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Introduction

The thirteenth Calconnect interoperability event was held at the Yahoo campus at Sunnyvale, California. Participants of the testing event used predetermined test scenarios. Rather than post the full test scenarios in this document, they can be found on the CalConnect website at the following URL: <http://www.calconnect.org/ioptesting.shtml>.

The documents used in this testing event were the CalConnect CalDAV Matrix for Draft 08, in particular the scheduling section and an iCalendar, iMIP and iTIP testing matrix.

Participants

Organization	Participants	Versions Tested
Apple	Cyrus Daboo	iCal Server and client - OS X 10.5.3 iCal client 3.03
	Wilfredo Sanchez	
	Haley Allen	
	Scott Adler	
Google	Harish Venkataramani	
	Ross Nelson	
IBM	Nate Barry	Lotus Domino and Notes 8.05
	Bruce Kahn	
Kerio Technologies	Tomas Hnetila	
Microsoft	Firdosh Ghyara	Exchange 8.5 and Outlook 2007
PeopleCube	Kellie Hunter	Meetingmaker V8.8
	Gordon Connelly	
RPI (Bedework)	Mike Douglass	Bedework server 3.5
Scalix	Florian von Kurnatowski	11.4.3 pre-release
	Gren Elliot	
	Chris Olsen	
Sun Microsystems	Arnaud Quillaud	
	May Ma	
	Karen Wu	
	Chengchen Zhou	
	Lakshmi Pavithra Pidatala	
Yahoo/Zimbra	John Holder	Zimbra Server pre 5.0.7
EM Client – Observer		Comind CalDAV Client
CalConnect Reps		
Interop Manager Logistics	Pat Egen Dave Thewlis	

General comments and findings

Eight CalDAV servers were tested against 4 CalDAV clients. iSchedule, a new specification was tested as well by several servers. Examples of what was tested by CalDAV servers and clients are:

- CalDAV access
- CalDAV scheduling
- CalDAV free/busy
- CalDAV Availability
- CalDAV Delegation.

In addition, two vendors tested their application's support for iCalendar, iTIP and iMIP. There were several clients who were testing iCalendar, iMIP and iTIP against regular clients as well as against several CalDAV servers so the CalDAV servers could test how they handled iMIP requests

The following are general comments about what occurred and specific findings. Vendor names are not referenced. What is discussed are actual issues found so that developers of applications can recognize potential issues within their own products.

CalDAV Testing

During CalDAV testing, the following things were noted:

When creating a new single-instance meeting with an alarm set to trigger 15 minutes prior to the schedule time of the meeting, a server removed the alarm after several update operations.

When modifying the location of the meeting a server did not preserve seconds on the override of the meeting.

After modifying the title of the first instance of the recurring meeting a server did not support the overwrite.

On the "Query all components and return ETag WebDAV property and all data" test, a CalDAV client did a query only for the etag, not the calendar data

When creating a calendar-query REPORT, one server's Reports are overridden in separate resources with the same url.

After creating a new calendar in the current user's personal calendar space, one CalDAV server appends "1" to the name of the created folder.

A CalDAV server verified an issue that makes it impossible to use alerts in one of the clients. Fixing the problem will require the server vendor to preserve non-standard properties specific to this client, so they do not have a complete resolution at the moment. A few other minor issues were also uncovered.

This same server discovered that they were missing a CalDAV operation (options request, not currently invoked by any other client). They implemented a fix during the interop and verified that the basic scheduling features worked after adding support for the options request. They helped one of the clients testing iCalendar uncover an issue with regards to incrementing sequence numbers when canceling events.

One CalDAV server noted that they found CalDAV implementations seems more mature than before. Items they noted were GUI and Usability issues in Availability settings in one of the clients. They noted incorrect server responses that caused problems with another client.

A CalDAV server noted the following issues within their own application:

- a problem with xmlns:D="DAV:"
- another problem with DAV: in iSchedule response

- Originator and Recipient address are swapped when a meeting reply was sent from a server over iSchedule
- finally it works.

Issues found with other clients and servers:

- iMIP: iPhone doesn't recognize meeting invitation from a CalDAV server
- A CalDAV client modified structure of MIME format on site
- iMIP: when meeting is accepted in a server's email, reply is sent to From: header address instead of Organizer's address.

One CalDAV server noted that all Tomcat versions don't work with large data amounts with CalDAV. They also noted that a client stored user credentials in the browser cache and even if the server deleted a calendar account and added it back it didn't ask them to re-authenticate. Also, upon deletion, we had to clear the browser cache to clear user credentials. This happened on Internet Explorer and Firefox.

A CalDAV server noted the following:

Problems found:

1. If you use the wrong authentication for a valid Calendar, we give a 501 error. A more friendly response would be desirable.
2. If you add a daily recurrence with one of the clients with four instances and delete the third instance, you lose sight of the fourth instance too.
3. If you have a recurrence with an exception where the start of the recurrence specifies seconds, we generate a bad recurrence-id for the exception.
4. We were not preserving the value of RSVP in Meeting REQUESTs. i.e. we always assumed the value was TRUE.
5. Notes originated meetings were not visible to our CalDAV clients.
6. One server's iMip Gateway originated messages are not recognized as meeting requests by us. We spotted an original issue that the Content-Type METHOD parameter was not being specified but we still had an issue with the final form of Mime structure that they intend to use.
7. Notes originated requests end up with blank DESCRIPTION in the iCalendar object and invalid ATTACH properties.

Another server observed the following during testing of iSchedule.

- From one server to another server, they got the invitation ok, and reply sent properly and the client was updated with the status
- From one server to another an invitation doesn't show up on the client
- From one server to another the invitation was received ok, and reply sent properly, and they could see status updated in the client
- On another server to server, the invitation was received ok, and reply sent properly but the status was not updated on the client
- From one server to another server, the invitation was ok, but reply can't be sent properly
- From one server to another, the invitation was ok, but reply can't be sent properly

One server noted:

There were a number of fixes needed to new code - mostly in CalDAV scheduling - had a number of interactions with a server with problems at both ends.

One server tested with a client and found it worked well enough with the new CalDAV scheduling draft.

iCalendar Testing:

Two vendors tested their applications against each other and other servers that would accept icalendar objects. These were some of the findings. What is shown is the specific test and observations for each test.

Send a meeting invitation

- There is a problem with reading MIME messages sent from one of the servers.

Accept a meeting invitation

- Issue where Accepts are showing as Tentative (likely related to above mismatch bugs)
- One vendor will investigate incorrect assumptions on name match
- Acceptances do not reliably get delivered
- The entire body shows in accept comments

Cancel a Meeting Invitation

- Not bumping the sequence on cancel
- One vendor will consider not requiring SEQUENCE to be bumped
- Updating the subject only - possibly related to sequence bump (retest)
- Viewing the cancel causing duplicates

Send an invite with Rich Text

- Not honoring ALTREP or sending any rich text.
- Displaying rich text in invite, not in calendar.
- Putting HTML directly in description rather than in an ALTREP.

Send an invite with attachments

- Putting inline attachments that can't be handled
- Attachments show in mail only and not in calendar

Update a meeting invitation

- Bumping the sequence number and forcing another vendor to accept.

Reschedule the original meeting invitation

- Not clearing invitee status on reschedule

Decline a meeting invitation

- Not sending RSVP thus causing lost responses

Create a meeting with required and optional Participants

- Not correlating the message.
- Showing CC users as To users, but without data loss

Create a repeating monthly by date

- Bug for monthly on first thurs until 1/2/09 - last instance missing
- Not handling multiple by date entries

Create a repeating monthly by day

- Not working when multiple days are selected
- Not implementing second day
- Not handling multiple by day entries

Create a repeating monthly event from end

- Error with end of month iCalendar.
- Writing bad iCalendar

Create a repeating yearly

- Not honoring DTSTART that doesn't match RRULE. DTEND is also wrong (early).

Create a repeating RDATE meeting

- Not supporting or understanding RRULE
- Not supporting RDATEs

Repeats with no end date

- Sending a response for all even though it truncates the set to some finite value

Repeat every other...

- Failing for every other year
- Test until (daily)
- Not including time on the date
 - Not showing last instance
 - Time on the until is not before the instance - still puts it on the calendar.
- Create a repeating daily invite
- Duplicate entries upon acceptance (not reproducible)
- Update the invite (all instances)
- Not supporting RDATEs
 - Deleting the existing meeting (and invite) and recreating a new invite since it does not handle RRULE updates
- Reschedule the invite (all instances)
- Showing as accepted despite not receiving an updated acceptance
- Cancel the invite (all instances)
- Not bumping sequence - also RDATEs
 - Not bumping sequence number on cancel
- Update one instance, then series
- Not supporting series update (RDATEs?)
 - Fail when working on messages with multiple VEVENTs
 - Not interpreted - Does One vendor need to put the RDATE?
- Cancel a single instance
- Pass but last char of subject is truncated
 - Not interpreted - Does One vendor need to put the RDATE?
 - Doesn't bump sequence
 - Does not bump sequence number on cancel
 - Only updating subject line - possibly related to a bug
 - Only updating subject line - possibly related to a bug
- Reschedule a single instance
- Does not bump sequence number
- Update a single instance
- Not interpreted - Does One vendor need to put the RDATE?
- Accept the updated single instance
- Not handling exception instances
- Counter a single date
- Could not correlate the message,
- Cancel this and all future instances
- Not supporting RDATEs
 - Bug preventing RDATEs from working
- Reschedule meeting and all future instances
- Not sending cancel when it splits, which causes duplicates
- Remove an attendee from a simple meeting
- Does not bump sequence
 - Chair does not work
- Add an attendee to a series
- Does not handle RDATEs
- Create a meeting with Reminders - one for 5mins, one for 10 mins
- Alarms are not preserved for anyone
- Items not supported by several applications:
- Counter all dates
 - Counter for this and all future instances
 - Accept the counter for this and all future instances
 - Counter a meeting invitation
 - Counter a single date
 - Counter all dates

Accept a meeting invitation counter
Accept the countered single date

A summary of significant interoperability issues is as follows:

- 1) Needs to handle VCALENDARS with multiple VEVENTS - this results in very ugly behavior and result in severe data loss.
- 2) Needs to increment SEQUENCE on cancellations to comply with the standard to unblock cancellation tests.
- 3) Revisit handling of RRULE updates - current method does not lose data but is a very brute force method. Is there a better way?
- 4) RDATEs are not supported: This causes severe data loss on some (rare) invites and also on multiple instance updates, which are very common.
- 5) Rich body content is not supported in either direction. Note: Counterproposals now work! This was very exciting!
- 6) Must fix the reliability of responses as these seem to intermittently not be sent (bug).
- 7) Fix bug with RDATE format. This should be working but is not. Fixing this will unblock a large number of tests.
- 8) Attachments and rich body content come in but do not make it to a calendar.
- 9) Counterproposals are not currently supported.
- 10) Not handling nested multipart/mixed MIME sections.
- 11) The MIME structure needs to be revisited to allow iCalendar data to be represented as workflow rather than as an attachment. This does not block tests but is ugly and annoying.
- 12) RDATEs are not supported: This causes severe data loss on some (rare) invites and also on multiple instance updates, which are very common.
- 13) Counterproposals are not currently supported.
- 14) Meeting modifications to a single instance is not yet supported.
- 15) Intermittent problem where meetings get duplicated

Summary

This meeting was our largest interoperability event to date. Eight CalDAV servers and 4 CalDAV clients were tested as well as iCalendar, iMIP and iTIP.

The most significant takeaway from this event was CalDAV clients were able to test with the majority of the servers. In the past, because things were often not finished or applications had issues, it was not possible to complete testing. The fact that one client was able to successfully test against 8 servers during a two day process shows tremendous progress. I look forward to the next set of testing to see how much improvement has been made, particularly with respect to CalDAV scheduling.

With regards to iCalendar testing general interoperability worked far better than it has in the past and it is clear that strong interoperability efforts have been and are being made by many of the vendors present.

Respectfully submitted by Pat Egen, CalConnect Interop Manager.