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DHCP Option for IEEE 1003.1 POSIX Timezone Specifications
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Abstract

The Dynamic Host Configuration Protocol (DHCP) [1] provides a framework for passing configuration information to hosts on a TCP/IP network. This document defines a new option to extend the available option codes [3].

Introduction

DHCP includes an option for the specification of the Universal Coordinated Time Offset [2], which is defined as a two's complement 32-bit integer representing the offset in seconds from UTC. Unfortunately, the UTC offset option does not provide enough information for an Internet client to determine such timezone-related details as the timezone names, daylight savings time start and end times in addition to the timezone UTC offsets.

This document defines a new option which addresses these shortcomings by delivering timezone information in the form of a 1003.1 POSIX Timezone specifier [4]. Timely information regarding timezones can be had at the U.S. Naval Observatory's web site [5].

Timezone Option Precedence

If a DHCP client receives both the Time Offset (code 2) and the POSIX Timezone (code 88) options in a DHCP reply message, the client MUST discard the value of the Time Offset (code 2) option and utilize the POSIX Timezone Option. The DHCP client MAY notify the user that it is resolving the conflict by discarding the Time Offset (code 2) option.

If a DHCP client finds that the POSIX Timezone option value is misformatted, it SHOULD notify the the user of the problem and MUST discard the entire option value.

Definition of option 88, IEEE 1003.1 POSIX Timezone specifier

This NVT ASCII string represents the IEEE 1003.1 POSIX Timezone specification that a client is to use to set its timezone. The option code number is 88.

Code	Len	POSIX Timezone string
88	n	a1 a2 a3 a4 ...

The format of the IEEE 1003.1 POSIX timezone specification is defined as follows:

stdoffset[dst[offset],[start[/time],end[/time]]], where:

std, dst: three or more bytes for the standard timezone (std) and daylight savings timezone (dst). If dst is missing, then daylight savings time does not apply in this locale. Any characters (or case) except a leading colon, digits, comma, minus or plus sign are allowed.

offset: Indicates the value one must add to local time to arrive at UTC, of the form: hh[:mm[:ss]]. offset following std is required. If no offset follows dst, then dst is assumed to be one hour ahead of standard time. Digits always interpreted as decimal number.

hour: 0-23, minutes and seconds: 0-59. If preceded by a '-', the timezone is east of the Prime Meridian, otherwise it is west ('+' is optional)

start/time,end/time: Indicate when to change to and back from daylight savings time. The 'time' field indicates when, in local time, the change is made.

start, end:

Jn: The julian day n, ($1 \leq n \leq 365$). Leap days not counted.

n: zero-based julian day, ($0 \leq n \leq 365$). Leap days are counted so it is possible to refer to Feb 29.

Mm.n.d: The 'd'th day, ($0 \leq d \leq 6$) of week 'n' of month 'm' of the year ($1 \leq n \leq 5$, $1 \leq m \leq 12$, where week 5 means last 'd' day in month 'm' which may occur in either the fourth or the fifth week. Week '1' is the first week in which the 'd' day occurs.

time: time has the same format as offset, except that no leading '-' or '+' is permitted. The default is 02:00:00.

An Example

Eastern USA time zone, 1986:

```
EST5EDT4,116/02:00:00,298/02:00:00
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References

- [1] Droms, R., "Dynamic Host Configuration Protocol", [RFC 2131](#), Bucknell University, March 1997.
- [2] Alexander, S. and R. Droms, "DHCP Options and BOOTP Vendor Extensions", [RFC 2132](#), Lachman Associates, March 1997
- [3] Droms, R., "Procedure for Defining New DHCP Options", Work in progress, February, 1996.
- [4] IEEE, "1003.1 POSIX Timezone Specification", 1988.

[5] <http://tycho.usno.navy.mil>, "U.S. Naval Observatory"

Security Considerations

DHCP currently provides no authentication or security mechanisms. Potential exposures to attack are discussed in [section 7](#) of the DHCP protocol specification [[1](#)].

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