DNS extension to support IPv6

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The changes of DNS to support IPv6

1. A new resource record type to store IPv6 address
2. A new domain to support lookups based on an IPv6 address
3. Update definition of existing query types

New resource record type definition

- AAAA record type
- AAAA query
- Textual format of AAAA records
- AAAA data format

AAAA query

- nslookup
  - > set q=AAAA
  - > a host name

Textual format of AAAA records

- Text Representation of Addresses
  - x:x:x:x:x:x:x:x
  - Example
    - FEDC:BA98:7654:3210:FEDC:BA98:7654:3210
    - 0:0:0:0:0:0:140.123.103.6
      - ::140.123.103.6

AAAA data format

- Textual format
  - FEDC:BA98:7654:3210:FEDC:BA98:7654:3210
- Encoded format (byte order)
  - 1032547698BADCFE1032547698BADCFE
  - High order byte first

New domain definition

- Reverse address resolution
  - A seperate domain, IP6.INT, is used for this purpose

IP6.INT domain

- example
  - 反查 4321:0:1:2:3:4:567:89ab

    nslookup

    > set q=ptr

    > b.a.9.8.7.6.5.0.4.0.0.0.3.0.0.0.2.0.0.0.1.0.0.0.0
    .0.0.0.1.2.3.4.IP6.INT.

Modifications to existing query types

- All existing query types must be redefined to perform both type A and type AAAA additional section processing
  - Like NS, MX, and MB