OSYS3030 – network services using linux

Install / Change Log

Date \_\_\_\_\_\_\_\_\_11/14/2024\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Name \_\_\_\_\_\_\_\_\_kyle walker\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Install Log** | | | | | |
| **Project:** Linux Network Server with DNS, DHCP and Printing | | | | | **Date:** Nov 11th 2024 |
| **Activity ID No.** | **Activity Name** | **Description of Work** | | | **Responsibility** |
| A001 | Documentation required for install and configuration. | OSYS3030\_Final Project v11.5.24.docx  Naming Convention Document v1.3.24.docx | | |  |
| A002 | Resources required for install. | ubuntu-24.04.1-live-server-amd64.iso  VMWare Workstation 17 | | |  |
| A003 | Documentation of object names required for implementation. | **Specify object names in preparation for implementation** | | |  |
| **VM** Folder: | E:\2024 Semester 3\OSYS3030 | |
| **VM** Name: | OSYS3030-LXDNS01 | |
| **VM** OS (selected during VM build): | Ubuntu 24.04.1 | |
| **System** Hardware Configuration: | Primary HD | 60GB |
| Additional HDs |  |
| RAM | 4GB |
| Processors/Cores | 2 / 2 |
| Network | IP Address (Static/DHCP) | 192.168.209.10 (NIC 1)  192.168.209.11 (NIC 2) |
| Subnet Mask | 255.255.255.0 |
| G/W Address | 192.168.209.2 |
| DNS Server Addresses (2) | 192.168.209.10 (NIC 1)  192.168.209.11 (NIC 2) |
| Installation Mode | New Installation | |
| Time Zone: | America/Halifax | |
| Server Type | Linux Network Server | |
| **Server** “Administrator” Password: | Passw0rd (root) | |
| **Server** Host Name: | lxdns01kw01 | |
| Domain Name: | podfive.ca | |
| **Additional** User: | Only if required. | |
| Additional User Password: | Only if required. | |
| DSRM Password: | Only if required. | |
|  | | |
| *Name and description of each snapshot to be taken during install.*  *Create a schedule of regular rollback points of the server and take regular snapshots of your server in shutdown state.* |  | |
| A004 | Required configurations or settings applied during initial install. | Core Server installation, Install OpenSSH, Update all, install dnsmasq, install CUPS | | |  |
| A005 | “Backup” information: Regular rollback points, snapshots, etc. | Regular timeshift restore points created weekly (TBA)  Snapshots created in DateTime format (11.14-1400)  Snapshots made daily and before any major updates or changes  Cloud backup saved to OneDrive  GoldCopy backup saved on local drive at home, D:\VMBackup | | |  |
| A006 | “Gold” Copy information: Rollback or restore options for the system. | GoldCopy backups to be saved at E:\2024 Semester 3\OSYS3030\Backup | | |  |

**Change Log**

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| --- | --- | --- | --- | --- | --- |
| Change No. | Change Type | Description of Change | Date Completed | Status | Comments / Troubleshooting notes |
| CR001 | Dnsmasq Troubleshooting | Conflicting ports | 11/17/2024 | Complete | Conflicting ports with systemd-resolved, edited /etc/dnsmasq.conf to listen on port 5353 instead, also set listen-address to loopback |
| CR002 | Dnsmasq Troubleshooting | Dnsmasq conflict with resolver | 11/17/2024 | Complete | Conflict with resolvconf.  In /etc/default/dnsmasq, uncommented 2 lines, added 2 lines |
| CR003 | Client DNS Issues | DHCP and CUPS working as intended, no DNS queries being answered by client | 11/17/2024 | Complete | Troubleshooting DNS. IP pings and other server functionality fine on client, suspected port or firewall issue. Enabled passage through port 5353 on firewall. |
| CR004 | Reverted Changes | Continuous issues with system-resolved and resolvconf led to a pivot in packages | 11/21/2024 | Complete | Attempted to reinstall dnsmasq on another distro and continued to have issues. Restarted process using Bind9 and isc-dhcp instead. |
| CR005 | DNS and DHCP Configured | Bind9 and isc-dhcp configured | 11/21/2024 | Complete | Bind9 configured with “podfive.ca” in forward and reverse zones, static IP’s set for team member servers, both tested and confirmed on network clients. |
| CR006 | CUPS installed | Printing server set up and configured | 11/21/2024 | Complete | CUPS with HP printer drivers running on port 953, confirmed network printer being pushed to network clients |
| CR007 | General Server Hardening | Various server hardening methods applied | 11/28/2024 | Complete | Disabled SSH root login, added firewall exclusions for DNS, DHCP and Printing ports (53, 67, 68 and 631), disabled unused services and prevented brute force attacks by installing fail2ban |
| CR008 | Specific Server Hardening | Locked down DNS and DHCP features | 11/28/2024 | Complete | Ensured only 209.0 subnet can query DNS, isolated with Bind9 chroot, ensured DHCP only listens on one specific interface (ens33), defined static IP addresses based on MAC address to prevent spoofing and limited file permissions on DHCP config file to prevent tampering. |
| CR009 | Edited Forward and Reverse Zones for Mail Sever | Troubleshooting Team Member’s Mail Server | 12/02/2024 | Complete | Added “ms01a1u30” in forward and reverse zones to help troubleshoot mail server connectivity with monitoring server |

**Testing Plan**

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| **Project (Activity) for testing:** | | DNS, DHCP and Printing Services | | |  |  |  |
| **Date:** |  | Dec 2nd 2024 | |  |  |  |  |
|  |  |  |  |  |  |  |  |
| **Test ID** | **Description** | **Action** | **Expected result** | **Tech** | **Status** | **Repeat test** | **Notes:** |
| A000 | Test DNS functionality | Using “nslookup”, check own hostname | Nslookup should return with my own IP address and FQDN. | Jacob | Successful | 1 | Test completed on host machine, clients on network to be tested next |
| A001 | Test client DNS connections | Using “nslookup” and pings to ensure client communication | Nslookup for this servers hostname should return FQDN and IP from connected clients | Jacob | Successful | 3 | Test completed on each host machine, all return expected results |
| A002 | Ensure DHCP leases are handed out | Ensure each client is set to DHCP, check IP address | IP address should be set to the static IP assigned on this server | Jacob | Successful | 3 | IP addresses match static IP addresses assigned |
| A003 | Confirm printer is being pushed automatically on network | Boot a client VM on same network/subnet, check available network printers | Printer should automatically appear in list of available printers without any input on client | Jacob | Successful | 1 | Client works on same host machine, testing with team member nodes next |
| A004 | Confirm printer is being pushed and accepted by other nodes | Team Members should check available network printers | Same as above, network printer should be pushed to their nodes automatically | Jacob | Successful | 3 | Same printer appears on all applicable nodes |