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26 August 2003

MEMORANDUM FOR MAJOR SHARED RESOURCE CENTER DIRECTORS
DISTRIBUTED CENTER DIRECTORS

SUBJECT: Internet Protocol version 6 (IPv6)

References: (a) ASD-NII memorandum dtd June 9, 2003 Internet Protocol version 6 (IPv6)
(b) DUSD(S&T) memorandum dtd June 27, 2003 Internet Protocol version 6 (IPv6)

Currently, Internet Protocol version 4 (IPv4) represents the mandated internetworking protocol for the DoD Global Information Grid (GIG). In reference (a), Mr. John P. Stenbit, Assistant Secretary of Defense (Networks and Integration Infrastructure), established a goal to complete the transition to IPv6 for all inter and intra networking across the DoD by fiscal year (FY) 2008. In reference (b), Dr. Charles J. Holland, Deputy Under Secretary of Defense (Science and Technology) responded to Mr. Stenbit's memorandum, saying that the S&T community looked forward to providing assistance to the DoD IPv6 efforts.

The Defense Research Engineering Network (DREN) and its applications were subsequently designated as a near-term (FY 2004) IPv6 pilot.

As a first step in supporting the DoD policy for Enterprise-wide deployment of IPv6, I directed the DREN Project Manager, Mr. Rodger Johnson, to convene a meeting of the DREN Technical Advisory Panel (TAP) to consider what the High Performance Computing Modernization Program (HPCMP) could accomplish as an IPv6 pilot during FY 2004, and how its high performance computing (HPC) Centers and interested HPC user sites might participate. The DREN Project Manager established an IPv6 pilot team during that meeting. The IPv6 pilot team, with input from the DREN TAP and HPC center technical representatives, developed a set of goals for the expansion of the existing DRENv6 IPv6 test bed this year and the implementation of an HPCMP IPv6 pilot during FY 2004.

In further support of the DoD policy for Enterprise-wide deployment of IPv6, and to enable the transition of DREN from today's IPv4 production environment to the IPv6 pilot environment envisioned by the IPv6 team in FY 2004 and ultimately to the DoD Enterprise-wide IPv6 environment in an integrated, timely, and effective manner:

- As of 1 October 2003, all assets being developed, procured, or acquired with HPCMP funds will be IPv6 capable (in addition to maintaining interoperability with IPv4 systems/capabilities). The HPCMP Technology Insertion-04 acquisition already reflects this requirement. The FY 2004 Distributed Centers and Common HPC Software Support Initiative (CHSSI) awards will reflect this requirement, when announced. Commencing in FY 2004, the DREN production IPv4 wide-area networking

infrastructure will be IPv6 capable (in addition to maintaining interoperability with existing IPv4 and IPv6 networks/capabilities).

- During FY 2004, the HPCMP Major Shared Resource Centers and Allocated Distributed Centers will work with the IPv6 pilot team to review their existing infrastructure, train their Center support personnel, and update/upgrade their infrastructure as feasible (including the identification of remediation approaches for resources that cannot directly support IPv6) in order to support IPv6 applications, including Center developed applications, while maintaining interoperability with IPv4 applications/capabilities. The Centers will be supported by the Programming Environment and Training (PET) initiative of the Software Applications Support component of the HPCMP in updating/upgrading selected applications.

- The IPv6 pilot team will solicit the participation of HPC user sites and HPCMP Dedicated Distributed Centers in the HPCMP IPv6 pilot, and assist interested sites in reviewing their existing infrastructure, training their Center support personnel, and updating/upgrading their infrastructure as feasible, in order to support IPv6 applications while maintaining interoperability with IPv4 applications/capabilities. Participating sites will be supported by the PET initiative in updating/upgrading their infrastructure and selected applications.

The effective implementation of IPv6 on an Enterprise-wide basis is an important long-range goal for the DoD and for the HPCMP. However, it is essential during the HPCMP IPv6 pilot implementation that the strong security posture that the HPCMP has worked so hard and so successfully to achieve should not be compromised. Consequently, the IPv6 pilot team shall work closely with the HPCMP Office security team during the HPCMP IPv6 pilot implementation to ensure that a security posture at least equivalent to the existing one is maintained.

The HPCMP focal point for this effort is the HPCMP IPv6 Implementation Manager, Mr. John Baird, who can be reached at 703-812-8205 or baird@hpcmo.hpc.mil.

Cray J. Henry
Director
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cc:
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High Performance Computing Advisory Panel
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