



Office of the President of the Philippines
COMMISSION ON INFORMATION AND COMMUNICATIONS TECHNOLOGY

MEMORANDUM CIRCULAR No. 01

Subject: Implementing Rules and Regulations (IRR) of Executive Order (E.O) No. 893 – Promoting the Deployment and Use of Internet Protocol Version 6 (IPv6)

Whereas, pursuant to Section 24, Article II (Declaration of Principles and State Policies) of the 1987 Constitution states that, “The State shall recognize the vital role of communication and information in nation-building”;

Whereas, advanced Internet services are now widely used and have become an enabler to social and economic development of all countries, as these services have increased worker productivity and connected local businesses to local and international markets;

Whereas, there is a need to promulgate policy directives to promote investment in Internet-based infrastructure, applications and services and to enable continued improvements in various sectors and enhance government operations and services such as but not limited to health care, national security, public safety, education, environment, and the economy;

Whereas, one major component of Internet-based operations is the Internet Protocol Version 4 (IPv4) address, which, by industry measure, is now becoming scarce and would be difficult to obtain by 2011, potentially impeding the growth and development of Internet-based services;

Whereas, the development of Internet Protocol Version 6 (IPv6) as well as the world-wide migration from IPv4 to IPv6 will pave the way to solve the problem of IPv4 address exhaustion, and deploying IPv6 will enable continued expansion of the Internet in the country;

Whereas, in accordance with Executive Order 269 Series of 2004, the Commission on Information and Communications Technology (CICT) is mandated to ensure the provision of strategic, reliable and cost-efficient information and communications technology (ICT) infrastructure, systems and resources as instruments for nation-building and global competitiveness; and

communications technology (ICT) infrastructure, systems and resources as instruments for nation-building and global competitiveness; and

Whereas, in accordance with Executive Order 893, the Commission on Information and Communications Technology (CICT) shall issue the Implementing Rules and Regulations (IRR) within ninety (90) days from the approval of this Order.

NOW, THEREFORE, pursuant to Executive Order (EO) No. 269 series of 2004, and Executive Order No. 893 series of 2010, the CICT hereby promulgates the following policy guidelines:

Section 1. Definition of Terms

The following definitions shall apply within the context of this policy:

- a) **Information and Communications Technology (ICT)** – means the totality of electronic means to collect, store, process and present information to end-users in support of their activities. It consists, among others, of computer systems, office systems and consumer electronics as well as networked information infrastructure, the components of which include the telephone cable, wireless and satellite systems, the Internet, fax machines and computers. It also refers to the theoretical and practical applications and processes utilizing such data and information. End-user shall also include things.
- b) **IP address** – is a numerical label that is assigned to any device participating in a computer network that uses the Internet Protocol for communication between its nodes.
- c) **Internet Protocol (IP)** – a standard set of rules for sending and receiving data through the internet. Each computer or device connected to the Internet must have a globally unique numeric IP address in order to communicate with other systems or the Internet.
- d) **Internet Protocol Version 4 (IPv4)** – means the first widely deployed version of the Internet Protocol. It uses 32-bit addresses, which limits the address space to 4,294,967,296 (2^{32}) possible unique addresses. It is typically represented, in the form n.n.n.n ranging from 0.0.0.0 through 255.255.255.255;
- e) **Internet Protocol Version 6 (IPv6)** – means the next-generation Internet Protocol version designated as the successor to version 4 (IPv4). It uses a 128-bit address which supports 2^{128} (about 3.4×10^{38}) addresses. It is typically

represented, in the form of hhhh:hhhh:hhhh:hhhh:hhhh:hhhh:hhhh:hhhh where h is a hexadecimal format number ranging from 0 to 9 and A to F;

- f) **IPv4-only** – means equipment, software and/or services that is capable of communicating/interfacing using only IPv4;
- g) **IPv6-only** – means equipment, software and/or services capable of communicating/interfacing using only IPv6;
- h) **Dual-stack** – means equipment, software and/or services capable of communicating/interfacing using both IPv4 *and* IPv6;
- i) **IPv6-compliant** – means equipment, software and/or services able to receive, process, transmit or forward (as appropriate) IPv6 packets regardless of whether IPv4 is supported. This includes dual-stack equipment.
- j) **Interoperability** – means the ability of systems, infrastructures, units, or products to provide services to and accept services from other systems, infrastructures, units, or products.
- k) **Globally Routable IPv6 Address** – means being routed and reached from anywhere in the world.

Section 2. IPv6 Promotion

Pursuant to Sec. 2 Specific Policies (f) and to Sec. 4 Creation of Inter-Agency Task Force on IPv6 of E. O. 893, deployment and use of IPv6 shall be promoted through a public-private-partnership, including the academe, approach through the Inter-Agency Task Force on IPV6.

Section 3. IPV6 Deployment and Use in the Philippines

- 3.1 All government online services shall be IPv6-compliant within two (2) years after the effectivity of Executive Order No. 893. All government websites and online services shall be accessible using IPv4 or IPv6 terminal and infrastructure. National Government Agencies (NGAs) are strongly encouraged to develop and adopt an IPv6 migration plan upon the effectivity of this Circular. For this purpose, all government agencies with online services must subscribe only to duly authorized Internet Service Providers (ISPs) that have the capability to support both IPv4 and IPv6 routing.
- 3.2 Government procurement of IPv4-only equipment, software and services shall be prohibited two (2) years after the effectivity of Executive Order No.

- 3.8 NTC shall issue guidelines defining the responsibilities of all ISPs in conformity with international practices and standards, including submission of quarterly reports on IPv6 compliance.
- 3.9 Interoperability and coexistence between IPv6 and IPv4 infrastructure and systems shall be encouraged. DOST-ASTI shall assist government agencies in the conduct of interoperability testing between IPv6 and IPv4 infrastructure and systems.
- 3.10 Cooperation between and among the government and the private sector to promote and ensure compliance to IPv6 shall be pursued. Regular consultation between the government and the private sector, if possible with other international organizations shall be done to enhance sharing of best practices and information in promoting and in ensuring compliance to IPv6.
- 3.11 The National Computer Center (NCC) shall monitor National Government Agencies (NGAs) IPv6 migration implementation. The private ICT sector is also encouraged to do the same upon securing IPv6 compliance status.
- 3.12 Capacity-building to address the technical requirements brought about by the new technology shall be instituted and enhanced. National Government Agencies (NGAs) shall require and ensure enhancement of capacity-building of technical personnel in the field of IPv6 and shall institutionalize measures and initiatives for IPv6 skill base and expertise retention in the Philippines. Training of personnel shall be given priority, particularly with regards to funding allocation of each agency. IPv6 skills tests and certification programs shall be implemented by NCC-NCI and TELOF-TTI, both of which shall develop the courseware in consultation with international, regional and other national organizations implementing IPv6 training and certification programs. The government (national and local) shall encourage both public and private sectors to fund projects that will promote and support innovation, research and development on ICT, considering the beneficial use of IPv6.
- 3.13 Public awareness through active information drive by the government shall be enhanced through interaction with the academe and other local organizations. Activities such as but not limited to forums, seminars, and workshops shall be conducted by the Inter-Agency Task Force (IATF) to

893. National Government Agencies (NGAs) are strongly encouraged to procure IPv6-compliant equipment, software and/or services upon the effectivity of this Circular. This IPv6-compliant equipment, if possible, shall also be capable of communicating/interfaces with IPv4 equipment. Certification and type approval process for all IPv6-compliant equipment and software shall be issued subsequently by the CICT in accordance with the recommendation of the IPv6 Inter-Agency Task Force.

- 3.3 All government agencies shall include an IPv6 migration plan in their Information System Strategic Plans (ISSP). National Government Agencies (NGAs) shall submit a new or updated ISSP, that shall include an IPv6 migration plan, not later than the end of the 2nd quarter 2011 to the National Computer Center (NCC) of the CICT for review and approval. Submitted ISSP's that do not include a technically viable IPv4 to IPv6 migration plan, including security requirements, shall not be approved. A new and updated ISSP shall include Security Policy on how to handle IPv4-only, dual stack and IPv6-only services/applications. No funding shall be released for agencies that do not have an approved ISSP. For this purpose, the CICT-NCC shall issue an updated template for ISSPs that will serve as a guide for government agencies preparing for their respective ISSP not later than end of December 2010.
- 3.4 The Head of each National Government Agency (NGA) shall designate a custodian to keep accurate records of hardware and software involved in the IPv6 migration which shall be reported to the Inter-Agency Task Force (IATF).
- 3.5 All government agencies shall ensure that IPv6 capability is reflected in their ICT procurement documents.
- 3.6 Security policies and provisions shall be considered in the IPv6 migration through proper planning processes to minimize or prevent operational issues when IPv4 and IPv6 coexist on a network.
- 3.7 All Internet Service Providers (ISPs) shall be capable of providing globally routable IPv6 addresses and readily available commercial IPv6 service with routing to the global IPv6 Internet within two (2) years from the effectivity of Executive Order No. 893.

help in the advancement of knowledge on IPv6 throughout the country, including Local Government Units.

Section 4. Inter-Agency Task Force (IATF)

4.1 The Task Force shall be composed of the Chairman of the Commission on Information and Communications Technology (CICT) as Head and Senior Level Officials from the Department of Science and Technology (DOST), Department of Trade and Industry (DTI), Department of National Defense (DND), Department of Budget and Management (DBM), and National Telecommunications Commission (NTC) and the private sector representatives as members.

4.2 Functions of the Inter-Agency Task Force.

- Formulate an IPv6 Roadmap, specifying target dates and milestones
- Initiate and Manage IPv6 data collection
- Develop baseline and metrics for measuring IPv6 usage and benefits in the country
- Provide periodic reports to the Office of the President through the Chairman of CICT regarding the activities of the Task Force
- Promote human capacity-building, including training and awareness on IPv6
- Develop a database of IPv6 compliance
- Recommend additional policies as may be deemed necessary
- Perform other functions as may be assigned by the Office of the President

4.3 The Inter-Agency Technical Working Group (IATWG) shall be composed of representatives from CICT, NTC, DOST, DBM, DTI, DND as well as representatives from the private sector, which include among others Business Process Association of the Philippines (BPAP), Chief Information Officer Forum (CIOF), Federation of International Cable TV Association of the Philippines (FICAP), I-Cafe Pilipinas, Institute of Electronics Engineers of the Philippines (IECEP), Internet Society (ISOC) Philippines, Information Technology Association of the Philippines (ITAP), Philippine Cable TV Association (PCTA), Philippine Chamber of Telecommunications Organization (PCTO), and Philippine Electronics and Telecommunications

Federation (PETEF). The IATWG shall consider other private sector organizations and members of the academe who may want to join the IATWG and recommend their respective membership to IATF.

4.4 IATWG shall assist IATF in its functions and shall be responsible for the following:

- Recommend the objectives, work plan and target deliverables of the IATF;
- Recommend technical guidelines for the adoption of IPv6;
- Propose steps that would be included in the IPv6 migration plan and its corresponding target schedules;
- Suggest technical guidelines for Interoperability Testing
 - Between existing IPv4 network to IPv6 networks
 - Between different IPv6 networks
 - Between Philippine networks and other countries (if necessary)
- Propose activities to promote human capacity building on IPv6
- Assist the IATF to perform its functions.

4.5 The CICT shall serve as Secretariat of the Task Force.

4.6 The IATF and its IATWG shall submit its report, including recommendations, to the Office of the President through the Chairman of the CICT within a year from the effectivity of this Circular. A yearly report shall be submitted thereafter.

Section 5. Funding

5.1 Appropriations for the agency level migration to IPv6 shall be included in the respective agency's allocations.

5.2 Funds for the operation of the IATF and IATWG shall come from the CICT and other resources.

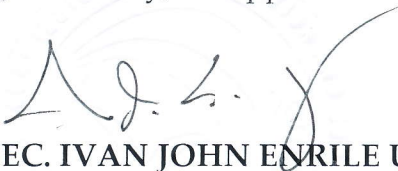
Section 6. Repealing Clause

Any Circular, Order or Memorandum or parts thereof inconsistent herewith are deemed superseded and/or amended accordingly.

Section 7. Effectivity Clause

This Circular shall take effect after fifteen (15) days following the completion of its publication in the Official Gazette or in a newspaper of general circulation.

Quezon City, Philippines.

A handwritten signature in black ink, appearing to read 'I. J. Enrile Uy', is written over a faint circular official stamp.

SEC. IVAN JOHN ENRILE UY
Chairman

21 January 2011