How To Maintain MCM Boot Images

Version History

Version	Date	Author	Change Description
1.0	11/7/2025	Mark Skiba	Initial document

Purpose

The purpose of this document is to define the standardized process for maintaining Microsoft Configuration Manager (MCM) boot images in alignment with current ADK and WinPE versions. This ensures all operating system deployments (OSD) remain fully supported, secure, and compatible with the latest hardware, drivers, and Windows 11 releases. Regular maintenance of boot images reduces deployment failures, simplifies troubleshooting, and maintains consistency across all distribution points and task sequences.

Scope

This procedure applies to all Configuration Manager environments managed by the MCM team and assumes that the latest ADK and WinPE version (10.1.26100.2454), current at the time of this document's publication, are properly installed.

It includes:

- Backing up existing boot images prior to modification.
- Creating, configuring, and distributing new boot images aligned with the current ADK/WinPE baseline.
- Injecting required drivers and optional components.
- Updating task sequences and PXE configurations to reference the latest boot images.
- Validating successful deployment and maintaining version documentation.

This document does **not** cover:

- Non-MCM-managed environments.
- Windows Deployment Services (WDS) or MDT-only imaging processes not integrated with Configuration Manager.

Step-by-Step Instructions

STEP 1 – Back up the current boot image

1. In Console → Software Library → Operating Systems → Boot Images, right-click your current image → Properties → Data Source to see where the current image is being stored.
2. Make a backup copy of the current boot image folder (e.g. \\DPSERVER01\packagesource$\OSD\Boot Images\PROD\2025.11.07)
3. (Optional) Add it back into ConfigMgr as **Boot image (x64) – OLD – 2025-11-07** for rollback reference.

STEP 2 – Create a new boot image from ADK 10.1.26100.2454

1. In the console:
   Software Library → Operating Systems → Boot Images → Add Boot Image.
2. Copy the winpe.wim from the ADK source on your primary site server (PRISRV01) to the package source location on your distribution server (DPSERVER01).
3. Rename the copied winpe.wim to boot.wim.
   - Use a dated folder structure for version control:
     \\DPSERVER01\packagesource$\OSD\Boot Images\PROD\YYYY.MM.DD\boot.wim
   - Always specify the **UNC path** during import, not a local path.
4. Name it clearly:
   - Boot image (x64) – WinPE 25H2 (10.1.26100.2454)
5. Add a short description:
   - Based on Windows 11 25H2 ADK. Created for ConfigMgr 2503.

STEP 3 – Configure the new boot image

A. General tab

- Confirm version reads 10.0.26100.x

B. Customization tab

- Enable Command support (F8).
- Set Scratch space to 512 MB.
- (Optional) Enable Prestart command if used.
- Add Customization in the Customization tab
  - Note: If the Customization tab does not include branding fields, branding can be added manually by mounting the WIM and creating Windows\System32\oobe\info\branding.ini with the following content:
    - [Branding]
    - OrganizationName=OrganizationNameHere
  - To include a logo, add logo.bmp (100x100, 256-color) in the same folder.
- After any manual change, unmount and commit the WIM, then Update Distribution Points.

C. Optional Components tab

Click Add → Windows PE optional components → WinPE x64 and select:

Component	Purpose
WinPE-WMI	Required for SCCM OSD
WinPE-Scripting	Required for TS engine
WinPE-PowerShell	For PS scripts during OSD
WinPE-DismCmdlets	For DISM operations
WinPE-NetFx	Needed by some advanced scripts
WinPE-HTA	If you use HTA UIs

Note: With ADK 26100, these components are under C:\Program Files (x86)\Windows Kits\10\Assessment and Deployment Kit\Windows Preinstallation Environment\amd64\WinPE_OCs.

D. Drivers tab

Add only required storage and network drivers:

- NIC drivers for any physical models that fail PXE.
- Skip chipset/video/etc.

STEP 4 – Distribute and update

1. Right-click new boot image → Distribute Content → select all DPs.
2. Wait until content status = Success (green).
3. Then right-click again → Update Distribution Points to regenerate hashes.
4. If PXE will be used, open **Boot Image → Properties → Data Source tab**, and check **"Deploy this boot image from the PXE-enabled distribution point."**

STEP 5 – Switch Task Sequences to the new image

1. Go to Task Sequences, right-click → Edit.
2. In the Advanced tab (or Boot Image field), select your new Boot image (x64) – WinPE 25H2.
3. Save.

STEP 6 – Refresh PXE

If you PXE boot:

1. Ensure at least one task sequence using the new boot image is **deployed as "Available"** to the test collection; otherwise PXE will not offer it.
2. On the PXE DP, open DP Properties → PXE tab.
3. Uncheck *Enable PXE support*, click Apply.
4. Re-check *Enable PXE support*, click Apply again.
   (This rebuilds the PXE boot files using the new ADK binaries.)
5. Restart Windows Deployment Services (WDS) on DPSERVER01 after enabling PXE for the new boot image.
6. Verify PXE boot files appear under <WDSDRV>:\RemoteInstall\SMSImages\<PackageID>

STEP 7 – Test

1. PXE boot a VM or USB boot with the new image.
2. Confirm:
   - F8 opens a command prompt.
   - ver shows 10.0.26100.x.
   - Task sequence starts successfully.
   - Network works (IP assigned).

If PXE displays "A boot image was not found," verify:

- Boot image is distributed successfully to the PXE DP.
- Boot image is deployed from PXE-enabled DP (checkbox enabled).
- Architecture matches (x64 for UEFI).
- Task Sequence is deployed as **Available**.
- WDS service is running.
- Restart WDS if PXE content was recently updated: Restart-Service WDS

STEP 8 – Clean up

- After a successful rollout:
    - Remove the old boot image from task sequences.
    - Optionally delete old content from DPs (keep your backup copy).
    - Document:
        - ADK version
        - Boot image version
        - Optional components
        - Drivers
        - Scratch space

Verification

1. Distribution Status
    - In the Configuration Manager console, navigate to *Monitoring → Distribution Status → Content Status*.
    - Confirm the new or updated boot image shows a Success (green) state on all Distribution Points.
2. Boot Image Properties
    - Verify the Version field reflects the current ADK/WinPE build (e.g., *10.0.26100.x*).
    - Confirm Scratch Space and Command Support (F8) settings match standards.
3. Task Sequence Validation
    - Open each production Task Sequence and confirm it references the new boot image.
    - Save and close each Task Sequence to ensure the reference is committed.
4. PXE/Media Test
    - PXE-boot or use USB media on a lab system to validate:
        - Network drivers load correctly (IP assigned).
        - Command prompt (F8) functions as expected.
        - The Task Sequence initialization completes successfully.

Troubleshooting

Symptom	Likely Cause	Resolution
Task Sequence fails to apply image (0x80070002)	Incorrect or outdated boot image version; missing content on DP	Update the boot image to match the current ADK, redistribute content, and recheck DP status.
Error 0x8007000E during Apply OS	Insufficient WinPE memory or scratch space	Increase VM/RAM allocation to ≥6 GB and set scratch space to 512–1024 MB.
PXE boot fails after ADK upgrade	Stale PXE boot files	Disable/re-enable PXE on the DP and restart WDS.
WinPE lacks PowerShell/WMI commands	Missing Optional Components	Re-mount the WIM or use the PowerShell import script to add WinPE-WMI, WinPE-Scripting, and WinPE-PowerShell.
Branding not visible during OSD	Branding file not injected or not distributed	Mount boot WIM → add branding.ini → commit → Update Distribution Points.

If deployment still fails, examine X:\Windows\Temp\SMSTSLog\smsts.log (during WinPE) or C:_SMSTaskSequence\Logs\Smstslog\smsts.log (after reboot) for detailed task sequence errors.

References

- **Microsoft Docs:**
  - Customize Windows PE (WinPE)
  - Manage boot images in Configuration Manager
  - Windows ADK for Windows 11, version 25H2 (10.1.26100.2454)