

White paper



# Intelligent Application and Service Monitoring With Virtana

Deploy Full-Stack Monitoring and AIOps insights at any scale

## The Business Challenge

Enterprise IT has evolved from a traditional cost center into a source of continuous innovation for businesses. However, at the heart of this change is often a complex mix of legacy and modern technologies that must be managed as a single, cohesive environment. While many legacy vendors have tried to cobble together groups of disparate monitoring tools to create the illusion of unified coverage, none of them offer an approach that is designed for change and built for the future. A dynamic IT ecosystem requires a modern approach that spans the entire IT service chain — an approach that is unified, architecturally extensible, and based on real-time, end-to-end visibility and intelligent analytics.

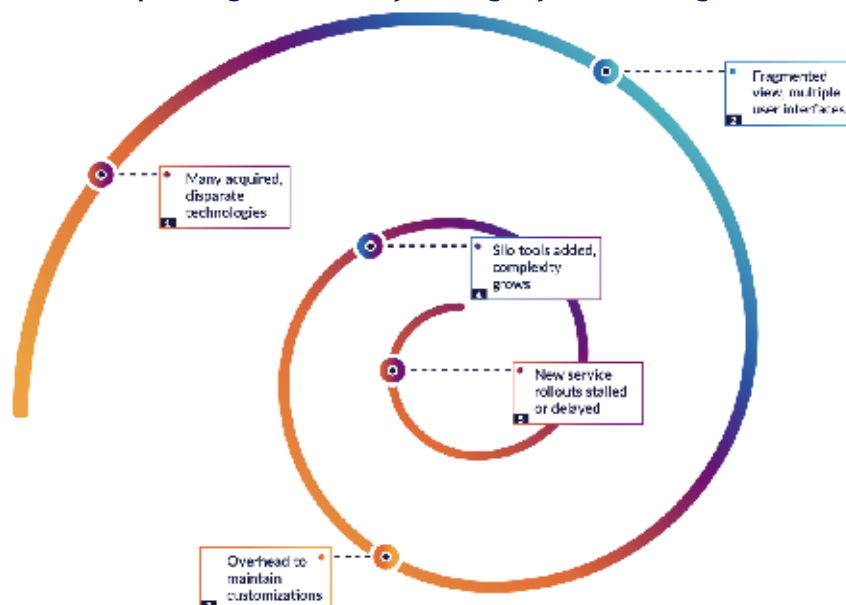
## Legacy Monitoring: Operational Complexity With No Unified View

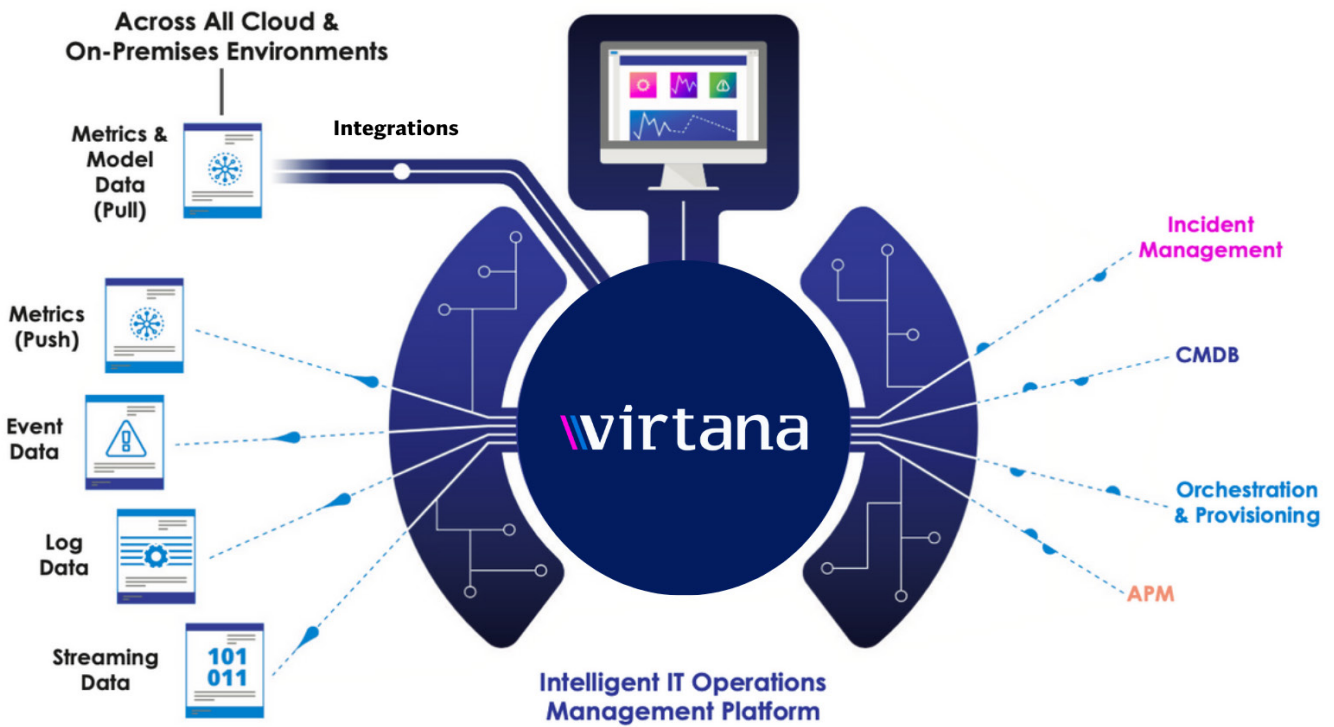
Legacy monitoring solutions — whether you use expensive “Big Four” frameworks comprised of disjointed, acquired technologies or a bevy of individual point products — cannot meet the demands of today’s complex IT infrastructures. There are simply too many tools involved. Your administrators have to jump from UI to UI, which eats away at productivity and provides a highly fragmented view of overall service availability and performance.

To gain better insight into infrastructure operations, organizations can end up investing heavily in lengthy and expensive custom integration work, trying to pull together disparate data repositories and user interfaces from these various tools into a more centralized view. Maintaining integrations between products through infrastructure updates and upgrade cycles introduces significant cost burdens — and still yields only a fraction of the visibility you need to accurately pinpoint the source of service degradations or outages.

The issue is further exacerbated as most enterprises prepare for the future by migrating to hybrid cloud architectures and using DevOps teams for application development. Cloud isn’t just hosted compute, storage and networking anymore. It’s databases and data analytics platforms, artificial intelligence and machine learning services, and containers and serverless functions. All of these can interact in interesting, emergent and unpredictable ways. And maintaining visibility across all of the capabilities of your infrastructure as organizations constantly develop and deploy new applications becomes a critical requirement of any new cloud architecture. To reach the areas you can’t see with your patched-together legacy solution, it becomes tempting to turn to yet another tool set to fill in the gaps — causing inefficiencies to spiral further out of control. With corporate revenue, productivity and reputation all tied to service quality, it is essential to have a unified view of the availability and performance of your entire infrastructure — whether physical, virtual, cloud-based or serverless — to efficiently maintain service reliability.

### The Spiraling Inefficiency of Legacy Monitoring





## Full-Stack Monitoring + AIOps

In response to the growing importance of DevOps applications, the explosion of machine data, and the increasing accessibility of data science technology, Virtana works to deliver SaaS-based full-stack monitoring and AIOps insights at any scale. To do this, we provide an intelligent IT operations management (ITOM) platform by building the most granular and intelligent infrastructure relationship models possible. Virtana Service Observability provides robust AIOps analytics capabilities for all data types, including metrics, dependency data, events and streaming data. It proactively delivers deep, unparalleled health and performance insights to optimize any IT environment and shares insights with other ITOM tools to automate issue remediation. As a SaaS-based platform, Virtana Cloud delivers IT management as a service without the added complexity of managing the monitoring platform itself.

Virtana Service Observability streams and normalizes all machine data, uniquely enabling the emergence of context for preventing service disruptions in complex, modern IT environments. It does this by leveraging three key capabilities:

### High Cardinality

Collect and analyze metrics, streaming data, dependency data, events, logs and agent data across complex, modern environments.

### Machine Learning

Transform machine learning (ML) accuracy and effectiveness with real-time, dynamic models of end-to-end IT services and applications.

### Ludicrous Scale

Grow at warp speed with a serverless, elastic cloud-based architecture, real-time data streaming, and ML-based analytics.

## Key Benefits

### Immediate Root-Cause Analysis

Gain ultimate visibility using real-time modeling for end-to-end infrastructure-related risks, and isolate problems immediately to improve mean time to resolution (MTTR) and eliminate service outage losses. Gain total visibility of overall IT service health with intelligent dashboards and reports. Collaborate across teams to coordinate investigation and problem-solving.

### Prevention of IT Disruptions

Leverage high-cardinality data to ensure continuous reliability of ephemeral systems, and reduce IT response times using predictive analytics driven by machine learning and AI. Evolve from availability and performance to capacity and optimization, and eliminate risks associated with digital transformation.

### Optimized Application Performance

View performance and anomalies across all on-premises and cloud infrastructures with AIOps insights to predict service health and performance issues. Apply consistent monitoring policies across all cloud and on-premises systems. Deliver management as a service for DevOps teams.

### Intelligent Automation

Share key data and insights with other ITOM tools to automate a rapid resolution and future-proof your monitoring platform to run at any scale. Enable agile IT while eliminating employee fatigue by reducing alerts.

Virtana is a Forrester Wave leader in intelligent application and service monitoring. Today, Virtana helps thousands of IT organizations worldwide improve MTTR by 85%, reduce alert noise and event storms by 99.99%, and increase ITOM system automation by 70%.

#### With Virtana Service Observability in place, organizations can:

- Consolidate monitoring tools to reduce licensing costs
- Monitor new services quickly and easily
- Identify service risks before they become outages
- Reduce firefighting and finger-pointing with root-cause analysis
- Prioritize and automate remediation efforts
- Enable effective resource utilization



Virtana strategy emphasizes simplifying integration across multiple IT data sources and corporate analytics systems ... Customers that have large volumes of disparate data sources and need a highly scalable solution should consider Virtana.

- Forrester Research



## Solution Capabilities

Virtana is built on a unified platform that provides insight into how infrastructure availability and performance relates to overall service quality. These combined capabilities make it possible to deliver intelligent application and service monitoring in a way that not only improves service levels but also creates productivity and cost savings.

### Unified Monitoring

Virtana streamlines the identification and resolution of service issues by eliminating siloed views of server, network, storage and application resources. A single user interface makes it easy to perform discovery, configuration, and performance and availability monitoring across physical, virtual and cloud-based environments. Virtana automatically discovers the devices in your environment and tracks new and changed cloud, virtualized and on-premises resources. These resources can be assigned to the appropriate model for automatically updating its configuration and relationships to other devices. The model is continuously updated to ensure you have a complete, accurate view of your infrastructure at all times.

### Agentless and Agent-Assisted Data Collection

We continue to be the market leader in agentless deep infrastructure data collection. You can easily extend monitoring capabilities to any resource in your service delivery infrastructure with Integrations. These easy-to-use software plug-ins help you monitor common applications, servers, network devices, databases, storage systems and cloud platforms. You can also easily create your own Integrations using our API, or leverage a library created and maintained by the 100,000-plus member Virtana developer community.

In many emerging cases, other approaches are more appropriate. Virtana Service Observability adds a push data framework that supports agents to collect data from Kubernetes and Prometheus as well as a `gostatsd` agent to accept data from any other source. Combined with a developer-friendly API, this flexible framework enables data collection from ephemeral devices, custom applications, serverless infrastructure and IoT/edge-of-network devices.

Virtana Service Observability gathers all types of machine data into a unified data store, correlating that data with its IT infrastructure model to surface actionable insights that would otherwise be missed. Data streams in directly from applications, and an open API allows DevOps teams to build monitoring into their projects from the beginning.

### AIOps Analysis With Machine Learning

Virtana helps you clearly understand what services are impacted by device issues and how performance and availability degradations impact overall service delivery. This insight allows you to manage your IT infrastructure as a portfolio of services rather than as a collection of individual components or devices.

The patented service impact model stays synchronized with software-driven configuration changes by dynamically mapping and maintaining dependencies between services and the underlying infrastructure. When disruptions occur, the impact model leverages a confidence-ranking engine that expedites root-cause analysis. This allows you to quickly identify, isolate and address the root cause of a service event, restore service faster, and minimize end-user impact.

Additionally, our partnership with Google Cloud yields tremendous advantages in deploying machine learning technologies in our platform. Virtana supports anomaly detection with automatic baselining, enhanced root-cause analysis, and AI-driven user interface and models.

### Event Management

Virtana provides a single, unified view of events across your physical, virtual, converged and cloud resources. By maintaining a real-time model of resource relationships and dependencies, it can parse through thousands of events in seconds to determine which events are most likely to cause service degradation or failure. Event aggregation, deduplication and masking occurs automatically, giving you only the list of events that require attention. Pairing this with the root-cause analysis and patent-pending confidence-ranking capabilities, you have an incredibly powerful tool for quickly and efficiently tackling the events most likely to impact overall service delivery.

### **Native SaaS Platform and Scale**

Virtana Service Observability was architected from the ground up to reside in the cloud. Since it runs on microservices in Google Cloud, its scale is effectively unlimited, and the data it collects is always available. Setting up monitoring is simple because there is no software to install and devices can be added to the monitoring platform immediately. Since Virtana fully maintains the monitoring platform in the cloud, the software is always up to date and there are no maintenance windows.

Virtana deploys easily across geographies and multiple management domains with the ability to scale up and down to meet the demands of dynamic virtualized or cloud-based environments. Designed from the ground up to be flexible and scalable, Virtana has been deployed in some of the largest organizations in the world. The architecture scales at every level — data collection, hub management, master server and interface — to ensure it conforms to your specific infrastructure requirements. The platform is inherently multitenant, supports policy-based decision-making and management as a service, and shares data through open APIs. For customers, all this means that they can spend less time and fewer resources managing the platform that hosts their monitoring solution.

### **Delightful UI and UX**

Virtana Service Observability's user interface is intelligent and intuitive, enabling easy consumption of IT data for practitioners and executive stakeholders. Dashboards, event consoles, impact diagrams and device exploration views render large amounts of information in consumable, impactful ways.

Additionally, Virtana Service Observability introduces Smart View, a new troubleshooting workflow that uses machine learning and AI to present the most relevant data to the user. With Smart View, the user can instantly navigate to any time period of interest, automatically surface related metrics, identify supporting technologies related during that time period, and quickly explore any anomalous activity.

### **Alerting, Remediation and Integration**

Virtana provides standard features for alert notification, integration and remediation, such

as targeted email and pager notifications. Events in Virtana can also trigger remediation scripts to execute a command on a monitoring system, automatically run diagnostic tasks, or call on an external orchestration system to start a complex recovery workflow.

Virtana supports integration with provisioning systems, service desk applications, CMDBs and orchestration systems. This helps you provide faster, more accurate IT operations processes. Standard integrations are available for ServiceNow, BMC Remedy, CA Service Desk and HP Service Manager service desk applications as well as for Cisco UCS Director, Chef and Puppet provisioning systems.

### **Enterprise-Grade Security**

Virtana adopts numerous best practices to ensure that all communications between its components are protected. Firewalls that prevent tenants from accessing data outside their role are enabled by default. Clients can use demilitarized zones to be prescriptive in how they allow access into and out of their networks. All connections can be secured with credentials that limit access to only data needed for monitoring. All passwords are encrypted in flight and stored securely.

Virtana also offers numerous controls to enable administrators to clearly enumerate and specify access levels for every user in the system. This ensures that team members have rapid and frictionless access to the data they need to do their jobs without risking exposure by granting too much access to any particular account. Virtana uses the Auth0 authentication service, which integrates with client identity services (like LDAP) to log in users and protect from brute-force access attempts. Additionally, all data used by Virtana Service Observability is encrypted when stored.

Finally, Virtana Service Observability is a managed SaaS offering, which means Virtana takes on the responsibility for ensuring that the product implementation continues to follow best practices for ensuring the secure transmission and storage of privileged user data. This includes regular security reviews when implementing new features and regular security updates to software across the entire platform to ensure that attack surface areas for any platform component are as small as possible.

## Who Uses Virtana?

Virtana helps some of the largest enterprises, online businesses, service providers and public sector organizations in the world replace legacy solutions with unified, end-to-end monitoring. Our solution is flexible enough to benefit any environment. Don't take our word for it — here's what our customers are saying:

**“No other solution provides the complete coverage that Virtana does. Our IT environment is quite dynamic, and other solutions weren't nimble enough to keep up and definitely couldn't model the entire environment in real time.”**

- Wendy M. Pfeiffer, CIO, Nutanix

**“If we didn't have Virtana, our audiences would have a degraded experience and our reputation would suffer.”**

- Shani Mashhood, Head of Monitoring, Global Media Organization

**“Virtana for us is more than just infrastructure monitoring. It's application monitoring [and] it's business service monitoring because it consumes data streams from other tools.”**

- Art Rogers, Director of Enterprise Services, TransUnion

**“With Virtana, we created a 'single source of truth' — giving us the transparency necessary to resolve issues quickly.”**

- Kyle Kopp, Infrastructure Manager, Huntington Bank

**Virtana Recognized  
in Gartner Market  
Guide for AIOps Pla-  
tforms and IT Infras-  
tructure Monitoring  
Tools**

