



IXP Manager

Sponsors' Report

For Year End 2020

Barry O'Donovan on behalf of The IXP Manager Project

Revision 1.0, December 2020



island bridge
networks

Platinum Sponsors



Gold Sponsors



Silver Sponsors



Bronze Sponsors



Executive Summary

IXP Manager has now completed the fourth year of its sponsorship program¹. You can read the past sponsorship reports on the website.

The 2020 sponsorship funding was made up of:

Name	Value
Amazon	€15,000
APNIC	€5,000
CIRA	€5,500
DIX	€1,000
Facebook	€10,000
GRIX	€2,000
InterLAN	€1,000
Internet Society (ISOC) (US\$26,000)	€22,596
INX	€5,000
NAMEX	€2,000
STHIX	€5,000
Total	€74,096

Full details of the structure of the program, project oversight and project management can all be found on the project's website² and these are in line with the original *Call for Sponsorship* document from 2016 (also on the website).

This document, the 2020 Sponsors' Report, provides a summary of activities undertaken in the last year, and shows full compliance with the program's objectives.

To summarise, we have met the following milestones in 2020:

- Known numbers of IXPs using IXP Manager has grown from 81 to 147 installations. Over the four years of the sponsorship program, there has been more than a five-

¹ <https://www.ixpmanager.org/sponsorship>

² <https://www.ixpmanager.org/sponsorship/terms>

fold increase in this metric. We feel that this is the best possible positive indicator from your sponsorship and we are incredibly proud of this growth³.

- A full-time developer was hired in December 2016 and remains with the project.
- Official releases of versions v5.3, v5.4, v5.5, v5.6 and v5.7 (including bugfix and security releases of these).
- Developed and launched a brand new project website:
<https://www.ixpmanager.org/>.
- Continued additions to the official documentation, which is also redesigned:
<http://docs.ixpmanager.org/>.
- Continued outreach through presentations, workshops and mailing lists (albeit much reduced to the Covid-19 global pandemic).
- Created a tutorial video series for the installation and use of IXP Manager.

The year-end 2020 financial position of the IXP Manager project fund is:

2020 Opening Reserves	€ 20,647
2020 Sponsorship Income	€74,096
2020 Expenditure	€ (62,521)
2020 Closing Balance	€ 32,222

As part of our commitment to transparency and to fulfil the financial reporting requirements to our sponsors, we have an external accountant prepare an independent report on the accounts each year. You can find the 2020 accountant's report on the sponsorship reports section of the website⁴.

³ <https://www.ixpmanager.org/community/world-map>

⁴ <https://www.ixpmanager.org/sponsorship/reports>

Sponsorship Expenditure

The intellectual property rights and copyright to IXP Manager are owned by INEX (Internet Neutral Exchange Association Company Limited by Guarantee), a not-for-profit industry-owned company registered in Dublin, Ireland. INEX owns and operates Internet Exchanges in Dublin and Cork.

As we detailed in the call for sponsorship document, project development for IXP Manager is handled by Island Bridge Networks Limited, a company registered in Dublin, Ireland. The directors and sole owners of this company are Barry O'Donovan, the IXP Manager lead developer / project manager and Nick Hilliard, INEX's CTO. Both Barry and Nick separately contract to INEX in operational roles.

Development of IXP Manager is handled on a not-for-profit basis by Island Bridge Networks Ltd. All rights to the IXP Manager code developed under this sponsorship arrangement are transferred by Island Bridge Networks Ltd to INEX (i.e. Island Bridge Networks Ltd is a signee of the Contributor License Agreement⁵).

This arrangement is structured in this way because INEX is an Internet Exchange Association and has no in-house software development expertise. Due to its constitutional neutrality and not-for-profit corporate structure, it is an appropriate organisation for holding the intellectual property and copyright ownership of this open source project.

Under the sponsorship arrangement as originally proposed and as implemented - Island Bridge Networks Ltd:

- Recruited and hired a suitable PHP developer.
- Provides office space and a suitable working environment for the developer.
- Handles all employee arrangements including: contracts, pay, tax, insurance, other financial, tax and legal obligations, annual leave, etc.
- Maintains a dedicated bank account for all financial matters relating to this project.
- Invoices all supporting organisations on a pre-agreed basis.
- Reports on the project at Euro-IX Forums in whatever format the Euro-IX Forum Program Committee deems to be appropriate.

⁵ <https://docs.ixpmanager.org/dev/cla/>

The year four summary expenditure is as follows:

	Budgeted	Y/E 2020
Developer Costs	€55,375	€55,195
Hardware (budget = €3,600 less 2017-19 spend):	€525	€149
Software Licences	€900	€458
Travel (2 x Euro-IX)	€1,200	€0
Rent (plus supplies and sundries)	€3,600	€5,144
Insurance	€150	€172
Other Costs	€0	€157
Home Broadband	€0	€846
Accountant's Report	€0	€400
Total	€61,750	€62,521

Some notes on the table above:

- The budgeted costs figure reflects the original call for sponsorship numbers from 2016 which included a year 2 and year 3 estimate. **These estimates have held up remarkably well into a fourth year.**
- The original budget separated *Software Licences* and *Cloud Services*. These have been merged above.
- Island Bridge Networks offers all employees home broadband. This was accidentally omitted from the original budget.
- Rent is costed to the project as $1/n$ of IBN's rent bill where n is the number of employees. Insurance (which covers employee liability and all risks for the developer's laptop) is also charged at $1/n$ of IBN's cost.
- IBN has not charged other incurred expenses such as staff parties, other office costs, entertainment, etc. to date.
- IBN has not apportioned any costs for the administrative overhead of the project's management.

Income versus Expenditure

Through the generosity of our patrons and sponsors, we have raised a total of €74,096 in our fourth year of sponsorship. In 2016, our year 3 estimated costs (when we exclude capital expenditure and other one-off costs), was €61,750. Despite representing estimates from over four years ago, this has come in largely on budget at €62,521 (variance €771 – 1.25%).

The accumulated reserves of the project at year end 2020 now stand at:

- Accumulated reserves as at January 1st 2020: €20,647
- Surplus for financial year ending December 31st 2020: €11,575
- **Total accumulated reserves at December 31st 2020: €32,222**

These accumulated reserves will be used to:

- Offset any sponsorship shortfalls for 2021;
- Extend the project lifetime into a fifth year; and
- Cover additional travel costs to deliver workshops and presentations and create increased project visibility (and thus sponsorship payback).

Publicity

Ordinarily we would do a number of in-person IXP Manager related talks at appropriate events in any year (e.g. in 2019 we delivered nine such talks). Due to the global pandemic in 2020, travel was curtailed and only one talk was delivered – details on the website⁶.

The time was put into two other endeavours:

1. A new website for the project.
2. A series of video tutorials.

New Website

In June 2020, we knew of nearly one hundred internet exchange points (IXPs) around the world who were Powering Peering using IXP Manager. In recognition of this upcoming milestone, we developed and launched a new website which provides a better insight to the world's favourite IXP platform.

Our new website reflects the professionalism and maturity of the platform itself and the essential internet services it helps enable. It serves as the online headquarters of the project where visitors can get the latest news, explore our community of users and find help through our plentiful support channels.

⁶ <https://www.ixpmanager.org/support/talks>

In particular, we wanted to better recognise our sponsors and patrons and give them the credit they deserve. The sponsors' section lists all our current and past sponsors, explains the current sponsorship structure and provides an archive for all the related reports.

We also wanted to recognise the wider community who contribute to the project with code, documentation and opening and working on feature and support requests. In all, 110 individuals, at time of launch, had worked with the project through GitHub and we welcome all those that have made at least five contributions to our new team page.

One section we're incredibly proud of is the community statistics page. As we write this in April 2021, those statistics reflect the international adoption of the platform:



There are at least **164** IXPs Powering Peering using IXP Manager around the world to connect **6,801** networks of which **4,188** are unique. The edge peering capacity of these networks is **104Tb** over **8,920** connected ports. We aggregate traffic statistics from 100 IXP Manager platforms which show us that the peak traffic exchanged is **27.23 Tbps**.

Port Breakdown



New Video Tutorials

There is a new video tutorials page⁷ in the support section which contains seven videos explaining how to install and set-up IXP Manager.

These have proved extremely popular with our users and we plan to continue to add more sessions during 2021 and beyond.

⁷ <https://www.ixpmanager.org/support/tutorials>

General Development Update

A complete list of releases and related features for 2020 are available on the project's GitHub page: <https://github.com/inex/IXP-Manager/releases>.

Since September 2020, we have been working on a number of new features and an extensive framework update which we expect to release imminently (April 2021). Some highlights from this upcoming release include:

- The switch from Doctrine ORM to Eloquent as our database interface. This will significantly reduce the number of third-party libraries the project relies on and remove a number of common issues when upgrading the primary framework components.
- Eloquent, as a core part of the Laravel framework we use, is now a more appropriate choice and will accelerate feature development.
- Complete update of all third-party libraries.
- Official release of the *core bundles* feature which allows IXPs to manage their inter-switch links within IXP Manager including auto-provisioning and graphing. This is an essential feature for complex configurations such as many switches with multi-port lags and VXLAN and works with INEX's published automation templates.
- Logging of CRUD (Create, Update and Delete) operations through database listeners and a fully-featured user interface to support this.
- Many other small features and bug fixes.

In addition to the above, the IXP Manager website has a development effort including an administrative section which includes:

- Review and management of IXP's using the project.
- Management of dynamic content such as talks, video tutorials, news items, patrons and sponsors.
- Crawlers to poll all registered exchanges to maintain a current view of the usage statistics presented earlier.
 - These are also snapshotted on a daily basis and in the future we plan to provide graphs of how these change over time.

Versions in Use

One excellent metric of active use and maintenance of IXP Manager is the number of installs of each version. Our website above, where possible, also gathers this information during its daily polls:

Version	# Installs
5.7.0	71
5.6.0	15
5.5.0	13
5.3.0	1
5.2.0	4
5.1.0	2
4.9.3	3
4.9.2	1
4.8.999	2
4.8.0	6
4.7.3	4
4.5.0	1
3.8.0	2
3.7.5	2
3.7.3	2
3.7.2	1

As you can see, the vast majority – 77% – are using a version released during 2020. This means their upgrade path for future versions is simplified and those IXPs are benefiting from the most recent features.