// SCCM DEPLOYMENT HUB

PXE Troubleshooting Cheatsheet

For SCCM Windows 11 deployments on HP EliteBook, ProBook, and ZBook G8 through G11. When PXE does nothing on screen, the problem is almost always network — not SCCM. This sheet walks the network path so a technician can isolate the failure in under five minutes.

// 01 — FAILURE MODES

When PXE does nothing — the top 7 reasons

01 **No DHCP relay (IP helper) on the client VLAN**
Laptop and DHCP/SCCM server are on different subnets. Without ip helper-address on the client VLAN interface, the DHCP DISCOVER never reaches the server.

02 **DHCP options 66/67 still set from a legacy WDS server**
Options 66/67 hard-pin clients to one PXE server. Remove them when moving to SCCM PXE — use IP helpers instead.

03 **UEFI vs BIOS boot file mismatch**
BIOS clients need wdsmgfw.com / pxeboot.com, UEFI clients need wdsmgfw.efi. SCCM serves both — confirm the client's firmware is set correctly.

04 **Secure Boot blocking the WinPE boot image**
The SCCM boot image must be signed. Update and redistribute. Disable Secure Boot only as a temporary diagnostic — the real fix is a signed image.

05 **Switch port has spanning-tree convergence delay**
STP holds the port ~30 seconds before forwarding. The laptop times out on PXE before STP settles. Enable PortFast (Cisco) or Edge Port (Aruba / HPE) on access ports.

06 **PXE responder service not started on the Distribution Point**
Confirm Windows Deployment Services and ConfigMgr PXE Responder services are running on the DP. Restart after enabling PXE.

07 **Firewall blocks UDP 67/68/69/4011 between subnets**
DHCP (67/68), TFTP (69), and ProxyDHCP (4011) must traverse from the client VLAN to the DP. Open these UDP ports on any internal firewall.

// 02 — DHCP RELAY

IP helper config — the right approach for SCCM PXE

When the laptop, DHCP server, and SCCM DP live on different VLANs, configure DHCP relay on every client VLAN that needs to image. Two helpers: one to your DHCP server, one to the SCCM Distribution Point. **Do not** use DHCP options 66/67 with SCCM.

```
! Cisco IOS — client VLAN interface
interface Vlan20
 description Workstation_VLAN
 ip address 10.20.0.1 255.255.255.0
```

```
 ip helper-address 10.10.5.10    ! DHCP server
 ip helper-address 10.10.5.20    ! SCCM Distribution Point (PXE)
!
! Aruba / HPE ArubaOS-CX equivalent
interface vlan 20
 ip helper-address 10.10.5.10
 ip helper-address 10.10.5.20
```

// 03 — FIREWALL

Ports PXE actually needs

If clients and the SCCM DP are separated by an internal firewall, open these from the client VLAN to the DP. Without them the laptop sees DHCP but never finishes the boot image transfer.

Port	Proto	Purpose
67 / 68	UDP	DHCP DISCOVER / OFFER
69	UDP	TFTP — boot image download
4011	UDP	ProxyDHCP (PXE binding)
80 / 443	TCP	HTTP(S) — content + WinPE peer cache
445	TCP	SMB — fallback content source
8530 / 8531	TCP	WSUS / SCCM software update point
10123	TCP	Client notification (CMG / push)

// 04 — SWITCH

Port settings for imaging

Enable PortFast (Cisco) or Edge Port (Aruba / HPE) on every access port a tech will image from — STP convergence kills PXE.

Disable 802.1X on imaging ports, or pre-stage the laptop's MAC in NAC for guest VLAN bypass during deployment.

Confirm the port is in the same VLAN that has the DHCP IP-helpers you configured.

Auto-negotiate speed and duplex — most HP G8+ NICs are 1 Gbps; older docks may renegotiate to 100 Mbps and break PXE timing.

If imaging through a dock: confirm the dock passes through PXE (some Type-C docks block UEFI PXE on first boot).

// 05 — FIRMWARE

HP G8+ BIOS checklist

F10 BIOS → Advanced → Boot Options: UEFI Boot enabled, Legacy disabled.

Network Boot enabled. IPv4 PXE enabled (IPv6 PXE off unless your environment supports it).

Secure Boot: keep ON. The SCCM boot image must be signed. Disabling Secure Boot to make PXE work means the boot image is the real problem.

Intel VMD (G10 / G11): if enabled, inject the Intel RST VMD driver into the WinPE boot image, or NVMe is invisible.

Wake-on-LAN: enable if SCCM should wake devices for overnight imaging.

BIOS password: pre-set so the technician does not need to clear it after deployment.

// 06 — DIAGNOSTIC LADDER

5-minute check when PXE does nothing

01	**On the laptop**	Press F12 (or F9 on HP) at boot. If you see no 'Start PXE over IPv4' line, the firmware is set to Legacy or Network Boot is disabled. Fix in F10 BIOS.
02	**On the switch**	Confirm the access port is up and assigned to the correct imaging VLAN. Run 'show interfaces status' and 'show vlan brief'. Verify PortFast / Edge is on.
03	**On the DHCP server**	Watch the lease pool while the laptop boots. If no DISCOVER arrives, the IP helper is missing or wrong. If a lease is issued but no boot file is offered, the DP-side helper is missing.
04	**On the SCCM DP**	Get-Service WDSServer, SccmExec should both be Running. Check C:\SMS_DP$\sms\logs\smspxe.log — every PXE request shows up here. No entries = traffic never arrived.
05	**End-to-end**	From a server inside the client VLAN run Test-NetConnection -ComputerName <DP> -Port 4011, and Test-NetConnection 445. If TCP / UDP probes fail, the firewall rule is missing.

// 07 — LOGS

Paths you should know by heart

Log path	What it tells you
`C:\SMS_DP$\sms\logs\smspxe.log`	Every PXE request the DP saw — MAC, ARCH, served boot file.
`%TEMP%\smsts.log`	Task sequence engine — runs inside WinPE during imaging.
`X:\Windows\Temp\smsts.log`	Same as above, while still in WinPE before disk is laid down.
`C:\Windows\CCM\Logs\smsts.log`	After OSD completes — final TS engine entries.
`C:\Windows\CCM\Logs\execmgr.log`	Why an SCCM-deployed application failed on the imaged box.

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