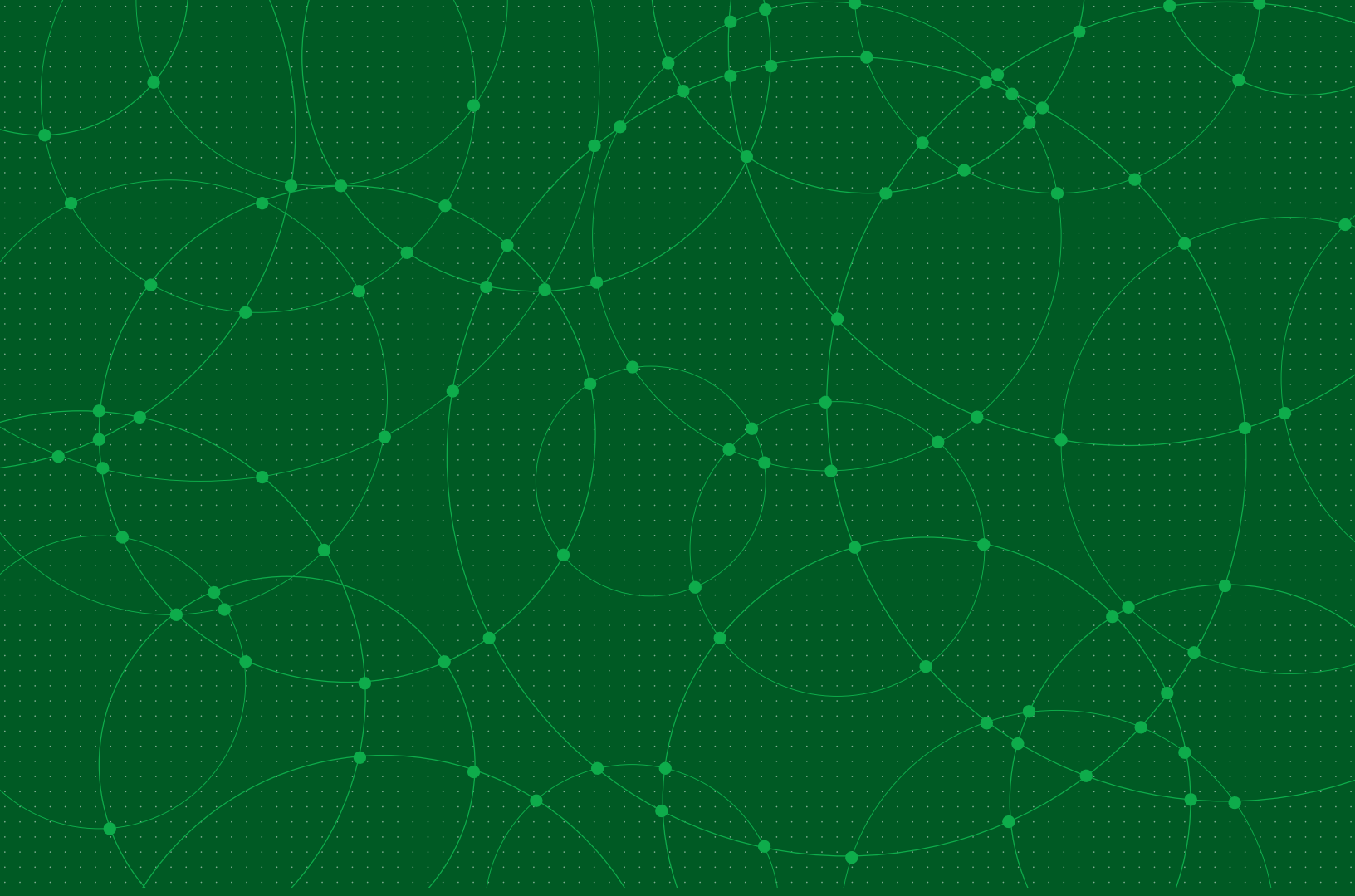


PagerDuty

Top ten toilsome tech tasks to automate today

Contents

Introduction

The pace of digital transformation places a premium on the agility of your IT Operations. When Operations should be focused on reducing costs, lowering risk & liability, and making their customers happier, they are often stuck in a cycle of siloed, labor-intensive tasks, where incidents can seem endless, tickets devour precious time and resources, and the best engineers are besieged by escalations and interruptions.. Expending so much time on low-margin work leaves the business ill-equipped to support a rapidly accelerating rate of change.

Making things worse, as complexity increases so does reliance on specialized experts to manage it all. Often burdened with the responsibility of handling routine tasks and incidents, this "below-the-value-line" work cannot be readily delegated to others, as it demands expert skills and abilities, and often requires specialized access.

Google research reveals that a staggering 80% of IT Ops budgets are consumed by this phenomenon: toil. It's not always unpleasant work, but it can be time-consuming, the kind of work that results in…a completed task, but one that solves the needs of one or few, not many. Over time, this can become a formidable obstacle for many organizations, in that it places a sizable burden on the bottom line, cuts engineering capacity, and stifles innovation, all while extracting a heavy price from the specialist talent your business relies upon, leading to boredom and burnout. In an organization with challenges so complex, so are the solutions - making it hard to know where or how to start.

Google research reveals that a staggering 80% of IT Ops budgets are consumed by this phenomenon: toil.

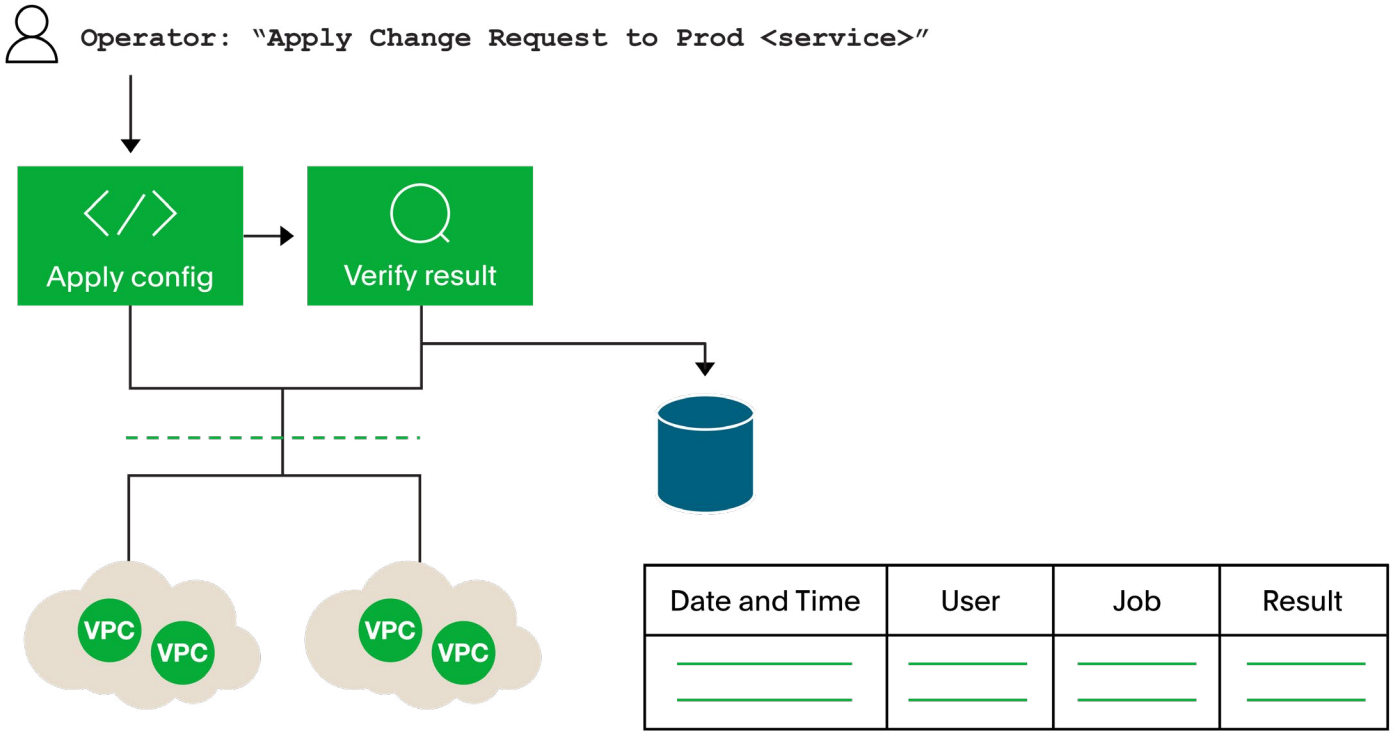
Automation to the rescue:
Operations teams have a choice to make. Spend time on toil, or you can build automated processes to reduce or eliminate toil, particularly in high-touch functions like incident response and service management. When you are bogged down by toil, it can be challenging to know what to start automating. Start small, reduce toil to free folks up for other work.

Many leading enterprises choose to automate their operations tasks with PagerDuty Process Automation. Here are ten things our customers are automating - things you can do with automation now, today - to deliver on the promise of doing more with less: increasing productivity instead of burdens, raising efficiency instead of costs, and re-energizing teams instead of depleting them. Drive high-value innovation and propel your business forward. This guide answers the question, "where do we start?".

1. De-complicate configuration change

A 2022 Cloudflare outage lasting 85 minutes, responsible for untold losses for a number of high-profile customers, was caused by a configuration error. The scale of today's IT infrastructure means managing configurations becomes increasingly complex, so there may be thousands of different configurations that need to be managed, with dependencies that are difficult to map and understand. Detailed documentation is labor-intensive to produce, so it isn't always available or prioritized.

Companies implement robust change management processes that require review of these kinds of changes before they go live. However, getting one change approved can take a long time and typically involves a number of decision makers with varying time constraints. By design, it creates a lot of overhead just to get one change out the door.

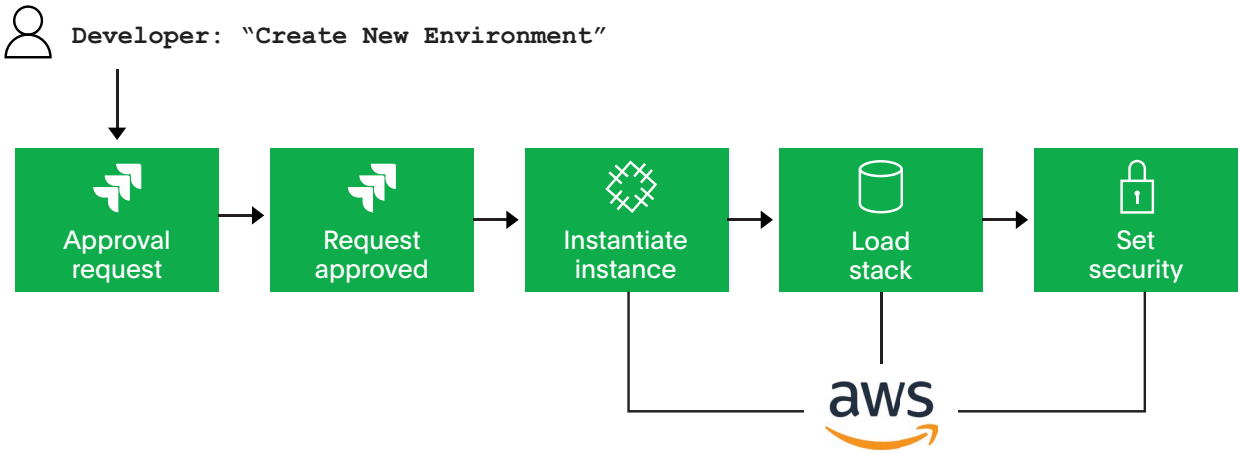


Automation to the rescue:
Create a repository of approved configuration changes in an automation solution that can be delegated out to others to use. You can include existing tools, scripts, and automation from your current configuration tools like Ansible and Salt. Standardizing configuration updates in an automation solution can streamline the change approval process since only approved changes are available and helps improve the quality of operations because manual updates are limited. With an automation platform, you can even trigger automation to execute directly from another system (like ServiceNow or Jira) at the point a change is approved, taking away the need for a human to be involved at all except for creating the original automation and doing the approval itself.

2. Streamline infrastructure provisioning

When a new environment is needed, Platform or Cloud Engineers are often responsible for provisioning the infrastructure. This multi-step process almost always starts with bringing up a Virtual Machine (VM) - like an EC2 node - specifying a Linux OS image, like AMI or similar, in a particular security zone. Then they attach storage to the VM, like Elastic Block or File Storage (EBS or EFS), followed by exposing the application's URL via an AWS Elastic Load Balancer (ELB).

This process requires subject matter expertise for each step, so businesses rely on these specialists to complete provisioning requests. However, these specialists often find they are constantly interrupted. . This is then multiplied by the countless hours of work each unique request generates, increasing time and cost. It adds up to a highly interrupted environment where engineers are unable to prioritize high-value, "deep" work.

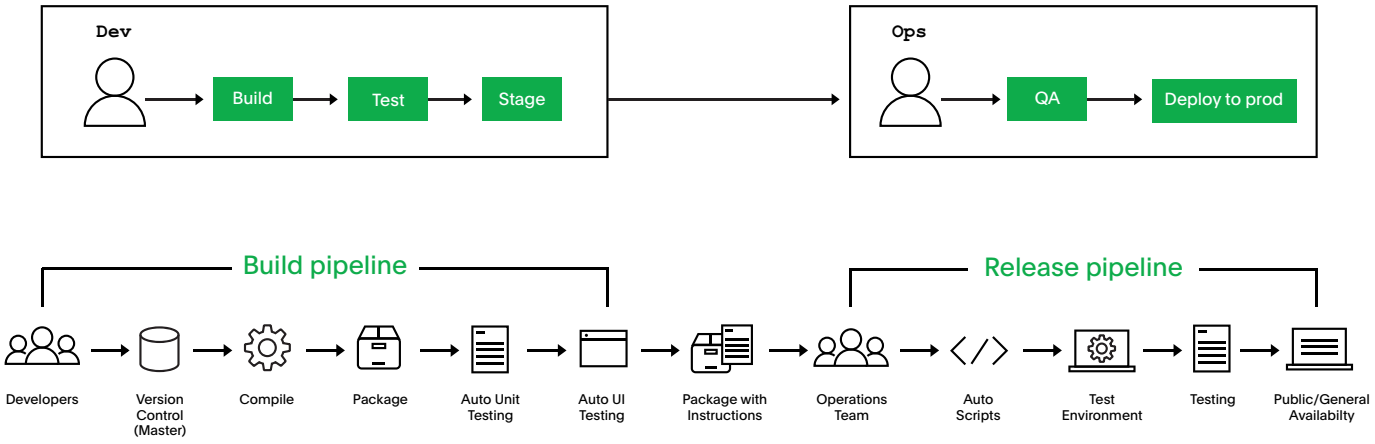


Automation to the rescue:

Creating automated end-to-end workflows for provisioning and connecting new infrastructure can help streamline this process. Provide approved automation workflows that allow developers and other stakeholders to provision their own environments from within the tools they are using today, like Jira and ServiceNow. Dependencies can be preloaded and security settings applied before the environment is made available to the developers. And you can ensure the necessary requirements are met and costs are controlled along the way. This means fewer one-off interruptions for the IT Operations team, less wasted time on repetitive tasks *and* developers can start coding right away.

3. Accelerate application deployment

Application deployment relies on an increasing number of interventions and exceptions in order to address evolving requirements and complexity. Once provisioned infrastructure is online, then the requesting teams will start deploying applications. Some teams use continuous-integration/continuous-delivery (CI/CD), which is designed to be a mostly unattended process triggered by a code check-in that results in an update to the application. However, a number of manual deployment and testing steps are often used. Other teams rely on legacy methods and might use an ITIL change-management process, meaning once a software release is approved, a Release Engineer, in collaboration with other SMEs like DBAs or Network/Security engineers, deploys packages to hosts and coordinates a rolling upgrade process, then initiates a semi-manual QA process to verify application health. Ongoing high-touch activities and manual steps create high-friction environments that make modern deployment expectations and KPIs more challenging to meet.



Automation to the rescue:

Automation accelerates these deployments by enabling Dev teams to build deployment automation in staging, test it, and pass it to the Operations team to execute, removing inefficiencies in legacy deployment and testing processes. Developers can define and create their own self-service operations tasks and pre-validate system changes via automated runbooks to satisfy change control requirements. Already using automation tools? With an automation platform, you can use the automation you already have to define automated workflows which can be safely delegated to other stakeholders. This allows deployment automation to safely co-exist across teams.

4. Patch without patchwork

Patching is the process of updating software or the configuration of an infrastructure resource so it complies with a required version, often to mitigate ever-evolving security or resilience concerns. It is often a manual process requiring a high level of system awareness, intervention, and deep knowledge to ensure that updates are applied correctly. It could require updating a fleet of long-running bare-metal hosts, or VMs with operating systems in need of a software patch to mitigate a source of crashing, memory overruns, kernel stability or performance issues. It could also mean replacing a software library version with known CVE (Common Vulnerabilities and Exposures) issues (i.e. log4j) with one that removes the vulnerability.

Additionally, patching is unlikely to be a single item at a time, but instead a layered set of patches that all need to be applied during the same maintenance window. Software developers deploying 3rd party libraries and services often have their own updates that need to be synchronized with their software releases and patches. By way of example, this happens to us, too: Process Automation is tied to Java and Spring versions, so if we update Process Automation, we might need to update those dependencies, too. So a workflow might stop a service and then apply updates to the dependencies followed by any updates to the core software itself.

This function requires subject matter expertise in a number of skill areas. It touches every single part of the operational ecosystem. Every patch may have varying degrees of depth and complexity. Each system owner and/or developer knows the intricacies of their part of the system and how to patch it, meaning when you need to patch a lot of Things, it interrupts many people who have to patch Their Thing. This situation makes the work incredibly unique and specialized, which can present resource management challenges and raise the propensity for error unless the process is very tightly controlled - here's a great example from one of our customers, William Hill, that describes a real-world example of exactly how something so seemingly simple as patching got so out of hand. Thus organizations rely on specialists to complete patches.

Automation to the rescue:

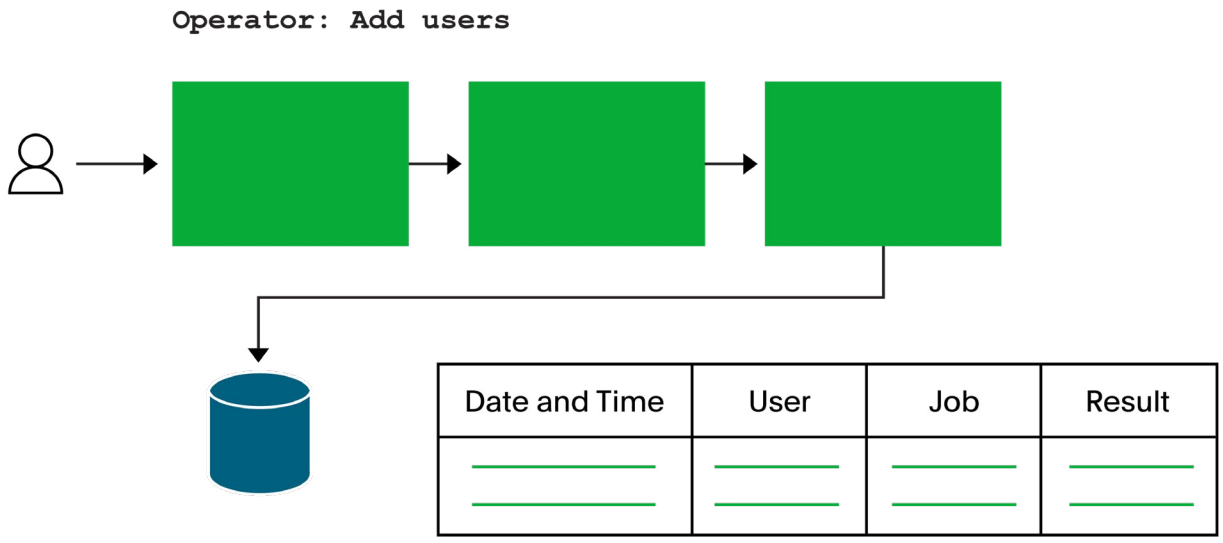
Instead of running manual tasks or scripts only available to expert engineers, you can standardize and automate whole business and IT operational procedures for your IT infrastructure. You can use an automation platform to schedule tasks to run (or not) based on conditional factors you set. You can also create automated workflows to fix vulnerabilities as they are discovered. If you've already got some existing task automation - you can use it to inform those procedures, freeing up even more time and resources to re-deploy to higher-value tasks and responsibilities. (For William Hill, while their story may have started out scary, their efforts to implement automation ensured it has a very happy ending!)

5. Simplify user management

User management is the process of managing user accounts and permissions within an organization's IT infrastructure. The majority of tasks are creating and managing user accounts, defining access permissions for users, and controlling user authentication and authorization. Effective user management is critical for maintaining the security and integrity of an organization's IT systems and data, as IT administrators can ensure that only authorized users have access to sensitive data and IT resources, reducing the risk of data breaches and other security incidents.

One of the biggest challenges in IT today is ensuring that users have access to the resources and data they need to do their jobs - no more, no less.

User management is a basis for managing security by providing least privileged access, or providing a means for people to temporarily gain privileged access only when they need it.



It is often also a cost containment concern: Accounts and access to systems often consume licensed seats, so it's critical to know if the people who have access to this resource, license, or application using that access. If not, could that free up the seat for someone else who will use it, rather than buy an additional one? Or if it's not needed, not pay for the seat?

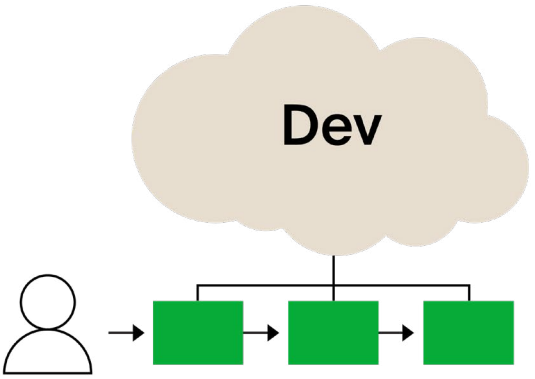
This requires setting up access control policies and permissions, which can be complex to manage in large organizations with many classifications, users, and systems.

Automation to the rescue:

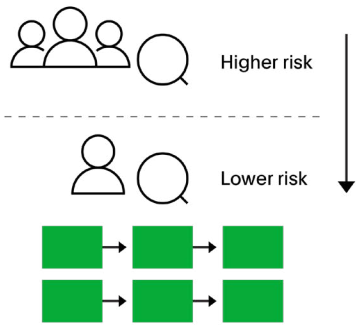
You can use automation as part of a greater employee onboarding or off-boarding business process, to help simplify and streamline user management processes, reduce errors, allocate, monitor and manage consumption, and improve security and compliance. This could even be delegated to other end users, like Human Resources, via self-service IT. Start by automating user provisioning, developing workflows that create new user accounts and assign roles and permissions automatically based on predefined rules and policies. Or in the reverse: de-provisioning can revoke access and remove user accounts when an employee leaves the organization or when access is no longer needed.

6. Compliance checks out

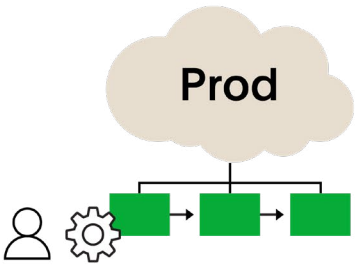
Compliance checks refers to the process of evaluating and reporting on an organization's adherence to regulatory and legal requirements and internal policies and procedures. While necessary, compliance checks can have a high overhead. Typically, they involve conducting audits, reviews, and assessments of IT systems, processes, and controls to identify areas where the organization may be non-compliant. To run these checks a specialist engineer has to complete processes that are usually manual or semi-automated. The process could include checking that resources in the technology stack have the correct software version, configuration, and/or permissions, scanning of a set of hosts to check if file system permissions, and/or access control rules are met, scanning a set of hosts to see if a specified software component matches a version, etc. Regulatory and legal requirements can change rapidly in response to contextual pressures and vulnerabilities, and if organizations don't keep up, it can result in costly fines or worse.



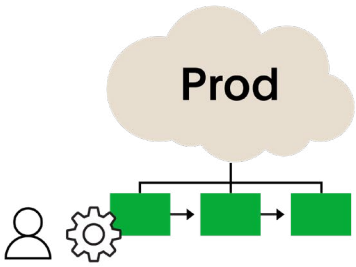
Focus developers on creating automation



Lower risk with pre-built, reusable automation to speed up due diligence



Implementation partners can execute automation- eliminating errors and reducing costs for separation of duties



Improve developer productivity with automated verification

Automation to the rescue:

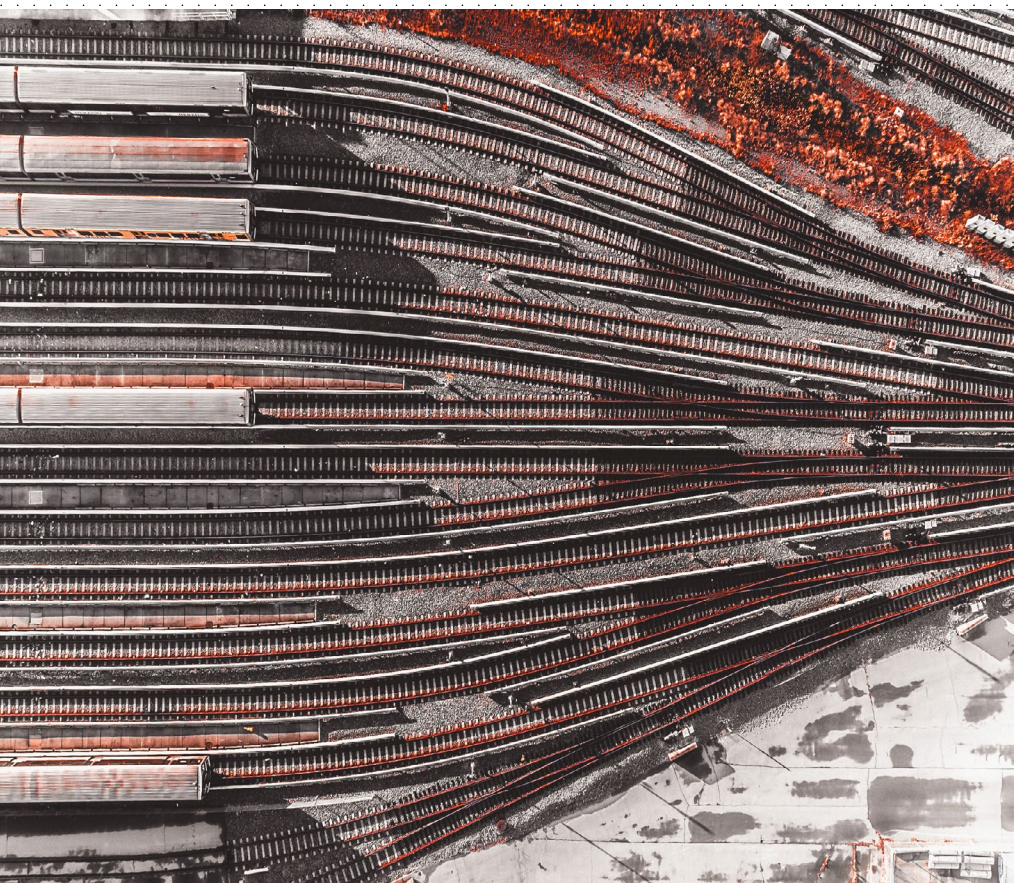
With an automation platform, your experts can bake their knowledge and expertise into repeatable sequences, with guardrails such as approval steps to ensure safety, significantly reducing the time it takes to run compliance checks. For example, it could cut the time needed for compliance checks across a fleet of 4000 servers from several days down to just hours. Businesses that can demonstrate consistent processes often get through compliance checks faster. And when your automation logs every workflow execution, it provides a clearly auditable history that's directly aligned with business activity, making it easier for engineering teams to meet their compliance requirements.

7. Rethink infrastructure reporting

Infrastructure reporting is the process of generating and analyzing reports about the performance and health of an organization's IT infrastructure. The SMEs responsible for this regular reporting may need to collect data from multiple systems, applications, and databases, which can be time-consuming and error-prone - and then they have to do it all over again when the next report comes due. They are stuck managing this process because they have the right systems knowledge and access to generate the reports.

Automation to the rescue:

Why not use an automation platform to automate the report-generation process? Then the SME can run and generate the report at the click of a button or they can give self-service access to other users so they can generate the reports themselves. Automating this process reduces the risk of errors while saving valuable time and effort.

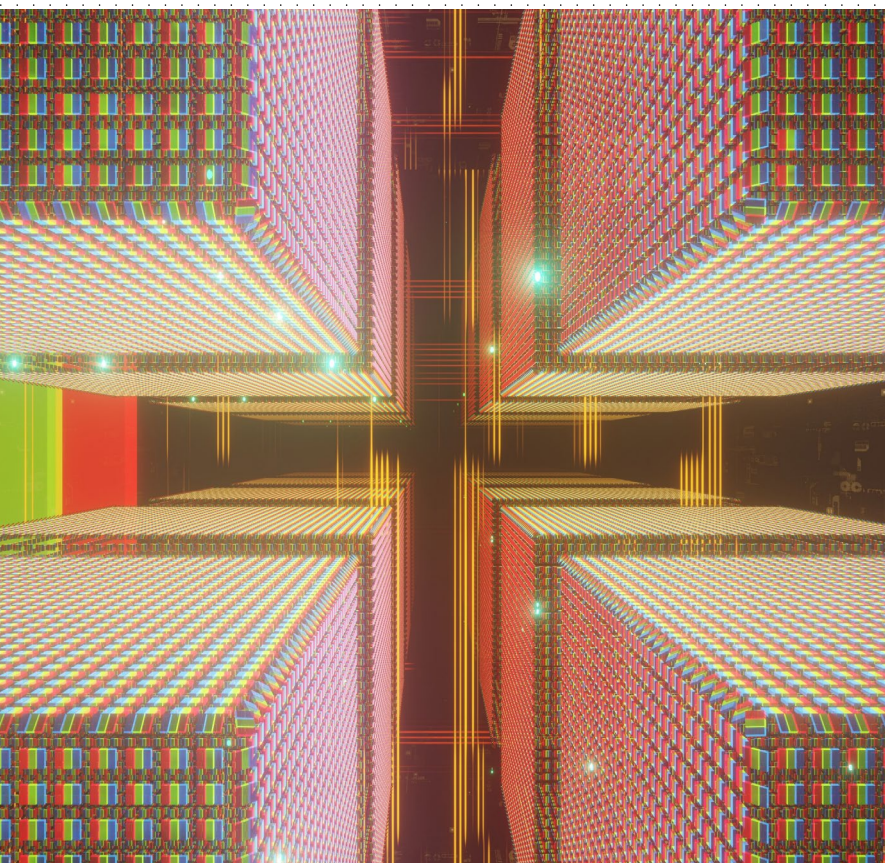


8. Ensure backup reliability

Backups provide a way to protect important data and ensure business continuity in the event of a disaster. IT environments are complex, with data spread across multiple systems, applications, and devices, making it hard to be certain that backup systems are properly configured, up to date, and able to be brought back up after the immediate crisis ends.

Ensuring that backup systems are designed to facilitate fast data recovery can be complex to identify and implement, and often requires deep knowledge of the system. In the event disaster strikes, the time it takes to recover data can have a significant impact on business operations, and if the process is manual, it can be error-prone and tedious, placing even more of a burden on already-constrained resources.

Automation to the rescue:
Automation can help make improvements to the reliability, efficiency, and effectiveness of IT backup processes. Automated backup processes help ensure backups are performed consistently, reliably and quickly, limiting the risk of human error. An automation platform provides redundant, centralized access to the operations capabilities that anyone in your organization can use to take action when it is needed. Operations teams can codify and automate their backup process and if they are facing a disaster-recovery situation, anyone can restore data and systems quickly and easily from backup.

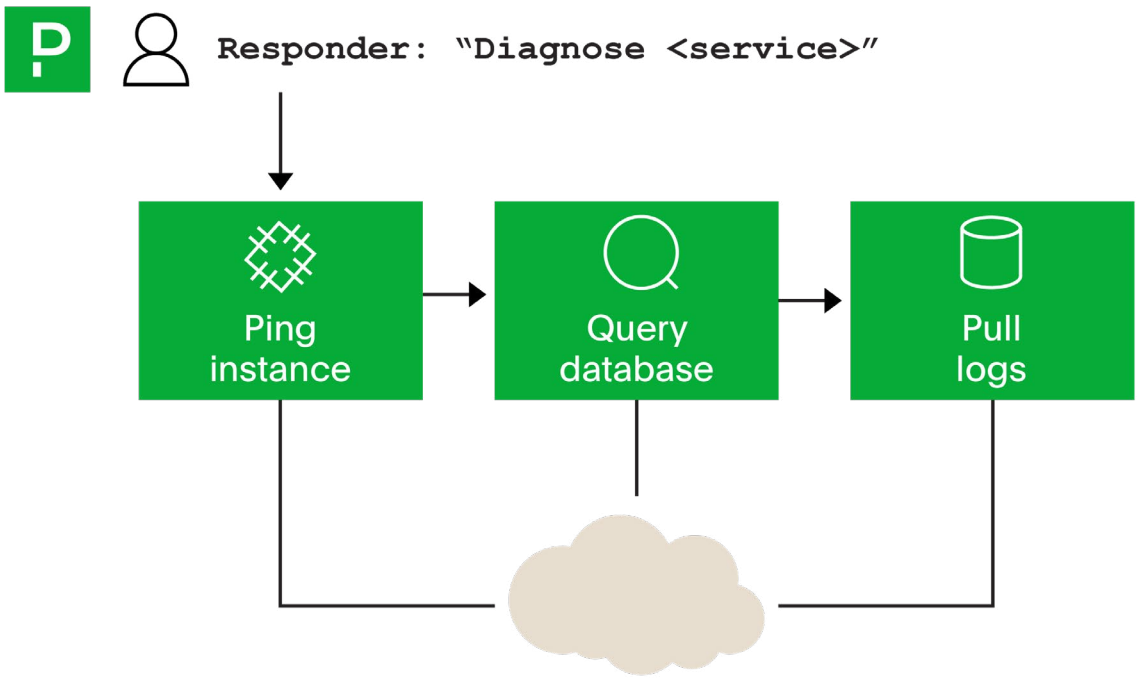


9. Sharpen diagnostic capabilities

When incidents inevitably occur, access to specialized expertise is often needed to effectively troubleshoot the cause. A first responder may have to escalate to several service owners or expert engineers to gather diagnostics in order to determine the root cause and who the ultimate resolver of an issue should be. This process can greatly extend the length of time it takes to resolve an incident. Not to mention causing mass escalations that chew up tremendous amounts of time and effort from SMEs.

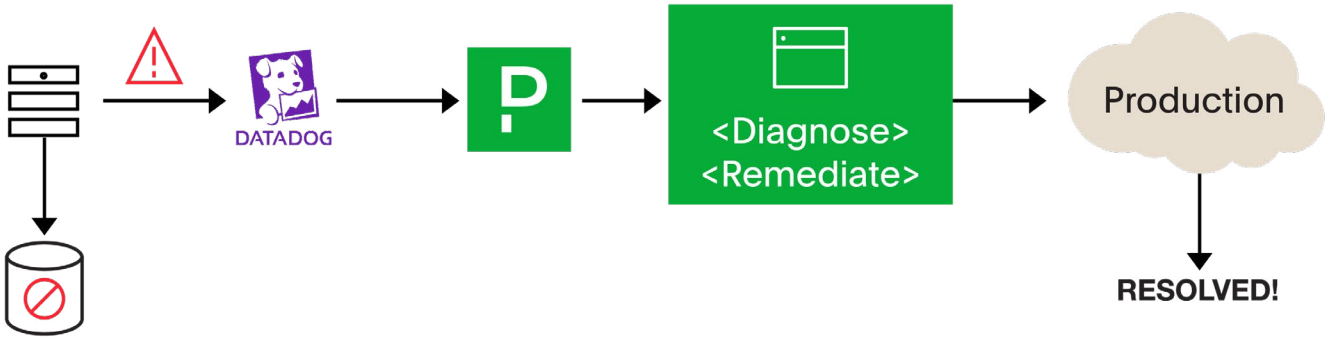
Among PagerDuty's own users, we've observed that on average the triage of incidents encompasses more than 50% of the time to resolve, and among enterprise customers, at least 4 employees are engaged on average for every incident. That's a lot of valuable resources that could be deployed on more high-value activities.

Automation to the rescue:
Why not automate the most common troubleshooting procedures responders use? This way you can stop disrupting day-to-day work of expert engineers since responders can do the troubleshooting. Slash the time-wasting and interruptions throughout an incident by allowing responders to efficiently triage problems by running automated diagnostics, only escalating to engineers who can resolve the issue. Then, resolvers have the data they need on hand, and this troubleshooting data is captured in the incident record for retrospectives and future diagnostic efforts.



10. Swiftly remediate issues

Remediations require an engineer, often one with specialized knowledge, to fix a problem. This can be frustrating when the cause is a chronic known problem. For example, SRE/DevOps may need to restart a service across the fleet (or perhaps a single instance) to resolve an incident. They may need to coordinate with updating VIP/load balancers to move a service in and out of rotation to avoid impacting customers, clear cache within the middleware layer when the data state is incorrect, etc. And if it is a recurring issue, the engineers may be frequently interrupted by escalations related to the incident.



Automation to the rescue:

Codify remediations for common issues into your automation solution to reduce incident severity and downtime, ensuring fewer crisis-mode incidents with faster resolutions. You can even find and fix chronic problems before paging a human. Free up time and resources, ensuring engineers aren't constantly fixing known problems, and let them work on more innovation-focused activities.

Closing

Your costs are rising, as your engineering capacity seems to be shrinking with each passing quarter. Delivery dates for innovation projects keep getting pushed back. Many of your team members are suffering from burnout. Sound familiar?

Easily reduce or eliminate the toil with an automation platform like PagerDuty Process Automation. Your SMEs can standardize and automate IT procedures, and delegate them to other end users as self-service processes. It's easy to plug in the scripts you already have or create automation from what someone would type at the command line. You can create end-to-end workflows that span the different scripts, tools, APIs, and system commands to standardize operations tasks. And you can stay compliant with centralized control, logging, credential usage, version control, and a host of other day-to-day functions.

When you start by automating routine, repetitive IT processes, it helps reduce toil and can give you the ability to deliver on the promise of doing more with less. Now your team operates faster, with greater productivity, can support increased rates of change and can focus on driving the high-value innovation that propels your business forward.

Ready to automate your IT tasks with PagerDuty Process Automation? PagerDuty Process Automation automates and orchestrates the most common IT processes, allowing customers to meet SLAs and lower operating costs. Enhance growth and innovation by eliminating old human-ticket concierge services and replacing them with automated systems that bridge departmental and technological silos. Incorporate security and compliance requirements into automation to reduce risk and expedite change request approval. Reduce incident resolution time by 25 minutes and task completion time by 99%. Process automation helps teams create automated processes rapidly, delegate them as functions and APIs, and schedule, trigger, and invoke them as self-service requests. Customers save 50% on support costs and see 40% fewer escalations to senior engineers.

For more information, visit www.pagerduty.com/platform/automation/.

Schedule a demonstration or trial today

Reduce incident resolution time by 25 minutes and task completion time by 99%.

About PagerDuty

PagerDuty, Inc. (NYSE:PD) is a leader in digital operations management. In an always-on world, organizations of all sizes trust PagerDuty to help them deliver a better digital experience to their customers, every time. Teams use PagerDuty to identify issues and opportunities in real time and bring together the right people to fix problems faster and prevent them in the future. Notable customers include Cisco, DocuSign, Doordash, Electronic Arts, Genentech, Shopify, Zoom and more.

To learn more and try PagerDuty for free, visit www.pagerduty.com. Follow our blog and connect with us on Twitter, LinkedIn, YouTube and Facebook.

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