

SPF 설치 및 운영 지침서

2005. 9.

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SPF

SPF

SPF DNS (Zone) TXT RR(Resource Record)

DNS

SPF (Publishing SPF)

RR(Resources Record) SPF DNS (Zone) TXT
SPF RFC
SPF RFC(DRAFT - SCHLITT - SPF - CLASSIC - 02) SPF
SPF

SPF
http://spf.pobox.com/wizard.html
http://www.anti-spamtools.org/SenderIDEmailPolicyTool/Default.aspx

< 1. SPF >

SPF

SPF
check-auth@verifier.port25.com
domain.com, id 가 admin admin@domain.com
check-auth@verifier.port25.com (
admin@domain.com) SPF
“pass” SPF가

< 2 SPF >

Bind DNS

SPF

(UNIX, LINUX)

BIND

/var/named

BIND ZONE

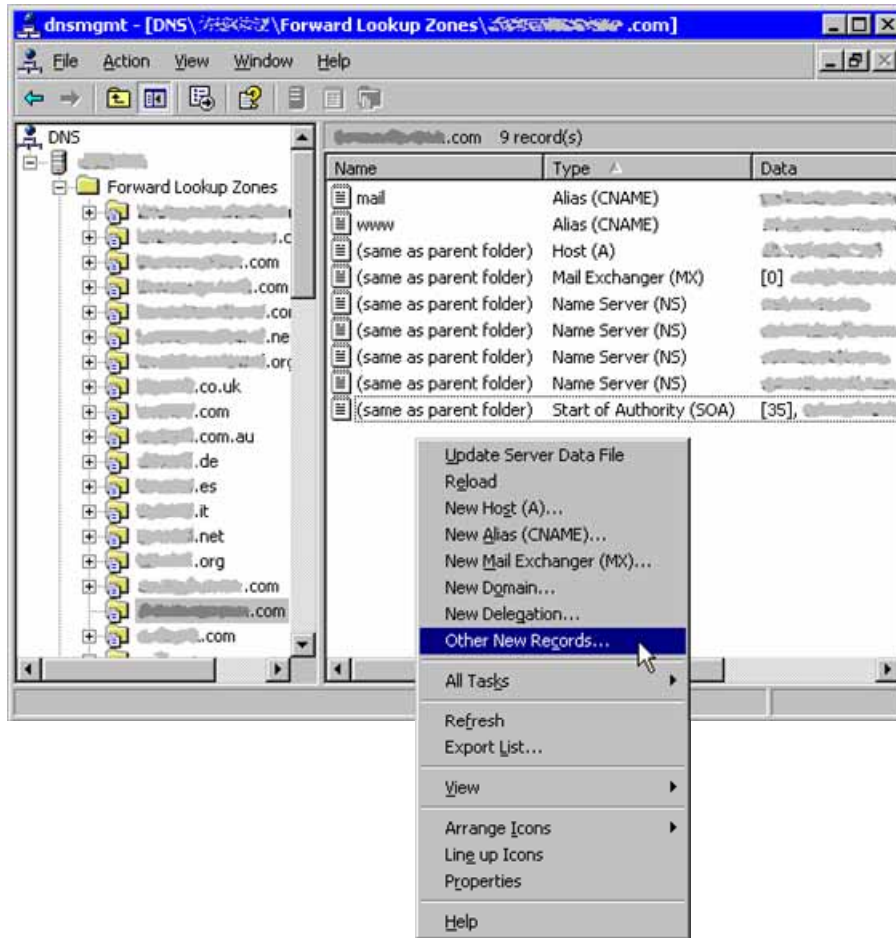
ZONE

SPF 가 .
 Name .
 ex) /etc/init.d/named restart
 SPF
 ex) check-auth@verifier.port25.com

```
#
$TTL 86400
@           IN      SOA    ns.example.com root.example.com(
                2005081200 ; serial
                10800      ; refresh
                3600       ; retry
                604800     ; expire
                86400 )    ; ttl
           IN      NS     ns.example.com.
           IN      MX     mx1.example.com
www        IN      A      192.168.1.100
mail       IN      A      192.168.1.101
example.com. IN      TXT   v=spf1 a:mail.example.com -all
```

가 SPF
 < 3 SPF - () >

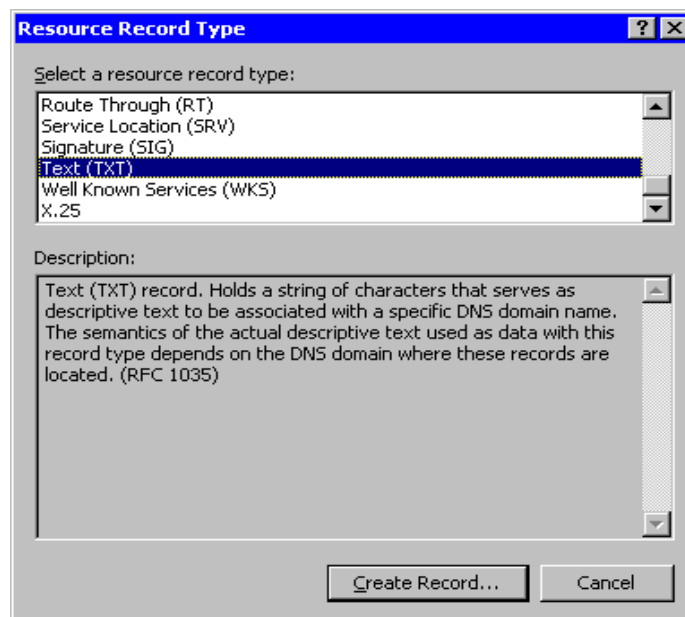
WINDOWS 2000/2003 DNS SFP
 MMC(Microsoft Management Console) DNS
 -> -> -> DNS
Forward lookup zones **SPF**
 ()
 "Other New Record"



< 1 SPF 1>

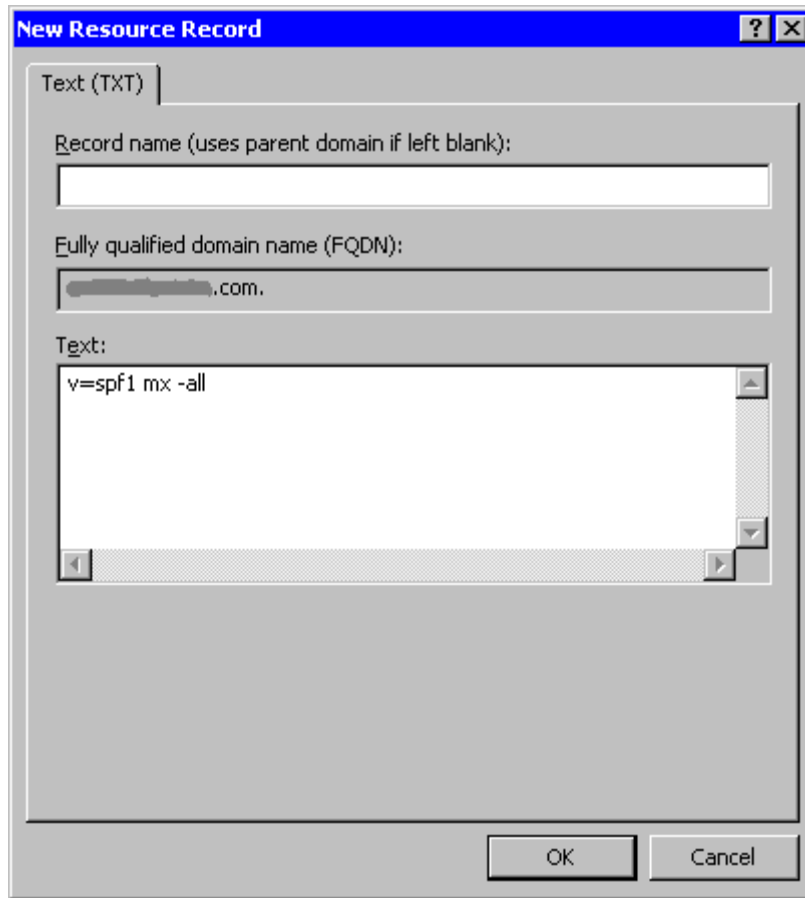
TXT

“Create Record”



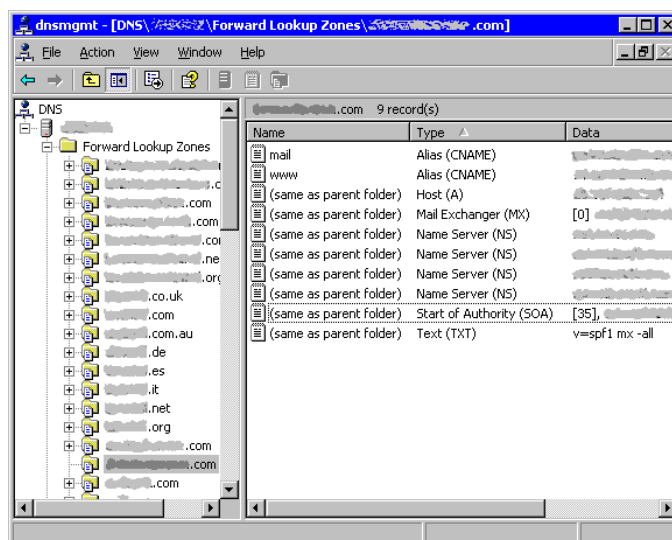
< 2 SPF 2>

(SPF Text 가 .
 “v=spf1 mx -all”)



< 3 SPF 3>

Ok .()



< 4 SPF 4>

SPF

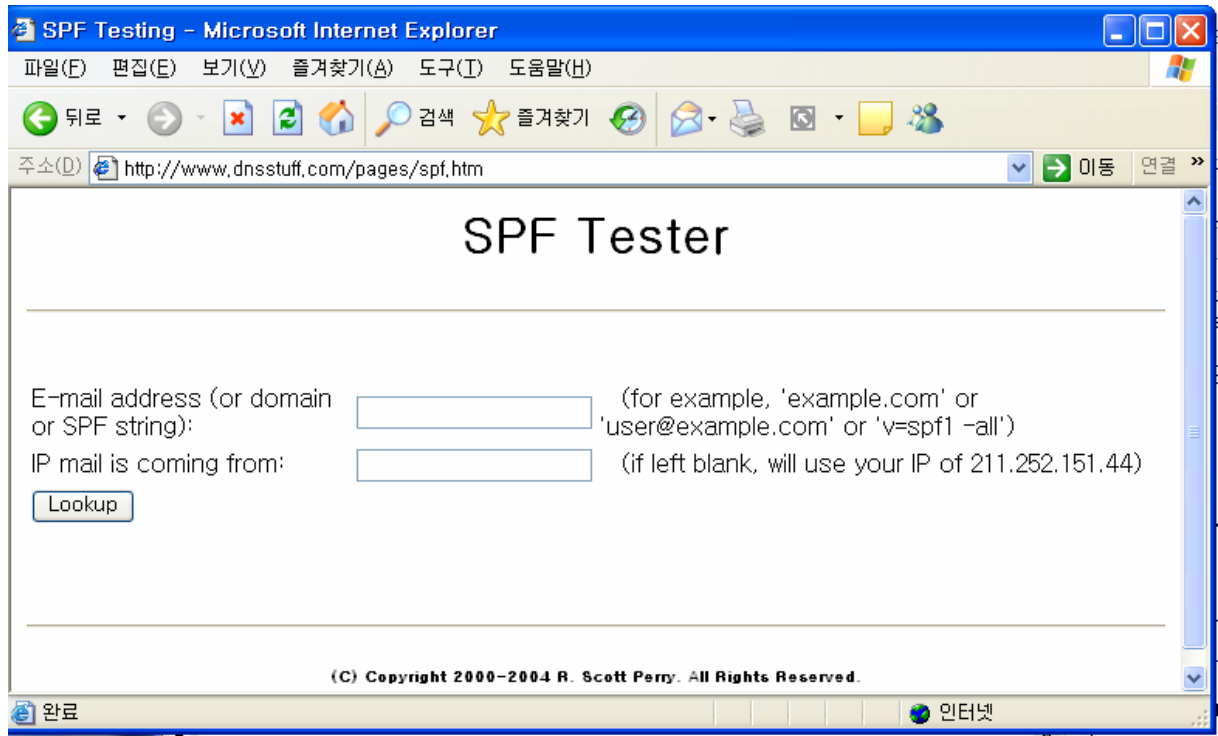
SPF

SPF가

check-auth@verifier.port25.com

<pre>===== Summary of Results ===== mail-from check: pass PRA check: pass DomainKeys check: neutral (message not signed) ===== Details: ===== HELO hostname: sniper.kisa.or.kr Source IP: 211.252.150.22 mail-from: joonkim@kisa.or.kr PRA Header: from PRA: joonkim@kisa.or.kr SPF TXT record/s: v=spf1 a:sniper.kisa.or.kr ~all PRA TXT record/s: v=spf1 a:sniper.kisa.or.kr ~all Domain Key TXT record: None</pre>

<http://www.dnsstuff.com/pages/spf.htm>



< 5 SPF >

SPF

SPF 가 MTA¹(Mail Transfer Agent) Filtering) SMTP² data가 Sendmail 8.13 (milter) SPF³ (compile) Sendmail 8.13 Postfix 2.1 SPF spf.pobox.com Policy Daemon 가 SPF SPF

SpamAssassin

3.0 SPF (default) (SPF) MTA/

¹ Mail Transfer Agent
² Simple Mail Transfer Protocol
³ Sender Policy Framework

SPF 가
 SPF 가
 SPF 가 (MTA(Sendmail, Postfix, Qmail) MTA)

```

SPF (/usr/share/Spamassassin/50_scores.cf)
# SPF
# PATH /usr/share/spamassassin/
ifplugin Mail::SpamAssassin::Plugin::SPF
score SPF_PASS -0.001 # SPF 0.001
endif # Mail::SpamAssassin::Plugin::SPF

```

< 4 SPF >

MTA(Mail Transfer Agent)

4 SPF milter Sendmail
 Perl Mark Kramer spf-milter C Jef
 Poskanzer spfmilter가 Perl SPF 가
 C libspf2 가

Sendmail

■ Perl based spf-milter

A.

```

POSIX
Sendmail::Milter
Socket
Net::CIDR
Mail::SPF::Query
Mail::SRS
Getopt
Errno

```

< 5 spf-milter Perl >

⁴ SPF

B. Sendmail.mc (<http://www.cpan.org/>)

```
# Sendmail.mc 가 .
define(`confMILTER_LOG_LEVEL',`9')dnl
define(`confMILTER_MACROS_HELO', confMILTER_MACROS_HELO`, {verify}')dnl
INPUT_MAIL_FILTER(`spf-milter',`S=local:/var/spf-milter/spf-milter.sock,
F=T,T=C:4m;S:4m;R:8m;E:10m')dnl
```

< 6 spf-milter Sendmail.mc >

C. Sendmail.cf

```
Sendmail.cf .
) > m4 < sendmail.mc > sendmail.cf
```

D. spf-milter

```
) > /usr/local/perl-threaded/bin/perl /usr/local/spf/sendmail-milter.pl milter
```

E. Sendmail

```
) /etc/init.d/Sendmail restart
```

■ C based spfmilter

A. sendmail

```
>sendmail -d0.1 -bt < /dev/null | grep MILTER
"MILTER"
```

B. libspf2

```
.
www.libspf2.org/download.html
libspf2-1.2.5.tar.gz
)./configure --enable-pthreads; make; make install
```

C. spfmilter

```
.
http://www.acme.com/software/spfmilter/
spfmilter-x.xx.tar.gz
)./configure; make; make install
```

D. sendmail.mc

가

```
INPUT_MAIL_FILTER(`spfmlter',`S=unix:/var/run/spfmlter.sock, T=S:8m;R:8m')
```

< 6 spfmlter Sendmail.mc >

E. **sendmail.cf**
) >m4 < sendmail.mc > sendmail.cf

F. **SPF** 가 fallback

```
/etc/mail/spfmlter - fallback
yahoo.* ptr:yahoo.com -all
*.yahoo.* ptr:yahoo.com - all
fallback SPF 가 SPF
가
```

G. **SPF**

```
/etc/mail/spfmlter - whitelist
127.0.0.1 # (local loopback interface)
192.168.64.0/24 #
10.0.0.0/8
192.68.1.0-192.68.1.255
192.68.0.0/16
```

H. **spfmlter**

) # spfmlter unix:/var/run/spfmlter.sock

I. **sendmail**

) /etc/init.d/sendmail restart

J. **SPF**

SPF

spfmlter sendmail

Postfix

A.

<http://spf.pobox.com/download> smtpd-policy.pl
Sendmail Perl-based-filter (Sendmail perl-based)

B. Postfix

- /etc/postfix/master.cf /etc/postfix/main.cf

```
policy unix - n n - - spawn
user=nobody argv=/usr/bin/perl /usr/libexec/postfix/smtpd-policy.pl
```

< 7 postfix master.cf >

```
smtpd_recipient_restrictions =
...#
reject_unknown_sender_domain
reject_unauth_destination
check_policy_service unix:private/policy
...#
```

< 8 postfix main.cf >

C. Postfix

) /etc/init.d/postfix restart

Qmail

A. qmail SPF

<http://spf.pobox.com/download> qmail

B.

) > patch -p1 < /path/to/qmail-spf-<version>.patch
<version>

qmail-spf-1.02.patch

1.02

C. SPF

/var/qmail/control

- spfbehavior

```
0: SPF , SPF-Received 가
1: SPF-Received 가,
2: DNS Temperr
3: "fail"
4: "Softfail"
5: "neutral"
6: "pass"
```

< 9 qmail SPF >

MS Exchange

MS Exchange SPF GFI (www.gfi.com) MailEssential 10.1

SPF

A.

- Windows 2000/2003 Server Advanced/Enterprise Server
- Microsoft Exchange 2000/2003

B.

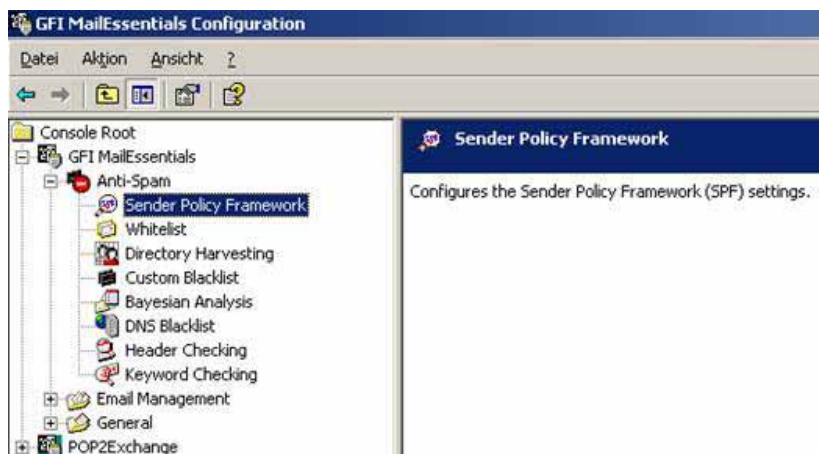
- GFI MailEssentials Exchange Server 2000/2003



< 6 GFI 1>

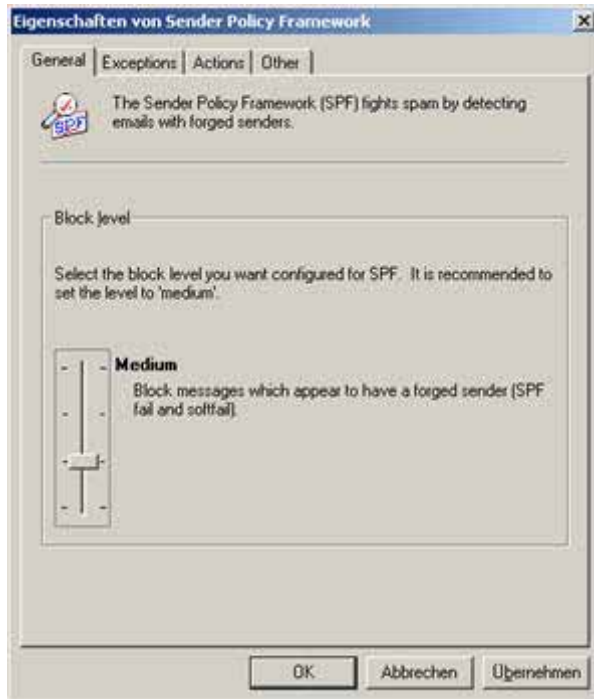
C. SPF

- GFI MailEssentials
- Configuration “Sender Policy Framework”

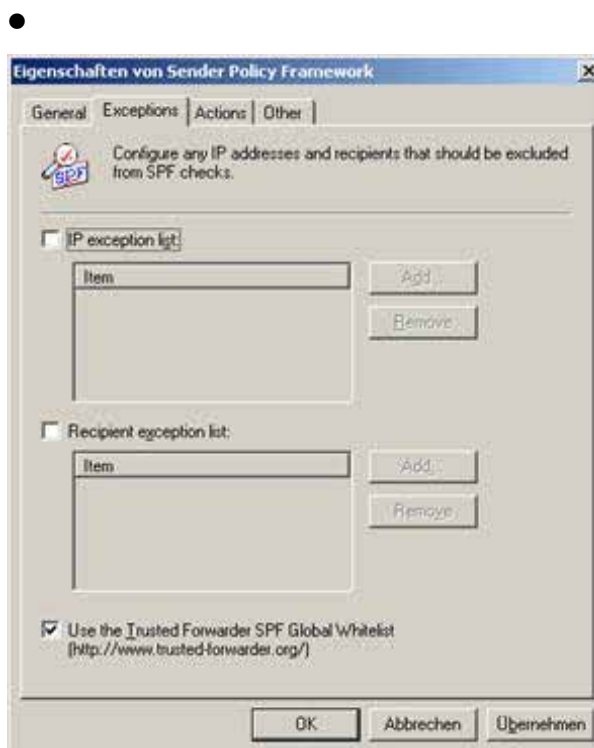


< 7 GFI 2>

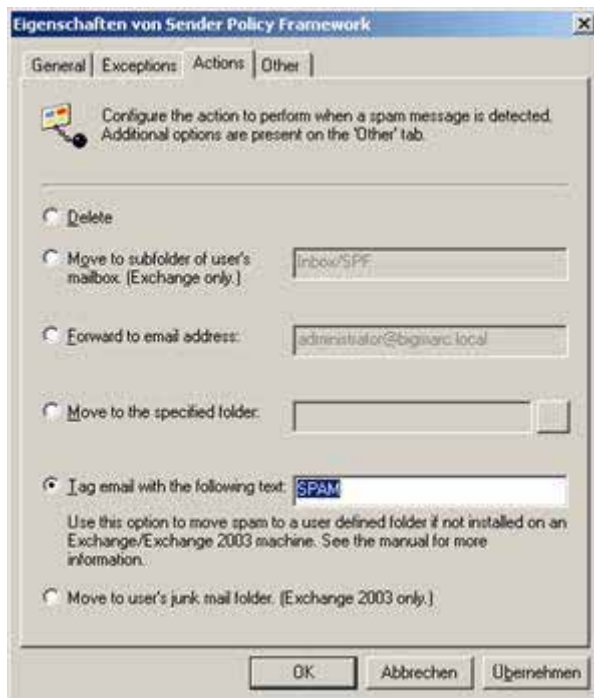
- “Properties”
- Never, Low Medium High



< 8 GFI 3>

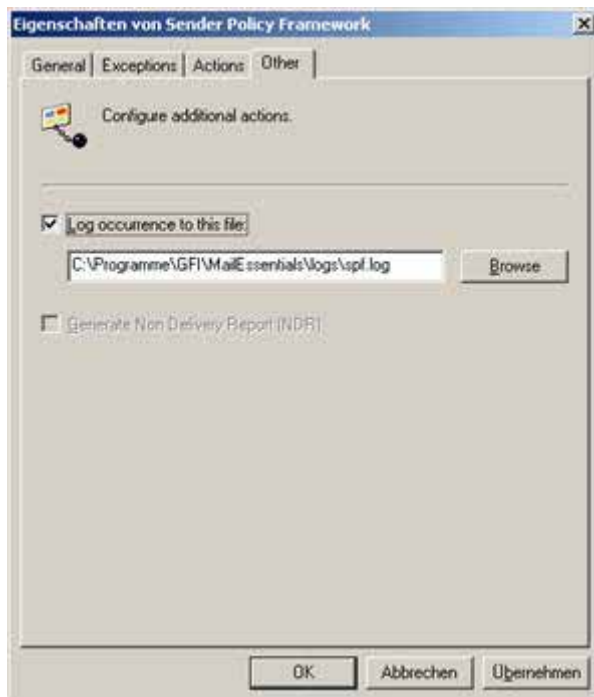


< 9 GFI 4>



< 10 GFI 5>

● SPF



< 11 GFI 6>

SPF

SMTP

SMTP

. SPF

가

가

SPF

SPF

spf.pobox.com

- M. Wong and W. Schlitt "SPF Draft-schlitt-spf-classic-02" IETF RFC[pending], June 2005
- Paul Albitz & Cricket Liu "DNS and BIND" 3rd Ed O'reilly & Association, September 1998
- Alan Schwartz "SpamAssassin" O'reilly & Association, July 2004
- Bryan Costales and Eric Allman "Sendmail" 3rd Ed Oreilly & Association, December 2002
- Bryan Costales and Marcia Flyn "Sendmail Milters" Addison-Wesley, 2005
- Meng Weng Wong "SPF: Sender Policy Framework" <http://spf.pobox.com>, August 2005
- Wayne Schlitt "libspf2 - SPF Library - Support" <http://www.libspf2.org>, August 2005
- Paul Howarth "city-fan.org mail software repository" <http://www.city-fan.org>, August 2005
- Mark ? " System Administrator" Asarian-host.org, August 2005
- Jef Poskanzer "spfmlter - SPF mail filter module" <http://www.acme.com/software/spfmlter> Aug. 2005
- Mark Kramer "A Sendmail LibMilter filter to block spam" <http://www.wanlink.com/spamilter> Aug. 2005
- Michael Brumm "General information about GFI" <http://www.gfi.com/mes> Aug. 2005

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