



Ministry of Information Communication and Culture  
Malaysia

# Development of IPv6 Roadmap in Malaysia

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# Contents

- Introduction
- Malaysia's Initiatives
- Development of National IPv6 Roadmap
- Stakeholders And Their Roles
- Issues and Challenges
- New Revised Targets For IPv6 Rollout
- Present Status
- Conclusion





# MyICMS 886

## Services

1. High Speed Broadband
2. 3G & Beyond
3. Mobile TV
4. Digital Multimedia Broadcasting
5. Digital Home
6. Short Range Communications (e.g. RFID-based)
7. VoIP/Internet Telephony
8. USP - Universal Service Provision

## Infrastructure

### *Hard*

1. Multiservice Convergence Networks
2. 3G Cellular Networks
3. Satellite Networks

### *Soft*

4. Next Generation Internet Protocol (IPv6)
5. Home Internet Adoption
6. Information & Network Security
7. Competence Development
8. Product Design & Manufacturing

## Growth Areas

1. Content Development (e.g. education, entertainment, games)
2. ICT Education Hub
3. Digital Multimedia Receivers (set top box)
4. Communication Devices (e.g. VoIP phones)
5. Embedded Components & Devices (e.g. RFID)
6. Foreign Ventures



## Malaysia's Initiatives

- Set-up the National IPv6 Council in 2004 to plan and implement IPv6 in Malaysia
- Set-up the National Advanced IPv6 Centre of Excellence (NAv6) at University of Science Malaysia (USM) in Mac 2005
- Develop the IPv6 Roadmap as a Strategic Implementation plan for IPv6 in Malaysia





## National IPv6 Council

- Ministry of Energy, Water and Communication has set-up the NATIONAL IPv6 COUNCIL
- Objective – to plan and implement the IPv6 adoption in Malaysia
- Proposed targets to be IPv6-enabled:
  - ISPs by 2006
  - E-Government Network in 2008
  - Malaysia in 2010



# National IPv6 Council

## Membership

### FULL MEMBERS

- Ministry of Energy, Water and Communication (Chair & Secretariat)
- Ministry of Finance
- Economic Planning Unit
- Ministry of International Trade and Industry
- Ministry of Science, Technology and Innovation
- Ministry of Higher Education
- Malaysia Administration Management and Planning Unit
- Malaysia Communications and Multimedia Commission

### AFFILIATES MEMBERS

- Representatives from Tertiary Institutions
- Multimedia Development Corporation
- MYREN
- MY6
- Representatives from the ICT Industry



# National Advanced IPv6 Centre of Excellence – NAv6

- To assist in the implementation of IPv6, National IPv6 Council in the first meeting has assigned the Network Research Group (NRG), University Of Science Malaysia (USM) as the Centre of Excellence for IPv6.
- The National Advanced IPv6 Centre (NAv6) was established on the March 2005 and positioned as the Malaysian hub to provide expertise and conducive environment to related IPv6 activities.



## National IPv6 Roadmap

- Outlines both compelling strategy and implementation approach to chart the way forward for Malaysia in the IPv6 arena
- Objective –
  - To produce a national framework document for the IPv6 roadmap for Malaysia that will be referred to by all government agencies, industries and research institutions in the country.
  - It also promote and ensure a scheduled adoption of IPv6 in Malaysia







## Scope of IPv6 Roadmap Study

- Identification of the need of IPv6 in Malaysia and the main focus areas of the IPv6 deployment
- Identification and definition of roles of each stakeholders (industries and research institutions) and government agencies
- Development of a detailed roadmap that combines the findings and maps the action plans for the Government and key stakeholders; and
- Development of indicators of success on the adoption of the IPv6 Roadmap by Government agencies, the industry and the public



## Stakeholders and their Roles



### Ministries and Government Agencies

#### ❖ Communication Sector of Ministry of Information, Communication and Culture



- ❖ Formerly under MEWC played the main role in the development of IPv6 in Malaysia
- ❖ Had taken an initiative for the establishment of the following 2 key players in IPv6
  - ❖ National IPv6 Council
  - ❖ National Advanced IPv6 Centre (NAv6)



## Stakeholders and their Roles

### Ministries and Government Agencies

#### ❖ Malaysian Communications and Multimedia Commission (MCMC)



- ❖ The regulatory body for IPv6 technology
- ❖ Responsible in drafting guidelines & regulations for ISPs to follow in the usage of IPv6





## Stakeholders and their Roles

### Ministries and Government Agencies

#### ❖ Malaysian Administrative Modernisation & Management Planning Unit (MAMPU)



- ❖ Monitors the implementation of IPv6 in the Public Sector
- ❖ Ensures that all government departments follow the IPv6 timelines set





## Stakeholders and their Roles

### Ministries and Government Agencies

- ❖ **Ministry of Science, Technology & Innovation (MOSTI)**



- ❖ Responsible in the area of Research & Development (R&D) for IPv6 R&D activities





## Stakeholders and their Roles

### Ministries and Government Agencies

- ❖ **Ministry of Higher Education (MOHE)**
  - ❖ Plays an important role as most of the applicants for IPv6 research grants will come from Institutes of Higher Learning as such institutes are the centre of R&D in Malaysia





## Stakeholders and their Roles

### R&D Communities in General

- ❖ **Consists of**
  - ❖ MYREN community
  - ❖ NAv6
  - ❖ Universities and Institutes of Higher Learning
  - ❖ Research Institutes
  - ❖ Industry and Telcos
- ❖ R&D community jointly provide direction on research in IPv6





## Stakeholders and their Roles

### Technical Standard Bodies

#### ❖ Malaysian Technical Standard Forum Berhad (MTSFB)

- ❖ Body designated by MCMC to identify and develop codes of technical standards for the communications and multimedia industry
- ❖ MTSFB is working closely with the local ISP industry to ensure the targets set by the Government are met







## Stakeholders and their Roles

### Technical Standard Bodies

- ❖ **.myDomain Registry**
- ❖ is the registry and registrar for the IPv6 domain





## Stakeholders and their Roles

### Internet Service Providers and Telecommunication Companies

- ❖ ISPs & Telco's play a significant role
- ❖ As service providers for the nation, it is vital that the local ISPs and Telco's prepare themselves to a fully dual stack IPv4 and IPv6 network





## Issues and Constraints

- Lack of awareness among the industry, and there is a low demand for IPv6 address
- Cost of migration is high
- Lack of technical expertise





## New Revised Targets For IPv6 Rollout

- Due to the issues and constraints faced, the targets had been revised
- In line with the global developments of IPv6 implementation in other countries which showed that most countries are ready around 2012 and 2013
- Malaysia is more ready to move to IPv6 by year 2012





# Revised Targets for IPv6 Implementation

## Original Targets Of IPv6 Rollout

**ISP  
2006**

**Govt. Agencies  
2008**

**Malaysia  
2010**

## New Targets based on Cabinet decision on 4 Dec 2009

**Govt. Agencies  
2011**

**Malaysia  
2012**



## Domain Registration

- Registration of IPv4 domain to IPv6 domain with Domain Registry is targeted as follows:
  - end of 2010 – 10%
  - end of 2011 – 25%
  - end of 2012 – 50%





## Present Status

- 2 Pilot IPv6 Projects were Implemented in line with the vision of the National IPv6 Council
- The Two (2) Government agencies selected were:



Ministry Of Energy, Water and  
Communication (MEWC)



Malaysian Administration Modernization  
and Management Planning Unit (**MAMPU**)





## 2 Pilot IPv6 Projects

- Both pilot projects had been successfully implemented and had reached the IPv6 status (IPv6 ready) at the end of year 2008
- But due to the Putrajaya Campus Network (PCN) overhaul which involve the upgrade of Asynchronous Transfer Mode (ATM) to Gigabit Ethernet (GE), had affected the IPv6 network of both pilots, and both are currently in the process of linking back to the IPv6 network







## ISP Readiness

- The main ISPs had undergone the network readiness and inter-isp connectivity audit tests and MCMC is currently taking steps to make sure all ISP's are ready to provide the IPv6 service





## Registration of Domain Name System (DNS) for IPv6

- This service by .myDomain Registry had increased the demand for IPv6.





## Migration Plan For Public Sector

- MAMPU had prepared the Migration Plan Transition Guidelines For Public Sector and had been circulated to Government agencies in early January 2010.





## IPv6 Technical Training

- Up to now, a total of 240 technical personnel had been trained of the government sector





# Awareness and Promotion Programmes

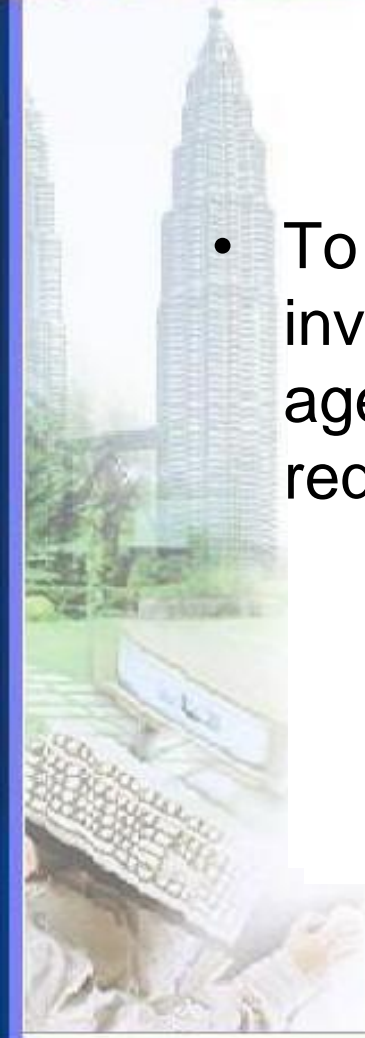


- On going
- For the Government sector, 12 seminars with about 2050 participants had been organized according to regions in the country
- The industry had also organised seminars and workshops throughout the country



## Conclusion

- To ensure a scheduled adoption of IPv6 in Malaysia, involvement of all stakeholders including government agencies, industries and research institutions is required and the country is geared towards that now.





**Thank You**

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