

ICANN 33



IMPACT OF CONSENSUS POLICIES ON DOMAIN REGISTRATION OPERATIONS

November 5, 2008

gTLD Registry Constituency

Agenda

Panel 1: Registry 101

- Tech/Ops – Eric Brown
- Administrative – Roland LaPlante
- Consensus Policies v. RSEP – David Maher

Panel 2: Registry Issues

- IDN – Joe Waldron
- DNSSEC – Michael Young
- DNS Abuse – Jeff Neuman
- WHOIS – Jim Reid
- New TLDs – David Maher



Registry 101: Technical

Eric Brown
NeuStar, Inc. (.BIZ)
Cairo 5 November 2008



What does a Registry do?

Registries *typically* have the following responsibilities:

- Maintain **authoritative database** for the zone
- Provide **WHOIS**
- Provide a **registrar interface**
- Update and publish the **zone file**
- Operate the **nameservers**



Although all gTLD Registries perform these functions, each are unique in its design and architecture

Thick vs. Thin

Thin Registry Data:

- Domain Name
- Sponsoring Registrar
- Key Dates (registration, expiration, etc)
- Domain Statuses
- Name Servers

Thick Registry Data:

- Domain Name
- Sponsoring Registrar
- Key Dates (registration, expiration, etc)
- Domain Statuses
- Name Servers
- Registrant Contact Info
- Admin Contact Info
- Technical Contact Info
- Billing Contact Info



Core Registry Components

3 Main Components of a Registry

- ❑ Shared Registry System (SRS)
- ❑ DNS
- ❑ WHOIS Database



Core Components - SRS

Shared Registry System (SRS)

- The core of the registry
- Database
- Protocol (EPP) Servers
- Application Servers
- Connection throttling network hardware
- Protected by multiple firewall layers
- High-availability (HA) design
- Replicated in backup datacenter



Core Components - DNS

DNS

- Most critical registry function for end-users
- Constellation of resolution servers responsible for mapping domain names to IP addresses
- Geographically dispersed, preferably across the globe
- Anycast vs. Unicast
- Diversified hardware and software
- Excess bandwidth capable of handling spikes in traffic



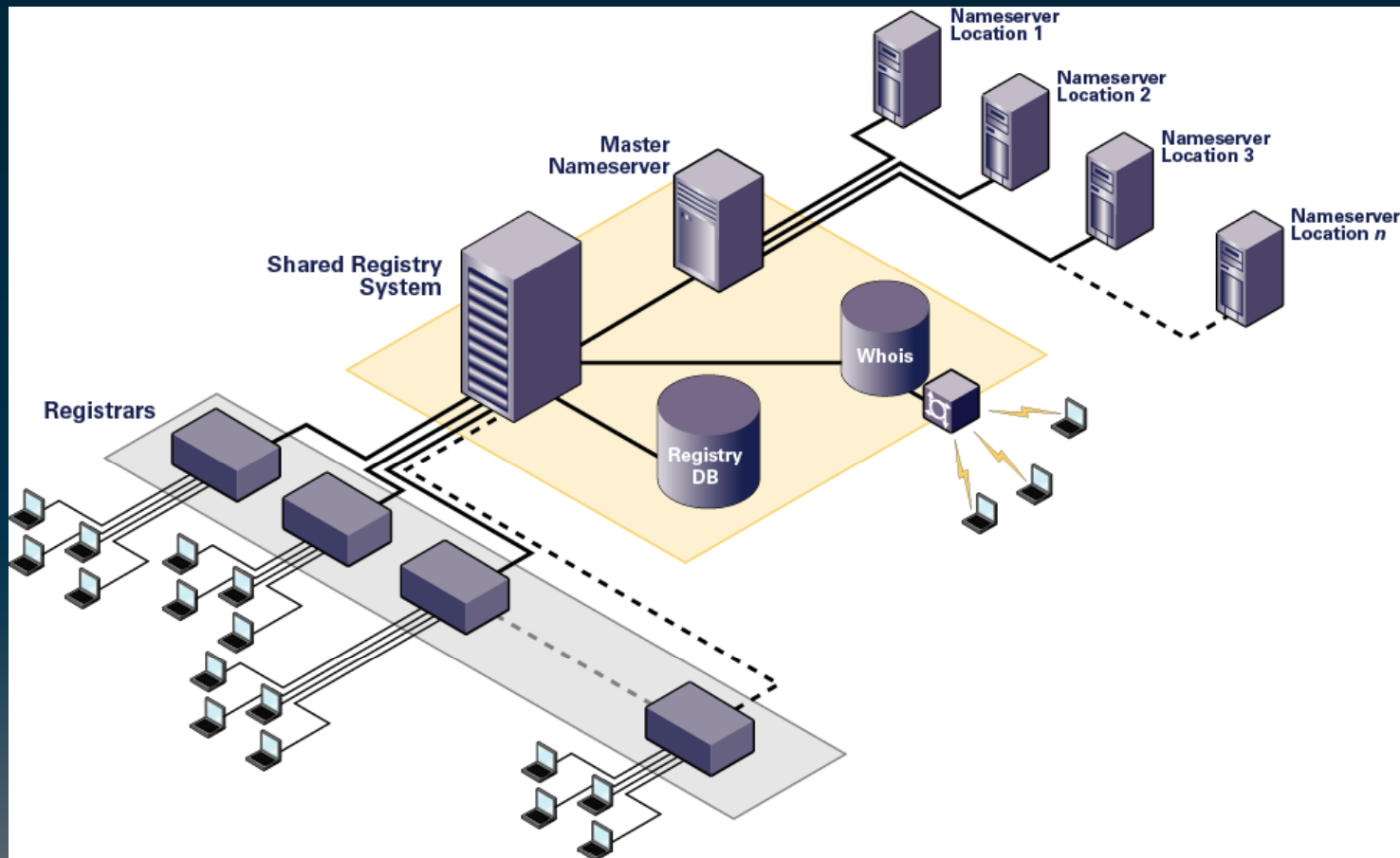
Core Components - Whois Database

Whois Database

- Centralized Contact Database
- Web and Port 43 accessible
- Open to the public
 - Access exceptions have been granted in some TLDs
- Updated dynamically, in near real-time
- Firewall Protected
- High-availability (HA) design
- Replicated in multiple datacenters



Core Registry Architecture



Secondary Components

Customer Support

- Primarily responsible for providing business and technical support to registrars, but may also respond to general public inquiries
- Conducts registrar certification testing
- 24 X 7 availability

Billing and Accounting Systems

- Provides real-time billing of registry transactions
- Manages registrar debit accounts, or other methods of payment
- May need to take into account VAT and exchange rate issues
- Revenue and Accounting Considerations
 - Deferred revenue



Secondary Components

Reporting

- Separate data warehouse
- Generates daily, weekly, and monthly reports in various formats for ICANN and registrars
- Provides data for internal analysis and external reporting
- 24 X 7 availability

Data Backup and Escrow Systems

- Provides critical data back up systems
- Ensures the Registry can recover in event of a catastrophic failure
- Provides daily and weekly data escrow deposits



Secondary Components

Network Operations Center (NOC)

- Provides constant monitoring of all systems
- Fully staffed 24 X 7
- Provides immediate response to technical issues
- Manages escalation process

Network Monitoring System (NMS)

- Critical systems designed to detect system issues
- Monitors all systems for availability, response times, CPU usage, memory usage, etc.
- Provides automated alerting to the NOC
- Critical for early warning detection of issues



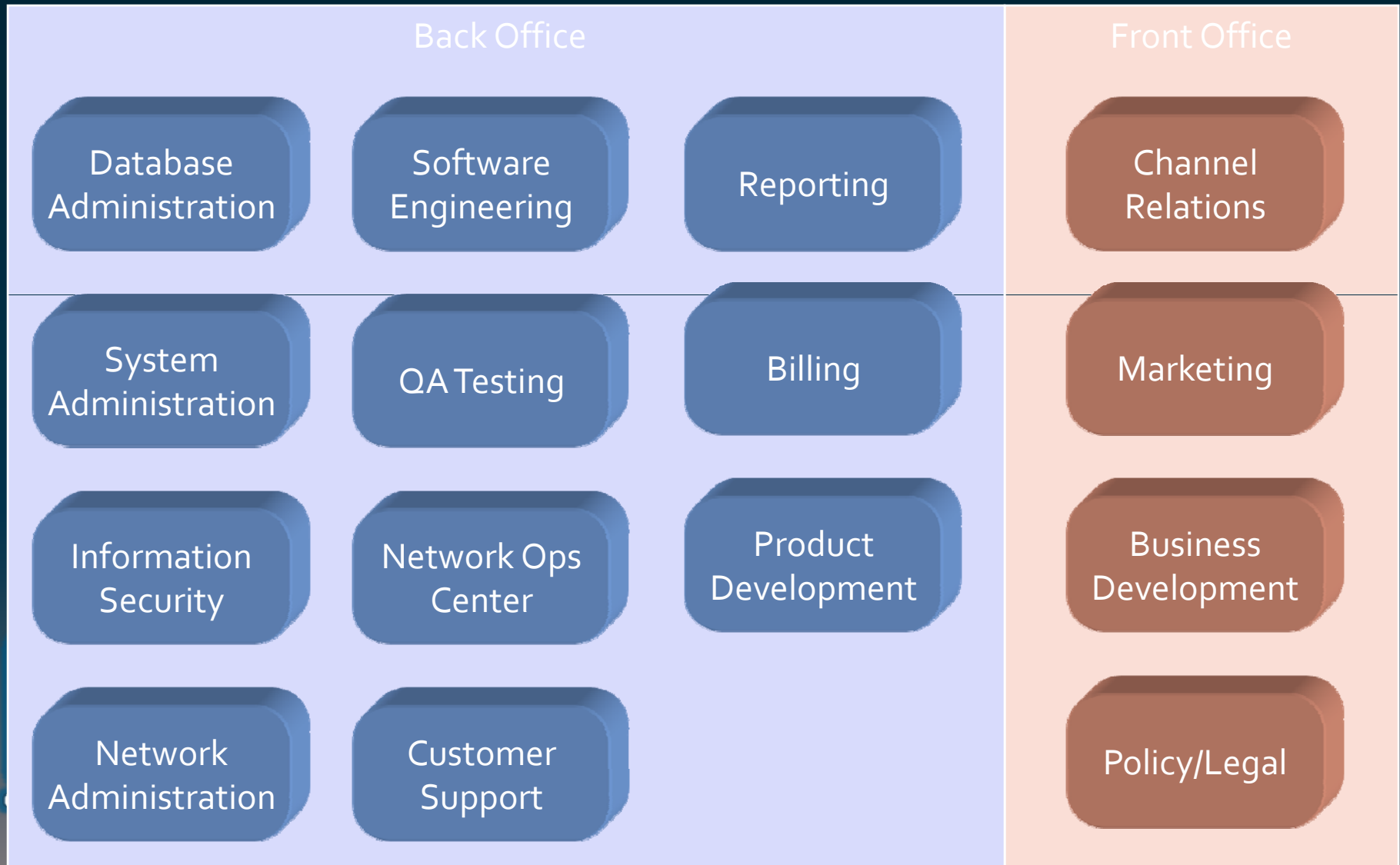
Secondary Components

Information Security

- Responsible for protecting registry data and systems
- Provide support for the monitoring and analysis of abusive domain practices
- Analyze and verify domain threats
- Take appropriate action to remediate the threat



Functional Roles



Industry Standard Registry SLAs

| Service Level Requirement | Requirement |
|--|-----------------------|
| Service Availability – SRS | 99.90% |
| Service Availability – Nameservers | 100.00% |
| Service Availability- Whois | 99.95% |
| Planned Outage Duration - SRS | 8 hours |
| Planned Outage Duration - Nameservers | None Allowed |
| Planned Outage Duration - Whois | 8 hours |
| Processing Time - Add, Modify, Delete of all objects | 95% within 3000 ms |
| Processing Time – Query Domain | 95% within 1500 ms |
| Processing Time – Whois Query | 95% within 1500 ms |
| Processing Time - Nameserver Resolution | 95% within 1500 ms |
| Update Frequency – Nameserver | 95% within 15 minutes |
| Update Frequency - Whois | 95% within 15 minutes |



Registry 101: Administrative

Roland Laplante
Afilias, Ltd
Cairo 5 November 2008



Administration

- Purpose: Control of the business
- ICANN compliance
- Financial
- Operations
- Legal



ICANN

- Approval process
- Accreditation
 - # of registrars/timing
- Contracts
- Compliance
 - Equivalent access—despite load
 - Registry-sensitive information
 - OCI (Organizational Conflict of Interest)



ICANN

- Reporting service
- Report and pay



Afilias Limited Monthly Operator Report – November 2007

Section 2 – Service Level Agreement Performance – November 2007

The following table compares the SLA requirements with Actual Performance for the reporting month. As required by the ICANN/Afilias Limited Agreement, Afilias Limited is committed to provide service levels as outlined in Appendix 7 of the agreement and to comply with the requirements of the SLA Appendix 10 of the agreement. The SLA is incorporated into the Afilias Registry Registrar Agreement that is executed with all operational registrars.

| Component/Service | Availability | | Performance | |
|---|---|--------------|---------------------|------------------------|
| | Required | Actual | Required | Actual |
| DNS | | | | |
| AXFR/IXFR Updates | Unplanned 300 minutes Planned 480 minutes ⁽¹⁾ | None None | < 5 minutes | 100% < 5 minutes |
| Resolution of .info domains, each name-server | Unplanned 20 seconds Planned 480 minutes ⁽¹⁾ | None None | < 300 milliseconds | 15 milliseconds (Avg.) |
| WHOIS | | | | |
| Singular query/response | Unplanned 240 minutes Planned 480 minutes ⁽¹⁾ | None None | < 800 milliseconds | 8 milliseconds (Avg.) |
| BILLING | | | | |
| Account balance check/modify | Unplanned 240 minutes Planned 480 minutes ⁽¹⁾ | None None | No requirement | No requirement |
| Manual balance adjust | Unplanned 300 minutes Planned 480 minutes | None None | No requirement | No requirement |
| ADMIN | | | | |
| Update Registrar profile | Unplanned 300 minutes Planned 480 minutes ⁽¹⁾ | None None | No requirement | No requirement |
| Update Registrar status | Unplanned 300 minutes Planned 480 minutes ⁽¹⁾ | None None | No requirement | No requirement |
| PROTOCOL INTERFACE | | | | |
| Write Operations | Unplanned 240 minutes Planned 480 minutes ⁽¹⁾ | None None | < 800 milliseconds | 36 milliseconds (Avg.) |
| Transfer | Unplanned 240 minutes Planned 480 minutes ⁽¹⁾ | None None | < 1600 milliseconds | 10 milliseconds (Avg.) |
| Query Operations | Unplanned 240 minutes Planned 480 minutes ⁽¹⁾ | None None | < 400 milliseconds | 3 milliseconds (Avg.) |

⁽¹⁾ No more than 240 minutes per week. In addition, each minute of Unplanned Outage Time subtracts from the available Monthly Planned outage Time up to four (4) hours.

ICANN

- Escrow
- New Products process
 - “Funnel”
- New policies / requirements
- Registrar deaccreditations, bulk transfers



Administrating Registrars

■ Setup

- Contacts
- Authorized signers
- OT&E
- Accounting Funding
- Parent/Child relationships
- Insurance

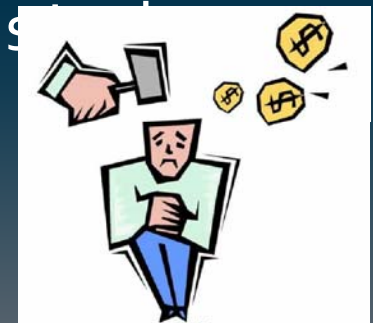
■ Ongoing

- Reports on financial and other matters
 - Daily, weekly, monthly
 - Transactions: Sales, renewals, transfers, deletes
 - Future: expirations, RGH, low balance alerts
- Questions
- Maintenance of current contacts
- Sales



Financial

- Registrar ongoing:
 - Registrar account funding
 - Credit
 - Emergency credit
- Internal
 - Currency flexibility and FX risk
 - Registrar account crediting (the check is in the mail)
 - Deferred Revenue Accounting
 - Research/access to data
 - Analysis & forecasting



Legal

- Registrar Contracts
 - Accreditation and Access
 - Enforcement
 - Abuse
 - Contacts: who can bind
- Launch
 - Sunrise (A, B, C...)
 - Competition for names/fairness
 - Land Rush
 - Competition for names/fairness
 - Disputes
 - Trademarks: legal action against the registry
- Ongoing
 - Law enforcement interactions



Legal

- WHOIS: complying with different laws in different jurisdictions
 - English/Arabic/French?
 - Proxy registrations
- Policy
- Domain abuse
 - Fast flux
 - Phishing
 - Spam
 - Fraud
 - Potential liability of registries



Operations

- Must keep up with new technology
 - RFCs, DNSSEC, IDNs
 - Upgrade hardware and software
- Tech Support
 - Large TLD = Hundreds of calls / e-mails per week
- NOC monitoring
- Web sites (for registrars and customers)



Summary

- Administrative services are important and require real resources
 - ICANN
 - Financial
 - Legal
 - Operations



Speaker: Roland LaPlante
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Afilias Limited

Consensus Policies and New Services

David W. Maher
Public Interest Registry (.ORG)
Cairo 5 November 2008



The Goal

- Policy- & decision-making processes that are:
 - Defined
 - Bottom-up
 - Consensus-based
 - Not legislative
 - Take account of the differences between sponsored and unsponsored registries



The Means

- New Services (“funnel requests”)- the Registry Services Evaluation Policy
- Consensus Policies –the Policy Development Process (PDP)



Registry Services Evaluation Policy

“Funnel Requests”

- Created by ICANN in 2006
 - <http://www.icann.org/en/registries/rsep/rsep.html>
- Preliminary Determination – 15 days – if no issues - approved
- Competition Issues?
- Security and Stability Issues?
 - Technical Evaluation Panel (RSTEP)
- ICANN Board vote



How does the PDP work?

Getting Started (1)

- Based on ICANN Bylaws
 - <http://www.icann.org/general/archive-bylaws/bylaws-26juno3.htm#AnnexA>
- Who can raise an issue?
 - ICANN Board, GNSO Council, Advisory Committee
- The Issues Report
 - Scope?



How does the PDP work?

Consensus-Based Process (2)

- 33% of GNSO Council starts the process
- Public Notice
- Flexible procedures – task force or constituency comments or other options
- Flexible results – policies can address differences in TLDs or other affected groups
- Initial Report – more public comment
- Final Report (possible outside advisors)



How does the PDP work?

Decision Time (3)

- Supermajority vote of GNSO Council requires ICANN Board to adopt new Consensus Policy
- UNLESS – More than 66% ICANN Board finds it “not in the best interests” of ICANN or the ICANN community



Consensus Policy “Concerns”

- There are some things a Consensus Policy won't do
 - the tension between contract terms and Consensus Policies
 - The “Picket Fence”
- The voting issue -
 - ““Consensus` decisions reached may not be very meaningful in cases where opposing blocs cannot agree on an acceptable compromise.” LSE 4.31



Reaching the Goal

- Consistent application of the PDP and new services procedures by ICANN



Panel 2: Registry Issues

Joe Waldron, VeriSign
Michael Young, Afiliias
Jeff Neuman, NeuStar
Jim Reid, Telnice
David Maher, PIR



IDN CONSIDERATIONS FOR A REGISTRY

- Background of IDNs
- IDN Considerations
 - Implementation
 - Maintenance
- Use of IDNs
- IDN TLDs



DNSSEC CONSIDERATIONS FOR A REGISTRY

- **DNSSEC is a DNS lifecycle product**
 - Registries
 - Registrars and Downstream DNS Operators
 - Application Providers (DNSSEC Aware)
- **Where the lifecycle begins:**
 - Signing the root?
 - Trust Anchors
- **Who Benefits?**
 - End Users
 - Security Products and Secured Product Providers
 - New products leveraging DNSSEC (secure email)
- **Impact to Registries**
 - Infrastructure
 - Training for Registrars
 - Ongoing operational support



DNS ABUSE CONSIDERATIONS FOR A REGISTRY

- **Not Contractually required**
 - Solely for Benefit of Internet Community
- **Phishing / Fast Flux/Malware**
 - Investigation
 - Coordination with Registrars
 - Takedowns
- **Coordination**
 - Registries / RISG
 - Law Enforcement
 - CERTS / Security Organizations
- **Content Issues – (outside Registry Control)**
 - Infringement
 - Gambling / Pornography
 - Pharmaceuticals
 - Spam



WHOIS CONSIDERATIONS FOR A REGISTRY

➤ THE PROBLEM

- Aligning WHOIS with Data Protection Laws
- ICANN's TLD contracts require all registrant contact data to be published in whois
- This is incompatible with UK/EU Data Protection Law
- Individuals must have an opt-out
- Solution: a form of tiered access
- Web-based system
- Permits pre-registered "authorised" parties to get access to any contact data in registry database



WHOIS CONSIDERATIONS FOR A REGISTRY

(2)

- Operational Issues
 - How many entities will register to use this special access system?
 - How frequently will they use it?
 - What if they abuse/game the system?
 - What impact will this have on the quality of registrant contact data?
 - How much is this system going to cost?
 - Are the benefits really worth it?



NEWTLD CONSIDERATIONS CONSITUENCY

- **DNSSEC is a DNS lifecycle product**
 - Registries
 - Registrars and Downstream DNS Operators
 - Application Providers (DNSSEC Aware)
- **Where the lifecycle begins:**
 - Signing the root?
 - Trust Anchors
- **Who Benefits?**
 - End Users
 - Security Products and Secured Product Providers
 - New products leveraging DNSSEC (secure email)
- **Impact to Registries**
 - Infrastructure
 - Training for Registrars
 - Ongoing operational support



Q&A

gTLD Registries Constituency

David Maher, Chair
Jeff Neuman, Alternate Chair

Chuck Gomes, GNSO Council Member
Edmon Chung, GNSO Council Member
Jordi Iparraquirre, GNSO Council Member

