

# Why Storage is Important to Databases

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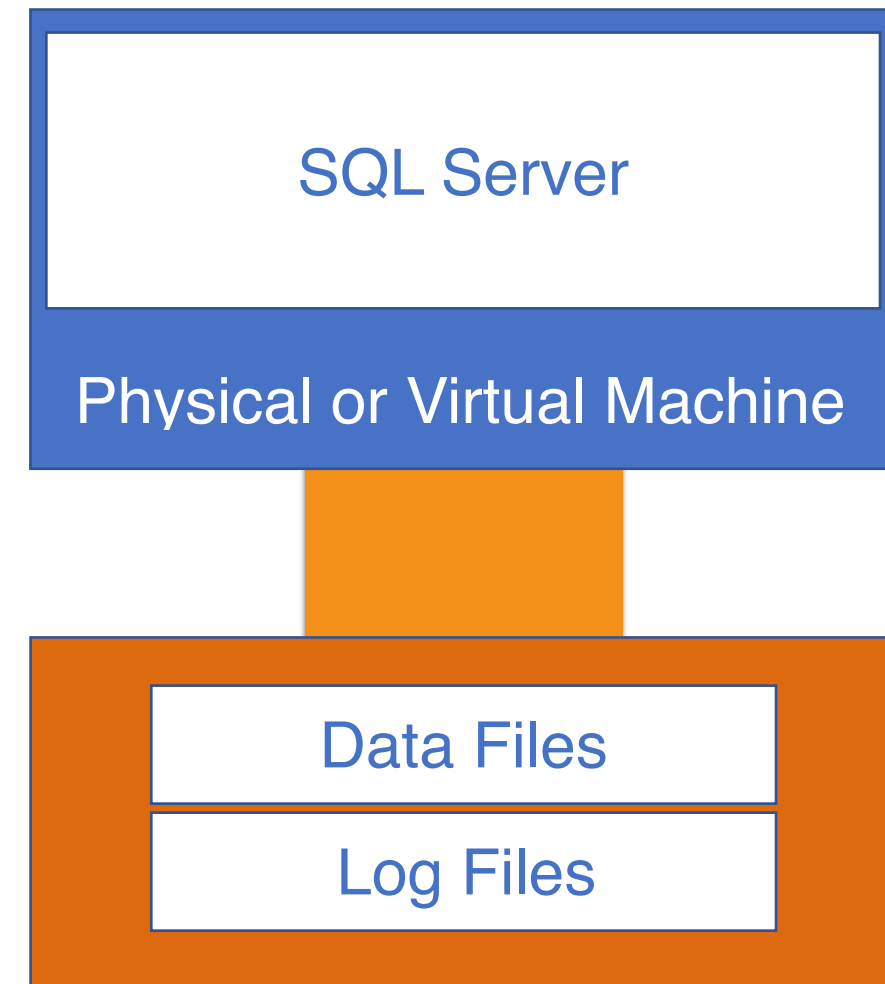


# Agenda

- **Storage is Where Data Lives**
- **Key Performance Metrics**
- **Storytime...**

# Storage is Where Data Lives

- SQL Server Stores Data...
  - In files...
    - On Disks
      - Local
        - SCSI
        - PCIe
      - Remote
        - Fibre Channel
        - iSCSI



# Key Performance Metrics

## Latency

How Long a Request  
Takes

Transaction Log I/Os

Saturation Leads to  
Queuing

## Throughput

Amount of data moved

Function of the storage  
interconnect

Type of storage used

## IOPs

Number of Requests

Size Depends on the  
Application

# Why Database Systems Care About These...

**Latency**

**Does your system sell things?**

**Is your system time sensitive?**

**OLTP**

**Throughput**

**Does users need reports?**

**Backups?**

**OLAP**

**IOPs**

**Larger Requests Take Longer**

**Often governed in Cloud and On Premises**

# My Application is Slow...Why?

37 Second Page Load Times

**App Vendor**

**DBAs**

**VM Admins**

**Network Team**

**Storage Team**

**Line of Business  
Application**

**Web Servers**

**SQL Servers**

**Hypervisor**

**Storage Interconnect**

**Storage**

**Web Server Config**

**High File and Disk  
Latency**

**High Disk Latency**

**No Meaningful Metrics**

**Super Low Latencies**

# Review

- **Storage is Where Data Lives**
- **Key Performance Metrics**
- **Storytime...**



# Need more data or help?

**<http://www.github.com/nocentino/presentations>**

Links to resources

Demos

Presentation

Pluralsight

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Thank You!