



**32ND FORUM GUIDE**  
**15 - 17 APRIL 2018**  
**GALWAY, IRELAND**

**euro-IX**



# HOST WELCOME - INEX

It is our pleasure to be your host for the 32nd Euro-IX Forum which will be taking place in the fantastic city of Galway, perched right on the Atlantic coast of Ireland. A thriving university city, Galway has a population of around 80,000 and the small size of the city centre makes it ideal for visitors to feel at home almost as soon as they arrive.

INEX has been a member of Euro-IX since 2005 and are very proud of our involvement in the community. The development of the IXP Manager platform is a source of great pride for the Members of INEX and for the team that oversee the day to day running of the exchange, that IXP Manager has been such a huge contributor to the development of Internet Exchange Points around the world. Over 50 IXPs are now operating around the world with IXP Manager at the heart of their exchange. A little bit of Galway even exists in IXP Manager's history, with some of the early version of the platform having been written by Barry O'Donovan during his weekends at home with his parents in the city.

We first hosted Euro-IX in a very memorable forum that took place in 2006 in Dublin, inviting delegates to enjoy the delights that Dublin has to offer and putting on show the legendary 'Irish welcome'. We were delighted to have been awarded best social event in the Euro-IX 15th anniversary celebrations in Krakow for the memorable Book of Kells Tour and the breath-taking Long Room library in Trinity College in Dublin, followed by a really enjoyable dinner in a nearby restaurant.

We set the bar high for ourselves with that performance, but the fantastic city of Galway has great delights to bestow on the Euro-IX community! Chosen as a European City of Culture for 2020, the IXP community is getting an early view of this small, but perfectly formed city.

Culture is very much at the heart of Galway, from the native Irish language spoken by many on the streets, to the art and crafts oozing out of every doorway. An incredible street busking culture exists with some fantastic groups and individuals to enjoy as you

walk along its cobbled and quirky streets. The city is awash with brilliant restaurants and pubs – music is evident everywhere in this happily multi-cultural city and there is a welcome for visitors that is both genuine and generous. The city also boasts excellent theatre companies that often take their famous productions on the road, to London, New York and further afield.

Just a few miles outside the city, the incredible and raw rural landscape awaits. The road to Connemara and its beautiful National Park will take your breath away at every turn, which can sometimes be just the view but also at times the indomitable Atlantic winds that have carved out this rugged and craggy region. Galway is almost mid-way on the now famous Wild Atlantic Way driving route, recently named by Lonely Planet in a list of the world's best drives.

We have put in a request for fantastic weather in Galway and while we are doing our best on that front, there are often four seasons in a single day in Galway, so, we do encourage you to bring along suitable clothes and shoes for the sunshine, wind or rain that might be making a visit while you're here. Fortunately, there are many wonderful places to find shelter and sustenance, if the weather is inclement.

If you're arriving early, for the Sunday daytime social, we're taking you out to the Burren area, just south of Galway city. Its Irish name of An Boíreann, meaning the rocky place, gives an insight to what is waiting for those who join us. We'll take a scenic route by bus through the incredible limestone, almost lunar like landscape. As part of our tour through this region, we will visit the Aillwee Cave, visit one of the Neolithic period Dolmens and perhaps have a bird of prey display, depending on the weather. On the return journey to the hotel and Galway city, we will stop for lunch at a pub in a thatched cottage, famous for its fantastic fish menu. There may be some Guinness to go with the locally harvested native oysters!

We're very much looking forward to welcoming everyone to Galway. It's an amazing city and a perfect match, we believe, for the enthusiastic community that is Euro-IX!

Gaillimh Abú!



# INEX TEAM



**BARRY RHODES**

Chief Executive



**EILEEN GALLAGHER**

Membership Development  
& Marketing



**DENIS NOLAN**

Network Operations



**ROISIN KING**

Network Operations



**BARRY O'DONOVAN**

Network Superhero



**NICK HILLIARD**

CTO

## CONTACT

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## COMPANY OVERVIEW

Euro-IX is an association of European Internet Exchanges, promoting an open interchange of ideas and experiences, by offering fora, meetings, mailing lists and on-line resources to its members. Euro-IX also gathers information on regulatory issues affecting member IXPs within and outside Europe.

General meetings and fora are held within the Euro-IX area but memberships from IXs outside the region are always encouraged. Such members are welcome to attend our meetings so that they can contribute and benefit from our shared expertise and experiences. Euro-IX welcomes contact with other regional associations and pledges to liaise and cooperate with those that emerge.

## MEMBERS

### STANDARD MEMBERS

39 members from 29 countries

### ASSOCIATE MEMBERS

9 IXPs from 7 countries

### REMOTE MEMBERS

34 IXPs from 31 countries

## PATRONS

**ARISTA**  
**CIENA**  
**CORIAN**  
**ECI**  
**EQUINIX**  
**EXTREME NETWORKS**  
**INTERXION**  
**JUNIPER**  
**NOKIA**  
**SMARTOPTICS**

# COMPANY PROFILE

## STAFF

Bijal Sanghani - Secretary General  
Rebecca Class-Peter - Events & Operations Coordinator

## EURO-IX BOARD

Kurtis Lindqvist, LINX - Chairman  
Harald Michl, VIX - Secretary  
Kjetil Otter Olsen, NIX - Treasurer  
Maura Magrassi, MIX  
Andy Davidson, IXLeeds / Asteroid  
Serge Radovic, RIPE NCC  
Ondrej Filip, NIX.CZ

## FORUM PROGRAMME COMMITTEE

Greg Hankins, NOKIA - Chair  
Rob Lister, LONAP - Co-chair  
Mikael Holmberg, Extreme - Co-chair  
Jo Fereday, LINX  
Marc Bruyere, TOUIX  
Aleksi Suhonen, TREX  
Christoph Dietzel, DE-CIX



## IX-F JSON Export Workshop with IXP Manager Support

**Sunday 15th April, 17:30 - 19:30**  
**Room: Section A, Inis Mór Ballroom**

The IX-F JSON schema allows IXPs to export a structured member list, and is being used by the IXPDB.

This workshop will cover:

- An introduction to the IX-F, IXPDB and IXP Manager
- What is the IX-F JSON Export and why you should do it
- Hands on support implementing the export

For further information about the JSON export schema, including a list of IXP implementations please see:

[ml.ix-f.net](http://ml.ix-f.net) for details on the schema and who is using it.

<https://github.com/euro-ix/json-schemas>

and the wiki for this project:

<https://github.com/euro-ix/json-schemas/wiki>

## Registration

Registration starts on Monday 16 April at 08:00 on the ground floor of the hotel, outside the Inis Mór Ballroom, with the conference starting promptly at 09:00.

On first arrival, please give the name of your IXP or organisation, followed by your surname to speed up the registration process. You'll be given a delegates badge. Please wear your badge at all times to gain entrance to the conference facilities.

## Schedule

For the up-to-date schedule, including social information and attendee lists, view the forum page on the [website](#).

- On Monday 16 April, the forum will begin at 09:00. The forum will close at 17:30.
- On Tuesday 17 April, the forum will begin at 09:00. The forum will end at 16:30.

## Conference Rooms

We are using two conference rooms this year:

- Sunday 15 - JSON Workshop: on the ground floor of the hotel in Section A of the Inis Mór ballroom.
- Main conference room: on the ground floor of the hotel in Section A & B of the Inis Mór ballroom.

## Refreshments, Lunch and Breaks

There will be refreshments in the 30 minute morning and afternoon breaks in the foyer. There is also a lunch break of one hour each day. Lunch will be served in Marina's Grill, on the ground floor (same room where breakfast is served).

### WIFI info:

- \* **SSID: EUROIX**
- \* **Password: welovepeering**



## KYLE SPENCER - UGANDA IXP



Kyle is focused on developing the African Internet infrastructure, content, and policy landscape as Executive Director of the Uganda Internet eXchange Point (UIXP), Co-Coordinator of the African IXP Association (AFIX), board member at the Internet eXchange Federation (IX-F), and Chief Executive Officer of Stormzero Consulting. Kyle also helped establish many notable community organizations and projects; is passionate about open-source software and intellectual property law reform; and spends his free time working to develop the regional multiplayer Internet gaming ecosystem.

Find out more about UIXP [here](#)





## MANRS IXP PARTNERSHIP LAUNCH

The Mutually Agreed Norms for Routing Security, or MANRS, is an industry initiative that defines four concrete Actions operators can take to implement crucial fixes needed to eliminate the most common routing threats. While MANRS was originally designed for network operators, IXPs can and already do play a very important role in facilitating a more secure Internet infrastructure. At Euro-IX, we are introducing a new IXP Partnership Program (IXPP) to open the MANRS initiative to IXPs across the globe.

The community has created a related but separate set of Actions specifically applicable to IXPs. MANRS helps IXPs build safe neighborhoods, leveraging the MANRS security baseline, and demonstrates an IXP's commitment to security and sustainability of the Internet ecosystem, and dedication to providing high quality services. To join us, please visit <http://www.manrs.org/participants/ixp/>.

Sponsoring Monday Dinner



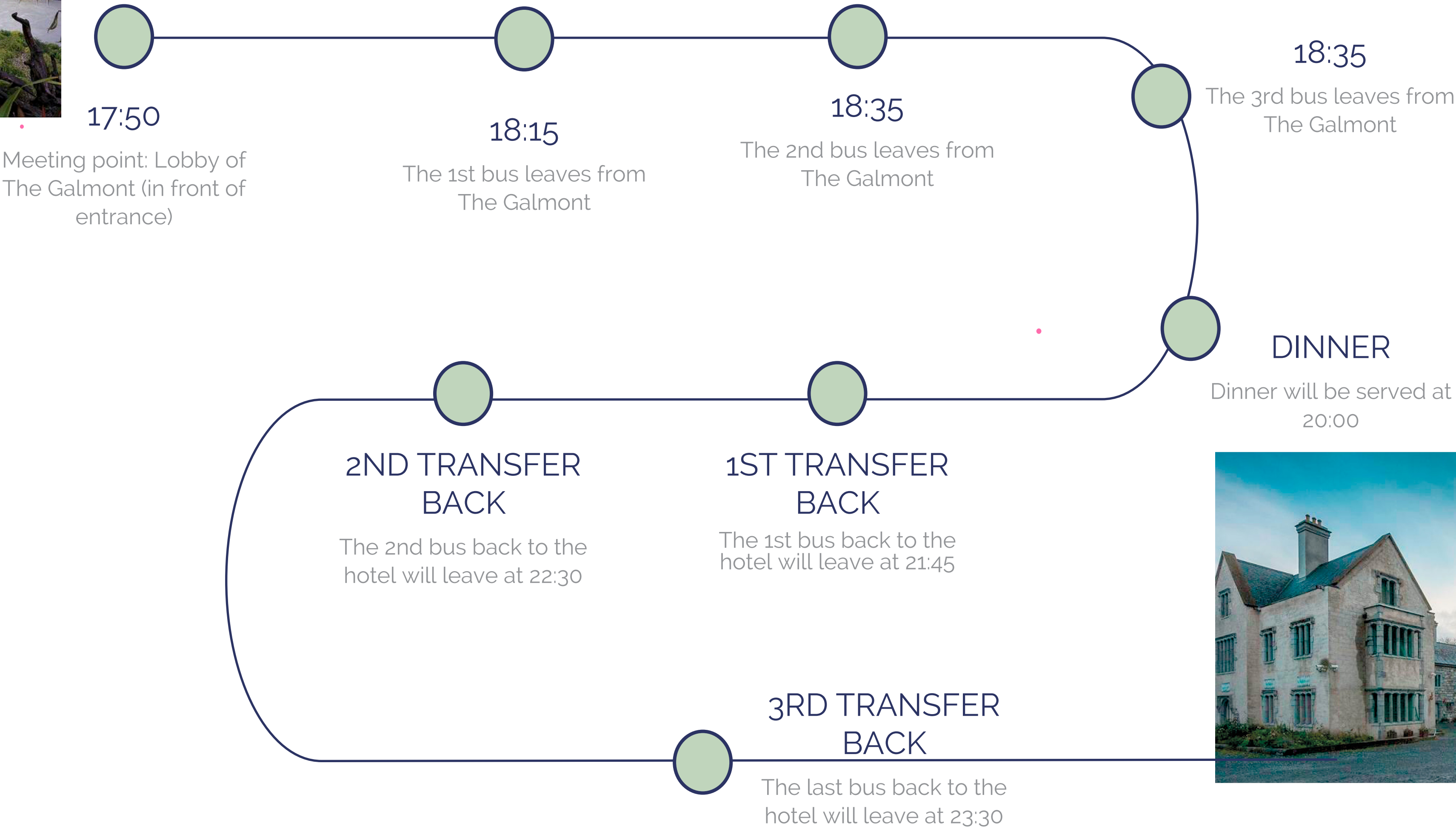
# MANRS





9.  
MONDAY DINNER

# The Galway Feast - Schedule





## 10. IXPDB

The Internet Exchange Point Database (IXPDB) is an Internet Exchange Federation (IX-F) initiative to bring an accurate view of the IXPs around the world.

While there are a number of disparate websites and resources, which contain various data on IXPs, none are globally authoritative and fully comprehensive. This makes it difficult for network operators, researchers and other interested parties to make informed decisions related to the global internet ecosystem. The Internet eXchange Federation (IX-F), aim to develop a system that will fill this gap. It will acquire data directly from IXPs through automation; aggregate and promote useful third-party data sources; and provide valuable insight, reporting, data export and visualisation functionality. We aim to work closely with the internet technical community throughout the project and will host workshops that help to promote use of the system and encourage the application of best common practices (BCPs).

### **The project covers:**

- A database schema for all IXPs to record information about their relationships with the network operators that they serve.
- A database and associated tools and APIs so the network operator community, researchers and related stakeholders can benefit from centrally collected data.
- Community outreach to ensure that all IXPs have the practical support they need to implement the necessary export schemas.

### **What is still needed:**

Whilst the core database is now available there is still work to be completed to achieve the project goals. These include:

- The automation of data import to the database
- Extend and internationalise the administration interface for all IXPAs
- Practical outreach to the global IXP community, helping their implementation
- Completing data exchange projects with other databases such as PeeringDB
- Creating bespoke, maintained, API instances for specific NGOs and Researchers
- Revising the database schema to capture more data.

### **How you can help:**

The initial stages of the project have been funded through the resources of the IXPAs and APNIC.

Completing the project will require additional funding for development, support, administration and management. We are therefore seeking sponsors from the internet industry and community to help complete this important work.

Please contact [secretariat@euro-ix.net](mailto:secretariat@euro-ix.net) for more information.





Thank you to all our Patrons, Members, Donors, Sponsors, Attendees & the FPC!