

41st Euro-IX Forum

IXP Manager v7

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Budapest, Hungary

INTERCONNECTING NETWORKS AND PEOPLE FOR OVER 25 YEARS



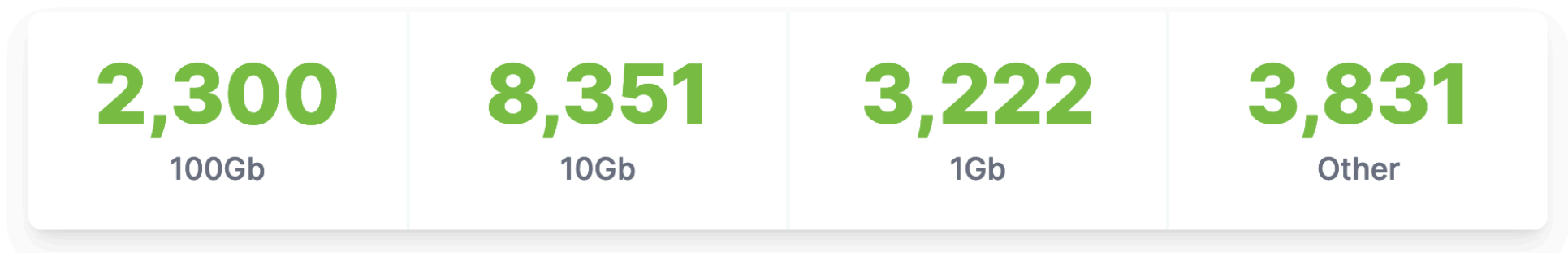
IXP Manager



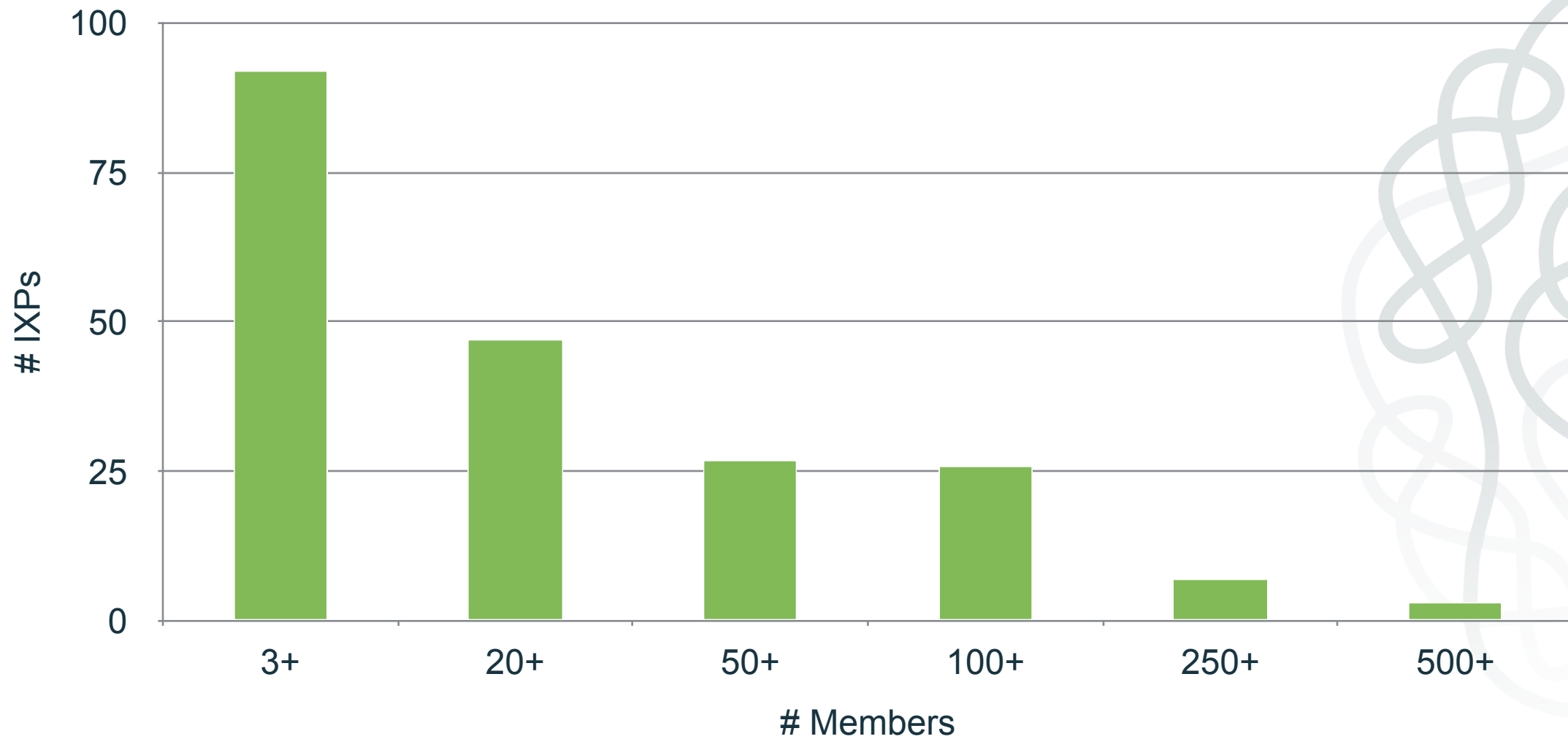


There are at least **236** IXPs Powering Peering using IXP Manager around the world to connect **12,244** networks of which **7,108** are unique. The edge peering capacity of these networks is **326 Tbps** over **17,672** connected ports. We aggregate traffic statistics from 138 IXP Manager platforms which show us that the peak traffic exchanged is **91.68 Tbps**.

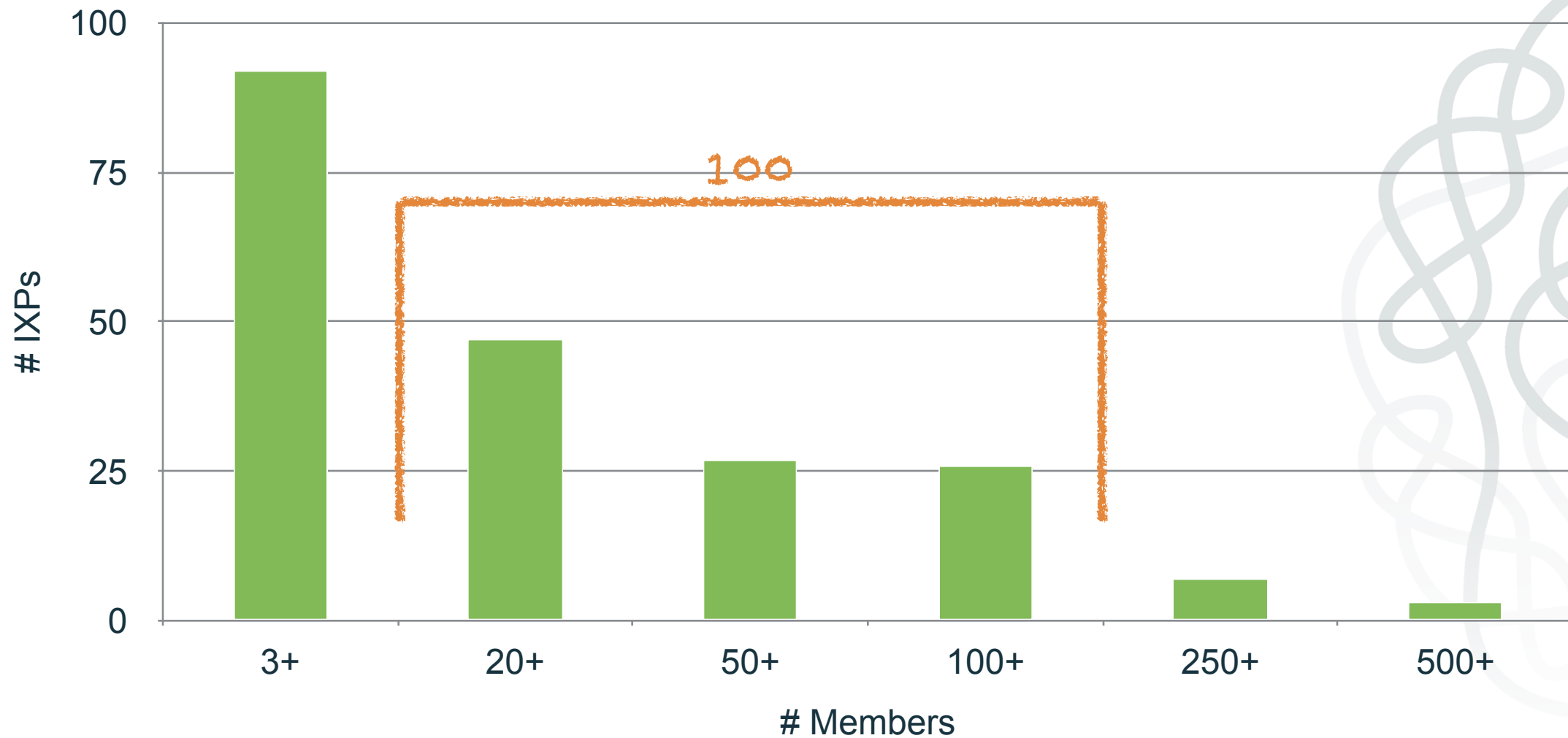
Port Breakdown



IXP Manager User Base



IXP Manager User Base



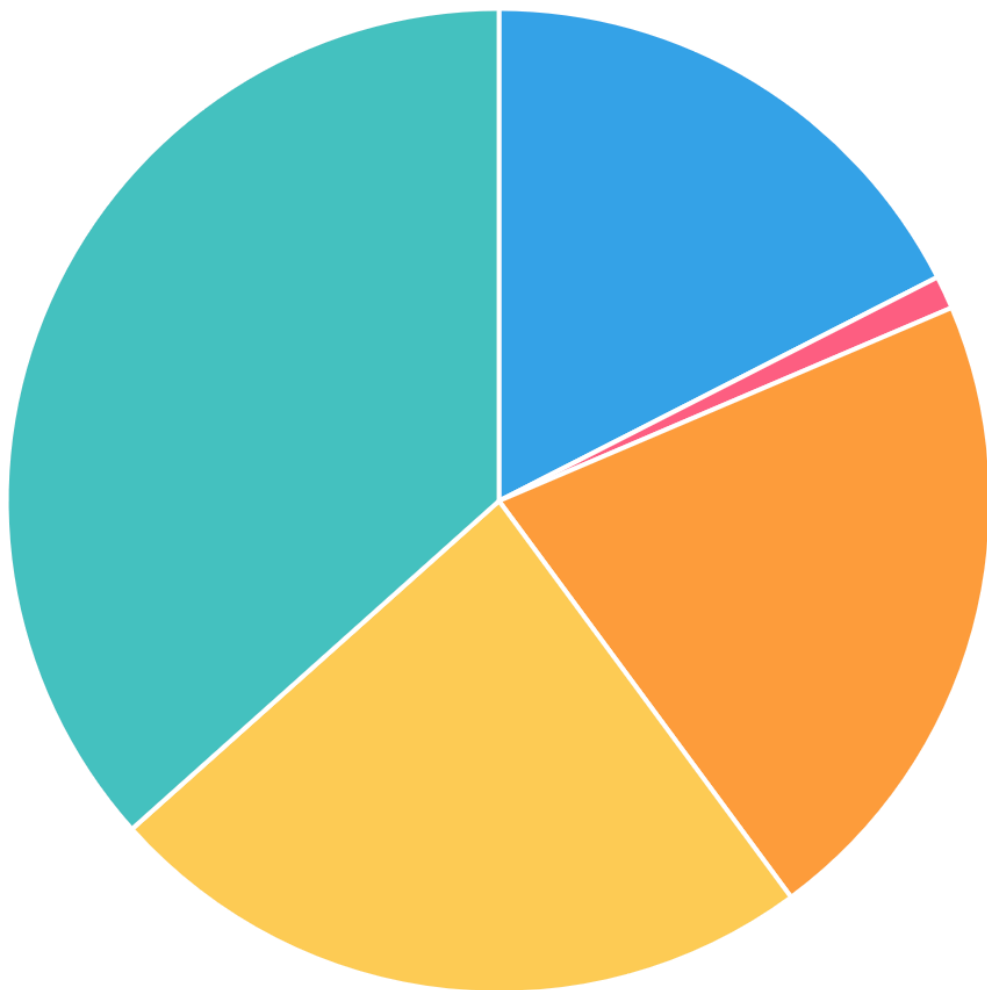
IXP Manager - Most Connected Networks

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

Versions

📅 14/Nov/2024

- v6.4.1
- v6.4.0
- v6.3.1
- v6.3.0 and v6.2.0
- v6.1.0 or older



Versions in Use



Highlights from IXP Manager v6

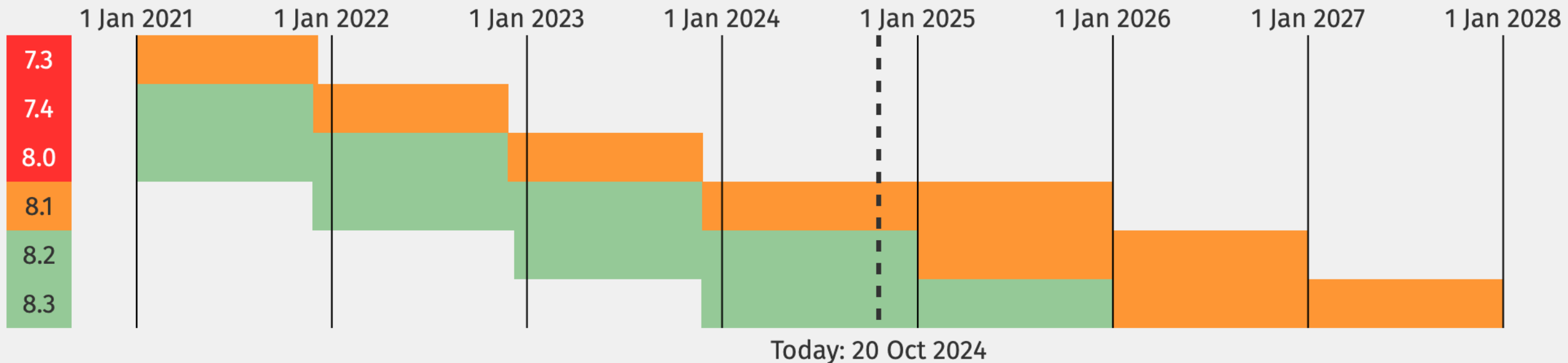
Highlights from IXP Manager v6

- 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



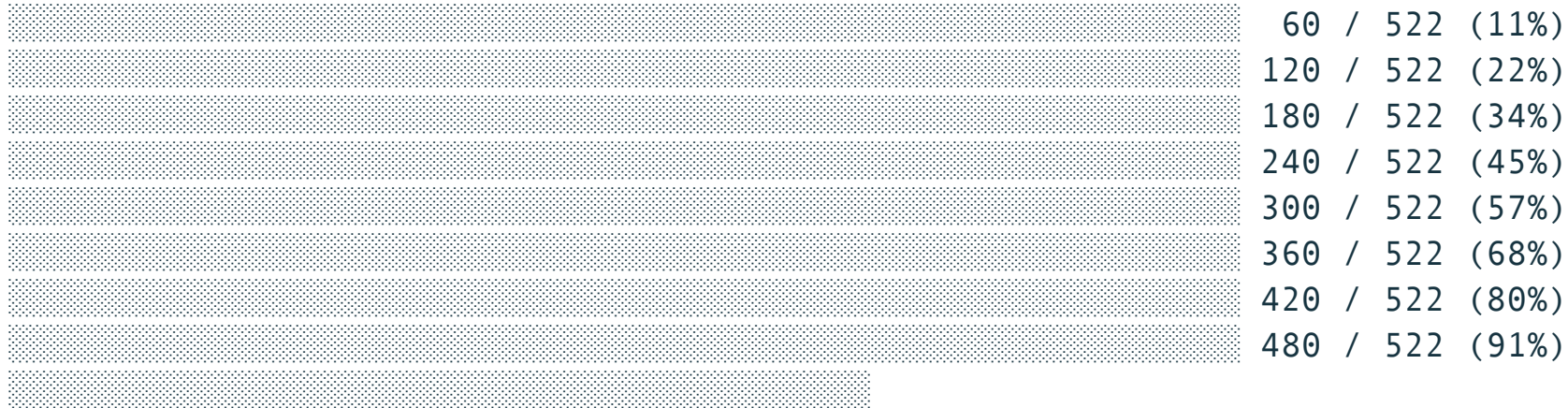
What else changes with a 'major' release?

- 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...

New Features in v7

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

P2P Graph Sorting




TSDB stuck on the list.
So we've a workaround for now.





Frontend Configuration


IXP Manager Settings


Features IXP Identity Authentication 3rd Parties IX-F Export Admin Route Servers System Utilities

 These are features or modules that can be enabled or disabled. Some are disabled by default as they may require extra configuration settings. Disabling a module will remove frontend elements such as menus and links also.

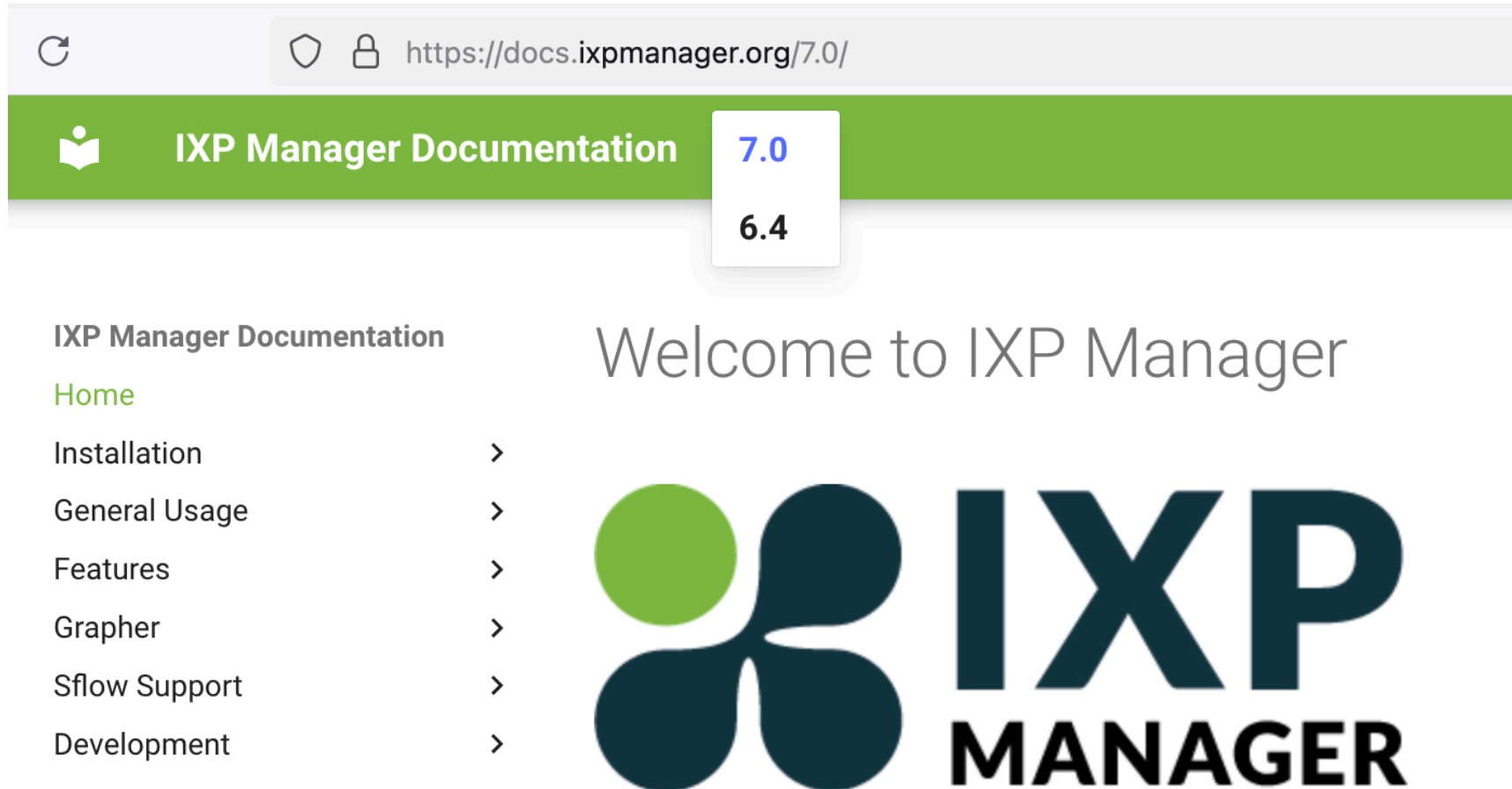
AS112 functionality 

 AS112 is a service which provides anycast reverse DNS lookup for several prefixes, particularly rfc1918 space. If you are providing an AS112 service to your members, this feature enables UI elements for that.

Console Server Connections 

 An IXP would typically have out of band access (for emergencies, firmware upgrades, etc) to critical infrastructure devices by means of a console server. This module allows you to record what equipment console server ports connect to. For larger exchanges, a modern DCIM system such as [NetBox](#) is recommended.

Versioned Documentation



The screenshot shows a web browser at the URL `https://docs.ixpmanager.org/7.0/`. A green navigation bar contains the text "IXP Manager Documentation" and a dropdown menu currently displaying "7.0" with "6.4" visible below it. On the left, a sidebar menu lists: "IXP Manager Documentation", "Home" (highlighted in green), "Installation", "General Usage", "Features", "Grapher", "Sflow Support", and "Development", each followed by a right-pointing chevron. The main content area displays "Welcome to IXP Manager" and the IXP Manager logo, which consists of a stylized four-lobed shape in green and dark blue, followed by the text "IXP MANAGER" in a bold, dark blue font.

Additional New Features

- IXP Manager v7 also introduces:
 - CI-Pipeline - More frontend unit testing
 - Vagrant development environment
 - See RIPE89 talk, *“Leveraging Vagrant to Simulate Complex Systems for Network Application Development.”*
 - <https://ripe89.ripe.net/archives/video/1508>



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



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