# CalConnect Technical Preview - Roundtable XIII

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The Calendaring and Scheduling Consortium, Inc.  2008

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# Contents

# Foreword

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http://www.calconnect.org/documents/disclaimerpublic.pdf.

# CalConnect Technical Preview - Roundtable XIII

## 1. Note Well

— This presentation reflects in-progress work and activities of CalConnect
— CalConnect rules governing disclosure of such work applies
— As always you can discuss this work freely within the CalConnect community
— Outside of CalConnect:
  — You may discuss the preview and the work being done in general
  — Please do not identify the organizations and individuals that are participating
  — Please do not discuss specific details and be cautious about inferences

## 2. Introduction

CalConnect members have produced a Technical Demonstration of key calendaring and scheduling technologies being developed by CalConnect.

This serves as a technology "preview" only and does not in any way represent final protocols or products.

Our goal is to solicit feedback from members and invited guests on the presentation itself as well as the technologies being demonstrated.

We also hope to show how CalConnect is successfully achieving its goal of improving calendaring and scheduling standards.

## 3. Agenda

— Introduction to CalConnect
— Technical Previews
  — CalDAV Scheduling
  — iSchedule
  — Internet Freebusy

— Conclusion
— Q&A

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## 4. Introduction to CalConnect

### 4.1. What is CalConnect

An information technology consortium focused on calendaring and scheduling that is a partnership between vendors and customers.

> Our vision of the future is not only interoperable calendaring, but ubiquitous interoperable calendaring. Calendaring should—and can—be as ubiquitous as electronic mail.

### 4.2. Why do we need it?

Our goals:

— improve general understanding
— promote the technologies
— improve the technologies, in particular interoperability

> The driving premise behind the Consortium is that interoperability between calendaring programs and systems is essential to achieving the promise and future growth of calendaring.

### 4.3. Current Membership



### 4.4. Done so far?

— Substantial input to the IETF on new versions of calendaring RFCs (e.g., recurrences, timezones, and minimum interoperability subsets)
— Work on CalDAV, CalDAV Scheduling, and extensions to CalDAV

— Recommendations and guidance on Extended Daylight Savings Time
— Timezone Registry and Service Recommendations
— Mobile Calendaring white paper and Interoperability Test Suite
— Mobile Calendaring Recurrence support
— Surveys and use cases for calendaring events, tasks ( VT0D0s)
— Calendaring Glossary
— Calendar Administrator's mailing list
— Thirteen successful IOP test events between C implementations
— First Mobile Calendaring IOP test event
— Demo of Federated Freebusy data consolidation in 2006

## 4.5. Ongoing work?

— TC-CALDAV
— TC-EVENTPUB
— TC-FREEBUSY
— TC-IOPTEST
— TC-ISCHEDULE
— TC-MOBILE
— TC-TIMEZONE
— TC-USECASE
— TC-XML

## 4.6. Where is it going?

— Continue with core goals
— Calendaring libraries/APIs to assist implementations
— Calendaring as a platform (e.g. project management)
— Types of calendaring infrastructures (e.g. enterprise, federation, services, ad hoc)
— Expand participation in new areas
    — Vertical industry focus (e.g., mobile operators)
    — Government and private industry customer perspective
    — Overseas (Europe in short term, Asia after)

## 5. Technical Previews

— Today we will demonstrate:
    — CalDAV Scheduling
    — iSchedule
    — Internet `freebusy` lookups using `freebusy` URLs

— Each presentation will consist of:
    — Introductory slides
    — Live demonstration

## 6. CalDAV Scheduling — How it works

## 6.1. Introduction to CalDAV

— RFC4791 defines the CalDAV Access protocol.
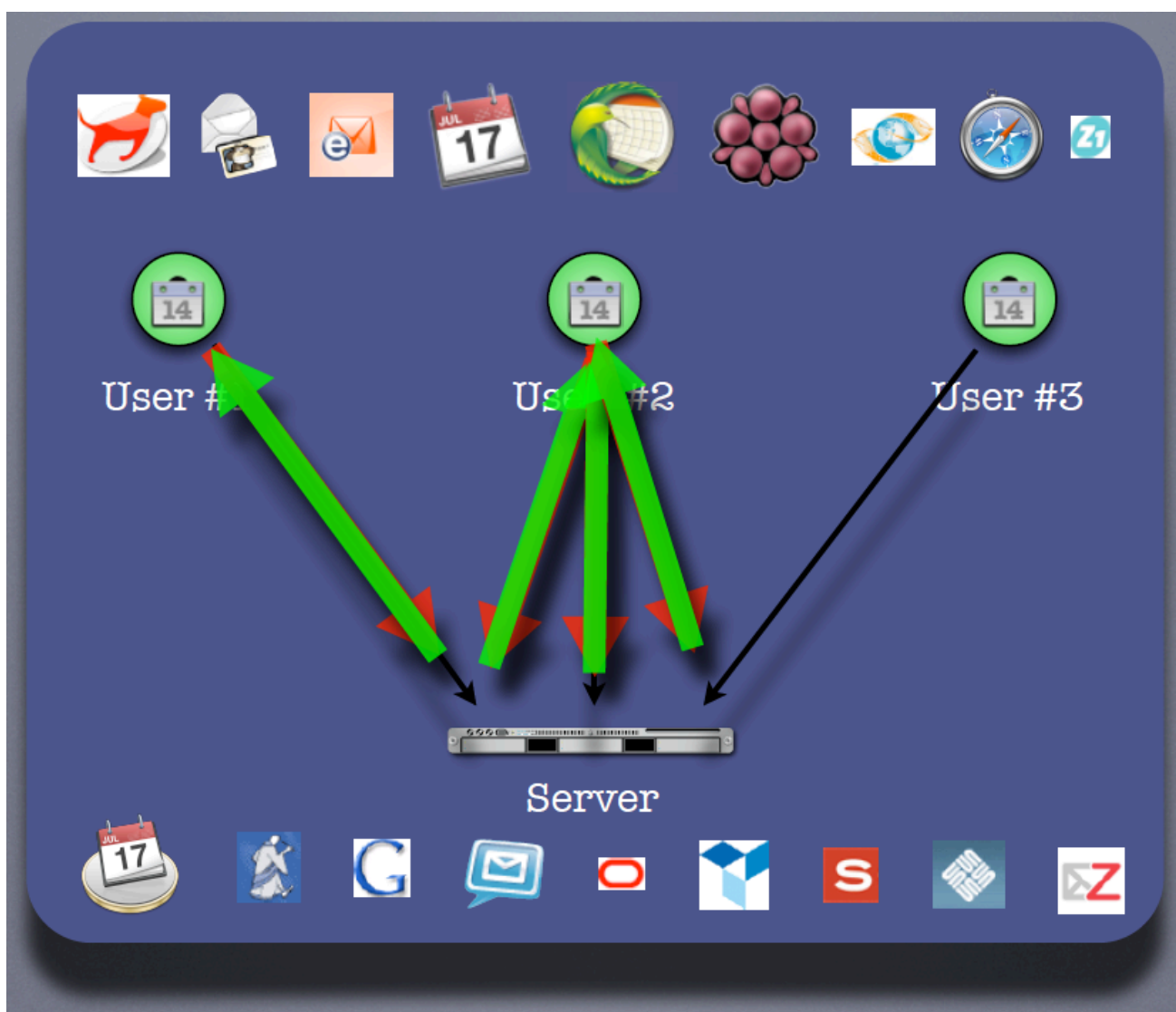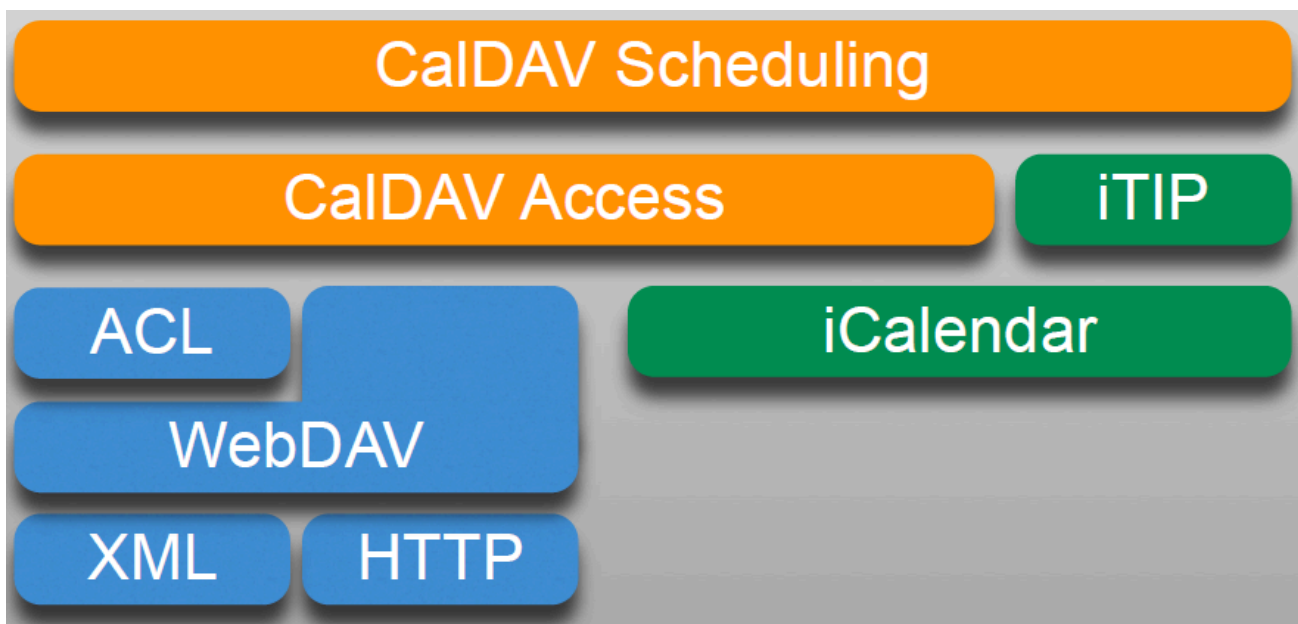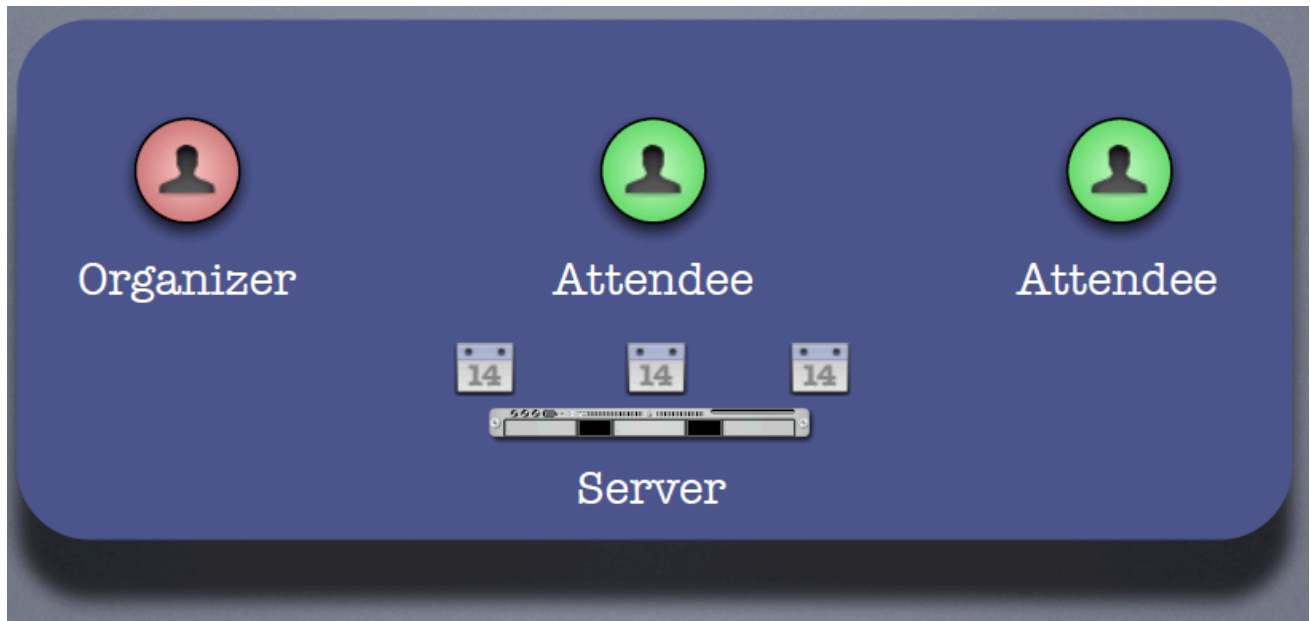— Built on core internet technologies

**Figure 1 — Multiple Users can Access and Share Calendars**

## 6.2.  CalDAV Scheduling

How it works:

— Several users on one CalDAV server (any client) schedule with each other
— One user is the "Organizer", others are "Attendees"



**Figure 2 — One is the Organizer, others are Attendees**

There are two parts to scheduling:

— Freebusy lookup
— Sending invitations and receiving replies

Freebusy results are returned immediately.

Invitation replies are sent only after users inspect and accept or decline.

Each user has an "Outbox" and an "Inbox". The "Outbox" is used to trigger `freebusy` lookup. The "Inbox" is where invites or replies are delivered. Changes to events trigger scheduling. Clients monitor the "Inbox" for incoming scheduling messages.
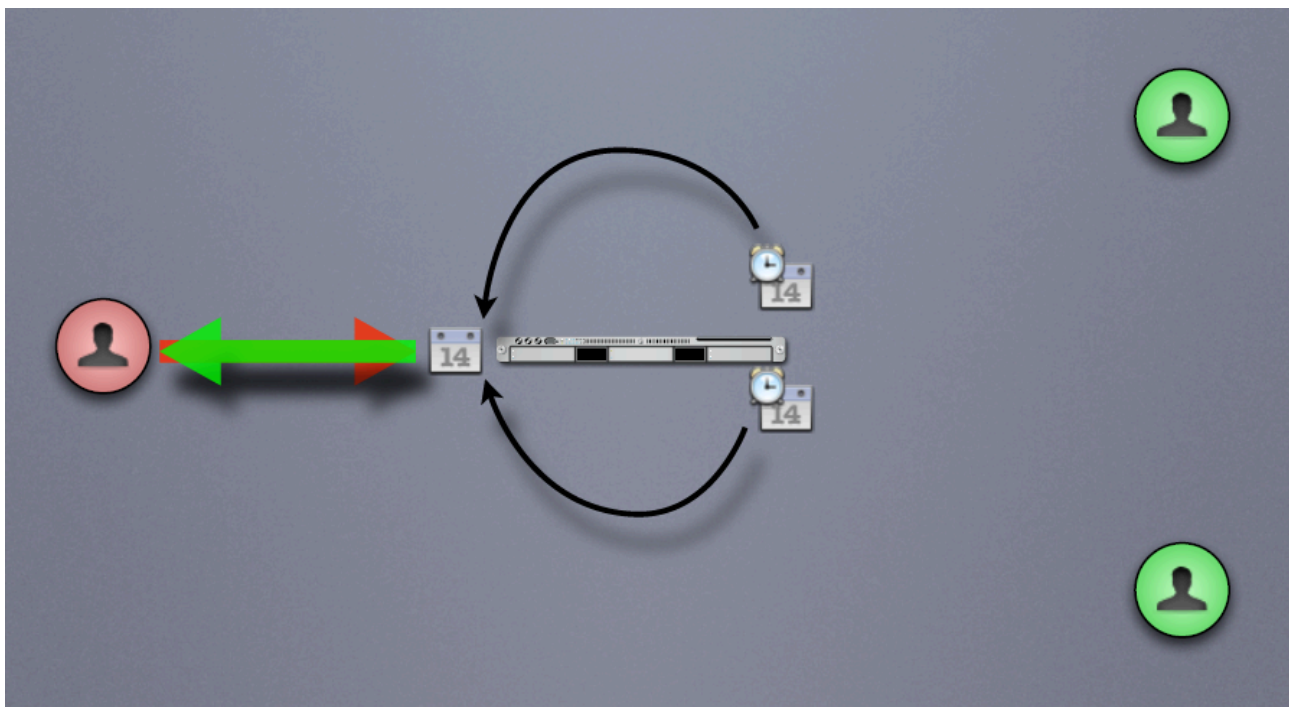
**Figure 3-1 — Organizer sends freebusy request to the server.
Server calculates and returns freebusy data for attendees.**
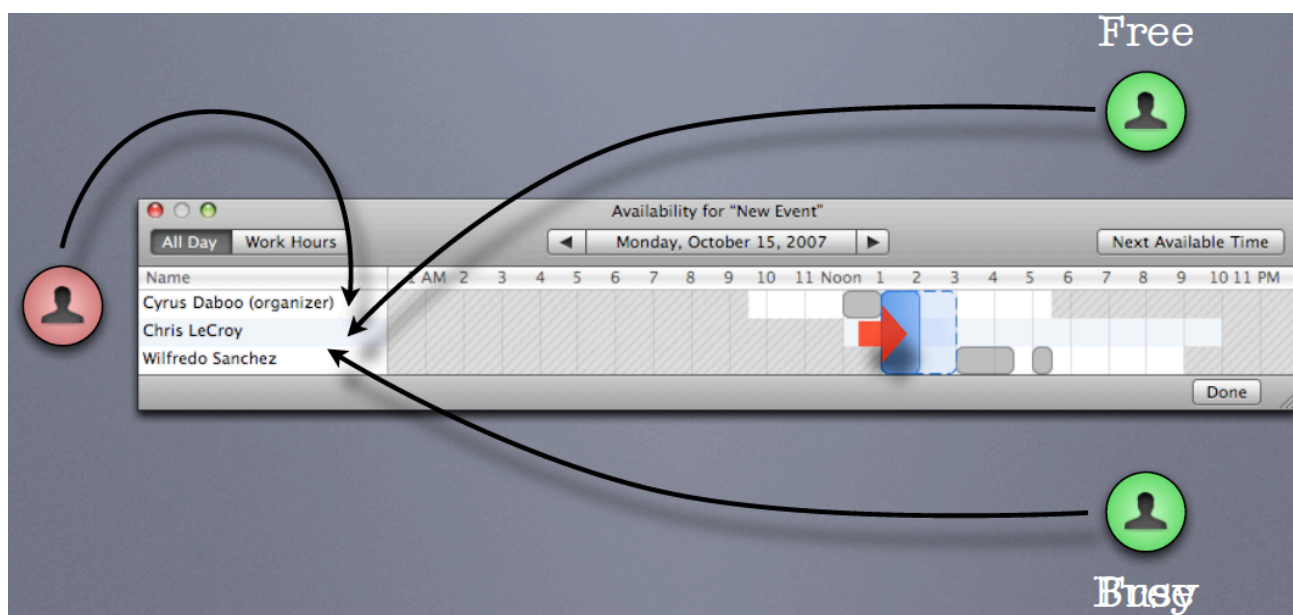


**Figure 3-2 — Organizer sees freebusy for everyone. Adjusts for free time for everyone.**

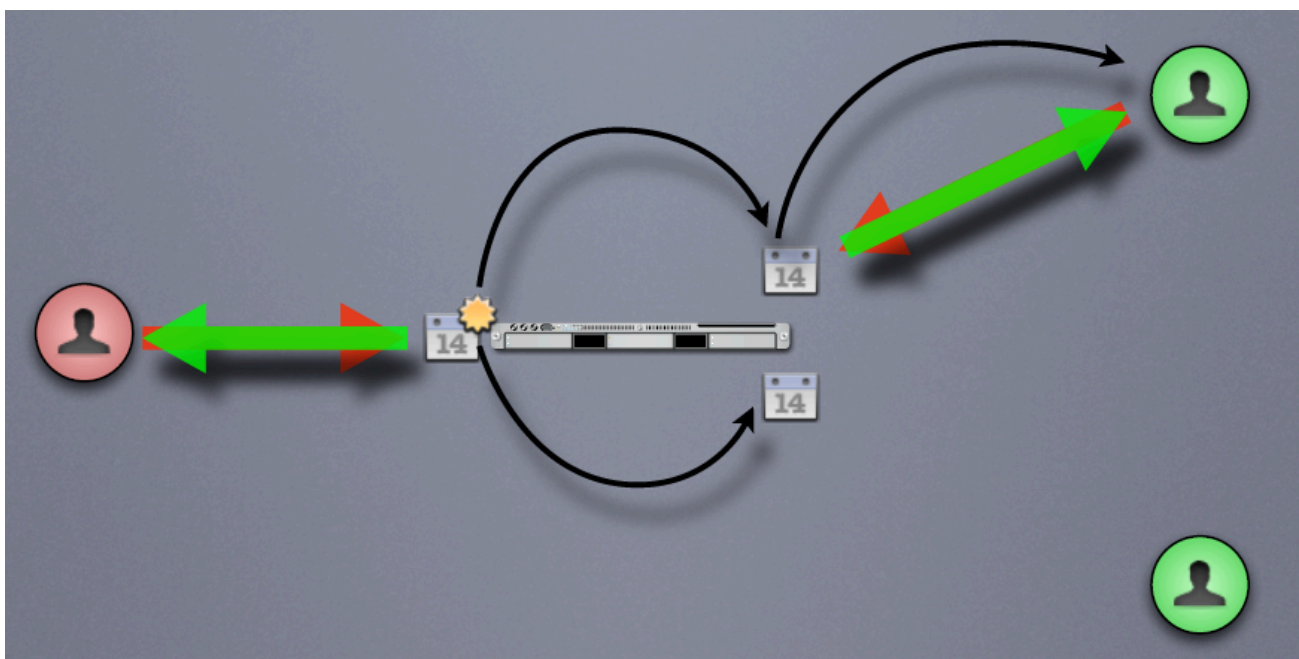**Figure 3 — Sequence of diagrams showing free-busy lookup.**

**Figure 4-1 — Organizer sends invite request to the server. Server copies the request into each attendees' Inbox. Attendees see the invites when they next check the server.**
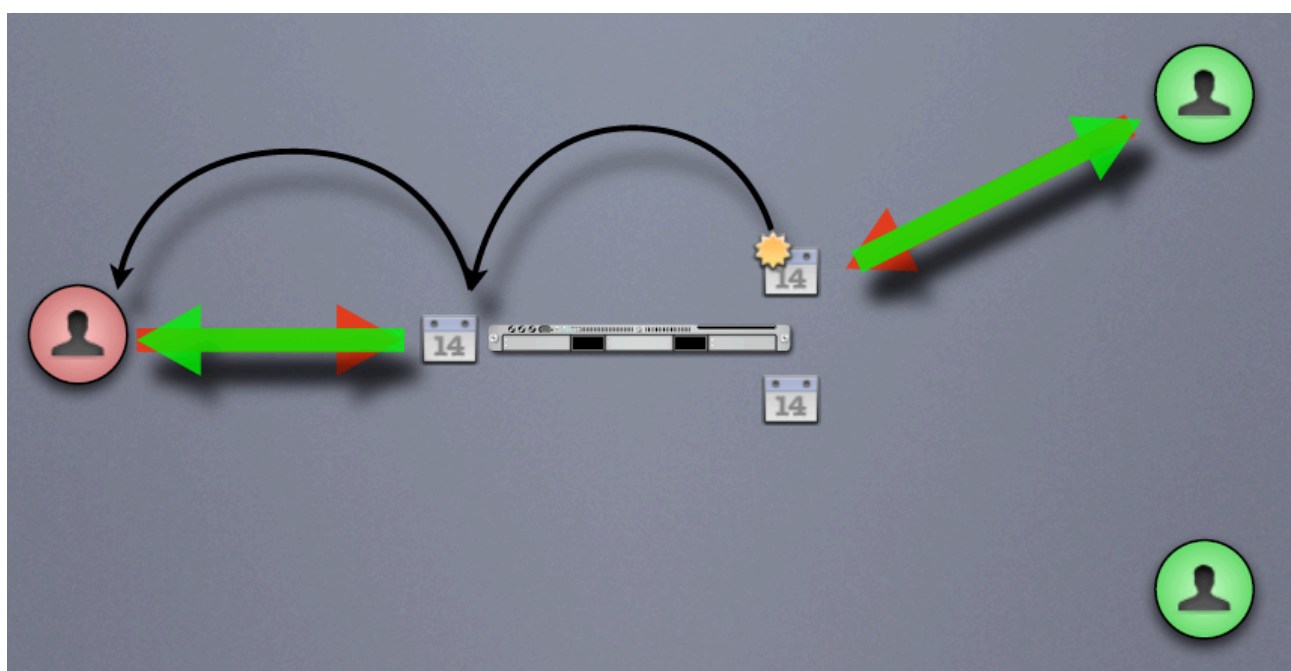


**Figure 4-2 — Attendee replies to the server. Server copies the reply into the organizer's Inbox. Organizer sees the reply when they next check the server.**

**Figure 4 — Sequence of diagrams showing invitations being sent out, replies returned.**

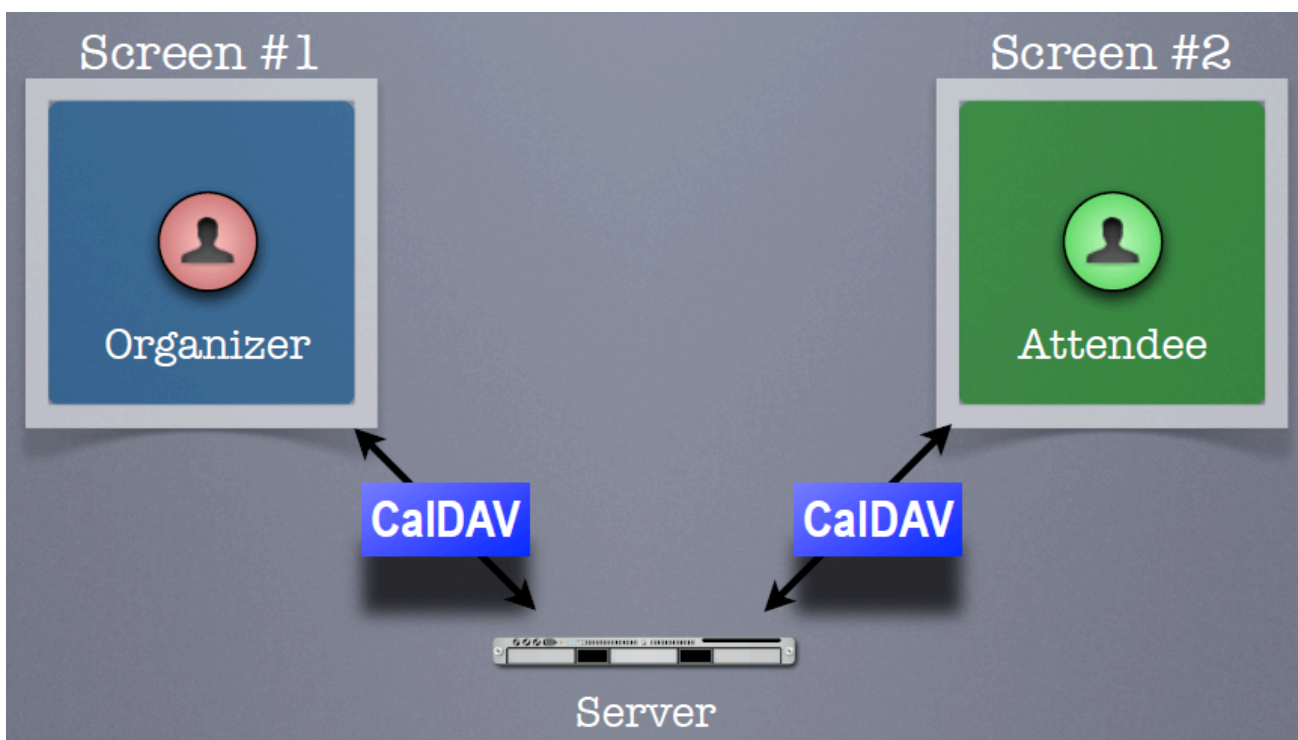### 6.2.1. Demonstration #1 — Simple meeting between two people



**Figure 5 — Demo Participants**

### 6.2.2. Demonstration #2 — Simple meeting between multiple people with different clients some CalDAV others using a CalDAV "connector"
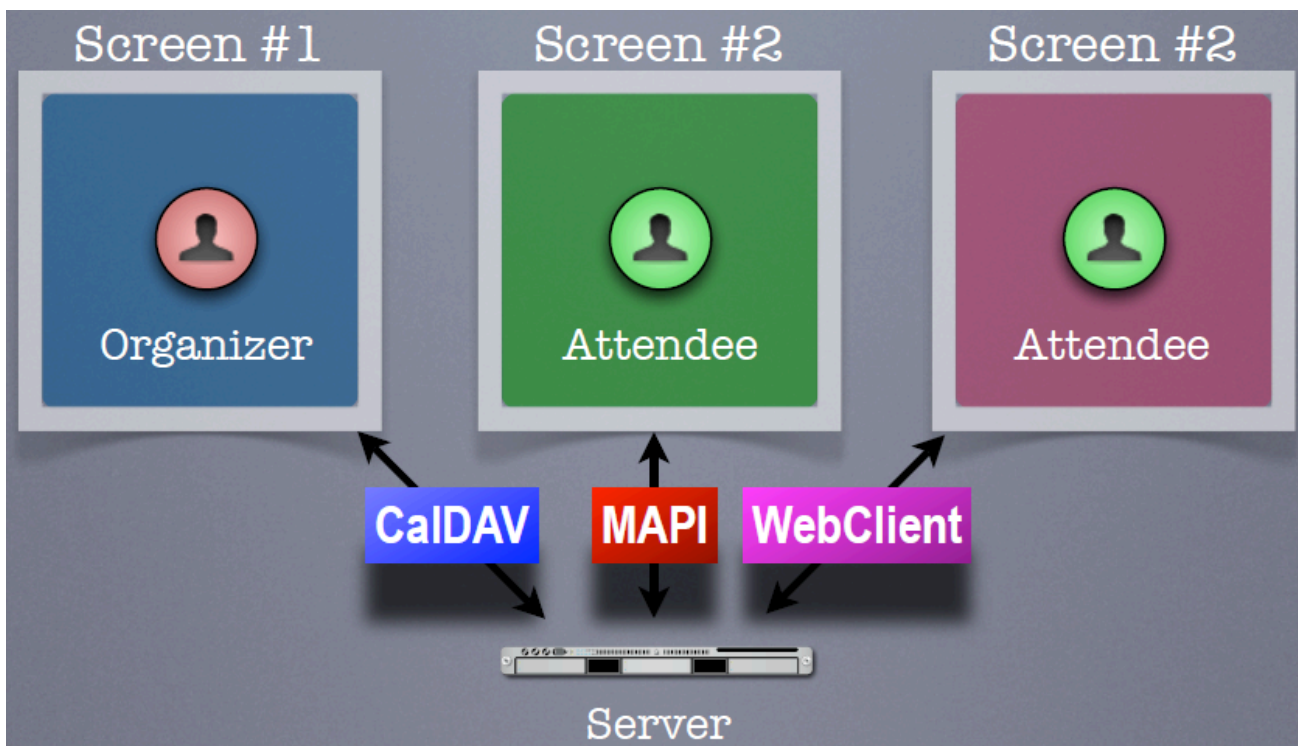


**Figure 6 — Demo Participants**

# 7. iSchedule — How it works

## 7.1. Basic Concept

— Provides the ability for users on different calendaring systems to schedule meetings with each other
— Instantaneous `freebusy` lookups
— Invites, replies sent as "messages" with delivery status immediately returned

## 7.2. Can't this be done today?

— But I can do scheduling with my colleagues today!
— True, but only people on the same server as you, or via some other communication process such as email or telephone.

## 7.3. Design of iSchedule

— Built on core internet technologies
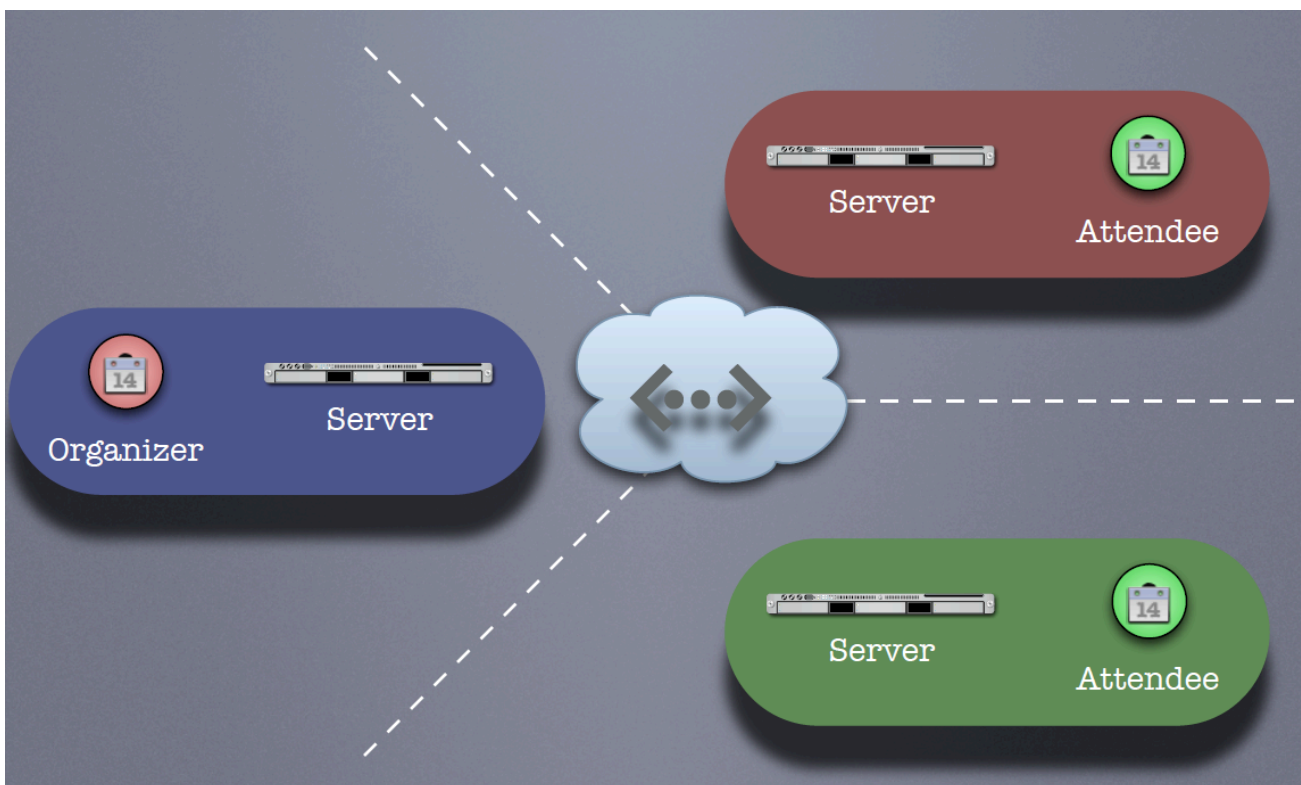— Can be used with any type of calendar store (does not depend on CalDAV)
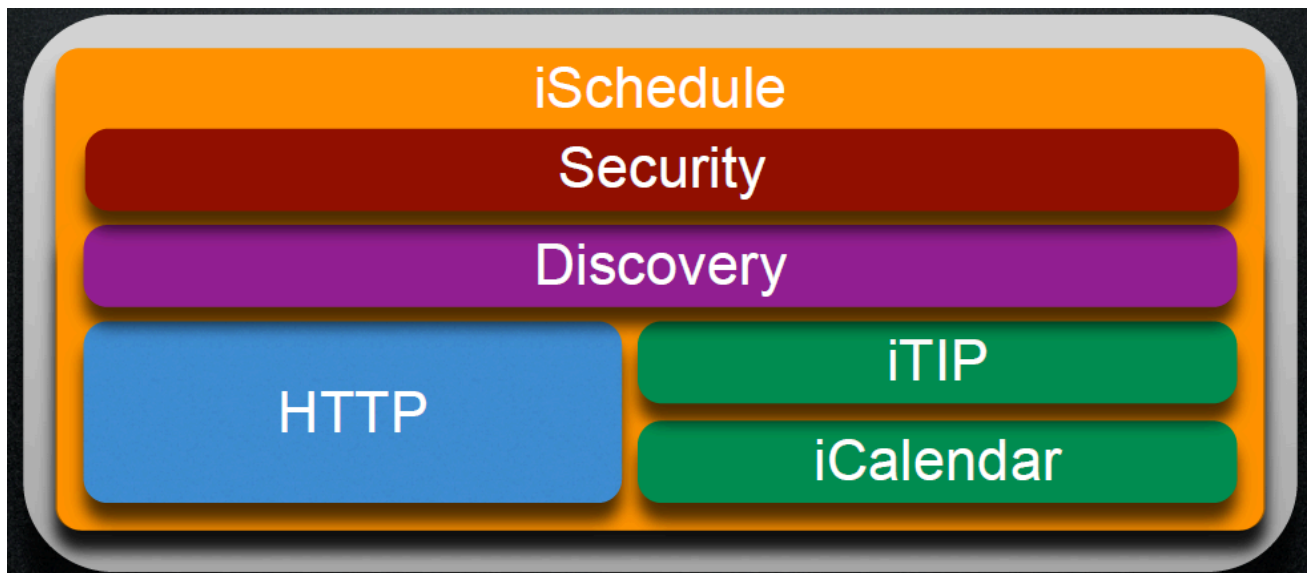
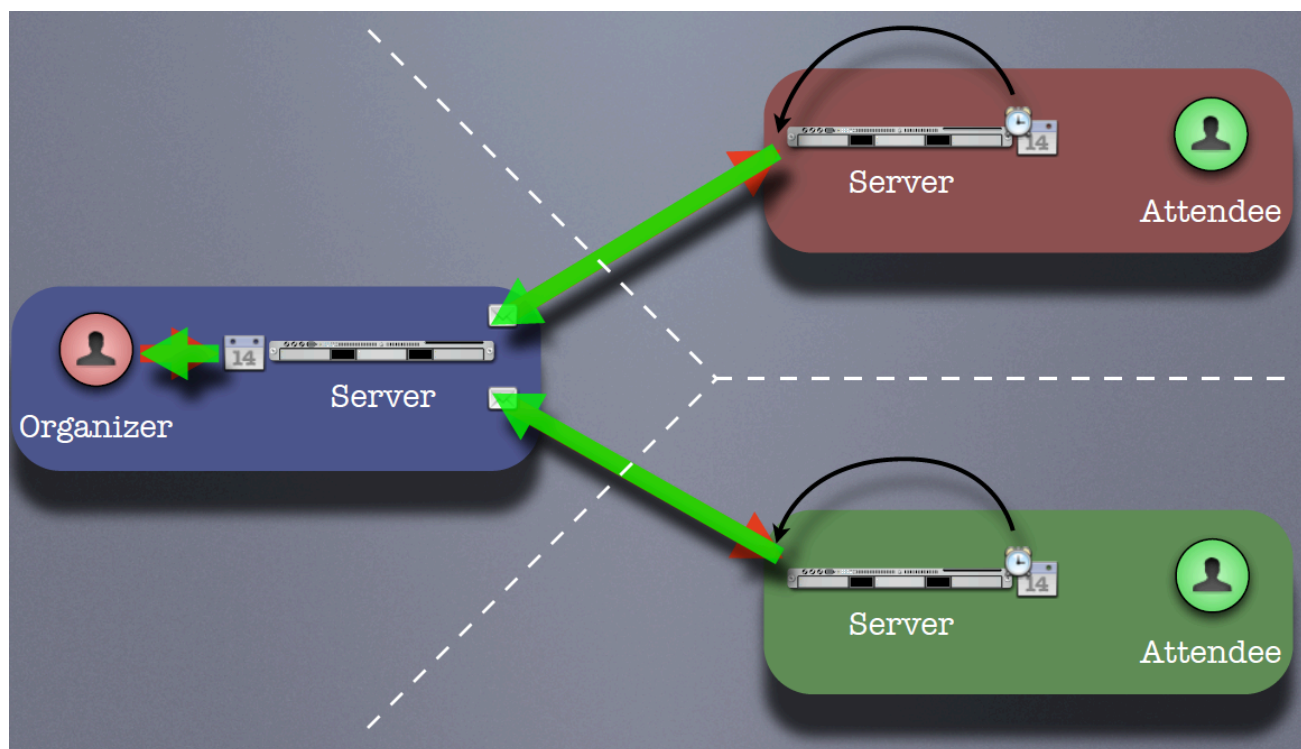**Figure 7 — Organizer and Attendees on different systems**



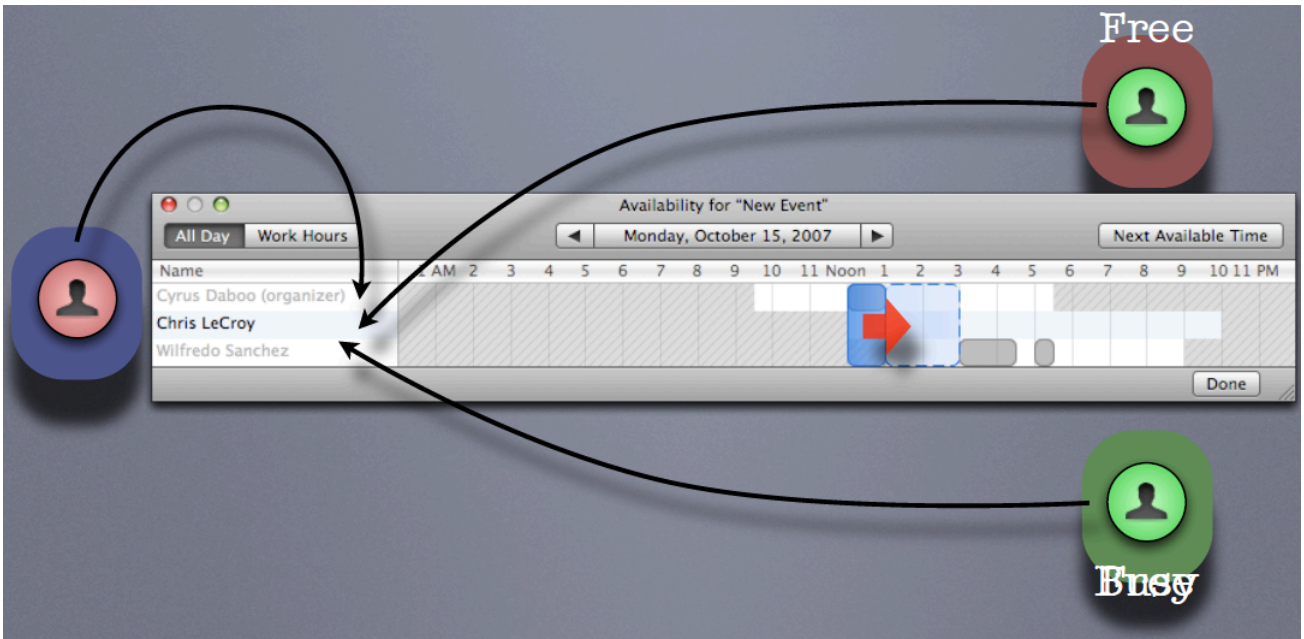**Figure 8-1 — Freebusy response comes back immediately**

**Figure 8-2 — Organizer sees freebusy for everyone. Adjusts for free time for everyone.**

**Figure 8 — Sequence of diagrams showing freebusy.**



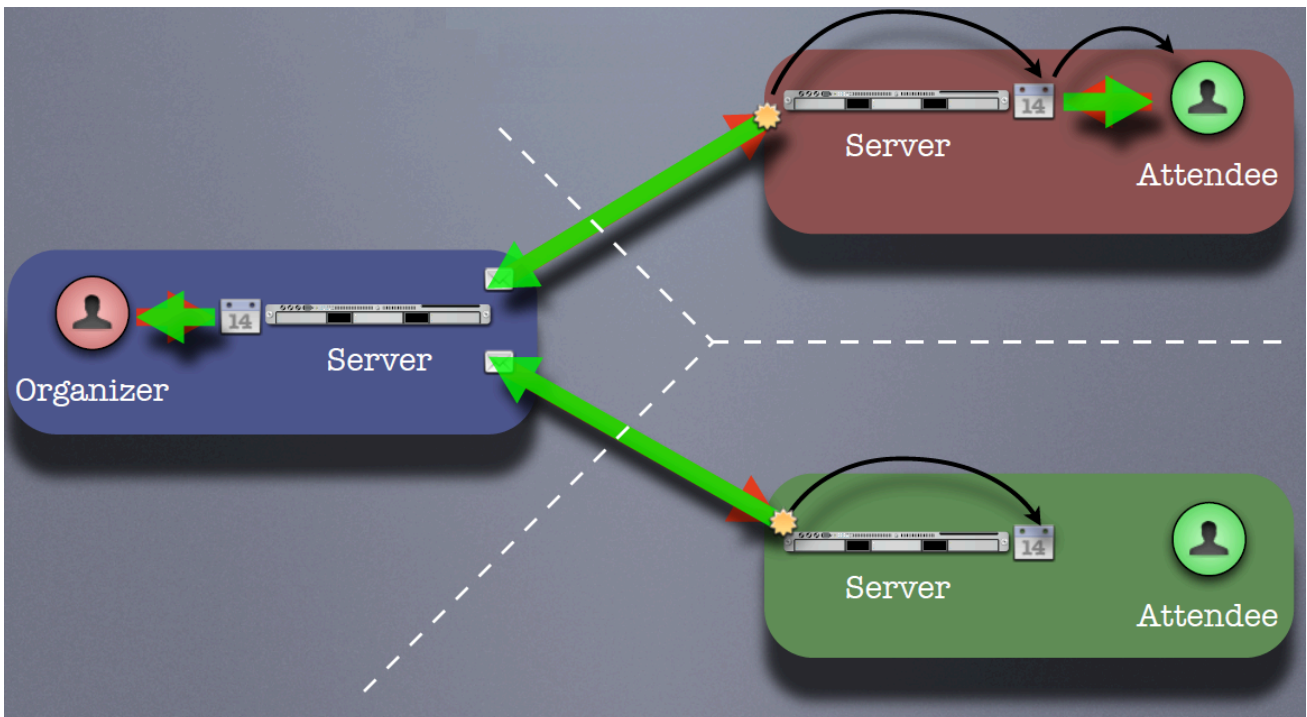**Figure 9-1 — Organizer sends invite request to their server. Server sends the invite to each attendee's server. Attendees see the invites when they next check the server.**
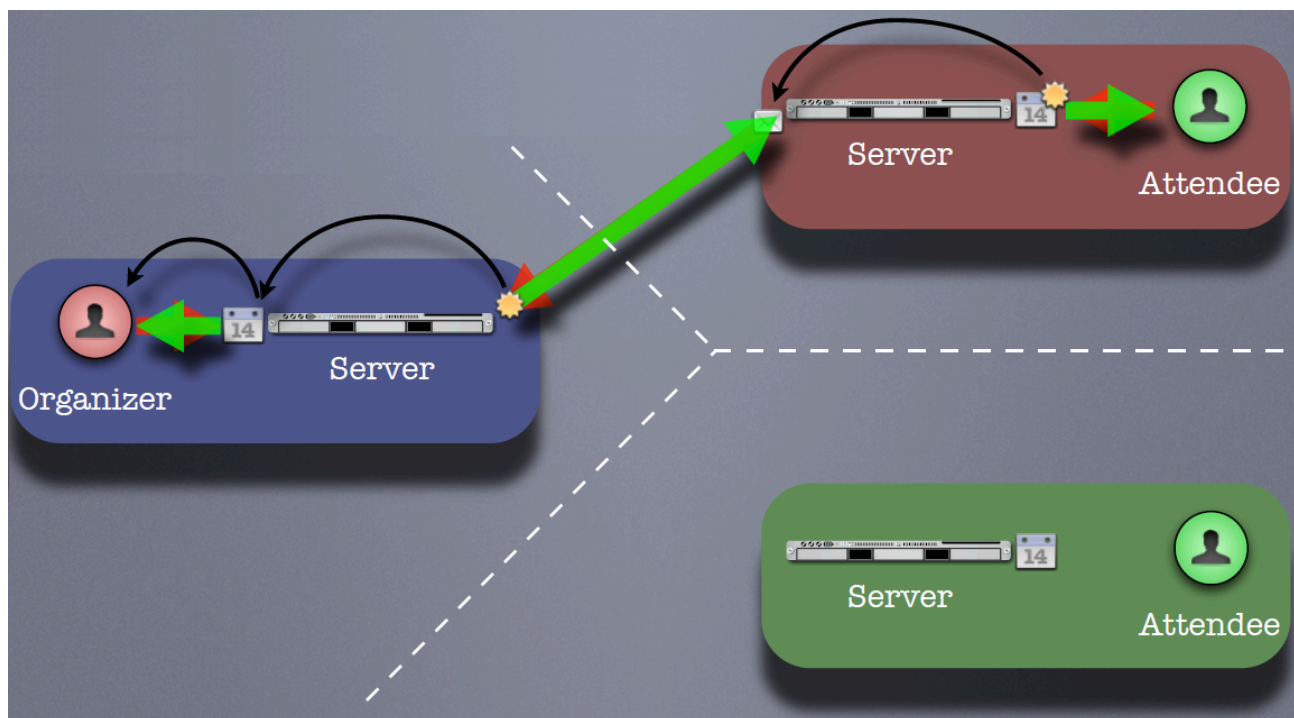
**Figure 9-2 — Attendees reply to their server. Server sends the reply to the organizer's server. Organizer sees the reply when they next check the server.**

**Figure 9 — Sequence of diagrams showing invites and replies.**

## 7.4. iSchedule Demonstration
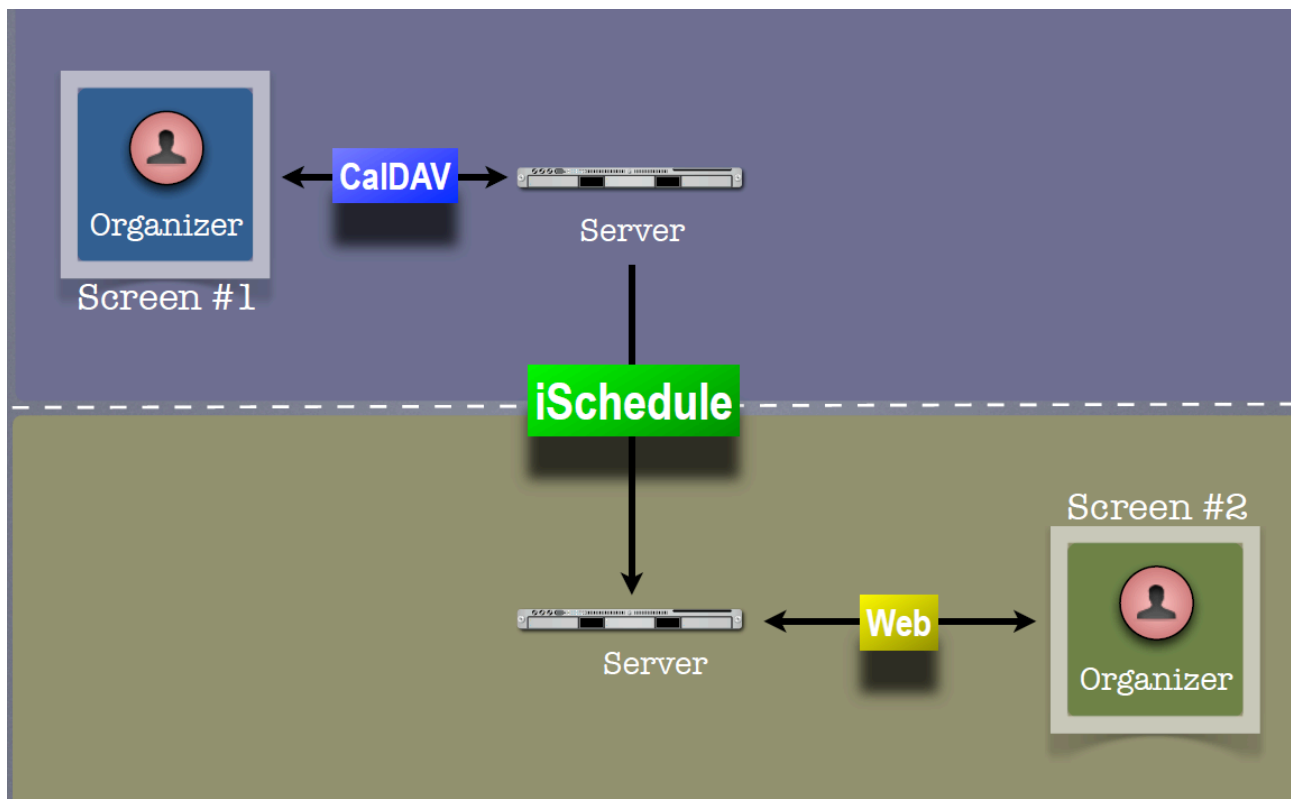
### 7.4.1. Two calendar users in different domains



**Figure 10 — iSchedule Demo Setup**

### 7.4.2. Four calendar users in different domains
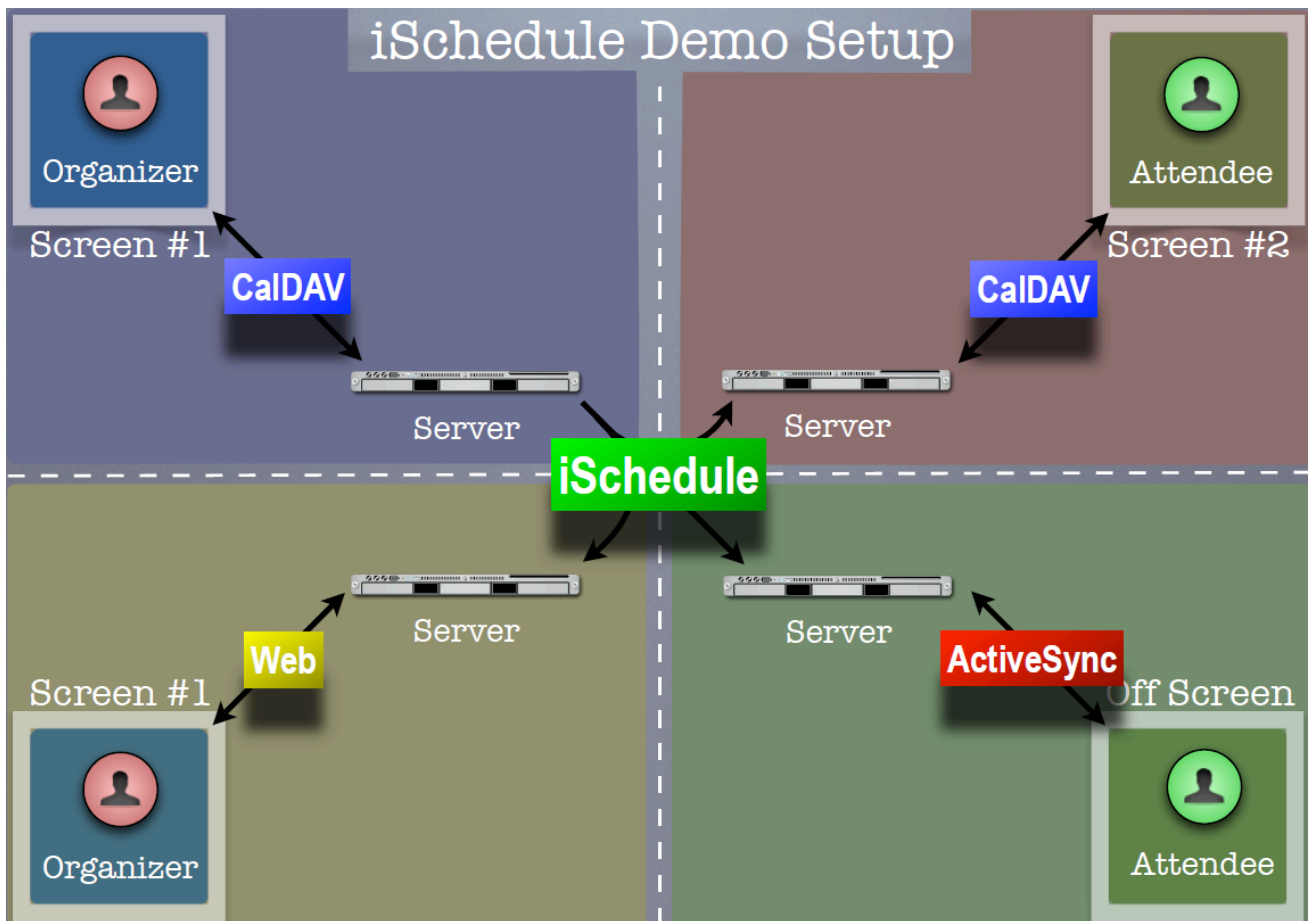


**Figure 11 — iSchedule Demo Setup**

## 8. Freebusy URL

### 8.1. What is Freebusy?

— A list of free and busy periods for a particular calendar user or resource
— Primarily used for scheduling resources or meetings with other people
— Time periods may be marked as
  — busy
  — free
  — busy unavailable ("out of office")
  — busy-tentative

### 8.2. Expressing Freebusy time

— Most commonly as a RFC 2445 VFREEBUSY object
  — a request for freebusy time,
  — a response to a request, or
  — a published set of busy time

## 8.3.  Sharing Freebusy

— CalDAV Scheduling
— iTIP/iMIP (email)
— iCalendar .ics file
— Freebusy URL (FBURL)

## 8.4.  Why FBURL?

— Freebusy is LCD scheduling
— FBURL is LCD Freebusy (or could be)
— Easy
— Outlook supports a form of FBURL
— The market says FBURL is desirable and useful
    — tungle.com, timebridge.com, timetomeet.info, doodle.ch

— Potentially bridge the divide between enterprise calendaring and
    — calendar/scheduling augmenters
    — standalone calendaring clients (no server)

## 8.5.  What we have done

— Standardize/Normalize
— Parameters -URI template
— Error reporting within the HTTP protocol
— Allow for non-authenticated or weakly authenticated service
— Keep it simple (in its simplest form) *Outlook compatibility
— Extend?
    — Discovery
    — Authentication
    — Provisioning
    — VAVAILABILITY
        — provide a grouping of available time information over a specific range of time.

## 8.6.  How it works

— The "Read URL" is used to get freebusy data for a user
    http://www.example.com/freebusy/user1@example.com?start=20070901T000000-0800
    http://www.example.com/freebusy/user1@example.com
— returns VFREEBUSY object
— The "Publish URL" is used by a client to upload freebusy data for a user
    http://www.example.com/freebusy/user1@example.com
    http://www.example.com/freebusy?user=user1@example.com&token=xcsfdgetdh

## 8.7.  What we will show you

— Basic form FBURL
    — lookups — no publishing
    — Accessing multiple servers from the same clients
    — Comparison with server-server lookups

## 8.8. Freebusy URL Demonstration

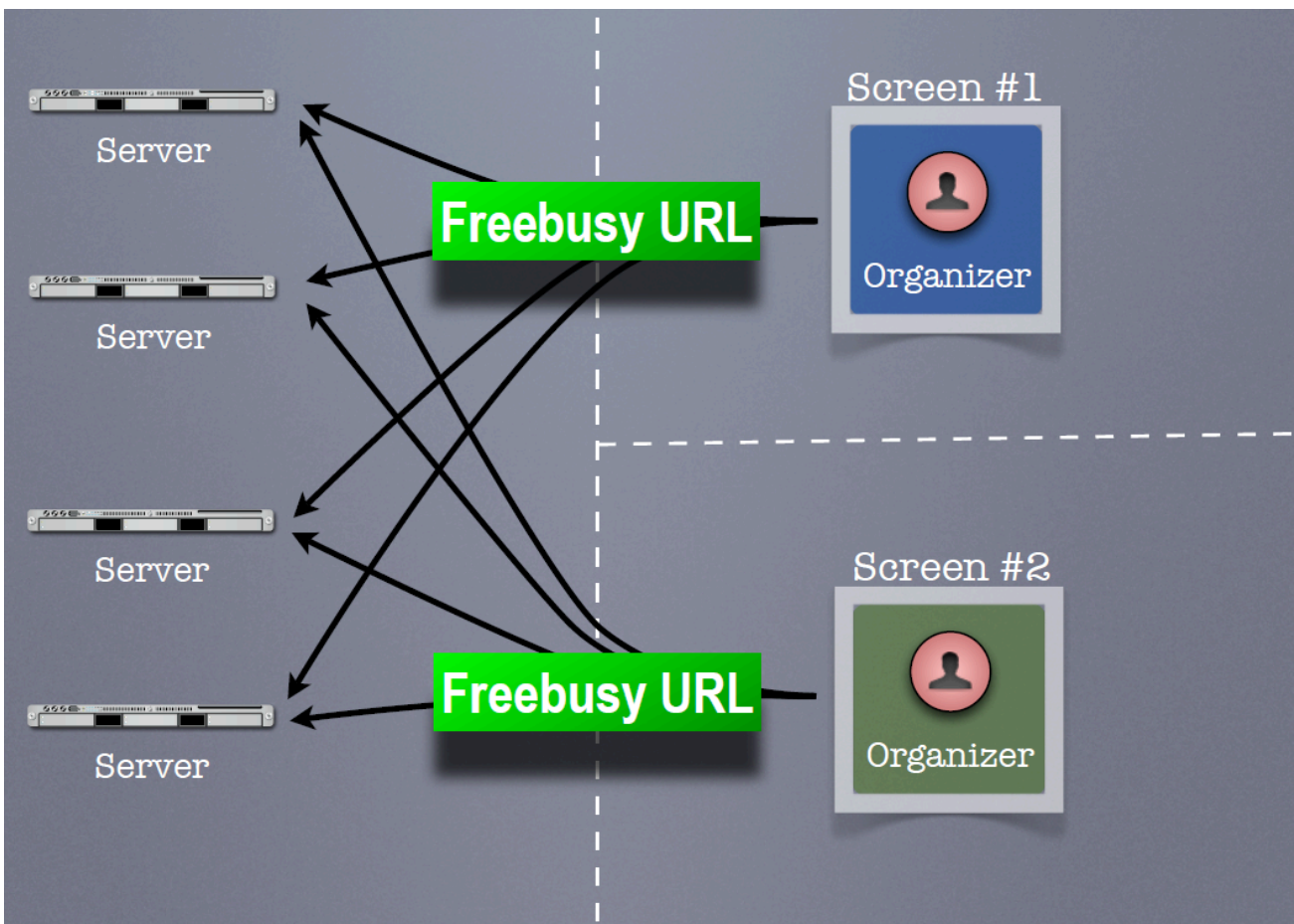### 8.8.1. Several clients retrieving freebusy information



**Figure 12 — Freebusy Demo #1 Setup**

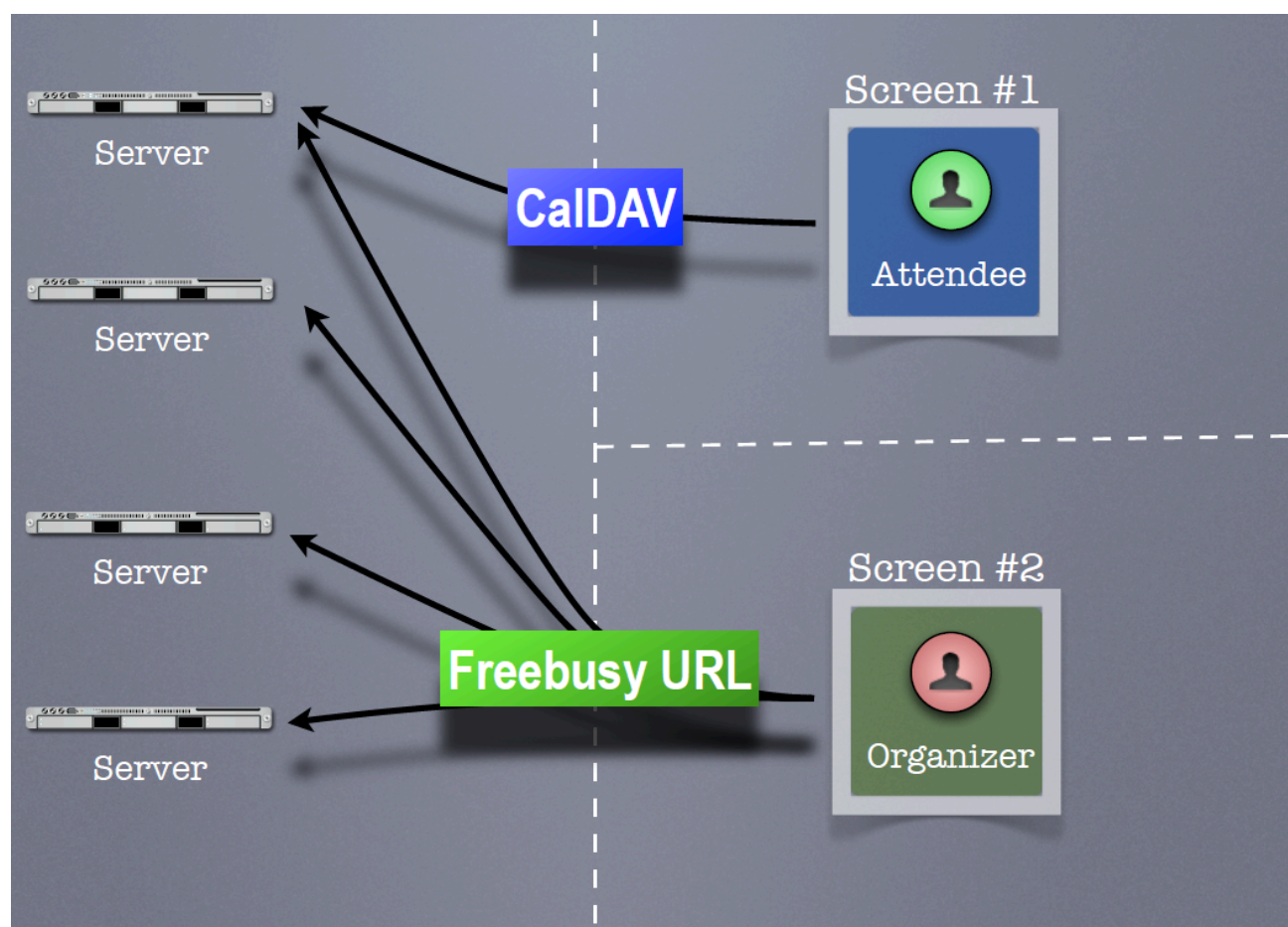### 8.8.2. Freebusy aggregation information



**Figure 13 — Freebusy Demo #2 Setup**

## 9. Conclusion

### 9.1. Wrap-up

— We have demonstrated how progress is being made with key scheduling technologies
— As with a lot of CalConnect work this is a very interactive process with specifications and implementations being worked on together
— This ultimately provides for a better specification and interoperability

### 9.2. CalDAV Scheduling

— A new CalDAV scheduling draft with implicit scheduling support was recently published and now we are heavily testing that
— Hope to complete this by end-2008

### 9.3. iSchedule

— Demonstrated basic scheduling message processing
— Key elements of iSchedule still need to be developed:
    — Discovery (use SRV records in DNS)
    — Security — need input from security experts as to what model(s) to use

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— Hope to complete this by mid 2009

## 9.4.  Freebusy URL

— Freebusy is LCD scheduling
— Freebusy is soft-core calendaring
— It is what we settle for, not what we want
— But…Free/Busy is very, very useful
— CalConnect will continue to develop FBURL