

Chapter 9

Troubleshooting Cloud Solutions

9.01 Troubleshooting Methodology

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9.02 Troubleshooting Deployment

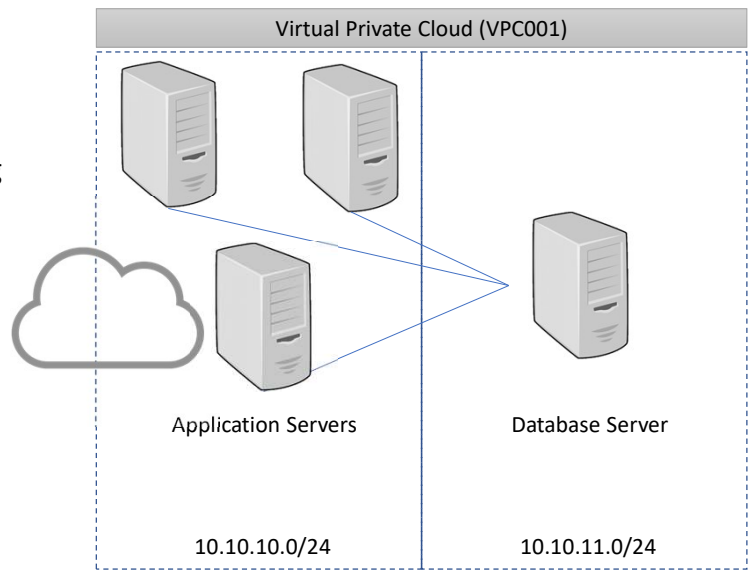
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Common Deployment Issues

- Breakdowns in the workflow
- Integration related to different cloud platforms
- Resource contention
- Connectivity
- Cloud service provider outage
- Licensing
- Template misconfiguration
- Time synchronization
- Language support

Scenario

- Users reporting they can access applications in the cloud, but receiving errors when accessing data
- Errors include “database unavailable” error
- Cloud management platform reports the database server instance is running
- Use the methodology to troubleshoot this problem



9.03 Troubleshooting Capacity

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Common Capacity Issues

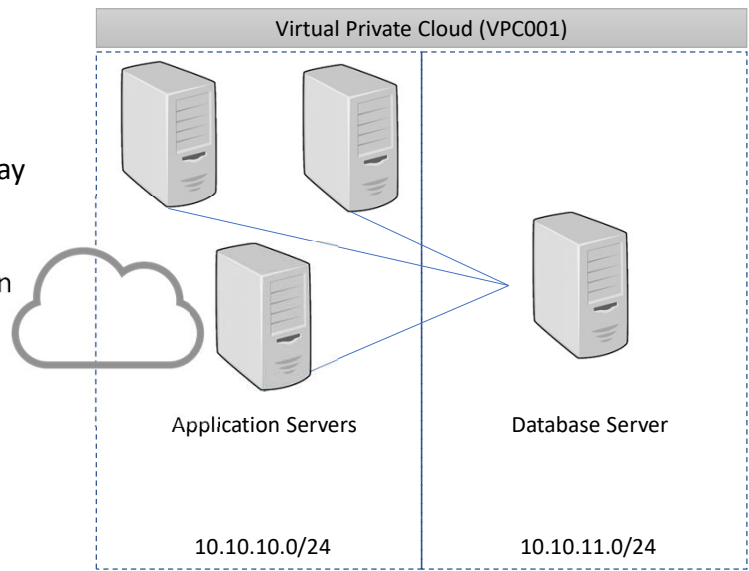
- Exceeding cloud capacity boundaries
 - Compute
 - Storage
 - Networking
 - IP address limitations
 - Bandwidth limitations
 - Licensing
 - Variance in the number of users
 - API request limit
 - Batch job scheduling issues

Common Capacity Issues

- Deviation from original baseline
- Unplanned expansions

Scenario

- Users reporting performance is degraded when accessing accounting servers every Thursday afternoon
- They can still perform their operations, but the processes run more slowly



9.04 Troubleshooting Automation and Orchestration

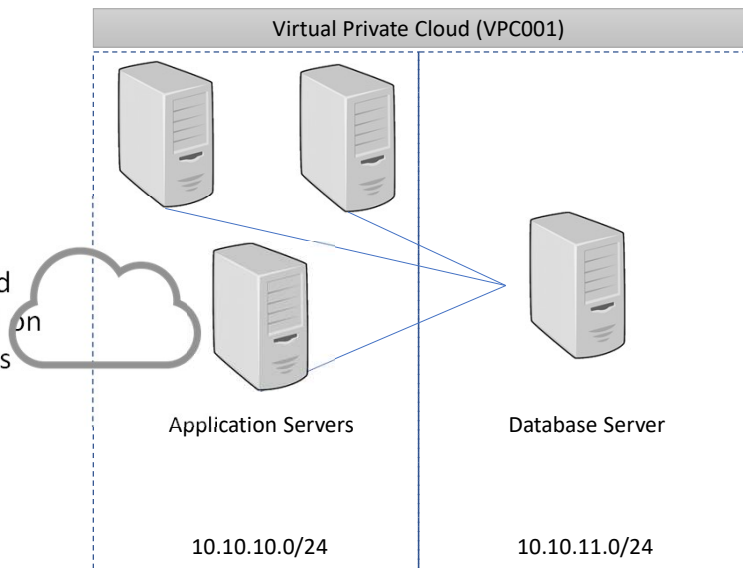
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Automation and Orchestration Issues

- Account mismatch
- Change management failure
- Server name changes
- IP address changes
- Location changes
- Version/feature mismatch
- Automation tool incompatibility
- Job validation issue

Scenario

- Application was upgraded on an application servers
- Users can connect to the application, but data can't be accessed
- User performing the upgrade said everything was configured based on documentation created two years ago



9.05 Troubleshooting Connectivity

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Networking Issues

- Incorrect subnet
- Incorrect IP address
- Incorrect gateway
- Incorrect routing
- DNS errors
- QoS issues

Networking Issues

- Misconfigured VLAN or VXLAN
- Misconfigured firewall rule
- Insufficient bandwidth
- Latency
- Misconfigured MTU/MSS
- Misconfigured proxy

Networking Tools

- Network tool outputs
- Connectivity tools
 - ping/traceroute/tracert
 - arp
 - ipconfig/ifconfig
 - nslookup/dig
 - netstat
 - telnet/ssh
 - route
 - tcpdump
- Remote access tools (RDP/VNC/SSH)

9.06 Troubleshooting Security

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Security Breach Issues

- External attacks
- Internal attacks
- Privilege escalation
- Internal role change
- External role change
- Security device failure

Security Breach Issues

- Incorrect hardening settings
- Unencrypted communication
- Unauthorized physical access
- Unencrypted data
- Weak or obsolete security technologies
- Insufficient security controls and processes

Problems Related to Security Solutions

- Authentication issues
 - Account lockout/expiration
- Authorization issues
- Federation and single sign-on issues
- Certificate expiration
- Certification misconfiguration
- Tunneling or encryption issues