

Internet Protocol Version 6 (IPv6) Implementation Plan

Data and Information Technology
December 14, 2021

Review Dates

The Chief Data & Information Officer or his designee must approve any exception to this plan or related procedures.

Document Version Control

Version	Created By	Edited By	Date	Change Summary
1.0	Jerry Carter	Jerry Carter	12/14/2021	Initial version

APPROVAL

This policy is effective on the date signed below.

Jerry Carter, CDIO
Chief Data & Information Officer

Date

OVERVIEW

This document, which applies to Internet Protocol Version 6 (IPv6), sets forth the Morris K. Udall and Stewart L. Udall Foundation (Udall Foundation) plan for IPv6 deployment and implementation. This plan complies with the requirements for completing the operational deployment of IPv6 as well as capturing considerations for transitioning from the current dual-stack IPv4/IPv6 environment in accordance with Office of Management and Budget (OMB) Memorandum M-21-07 requirements. It defines the governance and support for the ongoing use and future development of IPv6. The Udall Foundation's Data and Information Technology team, led by the agency's Chief Data and Information Officer (CDIO), is responsible for this policy.

The main advantages of IPv6 are:

- Expanded addressing capability;
- Security extensions for authentication and privacy;
- Flow labeling capability;
- Improved efficiency in routing and packet handling;
- Support for auto-configuration and plug-and-play capabilities;
- Support for embedded IP security;
- Elimination of the need for Network Address Translation (NAT);
- Support for widely deployed routing protocols;
- Network efficiency and bandwidth conservation; and
- Transition and interoperability mechanisms that allow users to deploy IPv6 incrementally.

REFERENCES AND AUTHORITIES

This Policy is written in accordance with OMB Memo M-21-07, *Completing the Transition to Internet Protocol Version 6 (IPv6)*, published November 19, 2020.

PLAN

No later than the end of Fiscal Year (FY) 2023, all new networked Udall Foundation information systems will be IPv6-enabled at the time of deployment (i.e., the use of IPv6 is "turned on" for production use). This commitment reflects the Udall Foundation's strategic intent to phase out the use of IPv4 for all systems. This plan describes the agency's transition process and includes appropriate milestones and actions.

IPv6 Project Team

The Udall Foundation has established a primary IPv6 governance project team that assesses, prioritizes, and approves requirements that will meet the IPv6 standards. The team, designated as an agency-wide integrated project team, consists of acquisition, policy, technical, and cybersecurity stakeholders. The group facilitates the IPv6 pilot system and all related activities. Continuous monitoring will be leveraged to support the IPv6 pilot deployment and to identify requirements needed to develop an implementation plan. All transition activities from dual-stack IPv4/IPv6 to full IPv6 must meet OMB-defined timelines and established Udall Foundation IT governance, including enterprise risk management. The group determines further recommendations on IPv6 hardware and software requirements as appropriate.

IPv6 Infrastructure Implementation

Since the release of OMB Memorandum M-05-22, *Transition Planning for Internet Protocol Version 6 (IPv6)*, published August 2, 2005, IPv6 has been considered in all technology hardware purchases (e.g., routers, switches, workstations, laptops, etc.) The budget of the Udall Foundation should accommodate the purchase of any unforeseen hardware needs to meet the requirements outlined in OMB Memorandum M-21-07.

UDALL FOUNDATION ACTION ITEMS

- a. Work with Contracting Officer (CO) to ensure appropriate IPv6 requirements language is included in Statements of Work (SOWs), Requests for Proposal (RFPs), and awarded contracts.
- b. Notify the CO of all contract specifications that do not meet IPv6 compliance requirements.

MILESTONES

The Udall Foundation plans to meet or exceed the following milestones identified in OMB Memorandum M-21-07:

- a. At least 20% of IP-enabled assets on the Udall Foundation network are operating in IPv6-only environments by the end of FY 2023;
- b. At least 50% of IP-enabled assets on the Udall Foundation network are operating in IPv6-only environments by the end of FY 2024;
- c. At least 80% of IP-enabled assets on the Udall Foundation network are operating in IPv6-only environments by the end of FY 2025; and
- d. Identify and justify Federal information systems that cannot be converted to use IPv6 and provide a schedule for replacing or retiring these systems (if any).

ENSURING ADEQUATE SECURITY

The Udall Foundation shall establish plans to fully support IPv6 services in IT security plans, enterprise architecture, and acquisitions. All systems that support network operations and/or enterprise security services shall be IPv6-capable and operate in IPv6-only environments. The Udall Foundation shall monitor and manage compliance with all applicable Federal guidance and leverage industry best practices, as appropriate, to secure the deployment and operation of IPv6 networks. All security and privacy policy assessments, authorizations, and monitoring processes shall address the production use of IPv6 in Federal information systems.

CONTACT

For further information about this policy, please send inquiries to the Morris K. Udall and Stewart L. Udall Foundation, Chief Data & Information Officer, at itsupport@udall.gov.