White Rabbit Switch

Management Specification

Juan Luis Mañas
Miguel Baizán
INTEGRASYS S.A.
Facilitate Centralized WR Network Monitoring and Control

- Fault Detection
  - HP & SP packet loss
  - Erroneous packets: corrected (via FEC) or dropped
  - Clock syntonisation or synchronisation loss
  - Option to have extremely accurate notion of network events order

- Device Configuration M&C
  - VLANs
  - Spanning Tree

- Network Performance Monitoring
  - Congestion
  - Traffic Patterns
What?

- WRS is* a VLAN-aware switch...
  - ... that follows STANDARD 802.1Q *cool!*

- Some Good News
  - 802.1Q also defines STANDARD MANAGEMENT for bridges
  - States our “WHAT”
    - Fault, Configuration, Accounting, Performance, Security
    - Defines the MANAGED OBJECTS

- Nice...
  - TOOLS@NL can speak this language.

* is much more than that, but management will first focus on WRS as a SP traffic bridge
White Rabbit Developers Meeting #2, GSI - Darmstadt - Germany, 14th April 2011
Local & Remote
In-Band & Out-of-Band
WRS Management Specification

How?

- **SNMPv3 (Simple Network Management Protocol)**

  - REQ PDU
  - RESP PDU
  - TRAP

  **SNMP DAEMON**

  **MIB INSTRUMENTATION**

  **SW MODULES**

  **OS DRIVERS**

  **IPC**

  Device Independent

  Device Specific
How?

○ MIB INSTRUMENTATION
  ○ Fully Standardised
  ○ 802.1ap defines ALL MIBs a VLAN bridge should implement
    ○ BRIDGE
    ○ Q-BRIDGE
    ○ SPANNING-TREE

○ Strategy
  ○ Implement all that is mandatory. “Wanna be standard compliant”
  ○ Implement optional parts on demand. “Wanna be rabbit-friendly”

MIB COMPILER
WRS
Management Specification

How?

- CLI...
- ...reusing SNMP

CLI

SNMP DAEMON

MIB INSTRUMENTATION

IPC

SW MODULES

OS DRIVERS
Who?

- WRS REMOTE MANAGEMENT
- RAPID SPANNING TREE PROTOCOL
- MULTIPLE REGISTRATION PROTOCOL
- MULTIPLE MAC RP
- MULTIPLE VLAN RP
When?

- By September Meeting
  - SNMPv3 Agent integrated in WRS V2
  - BRIDGE MIB partially implemented (except MRP and MMRP)
  - Q-BRIDGE MIB partially implemented (except MVRP, and learning constraints)
  - RTU software adapted
    - Support to BRIDGE MIB operations
    - Support to Q-BRIDGE MIB operations
  - CLI prototype
  - RAPID SPANNING TREE протокол
    - Initial prototype for STP traffic (non-functional)
Questions?