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Tha Sneak - March 16, 2025, 5:51 pm

Understanding Safe Mode & Windows Recovery Environment (WinRE)

1. Introduction

Safe Mode and the Windows Recovery Environment (WinRE) are built-in troubleshooting tools in Windows that help fix system issues, remove malware, and recover an unbootable system.

- Safe Mode starts Windows with minimal drivers and services, allowing users to diagnose and fix issues.
- Windows Recovery Environment (WinRE) provides advanced repair options, including system restore, command prompt, and startup repair.

Below is a detailed guide on both features.

2. Understanding Safe Mode

Safe Mode is a diagnostic startup mode that loads only the essential drivers and services needed for Windows to function.

A. Types of Safe Mode

Windows offers three types of Safe Mode:

1. Safe Mode – Loads Windows with only essential drivers.
2. Safe Mode with Networking – Includes internet and network drivers, useful for online troubleshooting.
3. Safe Mode with Command Prompt – Opens directly to the Command Prompt instead of the graphical interface.

B. How to Boot into Safe Mode

Method 1: Using Shift + Restart (If Windows Boots Normally) Press Win + X, then select Shut down or sign out > Restart while holding Shift.

In the recovery menu, go to Troubleshoot > Advanced options > Startup Settings.

Click Restart.

Press 4 for Safe Mode, 5 for Safe Mode with Networking, or 6 for Safe Mode with Command Prompt.

Method 2: Using System Configuration (msconfig) Press Win + R, type msconfig, and press Enter.

Go to the Boot tab.

Check Safe Boot and select Minimal, Network, or Alternate shell (Command Prompt).

Click OK and restart.

Method 3: If Windows Won't Boot (Using Automatic Repair) Turn off your PC and turn it back on.

As soon as the Windows logo appears, force shutdown by holding the power button.

Repeat this 3 times until you see the Preparing Automatic Repair screen.

Click Advanced options > Troubleshoot > Advanced options > Startup Settings.

Select Restart, then press 4, 5, or 6 based on the Safe Mode type you need.

C. How to Exit Safe Mode Restart your PC normally.

If Safe Mode persists, open msconfig, go to Boot tab, and uncheck Safe Boot.

Click OK and restart.

3. Understanding Windows Recovery Environment (WinRE)

Windows Recovery Environment (WinRE) is a set of diagnostic and repair tools used when Windows fails to boot.

A. How to Access WinRE

Method 1: Using Shift + Restart (If Windows Boots) Hold Shift while clicking Restart from the Start menu.

Select Troubleshoot > Advanced options.

Method 2: If Windows Won't Boot (Automatic Repair Mode) Turn off the PC and turn it back on.

Force shutdown 3 times to trigger Preparing Automatic Repair.

When Startup Repair fails, click Advanced options.

Method 3: Using Bootable USB (Windows Installation Media) Create a bootable USB (Media Creation Tool: [Microsoft Windows Download](#)).

Boot from USB and select Repair your computer instead of installing.

B. Windows Recovery Options in WinRE

Once in Windows Recovery Environment, you'll see these options:

1. Startup Repair – Fixes boot issues automatically.
2. System Restore – Reverts Windows to an earlier restore point.
3. Command Prompt – Provides advanced troubleshooting with CMD.
4. Uninstall Updates – Removes recent Windows updates that may have caused issues.
5. UEFI Firmware Settings – Accesses BIOS/UEFI for hardware settings.
6. System Image Recovery – Restores Windows from a full system backup.

4. Troubleshooting with Safe Mode & WinRE

A. Fixing Boot Issues Boot into WinRE > Advanced options > Startup Repair.

If that fails, open Command Prompt and run:

```
Code bootrec /fixmbr  
bootrec /fixboot  
bootrec /scanos  
bootrec /rebuildbcd  
Restart the computer.
```

B. Removing Malware in Safe Mode Boot into Safe Mode with Networking.

Download and run Malwarebytes (<https://www.malwarebytes.com>).

Scan and remove detected threats.

Restart normally and check for issues.

C. Repairing Corrupt System Files Boot into Safe Mode with Command Prompt or WinRE > Command Prompt.

Run:

```
Code sfc /scannow
```

If errors persist, run:

```
Code DISM /Online /Cleanup-Image /RestoreHealth
```

D. Uninstalling Problematic Drivers in Safe ModeBoot into Safe Mode.

Open Device Manager (Win + X > Device Manager).

Uninstall problematic drivers (Right-click > Uninstall).

Restart Windows.

E. Rolling Back Windows Updates in WinREBoot into WinRE > Troubleshoot > Advanced Options > Uninstall Updates.

Choose Uninstall latest quality update or Uninstall latest feature update.

5. When to Use Safe Mode vs. WinRE