Installing ASUS NUC Mini PCs for Kiosk Deployments

A comprehensive technical guide for IT professionals deploying ASUS NUC systems in kiosk environments. This step-by-step resource covers everything from initial Windows 11 installation through BIOS configuration and touch screen integration, ensuring reliable and efficient kiosk operations. The guide will work with most Windows 11 mini PCs.

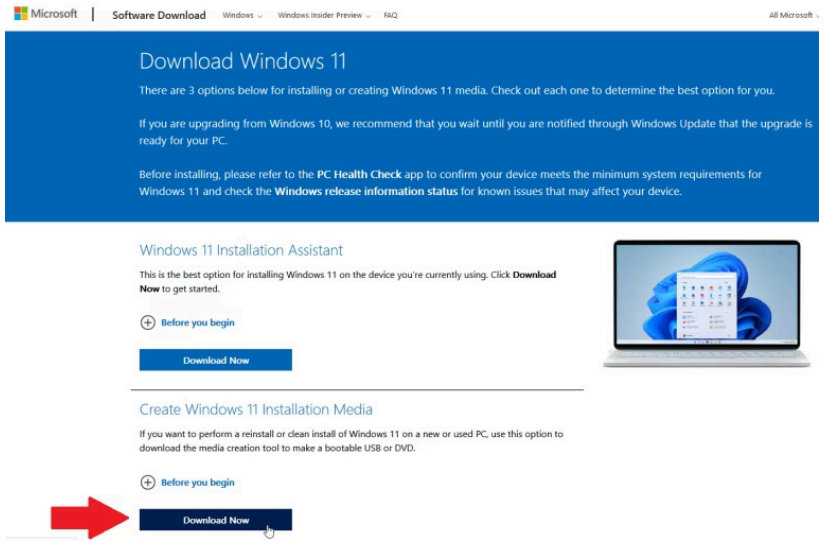
Downloading Windows 11 Installation Media

Obtaining the Installation Files

Begin by navigating to Microsoft's official Windows 11 download page on your laptop. You'll need to download the Windows 11 Installation Assistant or create installation media directly from Microsoft's servers.

Ensure you have a stable internet connection, as the download is approximately 5.5GB. Select the appropriate edition (Pro is recommended for kiosk deployments) and verify the file integrity after download completes.

1. Visit microsoft.com/software-download/windows11
2. Choose "Create Windows 11 Installation Media"
3. Select language, edition, and architecture (64-bit)
4. Save the ISO file to your laptop
5. Find out more here: **https://www.pcmag.com/how-to/how-to-install-windows-11-with-microsofts-media-creation-tool**



Creating a Bootable USB with Rufus

01

Download and Launch Rufus

Download Rufus from rufus.ie and run the portable executable. No installation required—it runs directly from the download.

02

Select Your USB Drive

Insert a USB drive (minimum 8GB) and select it from the Device dropdown. Warning: all data on this drive will be erased.

03

Choose the Windows ISO

Click SELECT and navigate to your downloaded Windows 11 ISO file. Rufus will automatically configure optimal settings.

04

Configure Boot Options

There is a possibility to install Windows 11 without an online login. Set the partition scheme to GPT and Target system to UEFI. These settings ensure compatibility with modern ASUS NUC hardware.

05

Start the Process

Click START and wait 10-15 minutes for completion. The bootable USB is now ready for NUC installation.

Installing Windows 11 on the NUC

Boot Configuration

Insert the bootable USB into the ASUS NUC and see if the Windows 11 setup page appears, and if not, then do a restart and press F2 to enter BIOS. Navigate to the Boot menu and set USB as the first boot priority. Save changes and restart to begin Windows installation.

Follow the Windows 11 setup wizard, selecting custom installation. Create partitions as needed for your kiosk application. The installation typically takes 15-20 minutes depending on NUC specifications.

Make sure you also have a USB keyboard and mouse!

Important: Ensure the NUC has at least 8GB RAM, 160GB SSD and Iris Xe (Raptor) GPU for optimal Windows 11 performance with 3D models. Disable Secure Boot temporarily if installation issues occur.

Obtaining and Activating Your Windows 11 License

A legitimate Windows 11 license is crucial for stability and security in kiosk deployments. You can acquire licenses from the Microsoft Store, authorized retail partners, or through distributors for discounted costs or buy volume licensing for larger enterprise needs. If you plan to use a refurbished computer, then in most cases the Windows activation key is already stored, and you only need to install Windows 11.

Windows 11 Home

Primarily for personal use. Lacks advanced features critical for managing and securing dedicated kiosk environments.

Windows 11 Pro

Recommended for kiosks, offering Remote Desktop, Group Policy, BitLocker, and Assigned Access for dedicated kiosk mode.

License Activation Steps

- Go to **Settings** > **System** > **Activation**.
- Select **Change product key** (or **Troubleshoot** if already activated).
- Enter your 25-character product key and follow the on-screen prompts for online activation.
- Verify activation status on the same **Activation** page to ensure your NUC is fully licensed.

Locating ASUS NUC Drivers

Proper driver installation is critical for kiosk stability and hardware functionality. Navigate to the ASUS support website to download model-specific drivers for your NUC device. You can use same bootable USB where your W11 was downloaded.

Visit ASUS Support Portal

Go to asus.com/support and enter your specific NUC model number (e.g., PN64, PN53, PN51). The model number is printed on the bottom of the device and on the original packaging.

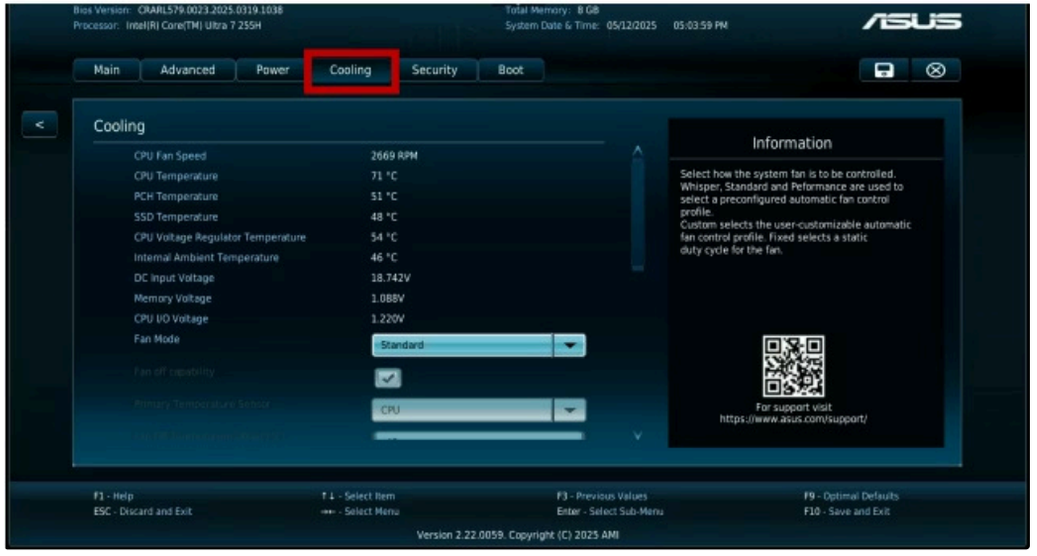
Select Windows 11 Drivers

Choose Windows 11 64-bit from the operating system dropdown. Download all available drivers including chipset, graphics, audio, networking (Wi-Fi and Ethernet), and USB controllers.

Install in Correct Order

Locate all in one driver package or Install drivers in this sequence: chipset first, then graphics, followed by audio, networking, and finally peripheral drivers. Restart the NUC after each major driver installation for proper configuration.

BIOS Configuration for Kiosk Reliability



Accessing ASUS NUC BIOS

Restart the NUC and press F2 repeatedly during boot to enter BIOS setup. Navigate using arrow keys and Enter to modify settings critical for unattended kiosk operation.

These BIOS modifications ensure the kiosk automatically recovers from power failures, crashes, or unexpected shutdowns—essential for retail and public deployment scenarios.

1

Wake on Power Loss

Navigate to Advanced → Power Management. Set "Restore AC Power Loss" to "Power On". This ensures the NUC automatically restarts after power interruptions.

2

Watchdog Timer Configuration

Enable the hardware watchdog timer if available. Set it to automatically restart the system if Windows becomes unresponsive for more than 2-3 minutes.

3

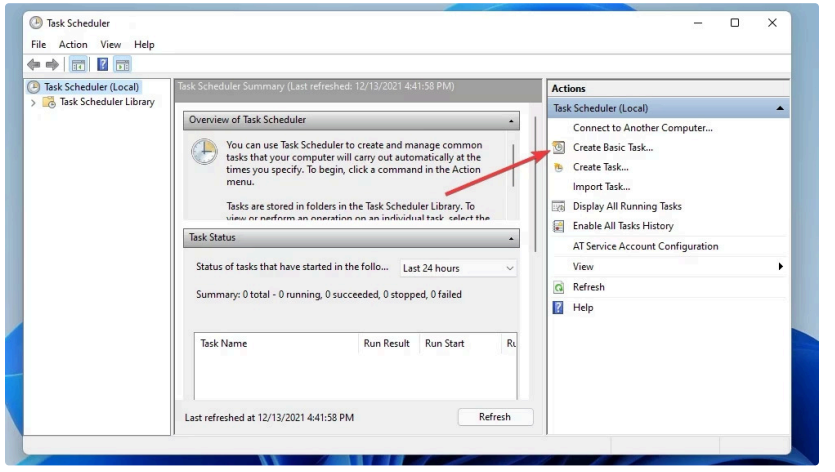
Power Performance Settings

Adjust CPU power limits if thermal throttling occurs. Navigate to Advanced → CPU Configuration and modify "Long Duration Power Limit" and "Short Duration Power Limit" for sustained performance under continuous operation.

Configuring Display and Restart Schedules

Display Orientation

Adjust the display orientation via **Windows Settings** > **System** > **Display**. Under 'Scale & layout,' select 'Display orientation' to switch between Landscape or Portrait. This setting is essential for kiosks utilizing vertical screens to ensure correct content presentation.



Scheduled Restarts

Ensure kiosk reliability and timely updates by scheduling daily restarts. Use Windows 11 Pro's Task Scheduler to create a task that executes a restart command (e.g., `shutdown /r /t 0`) during off-peak hours, minimizing operational impact. Or use the Windows 11 task scheduler.

Find more here: **https://windowsreport.com/schedule-shutdown-windows-11/**

The touch screen should be set on activation on HDMI power.

Scheduling Windows 11 Updates and Restarts

Maintaining system health and applying security patches is vital for kiosk reliability. Scheduling updates and restarts during off-peak hours, typically at night, ensures minimal disruption to operations while keeping the NUC secure and performing optimally.

Define Active Hours

Configure 'Active hours' in Windows Settings (Settings > Update & Security > Windows Update > Change active hours) to prevent automatic restarts during your establishment's operating hours. This ensures the kiosk remains available when customers are present.

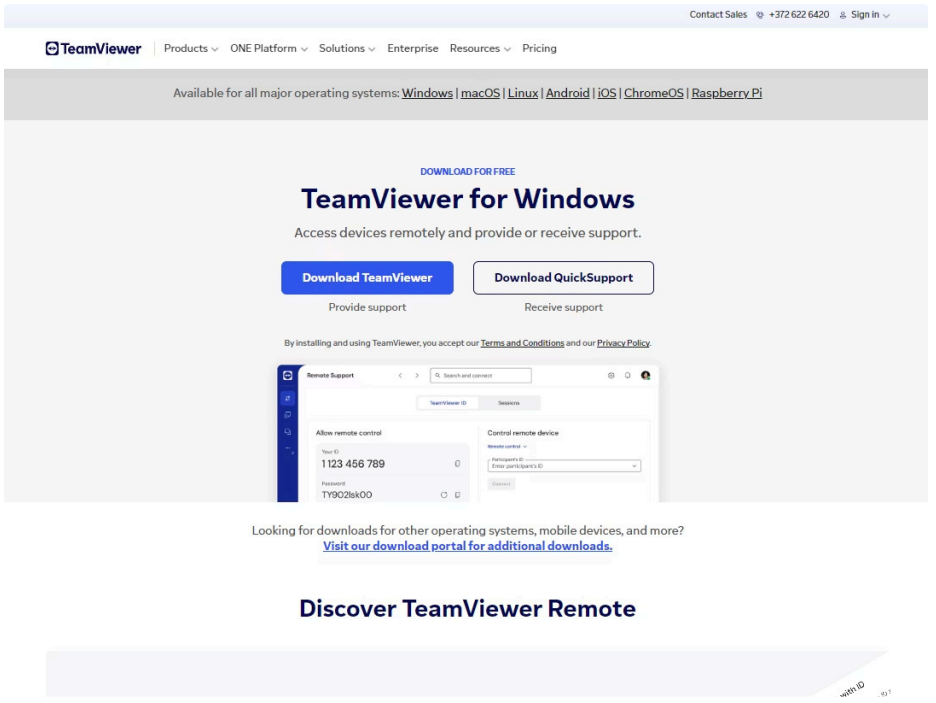
Set Update Download Schedule

Within Windows Update settings, specify when updates should be downloaded and installed. Choose a time when network usage is low and before the scheduled nightly restart to allow ample time for update preparation.

Verify Update Status

Periodically check the Windows Update history to confirm that updates are being successfully downloaded and installed. This proactive monitoring helps identify and resolve any update-related issues promptly.

Installing TeamViewer for Remote Access



Enable Remote Monitoring

TeamViewer provides essential remote access capabilities, allowing for convenient monitoring, maintenance, and troubleshooting of your kiosk without needing physical presence. This is crucial for managing multiple deployments efficiently.

1. **Download TeamViewer:** Visit the official TeamViewer website and download the client for Windows.
2. **Run Installer:** Execute the downloaded file. When prompted, select "Installation" and "Show advanced settings" if you need to configure specific options, otherwise proceed with default.
3. **Set Unattended Access:** During or after installation, configure "Unattended access" by assigning a personal password. Note down the TeamViewer ID and password for future remote connections.

Physical Cable Connections

Before powering on, ensure all necessary peripherals are securely connected to the ASUS NUC. Correct cabling is vital for stable operation and optimal kiosk performance, especially for touchscreens and network connectivity.

- **Power:** Connect the AC adapter to the NUC and a reliable power source. Ensure the adapter is correctly rated for the NUC model.
- **Display:** Use an HDMI or DisplayPort cable to connect to your monitor. For touch monitors, ensure the USB cable for touch functionality is also connected to a USB port on the NUC.
- **Network:** For wired connectivity, plug an Ethernet cable into the NUC. If using Wi-Fi, ensure any external antennae are securely attached for optimal signal.
- **Peripherals:** Connect any required USB devices such as barcode scanners, card readers, or external keyboards/mice. Use appropriate USB 3.0/3.1 ports for high-speed devices.
- **Installing 3D Wayfinder software**: follow the guide here: https://3dwayfinder.com/documentation/tutorials/setup-3d-wayfinder-kiosk-app/

Configuring Touch Monitor Settings

Touch monitor configuration varies by manufacturer. Two common brands in kiosk deployments—Iiyama and Swedx—require specific HDMI and EDID settings for optimal Windows compatibility.

Iiyama Display Configuration

Iiyama touch monitors may require specific HDMI version settings. Access the monitor's OSD (On-Screen Display) menu and navigate to HDMI settings. Select the appropriate HDMI version:

- **HDMI 1.3:** Legacy systems, basic 1080p
- **HDMI 1.4:** Standard for most kiosks, supports 1080p at 60Hz
- **HDMI 2.0:** Required for 4K displays or higher refresh rates

Test touch functionality after each change. Most kiosk deployments work optimally with HDMI 1.4 or 2.0.

Swedx EDID Configuration

Swedx displays occasionally require EDID (Extended Display Identification Data) modifications to properly communicate with Windows systems. This ensures correct resolution and refresh rate detection.

Access the display's advanced settings menu (consult manufacturer documentation for specific button combinations). Enable EDID emulation or select "PC Mode" if available, or you can test which option works. This forces the display to present itself as a standard computer monitor rather than a consumer television.

If touch input fails to respond, verify the touch driver installation in Device Manager and ensure the USB connection is secure.

Final System Verification

Driver Verification

Open Device Manager (devmgmt.msc) and verify no yellow warning triangles appear. All hardware should be properly recognized with correct drivers installed. Pay special attention to display adapters, USB controllers, and human interface devices.

Touch Calibration

Test touch functionality across all screen areas. Usually touch well calibrated but if not run Windows touch calibration (search "Calibrate" in Settings) if accuracy issues occur. Verify multi-touch gestures work correctly for your kiosk application requirements.

Power Cycle Testing

Perform multiple power cycle tests to confirm auto-restart functionality. Disconnect power for 10 seconds, reconnect, and verify the NUC boots automatically without intervention. Test both graceful shutdowns and unexpected power loss scenarios.

Your ASUS NUC Kiosk is Ready

Congratulations! Your ASUS NUC is now properly configured for reliable kiosk deployment. The system will automatically recover from power failures, maintain stable operation, and provide responsive touch interaction for end users.

Next Steps

Install your kiosk application software, configure Windows to launch it automatically on startup, and implement appropriate security lockdown measures to prevent unauthorised access.

Maintenance Recommendations

Schedule monthly Windows updates during off-peak hours, regularly clean dust from NUC ventilation ports, and maintain documentation of your specific configuration for future deployments.