

e-infrastructure

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Abstract:

This documents reports on the 2nd SEE 6DEPLOY workshop that was held in Athens on June 21st-22nd, 2010. The participants were associated with the local ISPs, software development companies, and universities. The presentation material is listed, the attendees and their affiliations are given, and the opportunities for further co-operation and follow-up actions are described. Furthermore, a short report of the Hellenic IPv6 TF meeting which took place on June 23rd, 2010 is provided.

Keywords: South Eastern Europe, IPv6 Workshop, Athens, Testbeds, Modules, 6DEPLOY, HIPv6 TF.
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Revision History

The following table describes the main changes to the document since it was created.

Revision	Date	Description	Author (Organization)
v0.1	08/09/2010	Document creation based on IPv6 workshop in Athens, given by GRNET	Athanassios Liakopoulos, Anastasios Zafeiropoulos (GRNET)
V1.0	06/10/2010	Review and Report Editing	A. Higa, M. Potts (Martel)

Executive Summary

One of the main activities in the 6DEPLOY project is to organise workshops to train the different Internet communities in the areas of IPv6 deployment, configuration, and usage. This project is a follow up of previous project activities within and outside the Framework Programmes of the European Commission.

This deliverable reports on the 2nd SEE workshop that took place in Athens on 21-22th of June 2010. The workshop was organized by GRNET and hosted at the OTE Academy premises. The main target group for this workshop was the network and system engineers from local ISPs, software development companies as well as from governmental agencies. Therefore, multiple hand-on training sessions were planned in order to help participants to deploy IPv6 services in their organisations. Finally, researcher and university engineers were also invited to participate provided that there was room availability. The latter group of engineers had the opportunity to participate at GRNET and 6DISS training events in the last two years.

This deliverable also reports on the 2nd Hellenic IPv6 Task Force Meeting organised in Athens on 23rd of June 2010. The event was organised by the Hellenic Communications and Post Commission (<http://www.eett.gr/>) and GRNET (<http://www.grnet.gr/>) and was supported by 6DEPLOY.

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1. THE 6DEPLOY WORKSHOP IN ATHENS

This workshop was held on 21st-22nd June 2010 in Greece. The event took place at the OTE Academy premises in Athens. In the following paragraphs we provide information for the workshop, including descriptions of the attendees and their affiliations, the programme outline, and the material that was presented.

1.1 Overview

The event was organized by GRNET in the context of the 6DEPLOY project. The target group consisted of regional networking/IT engineers from local ISPs and software development companies as well as from governmental agencies. Researcher and university students were also invited to participate, provided there was availability of seats.

The SEE workshop was conducted by the following lists of tutors:

- Douitsis Athanasios (NTUA)
- Karaliotas Tasos (GRNET)
- Kosiaris Alexandros (GRNET)
- Liakopoulos Athanassios (GRNET)
- Lioumis Antonis (GRNET)
- Mousmoulas Zenon (GRNET)
- Polyrakis Andreas (GRNET)
- Zafeiropoulos Anastasios (GRNET)
- Zorz Jan (go6.si)

The remote 6DEPLOY labs in Sofia and Ljubljana were supported by Spass Kostov (BREN/6DEPLOY) and Matjaz Straus (go6.si).

All the presentations were conducted in English in order to accommodate the local audience.

The workshop included several theoretical sessions with presentations related with IPv6 basics, IPv6 management services, operational differences between IPv4 and IPv6, IPv6 routing, IPv6 over DSL, and security. The theoretical sessions were combined with hands-on sessions related to routing, security and services, as requested by network/system engineers from the various companies before the event.

Finally, more theoretical sessions were presented for IPv6 in 3G/4G networks, IPv6 and sensor networks and programming in IPv6 environment. Special focus was given to the hands-on sessions.

1.2 Attendees

Below is a list of people that attended at least one session:

No.	Surname	First name	Affiliation	Affiliation
1	Elena	Saridaki	Forthnet	Senior Network Engineer
2	Dimitris	Kotsilis	Forthnet	
3	Themistoklis	Kordogiannis	Hellas Online	Senior IP Engineer
4	Antonis	Stratis	ON Telecoms	Network Engineer
5	Dionisis	Vinieratos	Vodafone SA	Network Engineer
6	George	Adamopoulos	Vodafone SA	Network Engineer
7	Antonis	Krasas	Net One SA	Engineering Dpt
8	Christos	Chatzis	Net One SA	Network Administrator
9	George	Manousakis	COSMOTE SA	Network Engineer IP/ATM
10	Stayros	Lekkos	COSMOTE SA	Network Engineer IP/ATM
11	Alexandra	Tsakri	WIND SA	IP Engineer
12	Ioanna	Tsoukalo	WIND SA	IP Engineer
13	Christakis	Christoforou	CYTA SA	
14	Giannis	Vlachos	CYTA SA	
15	Konstantinos	Liras	CYTA SA	
16	Minas	Balaskas	OTEGLOBE SA	NOC Engineer
17	Eleni	Deli	OTEGLOBE SA	Planning Engineer
18	Michalis	Stefos	Orange Business Services (Equant)	Network Engineer
19	Antonios	Ballas	Orange Business Services (Equant)	Field Network Engineer
20	Eygenia	Provia	OTE SA	Network Engineer, IPNOC
21	Kostopoulou	Evdokia	OTE SA	
22	Aristeidis	Tsinas	SPACE HELLAS SA	Network Engineer
23	Stayros	Karavatsios	Diinekis Information Systems SA	System & Network Administrator
24	George	Vlachos	Kestrel Information Systems SA	Network Engineer
25	Andreas	Sotiropoulos	Ministry of Decence	Network Engineer
26	Manolis	Kaliotis	Intracom Telecom	Network Engineer
27	Nikolaos	Apostolou	Intracom Telecom	Network Solutions
28	Athanassia	Tsertou	GENNET SA	Software Developer
29	Giannis	Skitsas	Ubitech SA	Software Engineer
30	Ioannis	Ledakis	Ubitech SA	Software Engineer
31	George	Kokolakis	CTI	Network Engineer
32	Theodoros	Kostis	Hellenic Quality Assurance Agency	Administrator
33	Nikolaos	Milas	NOA	Network&Systems Engineers/NOC
34	Aleksandros	Soumplis	National Documentation Centre	System Administrator
35	Anastasios	Salis	National Centre for Public Administration and Local Government	Network Engineer/NOC

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36	Ioannis	Ksidias	TEI of Athens	Network Engineer/NOC
37	Savas	Paschalidis	TEI of Serres	Senior IT Manager
38	George	Patramanis	TEI of Serres	Network Engineer/NOC
39	Charilaos	Mizas	TEI of Kavala	Network Engineer/NOC
40	Antonios	Zervoudakis	TEI of Crete	Network Engineer/NOC
41	Apostolos	Kousaridas	NKUA	Research Engineer
42	Panagiotis	Kolivas	NKUA	Research Engineer
43	Ioannis	Psaroudakis	Dem Univ. of Thrace	Network Engineers/NOC
44	Eyaggelos	Grigoropoulos	Univ of Macedonia/ GSN	Network Engineers/NOC
45	Taksiarxis	Tsaparas	University of Piraeus	Network Engineers/NOC
46	Panagiotis	Papachiou	Aegean University	Senior IT Manager
47	Tassos	Moschos	Aegean University	Network Engineers/NOC
48	Gerasimos	Fragkos	University of Thessaly	Network Engineers/NOC
49	Michalis	Kalogirou	University of Crete	Network Engineers/NOC
50	Manolis	Stayrakakis	University of Crete	Network Engineers/NOC
51	Giannis	Atzarakis	Technical University of Crete	Network Engineers/NOC
52	Christos	Ntokos	University of Ioannina	Network Engineers/NOC
53	Dimitris	Gioutsos	University of Ioannina	Network Engineers/NOC
54	Panagiotis	Sylkas	FORTH	
55	Eyanthia	Adontaki	Tech Univ. of Crete	Network Engineers/NOC
56	Eygenia	Polykchronopoulos	Univ of Patras	
57	Antonios	Atlasis	Ministry of Defence	
58	Athanassios	Goudosis	Hellenic Quality Assurance Agency	
59	Christos	Stayrogiannis	NKUA	Network Engineers/NOC
60	Lazaros	Vasileiadis	Intracom Telecom	Senior Network Solutions Manager
61	Vassilis	Karabounas	American College of Thessaloniki	System & Network Administrator
62	Konstantina	Syntila	Cisco	
63	Christos-Konstantinos	Tsoumaris	NTUA	Student
64	Athanassios	Valiakos	OPEKEPE	System Administrator
65	Ioannis	Tziggouras	Tech. Univ. of Larissa	Network Engineer DATA & VOICE
66	Konstantinos	Sakkas	COSMOTE	
67	Dimitris	Eleysiniotis	Intracom Telecom	Network Engineer
68	Stelios	Prekas	TEI of Athens	Network Engineer
69	Dimitrios	Andritsakis		
70	Konstantinos	Champidis	adslgr.com	administrator
71	Ioannis	Trichas	Hellas Online	IP/IPTV Supervisor
72	Eygenia	Nikolouzou	Hellenic Authority for Communication Security and Privacy	Consultant
73	Vasileios	Stathopoulos	Hellenic Authority for Communication Security and Privacy	Consultant
74	Sotirios	Maniatis	Hellenic Authority for Communication Security and Privacy	Consultant
75	Eleni	Saridaki	Forthnet SA	Network Engineer

Table 1-1: Athens Workshop: List of participants

The participants represented a wide range of the ICT community. They were technical people whose knowledge about IPv6 ranged from almost no knowledge at all to having significant experience with IPv6 deployment. Some had already performed IPv6 experiments or were planning some level of deployment at their institutions.

1.3 Workshop program

The agenda was agreed on after close collaboration with the requirements submitted by participants. The meeting agenda and the related material were submitted in advance so that the local organisers could decide which topics should be prioritised and so manage the logistics accordingly. The program of the workshop is presented in the following table:

Day 1: 21st of June 2010		
Time	Title of Session	Description
9:00 – 9:15	<i>Welcome - 6DEPLOY Project</i>	Project presentation, training objectives
9:15 – 11:00	<i>Introduction to IPv6 (Part A)</i>	Introduction, IPv6 protocol basics
	<i>Introduction to IPv6 (Part B)</i>	Addressing, associated protocols, auto-configuration
11:00 – 11:15	<i>Operating Systems & Host Configuration</i>	Enable IPv6 in various operating systems, (MS Windows, Linux/BSD, MacOS, etc)
11:45 – 12:15	<i>IPv6 deployment scenarios</i>	Deploy IPv6 in an ISP / enterprise network (case studies)
12:15 - 12:30	<i>Addressing case studies</i>	Addressing case studies
12:30 – 13:00	<i>IPv6 Routing & RPSLng</i>	Differences between IPv4 and IPv6 routing protocols
14:00 – 15:30	<i>Lab Session A: Routing</i>	Create tunnels, set-up BGP and OSPF in a lab environment
16:00 – 16:30	<i>IPv6 DNS & Management</i>	DNS and Network Management
16:30 – 17:00	<i>IPv6 experience in GRNET</i>	Brief presentation of IPv6 experiences in deploying IPv6 in GRNET
17:00 – 17:20	<i>Open Discussion - Questions</i>	Open discussion

Table 1-2: Athens Workshop Programme (Day 1)

Day 2: 22 nd of May 2010		
Time	Title of Session	Description
9:00 – 9:45	<i>IPv6 and xDSL</i>	IPv6 deployment in xDSL environments, EduDSL & GSN case studies
9:45 – 10:40	<i>IPv6 Multicast</i>	Multicast addresses, multicast listener discovery (MLD), multicast routing
10:40 – 11:00	<i>IPv6 coexistence with IPv4</i>	Migration policies, transitining mechanisms, e.g. NAT64.
11:30 – 12:00	<i>IPv6 Security</i>	IPv6 threat analysis and security issues
12:00 – 12:30	<i>Software Development</i>	How-to guide for developers
12:30 – 13:00	<i>IPv6 and cellular networks</i>	Overview of the IPv6 issues in cellular networks (3G, LTE)
14:00 – 15:30	<i>Lab Session B: Services</i>	Enable IPv6 services, DNS, firewalls, etc
16:00 – 16:30	<i>IPv6 Mobility</i>	IPv6 mobility features, comparison with IPv4 mobility
16:30 – 17:00	<i>IPv6 and Sensor Networks</i>	6LoWPAN protocols and examples of sensor networks
17:00 – 17:20	<i>Open Discussion Questions</i>	Open discussion
	<i>Evaluation</i>	

Table 1-3: Athens Workshop Programme (Day 2).

1.4 Presentation material

The following material was presented:

Modules	Presented by	Affiliation
6DEPLOY Introduction	Athanassios Liakopoulos	GRNET
IPv6 Introduction	Athanassios Liakopoulos	GRNET
IPv6 Protocol	Athanassios Liakopoulos	GRNET
IPv6 Addressing	Athanassios Liakopoulos	GRNET
IPv6 Associated Protocols	Athanassios Liakopoulos	GRNET
Equipment Configuration	Anastasios Zafeiropoulos	GRNET
How-to Guide for Developers	Anastasios Zafeiropoulos	GRNET
IPv6 and Sensor Networks	Anastasios Zafeiropoulos	GRNET

IPv6 Security	Athanassios Liakopoulos	GRNET
IPv6 Network Management	Athanassios Liakopoulos	GRNET
IPv6 RPSL	Andreas Polyraakis	GRNET
IPv6 Routing	Tassos Karaliotas	GRNET
IPv6 Multicasting	Zenon Mousmoulas	GRNET
IPv6 and 3G Cellular Networks	Athanassios Liakopoulos	GRNET
IPv6 and DSL	Thanassis Douitsis	NTUA/GRNET
IPv6 Deployment Case Studies	Jan Zorz	go6.si
Routing Hand-on	Andreas Polyraakis & Tasos Karaliotas	GRNET
Services Hands-on	Alexandros Kossiaris & A.Liakopoulos	GRNET
IPv6 Transition (Tunnel Broker)	Panayiotis Christias	NTUA/GRNET

Table 1-4: Athens Workshop: List of modules used.

1.4.1 Modules

Below is a brief description of each module's content:

- **IPv6 Introduction:** This module explains why a new version for IP, IPv6, has been developed. A brief history of IPv6, its motivation and benefits are given.
- **IPv6 Protocol:** This module describes IPv6 protocol: IPv6 packet header, extensions headers and differences with IPv4 headers. Packet size issues and upper layer considerations are also treated.
- **IPv6 Addressing:** This module explains the IPv6 addressing architecture, the different types of addresses (unique local IPv6 addresses, interface IDs, multicast addresses), their textual representation, how these are built and related to a layer 2 address.
- **IPv6 Associated Protocols:** This module describes new protocols associated to IPv6: e.g. Neighbour Discovery Protocol, SEND, ICMPv6, MLD, etc.
- **Equipment Configuration:** This module lists some examples of IPv6 configurations for hosts (Windows, Linux, etc) and routers (Cisco, Juniper, etc.).
- **How-to Guide for Developers:** This module explains how to implement IPv6 applications and how to update an IPv4 application in order to support IPv6

(porting issues, etc.)

- **IPv6 Multicasting:** Basic concepts are covered such as multicast addresses, Multicast Listener Discovery (MLD) protocol, multicast routing, PIM-ASM and PIM-SSM. Some practical examples are also included.
- **IPv6 Security:** Several issues are covered like the IPsec model, privacy extensions, ND threats, IPv4 vs. IPv6 Threat Analysis, IPv6 security issues, practical IPv6 security issues and firewalling IPv6. The distributed security model is introduced. Security issues from transition and coexistence point of view are also provided.
- **IPv6 Network Management:** This module explains how to manage an IPv6 network. The different ways to retrieve management information are described (MIBs, IPv6 flows) and some IPv6 management tools and platforms are presented.
- **IPv6 Routing:** This module mainly describes the differences between IPv4 and IPv6 routing protocols for OSPFv3, EIGRP, RIPng, BGP4+, ISIS and MPLS.
- **IPv6 RPSL:** This module describes the Routing Policy Specification Language for IPv6. Some examples are also provided
- **IPv6 and 3G Cellular Networks:** This module provides a short overview of the different kind of cellular networks (GSM, GPRS, 3G) and the IPv6 services that can be deployed within them. Specific issues such as IPv6 address allocation using GPRS, transition scenarios related to Mobile Stations (MS), transition scenarios related to IP Multimedia Subsystem (IMS) and IPv6 MS implementation issues are presented in detail.

1.4.2 Hands-on sessions

1.4.2.1 Routing Labs

The remote 6DEPLOY labs in Sofia and Ljubljana were used for the hands-on sessions. The detailed labs network diagrams are shown in the following pictures.

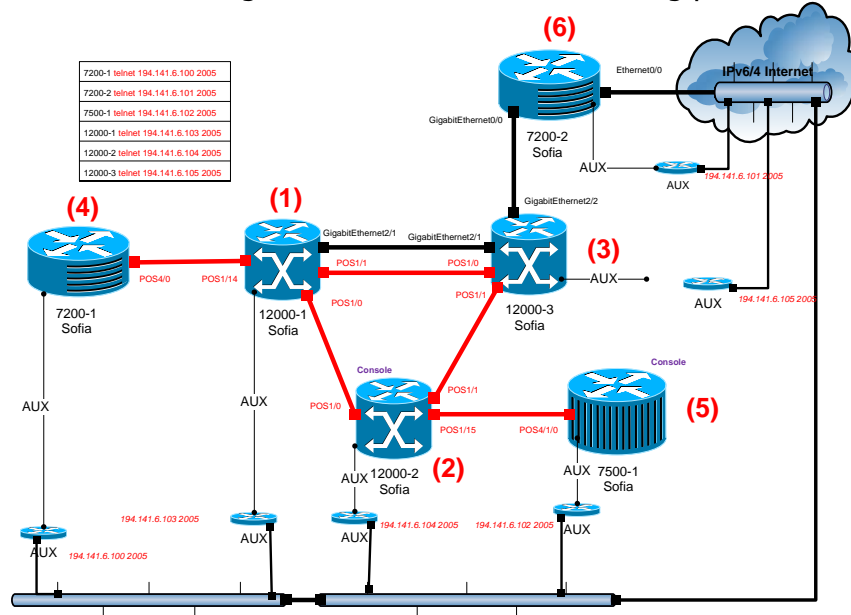


Figure 1: Lab in Sofia

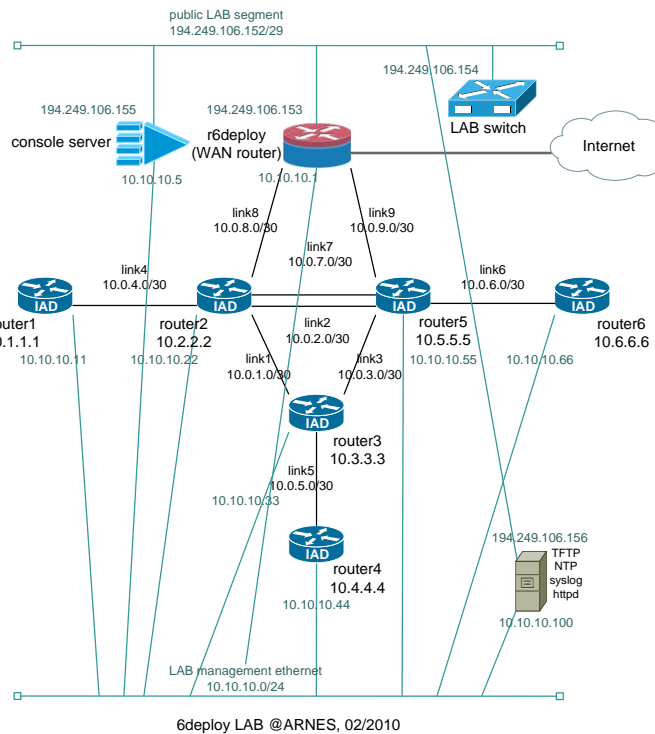


Figure 2: Lab in Ljubljana

An extensive set of exercises were requested in two sessions of approximately 40 people each. The outline of the exercises is as follows:

1. Basic Configuration & Connectivity

- Enable IPv6
- Set IPv6 addresses to loopback/physical interfaces
- Enable IPv6 routing
- Enable RAs
- Verify neighbours

2. Enable OSPFv3

- Enable OSPF
- Set the router ID
- Check OSPF neighbourship
- Check routing table
- Address redistribution

3. Enable BGP

- Enable iBGP mesh
- Enable eBGP multihop sessions
- Route filtering

1.4.2.2 The Service Labs

The service lab was performed using the cloud computing infrastructure of GRNET. Forty virtual machines (VMs) running Debian Linux 5 (lenny) were instantiated, each of them having the following software installed:

- IPv4/IPv6 dual stack
- ISC-Bind 9.x
- Apache 2.2
- OpenSSH 5.1

All the virtual machines were connected with a Juniper MX960 router in a star topology.

The outline of the exercises is as follows:

1. Basic Services

- Access IPv6
- Interface configuration

2. Security

- IPv6 iptables
- Administration of rules
- Troubleshooting

3. IPv6 DNS

- Basic configuration

- Administration of AAAA records
- Verification tests

4. IPv6 Apache

- Basic configuration
- Verification tests

5. IPv6 BIND

- Basic configuration
- Verification tests

1.5 Photographs taken at the event



Figure 3: Training Room



Figure 4: Software development training



Figure 5: Invited speaker from Go6.si



Figure 6: Routing Training



Figure 7: Hand-on Sessions



Figure 8: Basics IPv6 training

1.6 Participant comments

It should be noted that the participants had different technical backgrounds. For example, thirty one (31) participants claimed to be network engineers (and therefore they were more interested in routing protocols and troubleshooting practices), while another twelve (12) claimed to be system administrators (and therefore more interested in applications and monitoring tools). Six (6) participants claimed to be Governmental Advisors or IT managers.

Depending upon their technical background, some participants would have preferred to have a “hands-on” session related to each presented issue.

Approximately fifty participants filled in the questionnaire given in the Appendix A. Half of them were employed in commercial local ISPs, mobile operators or system integrator. Five participants represented governmental agencies and 23 participants were from the educational and research community.

The following graphs show the replies of the participants in the following questions:

- Question A: How useful did you find the presentations?
- Question B: How well the presentations were presented?
- Question C: How much of the material was already familiar?

Based on the participants replies, it may be claimed that:

- a. The training sessions addressed the needs of the participants and the event is

considered useful for the vast majority of the attendees.

- b. The awareness for the IPv6 technology is increasing over time but there is still a need for raising awareness for transitioning mechanisms.

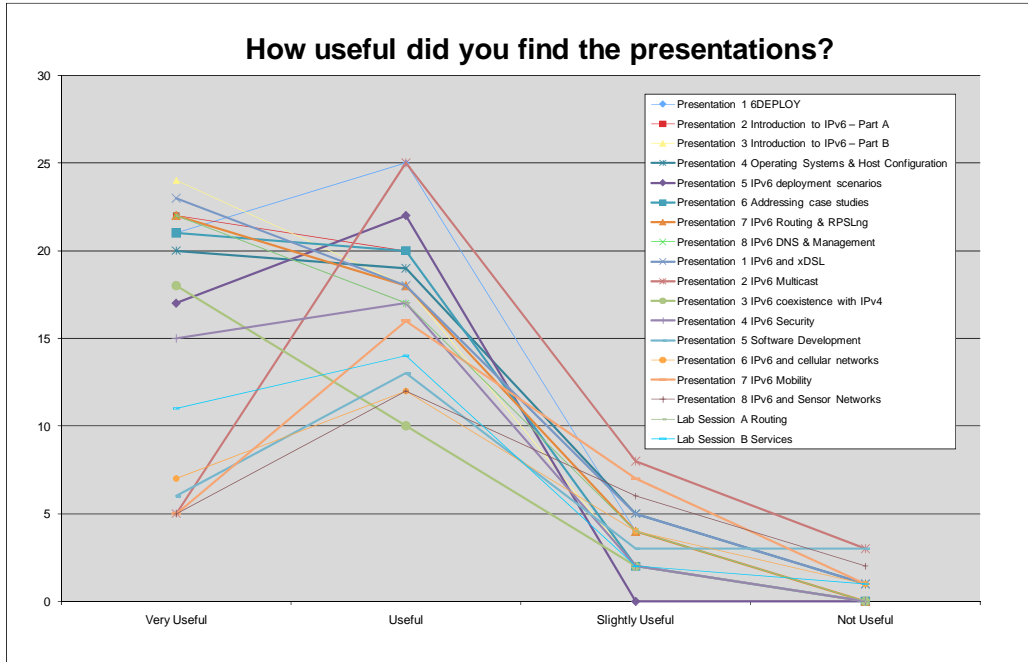


Figure 9: Question A

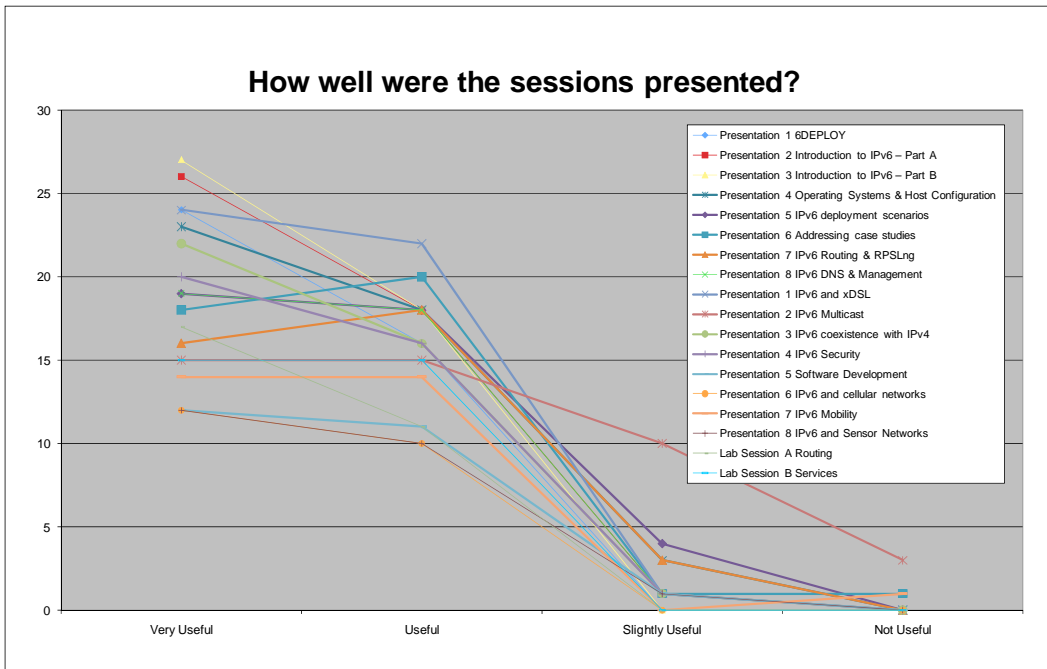


Figure 10: Question B

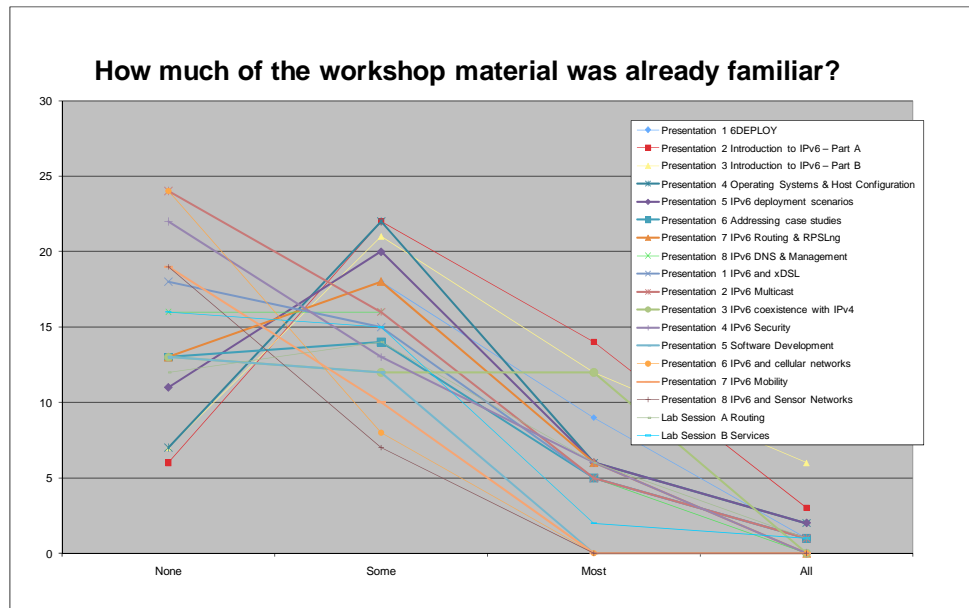


Figure 11: Question C

1.7 Sponsorship

The 6DEPLOY event was supported by the following list of companies that covered all the organisation expenses, such as the expenses for the lecture theatre, the lunch and coffee breaks, the travel expenses for the invited tutor Jan Zorz (Go6.si – Slovenia), etc.

The sponsors were given the permission to distribute promotional leaflets and CDs related with the event, e.g. operational manuals, etc.

1.7.1 Alcatel Lucent

International Vendor Provider – Greek Branch (<http://www.alcatel-lucent.gr>)



1.7.2 Cisco Systems

International Vendor Provider – Greek Branch

(<http://www.cisco.com/web/GR/index.html>)



1.7.3 Extreme networks and ΔΙΗΝΕΚΗΣ

International Vendor Provider (<http://www.extremenetworks.com/>)



Greek System and Network Integrator (<http://www.dienekis.gr/>)



1.7.4 Juniper Networks

International Vendor Provider – Greek Branch

(<http://www.juniper.net/us/en/contact-us/sales-offices/athens/>)



1.7.5 Kestrel Information Systems

Greek System and Network Integrator (<http://www.kestrel-is.gr/>)



1.7.6 Nokia Siemens Networks

Greek System and Network Integrator – Greek Branch

(<http://www.nokiasiemensnetworks.com/>)



1.7.7 OTEGlobe

International Bandwidth Provider (<http://www.oteglobe.gr/>)



1.7.8 Space Hellas

Greek System and Network Integrator (<http://www.space.gr/>)



1.7.9 Velti

International Mobile Application Development and Marketing (<http://www.velt.com>)



1.7.10 Hellenic IPv6 Task Force

Open IPv6 Forum in Greece (<http://www.ipv6-taskforce.gr/>)



1.8 Opportunities for Further Co-operation

In the workshop, the attendees were informed on how to stay in contact with the 6DEPLOY partners in case they have questions regarding IPv6 deployment, addressing plans, etc. In this respect, the role of the *helpdesk* was explained as being the way to submit questions. An e-mail to helpdesk@6deploy.org will be distributed to a mailing list composed of volunteers who are available to answer (or forward) any kind of questions, requests, etc. Also a web form can be used to send requests to the project.

Additionally, the attendees (and trainers from the region) can follow the e-learning course and/or check the availability of the 6DEPLOY remote labs and use these.

2. HELLENIC IPV6 TASK FORCE MEETING

The 2nd Hellenic IPv6 Task Force Meeting took place in Athens in 23rd of June 2010. The event was co-organised by the Hellenic Communications and Post Commission (<http://www.eett.gr/>) and GRNET (<http://www.grnet.gr/>) and supported by 6DEPLOY.

More than twenty governmental agencies and companies took part in this meeting, half of which presented their views for the deployment of IPv6 services in Greece as well their activities in the last period. Furthermore, educational and academic organisations presented their research activities and future plans.

Some for the key points of the presentations are as follows:

- OTEGlobe SA announced the provision of IPv6 transit interconnection services to Greece and the rest of the South Eastern European countries,
- OTE SA presented the completion of IPv6 over DSL tests and the plans for large-scale pilot tests with commercial end-users,
- GENNET SA announced that is investing in the development of software for IPv6-enabled DSL routers,
- NTUA announced the deployment of a free tunnel broker in Greece
- Local branches of international equipment vendors presented the roadmap of their R&D departments and committed to support further dissemination and training IPv6 in Greece,
- Various ISPs presented the initiation of IPv6 tests within the year 2010, such as Hellas Sat,
- GRNET presented dissemination activities, such as the 6DEPLOY training Workshop and IPv6-projects for 2010-2013.

2.1 HIPv6 TF Meeting Programme

The meeting programme is given in the following table. All the presentations as well as the minutes and conclusions of the meeting are publicly available from the official HIPv6 TF web site (<http://www.ipv6-taskforce.gr/>).

223794	6DEPLOY	D1.21 Report from the 20 th Workshop
2nd Hellenic IPv6 TF Meeting «Two years before the exhaustion of IPv4 addresses» Hellenic Communication and Post Commission		
Part A: Introductions		
Aggelos Sirigos (Hellenic Communication and Post Commission) - Welcome		
Athanassios Liakopoulos (GRNET/6DEPLOY) - Objectives – Activities Report for 2009		
Jan Zorz (go6.si) - IPv6 Dissemination Activities in Slovenia – Companies Cooperation Model		
Part B: Vendors' Views		
Sotiris Leventis (Cisco Systems) - (Architecting for IPv4-Exhaustion & IPv6 Deployment in SP Networks)		
Efthimios Christodoulakis (Extreme Networks) - (Extreme Networks IPv6 Solution)		
Dimitris Nissirios (Juniper Networks) - (Juniper Networks & IPv6)		
Part C: ISPs' Views		
Ioannis Vlachos (CYTA SA)		
Achilleas Voliotis (OTE SA) - (IPv6 Deployment/Migration Progress)		
Vagelis Vagias (OTEGlobe SA) - (Transit IPv6 Services for Greece and South East Europe: OTEGlobe Experiences)		
Antonis Stratis (ONTelecoms SA)		
Giorgos Adamopoulos (Technical Chamber of Greece)		
Alexandros Vavousis (Hellas Sat SA) - (Hellas SAT S.A IPv6 Activities)		
Part C: Integrators' Views		
Λεωνίδας Βασιλακάκης (Kestrel Information Systems SA) - (Kestrel & IPv6 Support Portfolio)		
Nikos Kopsias (GENNET SA) - (Supporting IPv6 functionality to CPEs)		
Part D: Governmental Agencies' Views		
Sotiris Maniatis (Hellenic Authority for Communication Security & Privacy)		
Anastasios Zafeiropoulos (GRNET) - (GRNET Activity Report)		
Athanasios Douitsis (NTUA/GRNET NOC) - (IPv6 broadband access Services)		
Panagiotis Christias (NTUA/NOC) - (IPv6 Tunnel Broker)		
Part E: Users' Forums		
Constadinos Chabidis (ADSLGR)		
Part F: Open Discussion		
Athanassios Liakopoulos (GRNET) - (Hellenic IPv6 TF Planning for 2010)		
Open Discussion - Conclusions		

2.2 Photographs taken at the event

The complete set of photos may be found in <http://www.ipv6-taskforce.gr/wiki/index.php/Presentations>



Figure 12: Hellenic IPv6 TF Meeting



Figure 13: A.Sirigos (Hellenic Communication and Post Commission)



Figure 14: A. Liakopoulos (GRNET)



Figure 15: J.Zorz (Go6.si)



Figure 16: L.Vasilakakis (Kestrel Information Systems)



Figure 17: V. Vaggias (OTEGlobe)

3. CONCLUSIONS

More than 75 network engineers, system administrators, and researchers participated in the 6DEPLOY training workshop, the second workshop organised in South Eastern Europe. The topics presented were selected according to the participants' requirements.

Based on the comments from the participants of the workshop, it is clear that there is significant interest in the region for IPv6 technology. The participants offered positive comments regarding the workshops' usefulness and organisation. They also requested that 6DEPLOY organise more workshops in the SEE region with more specific technical subjects.

In summary, this workshop should be considered a success with regard to the dissemination of IPv6 in the SEE Region, though this is only the first of many steps towards the deployment of real IPv6 networks and services in the region.

4. REFERENCES

6DEPLOY website: <http://www.6deploy.org>

6DISS website: <http://www.6diss.org>

Paris Testbed: <http://www.renater.fr/spip.php?article439&lang=en>

Hands-on modules: <http://6diss.6deploy.org/publications/deliverables/hands-on.pdf>

How-to organise an IPv6 workshop:

<http://6diss.6deploy.org/workshops/workshop-guidelines.pdf>

Training the trainers workshop: <http://6diss.6deploy.org/workshops/ttt/>

e-learning package: <http://6diss.6deploy.org/publications/multimedia/e-learning.iso>

e-learning on-line: <http://6diss.6deploy.org/e-learning/>

APPENDIX A: QUESTIONNAIRE: 6DEPLOY IPv6 TRAINING WORKSHOP(ATHENS, 21-22 JUNE 2010)

In order to help us plan similar workshops in the future, the 6DEPLOY project would be grateful if you would take a few minutes to complete this form. Thank you.

Personal Details (*Not mandatory*)

Full Name: _____
 Organisation: _____
 Country: _____

In which employment sector do you work?

- Government
- University or higher education
- Research
- Internet Service Providers
- Mobile Operators
- Systems Integrators
- Software development
- Other (please specify): _____

Which of the following best describes your job function?

- Government Advisor
- Senior Manager
- IT Manager
- System administrator
- Network administrator
- Researcher/Postgraduate
- Undergraduate
- Other (please specify): _____

Does your organisation use IPv6?

- Yes
- No, but planned in the next year
- No, but planned in the longer term
- No, and no plans as yet

Do you use IPv6 yourself?

- Yes
- No

What percentage of your colleagues is adequately familiar with IPv6? (Consider only the colleagues that are expected to be familiar with IPv6 technology)

- Less than 1%

- Less than 5%
- Less than 10%
- Less than 30%
- Less than 50%
- More than 50%

About the Workshop *(Please complete as many sections as possible)*

How useful did you find the presentations?

Very Useful *Slightly Useful* *Not Useful*

Monday, 21st of June 2010

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| Presentation 1 6DEPLOY | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 2 Introduction to IPv6 – Part A | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 3 Introduction to IPv6 – Part B | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 4 Operating Systems & Host Configuration | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 5 IPv6 deployment scenarios | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 6 Addressing case studies | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 7 IPv6 Routing & RPSLng | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Lab Session A Routing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 8 IPv6 DNS & Management | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 9 IPv6 experience in GRNET | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Tuesday, 22nd of June 2010

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| Presentation 1 IPv6 and xDSL | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 2 IPv6 Multicast | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 3 IPv6 coexistence with IPv4 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 4 IPv6 Security | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 5 Software Development | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 6 IPv6 and cellular networks | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Lab Session B Services | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 7 IPv6 Mobility | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 8 IPv6 and Sensor Networks | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

How well were the sessions presented?

Excellent *Good* *Average* *Poor*

Monday, 21st of June 2010

- | | | | | |
|--|--------------------------|--------------------------|--------------------------|--------------------------|
| Presentation 1 6DEPLOY | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 2 Introduction to IPv6 – Part A | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 3 Introduction to IPv6 – Part B | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 4 Operating Systems & Host Configuration | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 5 IPv6 deployment scenarios | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 6 Addressing case studies | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Presentation 7 IPv6 Routing & RPSLng | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Lab Session A Routing | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- Presentation 8 **IPv6 DNS & Management**
- Presentation 9 **IPv6 experience in GRNET**

Tuesday, 22nd of June 2010

- Presentation 1 **IPv6 and xDSL**
- Presentation 2 **IPv6 Multicast**
- Presentation 3 **IPv6 coexistence with IPv4**
- Presentation 4 **IPv6 Security**
- Presentation 5 **Software Development**
- Presentation 6 **IPv6 and cellular networks**
- Lab Session B **Services**
- Presentation 7 **IPv6 Mobility**
- Presentation 8 **IPv6 and Sensor Networks**

How much of the workshop material was already familiar?

None Some Most All

Monday, 21st of June 2010

- Presentation 1 **6DEPLOY**
- Presentation 2 **Introduction to IPv6 – Part A**
- Presentation 3 **Introduction to IPv6 – Part B**
- Presentation 4 **Operating Systems & Host Configuration**
- Presentation 5 **IPv6 deployment scenarios**
- Presentation 6 **Addressing case studies**
- Presentation 7 **IPv6 Routing & RPSLng**
- Lab Session A **Routing**
- Presentation 8 **IPv6 DNS & Management**
- Presentation 9 **IPv6 experience in GRNET**

Tuesday, 22nd of June 2010

- Presentation 1 **IPv6 and xDSL**
- Presentation 2 **IPv6 Multicast**
- Presentation 3 **IPv6 coexistence with IPv4**
- Presentation 4 **IPv6 Security**
- Presentation 5 **Software Development**
- Presentation 6 **IPv6 and cellular networks**
- Lab Session B **Services**
- Presentation 7 **IPv6 Mobility**
- Presentation 8 **IPv6 and Sensor Networks**

Quality of course documentation?

Excellent Good Average Poor

General organisation of the workshop?

Excellent Good Average Poor

Would you recommend the workshop to your colleagues? *Yes* *No*

What topics would you have liked to hear more about?

What topics would you have liked to hear less about?

Any other comments:
