The transition to IPv6 in the Public Administration

First steps on a long way

After many years and delays, the **exhaustion of the central repository of IPv4 Internet addresses managed by IANA[1] in February 2011** urged countries to hit the road leading to the almost infinite space of IPv6. The global economy's dependence on Internet connectivity demanded a long and complex transition in all countries. And, although technical aspects can be considered to have been solved, the coexistence of the two protocols for some time makes it necessary to coordinate actions at the national and international levels.

Once again in the transformation of the industrial society into the society of knowledge, the Public Administration is playing a key role in the promotion of technology innovation. As both consumers of technology and regulators of its use, Public Administration agencies must be the leaders of the transition to IPv6. This was identified as a priority in the EU. In fact, **The European eGovernment Action Plan 2011-2015** states that *'administrations will need to take action to upgrade IPv6-relevant eGovernment infrastructure (portals, websites, applications, etc.) and online services of public interest…'*

The agreement reached at the Council of Ministers on 29 April 2011[2], approving the **Development Plan for the Implementation of the IPv6 Protocol in Spain, was the starting point of the transition to the new Internet protocol in our country**. The Development Plan is aimed at strengthening the advantages and opportunities offered by the evolution of information and communication technologies in order to develop new services, guarantee citizens' right to access the Internet and keep

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[1] Internet Assigned Numbers Authority, http://www.iana.org

[2] Full text of the agreement available online at http://www.boe.es/aeboe/consultas/bases_datos/doc.php?id=BOE-A-2011-10786

Spain's position among the leaders in the use of new technologies related to the society of knowledge.

The Ministry of Finance and Public Administration (Ministry of Territorial Policy and Public Administration when the agreement was approved) has been entrusted with the Development Plan for the Implementation of the IPv6 Protocol in Spain in the Public Administration, as the Ministry of Industry, Energy and Tourism takes action to lead the transition to the new protocol for citizens and businesses. As a result of its competencies regarding the agreement, the **Ministry of Finance and Public Administration will take the lead in the development of five of the ten actions** included in the Development Plan:

- (1) **Implementation of the IPv6 protocol in the 060 portal of the Ministry of Finance and Public Administration**. This experience[3], alongside the implementation of the IPv6 protocol in the Internet services provided by the Ministry of Industry, Energy and Tourism[4], will be considered as a benchmark in the Public Administration, and a priority action for follow-up by the Standing Committee of the High Council for E-Government.

- (2) The **E-Government Portal** of the E-Government Observatory **is to include information on the IPv6 protocol development process in the Public Administration**[5].

- (8) **The Ministry of Finance and Public Administration is to boost the development of the IPv6 protocol in the Public Administration** through the collegiate bodies responsible for E-Government. In particular, it will conduct studies to **provide** the Public Administration agencies **with IPv6 addresses**, update the Public Administration Network Interconnectivity and **Address**

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[3] Experience description available online at http://administracionelectronica.gob.es/recursos/pae_020001097.pdf

[4] Experience description available online at http://www.ipv6.es/es-ES/transicion/casos/Paginas/Casos.aspx

[5] IPv6 Information Area on the E-Government Portal at http://administracionelectronica.gob.es/?_nfpb=true&_pageLabel=P30002362613037197 63387&langPae=es

Plan, and include the measures to be taken for the **incorporation of the IPv6 protocol into the SARA Network** in the Action Plan for E-Government in the Central Administration 2011-2015. Moreover, **training activities** will be designed for the people in charge of Internet services in the Public Administration.

- (9) **The Ministry of Finance and Public Administration is to propose the inclusion of IPv6 as a requirement in the public procurement of** ICT products and services, preferably using international standards or recommendations as a reference.

- (10) **The Ministry of Finance and Public Administration, together with the Ministry of Industry, Energy and Tourism, will be in charge of the follow-up and coordination in international forums** of the transition process from IPv4 to IPv6.

Over the past few months, the Ministry of Finance and Public Administration worked to fulfil the mission it had been entrusted with. **Since June and September 2011, respectively, the site of the Ministry of Industry, Energy and Tourism and the 060 portal managed by the Ministry of Finance and Public Administration have been available in native mode in the IPv6 protocol.** The description of both experiences – two different approaches to the transition to IPv6 – is available at the E-Government Portal. Whereas the former is based on the full renewal of the infrastructure to access a Data Processing Centre for IPv4/IPv6 dual-stack implementation, the latter consists mainly in a software solution based on the use of reverse proxy.

In **January 2012**, the Ministry of Finance and Public Administration took the first step to incorporate the IPv6 protocol as a requirement in public procurement by publishing a draft version of the **Guidelines for the Incorporation of the IPv6 Protocol as a Requirement in Public Procurement** in the E-Government Portal[6].

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[6] Available online at http://administracionelectronica.gob.es/recursos/pae_020002511.pdf

Analysing the national and international background and including a series of good practices, the document gives recommendations for the inclusion of IPv6-specific clauses in the specification of requirements according to the type of procurement (hardware, commercial software, bespoke software, professional services or telecommunication services).

Finally, in **February 2012, the international project GEN6 – Governments Enabled with IPv6 – was launched**; it is an initiative co-financed by the European Commission. Both the Ministry of Finance and Public Administration and the Ministry of Industry, Energy and Tourism are members of the project's consortium, aimed at boosting the deployment of IPv6 in Europe through the implementation of a series of pioneer transition experiences in the Public Administration in different countries and their extension throughout the EU. The **development of the new Public Administration Network Address, the launch of new connectivity scenarios between IPv4 and IPv6 environments within the Sara Network and the validation of the provision of services between Public Administration agencies in different Members States** using IPv6 through the sTESTA network are some of the initiatives framed within the project.

There is still a long way to go before the Spanish Public Administration is fully IPv6 ready. We will come across transition scenarios moving at different speeds, but the foundations laid in these first steps will guarantee the accessibility and quality of E-Government services throughout the process, irrespective of the access protocols in the terminals of the underlying connection.