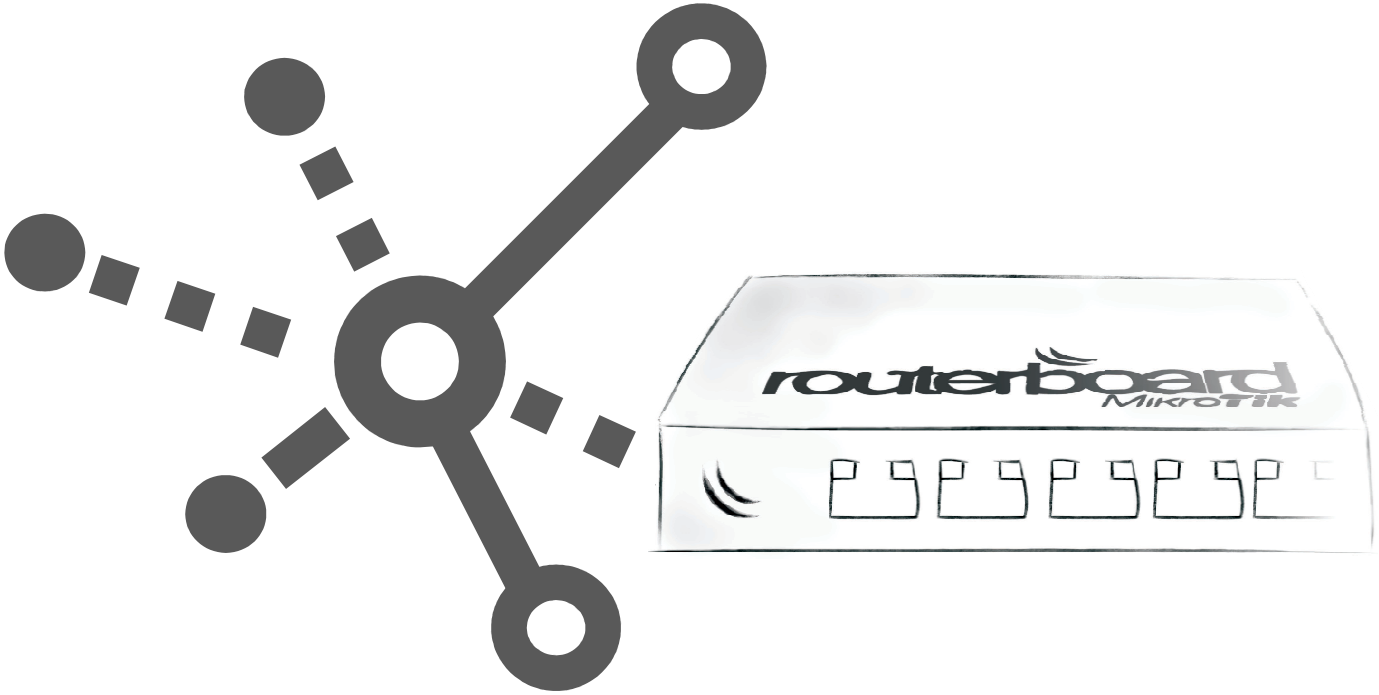
MUM Europe, Venice 2014.03.20

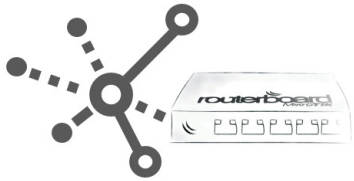
Andis Arins / router.lv



MikroTik + OpenFlow =

the future

Presenter – Andis Arins



- MikroTik Consultant at www.router.lv
- MikroTik / Microsoft certified trainer

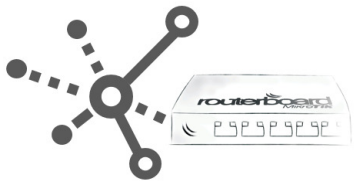
  - Member of the board in Latvian Internet Association
  - Review expert EU EC in future networking research

andis[at]router.lv

www.linkedin.com/in/andisarins

twitter.com/AndisArins

Why OpenFlow?



Main Idea: manage the WAN as a *fabric* not as a collection of individual routers

- Separate hardware from software
- Centralized network control
  - More efficient
  - More fault tolerant

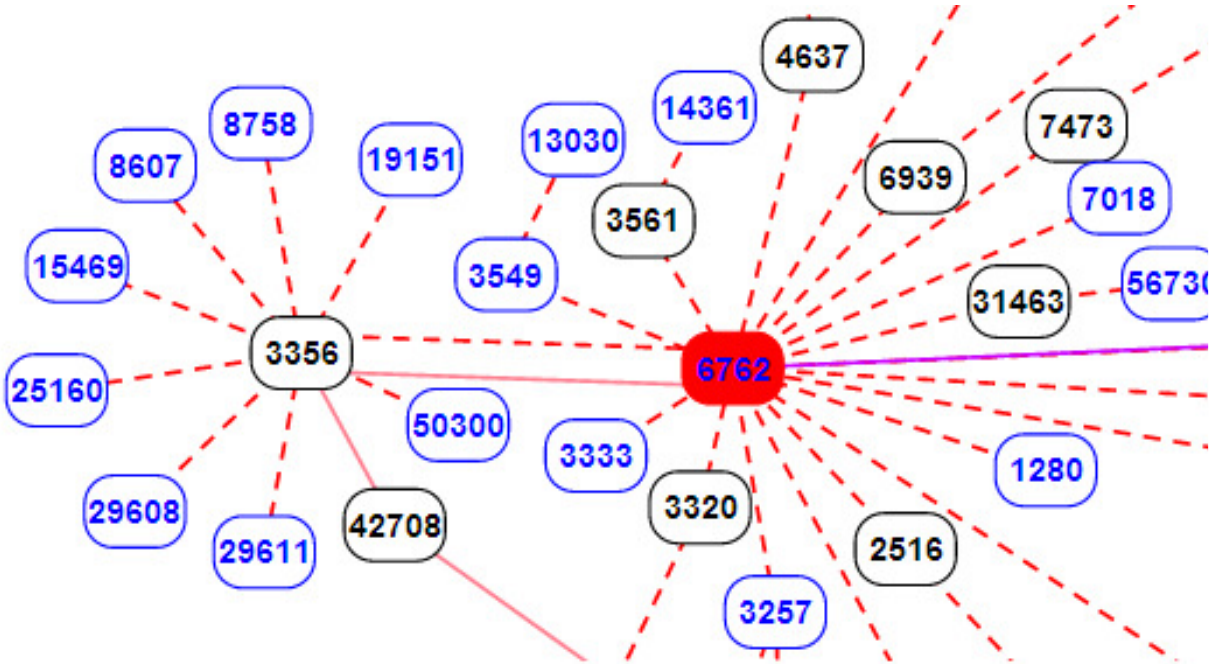
Why OpenFlow?

Current equipment and protocol limitations

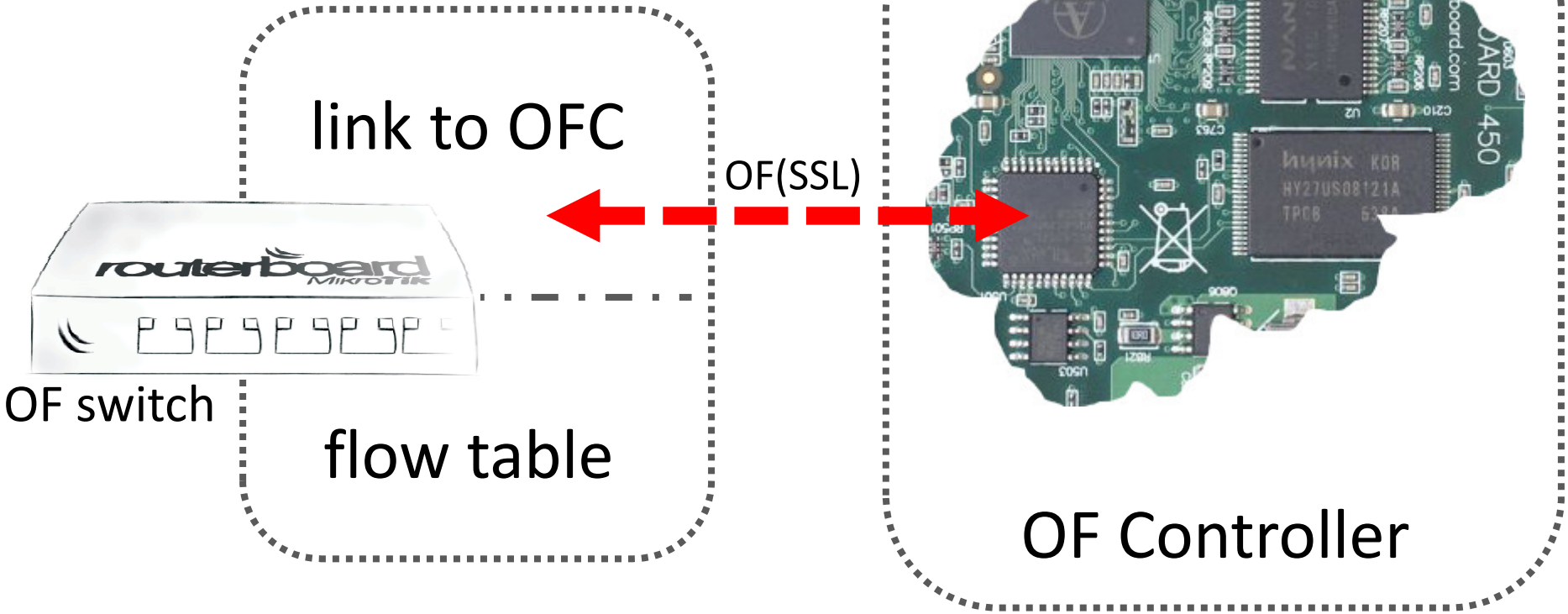
- Internet protocols are box centric, not fabric centric
- Weak monitoring opportunities
- Little support for low latency routing and quick failover

Expected Result:

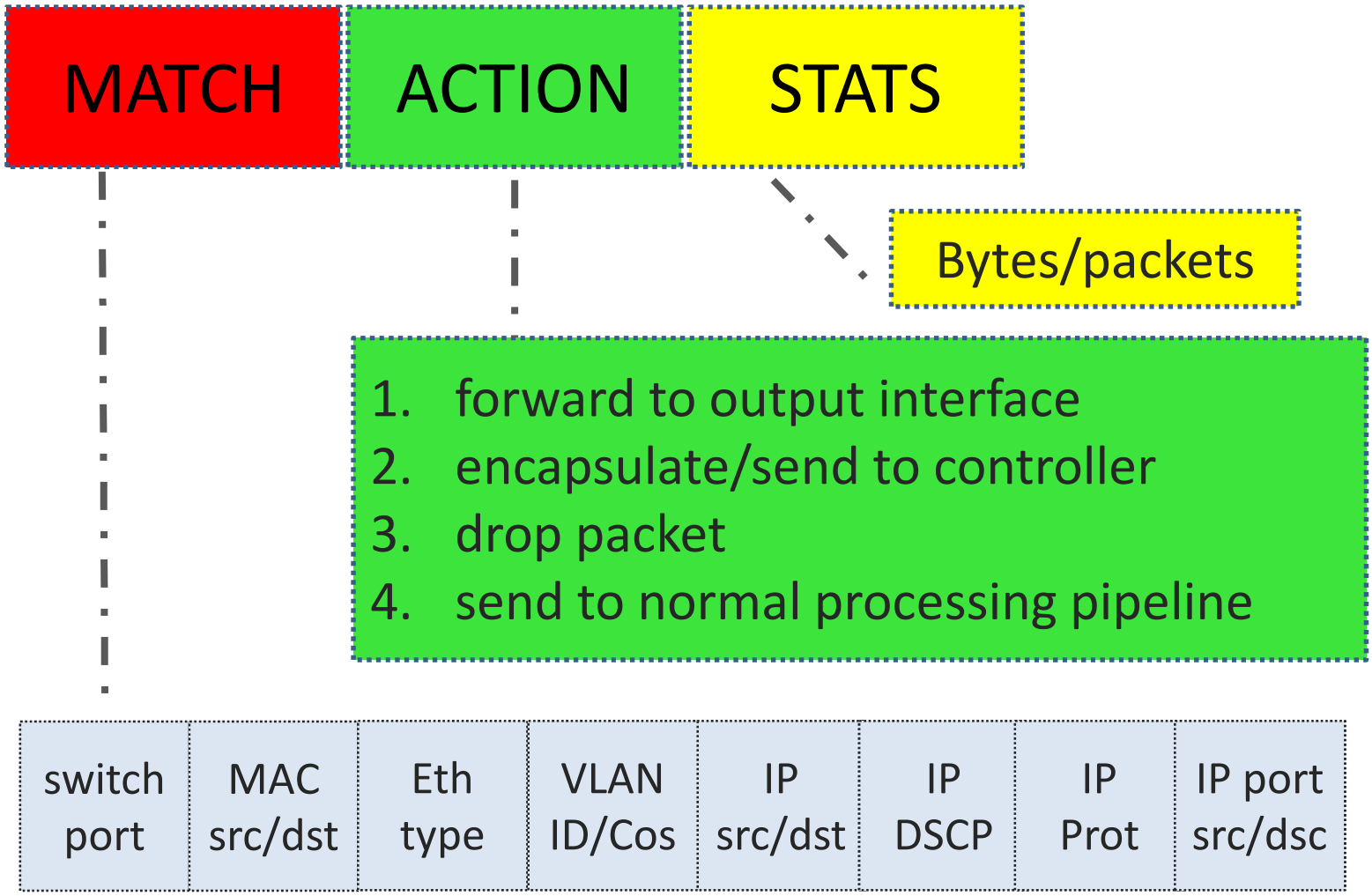
more fault tolerant
and clever WAN
for less money!



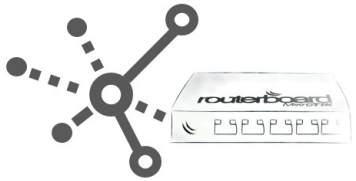
What is OpenFlow?



Flow in OF


MATCH
ACTION
STATS
Bytes/packets
1. forward to output interface
2. encapsulate/send to controller
3. drop packet
4. send to normal processing pipeline
switch port
MAC src/dst
Eth type
VLAN ID/Cos
IP src/dst
IP DSCP
IP Prot
IP port src/dsc

OpenFlow decision examples



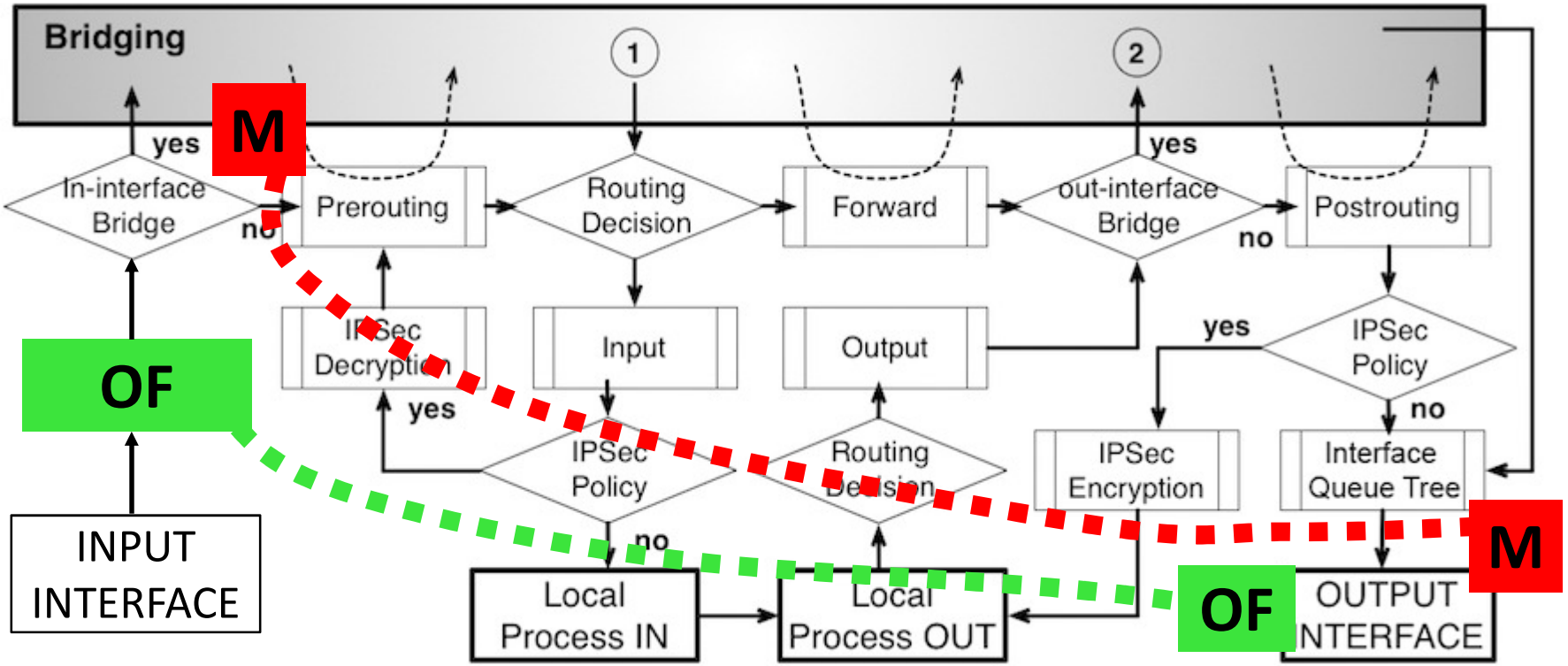
switching

switch port	MAC src/dst	Eth type	VLAN ID/Cos	IP src/dst	IP DSCP	IP Prot	IP port src/dsc	ACTION
*	*/ab:..	*	*	*	*	*	*	port2

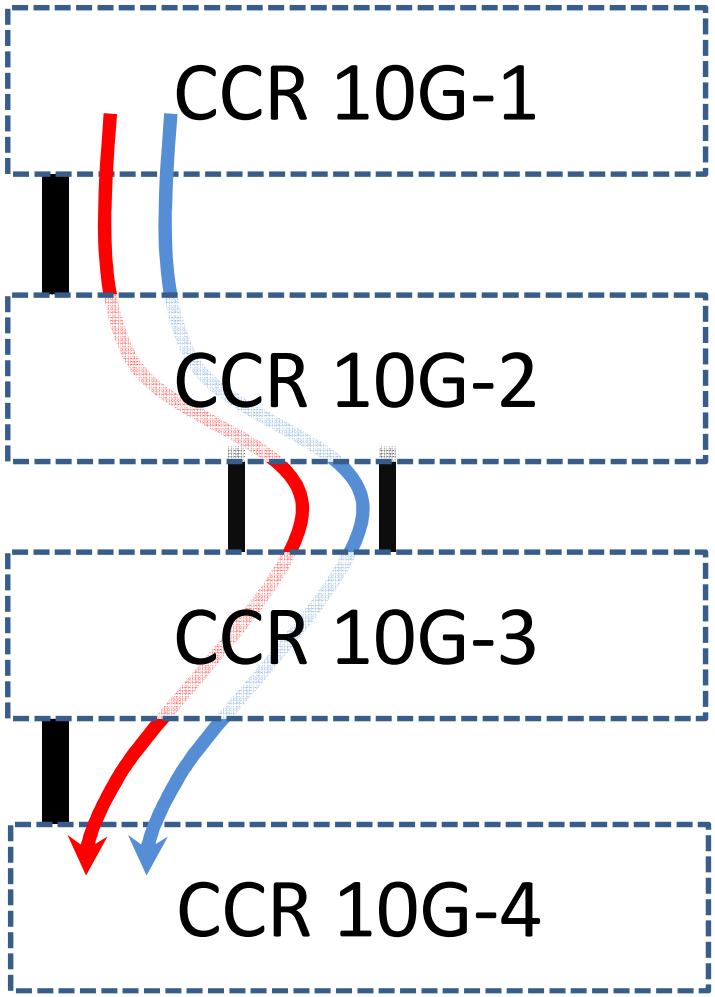
OF switching

switch port	MAC src/dst	Eth type	VLAN ID/Cos	IP src/dst	IP DSCP	IP Prot	IP port src/dsc	ACTION
port3	cd/ab	0800	15/46	1.3.5.7	2.4.6.8	17	*/5060	port1

Packet flow diagram



OpenFlow DEMO



Thank You!