



# INSTALL AND CONFIGURE WINDOWS OS

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- Prepare for Installing an OS
- Types of Installation
- Partitioning Storage
- Volumes
- Workgroup vs. Domain
- File System Types
- Install Windows 7
- Install Windows XP
- Windows Features

- Prepare
  - Hardware compatibility and system requirements
- Methods
  - USB – create or purchase a USB storage device that has installation software
  - CD-ROM – Older OS (Windows XP), configure BIOS, boot options to boot from CD
  - DVD – Modern OS (Windows Vista, 7), configure BIOS, boot options to boot from DVD
  - PXE – Preboot Execution Environment – allows installation from a network storage device

- Types of Installation
  - Clean Install – fresh new install on a new computer or after wiping a HD for a full upgrade
  - Image – copy an installed OS hard drive to be transferred to another computer (i.e. Windows Deployment Services)
  - Minimal driver installation for different hardware
  - Unattended Installation – automatic installation of OS with little human interaction
  - Answer file is created to automate the process
  - Upgrade – i.e. Windows Vista → Windows 7

- Repair Installation – using installation media/software to fix the operating system, ensure data is backed up, cannot upgrade
- Multiboot – Install more than 1 operating system on a computer (i.e. Windows XP and Windows 7)

- Basic – single drive
  - 4 partitions max for Master Boot Record (MBR)
  - Each partition formatted with a file system (typically FAT32 and NTFS for Windows)
- Primary – contains only 1 file system
- Extended – can be subdivided into several file systems
- Logical – a partition that operates as an independent unit or separate drive. Contrast to dynamic partition
- Dynamic – volumes that can span multiple disks
- Volume – single storage unit of free space in a single drive, a partition, or dynamic partition spanning multiple drives
- Factory Recovery Partition – small partition that stores OS installation software and manufacture drivers, setting, and configuration. Designed for a clean or repaired installation

**Disks**

Disks

Disk Drives

- 500 GB Hard Disk  
WDC WD5000BPKT-80PK4T0
- CD/DVD/Blu-Ray Drive  
Slimtype BD E DS4E1S
- 32 GB Drive  
Generic USB2.0-CRW
- 8.0 GB Drive  
Kingston DT 101 II

Other Devices

- 852 MB Block Device  
/dev/zram0
- 852 MB Block Device  
/dev/zram1
- 852 MB Block Device  
/dev/zram2
- 852 MB Block Device  
/dev/zram3
- 852 MB Block Device  
/dev/zram4
- 852 MB Block Device  
/dev/zram5
- 852 MB Block Device  
/dev/zram6
- 852 MB Block Device  
/dev/zram7

**500 GB Hard Disk**  
/dev/sda

Model WDC WD5000BPKT-80PK4T0 (01.01A10)  
Size 500 GB (500,107,862,016 bytes)  
Serial Number WD-WXL1A71L9657  
Assessment Disk is OK (37° C / 99° F)

**Volumes**

data\_ext4\_143G  
Partition 1  
154 GB Ext4

Filesystem  
Partition 2  
291 GB Ext4

Extended Partition  
Partition 3  
56 GB

Filesystem  
Partition 6  
42 GB Ext4

Swap  
Partition 5  
14 GB Swap

Size 154 GB (153,600,655,360 bytes)  
Device /dev/sda1  
Partition Type Linux  
Contents Ext4 (version 1.0)  
In Use Yes, mounted at [/media/nagalmanlm/data\\_ext4\\_143G](#)

- Basic Volume – single drive
- Spanned Volume – span multiple drives
- Striped Volume – RAID 0
- Mirrored Volume – RAID 1
- RAID 5 – striping across 3 or more drives



- Workgroup – peer to peer environment without a domain/Active Directory server connection
- Domain – connecting to an Active Directory domain

- FAT – File Allocation Table, legacy
  - FAT 16 max 2GB
  - FAT 32 max 32GB
  - USB, flash, portable storage uses FAT
  - Very compatible
- NTFS – New Technology File System
  - Typical Windows file system
  - Features: journaled FS, encryption, large volumes and file size (16GB), compression, short and long file names, quotas, volume mount points, symbolic links, etc
- CDFS – Compact Disk File System
  - Optical disk media
- Quick Format – setup and configure partition only
- Full Format – setup, configure, and drive scanned and tested for errors



- Use Virtualization



- Use Virtualization

- 32 and 64 bit versions
- Aero – transparency to windows, graphical switching of applications
- User Account Control – requires user (live local not remote) to give permission for software to perform certain actions
- Standard user – access own files, change password, network access, may ask for administrator password
- Power user (Windows XP) – install software, additional hardware configuration
- Administrator – full access to system and system administration

- Volume Shadow Copy – live file backup with multiple versions
- System Restore – revert OS settings to a previous point in time for configuration errors
  - Does not “backup software” or solve malware issues
- Sidebar – introduced w/Vista, gadgets
- ReadyBoost – use flash drive to add system memory
- Compatibility mode – running older software with previous version of Windows
  - actually runs a small virtual environment of the previous OS

- Windows Easy Transfer – allows migration of user settings and applications from Windows XP to Windows Vista or Windows 7
- Administrative Tools – Control panel utilities
- Windows Defender – anti malware software on Windows Vista and 7
- Windows Firewall – Control panel → Security Center
- Windows Event Viewer – Overview of system events: Applications, System, and Security



# THANK YOU

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