Cloud Computing and the Network

Strategies for Public and Private Cloud Computing with Carrier Ethernet Services

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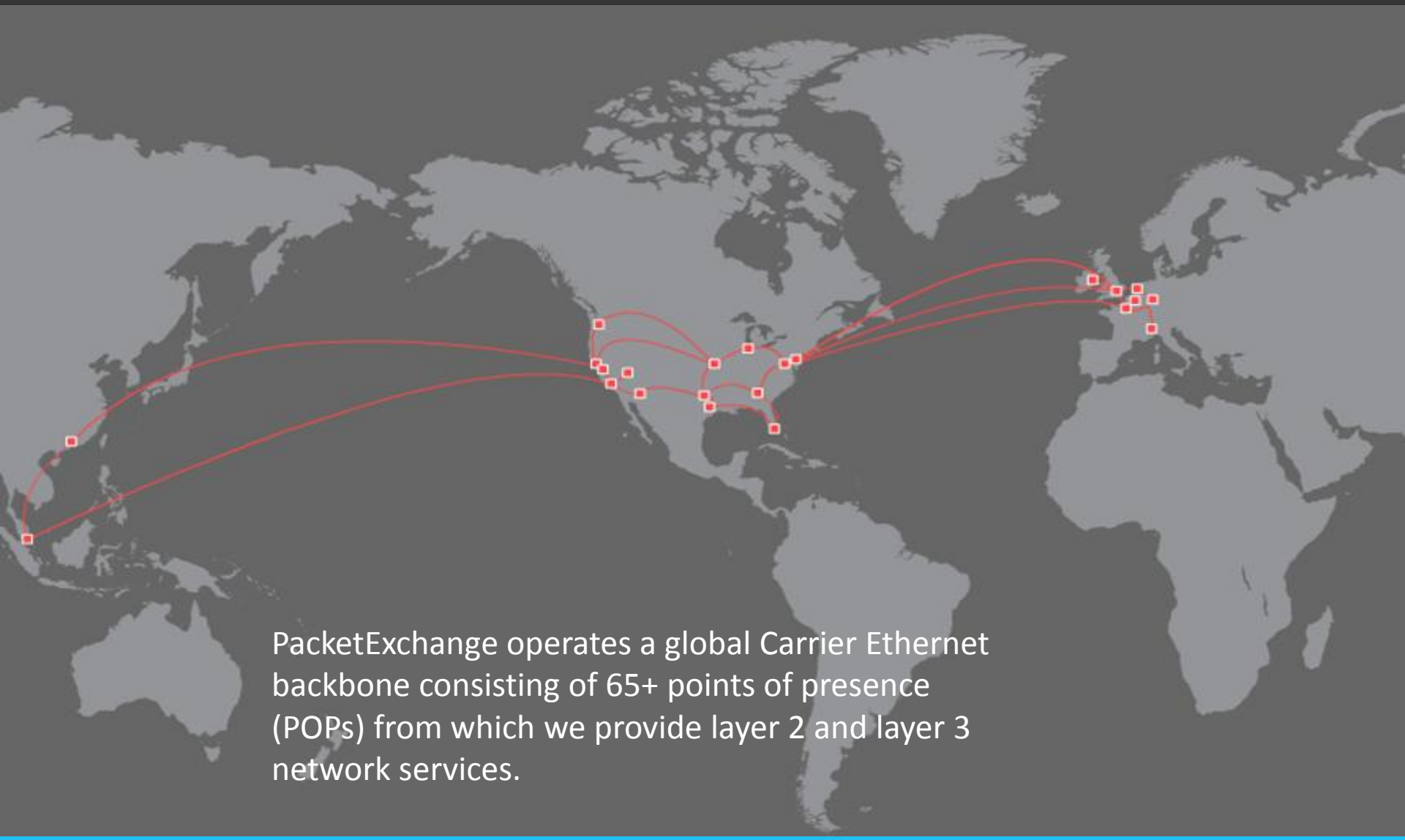
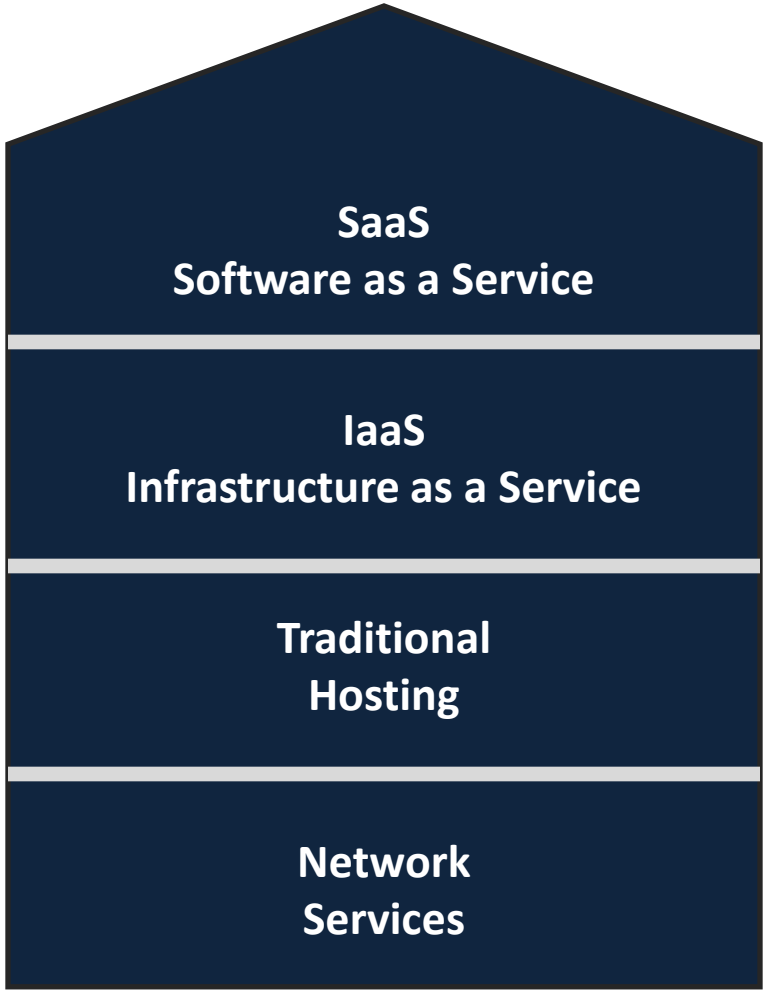
PE Global Backbone



PacketExchange operates a global Carrier Ethernet backbone consisting of 65+ points of presence (POPs) from which we provide layer 2 and layer 3 network services.

What is Cloud Computing?



Layers of Cloud Computing

Applications on the cloud are accessed directly by users via public or private networks.

Computational resources delivered as a service – ability to provision/manage resources.

Shared hosting, managed hosting, dedicated servers, traditional colocation. Content delivery.

Basic network connectivity – enables users to access services on the Internet.

The case for Cloud Computing

Cloud Computing provides numerous advantages to both users and service providers:

- Reduced CAPEX on hardware – pay only for what you need
- Reduced OPEX – more efficient utilization of resources
- Multiple customers share the same infrastructure, creating economies of scale
- Enables SME customers access to better IT infrastructure
- Quickly scalable based on computing requirements
- Security – can provide data integrity via massive parallel backup systems
- Reliability – ability to separate resources physically provides insurance against disasters
- Infrastructure and user location independence
- Maintenance of cloud applications is easier, as they don't have to be updated on each user's computer
- Greener – lower overall power consumption and environmental impact

History of Network-Based Computing

Mainframe / UNIX – based computing model: the original "Cloud Computing"

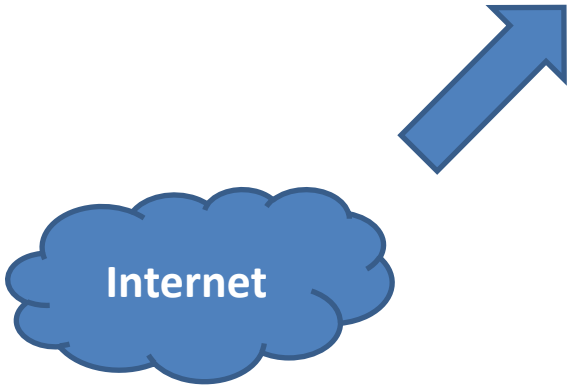
In the early days of network computing, resources were shared. CPU capacity was comparatively expensive and thusly centralized. "Dumb terminals" enabled multiple users to access the central computing resources simultaneously.

The application lived on the central computer – the early cloud.

History of Network-Based Computing

Advancements in CPU technology enabled a rich, immersive desktop experience for users. Computing resources moved away from a centralized model, instead putting immense CPU capability on the desktop.

The application lived on the desktop.



As powerful desktop computers became ubiquitous, so did the Internet – albeit as a data source that was “browsed.”

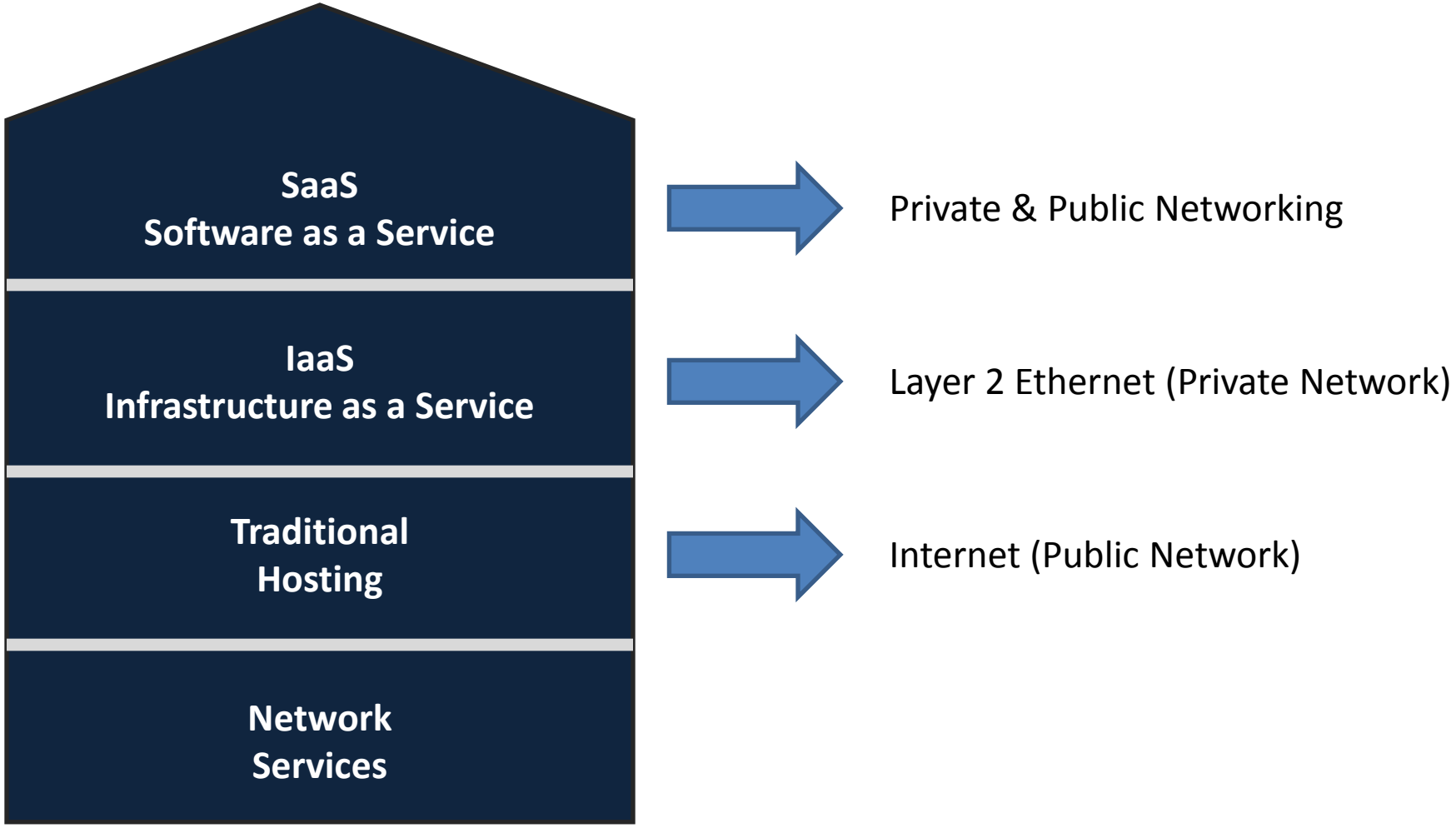
History of Network-Based Computing

As the Internet becomes a part of everyday life, users expect to be “always connected” from whatever device they are using, wherever they’re physically located.

As a result, applications are pushed back into the cloud. Applications are accessed via many mediums, but users expect the same desktop-like experience they’re used to – making the network more important than ever.

The application lives on the network.

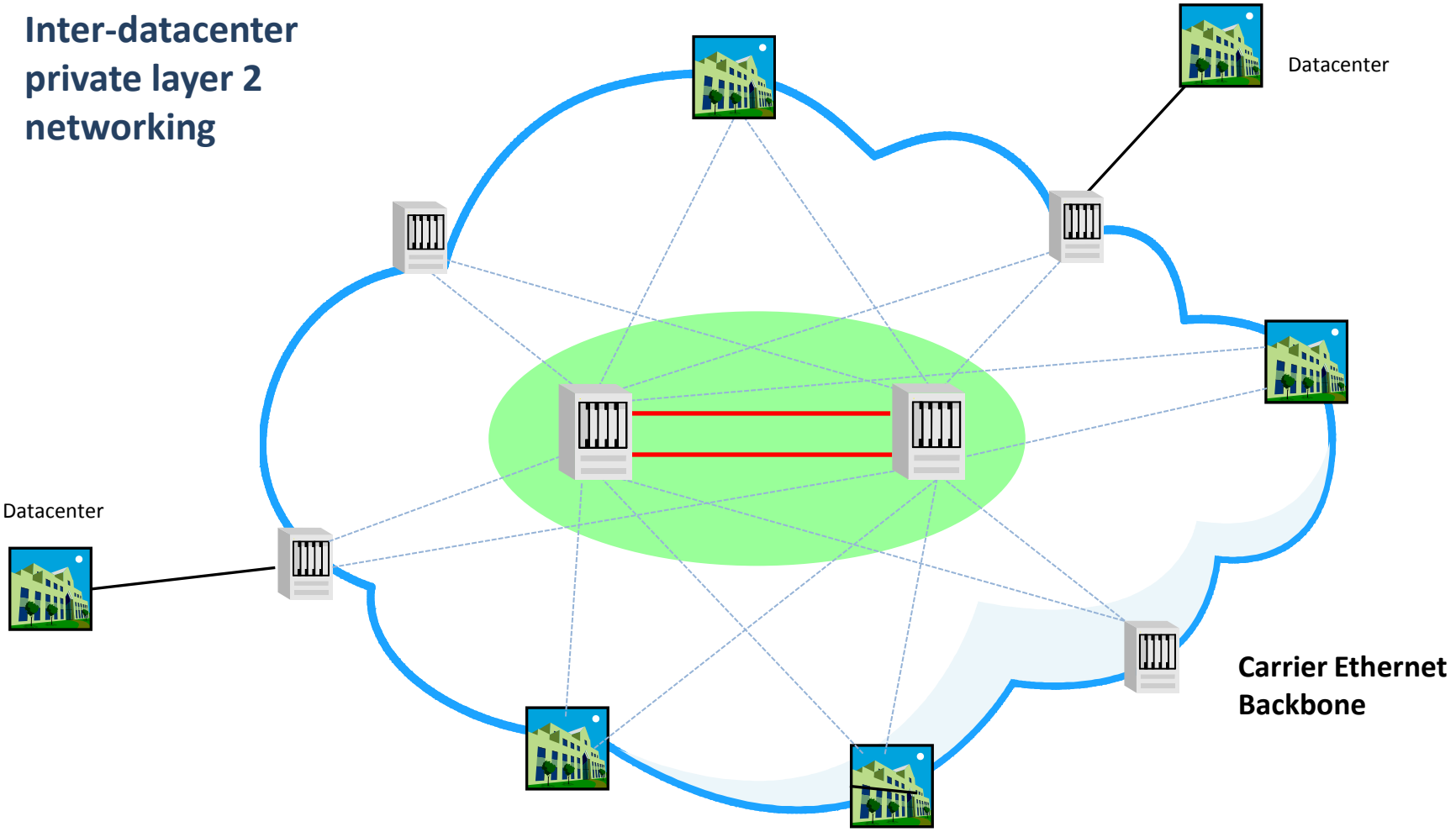
Public and Private Cloud Strategies



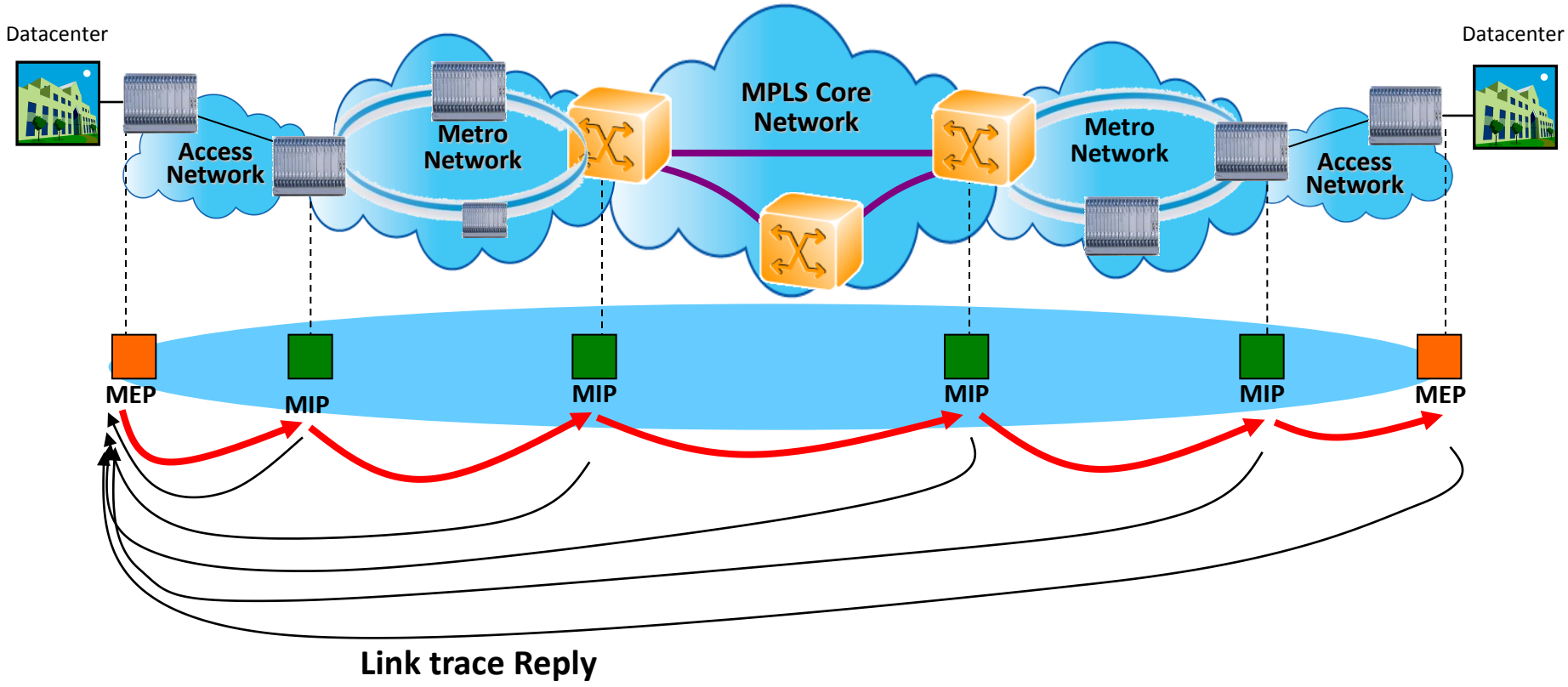
PacketExchange™

Private Cloud Networking

Inter-datacenter private layer 2 networking



Private Cloud Networking



Y.1731 Performance Management – ensure layer 2 network performance between physical locations.

Public Cloud Networking

Application
Cloud Network

The public Internet is not always suited to providing a rich, real-time application environment.

Level (3) COMMUNICATIONS

Global Crossing

at&t

Sprint

verizon

Qwest

NTT Communications

SAVVIS

User Network

By creating layer 3 “shortcut” routes directly to user networks, network performance can be guaranteed.

Thank you!

For more information please visit our website:

www.packetexchange.net