

# MetaFabric Reference Architecture Accelerates Time to Value and Increases Value Over Time

A Simple, Open, and Smart Solution for a More Agile Data Center Network

## Challenge

Cloud, mobility, and big data are driving business change and IT transformation. Enterprise businesses and service providers across all industries are constantly looking for a competitive advantage, and reliance on applications in the data center has never been greater.

## Solution

MetaFabric Reference Architecture is a tested and validated solution that enables seamless integration between premises data centers, managed service and hosted service providers, and cloud service providers.

## Benefits

- **Simple:** Simplifies network deployment, operations, and management without interrupting service delivery
- **Open:** Maximizes flexibility by integrating with any data center environment, eliminating vendor lock-in
- **Smart:** Saves time and improves network performance through data, analytics, and actionable insights

## The Challenge

Cloud, mobility, and big data are driving business change and IT transformation. Enterprise businesses and service providers across all industries are seeking a competitive advantage, and reliance on applications and the data center have never been greater. In the data center, where virtualization reigns supreme, IT leaders are looking to the network to help them achieve greater agility and efficiencies while driving down costs.

The network, however, is physically complex, difficult to manage, and not well suited to the dynamic application environments prevalent in today's data centers. In addition, most businesses are dealing with data centers that are distributed across multiple sites and clouds, adding even more complexity. Finally, because the data center is so dynamic, the network is constantly asked to do more and to support new applications, while ensuring integration with legacy applications that require more frequent refresh cycles. The network, therefore, poses two specific problems in the data center:

- It impedes time to value: Network complexity gets in the way of data center agility.
- It has low value over time: Every time a new application, technology, or protocol is introduced, the network needs to be ripped out and replaced.

The growing popularity and adoption of switching fabrics, new protocols, automation, orchestration, security technologies, and SDNs are strong indicators of the need for a more agile network.

## The Juniper Networks MetaFabric Architecture

Juniper has applied its networking expertise to address the problems of today's data centers by developing and delivering the Juniper Networks® MetaFabric™ architecture—a combination of switching, routing, security, software, orchestration, and SDN solutions, all working in conjunction with an open technology ecosystem to accelerate the deployment and delivery of applications for enterprises and service providers alike.

The MetaFabric architecture addresses problems common in today's data center by delivering a network and security architecture that accelerates time to value while simultaneously increasing value over time.

MetaFabric architecture introduces a blueprint for the data center that focuses on three key pillars of operation: simple, open, and smart (Figure 1).

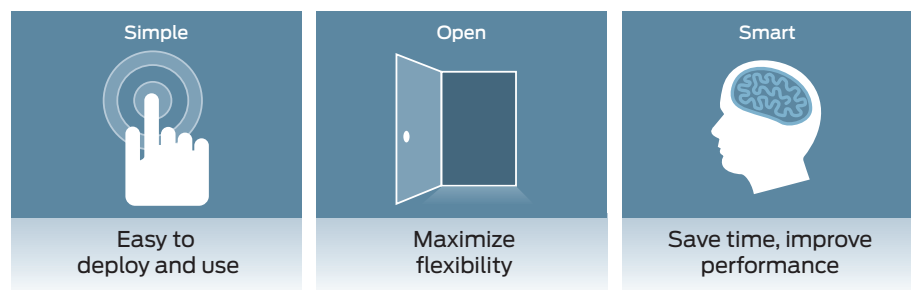


Figure 1: MetaFabric architecture is simple, open, and smart

The MetaFabric architecture is simple—utilizing network and security components that are easy to acquire, deploy, and integrate. The simplification of Juniper devices and network architectures extends from operations, through automation and orchestration, and into physical and virtual environments. A focus on simplicity ultimately enables better network performance and reliability, and reduces operational expenses.

The MetaFabric architecture is open—designed to maximize flexibility with an open approach that is evident across the Juniper product portfolio and extends to how we work with technology partners. This open approach provides the flexibility to integrate any heterogeneous data center environment and support any application, any policy, or any SDN protocol without disrupting services or imposing vendor lock-in.

The MetaFabric architecture is smart—utilizing network intelligence and analytics to drive insight and turn raw data into actionable knowledge, network intelligence enables a smart, flexible, and adaptable data center network.

The MetaFabric architecture focuses on agility, empowering application changes to happen quickly and with minimal business impact. The architecture allows the network to serve as a facilitator of this agility rather than a hindrance. Traditional data center architectures are complex and difficult to manage and operate, forcing businesses to cage applications and services based on geographic dependencies rather than in response to business requirements.

## MetaFabric Reference Architecture

The validated solution, referred to as the MetaFabric Reference Architecture, has been verified by Juniper solution testing.

Solution testing provides a detailed framework that tests a solution from both a network and an application perspective. Testing and measuring applications at scale verifies the integration of the network, compute, storage, and virtualization components.

Juniper solution testing provides the peace of mind and confidence that a solution behaves as described in a real-world production environment.

### Features and Benefits

- The MetaFabric architecture accelerates time to value by seamlessly coordinating between applications, devices, and locations, enabling optimal and agile resource utilization across the entire data center footprint.
- It enables both network and applications to interact at an agile pace, resulting in soaring productivity, tumbling network costs, and a consistent, exceptional user experience across the entire business.
- It is an end-to-end architecture that enables the enterprise data center to orchestrate compute, storage, and network resources in a way that enables agility in the data center.
- It creates a solid base upon which data center administrators can provision, manage, and maintain business-critical applications within the virtual data center environment.
- It supports a complete software stack that covers four major application categories: compute management, network management, network services, and business-critical applications (Figure 2).

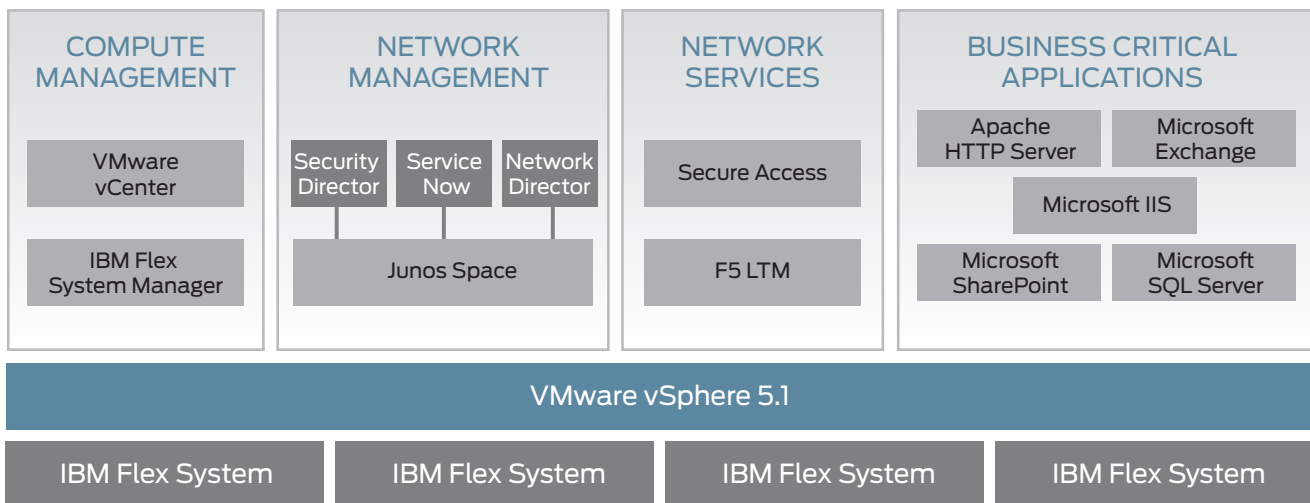


Figure 2: MetaFabric Reference Architecture software stack

## Summary—A Simple, Open, Smart Solution Enabling Agility in the Data Center

The Juniper Networks MetaFabric Reference Architecture delivers a modular, tested approach to data center provisioning and expansion, enabling the enterprise to plan and deploy new virtualized services with a single orchestration plane spanning the entire data center footprint. By focusing on simplicity and providing an open approach to data center design, the MetaFabric Reference Architecture enables better network performance and reliability, reduces operational expenses, and delivers a network and security architecture that accelerates time to value while increasing value over time.

### Next Steps

For more information on the MetaFabric Reference Architecture, please visit the MetaFabric page on [www.juniper.net](http://www.juniper.net).

## About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at [www.juniper.net](http://www.juniper.net).

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