

# ReadyRoom

# Android collaboration

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Nov 17 2014  
<https://www.phfactor.net/rr>

# What and why?

- Building Android applications with a distributed group of developers
- Corporate rule: All services must run on company-owned hardware. No AWS, no Campfire, no Slack.
- Wanted a tool for both communication and app distribution
- IRC is just not good enough


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**Notice from: joann**

Growl: I'm dropping the crew\_location table and recreating it. It will be unavailable for a few minutes.

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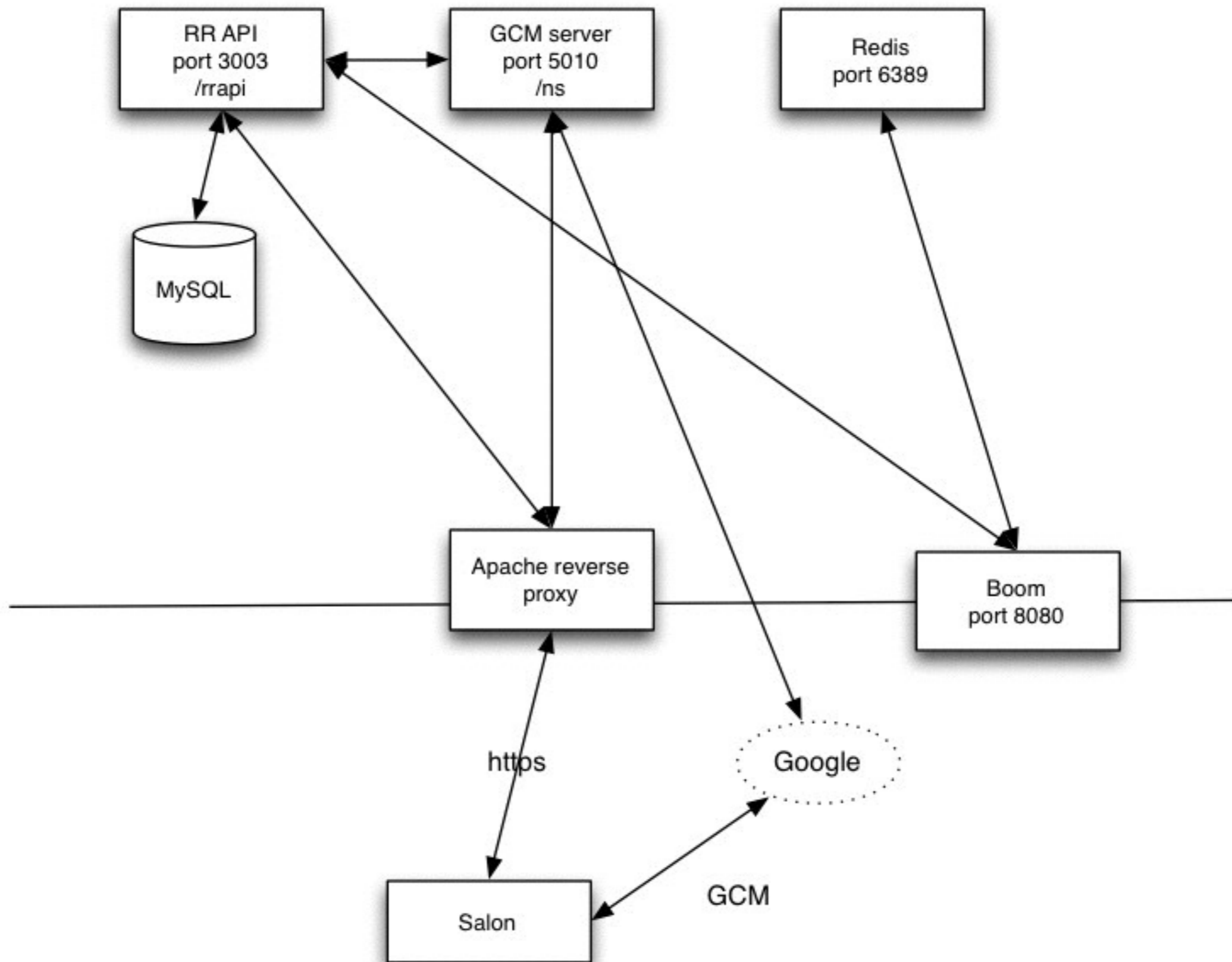
|               |   |     |
|---------------|---|-----|
| <b>Wylene</b> | joann that's iig developers group to add new project repo in Gitlab   | 1s  |
| <b>ph</b>     | is back   | 1s  |
| <b>Wylene</b> | joann I need permissions to add new project under jig-developers group in GitLab..could you assist me with this ?   | 6m  |
| <b>joann</b>  | okay - crew_location should be available again  | 17m |
| <b>joann</b>  | Growl: I'm dropping the crew_location table and recreating it. It will be unavailable for a few minutes.  | 24m |
| <b>Wylene</b> | ok  | 36m |
| <b>ph</b>     | back in a bit - kid run   | 37m |
| <b>ph</b>     | jo ann - looks like the location table needs an edit - IntegrityError: (1062, "Duplicate entry '5947ECA3-46C9-45D2-ACEF-08D414FA4C64' for key 'PRIMARY'")   | 37m |
| <b>Wylene</b> | <pre>2014-11-05 10:44:40.601 VzUtilityTwo[218:2f07] HTTP Response ERROR: Debug Info { URL: ██████████/location/5947 ECA3-46C9-45D2-AC... } { status code: 500, headers {   Connection = close;   "Content-Type" = "text/html; charset=utf-8";   Date = "Wed, 05 Nov 2014 15:44:40 GMT";   Server = "Werkzeug/0.9.6 Python/2.6.6";   "X-XSS-Protection" = 0; } }</pre> | 38m |
| <b>Wylene</b> | ph I know you're getting the registration, but are you getting the crewLocation update...I'm getting a 500 error code...see next  | 38m |
| <b>ph</b>     | what's the trick?   | 51m |
| <b>ph</b>     | ... yay!  | 51m |
| <b>Pat</b>    | @ph nevermind I figured it out  | 51m |
| <b>Pat</b>    | @ph I have Qs about using fabric from windows. Or rather how do I do an ssh through the jump server to my host. Any ideas here?   | 1h  |
| <b>ph</b>     | Well I certainly do   | 16h |

# Features!

- Web-based chat
- Searchable archive
- Drag and drop images as well as APK files
- Sounds, memes, SMS, whiteboard, private app store, Off-the-record, three levels of attention
- REST JSON API for native clients

# Implementation

- Site is Drupal / PHP
- MySQL backing store
- Websockets for browser message push
- GCM for Android push
- Native Android client



# Enterprise app store

- Problem: We develop apps and services and need an easy way to distribute binaries
- Solution: Add it to ReadyRoom
- Drop an APK into the chat window and its ready to install
- Simple WebView-based native client
- Low effort, high return

*Please drop your file in the proper target.*

APK

RR Image

Library

Link

QNote

Cancel

Search

Oscar

Mission Control

Apollo

Hubble

Shuttle

LCTM

Telematics-IIG

SUMS Developers

Device Tech - IIG

Interns

Rover





11:38 AM



VZIIG App Depot - Projects

## App Depot Credentials

Username:



Password:

No stored credentials were found on this device. Please sign in.

Cancel

Submit

Not signed in.

|  |    |
|--|----|
| MQTT Chat  | 1  |
| mvpn   | 1  |
|  MAPPS   | 16 |
|  Beacons | 2  |
| Radius Ranger  | 21 |
| Salon  | 34 |
| Smile  | 42 |
| Talker   | 29 |
| Verizon Univ Id  | 1  |
| VZ Authenticator   | 1  |
| WTest  | 0  |

## Salon

Version: 1.5.1 Build: 58

Version: 1.5.1 Build: 57

Version: 1.5.1 Build: 56

Version: 1.5.0 Build: 54

Version: 1.5.0 Build: 53

Version: 1.4.6 Build: 51

Version: 1.4.6 Build: 50

Version: 1.4.6 Build: 49

Version: 1.4.5 Build: 48

Version: 1.4.5 Build: 48

Version: 1.4.5 Build: 47



# Salon

Do you want to install an update to this existing application? Your existing data will not be lost. The updated application will get access to:

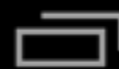
NEW

ALL

This update requires no new permissions.

Cancel

Install



# Discussion

- App distribution is a major use case. Developers, managers, collaborators as well. Used for every new app we develop.
- Often we will drag snapshots of app screens into RR as well to iterate on visuals
- Still surprised other collaboration systems don't have this feature yet.
- Much harder to do with iOS due to Apple

# Android client

- Native code
- Uses EventBus, SupportV4 and GCM
- ListView of WebViews, backed with SQLite and CursorAdapter
- Data exposed as a ContentProvider, also have simple widget for keeping an eye on the chat
- Notifications are the killer use case

# Useful tidbits

- Parse text with simple regular expressions to find and enable dialing, URLs for browser, playing sounds, mapping, triggering notifications and displaying images
- Really handy to have your phone light up when a co-worker needs your attention. Lets you leave your desk and not worry.
- ‘Send location’ and Pebble hooks were cute but mostly useless

# Clickable links

```
/*
 * Two types of URLs to handle here. The RR API does some rewriting, delivering the form
 * <a href="http://en.wikipedia.org/wiki/Horatius_Cocles" target="_blank">en.wikipedia.org/wiki/Horatius_Cocles...</a>
 * but if you post from Salon, it's just the raw text
 * http://en.wikipedia.org/wiki/Horatius_Cocles
 *
 * and we need to handle both. It's a pain, and we need something better than this.
 */
private String rewriteBothUrls(String msg)
{
    // Try the first type and see if it matches
    Pattern p;
    Matcher m;
    final String new_format = "<a href=\"\$1\">\$1</a>";

    String re_str = "<a\\s+href=\"(\\S+)\".+\"";
    p = Pattern.compile(re_str);
    m = p.matcher(msg);
    String first_pass = m.replaceAll(new_format);
    if (first_pass.equals(msg))
    {
        re_str = "((http|https):/\\S+)";
        p = Pattern.compile(re_str);
        m = p.matcher(msg);
        String second_pass = m.replaceAll(new_format);
        if (!second_pass.equals(msg))
            Log.i(TAG, "Found plain URL to rewrite");
        return second_pass;
    }

    Log.d(TAG, "Rewrote popup URL");
    return first_pass;
}
```



# Dialing without permissions

```
// Rewrite phone numbers too - device leverage! tel URLs invoke dialer; perfect.
// TODO handle commas and pauses for conference calling
private String rewritePhoneNumbers(String msg)
{
    Pattern p;
    Matcher m;
    // Local or long-distance numbers, with any non-digit character between them
    final String re_str = "(\\{0-9,\\(,\\),\\+,w,\\,\\,#)";
    p = Pattern.compile(re_str);
    m = p.matcher(msg);
    msg = m.replaceAll("<a href=\\\"tel:$1\\\">$1</a>");
    return msg;
}
```

```

/**
 * Apply the given set of {@link ContentProviderOperation}, executing inside
 * a {@link SQLiteDatabase} transaction. All changes will be rolled back if
 * any single one fails.
 *
 * @note this is from the Google iosched (Google IO 2012) code.
 */
@Override
public ContentProviderResult[] applyBatch(ArrayList<ContentProviderOperation> operations)
    throws OperationApplicationException
{
    Log.i(TAG, "Bulk ops called");
    if (helper == null)
        helper = new DbHelper(getContext(), VERSION);
    final SQLiteDatabase db = helper.getWritableDatabase();
    db.beginTransaction();
    try {
        final int numOperations = operations.size();
        final ContentProviderResult[] results = new ContentProviderResult[numOperations];
        for (int i = 0; i < numOperations; i++)
        {
            try {
                results[i] = operations.get(i).apply(this, results, i);
            }
            catch (SQLiteConstraintException sqe)
            {
                //Log.d(TAG, "ignoring constraint");
            }
        }
        db.setTransactionSuccessful();
        return results;
    } finally {
        db.endTransaction();
    }
}

```

# Location and maps

```
// Try maps urls, e.g.
// https://maps.google.com/?q=loc:32.868117,-117.209583
private String rewriteLocations(String msg)
{
    if (msg.startsWith("/location"))
    {
        Log.d(TAG, "Found a location message, rewriting");

        // Skip over the "/location "
        String data_str = msg.substring(10);
        String[] tokens = data_str.split(" ");

        if (tokens.length < 2)
            return msg;
        // First one has "lat:13.14" in it
        String[] lat_tokens = tokens[0].split(":");
        if (lat_tokens.length < 2)
            return msg;

        double lat = Double.parseDouble(lat_tokens[1]);

        // Same thing, for longitude
        String[] lon_tokens = tokens[1].split(":");
        if (lon_tokens.length < 2)
            return msg;
        double lon = Double.parseDouble(lon_tokens[1]);

        // Now rewrite the text
        msg = String.format(Locale.ENGLISH, "<a href=\"https://maps.google.com/?q=loc:%f,%f\">My location</a>",
            lat,lon);
        return msg;
    }
    return msg;
}
```

demo!



Oscar



ph

56 minutes ago

Remember [redacted]'s form generator project?  
<http://www.typeform.com>

Victor

1 hour ago

done; I have uploaded 2 docs for safekeeping;  
lets plan on reviewing tomorrow at sometime

Wylene

2 hours ago

Victor apologies for delayed  
reply...proximity\_documentation ok

Victor

3 hours ago

in looking at other projects, it looks like we use  
both conventions; I will go ahead and delete  
proximity-documentation and create  
proximity\_documentation for now

Victor

3 hours ago

gitlab

Victor

3 hours ago

should I delete "proximity-documentation" and



ph

Remember T  
<http://www.t>

Victor

done; I have  
 lets plan on r

Wylene

Victor apolog  
 reply...proxim

Victor

in looking at  
 both convent  
 proximity-doc  
 proximity\_do

Victor

gitlab

Victor

should I delet

- About
- Sounds
- Send a growl
- Send GPS location
- Send approximate location
- Sync with server
- Pebble integration
- Log out
- Search...
- Pick a sound



Oscar



ph 56 minutes ago

Re  
ht

Victor  
do  
le

Empty text input field

Cancel Post

Wylene 2 hours ago

Victor apologies for delayed  
reply...proximity\_documentation ok

Microphone icon

q w e r t y u i o p

a s d f g h j k l

↑ z x c v b n m ← x

?123 , . ↵



68°

San Diego  
Sunny  
70° 59°

FRI | MAY

10

**Veggie stand**

2:00 PM - 3:00 PM (Now)

**Ballet**

9:00 AM - 10:00 AM (Tomorrow)

ph

0 minutes ago

If you read up a bit, turns out that a lot of the water allotment was done based on absolute volumes, in what seems to have been the wettest few years in recent centuries. Havoc has ensued.



San Diego



El Paso



Tulsa




Newark





ReadyRoom in action





|      |   |      |
|------|---|------|
| ph   | ack   | 320d |
| Jon  | ping2   | 320d |
| ph   | /me wants a video   | 320d |
| Jon  | I think he's drafting behind something big and the front bracket is for some sort of fairing but there were not pictures of it  | 320d |
| Jon  | apparently there is some speed-record attempt to be released at the end of december and this is the bike  | 320d |
| ph   | gorgeous bike. that's a terrifying gear ratio   | 320d |
| Jon  |    | 320d |
| Gina | <a href="https://ris.verizonbusiness.com/users/2/password/edit?tok...">/ris.verizonbusiness.com/users/2/password/edit?tok...</a>  | 326d |
| Gina | ssh-rsa<br>AAAAB3NzaC1yc2EAAAADAQABAAQ8oeC7AwYOzOkU//N3gTjerw2EYulmtDKT5NKE7rjcTE9WiSCXNSJFAvg9fNVuiDT3G/Oo1ZsFolUGmP5UhSUE<br>b0d4SGvwHGMvWuc8MSVINc7xBY7a9L.VNahSl.kNBa+mTY1u1emtnLlk0/xZAXXf7llvW2OihxLJtauTIsF4rLJ8vMNlnAc9utOrhnmXYoZK+to4gduu1HPTtX | 326d |




**joann** @ph - port 5500 is open on [redacted] ( external IP for p3-dev01) 1s

**Pat** @ph are you still here? 1s

**Abby** @ph does "forgot your password" work on the new gitlab? if not, can you reset victor? 1s

**Jon**  291d

**Jon** ping2 319d

**Jerry** /ebpsslvpn.verizon.com/dana-na/auth/url\_2/welcome.... 544d

**Kamla** `mvnrepository.com/artifact/org.nhind` 564d

...

`http://mvnrepository.com/artifact/org.nhind`

`http://mvnrepository.com/artifact/org.nhind`

`http://mvnrepository.com/artifact/org.nhind`

`http://mvnrepository.com/artifact/org.nhind`




# IIG Ready Room

Rule the Air!

My account


Log out

Home

|                      |   |     |
|----------------------|---|-----|
| <input type="text"/> |   |     |
| <b>bandersen</b>     | ok, that's what i thought ;)  | 59m |
| <b>Greg</b>          | ff_otp_entry is the page  | 1h  |
| <b>Greg</b>          | sorry - i just mean the fauxauth version  | 1h  |
| <b>Abby</b>          | he just means the fauxauth version  | 1h  |
| <b>Abby</b>          | first crack at google on mirror webcam: <code>thisVideo.scaleX *= -1;</code> (flash)  | 1h  |
| <b>bandersen</b>     | don't you mean integrate into ff_otp_entry ?  | 1h  |
| <b>Greg</b>          | to integrate into ff_info, we need a video tag (where camera image is displayed) a canvas for the analysis display, as well as 6 smaller canvases for the display of digits | 1h  |
| <b>ph</b>            | brb, quick USPS errand  | 1h  |
| <b>ph</b>            | in both QR and target demos, it really seems like we need keystone correction in software, the tilt is really sensitive   | 1h  |
| <b>joann</b>         | @jon - have time to talk?   | 1h  |
| <b>Abby</b>          | also it's becoming a pet peeve of mine that the cameras aren't mirrored ;)  | 1h  |
| <b>Jon</b>           | I'm missing rr updates and I don't have owncloud on this system... will take a poke at the node server and see if it is ailing  | 1h  |
| <b>Abby</b>          | it seemed like sometimes the camera would grab too much light off the phone and then the colors would be very bright and lack distinction                                   | 1h  |
| <b>Abby</b>          | haven't tried lighting yet, because not sure it will really make a big difference--given that the phone is it's own light source  | 1h  |
| <b>Greg</b>          | that's actually a pretty dark room...   | 1h  |
| <b>Greg</b>          |   | 1h  |
| <b>bandersen</b>     | it's working well for me on this rainy, overcast day  | 1h  |

Ready Room

http://tesla.icsl.net/readyroom/1

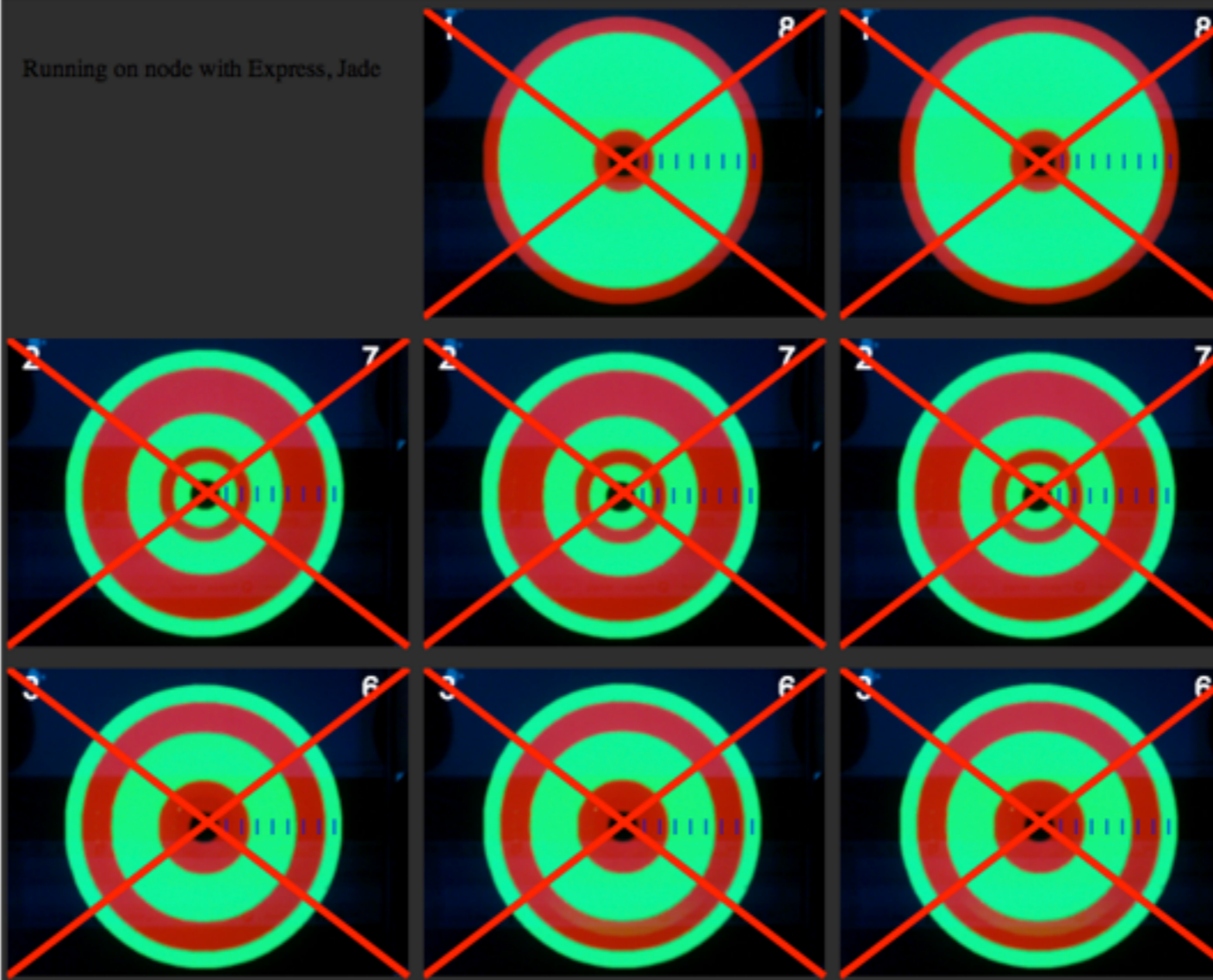
 **IIG Ready Room**  
*Rule the Air!*

My account  
Log out

Home

**bandersen**

Running on node with Express, Jade



^ makes me wonder if it might be worth trying blue instead of green 4m

^ in fact they look almost white... 4m

**Greg** bandersen - i just tried on my chromebook and i think i'm seeing the same thing you were saying... the greens are kind of light (or faded) 5m



[Home](#)

Ready Room White Board

Greg     Paul   Clear

[Join Call](#)

The whiteboard contains the following content:

- The letters 'R', 'G', and 'B' are written in red, green, and blue respectively.
- The word 'Nice!' is written in black.
- A red scribble is drawn below the word 'Nice!'.



## Ready Room Wiki Central

|                                     |  |                     |
|-------------------------------------|--|---------------------|
| <a href="#">Developer Reference</a> | <i>A wiki containing useful information for IIG developers</i> | 2012-05-14 13:39:57 |
| <a href="#">IIG Useful Info</a>     | <i>Wiki with general information about the IIG</i>             | 2012-08-14 16:04:54 |
| <a href="#">Test</a>                | <i>Test Wiki. Explore the wiki tools here</i>                  | 2012-08-14 16:06:34 |
| <a href="#">Onboarding</a>          | <i>Onboarding information helpful for new team members.</i>    | 2012-08-14 17:43:39 |
| <a href="#">Ready Room</a>          | <i>Wiki pages about the Ready Room</i>                         | 2012-08-14 18:18:07 |
| <a href="#">Smile Project</a>       | <i>Wiki for the secure messaging, AKA Smile, project</i>       | 2012-12-13 19:19:39 |
| <a href="#">APIs</a>                | <i>Wiki for the various IIG APIs</i>                           | 2013-02-20 16:48:47 |



Date Range

11/15/2013



—

12/1/2013



Author

- all -



Room

- all -



Find


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|                  |   |                     |
|------------------|---|---------------------|
| <b>Greg</b>      | rr requires a 2nd db in addition to the drupal db   | 2013-11-27 22:47:44 |
| <b>Jon</b>       | is what I used to create the drupal db  | 2013-11-27 22:38:04 |
| <b>Greg</b>      | good news is that i see the ready room module from the drupal admin... but i will wait to activate it.  | 2013-11-27 22:26:11 |
| <b>Jon</b>       | after the 43rd drupal instance it gets easier... or so we say   | 2013-11-27 17:07:52 |
| <b>Greg</b>      | there's a 'gpcrawford' account for the drupal instance hanging off 'rr' prefix?   | 2013-11-27 17:02:08 |
| <b>ph</b>        | jo ann had to set victors password in drupal  | 2013-11-22 16:08:58 |
| <b>Jon</b>       | @greg drupal is up and seems to be cohabitating with owncloud (so far) - will ping when I get home  | 2013-11-20 18:22:22 |
| <b>Jon</b>       | hehe... drupal site "download and extend" .... "share and enjoy"  | 2013-11-20 17:02:24 |
| <b>Greg</b>      | on i2dev, check /var/www/drupal/sites/dev.rr/modules/readyroom/js/readyroom_nodesserver.js  | 2013-11-20 16:25:54 |
| <b>Jon</b>       | you are in a maze of twisty drupal instances all alike  | 2013-11-20 15:33:15 |
| <b>bandersen</b> | <pre>there's an ugly looking error Base table or view not found: 1146 Table 'i2prod_rr.OTRMessage' doesn't exist: SELECT o.id, o.msgid from {OTRMessage} o WHERE o.expiredatetime &lt; :rrexpiration; Array (   [:rrexpiration] =&gt; 2013-11-18 23:56:10 ) in RRMessage-&gt;ClearExpiredOTRMessages() (line 38 of /var/www/drupal-7.23/sites/readyroom/modules/readyroom/RRMessage.php).</pre> | 2013-11-18 18:57:22 |
| <b>bandersen</b> | abby - the text box looks very wide on my browser. sometimes you need to flush the drupal cache before changes take effect  | 2013-11-18 14:28:32 |





# Lessons learned

- Start with API and build web interface on top of it
- Consider MQTT instead of nodejs + websockets
- Better message structure - JSON
- Conversations and whispers, or sidebar chat
- Better support for presence

# Credits

- Developers: Greg Crawford, Bob Andersen, Abby Charfauros, Jo Ann Joels, Paul Hubbard, Jon McCown
- Want your own? [paul.hubbard@verizon.com](mailto:paul.hubbard@verizon.com)