DNSSEC Challenges for Registrars

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DNSSEC ROLLOUT STATUS

- Approximately ¼ of all TLDs are now signed

- Root - http://stats.research.icann.org/dns/tld_report/

Total TLDs	310
Signed TLDs	74
(gTLDs)	11
(ccTLDs)	50
(IANA IDN Testbed)	13
TLDs with Trust Anchor in Root	69

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Verisign's DNSSEC Support

Tools to support registrar's DNSSEC programs:

Registrar Engineering

- Educational and technical webinars
- EPP Software Developer Kit
- DNSSEC Tool Guide
- Verisign's Downloadable Toolkit
- DNSSEC Transfer white paper
- Operational Testing & Evaluation environment (OT&E)

Business Support

- Educational webinars
- SME videos
- DNSSEC Data Sheets
- 3rd party research studies
- Verisign DNSSEC Signing Service
- DNSSEC Analyzer
- Interoperability Lab
- One on one Registrar sessions

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REGISTRAR RESOURCES

- **Portals for Registrars**
- Verisign DNSSEC Resource Center - verisign.com/dnssec
- Verisign Customer Center (VCC)– DNSSEC Forum

SECURE YOUR INFRASTRUCTURE WITH DNSSEC

Verisign provides critical infrastructure services that allow users to more securely and reliably use the Internet. Domain Name System Security Extension (DNSSEC) can help strengthen trust in the Internet by helping to protect users from redirection to fraudulent web sites and unintended addresses.

Click on the icons below to learn more about how DNSSEC affects you, and learn the role it plays in our strategy to authenticate the Internet from end to end.

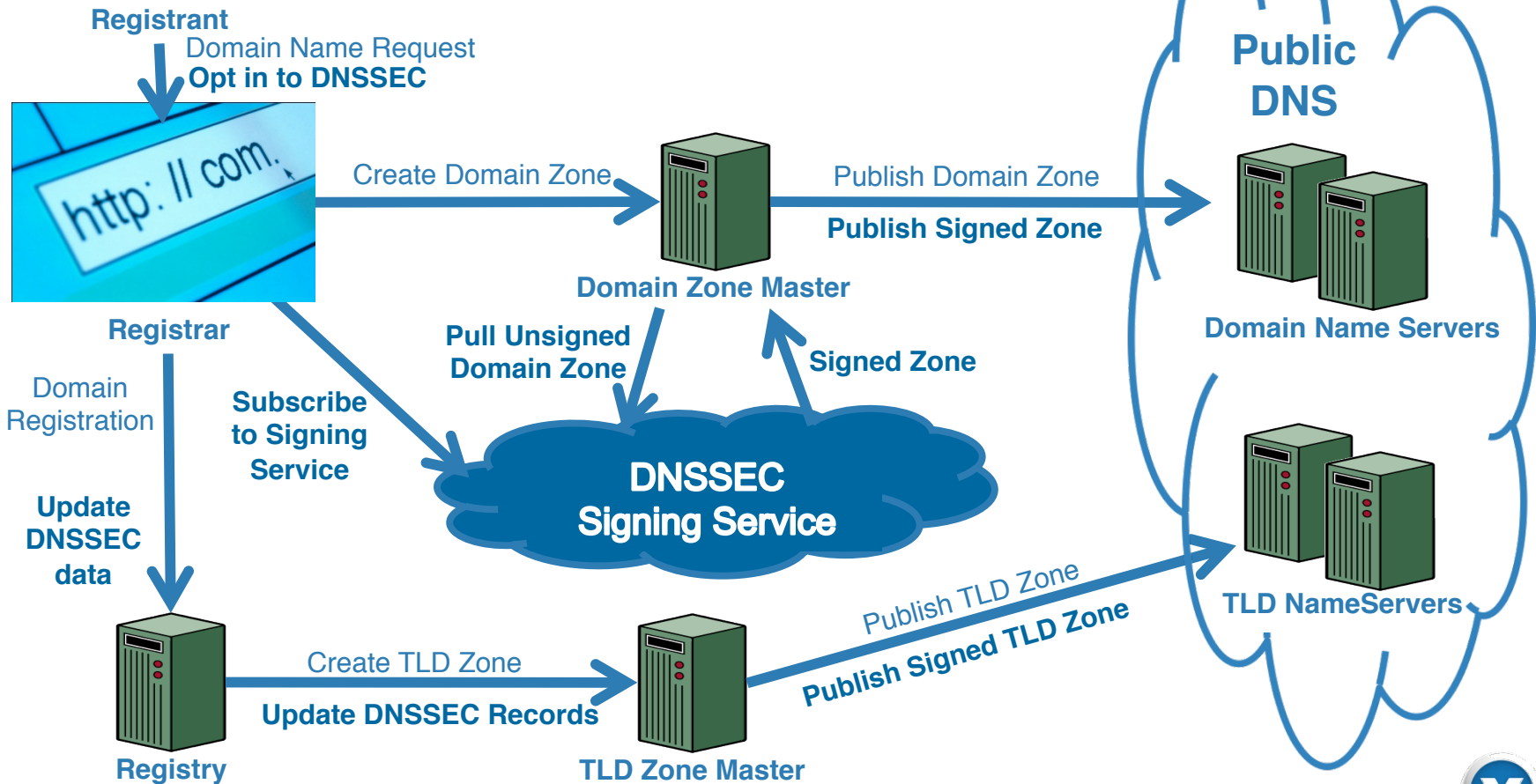| HARDWARE VENDORS	REGISTRARS	WEBSITE OPERATORS
ISPs	POLICYMAKERS	SOFTWARE DEVELOPERS

The Internet is an increasingly critical infrastructure for the effective functioning of our government, economy, society, and national security. Verisign supports DNSSEC as a way to increase trust in the Internet. The successful deployment of DNSSEC requires the support of the entire Internet community and a careful, methodical approach. Verisign is working alongside other members of the Internet community to facilitate a smooth, widely effective implementation of DNSSEC.

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DNSSEC Signing Service

Registrant

Domain Name Request
Opt in to DNSSEC

Registrar

Create Domain Zone

Publish Domain Zone
Publish Signed Zone

Domain Zone Master

Public DNS

Domain Name Servers

Domain Registration

Subscribe to Signing Service

Pull Unsigned Domain Zone

Signed Zone

Update DNSSEC data

DNSSEC Signing Service

Registry

Create TLD Zone
Update DNSSEC Records

TLD Zone Master

Publish TLD Zone
Publish Signed TLD Zone

TLD NameServers

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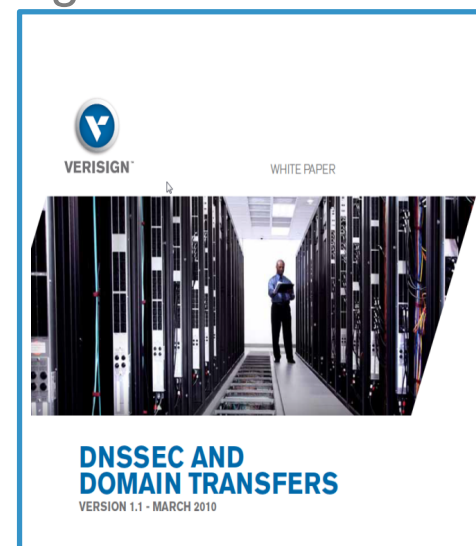# DNSSEC Analyzer

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com	✅ Found 2 DNSKEY records for com com. 86400 IN DNSKEY 257 3 8 (AQPDzldNmMvZFX4NcNJ0uEnKDg7tmv/F3MyQ R0lpBmVcNcsIszxNFxsBfKNW9JYCYqpik836 6LE7VbIcNRzfp2h9O vWEmu/6od+2boggPoiEfGNyvNPaSI7FOIroD snw/taggzHRX1Z7SOiOiPWPNiwSUyWOZ79Vm cQ1GLkC6N1YvG3HwYmynQv6oFwGv/KELSw7Z SdrbTQ0HXvZ 7O9ioVNc0+7ASbqmZN7Z98EGU/Qh2K/BgUe8 Hs0XVcdPKrtyYnoQHd2ynKPcMM1TEih2/2HD HjRPJ2aywIpKNnv4oPo/) ; Key ID = 30909 com. 86400 IN DNSKEY 256 3 8 (AQPCEt+JoihFJuN6AkcVgeK/+DS4ERsI7eqk ZQfEvILjrg+YBacnAVMbftPLAdn4A7hOrO1P ulW7BtBPgXoK7Sfa+ eg7hguZ3oix2pK0QrI0UvbPpbDKPiBMzxwIx PZrcgZ5KEKKB2KSlmawc9+4p7Jq6GQ==) ; Key ID = 36713 DNSKEY=30909/SEP is now in the chain-of-trust ✅ DS=30909/SHA256 verifies DNSKEY=30909/SEP ✅ Found 1 RRSIGs over DNSKEY RRset com. 86400 IN RRSIG DNSKEY 8 1 86400 20110613182533 (20110606182033 30909 com. UUDTlm061wXheu9CsvqJ3DbwOHUblzL3o7K/pnxZ1o wJB47Cm7hAVGL5JTykOWYUx7MrkGeRh1cWcHahoxq1TUx yAENz47I2xlp/A8bB4VBGC5s337lAtR4BhaZcVUXBahru j0pEL41wzSFpOFDmcjjcDD9ua9vzlc gM2KQO/qFWSjbBTi6j5VMv9hjTVpVkamu8Y31XDYby+uu iWSszobv+ppqMVvJgKSJCickEspBTFzp4wygRDhUkDEVX otAjpJKkQC5fRPWCy2+89SZmkOldvR nyOjGL35r4cfFt2KMfKSGyPbEJw==) ✅ RRSIG=30909 and DNSKEY=30909/SEP verifies the DNSKEY RRset DNSKEY=36713 is now in the chain-of-trust Found child zone verisigninc.com
	Checking DS between com and verisigninc.com ✅ Found 1 DS records for verisigninc.com in the com zone ✅ Found 1 RRSIGs over DS RRset verisigninc.com. 86400 IN RRSIG DS 8 2 86400 20110615041556 (20110608030556 36713 com. Of1s4bLrK9XGIAKzAhnwJsxMfeMCtR2mEp sBetLALuwpmEhSIOORDkpJTPpagyI2HG5g2+T1VEUElMp ysoWsV/y0xtt4GzUQbfiaaG2TbP5W4vNhI8MrbncgnN87 4SF1Jp4cCoXw0ObAVNn3lHD7/HjSQY ✅ RRSIG=36713 and DNSKEY=36713 verifies the DS RRset DS=24570/SHA256 is now in the chain-of-trust verisigninc.com. 86400 IN DS 24570 8 2 8512f0737feeb499a3f5ae6e24af3dd6274c4d06d505aa0d6a55301a18b1b085 ; xocec-dosol-fizy zazut-kynug-sofib-kahib-hepab-typuh-hesec-pekar-cusum-hexox ✅ Found 2 DNSKEY records for verisigninc.com verisigninc.com. 3600 IN DNSKEY 257 3 8 (AQOdUQMqymP7EUoxkqOx0b+fBaf3hC8VqORI 0WYW7O+vKRyMgIONtt1kDA3iOwSRK8R0g2MI Ct8gmk+zfU8WrlnoudI5o+hRPLFulJ4Y4tpc TgZyEymakEbmgarPuRaE31ALGq1uDXmBKm6X URePrf+HS9pGKRPCnMA9wkm88aQIWVCKHWoP fyiLG0WWI+2Y jlABV9RD/RP9wencbp43kigv9xxixq0FC2HG epHEhsOrGCYsGImU9b99+u2sqQJtzLSsswiV g5DIrQXpyFtPdzqrONuPQ5nBa/+ZnhuZRS3t ReVWfu1XzHr 24570 verisigninc.com. 3600 IN DNSKEY 256 3 8 (AQPJLo4zBBLc0FxtrHTEyYGYmgZFSTEAWRm/ Gabxn1z8ekykZQtDR9Zb+crD5+3flz8SKGzC niKNObuKYONuswoOI+C+WNF2sf/Myd2RRh1s Krv0UvEQ0cRaEaD5T986nSeTpvXfO+dQko3T D2IB55eYFW1EFFMUpBnCO9KuueypcQ==) ; Key ID = 22 DNSKEY=24570/SEP is now in the chain-of-trust
	✅ RRSIG=2273 and DNSKEY=2273 verifies the A RRset

Move your mouse over any ❌ or ⚠ symbols for remediation hints.

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Verisign Publications: DNSSEC Transfers

- ## DNSSEC and Domain Transfers (White Paper)
  - What considerations do registrars need to make?
  - How will registrars provide guidance to customers?

- ## Discusses the following use cases:
  - Domain-sponsorship change with DNS-hosting transfer
  - DNS-hosting transfer without domain-sponsorship change
  - Domain-sponsorship change without DNS-hosting transfer

- ## Practical advice, recommendations for:
  - Registrars, DNS operators, registries

- ## Available at
  - http://www.verisigninc.com/assets/whitepaper-dnssec-transfers.pdf

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WHITE PAPER

DNSSEC AND DOMAIN TRANSFERS
VERSION 1.1 - MARCH 2010

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Thank You