



Imtech ICT & the Juniper Networks MX BNG

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Introduction

Imtech are a System Integrator (we don't just ship tin)

- Juniper UKI partner of the year
- Juniper UKI Operate Support Services partner of the year
- Vast Experience with Juniper Portfolio
- JNCIE and CCIE Consultants
- Project focussed
- All specialise in Routing and Switching but each also have development areas of interest

J-Partner

UKI Operate
Support Services
Partner of the Year 2013

J-Partner

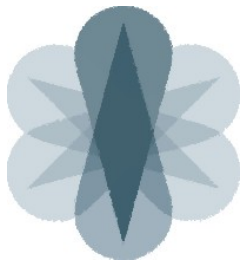
UKI Partner of the Year 2013



Introduction

My development area currently is JUNOS MX BNG

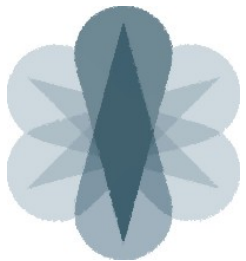
- Porting E series configuration to MX
- Working closely with SPs to develop NG Broadband products
- Designing new H-QoS models
- Developing Seamless MPLS Backhaul links



MX BNG

From the Small MX5 to the **LARGE** MX960

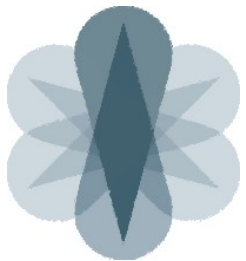
- Scaling numbers vary by model and code version
- Scales more as you move up the range and later the code
- Native PPPoE / LAC
- Available on all platforms
- Scaling license required
- L2TP LNS (LTS in 13.2)
- Available on all platforms (license required)
- H-QoS on MX80 MIC slots and MPC Q and EQ (QX Chip)
- Options of 4 or 8 queues per subscriber
 - Defined at the PIC level
 - 4 Queues provides maximum scaling
 - 8 Queues halves the subscriber scaling number per PIC



L2TP LNS

Makes use of Inline Services (si interface)

- MX5 through to MX960
- Anchors L2TP sessions on the MPC Q
- Can use any port based MPC for access interfaces
- Works in a similar way to the tunnel modules on E series
- License required for LNS
- Up to 128K subscribers on an MX960
- With 8 Queues per subscriber using MPC2 EQ



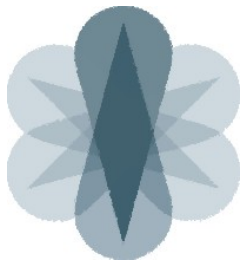
Subscriber H-QoS

Uses MX Style QoS

- Traffic Control profiles
- Classifiers
- Rewrite rules
- Schedulers
- Scheduler-maps
- Interface-sets

No 'huge' learning experience for JUNOS engineers

- Plenty of reference material
 - O'Reilly Juniper MX Series book is very useful
Doesn't expand on broadband but QoS is well explained
- Useful shell commands



Seamless MPLS

- Will scale to 2K pseudowires per chassis in 13.3R3
 - Ideal for MSAN backhaul
- No external cabling required
 - Loops internally using Tunnel-Services
- PPP interfaces ride on top of PWHT
- HQoS available for PWHT

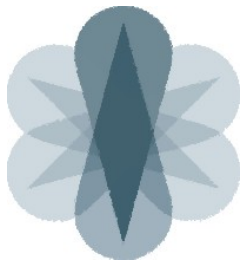
- Imtech are currently working with Juniper to enhance the scaling of PWHT
- Working with Juniper to enhance the NAS-Port-ID

Radius Integration

Works with the majority of VSAs used with the E series

- New VSA 108 used for Subscriber HQoS

26-108



Supported Code Versions

Juniper branched the code for broadband stability

- 11.4X27 First official Broadband feature release
- 12.3R3 and above on this feature release (R5,R6...)
- 13.3R3 and above (R4, R5...)

What does this mean

- Some services like LTS and PWHT are available today in 13.2
- Juniper won't officially support until 13.3R3
- Good chance to test and work with Juniper to develop product ahead of GA.

