Windows Print and File Sharing and FTP

Samba and vsftpd
COMP1071 Summer 2020

Windows File and Print Sharing

- UNIX uses NFS to natively share files

- UNIX uses IPP and LPD protocols to natively share printers

- Windows has proprietary file and print sharing protocols

- Samba was developed to implement those proprietary protocols on UNIX/Linux hosts using open-source software

- Samba provides the standard Windows SMB and NMB protocols and ports (https://wiki.samba.org/index.php/Samba_port_usage)

- Samba can act as a domain controller for Active Directory (https://wiki.samba.org/index.php/Samba_AD_DC_HOWTO)

File Sharing

- Samba shares are configured in /etc/samba/smb.conf

- Each share is defined by a section beginning with [sharename]

- Each share can have its own parameters, global parameters are defined in the share definition named [global]

- The [homes] share is special and provides shares on a per username basis

- The testparm command can be used to check the file before applying changes

- Changes to the file require service restart, or smbcontrol smb reload-config

Print Sharing

- The default samba install automatically shares printers defined as shared in CUPS

- It also creates a printer drivers share for Windows clients to use

- Printer-related shares are defined in /etc/samba/smb.conf

- Printers are shared using their CUPS queue names as the printer names for Windows

smbstatus/smbcontrol

- smbstatus is used to make various enquiries about the current state of a samba server

  - smbstatus -h hostname

- smbcontrol is used to send control messages to a samba server

  - smbcontrol all reload-config

  - smbcontrol all drvupgrade

  - smbcontrol smbd close-share

pdbedit

- pdbedit is the samba local user management tool

- Samba local users are tied to Linux user accounts with the same name, to provide access control and file ownership

- It can add, modify, remove, and review users, automatically synchronizing Linux and Samba passwords

  - pdbedit -a -u username

  - pdbedit -L [-v]

  - pdbedit -x -u username

smbclient

- smbclient is a tool used to communicate with any SMB server using the SMB protocol

- It has both interactive and non-interactive modes and built-in help

- It can be used to browse shares, or to access shares, or even to print to Windows-hosted printers

  - smbclient -L hostname

  - smbclient -U username //hostname/sharename [-c command list]

Log files

- Samba log files are defined in /etc/samba/smb.conf

- Normally kept in /var/log/samba

- Logs are kept for the service as well as for individual hosts

- Samba logs are auto-aged

FTP

- A very old file transfer protocol

- A command line tool to access ftp servers

- Normal and passive modes

- Operating system and hardware independent transfers were the goals, mostly superseded by HTTP these days

- Can be used as the protocol in a URL

vsftp

- The vsftpd software (very secure file transfer protocol daemon) provides ftp service to clients

- Authenticated and anonymous access supported

- Low overhead high performance protocol

- Configuration is kept in /etc/vsftpd.conf

FTP Access Control

- FTP can be used for anonymous access in a read-only mode

- Files provided to anonymous service users are kept in ~ftp, users use username ftp to connect

- Separate permissions are provided for anonymous versus authenticated users

- Authenticated users require a UNIX account, the account password must be given correctly, and the UNIX user must have a valid UNIX shell

Log Files

- vsftpd keeps logs in /var/log/vsftpd.log by default

- Log is automatically aged

- Anonymous users are supposed to use their email address as a password which is logged in the log file

ftp on the Command Line

- The ftp command provides a command line tool for connecting to ftp servers in normal mode (both ports 20 and 21)

- The pftp command provides passive mode command line access to ftp servers

- Interactive mode available with built-in help

- There is an sftp command which does not use the ftp server but is built into the sshd server