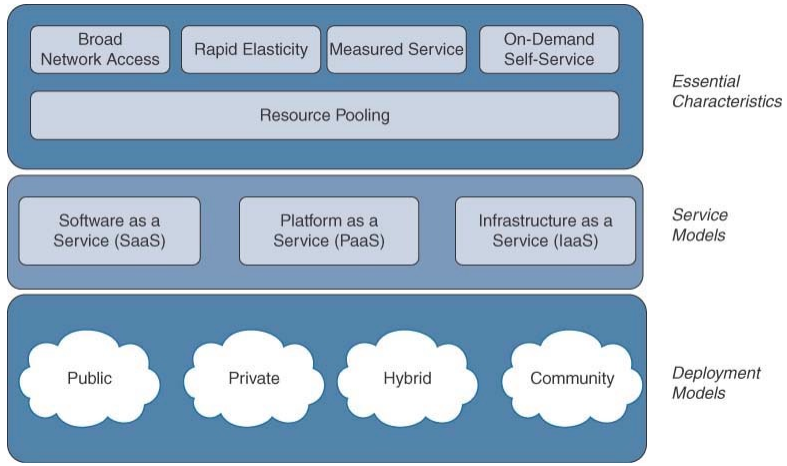
APPLICATION DEPLOYMENT MODELS

NITS's Cloud definition

- National Institute of Standards and Technology (NITS): a U.S. government agency responsible for standardizing weights, measurements, and technology standards and practices
- NIST Special Publication (SP) 800-145 was written to solve the "what is cloud" dilemma.
- In SP 800-145, NIST defines cloud through three primary lenses: essential characteristics, service models, and deployment models



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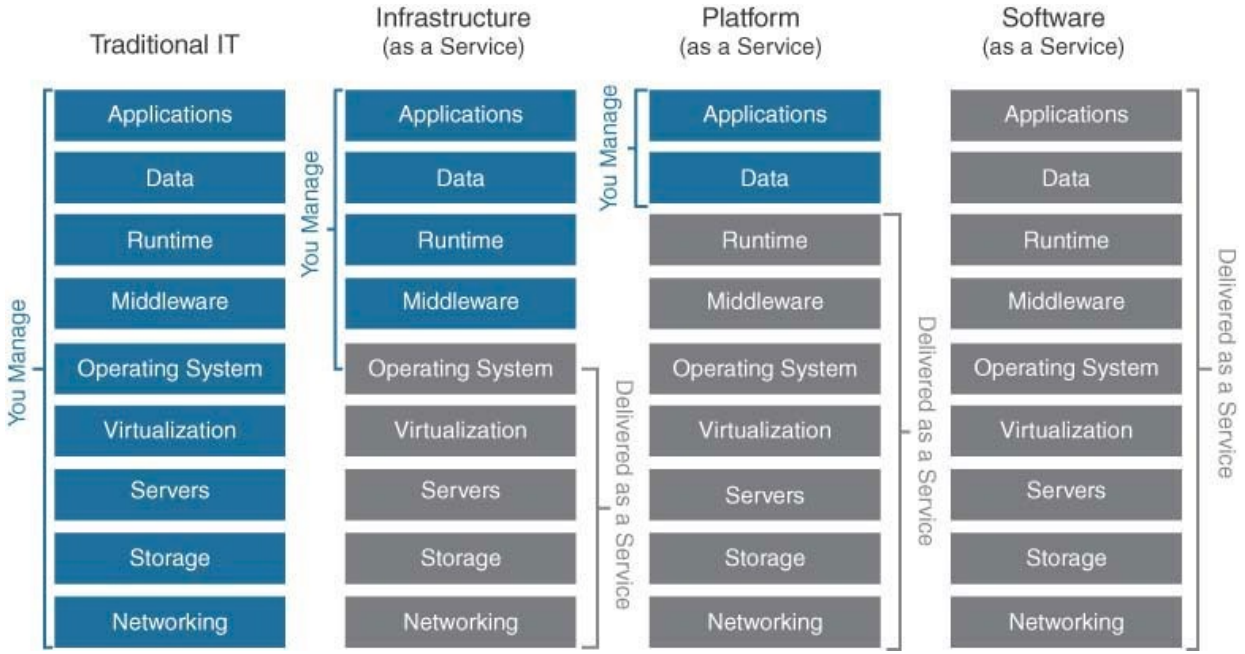
Cloud Essential Characteristics

- **Broad network access:** Services are available over the network and accessed via standard protocols and communications technologies on any type of client device (mobile phone, tablet, desktop, and so on).
- **Rapid elasticity:** Capacity can be automatically provisioned and decommissioned to scale the service to demand.
- **Measured service:** Cloud systems measure resource utilization (compute, storage, and network) and charge for those services accordingly. Utilization is monitored, controlled, and reported on, allowing transparency for the service provider and customer.
- **On-demand self-service:** The cloud consumer can provision compute, storage, and network as needed, without human interaction, through automation or self-service portals.
- **Resource pooling:** The infrastructure is a common pool of resources that can serve multiple customers at the same time. The customer does not interact with the underlying hardware, and workloads can be moved within the cloud environment based on demand without the end user knowing or needing to be involved.

Cloud Service Models



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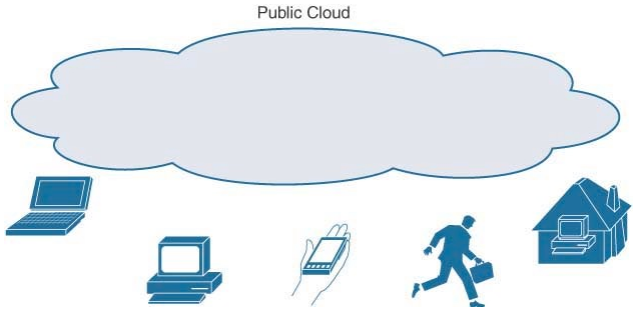
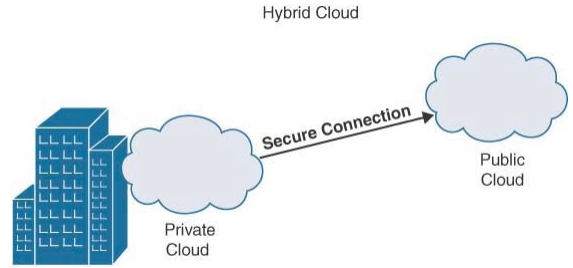
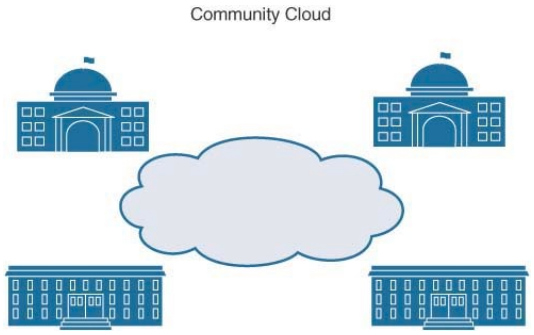
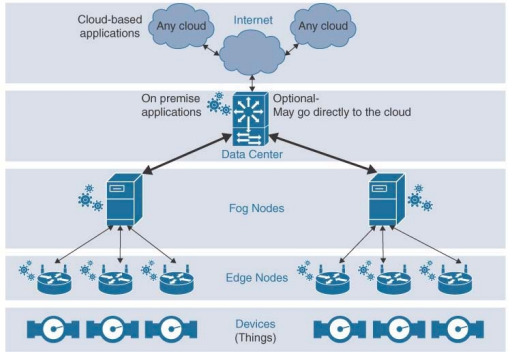
Cloud Deployment Models









Edge and Fog Computing

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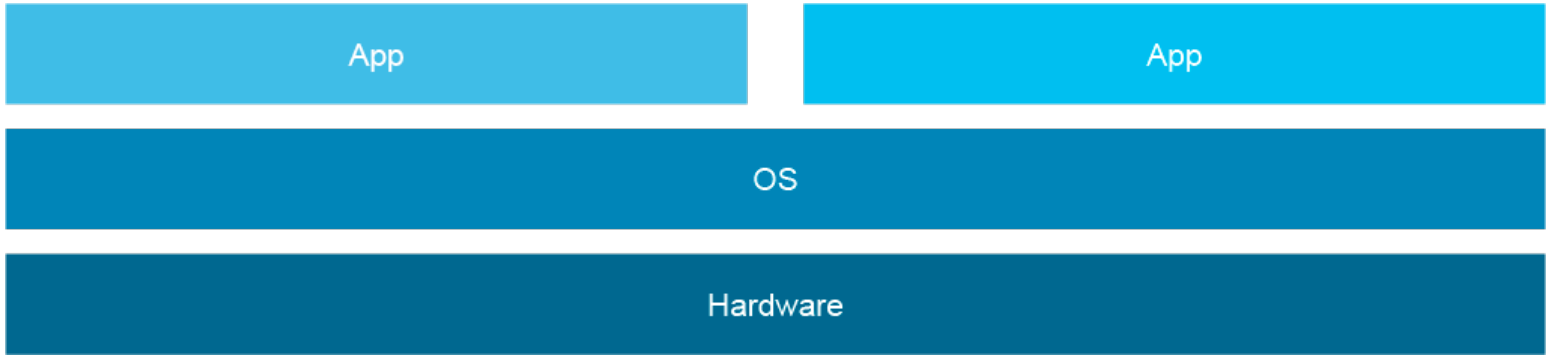
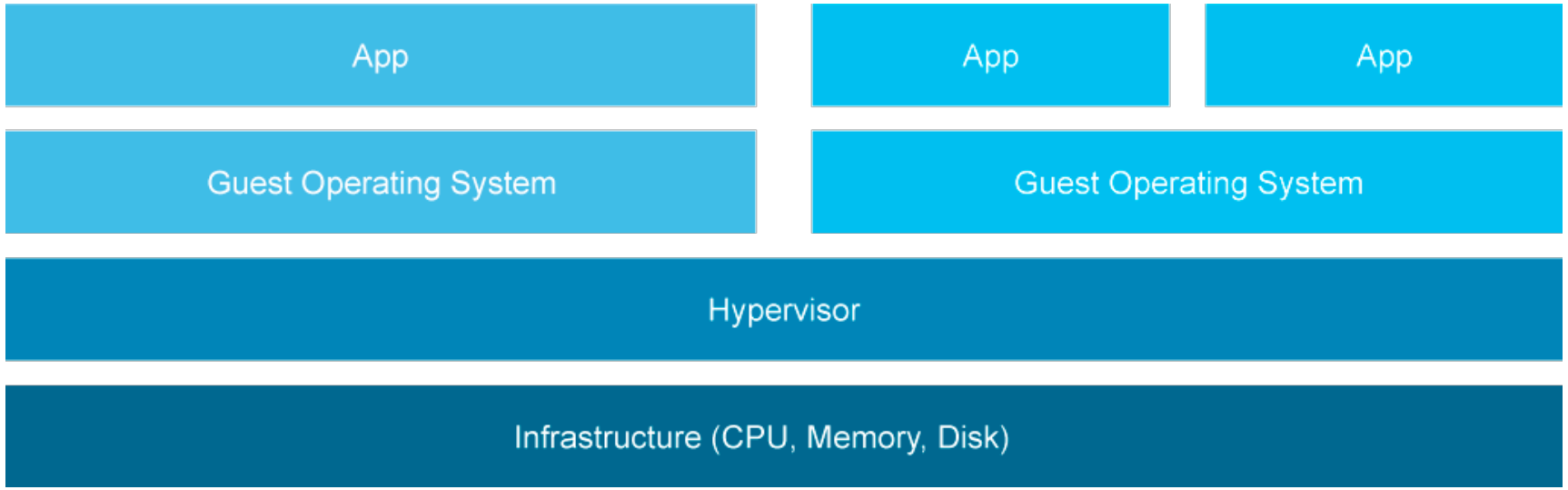
APPLICATION DEPLOYMENT METHODS

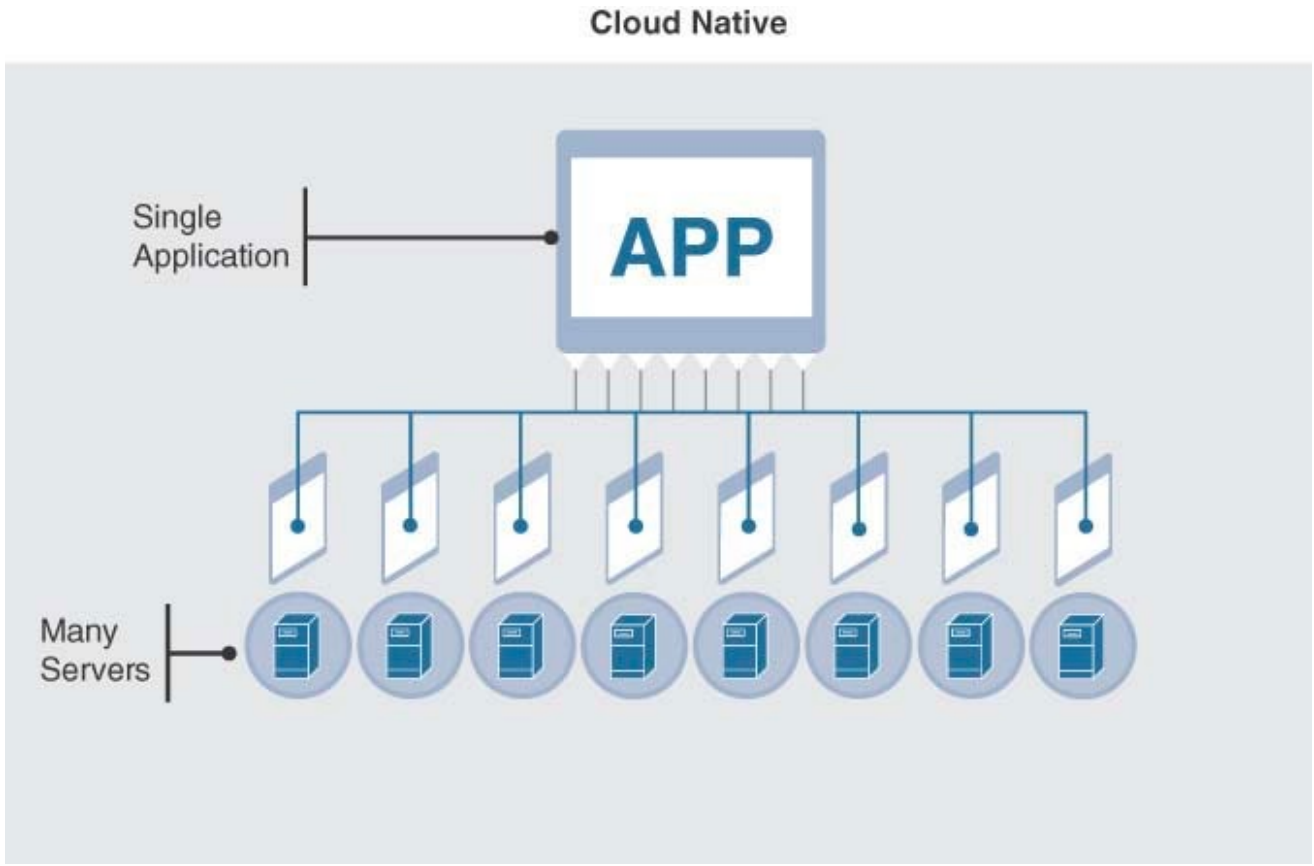
BARE-METAL APPLICATION DEPLOYMENT



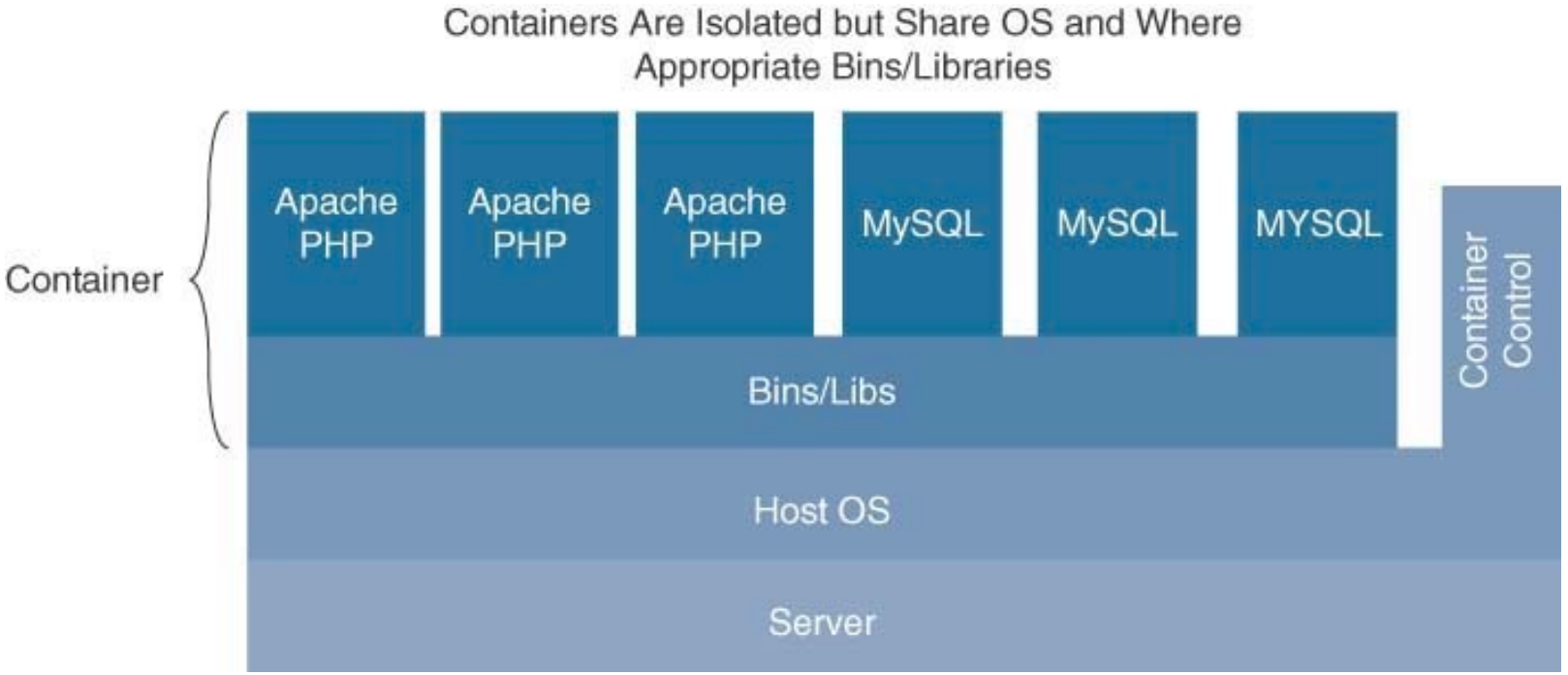
VIRTUALIZED APPLICATIONS



CLOUD-NATIVE APPLICATIONS



CONTAINERIZED APPLICATIONS

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