

RIPE65

# Quagga Status

Martin Winter  
OpenSourceRouting.org



Open Source Routing

# Who is OpenSourceRouting

Quick Overview of what we do and who we are

[www.opensourcerouting.org](http://www.opensourcerouting.org)

- ▶ **Started late summer 2011**
- ▶ **Focus on improving Quagga**
- ▶ **Funded by Companies who like an Open Source Alternative**
- ▶ **Non-Profit Organization**
  - Part of ISC (Internet System Consortium)



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# Quagga

Based on Version 0.99.21

<http://www.quagga.net/>

## ▶ **Protocols**

- RIP, RIPv2, RIPng, OSPFv2, OSPFv3, ISIS (v4 only), BGPv4, BGPv6, Babel, SNMP

## ▶ **Runs on Linux, \*BSD, NetBSD, Solaris and more**

## ▶ **Cisco like CLI**

## ▶ **Missing / Limitations:**

- BGP inefficient for Route Server / many full feeds
- ISIS (IPv6) (and ISIS IPv4 is not yet useable)
- Multiple branches of Quagga:
  - Quagga.net (official “Master” branch), Euro-IX, Quagga-RE and more

# Quagga – Users

- ▶ **Some Route Server (smaller ones)**
- ▶ **Used by OpenFlow, SDNs and small router appliances as route processor**
- ▶ **Smaller ISPs (Linux routers with OSPF & BGP)**
- ▶ **Many large Datacenters/CDNs use custom modified versions**
- ▶ **You?**

# Quagga Routing Protocols Status

## BGP IPv4 & IPv6

Performance bad for large multiple tables

- Euro-IX Branch tries to fix it with threads and data structure fixes (work in progress)

## OSPFv2

Reported as robust by many users

Some OSR found open issues with large OSPF network topology changes

## OSPFv3

Separate (partially cloned from OSPFv2), but behind on fixes as many OSPFv2 bugs never made it to it.



# Quagga Routing Protocols Status

## ISIS

Implemented, but not yet usable (too buggy)

- ISIS for IPv4 should be ok in 1..2 releases
- ISIS for IPv6 missing (expected to be done after IPv4 implementation is working)

## RIPv1, RIPv2, RIPng

Working with no issues

See [www.opensourcerouting.org/wiki/Testing+Efforts](http://www.opensourcerouting.org/wiki/Testing+Efforts)



# BGP Code Quality (Summary)

<http://opensourcerouting.org/wiki/ANVL+BGP+Results>

	<b>Mainline</b> <b>GIT 07/07/2012</b>	<b>Euro-IX Branch</b> <b>GIT 08/25/2012</b>
<b>Error Message Handling</b>	No or wrong notification on bad attributes	Bad/missing notification for invalid open No or wrong notification on bad attributes
<b>Bad updates processing</b>		Closes BGP session for non-fatal update error
<b>BGP Open</b>	Bad BGP Version check	Bad collision detection

# BGP Code Quality (Summary)

<http://opensourcerouting.org/wiki/ANVL+BGP+Results>

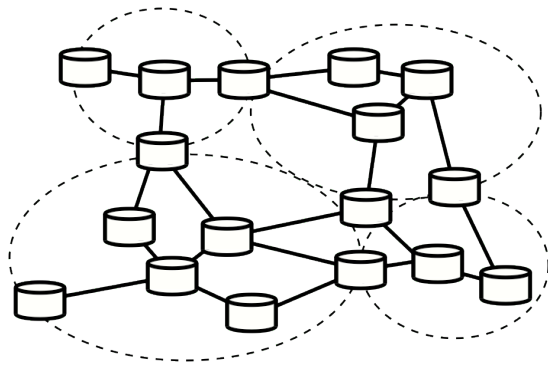
	<b>Mainline GIT 07/07/2012</b>	<b>Euro-IX Branch GIT 08/25/2012</b>
<b>Route Recursion</b>	Indirect BGP routes not or wrong installed to RIB	Indirect BGP routes not or wrong installed to RIB
<b>BGP Route Decision</b>	Lowest peer as tie breaker in best path decision	Lowest peer as tie breaker in best path decision
<b>BGP Aggregate</b>	Multiple bugs in BGP Route Aggregation	Multiple bugs in BGP Route Aggregation



# OpenSourceRouting (current) focus

OpenSourceRouting.org's main current work (in addition to community)

## ISIS / OSPF



Fixing ISIS (IPv4) to get it to a useable state

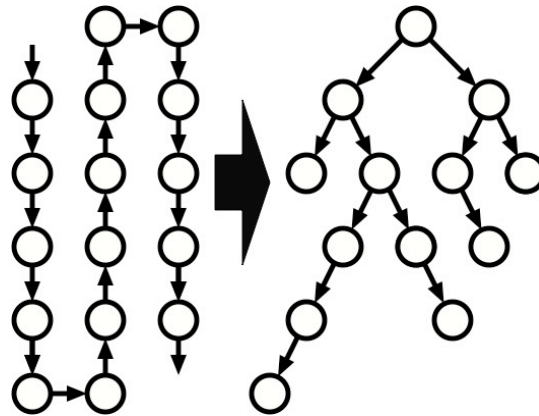
OSPF unnumbered interfaces

IGP Stability fixes



Open Source Routing

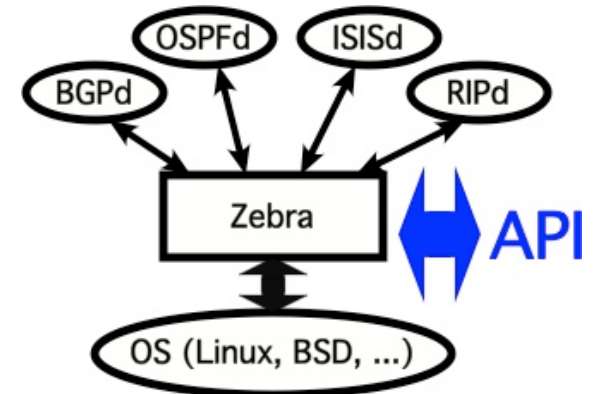
## Data structure changes



Trying to improve internal RIB structures

(Cleanup and Performance Changes)

## API to Zebra



Add API to decouple FIB updates from the OS below and allow forwarding engines to subscribe to direct updates from Zebra