NAS Hardware Planning Checklist

Workload · Users · Network · Drives · Enclosure — Before You Buy

1 WORKLOAD PROFILE

PRIMARY USE (TICK ALL THAT APPLY)

- ☐ File storage and backup
- ☐ Plex / Jellyfin media server
  Note: 4K direct play needs ≥ quad-core CPU (no transcode)
- ☐ Surveillance / NVR cameras
- ☐ Virtualisation (VMs / Docker)
  Needs ≥ 8 GB RAM, SSD cache strongly recommended
- ☐ Video editing workstation
  10GbE + SSD cache required for 4K/ProRes workflows
- ☐ Remote access / VPN host
- ☐ Database / business applications
- ☐ Local AI model hosting
  Requires GPU passthrough or separate compute node

INTENSITY

- ☐ Sequential workload (large file streaming) → HDD adequate
- ☐ Random I/O (databases, VMs) → SSD required or SSD cache

2 USERS & NETWORK

USER COUNT

Concurrent users: _____ **users**

Peak simultaneous streams: _____ **streams**

Off-site users (remote access): _____ **users**

NETWORK REQUIREMENTS

- ☐ 1GbE sufficient (1–2 users, file storage)
- ☐ 2.5GbE (3–5 users, Plex, modern default)
- ☐ 10GbE required (video editing, 6+ streams)
- ☐ Switch upgraded to match NAS port speed
- ☐ Client machines have matching NIC
  2.5GbE NAS + 1GbE client → 1GbE effective
- ☐ Network speed modelled:
  needtoknowit.com.au/tools/transfer-speed-estimator/

3 DRIVE SELECTION

DRIVE TYPE

- ☐ CMR drives only (avoid SMR in RAID)
- ☐ NAS-rated HDDs for primary storage
  IronWolf, WD Red Plus, Toshiba N300
- ☐ SSD cache considered for VM / random I/O workloads
- ☐ Compatibility confirmed on vendor list
  synology.com/compatibility or qnap.com/compatibility

DRIVE SIZING

Drive size chosen: _____ **TB**

Drive count: _____ **drives**

RAID level: _____

- ☐ Usable capacity verified:
  needtoknowit.com.au/tools/raid-calculator/

4 ENCLOSURE & POWER

ENCLOSURE REQUIREMENTS

- ☐ Bay count: minimum bays + 2 growth buffer
- ☐ CPU adequate for transcoding (if Plex)
  Synology: check DSM transcoding compatibility list
- ☐ RAM adequate: 4 GB min, 8 GB for VMs/Docker
- ☐ M.2 NVMe slots for SSD cache (if needed)
- ☐ PCIe slot available (for 10GbE NIC if needed)

All NTKIT Tools

POWER & PROTECTION

- ☐ Power draw estimated:
  needtoknowit.com.au/tools/power-calculator/
- ☐ UPS runtime calculated:
  needtoknowit.com.au/tools/ups-runtime-estimator/
- ☐ UPS connected — NAS shutdown on battery low

⚠ Budget 20–30% above drive cost for enclosure, UPS, and network gear.

MORE FREE NAS PLANNING TOOLS

needtoknowit.com.au/tools — RAID Calculator · Power Calculator · UPS Runtime Estimator
NAS Sizing Wizard · Transfer Speed Estimator · Drive Failure Risk · Backup Calculator

Need to Know IT
Independent Australian storage guidance
needtoknowit.com.au