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# **Mobile Edge Computing (MEC)**

# Mobile Edge Computing

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- Mobile edge Computing provides Cloud computing capabilities within the Radio Access Network (RAN) in close proximity to mobile subscribers.
- RAN edge offers a service environment with ultra low latency and high bandwidth as well as direct access to real time radio network information (such as subscriber location, cell load, etc.)
- Mobile-edge Computing can be seen as a cloud server running at the edge of a mobile network

# IT and Telecommunications networking convergence

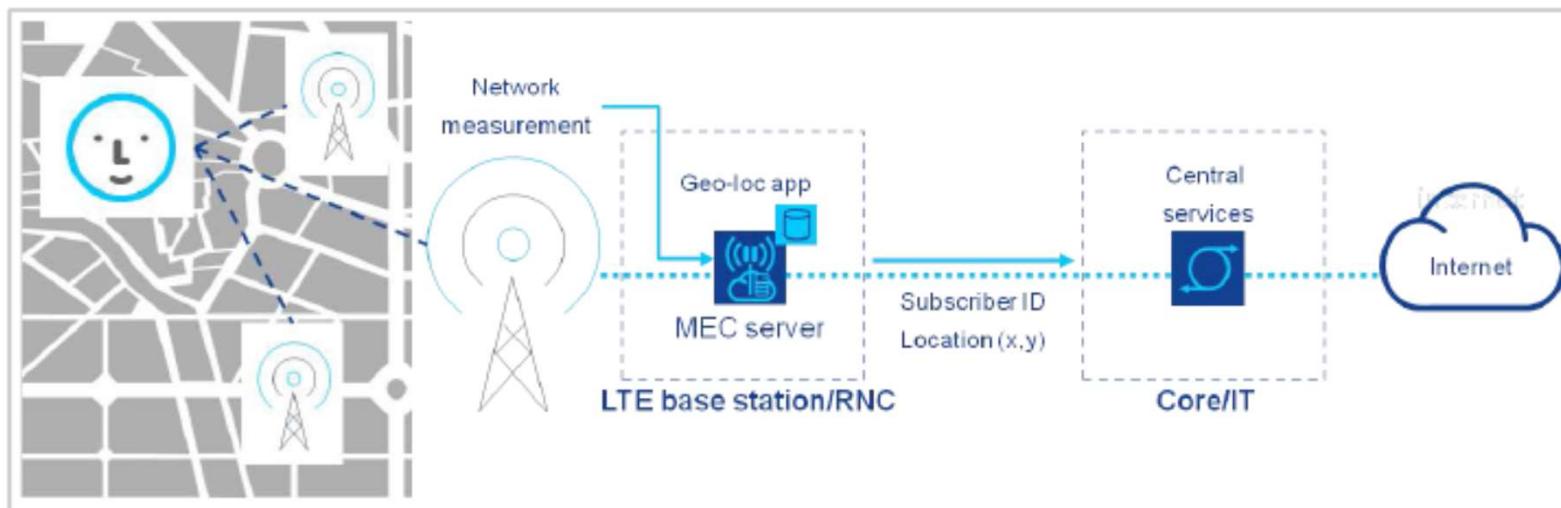
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# Use case

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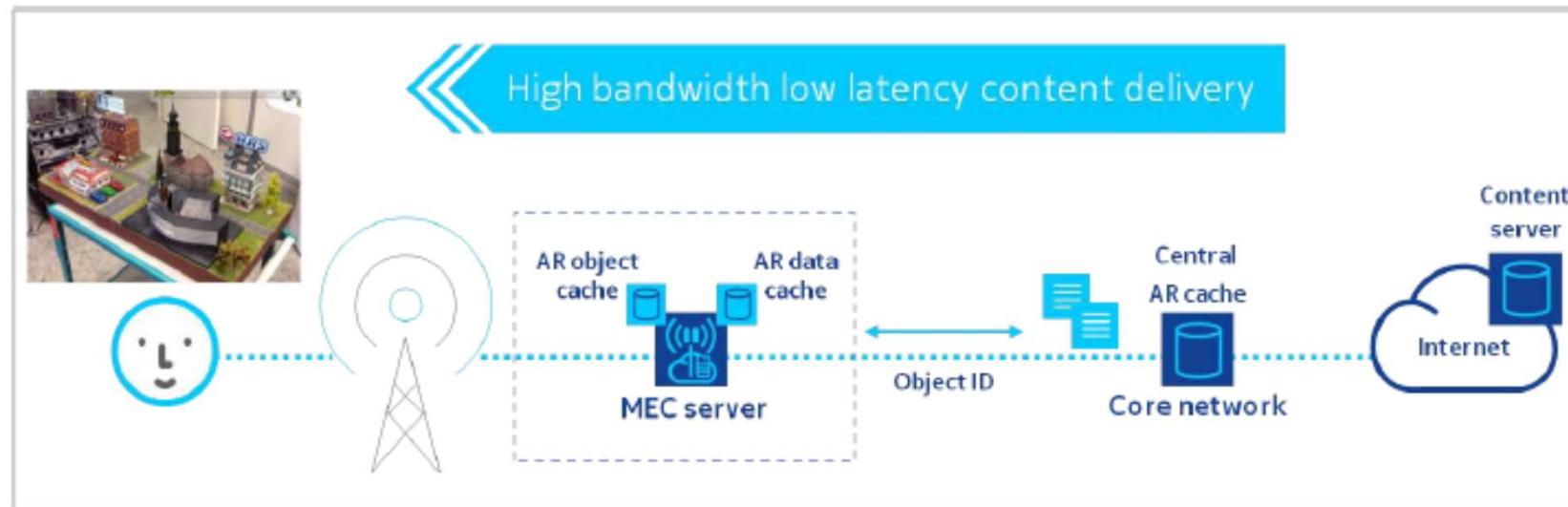
Example of active device location tracking



# Use case

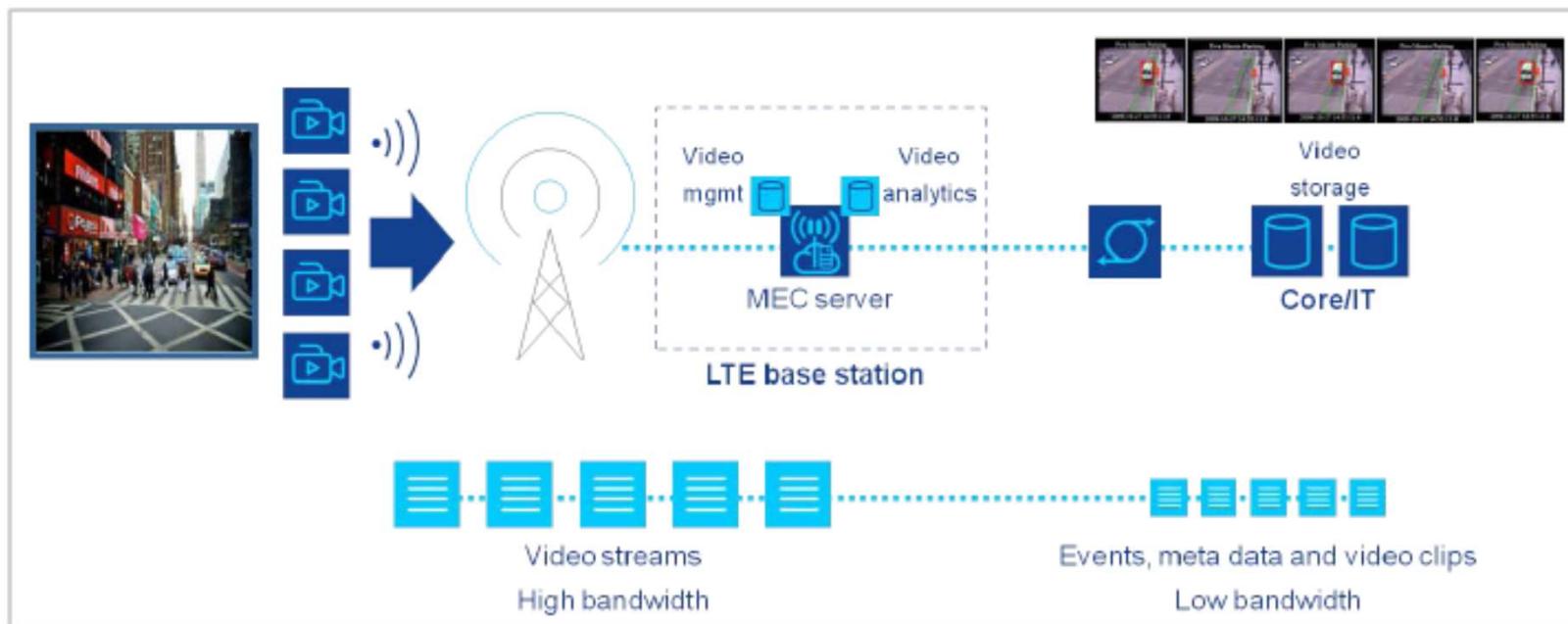
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## Example of augmented reality content delivery



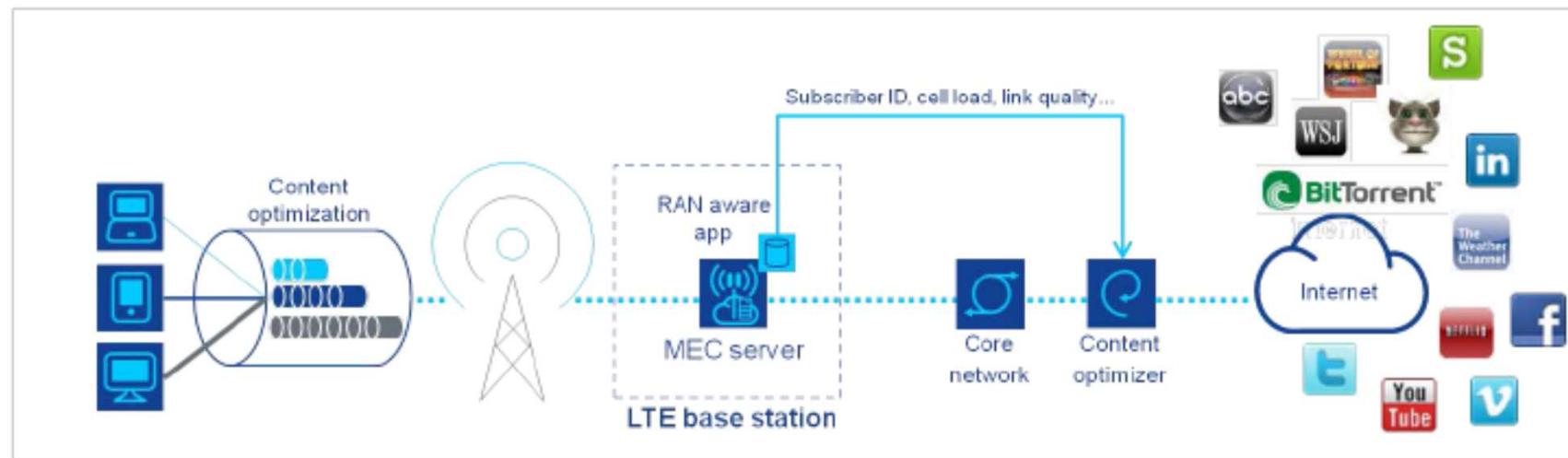
# Use case

## Example of video analytics



# Use case

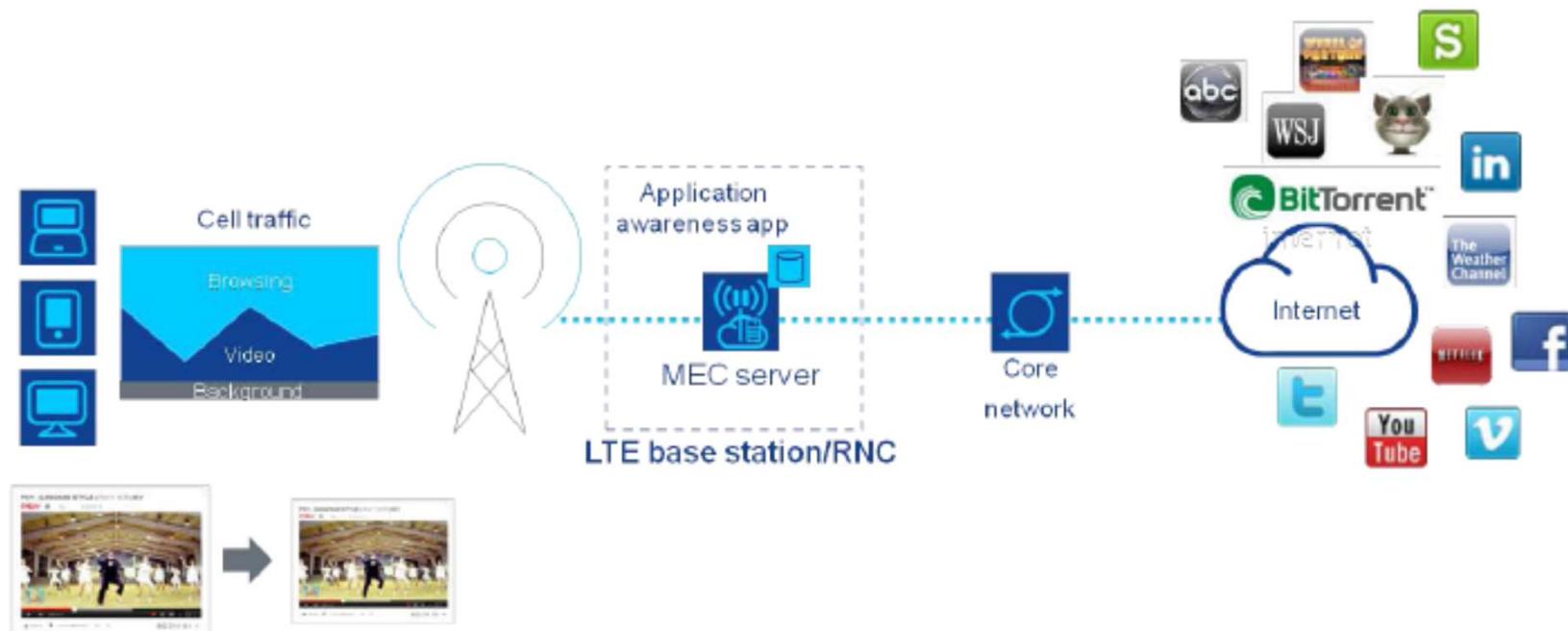
## Example of RAN-aware content optimization



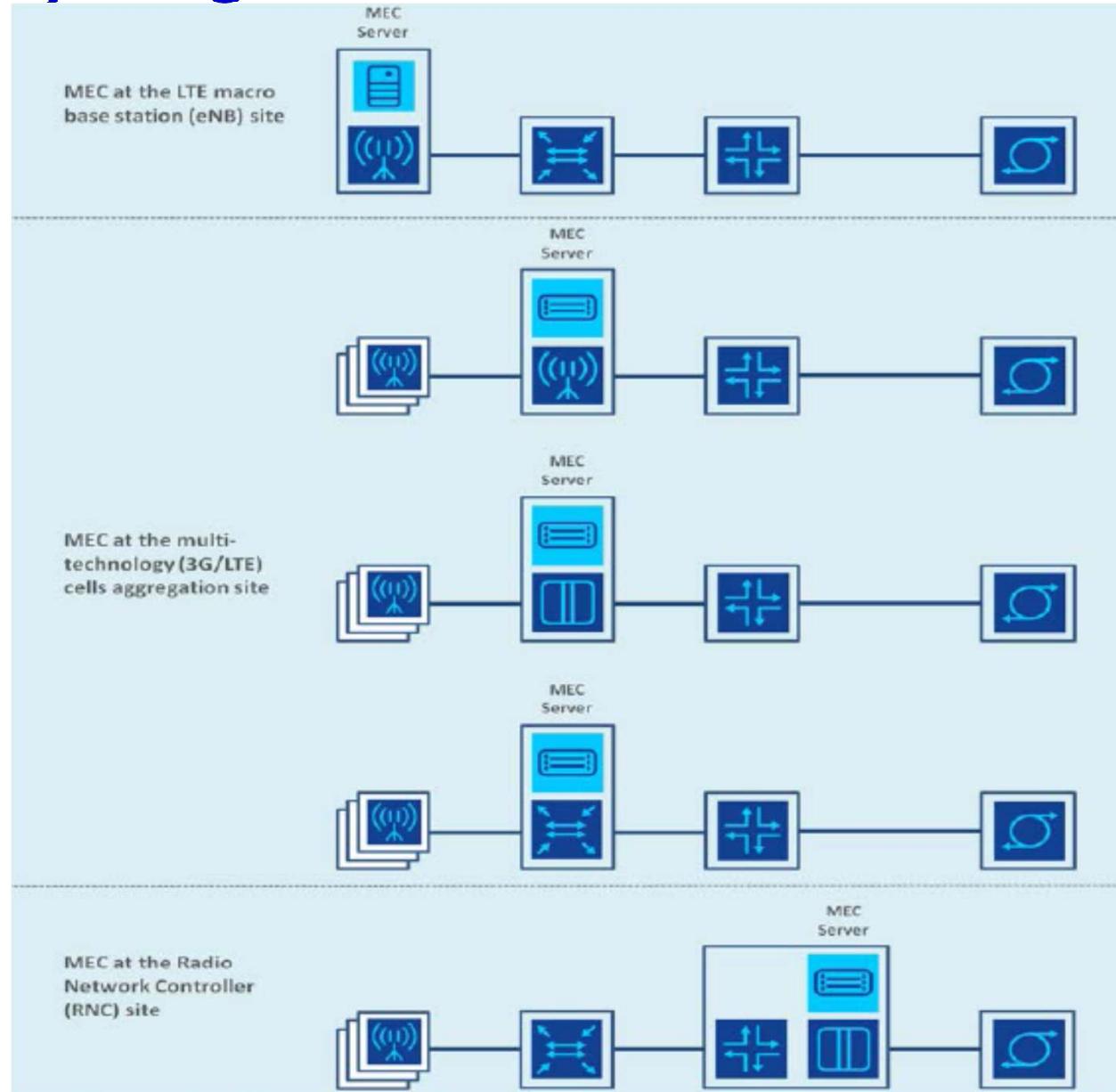
# Use case

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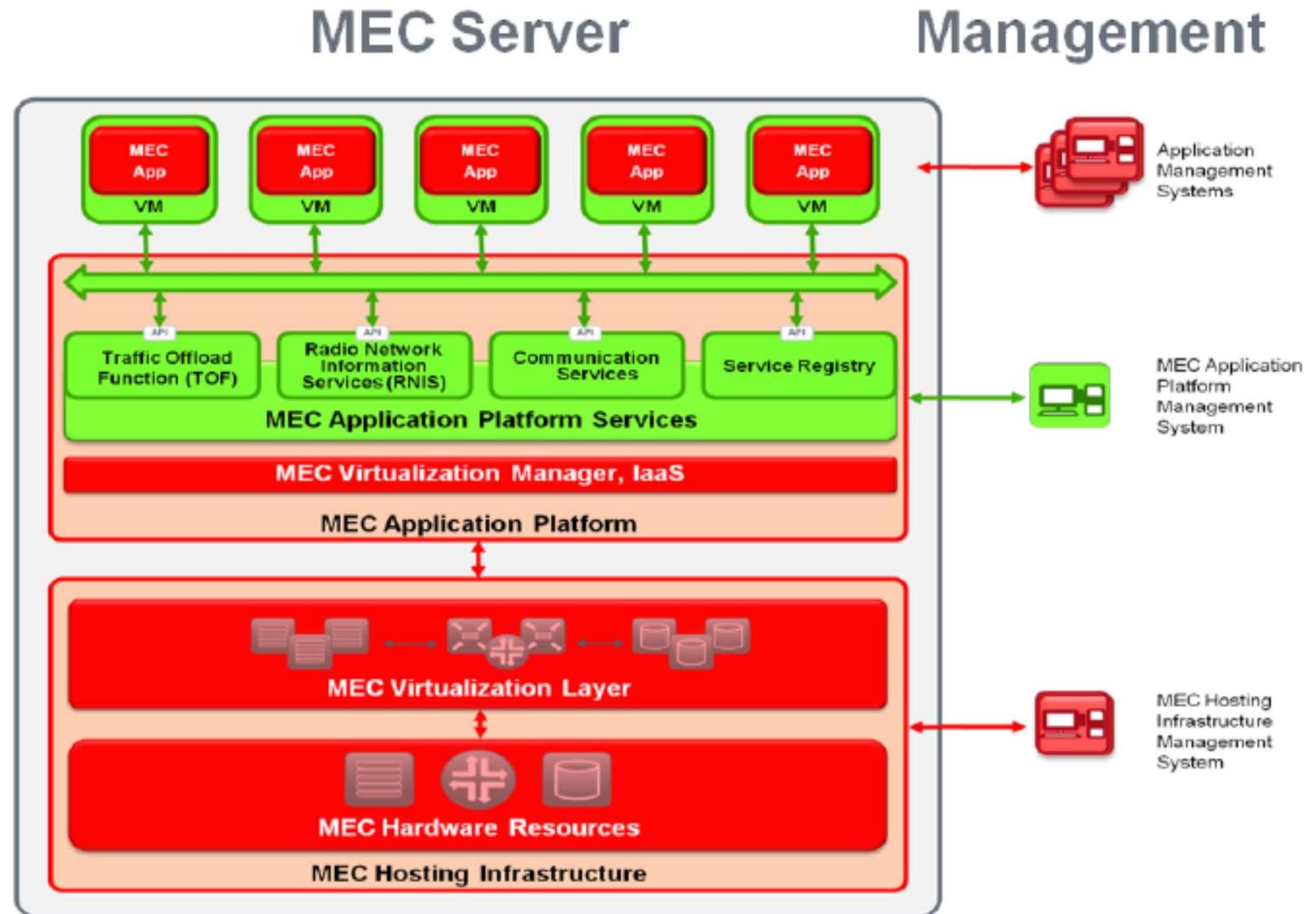
## Example of Application-aware performance optimization



# Deployment scenarios of the Mobile-edge Computing server



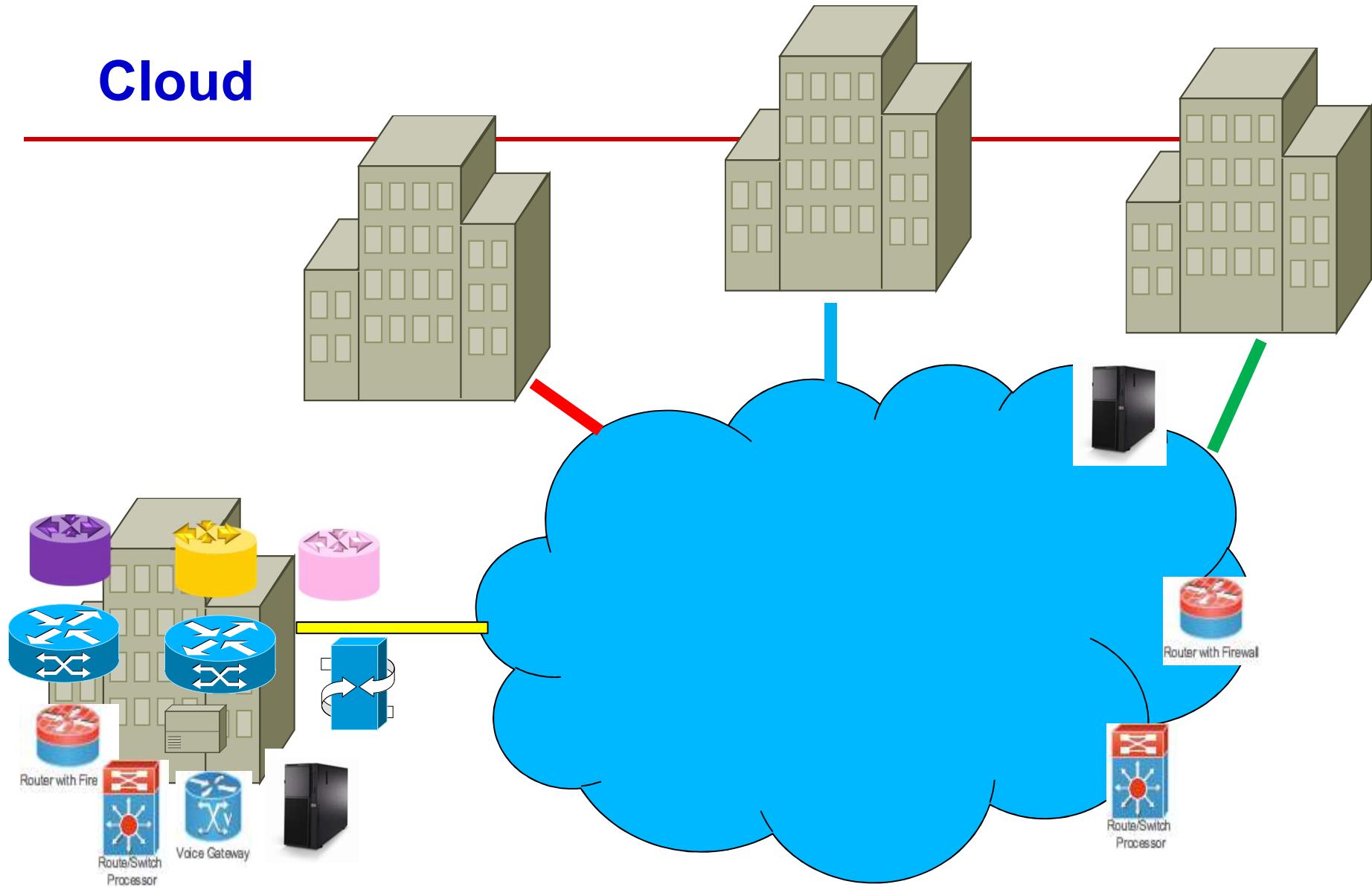
# MEC server platform overview



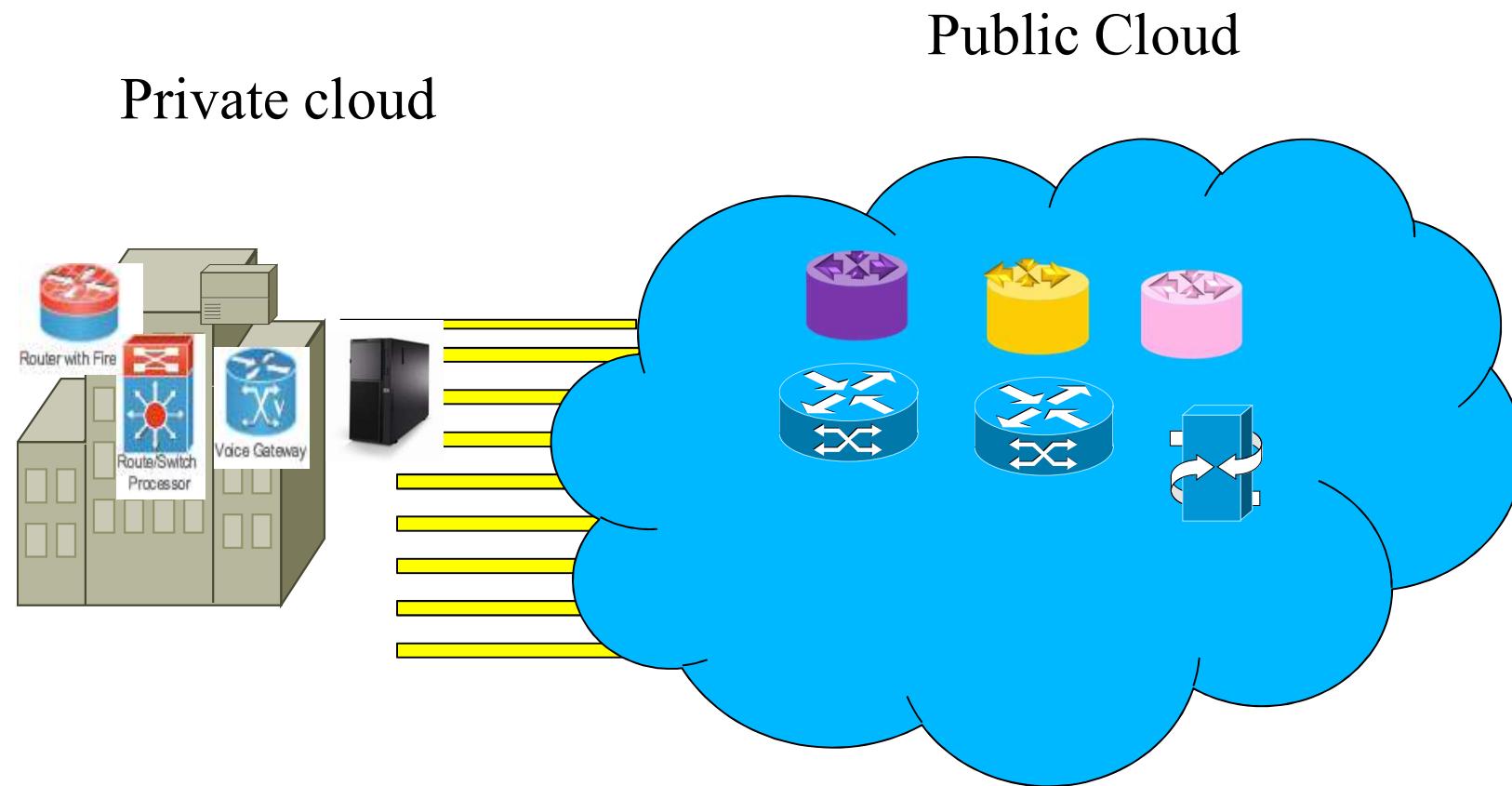
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**Cloud**

# Cloud

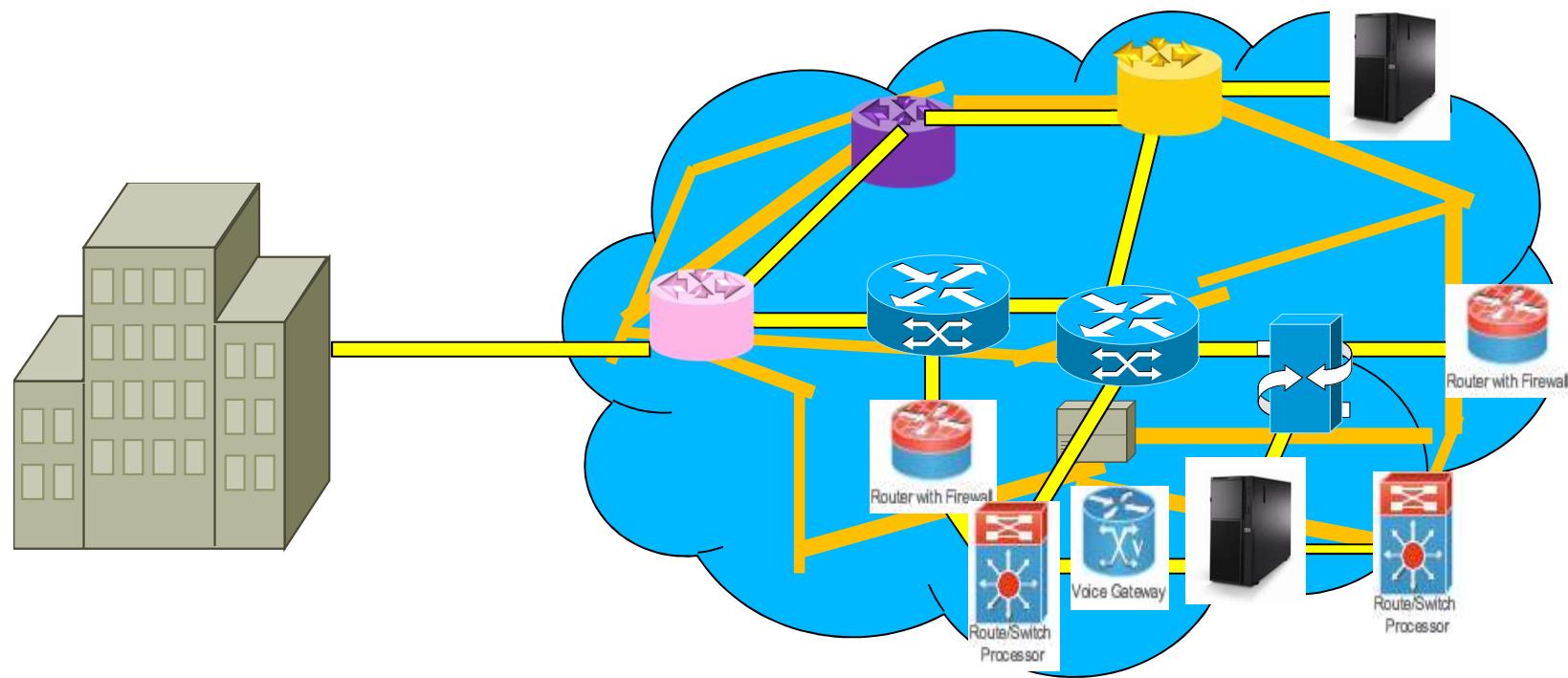


# Hybride Cloud



# Cloud

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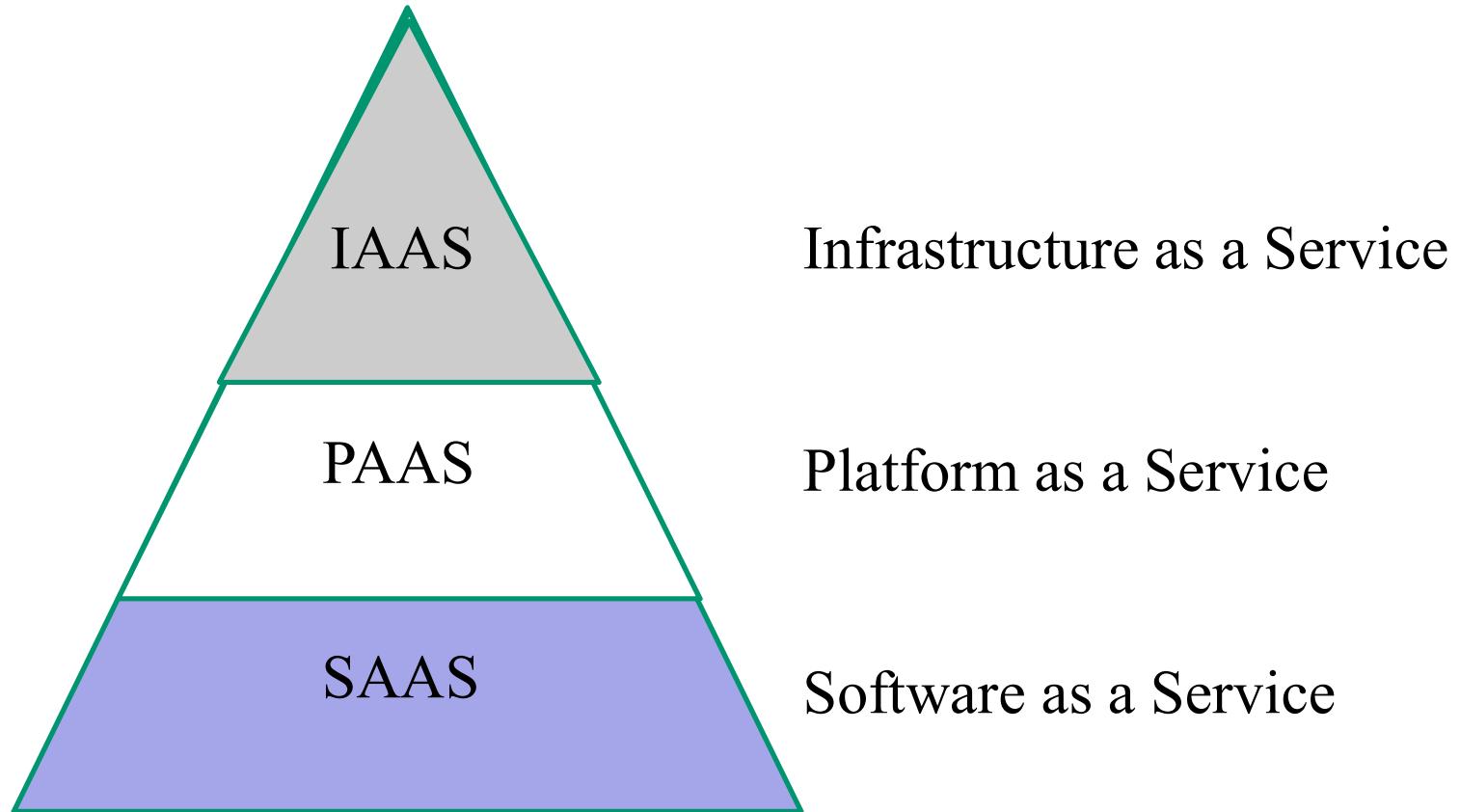
# Cloud

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- **Vue du fournisseur**
  - Economie d'échelle
  - Multiplexage statistique
  - Evite les complexités liées aux éléments spécifiques au clients
- **Vue du client**
  - Pas besoin de réserver ou de sur-réserver
  - Pas de coûts indirect de contrôle et de gestion.
  - Coût à l'utilisation
- **Découplage gagnant-gagnant**
  - Virtualisation

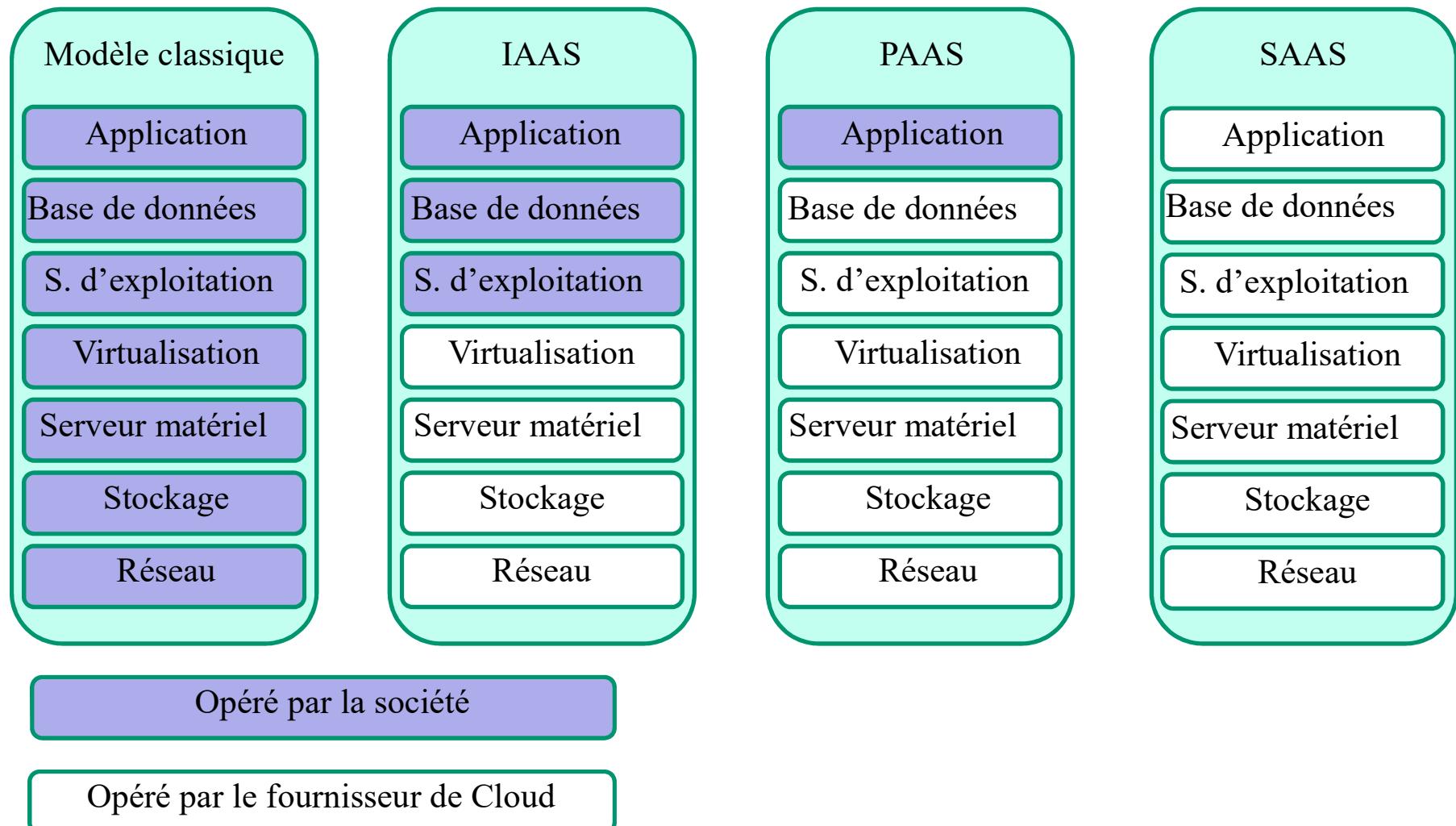
# Les différents types de Cloud

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XaaS Network, Security, Management, Control, etc.

# Les différents types de Cloud



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## *La cloudification des réseaux*

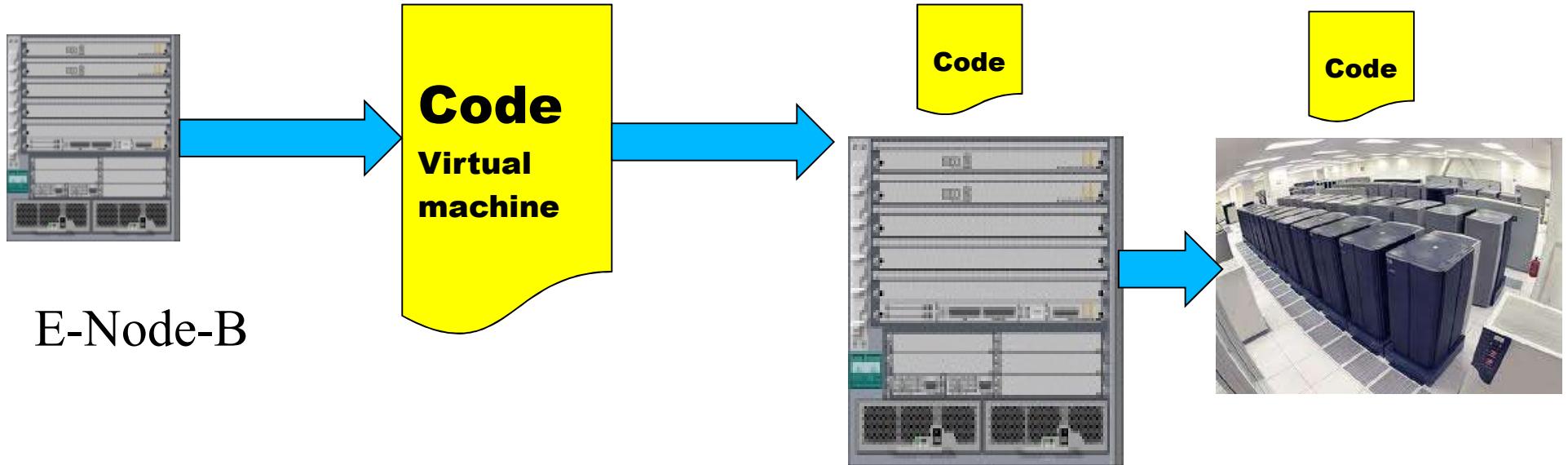
# Les trois révolutions en réseaux

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# Virtualization

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Virtualisation : hardware towards software  
Cost  
Agility  
Problem: performance

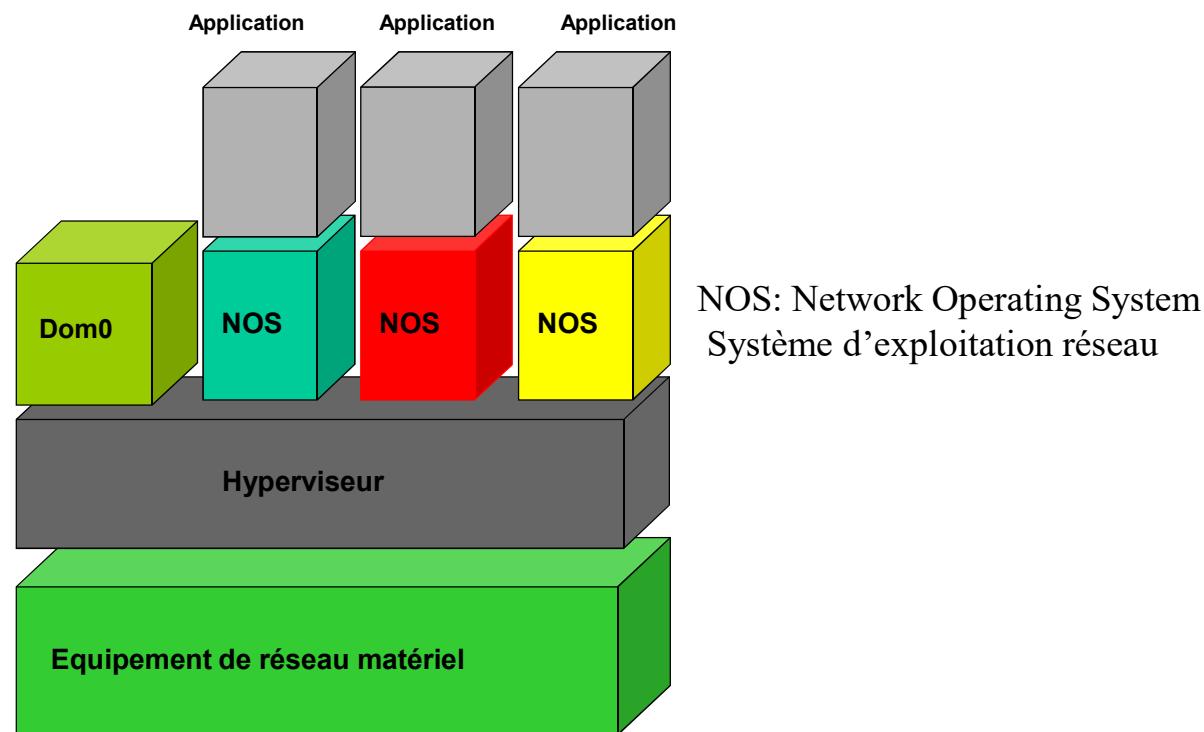
# Non virtualisable

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# Virtualization

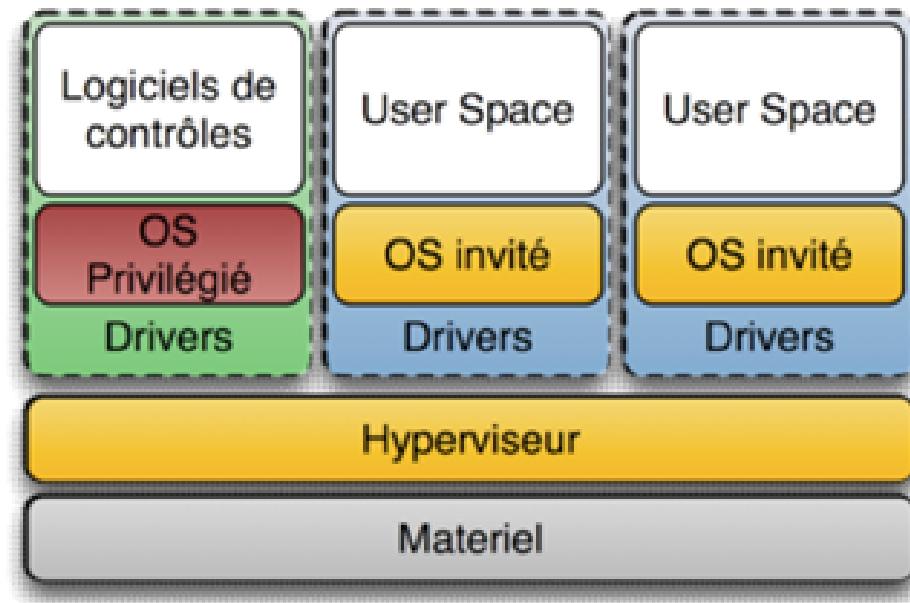
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# Hypervisor

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- Type 1 hypervisor

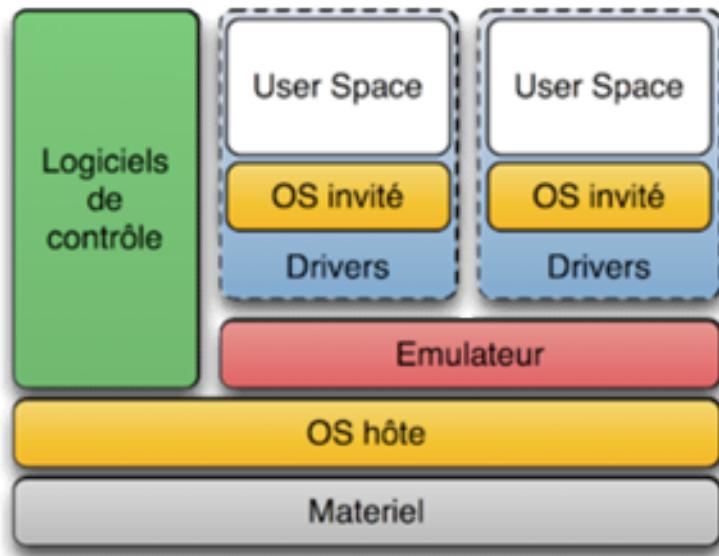


- Paravirtualisation

# Hypervisor

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- Type 2 hypervisor

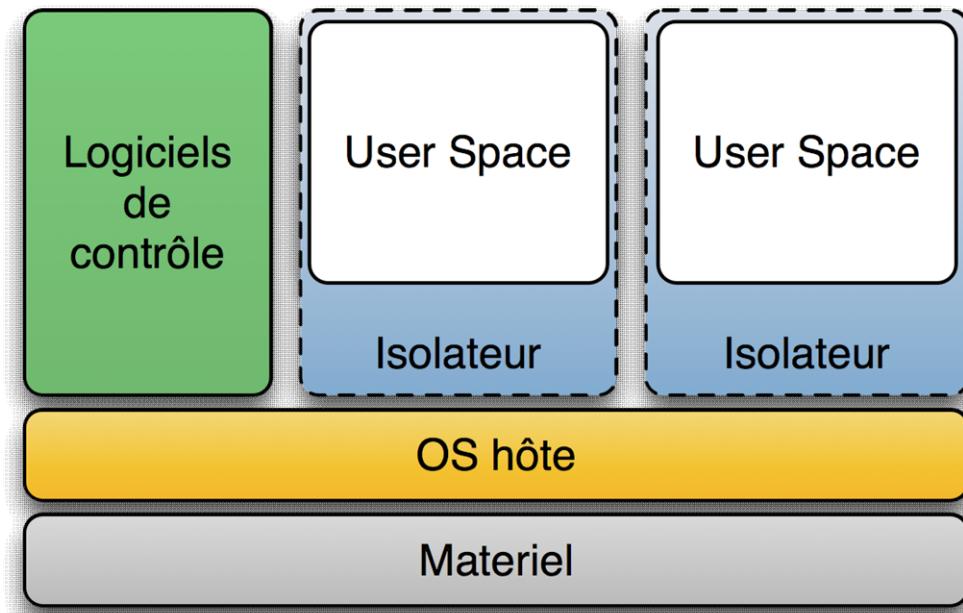


- Full Virtualization

# Hyperviseur

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- **Isolator**

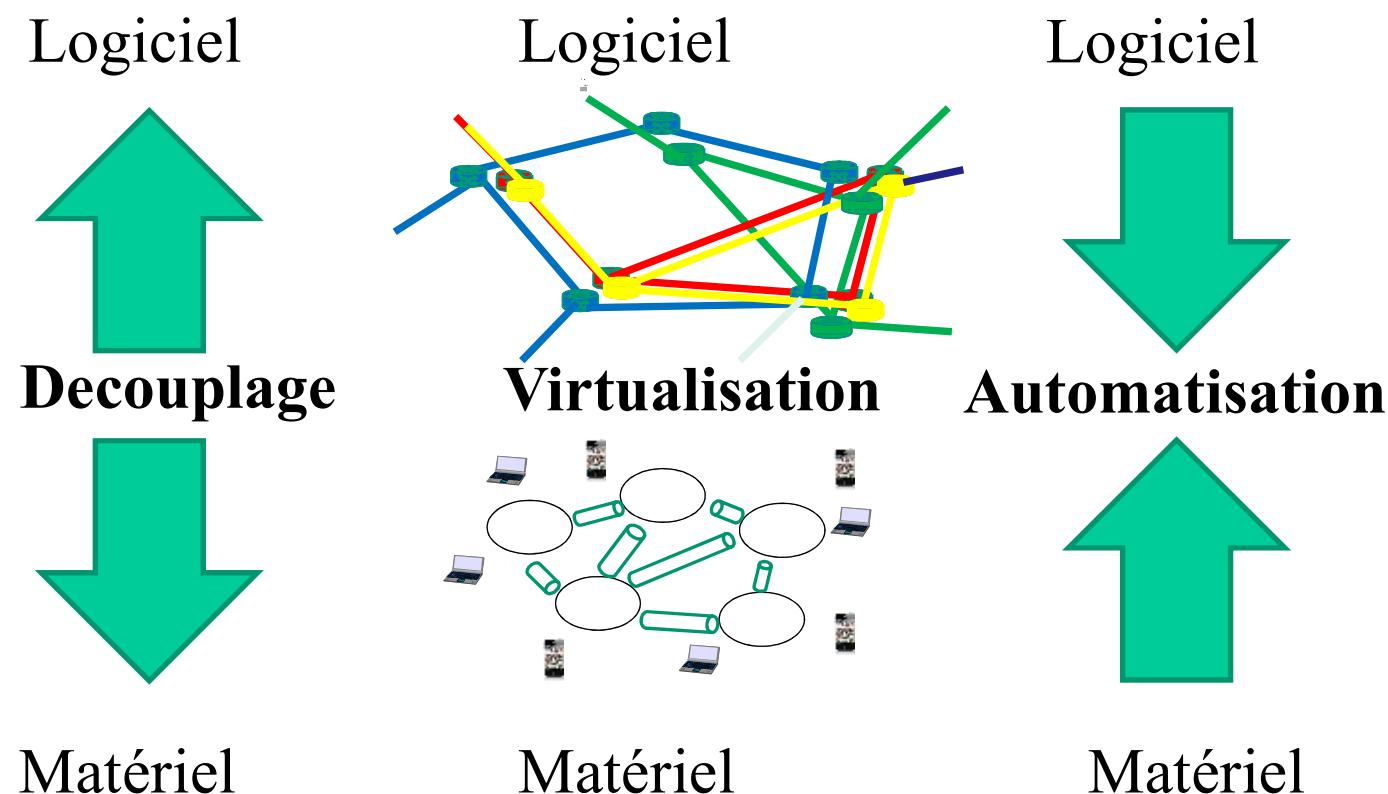


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## **Software mobile networks**

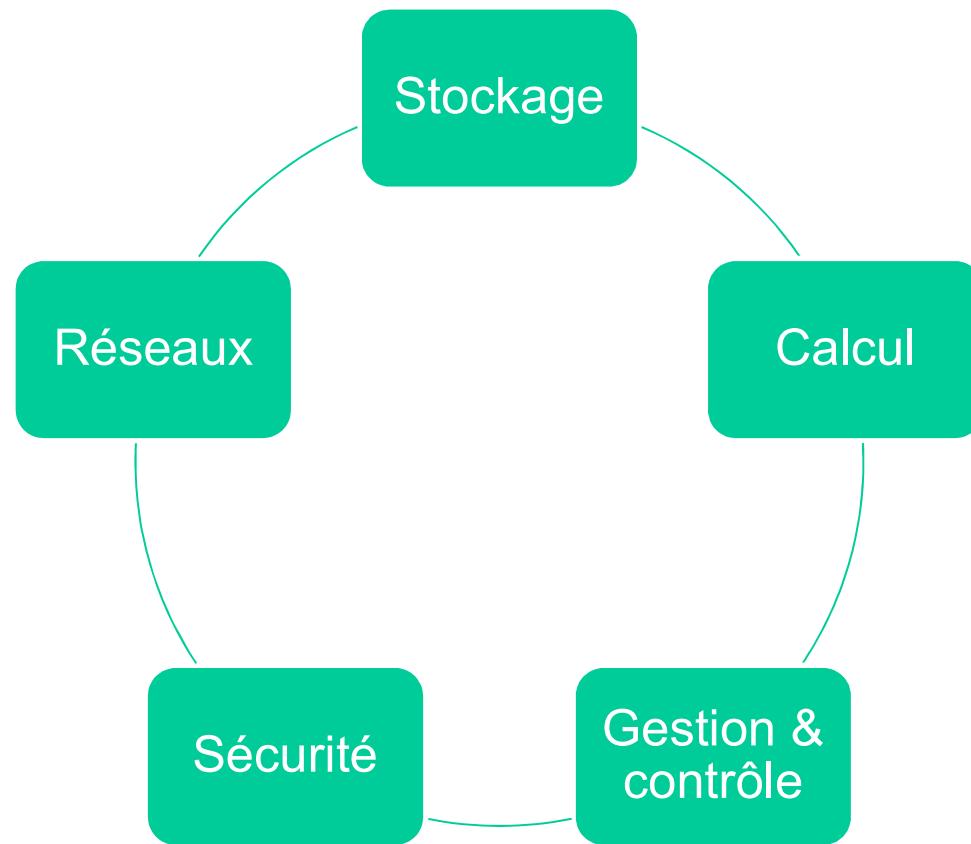
# Architecture de réseaux

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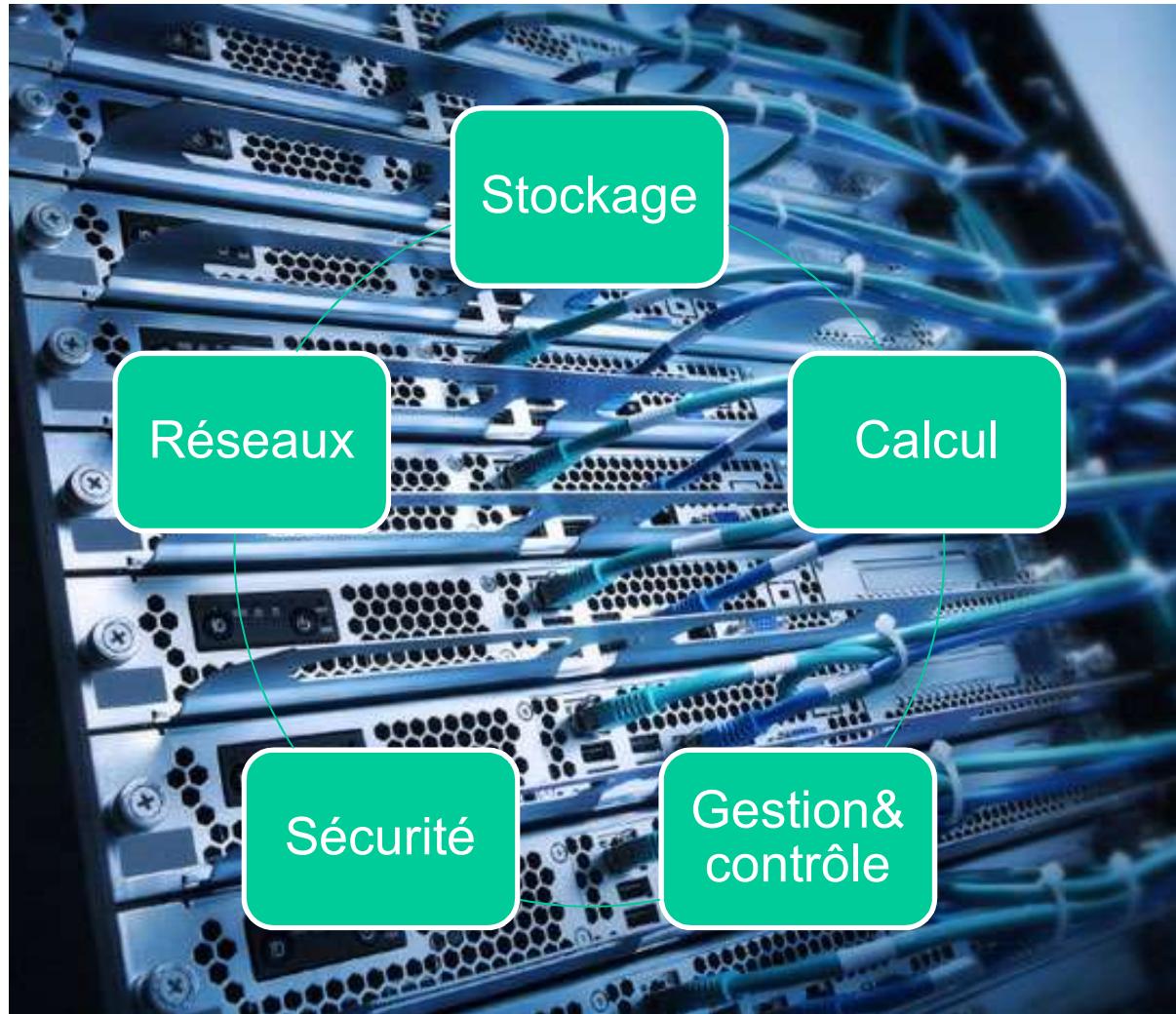
# Ressources

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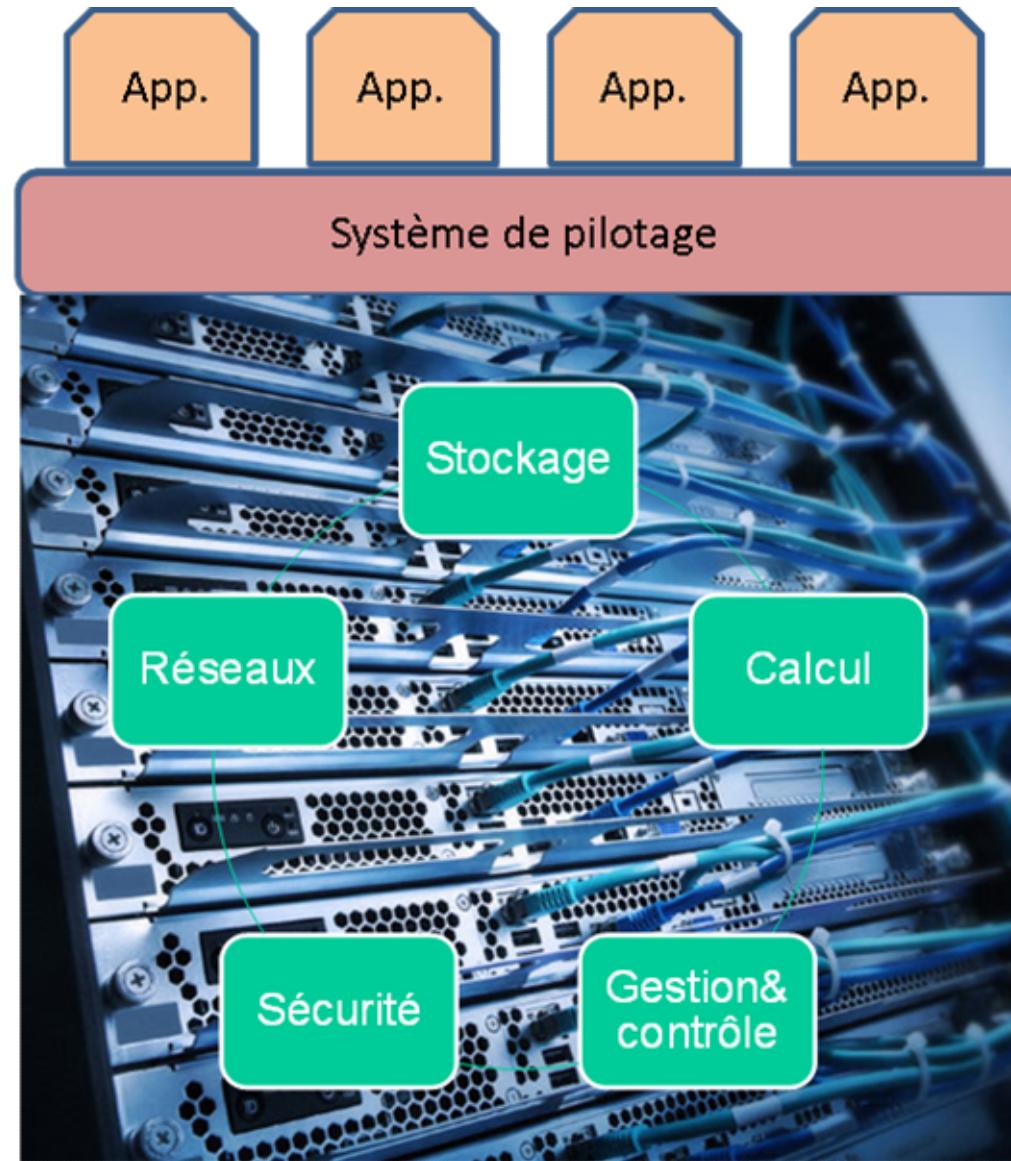
# Virtualisation

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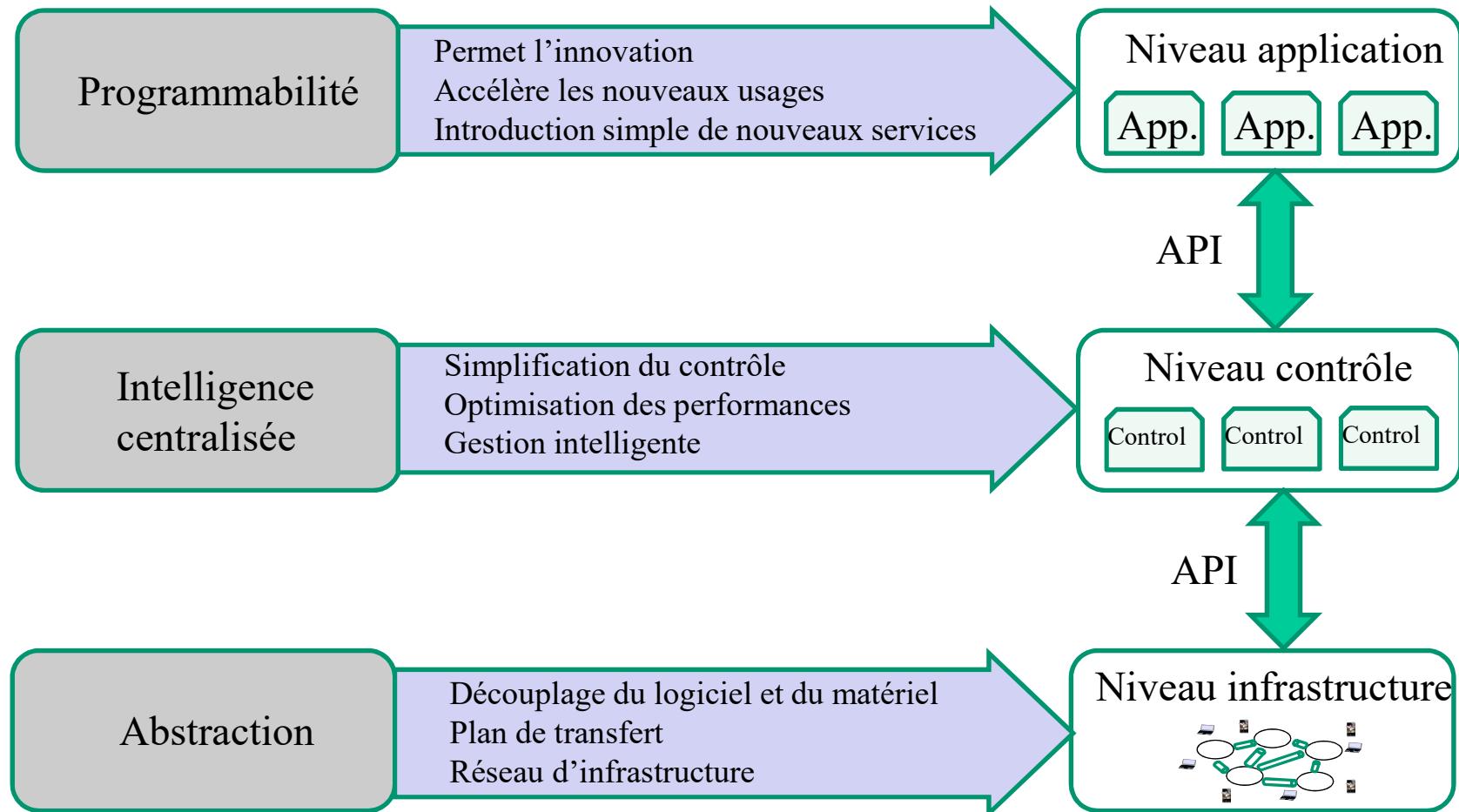


# Architecture conceptuelle

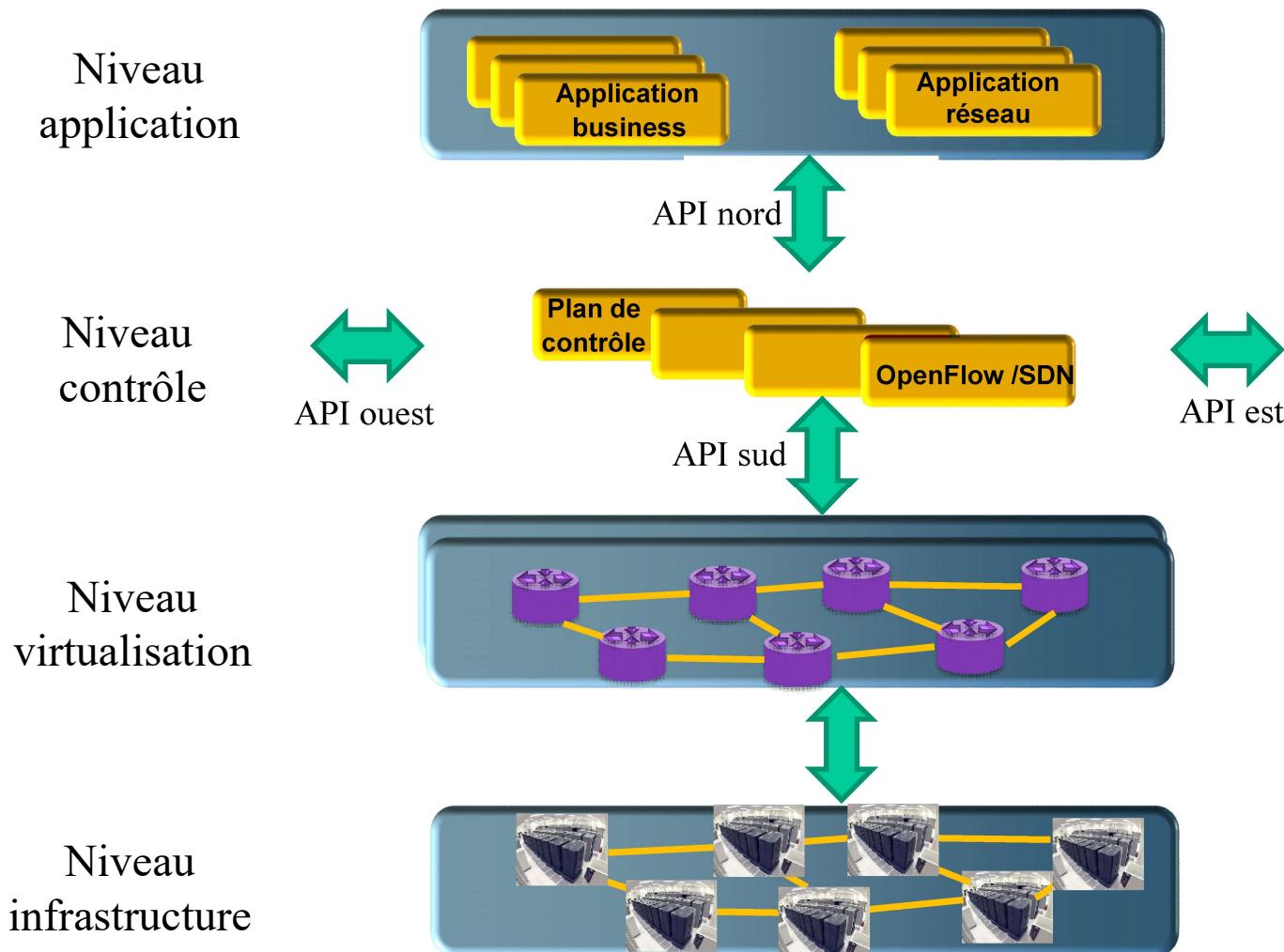
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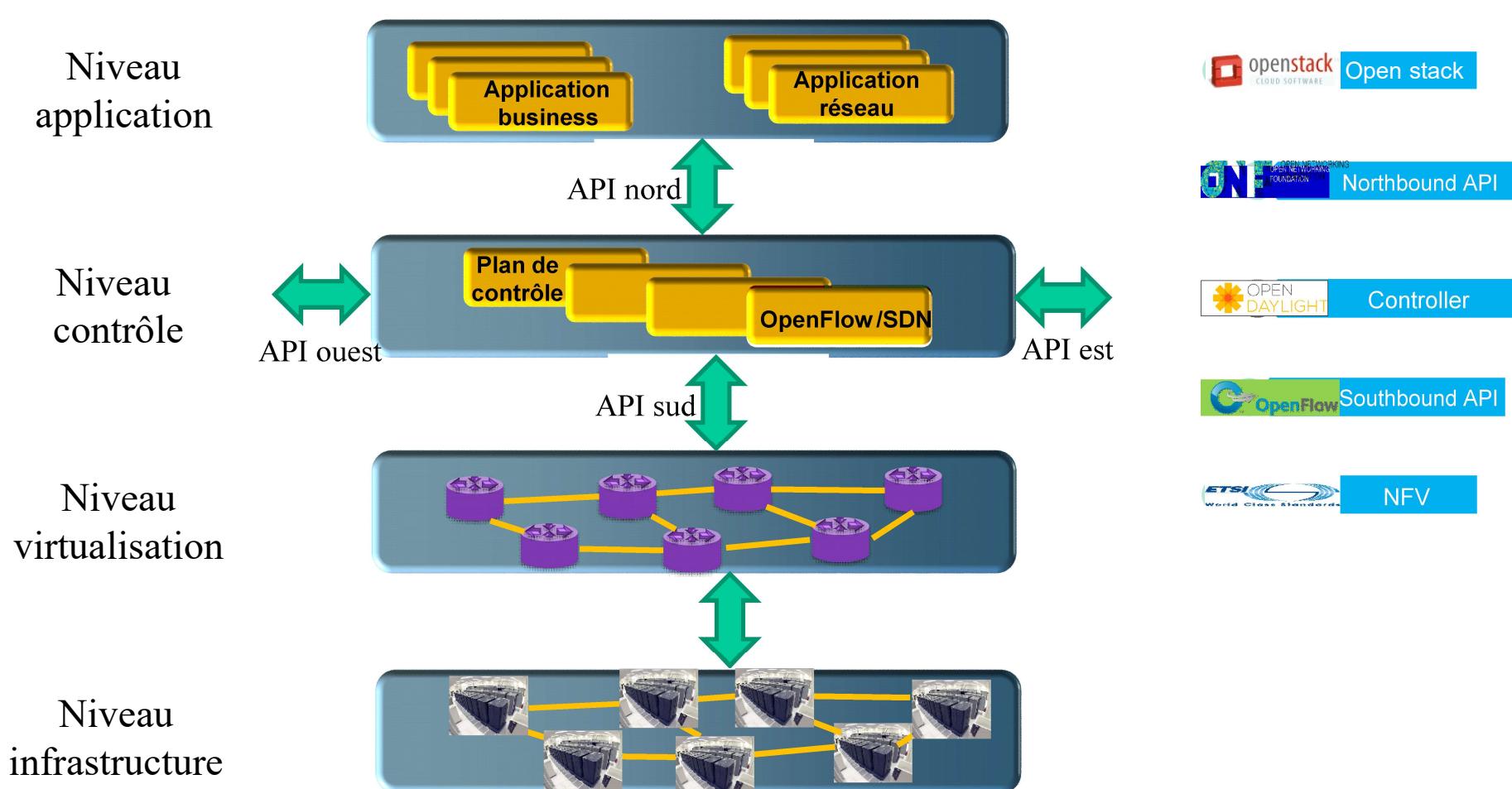
# ONF (Open Network Foundation)



# Architecture globale de réseaux



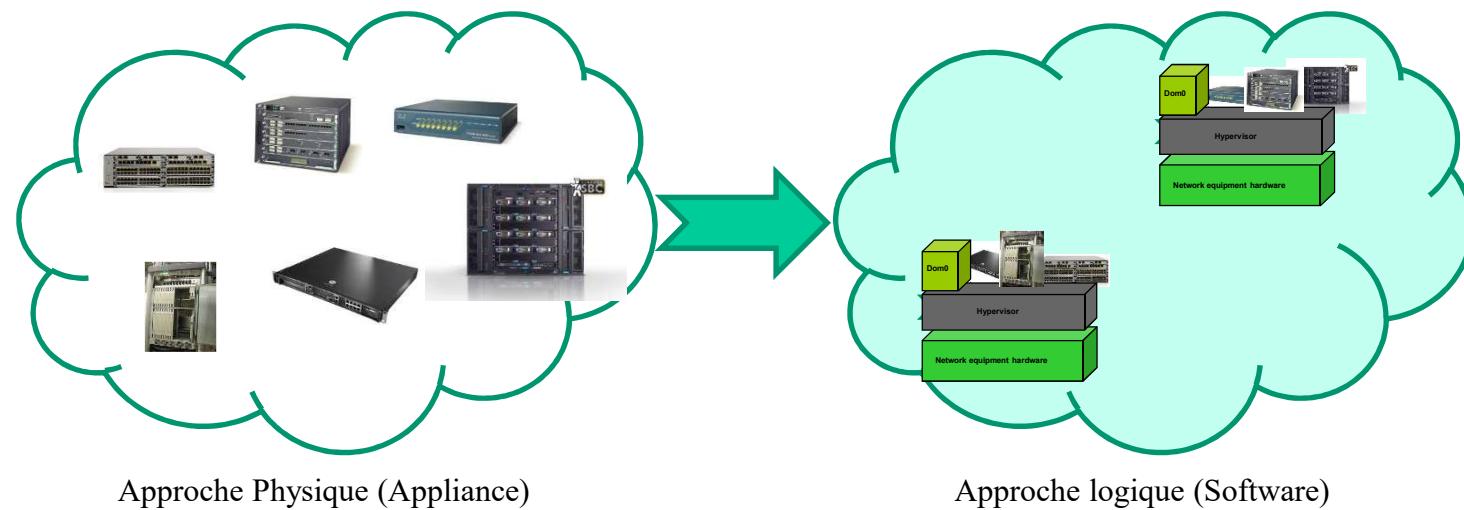
# Architecture globale de réseaux



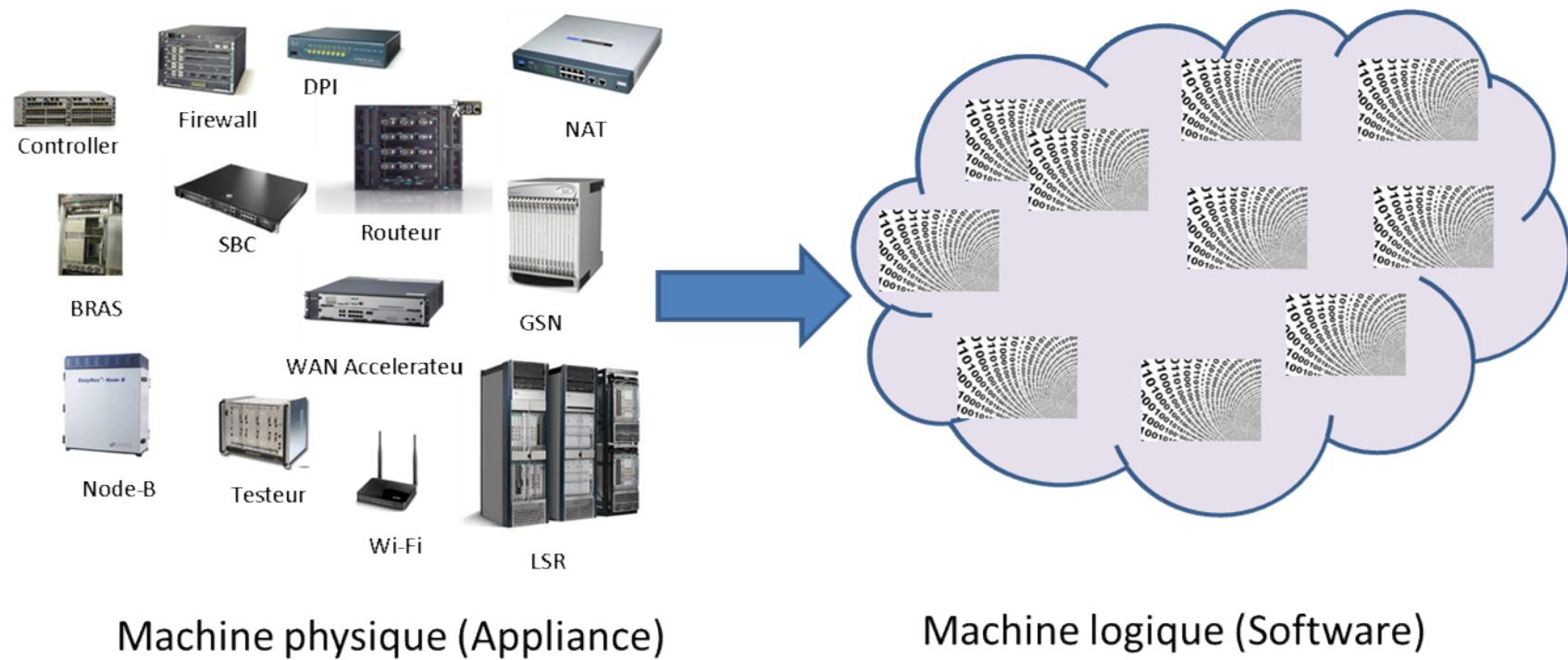
# Découplage des fonctions réseaux

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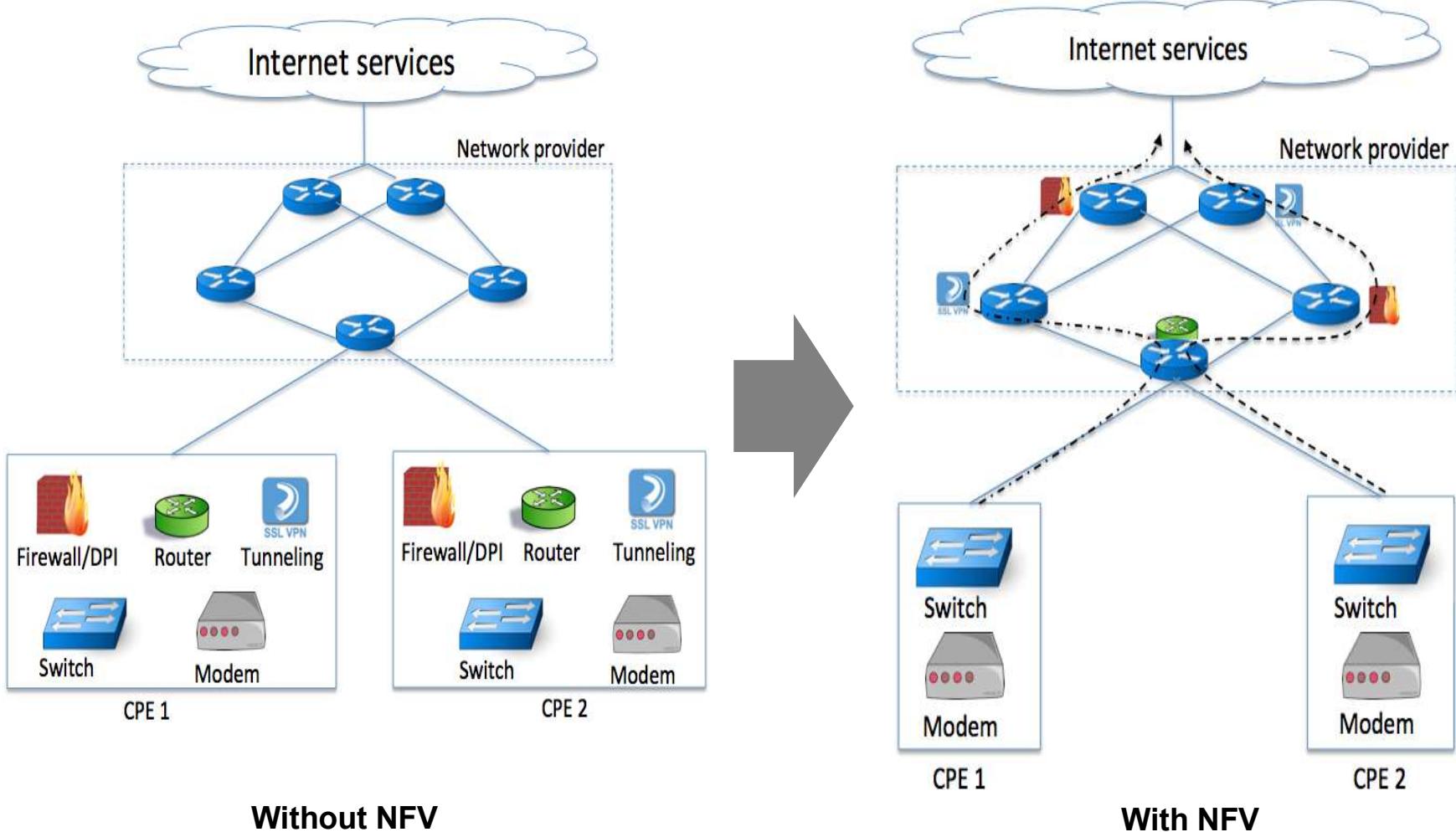
- **NFV (Network Functions Virtualization)**
  - Objectif : découpé les fonctions réseau des équipements réseau



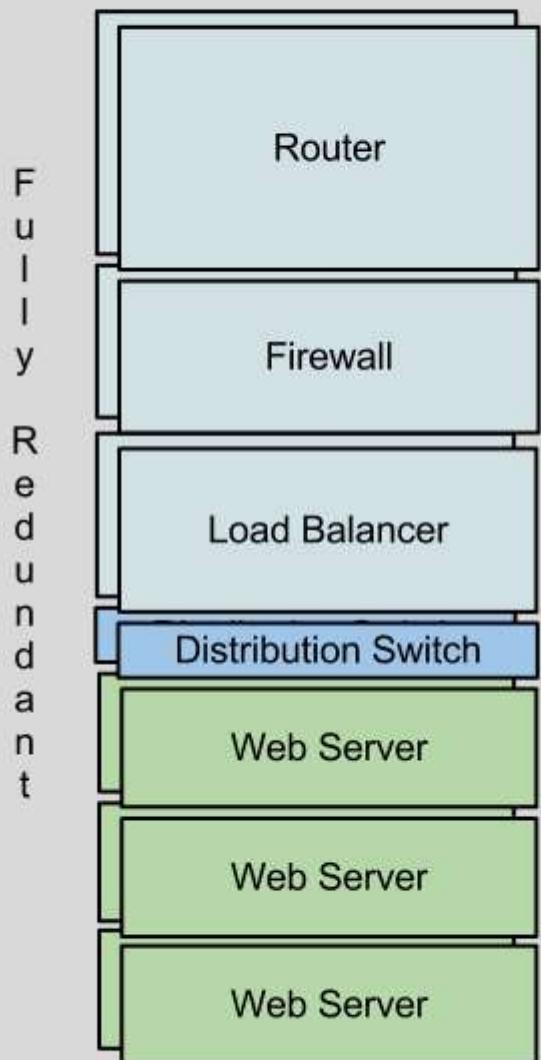
# NFV Network Function Virtualisation



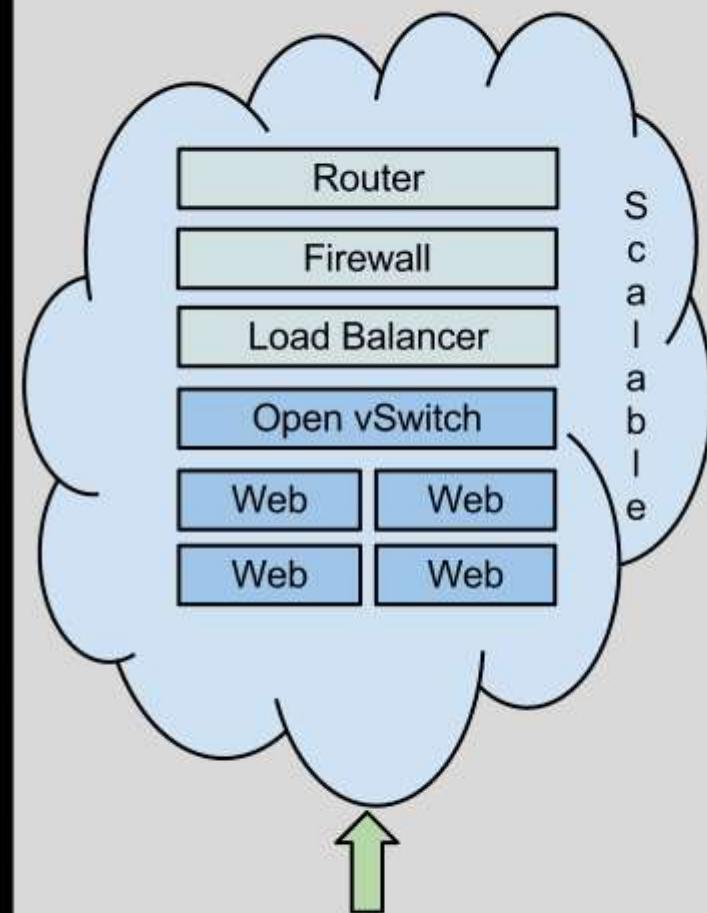
# Example of VNF chaining



Today - Separate Network Appliances For Each Function



Tomorrow - NFV: Each Function Virtualized



Power Usage = 20A

# OPNFV

