

Summary Session 1 COVID-19 and the Caribbean Internet Webinar Series

Introduction – Bevil Wooding, *Executive Director of CaribNOG and Caribbean Outreach Liaison of ARIN*

Meeting began with BMW welcoming everyone to the launch of the ARIN and CaribNOG Webinar Series “COVID-19 and the Caribbean Internet”. He identified that the objective of this meeting was to engage the CaribNOG community to identify ways to help the region to treat with the impact and downstream consequences of the Corona virus/COVID-19 pandemic. Over the last few weeks, persons, communities and businesses across the region have been disrupted, as operations have been moved from offices and familiar places of work into the home. It has also put a new spotlight on Information and Communications Technology (ICT) generally, but more specifically ICT and Internet infrastructure. For that reason, ARIN, CaribNOG, ICANN, Internet Society, and LACNIC are collaborating on this initiative to structure a response that provides practical tools, guidance and information to the community. This is in keeping with the CaribNOG mandate to share ideas, experiences and knowledge s to advance the Internet in the Caribbean region. This series will consider four main issues as they relate to COVID-19 and the Caribbean Internet:

1. The Internet and the Network Infrastructure
2. Network Security
3. Electronic Service Delivery
4. Telecommunications Regulation, Public Policy and Public Safety

“Managing Virtual Offices and Remote Workers” is the topic of the first webinar today, and the speakers are Stephen Lee, Programme Coordinator, CaribNOG and CEO, ArkiTechs Inc; and Brent McIntosh, Coordinator of the Grenada Internet Exchange Point – GREX.

Highlights of Session 1: Managing Virtual Offices and Remote Worker – the view from the trenches – *Stephen Lee*

- How can work, life and business continue to function effectively while switching to working remotely?
- How can businesses change their process flows to accommodate remote work especially in the area of knowledge workers and those who may need to support them?
- What are the new modes of operations to effectively access company data and infrastructure especially since that data is not at home or on personal devices?
- What is the impact of the increased demand on the domestic and global Internet infrastructure on those who work remotely?
- What are the new demands for technology infrastructure in homes, and how do businesses respond to facilitate remote work?
- How do businesses secure their data and manage work performance in the work at home scenarios?
- The data access challenge:
 - Securely put the data in the cloud – what types of data can be moved there, and what are the costs of this solution?
 - Remote desktop access to data within the business’ infrastructure – what is the availability of core infrastructure including servers, firewalls and access control, specifically consolidated infrastructure with VPN access?
 - Other areas of concern are: real-time communications such as VOIP systems, and Video conferencing systems.

Feedback after Session 1

- How does the business effectively transform and understand the options that are available especially because of the speed at which things need to get done?
 - Recognize and emphasize the fact that we are operating in unprecedented times;
 - Looking at the organization's network, there are certain things that will not work properly if they continue to be performed in the usual manner (one example was remote processing of payroll);
 - A pragmatic analysis of the business operation must be considered at this time which may require new considerations to keep the core business operations functioning.
- There was a request for focus to be placed on the education sector. There is a need for a greater awareness by the public of what is required in the education sector to transition to online teaching and remote support for teachers, students, and parents. This can include a dedicated session on education technology and connectivity in the current environment working with other stakeholders in the community.
- How do we quickly move antiquated processes to a more streamlined remote mode? Will be covered in later *How To* session.
- There has to be an understanding that not everything can be transferred into a virtual environment easily; whether it is in the conduct of school or business operations. As a result, priority should be given to particular aspects of those operations including the infrastructure availability to ensure greater productivity under the circumstances.

Highlights of Session 2: How-To Component – Building out My Remote Access Toolkit including Critical Network Infrastructure - *Brent McIntosh*

- The work from home scenarios have highlighted the need for the average user to rely on service providers for uptime guarantees for Internet traffic in the event of a failure which previously were only required by big business;
- The importance of the IXP infrastructure was emphasized specifically during a power outage or system failure, which was capable of continuing to provision Internet traffic to end users;
- Requirement for facilitating remote work:
 - the most basic requirement is good Internet access – minimum 20 mg down connection
 - VPN access to the office – can be provisions through software clients or hardware based solutions, including plug and play VPN clients for end users and hardware devices for remote tech users
 - More sophisticated solutions are required for the remote technical user who may need to create IPsec tunnel from home to the business with secured encryption for critical data transfer. These may also be available for use on mobile devices;
 - It is important to bear in mind the need for adequate security for access into the corporate services because of the vulnerabilities that may exist.
- An example of Critical Internet Infrastructure – Spotlight on the GREX
 - An IXP is necessary for best quality access;
 - Basic definition of an IXP – the common connectivity fabric where content providers (CDN) and ISPs can connect together to share local content without traversing IP transit links through the rest of the world;
 - The GREX has CDNs, ISPs and root servers peering on the IXP;

- During the COVID-19 Pandemic, the volume of usage has increased, and traffic trends have changed particularly traffic served by the CDNs;
- Providers have also been requesting increase connectivity on the IXP from 1Gbps to 10Gbps as well as IPv6 connections;
- Increase in DNS anycast root servers are being placed on IXPs in the region by the CTU to facilitate more efficient round trip time responses of Internet traffic;
- The GREX has therefore alleviated some of the pressure on bandwidth and local applications in Grenada.

Feedback after Session 2

- Have organization been embracing the option of moving to full cloud solutions, or is there a need for hybrid cloud?
 - The trend is that critical workloads that needs to be always available are being moved to the cloud;
 - Another type of implementation is the hyper convergence infrastructure (HCI) platforms which facilitate multi-cloud deployment scenarios.
- Using the example of the GREX, how are people connecting, is the IXP being used as a local point of convergence through a datacenter connected to the IXP, are they going over the public cloud for connectivity, or using VPN or remote access?
 - Some clients are using virtual gateways with virtual firewalls ensuring that there is secure connection to the cloud.
- What are the recommendations or guidance for purchasing or implementing secure VPN appliances, bearing in mind the existing VPN Types, such as: IPsec and small office/home office VPN clients with open VPN as the protocol?
 - An important consideration is the skill level of the remote worker who may not have the expertise to setup an open VPN or generic IPsec VPN connection, so plug and play may be the better way to go. Always use a product that is tried and tested and has technical support. A list of recommendations should be developed coming out of this session, identifying requirements for different types of users.
- What are some of the benefits of IXPs that are not being leveraged by businesses, and what advice, if any, is available on advocacy to businesses so that we can all receive those benefits?
 - Benefits include:
 - DNS anycast root server updates;
 - Real-time connectivity to time servers and secure web content (SSL) hosted by CDNs;
 - Real-time mission critical updates (Android, Apple IOS and video games);
 - Most importantly is connectivity of businesses using their own Internet resources to be able to peer directly with other members of the IXP.
- As a result, of COVID-19 pandemic, it is even more important to pay attention to the personal and individual or human dimension of the remote worker. Maintaining contact and appreciating the human considerations especially for remote meetings and calls is key. Remote workers need to have the personal connections and the reassurance that everything is okay, and they need assurance that they can and should take time for family. It must be recognized that the remote worker is having an intensive work experience, so the human and social components are as important as the VPN, security and other technical considerations necessary for sustaining what may be the new normal of the organization. Attention should be places on developing policies for remote work because human being are

the ones doing the work and need to find a new balance. This must be a consistent priority across all industries, and must be part of the toolkit of specific strategies for ensuring that there is no burnout, frustration or any dysfunctionality as a result of the intensity of the operations. Other important considerations are maintaining a sense of balance, order and predictability because of the removal or disruption of routine cause by the lack of normalcy of their office environments.

- This is the new normal and the information that are being addressed in these sessions is quite timely for our Caribbean audiences. Many of our industries may not have been as prepared for the workarounds brought about by the COVID-19 pandemic for online working and remote engagements, so some attention should be placed around authentication and security for business processes.
- Resources, updates, schedules and timetables for upcoming meeting can be found on CaribNOG.org and TeamARIN.net