ICANN 60
ANNUAL GENERAL
ABU DHABI
28 October–3 November 2017
EBERO Exercises

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ICANN 60 – Tech Day
30 October 2017
Agenda

1. What is the EBERO Program?
2. EBERO Event
3. EBERO Live-TLD Exercises
4. Summary and Next Steps
What is the EBERO Program?
What is the EBERO Program?

- Aimed at protecting registrants from a gTLD registry operator failure
- An Emergency Back-End Registry Operator (EBERO) provides the five critical registry functions in the event of a gTLD failure
- EBEROs are organizations that have demonstrated years of experience in operating registry services
- EBEROs have entered into five-year contracts with ICANN
Five Critical Functions Provided by EBEROs

- DNS resolution for registered domain names
- Maintenance of a properly signed zone in accordance with DNSSEC requirements
- Operation of Shared Registration System (i.e., EPP)
- Operation of Registration Data Directory Services (i.e., WHOIS and Web Whois)
- Registry data escrow deposits
Currently Contracted EBEROs

- China Internet Network Information Center (CNNIC)
- CORE Association (CORE Internet Council of Registrars)
- Nominet
EBERO Event
Declaring an EBERO Event

TLD Monitoring System

Contractual Compliance

Contracting

EBERO Program

Potential Event

EBERO Team

Event Declaration
(EBERO provider is selected)
What Happens During an EBERO Event?

DNS

ICANN → EBERO → DNSSEC signing → DNS is internally up

DNS service is publicly up; NS/DS in the root

ICANN → IANA

Re-delegation request

TLD zone file
What Happens During an EBERO Event?

**SRS & RDDS**

ICANN → gTLD Data Escrow Agent

- Data Escrow Release Request

ICANN → EBERO

- Data Escrow Deposit

EBERO → ICANN

- Import data / cross validation with zone file

EBERO → RDDS & EPP services are up

ICANN → RDDS & EPP services are up

- Data Escrow Deposit
What Happens During an EBERO Event?

Stable EBERO Operation

- **Object update request** from ICANN to EBERO
- **Reports** from EBERO to ICANN
- **Data Escrow Deposit** from ICANN to ICANN’s Data Escrow Agent
EBERO Live-TLD Exercises
EBERO Live-TLD Exercise

- 3 gTLDs in the process of terminating the Registry Agreement were used to perform EBERO live exercises.
- The 3 gTLDs used had no registrants; only one name registered by the registry.
- The Registry Operators agreed to allow ICANN to perform a live-TLD EBERO exercise just before revocation from the root zone.
- Each of the 3 EBERO exercises was performed with a different EBERO service provider.
## DNS Timeline comparison

<table>
<thead>
<tr>
<th>Step</th>
<th>gTLD-1</th>
<th>gTLD-2</th>
<th>gTLD-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reached 100% of emergency threshold (Simulated)</td>
<td>16:00 UTC 26 Jan 2016</td>
<td>14:03 UTC 25 Apr 2017</td>
<td>00:05 UTC 21 Sep 2017</td>
</tr>
<tr>
<td>DNS/DNSSEC service restored in EBERO’s servers</td>
<td>3 hours, 46 minutes</td>
<td>9 hours, 11 minutes</td>
<td>3 hours, 59 minutes</td>
</tr>
<tr>
<td>TLD change request issued to IANA</td>
<td>4 hours, 20 minutes</td>
<td>9 hours, 24 minutes</td>
<td>4 hours, 23 minutes</td>
</tr>
<tr>
<td>TLD change applied in root zone</td>
<td>8 hours, 22 minutes</td>
<td>1 day, 5 hours, 5 minutes</td>
<td>7 hours, 55 minutes</td>
</tr>
<tr>
<td>Total DNS downtime (simulated and discounting cache effects)</td>
<td>12 hours, 22 minutes</td>
<td>1 day, 9 hours, 5 minutes</td>
<td>11 hours, 55 minutes</td>
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## SRS/RDDS Timeline comparison

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<tr>
<td>(Simulated)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Escrow deposit made available to ICANN</td>
<td>1 day, 7 hours, 31 minutes</td>
<td>2 days, 19 hours, 36 minutes</td>
<td>1 day, 14 hours, 22 minutes</td>
</tr>
<tr>
<td>SRS (EPP) service restored</td>
<td>1 day, 23 hours, 3 minutes</td>
<td>2 day, 22 hours, 14 minutes</td>
<td>4 days, 18 hours, 29 minutes</td>
</tr>
<tr>
<td>RDDDS service restored</td>
<td>2 days, 1 hour, 5 minutes</td>
<td>2 day, 22 hours, 14 minutes</td>
<td>5 days, 13 hours, 58 minutes</td>
</tr>
<tr>
<td><strong>Total RDDDS downtime</strong></td>
<td><strong>2 days, 5 hour, 5 minutes</strong></td>
<td><strong>3 days, 2 hours, 14 minutes</strong></td>
<td><strong>5 days, 17 hours, 58 minutes</strong></td>
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Summary and Next Steps
### Summary

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<tr>
<td>Total RDDS downtime (simulated + real and discounting cache effects)</td>
<td>2 days, 5 hour, 5 minutes</td>
<td>3 day, 2 hours, 14 minutes</td>
<td>5 days, 17 hours, 58 minutes</td>
</tr>
<tr>
<td>Data Escrow function restored (End of exercise)</td>
<td>5 days, 21 hours, 53 minutes</td>
<td>8 days, 2 hours, 34 minutes</td>
<td>8 days, 3 hours, 21 minutes</td>
</tr>
<tr>
<td>Issues discovered</td>
<td>44 issues</td>
<td>37 issues</td>
<td>20 issues</td>
</tr>
</tbody>
</table>
During each of the 3 live-TLD exercises, a number of issues was found in the process and have or are in the process to be solved.

**Next Steps**

During each of the 3 live-TLD exercises, a number of issues was found in the process and have or are in the process to be solved.
Thank You and Questions

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