

Network Attached Storage: Building Your Own

Reliability / Performance / Cost:

Design	\	Features / Considerations / Constraints
Components	\	
Security	/	
Operations	/	

Design:

Sharing protocols (NFS, CIFS/SMB, AFP, FTP/SFTP/TFTP, rsync, AFS, NCP)
iSCSI, AoE (SAN protocols)
Filesystem (UFS, ZFS, extX, XFS, JFS)
Networking (Ethernet, Link aggregation / teaming / trunking / bonding)
Media Features (DLNA)
Hot Plug
Disk Architecture (RAID, RAID levels, hardware/software RAID)
Software Architecture (Linux, Solaris, BSD, Windows)
Distro Activity / Support
Virtualization

Components:

CPU Architecture (x86, x64, SPARC, PowerPC, ARM)
Motherboard / Expansion Cards (I/O Ports)
Disks (ATA, SATA, SCSI, FC, SAS)
RAM
Case (Physical size, disk capacity)
Power (Consumption, Efficiency, Savings)
Load / Boot Media (Disk, Removable Media, Network, USB)
Connectivity (Ethernet, USB)
Keyboard / Video / Mouse (KVM)

Security:

Authentication / Network Directories (LDAP, Active Directory, NIS)
ACL/UNIX Permissions
Encryption (Disk, Network)
Physical

Operations:

User Interface (Shell / GUI)
Backup / Snapshots / Replication
Network protocol for control
Hot Spare
UPS
Monitoring
Environmental (Cooling / Noise)

Note that this list is not exhaustive

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