



**PUERTO RICO
TOP LEVEL DOMAIN**

TECH DAY

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Why was NIC.PR interested?

- NIC.PR was a research laboratory involved in various research projects that included:
 - Watermarking
 - Public Key Cryptography
- Being a technology center of Computing Science, NIC.PR considered DNSSEC to be an area of interest.

History

- Circa 2000, the local government website was redirected to a malicious site at the ISP level.
 - Completely avoidable had DNSSEC been available.
- Shortly after Sweden (.se) became the first ccTLD to offer DNSSEC, it became clear that this was the way to go.

**Why was
NIC.PR
interested?**

History

NIC.PR started signing the zones on July 2006.

**When was
DNSSEC
activated?**

NIC.PR started transmitting DNSSEC zones to the public server for the first time in August 2006.

History

List of DNSSEC signed zones at deployment (2006):

- .pr
- .nic.pr
- .com.pr
- .net.pr
- .org.pr
- .isla.pr
- .edu.pr
- .gov.pr
- .pro.pr
- .biz.pr
- .info.pr
- .name.pr

History

An informational website was created at <http://dnssec.nic.pr> to publish .pr DNSSEC related information.

The local government was encouraged to sign the domain gobierno.pr.

Signed and hosted DNS zones of clients under the incentives program.

Promotion Efforts

.pr zones were signed on a Windows 2003 Server machine.

Zone file generation and DNSSEC signing were performed using VBScript.

- `dnssec-keygen -a rsasha1 -b 1024 -n zone [domainname]`
- `dnssec-keygen -a rsasha1 -b 2048 -f KSK -n zone [domainname]`
- `dnssec-signzone -o [domain] -t -g -k [KSK] [zone file] [ZSK]`

DNSSEC functionality was verified by:

- Querying OARC's open DNSSEC resolvers (149.20.64.20, 149.20.64.21)
- <http://www.dnsviz.net>

Operational Experiences



Hurricane Maria 2017

.pr had two colocations; One with Critical Hub and the other in a bunker with AT&T.

Having Any Cast helped because it maintain the DNS redundant at a global and local level.

We never lost our DNS



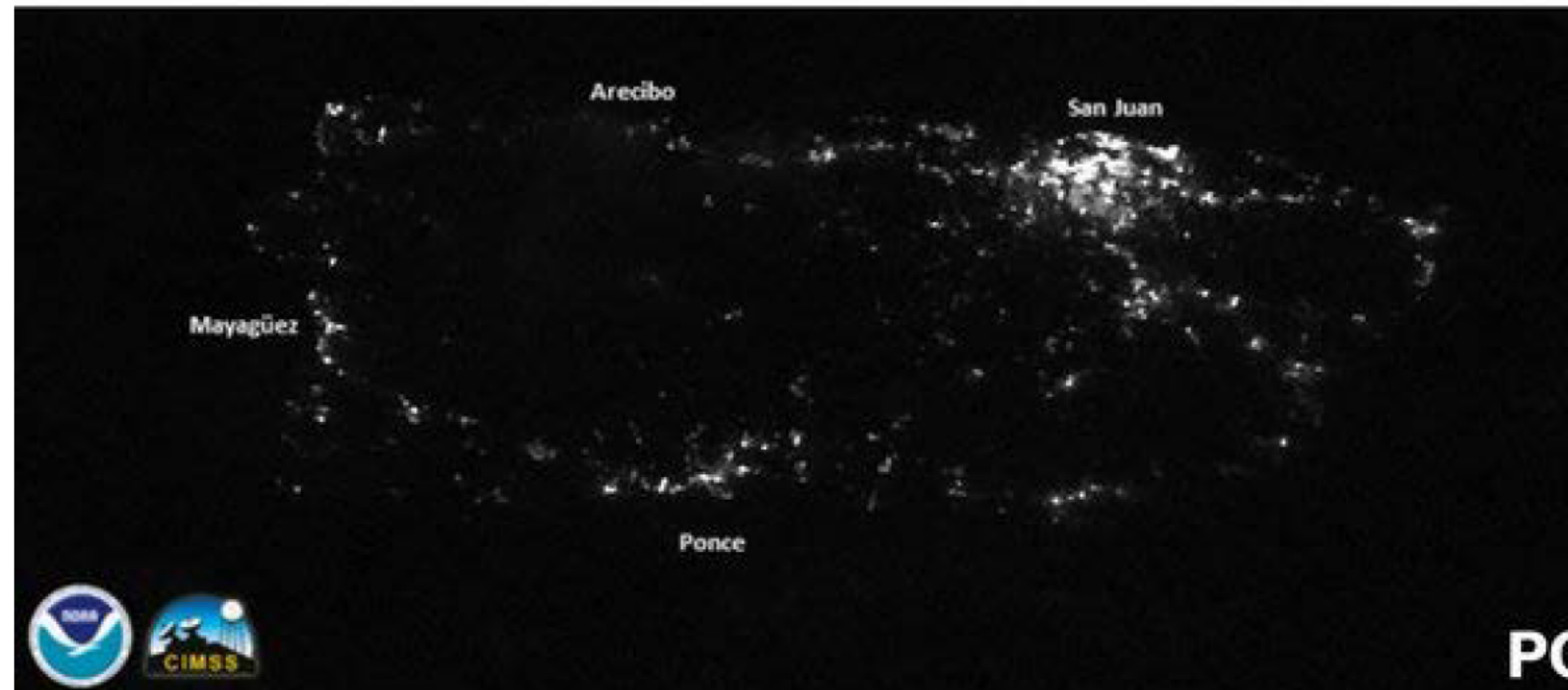
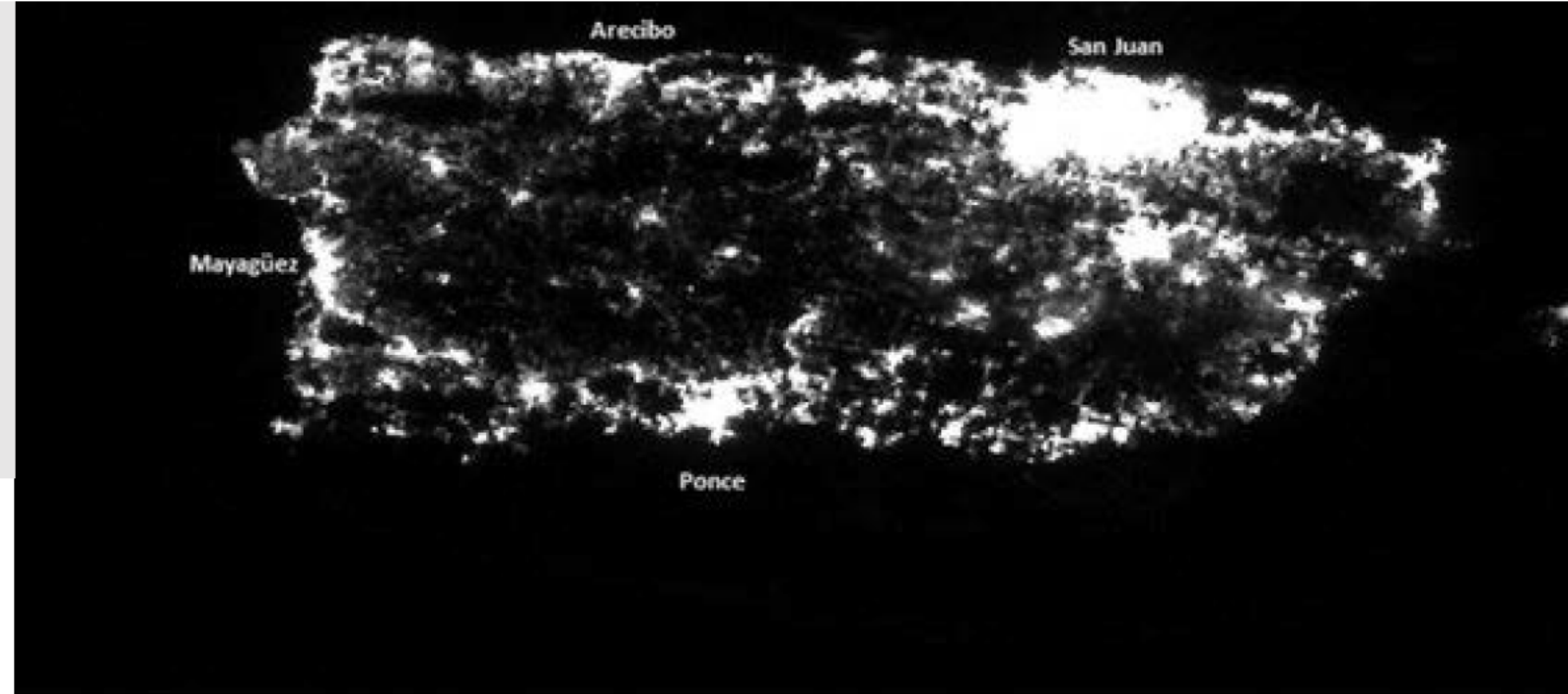
AT&T



How did PRTL D continue to be Operational During and After Hurricane Maria?

Lost of Telecommunication Towers...

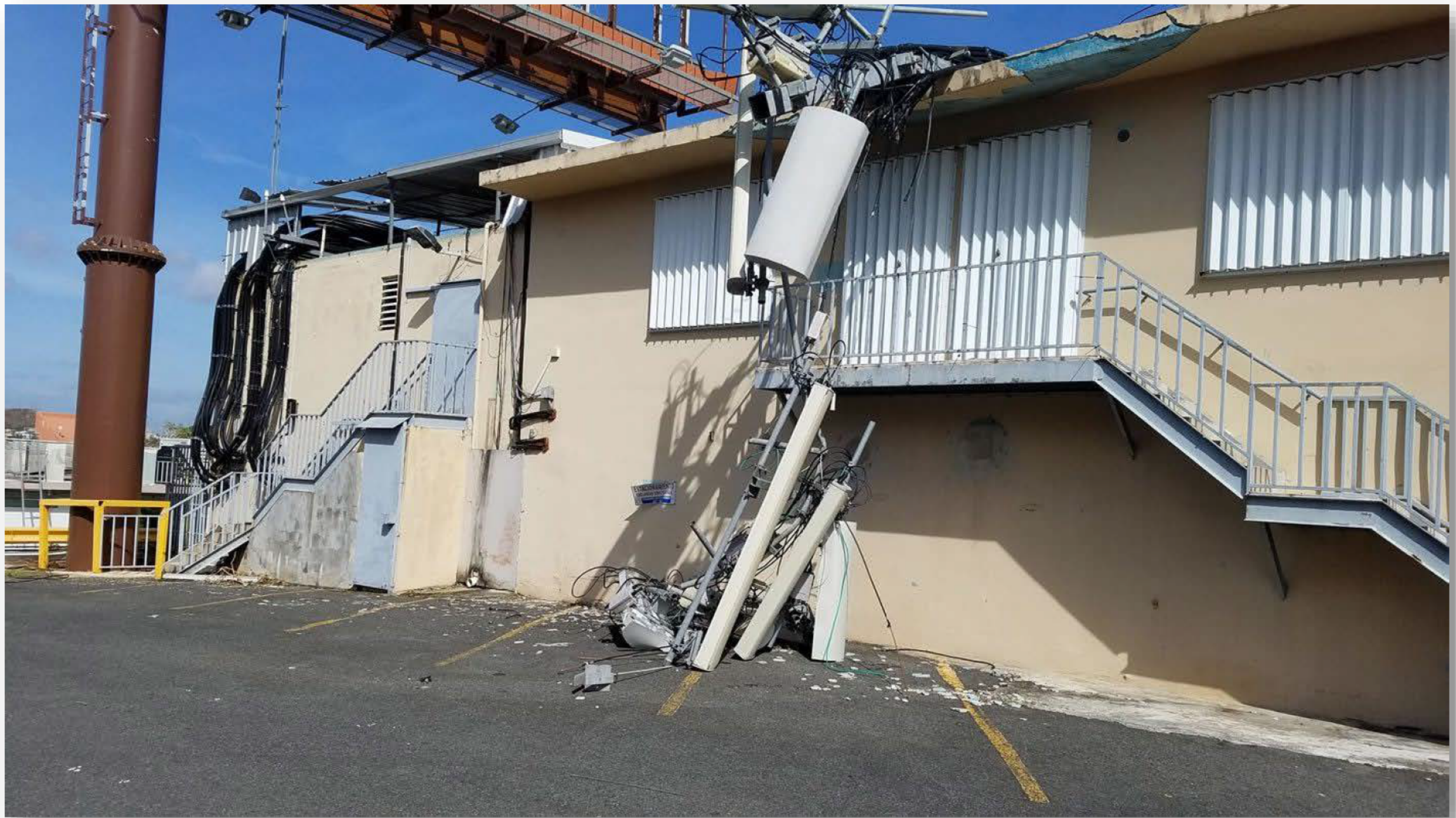
- “Hasta el 26 de septiembre, el 95% de la isla no tenía electricidad, menos de la mitad de la población tenía agua corriente y el 95% de la isla no tenía servicio de telefonía celular e internet.”
- Comparación del sistema eléctrico de Puerto Rico antes y después del Huracán María - Imágenes tomadas por la NASA desde el espacio →













ASUME
Administración para el Sustento de Menores
Gobierno de Puerto Rico

DESCARGA NUESTRA APLICACIÓN MÓVIL

Status.pr

Disponible en el **App Store**

Disponible en **Google play**



EDUCATION



PUERTO RICO SE LEVANTA




COMPLAINTS



PROGRESS GOALS

AAA

- Was a tool that helped us identify the domains from the affected territories by Hurricane Maria.



99.89%	97.02%	88.12%	99%	99.21%
Metro	North	West	South	East


Last update: 26/feb/2018 Source: AAA Note: El 97.23% significa 1,195,319 contadores activos.

[Ver Mapa](#) [Ver Listado](#)



84.60%

AEE Generation



Last update: 26/feb/2018
Source: AEE
Note: Representa el 86.60% de los abonados.

[Ver Mapa](#)



98.50%

Telecommunications Service



Last update: 02/feb/2018

Source: JRTC

Note: Incluye Servicio Alámbrico e Inalámbrico.

[Ver Mapa](#)

Cell Sites

93.11%



2,487 of 2,671

Last update: 02/feb/2018

Source: JRTC

Note: Incluye Servicio Alámbrico e Inalámbrico.



88%

Gas Stations



970 of 1,100

Last update: 26/dec/2017

Source: DACO

[Ver Listado](#)



92%

Supermarket



437 of 471

Last update: 26/dec/2017

Source: MIDA

[Ver Listado](#)



1,910

Businesses Processing PAN



1,910 of 2,513

Last update: 15/dec/2017

Source: Departamento de la Familia

Note: Programa de Asistencia Nutricional - EBT.

El total está basado en la capacidad de procesamiento regular.



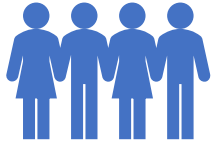
5

Shelters

Last update: 08/feb/2018

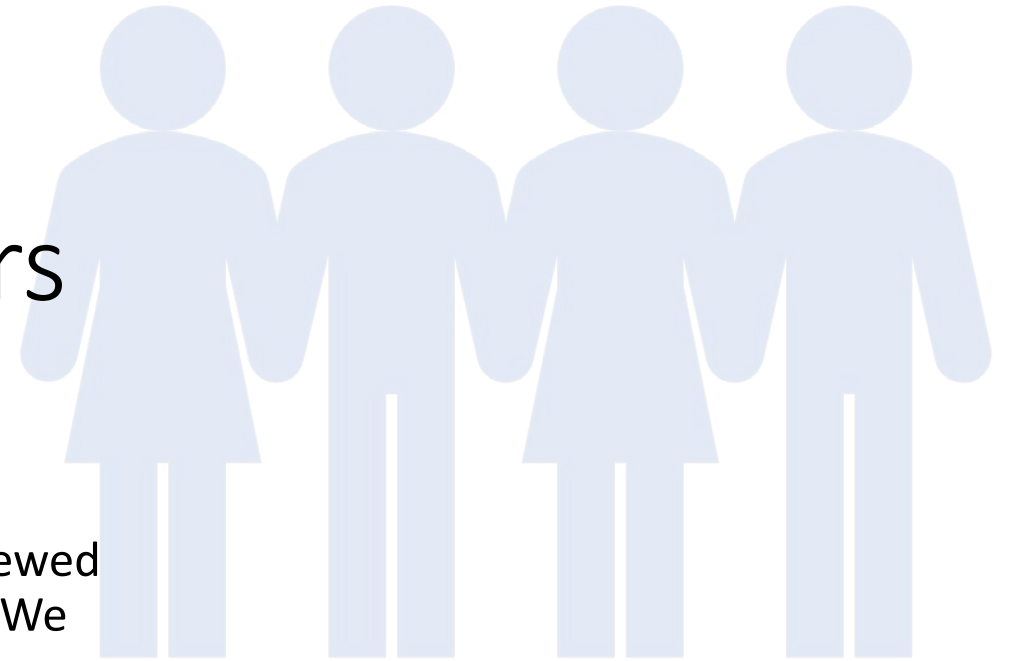
Source: Vivienda

Note: 2:30 PM.



Protecting Customers Cyber Real Estate

- The statistics of how many domains we renewed were about approximately of 626 domains. We had first and second level domains (.pr, .com.pr, isla.pr, org.pr, etc.) There were no renewal fees, and the date was extended to Feb 1st.



Process of Renewal



- As part of our process to renew these name was performing a search in our database of all domain names who's country was Puerto Rico or any other known territory (Antigua and Barbuda, Saint Martin, US Virgin Island) that were affected by the pass of Hurricanes Irma and/or Maria.

We MUST
Understand
that.....



- The Latin American and Caribbean Region is known for its vulnerability to natural disasters. (e.g.: Earthquakes, tsunamis and hurricanes)
- Near the time that Hurricane Maria was passing over Puerto Rico, Mexico experienced a major earthquake, thus it is important that registries operators are aware that their users could be uncommunicated during these type of disasters. Consequently, new policies should be instituted to ensure the protection of their cyber real estate.



Thank you!