CompTIA A+ Core 2 Exam 220-1102

Lesson 12

Identifying OS Types and Features

Objectives

- Explain OS types
- Compare Windows editions

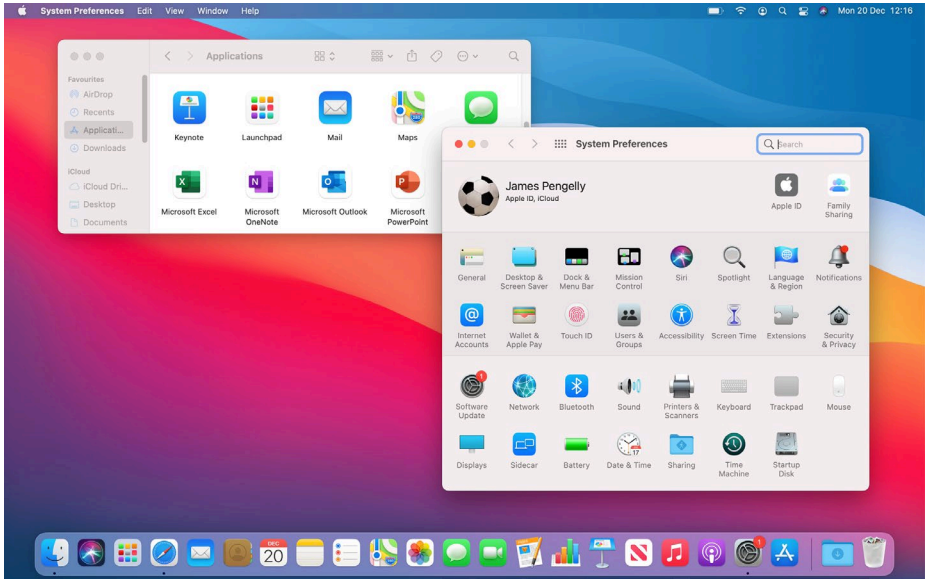
Lesson 12

Topic 12A

Explain OS Types

Windows and macOS

- Operating system types
  - Business client, Network Operating System (NOS), Home client, Cell phone (smartphone)/tablet
- Microsoft Windows
  - Windows 10 and Windows 11 versions and editions
  - Windows Server versions
- Apple macOS
  - Only licensed for installation on Apple Mac, iMac, and MacBook hardware
  - Upgrades and compatibility



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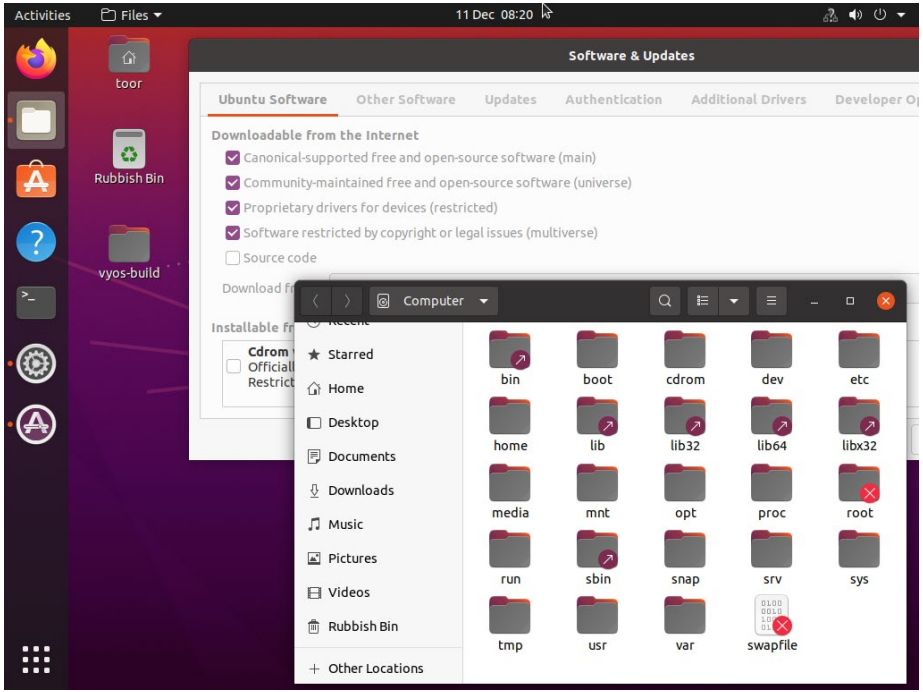
UNIX, Linux, and Chrome OS



- UNIX
- Linux
  - Kernel versus distributions
  - Open-source licensing models and subscriptions
  - Standard versus rolling release models
  - Used as client, server, and in embedded systems
- Google Chrome OS
  - Focused on use as a secure, reliable web app client
  - Chromebook and Chromebox hardware

iOS and Android

- Cell phone/tablet OS
  - Optimized for touch interface
  - Apps installed from a vendor-managed store
- Apple iOS and iPadOS
  - Only licensed for installation on Apple iPhones and iPads
- Android
  - Google's stock Android
  - Vendor distributions (One UI, Fire OS, OxygenOS, …)
  - Device compatibility for version updates

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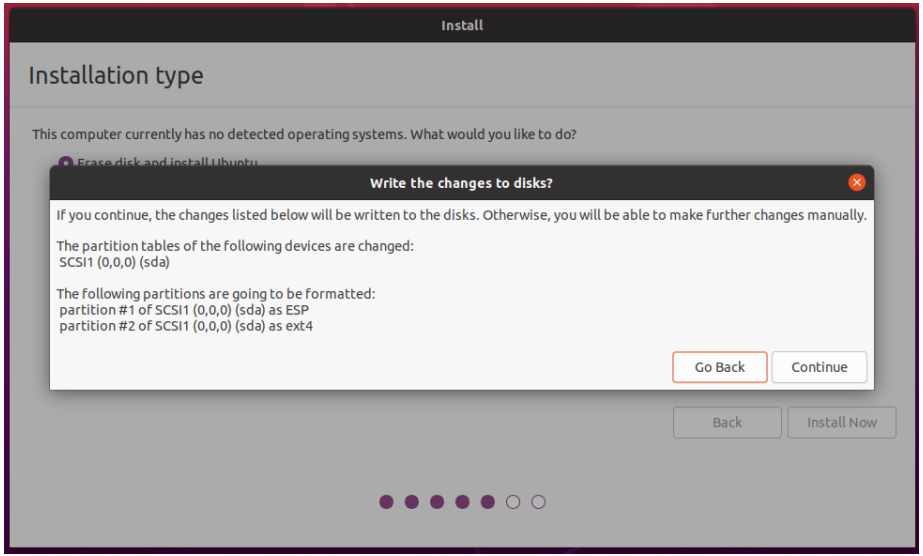
Windows File System Types

- New Technology File System (NTFS)
  - Reliability (journaling and snapshots) and security (permissions and encryption) features
  - Required file system for Windows boot volume
- File Allocation Table 32 (FAT32)
  - Legacy file system
  - Used for compatibility with other operating systems and devices (removable disks, memory cards, …)
- Extensible File Allocation Table (exFAT)
  - Updated version of FAT32 with support for larger drives

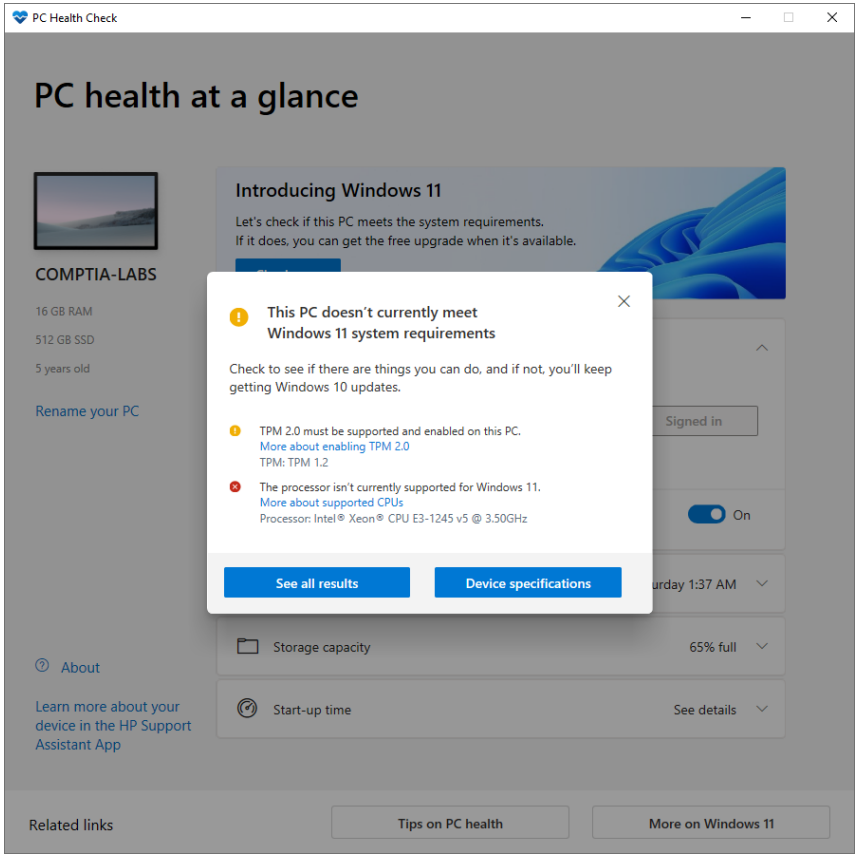
Linux and macOS Filesystem Types



- Fourth extended filesystem (ext4)
  - Popular choice for Linux storage
  - Support for journaling and 48-bit addressing
  - Third extended filesystem (ext3) limited to 32-bit addressing
- Apple File System (APFS)
  - Support for 64-bit addressing, journaling, and encryption

OS Compatibility Issues

- Hardware compatibility and update limitations
  - System requirements and update limitations
  - Support for peripheral devices
- Software compatibility
- Network compatibility
- User training and support



Screenshot courtesy of Microsoft

Vendor Life Cycle Limitations

- Beta phase and preview releases
- Supported/marketing phase
  - Major and minor versions/feature updates
  - Security/reliability update availability
- Extended support phase
  - More limited patch and support availability
- End of life (EOL) state

Review Activity: OS Types

- Windows and macOS
- UNIX, Linux, and Chrome OS
- IOS and Android
- Windows File System Types
- Linux and macOS File System Types
- OS Compatibility Issues
- Vendor Life Cycle Limitations

Lesson 12

Topic 12B

Compare Windows Editions

Windows Versions

- 32-bit versus 64-bit
- Desktop styles
  - Changes between feature updates and versions (Windows 10 to Windows 11)

Windows Home Edition

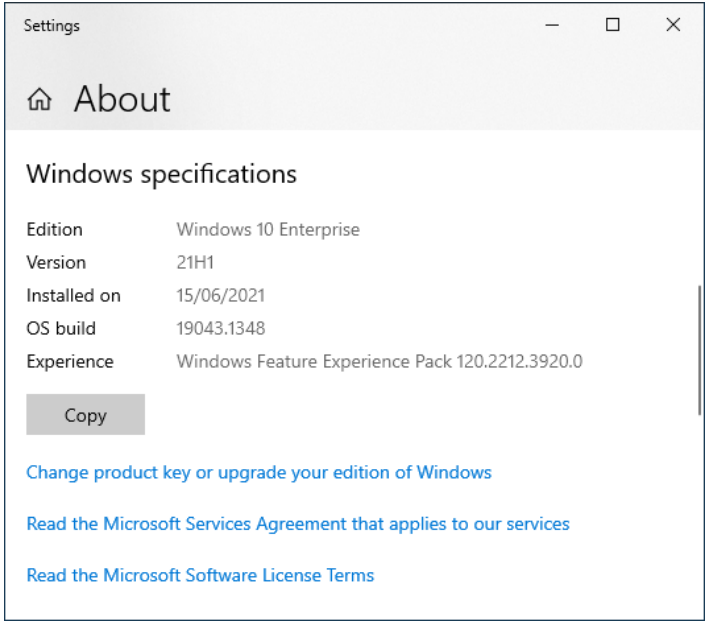
- Managing for home use
  - Shared use by family members
  - Use for gaming and home entertainment
    - Simple shared access to media files and connectivity with smart home devices
- Licensing and upgrade rights
  - Original equipment manufacturer (OEM) versus retail
- Resource limits
  - 1 CPU socket and 64 core limit and 128 GB RAM limit (assuming 64-bit)

Work and Education Features

- Pro, Enterprise, and Education editions
  - OEM, retail, and volume licensing
- Domain access versus workgroup
- Additional features
  - Group Policy Editor (gpedit.msc)
    - Lock down desktop styles/personalization and apply uniform policies
  - BitLocker
  - Remote Desktop server

Windows Pro and Enterprise Editions

- Windows Pro
  - Basic work client edition
  - OEM, retail, and volume licensing
  - 2 TB RAM, 2 CPU socket, and 128 CPU core limit
- Windows Pro for Workstations
  - Same feature set as Pro, but same resource limits as Enterprise
- Windows Enterprise
  - Maximum feature set
  - Volume licensing only
  - 6 TB RAM, 4 CPU socket, and 256 CPU core limit



Screenshot courtesy of Microsoft

Windows Upgrade Paths and Feature Updates

- In-place upgrades
  - Launch new version installer from current OS
  - Preserves apps (if compatible), settings, and data files
- Upgrade paths
  - Windows 7 to Windows 10
  - Windows 10 to Windows 11
  - Edition changes
- Feature updates versus quality updates

Review Activity: Windows Editions

- Windows Versions
- Windows Home Edition
- Work and Education Features
- Windows Pro and Enterprise Editions
- Windows Upgrade Paths and Feature Updates

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Summary