



Brandenburger  User Group

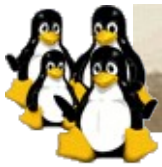
DNS & BIND

Grundlagen der Namensauflösung
im Internet



Der Sinn von DNS

- DNS: Domain Name System
- 70er Jahre: /etc/hosts - etwas überfordert
- 1984: RFCs 882 & 883 (später 1034 & 1035) => DNS
- wandelt Rechnernamen in IP-Adressen um
- Rückrichtung auch möglich (IP => Name)



Aufbau & Struktur

- hierarchisch aufgebaut => ein Baum
- Repräsentation durch Folge von Namen durch Punkt (".") getrennt
- weltweit eindeutig
- große, verteilte Datenbank
- Nameserver kennt Teil dieses Baumes
- redundante Server



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BIND

- Berkeley Internet Name Domain
- Open Source
- <http://www.isc.org/products/BIND/>
- Nameserver: `/usr/sbin/named`
- Resolver: `/usr/bin/{nslookup,host}`
- Bibliotheken



BIND - Konfiguration

```
/etc/bind/named.conf
```

```
// Anfang "/etc/bind/named.conf"
```

```
options {  
    directory "/var/cache/bind";  
    // query-source address * port 53;  
};
```

```
key "key" {  
    algorithm hmac-md5;  
    secret "...";  
};
```

```
controls {  
    inet 127.0.0.1 allow { 127.0.0.1; } keys { "key"; };  
};
```



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BIND - Konfiguration

```
// zone "." {  
//   type hint;  
//   file "/etc/bind/db.root";  
// };
```

```
zone "." {  
  type hint;  
  file "/etc/bind/db.noroot";  
};
```



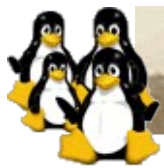
BIND - Konfiguration

```
zone "localhost" {  
    type master;  
    file "/etc/bind/db.local";  
};
```

```
zone "127.in-addr.arpa" {  
    type master;  
    file "/etc/bind/db.127";  
};
```

```
zone "0.in-addr.arpa" {  
    type master;  
    file "/etc/bind/db.0";  
};
```

```
zone "255.in-addr.arpa" {  
    type master;  
    file "/etc/bind/db.255";  
};
```



BIND - Konfiguration

```
zone "madsworld.lan" {  
    type master;  
    file "/etc/bind/db.madsworld.lan";  
};  
  
zone "1.168.192.in-addr.arpa" {  
    type master;  
    file "/etc/bind/db.192.168.1";  
};  
  
// Ende "/etc/bind/named.conf"
```




BIND - Konfiguration

```
/etc/bind/db.madsworld.lan
```

```
$TTL 43200
```

```
@ IN SOA scotty.madsworld.lan. hostmaster.madsworld.lan. (  
    1          ; Serial (increment after change)  
    3600       ; Refresh (in seconds) - 1h  
    900        ; Retry (in seconds) - 15m  
    1209600    ; Expire (in seconds) - 14d  
    43200      ; Default TTL (in seconds) - 12h  
    )
```

```
IN MX 5 bigtin.madsworld.lan
```

```
IN NS scotty.madsworld.lan
```

```
IN A 192.168.1.100
```



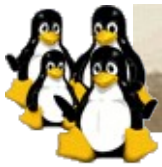
BIND - Konfiguration

```
bigtin    IN A      192.168.1.100
          IN A      192.168.1.101
          IN WKS    192.168.1.100 TCP ssh http https pop-3
          IN HINFO  "2 x Pentium III 1000" "Debian GNU/Linux"

www       IN CNAME  bigtin.madsworld.lan.
mail      IN CNAME  bigtin.madsworld.lan.

scotty    IN A      192.168.1.4
          IN MX     scotty.madsworld.lan.
          IN HINFO  "Pentium 75" "Debian GNU/Linux"

slippy    IN A      192.168.1.2
          IN HINFO  "Compaq Contura Aero 4/25" "DOS / XLinux"
          IN TXT    "it's a nice old notebook"
```



BIND - Konfiguration

```
/etc/bind/db.192.168.1
```

```
$TTL 43200
```

```
@ IN SOA scotty.madsworld.lan. hostmaster.madsworld.lan. (  
    1          ; Serial (increment after change)  
    3600       ; Refresh (in seconds) - 1h  
    900        ; Retry (in seconds) - 15m  
    1209600    ; Expire (in seconds) - 14d  
    43200      ; Default TTL (in seconds) - 12h  
    )  
  
2   IN PTR sloppy.madsworld.lan.  
4   IN PTR scotty.madsworld.lan.  
100 IN PTR bigtin.madsworld.lan.  
101 IN PTR bigtin.madsworld.lan.
```