Mail Service Quality Support: CSV and BATV

APCAUCE/APRICOT – Kyoto 2005

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Certified Server Validation (CSV): Assess Peer MTA Operation

1. Does a Domain Name Manager authorize this client MTA to be sending email?

2. Does an independent accreditation service consider domain manager's practices to be adequate, for controlling email abuse?
CSV Process

Sending MTA Client

MTA

→ SMTP HELO client.example.com

→ IP Source Address

1. Identify

Receiving MTA Server

MTA

→ SRV _client._smtp. client.example.com

← Authorized / Not Authorized as MTA

[ AddInfo (or A): IP Address valid ]

[ AddInfo (PTR): accred1.example1.net accred2.example2.net ]

3. Authorize

DNS

→ A) Consult private lists, or

→ B) SRV

client.example.com.accred1.example1.net

← Nice / Nasty

4. Accredit

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CSV Usage

- **Sending MTA Network Operator**
  - Register authorized MTAs in CSV SRV DNS
  - [Register “explicit” record, for default “not authorized”]

- **Sending MTA Client**
  - Use EHLO authorized domain name

- **Receiving MTA Server**
  - Query CSA SRV for Client domain name
  - [Query CSA SRV for Client domain name ‘explicit’ record ]
  - Query private table or public DNA PTR record
Bounce Address Tag Validation (BATV):
Detecting Forged 2821.MailFrom

- **Digital signature of bounce address**
  - Key is based on domain portion of address

- **Multiple schemes permitted**
  - First one is simple and private to the originating system

- **Meta-syntax on LHS (local-part) for parameters**
  - Permits finding mailbox without understanding signature, but entire string (with meta-syntax) must be used as bounce
  - Hard limit of 64 bytes for total of local-part

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mailbox@example.com  →  batv=mailbox/scheme/parameters@example.com
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Bounce Address Evaluation
Venues

Sign MailFrom

MTA

MDA

Bounce Receipt

Bounce Generation

Intermediate Relay

Relay

MailFrom

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First Scheme: \textit{PSB0}

- Private Signed Bounce, version zero
  - Detect invalid received bounces
  - Interpreted \textit{only} by issuer
  - Limited replay protection

\[ \text{sigsig-val} = \text{key-id, encrypt ( bounce address, timestamp, random-string )} \]
**Approach for “Public Key” Schemes**

- Allows interpretation by Relays earlier in the sequence
  - Requires PK infrastructure
  - Will be based on a content-signing standard, *when available*
  - Link to content permits strong replay protection

- **Tune computation to MailFrom’s limitations**
  - E.g., hash the signature into a short string.
To Follow Up...

鹠 CSV and BATV

✦ Mailing list and specifications: mipassoc.org/clear
✦ Certified Server Validation (CSV): draft-ietf-marid-csv-intro-02
  - Client SMTP Authorization (CSA): draft-ietf-marid-csv-csa-02
  - Domain Name Accreditation (DNA): draft-ietf-marid-csv-dna-02
✦ Bounce Address Tag Validation (BATV): draft-levine-mass-batv-00

_latency

✦ Email architecture

✦ bbiw.net/specifications/draft-crocker-email-arch-03.html
✦ Internet Mail Architecture: draft-crocker-email-arch-03