

Business white paper

# Accelerate ROI

HP IT process automation and orchestration



# Automate your IT processes for rapid ROI

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There are numerous benefits to deploying a next-generation, IT process automation solution. This white paper lists practical examples for realizing rapid return on investment (ROI) in your IT operations and provides CIOs, IT operations managers, and production support teams with a realistic roadmap for success.

## IT process automation overview

### The need for IT process automation

The increasing complexity of enterprise applications and infrastructures creates challenges for IT operations across business service management and monitoring, IT service desk and service management, and service automation. Leveraging enterprise automation technologies, particularly with process automation and orchestration, should be important for IT executives who are focused on reducing the cost and complexity of IT operations.

Pain points in driving IT process automation (run book automation) include:

- High alert volumes and the need for reduced time to resolution
- Complex changes that span multiple infrastructure groups and require many hand offs and coordination
- Business requirements for meeting ongoing compliance audits across servers, networks, and storage devices
- The need to integrate existing tools to achieve better visibility and efficiencies across the service lifecycle

A new generation of IT process automation solutions and IT automation software has the maturity and flexibility to tackle this challenge and can deliver efficiencies and cost savings for the next-generation data center. Forward-looking companies are also realizing that automation is an absolute prerequisite for migration to the cloud—and the key to a smooth, non-disruptive transition to hybrid service delivery.

### **Benefits of IT automation**

The benefits of IT process automation and orchestration are many. Automated and streamlined IT management processes help maximize application and infrastructure uptime and help drive higher service levels. They also significantly lower labor costs by pushing work to frontline IT operators.

For CIOs and IT executives, IT process automation solutions help:

- Maximize mission-critical application and infrastructure uptime
- Reduce cost and complexity in data center operations
- Improve service levels and help ensure efficient resource utilization

For IT operations teams, IT process automation solutions help:

- Reduce alert volumes and eliminate alert floods
- Increase productivity and reduce manual errors
- Reinforce Information Technology Infrastructure Library (ITIL) standards through process automation

For level 3 or production support teams, run book automation solutions help:

- Empower frontline teams and reduce escalations
- Proactively capture diagnostic data for continuous service improvement
- Improve troubleshooting visibility and reduce mean time to resolution

Tying these advantages to core IT processes, you can realize four main benefits.

### **Cost savings through automation**

IT process automation helps minimize IT labor costs by helping to automate mundane, repetitive tasks, enabling level 1 operators to perform more immediate resolution and reduce escalations. If an escalation is still required, level 3 experts have an audit trail and diagnostics data via automated workflows for advanced troubleshooting, giving the level 3 experts a “jump start” in addressing the problem.

### **Integrated troubleshooting**

With new automation platforms serving as the “glue,” you can now have a fully automated, closed-loop system for incident management. Automated incident resolution tools integrate existing system management and service desk tools by intercepting alerts to initiate fully automated or visually guided troubleshooting workflows, facilitating automatic ticket creation and closure, enabling automatic alert clearing upon resolution, and providing a detailed audit trail through automatic linking of diagnostic information to tickets.

### **Streamlined change orchestration**

Managing change in IT operations is no longer a set of siloed activities. If you need to update a set of applications or business services, you need to coordinate server, network, storage and application teams. Leveraging process automation and orchestration solutions streamlines the process and eliminates errors that commonly result from manual hand offs.

### **Process control and audit**

If you implement ITIL or other IT standards, automation solutions help reinforce best practices and standards. With an IT process automation solution, diagnostics and repair steps are logged and captured into an audit trail, and processes are locked down to prevent rogue changes. This is critical for ongoing service improvement as well as compliance with numerous governmental and industry requirements.

## Common automation strategies for rapid ROI

HP Operations Orchestration software is market-leading next-generation IT process automation software that allows frontline IT operators to automate common IT operations tasks, and reinforce standard processes. Many customers have deployed HP Operations Orchestration to help automate alert and incident resolution, change orchestration, maintenance tasks and tools integration across the service lifecycle. Analyzing these successful deployments reveals some common automation strategies that deliver quick and proven ROI.

### **Triage, diagnosis, and repair acceleration**

Large enterprise data centers commonly consist of thousands of servers that generate thousands of alerts on a daily basis. The sheer scale and complexity of these environments often force IT operations into a reactive mode.

Automating incident resolution provides rapid ROI by accelerating the triage, diagnosis, and repair process of common alerts and incidents. Some examples follow.

### **Basic application and infrastructure health checks for rapid isolation**

Integrated with common system management tools, HP Operations Orchestration is the first line of defense for incoming alerts. Running in either self-healing or visually guided mode, HP Operations Orchestration automates the lengthy process for checking all interconnected infrastructure components to determine problematic links, including:

- Server health check
- Services health check
- Network health check
- Database health check
- Configuration checks
- Connectivity checks
- Scanning log files for error conditions

For each type of common alert, most enterprises have a troubleshooting checklist with many steps. Assuming that a manual run through of these steps consumes 30 minutes of an operator's time (at an estimated \$50 per hour for a frontline operator, including benefits and overhead cost) and that 40 of these alerts occur each day (a conservative estimate), this translates to a savings of:

Potential cost savings = 0.5 hours \* \$50 per hour \* 40 incidents per week = \$1000 per week or \$52,000 per year



### **Automatic triage and resolution of high volume alerts where human diagnosis is impractical**

Most network operations centers share a common experience: The IT support team is busy addressing critical alerts, and most other alerts (such as “orange” and “yellow” alerts) fall below the critical level. They are simply dropped and never addressed. Many of these “noncritical” alerts can later turn into major problems and exacerbate reactive problems.

Deploying HP Operations Orchestration in the self-healing or visually guided mode can be an effective strategy for dealing with a high volume of alerts. This includes:

- Eliminating false alerts through basic verification
- Suppressing alert spikes and floods
- Performing basic self healing through automatic server reboots or services restarts
- Capturing and documenting all resolutions for incident and problem analysis

Although it’s difficult to value the tasks that IT operations could not perform prior to automation, we can approximate. Assuming 200 of these alerts occur a day with 10% developing into problems that require operator attention at an average resolution time of two hours, this translates to a daily savings of:

Potential cost savings = 200 alerts per day \* 10% problems \* 2 hours each \* \$50 per hour = \$2000 per day or \$730,000 per year

### **Server farm reporting and troubleshooting**

The majority of enterprise applications runs in a highly redundant, clustered server farm environment. Although this is necessary for increasing uptime, tracking individual servers when an alert is triggered may be difficult.

HP Operations Orchestration, along with out-of-the-box process automation libraries for specific domains, helps alleviate some of the responsibility involved with managing a large server farm environment. This includes:

- Proactive reporting and troubleshooting for F5, Cisco routers, Microsoft® Windows®, UNIX®, or Linux clusters and IP range
- Pinpointing problematic servers in a Microsoft Windows, UNIX, or Linux cluster
- Gracefully removing servers from a cluster or load-balanced environment
- Gracefully restarting services while maintaining the awareness of maintenance windows and repeat failures

Assuming 20 server farm-related alerts happen a day and the manual process of troubleshooting and resolving each alert consumes 30 minutes of an operator’s time, this translates to a daily savings of:

Potential cost savings = 20 alerts \* .5 hours \* \$50 per hour \* = \$500 per day or \$182,500 per year

Based on your customized IT processes, you can set any of these automation strategies to run in a scheduled and proactive mode, or you can run them in the event of an alert.

### **Change and configuration management orchestration**

Today’s IT environments have changed significantly from the days of client-server architectures and applications. Distributed applications may be quicker to develop, but they cost more to manage as they operate across large server farms, numerous network devices, and complex storage infrastructures. The sheer number of changes that need to be propagated throughout a data center environment grows significantly as you add applications, servers, and devices.

Automating change and configuration management provides rapid ROI by eliminating the inconsistencies and misconfigurations that often plague data centers. Some of these automation strategies include:

- Gracefully removing servers from clusters for provisioning
- Orchestrating end-to-end change management processes from generating initial change requests to effecting configuration changes in production environments
- Scanning servers to see if they meet compliance requirements and documenting compliance failures

Assuming that every day there are 50 changes that take an average of 15 minutes each to roll out, this translates to a daily savings of:

Potential cost savings = 50 changes \* .25 hours \* \$50 per hour = \$625 per day or \$228,125 per year

### **Repetitive maintenance task automation**

In addition to reacting to critical alerts that happen on a daily basis, IT operations also has to allocate time and resources to address routine maintenance tasks.

Automating repetitive maintenance tasks provides rapid ROI by eliminating manual steps and lowering the cost for performing routine maintenance. Some of these automation strategies include:

- Restarting simple services
- Rebooting file and print machines
- Changing passwords
- Creating users
- Reviewing log files
- Rotating log files
- Predicting disk space growth trends
- Performing data backups

Assuming that every day there are 15 manual maintenance procedures that each take an average of 20 minutes to complete, this translates to a daily savings of:

Potential cost savings = 15 changes \* .33 hours \* \$50 per hour = \$247.50 per day or \$90,337 per year



### **Virtualization and workload management**

Virtualization is a widely adopted practice in many enterprise data centers, bringing new challenges to IT operations. Having hundreds or even thousands of new servers, including virtual servers, requires time and resources for proper management. The process of dynamically adding new servers, keeping them running in a healthy state, repairing them, and taking them offline when a problem occurs can be daunting when performed manually.

HP Operations Orchestration software (HP OO) process automation libraries address this challenge by providing an easy, automated way for IT operations to manage virtual environments. This includes:

- Proactive reporting on the health of virtual server farms
- Dynamically triaging and diagnosing virtual servers
- Providing consistent procedures for gracefully adding and removing virtual machines
- Provisioning new servers when an existing virtual server fails
- Checking load balancers for the user load distribution
- Efficiently using excess server capacity
- Starting and stopping virtual machines
- Automating task management

If you want to deploy large-scale virtual environments, HP Operations Orchestration significantly reduces your support cost. Assuming that every day there are 40 virtual machine-related tasks that each takes an average of 30 minutes to complete, this translates to a daily savings of:

Potential cost savings = 40 tasks \* .5 hours \* \$50 per hour = \$1000 per day or \$365,000 per year

### **End-to-end process integration**

Today, most mature IT shops have deployed enterprise system management products and service desk products to help with automatic monitoring and ticket tracking in their network operating centers. However, these solutions are often deployed separately with little integration to help alleviate manual operation.

HP Operations Orchestration helps deliver a seamless and fully integrated alert and incident management system that increases the value of existing technology investments. Some of these automation strategies include:

- Automatic ticket creation upon receiving the alert
- Automatic update and closure of tickets based on resolution progress
- Automatic acknowledge of enterprise security management (ESM) alerts and events
- Automatic update and closure of ESM alerts and events
- Automatic capturing of detailed audit trail in the ticketing system

It's not uncommon for a single network operations center to generate thousands of alerts each day. Assuming that 50 of these are managed by manual operators every day and that the end-to-end process of creating, updating, and acknowledging the alerts and events each takes an average of 20 minutes to complete, this translates to a daily savings of:

Potential cost savings = 50 alerts \* .33 hours \* \$50 per hour = \$825 per day or \$301,125 per year

## Sample case study

Let's look at a deployment example. A financial services firm decided to use HP Operations Orchestration to manage its Microsoft Exchange server farm environment.

The Microsoft Exchange server farm consisted of 500 servers, generating 2000 alerts each day. A team of 10 operations professionals worked around the clock to support this environment. It addressed daily repetitive incidents for email queue issues, service restarts, and BlackBerry problems.

After the initial installation, the operations team created five automated resolution flows in HP Operations Orchestration within two weeks. By addressing the most common types of incidents and alerts, the five automation flows helped automate up to 90% of the alert diagnostics and repair processes.

Shortly after implementing these automation flows, the customer experienced a 50% reduction in alerts for the Microsoft Exchange server farm.

## Summary

Now is the time to start automating data center operations by leveraging the latest advancements in enterprise-scale IT process automation.

Getting started is simple and easy. By focusing on a few key areas, an experienced IT shop can achieve rapid ROI and achieve significant reductions in IT complexity and support cost.

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