

# IPv6 in the Real World: Planning for IPv6

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# Adding IPv6 to Your Network

- ▶ There are three major factors that make adding IPv6 to your network successful:
  - Planning
  - Training
  - Implementation
- ▶ But, what goes into these efforts?

# Planning : Policy Review

- ▶ What do you do today?
- ▶ Do you want to do it the same way after IPv6 is added?
- ▶ What policies and procedures should be adapted to address adding IPv6?
  - Is there any other tasks that need to be rolled in along with this work?
- ▶ Do you need to modify your security policy to take into account new capabilities available in an IPv6-enabled network?

# Planning: Inventory/Audit

- ▶ What devices are on your network today?
- ▶ What software runs on those devices?
- ▶ Is that software IPv6-ready?
  - If not, what will it take to make that possible?
- ▶ What changes need to be made in how users employ those devices when IPv6 is added to the network?
- ▶ What changes need to be made in how those devices are managed when IPv6 is added to the network?
- ▶ Does the inventory match up with what's really on the network?

# Planning: Impact on Others

- ▶ Are there any other projects that will be affected by adding IPv6 to the network?
  - If so, what is the impact?
    - How does that impact affect the IPv6 effort?
    - What can be done to insure that those projects are aware of the IPv6 effort and the impact it has on those projects?
- ▶ What is the impact on user community?
- ▶ What is the impact on customers?
- ▶ What is the impact on IT operations?
- ▶ In each case, what is the cost of this impact and how can that cost be mitigated?

# Planning: Designing The Plan

- ▶ Is there an existing change management framework that can be leveraged?
  - If not, this may be a good opportunity to consider a pilot for creating such a framework.
- ▶ What is the best sequence of events that insures the optimal impact and creates positive change?
  - What resources are needed to facilitate this?
  - How will the events be communicated to those impacted?
  - What happens when things don't go as expected?

# Training

- ▶ Properly leveraging existing human assets is the most critical factor in orchestrating a successful change.
  - Determine the level of expertise already available in the current staff.
  - Determine the gaps and determine the best option: training the current staff, bringing in extra temporary talent, or some combination of the two.
  - Train the current training staff on those things that will have long lasting benefit.
    - Have them train the current staff that will be involved in the implementation.
  - Don't forget to train on operations of the network after IPv6 is added.
  - Don't forget to train on common helpdesk issues that will likely occur both during the implementation and afterwards.
  - Invest in good training as it is much more likely to produce well-trained staff.

# Training: Who to Train

- ▶ System Operations
- ▶ Helpdesk/User Support
- ▶ Network Operations
- ▶ Network Engineering
- ▶ Applications Development
  - This group is often overlooked.
- ▶ Users?
  - This is very much dependent on the situation. Generally, a successful effort should not require much user training.



# Implementation

- ▶ Execute the plan, but be prepared to adapt.
  - Very few organizations can stand still while a broad network change is implemented.
- ▶ There is no single approach that is best, but:
  - Address the needed changes in hardware early on.
  - Insure that the software running on network-attached devices is correct.
    - This may require some lab work or some pilot deployments to validate.
  - Manage configuration changes (turning on IPv6 in an IPv6-ready device) using existing change management processes when possible.
  - Always be aware of the impact on security and respond quickly when security concerns are discovered.

# Implementation

- ▶ Over-communicate about upcoming changes and be sure to remind about changes already implemented.
  - If things go well, no one will see an impact, but they all need to be aware that changes are happening.
- ▶ Celebrate the milestones.
  - People often fear change. Making it a positive experience mitigates the fear.
- ▶ Integrate with the existing routine.
  - Ultimately, this will be the status quo.

# One More Thing: Evaluation

- ▶ Once implementation is complete, evaluate the work.
  - It will help make the next project better.
  - It will help expose those areas that need further refinement.
  - It will help set the new baseline for day-to-day operations.

# Where to go for more?

- ▶ RIPE NCC's <http://www.ipv6actnow.org/>
- ▶ ARIN's <http://getipv6.info>
- ▶ IPv6 Forum Affiliates:
  - <http://www.ipv6tf.org>
  - Rocky Mountain IPv6 Task Force <http://rmv6tf.org>
  - Texas IPv6 Task Force <http://txv6tf.org>
- ▶ Other sites of interest
  - <http://www.6diss.org/>
  - <https://sites.google.com/site/ipv6implementors/>
  - <http://gogoNET.gogo.net>

# Thank You!

- ▶ <http://www.academ.com>
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