

draft-lear-dhc-timezone-option-02.txt

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Motivation

- There is no timezone option for DHCPv6
- What's there in v4 isn't used and is somewhat limited

What's Wrong With An Offset

- Clients cannot determine if they are in DST or when to go into or out of DST
- Clients cannot determine the current timezone they are in
- Client operating systems may not be able to use the information

There **IS** a standard for this stuff, right!?!

- There are FOUR standards to describe
timezone information
 - IEEE 1003.1-POSIX TZ strings
 - The "TZ Database"
 - Microsoft TimeZone Elements
 - VTIMEZONE entries from RFC 2445

The Draft

- Option with suboptions
- POSIX strings mandatory, everything else optional

POSIX Strings

- Provides forward/backward consistency until a rule change
- Understood by UNIX systems
- Concise – no database needed
- Example

`TZ="EST5EDT4,M3.2.0/02:00,M11.1.0/02:00"`

The TZ Database

- Forward and backward consistency and accuracy of time zone information to 1970
- Used by default for most UNIX systems (FreeBSD, Linux, OS-X, Solaris) and some JVMs
- Index passed
- Example:
 - America/Central

Microsoft TimeZone Element

```
<TimeZone ID="13" Name="(GMT-08:00) Pacific Time (US and Canada);  
Tijuana" Hidden="FALSE">
```

```
  <Bias>480</Bias>
```

```
  <StandardTime>
```

```
    <Bias>0</Bias>
```

```
    <Date>
```

```
      <Month>10</Month> <Day>5</Day><Hour>2</Hour>
```

```
    </Date>
```

```
  </StandardTime>
```

```
  <DaylightTime>
```

```
    <Bias>-60</Bias>
```

```
    <Date>
```

```
      <Month>4</Month><Day>1</Day><Hour>2</Hour>
```

```
    </Date>
```

```
  </DaylightTime>
```

```
</TimeZone>
```


Microsoft TimeZone Element (Ctd)

- Only the index is needed (two bytes)
- Similar information to POSIX
- Native to Windows devices

VTIMEZONE entries

```
BEGIN:VTIMEZONE
TZID:US/Central
LAST-MODIFIED:20060222T102150Z
BEGIN:DAYLIGHT
DTSTART:20060402T020000
TZOFFSETTO:-0500
TZOFFSETFROM:-0600
TZNAME:CDT
END:DAYLIGHT
BEGIN:STANDARD
DTSTART:20051030T020000
TZOFFSETTO:-0600
TZOFFSETFROM:-0500
TZNAME:CST
END:STANDARD
END:VTIMEZONE
```


VTIMEZONE (ctd)

- No central (or distributed) repository of information (Yet)
- Same type of information as TZ database
- Not concise (and no upper bound on size)

Draft Contents

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- 👁 POSIX TZ string (mandatory)
- 👁 TZ Database Timezone name
- 👁 Microsoft TimeZone Element Index
- 👁 NO VTIMEZONE records

Who cares?

- 👁 Mobile laptops
- 👁 IP-based Phones
- 👁 Set top boxes

Why DHCP is the right vehicle

- Change of location generally implies change of link state on a given link (albeit not always)
- Granularity is appropriate (system level)
- DHCP is already there for link state changes

Authors' concerns

- 👁 Do we have the right mandatory suboption?
- 👁 Is this draft too complex? Use multiple suboptions?
- 👁 Are the field sizes correct? (neither author knows much about DHCP internals)

Next Steps

- 👁 Discussion
- 👁 Accept draft as WG item?