КООРДИНАЦИОННЫЙ ЦЕНТР
ДОМЕНОВ .RU/.РФ

Improving DNS stability in Russia

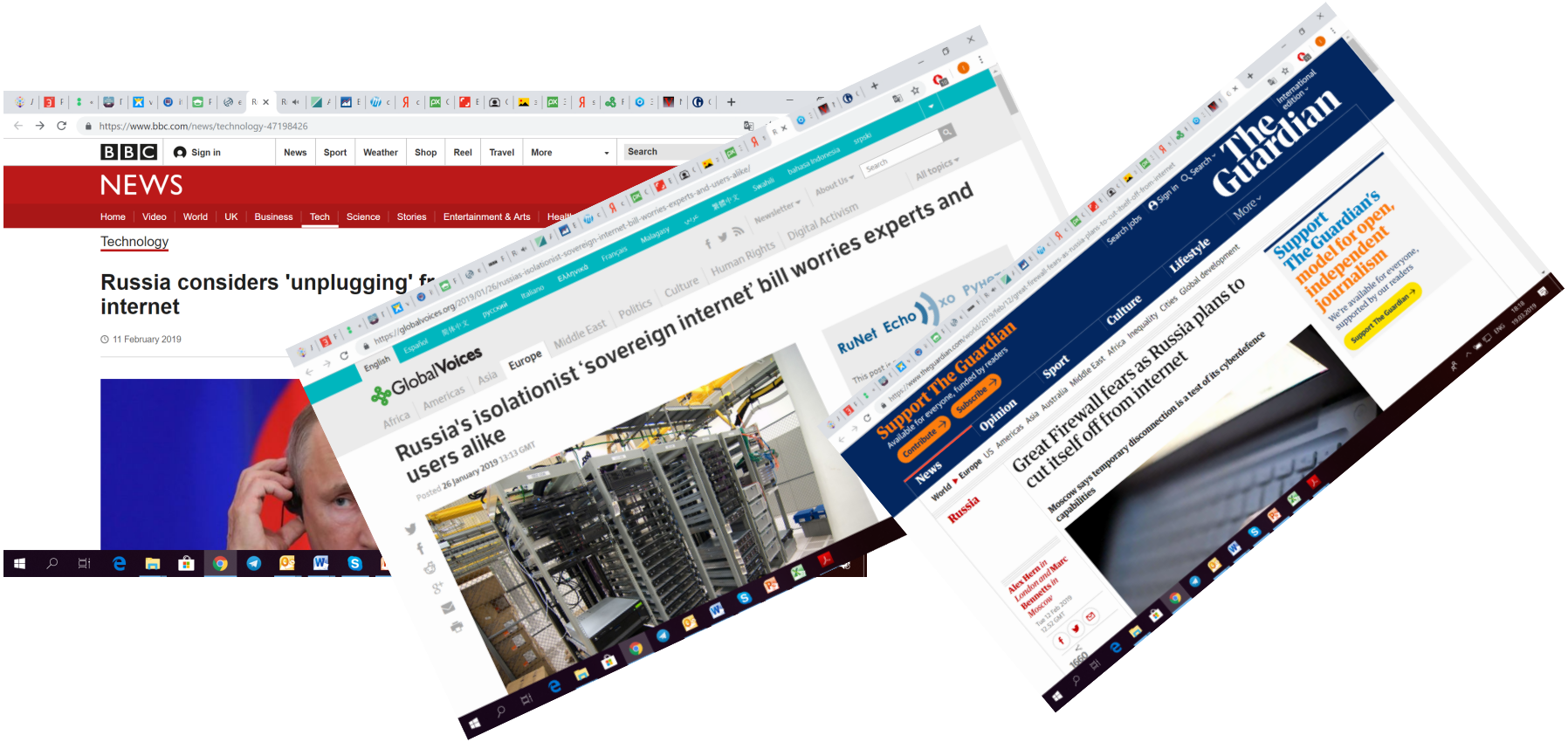
cctld.ru | кц.рф

.RU .РФ

VNIX-NOG 2019
Nha Trang, Vietnam, August 2019

КООРДИНАЦИОННЫЙ ЦЕНТР ДОМЕНОВ .RU/.РФ

DNS stability: the environment



КООРДИНАЦИОННЫЙ ЦЕНТР ДОМЕНОВ .RU/.РФ

DNS stability: threats and challenges

Main challenges that domain registration system face in Russia:

- Significant growth of end users and devices (huge number of DNS requests)
- Huge territory of the country (geographically distributed loads)
- DDoS
- Probable external malicious impact

КООРДИНАЦИОННЫЙ ЦЕНТР ДОМЕНОВ .RU/.РФ

Backup for Registry database

Moscow

St. Petersburg

- Independent datacenters
- Full backup every minute
- Supporting all main functions according to ICANN specifications (e.g. domain registration, renewal, current status etc.)

КООРДИНАЦИОННЫЙ ЦЕНТР ДОМЕНОВ .RU/.РФ

Distributed DNS

World map of distributed DNS for .RU/.РФ

КООРДИНАЦИОННЫЙ ЦЕНТР ДОМЕНОВ .RU/.РФ

Distributed DNS

DNS-clouds

Cloud «Europe» - 6 servers (3 nodes)

Cloud «Russia» - 17 servers (9 nodes)

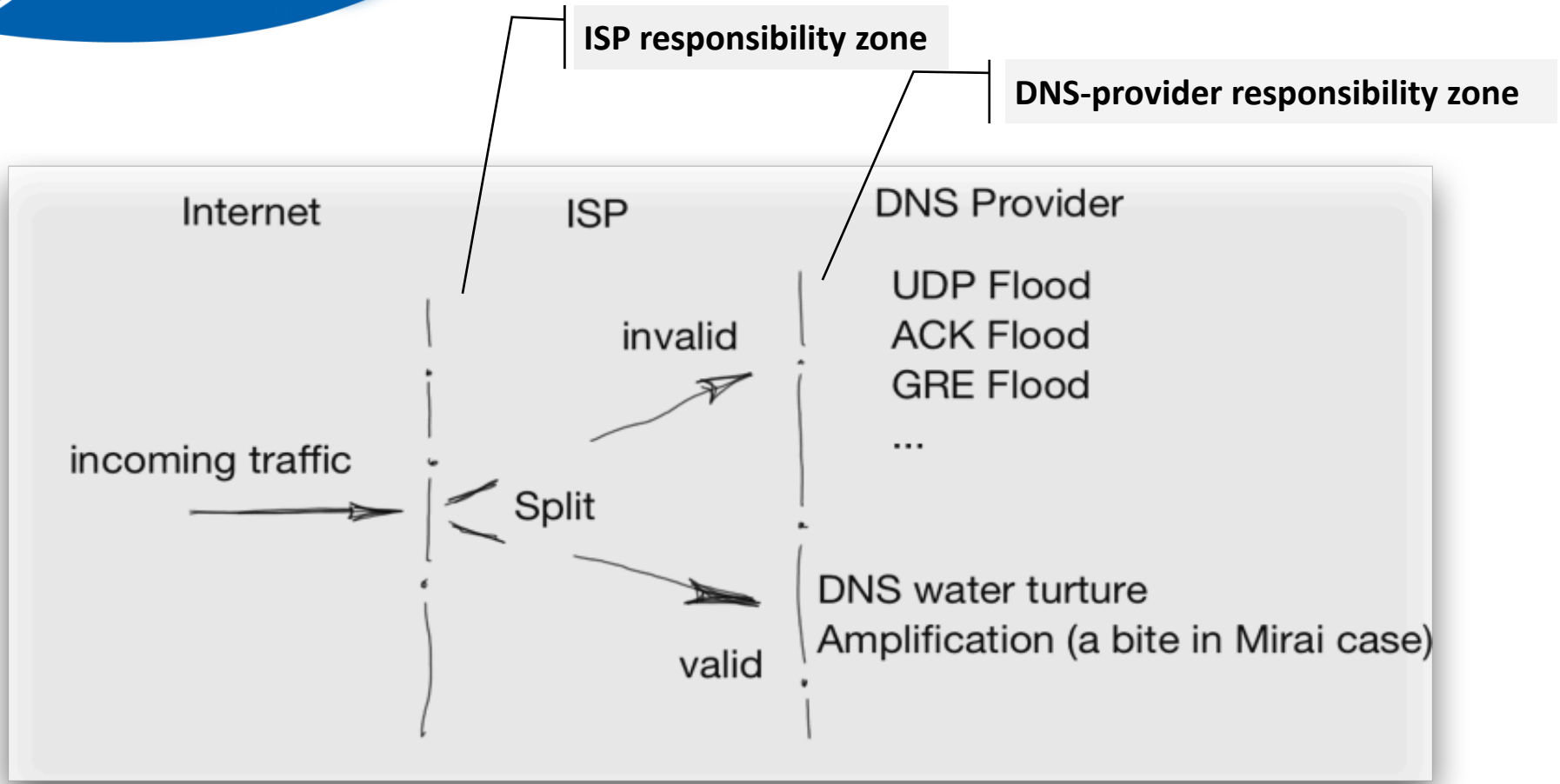
Cloud «Asia» - 4 servers (3 nodes)

Cloud «Moscow» - 4 servers (2 nodes)

Cloud «America» - 4 servers (3 nodes)

КООРДИНАЦИОННЫЙ ЦЕНТР ДОМЕНОВ .RU/.РФ

Stability/Reliability/Security



КООРДИНАЦИОННЫЙ ЦЕНТР ДОМЕНОВ .RU/.РФ

Real time mitigation

In case of DSN water torture (DNS valid traffic):

- Distribute traffic across DNS clouds & nodes;
- Switch on ACL and RRL on the servers.

In case of flood (Invalid traffic):

- Switch off announces of local nodes;
- Automatically switch on ISP protection service.

КООРДИНАЦИОННЫЙ ЦЕНТР ДОМЕНОВ .RU/.РФ

Final notes

1. Internet sovereignty should be understood as the ability to keep your country network operational in all conditions

2. This could be made by improving connectivity and distributed infrastructure

3. It means that the only way to build the stable, secure and reliable network is to make it inseparable part of the global network

КООРДИНАЦИОННЫЙ ЦЕНТР
ДОМЕНОВ .RU/.РФ

Thank you!

Mikhail Anisimov
m.anisimov@cctld.ru

cctld.ru | кц.рф

.RU .РФ