

### IPv6 DNS

#### NDP Research – Tech Note

July 2012

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<b>Tech Note Number</b>	NDP-TN-107
<b>Problem</b>	Achieving a rapid, light-weight and scalable IPv6 infrastructure with an easy to use web administration interface.
<b>Description</b>	NDP possesses the experience and personnel to provide rapid and comprehensive IPv6-only infrastructure in secure environments. Our solution can be deployed via a virtual machine for the rapid deployment of a scalable IPv6 only network using free and open source software (FOSS) for insertion into Virtual Infrastructure (VI).
<b>Core Technology</b>	NDP solutions leverage advanced networking and software technology, including FOSS. The solution described utilizes Red Hat Enterprise Linux (RHEL) based platforms (such as RHEL, CentOS, or Scientific Linux version 6) along with BIND, Internet Systems Consortium (ISC) Dynamic Host Configuration Protocol Daemon (DHCPD), and Webmin. All components are secured with custom Security Enhanced Linux (SELinux) policies as well as guidance from the National Security Agency (NSA), Defense Information Systems Agency (DISA) and Defense Security Service (DSS) using original and innovative policies and techniques.
<b>Benefit</b>	Our customers see improved reliability, performance, security, monitoring, and interoperability of their core IPv6 infrastructure including DNS for IPv6. This solution has been stress tested against a rapid update rate (six updates per second against a multiple zones each consisting of several thousand forward and reverse records). All zones can be easily administered using a secured web administration interface. Solutions are tailored for individual program needs, while retaining/improving data-sharing via service-oriented/web-based interfaces.
<b>Market</b>	Our focus is on Defense and Intel agencies with space-based assets, but the techniques and technologies apply in other sectors with stringent reliability, latency, and security requirements.
<b>Technology Readiness Level</b>	7. System prototype demonstration in an operational environment
<b>Keywords</b>	IPv6, DNSv6, DHCPv6, BIND, BIND9, named, Red Hat, RHEL, Fedora, CentOS, Scientific Linux, ISC, dhcpd, dhcp6, ip6tables, webmin, NSA, DISA, DSS, STIG, SRR, Gold Disk, SELinux

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##### About NDP

NDP designs and deploys complex computer systems and networks. We also assure that these systems and networks can operate securely in cyberspace. By integrating sound net-centric designs into our customer systems, we enable them to gain a competitive advantage that translates to mission effectiveness. We primarily support DoD, Intel and Federal customers and currently expanding our offerings to the commercial and academic markets. We are a customer-centric, technology-centric and people-centric company.

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