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Troubleshooting Network Issues

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Troubleshooting Network Issues

Issues

This presentation covers common network issues. Learn how to diagnose and fix them efficiently. We will cover name resolution, switching, and routing problems.



Diagnosing Name Resolution Failures

Name resolution problems prevent access to resources. Check DNS server reachability. Verify DNS client settings on the host.
the host.

Common Symptoms

- Cannot access websites by name
- Intermittent connectivity
- Slow browsing

Troubleshooting Steps

- Use **nslookup** or **dig** to query DNS servers
- Flush DNS cache
- Check host file entries

Isolating Switching Problems

Switching issues impact local network communication. Check physical layer connectivity first. Then examine VLAN configurations.

1 Port Status

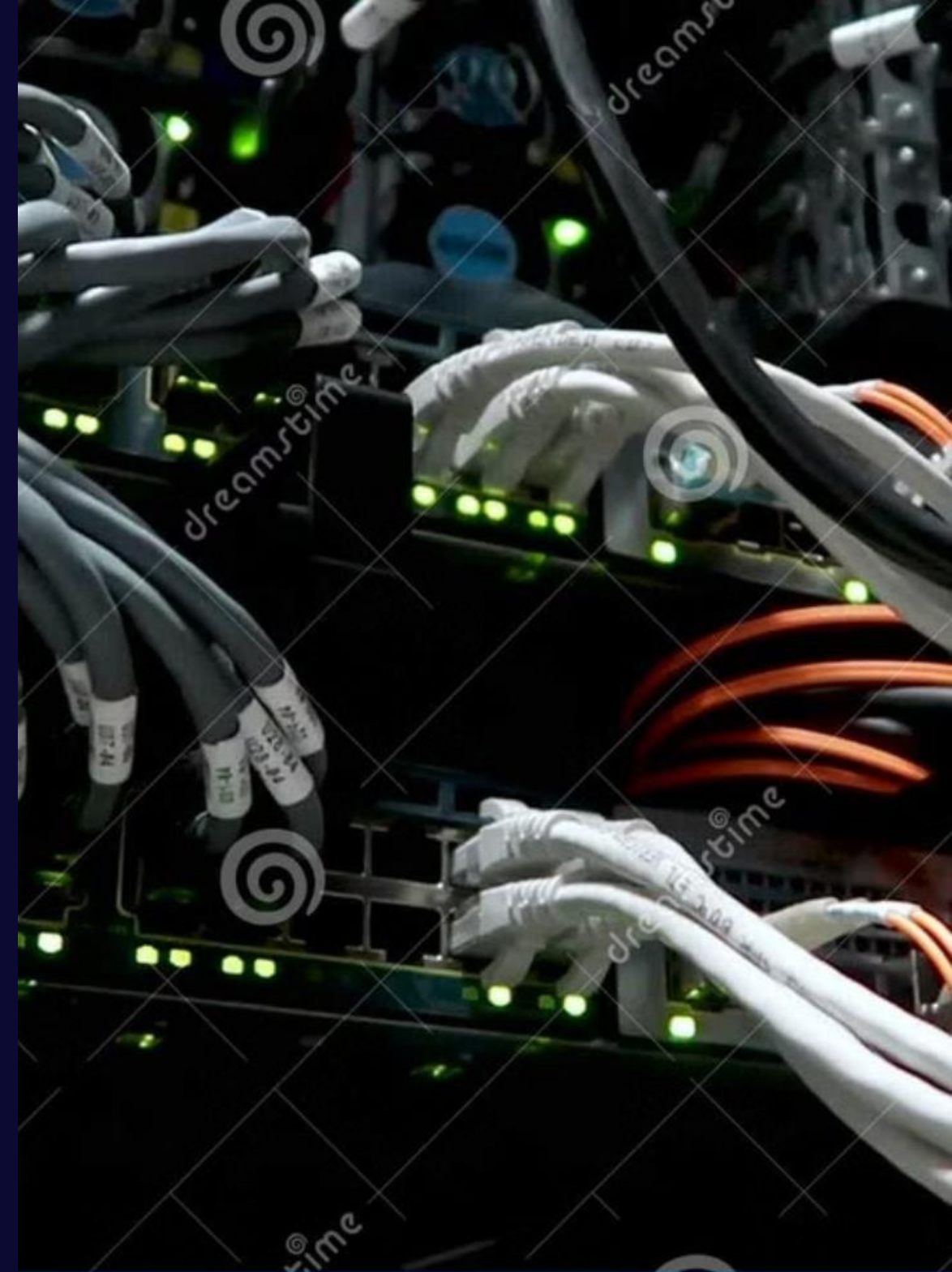
Verify port status and speed/duplex settings. Mismatched settings cause issues.

2 VLAN Configuration

Ensure correct VLAN assignments for ports. Incorrect VLANs isolate devices.

3 MAC Address Table

Examine the MAC address table for anomalies. Stale entries disrupt traffic flow.



Solving Routing Complications

Routing problems prevent inter-network communication. Start by checking the routing table. Use traceroute to identify path issues.

Routing Table

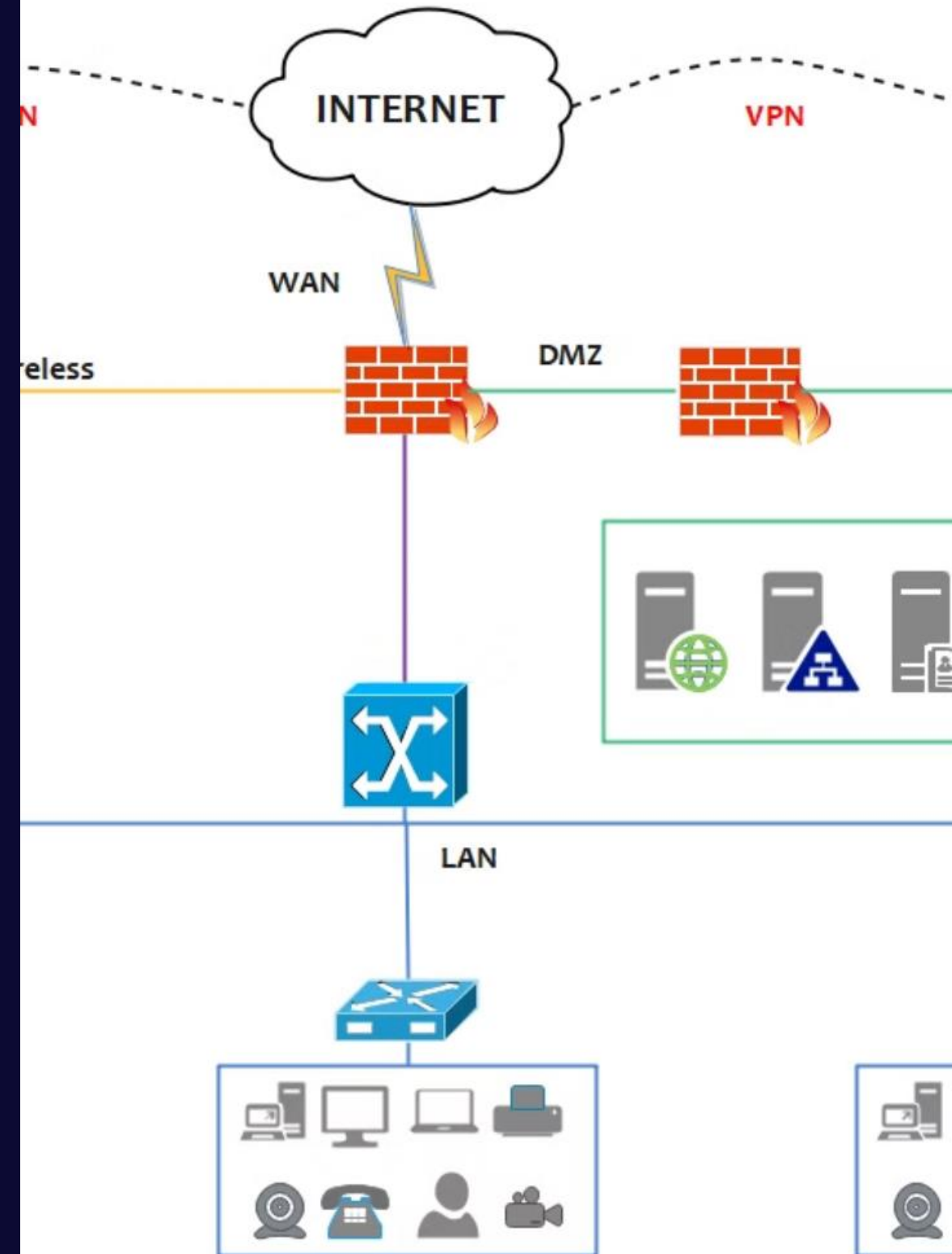
Verify correct routes for destination networks. Missing or or incorrect routes cause failures. failures.

Traceroute

Use traceroute to identify path path bottlenecks. High latency latency hops indicate issues.

Firewall Rules

Ensure firewall rules allow necessary traffic. Restrictive rules block communication.



Tools for Network Troubleshooting



Wireshark

Capture and analyze network traffic.
Identify protocol errors and anomalies.
Identify network anomalies.



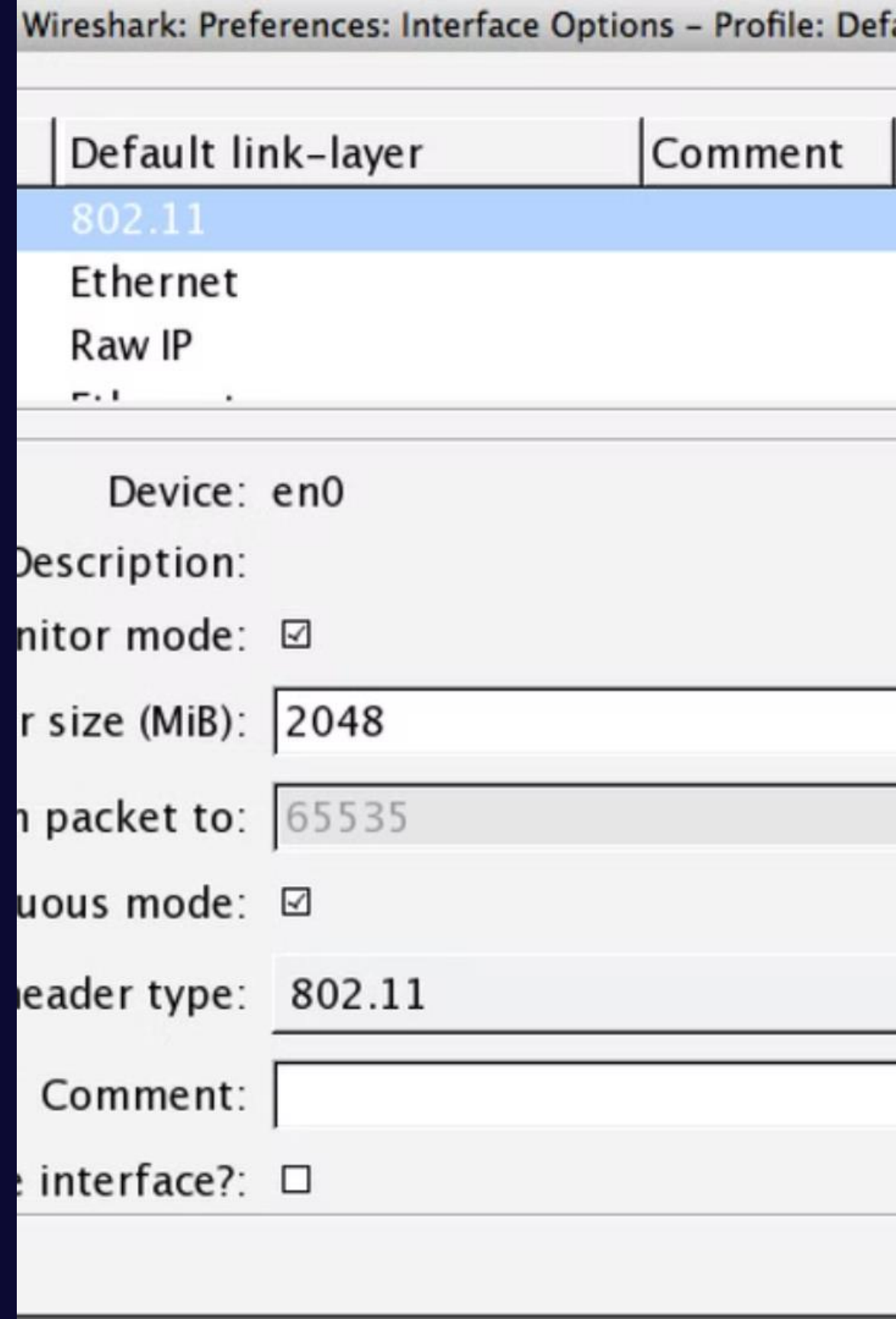
Ping

Verify basic network connectivity.
Determine round-trip time to hosts.



Traceroute

Trace the path to a destination. Identify routing loops and bottlenecks.



Best Practices for Network Monitoring

Proactive monitoring prevents major issues. Implement alerting for critical metrics. Regularly review network performance trends.

1

SNMP Monitoring

Use SNMP to collect device statistics. Track CPU usage, memory utilization, and utilization, and interface traffic.

2

Log Analysis

Centralize and analyze network device logs. Identify security threats and configuration errors.

3

NetFlow/sFlow

Collect network flow data for traffic analysis. Identify top talkers and application usage.





Troubleshooting Process

1

Identify

Define the problem scope.
scope.

2

Isolate

Narrow down the cause.

3

Solve

Implement a solution.

4

Verify

Confirm resolution.



Key Takeaways

Effective troubleshooting requires a systematic approach. Use the right tools and techniques. Proactive monitoring prevents issues.

3

Areas

Focus on name resolution, switching, and routing.

4

Steps

Follow the troubleshooting process to diagnose and solve network problems.

10+

Tools

Leverage tools like Wireshark, ping, and traceroute.