# MTA: Windows Operating System Fundamentals – Skills Measured

NOTE: The bullets that appear below each of the skills measured are intended to illustrate how we are assessing that skill. This list is not definitive or exhaustive.

NOTE: In most cases, exams do NOT cover preview features, and some features will only be added to an exam when they are GA (General Availability).

## Exam 98-349: Windows Operating System Fundamentals

### Understanding operating system configurations (15–20%)

**Configure Control Panel options**

- configure administrative tools, configure accessibility options, configure power settings, configure File Explorer settings

**Configure desktop settings**

- configure profiles, display settings, and shortcuts; configure and customize Start Menu; configure Task Bar settings; configure toolbars; configure notifications

**Configure native applications and tools**

- configure Microsoft Edge, configure Cortana, configure Hyper-V, configure settings using MSCONFIG, configure processes and applications using Task Manager, configure computer management

**Configure mobility settings**

- configure Sync Center, Windows Mobility Center, and Remote Desktop

**Configure and use management tools**

- configure MMC, configure the Windows PowerShell console and Windows PowerShell ISE

### Installing and upgrading client systems (15–20%)

**Identify Windows operating system editions**

- identify hardware and compatibility requirements, determine appropriate editions per device type

**Identify upgrade paths**

- identify upgrade paths from previous Windows versions, identify application compatibility

**Understand installation types**

- perform a clean install, upgrade via Windows Update, migrate from previous Windows versions, perform removable media installation, perform network installation

**Understand operating system architecture**

- understand kernel mode; understand user mode; understand memory, IRQs, drivers, CPUs, and UI; understand 32-bit versus 64-bit architecture

## Managing applications (15–20%)

**Configure applications**

- understand local versus network applications, configure desktop applications, configure app startup options, configure Windows features, configure Windows SmartScreen, configure application removal, configure Windows Store apps

**Configure user account control (UAC)**

- understand standard user versus administrative user, understand types of UAC prompts and levels

**Configure antivirus settings**

- configure Windows Defender and the Malicious Software Removal tool

**Understand services**

- understand service start-up types, service accounts, and service dependencies

## Managing files and folders (15–20%)

**Understand file systems**

- understand FAT32, NTFS, and ReFS

**Understand file and print sharing**

- configure File System permissions, configure Share Permissions, configure HomeGroup settings, configure print drivers, configure effective permissions, create shares, create mapped drives

**Understand encryption**

- understand BitLocker and Encrypting File Systems (EFS)

**Understand libraries**

- understand offline files, configure libraries, add multiple local locations to a library, add networked locations

## Managing devices (15–20%)

**Connect devices**

- connect, enable, and disable plug-and-play and Bluetooth devices; connect and disconnect printers; install third-party software for devices; install device drivers

**Understand storage**

- understand disk types, security (encryption), storage device types (eSATA, USB, IEEE 1394, iSCSI, InfiniBand), and storage drive types (basic, primary, extended, logical, dynamic disk, VHDs); configure OneDrive use; optimize drives

**Understand printing devices**

- understand local printers, network printers, print queues, print-to-file, and Internet printing

**Understand system devices**

- understand video, audio, and infrared input devices; understand Device Manager

## Understanding operating system maintenance (15–20%)

**Understand backup and recovery methods**

- configure System Restore; configure a recovery drive; configure recovery boot options, such as Last Known Good, and various Safe Mode options; recover files from OneDrive

**Understand maintenance tools**

- understand Disk Defragmenter, Disk Cleanup, Task Scheduler, and System Information

**Configure updates**

- configure Windows Update options; implement Insider Preview, Current Branch, and Current Branch for Business scenarios; manage update history; roll back updates