

**PREPARE FOR THE UNEXPECTED:**

# Forge a Strong ITSM Foundation with Automation & AIOps

An eBook from

**RESOLVE** 



# Executive Summary

2020 has presented a myriad of new IT challenges as we adjust to working in new ways and continually prepare for the unexpected. Digital transformation is officially on fast forward, pressure testing your ITSM foundation and processes.

No doubt you are battling a sea of IT data and struggling to keep up with an uptick in service desk requests, supporting more remote workers, and tackling a series of new initiatives while trying to keep the lights on. Meanwhile, the perpetual challenges of keeping up with dynamic infrastructure, CMDB updates, and status quo service requests haven't gone away – nor has the pressure to resolve incidents faster... all without enough headcount.

This eBook explores these challenges in depth, as well as how you can get immediate relief and prepare for whatever comes next by deploying automation and AIOps to aid in:

- Discovery and dependency mapping
- Real-time updates to your CMDB
- Service desk requests and support for remote workers
- Health checks and proactive maintenance
- Infrastructure and application provisioning
- Incident detection and resolution
- And more!

We hope the insights inside will help you jumpstart your journey to automation and AIOps and emerge from the current climate stronger than ever.

# Managing the Unexpected Is the New Status Quo.



Across 20 wealthy countries representing 660 million workers, **38 million** (5.7%) have filed for unemployment insurance during the pandemic.

*Source: Brookings*



The WHO officially declared COVID-19 a pandemic on March 11. An estimated **16 million US workers** switched to working remotely within two weeks.

*Source: Slack*



The pandemic is expected to cause the largest contraction of per capita income globally since 1870. Advanced economies are projected to **shrink by 7%**.

*Source: World Bank*



The pandemic has radically changed how we purchase goods. Online grocery sales in the US alone hit a record \$7.2 billion in June with more than **5x as many active customers** (45.6 million to be exact) compared to August of 2019.

*Source: Tech Crunch*

**“Prepare for more turbulence.**  
We’re taking the opportunity to  
rethink what the business will look  
like in the future. We’re not  
necessarily going to build back  
what we had.”

— Ed Bastian, CEO, Delta Air Lines

“We’re cutting back on our  
spend as we look at 2020 and  
2021. **But I can tell you what  
we’re going to amplify: digital.**”

— Jeffrey Gennette, CEO, Macy’s

**“Recovery from COVID-19 means building  
a company that can thrive in the face of  
continuous turbulence.” — Bain**

“My peers have made comments like, ‘If you had  
told me in January that 95% of my employees  
would be working from home and the firm would be  
running as well as it is, I would never have believed  
it.’ **Now that we recognize what’s possible, that  
paradigm shift is going to stay with us.**”

— Chuck Robbins, CEO, Cisco

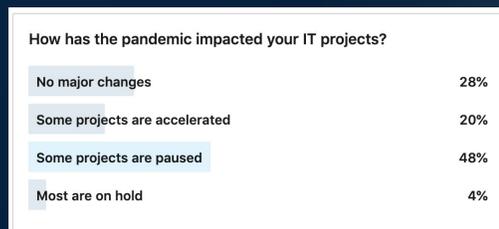
“The world never went back to normal  
after Sept. 11, 2001, and we won’t go  
back to the old normal now.”

— Heyward Donigan, CEO, Rite Aid

# What Challenges Are IT Leaders Facing Today?

As we battle both a pandemic and an economic slowdown, CIOs aren't putting everything on hold, but they are quickly and continually re-evaluating which projects get postponed and which ones to pursue now.

The results of a recent [LinkedIn poll](#) that we conducted indicate that 48% of immediate IT projects have been paused while 20% have been accelerated. Not surprisingly, the projects that have been accelerated aren't necessarily those that were on the priority list at the beginning of the year.



Global organizations have seen their business processes turned upside down with tectonic shifts towards digital channels. Consequently, some IT projects that were originally being considered in the next two to three years are now being pushed through over the next few months. Those that deliver IT agility, improved digital experiences, infrastructure resilience, efficiency, and cost reduction are making the cut.

CIOs are also focused quite literally on keeping the lights on in our new paradigm. Budgets are understandably tight due to decreasing sales pipelines and shrinking economies, putting considerable pressure on IT to 'do more with less.' Meanwhile employees are working from home and relying more on digital services and applications, which has them raising more support requests. While WFH was nothing new, very few companies were equipped to accommodate such a vast shift to a remote workforce in such a short time period.

Without a doubt, 2020 has brought about a number of challenges that none of us could have predicted. Here's a closer look.

# (Some) Digital Transformation Initiatives Are On Fast Forward While New Challenges Have Emerged...

- Business processes shifted in a matter of days with significantly more emphasis on all things digital
- Existing infrastructure has been pressure-tested and maxed out in many cases
- A new remote workforce emerged overnight, creating a host of new security, connectivity, training, provisioning, and remote management challenges
- Workforce fluctuations and, in some cases, reductions in force have resulted in overburdened IT teams and exhausted subject matter experts at risk of burn out
- Maintaining IT governance became exponentially more difficult with a remote IT staff
- Scalability and flexibility of infrastructure are now under increased scrutiny
- Improving infrastructure resilience and ensuring business continuity are being prioritized at all costs
- IT initiatives, sometimes years in the making, are being reprioritized, paused, or accelerated
- Infrastructure continues to grow in complexity and data volumes continue to increase at astronomical rates

**.... all while keeping the lights on in this new paradigm**

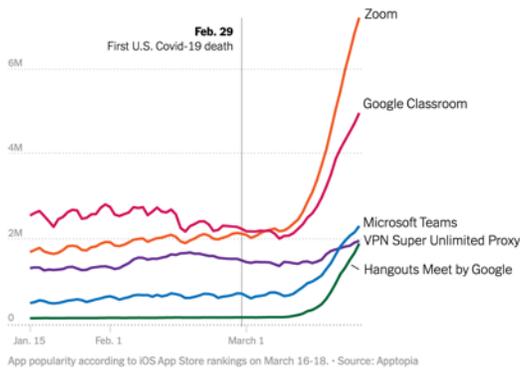
# Surges in Usage Have Put Unprecedented Strain on IT Systems and Networks

More Than 6 Million Zoom Sessions Conducted Per Day by Late March

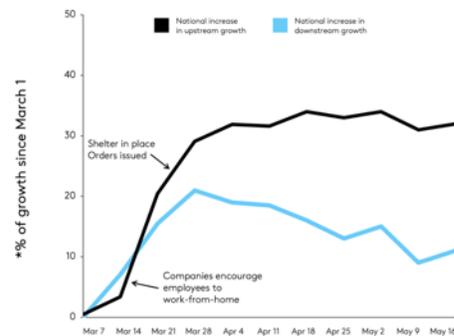
Comcast Reports VoIP & Video Conferencing Is Up 285% & VPN Traffic Is Up 30-40%

## We have suddenly become reliant on services that allow us to work and learn from home

Daily app sessions for popular remote work apps



## NETWORK TRAFFIC IMPACTED BY COVID-19



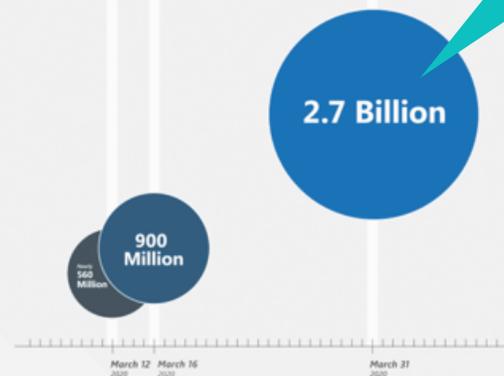
200% Increase in Teams Usage in Two Weeks

Microsoft 365

As the world transitions to remote work and learning, Microsoft Teams meetings increase at exponential rate

Source: Microsoft. Disclosure: Microsoft takes privacy seriously. We do not use personal data, organization identifying data, or customer content to produce data visualizations.

Minutes spent in Microsoft Teams meetings per day



# How Do You Tackle These Challenges & Prepare for the Unexpected?

**Automation & AIOps Provide Much-Needed Relief.**



# Why Automation & AIOps?

Increasingly, organizations are looking towards automation and AIOps technologies to alleviate current IT challenges, provide relief to overburdened IT teams, and accommodate a shifting (and perhaps) reduced workforce.

Almost immediately, IT automation can be implemented to handle common service desk issues to reduce loads on support staff, including powering ChatOps and self-service options. It can also enforce best practices that help mitigate security gaps and governance issues introduced unwittingly by a remote workforce.

Additionally, automation ensures that tribal knowledge is encoded into automated processes, safeguarding against fluctuations in the workforce, reducing reliance on individual subject matter experts, and ensuring that incident response, tasks, and requests can be left-shifted or agilely reassigned.

And, of course, automation radically improves overall IT efficiency as more processes are automated, as well as improving the resiliency and performance of critical infrastructure by preventing issues and reducing MTTR.

Not surprisingly, leading analyst firms have reported a significant rise in automation and AIOps initiatives in the last year. Gartner research indicates that 94% of executives are investing in I&O automation or plan to start. And, while less than 20% of the Global 5000 have a centralized automation function today, that is expected to grow to 90% by 2025.

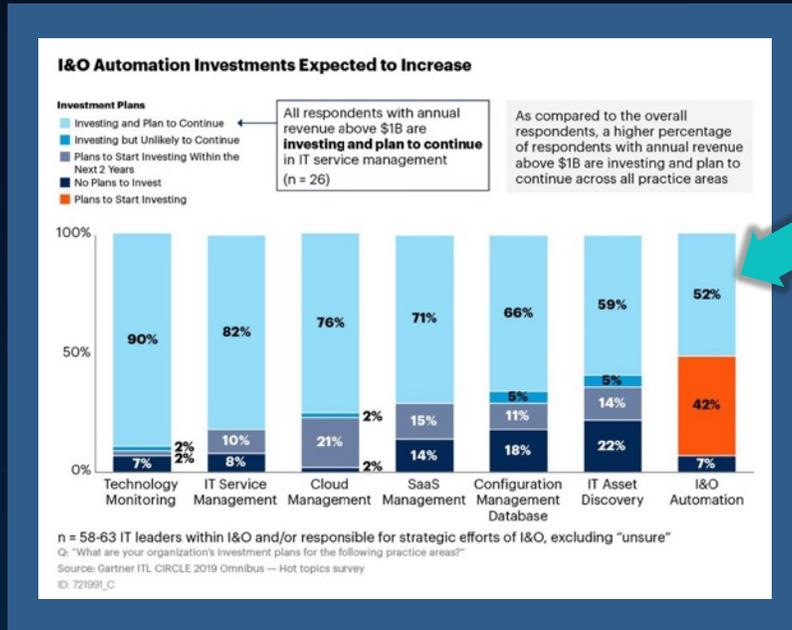
EMA Research reports that 85% of enterprises have AIOps underway or planned as a major initiative. Their data shows that AIOps in deployment correlates strongly with more progressive levels of automation, closely coupling these technologies. In fact, combining the two offers a closed loop of discovery, analysis, detection, prediction, and automation that put IT teams on a path to self-healing infrastructure.

**“COVID-19 pushed legacy processes and BPOs well beyond peak capacity. They were also exposed for their inefficiencies & reliance on manual processing.”**

**The pandemic made executives rethink the role advanced technologies could play in the future of business. At the top of the list are RPA and automation.”**



# Automation & AIOps: The next wave of innovation in infrastructure modernization



Gartner®

94%

ARE INVESTING IN AUTOMATION OR PLAN TO START

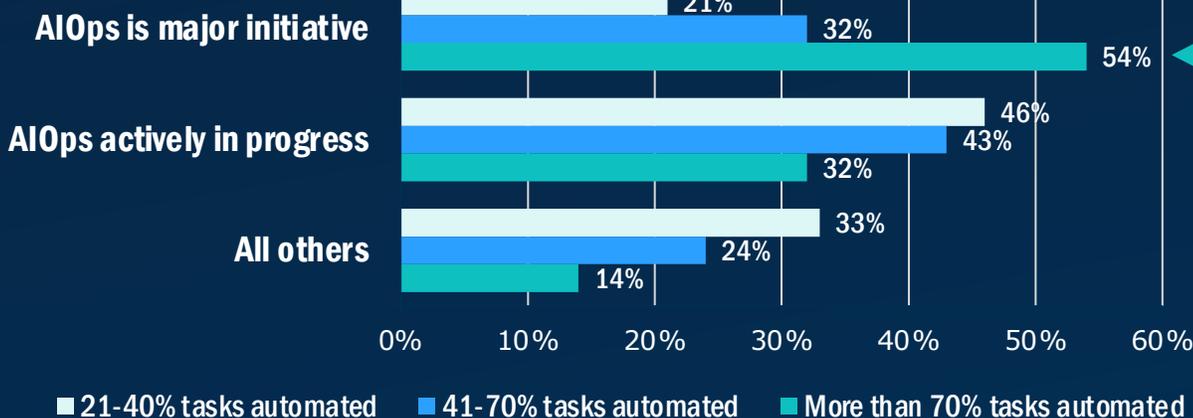
90%

OF THE GLOBAL 5000 WILL HAVE A CENTRALIZED AUTOMATION FUNCTION BY 2025, UP FROM LESS THAN 20% TODAY



85%

SAY AIOPS IS UNDERWAY OR A MAJOR INITIATIVE AND.... AIOPS IN DEPLOYMENT CORRELATES STRONGLY WITH MORE PROGRESSIVE LEVELS OF AUTOMATION



Source: EMA Research: Data-Driven IT Automation — A Vision for the Modern CIO



# The Role of the CMDB in Creating a Strong ITSM Foundation

A man in a blue suit is standing in a large, complex maze. The maze is composed of many paths and dead ends, rendered in shades of blue and grey. The man is looking towards the center of the maze, suggesting a journey or a search for a solution. The background is a dark blue gradient.

A well-maintained, mature CMDB provides clarity into:

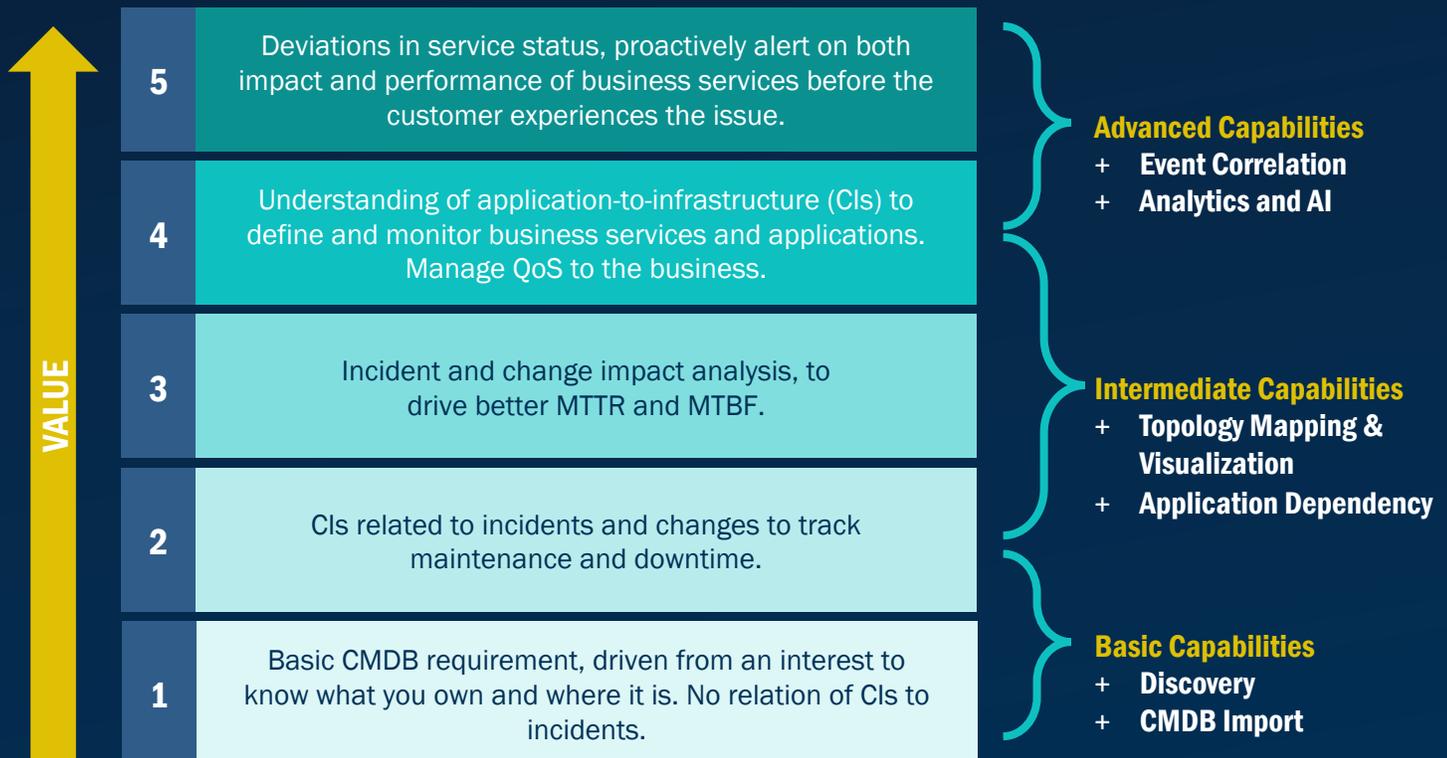
- Exactly what resources are available
- Where those resources are
- What impact existing resources have on the business
- What impact new resources and changes will have on the business

# Why Is the CMDB So Important?

The Configuration Management Database (CMDB) has always been difficult to tame, despite having a longstanding presence in enterprise IT. When executed well, the CMDB should be a trusted source for providing an updated inventory of IT devices and relationships. However, due to the inherent complexity and changing nature of IT infrastructure, this isn't always the case – especially when organizations rely on manual updates. The CMDB is oftentimes outdated by the time the last keystrokes are made, despite the time and effort put into it.

Today, the CMDB is undergoing a renaissance with the aid of automation and AIOps. And it couldn't come at a better time since a mature CMDB is the foundation for successful ITSM, providing much-needed visibility into complex, dynamic infrastructure. Without an accurate CMDB, IT teams can't effectively manage their environments, troubleshoot incidents, or make changes with confidence. An up-to-date CMDB also serves as a foundation for more advanced AIOps and automation initiatives.

## CMDB Attainment Model:



# Steps to Getting Your CMDB Right



## STEP 01

### KNOW WHAT DATA IS IMPORTANT

Knowing what data is important is key to success. Activities include aligning discovery data to proper classes in the CMDB and ensuring each class has an owner.



## STEP 02

### INTEGRATE DISCOVERY & INFRASTRUCTURE, APPLICATION DEPENDENCY, & SERVICE MAPPING TOOLS

Implementing tools to automate discovery and dependency mapping is critical to capture and maintain the required data to make configuration management successful. At this stage, you should also identify which applications and services are most important to support and ensure the application and service components are correctly identified.



## STEP 03

### DON'T LOSE SIGHT OF THE PROCESS!

Ensure integrity of the configuration management process as tools are deployed and integrated. It is important to manage the process and validate throughout the entire lifecycle.



## STEP 04

### CONTINUOUS SERVICE IMPROVEMENT

As you see results, continue to expand the scope of the application and services. The greater the detail, the greater the value of your CMDB.

# Using AIOps & Automation to Strengthen Your ITSM Foundation

Automation and AIOps offer immediate relief when it comes to today's IT challenges and ensure you are prepared for whatever comes next. Key uses cases include:

- Discovery and dependency mapping, including real-time updates to your CMDB
- Service desk requests and support for remote workers
- Health checks and proactive maintenance
- Infrastructure and application provisioning
- Incident detection and resolution
- Capturing tribal knowledge and enforcing best practices

# Automate Discovery & Dependency Mapping

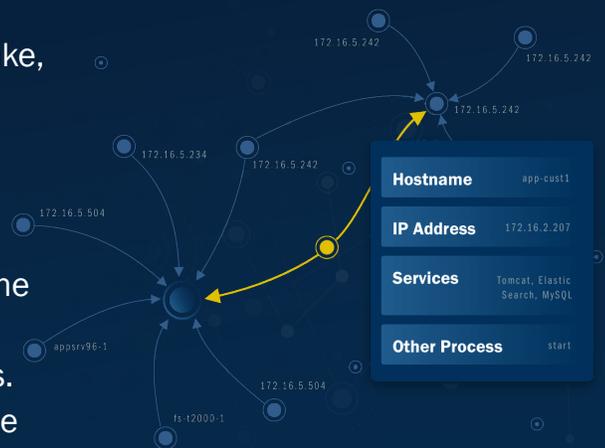
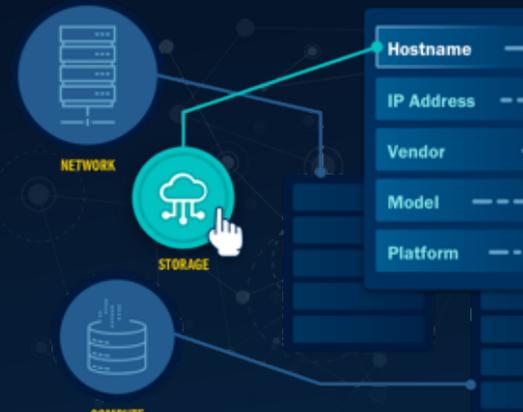
As mentioned in the previous section, automated discovery and dependency mapping can finally deliver the deep visibility you need into complex, dynamic IT infrastructure and ensure that your CMDB is always accurate. Automating these functions helps overtaxed IT teams by simplifying management, streamlining operations, and offering a unified view into multi-domain environments.

Some AIOps products (including [Resolve Insights](#)) provide auto-discovery and dependency mapping as part of a broader suite of advanced IT operations capabilities. These solutions quickly discover compute, network, and storage entities across dynamic, hybrid IT environments.

Lightweight data collectors intelligently scan subnets or user-input boundaries to identify CIs and determine a variety of details about each entity, including vendor make, model, platform, configuration, IP address, and more. A real-time inventory is produced and can be filtered and viewed in a variety of ways.

Additionally, AIOps technologies can identify and track the dependencies between infrastructure components, applications and supporting infrastructure, and services. The resulting topology maps make it easy to visualize the relationships between CIs, applications, and services, providing unprecedented visibility for troubleshooting, change requests, and proactive maintenance.

With bidirectional connectors to your CMDB, auto-discovery and dependency mapping data is automatically pushed to the CMDB in near real time, ensuring that you have an accurate, up-to-date record of everything in your environment and how it is all connected.



# Automate Service Desk Requests & Support for Remote Workers

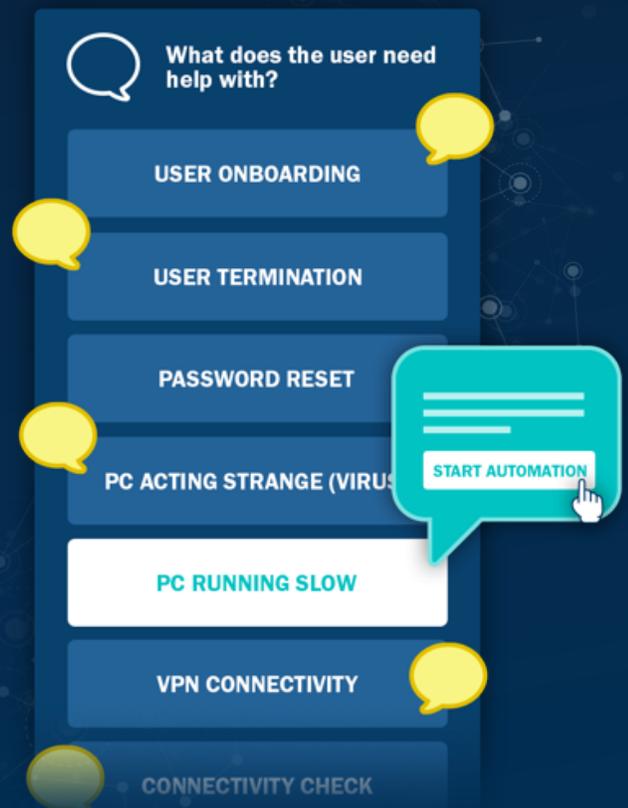
Overnight, thousands of employees transformed into remote workers, creating a barrage of support needs ranging from shoring up security gaps created by unwitting work-from-home users to supporting new communications technologies. Provisioning new applications and technologies like VPNs quickly became overwhelming.

Luckily, automation can quickly alleviate the stress on support teams by offloading a wide variety of activities, from provisioning services to handling common service desk requests. This reduces the number of tickets that require attention from the service desk staff and allows them to focus on more business-critical needs and advanced problem solving.

## Overcome challenges related to supporting a remote workforce.

### Key Automation Use Cases:

- Integrate with chatbots and tools like Slack, Skype, and Teams to trigger automations
- Offer self-service automation options for common tasks such as password resets that are powered by automation
- Automate user onboarding processes, like creating email accounts, assigning permissions, provisioning software, and updating Active Directory
- Troubleshoot end-user issues (such as slow PCs, VPN connectivity, etc.)
- Automate change requests, including the documentation trail



# Automate Proactive Health Checks, Predictive Analytics, & Preventative Maintenance

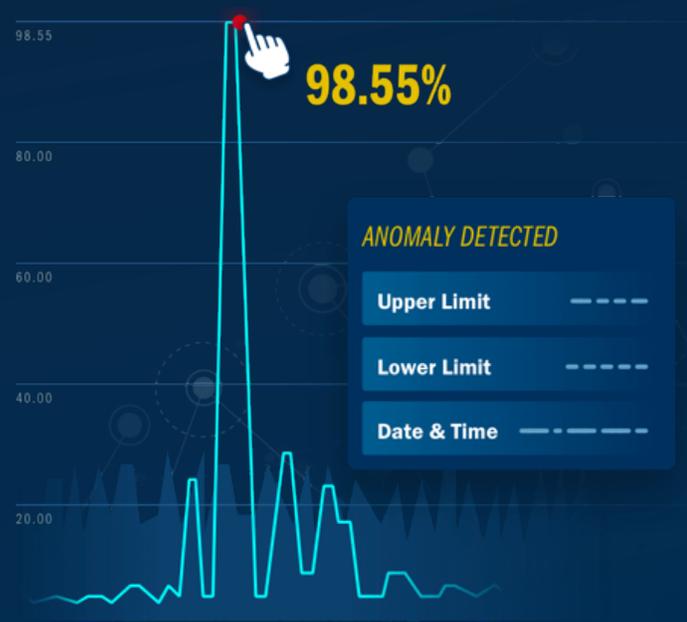
Given the dynamic, complex nature of today's IT environments, legacy monitoring techniques and manual processing are no longer viable options when it comes to identifying patterns, spotting anomalies, and predicting future outages. And yet customer expectations for performance and availability have never been higher.

Automation and AIOps can deliver the agility you need while ensuring that business-critical applications and infrastructure are at their best. Leveraging machine learning algorithms, multi-layer correlation, and cross-domain automation, these technologies work together across on-premise, virtual, and cloud infrastructure to predict future issues and automate proactive fixes before they impact your business.

**Improve resiliency, business continuity, & operational efficiency.**

## Key Automation & AIOps Use Cases:

- Predict and prevent potential issues with automated fixes before customers experience service degradation
- Proactively execute automated system health checks
- Optimize resource utilization based on dynamic thresholds
- Automatically backup and refresh databases
- Test network connectivity and performance
- Automate changes during specified windows for compliance



# Automate Infrastructure & Application Provisioning

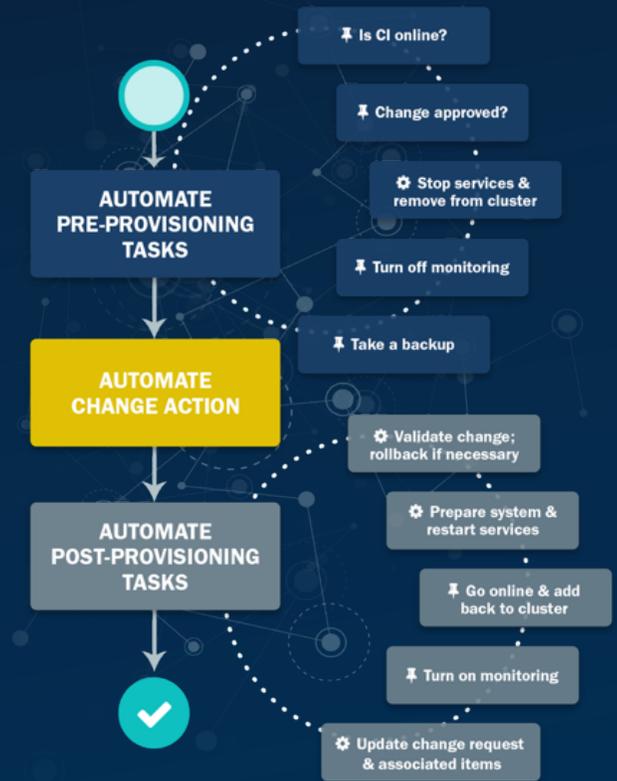
According to [Gartner](#), “Processes associated with provisioning and orchestration should be among the first that I&O targets because they impact customers directly and, in many cases, are relatively easy to address. Improving the experience with the delivery of systems is a demonstrable, visible success that customers can experience.”

Automating provisioning of various types of infrastructure is also significantly faster, more reliable, and more accurate than manual efforts as it eliminates human error. Automation enables you to scale your infrastructure agilely with fewer resources, which has never been more important.

## Achieve infrastructure scalability & flexibility.

### Key Automation Use Cases:

- Automate end-to-end deployment processes for servers, network devices, and applications, including pre-checks and post-provisioning tasks
- Automate the end-to-end patch management process
- Check and remediate configuration drift
- Automate dynamic resource and capacity optimization
- Integrate and automate updates to your service and change request systems (like ServiceNow, Cherwell, Remedy, and Jira)



# Automate Incident Validation, Detection, & Resolution

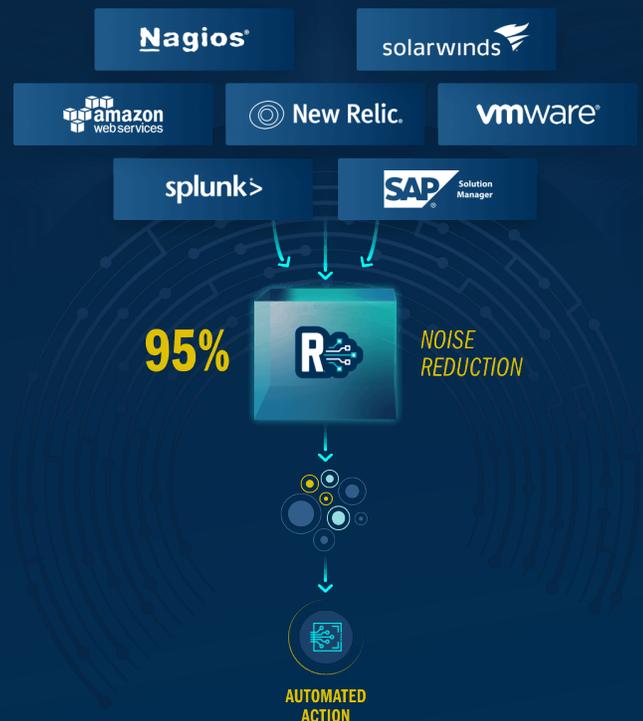
Uptime and performance are mission critical in today's digital world, putting incredible pressure on IT operations to resolve incidents as quickly and efficiently as possible. Automation and AIOps can radically transform the entire incident resolution process, starting with noise reduction to ensure IT teams are not inundated with redundant or useless alerts.

AIOps performs advanced event correlation to determine which alarms need attention by eliminating false positives and performing event clustering that groups related events into logical incidents. It also provides time-series event playbacks and triangulates on probable root cause. When combined with automation, common incidents can be resolved immediately – with or without human intervention. This enables incidents to be quickly remediated while eliminating unnecessary escalations.

## Reduce MTTR, safeguard business continuity, & improve efficiency.

### Key Automation & AIOps Use Cases:

- Correlate thousands of events to eliminate alarm noise and pinpoint root cause
- Automatically validate incidents
- Collect diagnostic data from multiple systems into a single pane of glass
- Execute fully automated remediation procedures
- Empower frontline operators with decision trees and interactive automations pre-approved by subject matter experts (including built-in systems access)
- Track all remediation actions, evidence, and artifacts for a full audit trail



# Encode Tribal Knowledge & Enforce Best Practices Through Automation

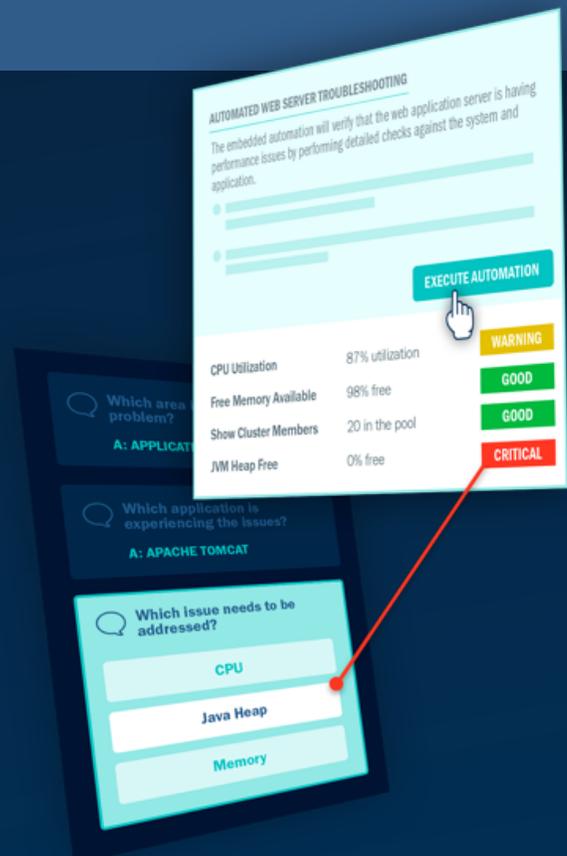
All too often, tribal knowledge and expertise still reside primarily with a handful of subject matter experts (SMEs), especially when it comes to complex technologies and legacy toolsets. Documenting this know-how (and best practices in general) is critical to advancing automation initiatives and also safeguards against workforce fluctuations as we battle a pandemic.

Valuable tribal knowledge can be captured and encoded into automation workflows, preserving this expertise for the long term and making it scalable. SMEs can even capture knowledge with conditional logic to create interactive automations that step through best-practice procedures while automation executes the tasks behind those steps. In doing so, IT organizations can left-shift workloads, minimize unnecessary escalations, and keep costs down.

## Maintain strong IT governance and plan for workforce fluctuations.

### Key Automation Use Cases:

- Eliminate reliance on “IT heroes” by capturing and memorializing guidance from subject matter experts in automations
- Left-shift workloads and eliminate escalations by providing guided, SME-approved automated procedures
- Securely embed permissions and systems access for particular activities into automations
- Enforce policies and best practices by encoding them into automations



# Recommended Steps to Advancing Automation & AIOps Initiatives



## PHASE 1 (2-3 MONTHS):

- Get your CMDB right!
- Improve visibility with discovery and dependency mapping
- Identify quick wins for out-of-the-box automation use cases
- Implement self-service automation for remote workers
- Introduce automation and AIOps to your organization and identify internal champions
- Build executive support – success hinges on it!

## PHASE 2 (3-6 MONTHS):

- Identify the next phase of automations, including more complex processes
- Optimize the processes on paper before automating them
- Leverage technologies that deliver noise reduction, event clustering, and correlation
- Connect AIOps to automation and start with an initial set of autonomous actions
- Engage employees in identifying processes to automate

## PHASE 3 (6-12 MONTHS):

- Create a Center of Excellence to centralize automation efforts
- Activate your “army of automators” to scale
- Integrate analytics and automation
- Expand usage of autonomous automations that can be triggered by AIOps insights

# In Closing

While the pandemic has created many unexpected challenges for IT leaders, it has also presented new opportunities. As we increasingly rely on digital channels for every aspect of our lives, people have a better appreciation of the value that technology brings to the business world and our daily existence.

As Gartner puts it, “don’t waste the crisis!” CIOs have a unique opportunity to capture a permanent seat in the boardroom and transform their role from one of a supporting player to an active driver of business outcomes. They also have a unique opportunity to revisit their operating models, sluff off lingering projects that may not deliver real value, and reprioritize around initiatives that meet a tangible set of objectives.

As we continue to face uncertainty, automation and AIOps can safeguard business operations and improve resilience in the short term. As we look further out, they also offer even greater value by freeing valuable (and scarce) IT resources to focus on innovation, problem solving, and creative ways to harness technology to do great things. By choosing the right things to prioritize now, IT leaders can ensure their organizations emerge from the current crisis stronger than ever before and in a position to deliver innovative new products and services.

## Additional Resources:

- [EMA Research: A Four-Stage Maturity Model for IT Automation](#)
- [Gartner Report: How to Start Executing a Successful Automation Strategy](#)
- [Forrester Research: Five Practical Applications of AIOps & Automation That Deliver Immediate Value](#)
- [AIOps & the Automation Handshake: Actionable Insights from EMA Research](#)

Visit our website at [resolve.io](https://resolve.io) to explore more automation & AIOps resources.

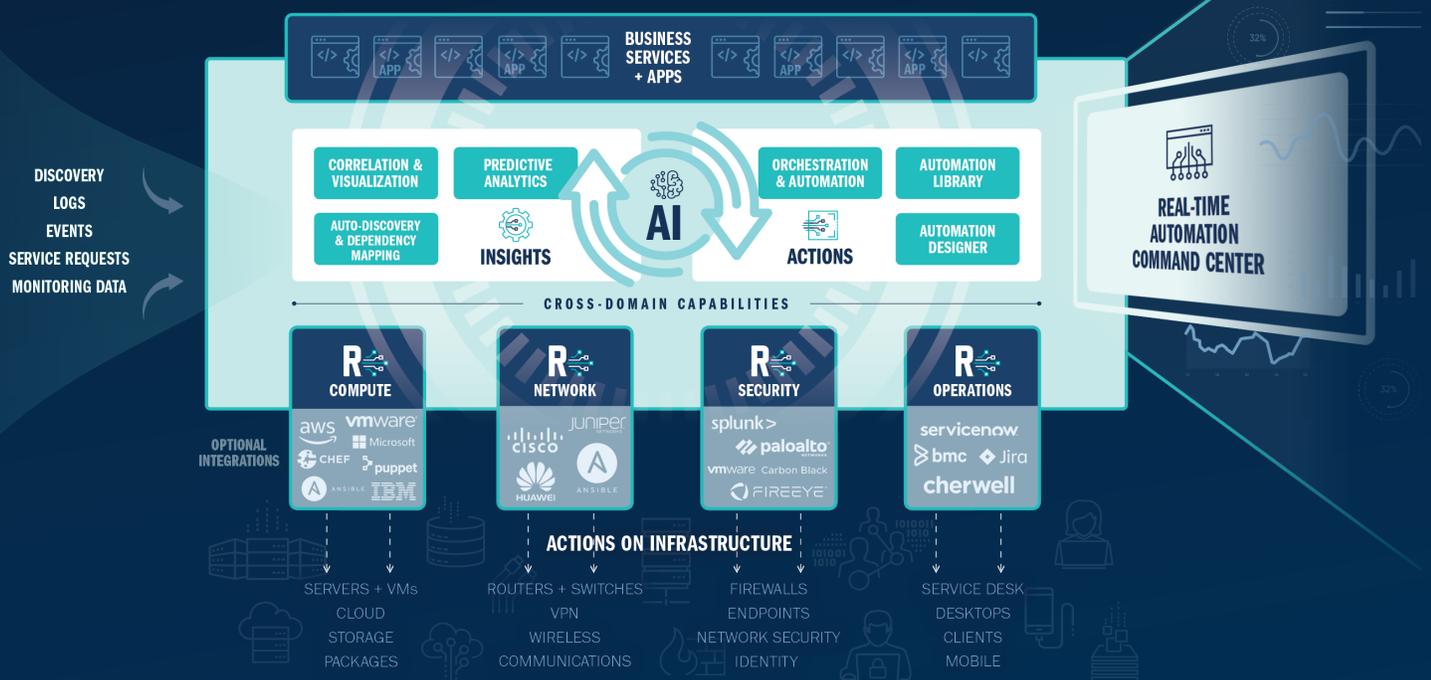
# ABOUT RESOLVE

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

### AIOps + ENTERPRISE AUTOMATION IN ONE PLATFORM



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