

Powering IT operations in a cloud-first world

*How ServiceNow creates
cloud visibility, improves
service health, and optimizes
cloud costs*



Introduction

Today, enterprises are embarking on broad-reaching digitalization strategies to drive innovation and create sustainable business advantage. Cloud services lie at the heart of this transformation, replacing static on-premises infrastructure with agile, on-demand computing power.

However, the unprecedented speed and agility also creates major challenges for IT.

Visibility

The first one is visibility. Services no longer run in a data center. Instead, they are distributed over multiple clouds from multiple cloud vendors, each with its own proprietary management interfaces. There's no common operating model. Instead, each cloud is its own silo. There's no easy way to create infrastructure visibility across your entire IT estate, or to understand how your services flow across this infrastructure.

Then, there's the speed of change. Services born in the cloud spin up fleeting workloads, constantly adjusting to ever-shifting demands. Traditional discovery tools just can't keep up. So, if you do somehow manage to get visibility across your IT estate, it's a snapshot of the past and doesn't reflect the current reality.

Health

If you don't have visibility, you can't manage the health of your infrastructure and services. And, as we just said, getting visibility across multiple cloud environments is a huge issue. However, let's assume that you've got visibility. It's still not enough.

Why? IT has struggled for years with torrents of disconnected events from multiple monitoring systems. Many of these events have no real meaning, drowning out significant information in a deluge of noise. Wading through this manually to pinpoint the root cause of service outages and degradations is a daunting task, leading to long service restoration times and unacceptable business impacts. The cloud just makes this worse. Multi-cloud environments create even more monitoring silos, with separate event streams from each cloud vendor. And, there are many more events. For example, container-based architectures generate significantly more events than their on-premises predecessors.

Here's the bottom line. You can't manage service health in the cloud using traditional approaches. There's just too much information for humans to stitch together. And, the situation is only going to get worse as digitalization leads to an ever-growing number of cloud-based services.

Optimization

Finally, let's talk about cloud costs. In principle, cloud's utility model should drive down computing costs. However, many IT organizations don't optimize their cloud spend. For instance, IDC estimates that 20% to 30% of cloud spend is wasted. There are numerous reasons for this waste, including stranded cloud assets, overdimensioned cloud resources, and failure to upgrade to the latest, most cost-effective cloud technologies.

There's another reason why cloud spend is out of control. The cloud makes it relatively easy for anyone to create their own cloud resources using cloud vendor interfaces. It's the ultimate in agility, but it also bypasses effective governance,

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leading to unconstrained cloud sprawl. On the other hand, traditional governance approaches create long provisioning delays. When you're a DevOps team cranking out multiple releases every day, you can't wait a week for someone to approve and provision a VM. In the cloud world, agility and governance are two warring factions desperately in need of a peacemaker.

Take charge of the cloud with ServiceNow IT Operations Management

At ServiceNow, we understand the challenges of a cloud-based world. After all, thousands of ServiceNow customers trust our cloud-based services to make work better. That's why we've built our IT Operations Management (ITOM) portfolio from the ground up to tackle cloud visibility, health, and optimization.

ITOM Visibility

Let's start with visibility.

ServiceNow® ITOM Visibility breaks down cloud silos, giving you a comprehensive, up-to-date view of your entire virtualized infrastructure and end-to-end services, creating a complete and reliable record in your CMDB. It has out-of-the-box support for leading cloud vendors such as Amazon AWS, Microsoft Azure, Google GCP, and IBM Cloud—including both IaaS and PaaS infrastructure, as well as container and serverless technologies such as Kubernetes, Docker, and AWS Lambda. And, it can easily be extended to other clouds. It also supports on-premise virtualization solutions such as VMware and Citrix, as well as traditional on-premises infrastructure. So, whether you want to assess the impact of a change or get a broken service up and running quickly, all the infrastructure and service information you need is at your fingertips.



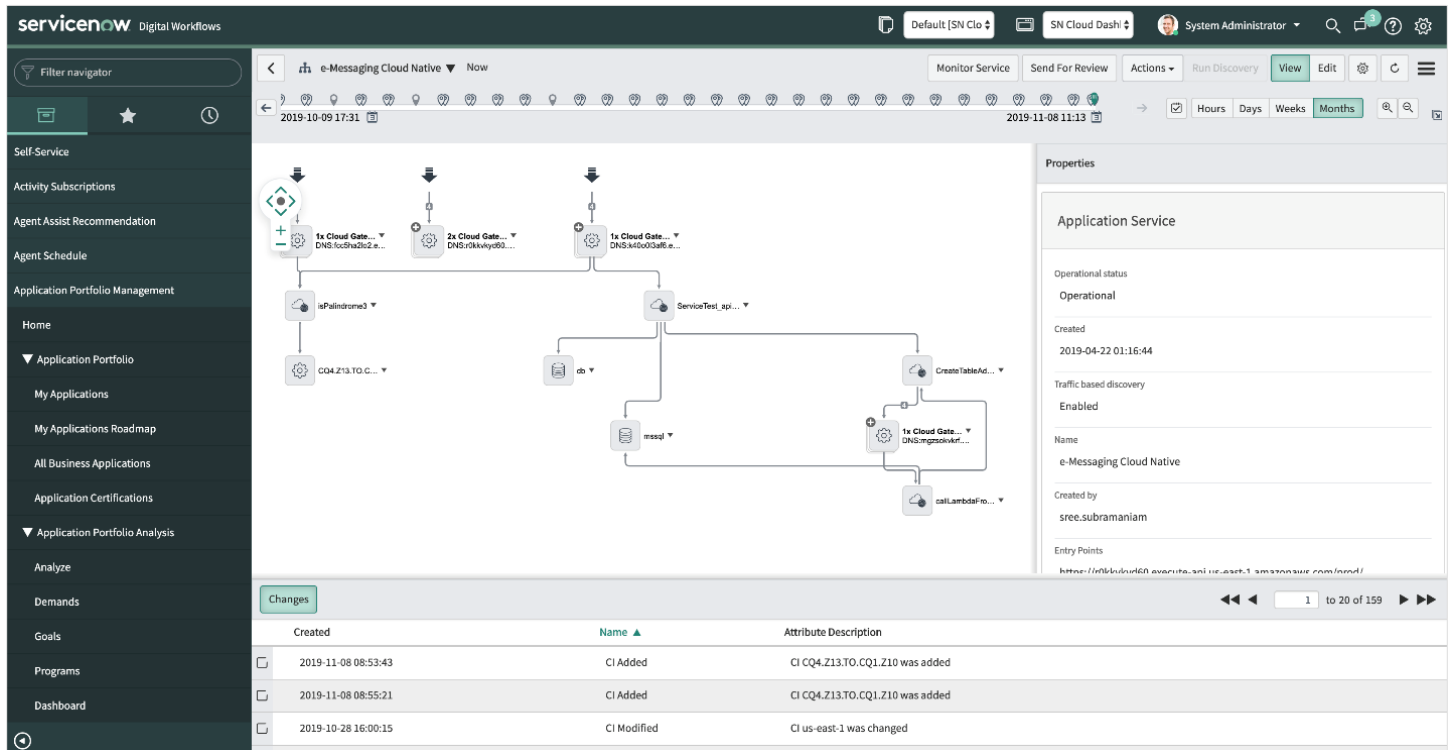
Holistic visibility of multi-cloud infrastructure and end-to-end services

ITOM Visibility includes two complementary features—Discovery and Service Mapping. Discovery discovers your multi-cloud infrastructure, as well as applications, databases, and other components that run on this infrastructure. It also

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maps upstream and downstream application dependencies, identifying communication flows down to the port and process level. Service Mapping then builds on this infrastructure data, creating end-to-end maps of your services as they flow across multiple clouds and on-premises infrastructure. This includes mapping complex service topologies that incorporate shared and redundant elements.



Service map

Keep pace with the cloud

Unlike traditional discovery tools, ITOM Visibility is designed to handle rapidly changing cloud environments. Conventional discovery approaches rely on periodic polling to detect changes, which means that the data they provide can be days or weeks out of date. ITOM Visibility is different. While it supports scheduled and on-demand discovery, it also automatically triggers targeted discovery when it receives a change event from a cloud vendor interface such as AWS Config, Azure Monitor, or GCP Stackdriver. This gives you near-real-time visibility of your multi-cloud environment, ensuring your CMDB is always up-to-date and accurate.

Integrate all your data sources

With ServiceNow, visibility doesn't stop at discovery and service mapping. You can easily enrich your CMDB with data from other sources, whether that's an endpoint monitoring system or a security tool such as Qualys or Tanium. You have access to an incredibly rich ecosystem of partners who are helping us to populate ServiceNow with a vast amount of useful configuration and application data. You'll find more than 90 third-party integrations in the ServiceNow store, and the number continues to grow. And, if a data source isn't supported out of the box yet, you can easily integrate it using ServiceNow's built-in no-code/low-code tools.

Unleash the value of your configuration information

ITOM Visibility does more than give you a single system of record for your multi-cloud infrastructure and services. Because it's an integral part of the Now Platform®, it seamlessly shares configuration information with other ServiceNow applications via the ServiceNow CMDB. This includes applications within the ServiceNow ITOM portfolio, as well as other applications such as Change Management and Software Asset Management. This unlocks the value of your configuration data, creating visibility for your entire IT team.

ITOM Health

Next, let's look at how ServiceNow lets you tackle the challenges of service health in the cloud.

ServiceNow® ITOM Health cuts through the noise of multi-cloud environments, leveraging end-to-end visibility and the power of AIOps to help you fix service outages faster. It turns a tidal wave of events into a trickle of actionable alerts, working hand-in-hand with your IT operations team to rapidly identify and remediate the root cause of service issues. And, unlike static, rule-based legacy event management tools, ITOM Health applies machine learning and advanced analytics to correlate events, automatically adapting to fast-changing cloud environments.

Eliminate swivel-chair operations by integrating all your monitoring data

In the same way that ITOM Visibility consolidates all your configuration information, ITOM Health brings together all your monitoring data, normalizing, deduplicating, and filtering it to create a consistent, connected set of information for further analysis. It supports event data from major cloud vendors, including Amazon, Microsoft, Google, and IBM, as well as feeds from many widely deployed monitoring tools. You can also easily extend it with REST, SNMP, JavaScript, or email collectors to support virtually any event source.

Cut through the noise fast with intelligent, adaptive correlation

ITOM Health applies advanced AI techniques to correlate events, reducing noise by up to 99%. It uses machine learning to identify temporal correlations in your event data, as well as topological correlations based on your discovered infrastructure and services. For example, it can identify when a specific upstream issue is causing downstream symptoms, even when the symptoms are in a different cloud.

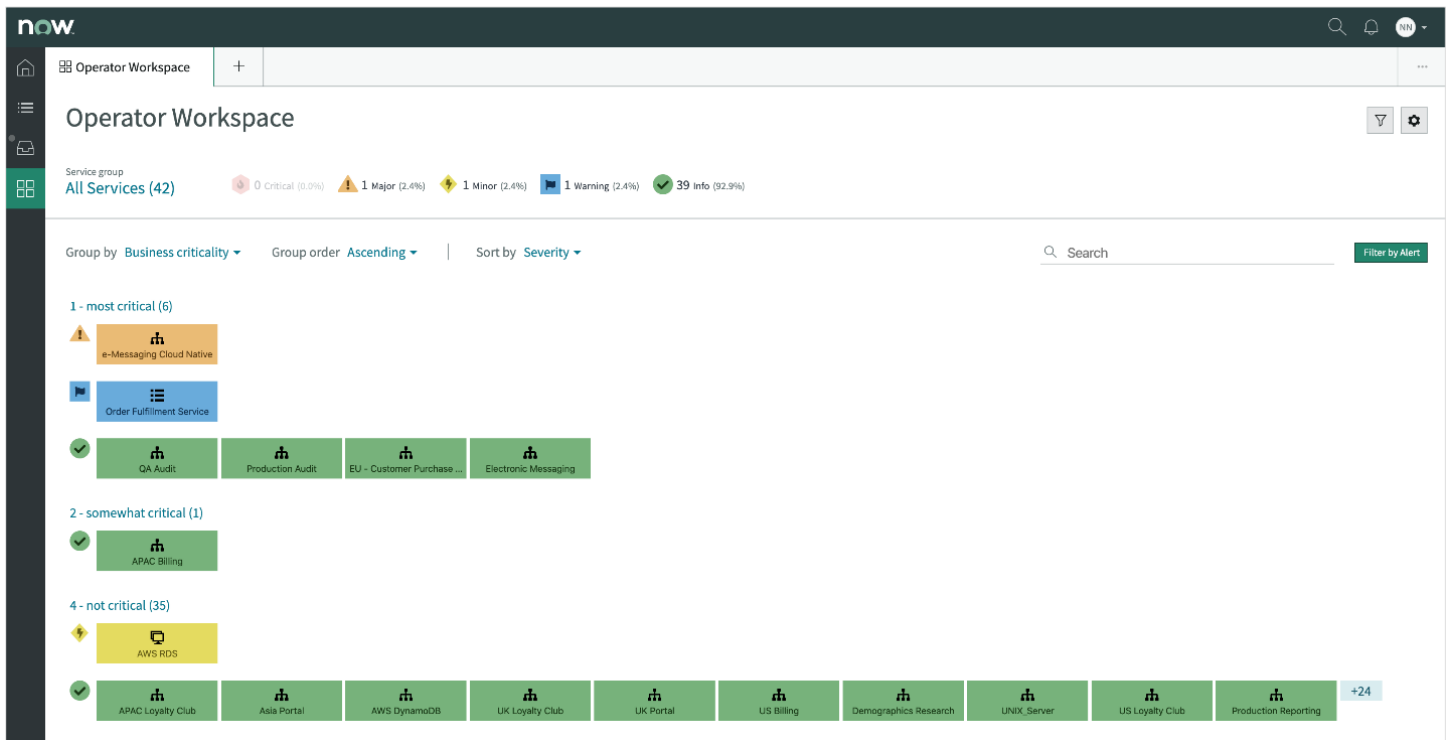
What's the result? Instead of drowning in event data, you immediately see what's important.

Instantly see the service impact

ITOM Health doesn't just give you actionable alerts—it shows you their service impact, even when a service spans multiple clouds. It uses service maps to identify which services are affected by each alert, giving you an intuitive, color-coded dashboard where you can see the status of all your services. This means that you can easily prioritize alerts based on how they're affecting your business and customers, so you focus on what matters most. And, you can quickly drill down from the dashboard into the underlying service maps, instantly seeing which alerts are contributing to a service issue.

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Event Management dashboard

See beyond events with Operational Intelligence

With ITOM Health, you can also proactively detect anomalous conditions that could lead to future issues. ITOM Health's *Operational Intelligence* feature uses machine learning to analyze operational metrics, determining their normal behavior. It then uses these normal behavior models to detect anomalies, showing you which CIs in your CMDB may be at risk of causing a service outage or degradation. This gives you advance warning, so you can take action before services are affected.

Accelerate remediation with AI-powered recommendations and automation

ITOM Health helps you to fix service issues faster by using the power of AI to automatically identify repeated alerts, similar historical alerts and incidents, and relevant knowledge base articles. These recommendations simplify root cause analysis and even show you how issues were fixed in the past—giving you insights into how to quickly restore service. And, with ITOM Health, you can accelerate remediation even further by automating actions such as retrieving log files, freeing disk space, or restarting a service. It can also trigger tasks such as creating a change request, incident, or security incident when an alert meets specific configurable criteria.

ITOM Optimization

Finally, here's how ServiceNow helps you to take control of your cloud costs.

ServiceNow® ITOM Optimization provides comprehensive visibility of your cloud costs and usage, identifying and automating opportunities to reduce cloud

spend. It also has automated cloud provisioning capabilities that allow you to establish an effective governance model without compromising agility.

Leverage the power of the Now Platform®

Of course, there are multiple cloud optimization tools on the market. However, these are fundamentally broken. Why? They aren't tied into your operational processes. Because they are siloed tools, they don't work with your existing operating model—and particularly with your change processes. There's no mechanism to approve optimizations or, in many cases, even to know who owns cloud resources. This makes it extremely difficult to operationalize optimizations or to hold people accountable for their cloud spend. As a result, these tools often fall into disuse because they aren't part of your IT operations platform. On the other hand, optimization is an integral part of ServiceNow's overall ITOM solution and is also tightly linked to change and other ITSM processes through the Now Platform®.

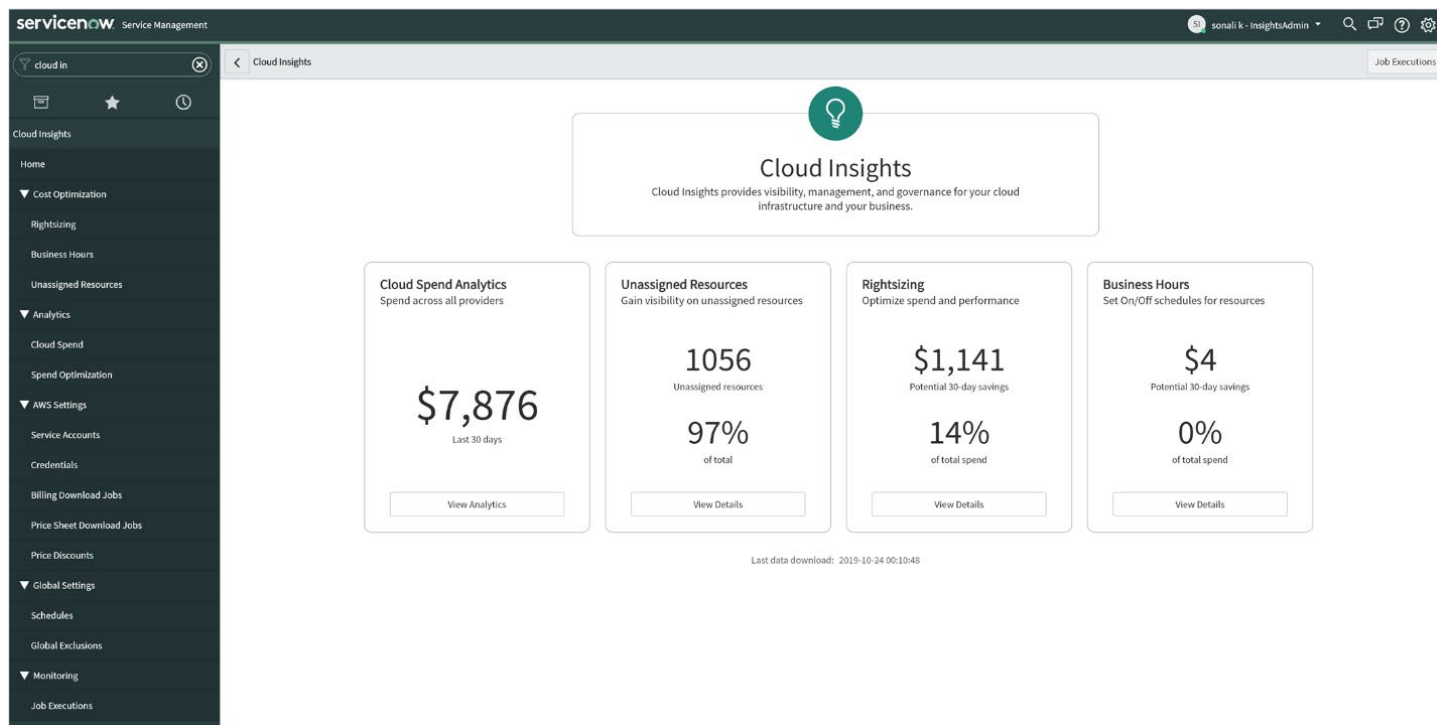
Understand and optimize your cloud spend

With ITOM Optimization's *Cloud Insights* feature¹, you can easily determine who or what is using your cloud resources. Cloud Insights automatically classifies your discovered cloud resources using flexible, configurable policies, assigning each resource to specific owners, cost centers, services, applications, and other entities. And, if you're not currently discovering your cloud resources using ITOM Visibility, Cloud Insights can still identify and classify your resources using billing reports and other similar sources.

Cloud Insights then combines this ownership information with cloud billing and usage data, showing you exactly who or what is consuming your cloud budget. Using build-in dashboards, you can easily visualize this information, creating high-level aggregate views as well as fine-grained cost analysis. This allows you to easily pinpoint cost optimization targets.

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Cloud Insights dashboard

1. Cloud Insights currently supports Amazon AWS.

Save money by rightsizing your cloud infrastructure

IT organizations often waste money by overdimensioning cloud resources, either because a service has been lifted and shifted into the cloud, or because they don't have visibility of cloud resource usage. Cloud Insights tackles this waste by making accurate cloud resource resizing recommendations based on actual resource usage. It then operationalizes these recommendations by automatically creating change requests and routing them to the appropriate resource owners for approval.

This is just one example of the types of resource optimizations that Cloud Insights produces. For instance, it also identifies when you are using expensive legacy cloud resources, recommending you upgrade to newer, more cost-effective cloud technologies.

Automatically turn off cloud resources when you don't need them

Often, cloud resources aren't needed 24x7. For instance, if a department is only open from 9 AM to 9 PM, there's no point in providing cloud resources or the other 12 hours. Cloud Insights lets you automate savings by only turning on cloud resources when they are required. Using policies that you define, Cloud Insights determines when resources should be turned off and on, and, once again, sends change requests to the appropriate resource owners. Once a request is approved, Cloud Insights turns the resources off and on automatically, eliminating unsustainable manual effort.

Increase agility and strengthen governance with intuitive self-service cloud provisioning

Remember how we said that agility and governance are at war in a cloud environment? This leads to unmanaged costs as DevOps and other users create their own resources using cloud vendor interfaces.

With ITOM Optimization, you can resolve this conflict. Its *Cloud Provisioning and Governance* feature provides intuitive, self-service cloud provisioning², delivering a consistent operating model across Amazon, Microsoft, Google, IBM, and other clouds. Just define standardized cloud services in the ServiceNow Service Catalog. Users simply select these services in their user portal, and Cloud Provisioning and Governance automatically provisions the corresponding cloud resources—often in seconds when no approvals are required. If you want to integrate cloud provisioning directly into your DevOps CI/CD chain, you can also access the service catalog through a built-in API.

And, because ServiceNow uses native cloud vendor templates to provision cloud resources, you have full access to each cloud vendors' full set of unique capabilities, rather than having to settle for a lowest common denominator solution.

Along with on-demand cloud provisioning, Cloud Provisioning and Governance also provides non-intrusive policy guardrails. As long as users stay within these role-based guardrails, the cloud resources they request are created right away without any need for approvals. By defining appropriate guardrails, you can establish storage, CPU, and other quotas, control the types of cloud service each user can create, enforce cloud resource naming conventions, control workload placement, enforce resource tagging policies, and more. And, these guardrails apply whether you provision cloud resources through the user portal or via the built-in API, delivering effective governance across your DevOps CI/CD chain.

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2. While Cloud Insights and Cloud Provisioning and Governance works seamlessly together, you can still benefit from the capabilities of Cloud Insights if you use a separate cloud provisioning tool instead of Cloud Provisioning and Governance.

Let's recap

Today, organizations are increasingly adopting a cloud-first strategy as they pursue far-reaching digitalization agendas. However, while the cloud delivers unprecedented agility, it also creates significant new challenges for IT. Multi-cloud environments create more silos, resulting in a lack of end-to-end infrastructure and service visibility. Dynamic, ever-expanding cloud environments are driving an explosion in events, overwhelming IT and leading to extended service outages. And, cloud costs continue to spiral out of control, as IT organizations lack the cost and usage visibility and agile governance structures needed to optimize cloud costs.

With ServiceNow ITOM, you can overcome these challenges. ITOM Visibility keeps pace with the cloud, creating an accurate, up-to-date record of your entire multi-cloud environment and of the end-to-end services that flow across it. ITOM Health cuts through event noise, using the power of AIOps and automation to help you quickly detect, diagnose, and remediate service issues. And, ITOM Optimization helps you drive down cloud spend by identifying and operationalizing cost optimizations, and by creating a common operating model across multiple clouds—delivering effective governance without compromising the cloud's speed and agility.

To find out more about how ServiceNow ITOM can help you to power your IT operations in a cloud-first world, check out the [ITOM Optimization datasheet](#).

