

SOP: Network Issue Troubleshooting

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Purpose

To provide a standardized procedure for simulating, troubleshooting, and resolving a network connectivity issue in the VirtuSupport virtual lab environment.

Scope

This SOP applies to technical support trainees and IT professionals using the VirtuSupport lab to simulate and resolve networking issues in Windows 10 and Ubuntu virtual machines.

Tools Required

- VirtualBox
- Windows 10 VM
- Ubuntu VM
- PowerShell (Windows)
- Bash (Linux)
- Networking tools: ping, ipconfig/ifconfig, netstat, tracert

Procedure

1. Launch the virtual machine (Windows or Ubuntu).
2. Navigate to the lab scripts folder.

3. Execute the network outage simulation script:
 - Windows: ``simulate_network_outage.ps1``
 - Ubuntu: ``simulate_network_outage.sh``
4. Observe the loss of network connectivity.
5. Begin troubleshooting using the steps outlined below.

Troubleshooting Steps

1. Use ``ping`` to test connectivity to local and external addresses.
2. Use ``ipconfig`` (Windows) or ``ifconfig`` (Linux) to check interface status.
3. Verify adapter settings in the OS network configuration.
4. Restart the network adapter or enable interface if necessary:
 - Windows: Use ``Enable-NetAdapter``
 - Linux: ``sudo ip link set <interface> up``
5. Confirm restored connectivity with another ``ping`` test.

Resolution

Restore the network adapter or settings to re-enable connectivity. Document steps taken to resolve the issue and verify the resolution.

Documentation

Update the SOP logbook or GitHub issue tracker with:

- Description of issue
- Commands used
- Root cause (if found)
- Resolution steps
- Time taken to resolve

Safety & Notes

- Do not run scripts on live or production systems.
- Always test in isolated virtual environments.

- Use rollback snapshots to recover VM state if needed.