NASCIO
Representing Chief Information Officers of the States

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Submitted electronically via email: IPv6@ntia.doc.gov

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U.S. Department of Commerce
1401 Constitution Avenue NW
Room 4725
Washington, DC 20230

Dear Ms. Heineman,

Thank you for the opportunity to provide comments on "The Incentives, Benefits, Costs and Challenges to IPv6 Implementation" published in the Federal Register by the National Telecommunications and Information Administration (NTIA). The National Association of State Chief Information Officers (NASCIO) represents the state chief information officers (CIO) and information technology executives and managers from the states, territories, and D.C. State CIOs are leaders of state information technology policy and implementation and continually look for opportunities to improve the operations, bring innovation, and transform state government through technological solutions. As leaders of state government IT, the IPv6 transition issue is important to NASCIO's membership.

As referenced in the current NTIA notice, state CIOs recognize many of the benefits described in the 2006 National Institute for Standards and Technology (NIST) study, "A Technical and Economic Assessment of IPv6." NASCIO has regularly conducted a Top Ten survey which asks state CIOs to rank their top priorities. For the past few years, cybersecurity has remained the number one priority for state CIOs. Naturally, state CIOs recognize the security benefits of mandated IPsec in IPv6 protocol specifications. However, as the aforementioned NIST study acknowledges, the potential cost associated with deploying IPv6 includes a "mixture of hardware, software, labor, and miscellaneous costs." The NIST study also questions whether the "incremental benefit of adopting IPv6 justify the cost of converting the large embedded IPv4 base to IPv6 on an accelerated basis." Though the NIST study was authored in 2006, these statements largely hold true today for state CIOs.

For this comment, NASCIO and the National Association of State Technology Directors (NASTD) gathered informal data on the readiness of state governments to transition to

IPv6. Seventeen (17) states were represented in the survey and 76 percent of respondents reported that their state had not made the transition to IPv6. Additionally, while some state networks are compatible with IPv6, the majority of IP addresses utilized within state government remain IPv4. State governments have not yet experienced a scarcity of IPv4 addresses within their assigned range and there is a lack of demand for IPv6 among state executive branch agencies which sit in a customer position in relation to state CIOs who supply and deliver IT resources within state government.

The current Notice correctly recognizes that the increase in connected devices may soon compel transition to IPv6. Within state government, there has been significant growth in the utilization of IP-enabled devices but this number is likely to remain stagnant unless there is a corresponding growth in the number of state users of said devices. State CIOs do anticipate another exponential growth in IP-enabled devices with the proliferation of the Internet of Things (IoT) and have begun discussions on IoT policy. However, data from the NASCIO- GrantThornton-CompTIA, "2016 State CIO Survey: The Adaptable CIO," suggests that IoT policy development within state government remains immature; 69 percent of state CIOs report having no discussion or only informal discussions within state government about the state's IoT agenda.

The small number of states that have transitioned to IPv6 is understandable given the method by which state CIO organizations operate. State CIOs are charged with providing IT services to state executive branch agencies and the vast majority of state CIO organizations are funded via "charge-back;" the budget for the state CIO organization is formed not through legislative appropriation but through cost-recovery. As such, without demand from customer agencies, there is little incentive for the state CIO organization to move to IPv6 as the cost would be borne by the demanding state agency. And again, state CIO organizations have not yet experienced a scarcity in IPv4 addresses. Adding to the complexity of the IPv6 transition, almost 40 percent of respondents from the informal NASCIO-NASTD survey report that it would take more than two (2) years for their state to fully implement the transition to IPv6.

When asked about the obstacles preventing state CIOs from transitioning to IPv6, responses from the informal NASCIO-NASTD survey include:

- Will not implement IPv6 until IoT compels migration
- [Lack of] workforce skill set
- Need end user buy in for additional complexity of assigning and managing IPv6
- No business need to convert at this time
- Address translation and security stack implementation
- Commitment, priority, time, and resources

- Converting IP addressing schemes and configurations on firewall devices
- Requirement to coordinate and carefully plan the transition for diverse and numerous (120+) partner agencies

As the comments indicate, state governments are not yet motivated to transition to IPv6 given the complexity, cost, time, and other considerations.

We appreciate NTIA's effort to engage relevant stakeholders on this issue and hope we can continue to serve as a resource and partner to NTIA as it moves forward to investigate and promote the transition to IPv6. Please feel free to contact our director of government affairs, Yejin Cooke, at 202.624.8477 or ycooke@NASCIO.org, with any questions or comments about this submission.

Sincerely,

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