

Control System Classifications(s): All Classifications; Compliance: Must [CID:3951]

Agencies not using IPv6, but which have deployed dual-stack network devices and ICT equipment that supports IPv6, MUST disable the IPv6 functionality, unless that functionality is required.

18.5.7.C.02. **Control System Classifications(s): All Classifications; Compliance: Must** [CID:3952]

Network security devices on IPv6 or dual-stack networks MUST be IPv6 capable.

Using IPv6

18.5.8.R.01. **Rationale**

The information security implications around the use of IPv6 are still largely unknown and un-tested. As many of the deployed network protection technologies, such as firewalls and IDSs, do not consistently support IPv6, agencies choosing to implement IPv6 face an increased risk of systems compromise.

18.5.8.R.02. **Rationale**

A number of tunnelling protocols have been developed to facilitate interoperability between IPv4 and IPv6. Disabling IPv6 tunnelling protocols when this functionality is not explicitly required will reduce the risk of bypassing network defences by means of encapsulating IPv6 data inside IPv4 packets.

18.5.8.R.03. **Rationale**

Stateless Address Autoconfiguration (SLAAC) is a method of stateless IP address configuration in IPv6. SLAAC reduces the ability to maintain complete logs of IP address assignment on the network. To avoid this constraint, stateless IP addressing SHOULD NOT be used.

18.5.8.C.01. **Control System Classifications(s): All Classifications; Compliance: Must** [CID:3960]

Agencies using IPv6 MUST conduct a security risk assessment on risks that could be introduced as a result of running a dual stack environment or transitioning completely to IPv6.

18.5.8.C.02. **Control System Classifications(s): All Classifications; Compliance: Must** [CID:3961]

Agencies implementing a dual stack or wholly IPv6 network or environment MUST re-accredit their networks.

18.5.8.C.03. **Control System Classifications(s): All Classifications; Compliance: Must** [CID:3962]

IPv6 tunnelling MUST be disabled on all network devices, unless explicitly required.

18.5.8.C.04. **Control System Classifications(s): All Classifications; Compliance: Should** [CID:3965]

Dynamically assigned IPv6 addresses SHOULD be configured with DHCPv6 in a stateful manner and with lease information logged and logs stored in a centralised logging facility.

New systems and networks

18.5.9.R.01. **Rationale**

Planning and accommodating changes in technology are an essential part of securing architectures and systems development.

18.5.9.C.01. **Control System Classifications(s): All Classifications; Compliance: Must** [CID:3971]

Any network defence elements and devices MUST be IPv6 aware.

18.5.9.C.02. **Control System Classifications(s): All Classifications; Compliance: Must** [CID:3972]

New network devices, including firewalls, IDS and IPS, MUST be IPv6 capable.

18.5.9.C.03. **Control System Classifications(s): All Classifications; Compliance: Should** [CID:3974]

Agencies SHOULD consider the use of DNSSEC.

Introducing IPv6 capable equipment to gateways

18.5.10.R.01. **Rationale**

Introducing IPv6 capable network devices into agency gateways can introduce a significant number of new security risks. Undergoing reaccreditation when new IPv6 equipment is introduced will ensure that any IPv6 functionality that is not intended to be used cannot be exploited by an attacker

before appropriate information security mechanisms have been put in place.

18.5.10.C.01. **Control System Classifications(s): All Classifications; Compliance: Must** [CID:4012]

IPv6 tunnelling MUST be blocked by network security devices at externally connected network boundaries.

18.5.10.C.02. **Control System Classifications(s): All Classifications; Compliance: Should** [CID:4014]

Agencies deploying IPv6 equipment in their gateway but not enabling the functionality SHOULD undergo reaccreditation.

Enabling IPv6 in gateways

18.5.11.R.01. **Rationale**

Once agencies have completed the transition to a dual-stack environment or completely to an IPv6 environment, reaccreditation will assist in ensuring that the associated information security mechanisms for IPv6 are working effectively.

18.5.11.C.01. **Control System Classifications(s): All Classifications; Compliance: Must** [CID:4018]

Agencies enabling a dual-stack environment or a wholly IPv6 environment in their gateways MUST reaccredit their gateway systems.