

## Appendix B. Example Responses (RFC 4035)

### B.1. Answer

A successful query to an authoritative server.

```
;; Header: QR AA DO RCODE=0
```

```
;;
```

```
;; Question
```

```
x.w.example.          IN MX
```

```
;; Answer
```

```
x.w.example.    3600 IN MX  1 xx.example.
```

```
x.w.example.    3600 RRSIG  MX 5 3 3600 20040509183619 (
20040409183619 38519 example.
I12WTZ+Bkv+OytBx4LItNW5mjB4RCwh008y1
XzPHZmZUTVYL7LaA63f6T9ysVBzJRI3KRjAP
H3U1qaYnDoN1DrWqmi9RJe4FoObkbcdm7P3I
kx70ePCoFgRz1Yq+bVVXCvGuAU4xALv3W/Y1
jNSlwZ2mSWKHfxFQxPtLj8s32+k= )
```

```
;; Authority
```

```
example.        3600 NS      ns1.example.
```

```
example.        3600 NS      ns2.example.
```

```
example.        3600 RRSIG  NS 5 1 3600 20040509183619 (
20040409183619 38519 example.
gl13F00f2U0R+SWiXXLHwsMY+qStYy5k6zfd
EuivWc+wd1fmbNCyql0Tk7lHTX6UOxc8AgNf
4ISFve8XqF4q+o9qlnqIzmppU3LiNeKT4FZ8
RO5urFOvoMRTbQxW3U0hXWuggE4g3ZpsHv48
0HjMeRaZB/FRPGfJPajngcq6Kwg= )
```

```
;; Additional
```

```
xx.example.     3600 IN A     192.0.2.10
```

```
xx.example.     3600 RRSIG  A 5 2 3600 20040509183619 (
20040409183619 38519 example.
kBF4YxMGWF0D8r0cztL+2fWWOvN1U/GYSpYP
7SoKoNQ4fZKyK+weWGlKLIUM+uE1zjVTPXoa
0Z6WG0oZp46rkl1EzMcdMgoaeUzzAJ2BMq+Y
VdxG9IK1yZkYGY9AgbTOGPoAgbJyO9EPULsx
kbIDV6GPPSZVusnZU6OMgdgzHV4= )
```

```
xx.example.     3600 AAAA     2001:db8::f00:baaa
```

```
xx.example.     3600 RRSIG  AAAA 5 2 3600 20040509183619 (
20040409183619 38519 example.
Zzj0yodDxcBLnnOIwDsuKo5WqiaK24DlKg9C
aGaxDFiKgKobUj2jilyQHpgFn2poFRetZd4z
ulyQkssz2QHrVrPuTMS22knudCiwP4LWpVTr
U4zfeA+rDz9stmSBP/4PekH/x2IoAYnwctd/
xS9cL2QgW7FChwl6mzlkH6/vsfs= )
```

```
ns1.example.    3600 IN A     192.0.2.1
```

```
ns1.example.    3600 RRSIG  A 5 2 3600 20040509183619 (
20040409183619 38519 example.
```

```

F1C9HVhIcs10cZU09G5yIVfKJy5yRQQ3qVet
5pGhp82pzhAOMZ3K22JnmK4c+IjUeFp/to06
im5FVpHtbFisdjyPq84bhTv8vrXt5AB1wNB+
+iAqvIfdgW4sFNC6oADb1hK8QNaUw9VePJhK
v/iVXSYC0b7mPSU+EOlknFpVECs= )
ns2.example.      3600 IN A      192.0.2.2
ns2.example.      3600 RRSIG    A 5 2 3600 20040509183619 (
20040409183619 38519 example.
V7cQRw1TR+knlaL1z/psxlS1PcD37JJDaCMq
Qo6/ulqFQu6x+wuDHRH22Ap9ulJPQjFwMKOu
yfPGQPC8KzGdE3vt5snFEAoE1Vn3mQqtu7SO
6amIjkl3Kj/jyJ4nGmdRIc/3cM3ipXFhNTKq
rdhx8SZ0yy4ObIRzIzvBFLiSS8o= )

```

## B.2. Name Error

An authoritative name error. The NSEC RRs prove that the name does not exist and that no covering wildcard exists.

```

;; Header: QR AA DO RCODE=3
;;
;; Question
ml.example.      IN A

;; Answer
;; (empty)

;; Authority
example.          3600 IN SOA ns1.example. bugs.x.w.example. (
1081539377
3600
300
3600000
3600
)
example.          3600 RRSIG    SOA 5 1 3600 20040509183619 (
20040409183619 38519 example.
ONx0k36rcjaxYtcNgq6iQnpNV5+drqYAsC9h
7TSJaHCqbhE67Sr6aH2xDUGcqQWu/n0UVzrF
vkgO9ebarZ0GWDKcuwlM6eNB5SiX2K7415LW
DA7S/Un/IbtDq4Ay8NMNLQI7Dw7n4p8/rjKB
jV7j86HyQgM5e7+miRAz8V01b0I= )
b.example.        3600 NSEC      ns1.example. NS RRSIG NSEC
b.example.        3600 RRSIG    NSEC 5 2 3600 20040509183619 (
20040409183619 38519 example.
GNuxHn844wfmUhPzGWKJCPY5ttEX/RfjDoOx
9ueK1PtYkOWKOOdiJ/PJKCYB3hYX+858dDWS
xb2qnV/LSTCNVBnkm6owOpysY97MVj5VQEWs
0lm9tFojcptQkmQKYPrwUnCSNwvvc1SF1xZ
vhRXgWT7OuFXldoCG6TfVFM9xE= )
example.          3600 NSEC      a.example. NS SOA MX RRSIG NSEC DNSKEY
example.          3600 RRSIG    NSEC 5 1 3600 20040509183619 (
20040409183619 38519 example.

```

```
O0k558jHhyrC97ISHnisl4kLMW48C7U7cBm
FTfhke5iVqNRVTB1STLMpgpbDIC9hcryo00V
Z9ME5xPzUEhbnGnHd5sfzgFVeGxr5Nyyq4tW
SDBgIBiLQUv1ivy29vhXy7WgR62dPrZ0PWvm
jffJ5arXf4nPxp/kEowGgBRzY/U= )
```

```
;; Additional
;; (empty)
```

### B.3. No Data Error

A "no data" response. The NSEC RR proves that the name exists and that the requested RR type does not.

```
;; Header: QR AA DO RCODE=0
;;
;; Question
ns1.example.      IN MX
```

```
;; Answer
;; (empty)
```

```
;; Authority
example.          3600 IN SOA ns1.example. bugs.x.w.example. (
                                1081539377
                                3600
                                300
                                3600000
                                3600
                                )
example.          3600 RRSIG SOA 5 1 3600 20040509183619 (
                                20040409183619 38519 example.
                                ONx0k36rcjaxYtcNgq6iQnpNV5+drqYAsC9h
                                7TSJaHCqbHE67Sr6aH2xDUGcqQWu/n0UVzrF
                                vkgO9ebarZ0GWDKcuwlM6eNB5SiX2K7415LW
                                DA7S/Un/IbtDq4Ay8NMNLQI7Dw7n4p8/rjKb
                                jV7j86HyQgM5e7+miRAz8V01b0I= )
ns1.example.      3600 NSEC  ns2.example. A RRSIG NSEC
ns1.example.      3600 RRSIG NSEC 5 2 3600 20040509183619 (
                                20040409183619 38519 example.
                                I4hj+Kt6+8rCcHcUdolks2S+Wzri9h3fHas8
                                1rGN/eILdJHN7JpV6lLGPIh/8fIBkfvdyWnB
                                jjf1q3O7JgYO1UdI7FvBNWqaaEPJK3UkddBq
                                ZIaLi8Qr2XHkjQ38BeQsbp8X0+6h4ETWSGT8
                                IZaIGBLryQWGLw6Y6X8dqhlxJM= )
```

```
;; Additional
;; (empty)
```

#### B.4. Referral to Signed Zone

Referral to a signed zone. The DS RR contains the data which the resolver will need to validate the corresponding DNSKEY RR in the child zone's apex.

```
;; Header: QR DO RCODE=0
;;

;; Question
mc.a.example.      IN MX

;; Answer
;; (empty)

;; Authority
a.example. 3600 IN NS ns1.a.example.
a.example. 3600 IN NS ns2.a.example.
a.example. 3600 DS 57855 5 1 (
B6DCD485719ADCA18E5F3D48A2331627FDD3
636B )
a.example. 3600 RRSIG DS 5 2 3600 20040509183619 (
20040409183619 38519 example.
oXIKit/QtdG64J/CB+Gi8dOvnwRvqrtolAdQ
oRkAN15FP3iZ7suB7gvTBmXzCjL7XUgQVcoH
kdhyCuzp8W9qJHgRUSwKKkczSyuL64nhgjuD
EML8l9wlWVsl7PR2VnZduM9bLyBhaaPmRKX/
Fm+v6ccF2EGNLRiY08kdkz+XHHo= )

;; Additional
ns1.a.example. 3600 IN A 192.0.2.5
ns2.a.example. 3600 IN A 192.0.2.6
```

#### B.5. Referral to Unsigned Zone

Referral to an unsigned zone. The NSEC RR proves that no DS RR for this delegation exists in the parent zone.

```
;; Header: QR DO RCODE=0
;;

;; Question
mc.b.example.      IN MX

;; Answer
;; (empty)

;; Authority
b.example. 3600 IN NS ns1.b.example.
b.example. 3600 IN NS ns2.b.example.
b.example. 3600 NSEC ns1.example. NS RRSIG NSEC
b.example. 3600 RRSIG NSEC 5 2 3600 20040509183619 (
```

```

20040409183619 38519 example.
GNuxHn844wfmUhPzGWKJCPY5ttEX/RfjDoOx
9ueK1PtYkOWKOOdiJ/PJKCYB3hYX+858dDWS
xb2qnV/LSTCNVBnkm6owOpysY97MVj5VQEWs
0lm9tFoqjcptQkmQKYPrwUnCSNwvvc1SF1xZ
vhRXgWT7OuFXldoCG6TfVFM9xE= )

;; Additional
ns1.b.example. 3600 IN A 192.0.2.7
ns2.b.example. 3600 IN A 192.0.2.8

```

## B.6. Wildcard Expansion

A successful query that was answered via wildcard expansion. The label count in the answer's RRSIG RR indicates that a wildcard RRset was expanded to produce this response, and the NSEC RR proves that no closer match exists in the zone.

```

;; Header: QR AA DO RCODE=0
;;
;; Question
a.z.w.example.      IN MX

;; Answer
a.z.w.example. 3600 IN MX 1 ai.example.
a.z.w.example. 3600 RRSIG MX 5 2 3600 20040509183619 (
20040409183619 38519 example.
OMK8rAZlepFzLWW75Dxd63jy2wswESzxDKG2
f9AMN1CytCd10cYISAxAdvXSZ7xujKAtPbc
tvOQ2of07AZJ+d01EeeQTVBPq4/6KCWhqe2X
TjnkVLNvvhnc0u28aoSsG0+4InvkkOHknKxw
4kX18MMR34i8lC36SR5xBni8vHI= )

;; Authority
example.      3600 NS      ns1.example.
example.      3600 NS      ns2.example.
example.      3600 RRSIG   NS 5 1 3600 20040509183619 (
20040409183619 38519 example.
gl13F00f2U0R+SWiXXLHwsMY+qStYy5k6zfd
EuivWc+wd1fmbNCyql0Tk7lHTX6UOxc8AgNf
4ISFve8XqF4q+o9qlnqIzmppU3LiNeKT4FZ8
RO5urFOvoMRTbQxW3U0hXWugge4g3ZpsHv48
0HjMeRaZB/FRPGfJPajngcq6Kwg= )
x.y.w.example. 3600 NSEC   xx.example. MX RRSIG NSEC
x.y.w.example. 3600 RRSIG NSEC 5 4 3600 20040509183619 (
20040409183619 38519 example.
OvE6WUzN2ziieJcvKPWbCAyXyP6ef8cr6Csp
ArVSTzKSquNwbezZmkU7E34o5lmb6CWSSSpq
xw098kNUFnHcQf/LzY2zqRomubrNQhJTiDTX
a0ArunJQCzPjOYq5t0SLjm6qp6McJI1AP5Vr
QoKqJDCLnoAlcPOPKAm/jJkn3jk= )

```



```

a0ArunJQCzPjOYq5t0SLjm6qp6McJI1AP5Vr
QoKqJDCLnoAlcPOPKAm/jJkn3jk= )
*.w.example. 3600 NSEC x.w.example. MX RRSIG NSEC
*.w.example. 3600 RRSIG NSEC 5 2 3600 20040509183619 (
20040409183619 38519 example.
r/mZnRC3I/VicrelgIcteSxDhtsd1TDt8ng9
HSB1AB01zLxQtfgTnn8f+aOwJIAFe1Ee5RvU
5cVhQJNP5XpXMJHfyps8tVvfxSAXfahpYqtx
91gsmcV/1V9/bZAG55CefP9cM4Z9Y9NT9XQ8
s1InQ2UoIv6tJEaaKkP701j8OLA= )

;; Additional
;; (empty)

```

## B.8. DS Child Zone No Data Error

A "no data" response for a QTYPE=DS query that was mistakenly sent to a name server for the child zone.

```

;; Header: QR AA DO RCODE=0
;;
;; Question
example.          IN DS

;; Answer
;; (empty)

;; Authority
example.          3600 IN SOA ns1.example. bugs.x.w.example. (
1081539377
3600
300
3600000
3600
)
example.          3600 RRSIG SOA 5 1 3600 20040509183619 (
20040409183619 38519 example.
ONx0k36rcjaxYtcNgq6iQnpNV5+drqYAsC9h
7TSJaHCqbhE67Sr6aH2xDUGcqQWu/n0UVzrF
vkgO9ebarZ0GWDKcuwlM6eNB5SiX2K7415LW
DA7S/Un/IbtDq4Ay8NMNLQI7Dw7n4p8/rjkb
jV7j86HyQgM5e7+miRAz8V01b0I= )
example.          3600 NSEC a.example. NS SOA MX RRSIG NSEC DNSKEY
example.          3600 RRSIG NSEC 5 1 3600 20040509183619 (
20040409183619 38519 example.
O0k558jHhyrC97ISHnislM4kLMW48C7U7cBm
FTfhke5iVqNRVTB1STLMpgpbDIC9hcryo00V
Z9ME5xPzUEhbnGnHd5sfzgFVeGxr5Nyyq4tW
SDBgIBiLQUv1ivy29vhXy7WgR62dPrZ0PWvm
jFFJ5arXf4nPxp/kEowGgBRzY/U= )

;; Additional
;; (empty)

```