



SOLARWINDS

Simplify Cloud Migration and Modernization with SolarWinds and AWS

Addressing full-stack performance challenges in hybrid and multi-cloud environments



Table of contents

Navigating cloud modernization.....	3
AWS and SolarWinds—An easier path to innovation.....	4
Migration and modernization—What to look for in software solutions	5
Best practice #1: Streamline processes for more efficient operations.....	6
Best practice #2: Better allocate resources with time-saving automation.....	7
Best practice #3: Gain comprehensive understanding with observability	8
Best practice #4: See the broader picture with full visualization	9
Building the future of IT with security in mind.....	10
Scaling application modernization initiatives with Kubernetes.....	11
Strategic IT enhancements in government with SolarWinds.....	12
Simplify your cloud migration and modernization with SolarWinds and AWS	13

Navigating cloud modernization

The importance of informed migration and innovation strategies

Whether migrating to the cloud for the first time, setting up a multi-cloud environment, working around on-premises infrastructure, or modernizing an existing all-cloud environment, each scenario has intricate details and complexities that require careful planning.

Any infrastructure modernization necessitates an inventory of historic core systems and an understanding of how they will work with cloud-based innovations—and this is no small undertaking. Businesses need to identify the different deployed network technologies and network vendors. Looking at their portfolio of applications, businesses must sort through a mix of coding languages, databases, and architectures. They must also plan a path for new technologies, such as microservices, containers, and artificial intelligence (AI) where appropriate. Additionally, they should consider how changes and innovation will require new workflows and ensure sufficient overview (for example, moving toward a DevOps approach).

Underneath these factors are challenges around skills and staffing shortages, regulatory standards, security concerns, and service-level agreements (SLAs). If an organization decides that a completely new solution would offer more benefit than consolidating existing ones, it must find tools that don't require specialist skills or extensive training. Single-purpose tools can create operational silos among departments, which detracts from visibility and the much-needed observability that efficient modernization demands.

However, there are many opportunities to simplify what can be a complicated set of processes. This eBook offers guidance on how to reduce complexity, outlining four best practices: streamlining processes to boost efficiency, saving time with automation, unifying visibility, and better understanding data through visualization. It also provides guidance on the types of solutions organizations should consider for optimal migration to—and modernization on—[Amazon Web Services® \(AWS\)](#).



91%

of respondents said their IT infrastructure needs to be improved to support AI adoption¹

51%

of businesses cited understanding application dependencies as their top challenge regarding cloud migration²

58%

of organizations consider blind spots in today's modern networks—including cloud, tunnels, and databases—to be extreme challenges to full observability³

¹ Nutanix State of Enterprise AI Report, 2023.

² Application Infrastructure Modernization Trends, Enterprise Strategy Group, 2023.

³ 2023 IT Trends Report: Lessons From Observability Leaders, SolarWinds.

AWS and SolarWinds— An easier path to innovation

As more businesses choose to operate in the cloud, they are seeking ways to simplify their migration and modernization processes while also ensuring robust IT management across diverse infrastructures.

AWS and SolarWinds together deliver value and reduce complexity wherever you are on your digital transformation journey. SolarWinds on AWS combines the cloud provider's reliable infrastructure with comprehensive observability and IT management tools from SolarWinds, providing a seamless way to manage, monitor, and optimize IT resources.

SolarWinds helps AWS customers improve visibility, scalability, and security for their environments across multi-cloud, hybrid, and on-premises deployments. By leveraging the strengths of both platforms, organizations can achieve greater operational efficiency, reduce complexity, and accelerate their digital transformation journey, freeing up time and resources for greater innovation.

SolarWinds holds AWS competencies in DevOps ISV and Microsoft® Workloads and has 25 years of experience working with a broad range of popular technologies across the stack. By applying this expertise in cloud and traditional IT, SolarWinds helps customers take the most straightforward paths for migration and modernization to realize a quick time to value and accelerate innovation.



90%

of companies see cloud technology as essential for growth, digital transformation, and competitiveness in the marketplace⁴

71%

of organizations using observability solutions to support their critical priorities experience faster innovation⁵

54%

of respondents want to see more investment in business process platforms and tools to help streamline the work⁶

⁴ [Deloitte Future of Cloud Survey, 2023.](#)

⁵ [IT Trends Report 2023: Lessons From Observability Leaders.](#)

⁶ [State of Internal Tools 2023, Retool.](#)

Migration and modernization— What to look for in software solutions

To address the complexities of cloud migration and modernization, organizations need a long-term solution to manage their networks, systems, and IT infrastructure. When searching for that solution, they should prioritize the following capabilities and features:



Simplicity and scalability

Solutions should be straightforward to deploy and manage, with the ability to scale as the business grows. They should support geographical distribution to ensure global coverage, cost-efficient scaling, and compliance without sacrificing performance or security.

AWS has more than 100 Availability Zones across 36+ Regions around the world, allowing customers to scale globally while maintaining speed, reliability, and compliance.



Secure remote working

In today's hybrid work environment, solutions must securely facilitate remote work. This includes safe access to network and system resources, comprehensive data protection, and the ability to manage remote endpoints effectively.



Flexible applications and integration

A flexible cloud setup is foundational to achieving business agility. Solutions should offer a wide range of applications and integrations that let businesses aggregate and visualize all their data across different environments. This fosters more informed decision-making and streamlines operations.

SolarWinds Service Desk and Asset Management solutions integrate with more than 200 cloud applications.



User-friendly tools

Tools that democratize access and improve productivity are key to long-term success. They should be easy to use and not require special training, heavy manual customization, or a significant amount of specialized knowledge. Going this route lowers the barrier to entry for team members and reduces the time and resources needed for training.



Path to innovation

Businesses should choose solutions that offer a clear path for further modernization. This includes the ability to adopt new technologies such as AI and cloud-native architectures. These capabilities can drive efficiency, improve service delivery, and keep the business competitive in the long run.

Selecting software solutions that offer effective observability, database performance, and overall IT management is only the beginning—for the best results, organizations should follow some best practices throughout their implementation and optimization.

BEST PRACTICE #1:

Streamline processes and tools for more efficient operations

As hybrid and cloud environments evolve, organizations should try to minimize operational complexity and tool diversity, particularly when working around any limitations of legacy platforms and on-premises infrastructure. Overlapping capabilities, inadvertently redundant systems, poorly utilized assets, and unnecessary complexity can slow down operations and stand in the way of modernization goals.

While streamlining processes and tools requires an upfront investment, it yields long-term economic benefits such as lower maintenance and licensing costs. Beyond long-term cost reduction, simplification can reduce repetitive manual interventions. Organizations can also improve security and compliance by providing consistent and predictable environments that make it easier to monitor and enforce policies. Simplification can lead to increased agility, enabling organizations to respond faster to market changes and deploy new features or updates quicker.

Best practice in action

Create a strategy for implementing more efficient, unified, holistic IT operations processes and tools. Start by auditing the function of each current system, application, infrastructure, network, database, and tool. Once organizations discover the areas of overlap or duplication, they should assess whether consolidating existing resources—or transitioning to a new solution—would better serve their current and future needs.

- To control costs and minimize risks, it's crucial to have visibility into all cloud and on-premises assets. With the Network Discovery capability of SolarWinds Service Desk, organizations can discover, map, and monitor devices to **increase and consolidate visibility into asset information** from AWS. By aligning AWS resources with IT service management, businesses can automatically populate and update their configuration management databases. Additionally, they can enhance triage and root cause analysis by attaching AWS configuration information to incidents and problems, ensuring a more efficient resolution process.
- Take advantage of machine intelligence to optimize IT health and performance tracking. Using AIOps capabilities from SolarWinds, organizations can leverage AI across their environment, e.g., for database monitoring. This observes connections across application stacks and storage volumes, providing insights for informed decision-making. By utilizing machine learning and statistical models, organizations can **replace previously complex and manual processes** with rapid and accurate performance analysis. Auto-instrumented planning and optimization predicts capacity limits, facilitating proactive planning and resource optimization.

BEST PRACTICE #2:

Better allocate resources with time-saving automation

To address operational challenges, including staff skill shortages and high costs, organizations are increasingly using automation tools. By streamlining routine and time-consuming tasks through automation, businesses can allocate human resources toward more complex, high-value activities. However, companies must approach automation thoughtfully to ensure it aligns with their core business objectives and doesn't needlessly introduce new complexities or dependencies.

Automation offers a pragmatic approach to optimizing operations on the road to simplified cloud migration and modernization. It can significantly reduce manual workload, minimize errors, and enhance the speed of service delivery. However, to fully realize these benefits, organizations must carefully plan and implement automation initiatives, avoiding the common pitfalls of over-automation or misalignment with business goals.

"I can now sleep at night"—how Corevist achieved single pane of glass observability

Delivering superior customer experiences globally is all in a day's work for SAP® Commerce Cloud partner Corevist®. Corevist needed new capabilities to address latency, availability, and data correlation challenges to keep up with the evolving needs of its worldwide client base. SolarWinds Observability SaaS helps the Corevist team automate operations, gain deeper insights into component relationships, and reduce remediation time with single pane of glass visibility. [Read the full story here](#) on core strategic initiatives.

Best practice in action

Once organizations have audited their current system and identified targets for automation, prioritize the initiatives that will provide immediate and maximum value. Evaluate automation efforts based on how well they align with strategic objectives, which will help lead to meaningful improvements in efficiency and effectiveness.

When selecting processes for automation, aim for those that not only save time but also enhance operational quality and effectiveness. Prioritizing high-impact areas for automation allows businesses to more thoughtfully integrate technology that supports long-term success. This approach encourages a more nuanced understanding of the role of automation in organizations, focusing on value-driven outcomes rather than just efficiency gains.

- AIOps-based capabilities embedded into the observability and database product ranges from SolarWinds provide AI-driven insights to optimize IT operations. This helps identify patterns, predict potential issues, and automate problem resolution, which is essential for **maintaining operational efficiency and reducing downtime**.
- **Automating various aspects of their cloud operations** enhances businesses' efficiency and agility. Leveraging AWS serverless capabilities, such as AWS Lambda, lets companies automatically run code in response to events without provisioning or managing infrastructure, eliminating the need to manually manage servers or clusters. Many AWS services facilitate resource provisioning and application deployment, allowing companies to adapt quickly to changing market demands and operational requirements.

BEST PRACTICE #3:

Gain comprehensive understanding with observability

Observability is a critical capability for effective IT management. It provides operations teams with a comprehensive overview of networks, systems, infrastructure, databases, and applications. This is essential for optimizing security, compliance, and performance—and goes beyond traditional monitoring to offer a deeper understanding of the entire stack. Observability is key to identifying and resolving issues before they impact performance or security, improving the efficiency, resiliency, and compliance of IT environments.

By capturing data across various layers and components and then applying automation and machine intelligence to this data, observability provides the visibility organizations need into the complex interactions within and between their systems. With the right observability tools, IT functions can detect anomalies, predict potential failures, and understand the impact of changes.

Observability helps organizations drive cloud migration and modernization initiatives based on their needs, priorities, dependencies, and timelines. Comprehensive full-stack visibility helps teams automate, observe, visualize, and remediate across their hybrid, AWS, and multi-cloud technology landscapes. The unified view of entire application stacks from service to infrastructure helps to ease the adoption of new technologies, facilitating cloud migration and application modernization.

Best practice in action

A robust observability capability relies on comprehensive monitoring to collect and add intelligence to data across all facets of IT environments. With those insights, businesses can investigate issues and interactions for a deeper understanding of their solutions. In short, observability tools allow companies to transform raw data into actionable intelligence to identify trends and potential issues earlier. Continuously applying observability practices boosts system reliability, performance, and overall user satisfaction.

- SolarWinds offers a **choice in deployment topologies**. SolarWinds Observability Self-Hosted is a good fit for traditional environments and works well for remote locations and secure or sensitive workloads. SolarWinds Observability SaaS is designed for the needs of cloud-native DevOps teams.
- Deploying SolarWinds Observability Self-Hosted and SaaS together allows businesses to integrate advanced AIOps capabilities into their IT environment. These tools help correlate metrics, pinpoint anomalies, and **streamline the entire troubleshooting process**. Organizations can also use the database observability features within SolarWinds Observability to gain specialized insights into database health and performance to maintain well-optimized databases that are aligned with broader IT goals.

BEST PRACTICE #4:

See the broader picture with full visualizations

Visualization is not just an add-on; it's an essential element that complements observability by turning complex data into clear, actionable insights. Observability provides the depth of data needed to understand system behaviors and performance metrics—but without effective visualization, the vast streams of data can become indecipherable. Visualization bridges this gap, translating intricate datasets into comprehensible, visual formats that allow quicker, more informed decision-making.

With the proliferation of solutions, IT professionals face the challenge of sifting through an avalanche of data across various platforms and tools. Here, visualization serves as a linchpin, providing a unified, coherent view of disparate data sources. It's not just about presenting data; it's about transforming it into a narrative that guides IT professionals to identify trends, pinpoint issues, and understand the interplay between system components, thus enhancing troubleshooting, performance, and security.

Best practice in action

Effective visualization goes beyond simplifying complex IT environments—it helps teams quickly identify and resolve issues. By centralizing diagnostic data and employing scalable visualization tools, organizations can manage growing data complexity and add to their ability to diagnose problems swiftly. Providing teams with intuitive visual tools empowers even non-specialists to analyze trends, drill down on issues, and understand dependencies.

- Provide **anomaly detection and expert advice** with SolarWinds Database Performance Analyzer. This tool supports a broad range of databases within a single pane of glass, for both cloud and on-premises environments.
- PerfStack is an innovative feature from SolarWinds that allows users to overlay performance and event data from **multiple sources onto a single, correlated timeline**. This visualization aids in pinpointing the root causes of complex issues by showing how different system components interact over time, streamlining the troubleshooting process.
- Deliver customizable visualization options so that IT teams can monitor system health and performance effectively. By providing **a unified view of infrastructure and applications**, SolarWinds Observability allows businesses to prioritize issue resolution and support strategic decision-making, keeping IT environments as optimized as they are resilient.

Building with the future of IT security in mind

Security is a critical priority for all IT organizations. For any security strategy to have longevity through innovation, it must be applied across employee processes, infrastructure, and software development.

SolarWinds has embedded Secure by Design as a guiding principle, helping enhance the strength of its security framework in several ways:

- Developing a resilient “Next-Generation Build System” environment
- Going beyond Zero Trust with an “assume breach” mindset
- Improving security through transparency, and taking a community approach to cyber resiliency

Security best practice in action

SolarWinds is ISO 27001:2013 certified and is annually certified by external auditors. SolarWinds has adopted the comprehensive Information Security Management System (ISMS) framework as the foundation for its Information and Cybersecurity processes. The framework has enabled SolarWinds to achieve secure, reliable IT operations; secure software design, development, and deployment; and improved and proactive third-party risk management.

Evolving with technology: The Next-Generation Build System

SolarWinds has advanced its security and build processes to become an industry leader in secure software development. At the core of this initiative is its Next-Generation Build System, which employs a triple-verification process utilizing three isolated and distinct build environments for the company’s software build and deployment.



Start with the security of AWS infrastructure

AWS infrastructure is built and managed according to security best practices and standards. Businesses that operate on AWS enjoy redundant and layered controls, continuous validation and testing, and effective automation that monitors and protects underlying infrastructure 24/7. AWS was designed to accommodate the security requirements of the most regulated industries and their sensitive data, including healthcare, finance, and government. While AWS is responsible for the security of the cloud, customers are responsible for security in the cloud. Organizations can choose from a broad range of options from AWS and deep integrations with a long list of third-party providers. This flexibility and agility make it easier for businesses to implement the services and solutions they choose for securing their workloads.

Scaling application modernization initiatives with Kubernetes

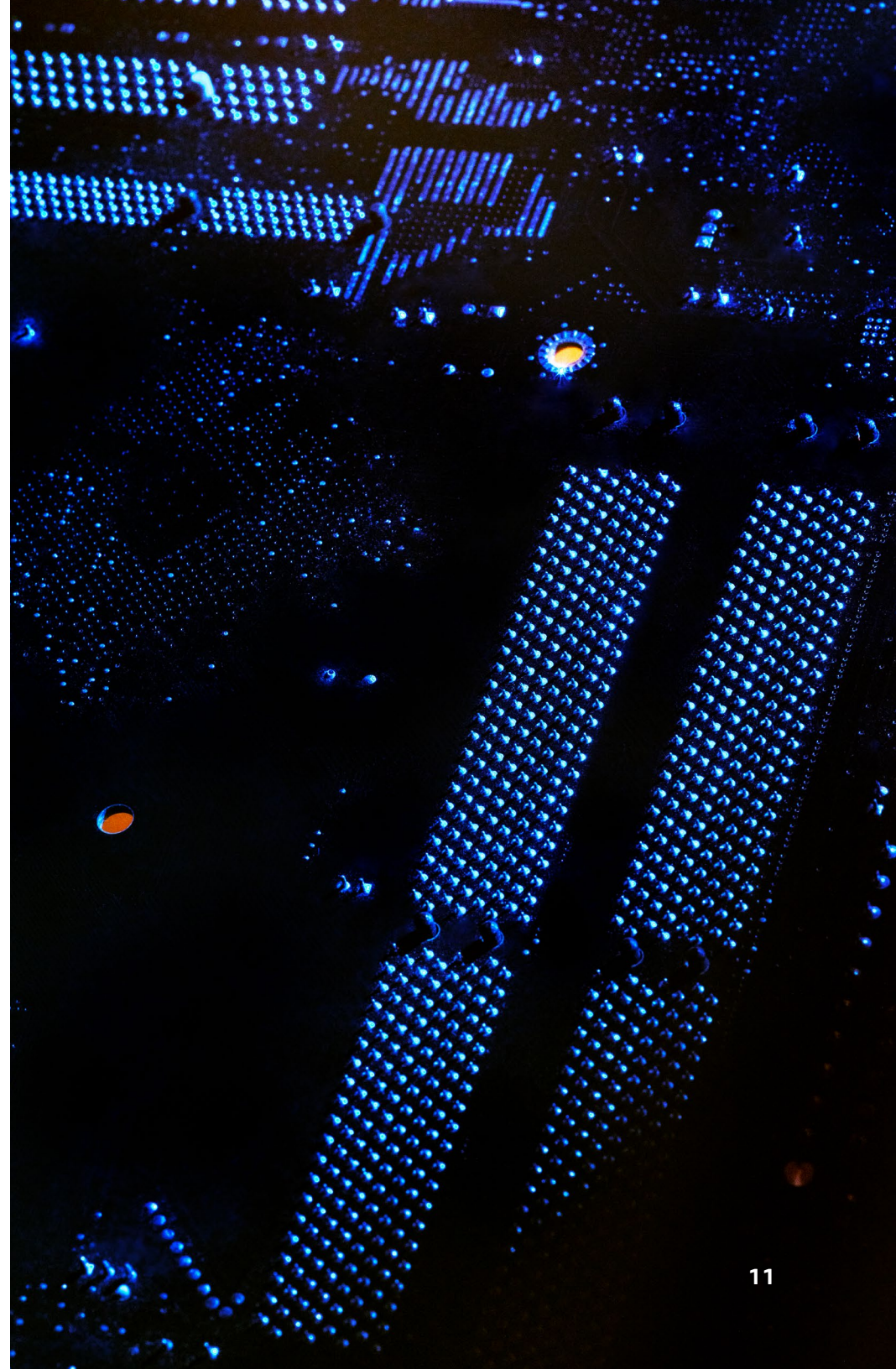
Kubernetes is a widely used container orchestration platform that's particularly popular with cloud-native teams embracing a DevOps approach. Organizations building modern applications often use microservices for improved productivity and reliability and deploy the application to Kubernetes for scalability and resilience.

Amazon Elastic Kubernetes Service (Amazon EKS), a managed service that lets companies start, run, and scale Kubernetes in the cloud and on-premises, is a popular environment for this microservice architecture. By adopting Amazon EKS, businesses can accelerate their modernization efforts thanks to a scalable, reliable, and efficient platform that drives innovation and growth. This supports a wide array of other modernization initiatives, from application migration to full-scale digital transformation.

Observability solutions from SolarWinds

While AWS is responsible for the security of the infrastructure on which Amazon EKS runs, organizations are responsible for securing their workloads. In the context of microservices, this can require a dynamic monitoring solution that ensures the performance and health of the platform.

SolarWinds Observability SaaS offers real-time monitoring and analysis for Amazon EKS to deliver visibility and control over containerized environments, simultaneously collecting data on the applications running inside clusters and the containers being spun up and down. Alongside monitoring and troubleshooting their environments, this empowers teams to optimize their Amazon EKS deployments for security, performance, and business alignment.



Strategic IT enhancements in government with SolarWinds

In the public sector, where the stakes include national security, citizen services, and regulatory compliance, IT modernization is a strategic priority as much as it is an operational necessity.

SolarWinds solutions are designed to empower government agencies with better visibility, comprehensive security, and improved performance management. These tools are pivotal for agencies aiming to balance infrastructure modernization with stringent security measures, while maximizing scalability and flexibility.

SolarWinds and AWS GovCloud for the public sector

Integrating SolarWinds with AWS GovCloud enables agencies to benefit from a secure, compliant cloud environment, designed to accelerate modernization and enable security. SolarWinds offerings combined with the capabilities of AWS GovCloud present a powerful solution for public agencies looking to modernize while maintaining a strong security posture. These solutions facilitate a holistic view of IT environments, streamline compliance processes, and support a proactive approach to cybersecurity—all crucial for effective public service in today's digital age.

The VA enhances IT operations and service delivery with SolarWinds

The way the Department of Veterans Affairs implemented SolarWinds is a testament to how targeted IT solutions can revolutionize government operations. With comprehensive monitoring capabilities, the VA significantly reduced alert noise, allowing its IT team to focus on critical issues and enhance system performance. This led to faster troubleshooting, improved application performance, and a more reliable IT infrastructure, directly benefiting service delivery to veterans. SolarWinds also supported the VA as it navigated a complex IT landscape, helping secure systems and optimize efficiency and effectiveness. Ultimately, the VA set a benchmark for other public sector entities looking to modernize their IT frameworks and maintain a strong focus on security and service quality.



3 ways government agencies can avoid multi-cloud chaos

- 1** Implement single-pane-of-glass observability. Full-stack visibility makes it easier to monitor network, database sources, infrastructure, and application data from a single vantage point.
- 2** Assess the requirements and characteristics of each workload to determine which ones should run on which cloud platforms. Consider dependencies, data sensitivity, compliance regulations, performance requirements, and costs.
- 3** Containerize applications and databases for seamless portability across different cloud environments without compromising performance. This approach helps control costs and simplifies the process for DevOps teams to test various applications across multiple clouds.



SOLARWINDS®

Simplify your cloud migration and modernization with SolarWinds and AWS

SolarWinds offers unified observability that simplifies monitoring and management of AWS resources. In tandem with applying the best practices outlined in this ebook, SolarWinds helps businesses make sense of even the most complex environments for optimal performance—from business-critical systems hosted in the AWS Cloud to hybrid or on-premises environments.

Simplify your modernization journey by visiting [SolarWinds in the AWS Marketplace](#) ›

