

Network Operator Groups - What, Why, and How

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Agenda | Network Operator Groups (NOGs)

- **What are Network Operator Groups (NOGs)?**
- **The Origin of NOGs**
- **NOGs and Their Importance!**
- **Who Starts them, How & Sustaining Them**
- **Why do it?**
- **A Role for Governments?**
- **Fellowships & On-line Training for NOG Communities**
- **Use Case – Slovenian NOG (SINOG)**

What are Network Operator Groups (NOGs)?

- They are groups of like-minded people and partners that:
 - Bring network operators, engineers, and other Internet community experts together to develop stronger technical expertise in a country or region.
 - Share information, operational experience, “know-how” and “networking-how-to”.
 - Create learning and training opportunities.
 - Help engineers meet other engineers and talk to each other more openly and learn from each other.
 - Are neutral, non-commercial, and non-political by nature - but some create a key forum for operators to talk “business” on the side or to discuss “key issues” in the Internet community.

More on What NOGs are?

- **NOGs come in all sizes. Some have 800+ people, some have less than 20. Some have Face2Face meetings. Some only meet online.**
- **NOGs usually keep growing if leadership is motivated and enthusiastic and the community stays engaged.**
- **The community is key, and keeping them engaged is important.**
- **There are national NOGs, sub-regional or regional. In some countries there is more than one NOG.**
- **In most NOGs, the participants generally are experienced technical operational experts that design, build and operate networks for their organisations – operators, enterprises, universities, and governments.**
- **Some NOGs have expanded their agendas to incorporate business, policy, and governance discussions, and other infrastructure conversations (e.g., IXPs, SDN).**

The Origin of NOGs

Regional:

- The first NOG was [NANOG](#) (North American). NANOGs discussions are very broad as many participants are from all over the world.
- Other regional NOGs ([APRICOT](#), RIPE, [AfNOG](#), [LACNOG](#), SANOG, PacNOG, [CaribNOG](#)) were established.

National and sub-regional NOGs are growing and they facilitate:

- Country and sub-regional specific discussions and meetings.
- A focus on local and sub-regional issues and experiences.
- Use of local languages and culturally specific.
- Provide a “value-add” as participants can learn a great deal, do not have to travel far, and calibrate how much/how little they participate.

Photos of Network Operator Groups



More Photos of Network Operator Groups



**AFNOG 2012 WORKSHOP & MEETING
SERREKUNDA, GAMBIA 6 - 18TH MAY, 2012**



NOGs & Their Importance

- **Anyone can join at no (or low) cost and learn more.**
- **A peer-group of experts is created for exchange of information/knowledge & develop local tech capacity.**
- **Training is facilitated as well as useful technical meetings.**
- **Collaboration is built among NOGs and technical training facilitated by experts (APRICOT, SANOG, BDNOG).**
- **Capacity building is localized and scaled to meet national and regional needs to reach more people.**
- **Training costs are lowered by bringing training and expertise to the community.**



NOGs are Important Because They:

- **Facilitate more peering agreements.**
- **Enable or help create IXPs.**
- **Encourage local discussions on domestic issues.**
- **Help with the deployment of new technologies.**
- **Encourage knowledge sharing and problem solving among peers in the same community.**
- **Encourage the use and deployment of current Best Practices and modern technologies.**
- **Allow easy access to network engineers for people outside the tech community.**

Who Starts Them?

- **Anyone in the Internet community can start them**
 - **Network Engineers**
 - **Technical Experts**
 - **Internet Community Organizations**
 - **University Students or National Research and Education Networks**
- **NOGs can be virtual groups with an online presence via mailing lists, a website, instagram, WhatsApp!, FB or other online medium.**
- **Some NOGs organize yearly or bi-annual face-to-face events to bring together the tech community and stakeholders.**

How | NOG Events: Meetings and Workshops

Different formats based on community:

- **Key Training Workshops from Beginner to Advanced Networking | APRICOT, SANOG, AfNOG, PacNOG, CaribNOG**
- **Big Events & Networking | Include tutorials, training, keynote sessions, presentations and working group meetings | NANOG, LACNOG, RIPE, APRICOT)**
- **Social meetings | Usually small national NOGs where knowing each other and building a local community is the main objective**
- **Collaboration | NOGs sometimes receive generous contributions from sponsors (e.g., Internet organizations, operators, manufacturers, CDNs)**



What You can do to Sustain a Local NOG?

- Be an active participant in your NOG community
- Participate & suggest training opportunities
- Attend other NOG meetings in the region to build regional Know How
- Become a trainer | NOGs are looking for experts around the globe
- Build an on-line forum
- Bring new operators to a NOG community
- Bring university students to learn and connect
- Sponsor your NOG's events: provide connectivity or equipment
- Provide training or meeting venues for your NOG
- Encourage your peers to join the NOG



More on Sustaining a NOG

NOGs are usually seen as a “natural” sponsoring opportunity by:

- **Software and hardware vendors/resellers**
- **System Integrators**
- **Operators (because it's cool to support a NOG)**
- **Other businesses where network operators are target group**

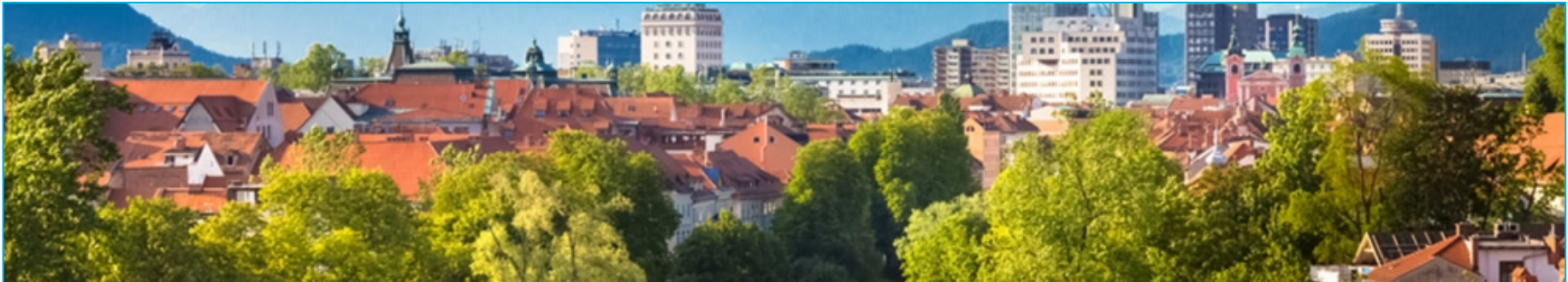
Why Do It?

- **To strengthen local Internet technical communities**
- **To provide a forum for training**
- **To connect experts across regions**
- **To help Internet development**
- **To help to localize and scale capacity building efforts at the national or regional level**
- **To advocate and promote Best Current Operational Practices use & development**

Is there a Role for Governments in NOGs ?

- **Experience from around the world shows that NOGs:**
 - Thrive on neutrality.
 - Are highly technical and operational forums with limited policy discussions.
 - Lack strong formal structures (loosely informal structures) and with non-binding resolutions.
- **Despite the major differences in how they operate, Governments can support NOG activities by:**
 - Sponsoring the meeting, coffee, lunch, opening/closing reception.
 - Recognizing a NOG as an equivalent stakeholder in a local Internet ecosystem.
 - Encouraging their experienced/technical staff to participate in the NOG discussions.

Use Case: Slovenian Network Operator Group



SINO



Use Case: SINOG

- The first discussion started at the 8th Slovenian IPv6 summit on 22 October 2013 during a panel session to gauge interest from the community.
- 5 volunteers agreed to draft a NOG charter.
- The same 5 volunteers ran for the SINOG board.



Use Case: SINO

- **SINO 0: Foundational meeting – 9th December 2013**

- Approximately 50 people participated
- We (community) agreed to:
 - Proposed [charter](#)
 - Members of SINO board
 - Ways of funding SINO
 - Go6 Institute as administrative home:
 - Administration of NOG
 - Organization of meetings and events
 - Funding (sponsors)



- **Two very good presentations**

- Benjamin Zwitter – DNSsec at .si TLD
- Ivan Pepelnjak – Software Defined Networks

Use Case: SINOG

- **SINOG1 and SINOG2 were attended by @130 people with very distinguished speakers on the agenda: Eric Vyncke, Frederic Donck, Ivan Pepelnjak, Ignas Bagdonas, Remco Van Mook as well as local Slovenian experts on different topics...**



Use Case: SINOG

- **Intermediate activities:** Held two more intermediate SINOG thematic workshops between “big” SINOG meetings
 - Building wireless networks for operators (SINOG 1.5)
 - AntiSpam and DDoS mitigation (SINOG 1.6)
 - Datacenters (SINOG 2.1)
 - Next one – SINOG 3.1 – Detecting the anomalies in the network



Use Case: SINOG – Ways of Communications

- Web site (<https://www.sinog.si/>)
- Membership on nog@sinog.si mailing list is free (moderated joining to protect from joining emails like qwtgqevq3@yandex.ru) (currently 190 members)
- Membership in SINOG community is also free, but you need to fill in a short application form on <https://www.sinog.si/clanstvo/pristopna-izjava/> to indicate that you agree with the SINOG charter and to enable you to vote/run for board among.
- List of SINOG members is here: <https://www.sinog.si/clanstvo/seznam-clanov/> (currently 126 people signed the application form)

Use Case: SINOOG – Activity and Findings

- **Dynamic mailing list – from time to time quiet, from time to time very active.**
- **Topics like IPv6, DNSSEC, fiber optics, configurations, strange addresses in packet headers, and BGP between operators.**
- **Mixed membership on the mailing list – from operators, academics and students, enterprise IT people, government IT experts, and integrators.**
- **Government has recognized SINOOG as an important stakeholder in national Internet ecosystem discussions. SINOOG representatives are invited to Internet related meetings to express a “technical” view and inform Govt action.**

Use Case: SINOG – Community Meeting Rules

- **Presentations for the SINOG meetings **MUST** (RFC 2119 *MUST*) be technical and provide some value to technical community. Use cases welcome, “I had this problem and I fixed it this way and learned this and that” most welcome...**
- **Commercial presentations are refused for major part of agenda.**
- **Sponsors are well informed in advance that with sponsoring the SINOG meeting they are not buying themselves a speaking slot. They may propose a presentation and if it fits technically and it's not (too) commercial they might get accepted.**
- **We do have “sponsors minutes” slot before lunch, where we give 5 minutes to each sponsor to do their commercial pitch and communicate this clearly to the community, that sponsors are making the event possible, so this type of slot is needed (but just one).**

Use Case: SINOG – Example of success

- **Slovenian Ministry for Culture stated in their strategy draft that due to shortage of funding of creation of “deficitary content”, Internet operators will have to pay a tax on web connectivity because web content is stealing attention from TV and therefore tax needs to be paid.**
- **Yes, you read that correctly.**

“TAX ON WEB CONNECTIVITY”

- **At the end that would implicit tax on the Internet connectivity and operators would then simply charge it further to end users.**

Use Case: SINOG – Example of success

- More expensive Internet? Discouraging innovation?
- SINOG community initiated the discussion on mailing list what the consequences and impact might be if this comes to effect.
- Long discussion, many participants, ideas, opinions and suggestions.
- At the end we edited the final version and published the “SINOG position text” on sinog.si web site and sent it to the Ministry and to the media (TV, radio, other web portals).
- <https://www.sinog.si/2016/11/ne-davku-na-internet/>

Use Case: SINOG – Conclusions

To create a vibrant and active community – some suggested best practices:

- **Create a bottom-up grass-roots start-up effort**
- **Enable good communications channels for discussion to start and bloom**
- **Encourage active volunteers to participate on the board**
- **Find a good independent not-for-profit administrative home for your NOG. Communities generally do not want to deal with administrative issues, sponsors and organizing meetings**
- **Maintain a healthy balance with your government. You want to be recognized and appreciated by your government and help them wherever possible, you want them to invite your people to other Internet related meetings, but keep in mind that government should not start and run your NOG.**



Resources & Existing Network Operator Groups (NOGs)

- http://en.wikipedia.org/wiki/Internet_Network_Operators%27_Groups
- <http://www.internetsociety.org/articles/internet-society-helps-convene-first-latin-american-network-operators-group>
- <http://www.internetsociety.org/history-timeline/first-meeting-african-network-operators%E2%80%99-group-afnog>
- http://wn.com/list_of_internet_network_operators_groups
- http://www.digplanet.com/wiki/Internet_Network_Operators%27_Groups
- <http://www.caribnog.org/articles/2013/3/9/networking-the-internet-community>
- http://www.linktionary.com/i/internet_organizations.html
- <https://www.sinog.si/>
- <http://www.internetsociety.org/what-we-do/education-and-leadership-programmes/ietf-and-ois-programmes/internet-society-fellowship>
- <http://www.internetsociety.org/what-we-do/inforum-learn-online>

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Thank you for your attention!

Questions?

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Deploy360 | www.internetsociety.org/deploy360/

