ANNUAL REPORT 2016

lacnic

A Historic Change in Internet Governance

This was a historic year for LACNIC and the other Regional Registries.

Along with other entities, we formally assumed stewardship of the IANA functions for Internet number resources, which until the month of September were performed by the United States Department of Commerce.

On September 30, during the LACNIC 26 closing ceremony in San Jose, Costa Rica, we had the pleasure of announcing the conclusion of the IANA functions' stewardship transition process and the beginning of a new model under which this responsibility is now in the hands of the Internet community.

This step is considered to be one of the most important steps in the history of the Internet.

This responsibility now lies with us, along with a diverse, multistakeholder community in each of the three operational areas: numbers, names and protocols. All these years we have been preparing as an organization based on this model in which all sectors have a space where they can contribute to Internet development and —mainly— to our number community.

This challenge finds LACNIC in a stage of full institutional maturity. We have reached 6,000 members in Latin America and the Caribbean, with an increase of almost 20% in the past year, and we have consolidated our position as an organization that leads the strengthening of an open, stable and secure Internet at the service of the development of the region, promoting a collaborative Internet model, as stated in our vision.

Precisely this year we worked on our strategic planning for 2017-2020, in which we set out our goals for the coming years when the efficient deployment of IPv6 will be essential for consolidating the Internet in the region.

The LACNIC Board worked hard in 2016, as we participated in monthly in-person or online meetings to discuss and deliberate on important issues related to the organization's sustainability and transparency, among others.

We were able to complete a very intense agenda. In this document you will find a sample of our work, including our main events held in Cuba and Costa Rica, On the Move meetings organized in Central America and the Caribbean in order to reach communities that had previously exhibited lower participation rates, multiple training events for our community, agreements with global security organizations, and even the fifth consecutive recognition LACNIC was awarded as one of the best places to work. I invite you to explore this document with us.

Personally, I would like to thank my colleagues on the Board of Directors for the trust they placed in me once again by appointing me to serve as LACNIC President during 2017.

Wardner Maia
President
LACNIC

1. LACNIC

1.1 What is LACNIC?

LACNIC, the Latin American and Caribbean Internet Addresses Registry, is an international non-government organization established in Uruguay in 2002. It is responsible for assigning and managing Internet numbering resources (IPv4, IPv6) and Autonomous System Numbers, among other resources for the region of Latin America and the Caribbean. It is one of five existing Regional Internet Registries. LACNIC contributes to Internet development throughout the region by means of an active cooperation policy, promoting and defending the regional community's interests, and helping create conditions that will allow the Internet to become an effective instrument for social inclusion and economic development in benefit of all Latin American and Caribbean countries and citizens.
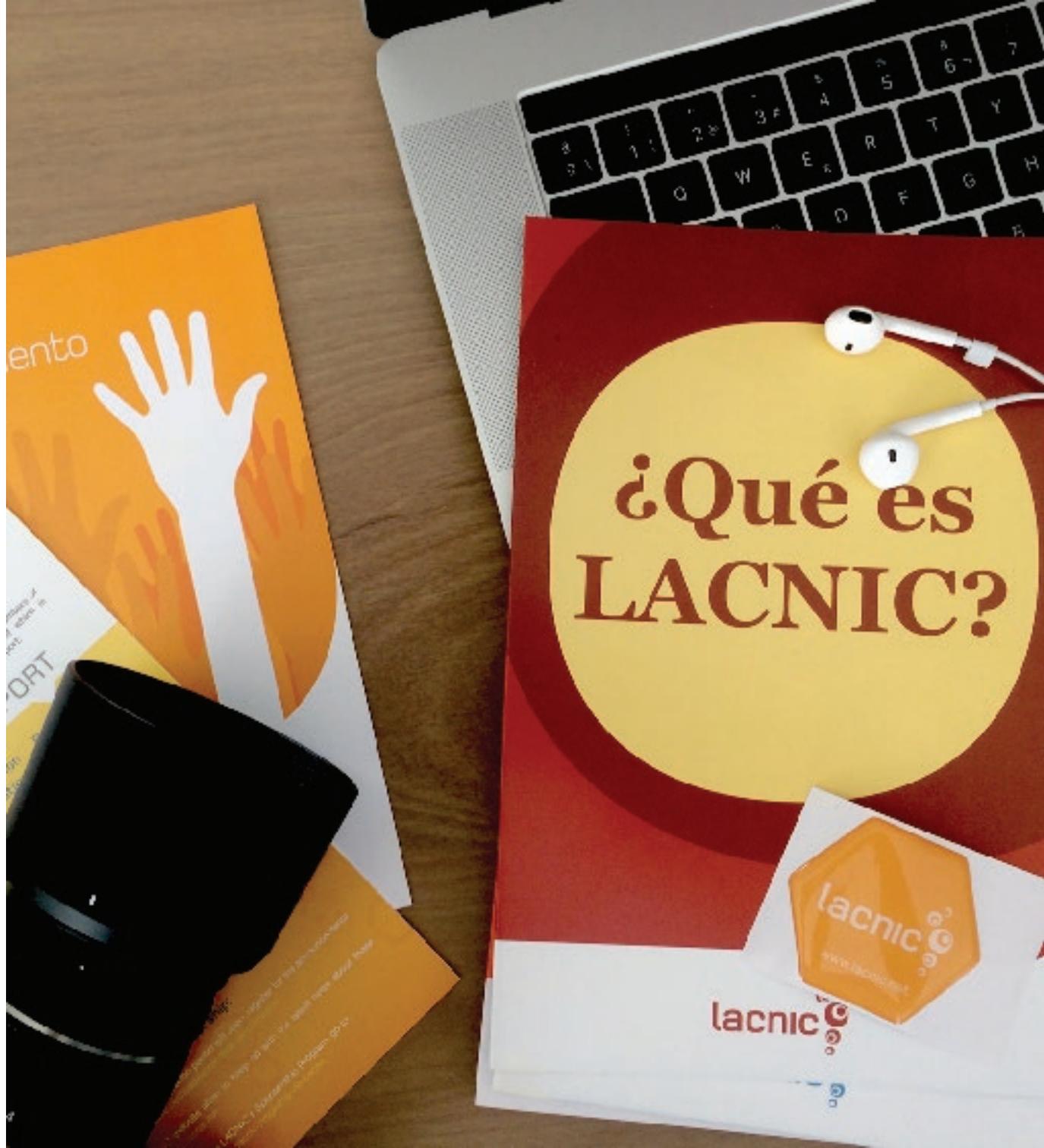
Vision and Mission

In 2016, LACNIC worked on the strategic planning for the 2017-2020 period. This work included a review and update of the organization's mission and vision as well as the development of strategic objectives for the coming years. The updated mission and vision are as follows:

LACNIC's vision is to lead the strengthening of an Open, Stable and Secure Internet at the service of the economic, social and cultural development of Latin America and the Caribbean, promoting the collaborative Internet model.

Its stated mission is to manage Internet number resources for Latin America and the Caribbean through participatory policy development, based on a culture of excellence, transparency and continuous improvement, adding value to our community by:

- building capacity within the regional community through training, cooperation and collaboration with other organizations;
- engaging in, and contributing a regional perspective to, industry and Internet Governance forums;
- strengthening the multistakeholder, participatory, bottom-up Internet Governance model; and
- promoting the use and development of Internet standards, involving the regional community in the process.

LACNIC seeks to be a permanent regional leader in issues related to Internet development.

LACNIC Board of Directors

LACNIC is managed and run by a Board made up by seven Directors elected by LACNIC members – more than 6,000 network operators providing services in 33 Latin American and Caribbean territories. The LACNIC Board is representative of the organization's members, as Directors are elected by their direct vote. During 2016, the LACNIC Board was made up as follows:

NAME	POSITION	RESIDENCE	TERM ends in
Wardner Maia	President	Brasil	December 2016
Oscar Messano	Vice President	Argentina	December 2017
Hartmut Glaser	Treasurer	Brasil	December 2018
Alejandro Guzmán	Deputy Treasurer	Colombia	December 2018
Javier Salazar	Secretary	México	December 2016
Gabriel Adonaylo	Deputy Secretary	Argentina	December 2017
Rafael Ibarra	Member	El Salvador	December 2018
Oscar Robles Garay	CEO	Uruguay	*

Fiscal Commission

The Fiscal Commission is LACNIC's control organ. It is charged which supervising that all accounting and administrative standards are met and overseeing compliance with LACNIC's legal and statutory framework.

In 2016, this Commission was made up as follows:

NAME	RESIDENCE	TERM
Hernán José Arcidiácono	Argentina	2016 - 2017
Adriana Ibarra	México	2015 - 2018
Aristóteles Dantas Gaudêncio	Brasil	2016 - 2019

Electoral Commission

The Electoral Commission organizes and supervises elections to ensure the transparency of each process. It analyzes and solves any problem that may arise during an election, and counts all votes and announces final results.

In 2016, this Commission was made up as follows:

NAME	RESIDENCE	TERM
Jorge Luis Legrá Álvarez	Cuba	06 May 2014 - 2017
Marcelo Corradini	Brasil	30 junio 2015 - 2018
Horacio Tedesco	Argentina	13 junio 2016 - 2019

1.2 Our Members

Organizations receiving IP addresses directly from LACNIC or through its NIRs automatically become LACNIC members. Different member categories and levels have been established according to the size of the address space managed by each organization.

There are two different ways to become a LACNIC member:

Active A Members

Active A Members are organizations that receive IP addresses directly from LACNIC or from LACNIC NIRs. They are classified into two categories:

1. Internet Service Providers
2. End Users

Internet Service Providers (ISPs) are members who receive IP addresses for their subsequent assignment to customers. In addition, an ISP's membership category is determined by the number of IPv4 or IPv6 addresses it has been assigned.

Adhering Member

Members who support LACNIC's objectives, apply for membership, manage IP addresses outside the address space allocated to the LAC region, and geographically based in Latin America or the Caribbean.

By the end of 2016, LACNIC had reached 6,000 members throughout Latin America and the Caribbean. This major, double-digit growth of our membership base is the result of the work of LACNIC and its community, and shows that the region remains optimistic about the strategies to be implemented in 2017.

These 6,000 members include major Latin American and Caribbean Internet companies, organizations and universities.

More information

For more information on how to become a LACNIC Member, go to:
http://www.lacnic.net/web/lacnic/como-ser-miembro

Detailed information regarding membership categories and member rights and obligations is available in the LACNIC Bylaws:
http://www.lacnic.net/web/lacnic/estatuto-capitulo-3

Membership FAQ:
http://www.lacnic.net/web/lacnic/faq-membresia

1.3 The LACNIC team

For the fifth consecutive year, LACNIC was recognized as one of the best places to work in Uruguay according to the ranking prepared by international consultants Great Place to Work. This study is conducted annually by Great Place to Work® in over 45 countries worldwide. In 2016, it ranked LACNIC among the best companies to work for in Uruguay.

This year, LACNIC improved its position in this prestigious ranking in the category of up to 150 employees, taking the fifth place.

LACNIC's commitment to the open and collaborative construction of an excellent working environment helps us further the organization's goals and contributes to more efficient organizational strategies in benefit of its community.

The LACNIC staff includes professionals from many different countries, such as Uruguay, Argentina, Venezuela, Spain, Brazil, Paraguay, Trinidad and Tobago, Panama, and Mexico. Ten percent of our staff works from home (Home Office). The average age of our team is thirty-six.

GREAT PLACE TO WORK® Las Mejores Empresas para Trabajar 2016 Uruguay

More information: http://www.lacnic.net/web/anuncios/2016-lacnic-mejor-lugar-para-trabajar

1.4 LACNIC in 2016

DECEMBER
- Wardner Maia, new Chairman of the Board
- The Board recognizes the work of Oscar Messano

JANUARY

FEBRUARY
- 2016 courses begin on the LACNIC Campus
- Dr. IPv6 is launched

MARCH
- On The Move, Honduras
- LACNIC sponsors IETF 95, the first IETF event to be held in the LAC region

APRIL
- LACNIC 25

MAY

JUNE
- NRO/RIRs signs IANA service agreement with ICANN in Helsinki

JULY
- LACIGF Costa Rica
- 2016 Lifetime Achievement Award Ceremony

AUGUST
- AMPARO (Dominican Republic)
- AYITIC, training for trainers in Haití
- On the Move, Santo Domingo

SEPTEMBER
- LACNIC 26/ LACNOG16
- Conclusion of the IANA functions stewardship transition process

OCTOBER
- AMPARO (Montevideo)
- On the move (Sint Marteen)
- LACNIC turns fourteen!

NOVEMBER
- AMPARO (Belize, Bolivia y Ecuador)
- LACNIC among the best places to work

DECEMBER
- FRIDA Awards ceremony at the IGF

JANUARY

Warder Maia, new Chairman of the Board

http://www.lacnic.net/web/lacnic/2016-reconocimiento-omessano

The LACNIC Board appointed Warder Maia of Brazil to serve as its new chairman, a position he assumed on 1st January 2016.

IANA Functions' Stewardship Transition Comes to an End

http://www.lacnic.net/web/anuncios/2016-iana-transition-ends

On 30 September, during the LACNIC 26 closing ceremony in San Jose, Costa Rica, LACNIC CEO Oscar Robles had the pleasure of announcing to the community gathered for the event —in real time— the culmination of the IANA Functions' Stewardship Transition Process and the beginning of the new model under which the Internet Community is in charge of this responsibility.

LACNIC 25

http://www.lacnic.net/web/eventos/lacnic25

On 2 to 6 May, Cuba hosted the regional Internet community's most important meeting, LACNIC 25. The meeting was organized at the Havana Convention Center together with ETECSA, the event's official sponsor.

The Amparo Project in Dominican Republic, Belize, Bolivia, Ecuador and Uruguay

http://www.proyectoamparo.net/

This year, LACNIC's AMPARO project conducted several IT security training workshops in various parts of the region – the Dominican Republic, Uruguay, Belize, Bolivia and Ecuador. The Belize workshop was the first to be presented in English.

Submitted and Implemented Policies

https://politicas.lacnic.net/politicas/list

In 2016, the LACNIC community submitted seven policy proposals and approved and implemented three. The policies approved by the community involve reserving IPv4 addresses for deploying infrastructure regarded as critical or essential for Internet operation in the region, modifying direct IPv6 assignments to end users, and modifying the size of initial and subsequent direct IPv6 assignments to end users.

Ayitic

http://www.ayitic.net

The third edition of the IT training workshop for Haitian professionals was held this year. The 2016 edition focused on training trainers, with a workshop on IPv6 deployment and another on 3D printing and prototype development. Ayitic received funding from the IDRC to begin a new phase focused on training young women for employment, thus ensuring the project's continuity over the next three years.

WARP

http://www.lacnic.net/web/anuncios/2016-amenazas-en-linea
http://www.lacnic.net/web/anuncios/2016-acuerdo-mejorar-respuesta-incidentes

WARP is a service developed by LACNIC to support its members in managing computer security incidents.

This year, LACNIC WARP became a member of the Messaging, Malware and Mobile Anti-Abuse Working Group (M3AAWG). It also subscribed a cooperation agreement with the Forum for Incident Response and Security Teams (FIRST) to improve security incident response capabilities throughout the region.

LACNIC On The Move

http://onthemove.lacnic.net/honduras-2016/
http://onthemove.lacnic.net/sint-maarten/es/index.html
http://onthemove.lacnic.net/republica-dominicana-2016/

Following the excellent results achieved by the events organized in different parts of the Caribbean, LACNIC decided to extend the initiative to all of Central America and the Caribbean and thus complement its efforts towards building a regional Internet community. This year, events were held in Honduras (April), Santo Domingo (August) and Sint Maarten (October).

Visiting Our Members

In February 2016, the LACNIC Services Department began a series of visits to customers in countries with typically low event participation rates. This time, a total of 48 organizations were visited in countries such as Panama, Costa Rica, Dominican Republic, Bolivia, and Ecuador and gave us the chance to discuss topics such as the final phase of IPv4 exhaustion, IPv6 deployment, resource management, and others.

LACIGF in Costa Rica

https://lacigf.org/

The 9th Latin American and Caribbean Internet Governance Forum was held in San José, Costa Rica, with the support of the Sulá Batsú Cooperative as the event's local organizer. The meeting had a record attendance, including relevant participation by local and government authorities.

One of the highlights of the event was the participation of young professionals who created Youth LACIGF and brought a very special flavor to the debates.

LACIGF is the most relevant regional space for the discussion of Internet Governance issues. It is led by a multistakeholder Program Committee, while LACNIC performs the role of Secretariat.

Lifetime Achievement Award

http://www.lacnic.net/web/trayectoria/premio-2016

This year, LACNIC presented its Lifetime Achievement Award to Alejandro Pisanty for his contribution to Internet development in Latin America and the Caribbean.
This time, the Lifetime Achievement Award jurors also decided to award a posthumous mention to professor Alvaro Nadal Pastor for his outstanding work towards Internet development in the Dominican Republic.

14 years – 6,000 members

http://www.lacnic.net/web/anuncios/2016-llegamos-a-los-14

LACNIC celebrated its 14th anniversary with more than 6,000 members, including more than 800 new organizations and companies that joined the organization in the past year.

Campus online

http://campus.lacnic.net/

At the closing of 2016, the LACNIC Campus, LACNIC's online training initiative, had completed five editions of the Basic IPv6 course, four editions of the Advanced IPv6 course, and one TestingV6 course. Approximately 2,000 people participated in the various online training activities organized in 2016.

Dr. IPv6

2016 saw the launching of Dr. IPv6, a mechanism for submitting IPv6 related questions and receiving a reply from community experts in podcast format. Dr. IPv6 received a total of twenty-one questions, twenty of which were answered in Spanish while one was answered in English.

In 2016, the web page created by LACNIC for this project received more than 13,000 unique visitors interested in the answers provided by the experts participating in the initiative. The greatest number of visitors were from Brazil, Colombia, Argentina and Venezuela. In addition to users from within the region, the page also received visits from Spain, the United States and Russia.

Winners of the FRIDA Award at the IGF

On 6-9 December, a group of LACNIC delegates attended the Internet Governance Forum held in Guadalajara, Mexico, where they participated in various events that took place within the framework of this global forum. Highlights included the LACNIC FRIDA Awards Ceremony, an activity organized jointly with AFRINIC and APNIC, the other two members of the Seed Alliance.

Board of Directors Elections

The LACNIC community voted among six candidates to fill two positions on the Board of Directors.

Wardner Maia (Brazil) and Javier Salazar (Mexico) were the winning candidates reelected to serve until 31st December 2019.

Fiscal Commission Elections

On 19-26 July 2016, online elections were held to fill two positions on LACNIC's Fiscal Commission.

The winning candidates were Aristóteles Dantas Gaudêncio, who will serve a three-year term, and Hernán José Arcidiácono, who will serve until the end of 2017, thus completing the term of Gabriel Adonaylo, who has been serving on the LACNIC Board since January 2017.

Web

Communicating with our members and community is vital to provide information regarding our activities and projects, as well as to disseminate various actions related to the continuous changes and challenges regularly faced by the Internet. For this reason, LACNIC's website is a key tool that allows us to reach our various target audiences. In 2016 our website received visits from approximately 220,000 users, averaging 600 unique users per day.

This year our website underwent a major renovation focused on increasing accessibility to relevant information and improving its look and feel.

Major improvements include highlighting our satellite websites on our home page, improved content accessibility and usability, and the incorporation of a navigation menu at the start of our home page.

This year we also added a new section on Transparency to make it easier for anyone to access information on our organization's management and institutional processes. LACNIC's work is based on the search for excellence and transparency in our services, efficiency and the development of a sustainable organization.

1.5 Communication and Dissemination

LACNIC News

The LACNIC news bulletin has become a means for disseminating and highlighting relevant news, interviews and documents of interest to our organization and also to other Internet stakeholders and actors. Published monthly, twelve news bulletins were sent during 2016 to approximately 4,500 users. The topics which generated the greatest interest were those focusing on training, security, the IANA transition, IPv6 deployment, and policy development.

Biweekly news for LACNIC members

A space used by LACNIC to communicate the activities in which the organization is involved and other news of interest to its members. Twenty-three editions of the biweekly news bulletin were published in 2016.

Social networks

Since 2011, LACNIC has been active on various social media sites including LinkedIn, Twitter (@Lacnic) and Facebook, using them as additional channels to communicate with our members, with the technical community, and with anyone interested in Internet growth and development, particularly in Latin America and the Caribbean.

By the end of 2016, LACNIC had more than 7,500 followers on Twitter, more than 3,300 on Facebook and 2,700 on LinkedIn.

2. THE LACNIC COMMUNITY

2.1 The LACNIC Community

The term 'LACNIC Community' is used to refer to the region's entire Internet community and fully embodies the concept of open, multistakeholder, bottom-up processes. Anyone interested in doing so can participate on our discussion lists, our meetings and our policy development process.

LACNIC supports its community in different ways, from advocating for special initiatives aimed at strengthening Internet development and the Information Society in our region to training on various topics of interest.

The LACNIC community encompasses an exceptionally diverse geographic area that includes territories in North America, Central America, South America and the Caribbean. Its members celebrate unity in diversity, working towards the inclusive development of an open, stable and secure Internet.

http://www.lacnic.net/web/lacnic/lista-de-discusion
http://www.lacnic.net/web/eventos/inicio
http://www.lacnic.net/web/lacnic/politicas
http://campus.lacnic.net/

2.2 LACNIC Events throughout 2016

With the goal of leading the strengthening of an Open, Stable and Secure Internet at the service of Latin America and Caribbean development, each year LACNIC organizes two meetings for the Latin America and Caribbean Internet community. In 2016, the following events were held: LACNIC 25 and LACNIC 26.

LACNIC 25

http://www.lacnic.net/web/eventos/lacnic25

LACNIC 25 was held on 2-6 May in Havana, Cuba, together with ETECSA (Empresa de Telecomunicaciones de Cuba S.A.). Five hundred and thirty-eight participants were present for the event, while 2,500 individuals participated remotely.

Among other activities, this first annual meeting included the Annual Member Assembly and the Public Policy Forum. Training and technical update activities also included several technical tutorials; the Latin American IPv6 Forum (FLIP6) with the participation of two of the world's leading IPv6 experts, Tom Coffen and LatifLadid; the Latin American Network Security Forum (LACSEC); the Regional Interconnection Forum; the Peering Forum; and the Network Operators Forum (LACNOG).

In addition, Alejandro Acosta of LACNIC presented Doctor IPv6, a new podcast system for receiving questions on any topic related to IPv6 deployment. http://portalipv6.lacnic.net/dripv6es/

Another highlight of this meeting was the new mobile application for both in-person and remote participants.

For more information, check out the daily recaps published during the event:
http://www.lacnic.net/web/eventos/lacnic25-recap

LACNIC 26 - LACNOG 2016

LACNIC 26 was held in San José, Costa Rica, in the month of September, together with LACNOG 2016, the annual meeting of the Latin American and Caribbean Network Operators Group co-organized by NIC Costa Rica.

Noted speakers such as Carsten Bormann (Universität Bremen TZI) and Gabriel Montenegro (Microsoft and Chair of the IETF Working Group) were part of the LACNIC 26 program, the latter presenting on the Internet of Things. Other highlights included a panel on Geolocation and the Public Policy Forum.

During the LACNIC 26 closing ceremony, LACNIC CEO Oscar Robles had the pleasure of announcing to the community gathered for the event —in real time— the culmination of the IANA Functions' Stewardship Transition Process.

More than 920 participants from 34 different countries both within and without the Latin American and Caribbean region attended these two LACNIC events, which are possible thanks to many people who volunteer their time and effort to enrich the contents of these events, serving as instructors, speakers and moderators of the various technical forums.

lacnic 26
lacnog '16
26/30 septiembre
san josé, costa rica

n!cr
NIC Costa Rica

LACNIC On the Move

After the success of the 2015 editions of LACNIC Caribbean On The Move, in 2016 events were organized in Honduras, in the Dominican Republic as part of the country's Internet Week, and in Sint Maarten as part of the activities planned for the Sint Maarten Internet Week which kicked off with the 12th Meeting of the Regional Caribbean Network Operators Group (CaribNOG12).

LACNIC On The Move consists of a series of activities, tutorials, training on LACNIC services, Internet number resources, Internet Governance and other topics designed for policy makers, government officials, regulators, ICT professionals, students, members of academia, journalists, and other interested parties.

IETF 95

This year IETF 95 was held in Buenos Aires, Argentina. It was the first IETF meeting to be held in Latin America and only the second to be held in the Southern Hemisphere. LACNIC had the privilege of co-organizing this historic meeting held in the month of April and attended by more than 1,000 professionals from 55 different countries.

2.3 Sponsoring Participation

Through its sponsorship program, each year LACNIC provides financial support to more than 100 members of the Latin American and Caribbean Internet community so they can attend the conferences and forums organized annually in different countries of the region.

The program has already been in place for 13 years and more than 1,000 members of the community have received support to attend various LACNIC meetings, where they received training and participated in key activities such as the Public Policy Forum and the Annual Member Assembly.

Through this program, LACNIC provides financial support to help members of the community attend its two annual meetings. The second meeting held each year is co-located with LACNOG.

2.4 LACNIC Virtual Campus

http://campus.lacnic.net

In 2016 the Campus offered six editions of the Basic IPv6 course, four editions of the Advanced IPv6 course, and one Testingv6 course.

A total of 2,849 users registered on the Campus during the year, 1,983 of which completed at least one course.

Over the year, a total of 1,775 participants registered for the Basic IPv6 course, 482 of which passed the final examination.

The Advanced IPv6 course had 198 registered participants, 182 of which were LACNIC members and 91 of which passed the final examination.

As for the Testing v6 course, a total of ten individuals received training, five of which passed the final examination.

2.5 Policy Development

LACNIC operates based on a self-regulation model according to which the rules (policies) that govern Internet resource administration are developed by the regional community through a public, participative and transparent process that is open to anyone who wishes to participate and built on consensus. Open participation of all stakeholders ensures that these policies are in line with regional interests, thus safeguarding the community as a whole.

Before being presented at the Policy Forum in order to seek consensus, all proposals are submitted and discussed on the policy mailing list (http://www.lacnic.net/lists/policy).

This year, LACNIC 26 included a tutorial titled "Changing Internet Policies is Easy" which explained how any member of our community can modify a policy or submit a new policy proposal and affect how the Internet is managed in the LAC region.

In 2016, the community discussed seven proposals at the LACNIC 25 (Havana, Cuba) and LACNIC 26 (San José, Costa Rica) Policy Forums. The following table shows a summary and current status of these proposals: https://politicas.lacnic.net/politicas/list
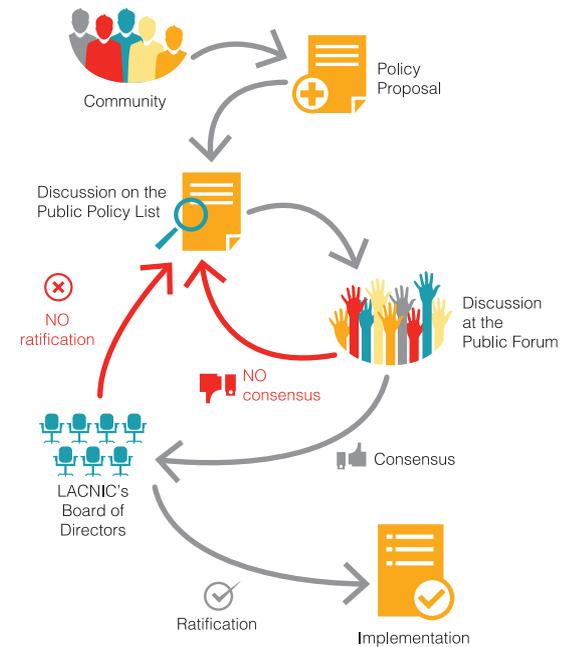
6/01/2016	LAC-2016-1: Settling IPv4-IPv6 connectivity disputes when only one of the protocols is supported	Abandoned 04/05/2016
11/02/2016	LAC-2016-2: IPv4 reserve pool for critical Internet infrastructure in the region	Implemented 01/12/2016
17/02/2016	LAC-2016-3: Remove the reference to a provider's multihomed or non-multihomed status	Under discussion
10/03/2016	LAC-2016-4: Modifying direct IPv6 assignments to end users	Implemented 01/08/2016
30/03/2016	LAC-2016-6: Modify the initial assignment size and the requirements for subsequent direct IPv6 assignments to end sites	Implemented 01/08/2016
02/06/2016	LAC-2016-5: Modify the size of initial IPv6 allocations	Under discussion
03/10/2016	LAC-2016-7: Modify the size of initial IPv6 allocations	Under discussion

Other initiatives worth noting that were implemented in order to improve participation and the quality of the proposals submitted to the policy development process include the following:

• Policy Shepherds. Policy Shepherds are members of the community experienced in the Policy Development Process who can help authors improve their proposals. Three shepherds were appointed to assist authors with their proposals. http://www.lacnic.net/web/lacnic/politicas-tutores

• List of Enhancements. A list of potential improvements that seeks to inspire the development of new policy proposals. The list currently includes seven possible improvements. http://www.lacnic.net/web/lacnic/lista-de-mejoras-politicas

• Remote Presentations. Webinars were organized to help authors submit their policy proposals to the community in order to receive feedback. In the event that the author of a policy is unable to attend the Public Policy Forum, they can present their proposals remotely.

• Training. In-person and remote training activities were organized to help increase the community's knowledge of the PDP.

In addition, this year the community elected Juan Peirano as co-chair of the Public Policy Forum. The Forum is currently chaired by Alex Ojeda (serving until May 2017) and Juan Peirano (until May 2018)

2.6 Technical Forums

LACNIC articulates initiatives aimed at achieving Internet development and stability in the region and supports several technical forums: the Network Operators Forum (LACNOG), CSIRT meetings, the Regional IPv6 Forum (FLIP6), the Regional Interconnection Forum, the Network Security Forum (LACSEC), and IETF Working Group meetings. In 2016, these forums met during both LACNIC events (LACNIC 25 in Havana, Cuba, and LACNIC 26 in San Jose, Costa Rica) and have become platforms for sharing knowledge and experiences, further strengthening the regional Internet community.

LACNOG

http://www.lacnog.org/

Since its creation, LACNIC has actively supported the consolidation of the Latin American and Caribbean Network Operators Group, LACNOG . Since 2011, LACNOG holds its annual meeting in conjunction with the second annual LACNIC meeting, as this helps promote the sharing of experiences and information usually accomplished over the discussion list.

This technical forum held its seventh meeting in the month of September and continues to expand and attract a growing number of network operators, data centers, infrastructure operators and other key industry participants.

LACNOG 2016 was held in San José, Costa Rica. Discussions included topics such as IPv6, the Internet of Things, security and routing. Highlights included the presence of keynote speakers Russ White of LinkedIn and Álvaro Retana of CISCO.

LACSEC

The goal of LACSEC, the Network Security Forum, is to provide a space for network security stakeholders to meet and discuss concrete actions and coordinate network security projects for the region. The meeting includes presentations by regional and global experts and a space for participants to discuss specific actions.

The eleventh edition of LACSEC took place within the framework of the annual LACNIC event held in Havana, Cuba. As with other LACNIC forums, face-to-face activities are supplemented with online discussion lists.

LACSEC is currently chaired by Fernando Gont of Argentina.

Anyone interested in participating in LACSEC can subscribe to the Network Security discussion list:
https://mail.lacnic.net/mailman/listinfo/seguridad

For more information on the Forum, check out the presentations at LACNIC 25:
http://www.lacnic.net/web/eventos/lacnic25-agenda-lacsec-viernes

IETF

IETF 95 was held this year in Buenos Aires, Argentina, the first IETF meeting to be held in Latin America and only the second to be held in the Southern Hemisphere. LACNIC had the privilege of co-organizing this historic meeting held in the month of April and attended by more than 1,000 professionals from 55 different countries.

IETF 96 met in Berlin and included a number of activities. Relevant topics included the Internet of Things or IoT. The challenge for the IETF is to adapt the IP and upper layer protocols for IoT technologies. A meeting was also held with people interested in bringing the IETF to other regions such as Africa. Meeting participants discussed successful actions that have been implemented in in our region, including remote participation hubs and the ietf-lac mailing list.

IETF 97 took place in Seoul, South Korea, in November 2016. Multiple activities were organized during the course of the week, not only Working Group meetings but also parallel meetings on topics such as IPv6, the IoT, routing, security and DNS. As usual, there was a meeting organized by ISOC to coordinate actions for increasing IETF participation in regions with currently low participation rates.

Because the LAC experience is relevant in this sense, one of the topics that was debated was how to measure participation. A proposal was made to develop some kind of engagement indicators for each region that will allow assessing the work that is being done.

CSIRT Meetings

The Computer Security Incident Response Teams meeting has consolidated itself as a workspace for Latin American and Caribbean actors to share security-related issues. This sharing of knowledge among participants aims at strengthening the region in terms of computer security incident prevention and impact mitigation.

In 2016, the tenth and eleventh CSIRT Meetings were held during the May event in Havana, Cuba, and the September event in San José, Costa Rica. LACNIC believes that these meetings are particularly important, as they allow teams from different countries to meet and share within an environment of trust that will later allow them to cooperate more efficiently during an incident management process.

FIRST

(Forum of Incident Response Team)

LACNIC signed an agreement with the Forum of Incident Response Teams through which, together with CERT.br, it annually organizes a FIRST Symposium and Technical Colloquium for the Latin American and Caribbean region within the framework of LACNIC's second annual meeting.

In 2016 this meeting was held in San José, Costa Rica, together with LACNIC 26 - LACNOG 2016.

This fourth FIRST Symposium and Technical Colloquium held in our region took place on Monday 26 September in parallel with the technical tutorials.

FIRST seminars provide a platform where FIRST members and guests share information on vulnerabilities, incidents, tools and other issues affecting the operation of security and incident response teams.

Approximately 60 participants attended this edition of the forum, which is an example of how the synergies among different organizations promote training opportunities and knowledge for the regional Internet community.

More information:
https://www.first.org/events/colloquia/sanjose2016/program

BOF

A BoF (Birds of a Feather) session is a small, informal meeting where attendees group together based on a very specific, concrete, Internet technology related topic and carry out discussions without any pre-planned agenda. In 2016, a BoF was organized during LACNIC25 to discuss the launching of M3AAWG activities in Latin America and the Caribbean, while another was organized during LACNIC25 to share best security practices.

It's also worth noting that during the RIPE73 event held in Madrid in the month of October LACNIC staff organized a BoF on IPv6 in Spanish, where participants shared advice and training materials.

Regional Interconnection

http://interconexion.lacnic.net

The goal of the Regional Interconnection Forum is to bring together Internet exchange point operators and their members to promote peering agreements, receive updates from the various NAPs within our region, share NAP-related technological advances, and discuss regional interconnection within Latin America and the Caribbean. This form is currently chaired by Fabián Mejía of Ecuador.

The face-to-face meeting takes place each year during LACNIC's main annual event. In 2016 the meeting was organized in Havana, Cuba and included several presentations. Those interested in obtaining further information can download these presentations at http://www.lacnic.net/web/eventos/lacnic25-agenda-interconexion

Anyone with an interest in IXP operation and regional traffic exchange can subscribe to the corresponding discussion list at https://mail.lacnic.net/mailman/listinfo/napla

FLIP6

http://portalipv6.lacnic.net/

The Latin American IPv6 Forum is a space that seeks to promote and encourage IPv6 adoption throughout Latin America and the Caribbean. The Forum also promotes sharing experiences in the implementation of IPv6-based services and applications in our region.

The fourth edition of the Forum met within the framework of the annual LACNIC meeting held in Havana, Cuba, and was moderated by Azael Fernández Alcántara of Mexico. Major topics addressed during the Forum included DHCPv6, 5G, SDN / NFV, OpenWrt, Scalable Routing, Network Reconnaissance, university and community network case studies.

Presentations made during this Forum are available at:
http://www.lacnic.net/web/eventos/lacnic25-agenda-flip6 - jueves

Anyone interested in developing IPv6 networks in the region can subscribe to the LAC IPv6 discussion list
https://mail.lacnic.net/mailman/listinfo/lactf

Peering Forum

Supported by major sponsors, this initiative by LACNIC, the Internet Society, and LAC-IX provides network operators and their industry colleagues with an opportunity to meet, network, share ideas and experiences, and discuss future interconnection activities.

This networking platform held its sixth and seventh meetings within the framework of LACNIC's two annual events (LACNIC 25 and LACNIC 26) held in Havana and San Jose, respectively.

3. LACNIC PARTICIPATES

3.1 Forums and other opportunities for participation

These spaces served to provide information and promote IPv6 deployment, encourage the creation of Internet Exchange Points (IXPs), discuss relevant Governance issues, strengthen network infrastructure security and stability, and debate the Internet of Things (IoT), among other activities.

Internet Governance Forum

The eleventh edition of the Forum met in Guadalajara, Mexico, and included a series of panels, round tables and 'best practice' sessions. The Internet Governance Forum (IGF) fosters multistakeholder dialogue on Internet policy issues. After the United Nations General Assembly renewed the IGF's mandate in December 2015, the Forum has consolidated itself as a platform that brings together different groups of people to discuss Internet related policy on an equal playing field.

The IGF seeks to allow participants to reach a common understanding on how to maximize the opportunities afforded by the Internet and manage the risks and challenges involved. Considering that multistakeholder participation from both developed and developing countries is essential for the future development of the Internet, the IGF also offers developing countries the same opportunities afforded to wealthier countries to engage in Internet Governance debates and facilitates their participation in existing institutions and agreements.

A LACNIC delegation was actively involved in several sessions at the Internet Governance Forum held on 6 to 9 December.

LACNIC CEO Oscar Robles, participated in the High Level Meeting that took place on IGF 'day zero,', where he shared a panel with other noted experts
https://youtu.be/ja9nk7g0Tzg?t=1h42m32s

Along with his peers from LACTLD, NIC Chile and NIC.br, Robles also participated in the signing of the Anycast Cloud Agreement for increasing Internet robustness and resilience throughout the region.

LACNIC CTO Carlos Martinez served as moderator of the Cybersecurity Initiatives Workshop https://www.youtube.com/watch?v=_GnqRogVqG4 and was part of a panel during the Best IPv6 Practices Forum. https://www.youtube.com/watch?v=g9EmjZXpscA

TICAL

LACNIC participated in the TICAL conference held on 13-15 September in the city of Buenos Aires, Argentina.

The Network of Latin American University ICT Directors meets annually for the universities themselves and international experts and panelists to share their experiences, knowledge and initiatives.

During the conference, LACNIC set up a booth and provided information on its various training activities and cooperation projects, including the FRIDA Program.

3.2 LACNIC in the Caribbean

LACNIC On The Move
Dominican Republic & Saint Maarten

In 2016, LACNIC organized two editions of LACNIC On The Move in the Caribbean. The first of these events was organized in coordination with NIC.DO within the framework of the Dominican Internet Week, which took place on 22-25 August in the city of Santo Domingo. The event included tutorials, training on the services offered by LACNIC, Internet number resources, and Internet Governance. Highlights included an Amparo Workshop attended by more than 40 participants.

The October event was held as part of the activities known as Internet Week Sint Maarten, which included the twelfth Regional Meeting of the Caribbean Network Operators Group (CaribNOG12).

Regional experts presented seminars and workshops on cybersecurity, IPv4 exhaustion and IPv6 adoption, Internet Exchange Points (IXPs), Internet Governance, as well as other relevant topics.

More information: http://onthemove.lacnic.net/

Ayitic 2016

This year, the program launched its third edition focused on training trainers and aimed at strengthening the project's sustainability, impact and scope, in the hope that each instructor trained through the program will replicate the contents among their students.

Two workshops were presented: a workshop on IPv6 deployment and a workshop on 3D printing and prototype development. The first workshop was completed by 29 instructors representing 12 local technical institutes, while the 3D printing workshop was attended by 10 representatives of 7 different Haitian technical institutes. This activity was also attended by Jean Michel Bonjour, Biomedical Engineer and Project Manager at the United Nations Office for Project Services (UNOPS), who has been working on printing 3D objects for hospitals in Haiti.

This edition of the project was supported by Canado Technique, Ecole Superieure d'infotronique d'Haiti (ESIH) and Transversal, all of which played a major role in selecting participants, coordinating activities and teaching the workshops in Port au Prince. The next step will be to monitor how far the instructors trained through the program will manage to share the contents they've learned among their own students.
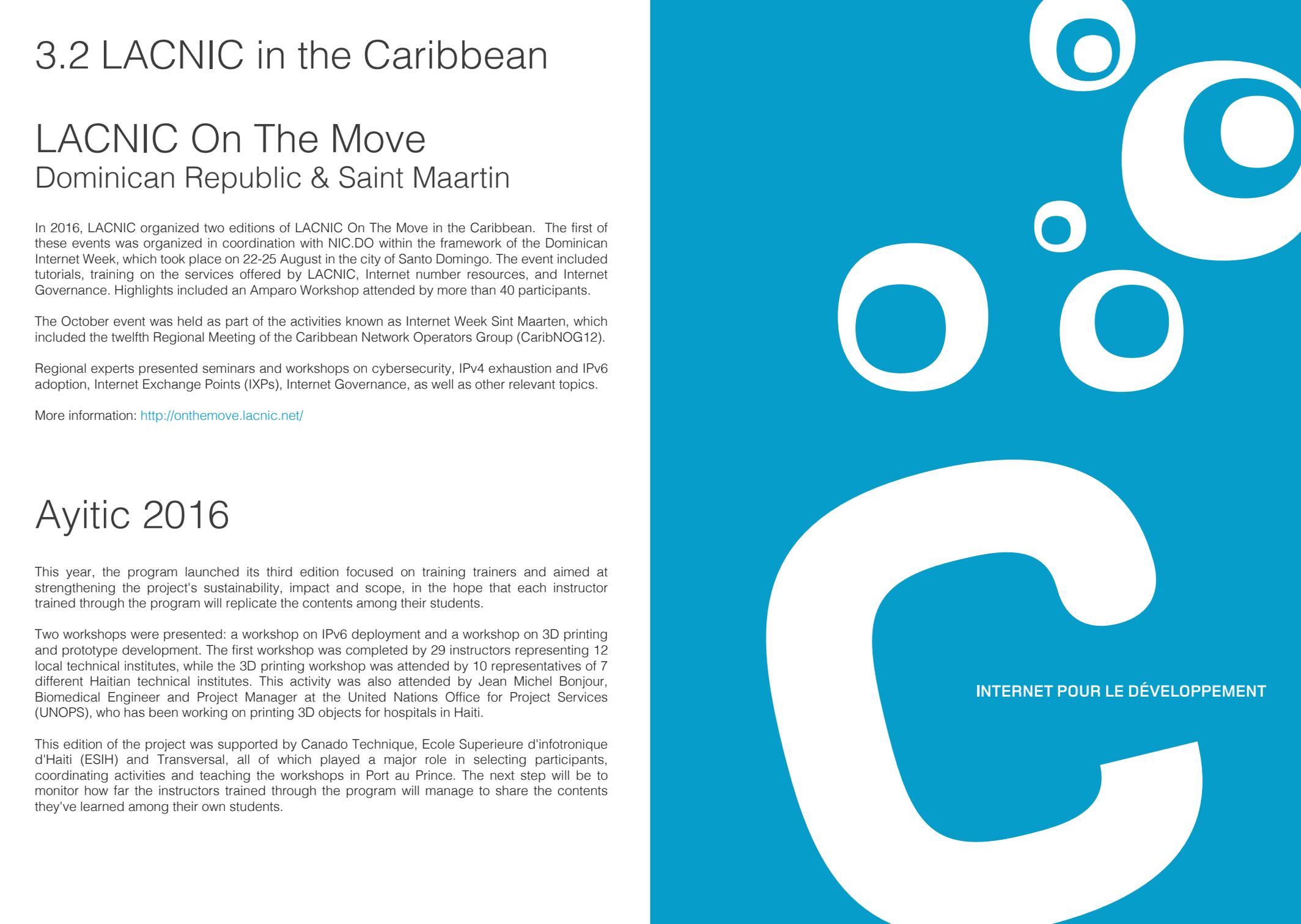
INTERNET POUR LE DÉVELOPPEMENT

3.3 LACNIC in Central America

LACNIC On The Move
Honduras

The first edition of LACNIC On The Move 2016 was organized in Honduras on 18-20 April in conjunction with the National Telecommunications Commission of Honduras (CONATEL) and ICANN.

LACNIC On The Move Honduras focused on sharing information, experiences and best practices in cybersecurity and IPv6 deployment, as well as key Internet Governance issues currently under discussion at global level. Our experts also addressed other relevant Internet-related issues such as number resources, the policy development process and the issues faced by the region.

COMTELCA

Central America continued to grow in terms of IPv6 deployment, Internet Exchange Points and Internet Governance, the issues promoted within the COMTELCA Standardization Committee.

The following activities were conducted:

- COMTELCA's 50th anniversary celebrations.
As part of these celebrations, COMTELCA recognized the support and contribution of telecommunications and ICTs towards regional integration and development.

- A survey on IPv6 deployment in Central America.
Surveys were conducted among regional operators and governments to find out their topics of interest and how far IPv6 deployment has advanced in Central America.

- Fourth Regional Forum on Interconnection, Cybersecurity and IPv6 in Panama City, Panama.
The Third Regional Forum on Interconnection, Cybersecurity and IPv6 was organized in the city of Tegucigalpa, Honduras, together with COMTELCA and the International Telecommunications Union (UIT). The topics that were addressed included IPv6 deployment, regional IXPs and their importance, regional interconnection initiatives, cybersecurity and broadband access.

- Regional Forum on Key Issues in Developing the Digital Ecosystem, held in the City of Managua, Nicaragua.

LACNIC participated in the Regional Forum on Key Issues in Developing the Digital Ecosystem organized by CEABAD, and was part of several panels of experts who discussed relevant Internet-related topics.

Internet Day

Internet Day celebrations organized in San Salvador, El Salvador, included several activities in which LACNIC participated, among them a presentation on IPv4 address exhaustion.

Multiple Internet-related organizations and entities participated in the event. Within this framework, we were able to speaks with many LACNIC members and share our commitment to supporting Internet events in Central America.

Telecommunications Conference

The third Telecommunications Conference was held in the city of Cancun, Mexico, and sought to create a meeting place for various relevant Internet- and ICT-related sectors to share knowledge and exchange their points of view.

During this event, LACNIC organized and participated in a round table to address the future of the Internet within the next five years. Multiple ecosystem actors, telcos and vendors took part in this activity.

National IGFs

In 2016, LACNIC participated in several National Internet Governance Forums, including IGF Uruguay, held on May 17at the University of the Republic, and IGF Paraguay, held in Asunción in early October. In both cases, the multistakeholder model was presented while stressing the importance of these spaces for the countries that are part of the region.

LAC-i-Roadshow

Within the framework of the LOTM event organized in Tegucigalpa, Honduras, LACNIC gave a presentation that was part of ICAN's LAC iROADSHOW. This presentation dealt with the current status of IPv4 exhaustion and IPv6 deployment in the region and was attended by ICT sector, university, and industry representatives.

LACIGF 9

The ninth edition of the Latin American and Caribbean Internet Governance Forum met in the city of San Jose, Costa Rica, on 27-29 July.

Actors representing civil society, the scientific community, the technical community, business organizations and governments analyzed and discussed Internet Governance issues relevant to Latin America and the Caribbean.

César Díaz, Head of Strategic Relations and Telecommunications at LACNIC, noted that organizing the LACIGF meeting in Costa Rica had placed Central America at the core of the most relevant discussions taking place on the global governance agenda. "Costa Rica is a leader in Internet Governance debates and is attempting to incorporate a greater number of Central American voiced to the dialogue," Díaz observed.

The forum discussed several issues of regional relevance included in the Internet Governance agenda, among them freedom of expression, human rights and gender equality in ICTs. "The agenda not only focused on regional needs but also on its future, as sustainable and inclusive development raises major challenges in terms of respect, equality and fairness," Díaz added.

The ninth edition of LACIGF sought to encourage dialogue so that the various stakeholders would contribute with their ideas and proposals on topics that are relevant and necessary for the benefit and development of the countries and the Internet in the LAC region.

More information: https://lacigf.org/

3.4 Interaction with Other RIRs

LACNIC has been a part of the NRO (Number Resource Organization) since 2003. This organization brings together the five Regional Internet Registries (RIRs) that exist worldwide:

- AFRINIC www.afrinic.net
- APNIC www.apnic.net
- ARIN www.arin.net
- LACNIC www.lacnic.net
- RIPE NCC www.ripe.net

This policy coordination space strengthens the role of RIRs in the protection of unallocated address space, promotes and protects an open and participatory policy development process, and serves as a focal point for Internet community input into the RIR system.

This coordination is implemented through periodic conference calls and face-to-face meetings between RIR leaders. It also includes spaces for technical coordination among RIR Engineering (ECG), Communications (CCG), Registry Services (RMCG) and Public Relations (PACG) teams, each of which has its own peculiar working dynamics.

This year, it was LACNIC's turn to chair the NRO EC. Likewise, LACNIC was responsible for chairing all internal coordination groups (CCG, RSCG, PACG, ECG), a task that focused mainly on coordinating the work related to the IANA Functions' Stewardship Transition, advancing towards uniform statistics and reporting on resource transfers, and the Identifier Technology Health Indicators (ITHI) project, among others.
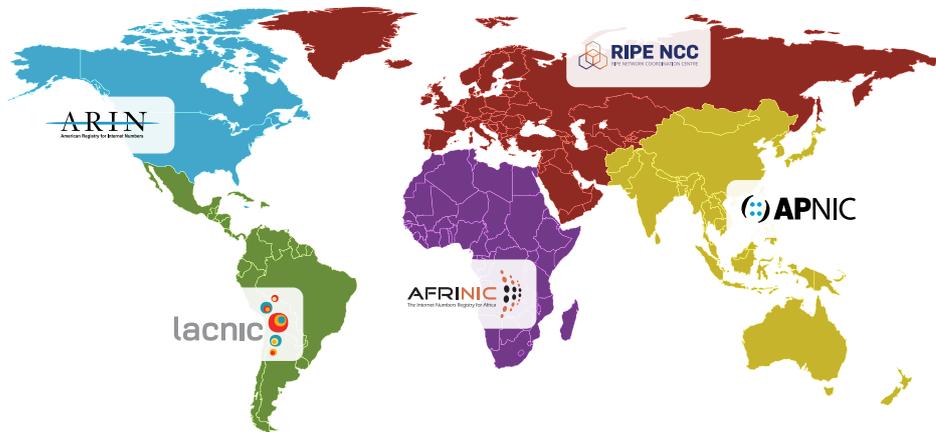
3.5 IANA Functions Stewardship Transition

On 30 September, during the LACNIC 26 closing ceremony held in San Jose, Costa Rica, LACNIC CEO Oscar Robles announced to the community gathered for the event —in real time— the culmination of the IANA Functions' Stewardship Transition Process.

This represents one of the most significant milestones in the history of the Internet, as it means that the US government —which held the role of IANA Functions Steward— transferred this responsibility to a diverse multistakeholder community in each of the three operational communities: Numbers, Names and Protocols.

The functions which the IANA performed for the Numbers Community will now be performed through a contractual agreement between ICANN (the operator) and the Regional Address Registries (AFRINIC, APNIC, ARIN, LACNIC, and RIPE NCC), who in turn will be supported by a Review Committee expressly created for this purpose with the participation of the communities of the five Regional Registries.

Watch the video: https://youtu.be/rAuzjWDaHRU

4. INTERNET RESOURCE MANAGEMENT

Distribution by Country of IPv4 Address Assignments in 2016

Brazil leads the list of countries with the most IPv4 resources assigned in 2016 by a broad margin (74.91%), followed by Argentina (9.91%) and Mexico (2.57%).

- BR
- AR
- MX
- CL
- CO
- HN
- VE
- CR
- DO

4.1 Registration Services

2016 saw the application of policies developed for IPv4 exhaustion Phase 2. Under these policies, the maximum assignment is a /22 and the minimum assignment a /24. Organizations that are already LACNIC members can receive additional IPv4 space after a six-month waiting period.

In addition, according to the global policies in force, of the eleven blocks that are expected to be received as part of the global recovered space, blocks number five and six have already been received from the IANA. The year's first assignment was a /15 received on 1st March; the second assignment was a /18 received on 1st September.

As for the assignment of numbering resources in the LACNIC service region, 964 IPv6 assignments were made over these twelve months and 2016 ended with a total of 5,359 assignments. The number of members with IPv6 assignments reached 87.55%.

On the other hand, in 2016 IPv4 block assignments followed a similar trend as the previous year, with a decrease of 10.45%. In 2015 7,061 /24s were assigned, compared to the 6,323 /24s assigned in 2016.

ASN assignments remained relatively unchanged and the year ended with 937 assigned ASNs.

To summarize, during 2016 the following resources were assigned in the LACNIC region:

- IPv6 requests: 1,008
- IPv4 requests: 1,634
- IPv6 space in /32 blocks: 1,180
- IPv4 space in /24 blocks: 6,323
- Available IPv4 addresses (as at 31st December 2016) 321,280
- Percentage of members with IPv6 assignments: 87.55%
- ASN assignments: 937
- Number of members: 6,009
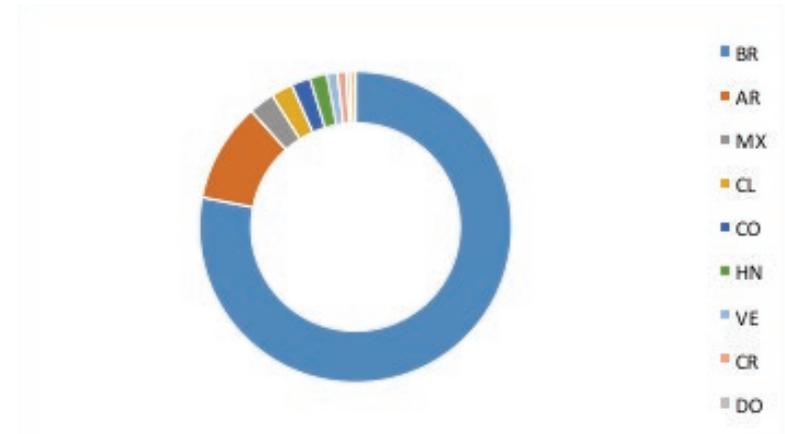
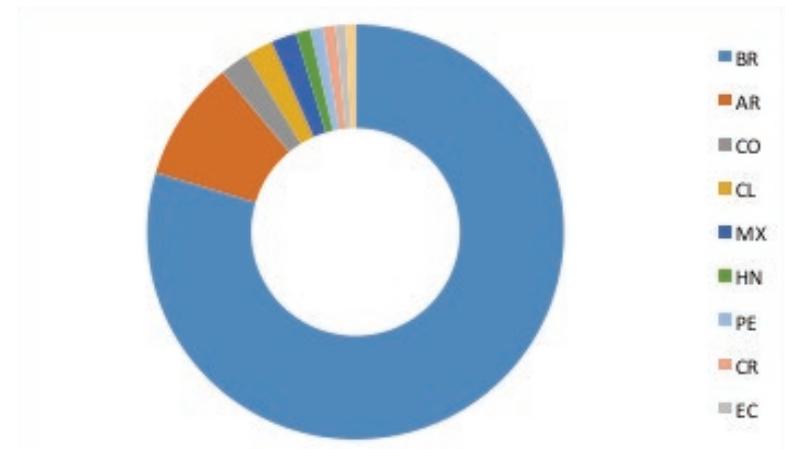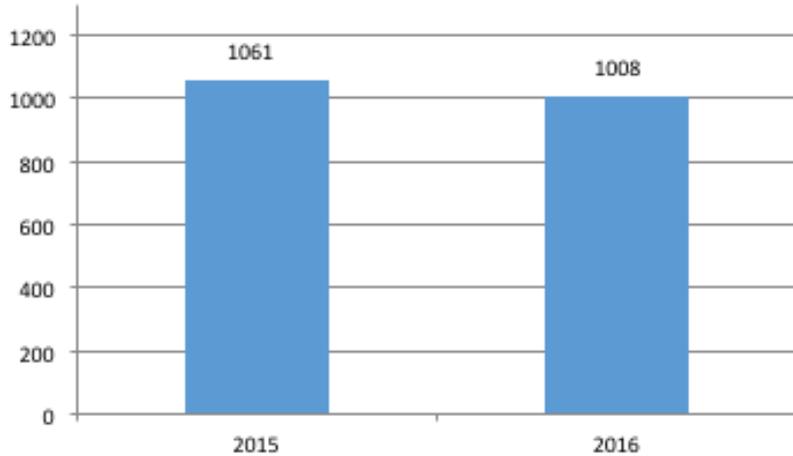## Distribution by Country of IPv6 Address Assignments in 2016

Brazil also ranks first in terms of the number of IPv6 assignments received in 2016 (76.79%), followed by Argentina (9.03%) and Colombia (2.18%).

- BR
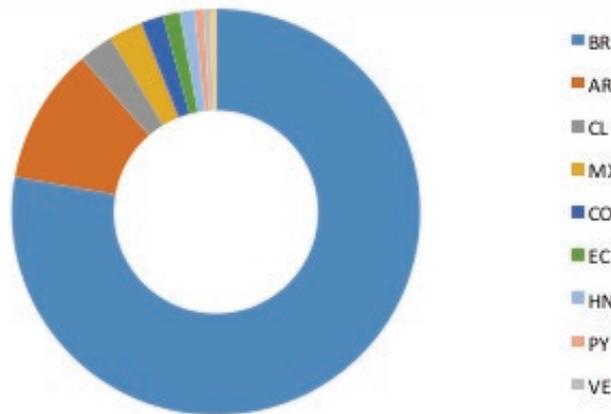- AR
- CO
- CL
- MX
- HN
- PE
- CR
- EC

Number of IPv6 Assignments by Year

IPv6 assignments have slightly decreased compared to 2015. In 2015 there were 1,061 IPv6 assignments, compared to 1,008 assignments in 2016.

The following table shows the evolution of IPv4, IPv6 and ASN assignments per year since LACNIC was created.

A comparison of 2015 and 2016 yields the following results: ASN assignments grew by 1.7%, IPv4 address assignments grew by 6.36%, and IPv6 address assignments decreased by 4.99%.
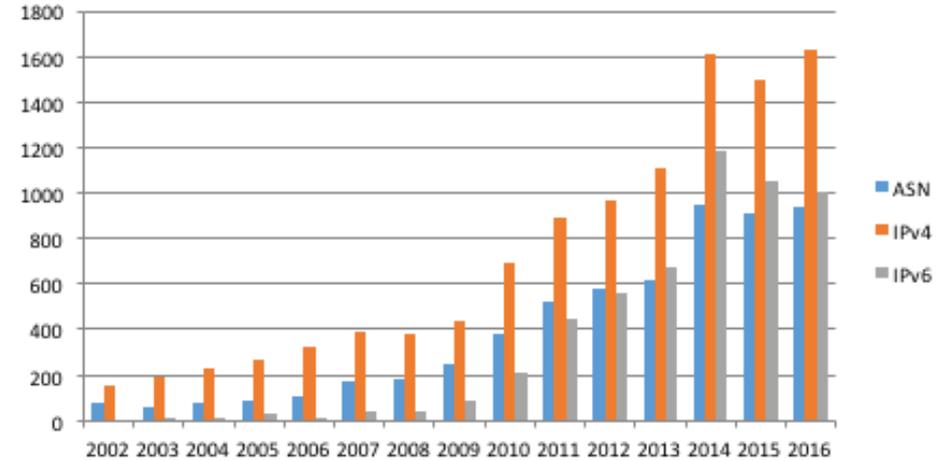

Total ASNs Assigned in 2016

Once again, Brazil and Argentina were the leaders in terms of ASN assignments in 2016. More than three-fourths (75.13%) of ASNs were assigned in Brazil, which highlights the remarkable growth of the Internet in that country. Argentina and Chile received 10.46% and 2.67% of the region's assignments, respectively.

Evolution of LACNIC's Membership Base

LACNIC's growth accompanies Internet growth in Latin America and the Caribbean. The following chart shows how LACNIC's membership base has evolved and significantly expanded since the organization was created. By the end of 2016, LACNIC had 6,009 members, representing a growth of 16.05% as compared to 2015. The Small/Micro category exhibited the greatest growth (25.78%), followed by the End User category which grew 8.72% over the previous year.
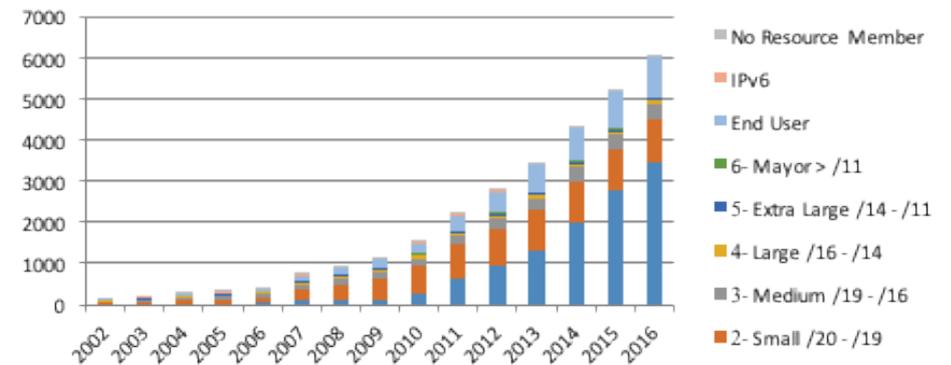
4.2 Visiting LACNIC Members

In February, the LACNIC Services department began its annual outreach efforts, visiting a total of 48 member organizations in five different countries (eight different cities) of the region: Panama, Costa Rica, Dominican Republic, Bolivia and Ecuador.

Topics discussed included member rights and benefits (sponsorships, online and in-person courses, events, the Public Policy Forum, etc.), as well as other topics relevant to the status of the industry in the region, particularly IPv6 deployment.

LACNIC values these meetings immensely, as they encourage member engagement and are a valuable tool for improving our customer service. Since the program's inception, we have visited more than ninety members.

5. Actions Towards IPV6 Deployment

5.1 IPv6 Workshops

This year, LACNIC expanded its initiatives aimed at achieving effective IPv6 deployment in Latin America and the Caribbean, providing assistance to various organizations in the region and training experts and professionals on the latest version of the Internet protocol which replaces IPv4.

A visit to Panama was organized in March to conduct Peering and IXP workshops, and we took advantage of this opportunity to present a technical workshop on IPv6. During this visit, a high-level meeting was organized with a team of AIG and LACNIC experts and government representatives aimed at establishing an IPv6 adoption committee.

In addition, César Díaz and Guillermo Cicileo, Head of LACNIC's Internet Security & Stability Program, spoke with various business representatives, decision-makers and technology directors about the need to implement the IPv6 protocol and presented tutorials designed for technical ISP and government agency personnel.

In 2016, LACNIC organized 16 IPv6 training activities, including workshops and webinars presented by the organization's experts. These activities were attended by 2,371 professionals from the private sector, members of civil society organizations, government officials and representatives of universities in Argentina, Colombia, Cuba, El Salvador, Suriname, Ecuador, Costa Rica and Uruguay. The online webinars were also attended by participants located in other territories of the LACNIC service region.

> 500	Ecuador - 668
	Cuba - 508
100 a 500	El Salvador - 220
	Brasil - 200
	Colombia - 154
	Honduras - 102
50 a 100	Surinam - 92
	República Dominicana - 64
	Costa Rica - 60
< 50	Panamá - 35
	Argentina - 25

WALC

This year, LACNIC once again supported the EsLaRed Foundation (the Latin American School of Networks) in conducting the WALC 19 workshop in Tegucigalpa, Honduras, on 14-18 November.

These workshops seek to help satisfy the training needs of Latin American and Caribbean information and communication technology experts and professionals, with an emphasis on the more practical aspects of networking, ICT project organization and management, and the latest technological developments.

The 2016 edition comprised six modules addressing topics such as wireless networks, the deployment of IPv6 networks, network management, computer security, cloud computing, and the Internet of Things.

Coordinated by LACNIC, the track on IPv6 network deployment allowed participants to acquire practical skills that will allow them to begin working on real-life deployments.

WALC is an ESLARED initiative, the 2016 edition of which was supported by NSRC (Network Startup Resource Center), the Internet Society, Universidad de los Andes (Venezuela), the International Centre for Theoretical Physics, LACNIC and other sponsors.

More information: http://eslared.net/walc2016

5.2 IPv6 Portal

http://portalipv6.lacnic.net

The IPv6 Portal is a website created for sharing information on IPv6 deployment, events and workshops organized in the region, statistics, and the transition to the latest version of the protocol, as well as to provide reading material and the latest news.

On the Portal users will find varied material on the subject, including videos, interviews, podcasts, bibliographic records, events and courses, as well as the IPv6- and IoT-related materials produced during LACNIC events.

This year we have added plenty of useful information and multiple news items. Highlights include information relating to the CAF study —from project description to access to the economic model— and news items such as interviews with noted personalities.

Another highlight of 2016 was the launching of Doctor IPv6, an innovative program aimed at encouraging IPv6 deployment in the LACNIC service region. Doctor IPv6 is a mechanism that allows anyone to send their doubts or questions to an email address (dr.ipv6@lacnic.net) and then receive a reply in podcast format prepared by experts on the topic at hand who are part of the community.

5.3 IPv6 Deployment Project in Collaboration with CAF

In March, LACNIC and CAF, the Development Bank of Latin America, presented the study titled 'IPv6 Deployment for Social and Economic Development in Latin America and the Caribbean,' which seeks to contribute to the promotion, expansion and adoption of Internet Protocol version 6 (IPv6).

The report highlights the importance of migrating to the new IPv6 format, as IPv4 addresses are running out and this will limit the Internet of Things' chances for success.

A Key Progress Indicator towards a fully IPv6-enabled network was developed for the region which better analyzes the current situation where most of the countries are in the planning stage. This LACNIC indicator (ICAv6) uses partial indicators are to ponder planning and initial actions in the IPv6 deployment process.

For more information on this indicator, go to:
http://portalipv6.lacnic.net/caf-lacnic/indices-icav6-e-indicadores-parciales

After its initial presentation, the study was presented at numerous international forums, including the Latin American Telecommunications Conference, IETF meetings, regional Internet events such as RIPE 72, APNIC and LACNIC events.

The full report is available on LACNIC's IPv6 Portal: http://portalipv6.lacnic.net/caf-lacnic/
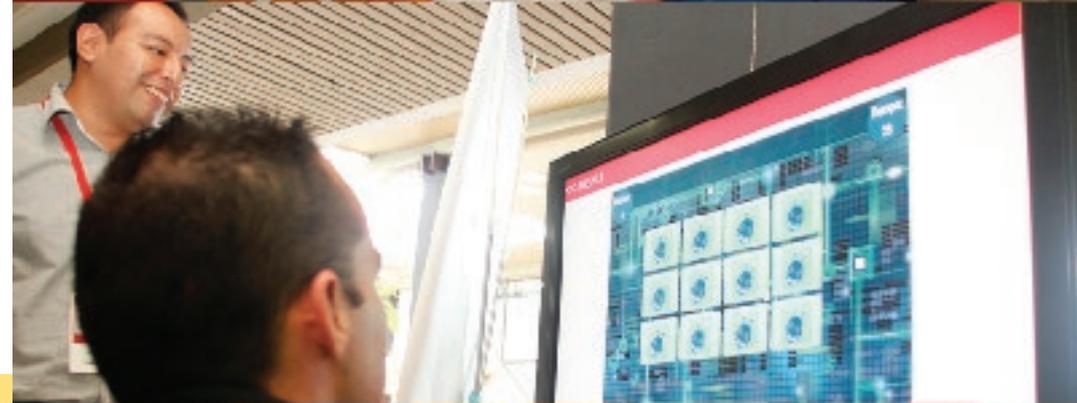
5.4 IPv6 Experience

In 2015 LACNIC implemented an interactive platform that includes an IPv6 game, the IPv6 song and an IPv6 video. These activities are shown at LACNIC events, as well as during other activities organized throughout the region to disseminate information on IPv6 deployment in a more dynamic and entertaining way.

6. R+D

6.1 AMPARO Project

Since 2009, the AMPARO Project has allowed LACNIC to provide training and information on different computer security topics, thus improving computer security incident prevention and response capabilities in the Latin American and Caribbean region.

The project is designed for those working on DNS security and DNSSEC deployment, secure routing, network security, the implications of IPv4 exhaustion for Internet security, incident management, and other related areas.

Five Basic Information Security Workshops were organized in 2016 within the framework of this project, training a total of more than 150 professionals in the following countries:

1. Santo Domingo, Dominican Republic, as part of the country's Internet Week and the LACNIC On The Move event (22-24 August)
2. Montevideo, Uruguay, together with the National Telecommunications Administration (ANTEL) (11-13 October)
3. Belize, in collaboration with Belize's Internet Exchange Point (BIXP); first edition presented in English (2 November)
4. La Paz, Bolivia, in collaboration with the Transport and Telecommunications Authority (ATT) (8-10 November)
5. Guayaquil, Ecuador, in collaboration with the Ecuadorian Consortium for the Development of Advanced Internet (CEDIA) (16-18 November).

More information: http://www.proyectoamparo.net/
Twitter: @AMPARO_LACNIC

6.2 WARP

In almost two years of operation, LACNIC WARP has managed to position itself as a reference on security issues and become a relevant player within the computer security incident response team ecosystem. WARP serves as a point of contact and trust that makes it easier for members to report security incidents and sensitive information. It also provides a safe and anonymous brokering environment that allows searching for, discussing and exchanging security incident information and best practices.

Its work at regional level has given WARP the opportunity to become a member of organizations such as the Messaging, Malware and Mobile Anti-Abuse Working Group (M3AAWG) and to enter into an agreement with the Forum for Incident Response and Security Teams (FIRST) in the month of November. As part of this agreement, FIRST will offer LACNIC their training programs and capabilities, which LACNIC will use with regional teams of experts. LACNIC will help develop a local team of trainers to offer FIRST courses in the region and will work closely with FIRST in order to organize events in different parts of the region.

This year, INTERPOL Costa Rica invited WARP to the Second American Cybersecurity Coordinators Meeting. WARP also participated in Cybersecurity Week at the Middle of the World (Ecuador), where they offered talks on cybersecurity and promoted IPv6 deployment and RPKI.

More information: http://warp.lacnic.net - info-warp@lacnic.net

6.3 +Raíces Project

The DNS system is a key part of Internet infrastructure. The +Raíces Project seeks to increase its scope, strength and response times at regional and global level. Through this project, LACNIC seeks to improve the stability and performance of the DNS root server system in Latin America.

In 2016, copies of the K and I root servers were installed at LACNIC, a copy of the L server was installed at Comteco (Bolivia), and negotiations were carried out to purchase a root server at ARIU (Argentina) and AIG (Panama).

More information: http://www.lacnic.net/web/lacnic/proyecto-raices

6.4 Security and Stability Project

As part of its strategy for a more stable, resilient and secure Internet, LACNIC promotes local and regional interconnection in the countries that are part of the LACNIC service region. In this sense, our organization's goal is to strengthen and consolidate new IXPs by providing technical workshops, infrastructure support, and organizational and operational models.

The following activities were organized in 2016: IXP workshops in Honduras, Bolivia and Belize (approximately 80 participants); peering and interconnection tutorials in Panama; LACNIC25 and LACNIC 26 (a total of more than 200 participants); and technical talks for operators in Panama, Cuba, ArNOG, NetNAP (AR), TICAL (more than 200 participants).

LACNIC continues to promote RPKI deployment among regional operators, organizing training activities mainly at national NOGs and promoting resource signing events such as the one held during IETF 95.

In October, online RPKI theory and practice seminars were co-organized with Colombia's National Advanced Technology Academic Network, RENATA, and Cisco Systems, Inc.

Likewise, LACNIC continues to promote DNSSEC among the region's ccTLDs, presenting tutorials during both LACNIC25 and LACNIC26.

LACNIC also participates in IETF, IDR, SIDR and GROW working groups to keep up with the issues affecting the Internet routing system, as well as in activities having to do with the IoT, particularly those involving addressing (IPv4/IPv6), network security and network preparations to support this model.

6.5 Technical Coordination among the RIRs

Throughout 2016, LACNIC and the other Regional Internet Registries (ARIN, RIPE NCC, APNIC, AFRINIC) worked hard to improve how various joint projects are developed and implemented.

In order to facilitate this task, the NRO-ECG met four times throughout the year.

Highlights of the work carried out during 2016 include:

• During 2016, LACNIC chaired the NRO Engineering Coordination Group (NRO ECG) and was responsible for coordinating tasks among the five RIRs at engineering group level.
• Among other issues, coordination focused on the standardization of transfer logs (public files documenting number resource transfers between different organizations at global level), DNS and security activities, as well as sharing operational experiences.
• Continuity in the analysis of RPKI information RPKI in order to generate proposals for improving the protocol and the infrastructure.
• LACNIC's participation in the RIPE Atlas project implemented by our colleagues at RIPE NCC. The project consists of an online measuring system based on the creation of a network of sensors distributed in various parts of the world.

https://atlas.ripe.net/

6.6 LACNIC Labs

Highlights of the LACNIC Labs initiative during 2016 include the following activities:

Open Data

Open data is the idea that some data should be freely available to everyone, without restrictions from copyright, patents or other mechanisms of control. In 2015, LACNIC worked on obtaining accurate statistics on IPv4 and IPv6 resource assignments, both regionally and by country. Another goal is to better estimate IPv4 exhaustion so that the LACNIC community can make informed decisions on how to manage IPv4 exhaustion.

Modeling Resource Utilization

Predicting the future is very difficult, if not impossible. However, attempting to estimate when certain events will take place is essential for the community to suggest policies for proper resource utilization. LACNIC Labs has been working on modeling the different phases of IPv4 exhaustion so that this information can serve as input for community dialogue.

Measuring IPv6 Traffic and IPv6 Adoption

Finally, IPv6 traffic reports were created in the different countries that are part of the LACNIC service region. http://stats.labs.lacnic.net/IPv6/graph-access.html

IPv6 Traffic Measurements http://goo.gl/mWUd3C

One of the outputs of the CAF Project on IPv6 adoption http://stats.labs.lacnic.net/PROYECTOCAF/modelo/ was the definition of an IPv6 adoption indicator —ICAv6— that better reflects the early adoption stages of the new IP protocol. This indicator has already been measured not only for Latin America but also for Asia and Africa.

Simón Project

Since 2015, LACNIC maintains a map that measures Internet network latency in Latin America and the Caribbean. This project offers the Internet community information on latency measurements in the region. The project will make available a tool that automates data collection and allows having a complete, updated, representative IPv6 map of Latin America and the Caribbean. The tool will generate approximately 500 tests per day from 25 different countries.

The Simón project is a LACNIC initiative that offers up-to-date and representative information on connectivity measurements in Latin America and the Caribbean.

Based on the study conducted in the LAC region, a similar study was conducted in Africa in collaboration with AFRINIC, Cape Town University and Princeton University. The study consisted of generating a connectivity database through ICMP pings from multiple origins aiming at multiple servers and then analyzing the data to find hidden patterns.

The results of this study are the first stage of a full regional connectivity analysis. The next steps are to cross the latency data obtained by the Simón project with other data sources (e.g. routing information) and to try to infer which factors result in good / poor connectivity.

For more information on this study: http://labs.lacnic.net/site/connectivity-in-africa

7. INTERNET AND SOCIAL DEVELOPMENT

7.1 FRIDA Program

The Regional Fund for Digital Innovation in Latin America and the Caribbean is a LACNIC initiative that has been contributing to the development of the information society in our region since 2004. The program provides funding as well as capacity building and networking opportunities to civil society organizations, enterprises, governments and universities seeking to unlock the potential of information and communications technology for regional development.

The year 2016 marked a record, as a total of 551 nominations were submitted from 23 Latin American and Caribbean countries under the grants, awards and scale-ups categories. The ten selected project proposals will receive financial support for a total of US$235,000.

2016 Awards, Grants and Scale-Ups

Under the guidance of an independent selection committee, the FRIDA Awards seek to recognize projects that strengthen Internet development and access, as well as initiatives that promote the creative use of ICTs for social inclusion, civic engagement and the defense of rights and freedoms.

As part of the activities organized within the framework of the IGF meeting in Guadalajara, two winners were presented with their FRIDA Awards: AgriNeTT by the University of West Indies (Trinidad and Tobago) and Mexicoleaks (Mexico). In addition, together with the other members of the Seed alliance, FRIDA organized two workshops on cybersecurity and innovation and entrepreneurship in the Global South, coordinated a social event, and set up a stand to promote the program's activities among IGF participants.

As for the FRIDA Grants, six projects received a total of US$145,000 to promote social and economic development and Internet access throughout the region. Each winning project will receive between US$20,000 and US$30,000. The Committee selected the following projects: Digital Mapping, by Organización Perpendicular (Guatemala); Digital and Accesible Library, by Unión Nacional de Ciegos del Uruguay (Uruguay); Radio Amazónica: Digital High-Frequency Radio, by Universidade Estadual Paulista (UNESP, Brazil); IPv6 Deployment, by Universidad Nacional del Tucumán (Argentina), Protecting the TOR Network against Malicious Traffic, by Universidade Estadual de Campinas (Brazil); and BGP Security in RENATA's Infrastructure, by RENATA (Red Nacional Académica de Tecnología Avanzada, Colombia).

FRIDA Scale-Ups will provide US$40,000 to each project selected by the Committee: Speaking with Julis (Colombia) and Open Router by Altermundi (Argentina). The goal of these funds is to strengthen these social enterprises and help them gain scale by replicating successful technologies.

In this case, winning projects will also benefit from institutional strengthening and capacity building activities valued at an additional US$10,000.

Seed Alliance

Seed alliance is a collaborative partnership between awards and small grants programs FIRE Africa by AFRINIC (http://www.fireafrica.org/), ISIF ASIA by APNIC (http://isif.asia/) and FRIDA by LACNIC. Together with its partners IDRC and the Internet Society, and with the support of its regional sponsors, these programs support innovation for Internet development in the countries of the Global South.

This year, Seed Alliance also offered a grant for interregional projects which was awarded to the Open Router initiative by Altermundi (Argentina) and the University of Western Cape (South Africa). The project seeks to promote community networks in the Southern hemisphere and will receive an additional US$22,000.

7.2 Women in ICTs

Women's participation and integration is an important aspect that needs to be strengthened. With this in mind, LACNIC created Women in ICTs, a space aimed at encouraging the participation of women in technical issues, promoting synergies among them, and stimulating greater involvement of LACNIC's female community in the organization's activities. This space is provided at the various events organized each year by LACNIC.

In 2016, the LACNIC 25 event held in Cuba included a panel titled Inspiring Women to Participate in ICTs. Panelists included Ayanna Samuels from Jamaica, Anna Torres of Wikimedia, and Inés Robles of the IETF, while Laura Kaplan, Development and Cooperation Manager at LACNIC, served as moderator. The event's goal was to promote women's involvement in the technical community, as well as to inspire more women to participate and submit proposals having to do with their specific fields of action.

A video of the panel is available at:
https://www.youtube.com/watch?v=BKLxB7N6oHs&feature=youtu.be

7.3 Lifetime Achievement Award

The 2016 Lifetime Achievement Award jurors selected Alejandro Pisanty as this year's award recipient for his contribution to Internet development in Latin America and the Caribbean.

This recognition was established in 2009 by the LACNIC's Board of Directors and is awarded to individuals who have devoted their efforts to regional Internet development and whose work has set an example for the rest of the community. The 2016 judging panel was made up by Ida Holz, Rodrigo de la Parra, Rafael Ibarra, Ben Petrazzini, Carolina Aguerre, Serby Wilson, Elgeline Martis, and Jesús Martinez.

Pisanty has been actively involved and made valuable contributions through various international organizations and forums such as the ICANN Board, the ISOC Mexico Chapter, UNAM (the National University of Mexico), CUDI (the University Corporation for Internet Development in Mexico), and MAG (the Multistakeholder Advisory Group). Working at UNAM, he led efforts to promote security initiatives and with his colleagues drove the growth of UNAM-CERT.

In the field of Internet Governance, Pisanty was a pioneer in structuring the first Internet Governance guidelines worldwide, from his positions at ISOC and ICANN as well as through his work in academia. Today he continues to contribute as an active member of the Internet Governance Forum's Advisory Group.

This time, the Lifetime Achievement Award jurors also decided to award a posthumous mention to professor Alvaro Nadal Pastor for his outstanding work towards Internet development in the Dominican Republic.

8. ANNEXES

Independent Audits' Report

To the Shareholders of
Registro Regional de Direcciones IP para América
Latina y Caribe (LACNIC).

Report on the Financial Statements
We have audited the accompanying financial statements of the Latin America and Cariebean Network Information Centre| LACNIC (the Institution), which comprise the Statement of Financial Position Statement as at December 31, 2016, the Comprehensive Income statement, the statement of changes in equity, and statement of cash flows for the year then ended, and a summary of significant accounting policies and other explanatory notes.

Management's Responsibility for the Financial Statements
Management is responsible for the preparation and fair presentation of these financial statements in accordance with General Accepted Accounting Principles in Uruguay. This responsibility includes: designating, implementing and maintaining internal controls relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error; selecting and applying appropriate accounting policies; and making accounting estimates that are reasonable in the circumstances.

Auditor's Responsibility
Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with Local Standards on Auditing established in Pronunciamiento 18 of Colegio de Contadores, Economistas y Administradores del Uruguay. Those Standards require that we comply with ethical requirements and plan and perform the audits to obtain reasonable assurance whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal controls. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion
In our opinion, the financial statements present fairly, in all material respects, the financial position of the Institution as at December 31, 2016 and of its financial performance and its cash flows for the year then ended in accordance with General Accepted Accounting Principles in Uruguay.

March 21st, 2017

Cra. Victoria Buzetta
Nº CJPPU 66.795

Registro Regional de Direcciones IP para América Latina y Caribe (LACNIC)
STATEMENT OF FINANCIAL POSITION
AS OF DECEMBER 31, 2016
(Expressed in US Dollar)

	December 31, 2016	December 31, 2015
ASSETS		
CURRENT ASSETS		
CASH AND BANKS (Notes 2.3 and 2.9)		
Cash	768	908
Banks	818.879	347.648
	819.647	348.556
SHORT TERM INVESTMENTS (Note 2.3,2.10 and 5)		
Investments	4.078.416	2.880.187
Interest Receivable	25.402	34.492
	4.103.818	2.914.679
ACCOUNTS RECEIVABLES (Nota 2.3, 2.9 and 11)		
Trade Receivables	1.428.816	2.041.401
Allowance for Doubtful Accounts	(15.529)	(18.000)
	1.413.287	2.023.401
OTHERS RECEIVABLES		
Other Receivables	139.608	125.743
TOTAL CURRENT ASSETS	6.476.360	5.412.379
NON CURRENT ASSETS		
Fixed Assets (Note 2.11 and Annex)		
Cost of Acquisition	4.219.080	4.006.185
Accumulated Amortization	(1.002.297)	(813.422)
	3.216.783	3.192.763
INTANGIBLES (Note 2.11 and Annex)		
Cost of Acquisition	322.140	282.616
Accumulated Amortization	(266.488)	(243.430)
	55.652	39.186
TOTAL NON CURRENT ASSETS	3.272.435	3.231.949
TOTAL ASSETS	**9.748.795**	**8.644.328**
Off Balance Accounts (Note 9)	160.008	316.261

The Annex and the Notes 1 to 15 attached are an integral part of these financial statements.

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Registro Regional de Direcciones IP para América Latina y Caribe (LACNIC)
STATEMENT OF FINANCIAL POSITION
AS OF DECEMBER 31, 2016
(Expressed in US Dollar)

	December 31, 2016	December 31, 2015
LIABILITIES		
CURRENT LIABILITIES (Note 2.3)		
COMMERCIAL DEBTS		
Account Payable	232.992	228.459
FINANCIAL DEBTS		
Leasing Loans (Note 7)	-	12.360
OTHER DEBTS		
Provisions for Employee Benefits	319.553	246.925
Benefits for Staff Retirement	50.036	21.470
Advanced Collections	342.655	373.241
Other Debt	50.797	21.386
	763.041	663.022
TOTAL CURRENT LIABILITIES	996.033	903.841
TOTAL LIABILITIES	**996.033**	**903.841**
EQUITY		
RETAINED EARNINGS		
Prior Year's Results	7.740.487	6.933.616
Comprehensive Result of the Year	1.012.275	806.871
	8.752.762	7.740.487
TOTAL EQUITY	**8.752.762**	**7.740.487**
TOTAL LIABILITIES AND EQUITY	**9.748.795**	**8.644.328**
	!	
Off Balance Accounts (Note 9)	160.008	316.261

The Annex and the Notes 1 to 15 attached are an integral part of these financial statements.

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Registro Regional de Direcciones IP para América Latina y Caribe (LACNIC)
COMPREHENSIVE INCOME STATEMENT
FOR THE YEAR ENDED AS OF DECEMBER 31, 2016
(Expressed in US Dollar)

	For the year ended as of December 31, 2016	For the year ended as of December 31, 2015
OPERATING REVENUES		
Net Operating Revenues (Note 8)	6.896.346	6.742.532
	6.896.346	6.742.532
SELLING AND ADMINISTRATIVE EXPENSES		
Salaries and Contributions for Retirement (Note 11.3)	(2.462.882)	(2.190.866)
Travel and Staff Subsistence	(846.826)	(767.964)
Cooperation, Contribution and Memberships	(323.194)	(339.630)
Hired Services	(748.594)	(681.865)
Diffusion costs	(267.082)	(400.920)
Travel and Fellows and Exhibitors Subsistence	(299.318)	(324.610)
Fixed Assets Depreciation (Note 2.11 and Annex)	(223.488)	(184.808)
Maintenance	(161.777)	(181.250)
Communication Expenses	(138.428)	(123.820)
Training	(58.815)	(70.200)
Stationery and Other Office Supplies	(42.280)	(64.588)
Electric Power and Water	(30.703)	(30.628)
Doubtful Accounts	2.471	(7.425)
Other Expenses	(59.500)	(62.564)
	(5.660.416)	(5.431.138)
OTHER RESULTS		
Other Incomes	7.315	2.954
Other Expenses	(4.826)	-
	2. 489	2.954
FINANCIAL RESULTS		
Interest Paid	(21.759)	(15.288)
Collecting Fees	(54.304)	(68.192)
Interest Income	115.376	135.935
Discounts Granted	(346.189)	(297.569)
Differences of Investment Valuation	99.094	(197.164)
Exchange Differences	(18.362)	(65.199)
	(226.144)	(507.477)
NET INCOME OF THE YEAR	**1.012.275**	**806.871**
Other comprehensive results	"!|	"!|
COMPREHENSIVE INCOME OF THE YEAR	**1.012.275**	**806.871**

The Annex and the Notes 1 to 15 attached are an integral part of these financial statements.

7

FISCAL COMMISSION'S REPORT

Based on to the provisions of Article 5, Item (d) and Article 27, Item (c) of the approved and valid Bylaws of the LATIN AMERICAN AND CARIBBEAN INTERNET ADDRESSES REGISTRY (hereinfter "LACNIC"), a meeting of the Fiscal Commission made up by Hernán José Arcidiácono, Aristóteles Dantas Gaudèncio and Adriana Ibarra Vázquez was held.

In view of the above, this Report is issued in reference to the Financial Statements corresponding to the term ended on 31st December 2016 and Independent Auditor's Report.

CONCLUSIONS

ONE.- The results of the audit conducted by ESTUDIO KAPLAN, in their capacity as independent auditors, in relation to the Financial Statements corresponding to the term ended on 31st December 2016 were reviewed. The result of said audit was favorable and the referenced Financial Statements reasonably represent, in all material aspects, LACNIC's financial situation as at 31st December 2016.
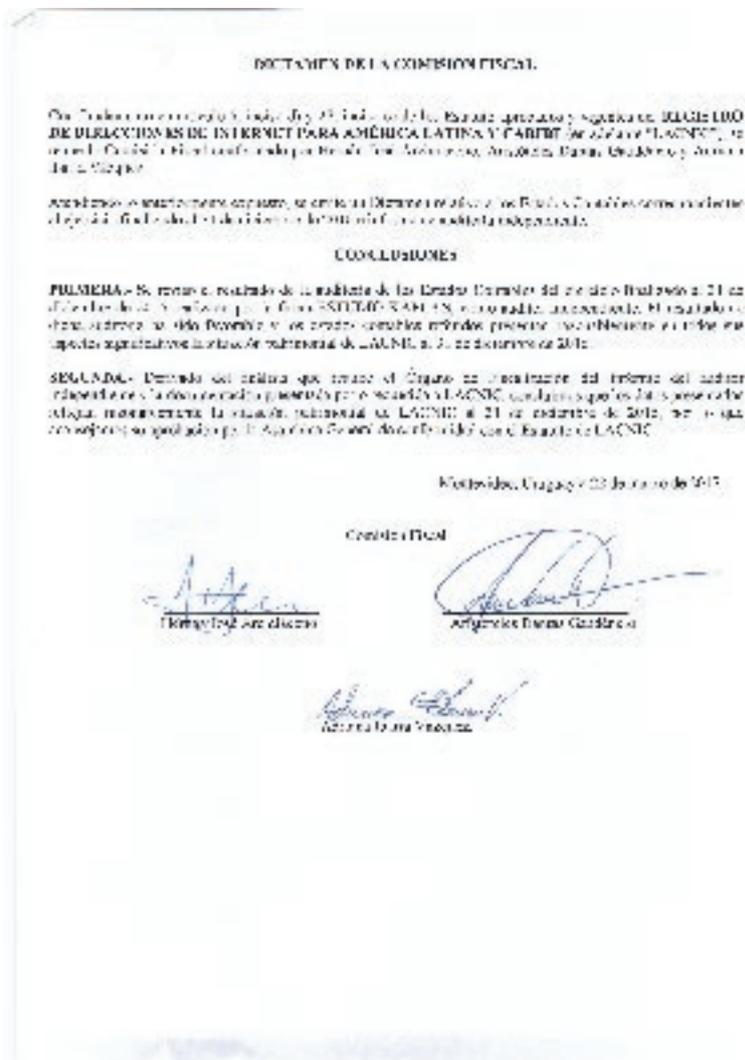
TWO.- Based on the analysis conducted by the Fiscal Commission of the independent auditor's report and the documentation submitted by or requested from LACNIC, it is our conclusion that the information we have been presented reasonably reflects LACNIC's financial situation as at 31st December 2016 and therefore recommend its approval by the General Assembly under the provisions of the LACNIC Bylaws.

Montevideo, Uruguay, 22 March 2017.

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Fiscal Commission

Adriana Ibarra Vázquez - Aristóteles Dantas Gaudèncio - Hernán José Arcidiácono

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