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Automation secrets of scalable MSPs

Like any other business, successful MSPs often earn their keep by increasing revenue sources and differentiating themselves in the market. Some do so by offering new services like security. Others establish and enforce personal relationships and great customer service. Still others do so simply by enhancing their sales process to convert more leads.

But there’s a flip side to the profitability equation: efficiency. While these other activities often seek to build the top line, efficiency allows you to keep more of what you earn. Also, it builds a foundation that allows you to take on those revenue-generating activities without risking the services you already provide.

That’s why strong MSPs embrace automation in their businesses. You can get out-of-the-box automation with an RMM solution, or you can write scripts yourself via a scripting language. Regardless, automation can often be the edge you need to boost your business to a new level.

This white paper will cover a few things:

• **The benefits of automation to your MSP business**
• **Some tasks to consider automating—and how to determine whether writing an automation script is worth your time**
• **Motivating individual team members to automate tasks (and dealing with their fears of automating themselves out of a job)**
• **Practical considerations for creating automation workflows (including additional resources, script libraries, and info on automation editors without writing code)**

Let’s jump right in.

What we mean by automation

OK, let’s start with a basic definition. By automation we mean anything a computer or machine can do automatically in a repeatable fashion. These tasks may not always follow a perfectly linear process—most involve logic flows and conditional choices to accomplish a task. Most RMM products include some automated tasks out of the box with their features.

Of course, this paints with a broad brush. When people in IT think automation, they likely think of scripting. So for most of this, we’ll be talking about automated scripts technicians write to extend the native features in an RMM product (although, we’ll mention a little about native features in RMM as well).

What is an automation script?

Automation scripts allow computers or machines to perform repetitive actions on behalf of a user that normally would have to be done manually. They consist of a launch point, the source code, and variables with corresponding binding values. Generally, when creating a script, you must already be fairly familiar with the scripting language (although there are ways around this, as we’ll cover later).
As mentioned in the opening, some automation features are built into IT tools like RMM solutions. They may not require scripting—the developers have already handled that, and you just need to tell the system what to do. This could be as simple as setting up the system to push out patches during off-hours unless they’re critical security updates.

To go beyond this, many businesses employ programmers to write and maintain scripts for automation purposes. Sometimes, there will be members of the MSP tech staff who either have these skills or they train to acquire them so they can take on some automation duties as part of their jobs.

Often, automation becomes an adapt or struggle situation for many MSP businesses. Quickly, teams get overwhelmed by incoming requests. Customers start requiring better customer service than overwhelmed technicians can give. This makes automation all the more important.

**Why automate?**

This might seem obvious—you automate to save costs, right? True, automation saves you money by keeping techs from spending employee hours on repetitive work.

This undoubtedly plays a major role. But the bottom line isn’t the only reason. With automation, you can:

- **Reduce human errors.** Scripts can handle complex tasks the same way each time, reducing the potential for human error. It’s easy for an exhausted technician to do a step out of order and cause an issue.

- **Extend your RMM platform’s capabilities.** You can always create an add-on to handle some additional monitoring capabilities for new device types, or to handle the nuances of legacy systems.

- **Get information faster.** Instead of manually pulling data, automation can mine data from systems and networks, giving technicians quick diagnostic information and executives strong reporting information without having to bog an employee down in too much minutia.

- **Free up employees.** No one likes doing repetitive boring tasks all day. If you find a help desk technician who tells you they love resetting passwords for employees all day, you may want to subtly (or overtly) suggest some vacation time. Automation can take some of this drudgery away by allowing them to work on higher-level tasks that require human interaction and challenge them—making work far more interesting.

- **Building capacity for interruptions.** You know the drill—customers call with a problem because their network’s running at a snail’s pace and you have to summon the team to spend hours figuring out the root cause. Automating tasks lets you feel confident you still have other tasks covered, like patching, backup, and routine maintenance.

- **Respond to issues faster.** You can set up automation tasks to occur based on a given trigger event, like a device exceeding a specific threshold. For example, if a service fails, you could set up your RMM to either reset the service automatically or even run a script set by the sysadmin in response. It doesn’t even have to be a full fix—there’s some benefit to simply having an automation script deliver you more information on an issue by checking specific issues first or ruling out potential problems. That saves your tech time and gives them something to go on.
We really want to hammer home how automation can be a differentiator for your business. Customers demand a greater quality of service. They want issues fixed quickly because they face serious costs when there’s downtime at their site. If they need urgent attention, they can’t wait days or even hours for service—it needs to be all hands on deck. A well-automated MSP can have an edge in this case.

For example, let’s say a client submits a ticket about a slowly running server impacting a critical business system. Without automation or remote monitoring, you may have to send a tech in person to run checks—from disk space and error checks to memory and CPU usage stats. Automation can handle this for you before anyone arrives on-site (often saving you a trip). For example, you can set your RMM to flush the DNS cache, clear temp files to increase space, and run a disk defrag. You could also use automation to pull up other diagnostic information after this is done so the tech has more to go on if these initial steps don’t fly.

Without this heavy automation, your MSP would be unable to meet these sorts of expectations. Beyond these emergencies, you can find a way to expand your services when you have this additional time. Automating the small-time stuff allows you to free up mid-level or senior staff to learn new skills like security or new tech systems they can support.

What should you automate?

It’s clear there’s a broad range of benefits for automation. From cost savings to expanded service offerings to simply making your team’s lives easier, there’s very little in an MSP business that automation can’t help.

That said, what should you automate? Again, there are several types of automation to consider here. Some tasks will be built-in features for your RMM solution, and you simply need to set up the features correctly for your customers. We include them, however, because you’d be surprised how often some people forget to even focus on these features.

However, most automation tasks will require at least some scripting knowledge. We’ll cover those and offer some suggestions. We’ll also touch on PowerShell and finish off with some advice for how to decide whether you should automate a given task or not. This will help you make your own decisions beyond our starter lists.

A word about RMM scripting

For some solutions, you’ll need extensive scripting knowledge. And frankly, in some cases, you may even need to learn a new, proprietary language. However, not all require you to be a scripting ninja. N-able™ N-central® doesn’t require you to learn a new scripting language. You can upload your own PowerShell scripts or download premade scripts from our automation cookbook. Plus, it comes with a drag-and-drop automation editor that allows you to create full automation workflows without having to write a single line of code. And N-able partners can always attend a live online automation boot camp with one of our head nerds to dig into automation technologies. The point is you have options with N-able N-central.
Potential automation task ideas

1. Discovering new devices. If your RMM doesn’t already do this, writing a script to pick up new signals on your company’s Wi-Fi is crucial. Once you discover the new device, you can decide how best to handle it, including pushing a new agent to the machine if needed. This can be particularly useful to see if there are unprotected machines you’re not currently monitoring.

2. Patch management. This comes out of the box for many RMM solutions, but it’s worth mentioning here—automate and schedule as much as you can for patching across your customers’ systems. This includes checking for out-of-date systems, downloading patches during off-hours, immediately applying priority security patches, etc.

3. Onboarding. While this is a more complex process, you should consider building out a series of scripts to bring new customers into your MSP’s remit. Map out your process, then anything repetitive, and consider automating. This could mean configuring servers or workstations, setting up user accounts, rolling out RMM agents, deploying important software like endpoint detection and response or email protection, checking for machines running ancient software or unpatched operating systems, or making sure all required applications are installed on the end machine.

4. Excessive user privileges. Piggybacking off the previous point, when you onboard a new client, it’s common for companies to have users with higher-than-average user privileges. For example, an early employee who worked as an executive assistant may end up with access to critical systems they simply don’t need access to. Setting up a script to scan for privileges within common identity systems like Active Directory can give you the lay of the land early on so you can start to correct some of the issues. Besides, even in larger organizations, these group memberships can grow out of hand quickly.

5. Employee offboarding. Just like onboarding, expect some turnover. People leave for greener pastures, companies face downsizing, or sometimes, employees simply aren’t good cultural fits. Regardless of the reason for someone leaving, you can’t have them walk out with access to old systems—it’s a security risk. Try to write a script to turn off the basics—access to company communication systems like email, Microsoft teams, shared drives like OneDrive, financial records, or anything that could prove potentially damaging to the company. You may still need to look at each individual employee’s information after they leave and double check information, but the automation you write up front can really take a lot of the early grunt work out of the process.

6. Responding to alerts. When an alert arises, you can have your RMM solution create a ticket in your PSA or help desk if you either write a script or have an existing integration between the two (such as between N-able N-central and N-able MSP Manager). Additionally, you can always get more granular by classifying certain alerts based on a set of criteria—priority level, potential systems affected, or clients affected—and properly route the ticket for triage. Additionally, if you have a predictable alert, try creating a script to deal with that alert in a manner, even if it’s simply to gather additional diagnostic criteria.

7. Basic maintenance tasks. Routine maintenance tasks are ripe for automation. Scripts can allow you to frequently defragment the hard drive, remove temp files, or flag files over a certain size to administrators looking to save disk space.
8. **Application removal.** One good security practice involves keeping an application allow or block list. (In fact, many security operations need some level of automation.) Writing a script—or perhaps using one from our Automation Cookbook and modifying it for your purposes—allows you to keep users from installing disallowed applications that could either introduce security issues or harm network or system performance.

This list certainly isn’t exhaustive. You’ll come up with your own. And if you have the opportunity, you may even decide to share some scripts with the wider N-able community.

**Is it worth automating?**

The ideas above should get you started. They’re a good brainstorm, but ultimately, you’ll want to decide on your own what best fits your business needs at the time and that of your customers.

We mentioned earlier all the benefits of automation—it’s not just about time or cost savings. Likewise, the decision to spend the time on automating a task isn’t always straightforward. Some people we encounter want to automate any task they do twice—this probably isn’t the best method.

Based on peer groups held by our N-able Head Nerds, we’ve found a few of the main reasons people automate a task are if it:

- Saves more time in a month, quarter, or year than it takes to automate
- Prone to human error (for example, it has 12 steps and involves a lot of manual entry that could lead to typos)
- Improves the customer experience in a tangible way
- Offers a strategic value to the MSP (for example, it allows you to better serve a high-ticket customer)
- Is boring and repetitive

Also, if you’re fully committed as an organization to automating a lot of tasks as part of a strategic initiative, then definitely feel free to automate. But your decision to automate a task does take time from your team, so make sure you’re prioritizing correctly.

**Practical concerns about automation**

Despite the benefits, there can still be hesitancy around automation. This can come from a number of factors:

- Worries about job loss, causing people to drag their feet
- Lack of in-house expertise
- Unwillingness (or no time) to train up
- Time consumption and risk

In this section, we’ll talk about these issues and show how to remove these roadblocks.
Motivating your team to work on automation

First, let’s address the elephant in the room: Automation doesn’t mean eliminating jobs for MSP technicians. Many worry about this, but it rarely happens. There’s too much ground to cover and too much growth for businesses leveraging automation to eliminate jobs. If anything, automation allows technicians to really boost their career skills by tackling harder problems, helping to keep their jobs interesting.

Beyond that, techs who use automation to solve issues help the business; managers and owners tend to want to keep these people around. It’s a common fear among workers, and if you’re an MSP owner or a manager we highly recommend addressing this head on.

That said, team members may still resist the idea. In this case, you want to add incentives. Some ideas:

• Offer financial incentives, like $50 – $100 USD to anyone who writes a script solving a problem
• Offer time off or other compensation, like a dinner or outing
• Make it part of their performance reviews (such as writing one or two scripts per quarter)
• Set up contests with incentives and prizes

Don’t forget—not everyone has the time or knowledge to build the scripts. Make sure to find ways to incentivize people to submit ideas for scripts as well, as they should feel included in the process. Ideas matter, even if someone else executes. But make sure to only offer the incentive if the script gets built—you don’t want a backlog of incentives to pay out.

This ultimately creates an entire culture of process improvement and automation. This lets your MSP fire on all cylinders. Some MSPs make the mistake of having one person become the “automation person.” Don’t fall into this trap—not only does this restrict innovation, but it also is a recipe for having people feel like their jobs are threatened. Anyone from your L1 technicians to your L3 NOC engineer may be able to help—and they may feel empowered by it. The more, the merrier.

Do you need to be well-versed in scripting?

You probably already know enough PowerShell to be dangerous. Even if your employees aren’t sysadmins with intimate knowledge of PowerShell and are just getting started as help desk techs, learning and becoming more proficient with PowerShell should be a priority.

That said, you don’t need a lot of know-how to automate at least some basic tasks. By just combining a few cmdlets, you can often create scripts to let you:

• Roll out new policies (such as enabling multifactor authentication across devices)
• Reach dozens of machines at once to install updates, configure settings, gather info, or more
• Automate additional checks and alerts in your RMM

You can always learn other languages as well and add to your toolset, but you likely already have enough to get started.
Learning more about automation

You can always assign at least one member of the team to learn more. (Be careful not to fall into the trap of having one person set as the “automation” person. That’s a recipe for disaster if they leave.)

That said, if you’re an N-able partner, we hold regular automation boot camps where one our Head Automation Nerd holds hands-on training in writing scripts. Anyone on your team can go. And if you have something you want to automate, the team can help.

Plus, you don’t always have to write your scripts from scratch. We offer an Automation Cookbook with hundreds of premade scripts you can use as a starting point, written by both our Head Nerds and members of the wider N-able partner community. Some of the current scripts include:

• Finding files over a specific size in a folder
• Hyper-V replication monitoring
• Exporting BitLocker keys
• Removing applications based on a list
• Basic disk cleanup policies (deleting temp files, old Windows updates, etc.)

Again, there are hundreds of scripts in the library, so we highly recommend you take a look when you can.

Plus, N-able N-central also includes a drag-and-drop automation editor that allows you to create full automation workflows without having to write a single line of code. So if you want to upload your own scripts or you want to drag-and-drop your way to greater efficiency, N-central can help.

N-able N-central: Built for Automation

Ultimately, those MSPs that embrace automation can boost efficiency and speed up their business, giving them an incredible competitive edge.

As your partners, we’re here to help. In fact, we often use our own in-house automation team in the Head Nerds to extend monitoring capabilities to other devices such as Cisko Meraki and Ubiquity, which allows you to monitor more from within your RMM dashboard.

N-central was built to help you tackle complex networks. And with the automation capabilities, it’s also built to help you scale your business as you need. Learn more by visiting n-able.com/products/n-central.
About N-able

N-able (formerly SolarWinds MSP) empowers managed services providers (MSPs) to help small and medium enterprises navigate the digital evolution. With a flexible technology platform and powerful integrations, we make it easy for MSPs to monitor, manage, and protect their end customer systems, data, and networks. Our growing portfolio of security, automation, and backup and recovery solutions is built for IT services management professionals. N-able simplifies complex ecosystems and enables customers to solve their most pressing challenges. We provide extensive, proactive support—through enriching partner programs, hands-on training, and growth resources—to help MSPs deliver exceptional value and achieve success at scale. n-able.com