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Internet Protocol version 6

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Background on IPv6 and Recent Efforts to Implement

- IPv4 address exhaustion
  - Nearly all of the 4.3 billion IPv4 addresses are allocated, and limited availability threatens new deployments
  - IPv6 resolves the shortage by providing 340 undecillion (1 followed by 36 zeroes) addresses to uniquely address mobile, fixed, wired and wireless systems in support of current and future systems

- Maintain Interoperability
  - Industry is migrating to IPv6; Service Providers have already started migration to IPv6
  - US Allies are moving to IPv6, and interoperability with them is important to future warfighting capabilities

- OMB Mandate
  - Previous OMB mandates still in play, and a new draft memo for Heads of Executive Departments and Agencies specifies goals for IT assets to complete the transition to IPv6-Only

- DoD CIO Strategy, Direction & Guidance
  - Nov 2019 DOD Strategy to Implement IPv6, and Feb 2019 IPv6 Implementation Direction and Guidance

- DISA Policy, Strategy, and Implementation Plan
  - Oct 2020 DISA Director Policy Letter with specific guidance for a DISA IPv6 Strategy and Implementation Plan

DOD IPv6 Way Ahead and DISA Overall Approach

- DOD Initial Direction and Guidance

  - Reinvigorate preparations and planning; focus on long lead time actions and enabling capabilities

  - Key Priorities are cybersecurity, cloud, applications, mobility, and mission partners with a goal of secure and reliable IPv6 Services in support of DoD missions

  - Achieve meaningful and measurable progress over the next 2 years, and maintain sustainable course thereafter

  - Reduce risk and enable opportunities; multi-year effort to operationalize IPv6

- DISA Policy Letter

  - DISN core hardware to be IPv6 enabled by the end of 2021 to allow all DISA catalogue services and external IT Systems to be IPv6-only by 31 December 2025.

  - Interim Dual Stack (IPv4/IPv6) configurations are authorized to accommodate legacy IT during the IPv6 transition

  - Create a DISA IP inventory to document and track IPv6 transition status of all unclassified and secret DISA IT systems transitioning to IPv6. DISA's initial IPv6 implementation priority is unclassified IT systems

  - Develop a DISA IPv6 Implementation Strategy to define specific goals, objectives, roles, responsibilities, and a timeline.

  - Develop a DISA IPv6 Implementation Plan to define the detailed actions and activities required to achieve the goals and objectives established in the DISA IPv6 Implementation Strategy.

Overview of Limited Deployment Expansion (LDE) Pilot Capabilities

- 2016 Limited Deployment: G-root and NIPR/IAP dual stack, and G-root DNS for .mil internet facing

- 2020 Limited Deployment Expansion Pilots (June 2020 start)

- 2020 LDE Pilots: USSTRATCOM, DLA, DREN, and ecosystem Internal IAP NIPR Access on-going, followed by external IAP access to Internet

- DREN services (web and VTC) to reduce risk until DISA IPv6 Services online at EcoSystems

- DoD Collaboration via DoD IPv6 Working Group and DISA's virtual PMO and its IPTs (Requirements, Network Engineering, Network Management, Cybersecurity, Training, Test, Implementation, and Operations).

Summary and Contact Information

- DISA Director's Policy Letter will be followed by a Strategy with several goals and objectives to execute, and an IPv6 Implementation Plan with activities and completion dates for each objective

- DISA will deploy an Interim Dual Stack (IPv4/IPv6) with a goal to establish IPv6-Only for the DISA IT Systems and Services by 2025

- DISA IT Inventory will be used to track the transition of IT Systems and Catalogue Services and other applications to IPv6-Only completion

- Limited Deployment Expansion Pilots will continue to be used by DoD Military Services and Agencies to reduce risk

- DoD coordination and collaboration through WGs, IPTs and LDEs to reduce risks, with lessons learned throughout the deployment process

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