draft-lear-dhc-timezone-option-02.txt
Eliot Lear
Paul Eggert
DHC Working Group
IETF 65
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

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

- 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?