

Managed IPv6 Transitioning Architectures

Presenting a Managed Approach
to IPv6 Transitioning

Michael Mackay
Computing Dept
Lancaster University



Overview

- IPv6 Transitioning Architectures
- Transitioning Management
- Introducing the STA

Transitioning Architectures

- **Internet Draft** (draft-savola-v6ops-transarch-02.txt)
 - Basic Principles
 - Guidelines
- **Our Structure**
 - Practical Deployment Issues
 - Mechanism Integration
 - Mechanism Interaction

Transitioning Management

- Supplements Admin properties
 - Subset of IPv6 net man, starting to be addressed
- Utilise SNMP Framework
 - Fault management
 - Design issues
- Transitioning MIB
 - Basic Spec in place
 - Discuss and develop further within 6Net

STA Overview

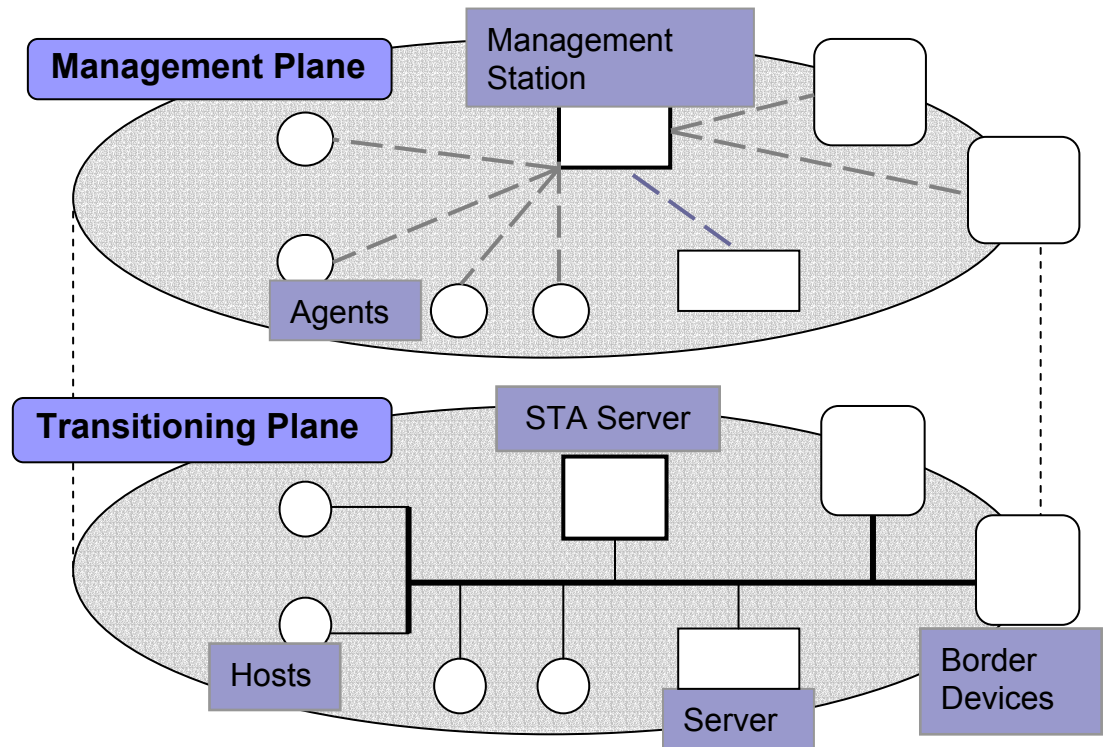
- IPv6 transitioning architecture
 - Administration and Management Framework
 - Large scale operators with managed networks
 - Minimal modification of existing mechanisms
- Two-layered architecture
 - Transitioning Plane - Dynamic transitioning infrastructure
 - Management Plane - SNMP

STA Objectives

- Unified framework suitable for whole transitioning period
 - Add and Remove mechanisms as needed
- Simplified operation and management
 - Unified allocation of resources
- Service-based approach to transitioning
 - Optimised mechanism Usage

STA Design 1 - Overview

- **Transitioning Plane**
 - Mechanisms composed of elements
- **Management Plane**
 - SNMP
- **STA Server**
 - Transitioning and management Server



STA Design 2

■ Transitioning Components

- Host – ?
- Server – DSTM Server, Tunnel Broker
- BD – Translator, Relay, Tunnel end-point
- Minimal modification of mechanisms

■ Deployment Scenarios

- Mechanisms Used vary according to scenario
- Migrating – Mixed Tunnelling and Interoperation
- IPv6-only – Interoperation-oriented

STA Usage Example

■ Overview

- IPv6-only Interoperation-based framework
- Large early IPv6 deployment

■ Multiple levels of service

- 'Common' Translator based service
- 'Premium' Dual Stack service

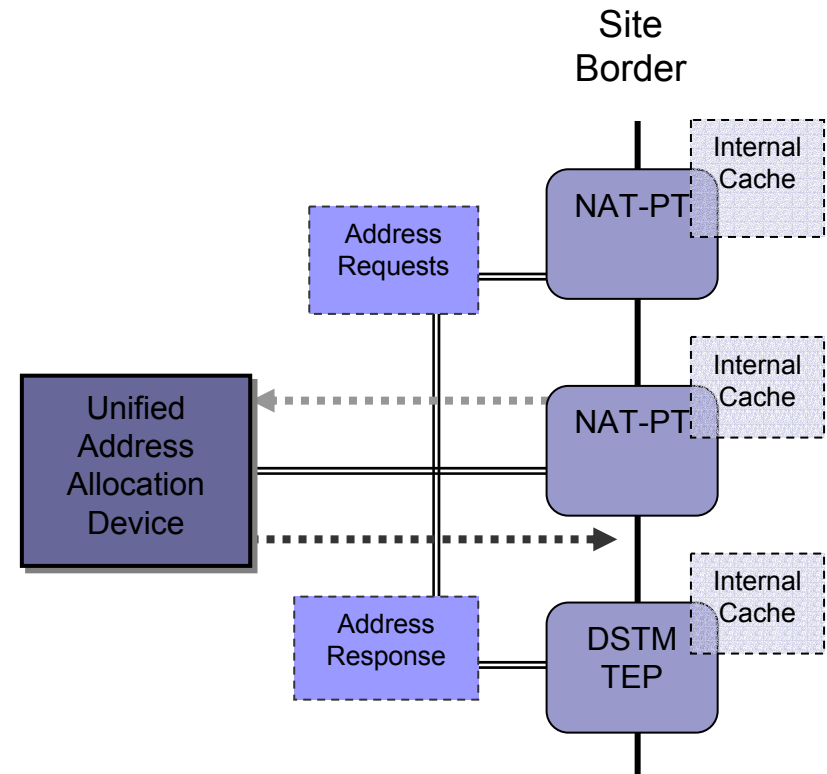
Case Study - Design

■ Operation

- Common Translator
- Premium Dual Stack

■ Tools

- DSTM, NAT-PT
- Modifications



Case Study - Implementation

- Implementation
 - Linux based
 - Existing implementations
- Transitioning
 - KAME NAT-PT
 - ENST DSTM
- Management
 - Net-snmp

The End...

- Thank you
- Questions?