DevOps.com WEBINAR

AWS Well-Architected: Build Better Architecture, Better Business

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Meet the Speakers

Matt Yanchyshyn
Director, Solutions Architecture

JT Giri
CEO & Founder

John Ray
Director, Solutions Engineering

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Amazon Web Services (AWS) is the world's most comprehensive and broadly adopted cloud platform, offering over 175 fully featured services from data centers globally. Millions of customers—including the fastest-growing startups, largest enterprises, and leading government agencies—are using AWS to lower costs, become more agile, and innovate faster.

nOps

nOps is a SaaS cloud management platform designed to help rapid-growth companies build, monitor, and run a well-architected AWS infrastructure that is secure, cost-optimized, reliable, efficient, and operationally excellent. And, to help you keep it that way.

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awsmarketplace

AWS Well-Architected

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Agenda

Are You Well-Architected?

The AWS Well-Architected Framework, Customer Results

Cloud Financial Management

Key Updates to the AWS Well-Architected Framework

Making Well-Architected Actionable

nOps Demo & Audience Q&A

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AWS Well-Architected

Are You Well-Architected?

Matt Yanchyshyn
Director, Architecture Best Practices
Amazon Web Services

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When you look at the systems you or your customers are building, can you answer the question:

“Are you Well-Architected?”

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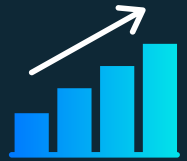
Why does Well-Architected exist?

To drive better outcomes for customers who build and operate workloads in the cloud

Learn

Measure



Improve

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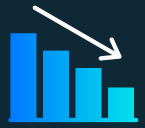
Why AWS Well-Architected Framework?

Build and deploy faster



Lower or mitigate risks

Make informed decisions

Learn AWS best practices

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What is the AWS Well-Architected Framework?

Pillars

Design principles

Questions

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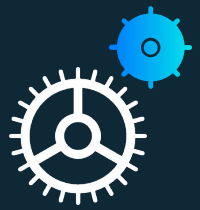
Pillars of AWS Well-Architected



Operational Excellence

Security

Reliability

Performance Efficiency

Cost Optimization

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Design principles

General
design principles

Pillar-specific
design principles

Automate responses to security events: Monitor and automatically trigger responses to event-driven, or condition-driven, alerts

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Questions

Failure management

REL 7 How does your system withstand component failures?

If your workloads have a requirement, implicit or explicit, for high availability and low mean time to recovery (MTTR), architect your workloads for resiliency and distribute your workloads to withstand outages.

Best practices:

- **Monitoring is done at all layers of the workload to detect failures**: Continuously monitor the health of your system and report degradation as well as complete failure.
- **Deployed to multiple Availability Zones; Multiple AWS Regions if required**: Distribute workload load across multiple Availability Zones and AWS Regions (for example, DNS, ELB, Application Load Balancer, API Gateway).
- **Has loosely coupled dependencies**: Dependencies such as queuing systems, streaming systems, workflows, and load balancers are loosely coupled.
- **Has implemented graceful degradation**: When a component's dependencies are unhealthy, the component itself does not report as unhealthy. It can continue to serve requests in a degraded manner.
- **Automated healing implemented on all layers**: Use automated capabilities upon detection of failure to perform an action to remediate.
- **Notifications are sent upon availability impacting events**: Notifications are sent upon detection of any significant events, even if it was automatically healed.

Pillar area

Question

Context

Best practices

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Are you Well-Architected?

Operational Excellence

Security

Reliability

Performance Efficiency

Cost Optimization

Review process

Consistent

Technology portfolio

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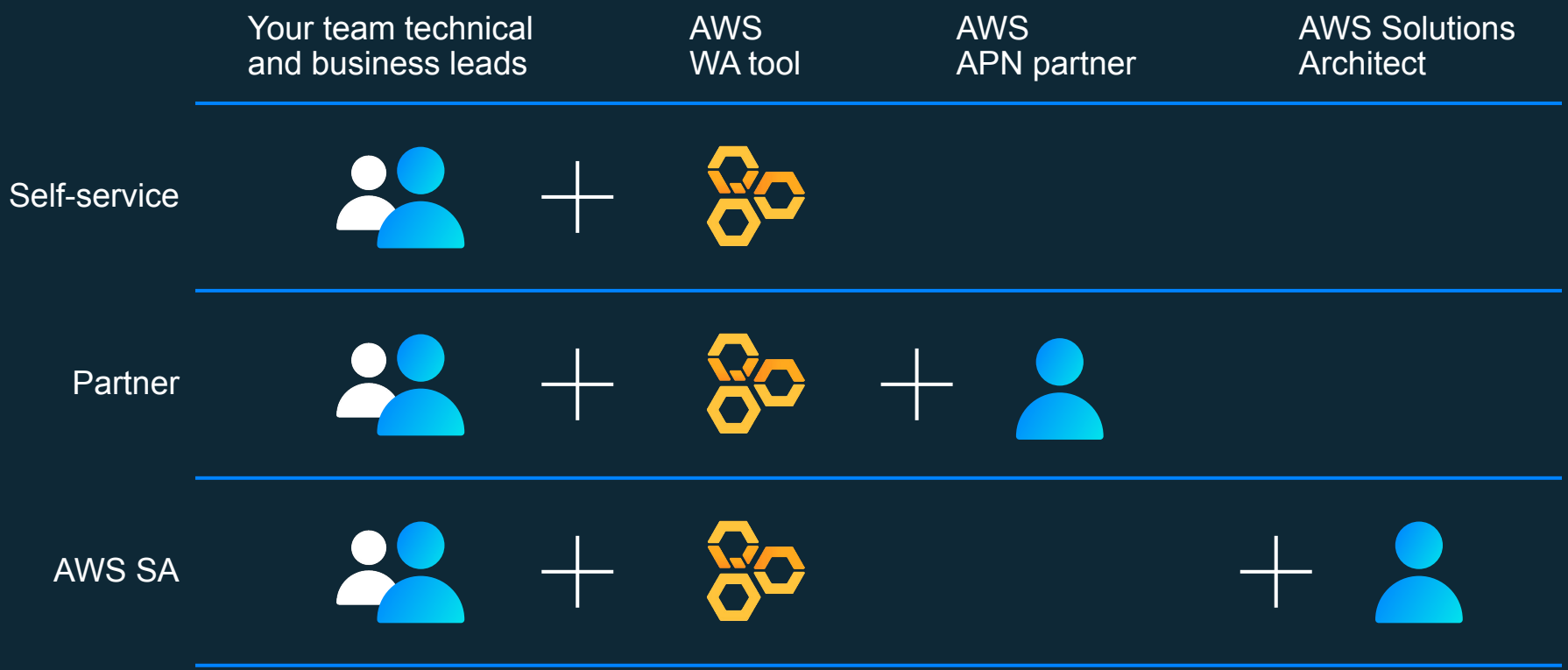
Review choice



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Thousands of customers are using AWS Well-Architected

"The Well-Architected Review process helped us see where we were on track and enabled us to check off what worked. But, more importantly, it gave us critical feedback to improve our platform since we're always looking at how to serve our customers better."

– Raja Nadar, Principal Software Engineer, Expedia

"Developers don't have to find an expert to say, is this good enough? We can build patterns that are directly related to the best practices from the Serverless Lens of the Well-Architected Framework."

– Matt Coulter, Technical Architect, Liberty Mutual

"There have been a couple of different benefits. One is certainly using a data-driven approach to drive the evolution of our architectures. Then, there's the engagement we've had with our teams. We're bringing visibility to the great work that our teams are doing, and also uncovering some opportunities for us to make improvements around modernization or simplification, reducing technical debt."

– Gene Mohan, Director of Architecture, Cox Automotive

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Cloud Financial Management

John Ray
Director, Solutions Engineering
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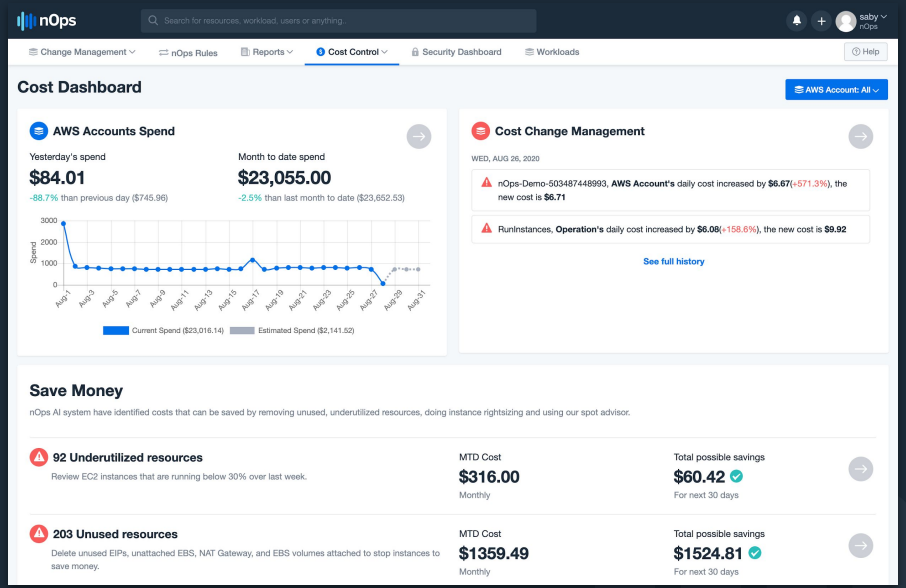
Cloud Financial Management

Cloud Financial Management (CFM) enables organizations to realize business value and financial success as they optimize their cost and usage and scale on AWS.

- Functional Ownership
- Finance and Technology Partnership
- Cloud Budgets and Forecasts
- Cost-Aware Processes
- Cost-Aware Culture
- Quantify Business Value Delivered Through Cost Optimization



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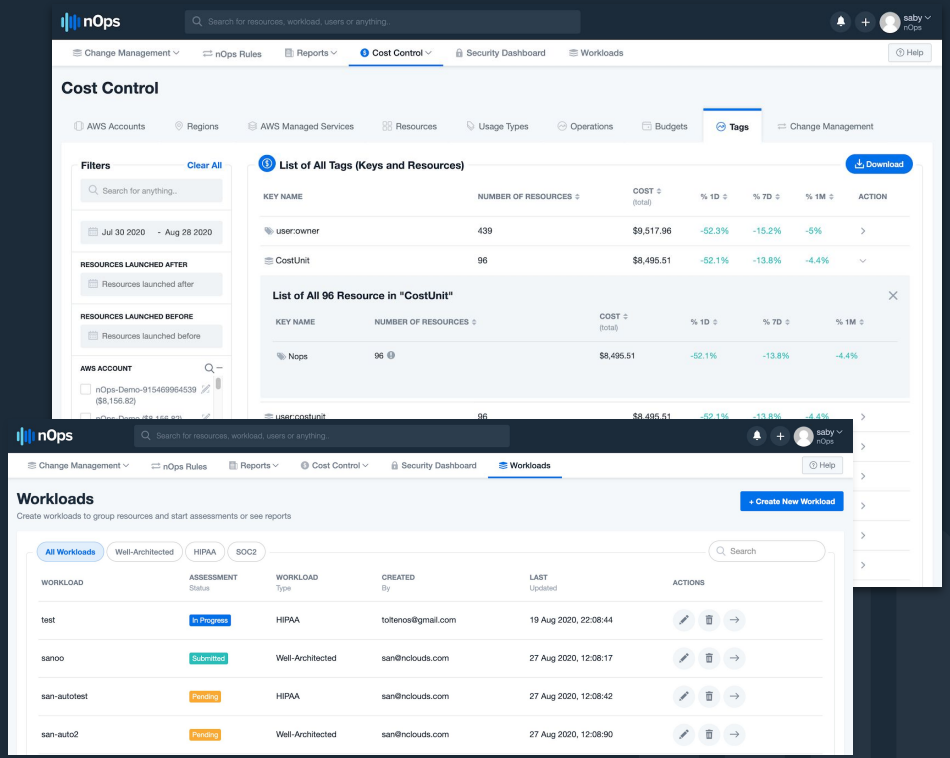
Functional ownership

Cost Optimization Function

“Person, team, or currently existing group, who is/are given the responsibility and authority to drive a culture of cost optimization within your organization.”

Requires executive sponsorship and knowledge across domains

- Project management
- Data science
- Financial analysis
- Software/infrastructure development



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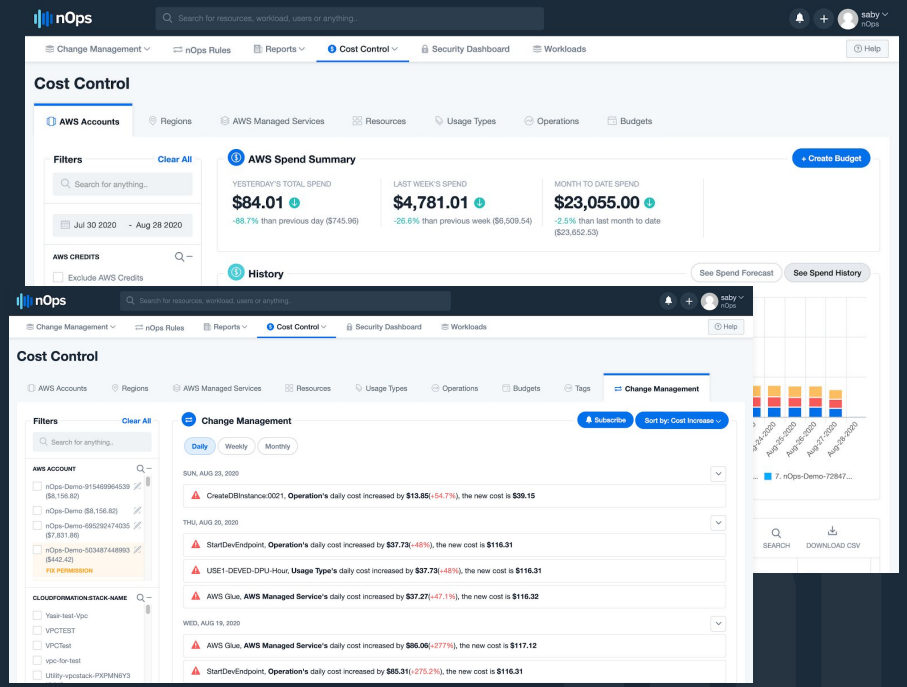
Partnership

Technology and financial leaders MUST work together to achieve the shared goals of the business.

- Have near real-time visibility into cost and usage
- Establish a standard operating procedure to handle cloud spend variance.
- Act as strategic advisors with respect to how capital is used to purchase commitment discounts, and how the cloud is used to grow the organization.
- Existing processes are used and improved.
- Collaborate on forecasting future AWS cost and usage to align/build organizational budgets.
- Have a shared language, and common understanding of financial concepts



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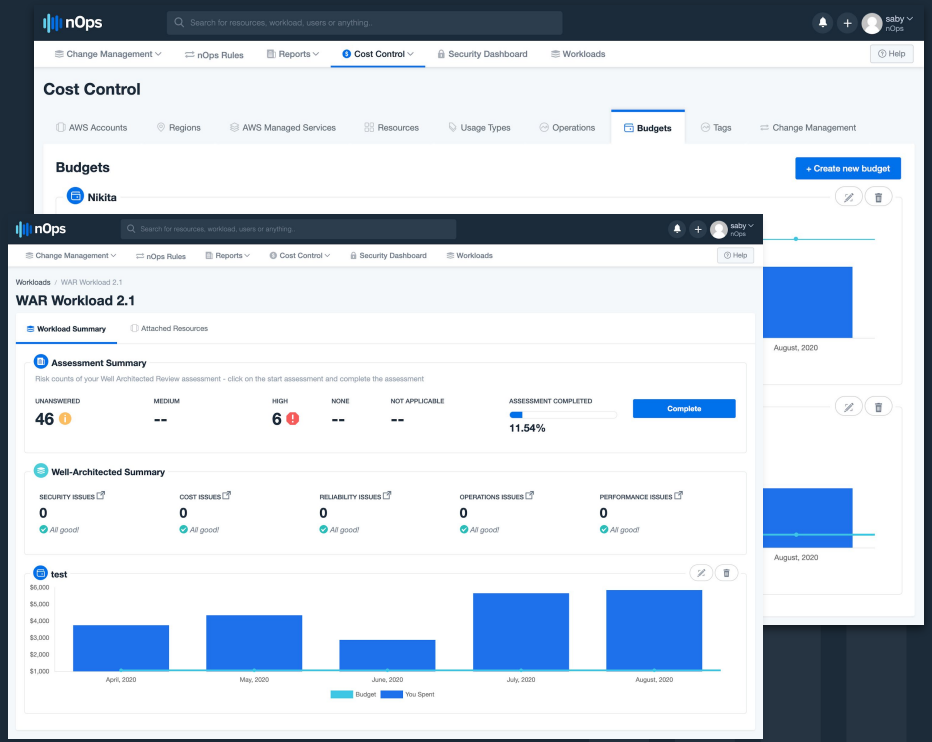
Budgets

Cloud spend is extremely variable.

- Workloads scale, prices change, new services are released
- Existing budgeting processes aren't going to be able to handle that much volatility.
- Using a combination of historic trends and business drivers to actively keep track of your budgets.
- Set budgets for more than just overall spend.
  - Workloads
  - Services
  - Regions
  - Network traffic



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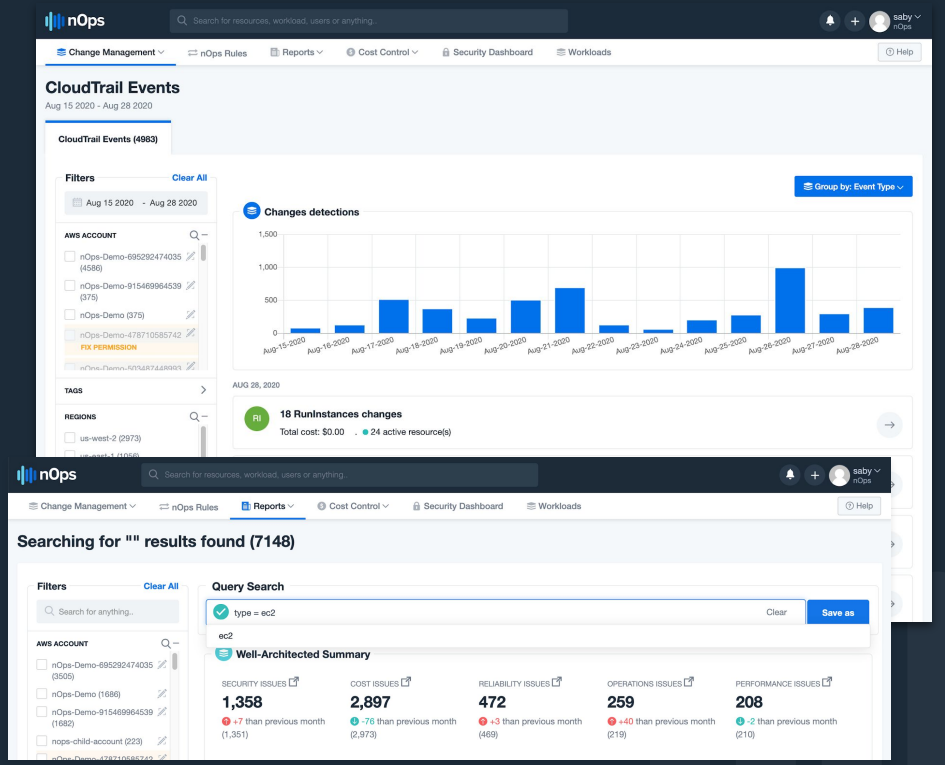
Cost-aware processes

Just like security, you must incorporate a cost component into your business process.

- Quantify the cost of change in your CM process.
- Make cost a core competency for your business.
- Learn to dive deep for Root Cost Analysis.
- Consider ROI when making technology decisions.
- Train for cost awareness.



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Cost-aware culture

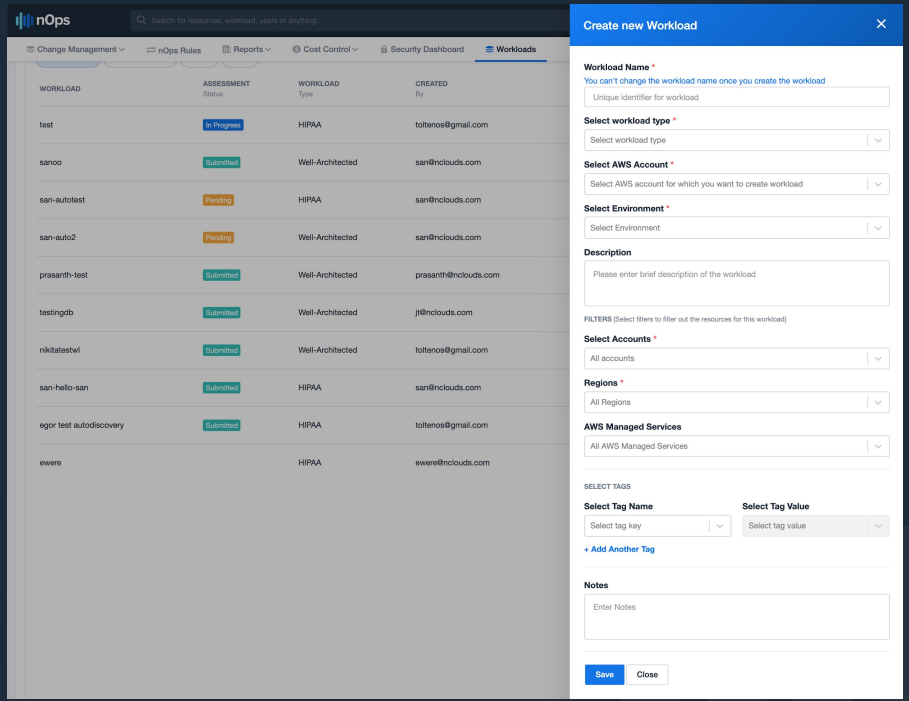
A cost aware culture allows your organization to move rapidly.

Cost doesn't need to become a roadblock to innovation.

Place enabling constraints on the system.

Creativity often comes from these constraints.

- Gamify
- Reward
- Adapt



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Quantify the value

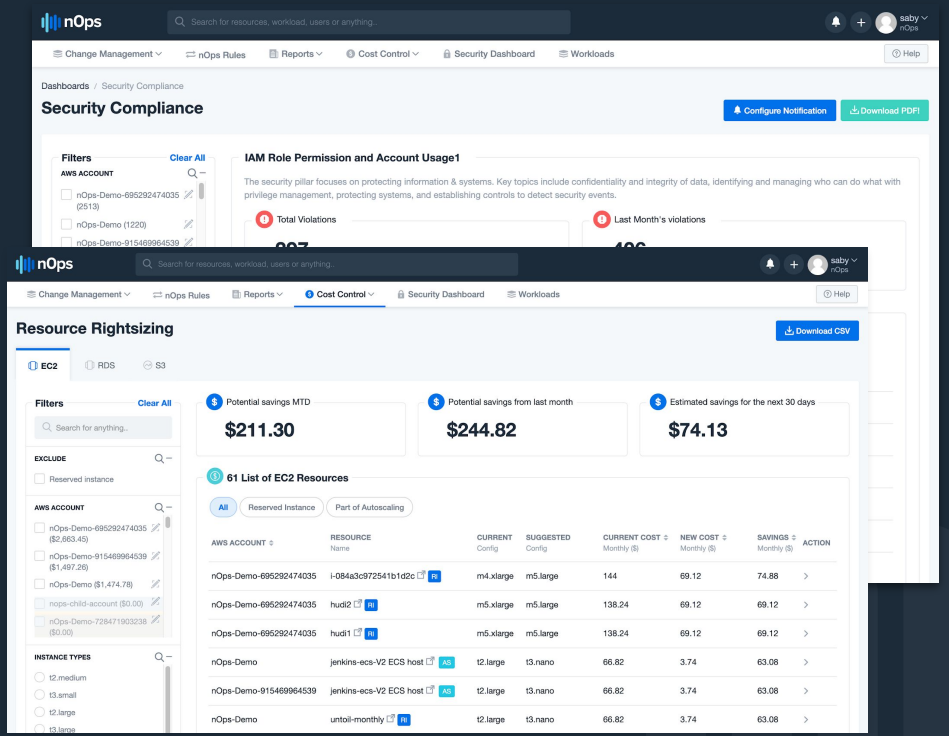
It’s not enough to have all the data if that data has no meaning.

Quantify and make public your cost optimization practices and results.

Associate cost savings to efficiency metrics.

It’s not always about savings.

- Savings in one place might mean you can hire a new developer.
- Automate a mundane process and free up time.



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Making Well-Architected Actionable

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DEMO

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Uber reduces cost, manages change to support the speed of business.

Challenge

- Manage dynamic change in the AWS environment at Uber Advanced Technologies Group – without slowing high-velocity teams.
- Gain actionable insights into the impact of changes to cost, security, performance, reliability, and operational excellence.

Outcome

- **Cost optimization** – Saved 15% in the first 30 days.
- **Chargebacks** – Allocate cloud infrastructure costs at a highly granular level of detail.
- **Anomaly detection** – Get automated, ML-driven alerts with the ability to drill down to the resource level.

View On-Demand Webinar:
https://www.nops.io/resources/webinar_aws_cost_optimization_uber

Uber

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Typical 18-50% cost savings after hundreds of reviews

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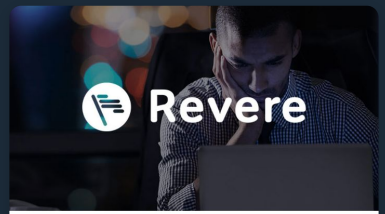
nOps case studies



CLIENT STORY

Revere Intelligence

How nOps helped Revere reduce cloud costs by 30%. Learn how nOps continuously optimizes costs and enhances security and compliance.

READ CASE STUDY →

CLIENT STORY

Onriva

nOps helps innovative online travel service reduce AWS cloud costs by 35% while improving scalability to support rapid business growth.

READ CASE STUDY →

CLIENT STORY

6Connex

How nOps helped 6Connex reduce AWS cloud costs by 50%, and comply with security best practices to meet the ISO information security standard.

READ CASE STUDY →

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Next steps – AWS Well-Architected Review

- Identify high-risk issues (HRIs) immediately.
- Optimize AWS costs – typically 18-50% cost savings.
- Customer credits for Well-Architected issue remediation.*

** From AWS, when you proceed with remediation within 30 days of an AWS Well-Architected Review.*

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nOps Resources

nOps Free Trial
https://www.nops.io/nops-partner-network

nOps Case Studies
https://www.nops.io/case-studies/

APN Blog Post – AWS Well-Architected, by JT Giri
https://aws.amazon.com/blogs/apn/how-aws-well-architected-reviews-can-drive-a-customer-first-culture/

How Uber Reduced AWS Costs 15% in 30 Days
https://www.youtube.com/watch?v=l71v9vOUOnk&feature=youtu.be

451 Research Report – nOps
https://www.nops.io/resources/others/451-Research_Reprint_nOps.pdf

Video – Get Well-Architected for Continuous Compliance & DevSecOps
https://youtu.be/XStg5kk0lsY

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Q&A

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Q&A

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