

Troubleshoot Windows Server Hybrid Networking



Tim Warner

Microsoft Azure Solutions Architect

@TechTrainerTim TechTrainerTim.com



Overview



Troubleshoot hybrid network connectivity

IP configuration

Routing

Troubleshoot on-premises connectivity

DHCP

DNS



Windows Server 2022: Monitor and Troubleshoot Server Environments

Monitor Windows Server Using Local Tools

Monitor Windows Server Using Azure Services

Troubleshoot Windows Server Hybrid Networking

Troubleshoot Windows Server VM Deployment Failures

Troubleshoot Windows Server VM Connection Issues

Troubleshoot Active Directory



Troubleshoot IP Configuration and Routing Issues



IP Configuration and Routing Tools

Compiled executables

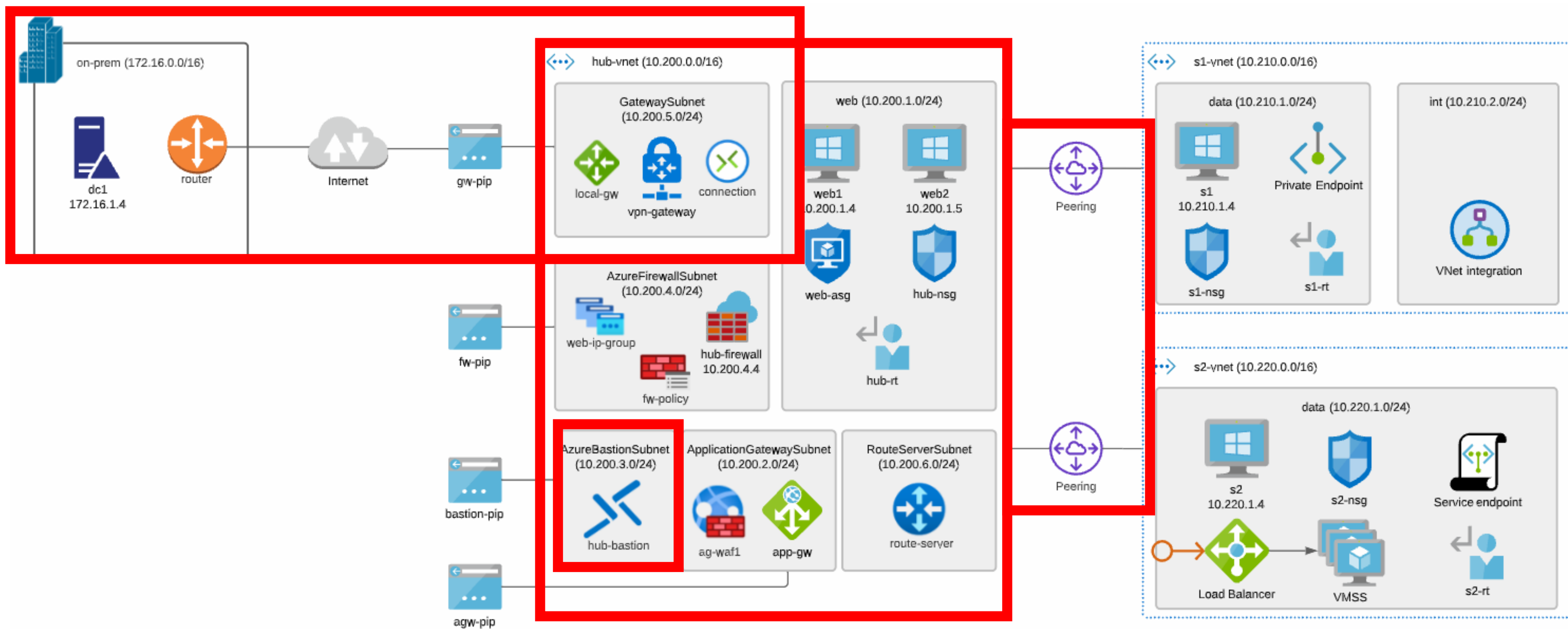
- **ipconfig**
- **ping**
- **arp**
- **tracert**
- **netstat**

PowerShell


- **Get-NetIPConfiguration**
- **Get-NetIPAddress**
- **Test-NetConnection**
- **Get-NetRoute**









Hybrid Cloud Network Topology



Azure VM NIC Effective Routes




 **Microsoft Azure**

Search resources, services, and docs (G+)




     


tim@timw.info
TIMW.INFO (TIMW.INFO)

Dashboard > Network interfaces > tim-vm-01144

 **tim-vm-01144** | Effective routes  


Network interface

>>  Download  Refresh |  Give feedback

 Showing only top 200 records, click Download above to see all.

Scope

Network interface (tim-vm-01144)

Associated route table:  -

Effective routes

Source	↑↓	State	↑↓	Address Prefixes	↑↓	Next Hop Type	↑↓	Next Hop IP Address
Default		Active		192.168.0.0/16		Virtual network		-
Default		Active		0.0.0.0/0		Internet		-
Default		Active		10.0.0.0/8		None		-
Default		Active		191.238.72.80/28, 676 more		VirtualNetworkServiceEndpoint		-
Default		Active		191.238.6.46/32, 71 more		VirtualNetworkServiceEndpoint		-



Network Watcher: Next Hop

Microsoft Azure

Search resources, services, and docs (G+)

tim@timw.info
TIMW.INFO (TIMW.INFO)

Dashboard > Network Watcher

Network Watcher | Next hop

Microsoft

Search (Ctrl+)

Overview

Get started

Monitoring

Topology

Connection monitor (classic)

Connection monitor

Network Performance Monitor

Network diagnostic tools

IP flow verify

NSG diagnostic

Next hop

Effective security rules

VPN troubleshoot

Packet capture

Connection troubleshoot

Metrics

Usage + quotas

Logs

Specify a target virtual machine and destination IP address to view the next hop.

Subscription * ⓘ
Microsoft Azure Sponsorship

Resource group * ⓘ
TIM

Virtual machine * ⓘ
tim-vm-01

Network interface *
tim-vm-01144

Source IP address * ⓘ
192.168.1.4

Destination IP address * ⓘ
8.8.8.8

Next hop

Result

Next hop type
Internet

IP address
-

Route table ID
System Route



Azure Wire Server

168.63.129.16

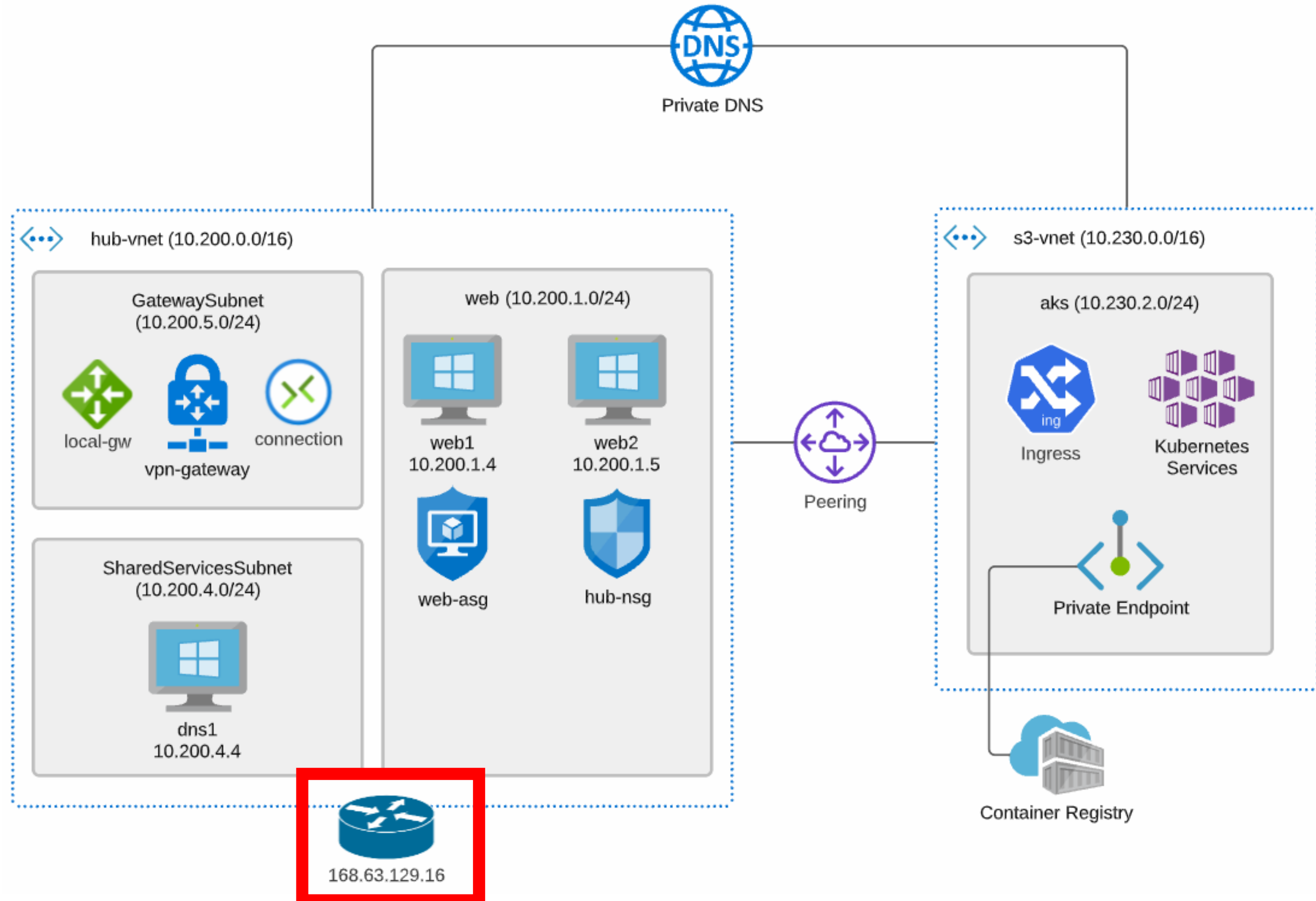
DHCP

Default gateway

DNS

Azure VM heartbeat

Azure load balancer



Troubleshoot DHCP and DNS Issues



Diagnose DHCP Server and Client Problems



Verify server authorization in Active Directory

Verify DHCP Server service is running and scopes are activated

Verify DHCP Relay (UDP 67 & 68)

Look for APIPA addresses (169.254.0.0/16)

Exam event logs

- System log
- DHCP Server service log



DNS Troubleshooting Commands

nslookup

Resolve-DNSName

Test-DNSServer

**Clear-
DnsClientCache**

ipconfig

Get-DNSClient



Demo



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Local VM:

PowerShell command help

routing table w/ route print

Azure VM:

Run command / connect monitor

Network Watcher

IPconfig to show wire server



Summary



Microsoft Azure Network Engineer Associate

- Exam AZ-700

CompTIA Network+

IPv4 on Microsoft Cloud Platform certification exams



Up Next:

Troubleshoot Windows Server VM
Deployment Failures

