A Comparison of Virtual and Dedicated Physical Servers

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Outline

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- Why virtualize?
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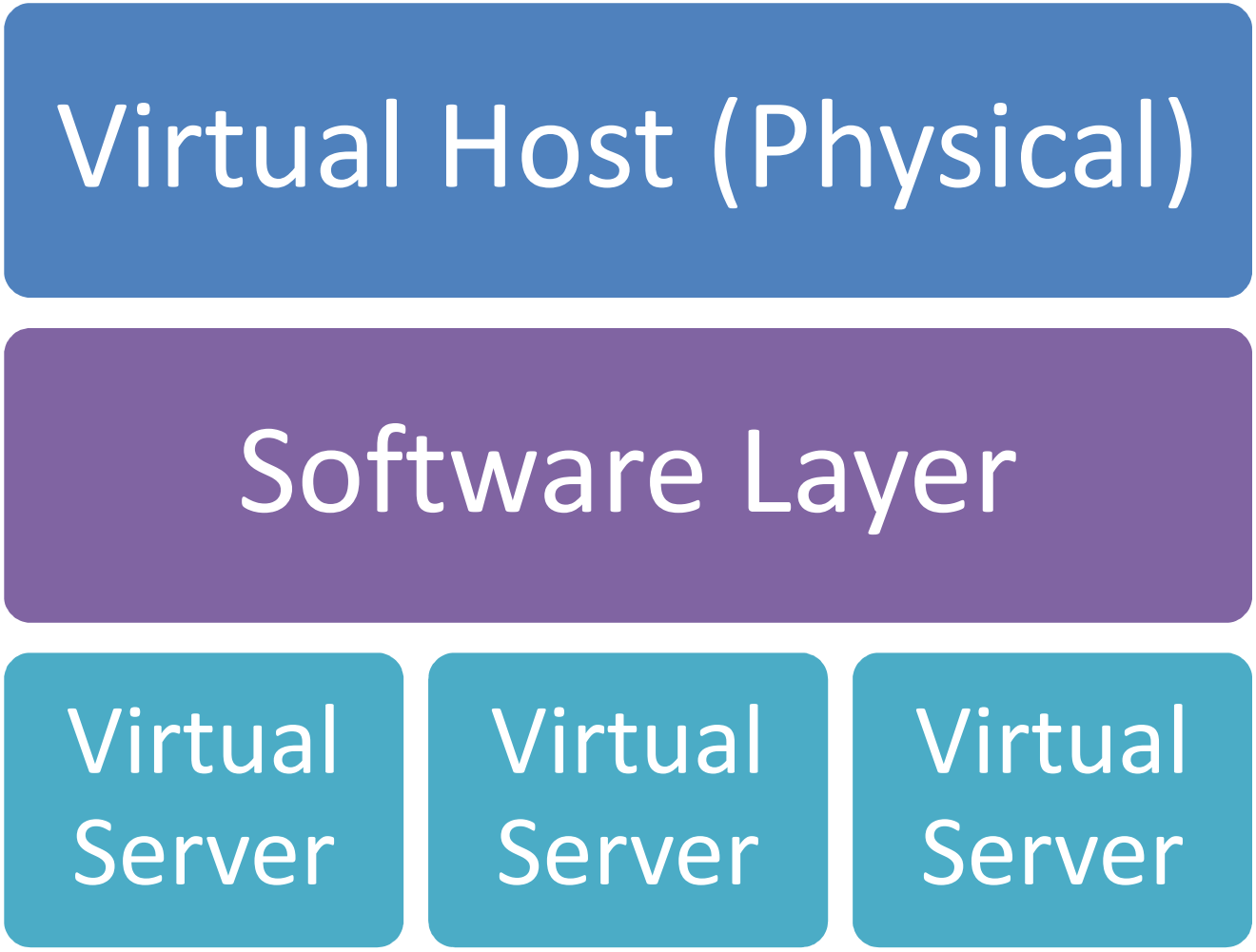
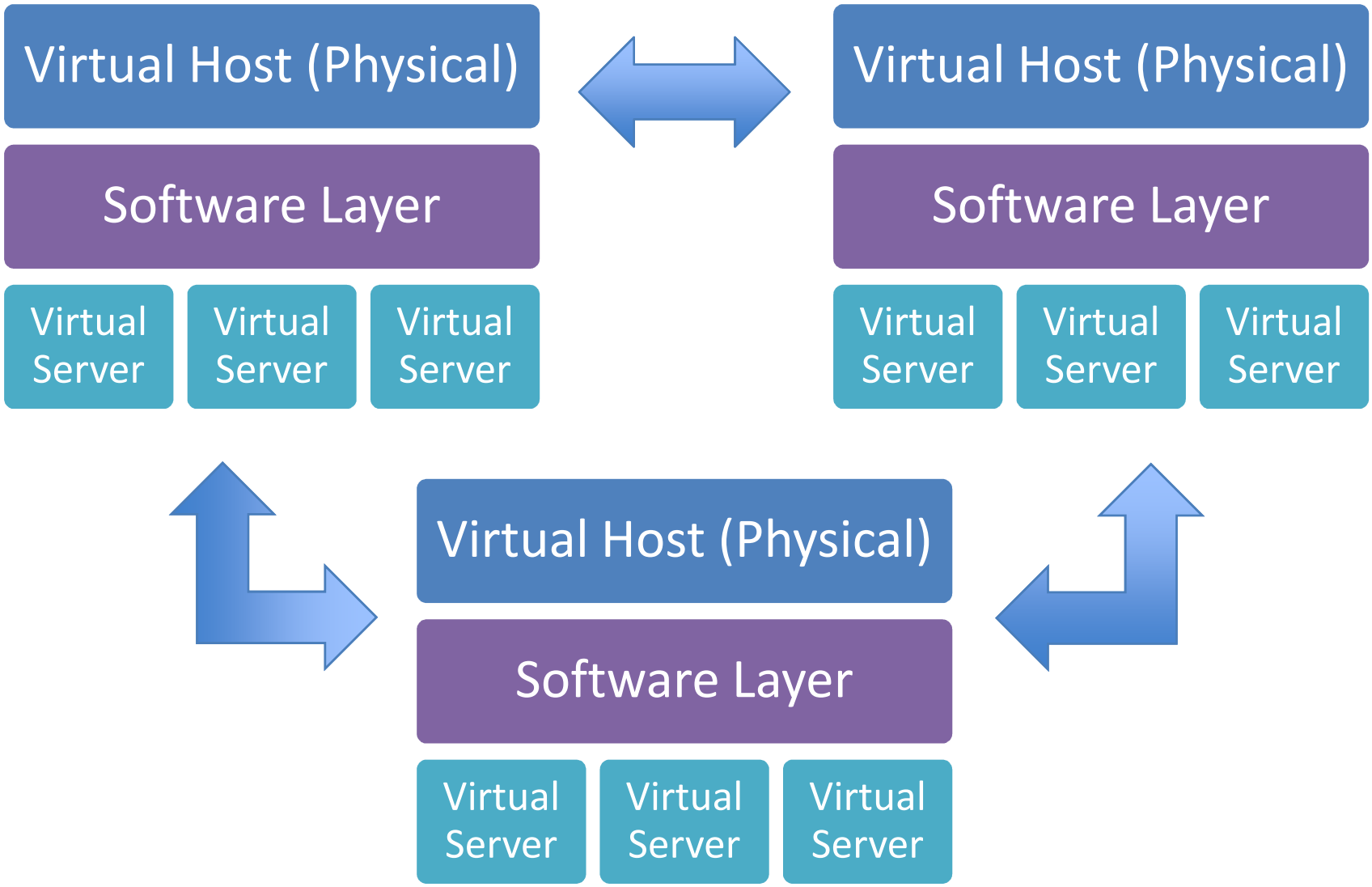
  - Cost-Benefit Analysis
- Virtual Servers
  - Cost-Benefit Analysis
- Case Study (PricewaterhouseCoopers LLP)
- Summary & Conclusions

Background


Virtual Host (Physical)
Software Layer
Virtual Server
Virtual Server
Virtual Server

Background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Background

Features

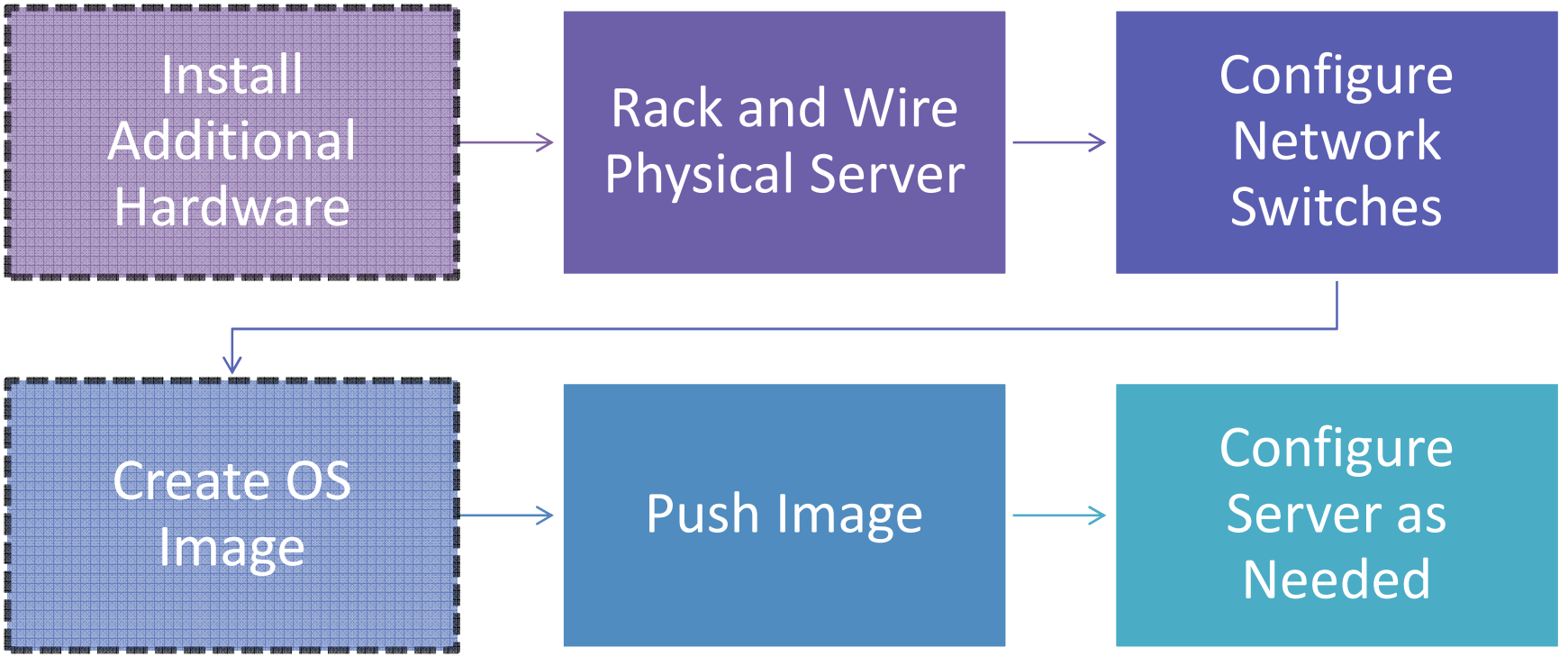
- Move virtual servers from one host to another
  - No additional configuration
  - Prevents server sprawl
- Heartbeat monitoring
  - Automatically moves and reboots virtual servers from failed hosts
  - Reduces downtime

Why virtualize?

- Physical servers often used for non-CPU-intensive applications
- Virtualization is becoming increasingly more popular in large corporations
  - Ability to easily expand
  - Tool and hardware consolidation
- Goal: Use as little physical hardware to reduce power/space consumption and management

Physical Servers

Overview



Physical Servers

Costs

- Time consuming
- Hardware changes
- Migration issues
- Individual cost ($) per new server
- More physical points of failure
- Must be physically present to troubleshoot

Benefits

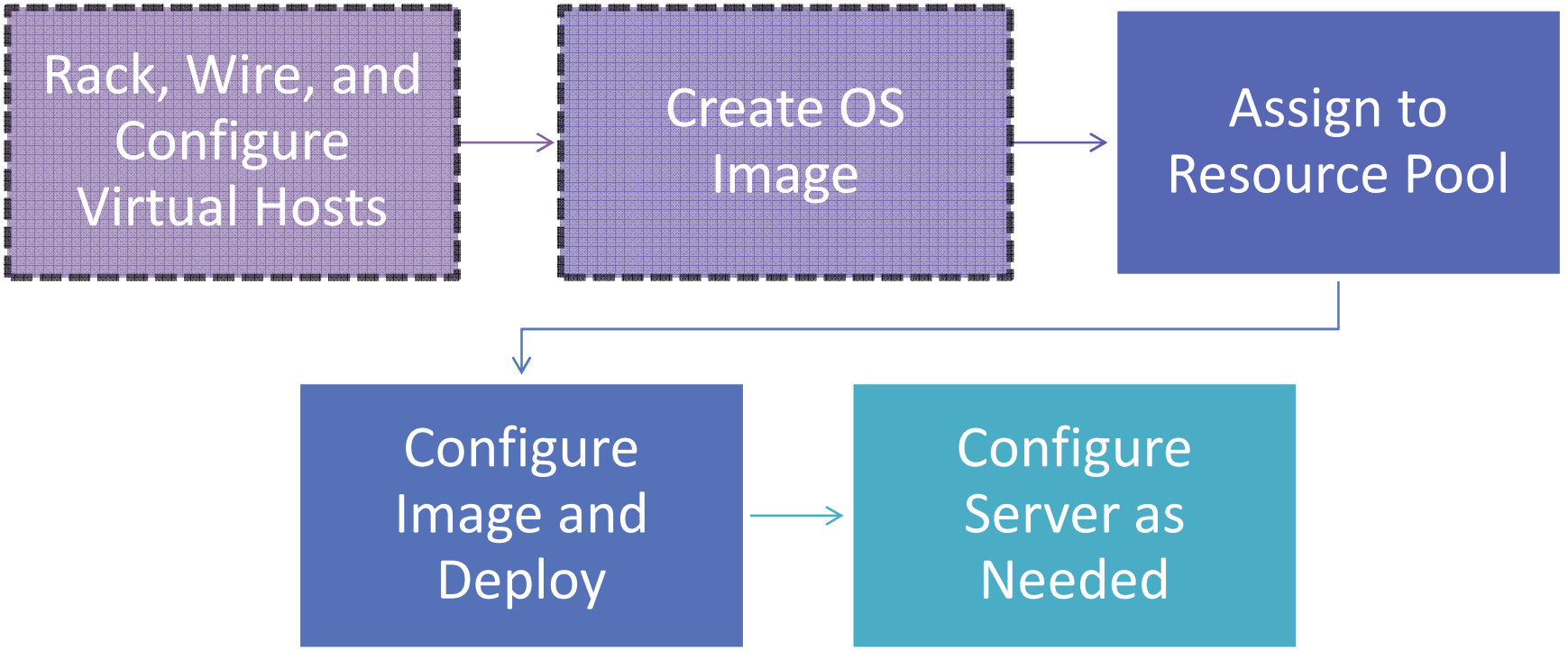
- Dedicated system resources
- Downtime on per-server basis only

Physical Servers

- Better for CPU-intensive applications
  - Dedicated system resources
  - Won't interfere with other essential applications or servers
- Should definitely be used for monitoring virtual hosts
  - Monitoring virtual hosts using virtual servers on a particular host is somewhat useless if that same host goes down

Virtual Servers

Overview



Virtual Servers

Costs

- Initially expensive ($)
- Licensing issues
- Concentration risk
- Risk of server sprawl

Benefits

- Hardware flexibility
- Snapshot feature
- Heartbeat monitoring
- Easily move, migrate, and create servers
- Host multiple virtual servers on a single host
- Tool Consolidation
- Server Isolation

Case Study

PricewaterhouseCoopers LLP

Savings

- Reduction of:
  - Server build process by 30 minutes
  - Physical servers by approx. 92%
  - Data centre space savings of 280 square feet
  - Operating power by approx. 105 kW
  - Cooling power by approx. 130 kW
  - Over 2.5 million pounds of carbon emissions
    - Equivalent to average emissions of taking approx. 230 cars off the road per year

Source: VMware TCO/ROI Calculator for PwC

Summary & Conclusions

- Virtual servers
  - Easy to deploy and manage
  - Better redundancy features
  - Initially expensive, savings add up over time
- Physical servers
  - One failed server only results in a single server failure, not multiple
  - Use for CPU-intensive applications and monitoring virtual environment (incl. virtual hosts)

Questions?