



# Advanced Mail



# Greylisting

- <http://www.greylisting.org>
- mail/postgrey
  - /usr/local/etc/postfix/postgrey\_whitelist\_clients
  - /usr/local/etc/postfix/postgrey\_whitelist\_recipients

# Sender Policy Framework (SPF)

- <http://www.openspf.org>
- RFC 4408
- `cd /usr/ports/mail && make search key=spf`

# SPF in action

```
From lwhsu.tw@gmail.com Mon May 11 02:09:21 2009
Return-Path: lwhsu.tw@gmail.com
X-Original-To: lwhsu@lwhsu.org
Delivered-To: lwhsu@lwhsu.org
Received: from an-out-0708.google.com (an-out-0708.google.com [209.85.132.243])
    by knight.lwhsu.ckefgisc.org (Postfix) with ESMTP id D832B11431
    for <lwhsu@lwhsu.org>; Mon, 11 May 2009 02:09:20 +0800 (CST)
Received: by an-out-0708.google.com with SMTP id d14so1324869and.41
    for <lwhsu@lwhsu.org>; Sun, 10 May 2009 11:09:19 -0700 (PDT)
Sender: lwhsu.tw@gmail.com
Received: by 10.100.248.4 with SMTP id v4mr14373811anh.121.1241978954295; Sun,
    10 May 2009 11:09:14 -0700 (PDT)
Date: Mon, 11 May 2009 02:09:13 +0800
Message-ID: <ef417ae30905101109j5c7b27bcy70a5bcf6d58092ab@mail.gmail.com>
Subject: test SPF
From: Li-Wen Hsu <lwhsu@cs.nctu.edu.tw>
To: lwhsu@lwhsu.org
```

# SPF in action

No. ↓	Time	Source	Destination	Protocol	Info
164	9.721561	209.85.132.243	140.113.24.67	TCP	50992 > smtp [SYN] Seq=0 win=5720 Len=0 MSS=143
165	9.721599	140.113.24.67	209.85.132.243	TCP	smtp > 50992 [SYN, ACK] Seq=0 Ack=1 win=65535 L
168	9.915742	209.85.132.243	140.113.24.67	TCP	50992 > smtp [ACK] Seq=1 Ack=1 win=5760 Len=0 T
181	9.978756	140.113.24.67	209.85.132.243	SMTP	S: 220 knight.lwhsu.ckefgisc.org ESMTP CKEFGISC
188	10.173093	209.85.132.243	140.113.24.67	TCP	50992 > smtp [ACK] Seq=1 Ack=75 win=5760 Len=0
189	10.173726	209.85.132.243	140.113.24.67	SMTP	C: EHLO an-out-0708.google.com
190	10.173886	140.113.24.67	209.85.132.243	SMTP	S: 250-knight.lwhsu.ckefgisc.org   250-PIPELINI
217	10.368266	209.85.132.243	140.113.24.67	SMTP	C: MAIL FROM:<lwhsu.tw@gmail.com>
218	10.383113	140.113.24.67	209.85.132.243	SMTP	S: 250 2.1.0 ok
220	10.577302	209.85.132.243	140.113.24.67	SMTP	C: RCPT TO:<lwhsu@lwhsu.org>
224	10.594985	140.113.24.67	209.85.132.243	SMTP	S: 250 2.1.5 ok
243	10.789034	209.85.132.243	140.113.24.67	SMTP	C: DATA
244	10.789473	140.113.24.67	209.85.132.243	SMTP	S: 354 End data with <CR><LF>.<CR><LF>
249	10.984196	209.85.132.243	140.113.24.67	SMTP	C: DATA fragment, 1418 bytes
250	10.984216	209.85.132.243	140.113.24.67	IMF	subject: test SPF,
251	10.984292	140.113.24.67	209.85.132.243	TCP	smtp > 50992 [ACK] Seq=396 Ack=1750 win=64990 L
252	10.986837	140.113.24.67	209.85.132.243	SMTP	S: 250 2.0.0 Ok: queued as D832B11431
269	11.221352	209.85.132.243	140.113.24.67	TCP	50992 > smtp [ACK] Seq=1750 Ack=432 win=6848 Le

# SPF Syntax

## ○ Mechanisms

- + Pass
- - Fail
- ~ SoftFail
- ? Neutral

- Mechanisms are evaluated in order. If no mechanism or modifier matches, the default result is "Neutral"

# SFP evaluation results

Result	Explanation	Intended action
Pass	The SPF record designates the host to be allowed to send	Accept
Fail	The SPF record has designated the host as NOT being allowed to send	Reject
SoftFail	The SPF record has designated the host as NOT being allowed to send but is in transition	Accept but mark
Neutral	The SPF record specifies explicitly that nothing can be said about validity	Accept
None	The domain does not have an SPF record or the SPF record does not evaluate to a result	Accept
PermError	A permanent error has occurred (eg. Badly formatted SPF record)	Unspecified
TempError	A transient error has occurred	Accept or reject

# SPF record syntax (Mechanisms)

- all
  - Always matches
  - Usually at the end of the SPF record
- ip4 (**NOT ipv4**)
  - ip4: <ip4-address>
  - ip4: <ip4-network>/<prefix-length>
- Ip6 (**NOT ipv6**)
  - ip6:<ip6-address>
  - ip6:<ip6-network>/<prefix-length>
- a
  - a
  - a/<prefix-length>
  - a:<domain>
  - a:<domain>/<prefix-length>



# SPF record syntax (Mechanisms)

- mx
  - mx
  - mx/<prefix-length>
  - mx:<domain>
  - mx:<domain>/<prefix-length>
- ptr
  - ptr
  - ptr:<domain>
- exists
  - exists:<domain>
- include
  - include:<domain>
  - Warning: If the domain does not have a valid SPF record, the result is a **permanent error**. Some mail receivers will reject based on a **PermError**.

# SPF record syntax (Modifiers)

## ○ redirect

- redirect=<doamin>
- The SPF record for domain replace the current record. The macro-expanded domain is also substituted for the current-domain in those look-ups.

## ○ exp

- exp=<doamin>
- If an SMTP receiver rejects a message, it can include an explanation. An SPF publisher can specify the explanation string that senders see. This way, an ISP can direct nonconforming users to a web page that provides further instructions about how to configure SASL.
- The domain is expanded; a TXT lookup is performed. The result of the TXT query is then macro-expanded and shown to the sender. Other macros can be used to provide an customized explanation.

- On `bsd2.cs.nctu.edu.tw`
- From: `lwhsu@cs.nctu.edu.tw`
- To: `lwhsu.tw@gmail.com`

Delivered-To: lwhsu.tw@gmail.com  
Received: by 10.90.56.12 with SMTP id e12cs464421aga;  
Sun, 10 May 2009 12:12:00 -0700 (PDT)  
Received: by 10.210.91.17 with SMTP id o17mr7881766ebb.3.1241982719273;  
Sun, 10 May 2009 12:11:59 -0700 (PDT)  
Return-Path: <lwhsu@cs.nctu.edu.tw>  
Received: from csmailgate.cs.nctu.edu.tw (csmailgate2.cs.nctu.edu.tw  
[140.113.235.117])  
by mx.google.com with ESMTP id 10si4213172eyz.41.2009.05.10.12.11.58;  
Sun, 10 May 2009 12:11:59 -0700 (PDT)  
Received-SPF: pass (google.com: best guess record for domain of  
lwhsu@cs.nctu.edu.tw designates 140.113.235.117 as permitted sender) client-  
ip=140.113.235.117;  
Authentication-Results: mx.google.com; spf=pass (google.com: best guess record for  
domain of lwhsu@cs.nctu.edu.tw designates 140.113.235.117 as permitted sender)  
smtp.mail=lwhsu@cs.nctu.edu.tw  
Received: from bsd2.cs.nctu.edu.tw (bsd2 [140.113.235.132])  
by csmailgate.cs.nctu.edu.tw (Postfix) with ESMTP id 189DA3F65E  
for <lwhsu.tw@gmail.com>; Mon, 11 May 2009 03:11:57 +0800 (CST)  
Received: (from lwhsu@localhost)  
by bsd2.cs.nctu.edu.tw (8.14.3/8.14.2/Submit) id n4AJBuTM000652  
for lwhsu.tw@gmail.com; Mon, 11 May 2009 03:11:56 +0800 (CST)  
(envelope-from lwhsu)  
Date: Mon, 11 May 2009 03:11:56 +0800  
From: Li-Wen Hsu <lwhsu@cs.nctu.edu.tw>  
To: lwhsu.tw@gmail.com  
Subject: test if SPF record works

- On gmail (lwhsu.tw's account)
- From: lwhsu@cs.nctu.edu.tw
- To: lwhsu@lwhsu.org
  
- On knight.lwhsu.org (lwhsu.org's mx)
- ~lwhsu/.forward:
  - liwenhsu@gmail.com

Delivered-To: liwenhsu@gmail.com

Received: by 10.229.81.4 with SMTP id v4cs221969qck;  
Sun, 10 May 2009 11:09:26 -0700 (PDT)

Received: by 10.216.2.84 with SMTP id 62mr2907141wee.217.1241978964147;  
Sun, 10 May 2009 11:09:24 -0700 (PDT)

Return-Path: <lwhsu.tw@gmail.com>

Received: from knight.lwhsu.ckefgisc.org (lwhsusvr.cs.nctu.edu.tw [140.113.24.67])  
by mx.google.com with ESMTP id 24si6143118eyx.13.2009.05.10.11.09.22;  
Sun, 10 May 2009 11:09:23 -0700 (PDT)

Received-SPF: neutral (google.com: 140.113.24.67 is neither permitted nor denied  
by domain of lwhsu.tw@gmail.com) client-ip=140.113.24.67;

Authentication-Results: mx.google.com; spf=neutral (google.com: 140.113.24.67 is  
neither permitted nor denied by domain of lwhsu.tw@gmail.com)

smtp.mail=lwhsu.tw@gmail.com;

Received: by knight.lwhsu.ckefgisc.org (Postfix)  
id 47F571143E; Mon, 11 May 2009 02:09:21 +0800 (CST)

Delivered-To: lwhsu@lwhsu.org

Received: from an-out-0708.google.com (an-out-0708.google.com [209.85.132.243])  
by knight.lwhsu.ckefgisc.org (Postfix) with ESMTP id D832B11431  
for <lwhsu@lwhsu.org>; Mon, 11 May 2009 02:09:20 +0800 (CST)

Received: by an-out-0708.google.com with SMTP id d14so1324869and.41  
for <lwhsu@lwhsu.org>; Sun, 10 May 2009 11:09:19 -0700 (PDT)

Sender: lwhsu.tw@gmail.com

Received: by 10.100.248.4 with SMTP id v4mr14373811anh.121.1241978954295; Sun,  
10 May 2009 11:09:14 -0700 (PDT)

Date: Mon, 11 May 2009 02:09:13 +0800

Message-ID: <ef417ae30905101109j5c7b27bcy70a5bcf6d58092ab@mail.gmail.com>

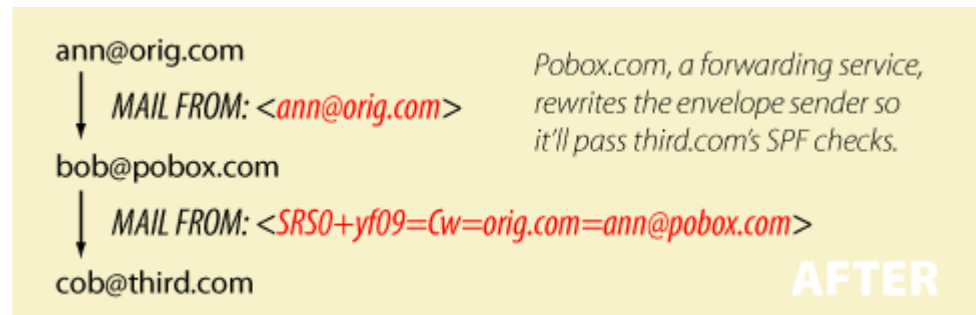
Subject: test SPF

From: Li-Wen Hsu <lwhsu@cs.nctu.edu.tw>

To: lwhsu@lwhsu.org

# SPF and Forwarding

- Does SPF break forwarding?
  - Yes, but only if the receiver checks SPF without understanding their mail receiving architecture. If receivers are going to check SPF, they should whitelist forwarders that do not rewrite the sender address from SPF checks.
  - <http://www.openspf.org/FAQ/Forwarding>
- SRS: Sender Rewriting Scheme
  - <http://www.openspf.org/SRS>



- On knight.lwhsu.org
- From: lwhsu@cs.nctu.edu.tw
- To: lwhsu.tw@gmail.com



No. ↓	Time	Source	Destination	Protocol	Info
99	3.066274	140.113.24.67	74.125.79.27	TCP	63057 > smtp [SYN] Seq=0 win=65535 Len=0 MSS=1460
110	3.349764	74.125.79.27	140.113.24.67	TCP	smtp > 63057 [SYN, ACK] Seq=0 Ack=1 win=5672 Len=0
111	3.349810	140.113.24.67	74.125.79.27	TCP	63057 > smtp [ACK] Seq=1 Ack=1 win=66646 Len=0 T=0
125	3.635305	74.125.79.27	140.113.24.67	SMTP	S: 220 mx.google.com ESMTP 28si6279611eye.6
126	3.635405	140.113.24.67	74.125.79.27	SMTP	C: EHLO knight.lwhsu.ckefgisc.org
130	3.919017	74.125.79.27	140.113.24.67	TCP	smtp > 63057 [ACK] Seq=43 Ack=33 win=5696 Len=0
131	3.925390	74.125.79.27	140.113.24.67	SMTP	S: 250-mx.google.com at your service, [140.113.24.67]
132	3.925536	140.113.24.67	74.125.79.27	SMTP	C: MAIL FROM:<lwhsu@lwhsu.ckefgisc.org> SIZE=595
137	4.210340	74.125.79.27	140.113.24.67	SMTP	S: 250 2.1.0 OK 28si6279611eye.6
138	4.310152	140.113.24.67	74.125.79.27	TCP	63057 > smtp [ACK] Seq=130 Ack=200 win=66646 Len=0
146	4.555600	74.125.79.27	140.113.24.67	SMTP	S: 250 2.1.5 OK 28si6279611eye.6   354 Go ahead
147	4.555773	140.113.24.67	74.125.79.27	SMTP	C: .
149	4.879864	74.125.79.27	140.113.24.67	TCP	smtp > 63057 [ACK] Seq=263 Ack=734 win=6912 Len=0
154	5.171084	74.125.79.27	140.113.24.67	SMTP	S: 250 2.0.0 OK 1241983602 28si6279611eye.6   220
155	5.171161	74.125.79.27	140.113.24.67	TCP	smtp > 63057 [FIN, ACK] Seq=352 Ack=734 win=6912
156	5.171186	140.113.24.67	74.125.79.27	TCP	63057 > smtp [ACK] Seq=734 Ack=353 win=66646 Len=0
157	5.171357	140.113.24.67	74.125.79.27	TCP	63057 > smtp [FIN, ACK] Seq=734 Ack=353 win=66646
164	5.455379	74.125.79.27	140.113.24.67	TCP	smtp > 63057 [ACK] Seq=353 Ack=735 win=6912 Len=0

Delivered-To: lwhsu.tw@gmail.com

Received: by 10.90.56.12 with SMTP id e12cs465902aga;  
Sun, 10 May 2009 12:26:45 -0700 (PDT)

Received: by 10.210.18.8 with SMTP id 8mr3486644ebr.0.1241983602249;  
Sun, 10 May 2009 12:26:42 -0700 (PDT)

Return-Path: <lwhsu@lwhsu.ckefgisc.org>

Received: from knight.lwhsu.ckefgisc.org (lwhsusvr.cs.nctu.edu.tw [140.113.24.67])  
by mx.google.com with ESMTP id 28si6279611eye.6.2009.05.10.12.26.41;  
Sun, 10 May 2009 12:26:41 -0700 (PDT)

Received-SPF: neutral (google.com: 140.113.24.67 is neither permitted nor denied  
by best guess record for domain of lwhsu@lwhsu.ckefgisc.org) client-  
ip=140.113.24.67;

Authentication-Results: mx.google.com; spf=neutral (google.com: 140.113.24.67 is  
neither permitted nor denied by best guess record for domain of  
lwhsu@lwhsu.ckefgisc.org) smtp.mail=lwhsu@lwhsu.ckefgisc.org

Received: by knight.lwhsu.ckefgisc.org (Postfix, from userid 1001)  
id 444EF1143E; Mon, 11 May 2009 03:26:40 +0800 (CST)

Date: Mon, 11 May 2009 03:26:40 +0800

From: Li-Wen Hsu <lwhsu@cs.nctu.edu.tw>

To: lwhsu.tw@gmail.com

Subject: test cs.nctu.edu.tw SPF from external host

Message-ID: <20090510192640.GB87577@knight.lwhsu.ckefgisc.org>

```
csns:/etc/namedb/db -lwshsu- dig cs.nctu.edu.tw txt
```

```
;; ANSWER SECTION:
```

```
cs.nctu.edu.tw.          3600    IN      TXT     "v=spf1 a mx  
a:csmailgate.cs.nctu.edu.tw a:csmailgate2.cs.nctu.edu.t  
w a:csmail.cs.nctu.edu.tw a:csmail1.cs.nctu.edu.tw a:csmail2.cs.nctu.edu.tw  
a:www.cs.nctu.edu.tw a:csws1.cs.nctu.edu  
.tw a:csws2.cs.nctu.edu.tw ~all"
```

```
;; ANSWER SECTION:
```

```
csmx1.cs.nctu.edu.tw.  3600    IN      TXT     "v=spf1 a -all"
```

```
;; ANSWER SECTION:
```

```
csmx2.cs.nctu.edu.tw.  3600    IN      TXT     "v=spf1 a -all"
```

```
;; ANSWER SECTION:
```

```
csmx3.cs.nctu.edu.tw.  3600    IN      TXT     "v=spf1 a -all"
```

Delivered-To: lwhsu.tw@gmail.com  
Received: by 10.90.56.12 with SMTP id e12cs719147aga;  
Tue, 12 May 2009 00:49:39 -0700 (PDT)  
Received: by 10.224.2.85 with SMTP id 21mr5508548qai.262.1242114578996;  
Tue, 12 May 2009 00:49:38 -0700 (PDT)  
Return-Path: <lwhsu@freebsd.cs.nctu.edu.tw>  
Received: from FreeBSD.cs.nctu.edu.tw (FreeBSD.cs.nctu.edu.tw [140.113.17.209])  
by mx.google.com with ESMTP id 7si4128629qwf.35.2009.05.12.00.49.38;  
Tue, 12 May 2009 00:49:38 -0700 (PDT)  
Received-SPF: pass (google.com: best guess record for domain of  
lwhsu@freebsd.cs.nctu.edu.tw designates 140.113.17.209 as permitted sender)  
client-ip=140.113.17.209;  
Authentication-Results: mx.google.com; spf=pass (google.com: best guess record for  
domain of lwhsu@freebsd.cs.nctu.edu.tw designates 140.113.17.209 as permitted  
sender) smtp.mail=lwhsu@freebsd.cs.nctu.edu.tw  
Received: by FreeBSD.cs.nctu.edu.tw (Postfix, from userid 1058)  
id 6D98E61DBC; Tue, 12 May 2009 15:49:37 +0800 (CST)  
Date: Tue, 12 May 2009 15:49:37 +0800  
From: Li-Wen Hsu <lwhsu@FreeBSD.org>  
To: lwhsu.tw@gmail.com  
Subject: test tw.freebsd.org SPF

Delivered-To: lwhsu.tw@gmail.com  
Received: by 10.90.56.12 with SMTP id e12cs719801aga;  
Tue, 12 May 2009 00:56:27 -0700 (PDT)  
Received: by 10.224.74.84 with SMTP id t20mr5499756qaj.328.1242114987266;  
Tue, 12 May 2009 00:56:27 -0700 (PDT)  
Return-Path: <lwhsu@freebsd.cs.nctu.edu.tw>  
Received: from FreeBSD.cs.nctu.edu.tw (FreeBSD.cs.nctu.edu.tw [140.113.17.209])  
by mx.google.com with ESMTP id 5si4111810qwh.54.2009.05.12.00.56.26;  
Tue, 12 May 2009 00:56:27 -0700 (PDT)  
**Received-SPF: pass (google.com: domain of lwhsu@freebsd.cs.nctu.edu.tw designates  
140.113.17.209 as permitted sender) client-ip=140.113.17.209;**  
Authentication-Results: mx.google.com; spf=pass (google.com: domain of  
lwhsu@freebsd.cs.nctu.edu.tw designates 140.113.17.209 as permitted sender)  
smtp.mail=lwhsu@freebsd.cs.nctu.edu.tw  
Received: by FreeBSD.cs.nctu.edu.tw (Postfix, from userid 1058)  
id 78CD461DB0; Tue, 12 May 2009 15:56:25 +0800 (CST)  
Date: Tue, 12 May 2009 15:56:25 +0800  
From: Li-Wen Hsu <lwhsu@FreeBSD.org>  
To: lwhsu.tw@gmail.com  
Subject: test tw.freebsd.org SPF (2)

```
knight:~ -lwhsu- dig pixnet.net txt
```

```
;; ANSWER SECTION:
```

```
pixnet.net.          86400   IN      TXT     "v=spf1  
include:aspmx.googlemail.com ip4:60.199.247.0/24 ~all"
```

# DomainKeys and DKIM

- RFC 4870 Domain-Based Email Authentication Using Public Keys Advertised in the DNS (DomainKeys)
- RFC 2871 DomainKeys Identified Mail (DKIM) Signatures
- <http://www.dkim.org/>

# DKIM-Signature header

- v= Version
- a= Hash/signing algorithm
- q= Algorithm for getting public key
- d= Signing domain
- i= Signing identity
- s= Selector
- c= Canonicalization algorithm
- t= Signing time (seconds since 1/1/1970)
- x= Expiration time
- h= List of headers included in signature;  
dkim-signature is implied
- b= The signature itself
- bh= Body hash



# DOMAINKEYS IDENTIFIED MAIL (DKIM)

## D. Crocker

Brandenburg  
InternetWorking

dcrocker@bbiw.net

[mipassoc.org/mass](http://mipassoc.org/mass)

- Derived from Yahoo DomainKeys and Cisco Identified Internet Mail
  - Multi-vendor specification
  - IETF working group being formed
- Msg header authentication
    - DNS identifiers
    - Public keys in DNS
  - End-to-end
    - Between origin/receiver administrative domains.
    - Not path-based

# DKIM Goals

- Validate message content, itself
  - Not related to path
- Transparent to end users
  - No client User Agent upgrades *required*
  - But extensible to per-user signing
- Allow sender delegation
  - Outsourcing
- Low development, deployment, use costs
  - Avoid large PKI, new Internet services
  - No trusted third parties (except DNS)

# Technical High-points

- Signs body and selected parts of header
- Signature transmitted in DKIM-Signature header
- Public key stored in DNS
  - In `_domainkey` subdomain
  - New RR type, fall back to TXT
- Namespace divided using selectors
  - Allows multiple keys for aging, delegation, etc.
- Sender Signing Policy lookup for unsigned or improperly signed mail

# DKIM-Signature header

- Example:

```
DKIM-Signature: a=rsa-sha1; q=dns;  
d=example.com;  
i=user@eng.example.com;  
s=jun2005.eng; c=relaxed/simple;  
t=1117574938; x=1118006938;  
h=from:to:subject:date;  
b=dzdVyOfAKCdLXdJOc9G2q8LoXSIEniSb  
av+yuU4zGeeruD00lszZVoG4ZHRNiYzR
```

- DNS query will be made to:

**jun2005.eng.\_domainkey.example.com**

From lwhsu\_tw@yahoo.com.tw Mon May 11 17:25:45 2009

Return-Path: lwhsu\_tw@yahoo.com.tw

X-Original-To: lwhsu@lwhsu.org

Delivered-To: lwhsu@lwhsu.org

Received: from web73511.mail.tp2.yahoo.com (web73511.mail.tp2.yahoo.com [203.188.201.91])  
by knight.lwhsu.ckefgisc.org (Postfix) with SMTP id 835AA11431

for <lwhsu@lwhsu.org>; Mon, 11 May 2009 17:25:45 +0800 (CST)

Received: (qmail 76109 invoked by uid 60001); 11 May 2009 09:25:45 -0000

DKIM-Signature: v=1; a=rsa-sha256; c=relaxed/relaxed; d=yahoo.com.tw; s=s1024; t=1242033944;

bh=t3GnH+pN34KpMhLX59Eezm+9eCI68fU2hgid1Kscdrk=;

h=Message-ID:X-YMail-OSG:Received:X-Mailer:Date:From:Subject:To:MIME-Version:Content-Type:Content-

Transfer-Encoding;

b=emLg4QonGbbq3PhZIEoYfiQVDYMwCBBB6SAEW+RziBEhjxKS20UWmq5EpD1cxX+uz9MzJ4+fK4QRJZ0td0Y10c6Ce2J+V+C/RHnrjZ3PF8kAhjqv  
T1GT

TdohxivLGrMftglxFG0//M7ML/fcI4UJL+XP1xhJMBaHlHMGhE1sdGQ=

DomainKey-Signature:a=rsa-sha1; q=dns; c=noFWS;

s=s1024; d=yahoo.com.tw;

h=Message-ID:X-YMail-OSG:Received:X-Mailer:Date:From:Subject:To:MIME-Version:Content-Type:Content-

Transfer-Encoding;

b=DlAhpUGID5ozcL770zm5doCQsxHSWaYHULW2hWAb3heXwewHgAmq0+McEcSIplcB1JXTIBka7BR6HvbSPWX/XiMrVAjvb6zeRWiXSBWdtXImpQhj  
JiBd

zC8Y1BPCsdv2UwMgx0mR6i51BTil+GDWFIKSGm5ky/MzU+ZsdwIhlss=;

Message-ID: <993677.71467.qm@web73511.mail.tp2.yahoo.com>

X-YMail-OSG:

\_MD0YpoVM1kaHzmTWKmqS4IkJcirBLjIle9qnyYESBBHMwfBYq0yS3ixCQWp3HdwB5720zEZnyUNfM804Ko9cX2BTfMcpHREKoe8noEA1Ualvmfd8Q  
zdBS

qmFg.RgCpIGuK7pDBWUPjpAzm8QhzdonQV11M\_JdPaihhp67zpBtPhQqqyJTiyvKrd.JmxMA--

Received: from [140.113.17.182] by web73511.mail.tp2.yahoo.com via HTTP; Mon, 11 May 2009 17:25:44 CST

X-Mailer: YahooMailRC/1277.43 YahooMailWebService/0.7.289.1

Date: Mon, 11 May 2009 17:25:44 +0800 (CST)

From: "立文 許" <lwhsu\_tw@yahoo.com.tw>

Subject: test DomainKeys

To: lwhsu@lwhsu.org

MIME-Version: 1.0

Content-Type: text/plain; charset=big5

Content-Transfer-Encoding: quoted-printable

```
knight:~ -lwhsu- dig gamma._domainkey.gmail.com txt
```

```
;; ANSWER SECTION:
```

```
gamma._domainkey.gmail.com. 300 IN      TXT          "k=rsa\; t=y\  
p=MIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQDIhyR3oIt0y22Z0aBrIVe9m/iME3Rq0JreasANSpg2Y  
THTYV+Xtp4xwf5gTjCmHQEM0s0qYu0FYiNQPQogJ2t0Mfx9zNu06rfRBDjiIU9tpx2T+NGlWZ8qhbiLo5B  
y8apJavLyqTLavyPSrvsx0B3YzC63T4Age2CDqZYA+0wSMWQIDAQAB"
```

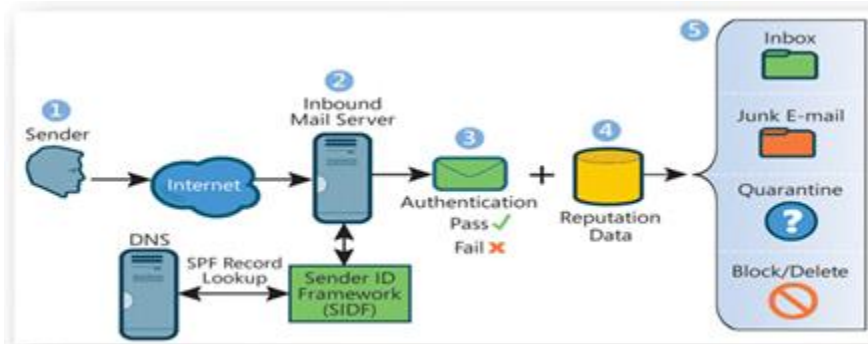
```
knight:~ -lwhsu- dig s1024._domainkey.yahoo.com.tw txt
```

```
;; ANSWER SECTION:
```

```
s1024._domainkey.yahoo.com.tw. 7200 IN  TXT          "k=rsa\; t=y\  
p=MIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQDrEee0Ri4Juz+QfiWYui/E9UGSXau/2P8LjnTD8V4U  
nn+2FAZVGE3kL23bzeoULYv4PeleB3gfm"  
"JiDJ0KU3Ns5L4KJAUUHjFwDebt0NP+sBK0VKeTATL2Yr/S3bT/xhy+1xtj4RkdV7fVxTn56Lb4udUnwux  
K4V5b5Pd0Kj/+XcwIDAQAB\; n=A 1024 bit key\;"
```

# Sender ID

- RFC4406, 4405, 4407, 4408
- Caller ID for E-mail + Sender Policy Framework
- <http://www.microsoft.com/mscorp/safety/technologies/senderid/default.mspix>



```
knight:~ -lwesu- dig paypal.com txt
```

```
;; ANSWER SECTION:
```

```
paypal.com.          3600      IN        TXT       "v=spf1 mx include:spf-  
1.paypal.com include:p._spf.paypal.com include:p2._spf.paypal.com  
include:s._spf.ebay.com include:m._spf.ebay.com include:c._spf.ebay.com  
include:thirdparty.paypal.com ~all"
```

```
paypal.com.          3600      IN        TXT       "spf2.0/prax mx  
include:s._sid.ebay.com include:m._sid.ebay.com include:p._sid.ebay.com  
include:c._sid.ebay.com include:spf-2._sid.paypal.com  
include:thirdparty._sid.paypal.com ~all"
```



# Other MTA?

- qmail
- exim
- Sendmail X
  - <http://www.sendmail.org/sm-X/>
- MeTA1
  - <http://www.meta1.org/>