6 Automations to Accelerate IT Operations

An eBook from

RESOLVE

With Transformation, Comes Challenges

The role of IT teams continues to expand and evolve as digital transformation accelerates. Technologies such as cloud, virtualization, edge computing, microservices, and containers have now entered a phase of mass adoption and are being implemented at unprecedented rates while staffing has remained flat for most IT teams. Overburdened IT organizations are struggling to keep up with the scale of their infrastructure and the diversity of the technologies they support.

The conundrum persists: how do you deliver quality IT services faster and expand digital transformation initiatives without increasing costs or headcount? This eBook will demonstrate how forward-thinking IT organizations are addressing these challenges today with automation.

We'll explore six critical automations that we think every IT team should prioritize to accelerate their operations and overcome common challenges, including:

- Lack of visibility across systems, environments, and tools

- Difficulty meeting SLAs and expectations for perfect reliability and performance

- Increasing alarm noise and data volumes

- Rising MTTR and support costs

- Supporting the rapid shift to work-from-home

- Overcoming obstacles stemming from distributed IT teams, including governance and process issues

In the following pages, you'll gain real-world insights into how automating around six key areas can help you optimize resources, lower costs, and improve customer and employee satisfaction.

Operational Challenges Facing IT Organizations Today

IT teams face a myriad of operational challenges right now. Some have intensified in the wake of the pandemic. Others are brand new. And some remain status quo. Let's explore some of the most common challenges.

Inconsistent Processes Across Departments and Teams

In a Resolve poll, 62 percent of respondents cited inconsistent processes as a challenge. Standardizing procedures and streamlining workflows can be difficult to achieve despite the downstream gains in productivity, efficiency, and service quality.

In some cases, the difficulty can be chalked up to the many technical variations presented by complex, dynamic IT environments. In other cases, different teams simply employ different processes that are never shared across your organization. The pandemic has further amplified this problem as teams are working remotely, making consistency more challenging than ever before.

Without the right tools in place, it's easy to find yourself reinventing the wheel and investing countless hours to craft, customize, and support unique processes across the business. This limits your organization's scalability and capacity to quickly rollout new applications and services that will improve experiences while driving efficiencies that help the business grow.

Lack of Visibility Across Systems, Environments, and Tools

Traditional processes are no match for today's multi-layered, hybrid IT environments with their dynamic applications and services. Without full-stack, cross-domain visibility and deep knowledge of how applications and infrastructure are connected, day-to-day management is a difficult task, much less pinpointing the root cause of problems when they occur.

In many organizations, IT teams rely on outdated domain-centric tools to contend with siloed infrastructure – forcing them to swivel-chair between multiple monitoring tools and attempt to correlate thousands of data points by hand to identify relationships between services and CIs. Not surprisingly, it's almost impossible to rapidly diagnose and resolve system issues or make changes confidently under these circumstances.

Difficulty Meeting KPIs and Performance Expectations

IT teams are expected to keep operations up and running 24x7 with near perfect performance. In fact, expectations oftentimes exceed SLAs. Even one prolonged outage or slowdown in performance can significantly damage trust and your core business.

With the "acceptable level" of system availability now at 99.99 percent uptime (less than six minutes of downtime per year), the pressure couldn't be greater. Outages in 2021 alone in Microsoft Azure, IBM Cloud, Amazon Web Services, and Github remind us that even well-maintained IT environments are vulnerable to system disruptions.

Data Security and Compliance

Ever-present cybersecurity threats are top of mind for both enterprises and service providers. According to a survey by Forrester, 57 percent of enterprise respondents suffered at least one data breach in the past 12 months.

While some of these breaches can doubtlessly be attributed to newer, more sophisticated threats, many are well known. In fact, Gartner predicts that 99 percent of vulnerabilities exploited through 2020 were known to security and IT professionals. It's not that they aren't aware of the threats; they simply don't have the resources to keep up with investigating vulnerabilities, patching systems, and manually filtering through event data.

Regardless of the cause, it's only a matter of time before disaster strikes for most organizations. To combat these threats, you need security policy enforcement, robust incident response plans, and rapid-response patching capabilities, as well as audit trails that meet compliance and regulatory requirements.

Rising MTTR and Support Costs

As infrastructure complexity has exploded, so have the number of incoming alarms and events. With thousands of notifications streaming in every day from the numerous monitoring tools that have been deployed, separating the signal from the noise has never been more difficult. It's no longer possible to manually make sense of this data to determine which incidents need immediate attention and which ones are just false alarms.

As a result, IT teams are seeing increases in mean-time-to-acknowledge (MTTA) and mean-time-to-resolution (MTTR). Meanwhile, incident escalation is also on the rise, making it more costly without commensurate gains in response times.

And That's Just the Tip of the Iceberg...

In addition to these challenges, organizations are also struggling with those brought about or amplified by the pandemic, including the need to reduce costs or keep resources flat while increasing infrastructure, pressure to accelerate digital transformation initiatives, risks related to tribal knowledge being held by a select few, and IT governance in a distributed world. Luckily, automation can help with all of this.

Forward-Looking IT Organizations Are Overcoming These Challenges

WHAT'S THEIR SECRET?

Intelligent automation paired with artificial intelligence for IT operations (AIOps).

Transformational IT leaders are leveraging automation and AIOps to help them overcome the challenges presented by today's infrastructure and operations complexity.

Harnessing intelligent automation enables IT to automate thousands of processes every day, ranging from high-volume repetitive tasks to incredibly complex processes and service offerings. AIOps provides rich insights by applying machine learning to aggregate, analyze, and contextualize immense amounts of data from a wide variety of sources, which in turn offers the visibility that IT teams need to be successful.

"The pandemic accelerated a default-is-digital requirement demanding digitized business and IT processes. IT leaders must recognize that hyperautomation is pervasive and a mandate for achieving business outcomes."

— Gartner, Top Strategic Technology Trends for 2021: Hyperautomation

"In 2021, digital transformation at more than three-quarters of enterprises will focus on automation… Advances in artificial intelligence (AI), changes to work patterns as a result of the pandemic, and a fierce global recession have made this drive for automation inevitable — and irreversible."

— Forrester, Predictions 2021

How Will You Benefit from Automation + AIOps?

Automation and AIOps enable you to optimize your resources and lower costs while improving digital experiences. Here's a closer look at how these technologies impact key business objectives:

COST REDUCTIONS

- Reduce costs by automating time-intensive, repetitive tasks and processes
- Lower support costs by minimizing escalations and empowering front-line analysts to handle more incidents and service requests ("left-shifting")
- Increase infrastructure under management on a per person basis

STREAMLINED INCIDENT RESPONSE

- Accelerate mean-time-to-identify (MTTI) and mean-time-to-resolution (MTTR) by automating diagnostic and remediation actions and processes
- Quickly diagnose problems with complete visibility into complex IT environments and an accurate CMDB
- Fix issues autonomously, avoiding outages altogether or reducing resolution time from hours to seconds

IMPROVED PERFORMANCE & RELIABILITY

- Perform proactive health checks to prevent problems before they impact the business
- Automate ongoing maintenance tasks to improve performance and reliability

IMPROVED CUSTOMER & EMPLOYEE EXPERIENCE

- Provide self-service options by combining automation with chatbots and virtual agents
- Eliminate dreaded, repetitive tasks, and free up resources for more innovative work

PROCESS OPTIMIZATION

- Standardize procedures and workflows regardless of technical variations, to achieve repeatable, consistent, and streamlined operations
- Reduce human error by automating complex processes

GOVERNANCE & COMPLIANCE

- Maintain audit trails and automate documentation for compliance
- Enforce best practices designed by subject matter experts by encoding them in automations that can be implemented at scale

FOR SERVICE PROVIDERS, AUTOMATION AND AIOPS CAN ALSO HELP:

- Achieve faster time to revenue by onboarding new customers quickly and seamlessly
- Increase revenue by quickly delivering new, innovative services
- Improve customer satisfaction, reduce churn, and eliminate penalty costs by accelerating service delivery and improving performance to consistently meet SLAs

6 Automations You Should Prioritize

While the benefits of automation are clear, many organizations struggle with prioritizing automation candidates. We've queued up a few that we believe should be on every IT team's priority list.

#1: Proactive & Preventative Actions
Improve Reliability & Customer Experience with Predictive, Data-Driven Automation

#2: Incident Management
Reduce MTTR with Automated Incident Validation, Investigation, and Resolution

#3: Service Desk Automation & Self-Service Options
Improve Speed and Operational Efficiency While Freeing Up Agents for Innovation

#4: Provisioning, Deployment, & De-Provisioning
Accelerate Network, Compute, Cloud, and Application Provisioning, and Save Hours of Manual Effort

#5: Discovery & Dependency Mapping
Get Complete Infrastructure Visibility in Literally Minutes

#6: Patch Management
Shrink Vulnerability Windows, Reduce Risk, & Improve Compliance

Proactive & Preventative Actions

Improve Reliability & Customer Experience with Predictive, Data-Driven Automation

When your network or applications fail, the downtime can have a direct impact on the bottom line. ITIC's 2020 Global Server Hardware and Server OS Reliability Survey found that 88 percent of businesses estimate the cost of one hour of downtime at $301,000 or more. Of that number, 40 percent indicated that hourly downtime costs now exceed a staggering $1 million. An extreme example is the five-hour Delta Airlines outage that caused the cancellation of 280 flights and cost the company $150 million.

Proactive automation improves uptime and reliability, oftentimes catching issues before they have an impact – or preventing them altogether. Automated health checks can be run on a regular basis across databases, servers, VMs, load balancers, network equipment, and applications, so you don't have to worry about the unknown.

You can also automate everyday maintenance tasks, including service restarts, system reboots, access management, and file system management to reduce time-consuming, error-prone manual processes. And what about backing up and refreshing databases, testing network connectivity and performance, and fixing firewall interface errors? Yes, you can automate all of that, too!

If you want to take preventative maintenance to the next level, adding AIOps to the automation equation is the answer. With AIOps, you can:

- Proactively detect problems in the making with dynamic thresholds that account for seasonality and identify anomalous behavior tracked across multiple variables

- Normalize, sequence, and analyze millions of events leveraging machine learning to predict and prevent future issues based on advanced pattern identification

- Analyze historic utilization trends for critical infrastructure resources, predict when entities will run out of capacity, and automate expansion to prevent outages

- Autonomously trigger automated actions based on AIOps insights to quickly fix issues or prevent them from happening

Proactive automation delivers a wealth of benefits, starting with efficiency gains and cost reduction realized by eliminating manual, repetitive tasks. More importantly, by improving overall reliability and avoiding unnecessary outages, you can make your users and customers happier.

Incident Management

Reduce MTTR with Automated Incident Validation, Investigation, and Resolution

When something goes wrong in your environment, it's all hands-on deck as the alarm bells start ringing. No doubt the dreaded IT war room ensues – with all the pain, suffering, and extreme cost associated with it. Meanwhile, your users count the minutes and hours (hopefully not days) until you've fixed the issue.

Luckily, automation and AIOps can help. It starts with noise reduction to ensure support staffers aren't overwhelmed by floods of redundant or useless alerts. AIOps determines which alarms need your attention by eliminating false positives and performing event clustering that separates the signal from the noise. It also provides time-series event playbacks, correlates connected events into incidents, and determines probable root cause. All of this helps significantly reduce mean-time-to-acknowledge (MTTA) and mean-time-to-resolution (MTTR).

Automation further improves incident management by:

- Resolving common incidents with pre-built automated tasks and workflows that can do the work for you – and they can even be triggered autonomously by insights from AIOps, without any human intervention
- Validating alerts and automating time-consuming system and service checks
- Collecting key troubleshooting information into an easy-to-read, color-coded dashboard that eliminates the "swivel-chair interface"
- Arming frontline agents with pre-approved, guided procedures that enable them to handle complex incidents without escalation
- Providing interactive automations, including step-by-step instructions, incremental automations, and decision trees for more complex events
- Enabling admins to execute remediation steps without direct access to the systems
- Creating tickets, suppressing unnecessary tickets, and enriching the important ones with additional context
- Capturing all remediation actions and case artifacts for compliance, governance, and auditing purposes

By accelerating incident response, IT teams can improve customer experience and ensure SLAs are met. Additionally, automation can eliminate expensive incident escalation and left-shift workloads to more cost-effective resources.

Our customers also tell us that improving MTTR ultimately improves employee morale – because let's face it, no one enjoys outages or dealing with angry users. Plus, with noise reduction, employees feel more confident that they are focused on the right things and won't miss an important event. That's a win-win.

Service Desk Automation & Self-Service Options

Improve Speed and Operational Efficiency While Freeing Up Agents for Innovation

As businesses have become more dependent on technology, the need for instant response has increased dramatically. Service desk professionals are the first line of defense when frustrated end-users experience technical difficulties, get locked out of an account, need updated access to new applications, or have issues with their devices.

The service desk faces many challenges, including fielding requests from different channels, constant interruptions, lengthy resolution times due to inefficient processes, and inability to access systems to resolve problems due to a lack of permissions. Repetitive tasks oftentimes interfere with investigating systemic issues and ticket prioritization. This environment slows response times for everything from simple requests, such as password resets, to more time-consuming ones, like provisioning servers or resolving network issues.

Automation helps service desks improve response times, operational efficiency, and the overall customer experience. It can also reduce escalations and left-shift workloads. With automation, you can:

- Standardize service desk processes across teams
- Automate end-to-end user onboarding (and offboarding) processes, like creating email accounts, assigning permissions, provisioning software, and updating Active Directory
- Offer end users self-service options by integrating with chatbots, virtual agents, and tools like Slack and Teams to trigger automations, including multi-step processes with decision trees
- Capture tribal knowledge and enforce best practices by encoding tested, subject-matter-expert-approved processes into automations that can be leveraged across the organization
- Left-shift workloads safely and confidently, while reducing human error
- Accelerate completion of common tasks like troubleshooting end-user issues (such as slow PCs), password resets, and more
- Automate change requests, including guided automations for variable, decision-dependent change processes

By automating service requests and change management, service desk professionals are freed up to focus on more strategic initiatives. It also empowers them to close tickets on time, reduce escalations, eliminate unnecessary and expensive hand-offs between teams, and improve their security posture.

End-to-End Provisioning, Deployment & De-Provisioning

Accelerate Network, Compute, Cloud, and Application Provisioning to Save Hours of Manual Effort

Manual provisioning and deployment can be time-consuming and prone to human error, not to mention concerns around governance and security. Waiting on other teams or a subject matter expert to complete one step in the process can frustrate users while unreliable, unverified server deployments can wreak havoc from a security perspective. And who doesn't dread the monotonous, manual, pre- and post-provisioning tasks?

Automating and orchestrating the entire end-to-end provisioning and deployment process is a real game changer. You might be using task-based tools to automate turning up a server today, but you can automate every step of the process, starting with approving the request all the way to generating the audit documentation.

With automation, you can provision entire workflows at lightspeed:

- Automate pre-provisioning checks to eliminate hours of manual effort
- Automate post-provisioning tasks to verify infrastructure and services are fully operational and compliant
- Integrate and automate updates to your service and change request systems (like ServiceNow, Remedy, Jira, and more)
- Automate workflows across your IT, network, and security infrastructure to eliminate time-consuming handoffs between your ITOps, NetOps, and SecOps teams
- Orchestrate processes leveraging your existing point automation tools or handle the entire end-to-end deployment using a centralized platform
- Ensure change compliance and enforce policy and controls
- Provide a full audit trail

Automation can also check and remediate configuration drift and even rollout a new network policy across systems.

The ability to automate provisioning and deployment doesn't just offer tremendous savings and operational efficiency (including the ability to left-shift these workloads), but it also enforces security policies, standardizes processes, and eliminates human error, which ultimately results in happier customers.
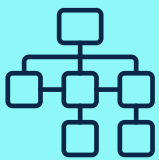
Discovery & Dependency Mapping

Get Complete Infrastructure Visibility in Literally Minutes

Today's IT systems are highly dynamic, making it a challenge to keep track of all the changing infrastructure components and applications across complex, multi-domain environments. How can you quickly determine root cause or gauge service impacts if you don't know what's in your environment and how all the pieces are connected? How can you determine which systems need to be patched or which applications will be impacted when a device goes down?

The very nature of hybrid multi-cloud environments – with their sprawling, siloed architectures, multi-vendor components, disparate technologies, and obscured microservices and containers – complicates monitoring and managing performance and makes it hard to achieve comprehensive visibility.

Traditional discovery tools and mechanisms provided by legacy ITAM vendors lack the agility, reliability, and completeness to keep up with this changing, complex infrastructure. To be successful, you need modern auto-discovery capabilities to ensure you always have an accurate and complete inventory of CIs. You also need a solution that is completely agentless, removing a common roadblock to gathering data as agents add up to more approvals, more maintenance, and more delays.

Equally important is understanding how everything is connected. Auto-generated topology maps can display the physical, virtual, and logical compute, network, and storage entities throughout your hybrid IT environment, and they show you exactly how the entities are connected to one another. Plus, the ability to overlay alarms, performance alerts, change requests, and tickets right on top of the topology enable you to quickly identify root cause and see what's happening in your infrastructure.

Automated application discovery and dependency mapping provides tremendous value when it comes to keeping business-critical applications up and running. With today's technology, you can auto-discover application flows and application services, including dynamic discovery of collections of interconnected app flows that together comprise an application. These are then mapped to underlying infrastructure to visualize the relationships between components, so you can quickly see how infrastructure issues are impacting applications.

Last but not least, automating discovery and dependency mapping means you can finally ensure your CMDB is always up-to-date and accurate. With bidirectional connectors that can push discovered devices and dependency maps to your CMDB, you can declare victory on this critical component of your ITSM foundation. After all, effective troubleshooting, capacity planning, maintenance, and change management all hinge on having reliable CMDB data and inventory views.
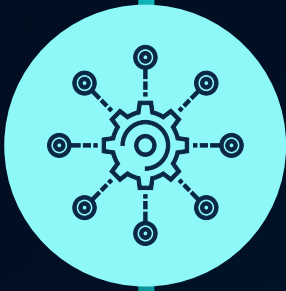
Patch Management

Shrink Vulnerability Windows, Reduce Risk, & Improve Compliance

When it comes to patching, the pain is real. The decisions seem endless, and the process is continuously delayed with too many dependencies, too many approvals to secure, and too many questions to answer. Especially if things go sideways and something breaks.

It takes months to install critical patches manually on some systems while others never get installed at all. Then there are maintenance windows to contend with. Meanwhile, the ever-present threat of security vulnerability makes patching non-negotiable. Believe it or not, automation can take care of every step of the patch management process, from vulnerability discovery to full remediation and post-patching health checks.

Automation even handles the most decision-dependent tasks that rely on subject matter experts and their knowledge of the trickiest parts of patch deployment and verification, along with their access permissions to critical systems. SMEs can package up and approve automations to evaluate patches that anyone can safely execute without requiring hand-offs to other teams, optimizing human decision-making when it's necessary while freeing up SMEs to focus on more strategic responsibilities. You can even automate and orchestrate the build out of a patch testing infrastructure to further rest assured that a patch isn't going to break anything or slow performance to a crawl.

With automation managing the end-to-end patching workflow, you can:

- Automate systems and app testing, as well as health checks immediately after the patch is deployed to verify everything is running as expected and ensure any third-party or custom apps aren't negatively impacted
- Scale your patch management cycle with interactive automations to meet the blazing pace of vulnerability disclosures and exploits
- Automate the entire approval process, triggering authorization requests at key milestones and documenting each approval along the way, so you never worry about who needs to sign off on updates
- Assess system configurations, trigger updates to the CMDB, and audit all actions executed by human or machine to promote transparency and trust among teams
- Validate system health once a patch has been installed and trigger additional remediation if required
- Capture a complete record of each step in the process for full compliance and governance

IT Organizations Achieve Automation Success with Resolve

Resolve enables leading enterprises, managed service providers and the largest communication service providers on the planet to transform IT operations and scale automation with significant, measurable results.

Here's a look at some of the outcomes that IT organizations have achieved with Resolve:

- Consolidated Communications: $15M saved annually in IT operations costs

- T-Mobile: 40,000-man hours saved every year and 60,000 automations run every day

- CenturyLink: 99.9% faster resolution of incidents, $1.8M saved annually, 60% fewer IT tickets created

- Windstream: 70% of alarms handled by automation, 84% of outages ticketed by automation, 70% of all network incidents opened by automation

- BT: 200,000 devices discovered, mapped, monitored, and correlated

- Cable & Wireless Communications: 99% faster response time, from 6 minutes to 4 second

- Zayo: 600,000 incidents processed automatically every day

Don't just take our word for it. Here's what a few of our customers have to say about Resolve:

"The cost savings from automation has been significant. Automation has dramatically improved service levels, helping with customer retention."

– Angela Abbott, Strategy and Capability Owner for Automation and Analytics, Fujitsu

"We introduced use cases that saved on an annual basis hundreds of hours of time manual effort. Those resources could then be used on more valuable outputs for the business, rather than performing simple activities."

– Michael Hutcheson, CTIO, BT

"The tools we've been able to develop using the Resolve Platform have provided us continual monthly savings of over one million dollars."

– Darin Tiemann, Manager, Network Tools & Automation, Consolidated Communications

"With Resolve, we're able to greatly reduce technician time per ticket, reduce customer call times, and lower MTTI & MTTR."

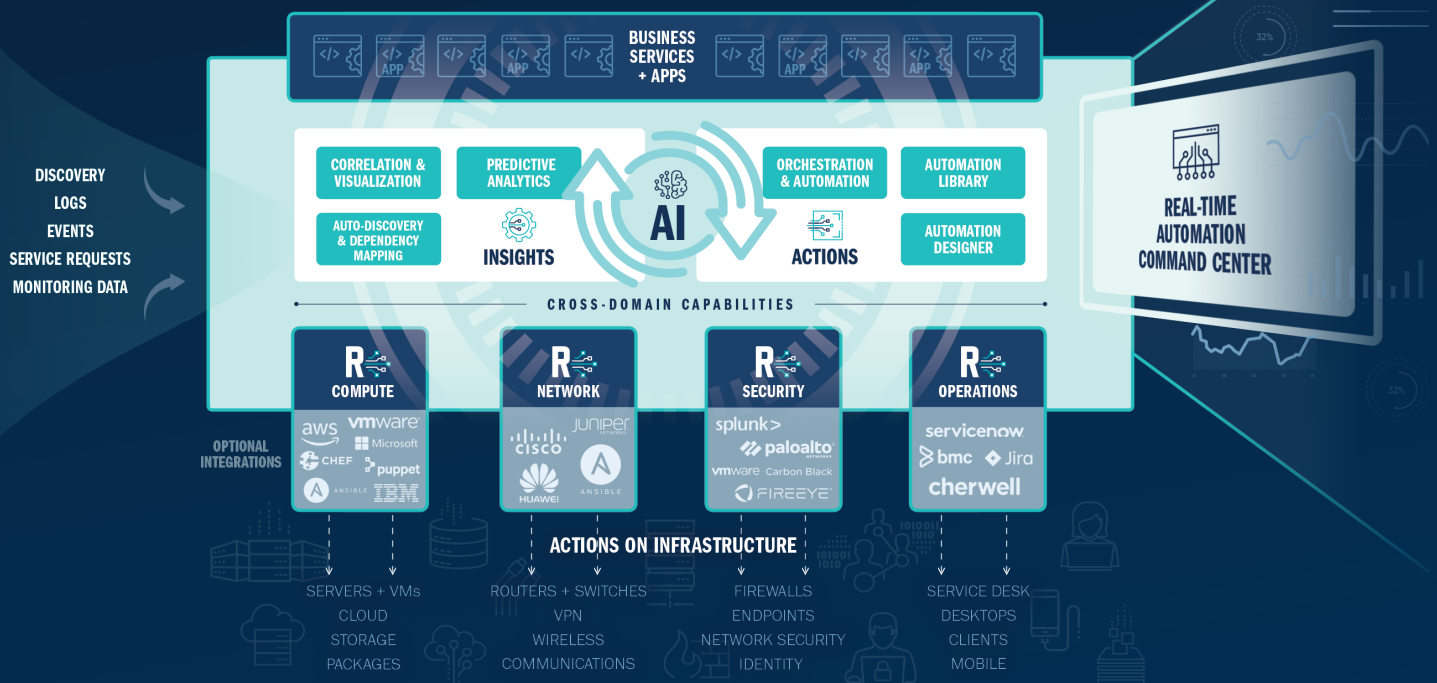– Greg Hadlock, SVP Network Control Center, Zayo

Resolve helps IT teams achieve agile, autonomous operations with an industry-leading, enterprise automation and AIOps platform. By combining insights from artificial intelligence with powerful, cross-domain automation, Resolve handles a wide array of IT operations – from dependency mapping, event correlation, and predictive analytics to intelligently automating actions based on those findings.

Purpose-built to address challenges posed by increasing IT complexity, Resolve enables organizations to maximize operational efficiency, reduce costs, quickly troubleshoot and fix problems, and accelerate service delivery. Fortune 1000 companies, leading MSPs, and the largest communication service providers on the planet trust us to power millions of automations every day. Visit our website to learn more ›

Resolve Delivers a Closed Loop of Discovery, Analysis, Detection, Prediction, & Automation

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BUSINESS SERVICES + APPS

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EVENTS
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MONITORING DATA

CORRELATION & VISUALIZATION
PREDICTIVE ANALYTICS
AUTO-DISCOVERY & DEPENDENCY MAPPING
INSIGHTS
AI
ORCHESTRATION & AUTOMATION
AUTOMATION LIBRARY
AUTOMATION DESIGNER
ACTIONS

REAL-TIME AUTOMATION COMMAND CENTER

CROSS-DOMAIN CAPABILITIES

R COMPUTE
R NETWORK
R SECURITY
R OPERATIONS

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cisco | JUNiPer | A ANSIBLE | HUAWEI

splunk> | paloalto | vmware Carbon Black | FIREEYE

servicenow | bmc | Jira | cherwell

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STORAGE
PACKAGES

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Explore Additional Resources:

- **Build Your Automation KPI Dashboard**

- **Tech Talk: Top 5 Network Automation Use Cases**

- **Automation Excellence Analyst Report**

- **Forrester Research: On Your Mark… Get Set… It's Go Time for Dependency Mapping**

- **Resolve Actions: Unified Orchestration & Automation Platform**

Visit our website at resolve.io to check out our automation resource center!

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