Design Document

Version 1.0

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# Network Diagram



|  |  |
| --- | --- |
| Name | Description |
| The Internet | The wide area network |
| Router | At the address of 1.2.3.4 on the internet, and address of 192.168.0.100 on the internal network. |
| Gateway | Acts as a firewall as well as a gateway. It is at the address of 192.168.0.22 on the external network, and an address of 10.210.0.2 on the internal network. It can forward packets from the external network to a specific computer and port on the internal network. |
| Computer | Node connected to the *Gateway*. |

# gateway.sh Flow Diagram



|  |  |
| --- | --- |
| Name | Description |
| Start | The script begins execution with root permissions. |
| Configuration | Declare and initialize variables configurable by users. |
| Enable forwarding | Enable forwarding of packets between the LAN and WAN networks. |
| Set DNS server | Sets the DNS server of the machine. |
| Configure routing | Configures the routing table of the machine so it is aware of which network interface to use to communicate with the LAN, and what its IP address is on that network interface. |
| Exit | The script finishes execution. |

# host.sh Flow Diagram



|  |  |
| --- | --- |
| Name | Description |
| Start | The script begins execution with root permissions. |
| Configuration | Declare and initialize variables configurable by users. |
| Set DNS server | Sets the DNS server of the machine. DNS queries made from this computer will be directed to the specified DNS server. |
| Exit | The script finishes execution. |

# firewall.sh Flow Diagram



|  |  |
| --- | --- |
| Name | Description |
| Start | The script begins execution with root permissions. |
| Configuration | Declare and initialize variables configurable by users. |
| Reset | Clears all previous firewall rules, and resets the default policy to ACCPET. |
| Stop? | Check if the first argument when running the script was “stop”. |
| Apply policies and firewall rules | Policies are set for default chains, and firewall rules are applied as per the specifications indicated by the user in the configuration section. |
| Exit | The script finishes execution. |