

Four Reasons to Automate Your Network Right Now

Accelerate Time to Value While Minimizing Risks by Engaging Juniper Networks Professional Services

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Executive Summary

Automation is the cornerstone strategy upon which organizations are focused in order to increase network agility and reliability while controlling OpEx and CapEx. Juniper Networks® Professional Services offers automation capabilities that can help you successfully implement your network service automation strategy with dramatic operational benefits over a self-developed solution.

Introduction

Running a network efficiently and effectively is essential to business success today. The good news is that technologies like virtualization and cloud allow you to be more flexible and agile than ever before.

But your network operations still tend to rely on manual processes that require the expertise of highly trained professionals. Not only is this reliance costly and time-consuming, but also it's prone to human error. These operational realities can lead to higher costs and loss of business or missed opportunities due to network downtime or the inability to fulfill business requirements fast enough.

Automation is key to addressing these challenges. In this white paper, we'll give you four unbeatable reasons why you should automate your network now. In addition to improving service availability, you free up your staff from tedious—and time-consuming—manual tasks and enable them to focus on higher-level, strategic activities that help the business. You reduce both operational expenses (OpEx) and capital expenses (CapEx). And the business as a whole is much more agile and competitive.

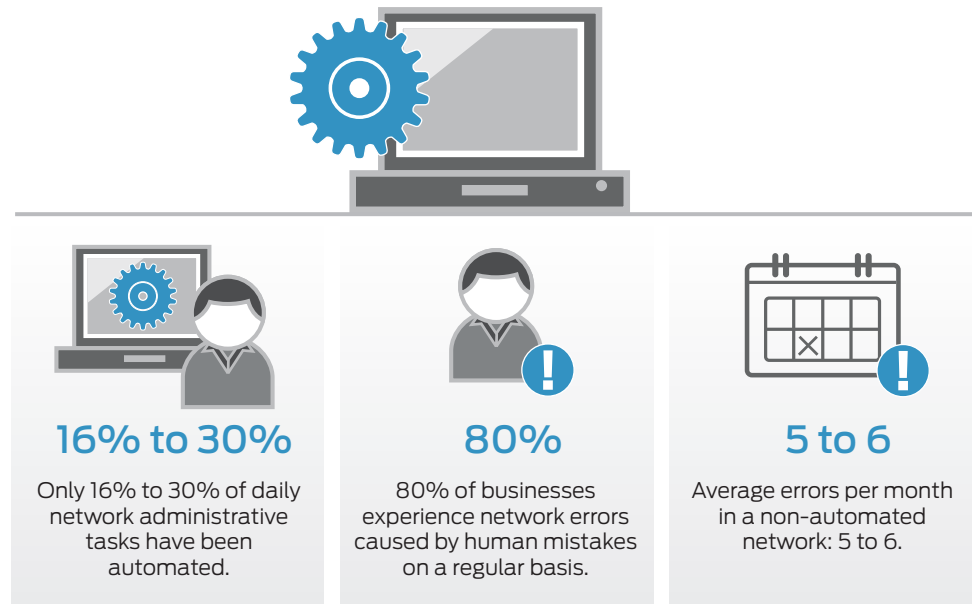


Figure 1: Automation is necessary to assure network reliability

But once you decide to automate, you face another decision—whether to do it yourself or hire experienced professionals to help.

The following questions can help you make your decision:

- Which network automation technologies are best suited to your needs?
- Do you have personnel who have expertise in automation technologies?
- Do you have sufficient personnel resources to deploy automation technologies?
- What are the risks of automating, and how do you mitigate the risks?
- What are the benefits of automating sooner rather than later?
- Do you know how to begin automating your network?

The Risks of Not Automating

Still not convinced? Here's another way to look at it. The risks of not automating are too high. Here's why:

- **Difficulty staffing**—Because of the tedious nature of manually configuring and provisioning network services, you have trouble attracting, training, and retaining CLI-centric resources with vendor-specific knowledge, resulting in higher internal costs, higher vendor support costs, and escalations.
- **Too many errors**—Even if you can find inexpensive labor, it is hard to apply and implement even the simplest CLI tasks consistently and without errors.
- **Dissatisfied users**—Configurations done manually, even if documented, are prone to errors that can slow down deployments and the provisioning of new or improved network services.
- **Unexpected outages**—Since inconsistencies and changes in network configurations go unchecked in a manual environment, they can multiply across the network and can impact business.
- **Reduced competitiveness**—The business cannot respond swiftly and flexibly with new support services, impacting its ability to hold its own in the marketplace.

Automation relieves the pressure on your network staff on both these points, enabling them to be more proactive in serving more customers and delivering better service assurance. As a result, you have the ability to offer and adhere to service-level agreements (SLAs) for internal and external customers.

Four Reasons to Automate Your Network

Two issues in particular are driving CIOs to implement network automation today. First, their resources are stretched. There are simply not enough people-hours in the day to get everything done. Second, the technologies being deployed within your network are increasingly complex. These two together can result in costly mistakes and network downtime at a time when the network is essential for competitive advantage.

Here are the top four reasons you should consider automating your network right away.

Reason No. 1: Free Your Staff for More Strategic Work

First and foremost, your staff is already overstretched. And the majority of their time and energy is spent on tactical tasks to keep the business running. By reducing the effort spent on repetitive and mundane manual tasks—which are incredibly tedious for the people performing them—you free up resources to work on higher-order tasks, such as driving improvements in application delivery. Not only does your business flourish under these conditions, but you also end up with happier and more productive workers. They can be proactive rather than reactive.

And a more efficient and productive workforce translates to smoother operations all around. It also means a much greater output of work and enhanced services since technology is now doing all the heavy lifting. And as a result, there is less staff turnover, less training required for new staff, and an overall more efficient and productive workforce.

Reason No. 2: Lower Your Costs

Precisely because automation masks the complexities of the underlying infrastructure—dramatically fewer person-hours are required for network operations because the provisioning, managing, and orchestrating of network services have all been simplified—your OpEx is immediately lower. You need fewer staff to troubleshoot and repair the network, and less expensive person-hours are spent putting out fires.

And if automation is a fundamental part of your network design, you can also reduce CapEx as well. For example, if you simplify your network architecture by replacing hardware devices with virtual network devices, you can scale up and down automatically and add or remove virtual resources to meet changing load demands. This means you no longer have to overprovision network hardware, thus saving on the capital costs of equipment.

Reason No. 3: Improve Business Resiliency

By taking human fingers off switches, you find that your network operates with more consistency and fewer errors. And if a problem does arise, you're able to respond much faster by cutting over to a backup or cold site using automation. This means less downtime and better business resiliency.

Leading network automation solutions provide location-based tracking, monitoring, and automated event response to help simplify troubleshooting and repetitive tasks. This means that your network can automatically respond to events without requiring your staff to intervene, thus effortlessly delivering higher levels of service. With automation, troubleshooting can be done more quickly because systems and network components are being examined consistently.

If done right, automation helps with everything from change control, to security, to operational management. You have a more efficient operation that delivers improved services at, as we previously explained, lower costs. The result of all these actions is an overall better user experience, which in turn can contribute to higher customer satisfaction and greater employee productivity.

Reason No. 4: Enable the Business To Be More Agile and Competitive

The final, and perhaps most important, benefit of network automation is that it helps to make IT operations more responsive to change through analytics. You understand much more precisely what is happening in the network and how your network resources are performing.

There's no question that we're living in an ever-evolving world where technology is advancing quicker than we realize. The ability to scale and adapt is absolutely critical, particularly in IT. A slow evolution simply won't cut it, especially in a field that is so hyper-competitive. Automation allows for agility, which is essential to an organization's ongoing success.

It also allows an organization to try new applications and fix problems in existing applications, thus increasing the agility of the business or organization. Automation can also dramatically accelerate the provisioning of new or updated applications. This in turn reduces the time to realize the benefits of the new software, resulting in greater competitiveness and, ultimately, more profits on the bottom line.

Roadmap to Automation

Here is a low-cost, easy entry to network automation that allows you to immediately see the benefits with Juniper Professional Services.

Step 1:

Undergo an Automation Discovery Workshop with Juniper Professional Services. Obtain an overview of network automation technologies, tools, and trends so that your team is current and state of the art. During this workshop, Juniper Professional Services demonstrates how automation can deliver benefits across a range of operational tasks, network and management devices, and technologies, and then discovers some of your existing network operations tasks, and outlines how various automation approaches can benefit your operations (where possible illustrated by best-practice examples elsewhere).

Step 2:

Undergo an Automation Assessment that creates a roadmap prioritizing the automation projects you could undertake and lists the projects in the order you should perform them. You should start by automating the key processes in your network that you shouldn't have to think about—those manual and repetitive workflows such as service deployment and activation. These improvements represent the low-hanging fruits of automation. Juniper has many tools that automate support operations to help protect your investment in network components and to ensure that products are correctly deployed on the network. Service automation falls into this category. When you deploy any type of network appliance—a switch, a router, or a security device—you must also deal with the management tasks associated with it.

Step 3:

Implement the plan with Juniper Professional Services or a Juniper Professional Services partner, and if available include an onsite Juniper Resident Engineer to help you implement your plan in house. Additionally, Juniper Educational Services can train your team to develop and execute the plan yourself.

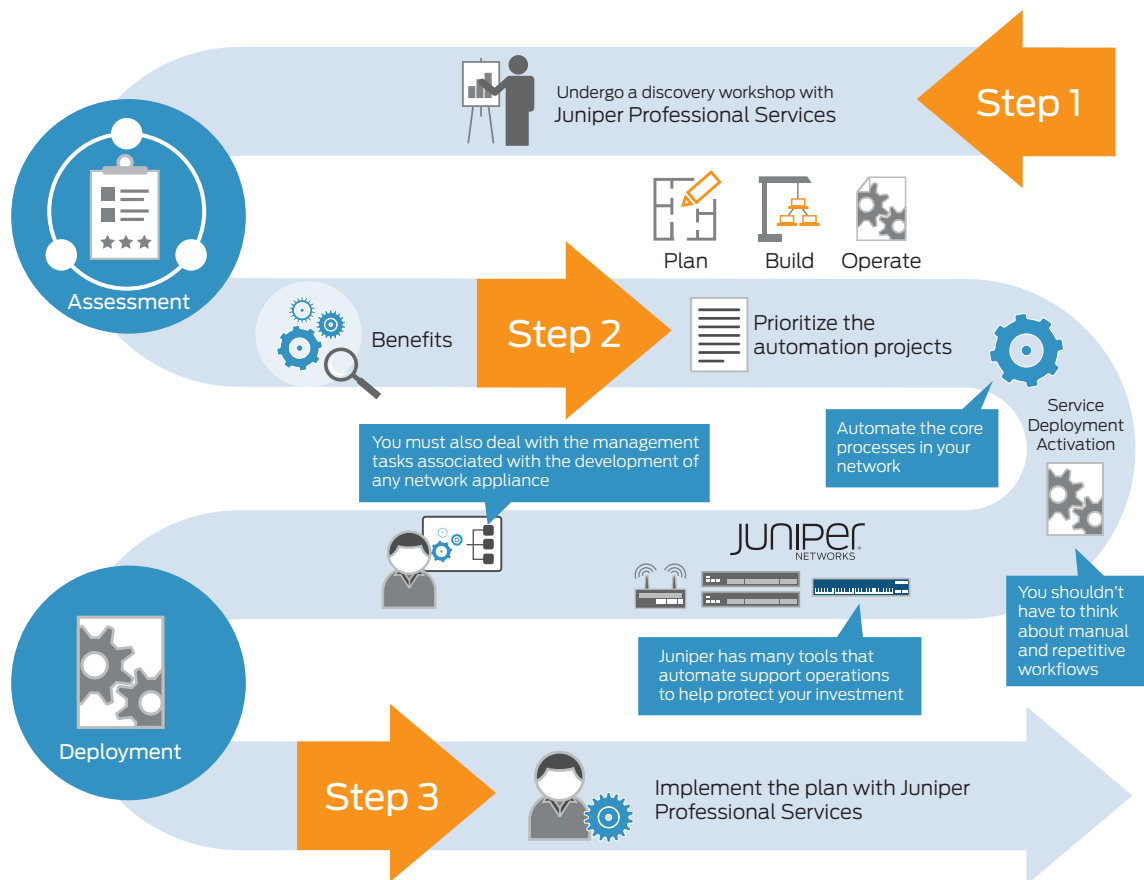


Figure 2: The automation journey with Juniper Professional Services

No Need to Go It Alone: Juniper Professional Services Is Here to Help

Managing network automation requires solid planning capabilities and application of industry best practices to ensure that projects progress smoothly and with minimum risk.

Juniper Networks takes a holistic approach to network automation and orchestration. We have designed a strategy for providing networking professionals with tools and technologies that reduce the operational burden of managing a network.

This strategy begins with putting in place a simplified architecture that is easy to manage. It reduces the number of devices that you have to manage. And it abstracts the complexity of the network topology. In addition, the inherent flexibility of the Juniper Networks Junos® operating system enables integration with external tool chains to increase operational efficiency, minimize downtime from configuration errors, and reduce operational overhead. Based on years of experience, the Juniper Professional Services team provides the following capabilities through the three stages of network automation—plan, build, and operate.

Plan

Capability	Description	What Juniper Professional Services Delivers
Strategy and Analysis	Understand how automation technologies relate to real operational issues, business outcomes, and OpEx cost reductions using real-life examples, use cases, and ROI.	<ul style="list-style-type: none"> Conduct workshops for your company to go over Juniper's automation capabilities so you can have a discussion for what can be applied to your business Prioritize and focus on automation opportunities for architecture transformation, network operations, and engineering management efforts Accelerate the development of a cost-effective automation strategy with a measurable ROI Successfully transform your infrastructure, management, people, and processes with automation
Assessment	Determine your network's compliance to best practices and policies and automation readiness to support automation.	<ul style="list-style-type: none"> Reduce automation deployment costs and adoption delays Improve your operations team's ability to support the automation being introduced
Design	Create and test new IT processes using automation scripts that support your business solutions by developing a design-and-solution framework customized to your requirements.	<ul style="list-style-type: none"> Improve your network infrastructure performance, security, and scalability using automation Accelerate adoption of new automation technologies and improve ROI Reduce expensive and time-consuming automation redesign Strengthen the proficiency of your deployment team and operations team

Build

Capability	Description	What Juniper Professional Services Delivers
Validation	Confirm the automation solution meets your requirements for availability, security, reliability, and performance through assessment and issue resolution in a lab environment before implementation in your production network.	<ul style="list-style-type: none"> Mitigate risks associated with updating the production network Accelerate time to market and solution adoption Reduce costly delays, risks, and rework Improve availability
Deployment	Help you successfully deploy automation solutions in your production environment. Transfer knowledge to your team for ongoing maintenance and support.	<ul style="list-style-type: none"> Start realizing automation ROI Reduce delays, rework, and other problems during implementation Decrease disruption to your production network during deployment

Operate

Capability	Description	What Juniper Professional Services Delivers
Validation and Compliance	Ensure that your network operations always meet design and operational criteria. Automate impact analysis, identify and remediate faults to maximize network uptime.	<ul style="list-style-type: none"> Mitigate risks associated with updating the production network Accelerate time-consuming and error-prone tasks Improve the performance, availability, resiliency, and visibility of your network and IT services

While the aforementioned capabilities are the standard types of activity within each phase, the specific activities to be included in an engagement are defined on a customer-by-customer basis. Similarly, the specific automation tools and resource requirements are identified for each customer situation.

Juniper Networks, of course, can provide the intimate knowledge of our products—both deployment and DevOps use-case and solution-development knowledge—and dedicated and project-based options to support your automation objectives.

Conclusion: The Time to Automate Is Now

Your business depends on your network—its speed, its reliability, its efficiency, and its flexibility. Your network provides access to and communications between you and your customers or your critical applications. Or maybe it is your business, as in the case of network operators and service providers.

As the demands on operations continue to grow and become more complex, there is an even greater need for automation. Only those organizations that are forward thinking enough to adopt these innovative technological tools remain competitive and continue to achieve their business objectives.

Juniper Professional Services and certified Juniper Professional Services Partners are here to be your personal guides to automation. We understand the technologies involved and can advise which ones are appropriate to your company. We can also help with all stages of the Professional Services life cycle for automation—plan, build, and operate.

Where does your company stand? Do you come out on top or get left behind?

Start automating today and position your business as a front-runner of the future.

About Juniper Networks

Juniper Networks challenges the status quo with products, solutions and services that transform the economics of networking. Our team co-innovates with customers and partners to deliver automated, scalable and secure networks with agility, performance and value. Additional information can be found at Juniper Networks or connect with Juniper on [Twitter](https://twitter.com/Juniper) and [Facebook](https://www.facebook.com/Juniper).

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