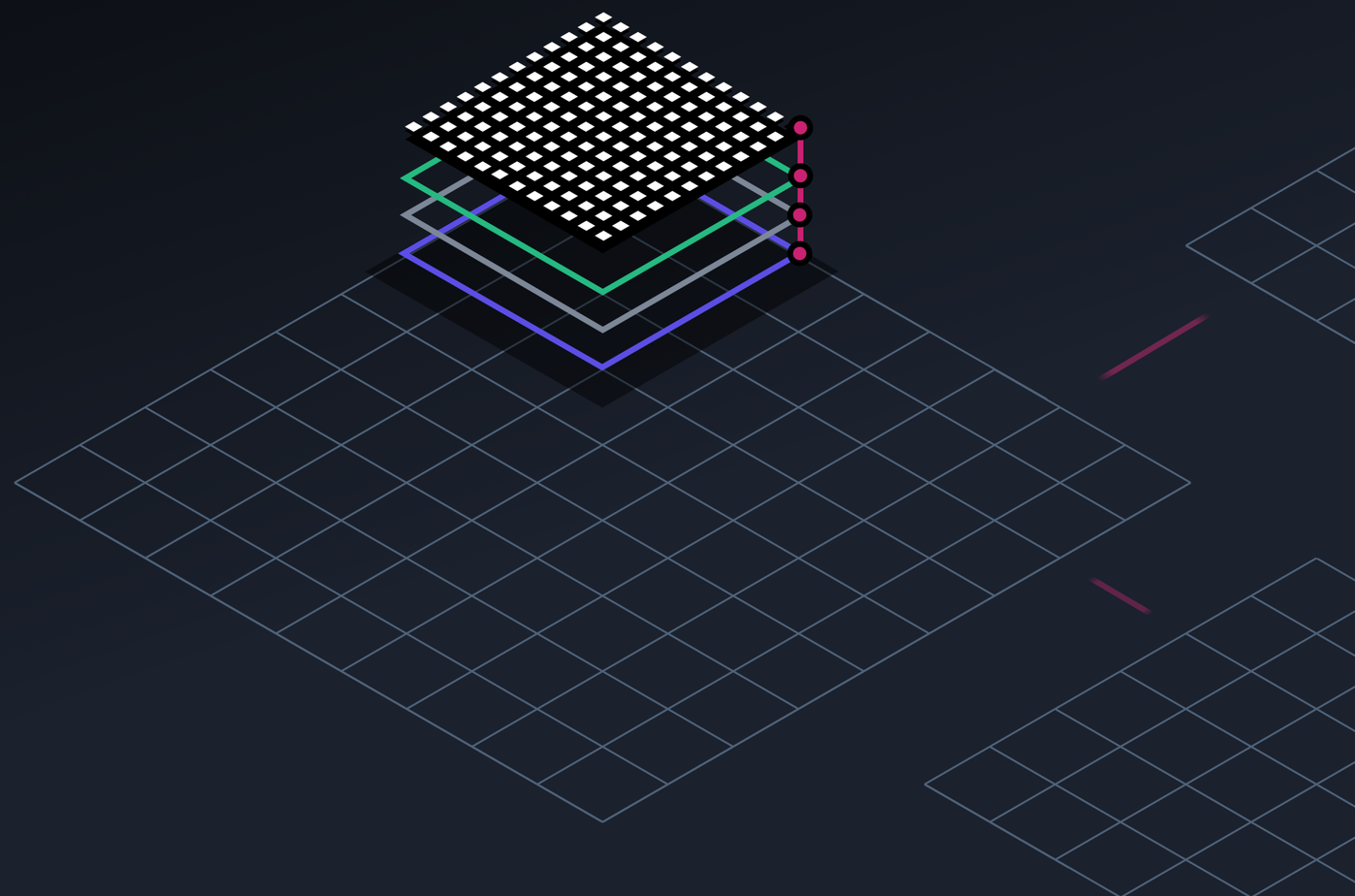
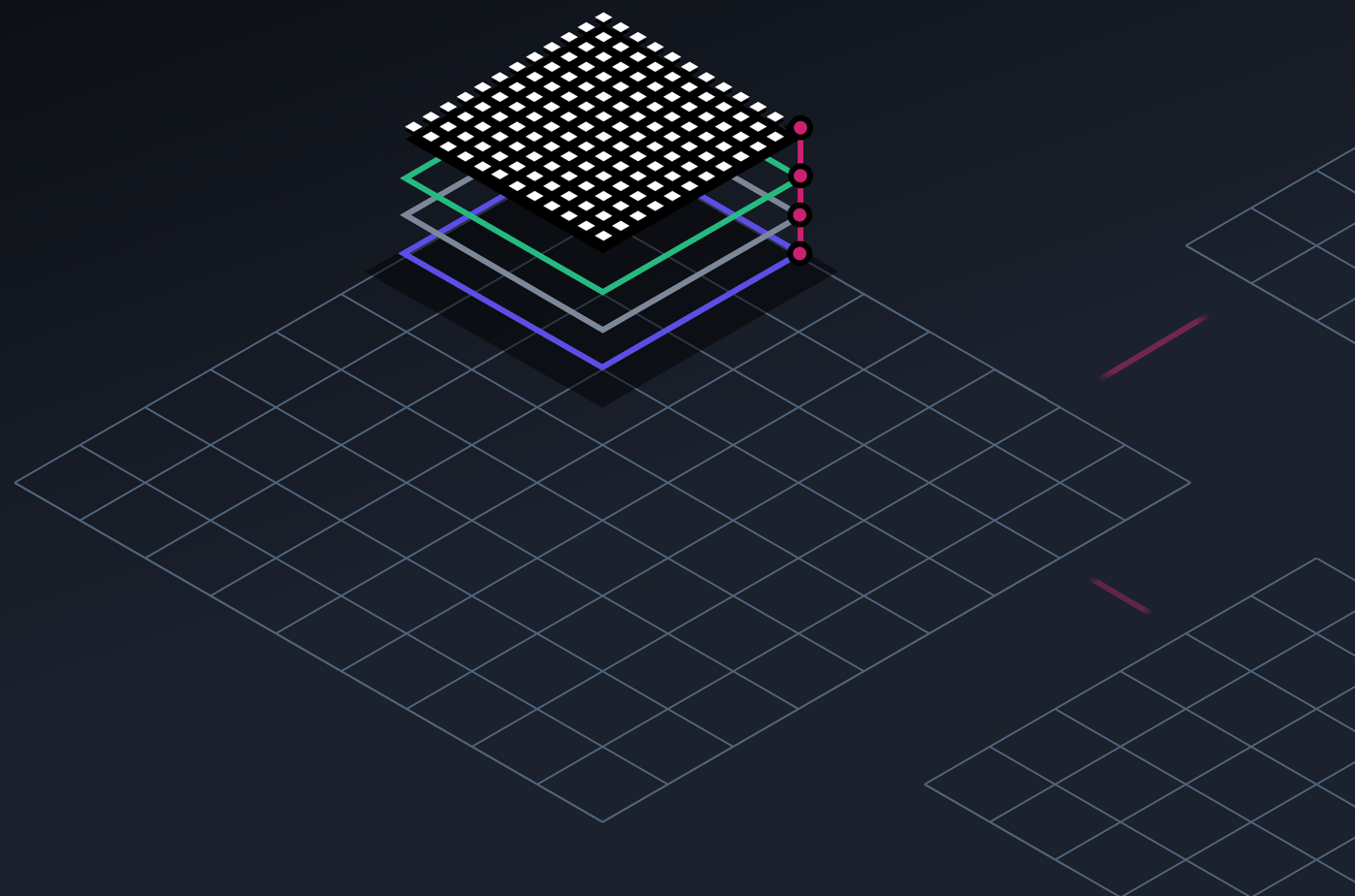
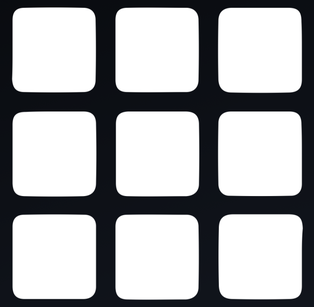
The Cloud Operating Model



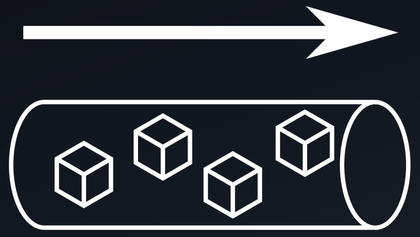
Mainstream Trends



Cloud



Microservices



Schedulers

Cloud

Microservices

Schedulers

Cloud

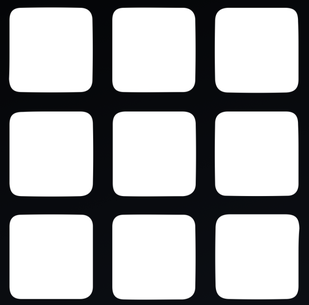
Benefits:

- Can be highly automated
- Globally distributed
- High-value services
- Low-cost experimentation
- Not using it? Don't pay for it.

Cloud

Microservices

Schedulers



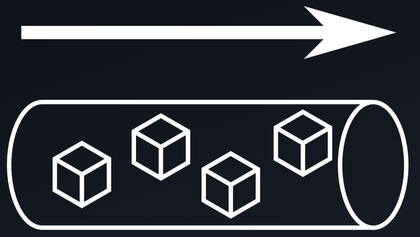
Microservices

Benefits:

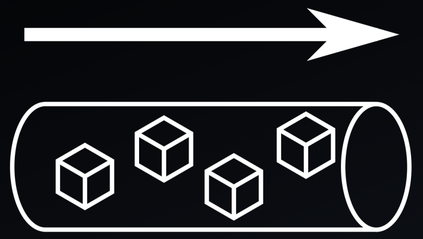
- Less surface area means higher quality
- Development parallelizes nicely
- Can update small parts of a large system
- Improved security and access control

Cloud

Microservices



Schedulers

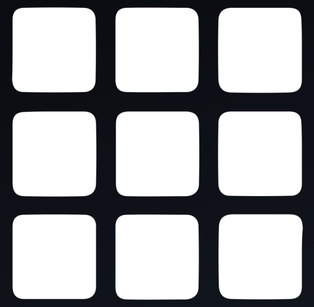


Schedulers

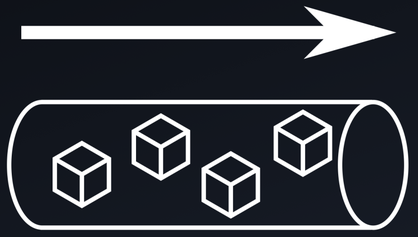
Benefits:

- High resource utilization
- Uniform application deployment across different workloads
- Automatic failure recovery
- Easy scale-out of underlying resources

Cloud



Microservices



Schedulers

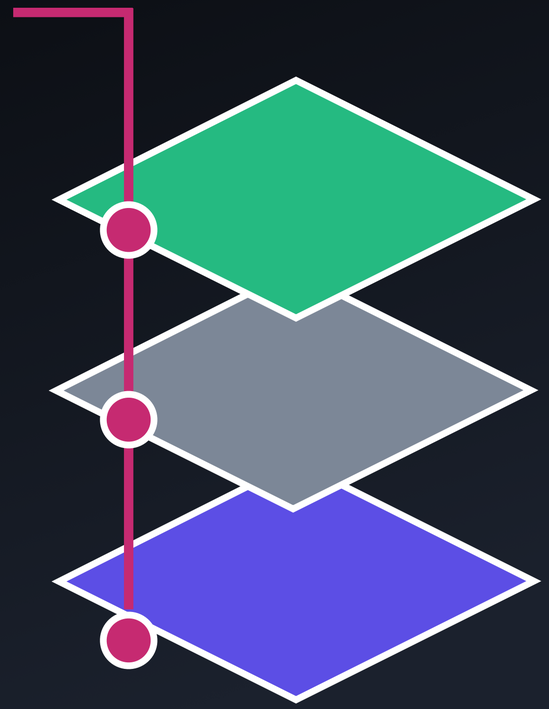
The Cloud Operating Model

Networking
Infrastructure & Applications

Development
Deploy Applications

Security
Secure Infra & Applications

Operations
Provision Infrastructure



The Cloud Operating Model

Traditional "Static" Model

Cloud "Dynamic" Model

The Cloud Operating Model

	Traditional "Static" Model	Cloud "Dynamic" Model
Operations Provision Infrastructure	- Dedicated Servers, Homogeneous - Limited Scale	- On Demand, Heterogeneous - Infinite Scale

The Cloud Operating Model

	Traditional "Static" Model	Cloud "Dynamic" Model
Operations Provision Infrastructure	- Dedicated Servers, Homogeneous - Limited Scale	- On Demand, Heterogeneous - Infinite Scale
Security Secure Infra & Applications	- Clear Perimeter, High Trust - IP-based Security	- No Perimeter, 'Low Trust' **- Identity-based** Security

The Cloud Operating Model

	Traditional "Static" Model		Cloud "Dynamic" Model
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The Cloud Operating Model

	- On Demand, Heterogeneous - Infinite Scale
x	- Clear Perimeter, High Trust - IP-based Security
x	**- Host-based** - Static IP addresses
x	- Apps on Dedicated Infrastructure

Result:

- Too many VPCs, routing tables, security groups.
- Too many servers since applications are not being scheduled.
- Bottlenecks in security, deployment

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The Cloud Operating Model

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	- Service-based - Dynamic IP addresses
	- Apps Scheduled Across Fleet

Result:

- Extremely slow infrastructure or application deliveries because security will be struggling to maintain IP-based security.
- Poor resource utilization as applications are stuck on specific nodes.
- Security risks from over-trusting internal traffic.

The Cloud Operating Model

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OSS Enables The Cloud Operating Model

Networking
Infrastructure & Applications

Development
Deploy Applications

Security
Secure Infra & Applications

Operations
Provision Infrastructure