Understand Umbrella Support for Extended DNS Errors

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Introduction

This document describes Cisco Umbrella support for extended DNS errors.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

The information in this document is based on Cisco Umbrella.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

Overview

Cisco Umbrella announced preliminary support for Extended DNS Errors (EDE) as defined in this IETF document on Extended DNS Errors.

Umbrella's initial support is focused on DNSSEC error codes for SERVFAIL responses. Umbrella plans to add support for other error codes in the future, as well as the text representations of the error codes.

Supported Error Codes

Code	Name	Supported	Error Encountered
0	Other	No	
1	Unsupported DNSKEY Algorithm	Yes	DNSKEY Algorithm not supported.

2	Unsupported DS Digest Type	Yes	DS Digest type not supported
3	Stale Answer	No	
4	Forged Answer	No	
5	DNSSEC Indeterminate	No	
6	DNSSEC Bogus	Yes	• If all relevant records found and validation failed (signature hash did not match) • RRSIG signer/owner mismatch • RRSIG not valid • Negative proof is invalid NXDOMAIN expected found NODATA and vice versa • Reached a signed zone but not a delegation point.
7	Signature Expired	Yes	RRSIG matched DNSKEY (keytag and algorithm) but has an expired signature
8	Signature Not Yet Valid	Yes	RRSIG matched DNSKEY (keytag and algorithm) but has a signature inception time that is after now.
9	DNSKEY Missing	Yes	DS matching the DNSKEY not found.
10	RRSIGs Missing	Yes	RRSIG that matches the DNSKEY (keytag and algorithm) not found.
11	No Zone Key Bit Set	Yes	When the DNSKEY does not have the zone bit set.
12	NSEC Missing	Yes	Negative proof not found or insufficient.
13	Cached Error	No	
14	Not Ready	No	
15	Blocked	No	
16	Censored	No	
17	Filtered	No	
18	Prohibited	No	
19	Stale NXDOMAIN Answer	No	
20	Not Authoritative	No	
21	Not Supported	No	
22	No Reachable Authority	No	
23	Network Error	No	
24	Invalid Data	No	

Example Response

A query returning an Extended DNS Error can show the error code in the EDNS section using OPT code 15.

For example, in this query, the error code returned is 6, corresponding to the "DNSSEC Bogus" error:

```
; <<>> DiG 9.11.5-P4-5.1+deb10u1-Debian <<>> +dnssec +nocrypt bogus.d2a10n3.rootcanary.net @m81.sjc.ope
```