

Blazing the Trail to a Software-Defined Network

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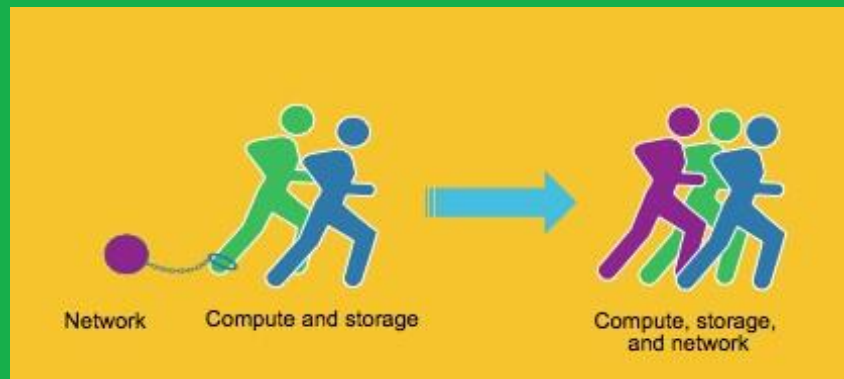
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Enterprise network pressures

- Lack of responsiveness and agility
- Concern about network security posture
- Manage costs of IT



What is Software Defined Networking (SDN)?

- Enables programmable and centralized management of the network resources through the use of well-defined application programming interfaces (APIs)
 - Orchestration of network resources with IT infrastructure resources
 - Centralized control points
- Generally, SDN in the enterprise data center market can be organized:
 - Network virtualization
 - Overlay networks
 - Fabric networks
- Network function virtualization (NFV)

The benefits of SDN



Faster time to value

- Implement new services and applications in minutes
- Deploy applications and network functions together



Easy scalability

- Scale capacity rapidly to meet changing needs
- Connect and leverage cloud resources



Reduced operating expenses

- Automate and centralize operations
- Optimize network investments



Enhanced security

- Conduct micro-segmentation of network, applications and users for higher security
- Deploy consistent security policies across services and locations

Use case: Tighten security

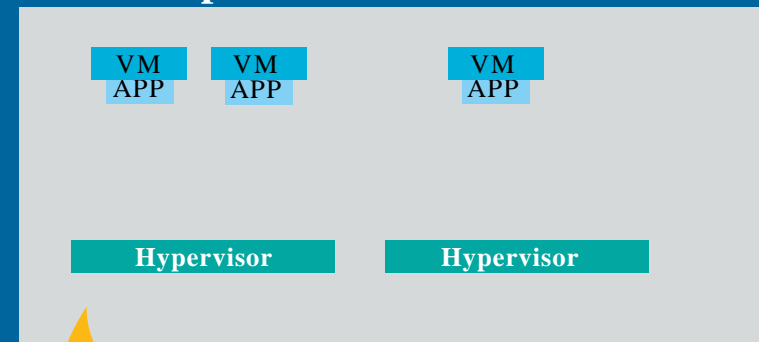
Tailor security to applications

Need: Provide distinct levels of security to each application

Solution: Leverage micro-segmentation capabilities with distributed virtual firewalls to supplement your conventional perimeter firewall for data center protection.

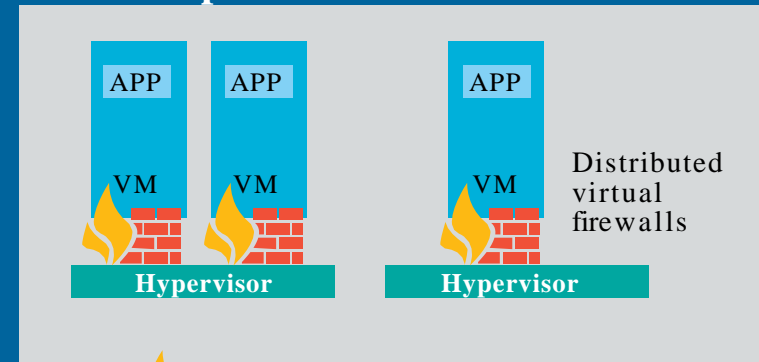


On-premises data center



Main data center firewall

On-premises data center



Perimeter firewall

Hybrid Cloud

- **Network virtualization can enable hybrid cloud scenarios**
 - **Traditional IT to a private cloud platform**
 - **Traditional IT to a public cloud platform or many public cloud platforms**
- **Orchestration across traditional IT and cloud platforms using well-defined and well-known APIs**

Implications



Architectural Design

- Rules and principles of network design still apply whether physical or virtual
- Network addressing challenges

Network Management

- Topology – understanding both physical and virtual
- Diagnostics
- Availability, event, performance, capacity management

Security

- Use of micro-segmentation
- Re-thinking policy, rules and defaults
- New opportunities – exploiting meta data

Organization/Skills

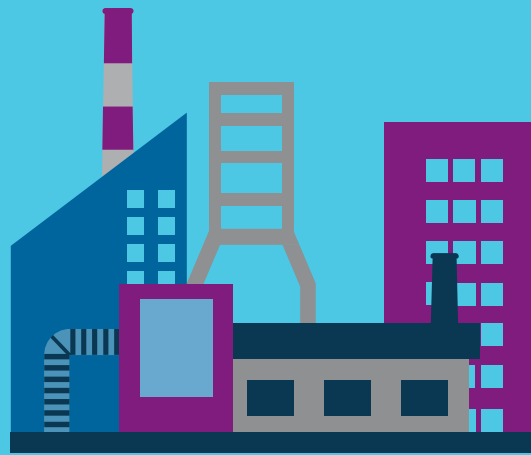
- Server, network and security working closer together
- Still need depth in discipline

Across industries, organizations are benefiting from SDN implementations



International banking

Distributed firewall capabilities help deploy a secure private cloud designed to speed application development and deliver financial products to market faster.



Electronics manufacturing

Network virtualization and distributed firewalls enable a simplified development and production environment that reduces developer cycle time and maintains separation of business units.



Media firm

SDN with OpenStack integration helps a global media firm accommodate rapid growth and increase agility with effective network orchestration for a cloud environment.

Learn more about software defined networking



Ready to learn more?
ibm.co/1MmqSEQ

SDN video:
Nothing Works without the
Networking
youtu.be/WVtrT7pXp7E