

# SDN Problem Statement and Use Cases for Data Center Applications

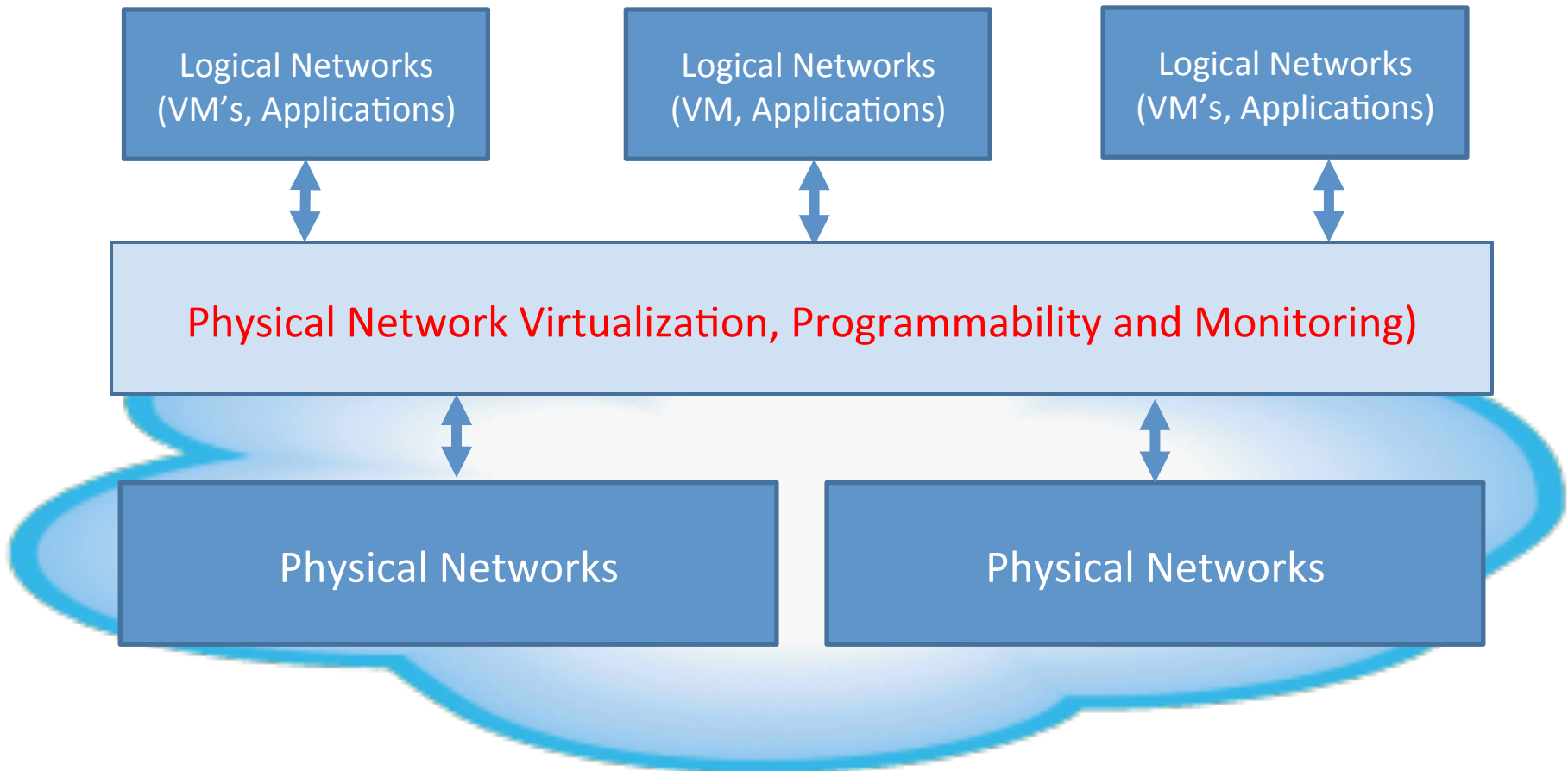
Ping Pan  
Thomas Nadeau

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# Problem

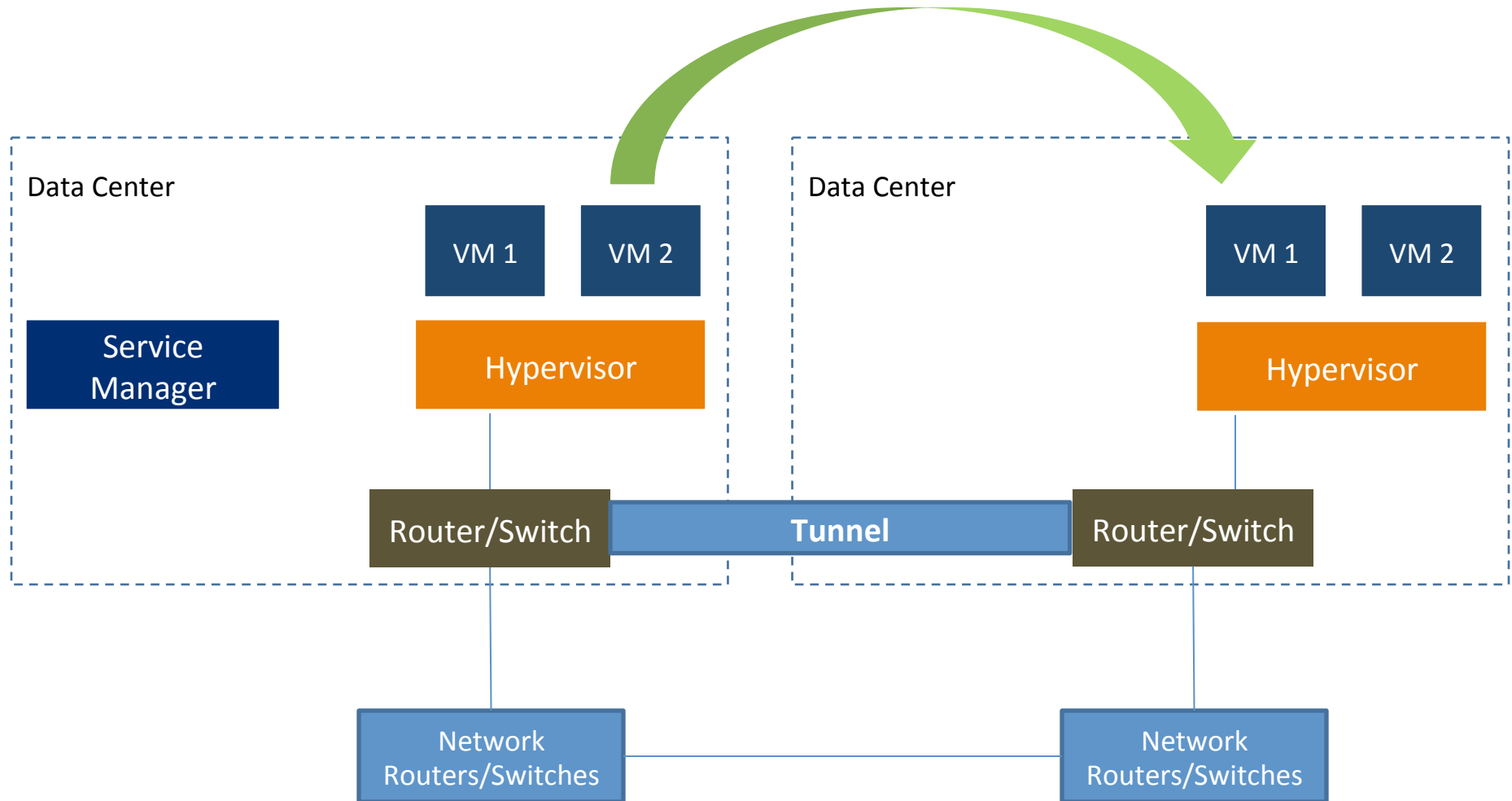
- In data center environment, the operation at application-level does not have the knowledge of the underlying network condition:
  - Make network provisioning complex
  - Difficult to expand intra/inter-data-center services
- Many are developing proprietary solutions
  - This area involves the interoperability between applications, storage servers and networking routers/switches
  - Need to have a standardized protocol

# What is needed to address the problem...



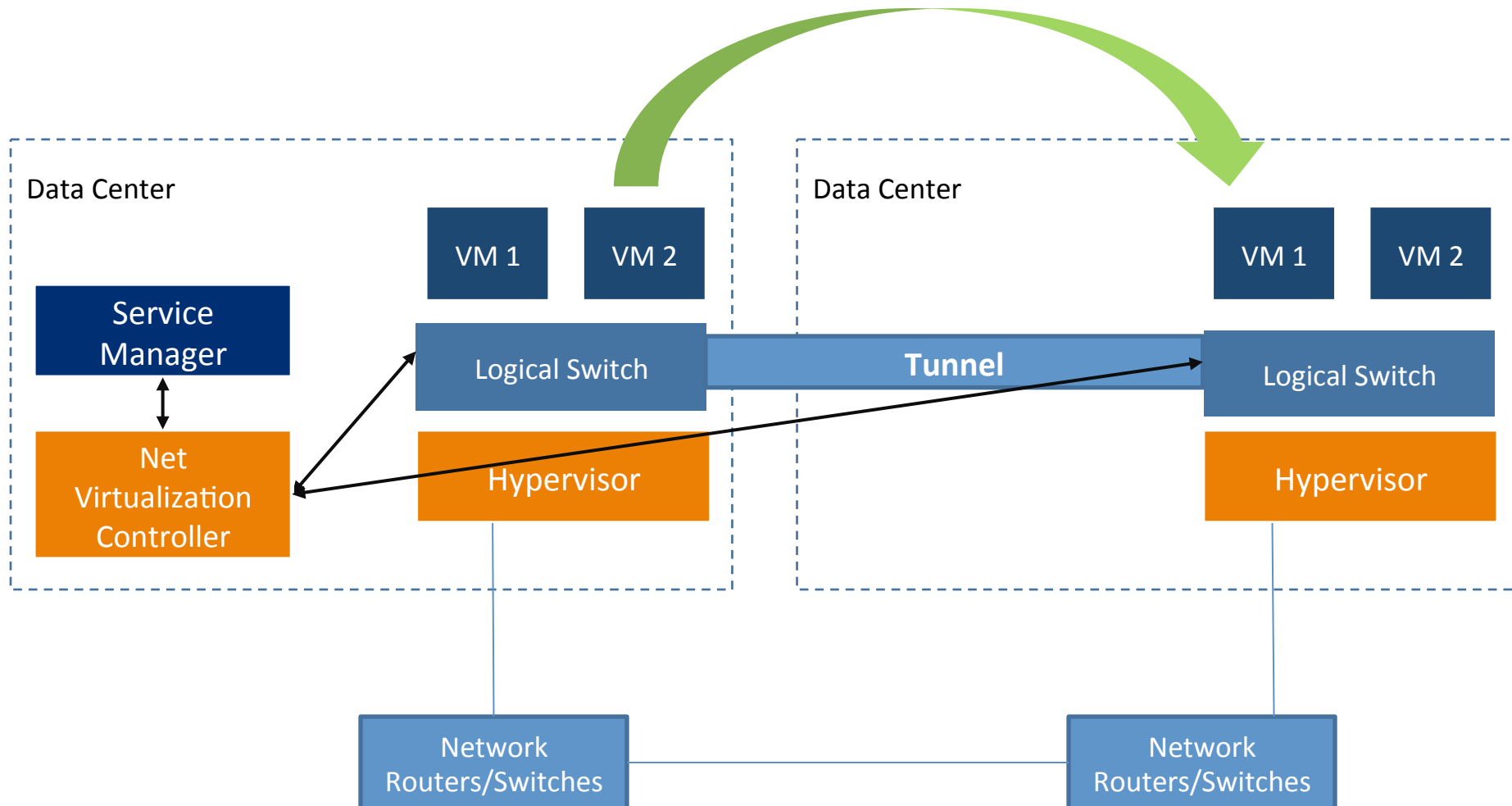
# User Case #1: VM Migration: traditional model

(Dedicated network devices, and manual configuration)



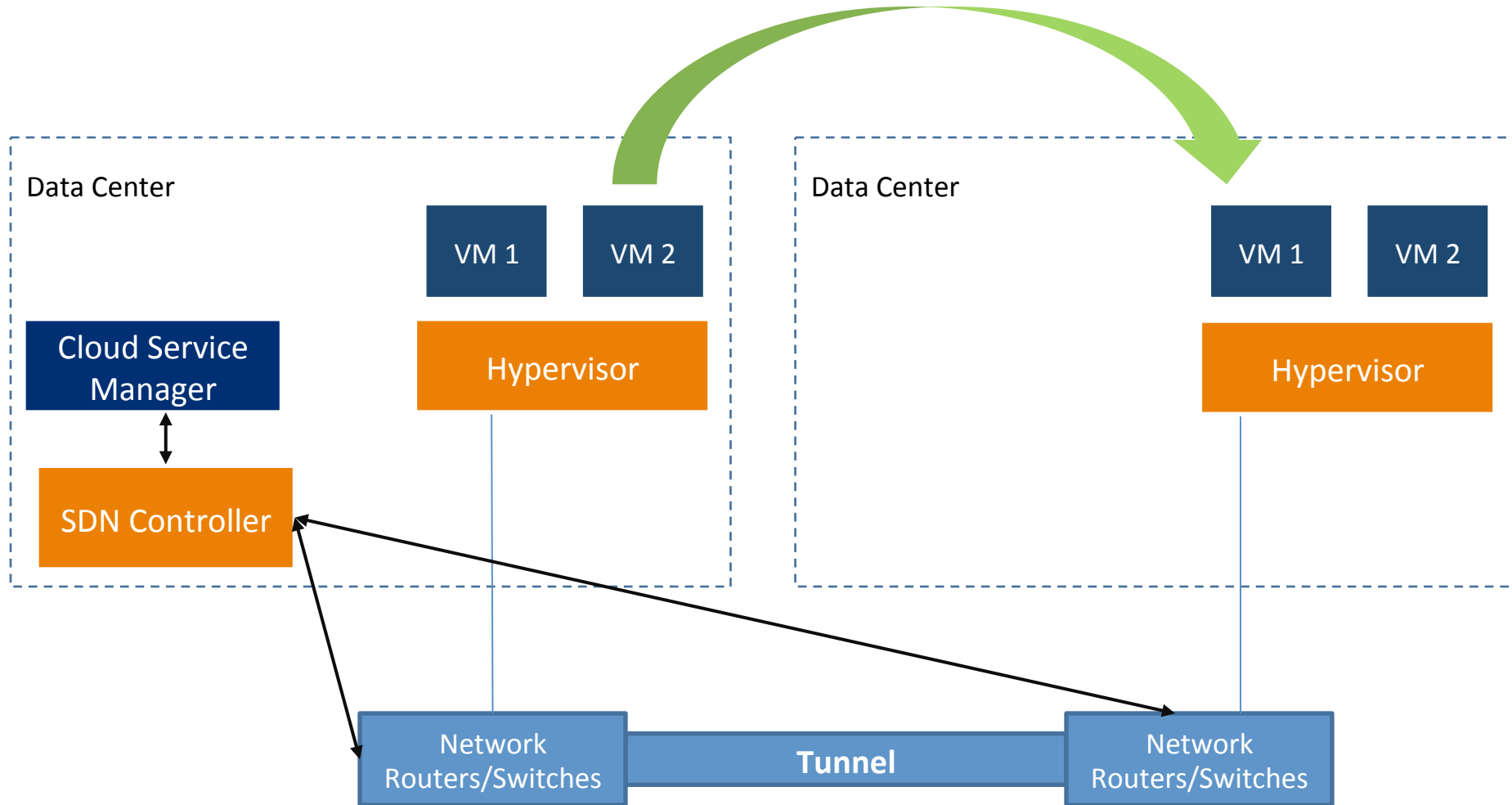
# User Case #1 (cont.): Manage via network virtualization

(A software solution by constructing L2 over L3,  
but no awareness on the underlying network links)



# User Case #1 (cont.): Manage via SDN Controller

(Support network virtualization by interfacing with the underlying physical network, and leveraging existing techniques to provide provisioning, VPN and SLA support)



# User Case #2 (cont.): Application-to-Network VPN Mapping

