

28 April 2021



InterCommunity 2021

Infrastructure and Community Development



# Housekeeping Rules

To help ensure everyone can participate, please note the following:

- We have simultaneous translation available in French and Spanish and closed captions available in English, sponsored by Flexoptix. You can select these options in your Zoom panel.
- Keep your microphone on MUTE at all times unless you are asking a question.
- Please use the chat for all questions. Keep your questions brief and to the point.
- Kindly format your questions with your first name and country (e.g., Jane, Kenya; Roberto, Chile).
- Feel free to type questions in French or Spanish. These will be translated and sent to the moderator.
- This session will be recorded and a link for future viewing will be shared after the call.





# Challenges of Developing an IX, Managing the Community

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**28 Apr 2021**  
**ICOMM 2021**

Anupam Agrawal  
Chair - India Internet Foundation  
anupam@iifon.org

# The Milieu

1

One thing leads to another. ISOC Kolkata Chapter was working on building root instance infrastructure in the region. An IXP was required as a precondition for implementation of a particular root instance. It was where it all started.

2

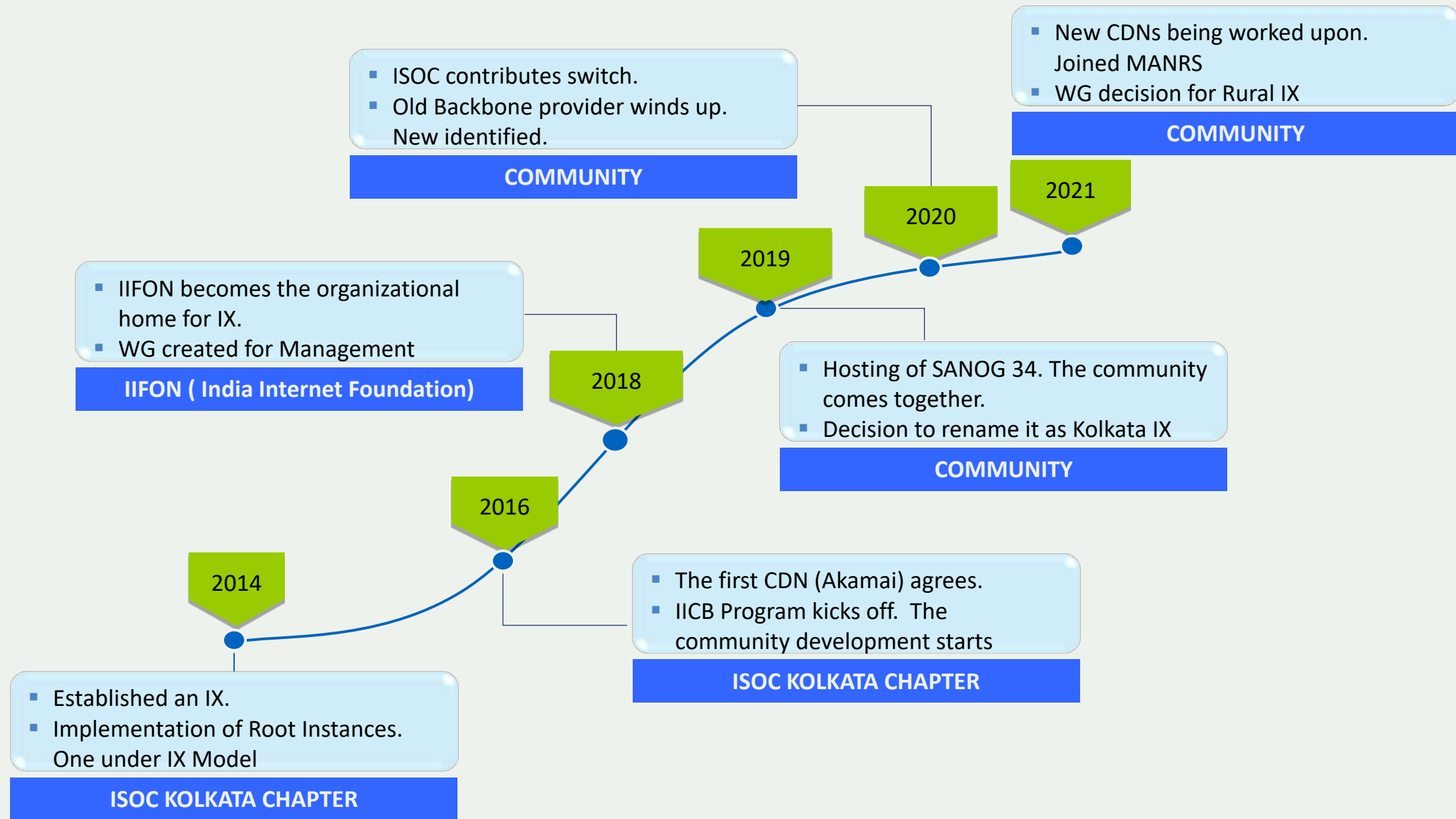
The existing IXP was one in the country. No community & definitely no concept of a community exchange.

3

Conversations with the members evoked mixed response. It was okay to peer at IXP but not okay to share routes. It was very transactional with no clear articulation of benefits.












# KOLKATA IX Journey Challenges & Management



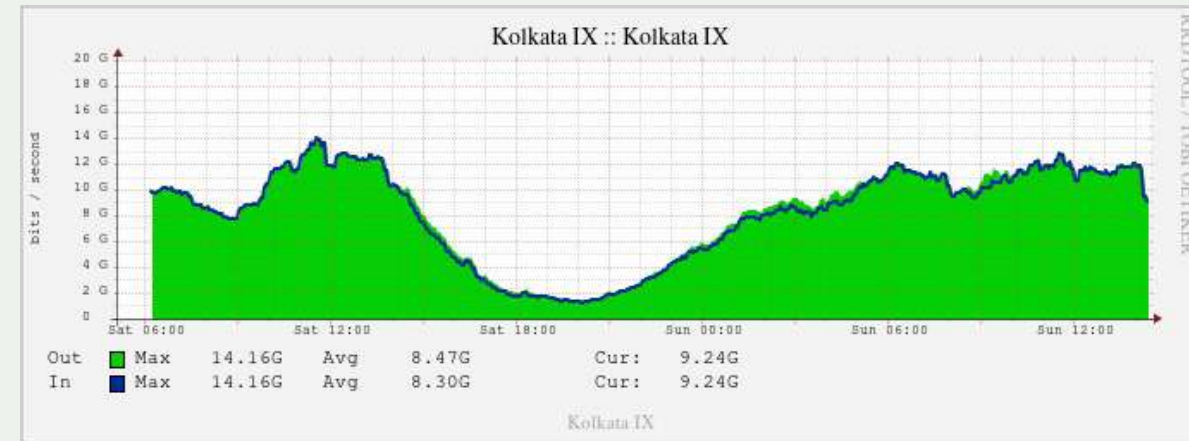
# The Community & Supporters



 <p><b>Anupam Agrawal</b> India Internet Foundation <i>[Convenor]</i></p>	 <p><b>Anand Raje</b> ISOC Kolkata Chapter <i>[Member]</i></p>	 <p><b>Suresh Kumar Singh</b> India Internet Foundation <i>[Advisor]</i></p>
 <p><b>Pulak Majumdar</b> India Internet Foundation <i>[Member]</i></p>	 <p><b>Chandan Singh</b> MFT Internet Pvt. Ltd.N <i>[Member]</i></p>	 <p><b>Ankan Bhowmick</b> Alliance Broadband <i>[Member]</i></p>
 <p><b>Dayal Saha</b> Speednet Unique Networks <i>[Member]</i></p>	 <p><b>Prasenjit Bhakta</b> Sistemas <i>[Member]</i></p>	 <p><b>Joy Chanda</b> Bittell <i>[Member]</i></p>

# The Value of Being in a Community

- 1 The IX Policies are where anyone can peer, no restriction on being an ISP only, fixed pricing based on port charges and not on traffic basis. Cost Recovery Model & savings pooled for new initiatives. Rural IXPs
- 2 Each Member ~ 60% savings in cost. Year ending March 2021, savings value delivered was 530K USD.
- 3 Investment – Equipment Upgrades, trained manpower, faster resolution. Foundations.
- 4 Routing Security – Kolkata IX is MANRS compliant and is handholding its members to become MANRS compliant.



Graph as on 11.PM IST - 25- Apr 2021

[www.kolkataix.in](http://www.kolkataix.in)

<https://www.peeringdb.com/ix/1577>

# Summing Up

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**1**

## Empirical Relationship

The Internet resilience of a region is directly proportional to the number of IXPs in the region.

**2**

## Social Impact

The IXP produces social effects. It promotes trust among competition and manifest itself in better user experience.



Thanks Everyone & Namaste !!!



# SdNOG

**Building a community!!!**

InterCommunity 2021 - Hiba Eltigani



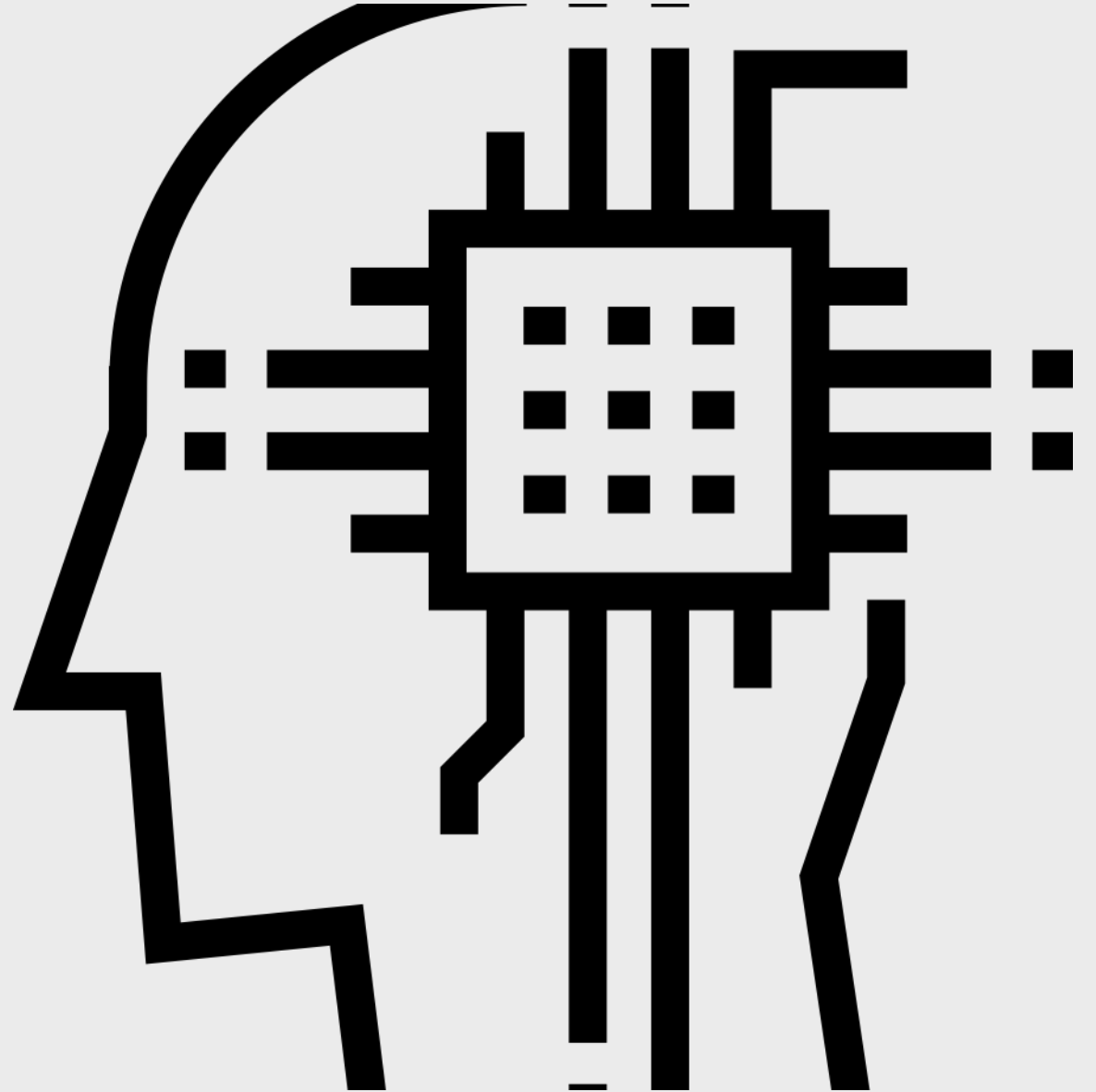
# Why ?

Technical collaboration.

Knowledge and experience exchange.

Networking and mentorship.

National Infrastructure.



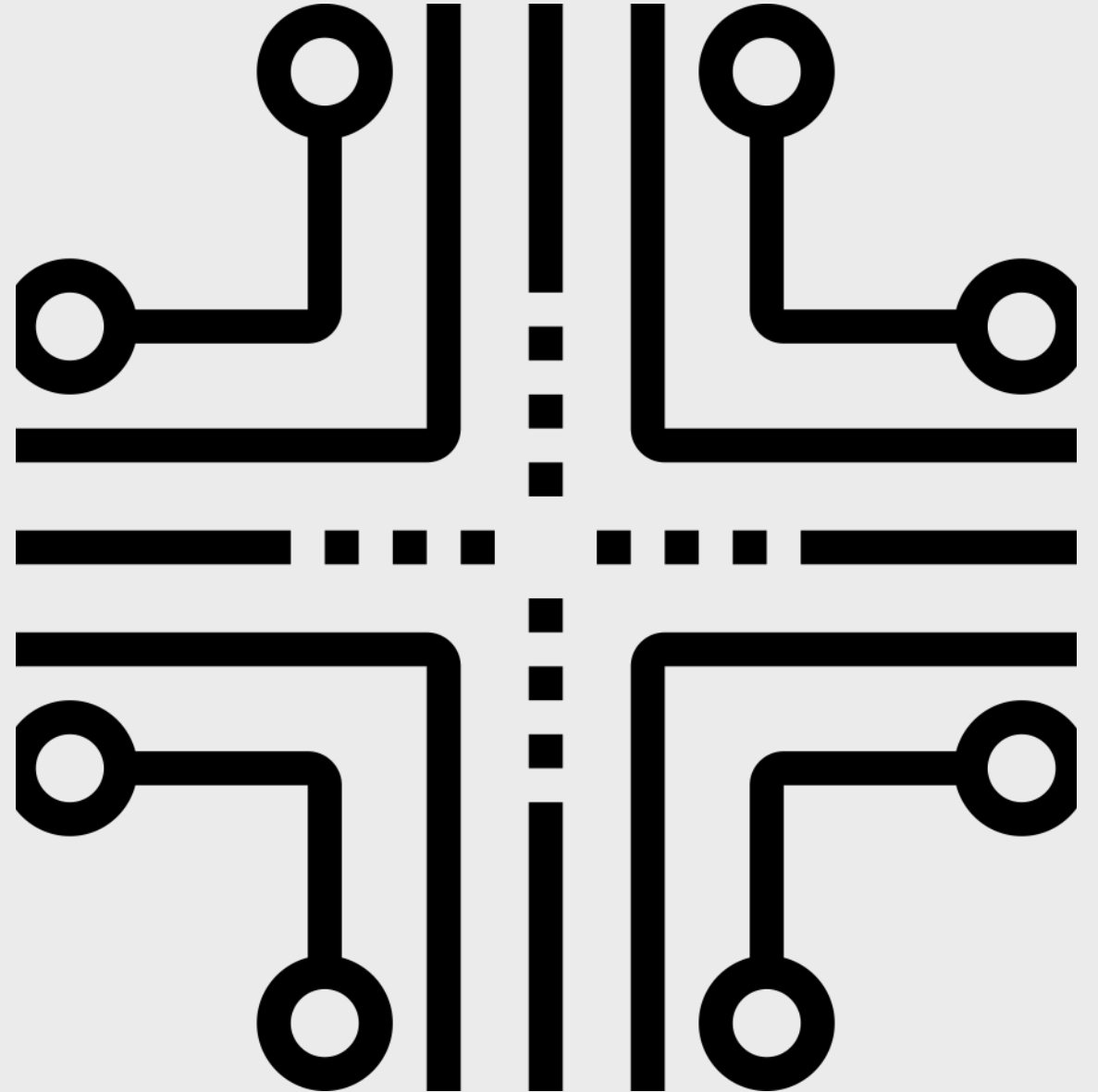
# How ?

Volunteer support.

Technical events.

Online platforms.

Stakeholder collaboration.



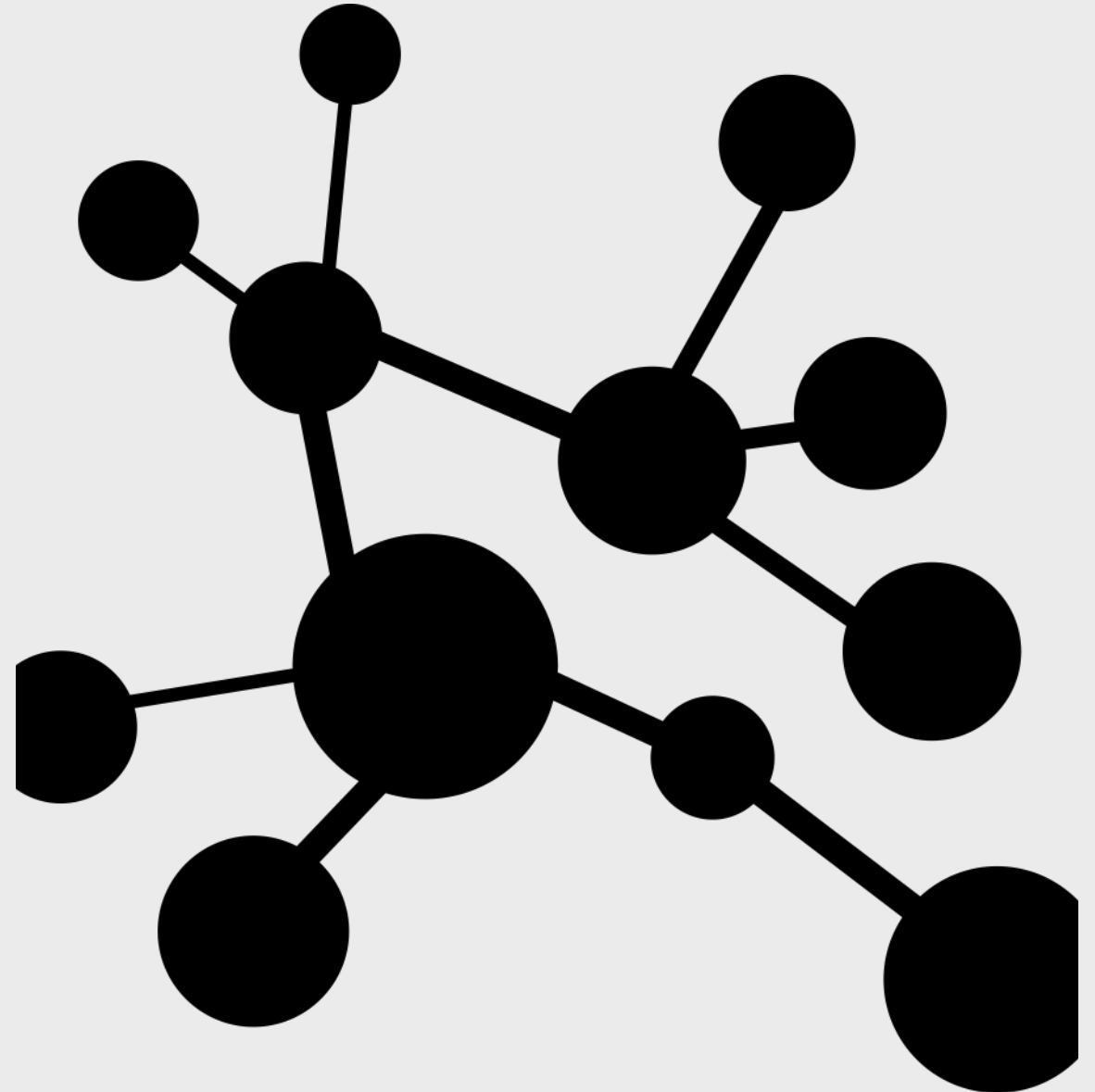
# Results ?

Growing community base.

Stakeholder recognition.

Infrastructure transformation.

Knowledge domino effect.

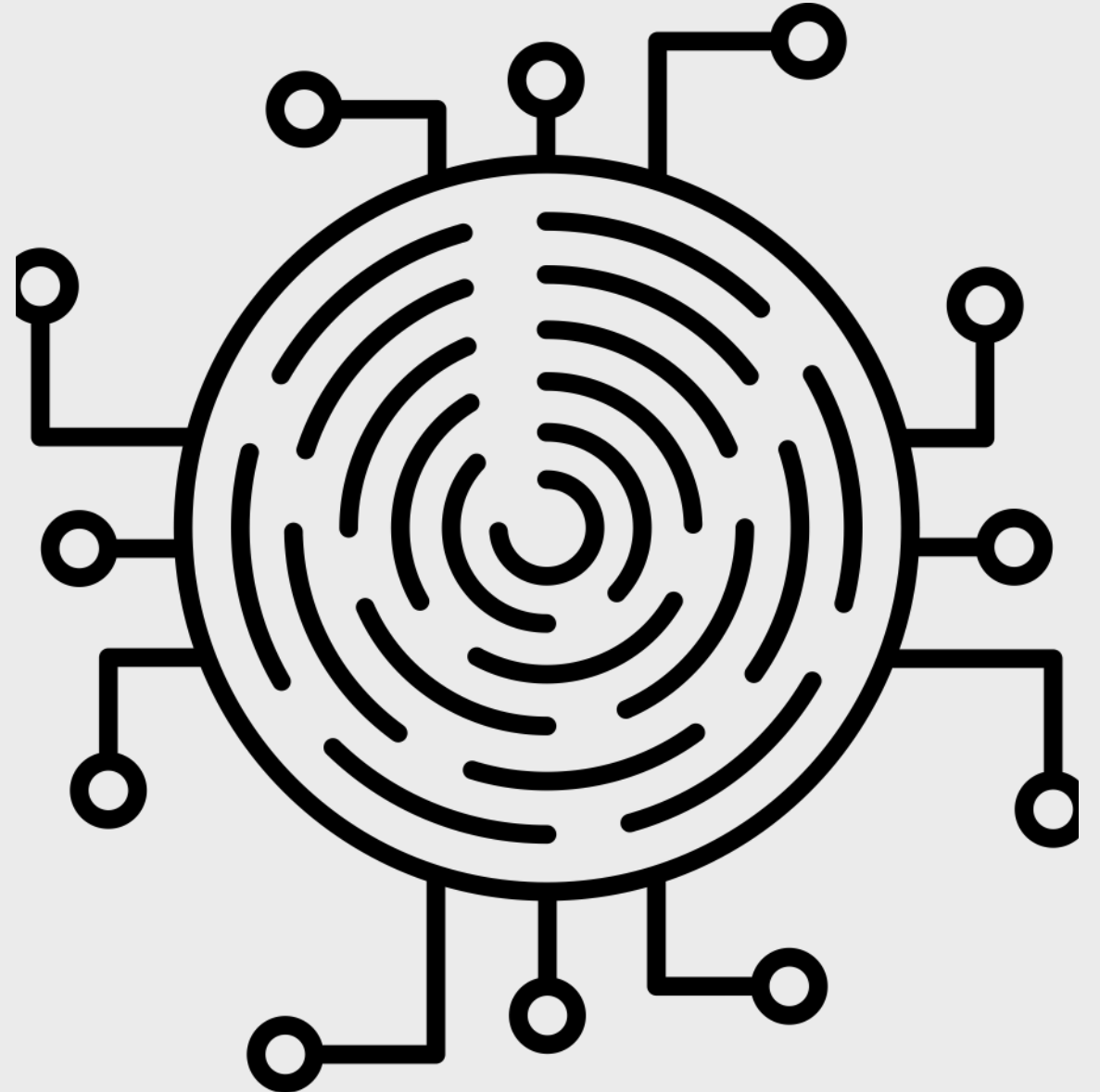


# Challenges ?

Country situation.

People commitment.

Industry Involvement.



**SdNOGPage**



**info@sdnog.sd**

**@SudanNOG**

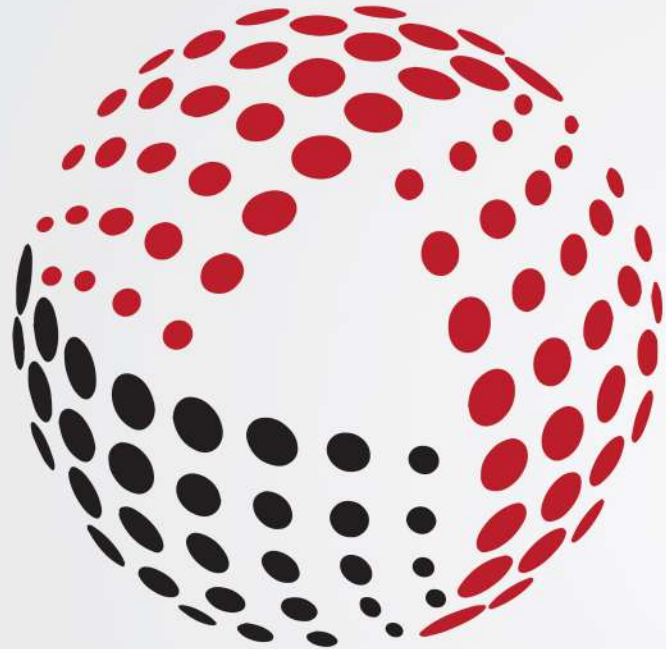


**<https://sdnog.sd>**

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# BUILDING THE CARIBBEAN NETWORK



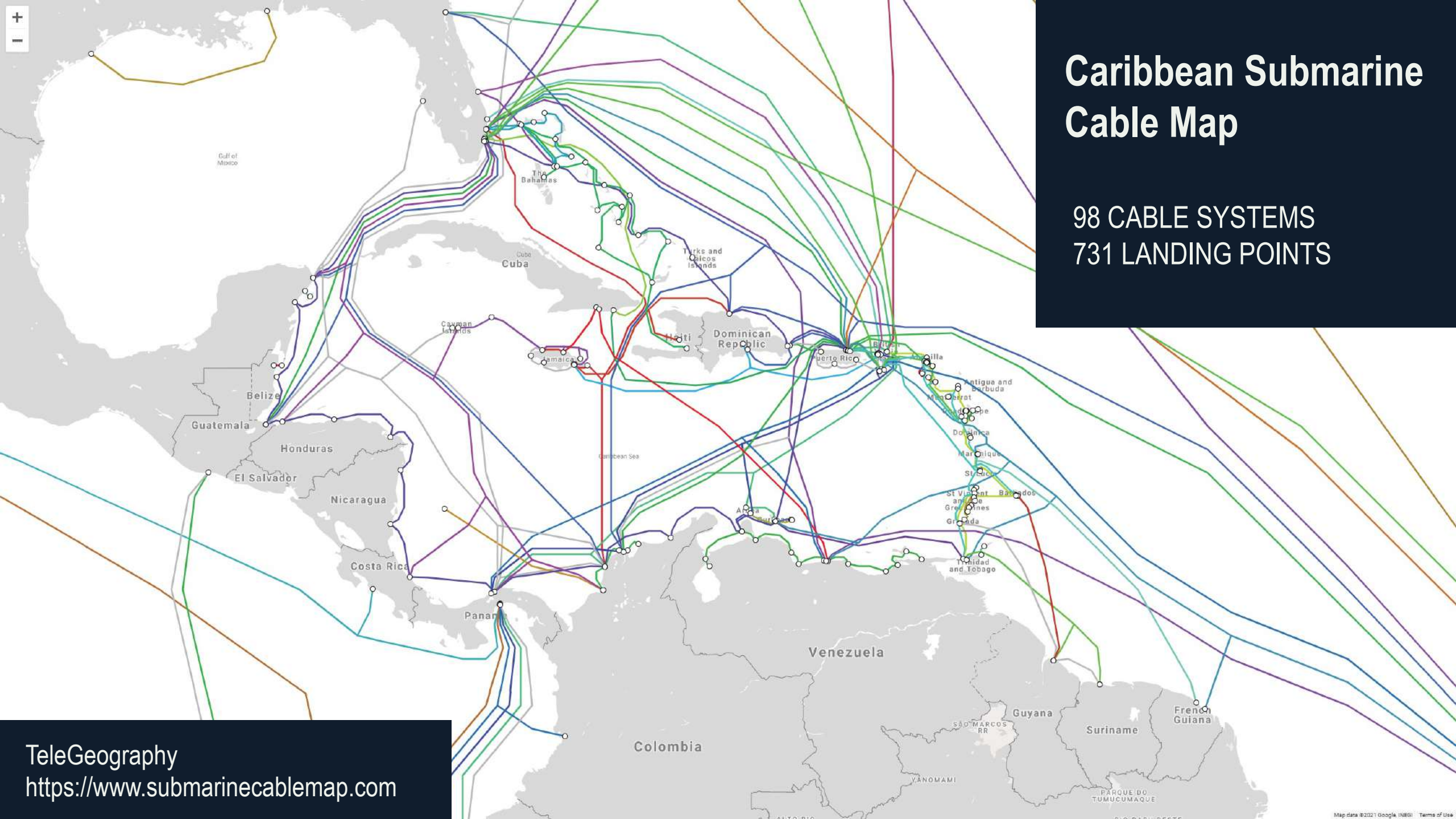


# CaribnOG

WE ARE HERE



THE CARIBBEAN REGION IS HOME TO...  
**40 COUNTRIES & DEPENDENCIES**  
**43 MILLION PEOPLE**



# Caribbean Submarine Cable Map

98 CABLE SYSTEMS  
731 LANDING POINTS

TeleGeography  
<https://www.submarinecablemap.com>

# Caribbean Internet Exchange Map

10 COUNTRIES  
12 EXCHANGE POINTS



TeleGeography  
<https://www.internetexchangemap.com>



# Caribbean Cloud Infrastructure Map



## ABOUT CARIBNOG

- **A community of network operators and stakeholders committed to providing a regional forum for research, knowledge sharing and infrastructure support**
- **Established in 2007 through the support of CTU, ARIN and PCH**
- **Partnerships with iOrgs, regional institutions and businesses**
- **Regular Regional Meetings, member dialogue and capacity-building initiatives**



Networking for Caribbean  
Development





ARIN in the CARIBBEAN Caribbean Network Operators Group

Organisation of Eastern Caribbean States Caribbean Telecommunications Union lacnic Internet Society ICANN PCH Packet Clearing House

ARIN & CaribNOG Webinar Series

# COVID-19 AND THE CARIBBEAN INTERNET

## Managing Virtual Offices & Remote Workers

Business Continuity Support Considerations for Tech Workers

HOSTED BY: Registry for Internet Numbers & Network Operators

Where: Online @ [www.caribnog.org](http://www.caribnog.org)

When: Thurs. 9 April 2020 11:00 a.m. EST

ARIN / CARIBNOG WEBINAR COVID-19 AND THE CARIBBEAN INTERNET

Where: [caribnog.org/webcast](http://caribnog.org/webcast)

When: Friday, 12 June 2020 11:00 AM – 12 PM AST

Who: CTOs, IT Managers, Network Admins, IT Support Teams

**BONUS:** Meet the Panelists Session: 12:00 PM – 12:30 PM

REGISTER @ CARIBNOG.ORG

TOPIC: NETWORK RESILIENCE II: Disaster Mitigation & Recovery Planning

Friday 12 June 2020 from 11:00 AM–12 PM AST

REGISTER @ CARIBNOG.ORG

Panelists: [List of names and titles]

ARIN / CARIBNOG WEBINAR COVID-19 AND THE CARIBBEAN INTERNET

www.arin.net | www.caribnog.org REGISTER @ CARIBNOG.ORG

Where: [caribnog.org/webcast](http://caribnog.org/webcast)

When: Friday 29 May 2020 11:00 AM – 12 PM AST

Who: CTOs, IT Managers, Network Admins, IT Support Teams

Special Meet the Panelists Session: 12:00 PM – 12:30 PM

INCREASING NETWORK AUTONOMY IN THE CARIBBEAN: ASNs and IPv6 DEPLOYMENT

Getting the Most from Number Resources II

Friday 29 May 2020 from 11:00 AM–12 PM AST

TALES FROM THE TRENCHES

Panelists: [List of names and titles]

ARIN / CARIBNOG WEBINAR COVID-19 AND THE CARIBBEAN INTERNET

www.arin.net | www.caribnog.org REGISTER @ CARIBNOG.ORG

Where: [caribnog.org/webcast](http://caribnog.org/webcast)

When: Friday 22 May 2020 11:00 AM – 12 PM AST

Who: CTOs, IT Managers, Network Admins, IT Support Teams

Special Meet the Panelists Session: 12:00 PM – 12:30 PM

INCREASING NETWORK AUTONOMY IN THE CARIBBEAN: ASNs and IPv6 DEPLOYMENT

Getting the Most from Number Resources

Friday 22 May 2020 from 11:00 AM–12 PM AST

REGISTER @ CARIBNOG.ORG

Panelists: [List of names and titles]

## **CURRENT EMPHASES**

- **Internet Exchange Point proliferation and growth**
- **Local content and services - leveraging IXPs to expand economic opportunities**
- **Capacity building in the area of cybersecurity**
- **Training courses in targeted domains - continuously delivered and easily accessed**
- **Academic research and open data**

# Participate in Building the Caribbean Network




[www.caribnog.org](http://www.caribnog.org)  
[caribnog@caribnog.org](mailto:caribnog@caribnog.org)

 [facebook/CaribNOG](https://www.facebook.com/CaribNOG)

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 [CaribNOG on YouTube](https://www.youtube.com/CaribNOG)

 [CaribNOG on Instagram](https://www.instagram.com/CaribNOG)

# Q&A Session



# Get Involved

- Learn more about IXPs:
  - <https://www.internetsociety.org/issues/ixps/>
- Make a difference in your own community!
  - Reach out to the Internet Society to get started: [infracomdev@isoc.org](mailto:infracomdev@isoc.org)

# Thank you.

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