



# VIRL

Virtual Internet Routing Lab

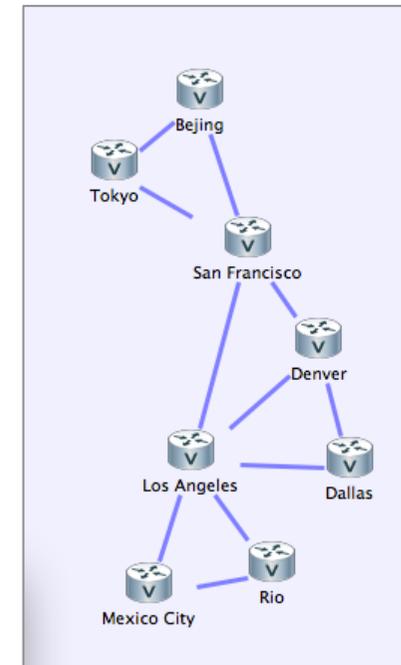
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# What is VIRTUAL?



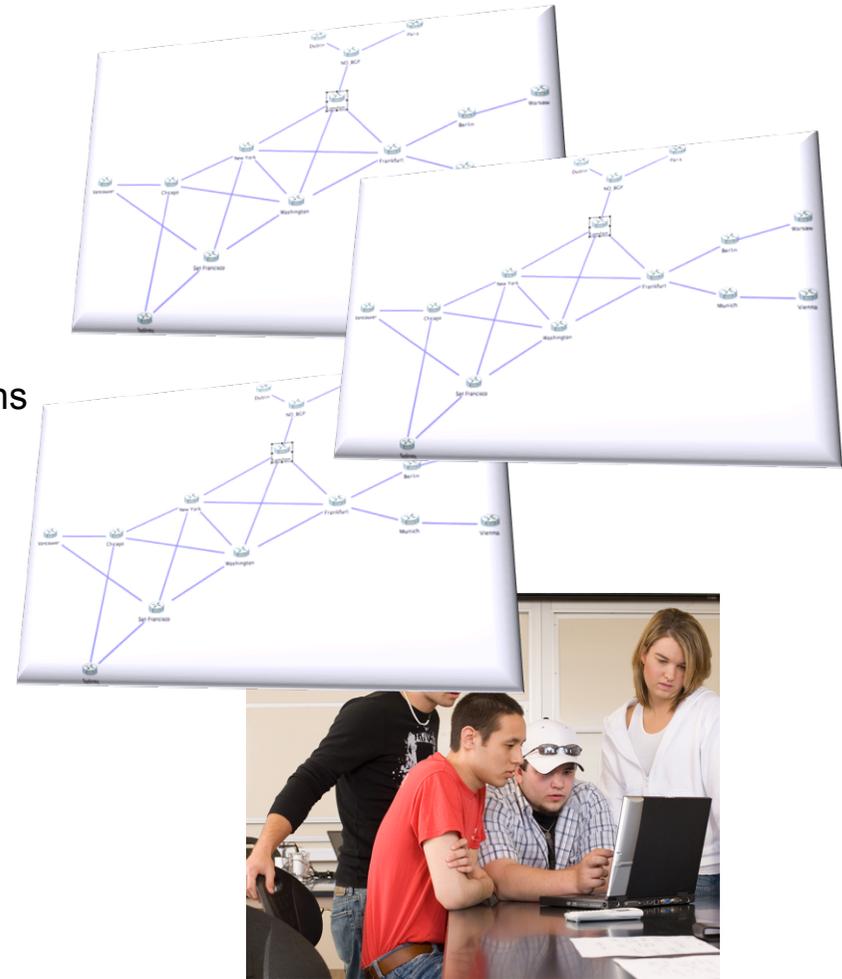
## A multi-purpose extensible network virtualization and simulation platform

- Create highly-accurate models of real-world / future networks
- Leverage 'real' network operating systems - build synced, not emulated
- Scale from 10's to 1000's of virtual network and server devices
- Integrate virtual networks and appliances into 'real' (physical) networks
- Create and 'wire' servers and services on-demand into real networks



# Training & Education

- People retain through 'hands-on' experience but the challenge is access to hardware
  - 10 students to 1 router or 1 student to 10 routers?
  - Real-world operating systems or Open-source solutions (Quagga, etc)?
- Teach and train the next generation
  - Network engineers
  - Operators
  - Designers
  - Architects
  - Researchers

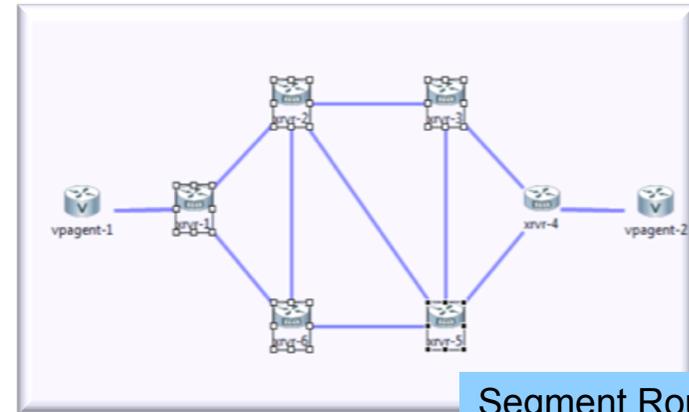


## New features, new capabilities

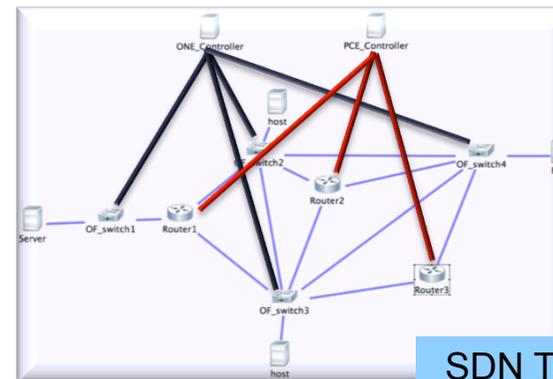
- New paradigms create new challenges – how do we build, test, experiment and learn SDN technologies?
- Network-aware programmability – do you let developers test their applications in the production network?
- How do you test and trial capabilities such as if you don't have a lab?

Technology demonstrations available on VIRL:

- WAE
- MATE Live
- Segment Routing
- Virtualized Route-Reflector
- OpenDayLight
- OnePK DevOps sandbox

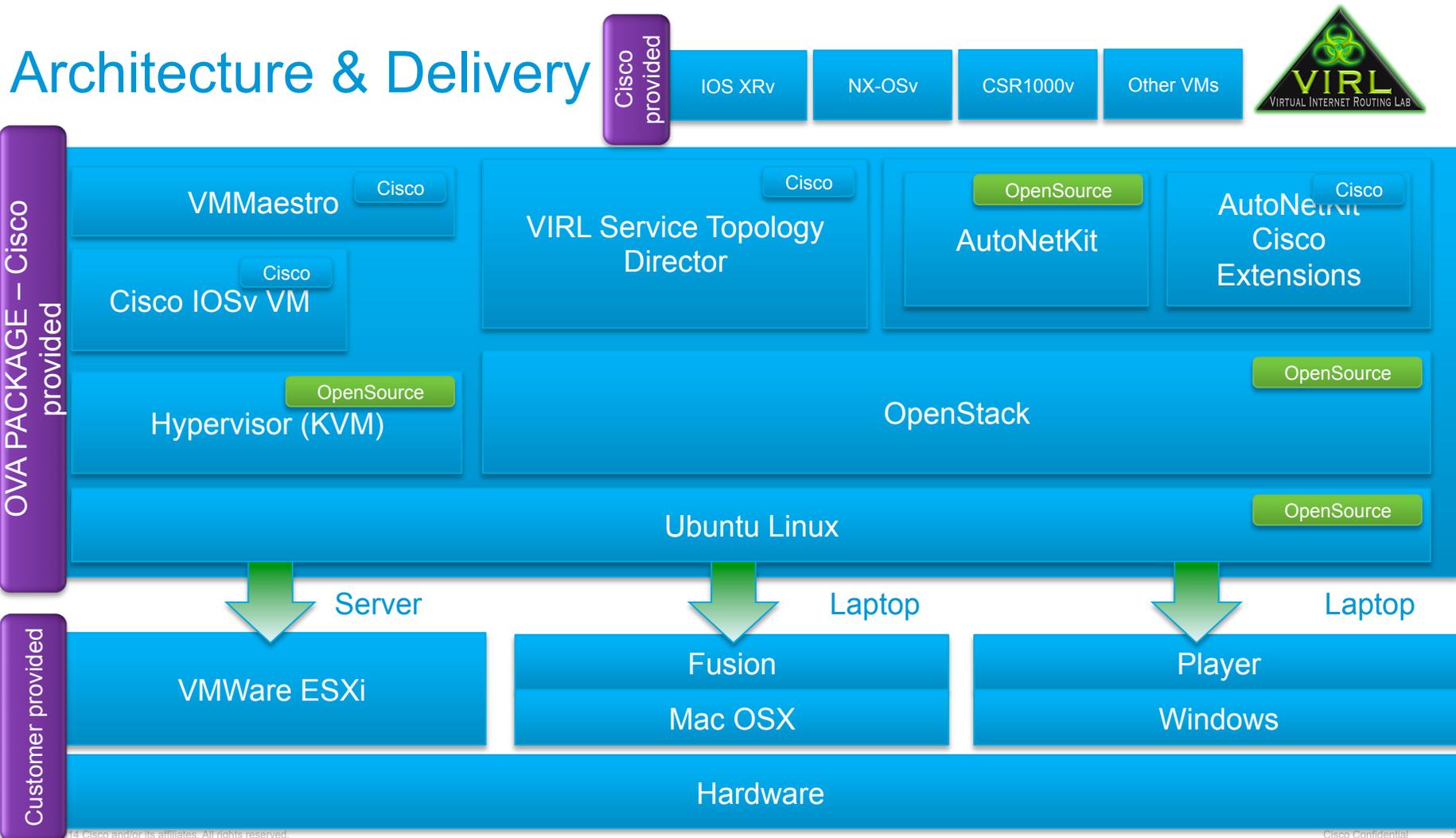


Segment Routing  
– hand's on



SDN Technologies  
testbed

# Architecture & Delivery



## Availability – 30<sup>th</sup> July

- For '**individual**' customers, **VIRL** will be available via Devnet and will be free for any registered user to download. This will be a community-supported platform
  - For more information on 'Devnet', please take a look at <https://developer.cisco.com/site/devnet/home/index.gsp>.
- For customers joining the '/dev/innovate' program, **VIRL** will be included as part of the software bundle that they will receive
- '/dev/innovate/research'- specific program for University Research and Education sector
- For more information on the 'dev-innovate' program, please contact [Robert Justice](#) or take a look at <http://dev-innovate.cisco.com/>



 BETA



# MEET: /dev/innovate

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# VIRL – Virtual Internet Routing Labs



Many control plane manipulation/monitoring/management features available in Cisco Network operating systems today

VIRL provides an easy-to-use VM orchestration framework, enabling a wide range of user

- For Proof of Concept validation
- For Network-aware applications development
- For testing out that niggling ‘what-if we could’ idea