

**RIPE89, Prague, Czechia**

# **Introducing IXP Manager v7**

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# INEX

- Peering point for the island of Ireland
- Founded in 1996
- ~110 members
- Peaks @ ~1.3 Tbps
- Three IXPs - dual infrastructure in Dublin, 7 PoPs; INEX Cork
- Home of IXP Manager
- $3 \times 2 \times (1+1+1+2) = 30$  Bird instances





# IXP Manager



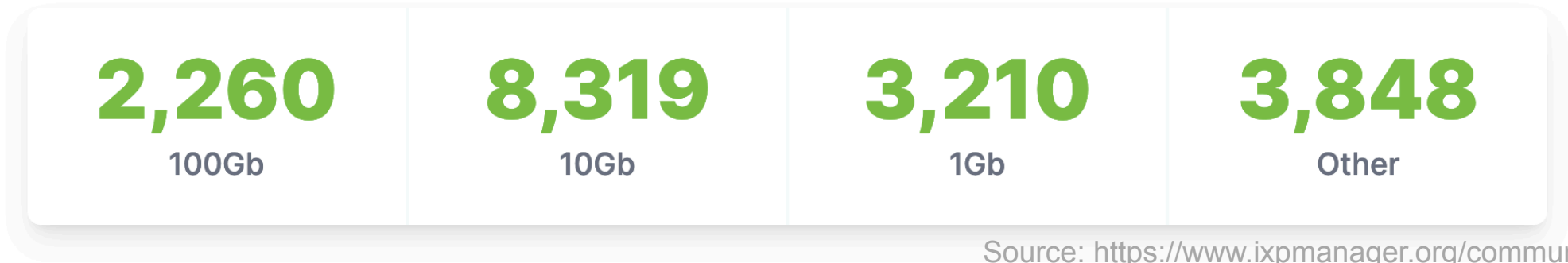






There are at least **237** IXPs Powering Peering using IXP Manager around the world to connect **12,166** networks of which **7,073** are unique. The edge peering capacity of these networks is **320 Tbps** over **17,600** connected ports. We aggregate traffic statistics from 139 IXP Manager platforms which show us that the peak traffic exchanged is **88.09 Tbps**.

### Port Breakdown



Source: <https://www.ixpmanager.org/community/statistics>



# IXP Manager - Most Connected Networks

NETWORK	ASN	# IXPS
Packet Clearing House	3856	88
Packet Clearing House AS42	42	86
Cloudflare	13335	84
Hurricane Electric	6939	79
Akamai Technologies	20940	58
Facebook Inc	32934	49
Microsoft	8075	47
Amazon.com	16509	46
Google LLC	15169	43
DNS-OARC-112	112	42



# Highlights from IXP Manager v6



# Highlights from IXP Manager v6

- UI-based prefix filtering for route servers
  - Replaces the need for members to apply community tags and filters
- Route server resilience
  - Routers can be 'paired' ensuring only one updates at a time and only if the other was successful.
- Core bundle management
- Database change logging
- Route server configuration reduced from 100secs (v6.0) to 30secs (query optimisation) and then 1.3secs (v6.1, caching)
- Partial port speeds
- Security enhancements (via third-party pen-testing)

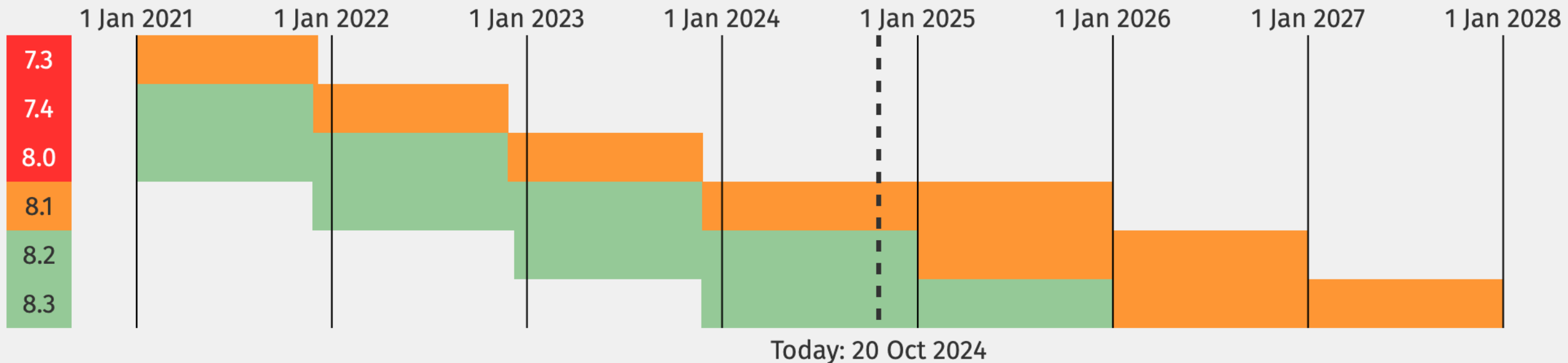


# IXP Manager v7



# What triggers a 'major' release?

- Primarily: PHP version compatibility - we stay current
  - For IXP Manager v7 this means PHP 8.3





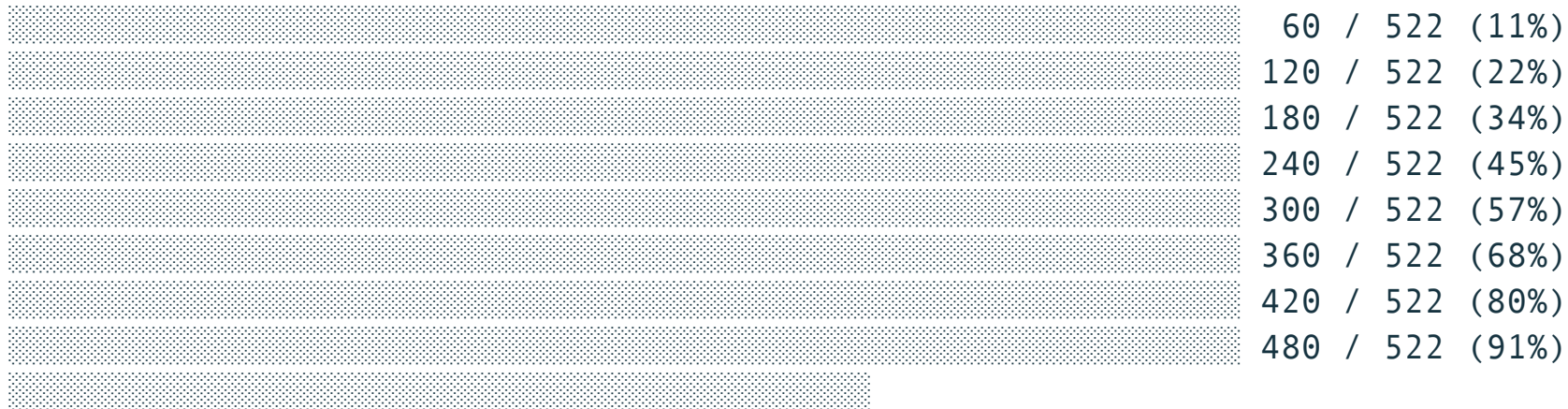
# What else changes with a 'major' release?

- New recommendation for server operating system: Ubuntu 24.04 LTS
- The latest production release of Laravel, the PHP framework we use
  - Currently 11.x (security fixes until March 2026)
  - 12.x will be compatible with PHP 8.3 and support until 2027.
- Updates of third-party libraries (composer) and frontend assets (npm).
- Improvements, bug fixes and new features...



# CI Pipeline - Static Code Analysis Added

```
~/dev/ixpm-ibn v7-dev  
> ./vendor/bin/psalm  
Target PHP version: 8.3 (inferred from composer.json).  
Scanning files...  
Analyzing files...
```



-----  
No errors found!  
-----



# Diagnostics Suite

```
› ls -l app/Services/Diagnostics/Suites
```

**CustomerDiagnosticSuite.php**

**IrrdbDiagnosticSuite.php**

**PhysicalInterfaceDiagnosticSuite.php**

**RouterBgpSessionsDiagnosticSuite.php**

**TransceiverDiagnosticSuite.php**

**VirtualInterfaceDiagnosticSuite.php**

**VlanInterfaceL2DiagnosticSuite.php**

**VlanInterfaceL3DiagnosticSuite.php**

# Diagnostics Suite

## **i** Transceiver diagnostics for: swi1-fac1-1 :: Ethernet49/1 [Physical Interface #10]

**INFO** Transceiver information - FLEXOPTIX Q.161HG.10, serial #F79E8BW  
**Manufacturer:** FLEXOPTIX  
**Model:** Q.161HG.10  
**Serial:** F79E8BW

**INFO** Light levels - click info for switch-like output

	Bias Current	Optical Tx Power	Optical Rx Power
L	(mA)	(dBm)	(dBm)
	-----	-----	-----
1	+42.18	+0.01	-1.60
2	+47.26	-0.42	-0.14
3	+47.27	+0.48	-0.77
4	+44.08	+1.58	-1.15



# Additional New Features

- IXP Manager v7 also introduces:
  - CI-Pipeline - More frontend unit testing
  - Front end configuration
  - P2P graph sorting
  - Versioned documentation
  - Vagrant development environment





**What's Next?**



# Development Plans

1. Member frontend rework with i18n and l10n
2. TSDB for peer-to-peer traffic with amazing graphs
3. OpenBGPd (big project: config generation; monitoring & alerting; looking glass; prefixes filtered reporting; UI-based community filtering; )
4. Birdwatcher / others for Looking Glass
5. rfc8950 - Advertising IPv4 Network Layer Reachability Information (NLRI) with an IPv6 Next Hop



# Thank you



**INEX**

INTERCONNECTING NETWORKS  
AND PEOPLE FOR OVER 25 YEARS