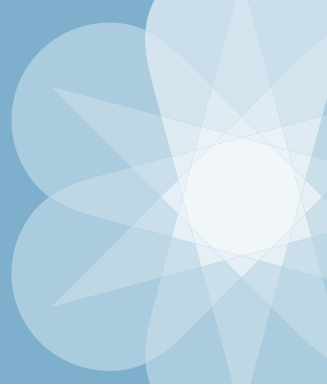




# The Data Center Survival Guide

How to Manage Increasing Complexity and Control Costs

# IT'S A JUNGLE IN THERE



## If You're Feeling Tangled Up and Nearly Lost in the Weeds, You're Not Alone

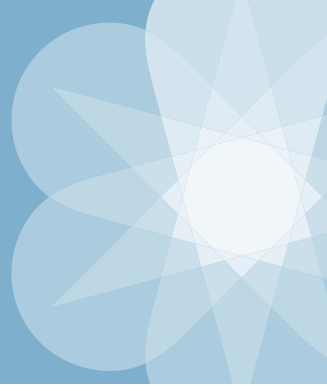
Today's data center has become very complex to manage, with too many devices, switching layers and operating and management systems. This complexity is driving up costs, power and cooling requirements and provisioning time. It's also making the entire network inefficient, difficult to scale and vulnerable to security breaches.

That's not the worst of it. New technologies and services, such as Service Oriented Architecture (SOA), Web Oriented Architecture (WOA), Cloud Computing and Software as a Service (SaaS) will take an even bigger bite out of data center performance and bandwidth—and present new security challenges.

[How do you survive in this increasingly complicated environment?](#)

The answer is simple. Start simplifying your infrastructure and network management now with Juniper Networks®. In this guide, we identify four of the most difficult challenges you face today in your data center—and simple steps you can take with Juniper Networks to not only survive the onslaught of new applications and services, but enable your data center to thrive.

# VIRTUALIZATION



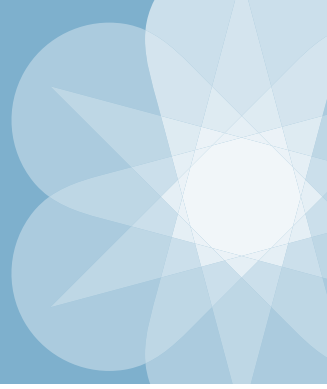
## What You Have Won't Get You There

Today's data center is going through a massive transformation, evolving from the old silo networking approach to a new, single converged IP network. In this new model, virtualization is the key to efficiently utilizing resources while maintaining the autonomy, integrity and security of each business unit.

The problem is that the traditional data center infrastructure wasn't designed for the level of virtualization we need today. Old silo data center infrastructures have hundreds of different devices arranged in redundant areas, unnecessary tiers and running different operating and management systems. That makes it incredibly difficult to scale clusters of applications and systems. There's no simple, consistent and centralized way to manage everything or virtualize anything.

Even more challenging, separate platforms from the same supplier often use a different operating system and release train. So if you know one operating and management system, you don't know all of them. This inconsistency extracts a heavy toll in time, talent and cost. Even scarier, this patchwork infrastructure is incredibly unreliable and vulnerable to errors and security breaches.

# THE SAFE AND SIMPLE PATH TO VIRTUALIZATION



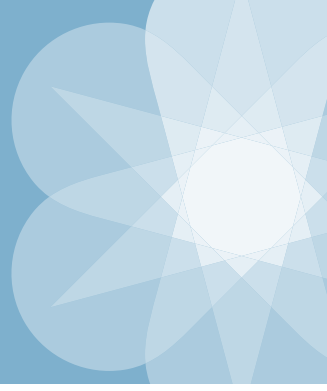
Juniper has a better survival technique: simplicity. Our innovative technologies let you build a flexible infrastructure and actually deliver more services using fewer devices. We help you do that by:

- Collapsing core and aggregation tiers
- Consolidating security appliances
- Simplifying operations and management
- Connecting data centers together

We can help you dramatically reduce the number of devices and interconnections you need and completely eliminate unnecessary tiers and complexities. The result is a significant reduction in capital equipment and network operating costs, improved application performance and dramatic acceleration in the time to deploy new servers and applications.

Even better, only Juniper Networks technologies give you freedom and flexibility through an open-standards approach that doesn't lock you into one vendor and limit business agility. Our simpler architecture can lower your total cost of ownership while providing users with consistent functionality, high availability and security across the entire infrastructure.

# SPACE AND POWER



## Increasing Costs are Taking Big Bites Out of Your Budget

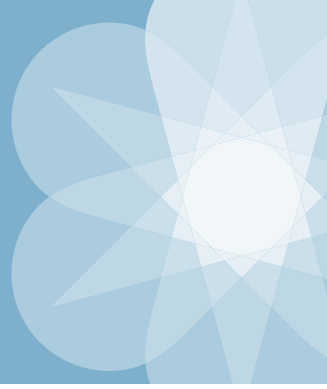
Every data center infrastructure has its limitations. Limited floor space. Limited amounts of power. Limited cooling capacity. The challenge is getting the most productivity at the lowest cost from that space, power and cooling capacity.

The stakes are high. Building a data center today demands a massive capital investment of anywhere from \$1,000 to \$3,000 a square foot. It's critical to get the most from every square inch.

An inefficient device gobbles up unnecessary amounts of valuable space and consumes power less efficiently than required. You're spending money, but getting less for your investment. So when you buy equipment, it needs to pay for itself by running at the highest possible capacity in the minimum amount of space. Not 20% or 30%, but as close to 100% as possible.

Likewise, you also need to keep management costs to a minimum. That means minimizing the time and talent it takes to administer each device. A mind is a terrible thing to waste, so you want your best and brightest working on creating added value and contributing to profitability instead of babysitting the infrastructure. So what can you do now to get your infrastructure into better shape?

# SIMPLE STEPS THAT SAVE YOU PLENTY



Start by thinking simpler and more efficiently with Juniper. Using Juniper Networks Data Center Infrastructure Solutions, you can collapse tiers, consolidate security services, deliver more services and provide a higher level of performance.

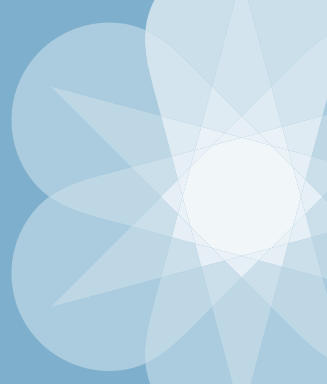
By collapsing the multiple switching tiers, you need fewer devices and interconnections, giving you more efficient use of space, power, cooling and management time. This simpler approach also lets you deploy security services faster and easier.

Next, using Juniper Networks SRX Services Gateway, you can consolidate the security sprawl of the traditional infrastructure into a few high-capacity, high-performance chassis-based devices. This not only shrinks the space and energy requirements of your security infrastructure, it simplifies management. Even better, it reduces application latency by eliminating the need to channel security services through multiple single-function appliances.

With Juniper's advanced routing technologies and platforms, you also increase business agility by improving the scalability of converged core networks spanning multiple data centers. With our uncomplicated and flexible architecture, you have the operational simplicity and efficiency you need to:

- Deploy applications and services in record time and enable greater productivity at a lower cost than ever before
- Achieve exceptionally high network performance that supports demanding applications and increasing numbers of remote and local users
- Provision services on demand and eliminate roadblocks as they occur with outstanding visibility and management across the infrastructure

# THE DANGERS OF AN INFLEXIBLE NETWORK

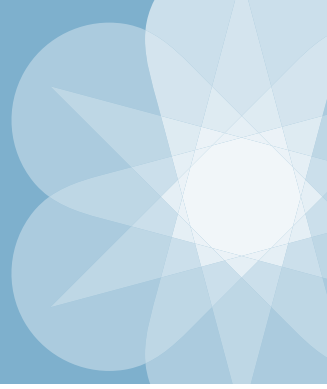


If there's one thing you can count on, it's that you can't count on anything. Business is unpredictable. No matter which way the economy is going, enterprises need the flexibility to respond quickly to avoid problems and take advantage of opportunities.

The data center plays a crucial role in this process, providing the applications, services, connectivity and performance that enterprises and users need. The problem is that the traditional data center infrastructure is so inflexible and inefficient, it makes the process slow and difficult.

For example, when a new branch opens, it immediately needs access to applications and services. That usually means buying a bunch of expensive ports, since your inflexible infrastructure won't let you easily allocate the unused ports you already have. Not only that, all the underutilized resources on your network are just adding to overall network complexity and cost. Sitting there doing nothing, they still consume space, power and management time.

# HOW TO CUT THROUGH THE COMPLEXITY



With Juniper, you can get more out of what you have—and save money, time and headaches in the process. The key is our innovative Virtual Chassis technology. Built into our state-of-the-art EX Series switches, Virtual Chassis lets you interconnect up to ten switches to create a single high-bandwidth switch.

What does that mean for you and your data center? Simplicity and savings. By enabling multiple switches to work as one instead of individual, stacked devices, Virtual Chassis gives you the scalability of chassis-based switches without the operational and management burden of individual stackable switches.

Best of all, by enabling high port densities, Virtual Chassis provides elegant and highly scalable deployment options. For example: a single Virtual Chassis configuration can support up to 480 copper or 240 fiber GbE ports and up to 20 10 GbE uplinks.

As a result, you can immediately simplify operations by reducing the number of networking devices and interconnections you need. By effectively eliminating the need for an aggregation tier, you can dramatically reduce your capital equipment and operational costs, accelerate application performance and compress deployment time for new services and applications.

More ports. Fewer tiers. Lower costs. More efficient management.

[Juniper makes it simple.](#)

# FINDING MORE: PERFORMANCE IN DATA CENTER INFRASTRUCTURE



You put time, energy and talent into managing your data center. Your data center should return the favor by running as close to full capacity as possible.

The problem is that most devices in the data center were never designed to run at full capacity. For years, the standard design rule has been that data center devices should run only at a fraction of their overall capacity. That means you have a data center full of potential that you pay for, power and manage, but can never use.

So as the demand for more applications and services grows, you're forced to load up with even more of these inefficient devices, consume more valuable floor space and drive up your operational and energy costs. There has to be a better way—and there is.

# SMALL IDEAS DELIVER BIG RESULTS



Anything less than 100% makes no sense to Juniper. We design smaller, more efficient devices that take up less space, consume less power and run all the way up to maximum capacity. We make sure you get full value for your money.

Our entire infrastructure portfolio, in addition to Virtual Chassis, will help you increase overall performance while providing operational simplicity, agility and efficiency, and lower the total cost of ownership:

- [SRX Series](#). Consolidates security appliances into an integrated, multi-function platform that enables simpler network designs, improves application performance and reduces space, power and cooling requirements
- [EX Series Ethernet Switches](#). Delivers wire-speed performance on all ports for any packet size with the reliability, scalability and manageability of traditional chassis-based systems
- [Juniper Networks JUNOS® Software](#). Provides one consistent operating system across the network infrastructure- integrating routing, switching, security, and network services, while simplifying management, reducing training costs and streamlining deployment
- [Network Virtualization with MPLS](#). Enables network segmentation across data centers and to remote offices for applications and departments, eliminating the need for separate or overlay networks
- [Network and Security Manager](#). Provides a single management portal with end-to-end visibility across the data center for security, switching and routing infrastructure



## SEE WHAT WE CAN DO FOR YOU

It's a jungle inside the data center, but it doesn't have to be that way. We can show you simple, cost effective steps you can take now to simplify your infrastructure, streamline operations and lower costs.

Just contact your Juniper Networks representative or call one of our sales offices listed below. For more information on our complete portfolio of data center solutions, go to [www.juniper.net/datacenter](http://www.juniper.net/datacenter). If you want to thrive and not just survive in this new environment, you want Juniper Networks on your team.

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