

Network Working Group  
Internet-Draft  
Updates: [4791](#) (if approved)  
Intended status: Standards Track  
Expires: April 15, 2016

C. Daboo  
Apple  
October 13, 2015

**CalDAV: Time Zones by Reference**  
**draft-ietf-tzdist-caldav-timezone-ref-05**

Abstract

This document defines an update to the CalDAV calendar access protocol ([RFC 4791](#)) to allow clients and servers to exchange iCalendar data without the need to send full time zone data.

Status of This Memo

This Internet-Draft is submitted in full conformance with the provisions of [BCP 78](#) and [BCP 79](#).

Internet-Drafts are working documents of the Internet Engineering Task Force (IETF). Note that other groups may also distribute working documents as Internet-Drafts. The list of current Internet-Drafts is at <http://datatracker.ietf.org/drafts/current/>.

Internet-Drafts are draft documents valid for a maximum of six months and may be updated, replaced, or obsoleted by other documents at any time. It is inappropriate to use Internet-Drafts as reference material or to cite them other than as "work in progress."

This Internet-Draft will expire on April 15, 2016.

Copyright Notice

Copyright (c) 2015 IETF Trust and the persons identified as the document authors. All rights reserved.

This document is subject to [BCP 78](#) and the IETF Trust's Legal Provisions Relating to IETF Documents (<http://trustee.ietf.org/license-info>) in effect on the date of publication of this document. Please review these documents carefully, as they describe your rights and restrictions with respect to this document. Code Components extracted from this document must include Simplified BSD License text as described in Section 4.e of the Trust Legal Provisions and are provided without warranty as described in the Simplified BSD License.

## Table of Contents

|                             |  |                    |
|-----------------------------|--|--------------------|
| <a href="#">1.</a>          | Introduction . . . . .   | <a href="#">2</a>  |
| <a href="#">2.</a>          | Conventions Used in This Document . . . . .                                  | <a href="#">3</a>  |
| <a href="#">3.</a>          | Time Zones by Reference . . . . .  | <a href="#">3</a>  |
| <a href="#">3.1.</a>        | New Server Behavior . . . . .  | <a href="#">3</a>  |
| <a href="#">4.</a>          | New Client Behavior . . . . .  | <a href="#">7</a>  |
| <a href="#">5.</a>          | New WebDAV Properties . . . . .  | <a href="#">8</a>  |
| <a href="#">5.1.</a>        | CALDAV:timezone-service-set . . . . .  | <a href="#">8</a>  |
| <a href="#">5.2.</a>        | CALDAV:calendar-timezone-id . . . . .  | <a href="#">8</a>  |
| <a href="#">6.</a>          | XML Element Definitions . . . . .  | <a href="#">9</a>  |
| <a href="#">6.1.</a>        | CALDAV:calendar-query XML Element . . . . .                                  | <a href="#">9</a>  |
| <a href="#">6.2.</a>        | CALDAV:timezone-id XML Element . . . . .                                     | <a href="#">9</a>  |
| <a href="#">7.</a>          | Additional Message Header Fields . . . . .                                   | <a href="#">10</a> |
| <a href="#">7.1.</a>        | CalDAV-Timezones Request Header Field . . . . .                              | <a href="#">10</a> |
| <a href="#">8.</a>          | Security Considerations . . . . .  | <a href="#">10</a> |
| <a href="#">9.</a>          | Privacy Considerations . . . . .   | <a href="#">10</a> |
| <a href="#">10.</a>         | IANA Considerations . . . . .  | <a href="#">11</a> |
| <a href="#">10.1.</a>       | CalDAV-Timezones . . . . .   | <a href="#">11</a> |
| <a href="#">11.</a>         | Acknowledgments . . . . .  | <a href="#">11</a> |
| <a href="#">12.</a>         | References . . . . .   | <a href="#">11</a> |
| <a href="#">12.1.</a>       | Normative References . . . . .   | <a href="#">11</a> |
| <a href="#">12.2.</a>       | Informative References . . . . .   | <a href="#">12</a> |
| <a href="#">Appendix A.</a> | Change History (To be removed by RFC Editor before<br>publication) . . . . . | <a href="#">12</a> |
|                             | Author's Address . . . . .   | <a href="#">14</a> |

**1. Introduction**

The CalDAV [[RFC4791](#)] Calendar Access protocol allows clients to access calendar data stored on a server in the iCalendar [[RFC5545](#)] data format. In iCalendar, calendar data that uses local time in any of its date and/or time values is specified as a date-time value in combination with a time zone identifier ("TZID" property parameter). The time zone identifier refers to a time zone definition (a "VTIMEZONE" component) that has all of the rules required to determine local time UTC offsets for the corresponding time zone. In many cases, these "VTIMEZONE" components can be larger, octet-wise, than the events or tasks which make use of them. However, iCalendar currently requires all iCalendar objects ("VCALENDAR" components) that refer to a time zone via its identifier to also include the corresponding "VTIMEZONE" component. This leads to inefficiencies in the CalDAV protocol because large amounts of "VTIMEZONE" data are continuously being exchanged, and for the most part these time zone definitions are unchanging. This is of particular problem to mobile or limited devices, with limited network bandwidth, cpu processing, and power constraints.

Daboo

Expires April 15, 2016

[Page 2]

A set of standard time zone definitions are available at the IANA hosted time zone database [[RFC6557](#)]. That database provides the "raw" data for time zone definitions, and those can be converted into iCalendar "VTIMEZONE" components for use in iCalendar applications, as well as converted into other formats for use by other applications (e.g., "zoneinfo" files often found on Unix-based operating systems). A new Time Zone Data Distribution Service [[I-D.ietf-tzdist-service](#)] protocol is available that allows iCalendar applications to retrieve these standard time zone definitions in a timely and accurate fashion, instead of relying on possibly infrequent system updates of time zone data that frequently result in mismatched calendar data and resulting missed meetings between calendar users. Another benefit of the Time Zone Data Distribution Service is that it provides a single "reference" for standard time zone data that CalDAV clients and servers can make use of to "agree" on standard time zone definitions, and thus eliminate the need to exchange the data for those.

This specification defines a new mode of operation for CalDAV clients and servers which allow them to exchange iCalendar data without the need to send "VTIMEZONE" components for known, standard time zone definitions. This can significantly reduce the amount of data that needs to be sent between client and server, giving rise to performance and efficiency improvements for each of them.

## **[2.](#) Conventions Used in This Document**

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "NOT RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in [[RFC2119](#)].

Other notations used in this memo follow the notations of [[RFC4791](#)].

## **[3.](#) Time Zones by Reference**

Note that this specification only defines changes to iCalendar data sent or received via the CalDAV protocol (both [[RFC4791](#)] and [[RFC6638](#)], and extensions). These changes do not apply to other means of exchanging calendar data, such as iTIP [[RFC5546](#)] based scheduling mechanisms (e.g., iMIP [[RFC6047](#)]), or other methods.

### **[3.1.](#) New Server Behavior**

#### **[3.1.1.](#) Server Advertised Capability**

A server that supports this specification MUST include "calendar-no-timezone" as a field in the DAV response header field from an OPTIONS request on a calendar home collection (see [Section 6.2.1](#) of



[RFC4791]) or calendar collection (see [Section 4.2 of \[RFC4791\]](#)). Clients MUST check for the presence of that field in the DAV response header field before changing their behavior as per [Section 4](#).

### **3.1.2. Associated Time Zone Data Distribution Service**

A CalDAV server supporting this specification MUST have one or more associated time zone distribution services [[I-D.ietf-tzdist-service](#)] that provide data for the set of time zones known to the server and expected to be used by clients. A CalDAV server advertises the set of time zone distribution services it makes use of via a CALDAV:timezone-service-set WebDAV property (see [Section 5.1](#)) defined on calendar home collections. Clients can use the time zone data distribution services listed in this property to fetch current time zone definitions for the time zone identifiers in iCalendar data retrieved from the server. This allows clients to keep their "built-in" time zone definitions up to date. It also allows clients to use an "on-demand" model for populating their local time zone definition cache, only fetching a time zone definition when it is first seen in calendar data, potentially allowing for savings on storage space by eliminating the need to store time zone data that is not currently being used.

When making use of the time zone data distribution services advertised by a CalDAV server, clients MUST follow all the requirements of the time zone data distribution service protocol [[I-D.ietf-tzdist-service](#)], taking care to refresh time zone data in a timely fashion.

### **3.1.3. Time Zones in CalDAV Responses**

Servers MUST support the HTTP "CalDAV-Timezones" request header field (see [Section 7.1](#)). If the "CalDAV-Timezones" request header field has the value "T" on any HTTP request that returns iCalendar data, then the server MUST include all the appropriate "VTIMEZONE" components in the iCalendar data (all the ones that are referenced by "TZID" property parameters). If the "CalDAV-Timezones" request header field has the value "F" on any HTTP request that returns iCalendar data, then the server MUST NOT return any "VTIMEZONE" components if the time zone identifier matches one provided by any of the advertised time zone distribution servers (see [Section 3.1.2](#)). However, the server MUST return the appropriate "VTIMEZONE" component for each time zone with an identifier not available on the advertised time zone distribution servers. This behaviour applies to all HTTP requests on CalDAV resources that return iCalendar data either directly (such as a "GET" request on a calendar object resource), or embedded in a "structured" response such as a DAV:multistatus returned by a "REPORT" or "PROPFIND" request.

Daboo

Expires April 15, 2016

[Page 4]

Observation and experiments have shown that, in the vast majority of cases, CalDAV clients have typically ignored time zone definitions in data received from servers, and instead make use of their own "built-in" definitions for the corresponding time zone identifier. This means that it is reasonable for CalDAV servers to unilaterally decide not to send "VTIMEZONE" components for standard time zones that clients are expected to have "built-in" (i.e., IANA time zones). Thus, in the absence of a "CalDAV-Timezones" request header field, servers advertising the "calendar-no-timezone" capability MAY opt to not send standard "VTIMEZONE" components. Servers that do that will need to provide an administrator configuration setting to override the new default behavior based on client "User-Agent" request header field values, or other suitable means of identifying the client software in use.

#### **3.1.4. Time Zones in CalDAV Requests**

In addition to servers not sending time zone definitions to clients in iCalendar data, this specification also allows clients to not include time zone definitions when sending iCalendar data to the server, as per [Section 4](#). This behaviour applies to all HTTP requests on CalDAV resources that include iCalendar data either directly in the request body (such as a "PUT" request on a calendar object resource), or embedded in a "structured" request body such as a one used by "PROPPATCH" request.

Note that, as per [Section 4](#), clients might send time zone definitions for time zones that are not advertised by any of the time zone services associated with the server. In that case, servers have various choices:

1. Servers can preserve the original time zone definitions in the iCalendar data sent by the client, so that those can be returned to that or other clients who subsequently request iCalendar data.
2. Servers can refuse to accept any unknown/non-standard time zones, in which case they MUST reject the HTTP request containing such data using a WebDAV precondition code of CALDAV:valid-timezone.
3. Servers can, with appropriate knowledge, map the unknown/non-standard time zone to a standard time zone definition that accurately matches the one supplied by the client. In doing so, servers will need to re-write the iCalendar data to make use of the new standard time zone identifier chosen by the mapping procedure. Any subsequent request to fetch the calendar data would see the new time zone identifier in the calendar data. Note there is one important situation where this re-mapping is not appropriate: an attendee's copy of an event. In that case



Daboo

Expires April 15, 2016

[Page 5]

the original time zone definition needs to be preserved as the organizer's calendar user agent will expect to see that in any iTIP [\[RFC5546\]](#) replies sent by the attendee.

#### **[3.1.5.](#) Support of Time Zone Identifiers in WebDAV Properties**

CalDAV defines a CALDAV:calendar-timezone WebDAV property that is used by clients to set a default time zone for the server to use when doing time-based queries on calendar data (see [Section 5.3.2 of \[RFC4791\]](#)). The content of that WebDAV property is an iCalendar "VTIMEZONE" component. This specification defines a new CALDAV:calendar-timezone-id WebDAV property that allows the default time zone to be set via its time zone identifier, rather than providing the full "VTIMEZONE" component (see [Section 5.2](#)). This WebDAV property MUST be present on all resources that also support the CALDAV:calendar-timezone WebDAV property. Its value MUST match the value of the "TZID" iCalendar property in the "VTIMEZONE" component in the CALDAV:calendar-timezone WebDAV property on the same resource. The server MUST accept clients setting either the CALDAV:calendar-timezone or the CALDAV:calendar-timezone-id, and it MUST adjust the value of the alternate property to reflect any changes. i.e., if a client sets the CALDAV:calendar-timezone-id WebDAV property value to "America/New\_York", then the server will return the full "VTIMEZONE" data for that time zone in the CALDAV:calendar-timezone WebDAV property.

If a client attempts to update the CALDAV:calendar-timezone-id with a value that does not correspond to a time zone that is known to the server, the server MUST reject the property update using a CALDAV:valid-timezone pre-condition error. In such cases, clients MAY repeat the request using the CALDAV:calendar-timezone instead, and provide the full iCalendar data for the time zone being set.

#### **[3.1.6.](#) Support of Time Zone Identifiers in CALDAV:calendar-query REPORT**

CalDAV calendar query reports support a CALDAV:timezone XML element that is used by clients to set a specific time zone for the server to use when doing time-based queries on calendar data (see [Sections 7.3 and 9.8 of \[RFC4791\]](#)). The content of that XML element is an iCalendar "VTIMEZONE" component. This specification defines a new CALDAV:timezone-id XML element, that can be used as an alternative to the CALDAV:timezone XML element, that allows a specific time zone to be set via its time zone identifier, rather than providing the full "VTIMEZONE" component (see [Section 6.2](#)). Servers MUST support clients providing a time zone identifier for use in a calendar query REPORT using this new element.

Daboo

Expires April 15, 2016

[Page 6]

If a client attempts use a CALDAV:timezone-id XML element with a value that does not correspond to a time zone that is known to the server, the server MUST reject the request with a CALDAV:valid-timezone pre-condition error. In such cases, clients MAY repeat the request using the CALDAV:timezone XML element instead, and provide the full iCalendar data for the time zone being used.

#### 4. New Client Behavior

When a server advertises the "calendar-no-timezone" field in a DAV response header field (as per [Section 3.1.1](#)):

1. Clients SHOULD include an HTTP "CalDAV-Timezones" request header field with a value of "F" to ensure that the CalDAV server does not include "VTIMEZONE" components in any iCalendar data returned in a response (see [Section 3.1.3](#)), for those time zones whose identifier is one provided by any of the advertised time zone distribution servers (see [Section 3.1.2](#)). In this case, clients will have to retrieve the missing standard time zone definitions either from their own cache of standard time zones, or from the set of time zone distribution servers advertised by the CalDAV server (see [Section 3.1.2](#)).
2. Clients can include an HTTP "CalDAV-Timezones" request header field with a value of "T" to ensure that the CalDAV server does include all "VTIMEZONE" components in any iCalendar data returned in a response (see [Section 3.1.3](#)).
3. Clients can expect servers not to include standard time zone definitions in any iCalendar data they receive from the server, if there is no "CalDAV-Timezones" request header field in the HTTP request. Clients MUST retrieve standard time zone definitions either from its own cache of standard time zones, or from the set of time zone distribution servers advertised by the CalDAV server (see [Section 3.1.2](#)).
4. Clients SHOULD remove standard time zone definitions from iCalendar data they send to the server, provided the corresponding time zone identifier is one available on any of the server's advertised time zone distribution servers (see [Section 3.1.2](#)).
5. Clients MUST send time zone definitions in iCalendar data for any time zone identifiers not available via any of the server's advertised time zone distribution servers. Clients MUST be prepared for the server to reject such data or map the time zone to one in the set of standard time zones provided by the server's associated time zone services (as per [Section 3.1.4](#)).



6. Clients SHOULD make use of the CALDAV:calendar-timezone-id WebDAV property (see [Section 3.1.5](#)) and CalDAV:timezone-id XML element (see [Section 3.1.6](#)) for specifying default and specific time zones to use in calendar queries executed by the server.

## 5. New WebDAV Properties

### 5.1. CALDAV:timezone-service-set

Name: `timezone-service-set`

Namespace: `urn:ietf:params:xml:ns:caldav`

Purpose: Specifies one or more time zone data distribution servers being used by the CalDAV server to provide standard time zone data.

Conformance: This property SHOULD be defined on CalDAV calendar home collection resources. If defined, it SHOULD NOT be returned by a PROPFIND DAV:allprop request (as defined in [Section 14.2 of \[RFC4918\]](#)).

Description: The CALDAV:timezone-service-set property lists one or more time zone data distribution servers that the CalDAV server is using to provide its set of time zone data. See [Section 3.1.2](#) for more details.

Definition:

```
<!ELEMENT timezone-service-set (DAV:href+)>
DAV:href value: URI of a time zone data distribution service
as defined by this specification.
```

Example:

```
<C:timezone-service-set
  xmlns:D="DAV:"
  xmlns:C="urn:ietf:params:xml:ns:caldav">
  <D:href>https://timezones.example.com</D:href>
</C:timezone-service-set>
```

### 5.2. CALDAV:calendar-timezone-id

Name: `calendar-timezone-id`

Namespace: `urn:ietf:params:xml:ns:caldav`

Purpose: Specifies a time zone identifier for a calendar collection.



Conformance: This property SHOULD be defined on all resources where the CALDAV:calendar-timezone property is also defined. If defined, it SHOULD NOT be returned by a PROPFIND DAV:allprop request (as defined in [Section 14.2 of \[RFC4918\]](#)).

Description: The CALDAV:calendar-timezone-id property is used as an alternative to the CALDAV:calendar-timezone property (see [Section 5.3.2 of \[RFC4791\]](#)). It allows clients to set the default time zone using only a time zone identifier. It also indicates to the client, the time zone identifier of the current default time zone. See [Section 3.1.5](#) for more details.

Definition:

```
<!ELEMENT calendar-timezone-id (#PCDATA)>
PCDATA value: an time zone identifier.
```

Example:

```
<C:calendar-timezone-id
  xmlns:C="urn:ietf:params:xml:ns:caldav">US-Eastern<
/C:calendar-timezone-id>
```

## **[6.](#) XML Element Definitions**

### **[6.1.](#) CALDAV:calendar-query XML Element**

The CALDAV:calendar-query XML element, defined in [Section 9.5 of \[RFC4791\]](#), is modified to allow use of the CALDAV:timezone-id XML element as follows:

Definition:

```
<!ELEMENT calendar-query ((DAV:allprop |
                           DAV:propname |
                           DAV:prop)?, filter,
                           (timezone | timezone-id)?)>
```

### **[6.2.](#) CALDAV:timezone-id XML Element**

Name: timezone-id

Namespace: urn:ietf:params:xml:ns:caldav

Purpose: Specifies the time zone identifier for a time zone component to use when determining the results of a report.





Description: The CALDAV:timezone-id XML element is used as an alternative to the CALDAV:timezone XML element (see [Section 9.8 of \[RFC4791\]](#)) in calendar query reports, to allow a client to specify a time zone using a time zone identifier rather than providing the full iCalendar time zone data. See [Section 3.1.6](#) for more details.

Definition:

```
<!ELEMENT timezone-id (#PCDATA)>
PCDATA value: an time zone identifier.
```

## **7. Additional Message Header Fields**

### **7.1. CalDAV-Timezones Request Header Field**

The "CalDAV-Timezones" request header field provides a way for a client to indicate to the server whether it wants "VTIMEZONE" components returned in any iCalendar data that is part of the HTTP response. The value "T" indicates that the client wants time zone data returned, the value "F" indicates that it does not.

CalDAV-Timezones = "T" / "F"

Example:

CalDAV-Timezones: F

## **8. Security Considerations**

This specifications adds Time Zone Data Distribution Service [[I-D.ietf-tzdist-service](#)] servers into the overall calendaring and scheduling client/server architecture, as a critical component, and thus adds a new vector of attack against such systems. As such, administrators of CalDAV servers SHOULD ensure that any advertised time zone distribution servers are protected by a level of security commensurate with all the other components in the system.

Beyond the above point, this specification does not introduce any new security concerns beyond those addressed in CalDAV [[RFC4791](#)], iCalendar [[RFC5545](#)], and the Time Zone Data Distribution Service [[I-D.ietf-tzdist-service](#)].

## **9. Privacy Considerations**

The privacy recommendations in [Section 9](#) of the Time Zone Data Distribution Service [[I-D.ietf-tzdist-service](#)] specification SHOULD be used to ensure that details of clients' interactions with CalDAV



servers are not exposed to potential network observers. Note that since events can be delivered to a calendar user from an outside source (e.g., using iTIP [[RFC5546](#)]), and an attacker could create a calendar event with, e.g., a fake or lesser-used time zone identifier that could be used to monitor the calendar user's activity and interaction with others, this specification increases the importance of using the mitigations of privacy issues discussed in [[I-D.ietf-tzdist-service](#)].

## **[10.](#) IANA Considerations**

The message header field below should be added to the Permanent Message Header Field Registry (see [[RFC3864](#)]).

### **[10.1.](#) CalDAV-Timezones**

Header field name: CalDAV-Timezones

Applicable protocol: http

Status: standard

Author/Change controller: IETF

Specification document(s): this specification ([Section 7.1](#))

Related information: none

## **[11.](#) Acknowledgments**

Thanks to Mike Douglass, Andrew McMillan, and Ken Murchison. This specification came about via discussions at the Calendaring and Scheduling Consortium.

## **[12.](#) References**

### **[12.1.](#) Normative References**

- [I-D.ietf-tzdist-service]  
Douglass, M. and C. Daboo, "Time Zone Data Distribution Service", [draft-ietf-tzdist-service-11](#) (work in progress), July 2015.
- [RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), DOI 10.17487/[RFC2119](#), March 1997,  
<<http://www.rfc-editor.org/info/rfc2119>>.



- [RFC3864] Klyne, G., Nottingham, M., and J. Mogul, "Registration Procedures for Message Header Fields", [BCP 90](#), [RFC 3864](#), DOI 10.17487/RFC3864, September 2004, <<http://www.rfc-editor.org/info/rfc3864>>.
- [RFC4791] Daboo, C., Desruisseaux, B., and L. Dusseault, "Calendaring Extensions to WebDAV (CalDAV)", [RFC 4791](#), DOI 10.17487/RFC4791, March 2007, <<http://www.rfc-editor.org/info/rfc4791>>.
- [RFC4918] Dusseault, L., Ed., "HTTP Extensions for Web Distributed Authoring and Versioning (WebDAV)", [RFC 4918](#), DOI 10.17487/RFC4918, June 2007, <<http://www.rfc-editor.org/info/rfc4918>>.
- [RFC5545] Desruisseaux, B., Ed., "Internet Calendaring and Scheduling Core Object Specification (iCalendar)", [RFC 5545](#), DOI 10.17487/RFC5545, September 2009, <<http://www.rfc-editor.org/info/rfc5545>>.
- [RFC6638] Daboo, C. and B. Desruisseaux, "Scheduling Extensions to CalDAV", [RFC 6638](#), DOI 10.17487/RFC6638, June 2012, <<http://www.rfc-editor.org/info/rfc6638>>.

## **12.2. Informative References**

- [RFC5546] Daboo, C., Ed., "iCalendar Transport-Independent Interoperability Protocol (iTIP)", [RFC 5546](#), DOI 10.17487/RFC5546, December 2009, <<http://www.rfc-editor.org/info/rfc5546>>.
- [RFC6047] Melnikov, A., Ed., "iCalendar Message-Based Interoperability Protocol (iMIP)", [RFC 6047](#), DOI 10.17487/RFC6047, December 2010, <<http://www.rfc-editor.org/info/rfc6047>>.
- [RFC6557] Lear, E. and P. Eggert, "Procedures for Maintaining the Time Zone Database", [BCP 175](#), [RFC 6557](#), DOI 10.17487/RFC6557, February 2012, <<http://www.rfc-editor.org/info/rfc6557>>.

## **Appendix A. Change History (To be removed by RFC Editor before publication)**

Changes in -05:

1. IESG Review: abstract now says "updates" instead of "extends".



2. IESG Review: 3.1.5, 3.1.6 section title tweaks.
3. IESG Review: add tzdist reference in Security Considerations.
4. IESG Review: fixed truncated sentence in bullet #3 in [Section 4](#).
5. IESG Review: added privacy considerations section that references the corresponding tzdist service section.
6. IESG Review: added text to security considerations section to indicate tzdist servers need to be protected as well as the caldav server.

Changes in -04:

1. AD Review: added Updates 4791
2. AD Review: reworded first bullet of [Section 4](#) to indicate clients have a choice of where to locate time zones
3. AD Review: added text about server providing an admin config option to override new default behavior
4. AD Review: Replaced Prefer header with CalDAV-Timezones

Changes in -03:

1. Chair Review: minor editorial changes
2. Chair Review: expanded item #3 in [Section 3.1.4](#) to clarify the behavior and indicate when it would not be appropriate.

Changes in -02:

1. Ticket #27: added an HTTP Prefer header preference to allow clients to explicitly state whether they want or do not want VTIMEZONES from the server.

Changes in -01:

1. Ticket #24: rewording intro to [Section 3](#) to remove the MUST.
2. Ticket #26: rewording [Section 3.1.1](#) to not provide advice about how to handle limited devices.

Changes in -00:





1. Initial WG draft derived from [draft-daboo-caldav-timezone-ref-01](#), with some terminology changes to match WG name.
2. "timezone" -> "time zone" (<https://tools.ietf.org/wg/tzdist/trac/ticket/6>).

Author's Address

Cyrus Daboo  
Apple Inc.  
1 Infinite Loop  
Cupertino , CA 95014  
USA

Email: [cyrus@daboo.name](mailto:cyrus@daboo.name)  
URI: <http://www.apple.com/>

