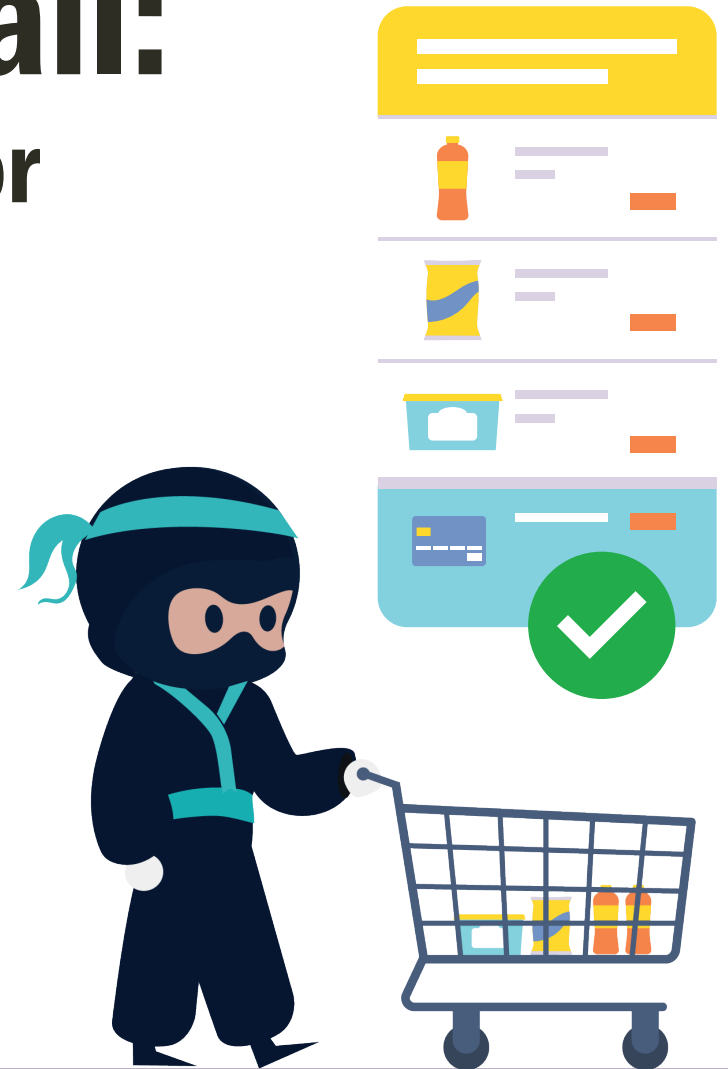




# Streamlining Retail:

## 11 InfraOps Automations for the Digital-First Era



# Harnessing IT Automation and Orchestration for Retail Success

As the retail landscape undergoes rapid changes, driven by evolving consumer behaviors, intensifying competition, and ongoing digital transformation, the importance of efficient operations has never been more vital.

Retailers are exploring ways to streamline processes, enhance customer experiences, and minimize operational costs.

## Building Robust IT Infrastructure for Retail Success

The push for transformation comes from shifting consumer trends, new technologies, and the relentless growth of e-commerce. At the core of this transformation are IT systems that enable seamless operations, from secure payment processing to flexible e-commerce platforms.

Given these demands, building, and maintaining a reliable IT infrastructure is key to meeting customer expectations, protecting sensitive data, and staying competitive in the digital age.

Welcome to the world of IT systems supporting the critical infrastructure of the retail industry. In this e-book, we will dive into the role of technology in driving retail operations, with a particular focus on payments, e-commerce platforms, and other essential systems.

Our aim is to guide you through the technical aspects of retail and show how robust IT solutions can foster business success.

Whether you're an IT professional, a retail executive, or an aspiring entrepreneur, this e-book is designed to be your guide to mastering the technology that powers retail.



# A Retail Giant's Journey to Automation Success

One of the world's largest retailers, a multinational grocery and general merchandise giant, with thousands of stores across the globe and more than 300,000 employees, faced the complex challenge of managing its vast operations efficiently.

The goal was to save time and money, improve incident response, and achieve a greater return on investment (ROI) through automation. The organization wanted a sustainable solution that would be carefully devised, strategic, and unrushed to ensure a smooth transition.

They partnered with Resolve to rollout automation to help them break through existing tools silos that had accumulated over the years. They started with 20 use cases that saved them over 172k hours a year. A big part of those included existing scripts and RPA use cases that were migrated to Resolve automation.

The partnership between the retail organization and Resolve drilled down into the company's environment's unique challenges and led to a path to success that worked for them specifically. They've also embraced a growth mindset to continuously identify new areas for automation, which unlocks efficiency and productivity, and new heights in ROI.

With this foundation, the organization is well-positioned to continue driving efficiency and achieving greater success. The retailer is now planning to expand its automation footprint, with a backlog of over 30 additional use cases ready for implementation.



# Eleven Processes to Start Becoming More Effective

As businesses navigate through an increasingly complex and fast-paced landscape, the need for efficiency, agility, and innovation has never been more pressing. Fortunately, automation offers a pathway to achieving these objectives.

From streamlining repetitive tasks to optimizing critical processes, each automation represents a strategic lever for driving performance, enhancing productivity, and fostering growth.

Success today and tomorrow will be defined by the rate at which IT can get ahead of the game and create new value for the business. Fortunately, we've done the heavy lifting so you can get started on driving the business forward.

The following 11 automations serve as the ideal starting points to jumpstarting the transformative potential of automation.

**1** **Orders Stuck in Neutral**  
Avoid the dreaded 'Error State'

**2** **Services on the Server Not Running**  
Prevent end-of-day processing from becoming an end-of-day nightmare

**3** **End of Day Failures**  
Shift from reactive to proactive troubleshooting

**4** **Mainframe Automation**  
Set your systems to autopilot

**5** **Password Resets**  
Make "Forgot Password" emails a thing of the past

**6** **Employee Onboarding**  
Turn new hires into office ninjas

**Employee Offboarding** **7**  
Bid farewell with dignity... and secure closure

**Resource Provisioning** **8**  
Empower employees to conquer the digital jungle... without a treasure map

**Incident Response - Low Disk Space** **9**  
Your application's diet needs more storage space ASAP

**Incident Response - Web App Down** **10**  
When one of your services takes a coffee break... but forgets to come back

**Health Checks - Load Balancer Reboot** **11**  
Giving your load balancer a much needed refresh



## USE CASE #1

# Orders Stuck in Neutral

Avoid the Dreaded 'Error State'.

In the fast-paced world of e-commerce, seamless order processing is crucial to customer satisfaction. But often Engineering Operations teams face persistent challenges with e-commerce orders getting stuck in various stages of processing.

When an order is stuck, it can be due to several factors, such as system errors, inventory discrepancies, or data synchronization issues. These incidents require immediate attention to avoid delays in customer deliveries and maintain customer trust.

These issues are flagged by store employees by contacting the Store Support Service Desk, which then creates an IT Service Management (ITSM) ticket. An engineer then begins to troubleshoot manually, accessing various diagnostic tools and performing database queries and updates. The engineer might also need to contact the local store to gather additional information.

All of this, while critical to business continuity, is a waste of precious talent and human resources, which could be better spent on more mission-critical tasks. Enter automation for the win!



## HOW IT WORKS

# Troubleshooting Stuck E-Commerce Orders

Automation can help address this repetitive and resource-intensive process. When an ITSM ticket is created for a stuck order, a Resolve runbook is automatically triggered.

This workflow performs the following tasks:



**Troubleshooting:** The automation identifies common causes for stuck orders, performs diagnostic checks, and collects relevant data to determine the issue.



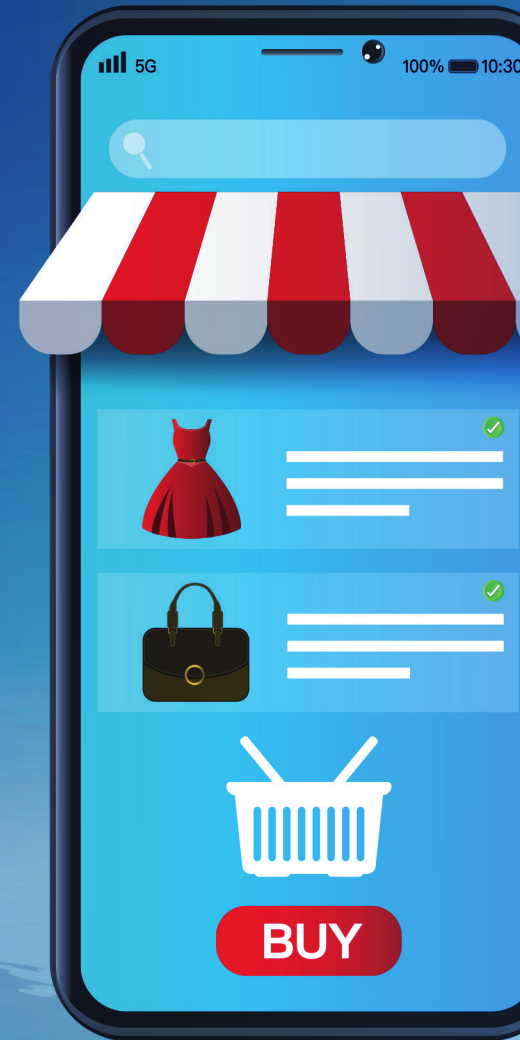
**Remediation:** Based on the identified cause, the automation executes appropriate remediation steps, such as updating database entries or reprocessing the order.



**Documentation:** All actions taken by the automation are automatically recorded in the ITSM ticket, providing a detailed log for audit and analysis.

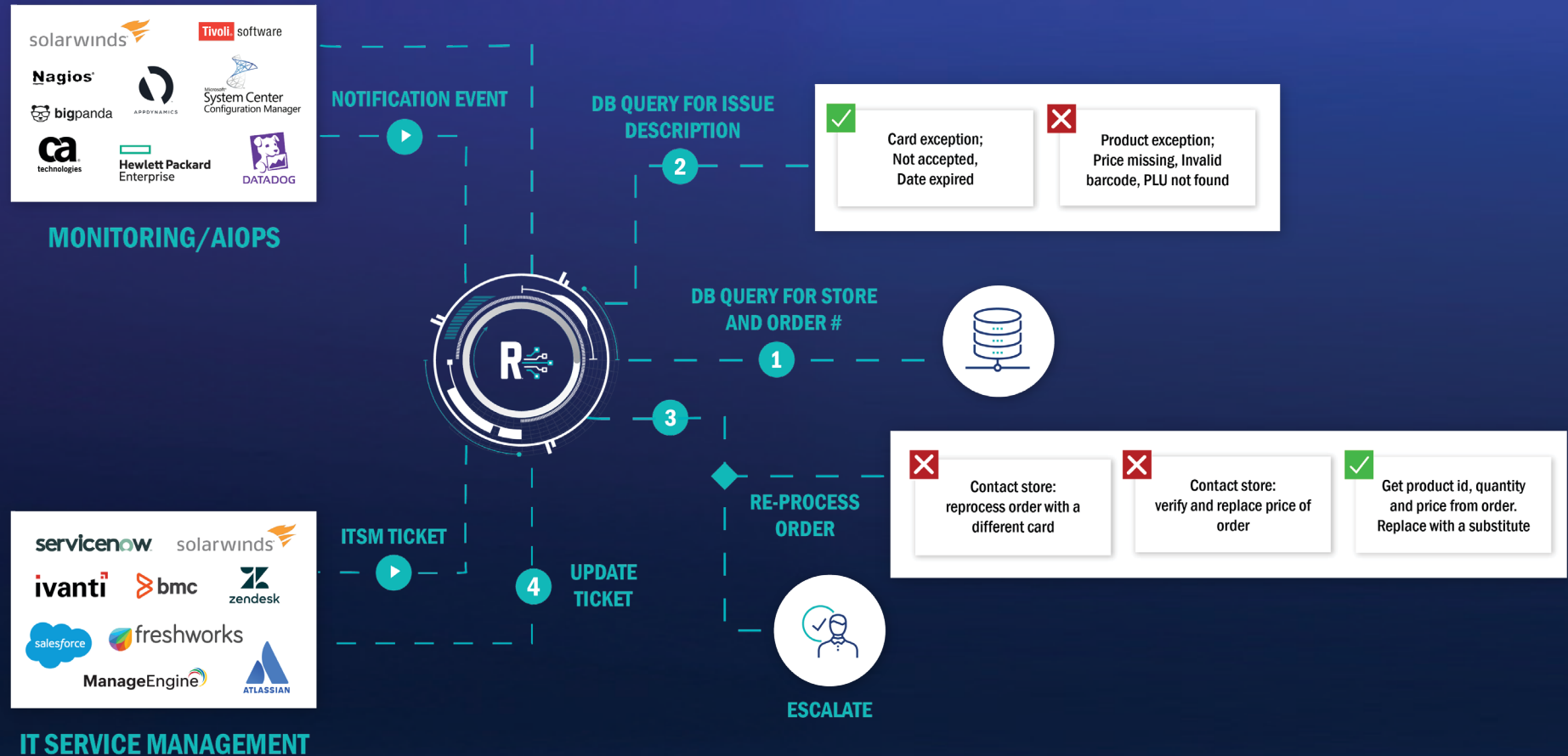
This automation solution significantly reduces the time required to resolve stuck orders, allowing the EngOps teams to focus on more complex issues.

Additionally, the automated runbook can evolve, with the ability to incorporate new procedures and troubleshooting techniques as the retailer gains more insights into common issues.



## WORKFLOW

# Troubleshooting Stuck E-Commerce Orders



## USE CASE #2

# Services on the Server Not Running

Prevent End-of-Day Processing from becoming an End-of-Day Nightmare.

End-of-day (EOD) processing is a critical operation for retail stores, ensuring that all transactions are reconciled, reports are generated, and systems are prepared for the next business day. However, many stores face frequent issues that disrupt this process.

In fact, retailers can face up to an average of 100 incidents per week related to end-of-day processing, leading to delays and additional manual troubleshooting.

When essential services on the stores' servers are not running as expected, it prevents end-of-day processing from starting, which can also disrupt other services like Labelling, Pricing, and Payment.

Each troubleshooting effort can take significant time, resulting in lost productivity and increased operational costs.



## HOW IT WORKS

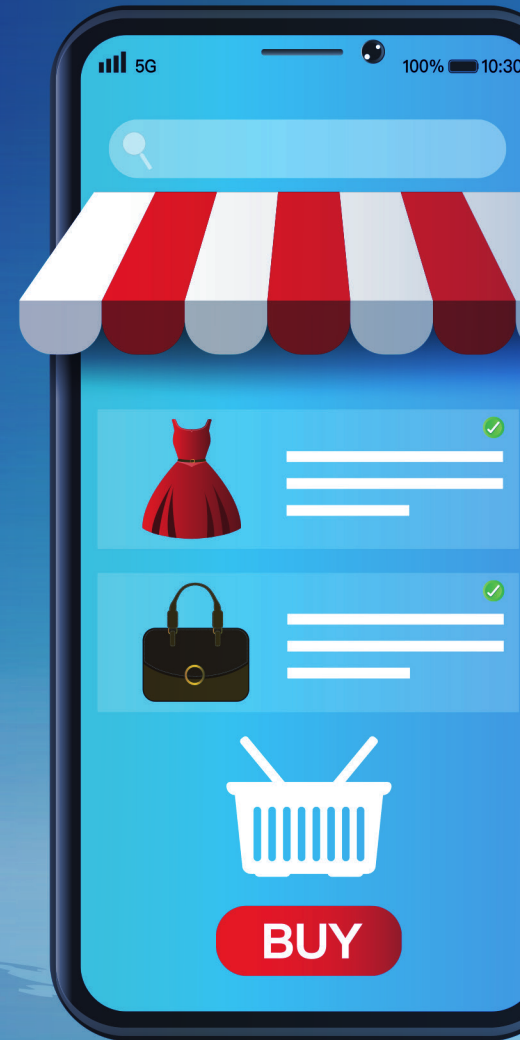
# Proactive Pre-Checks

The goal of this use case is to automate the pre-check and troubleshooting process for end-of-day processing, using automation to ensure the necessary services are running before EOD begins.

If these services are malfunctioning, the automation will perform the required troubleshooting and attempt to resolve the issue. If the problem persists, the system will automatically escalate the incident to the Level 3 Team for further investigation.

Resolve offers a significant advantage over traditional PowerShell scripts, which process operations linearly. With Resolve, automation can communicate with all stores concurrently, significantly reducing the time required to complete checks. This concurrent approach is expected to cut the process from over four hours to much less, increasing the chances of addressing issues before EOD processing is scheduled to occur.

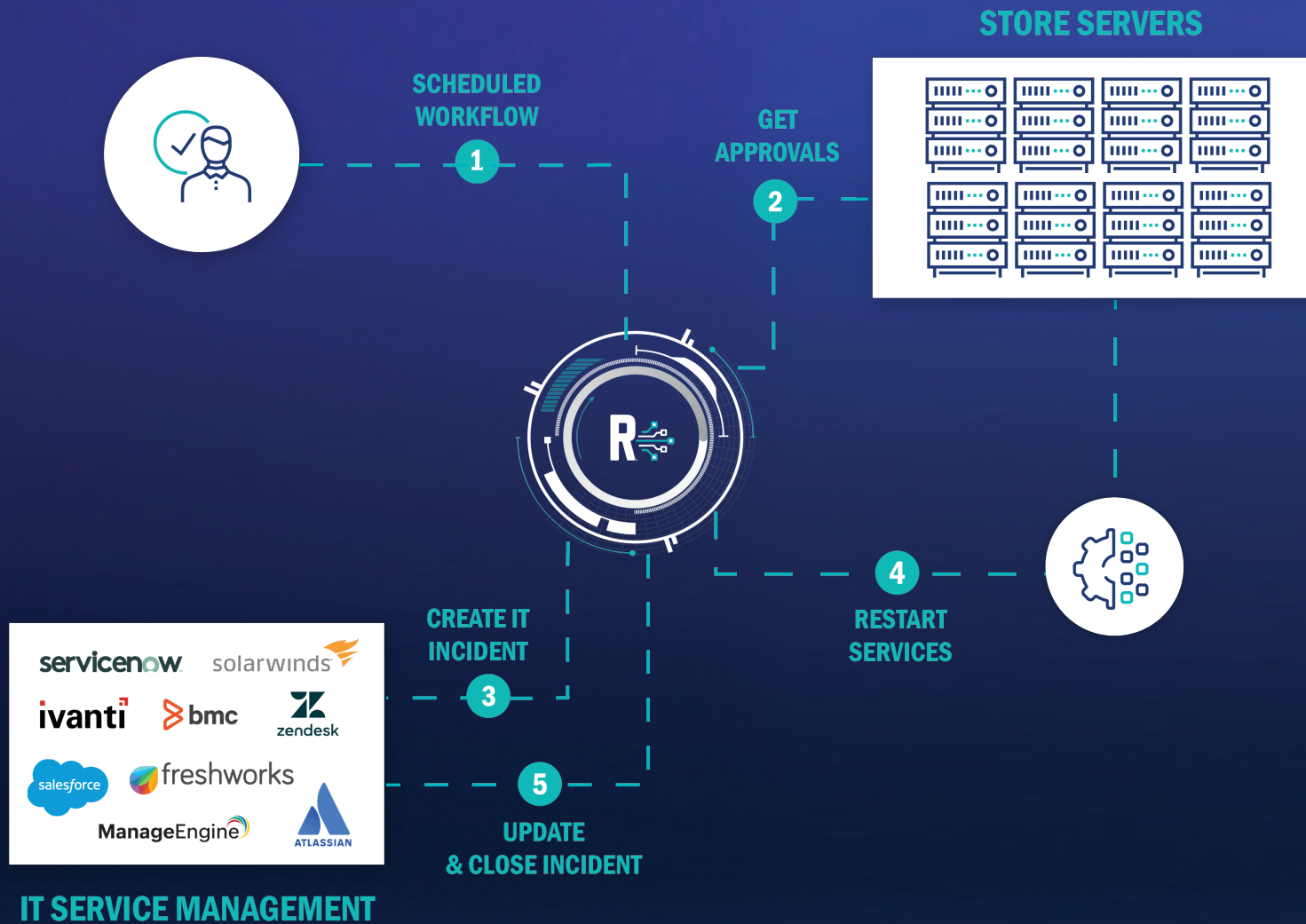
By implementing this automated approach, EngOps teams can eliminate manual intervention, speed up the troubleshooting process, and ensure smooth and uneventful end-of-day operations. This not only improves operational efficiency but also minimizes the impact of EOD issues on store-level processes and, ultimately, customer satisfaction.





## WORKFLOW

# Proactive Pre-Checks





## USE CASE #3

# End-of-Day Failures

### Shift from Reactive to Proactive Troubleshooting.

This use case focuses on troubleshooting end-of-day processing on store servers remotely, specifically for international stores. Most often the process is manually initiated by Network Operations Center (NOC) Engineers when they receive an email indicating which stores have not started their end-of-day processing.

Without automation, this process ends up being all manual, where engineers spend at least 10 minutes resolving each issue, leading to significant wasted time—approximately 600 manhours annually.

The goal of this use case is to respond quickly and automatically to instances where end-of-day processing has not started at the required time. To achieve this, the automation/runbook is triggered when the End-of-Day Batch Jobs email is received.



## HOW IT WORKS

# Reactive Troubleshooting from the NOC



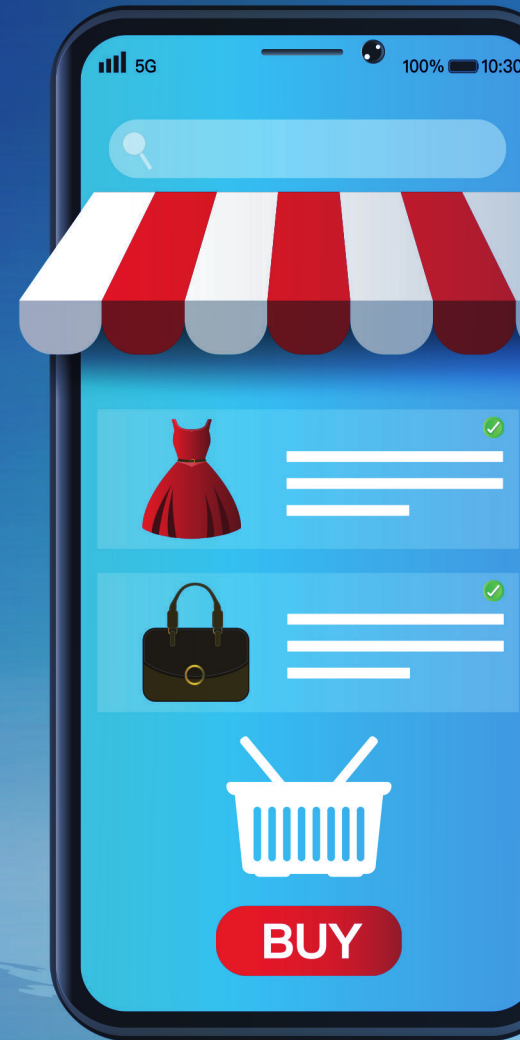
**Automated Parsing and Diagnostics:** The automation parses the incoming email to extract the list of affected store numbers. It then loops through each store, performing a series of diagnostic checks to identify the cause of the issue.



**Troubleshooting and Resolution:** If a batch job is found to be stuck, the automation checks the batch file and attempts to restart it. Additionally, the automation checks relevant services, restarting them if necessary, or even restarts the entire server to resolve the problem.



**Automatic Escalation:** If the automation cannot resolve the issue, it automatically escalates the incident to the Level 3 Team for further investigation, ensuring a seamless and efficient process for addressing more complex problems.



## WORKFLOW

# Reactive Troubleshooting from the NOC



## USE CASE #4

# Mainframes Automation

### Set Your Systems on Autopilot.

In the retail industry, mainframes play a crucial role in handling critical functions such as transaction processing, batch jobs, inventory management, and customer data storage. Despite the growing popularity of cloud-based solutions and distributed computing, many retailers still rely on mainframes to ensure their core systems run smoothly and efficiently.

- **High Processing Power:** Mainframes are designed to handle vast amounts of data and transactions, making them ideal for retail environments with high transaction volumes.
- **Reliability and Uptime:** Retailers cannot afford downtime, and mainframes are known for their reliability and robust architecture, ensuring continuous operation.
- **Security and Compliance:** Mainframes offer strong security features and compliance capabilities, which are essential in retail for protecting customer data and meeting regulatory requirements.
- **Legacy Integration:** Many retail systems were built on mainframe technology, and integrating with these legacy systems can be complex and costly if moved to new platforms.

Maintaining mainframes however poses several challenges for retailers:

- **Skill Shortages:** The pool of experienced mainframe engineers is shrinking, making it difficult to find and retain talent to manage and maintain these systems.
- **High Operational Costs:** Mainframes require specialized hardware, software, and infrastructure, leading to significant operational costs.
- **Complexity of Maintenance:** Mainframes run critical batch jobs and processes that require meticulous attention to detail, with any errors potentially causing significant disruptions.
- **Slow Adaptation to Change:** Unlike more flexible computing platforms, mainframes can be slow to adapt to new technologies and industry trends.








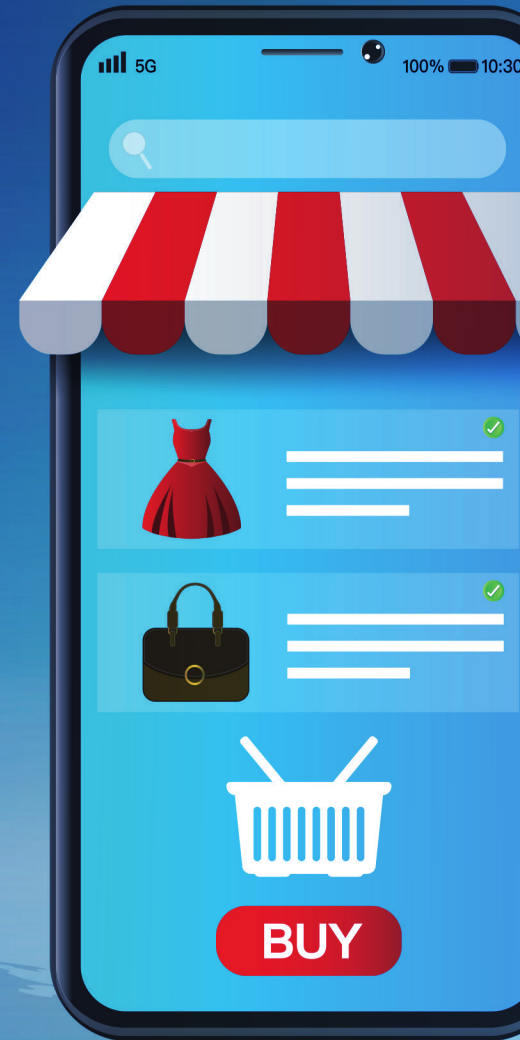
## HOW IT WORKS

# Mainframe Automation

In this use case, automation plays a critical role in monitoring and resolving issues on a mainframe system. Often terminal emulation software is used to access and monitor alerts in the mainframe. Here, an engineer observes a session that displays failed transactions or jobs. When failures occur, the engineer manually acts upon these events to remediate the problem.

The goal of automation in this context is to streamline the process of detecting and resolving issues with minimal human intervention. Here's how it works:

-  **Event Detection:** When a transaction or job fails on the mainframe, an event is raised to signal an issue. In the traditional setup, engineers would manually monitor for these events, but with automation, the system can automatically intercept the event in real-time.
-  **Automated Remediation:** Once an event is detected, the automation platform (Resolve) executes a series of terminal commands to perform a pre-determined set of steps aimed at resolving the problem. These steps can include restarting processes, clearing error logs, or re-initiating failed transactions.
-  **Alert Resolution:** If the automated remediation is successful, the event is marked as resolved, and this status is reflected on the alert screen. This allows engineers to quickly identify which issues have been addressed and focus their attention on more complex problems that require manual intervention.



## USE CASE #5

# Password Reset

**Make “Forgot Password” emails a thing of the past!**

The common IT password reset ticket is a puzzle most IT professionals have solved in their sleep.

But these pesky requests tend to hog more bandwidth than anticipated, diverting resources that IT service desks could allocate more strategically. The influx of password reset requests also introduces unforeseen expenses, quietly nibbling away at the business budget.

### Not everything is still in the cloud

In the era of cloud-based SaaS applications, users can retrieve forgotten passwords with a simple click. However, managing passwords for legacy or custom-built applications presents a more complex challenge, often leading to a high volume of tickets and increased demand on IT service management (ITSM) teams. For routine tasks like these, ITSM professionals are required to manually handle each request, adding to their already heavy workload.



“

**The average IT helpdesk labor cost for just one password reset is \$70, according to Forrester.**

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## HOW IT WORKS

# Password Reset in Action

There can be many flavors of password reset automations based on an organization's individual requirements and IT setup.

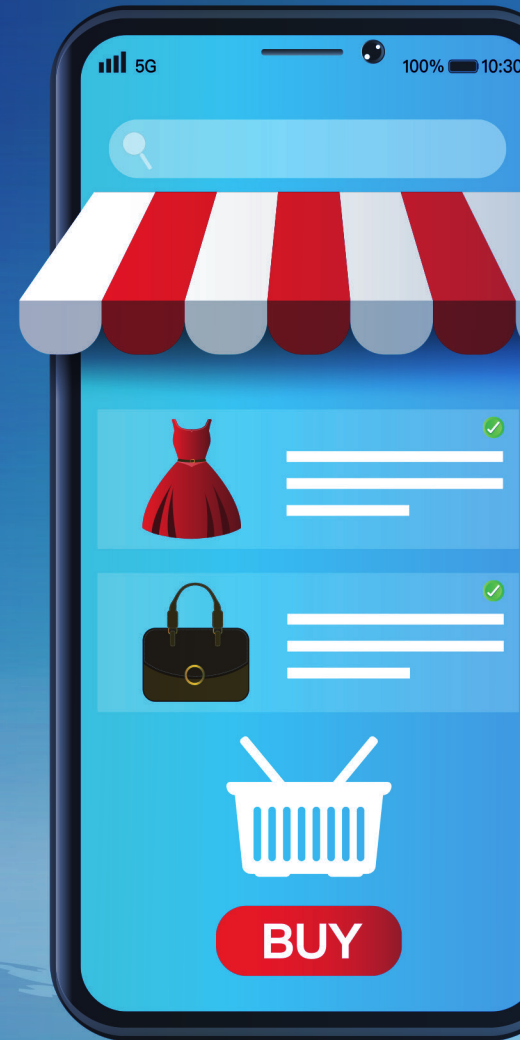
Unlocking accounts through text-based methods provides employees with a convenient and efficient way to regain access to their accounts. Automation allows employees to initiate password requests directly from their mobile devices. Typically, employees find themselves locked out of multiple company accounts, necessitating either an account unlock request or the use of an alternative backup method to reset their password.

Here's a breakdown of the process:

- ✱ This process is triggered by either a self-service request or an IT ticket for resetting a password.
- ✱ The workflow verifies identity of the requestor.
- ✱ It performs the reset operation (getting approvals along the way if there needs to be).
- ✱ The temporary password is communicated back to the end user.

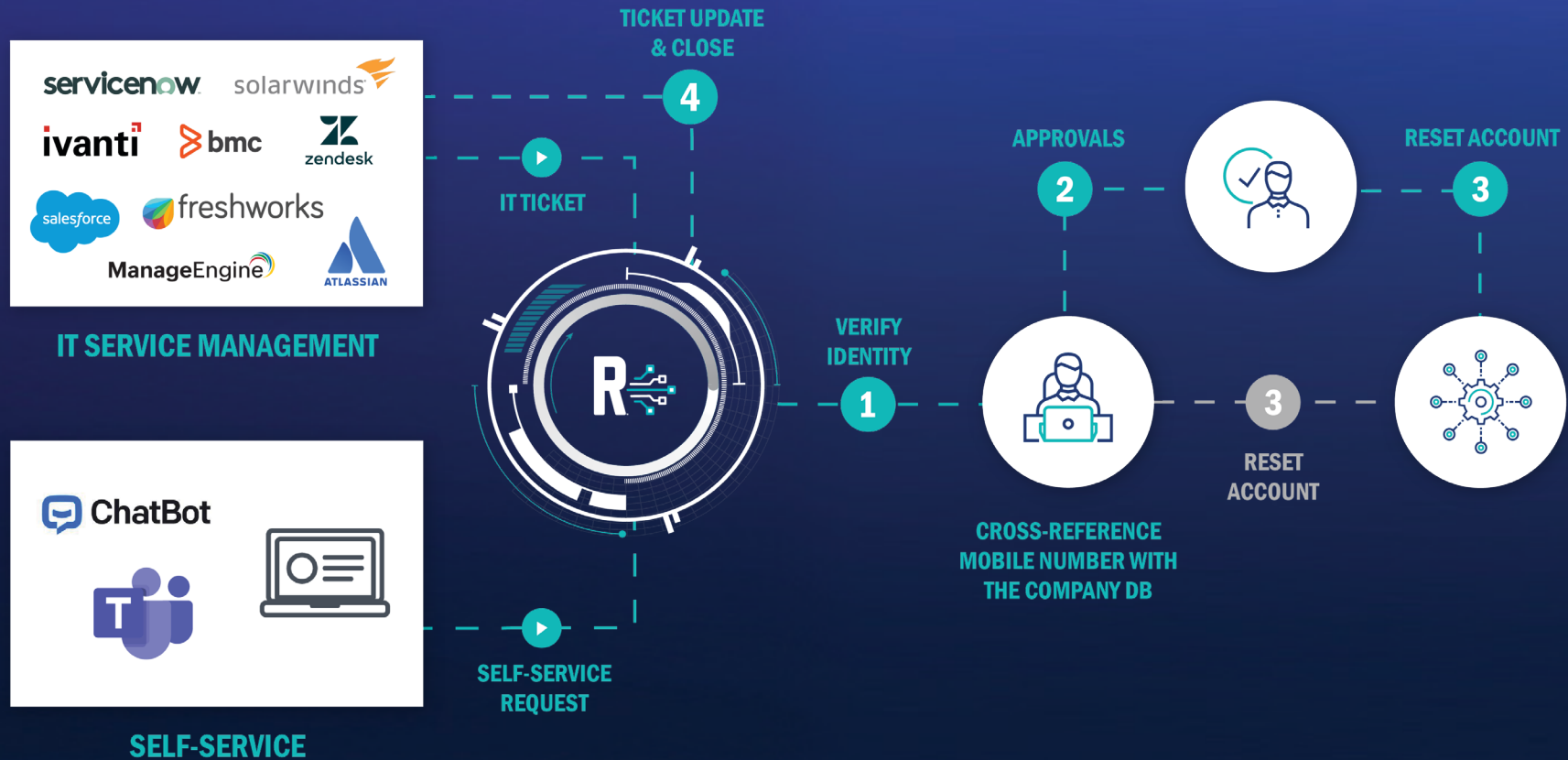
This temporary password, which expires after 72 hours, adheres to the organization's password policies, for example being at least 12 characters long and including at least one number and one special character.

By leveraging automation, organizations can reduce the burden on IT teams while providing employees with a seamless experience. This approach not only enhances security through identity verification but also ensures compliance with password policies.



## WORKFLOW

# Password Reset



## USE CASE #6

# Employee Onboarding

Turning new hires into office ninjas... without the paperwork samurai swords.

Vital for fostering a positive onboarding experience, IT teams provision new hires with multiple systems and accounts, ensuring a frictionless start on Day 1. However, this process often generates a significant influx of IT tickets, presenting an ideal opportunity for automation.

Effectively managing these IT requests is paramount to ensuring new employees feel supported and empowered. Yet, the burden of handling these tickets adds to the complexity of setting up applications and documentation, creating additional challenges for IT staff.






## HOW IT WORKS

# Automated Employee Onboarding in Action

By leveraging automated workflows, organizations can streamline the onboarding process, minimize errors, and enhance employee satisfaction.

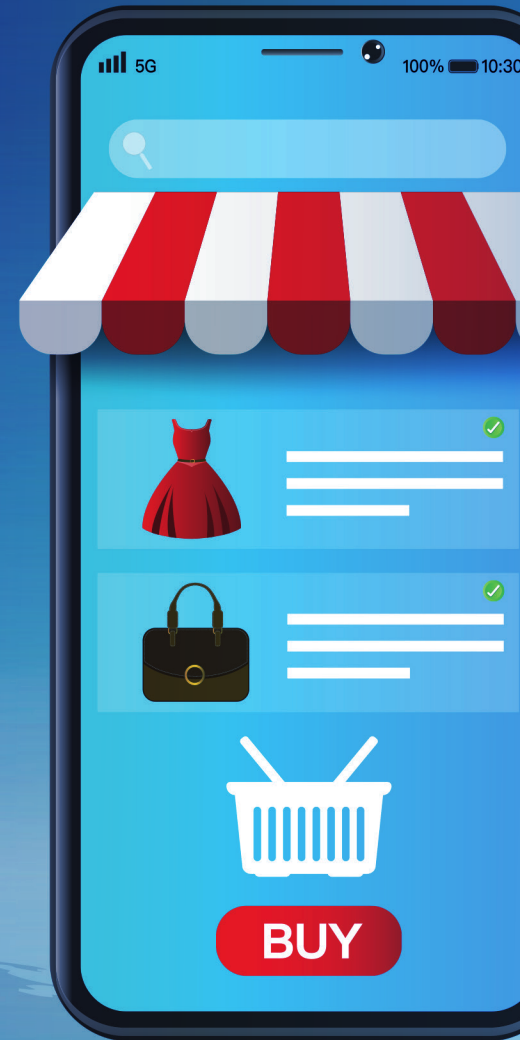
Initiating the employee onboarding process marks the inception of a seamless workflow, meticulously crafted within Resolve Actions' workflow designer with minimal or zero coding requirements. Whether the onboarding request originates from a ticket or directly integrates with popular human resources (HR) management systems such as Workday or BambooHR, Resolve effortlessly accommodates both pathways.

Here's how it unfolds:

-  An HR representative submits an onboarding request, furnishing essential details like the new employee's name, department, and pertinent information.
-  Upon submission, Resolve springs into action, initiating the automated onboarding process without delay.
-  The workflow dynamically configures access levels and permissions based on factors like employee location and job code. Additionally, access to essential applications like Office 365 and Okta can be configured as well.

When the onboarding request originates from an HR management system, Resolve facilitates bi-directional updates back to the IT ticket, ensuring seamless communication and collaboration across departments. The workflow is designed to adapt to the dynamic nature of organizational approvals, allowing for multiple levels of review and endorsement.

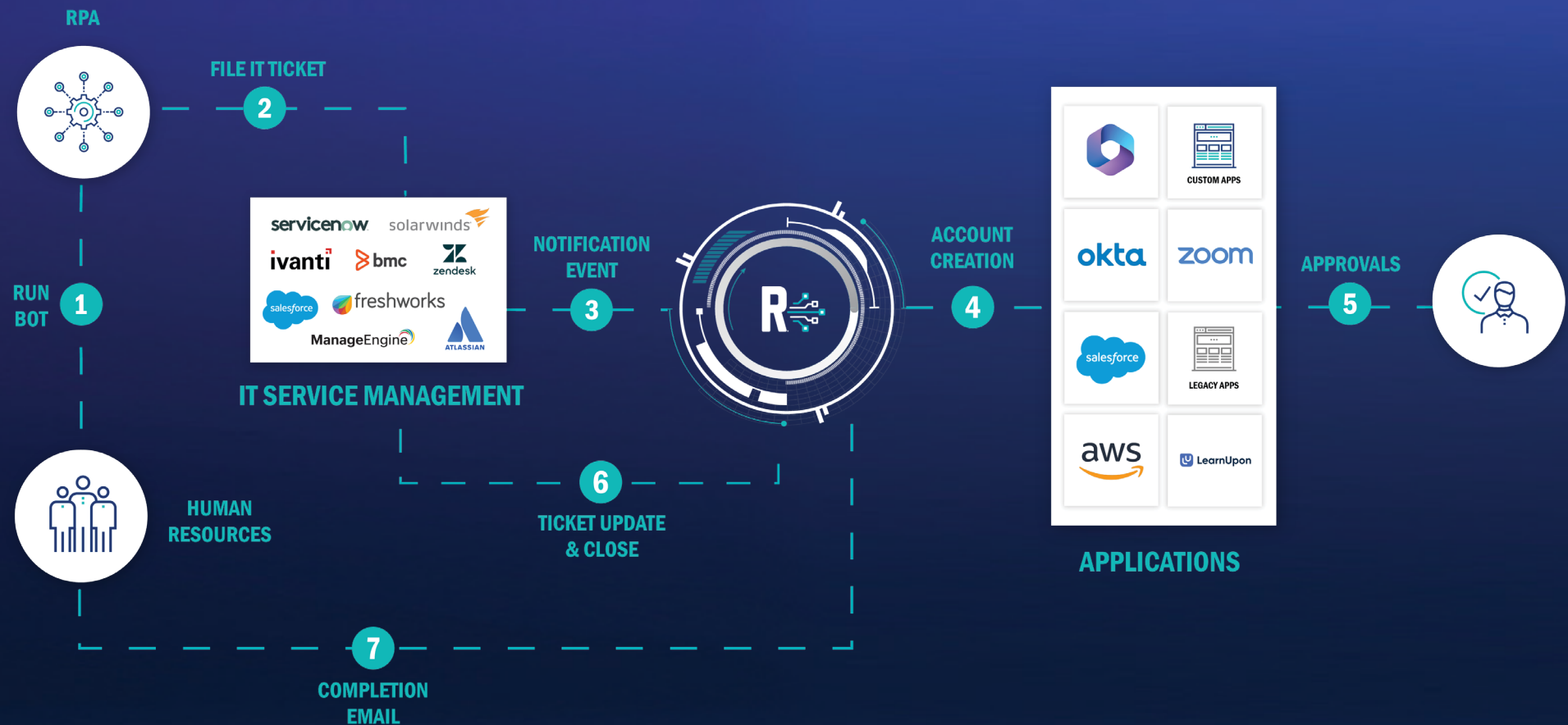
Remarkably, this entirely self-driven automated onboarding process typically concludes within a swift 20 to 30 seconds, underscoring Resolve's efficiency and agility in orchestrating complex workflows with ease.





## WORKFLOW

# Employee Onboarding



## USE CASE #7

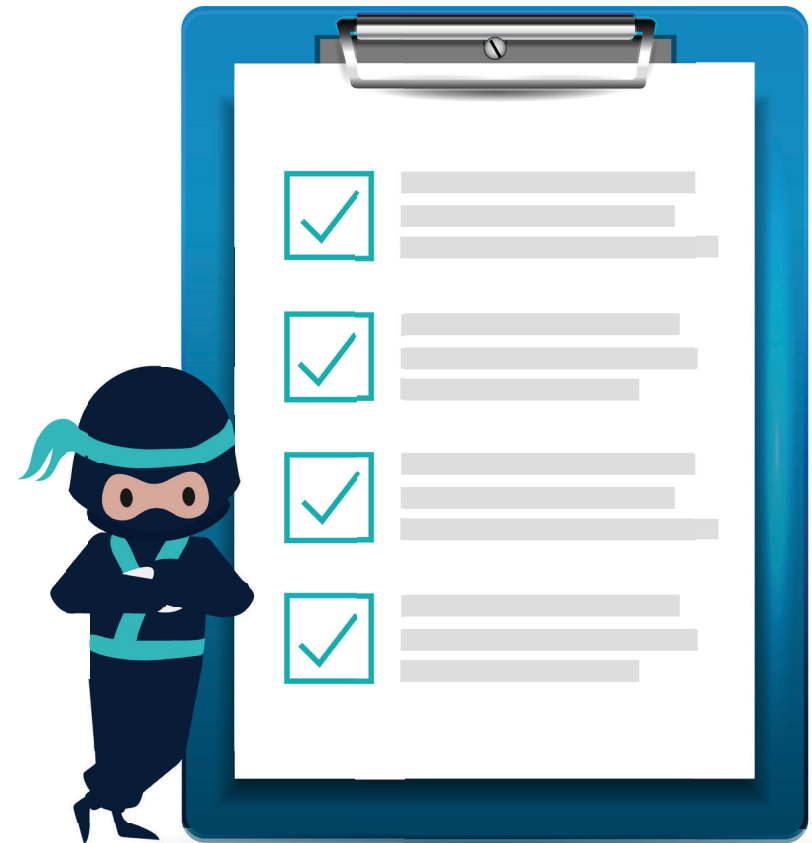
# Employee Offboarding

**Bid farewell with dignity... and secure closure.**

A surprising number of checklist items must be completed leading up to the moment when the relationship between employee and employer ends.

While farewells may seem simple on the surface, IT teams are tasked with critical procedures essential to the security of the organization. Managing offboarding logistics, including closing open accounts within specified timeframes, places IT under considerable stress with an exhaustive to-do list that appears never-ending.

Employee offboarding requires a great deal of time-sensitive communication between HR, management, and IT. Manual effort creates room for error that organizations cannot afford, given consequential security risks. One tiny task left undone, keeping system access on, can cause irreversible damage, and there may not be a mechanism to correct the mistake.










## HOW IT WORKS

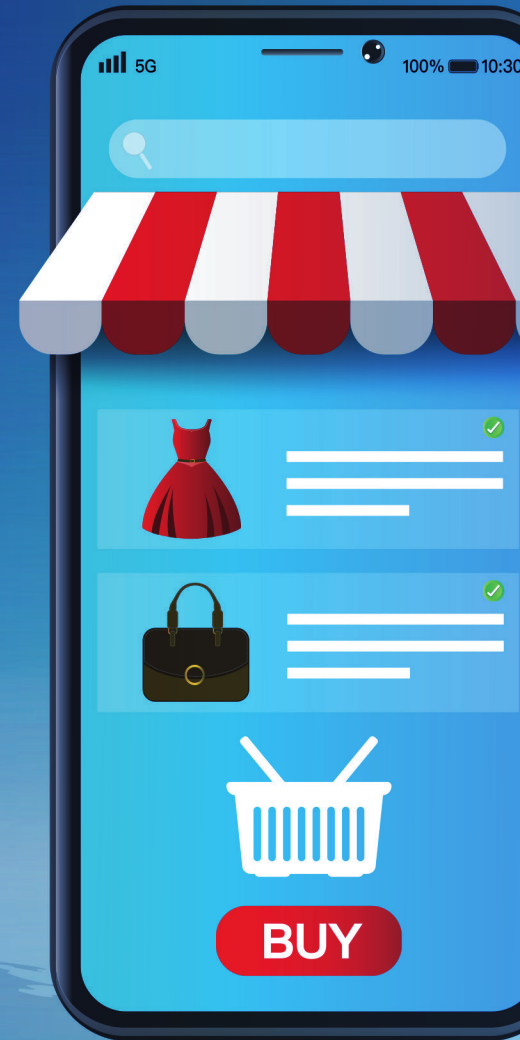
# Automated Employee Offboarding in Action

Automation can standardize the process and perform every single onboarding checklist item, giving IT professionals time for high-value work.

Employee offboarding is mistakenly seen mostly a reversal of the steps performed in the onboarding process. But as simple as that sounds, over the tenure of the employee's career they might have acquired more accounts, SaaS apps, or cloud resources that all need to be deprovisioned. So, there's actually much more to it.

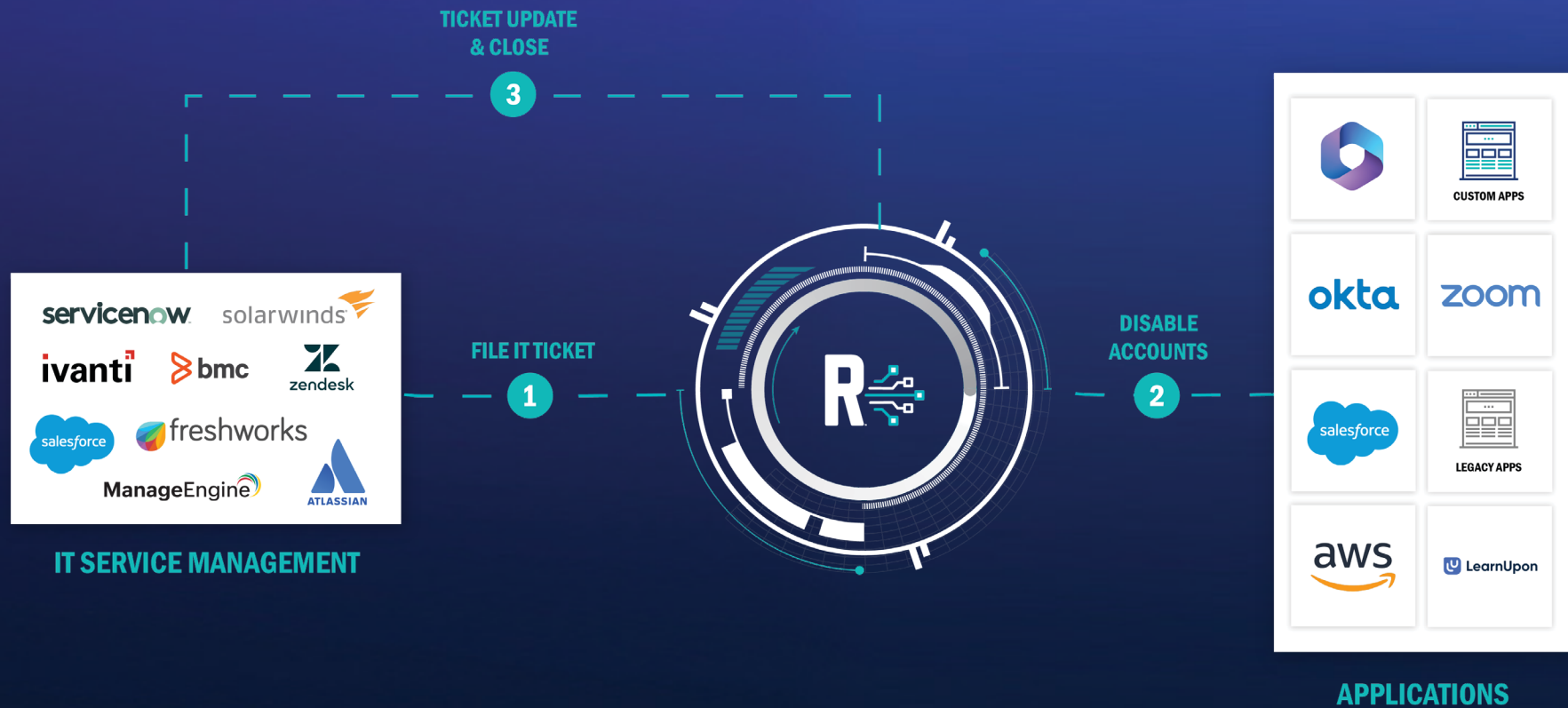
Here's how it unfolds:

-  The HR representative initiates the request from an IT ticket.
-  The workflow scans all known applications and services used by the organization to identify accounts for the departing employee (providing a realistic view of everything he/she procured over her lifetime at the company).
-  The workflow deprovisions accounts for all identified applications and services.
-  It notifies the HR manager that accounts have been locked or deprovisioned.
-  The workflow finally updates and closes the ticket.



## WORKFLOW

# Employee Offboarding



## USE CASE #8

# Resource Provisioning

Giving your team the tools they need to conquer the digital jungle... without a treasure map.

The many moving parts of resource provisioning present real roadblocks for IT teams - from diverse environments to the constant need for cost optimization and approvals.

Organizations today might already have a method and set of tools by which to build and configure a server, like Windows or Linux. But the automation is focused on building the server, which is just a small part of the overall process.

Resource provisioning is more than server provisioning and can include a network link or even a new network configuration service, firewalls, and more. There are also tasks and processes that need to be completed by other external teams requiring explicit approvals.









## HOW IT WORKS

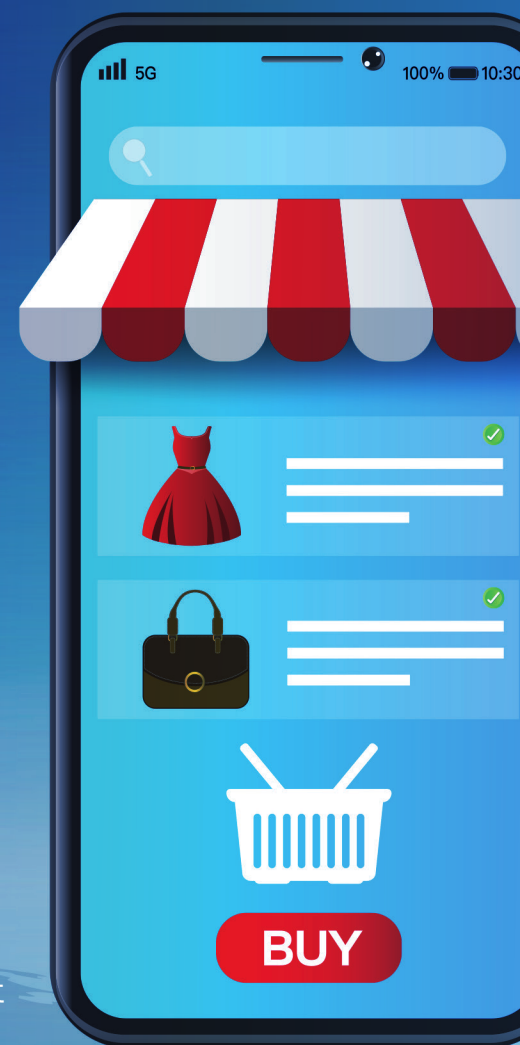
# Automated Resource Provisioning in Action

Infrastructure and operations engineers must think about server provisioning as an end-to-end process and as an ideal candidate for orchestration. Seeing the bigger picture will enable IT to finish the series of tasks faster, and they'll understand that server provisioning doesn't have to take three or four weeks (or even months!), but instead, 10-20 minutes at most.

Provisioning servers requires many steps, which usually starts when an employee fills out an IT request on a ticketing platform.

-  The employee chooses to request a new resource and selects specifications.
-  The ITSM ticket kicks off the Resolve workflow.
-  All relevant information needed is parsed from the ITSM ticket.
-  The workflow can begin prechecks. As the workflow progresses, notifications are sent out to the employee and become available on the IT ticket.
-  The server is provisioned and configured using the information provided in the IT ticket.
-  Once built, all relevant details about the new resource are communicated back to the ticket and/or requestor, including information like network details, zone and region details, default credentials, and more.

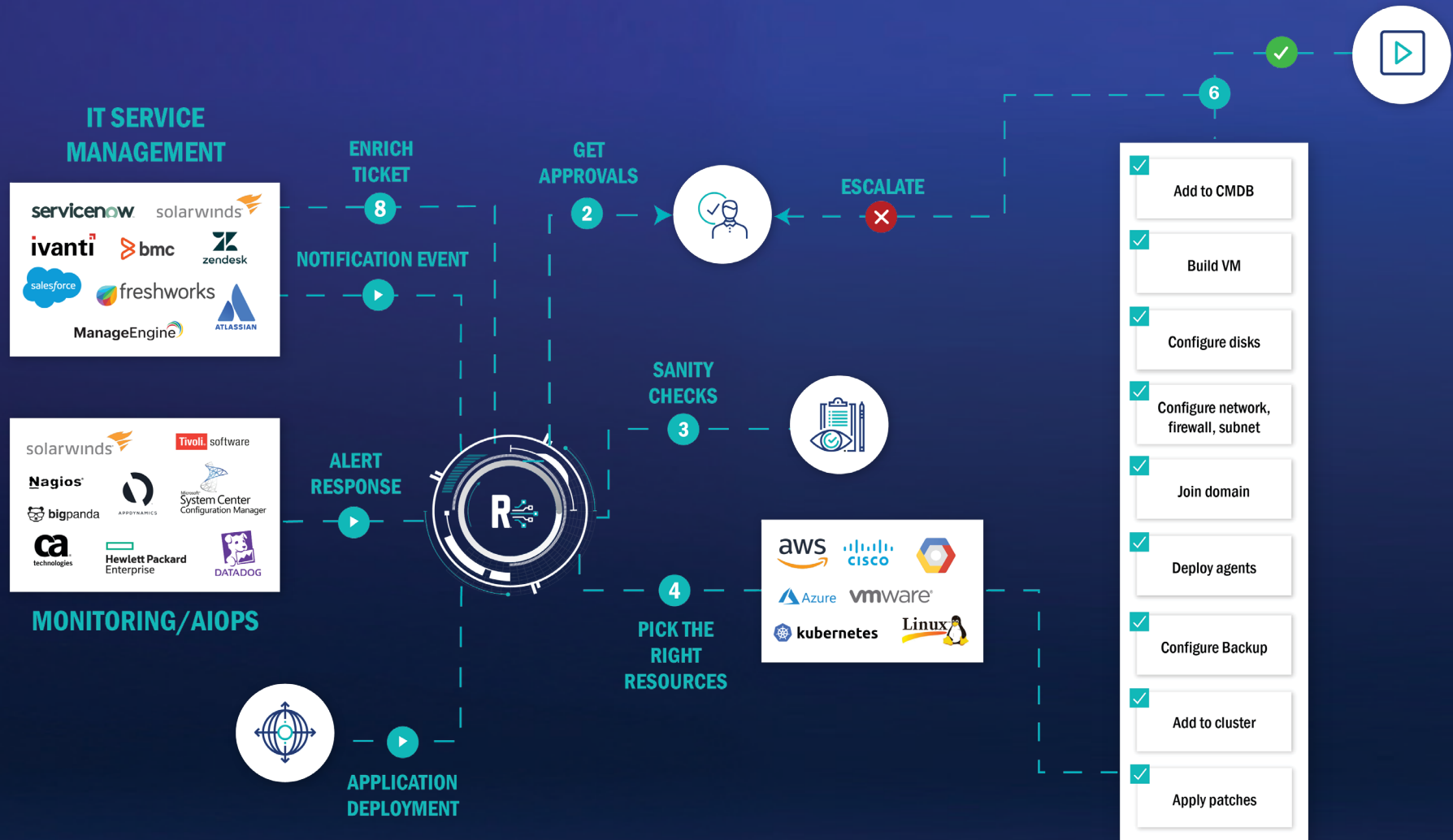
From the ticket, IT can examine every validation and sanity check step that the automation carries out before any new infrastructure is provisioned. These validation steps not only prevent build errors that require the original requestor to figure out what they did wrong, but they also ensure any newly built resources adhere to IT policies.





# WORKFLOW

## RESOURCE PROVISIONING



## USE CASE #9 & 10

# Incident Response

When alerts come flooding in like a deluge, it's all too easy for even the most seasoned IT professionals to become overwhelmed and desensitized. Amid this chaos, errors can occur, leading to downtime, disruptions, and ultimately, diminished productivity. It's a scenario that can happen to anyone caught in the crossfire of an alert storm, highlighting the importance of automation to help maintain operational integrity.





## USE CASE #9 - INCIDENT RESPONSE

### Web App Down

When a service takes a coffee break ...  
but forgets to come back.

Getting ahead of the curve and proactively managing web applications is key for customer experiences.

More businesses have gone digital, requiring increased IT support, and employees are accessing more systems and applications virtually from multiple locations. They all depend on sturdy websites and applications to do their jobs and support business growth.

Automation has what it takes to streamline outage remediation from end-to-end, for every process from simple service and server restarts to more advanced functions like adding additional nodes to a cluster and scaling up load balancers - as well as mitigating error along the way.



## USE CASE #6 - INCIDENT RESPONSE

### Alert! Low Disk Space

Your application's diet needs more storage space ASAP!

In low disk space remediation, IT typically receives an alert stating that a specific disk has exceeded its acceptable safe usage threshold, which is set up through observability or AIOps platforms, allowing IT to respond quickly and minimize business impact. A Windows update, for instance, downloads a significant amount of data and doesn't always clean up after itself. Over time, leftover data from past updates adds up.

Resolve workflows are event-driven and can be triggered directly from the observability or AIOps platform, with each workflow being kicked off by data that's analyzed from the alert.








## HOW IT WORKS

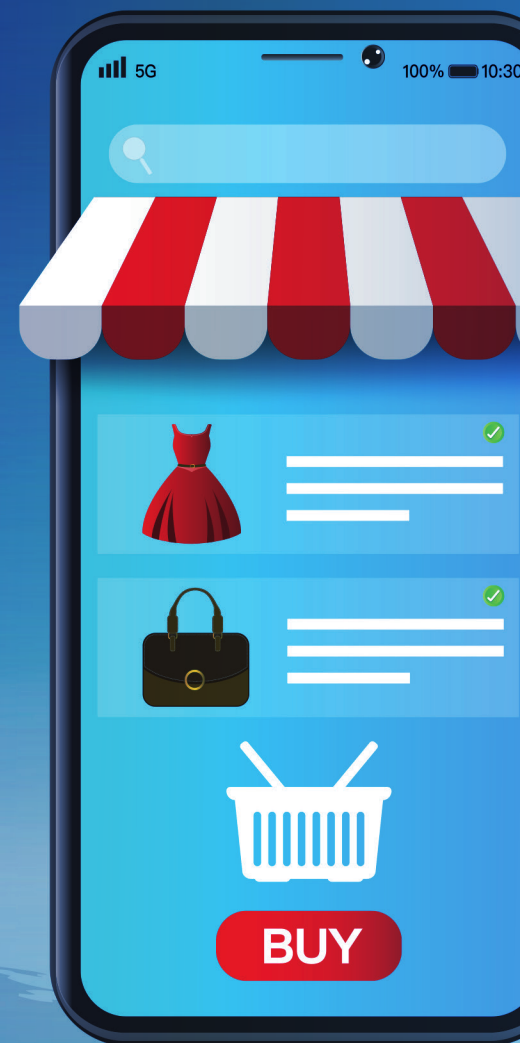
# Automated Incident Response in Action

When a web application is unresponsive or in a faulted state, IT teams get an alert. At that point, Resolve intercepts the alert in real time.

The Resolve workflow inspects the alert to collect all relevant data, including the alert ID, the affected host, and the type of alert. An IT ticket is filed as well, which includes the right details and the configuration item.

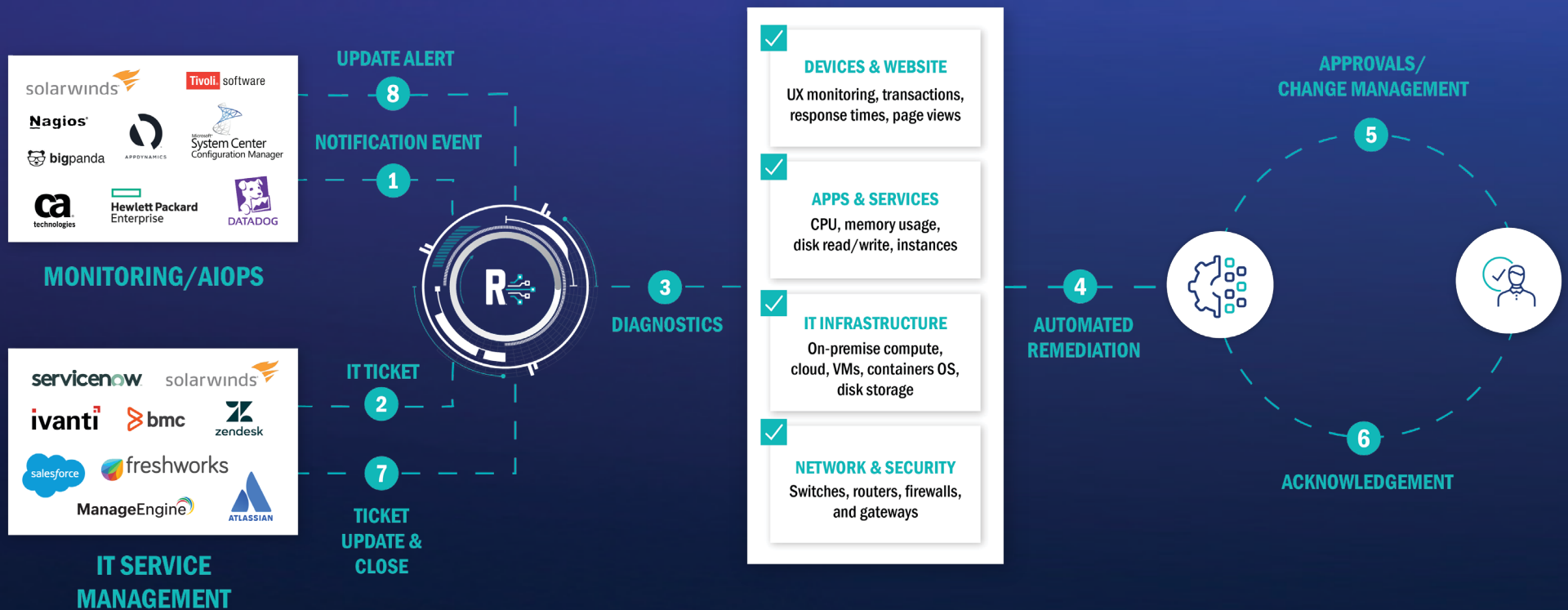
For example, a web application is hosted on Windows, and the Internet Information Services (IIS) are down.

-  The automation isolates the problem server.
-  Restarts the service on the Windows VM.
-  An application pool is then checked to see if any are in a stopped state and need to be recycled and brought back online.
-  Lastly, the web application is checked for a normal response.
-  Resolve closes out the ticket and add the detailed audit logs for later use.



## WORKFLOW

# Incident Response



## USE CASE #11

# Load Balancer Sanity Reboot

Giving your load balancer a much needed refresh.

The load balancer front-ends a web server, or other application, so that it appears as a single service for the user (even though it's essentially multiple services behind the load balancer), like for someone in the U.K. versus someone in the U.S. A variety of mechanisms allows for the server to recognize geographic regions.

A web application can have two — or it can have 2,000 — servers around the world.

Most commonly, companies have a primary and a secondary load balancer for availability and resilience. Load balancer sanity reboot processes run every three to six months and cycle around the load balancers to ensure that both are working equal amounts of time, over the typical five to 10 years that they're installed. This changeover should be forced to ensure network resiliency and high availability.

Even though a checklist with items to complete sounds simple and reliable, it's not.





## HOW IT WORKS

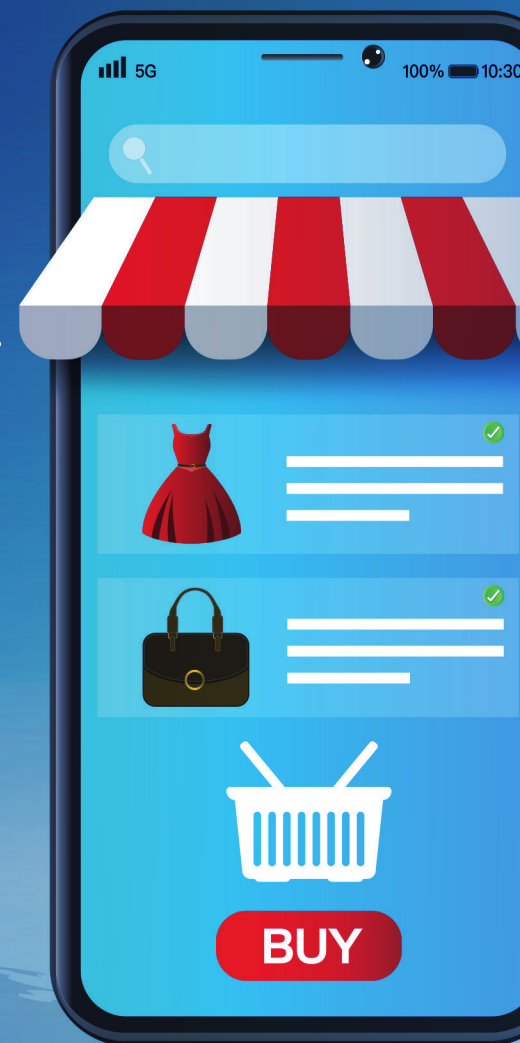
# Automated Load Balancer Sanity Reboot in Action

In an automated load balancer sanity reboot, the Resolve workflow is executed on demand by a human agent or as part of a pre-defined reboot schedule. Although the process is not kicked off in response to an incident, the right sequence of steps must be followed accurately so that it's not escalated into a business-critical issue.

- ✱ First, the automation determines whether both devices are online, they “know each other,” and they’re in fact working.
- ✱ Once confirmed that the backup device meets expectations, it’s then taken down and rebooted.
- ✱ The automation runs one more time to double check that everything is working.
- ✱ The secondary device takes over while the primary is rebooting. Like rotating tires on a vehicle, the two servers have been swapped as to not run down the “front two wheels.”

An IT engineer typically spends 30-60 minutes executing the reboot, but it’s a very risky process because many steps, pre-checks, and post-checks must be managed the right way. If done wrong, the engineer brings down every single web application or server that the load balancer is fronting.

Building the pre- and post-checks into the automation ensures proper behavior of the load balancer sanity reboot. Automation takes the process down to under five minutes. Triggered from a network alert or job schedule, engineers receive notice that the load balancer has been operating in the proper format for six months, which enables the rebooting process.



## WORKFLOW

# Load Balancer Sanity Reboot



# Modernizing Retail InfraOps for the Digital Age

Simply put, automation solves problems faster and with greater accuracy.

Organizations with their eyes on the biggest possible business outcomes must operate with development, growth, and transformation top of mind.

Just as individuals work to realize their fullest potential and become more effective, organizations can do the same – with just a bit of innovation and willingness to try something new.

Today's challenges in the retail industry make transformation difficult, changing key initiatives for each individual company. IT automations, like the eleven we've covered, are instrumental for creating real business transformation. It's about empowering retail organizations to address and overcome their unique obstacles with customized, innovative solutions, as well as serving the business's big picture purpose.







## About Resolve

Resolve's purpose-built IT process automation (ITPA) and orchestration platform addresses every unique challenge across IT Operations, Network Operations, ITSM and Cloud teams, with automated workflows that allow IT teams to respond faster, reduce the impact of incidents, and consistently maintain and deliver on service-level agreements (SLAs).

As a true end-to-end automation platform, Resolve frees up IT teams from time-consuming and error-prone manual work and empowers them to drive business innovation. From simple IT tasks to large scale service orchestration, IT process automation is the backbone for business growth.

[Schedule time with Resolve](#) to learn more about automating your organization's IT tasks and processes, and realizing your full potential.