

## NISTv6-r1 Capabilities Table (NCT) - June 2019

Reference	Section	Title	Capabilities	Host	Router	Other	Flag
<b>IPv6-only Capabilities</b>							
<a href="#">SP500-267Ar1</a>	4.1	Install product over IPv6-only network	IPv6-Only				N
<a href="#">SP500-267Ar1</a>	4.1	Product user Interface fully supports IPv6	IPv6-Only				N
<a href="#">SP500-267Ar1</a>	4.1	Manage product over IPv6-only network	IPv6-Only				N
<a href="#">SP500-267Ar1</a>	4.1	Update product over IPv6-only network	IPv6-Only				N
<b>Basic Capabilities</b>							
<a href="#">RFC8200</a>		IPv6 Specification	Core	M	M		U
<a href="#">RFC4443</a>		ICMPv6	Core	M	M		
<a href="#">RFC8201</a>		Path MTU Discovery for IPv6	Core	M	M		U
<a href="#">RFC4861</a>		<b>Neighbor Discovery for IPv6</b>	Core	M	M		
	8	Redirect	Core	M	M		
<a href="#">RFC6437</a>		IPv6 Flow Label Specification	Core	M	M		N
<a href="#">RFC5942</a>		IPv6 Subnet Model: The Relationship between Links and Subnet Prefixes	Core	M	M		N
<a href="#">RFC6980</a>		Security Implications of IPv6 Fragmentation with IPv6 Neighbor	Core	M	M		N
<a href="#">RFC7608</a>		IPv6 Prefix Length Recommendation for Forwarding	Core		M		N
<a href="#">RFC4191</a>		Default Router Preference	Core	M	M		N
<a href="#">RFC4884</a>		Extended ICMP for Multi-Part Messages	Extended-ICMP				
<a href="#">RFC4821</a>		Packetization Layer Path MTU Discovery	PLPMTUD				N
<a href="#">RFC4429</a>		Optimistic Duplicate Address Detection (DAD) for IPv6	ND-Ext				N
<a href="#">RFC7527</a>		Enhanced Duplicate Address Detection	ND-Ext				N
<a href="#">RFC8028</a>		First-Hop Router Selection by Host in a Multi-Prefix Network	ND-Ext				N
<a href="#">RFC7048</a>		Neighbor Unreachability Detection is Too Impatient	ND-WL				N
<a href="#">RFC7559</a>		Packet-Loss Resiliency for Router Solicitations	ND-WL				N
<a href="#">RFC8319</a>		Support for Adjustable Maximum Router Lifetimes per Link	ND-WL				N
<a href="#">RFC3971</a>		Secure Neighbor Discovery	SEND				
<a href="#">RFC6494</a>		Certificate Profile and Certificate Management for SEcure Neighbor	SEND				
<a href="#">RFC6495</a>		Subject Key Identifier (SKI) SEcure Neighbor Discovery (SEND) Name	SEND				
<a href="#">RFC4862</a>		<b>IPv6 Stateless Address Autoconfig</b>	SLAAC	M	M		
	5.3	Creation of Link Local Addresses	Core	M	M		
	5.4	Duplicate Address Detection	Core	M	M		
	5.5	Creation of Global Addresses	SLAAC	M	M		
<a href="#">RFC8106</a>		IPv6 Router Advertisement Options for DNS Configuration	SLAAC	M	M		N
<a href="#">RFC7217</a>		Generating Semantically Opaque Interface Identifiers with SLAAC	SLAAC	M			N
<a href="#">RFC4941</a>		Privacy Extensions for IPv6 SLAAC	PrivAddr				
<a href="#">RFC8415</a>		DHCPv6 Stateless (Two Message Exchange)	DHCP-Stateless				U
<a href="#">RFC8415</a>		Dynamic Host Config Protocol for IPv6	DHCP-Client				U
<a href="#">RFC3646</a>		DNS Configuration options for DHCPv6	DHCP-Client				
<a href="#">RFC3319</a>		Dynamic Host Configuration Protocol (DHCPv6) Options for Session	DHCP-Client-Ext				N
<a href="#">RFC8415</a>		DHCPv6 Prefix Delegation for Client	DHCP-Prefix				U
<a href="#">RFC6603</a>		Prefix Exclude Option for DHCPv6-based Prefix Delegation	DHCP-Prefix-Ext				N
<a href="#">RFC6282</a>		Compression Format for IPv6 over IEEE 802.15.4-Based Networks	6Lo				N
<a href="#">RFC6775</a>		Neighbor Discovery Optimization for 6LoWPANs	6Lo				N
<a href="#">RFC8305</a>		Happy Eyeballs Version 2: Better Connectivity Using Concurrency	Happy-Eyeballs				N
<b>Addressing Capabilities</b>							
<a href="#">RFC4291</a>		IPv6 Addressing Architecture	Addr-Arch	M	M		
<a href="#">RFC4007</a>		IPv6 Scope Addressing Architecture	Addr-Arch	M	M		
<a href="#">RFC4193</a>		Unique Local IPv6 Unicast Addresses	Addr-Arch	M	M		
<a href="#">RFC3879</a>		Deprecating Site Local Addresses	Addr-Arch	M	M		
<a href="#">RFC2526</a>		Reserved IPv6 Subnet Anycast Addresses	Addr-Arch	M	M		
<a href="#">RFC6724</a>		Default Address Selection for IPv6	Addr-Arch	M	M		U
<a href="#">RFC5952</a>		A Recommendation for IPv6 Address Text Representation	Addr-Arch	M	M		N
<a href="#">RFC7136</a>		Significance of IPv6 Interface Identifiers	Addr-Arch	M	M		N
<a href="#">RFC6164</a>		Using 127-Bit IPv6 Prefixes on Inter-Router Links	Addr-Arch		M		N
<a href="#">RFC7346</a>		IPv6 Multicast Address Scopes	Addr-Arch	M	M		N
<a href="#">RFC7078</a>		Distributing Address Selection Policy Using DHCPv6	Addr-Arch & DHCP-Client				U
<a href="#">RFC3972</a>		Cryptographically Generated Addresses (CGA)	CGA				
<a href="#">RFC4581</a>		(CGA) Extension Field Format	CGA				
<a href="#">RFC4982</a>		(CGA) Support for Multiple Hash Algorithms.	CGA				
<b>Network Support Capabilities</b>							
<a href="#">RFC3596</a>		DNS Extension for IPv6	DNS-Client				
<a href="#">RFC2671</a>		DNS Mechanisms for DNS (EDNS0)	DNS-Client				
<a href="#">RFC3226</a>		DNSSEC and IPv6 DNS MSG Size Reqs	DNS-Client				
<a href="#">RFC3986</a>		URI: Generic Syntax	URI				

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<a href="#">RFC6874</a>		Representing IPv6 Zone Identifiers in Address Literals and Uniform	URI				
<a href="#">RFC5905</a>		NTP Client Functions	NTP-Client				N
<a href="#">RFC5905</a>		NTP Server Functions	NTP-Server				N
<a href="#">RFC3596</a>		DNS Server Functions	DNS-Server				
<a href="#">RFC8415</a>		DHCPv6 Server Functions	DHCP-Server				U
<a href="#">RFC3646</a>		DNS Configuration options for DHCPv6	DHCP-Server				U
<a href="#">RFC5460</a>		DHCPv6 Bulk LeaseQuery	DHCP-Server-Ext				N
<a href="#">RFC3319</a>		Dynamic Host Configuration Protocol (DHCPv6) Options for Session	DHCP-Server-Ext				N
<a href="#">RFC8415</a>		DHCPv6 Relay Agent Functions	DHCP-Relay				N
		<b>Routing Capabilities</b>					
<a href="#">RFC5340</a>		OSPF for IPv6	OSPF				U
<a href="#">RFC5613</a>		OSPF Link-Local Signaling	OSPF				N
<a href="#">RFC4552</a>		Authentication/Confidentiality for OSPFv3	OSPF-IPsec				
<a href="#">RFC7166</a>		Supporting Authentication Trailer for OSPFv3	OSPF-Auth				N
<a href="#">RFC5838</a>		Support of Address Families in OSPFv3	OSPF-Ext				N
<a href="#">RFC6845</a>		OSPF Hybrid Broadcast and Point-to-Multipoint Interface Type	OSPF-Ext				N
<a href="#">RFC6860</a>		Hiding Transit-Only Networks in OSPF	OSPF-Ext				N
<a href="#">RFC8362</a>		OSPFv3 Link State Advertisement (LSA) Extensibility	OSPF-Ext				N
<a href="#">RFC5185</a>		OSPF Multi-Area Adjacency	OSPF-Ext				N
<a href="#">RFC7949</a>		OSPFv3 over IPv4 for IPv6 Transition	OSPF-Trans				N
<a href="#">RFC5187</a>		OSPFv3 Graceful Restart	OSPF-Graceful				N
<a href="#">RFC8379</a>		OSPFv3 Graceful Link Shutdown	OSPF-Graceful				N
<a href="#">RFC5308</a>		Routing IPv6 with IS-IS	IS-IS				N
<a href="#">RFC5304</a>		IS-IS for Cryptographic Auth	IS-IS-Auth				N
<a href="#">RFC5310</a>		IS-IS Generic Cryptographic Auth	IS-IS-Auth				N
<a href="#">RFC7775</a>		IS-IS Route Preference for Extended IP and IPv6 Reachability	IS-IS-Ext				N
<a href="#">RFC6232</a>		Purge Originator Identification TLV for IS-IS	IS-IS-Ext				N
<a href="#">RFC6233</a>		IS-IS Registry Extension for Purges	IS-IS-Ext				N
<a href="#">RFC5301</a>		Dynamic Hostname Exchange Mechanism for IS-IS	IS-IS-Ext				N
<a href="#">RFC5120</a>		M-ISIS: Multi Topology (MT) Routing in Intermediate System to	IS-IS-MT				N
<a href="#">RFC4271</a>		BGP-4	BGP				
<a href="#">RFC4760</a>		BGP Multi-Protocol Extensions	BGP				
<a href="#">RFC2545</a>		BGP Multi-Protocol Extensions for IPv6 IDR	BGP				
<a href="#">RFC6286</a>		Autonomous-System-Wide Unique BGP Identifier for BGP-4	BGP				N
<a href="#">RFC6608</a>		SubCodes for BGP Finite State Machine Error	BGP				N
<a href="#">RFC6793</a>		BGP Support for Four-Octet Autonomous System (AS) Number Space	BGP				N
<a href="#">RFC7606</a>		Revised Error Handling for BGP UPDATE Messages	BGP				N
<a href="#">RFC7607</a>		Codification of AS 0 Processing	BGP				N
<a href="#">RFC7705</a>		Autonomous System Migration Mechanisms and Their Effects on the	BGP				N
<a href="#">RFC8212</a>		Default External BGP (EBGP) Route Propagation Behavior without	BGP				N
<a href="#">RFC5575</a>		Dissemination of Flow Specification Rules	BGP-FlowSpec				N
<a href="#">RFC7674</a>		Clarification of the Flowspec Redirect Extended Community	BGP-FlowSpec				N
<a href="#">RFC6811</a>		BGP Prefix Origin Validation	BGP-OV				N
<a href="#">RFC8481</a>		Clarifications to BGP Origin Validation Based on Resource Public Key	BGP-OV				N
<a href="#">RFC8097</a>		BGP Prefix Origin Validation State Extended Community	BGP-OV				N
<a href="#">RFC8210</a>		The Resource Public Key Infrastructure (RPKI) to Router Protocol	BGP-OV				N
<a href="#">RFC4761</a>		Virtual Private LAN Service (VPLS) Using BGP for Auto-Discovery and	BGP-VPLS				N
<a href="#">RFC7432</a>		BGP MPLS-Based Ethernet VPN	BGP-EVPN				N
<a href="#">RFC4659</a>		BGP-MPLS IP Virtual Private Network (VPN) Extension for IPv6 VPN	BGP-6VPE				N
<a href="#">RFC6565</a>		OSPFv3 as a Provider Edge to Customer Edge (PE-CE) Routing Protocol	BGP-6VPE				N
<a href="#">RFC7084</a>		Core Requirements for IPv6 Customer Edge Routers	CE-Router				N
	4.5	Ingress Filtering (BCP38)	CE-Router				N
<a href="#">RFC6092</a>		Recommended Simple Security Capabilities in Customer Premises	CE-Router				N
<a href="#">RFC5798</a>		Virtual Router Redundancy Protocol (VRRP) Version 3 for IPv4 and IPv6	VRRP				N
		<b>Security Capabilities</b>					
<a href="#">RFC4301</a>		Security Architecture for the IP	IPsec				
<a href="#">RFC4301</a>		IPsec - Security Gateway Functions	IPsec-VPN				
<a href="#">RFC4303</a>		Encapsulating Security Payload (ESP)	IPsec				
<a href="#">RFC4303</a>		Encapsulating Security Payload (ESP)	IPsec-VPN				
<a href="#">RFC7296</a>		Internet Key Exchange Protocol Version 2 (IKEv2)	IPsec				U
<a href="#">RFC7296</a>		IKEv2 - Secure Gateway Functions	IPsec-VPN				U
<a href="#">RFC8221</a>		Cryptographic Algorithm Implementation Requirements and Usage	IPsec				U

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<a href="#">RFC8221</a>		Cryptographic Algorithm Implementation Requirements and Usage	IPsec-VPN				U
<a href="#">RFC8221</a>	5	AES-CCM with a 8 octet ICV	IPsec-IoT				N
<a href="#">RFC8221</a>	5	AES-CCM with a 8 octet ICV	IPsec-IoT-VPN				N
<a href="#">RFC8221</a>	5	CHACHA20_POLY1305	IPsec-CHACHA				N
<a href="#">RFC8221</a>	5	CHACHA20_POLY1305	IPsec-CHACHA-VPN				N
<a href="#">RFC8221</a>	6	AUTH_HMAC_SHA2_512_256	IPsec-SHA-512				N
<a href="#">RFC8221</a>	6	AUTH_HMAC_SHA2_512_256	IPsec-SHA-512-VPN				N
<a href="#">RFC8247</a>		Algorithm Implementation Requirements and Usage Guidance for the	IPsec				U
<a href="#">RFC8247</a>		Algorithm Implementation Requirements and Usage Guidance for the	IPsec-VPN				U
<a href="#">RFC8247</a>	2.1	AES-CCM with a 8 octet ICV	IPsec-IoT				N
<a href="#">RFC8247</a>	2.1	AES-CCM with a 8 octet ICV	IPsec-IoT-VPN				N
<a href="#">RFC8247</a>	2.1	CHACHA20_POLY1305	IPsec-CHACHA				N
<a href="#">RFC8247</a>	2.1	CHACHA20_POLY1305	IPsec-CHACHA-VPN				N
<a href="#">RFC8247</a>	2.2	PRF_HMAC_SHA2_512	IPsec-SHA-512				N
<a href="#">RFC8247</a>	2.2	PRF_HMAC_SHA2_512	IPsec-SHA-512-VPN				N
<a href="#">RFC8247</a>	2.3	AUTH_HMAC_SHA2_512_256	IPsec-SHA-512				N
<a href="#">RFC8247</a>	2.3	AUTH_HMAC_SHA2_512_256	IPsec-SHA-512-VPN				N
<a href="#">RFC8247</a>	2.2	PRF_AES128_XCBC	IPsec-IoT				N
<a href="#">RFC8247</a>	2.2	PRF_AES128_XCBC	IPsec-IoT-VPN				N
<a href="#">RFC8247</a>	2.3	AUTH_AES_XCBC_96	IPsec-IoT				N
<a href="#">RFC8247</a>	2.3	AUTH_AES_XCBC_96	IPsec-IoT-VPN				N
<a href="#">RFC5246</a>		TLS 1.2	TLS				N
<a href="#">RFC6176</a>		Prohibiting Secure Sockets Layer (SSL) Version 2.0	TLS				N
<a href="#">RFC7465</a>		Prohibiting RC4 Cipher Suites	TLS				N
<a href="#">RFC7568</a>		Deprecating Secure Sockets Layer Version 3.0	TLS				N
<a href="#">RFC5746</a>		Transport Layer Security (TLS) Renegotiation Indication Extension	TLS				N
<a href="#">RFC8446</a>		TLS 1.3	TLS-1.3				N
<b>Transition Mechanism Capabilities</b>							
<a href="#">RFC2473</a>		Generic Packet Tunneling in IPv6	Tunneling-IP				
<a href="#">RFC6936</a>		Applicability Statement for the Use of IPv6 UDP Datagrams with Zero	Tunneling-UDP				N
<a href="#">RFC7676</a>		IPv6 Support for Generic Routing Encapsulation (GRE)	GRE				N
<a href="#">RFC6333</a>		Dual-Stack Lite Broadband Deployments Following IPv4 Exhaustion	DS-Lite				N
<a href="#">RFC7596</a>		Lightweight 4over6: An Extension to the Dual-Stack Lite Arch.	LW4over6				N
<a href="#">RFC7597</a>		Mapping of Address and Port with Encapsulation (MAP-E)	MAP-E				N
<a href="#">RFC7599</a>		Mapping of Address and Port using Translation (MAP-T)	MAP-T				N
<a href="#">RFC6877</a>		464XLAT: Combination of Stateful and Stateless Translation	XLAT				N
<a href="#">RFC7915</a>		IP/ICMP Translation Algorithm	XLAT				N
<a href="#">RFC6146</a>		Stateful NAT64: Network Address and Protocol Translation	NAT64				N
<a href="#">RFC6147</a>		DNS64: DNS Extensions for Network Address Translation from IPv6	DNS64				N
<a href="#">RFC4798</a>		Connecting IPv6 islands over IPv4 MPLS (6PE)	6PE				
<a href="#">RFC6830</a>		The Locator/ID Separation Protocol (LISP)	LISP				N
<b>Network Management Capabilities</b>							
<a href="#">RFC3411</a>		SNMP v3 Management Framework	SNMP				
<a href="#">RFC3412</a>		SNMP Message Process and Dispatch	SNMP				
<a href="#">RFC3413</a>		SNMP Applications	SNMP				
<a href="#">RFC3414</a>		User-based Security Model for SNMPv3	SNMP				
<a href="#">RFC4293</a>		MIB for the IP	SNMP				
<a href="#">RFC4292</a>		MIB for IP Forwarding Table	SNMP				
<a href="#">RFC4022</a>		MIB for TCP	SNMP				
<a href="#">RFC4113</a>		MIB for UDP	SNMP				
<a href="#">RFC4087</a>		IP Tunnel for MIB	SNMP & Tunneling				
<a href="#">RFC4807</a>		MIB for IPsec Policy Database Configuration	SNMP & IPsec				
<a href="#">RFC3289</a>		MIB for DiffServ	SNMP & DiffServ				
<a href="#">RFC6241</a>		Network Configuration Protocol (NETCONF)	NETCONF				N
<a href="#">RFC8344</a>		A YANG Data Model for IP Management	NETCONF				N
<a href="#">RFC8343</a>		A YANG Data Model for Interface Management	NETCONF				N
<a href="#">RFC8348</a>		A YANG Data Model for Hardware Management	NETCONF				N
<a href="#">RFC8349</a>		A YANG Data Model for Routing Management	NETCONF				N
<b>Multicast Capabilities</b>							
<a href="#">RFC3810</a>		<b>MLD Version 2 for IPv6</b>	SSM				
<a href="#">RFC3810</a>		Ability to Join/Leave Group with ASM	Multicast	M	M		
<a href="#">RFC3306</a>		Unicast-Prefix-based IPv6 Mcast Addresses	Multicast	M	M		

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<a href="#">RFC3307</a>		Allocation Guidelines for IPv6 Mcast Addr	Multicast	M	M		
<a href="#">RFC7371</a>		Updates to the IPv6 Multicast Addressing Architecture	Multicast	M	M		N
<a href="#">RFC4607</a>		Source-Specific Multicast for IP	SSM				
<a href="#">RFC4604</a>		MLDv2 for Source Specific Multicast (SSM)	SSM				
<a href="#">RFC7761</a>		PIM-SM	PIM-SM				U
<a href="#">RFC4610</a>		Anycast-RP Using Protocol Independent Multicast (PIM)	PIM-SM-RP				N
<a href="#">RFC5059</a>		Bootstrap Router (BSR) Mechanism for Protocol Independent Multicast	PIM-SM-RP				N
<a href="#">RFC3956</a>		Embedding the Rendezvous Point (RP) Address	PIM-SM-RP				N
<a href="#">RFC5796</a>		Authentication and Confidentiality in Protocol Independent Multicast	PIM-SM-IPsec				N
<a href="#">RFC5015</a>		Bidirectional Protocol Independent Multicast (BIDIR-PIM)	PIM-SM-Bidir				N
<b>Quality of Service Capabilities</b>							
<a href="#">RFC2474</a>		Differentiated Services (DiffServ)	DiffServ				
<a href="#">RFC3140</a>		Per Hop Behavior (PHB) Identification Codes	DiffServ				
<a href="#">RFC2597</a>		Assured Forwarding PHB Group	DiffServ				
<a href="#">RFC3246</a>		An Expedited Forwarding PHB	DiffServ				
<a href="#">RFC3247</a>		Supplemental Info for the New EF PHB	DiffServ				
<a href="#">RFC3168</a>		Explicit Congestion Notification (ECN) to IP	ECN				
<b>Link Specific Capabilities</b>							
<a href="#">RFC2464</a>		IPv6 over Ethernet	Link=Ethernet				
<a href="#">RFC5072</a>		IPv6 over PPP	Link=PPP				
<a href="#">RFC7428</a>		IPv6 over ITU-T G.9959 Networks (Zwave)	Link=G.9959				N
<a href="#">RFC7668</a>		IPv6 over BLUETOOTH(R) Low Energy	Link=Bluetooth				N
<a href="#">RFC8163</a>		Transmission of IPv6 over Master-Slave/Token-Passing Networks	Link=Bacnet				N
<a href="#">RFC4944</a>		Transmission of IPv6 Packets over IEEE 802.15.4 Networks	Link=6LoWPAN				N
<b>Application and Services Capabilities</b>							
<a href="#">SP500-267Ar1</a>	4.12	Application/Service Specific Functions over IPv6-only network.	App-Serv=[TBD]				
<b>Switch Capabilities</b>							
<a href="#">RFC7610</a>		DHCPv6-Shield: Protecting against Rogue DHCPv6 Servers	DHCPv6-Guard				N
<a href="#">RFC6105</a>		IPv6 Router Advertisement Guard	RA-Guard				N
<a href="#">RFC7113</a>		Implementation Advice for IPv6 Router Advertisement Guard (RA-Guard)	RA-Guard				N
<a href="#">RFC4541</a>		Considerations for Internet Group Management Protocol (IGMP) and	MLD-Snooping				N
<b>Network Protection Capabilities</b>							
<a href="#">SP500-267Ar1</a>	4.14.3	Common Requirements for Network Protection Devices	FW or IDS or IPS or APFW				U
<a href="#">SP500-267Ar1</a>	4.14.4	Firewall Requirements	FW				U
<a href="#">SP500-267Ar1</a>	4.14.5.1	Intrusion Detection System	IDS				U
<a href="#">SP500-267Ar1</a>	4.14.5.2	Intrusion Prevention	IPS				U
<a href="#">SP500-267Ar1</a>	4.14.4.2	Application Firewall	APFW				U

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