

Getting the Most Out of Your IT Infrastructure Investment

How AlOps & Clean Data Fuels a More Efficient, Effective Agency

ScienceLogic



Contents

Part One How AIOps Leverages Complete & Accurate Agency Data

Part Two What It Takes to Get Started Using an AIOps Platform _____

Part Three Best Practices When Choosing and Using AlOps____

Conclusion_

About ScienceLogic_



Introduction

Gartner defines AIOps as "the application of machine learning and data science to IT operations problems." That simple description belies a lot of complex engineering that allows AIOps platforms to combine big data and machine learning to produce a platform that gives IT operations staff the power to automate decision making and many manual tasks, allowing organization to maintain their IT estates at a high degree of efficiency and reliability.

When fed complete, accurate agency data, AIOps can streamline and even automate—processes like event correlation, root cause analysis, preventative maintenance, incident detection and systems restoral, and decision making that once consumed most of an IT operations team's time. What's more, as IT estates grow more complex and generate an exponentially greater volume of data, humans simply can't keep up. AIOps platforms like ScienceLogic's SL1 give organizations a tool for handling data and IT operations management in real-time, and at unparalleled accuracy.

That's why the market for AIOps is expected to grow to over \$27 billion within five years as more organizations choose AIOps as their catalyst for IT transformation. But smart organizations don't invest in technology because it's trendy; they invest in technology because it works. This ScienceLogic eBook helps you to set a path to put AIOps to work for your agency by helping you to understand how AIOps works, learn how to put AIOps to work for your agency, and establish proven best practices for AIOps success.

In this eBook, you'll learn:



How AlOps leverages accurate and complete agency data What it takes to get started using an AlOps platform

The best practices for choosing and using AlOps



Part One How AlOps Leverages Complete & Accurate Agency Data

AlOps platforms, combine big data and machine learning functionality to enhance and partially replace all primary IT operations functions, including availability and performance monitoring, event correlation and analysis, and IT service management and automation. AlOps platforms consume and analyze the ever-increasing volume, variety and velocity of data generated and present it in a useful way.

There's a lot to that description. It helps to think of AlOps as a relatively new term for the latest phase in the evolution of IT operations monitoring and management. It's what IT management teams have been asking for ever since the advent of Big Data, when the speed and complexity of the IT estate surpassed the ability of humans to keep up. And for organizations that have invested in the technology, AlOps means something else: automation. Specifically, with AlOps IT operations teams can automate the processes that enable them to See, Contextualize, and Act on events in their environment.





AlOps' Virtuous Data Cycle

Delivering reliable IT process automations requires complete, accurate, and real-time data. That is only possible through comprehensive discovery of all systems, services, and applications operating in the IT estate. The SL1 AlOps platform is engineered to provide visibility across the entire agency, including legacy systems operating on-premises and assets operating in the cloud.

Discovering all an agency's network elements in real-time, consolidating and contextualizing in a single operational data lake, and applying that data to improve performance creates a virtuous cycle that ensures infrastructure health, availability, and reliability are always operating at maximal efficiency.





Data Is the Foundation

Data is the foundation of automation with AIOps, but "garbage in, garbage out" applies to the data used to support automation. When data is erroneous, incomplete, or obsolete, there is no way to ensure automated processes will be successful. But with SL1, IT operations teams can collect data from all sources, consolidate data in a single operational data lake, contextualize the data by identifying dependencies, use the data to generate meaningful insights, and then apply those insights to automate valuable IT workflows.

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Large Enterprise Case Study

One large, high technology manufacturing agency, using mostly legacy tools and manual labor to "keep the lights on," were determined to transform their approach to IT operations by leveraging the ScienceLogic SL1 AlOps platform to streamline operations and enable automation. Using a crawl, walk, run approach to demonstrate what's possible and build confidence.

Crawl

The first step was to discover all configuration items in the agency and use data from every device and service to create a unified data lake filled with complete, accurate, and contextualized data.

Walk

Then, by leveraging knowledge management data from their ITSM system, SL1 was able to see patterns and identify simple, repetitive processes that could be quickly automated. Troubleshooting was an area where SL1 was able to streamline decision making and action through automation, tackling simple tasks in moments, whereas human intervention might take many minutes.



Run

Finally, building on a base of early automations to demonstrate what's possible and cultivate champions within the organization, the customer built more complex IT workflow automations across both legacy on-premises and hybrid cloud infrastructure.

The results were massive gains in efficiency and reliability, including

5900%

Mean Time to Resolution (MTTR) improvement;

45%

of incidents automatically triaged and resolved; and

Operations productivity increases saving the company tens of millions of dollars.





Part Two What It Takes to Get Started Using an AlOps Platform

Data is king in AlOps. As discussed in Part One, it's a foundational requirement for managing IT operations and automating IT workflows. But achieving success with AlOps requires the right platform (SL1 for instance) and a planned approach to ensure your platform can discover all assets and to ingest all operational data. That includes things like log data, availability data, relationship data (which is often huge), performance data ("speeds and feeds"), and any variances of that same data. Once discovered and ingested, you can create an accurate topology of the infrastructure environment that allows you to evaluate the data through machine learning analytics to detect anomalies, understand root cause, and produce and automate actionable events.

A good AlOps platform is not merely a monitoring and management tool; it is a journey to IT operational efficiency. And as with any journey, you have starting point, and from there chart a course to your destination. Here's what it takes to get started with AlOps:





Data Integrations

Beyond discovery of the systems, services, and applications that comprise your IT infrastructure, an AIOps platform needs tight integrations with the data platforms you rely on to manage your agency, feeding them the clean data they need to perform at their best. There are common integrations with IT operations management (ITOM), IT services management (ITSM), application performance monitoring (APM), Security Information and Event Management (SIEM), and configuration management database (CMDB) vendors. These are table stakes for any AIOps platform.

But to be truly useful and support the full scope of IT operations, an AlOps platform must be able to integrate with every element of data flow across your IT environment. Only through deep visibility across all your technologies, applications, and services can you ensure consistent data across your management ecosystem and reliably automate IT workflows to keep pace with your business. That's why SL1 offers more than 500 out-of-the-box PowerPack integrations.



Executing Data Triage

When dealing with data at the speed and volume typical with a modern agency, the resulting increase in trouble signals can make people fearful that they will be overwhelmed. To prevent this from happening requires data triage that automatically eliminates redundant signals, identifies harmless anomalies, and prioritizes events that need attention while also providing vital insights—like root causes—through event enrichment.

With AlOps, when an event occurs it triggers a series of decisions and actions prebuilt into the system, including automations that can eliminate human intervention. For example, an event might prompt a several questions intended to diagnose a problem and its solution: Can you run a certain command? Pull an event log? Check settings? With SL1 all those steps and more can be triaged and automated, doing in moments what a human might take 30 minutes or more to accomplish.

SL1 automated triage





System Self-Healing

Ultimately, the ideal for automating IT workflows with AlOps is to achieve system self-healing. That means when X happens, AlOps automatically diagnoses and resolves the issue, and restarts the service. It also means that when a provisioning system spins up an additional instance, all the downstream effects are understood and accounted for. For example, load balancing when a service migrates from host Y to host Z and automatically changing DNS settings, etc.

Any time a ticket is opened, enrichments are runstamped on the ticket, changes are made based on the even. Then, the incident is resolved, and the ticket closed without a human ever having touched it. And because these things are done without human intervention, they are not only faster, but the risk of human error is minimized. Each decision is made through advanced analytics and with a complete, contextual understanding of the related impacts. With system self-healing, the agency can operate at full potential and employees, customers, and partners benefit from service availability. The results? Happy employees, satisfied customers, and a reliable digital supply chain.

Furthermore, the results inform the virtuous cycle of See, Contextualize, and Act, meaning ongoing process improvements occur as conditions change. And because AIOps generates and captures a complete audit trail in the ITSM system, the resulting insights are available to drive other decisions like lessons learned, postmortem discussions, and resource allocation.



Data Democratization

Another important aspect of an AIOps platform is the ability to transcend data's utility specific to the organization. Once data resources are discovered, dataflows ingested, and all data normalized in a single, unified data lake, that data must be rendered in a way that makes sense to organization using it. That means it must do more than merely support IT operations, but also be available and intuitively useful to carrying out the organization's mission and support the roles of individuals and departments within the organization. In other words, AIOps must support the organization's goals through data democratization.

SL1 does this by defining the data it ingests and adding the context necessary to help its machine learning algorithms understand relationships not only associated to what box speaks to what box, but also how those flows come together to support a certain mission or business function.



Security-by-Design

Finally, because your AIOps platform plays an integral role in the movement of data—including data relevant to network, system, and component performance—it's important that your chosen technology be engineered to be secure. SL1 by ScienceLogic is built with a security-by-design approach and tested rigorously. In fact, SL1 is certified by the Department of Defense Information Network (DoDIN) for operating in the most sensitive IT environments in the U.S. federal government—including infrastructure used for classified information and managed by the Defense Information Systems Agency (DISA).



Public Sector Case Study

In 2019, one of the largest federal agencies in the U.S. had to implement a near overnight shift to a remote work model because of Covid-19. The agency's network was already vast and complex, with 200 development projects and 1.5 million data elements operating across more than 1,200 locations at any time. And because the agency supports more than 19 million constituents, including health services delivery, the shift created a critical strain on bandwidth, service, and application performance.

Fortunately, the agency had already begun an IT modernization journey, including ScienceLogic's SL1 AlOps platform. However, because of the pandemic a planned years-long process had to

SL1 was essential to this customer for ensuring the success of their massive hybrid cloud environments. They leverage our platform to for monitoring performance and diagnosing issues as they occur. Upon completion, the project manager described the result as a "technical miracle."

be compressed into a matter of weeks. Instead of the usual crawl, walk, run approach, the agency had to go into a full sprint. The agency started by moving one of its largest and most mission critical systems to the cloud. That system included a major web-based application supporting about 4000 simultaneous users

and managing millions of digital documents.

Overview

480,000

employees (incl. 170,000 remote)

40,000

daily telehealth visits

1200 individual physical locations.

100 cloud applications w/4000 simultaneous users

800 million

digital documents

19 million constituents



Part Three Best Practices When Choosing and Using AlOps

AlOps is often referred to in generic terms, and many vendors claim to offer AlOps but without the full scope of features and capabilities true AlOps demands. An AlOps platform like SL1 from ScienceLogic is a powerful and highly capable IT monitoring and management technology that is at its best when applied to the specific needs of an IT environment. It is not a rigid tool that demands the user make accommodations to fit its limitations, but one that adapts to the needs and data specific to the user. Each data lake created by SL1 is unique to its agency, with contents normalized for accomplishing the organization's mission.

That said, there are several best practices that should be followed to get the most out of any investment in AlOps. These are best understood in the context of matching the needs of an organization with the platform's capabilities in areas like:

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Let's examine each a little more closely.



Integrations



Country of origin



Tool consolidation;



Proof of value



Scale

Scale may be the most important consideration if your organization is large and complex. Some AIOps platforms are engineered to work well for smaller agencies, but performance rapidly diminishes when deployed within larger IT environments, or when in instances when the scope includes multi-tenant applications (such as with MSPs) or for organizations distributed geographically.

With this in mind, it's important to not only evaluate your needs based on the current size of your IT estate, but whether plans include significant growth, either organic or through acquisition. With the latter, your AlOps platform may need to support not only a sudden increase in scale, but the infrastructure that comes with it.

69	Size
	Geography
**	Legacy tech
*	MSP/multi-tenancy
~~	Organic growth
ííÍ	M&A

Openness

Today's agencies rely on a variety of technologies old and new, and it's important that your AlOps platform be able to play nice with them all. That means supporting the same systems you are likely to encounter in whatever environment you find yourself in. AlOps platforms that don't support the widest variety of technologies—including legacy systems, cloud tech, software-defined service, and more—are of limited value.





Integrations

Related to openness, technology integrations are vital to maximizing the value of your investment in an AIOps platform. When evaluating your choices, it helps to take an inventory of the systems and tools your IT operations team already relies on. From there you can better determine whether a particular platform will be ready "out-of-thebox," of if there will be a significant amount of customization required.

Fortunately, ScienceLogic's SL1 AIOps platform already supports all the popular ITSM, ITOM, CMDB, APM, and SIEM vendors. And with more than 500 additional integrations available through PowerPacks, ScienceLogic supports the industry's widest variety of technologies.



Tool Consolidation

Tool consolidation is not a primary function of an AlOps platform, but the last thing your agency needs is more complexity. If your AlOps platform contributes to complexity by adding another tool to an already crowded box, you may want to reconsider. As a byproduct of adopting AlOps and specifically SL1 from ScienceLogic—you should expect to be able to eliminate many legacy IT monitoring tools. And while there may be a need to maintain some functional overlap, SL1 can deliver "single pane of glass" dashboard visibility and control for the tools you are running.



Futureproof

An important question to ask yourself when evaluating AIOps is, "Can I get a platform that supports my needs today?" Then follow that up with, "Will this platform meet my needs tomorrow?" While it is difficult to predict what the future holds, a vendor that has a track record of evolving with the changing technology landscape is important. ScienceLogic has an exceptionally good 20-year record of anticipating trends and seamlessly adapting to change. SL1 is engineered that way. We can support mainframes, Kubernetes containers, and everything in between with the same platform. And our growing array of 500+ integration PowerPacks ensures that our customers can keep pace with change.

Getting the Most Out of Your IT Infrastructure Investment | Sciencelogic 21



Security

No AlOps platform can be accurately described as a security product, but every AlOps platform should be a secure product. SL1 is. Our security-by-design approach, affirmed by our certification by the Department of Defense Information Network (DoDIN), means it can be trusted in commercial environments. What's more, by integrating with security tools like security incident and event monitoring (SIEM) platforms, SL1 can complement cybersecurity programs by providing clean, timely data for analysis in search for indicators of compromise, or erroneous settings that could put the agency at risk of a breach or leave it vulnerable to attack.



Country of Origin

Although this best practice may not be universally applicable, for organizations that work with the U.S. federal government or plan to—there may be a need to comply with regulations requiring that core technologies be sourced and developed by American vendors. ScienceLogic is a U.S. company, and SL1 is developed here. Furthermore, SL1 is DoDIN certified, approved for use in classified environments, and on the federal Approved Products List (APL) catalog.



Proof of Value

As a software solution, AIOps platforms are easy to demonstrate. And when evaluating your choices, a vendor should be able to demonstrate their platform within a customer environment. You should always ask for a demonstration within your environment so that you can see proof of value (POV) and get a sense of how the platform will work for you. Generalized descriptions of functionality may be helpful when a conversation begins, but there is no substitute to seeing a solution in action and in a context that is meaningful to the user.

Any AIOps vendor should be able to conduct such a demonstration, so come prepared with questions specific to your situation and ask to see the platform at work in response. Here are a few questions that can help to separate AIOps contenders from the AIOps pretenders:



Conclusion

An investment in AIOps is a major undertaking. It often precedes an organization's technology transformation and is a pivotal piece in enabling high value IT workflow automations, maximizing service efficiency, and improving the health, availability, and reliability of IT operations. ScienceLogic's SL1 AlOps platform is recognized by industry analysts and many of the world's largest, most complex agencies as the best option in the industry.

ScienceLogic and SL1 offer:

- Excellent customer and technical support
- A full scope of integrations \bullet
- Security by design
- Ease-of-use, and
- Built to last \bullet

Our technology, experience, and expertise are without peer in our industry.



ScienceLogic

About ScienceLogic

ScienceLogic enables companies to digitally transform themselves by removing the difficulty of managing complex, distributed IT services. Our IT infrastructure monitoring and AIOps platform (SL1) provides modern IT operations with actionable insights to predict and resolve problems faster in a digital, ephemeral world. The SL1 platform sees everything across cloud and distributed architectures, contextualizes data through relationship mapping, and acts on this insight through integration and automation. Trusted by thousands of organizations, ScienceLogic's technology was designed for the rigorous security requirements of United States Department of Defense, proven for scale by the world's largest service providers, and optimized for the needs of large enterprises.

For more information on the ScienceLogic SL1 platform and how it can enable your agency to ensure a positive digital transformation journey for your business