

Enterprise Network Technologies  
CPTR 2245  
Lab 02

- Contact your instructor with your questions about the assignments.
- The student must insure all the answers are free from any malware.
- The student must insure all answers are legal as defined by the class syllabus.
- All parts of your answers must be neat and easy to read.
- Paragraphs are at least four properly constructed English sentences.
- Embedding documents within documents does not work with the D2L Bright Space assignments.
- Plagiarism will not be tolerated.
- Unless noted, all lab sections must be done as unprivileged login.

**Lab 02: Technical Foundations**

- 2.1 Each part is worth five points for a maximum of twenty-five points. Upload your document(s) to the D2L Bright Space Assignment section 2.1 before the due date found in the 2245a.pdf document. The text must be readable by the instructor. Submit a Portable Document Format (PDF) or word processing file containing your answers.
- 2.1.1 Document the building of a router with NAT/PAT virtual machine on your local system with the following. A pfSense router is recommended. [ 24 points ]
- 2.1.1.1 Provide a Visio or similar diagram showing the network design and IPv4 and IPv6 address assignments.
- 2.1.1.2 Show the virtual machine is current with updates.
- 2.1.1.3 Show the NAT/PAT settings.
- 2.1.1.4 Show the firewall settings.
- 2.1.1.5 Show the IPv4 and IPv6 address settings on the host.
- 2.1.2 Identify if an AI type program was used to complete this lab section. If an AI program is used, identify the AI system used. [ 1 point ]
- 2.2 Each part is worth five points for a maximum of twenty-five points. Upload your answer to the D2L Bright Space Assignment section 2.2 before the due date found in the 2245a.pdf document. The text must be readable by the instructor. Submit a Portable Document Format (PDF) or word processing file containing your answers.
- 2.2.1 Document the building of a Linux virtual machine on your local system with the following. A Debian based Linux is recommended. [ 24 points ]
- 2.2.1.1 Show the hostname is your name with "01" added to the name.
- 2.2.1.2 Show the virtual machine is current with updates.
- 2.2.1.3 Successful time synchronization with the NTP pool.
- 2.2.1.4 Successful firewall configuration allowing only necessary ports open.
- 2.2.1.5 Successful installation of OSSEC local.
- 2.2.1.6 Provide a copy of your installation documentation.
- 2.2.2 Identify if an AI type program was used to complete this lab section. If an AI program is used, identify the AI system used. [ 1 point ]
- 2.3 Each part is worth five points for a maximum of twenty-five points. Upload your answer to the D2L Bright Space Assignment section 2.3 before the due date found in the 2245a.pdf document. The text must be readable by the instructor. Submit a Windows or Unix text file with the appropriate Windows extension.
- 2.3.1 Provide evidence of configuring the following on your host01 on the local VM network. [ 24 points ]
- 2.3.1.1 IPv4 and IPv6 address on the local VM network served by your router.
- 2.3.1.2 The configuration of auditd to monitor with best practices rules installed.
- 2.3.1.3 Successful creation of an new partition for Docker files.
- 2.3.1.4 Successful installation of the iperf3 program.
- 2.3.1.5 Provide a copy of your installation documentation.
- 2.3.2 Identify if an AI type program was used to complete this lab section. If an AI program is used, identify the AI system used. [ 1 point ]
- 2.4 Each part is worth five points for a maximum of twenty-five points. Upload your answer document to the D2L Bright Space Assignment section 2.4 before the due date found in the 2245a.pdf document. The text must be readable by the instructor. Submit a Portable Document Format (PDF) or word processing file containing your answers.
- 2.4.1 Document the building of a Linux virtual machine on your local system with the following. A Debian based Linux is recommended. [ 24 points ]
- 2.4.1.1 Show the hostname is your name with "02" added to the name.

- 2.4.1.2 Show the virtual machine is current with updates.
  - 2.4.1.3 Successful time synchronization with the NTP pool.
  - 2.4.1.4 Successful firewall configuration allowing only necessary ports open.
  - 2.4.1.5 Successful installation of OSSEC local.
  - 2.4.1.6 IPv4 and IPv6 address on the local VM network served by your router.
  - 2.4.1.7 The configuration of auditd to monitor with best practices rules installed.
  - 2.4.1.8 Successful creation of an new partition for Docker files.
  - 2.4.1.9 Successful installation of the iperf3 program.
  - 2.4.1.10 Provide a copy of your installation documentation.
- 2.4.2 Identify if an AI type program was used to complete this lab section. If an AI program is used, identify the AI system used. [ 1 point ]