Network Working Group
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DNS NSAP RRs

Status of this Memo

This memo defines an Experimental Protocol for the Internet community. Discussion and suggestions for improvement are requested. Please refer to the current edition of the "IAB Official Protocol Standards" for the standardization state and status of this protocol. Distribution of this memo is unlimited.

Table of Contents

Introduction

This RFC defines the format of two new Resource Records (RRs) for the Domain Name System (DNS), and reserves corresponding DNS type mnemonic and numerical codes. This format may be used with the any proposal that has variable length addresses, but is targeted for CLNP use.

This memo assumes that the reader is familiar with the DNS [3,4].

Background

This section describes an experimental representation of NSAP addresses in the DNS. There are several reasons to take this approch. First, it provides simple documentation of the correct addresses to use in static configurations of CLNP compliant hosts and routers.

NSAP support requires that a new DNS resource record entry type ("NSAP") be defined, to store longer Internet (i.e., NSAP) addresses. This resource record allows mapping from DNS names to NSAP addresses, and will contain entries for systems which are able to run Internet applications, over TCP or UDP, over CLNP.

The backward translation (from NSAP address to DNS name) is facilitated by definition of an associated resource record. This resource record is known as "NSAP-PTR", and is used in a manner analogous to the existing "in-addr.arpa".

These RRs are intended for use in a proposal [6] by one of the members of the NOOP WG to address the next-generation internet.

The NSAP RR

The NSAP RR is defined with mnemonic NSAP and type code 22 (decimal).

An NSAP (Network Service Access Protocol) number is a unique string to OSI transport service.

The numbering plan follows RFC 1237 and associated OSI definitions for NSAP format.

NSAP has the following format:

<owner> <ttl> <class> NSAP <length> <NSAP-address>

All fields are required.

<length> identifies the number of octets in the <NSAP-address> as defined by the various national and international authorities.

<NSAP-address> enumerates the actual octet values assigned by the assigning authority. Its format in master files is a <character-string> syntactically identical to that used in TXT and HINFO.

The format of NSAP is class insensitive. NSAP RR causes no additional section processing.

For example:

```
foo.bar.com.    IN  NSAP   21 47000580ffff000000321099991111222233334444
host.school.de  IN  NSAP   17 39276f3100111100002222333344449876
```

The RR data is the ASCII representation of the digits. It is encoded as two <character-strings>, i.e., count followed by characters.

The NSAP-PTR RR

The NSAP-PTR RR is defined with mnemonic NSAP-PTR and a type code 23 (decimal).

Its function is analogous to the PTR record used for IP addresses

[4,7].

NSAP-PTR has the following format:

<NSAP-suffix> <ttl> <class> NSAP-PTR <owner>

All fields are required.

<NSAP-suffix> enumerates the actual octet values assigned by the assigning authority for the LOCAL network. Its format in master files is a <character-string> syntactically identical to that used in TXT and HINFO.

The format of NSAP-PTR is class insensitive. NSAP-PTR RR causes no additional section processing.

For example:

In net ff08000574.nsap-in-addr.arpa:

```
44443333222211119999O123000000ff    NSAP-PTR   foo.bar.com.
```

Or in net 11110031f67293.nsap-in-addr.arpa:

```
6789444433332222O000  NSAP-PTR        host.school.de.
```

The RR data is the ASCII representation of the digits. It is encoded as a <character-string>.

REFERENCES and BIBLIOGRAPHY

[1] Stahl, M., "Domain Administrators Guide", RFC 1032, Network Information Center, SRI International, November 1987.

[2] Lottor, M., "Domain Administrators Operations Guide", RFC 1033, Network Information Center, SRI International, November, 1987.

[3] Mockapetris, P., "Domain Names - Concepts and Facilities", RFC 1034, USC/Information Sciences Institute, November 1987.

[4] Mockapetris, P., "Domain Names - Implementation and Specification", RFC 1035, USC/Information Sciences Institute, November 1987.

[5] Colella, R., Gardner, E., and R. Callon, "Guidelines for OSI NSAP Allocation in the Internet", RFC 1237, NIST, Mitre, DEC, July 1991.

[6] Callon, R., "TCP and UDP with Bigger Addresses (TUBA), A Simple Proposal for Internet Addressing and Routing", Digital Equipment Corporation, RFC 1347, June 1992.

[7] Mockapetris, P., "DNS Encoding of Network Names and Other Types", RFC 1101, USC/Information Sciences Institute, April 1989.

[8] ISO/IEC. Information Processing Systems -- Data Communications -- Network Service Definition Addendum 2: Network Layer Addressing. International Standard 8348/Addendum 2, ISO/IEC JTC 1, Switzerland, 1988.

[9] Bryant, P., "NSAPs", PB660, IPTAG/92/23, SCIENCE AND ENGINEERING RESEARCH COUNCIL, RUTHERFORD APPLETON LABORATORY May 1992.

Security Considerations

Security issues are not addressed in this memo.

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