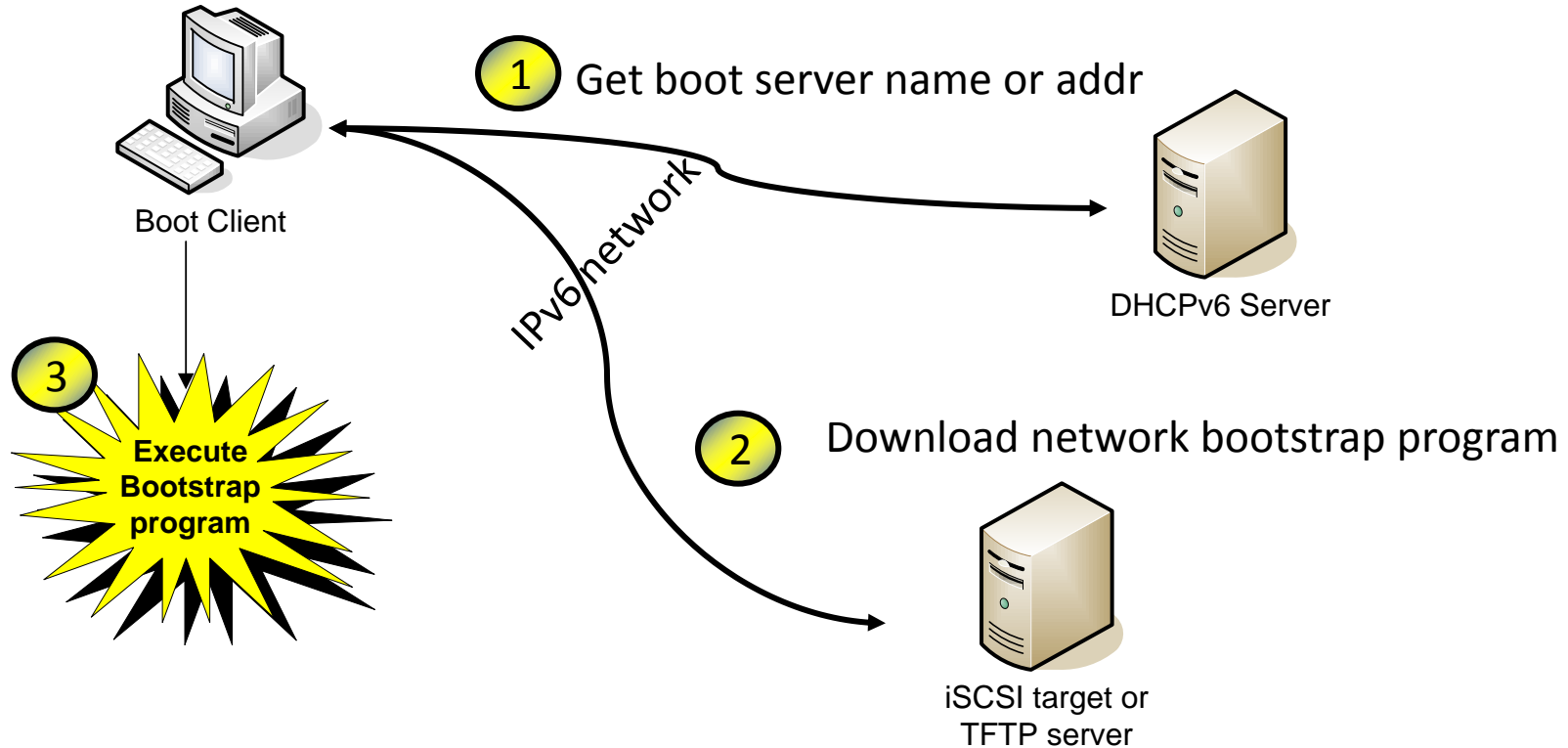


IPv6 Remote Boot Requirements From UEFI Forum

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Remote Boot Mechanism



UEFI Forum

- UEFI Forum (uefi.org) defining requirements and APIs between drivers/BIOS
 - UEFI = “Unified Extensible Firmware Interface”
- Goals:
 - Make iSCSI and PXE network boot support IPv6
 - Maintain feature parity with IPv4
 - Leave protocol work to the IETF (hence this request)

iSCSI Boot Needs

- If the boot server information is not pre-provisioned on the boot client, iSCSI boot needs to get configuration info through a DHCP-based exchange

	IPv4	IPv6
Client IP	√	√
Routing Info (gateway, subnet)	√	√
Boot server (IP address of the iSCSI target)	√ (siaddr)	X (GAP!)
DNS servers	√ (Option 6)	√ (Option 23)
iSCSI target name	√ (Option 17 [RFC4173])	X (GAP!)
iSCSI Initiator capability info (LUN)		

- RFC4173: “The Root Path option is not currently defined for DHCPv6; if the option is defined for DHCPv6 in the future, the use of the option as defined for iSCSI boot will apply.”

PXE Boot Needs

	IPv4	IPv6
Client IP	√	√
Routing Info (gateway, subnet)	√	√
Boot server IP	√ ('siaddr')	X (GAP!)
TFTP server name	√ ('sname' or Option 66)	X (GAP!)
Boot file name	√ ('file' or Option 67)	X (GAP!)
Vendor class identifier	√ (Option 60)	√ (Option 16)
Vendor-specific information	√ (Option 43)	√ (Option 17)
Client System Architecture Type	√ (Option 93)	X (unless encap in 16)
Client Network Interface Identifier	√ (Option 94)	X (GAP!)
Client Machine Identifier	√ (Option 97)	X (GAP!)

- RFC4578 defines PXE options for DHCPv4 but not DHCPv6
- RFC3315 allows opaque data in Vendor Class option, but presumably up to each vendor to define

Client System Architecture Types

- RFC 4578 defines values used in Option 93
- Values are not currently IANA-maintained

Type	Architecture Name
0	Intel x86PC
1	NEC/PC98
2	EFI Itanium
3	DEC Alpha
4	Arc x86
5	Intel Lean Client
6	EFI IA32 <- used by many vendors for legacy boot of x64 machine
7	EFI BC <- used by many vendors for EFI x64 boot
8	EFI Xscale
9	EFI x86-64