



Community Meeting

Edward McNair | NANOG Executive Director

Ron Grant | Mentorship Committee

Chris Woodfield | Program Committee Secretary



NANOG®

A photograph of two men in a meeting. The man on the left is wearing glasses and has his hand on his chin, looking intently at a laptop screen. The man on the right is also looking at the screen with a focused expression. In the background, there are whiteboards with some diagrams and text. The overall scene is dimly lit, suggesting an indoor office or meeting room environment.

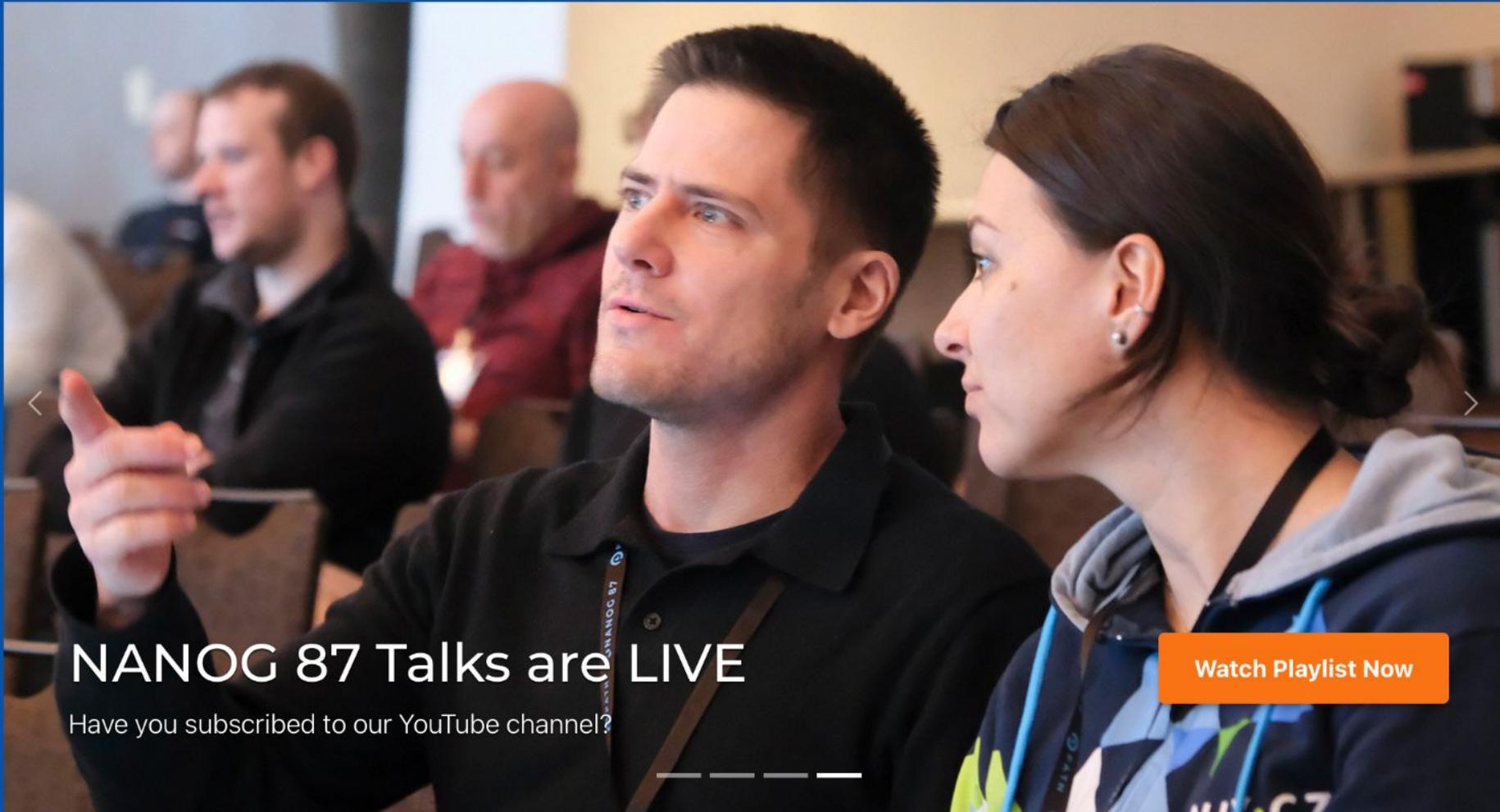
Development Updates

UI/UX Upgrades – Making nanog.org more accessible



Working together to build the Internet of tomorrow[®]

NANOG is a community of Network Operators, Engineers, and Internet Professionals dedicated to the ongoing advancement of an open, secure, and robust Internet.



NANOG 87 Talks are LIVE

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NANOG Member

[Become a Member](#)

NANOG 86 sessions are now
available on YouTube

[Watch Now](#)

Join the Conversation at
community.nanog.org

[Login Now](#)

Events

- [Upcoming Events](#)
- [Past Events](#)
- [About NANOG Events](#)
- [NANOG Swag](#)

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- [Sponsors Resources](#)
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Stories



The (Tech) Road Less Taken

Marlin Martes Shares How to Make the Impossible Possible
"What I've found most surprising is that most people don't have a straightforward path to tech either. Everybody has different backgrounds. If you can get over the shame..."



Meet NANOG's New Board Chair

Q + A with Leslie Daigle
Chief Technical Officer (CTO) of Global Cyber Alliance and former Chief Internet Technology Officer (CITO) of Internet Society (ISOC), Leslie Daigle, helms the NANOG Boa...

[View all posts →](#)

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STORIES

STORIES

STORIES

STORIES

Featured Stories

The (Tech) Road Less Taken

STORIES

Meet NANOG's New Board Chair

STORIES

What's Your Favorite N87 Moment?

STORIES

Road Less Traveled: Alex Latzko

NEWS

'NANOG Jeopardy' Takes the N87 Stage



Registration is open!

Late registration ends June 10th

[Register Now](#)



3

Days

23

Hours

43

Minutes

18

Seconds

[View the NANOG 88 Agenda!](#)

[Learn More](#)

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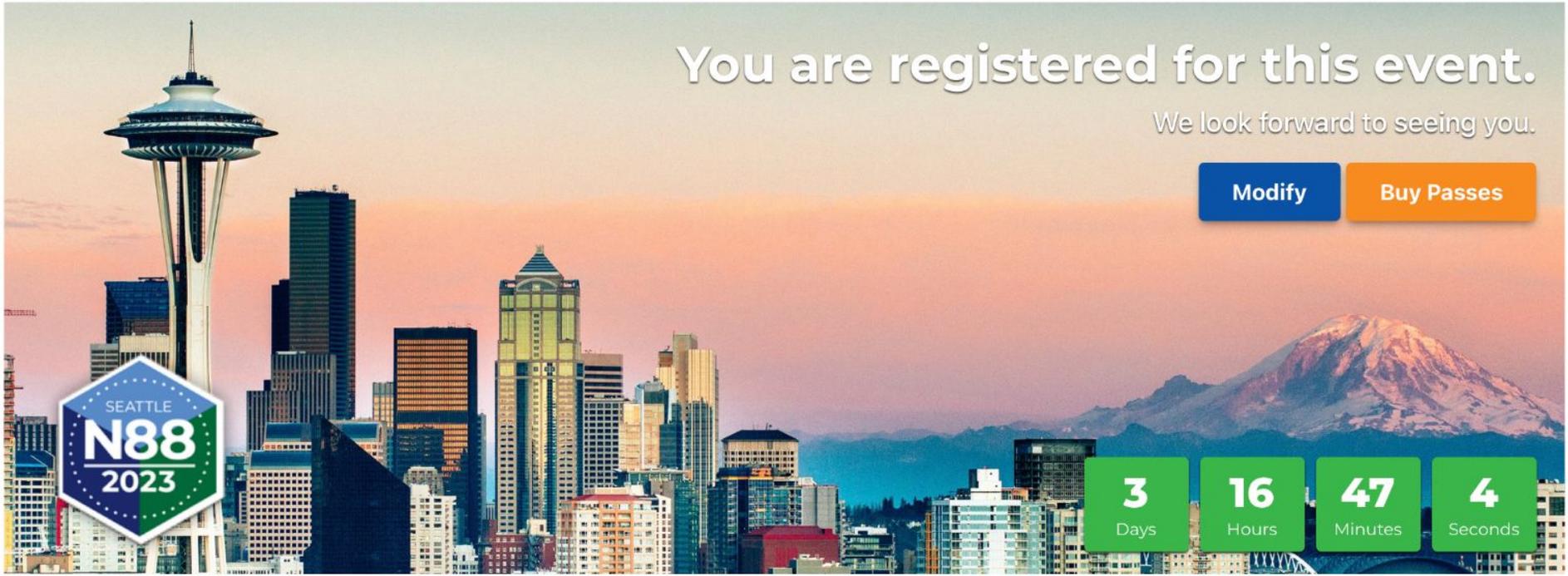
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NANOG 88 Seattle



HOST SPONSOR



You are registered for this event.

We look forward to seeing you.

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NANOG 88 Seattle





Community Forum

COMMUNITY FORUM

Welcome! The NANOG Community Forum is a digital space that inspires community building, fosters mentorship, and provides ongoing support for students and professionals in Internet technology. By joining the forum, you'll also have the opportunity to share your insights and provide feedback as we work together to build the Internet of tomorrow. By using this forum you are agreeing to abide by NANOG's [Usage Guidelines](#), and [Code of Conduct](#).

Do you want live notifications when people reply to your posts? [Enable Notifications](#) ✕

all categories ▾

all tags ▾

Categories

Latest

New (4)

Unread (4)

Bookmarks



+ New Topic

Category

Topics

Latest

Mailman List

A public category this is a read only mirror of the NANOG Mailing list. It is currently read only, and serves as a modern, searchable archive.

54.9k

4 unread

3 new



New addresses for b.root-servers.net

■ Mailman List

3

4h



Verizon business internet contact needed

■ Mailman List

0

8h

General Technical Discussions

This community-moderated forum is open to all, and a great place to discuss topics related to network engineering. Ask questions, present ideas, and share success stories! You're free to create polls, gather feedback through community voting, and

8



N88 Panel: "How to Survive NANOG as an Introvert" + More

0

Community Forum

- Now in 1.0 release
- Several ways to login – Use your NANOG, Google or LinkedIn accounts, or create an account directly on the forum.
- It can be accessed through a browser or as a mailing list.
- If you have made posts on the NANOG Mailing list, it will automatically sync with the email address used for login.
- There is read-only Mailman Mirror, focused Technical Forums, Affinity Groups, and more.
- If you would like a new Group created –send an email to webmaster@nanog.org

A close-up photograph of two men in a workshop or office environment. The man on the left has a beard and is looking intently at a laptop screen. The man on the right, wearing glasses and a grey hoodie, is leaning in and looking at the same screen. The background is softly blurred, showing what appears to be a technical workspace.

Discourse Basics

Welcome to NANOG

A NANOG Community-Forum account is required. Please create an account or log in to continue.

[Sign Up](#)[Log In](#)

Welcome back

Log in to your account

[I forgot my password](#) [Show](#)

[Log in](#) [Create your account](#)

[Sign in with Google](#)
[Sign in with NANOG](#)
[Sign in with LinkedIn](#)



User Menu



12h

ne!

staff are also here to help if you need to reach a person.

ly limit what new users can do. You'll gain [new abilities](#) (and

[behavior](#) at all times.

ow and  **bookmark this personal message.** If you do, there



 Reply

welcome!

[friendly staff](#) are also here to help if you need to reach a person.

temporarily limit what new users can do. You'll gain [new abilities](#) (and
v you.

[community behavior](#) at all times.

... below and  **bookmark this personal message**. If you do, there

12h



 Reply

0

views

1

user



 Summary

 Activity

 Drafts

 Preferences

 Pause notifications

 Log Out



Edward_McNair

Edward McNair

Expand

Summary

Activity

 Notifications

 Preferences

Account

Security

Profile

Emails

Notifications

Categories

Users

Tags

Interface

Webcal Keys

Username

Edward_McNair 

People can mention you as @Edward_McNair

Profile Picture



Email

edward@right-brain.com
primary

Never shown to the public.

Associated Accounts

Google edward@right-brain.com 

Name

Account

Security

Profile

Emails

Notifications

Categories

Users

Tags

Interface

Webcal Keys

Email

Email me when I am sent a personal message

always ▼

Email me when I am quoted, replied to, my @username is mentioned, or when there is new activity in my watched categories, tags or topics

only when away ▼

We'll only email you if we haven't seen you in the last 10 minutes.

Include previous replies at the bottom of emails

never ▼

Include an excerpt of replied to post in emails

Activity Summary

When I don't visit here, send me an email summary of popular topics and replies

weekly ▼

Include content from new users in summary emails

Save Changes

Account

Security

Profile

Emails

Notifications

Categories

Users

Tags

Interface

Webcal Keys

Notifications

Consider topics new when

created in the last 2 days ▼

Automatically track topics I enter

after 5 minutes ▼

When I post in a topic, set that topic to

Tracking ▼

Notify when liked

First time a post is liked and daily ▼

Live Notifications

 Enable Notifications

Note: You have to change this setting on every browser you use. All notifications will be disabled if you pause notifications from user menu, regardless of this setting.

Notification Schedule

Enable custom notification schedule

Save Changes

Account

Security

Profile

Emails

Notifications

Categories

Users

Tags

Interface

Webcal Keys

Categories

 Watched

[Show](#)

Select...



You will automatically watch all topics in these categories. You will be notified of all new posts and topics, and a count of new posts will also appear next to the topic.

 Tracked

[Show](#)

Select...



You will automatically track all topics in these categories. A count of new posts will appear next to the topic.

 Watching First Post

Select...



You will be notified of the first post in each new topic in these categories.

 Muted

[Show](#)

Select...



You will not be notified of anything about new topics in these categories, and they will not appear on the categories or latest pages.

Account

Security

Profile

Emails

Notifications

Categories

Users

Tags

Interface

Webcal Keys

Categories

 Watched

Show

Select...



Search...

 Development  Public Betas x 2

 Mailman List x 54942

 General Technical Discussions x 8

 Community Requests x 8

 Peering Forum

 Discourse Test x 12

 Uncategorized x 1

 Automation Affinity Group

 Muted

Show

Select...



You will not be notified of anything about new topics in these categories, and they will not appear on the categories or latest pages.

General Technical Discussions

This community-moderated forum is open to all, and a great place to discuss topics related to network engineering. Ask questions, present ideas, and share success stories! You're free to create polls, gather feedback through community voting, and more. To post via email, use the address:

general@community.nanog.org

To interact via email

Discussions ▾ all tags ▾ Latest New Unread Bookmarks Votes My Votes + New Topic 

Replies Views Activity

Click the bell icon to subscribe to a Group

Technical Discussions category

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	0	13	Mar '21
	6	31	1d

Do ISP's collect and analyze traffic of users?

■ Mailman List

 **Michael_Thomas** ✉ 17d

And maybe try to monetize it? I'm pretty sure that they can be compelled to do that, but do they do it for their own reasons too? Or is this way too much overhead to be doing en mass? (I vaguely recall that netflow, for example, can make routers unhappy if there is too much "flow").

Obviously this is likely to depend on local laws but since this is NANOG we can limit it to here.

Mike

4 Replies ▾

created	last reply	22	25	14	2				▾
		replies	views	users	links				

 **Dave_Phelps** ✉ 17d

I think it's safe to assume they are selling such data.

<https://www.techdirt.com/2021/08/25/isps-give-netflow-data-to-third-parties-who-sell-it-without-user-awareness-consent/>

<https://www.vice.com/en/article/dy3z9a/fbi-bought-netflow-data-team-cymru-contract> ¹

 **Matthew_Petach2** ✉ 17d

May 15

1 / 23

May 15

13d ago



Do ISP's collect and analyze traffic of users?

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Michael_Thomas

✉ 17d

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Dave_Phelps

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May 15

1 / 23

May 15

13d ago





ABQNOG 01

ABQNOG 01

- This was the inaugural meeting of the Albuquerque Network Operators' Group
- Attendees ranged from local internet providers, students and representatives from local indigenous tribes.
- NANOG and ARIN attended to provide support for their first meeting.
- While there we had the opportunity to listen to the challenges facing indigenous tribes as they build community networks.



CHI-NOG 11

CHI-NOG 11

- First local NOG in the USA
- 11th annual full day conference in Chicago and the Midwest - May 11th 2023
- 102 attendees
- 10 vendor neutral presentations
- Keynote - Highlighting the future of Quantum Optical Networking research in Chicago



<https://chinog.org/>

CHI-NOG 11

Argonne NATIONAL LABORATORY

Design and Implementation of the Illinois Express Quantum Metropolitan Area Network

The diagram illustrates a network topology for the Illinois Express Quantum Metropolitan Area Network. It shows a central ring of Q-MAN Switches (Q-MAN Switch (FNAL) and Q-MAN Switch (StarLight)) connected to Q-LAN Switches (Q-LAN 1 (FNAL) and Q-LAN 2 (NU and StarLight)). Each Q-LAN Switch is connected to Q-nodes (Q-node1 and Q-node2) and EPS (EPS1 and EPS2). A Q-MAN Switch (Q-MAN Switch (ANL)) is also shown connected to a Q-LAN Switch (Q-LAN 1 (ANL)).

Joaquin Chung
Research Scientist
The University of Chicago and Argonne National Laboratory

The IEQNET collaboration

Argonne Fermilab Caltech Northwestern University
HYPERLIGHT NuCrypt

U.S. DEPARTMENT OF ENERGY Argonne National Laboratory is a U.S. Department of Energy laboratory managed by UChicago Argonne, LLC

<https://www.youtube.com/watch?v=usvNgqfbQ9Q>



NANOG[®]

.....

2022

Annual Report

.....

**North American
Network Operators'
Group**

Conference Badges

- The board is considering the option of scanning badges
- Your privacy is our highest concern:
 - Attendees would have the option to opt out of having a QR Code on their badge.
 - QR codes would need to be small enough that they couldn't be scanned at a distance.
 - Attendees would have the option to select what information would be shared on their QR Codes.
- The board is seeking community feedback (feedback@nanog.org)

A photograph of two men sitting at a table, looking at a document. The man on the left has a beard and glasses, wearing a maroon polo shirt. The man on the right has glasses and is wearing a light blue button-down shirt. They appear to be in a professional or academic setting, possibly a meeting or a classroom. The background is blurred, showing other people and what looks like a computer monitor.

Mentorship Update

Ron Grant Mentorship Committee Member

Why you should become a mentor?

According to Forbes:

- Mentees are promoted five times more often
- 87% of mentees feel empowered + have developed greater confidence
- 84% of Fortune 500 companies have mentoring programs, and 100% of Fortune 50 companies

Mentorship will help you:

- Clarify + reach your career goals
- Build your network
- Better understand the industry
- Get an unbiased perspective

nanog.org/outreach/nanog-mentorship-program/

NANOG Ombuds

Confidential
support for our
community

ombuds@nanog.org





NANOOG



Framework – GitHub/Jenkins/Ansible

- Initially deployed for Open Networking (Cumulus)
- Playbooks stored in GitHub for version control, change MGMT, and code/peer review
- Playbooks run from Jenkins for centralization, security, auditing, logs, etc. (logs all jobs and results to Splunk)
- Ansible and associated plugins/modules installed on Jenkins server

```

graph TD
    GitHub[GitHub] --> Jenkins[Jenkins/Ansible]
    Jenkins --> Splunk[Splunk]
    Jenkins -- EAPI/CLI --> Arista[Arista]
    Jenkins -- SSH --> Cumulus[Cumulus]
    Jenkins -- Nitro API --> Citrix[Citrix]
    Jenkins <--> User((User))
  
```

The NANOOG Program

Curated by industry professionals



Life Cycle of a Talk

EVENT CALENDAR	
June 26, 2023	CFP Reminder Announcement
July 24, 2023	CFP Reminder 2 Announcement
Aug. 27, 2023	DRAFT Presentation Slides Due
Sept. 11, 2023	Topics List Published
Sept. 25, 2023	Meeting Agenda Published
Oct. 9, 2023	In-Person Final Slides DUE
Oct. 15, 2023	On-Site Lightning Talk Submissions Open



Program Committee Tool

NANOG 89 Summary:

- 22 talks in the hopper
- 15 pending
- 1 submitted
- 4 accepted

Program Committee Dashboard

Viewing the dashboard for NANOG 89

NANOG 89 GO



4 Talks Already Accepted for N89

- **General Session:**

- ASPA-based BGP AS_PATH Verification and Route Leaks Solution
- The complex reality of protecting BGP: Quantifying the impact of RPKI validation in ISPs and IXPs
- RPKI adoption and Routing Security in the North America & Caribbean

- **Tutorial:**

- Bringing True Load Balancing to Your On-Premises Kubernetes Cluster

Agenda Builder

- Allows us to easily build the agenda with a drag and drop interface
- Future update coming to allow to more easily schedule multiple presentation locations in parallel

Agenda Builder

The Calendar is set to NANOG 88's timezone (US/Pacific)

June 2023		Week	Day	Agenda	<	>
		Sun 11	Mon 12	Tue 13	Wed 14	
all-day						
7 AM						
8 AM						
9 AM	NANOG 88 Hackathon 8:30 AM - 5:00 PM	Mond: Break: 8:00 AM - 9:45 AM	Mond: Meetin: 8:00 AM - 5:00 PM	Tuesd Break: 8:00 AM - 9:45 AM	Tuesd Meetin: 8:00 AM - 5:00 PM	Wedn: Break: 8:00 AM - 9:45 AM
10 AM		NANO 88 Keyno From	NANO 88	2023 Design Driver	NANO 88 Hijack	Wedn: Meetin: 8:00 AM - 5:15 PM
11 AM		NANOG 88 DNS Fundamer	API Peerin	Netwc	Route	
11:22 AM						
12 PM		Mond: Netwc Lunch 12:00		Tuesd Netwc Lunch 12:00		Wedn: Lunch (On Your
1 PM						
2 PM		Dive deep	How to	BGP Techn for Netwc	How to Deplo	Inclus Hiring
3 PM		Protec Critic	Off-label ARIN	Opera	Ember CDNs	Stand Scalat NANO
4 PM		Reelin				Wedn: The
5 PM	Sunday Meeting Registrati 4:00 PM - 6:00	Bogor The	NANOG 88 Peering Coordination Forum 5:00 PM - 6:30 PM	No nacker The New.	pyGNI and ChatG to	Wedn: NANO
6 PM				Tuesday Lightning		
7 PM				NANOG 88 Beer n Gear 6:00 PM - 8:00 PM		
8 PM		NANOG Social Event 7:00 PM - 10:00 PM				
9 PM				Sponsored Social 8:00 PM - 10:00 PM		
10 PM						

Shepherd vs. Content Reviewer

- **Shepherd** - your main point of contact on the Program Committee; works with you on initial reviews, provides feedback on content, and represents your talk to other PC members.
 - <https://www.nanog.org/participate/process-submissions-proposal-review/>
- **Content Reviewer** - like a copy editor, they will look over formatting, check for typographical errors and make sure the slides adhere to NANOG standards
 - <https://www.nanog.org/program/presentation-guidelines/>

Getting Involved

- PC nominations open up every February
- We are all volunteers
 - Board appointed and self governing
- We have sub-committees
 - Keynotes
 - Tutorials and Tracks
 - Lightning Talks
 - Moderators
 - Data Analysis
 - Hackathon
- Interested in helping out? Come talk to us!

<https://www.nanog.org/about/who-we-are/program-committee/>

A photograph of three people at a hackathon. On the left, a man with long dark hair and a beard is smiling broadly, wearing a dark jacket with blue and white stripes on the sleeve. In the center, a man with short dark hair is looking towards the camera with a slight smile, wearing a plaid shirt and a white name tag. On the right, a woman with dark hair and bangs is smiling, wearing a dark hoodie with a peace sign and the letters 'N O W O' on it. They are sitting at a table with laptops. The background is blurred, showing other people and a blue wall.

Thank you

We hope you'll join us in building the Internet of tomorrow.



AKSHAT



Q+A

