The Wild Card Incident of 9/15/2003

Steve Crocker Chair
Security and Stability Advisory Committee
Primary Security and Stability
ICANN Components

- Constituent Participatory Organizations
  - Generic Names Supporting Organization
  - Country Code Names Supporting Organization
  - Government Advisory Council
    - 80 countries and 5 treaty organizations
  - Root Server Advisory Committee

- Specialist Groups
  - IANA
    - Administers root database and address allocation
  - Security and Stability Advisory Committee
    - Volunteer experts on security and stability issues
SECSAC Committee

- Steve Crocker, Chair
- Alain Patrick Aina
- Jaap Akkerhuis
- Doug Barton
- Steven M. Bellovin
- Rob Blokzijl
- David R. Conrad
- Johan Ihren
- Mark Kosters
- Allison Mankin
- Ram Mohan
- Russ Mundy
- Jun Murai
- Frederico A.C. Neves
- Ray Plzak
- Doron Shikmoni
- Ken Silva
- Bruce Tonkin
- Paul Vixie
- Rick Wesson

Staff support: Jim Galvin
SECSAC Committee Strengths

- Root Server Operators
- gTLD Operators
- ccTLD Operators
- Name Space Registries
- Regional Internet Registries (RIRs)
- Registrars
- Internet Security

No policy or political members(!)
Preamble

- On Sept 15, VeriSign introduced change to .com and .net domain
- Redirected unassigned names to their own server (SiteFinder)
- Immediate complaints and problem reports
- Several actions, including SECSAC
SECSAC Involvement

- Advisory issued 9/22
- Public inputs
  - secsac-comment@icann.org
- Public meetings 10/7 & 10/15
- More public inputs
- Report will come toward end of November
SECSAC in the larger process

- SECSAC is an advisory committee
  - We only speak. We don’t decide or enforce. Others may choose to listen.
  - ICANN management will deliberate and choose path following our report.

- Focus on Security and Stability
  - Not competition, etc.
  - But may include large issues
What Happened

- VeriSign used the wild card feature to redirect all uninstantiated names to their own servers
  - Previously, returned standard error code
  - This was a change to an existing service
- Some things broke
- Some took defensive action
Registries, Registrars, and Registrants

Registry

Zone DB

Registrant submits add/modify/delete to registry

Registrar

Registry updates zone

End user requests add/modify/delete

Registrants

Master updated

Slaves updated
Name Resolution

- *Name resolution* is the process by which resolvers and name servers cooperate to find data in the name space.

- To find information anywhere in the name space, a name server only needs the names and IP addresses of the name servers for the root zone (the “root name servers”).
Name Resolution

- A name server receiving a query from a resolver looks for the answer in its authoritative data first and then in its cache.
  - If it doesn’t have the requested data and is not authoritative for the domain in the query, other servers must be consulted.
Name Resolution Example

- Let’s look at the resolution process step-by-step:

Name Resolution Example

The workstation *annie* asks its configured name server, *dakota*, for www.nominum.com’s address

What’s the IP address of www.nominum.com?

Name Resolution Example

The name server *dakota* asks a root name server, *m*, for **www.nominum.com**’s address.

What’s the IP address of **www.nominum.com**?

*ping* **www.nominum.com**.
Name Resolution Example

The root server $m$ refers $dakota$ to the $com$ name servers.

This type of response is called a “referral”.

Here’s a list of the $com$ name servers. Ask one of them.

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Name Resolution Example

The name server *dakota* asks a *com* name server, *f*, for www.nominum.com’s address. What’s the IP address of www.nominum.com?

Name Resolution Example

The *com* name server *f* refers *dakota* to the *nominum.com* name servers

If the Name doesn’t exist

dakota.west.sprockets.com

m.root-servers.net

f.gtld-servers.net

Here’s the address of www.nnominum.com

annie.west.sprockets.com

Name Resolution Example

The name server *dakota* asks a *nominum.com* name server, *ns1.sanjose*, for *www.nominum.com*’s address.

ping *www.nominum.com*. 
Name Resolution Example

The nominum.com name server ns1.sanjose responds with www.nominum.com’s address.
Here's the IP address for www.nominum.com

Name Resolution Example

The name server *dakota* responds to *annie* with **www.nominum.com**'s address

Broad Areas of Concern

- Abruptness
  - No notice or community involvement
  - But internal and private testing

- Is it the right thing?
  - Changes in the core vs innovation
  - Lots more to say

- Competition
  - Not our concern; belongs elsewhere
Initial Advisory

- VeriSign: Please roll back
- Tech Community: Please clarify specs
  - IETF, IAB, network and DNS operators
- ICANN: Please clarify procedures
10/7 Agenda

10:00 Welcome
    Arnaud de Borchgrave
    Steve Crocker

10:20 VeriSign Site Finder
    Scott Hollenbeck

11:00 What was affected
    David Shairer

11:30 Community Tech Responses
    Paul Vixie

12:00 Information Flow
    Richard M. Smith

12:30 LUNCH

2:00 Protocol Problems and Architectural Issues
    Steven M. Bellovin

2:30 Internet Protocols and Innovation
    John C. Klensin

3:00 Other Issues; Open Session

3:30 Next Steps
    Steve Crocker

4:00 Adjourn
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<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Presenter</th>
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</thead>
<tbody>
<tr>
<td>1:00</td>
<td>Welcome</td>
<td>Steve Crocker</td>
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<tr>
<td>1:15</td>
<td>VeriSign Business Overview of Site Finder</td>
<td>Anthony Renzette</td>
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<td>1:45</td>
<td>Technical Review Panel Summary</td>
<td>Scott Hollenbeck</td>
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<td>2:15</td>
<td>Technical Issues and VRSN Responses</td>
<td>Matt Larson</td>
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<tr>
<td>2:45</td>
<td>Usability Market Research</td>
<td>Ben Turner</td>
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<td>3:15</td>
<td>Next Steps</td>
<td>Chuck Gomes</td>
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<td>3:30</td>
<td>BREAK</td>
<td>Rusty Lewis</td>
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<td>3:45</td>
<td>Measuring ISP Responses to SiteFinder</td>
<td>Benjamin Edelman</td>
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<td>4:15</td>
<td>Global Name Registry Statement</td>
<td>Hakon Haugnes</td>
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<td>4:30</td>
<td>Other Issues; Open Session</td>
<td>Geir Rasmussen</td>
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<td>Steve Crocker</td>
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Tentative Issues

- Abruptness
- Rightness
- Systemic Stability
- Confidence
- Technical Clarity
- Process Clarity
- Displaced Costs
- Innovation at core vs edge
- Future architecture
- Role of standards
- Existing wild card use
  - .museum, .name, etc
Next Steps

- More Public Input
  - Secsac-comment@icann.org
- Report
- ICANN and others will follow through