performance Monitoring

Actionable Application Intelligence and Analysis

- Application auto-discovery for over 3,000 applications with deep packet inspection.
- Application performance response time and service levels are tracked constantly to identify bottlenecks and issues.
- Service availability monitoring alerts IT teams to service disruptions immediately.
- Application transaction metadata tracks query, response and volume information for deeper investigation into application internals.
- Application dependency mapping generates an intuitive topology map for multi-tier application insights for reducing MTTR.
- Agentless application dependency and topology mapping provides critical assessment insight for defining Migration & Disaster Recovery Strategies.

Infrastructure Performance Monitoring

Insightful Analytics & Visualization of Infrastructure Bottleneck on Application Performance

- Support for modern infrastructure including hyper-converged, software defined storage and networking.
- Virtualized and physical server monitoring with OS process level details helps quickly pinpoint issues within the infrastructure.
- Network flow analysis reveals network issues and stress impacting application servers.
- East-west network traffic analysis eliminates monitoring blind spots, and lets IT teams see traffic between VMs.
- Deep Analysis for Compute (CPU and Memory) resources and visualize their impact on Application performance.
- View the entire storage stack all the way from the data store to the performance relating to storage of applications running on VMs.

Service Outage & Poor Performance Troubleshooting

Reduce Identification of issues & MTTR from Days to Minutes

- Intuitive dashboard gives IT teams 1-click access to root cause of business service outages or performance degradations.
- Exonerate the infrastructure with correlated full-stack evidence and avoid time-consuming and stressful fingerpointing.
- Application-to-infrastructure correlation bridges the IT troubleshooting gap.
- Infrastructure and application health visualization shines a spotlight on bottlenecks that are affecting application performance.

Rightsize your Resources to Optimize your Costs

Rightsize VMs and Instances to Optimize Infrastructure & Cloud Asset Investments

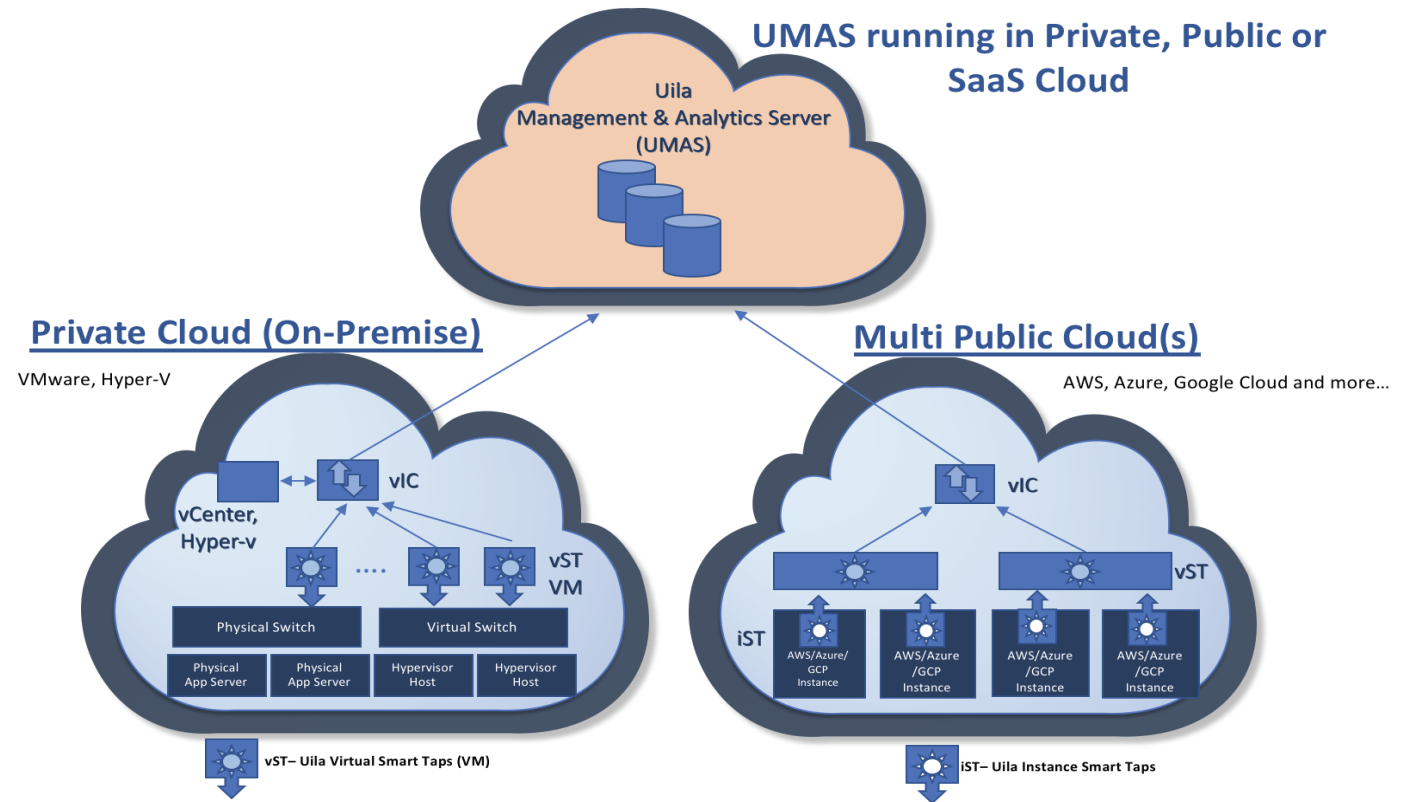
- Optimize cloud costs and coordinate between cloud governance teams and resource owners (cloud IT teams) based on actual usage and uncover inefficiencies so that you can reduce waste.
- Visualize VM and Instance performance and utilization for a variety of resources including CPU, Memory, Storage.
- Base your rightsizing decisions based on actual application performance for the application or VM/Instance by comparing usage trends with allocated resources.
- Get accurate right-sizing (downgrading) recommendations on over-provisioned scenarios for your cloud resources.

End-user Business Service Assurance

Identify and Fix End-user Problems Before any Impact

- End user response time tracking proactively alerts IT to service degradation from the user's perspective.
- Response time analysis breaks down delays by the server, network, storage, application and clients.
- Site-by-site and client-by-client analysis isolates and correlates user issues to the real root cause, thus speeding up troubleshooting time.

Architecture & Solution Components



Uila Management and Analytics System (UMAS)

The core of the Uila virtual infrastructure architecture is a big data store and analytics engine that is designed from ground up to scale-out to accommodate large data center deployments with thousands of servers, to scale-in to record data in high resolution, maintain historical data while maintaining real time responsiveness. Built-in redundancy offers high availability, mitigates downtime, and reduces maintenance overhead. UMAS can be installed in the Private, Public or SaaS Cloud.

The patent-pending analytics engine is the brain that correlates application to infrastructure performance metric by providing the smarts to pinpoint the infrastructure root cause behind application performance degradation. The trending reports generated from the historical data helps identify infrastructure hot spots, and maintains optimal application performance. The Uila Dashboard offers a simple and yet powerful way to view the results of the analytics engine and reveal the health of applications and the underlying infrastructure in compute, storage, physical and virtual networks.

Virtual Smart Tap (vST)

Virtual Smart Tap (vST) is deployed in a distributed manner across the data center or the Public Cloud. The vST installs in the host (Private Cloud) or VM/instance (Public Cloud) as an efficiently designed guest Virtual Machine or container where it promiscuously listens to all traffic from the virtual switch or Docker bridge or getting traffic from Uila's Instance Smart Tap (iST) that traverses the virtual networks (North-South and East-West). Using embedded Deep Packet Inspection (DPI) technology, the vST identifies unique applications and their attributes.

The vST measures application response time, network latency, and other network performance data in meta data form. No packet payload is stored, thus removing the risk of exposing sensitive data. The vST passes this Application & Network Metadata to the Virtual Information Controller (vIC) for further processing and correlating with the infrastructure metadata collected by the vIC.

Virtual Information Controller (vIC)

The vIC can be installed in either the Private and Public Cloud. In the Private Cloud, Virtual Information Controller (vIC) is the integration conduit to the data center Virtualization Management System e.g. VMware vCenter and Docker Container Enterprise Edition. The vIC retrieves your infrastructure configuration as a template to build Uila monitoring domain and to streamline deployment. The vIC collects network, storage and compute performance metrics that are maintained by vCenter and combines it with the application and network metadata from all deployed vSTs. In the Public Cloud, the vIC collects the Instance & VM level networking, application, compute statistics from the vSTs. In both cases, the vIC securely transmits it to the Uila Management and Analytics System, either on-premise or in the cloud.

Uila Instance Smart Tap (iST)

The Uila Instance Smart Tap (iST) is deployed as a plug-in in a distributed manner across the Public Cloud on the VMs or Instances running the application workload. It collects traffic as well as VM and Instance level Compute statistics and sends it to the vST for Deep Packet Inspection.

System Requirements

Instance/VM Type		CPU	Memory	Storage	Remark
Virtual Smart Tap (vST) for On-premise		1 vCPU (1 Core)	1 GB virtual memory	2 GB virtual storage, local	
Virtual Smart Tap (vST) in Public Cloud	t2.large for AWS D2s v3 for Azure				
Virtual Information Controller (VIC) for On-premise		1 vCPU (2 Cores)	4 GB for small deployment with <500VMs 8 GB for medium deployment with 500~1000VMs 16 GB for large deployment with 1000~2000 VMs	8 GB virtual storage, local, thin provision	
Virtual Information Controller (VIC) in Public Cloud	AWS t2.medium (<500 Instances) t2.large (500-1000 Instances) r4.large (1000+ Instances) Azure B2S (<500 VMs) D2s v3 (500-1000 VMs) A2m v2 (1000+ VMs)				
Uila Management & Analytics System (UMAS) for On-Premise		1 vCPU (4 Cores)	32 GB virtual memory 24 GB reserved	800 GB by default, local, thin provision	1. Not required for Uila Cloud 2. Default 2-month data retention period 3. Able to expand disk on the fly to accommodate larger DC or longer data retention period
Uila Management & Analytics System in Public Cloud	r4.xlarge for AWS E4 v3 for Azure				
Internet Browser	Windows: Firefox, Edge, Chrome		OS X: Safari, Firefox, Chrome, Opera	Linux: Firefox, Chrome	
Hypervisor	VMware VMware/NSX Hyper-V		vSphere ESXi 5.5 or higher; vCenter Server 5.5 or higher vSphere ESXi 5.5 or higher; NSX 6.2, or higher Standalone or Cluster mode; Windows 2012 R2 or higher		
Container	Docker Engine version 17.0.0 EE / CE or later install on Servers: CentOS, Debian, Fedora, Oracle Linux, RHEL, SLES, Ubuntu		coreOS 1409.6.0	VMware PhotonOS version 1.0 or later	

System SKUs

Description	Remark
Uila AA-IPM Annual Subscription License for x number of pCPU sockets Uila CIPM Annual Subscription License for # of VM/Instance for Cloud	Includes software updates and support (Refer to www.uila.com/support)
Uila AA-IPM Perpetual License for x number of pCPU sockets Uila CIPM Perpetual License for # of VM/Instance for Cloud	Software update and support purchased separately
Annual Support for Uila AA-IPM Perpetual License for x number of pCPU sockets Annual Support for Uila CIPM Perpetual License for # of VM/Instance for Cloud	Includes software updates and support (Refer to www.uila.com/support)

About Uila

Uila provides Multi-Cloud Monitoring & Analytics in a single pane of glass for the Digital Enterprise. With Uila, IT Operations and Cloud IT teams can visualize application workload dependencies across cloud platforms, rightsize resources and investments for their workloads and plan workload migration strategies for Hybrid and Multi-Cloud deployments. IT teams can also identify performance bottlenecks for business-critical services using full-stack correlation with 1-click root cause analysis and a patented Deep Packet Inspection technology that understands over 3,000 application protocols for transactional meta data analysis. Businesses use Uila to align themselves with their IT teams and cut time to resolution from days to minutes, keep their application at peak performance at all time and ensure end-user satisfaction to the fullest across cloud boundaries.

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