

BUILDING MOBILE SOCIAL GAMES



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Why mobile social games ?



Agenda

- **Introduction - A mobile social game**
- **Deconstruct the mobile social game**
 - Multiplatform
 - Social channels
 - Discovery

Crazy pool 2nd edition



DEMO

MULTIPLATFORM

Mobile Multiplatform

- **Support for multiple OSs**
 - iOS, Android, Windows phone
 - Device stats
- **Multiple screen sizes and PPIs**
 - iPad, iPhone
- **Device specific features**
 - Device specific experiments
 - GPS, Accelerometer
- **Multiple marketplaces**

Cross platform dev tools

- **Adobe AIR**
- **Unity**
- **PhoneGap**
- **Cocos 2DX**
- **Others**

Adobe AIR

- **Write code in ActionScript 3**
- **Same code runs on multiple devices**
 - iOS
 - Android
 - Web
- **Access device specific features through native extensions**

Unity game engine

- **Game development tool**
 - IDE
 - Programming environment
- **Native 3D and 2D scene management**
- **Allows scripting in C#, JavaScript or Boo**
- **Designers and engineers use the same tool**
- **Supports iOS, Android and Flash for the Web**

PhoneGap

- **Write code in HTML and JavaScript and bundle it in a native browser app**
- **Works on Web, iOS and Android**
- **Certain platforms does not allow JS JIT on apps that use Webkit leading to performance drop**
- **HTML5 on PCs are still an evolving standard**

Performance

Stack	Memory (MB)	Framerate (fps)	Load time (s)	Code performance (s)
Unity	68	20	4.2	24
Adobe Air	82	18	15	17
Cocos 2DX	52	7.5	38	15

Memory/fps benchmark: Display 1000 animated sprites

Target machine: iPhone 4

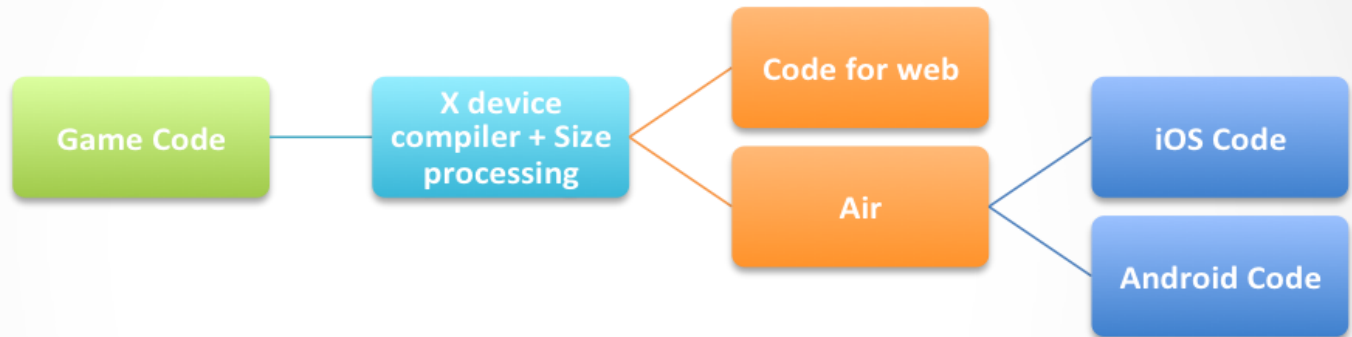
Code performance benchmark: In memory sub string match

Why Adobe AIR

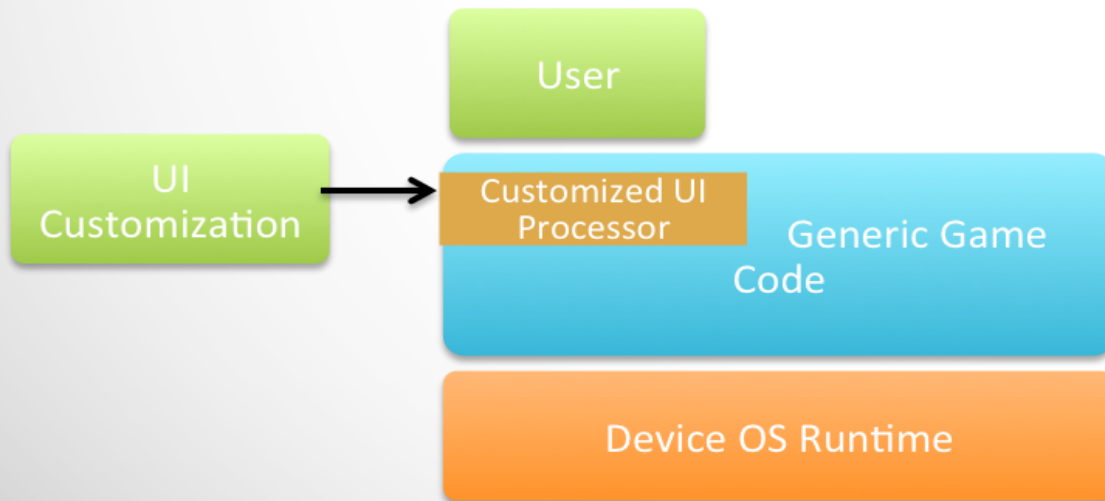
- **Support for Web out of the box**
- **Code performance is excellent**
- **Load time can be a concern**
- **Rich set of APIs**
 - Push notification
 - Touch and accelerometer support
 - Camera and media support
 - Rich 3D libraries such as Away 3D/Flare 3D
 - Native extensions

Adobe AIR

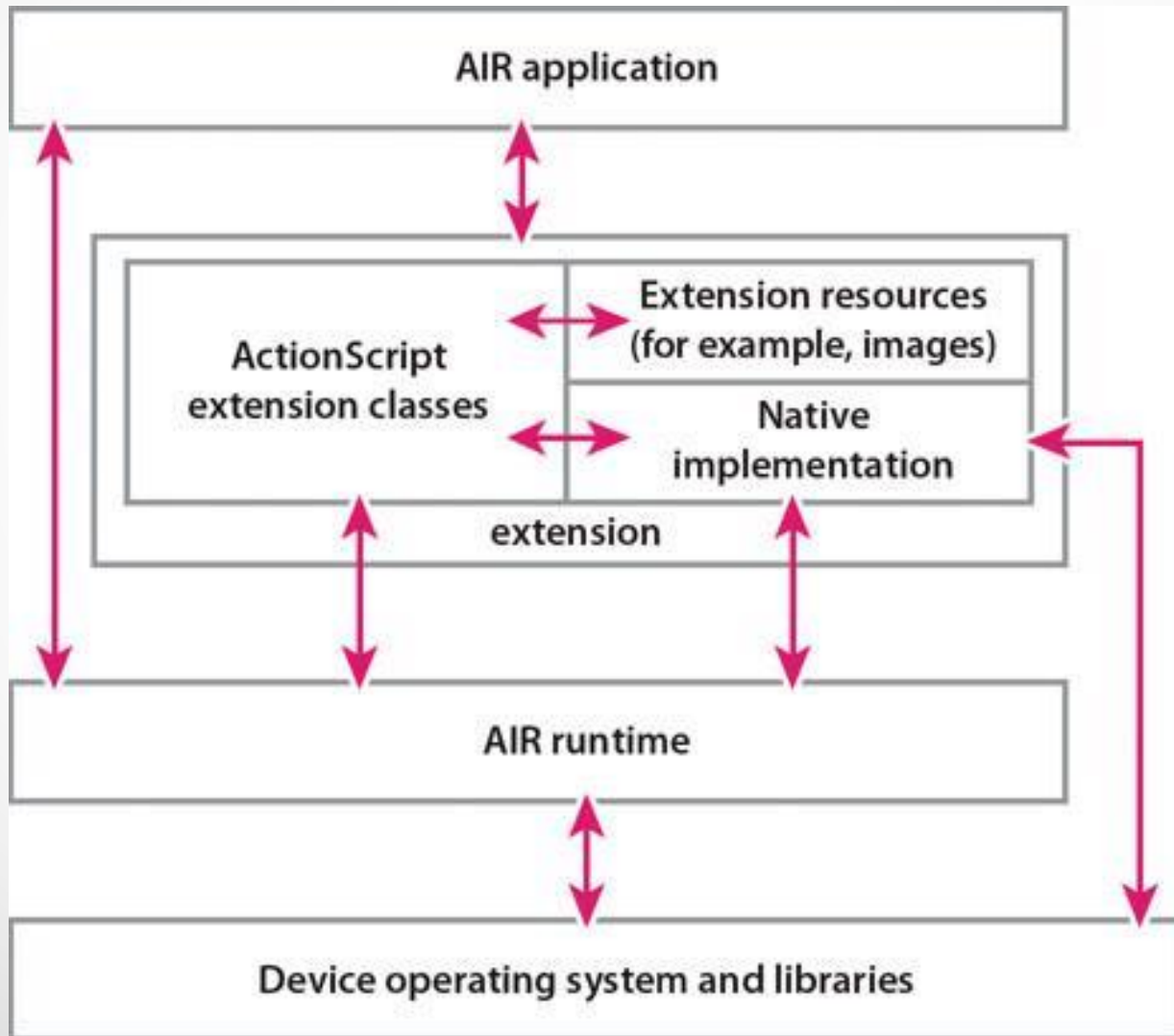
Compile Time



Run Time



Adobe native extensions



Useful native extensions (ANEs)

- **In App Purchases**
- **Anonymous Authentication**
- **Share and SMS**
- **In App Ads**

Support for multiple screens

- **Mobile devices pack more pixels per inch**
 - Web: {75...106}
 - iOS: {160, 260, 320}
 - Android: {150...440}
- **A 3 cm asset on laptop = 1 cm on iPhone**
- **Multiple aspect ratios**
 1. 4:3 Android and desktops
 2. 3:2 Many iOS devices
 3. 16:9 Android and laptops



Support for multiple screens

- **Keep coordinates between 0 and 1**
 - Lets you scale for every device barring a bad aspect ratio.
- **Multiple ways to scale**
 - Fit Width
 - Fit Height
 - Fit Both
 - Scale Width or Height
- **Design layers carefully to avoid distortion when scaling**

Device experiments

```
value = getExperimentValue("iOS", uid, "monkeyexpt");  
If(value == 1) { /* Show Dancing Monkey */ }
```



Game Server

Experiment Rollout

Experiment Manager

```
//monkeyexpt  
$threshold["iOS"]=10;  
$threshold["Android"]=5;
```

```
$segment = $uid % 100;  
if($segment < $threshold[$device]) {  
return 1; }  
return 0;
```

Client architecture

Game code

Presence/Multiplayer

Storage

Neighbor

Stats

Messaging codec

AMF

SN API

Stats service

Websocket

HTTP

HTTP

HTTP

Server API

StorageService
Php/Redis

- nukeGameState
- storeGameState
- loadGameState

NeighborService
Graph API/FB

- getFriends

GameStatsService

- getLeaderBoard

AdminService

- giveStrikes
- setScore
- setPoints

SOCIAL CHANNELS



Mobile social channels

- **Authentication: More than one way**
- **Viral channels**
 - Push notifications
 - Presence service
 - Game center
 - Multiple social network channels
 - FB, Twitter, Email, Google+

Auth: More than one way

- **Social network users**
 - Social network exposes a unique ID for the user
 - Store id as: {"FB:" <FBID>}
- **Anonymous users**
 - Get the mac id of the device
 - Store id as: {"AN:" <sha1(mac-id)>}
- **Email based users**
 - On smartphones player has registered an email id
 - Get the id
 - Store id as: {"EM:" <email-id> }
- Perform SHA1 for privacy considerations

Mobile social channels

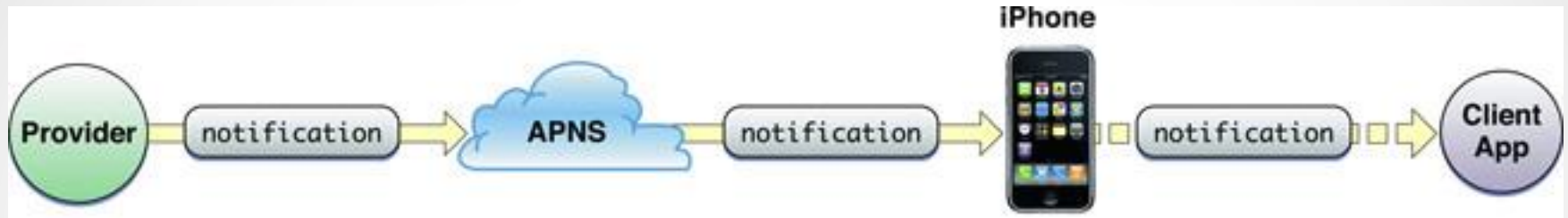
Facebook Web	Mobile
Requests	Push notifications 
Bookmarks	App badges (iOS only) 
Feeds	No equivalent feature, Evolving

Push notification

- **Tool for high retention and engagement**
- **Words With Friends uses PNs to**
 - Notify players of their turns and
 - Send reminders if they don't respond in 24/48 hours
- **CityVille Hometown uses PNs**
 - Neighbor visits
 - Harvest reminders
 - Unlocked new levels
- **Do not spam**



Push notification



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Presence based notification

- **Presence states**
 - Available: Friend is online and free to play
 - Offline: Friend is offline
 - Busy: Friend is online but engaged in the game

Presence neighbor bar

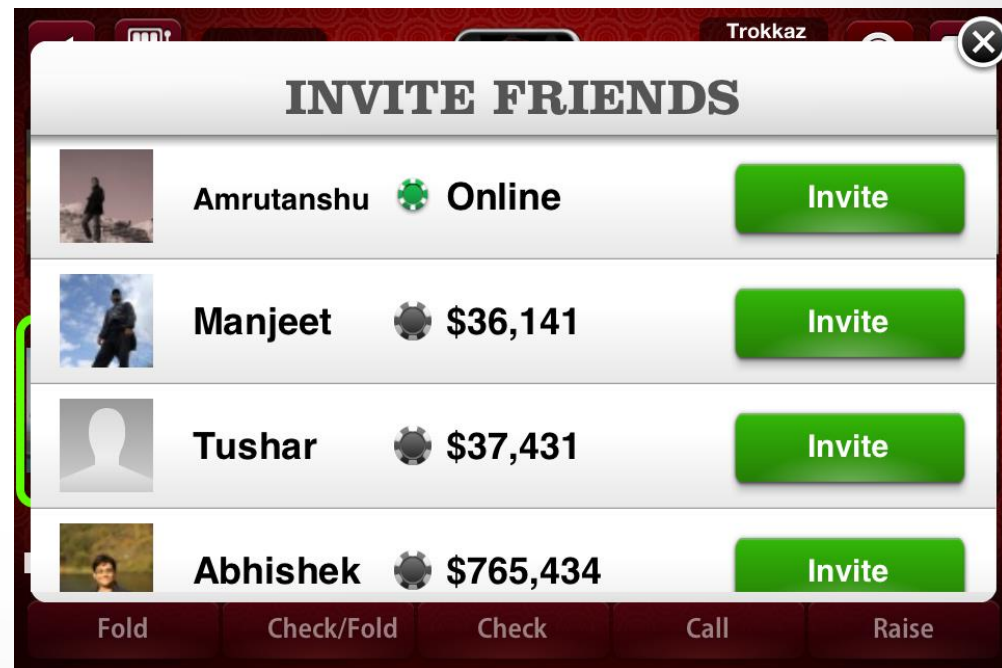
Sorted by:

- Non app user
- App user
 - Available
 - Offline
 - Busy

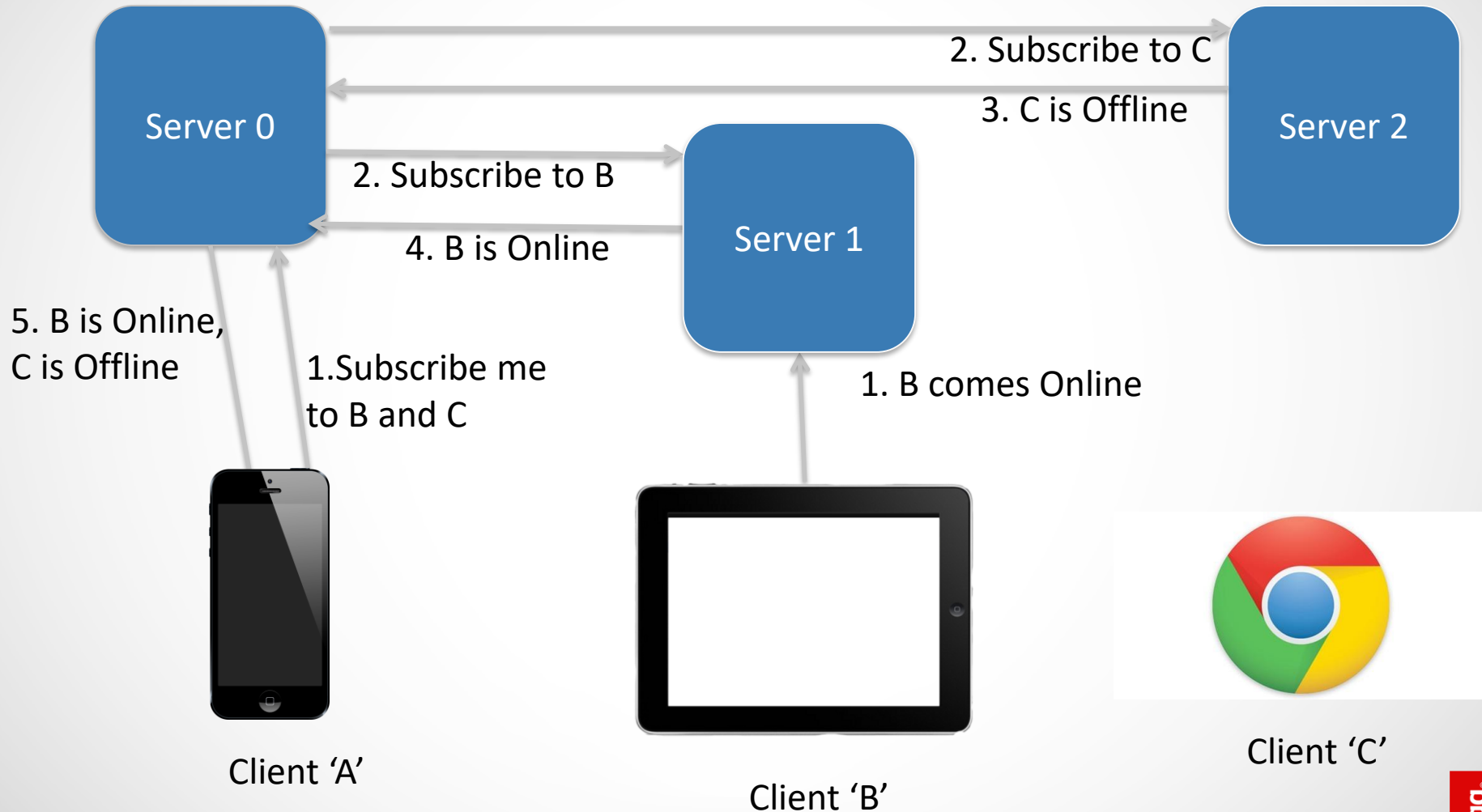


Presence in Poker

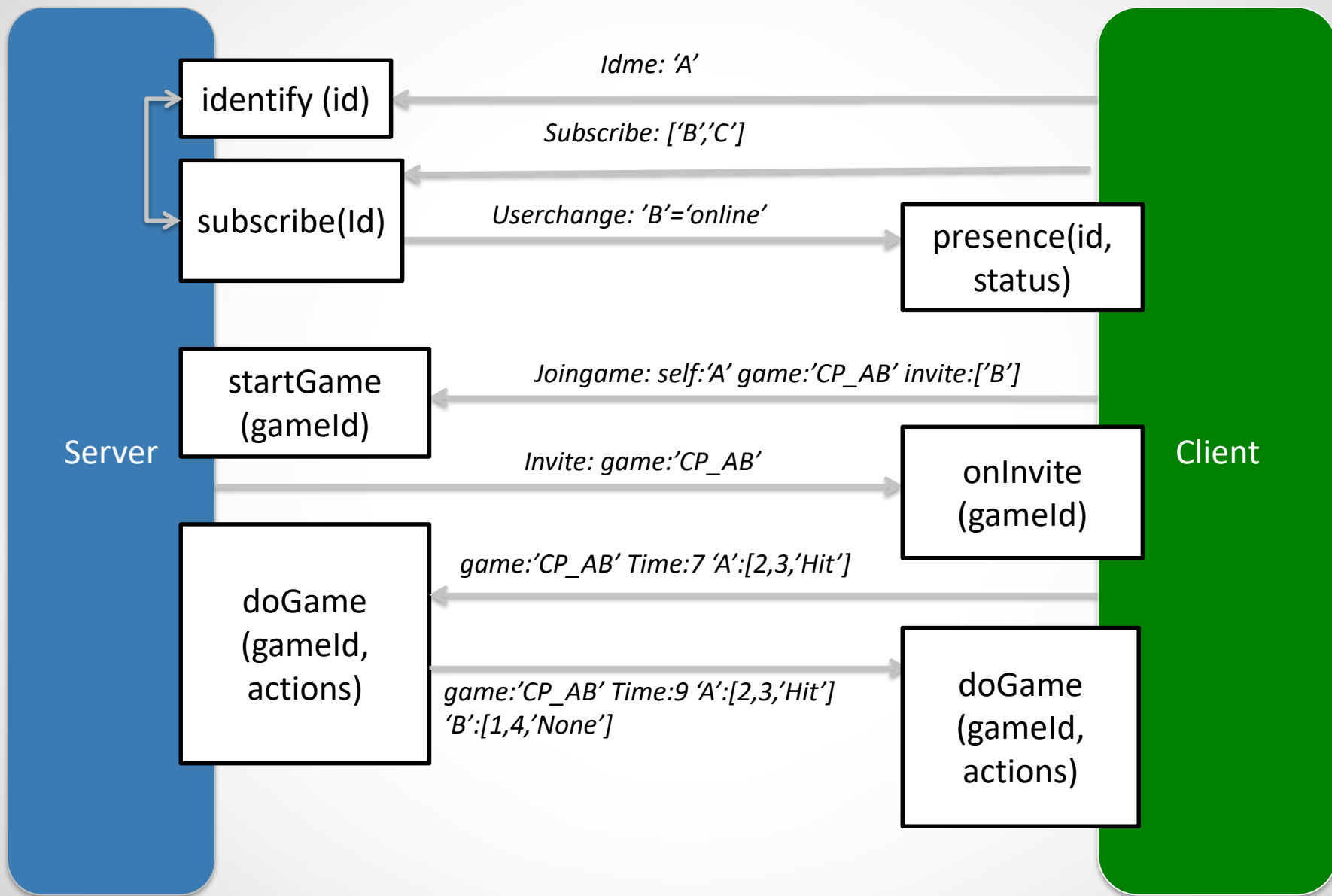
- Displays list of Online and Offline friends when players want to invite them.



Presence service



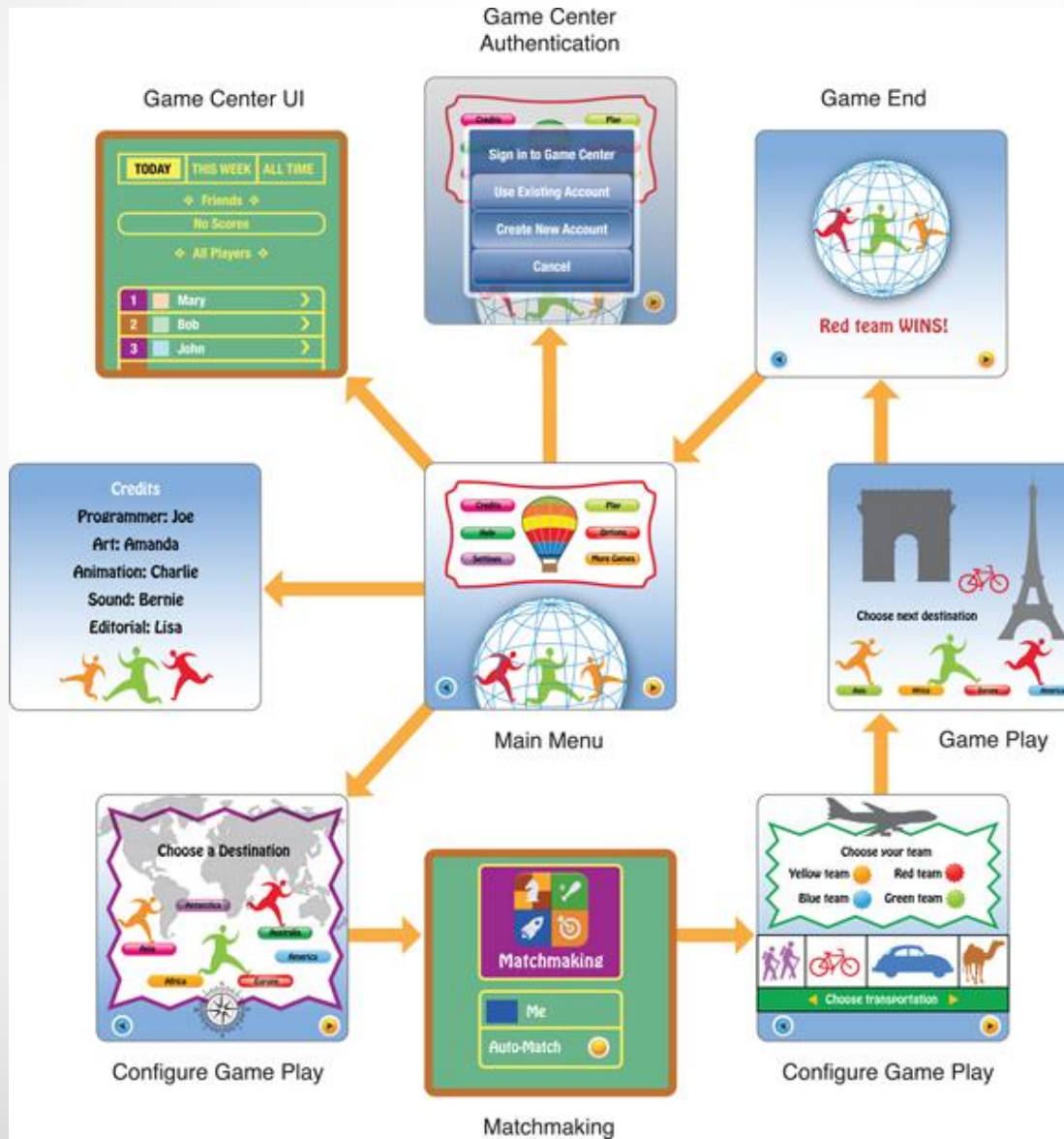
$$\text{Server}(\text{'A'}) = |\text{Crc32}(\text{'A'})| \% N_{\text{servers}}$$



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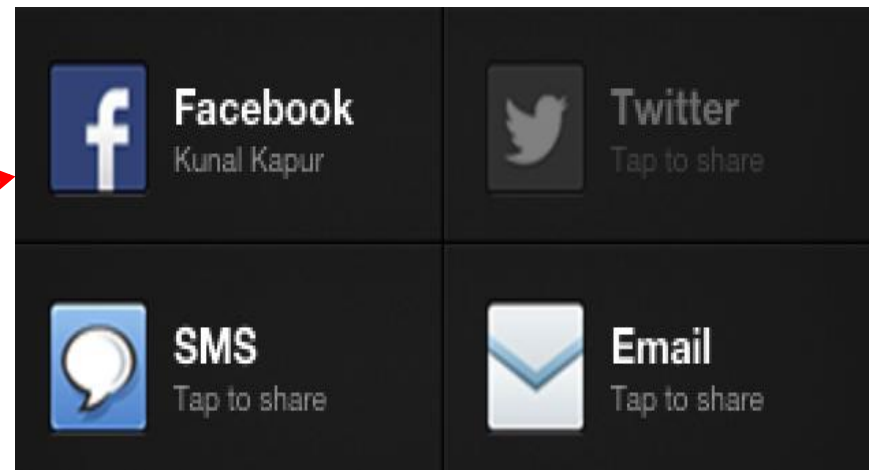
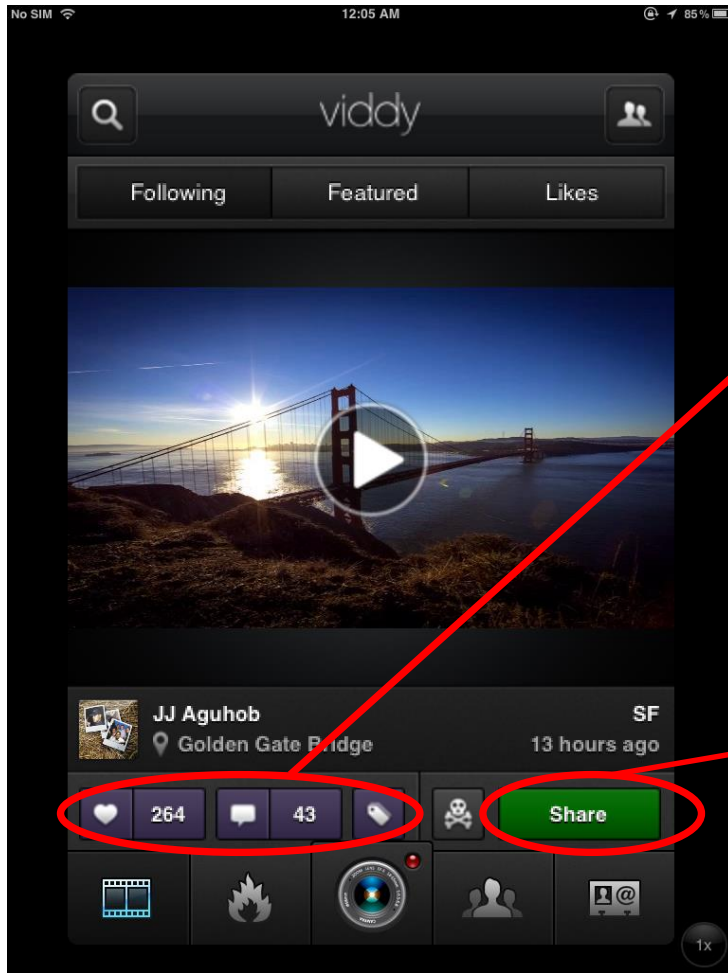
Game center



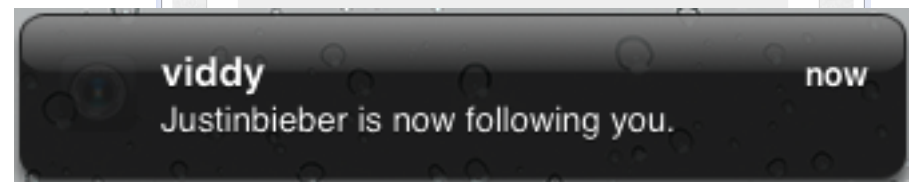
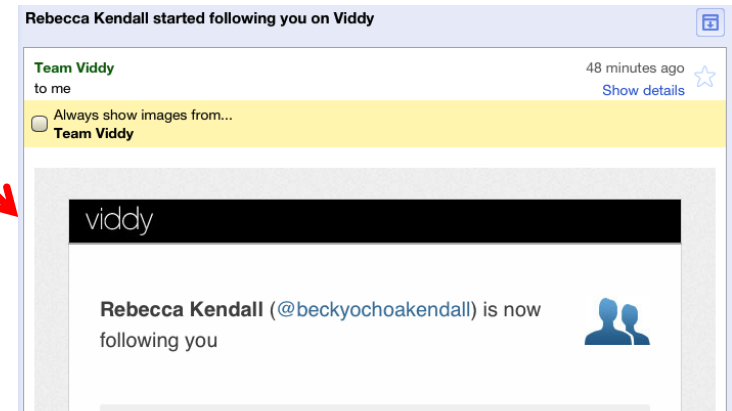
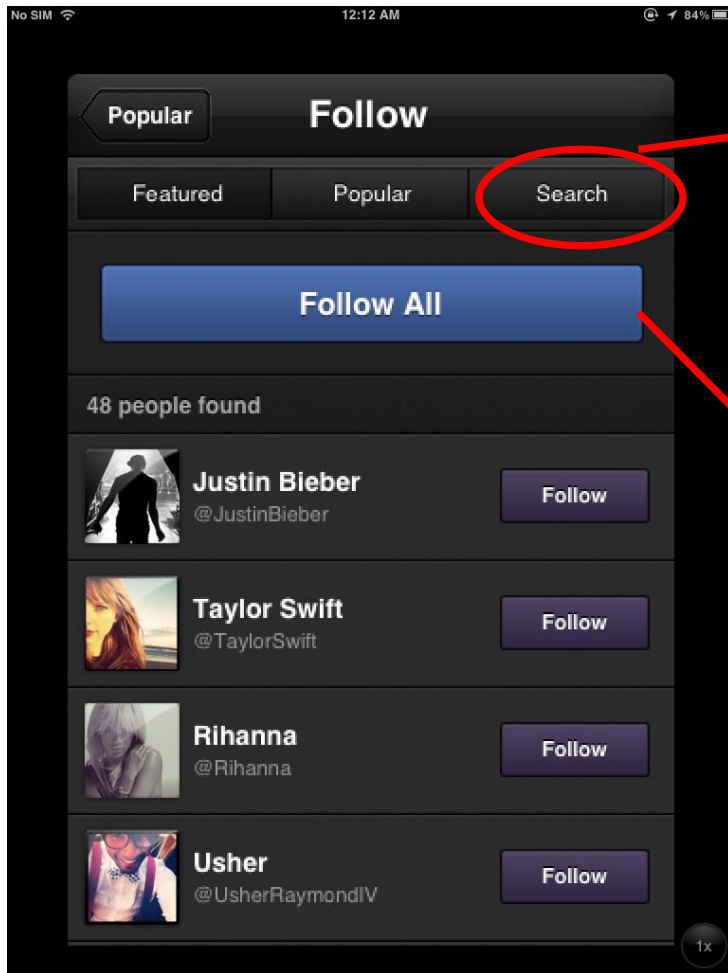
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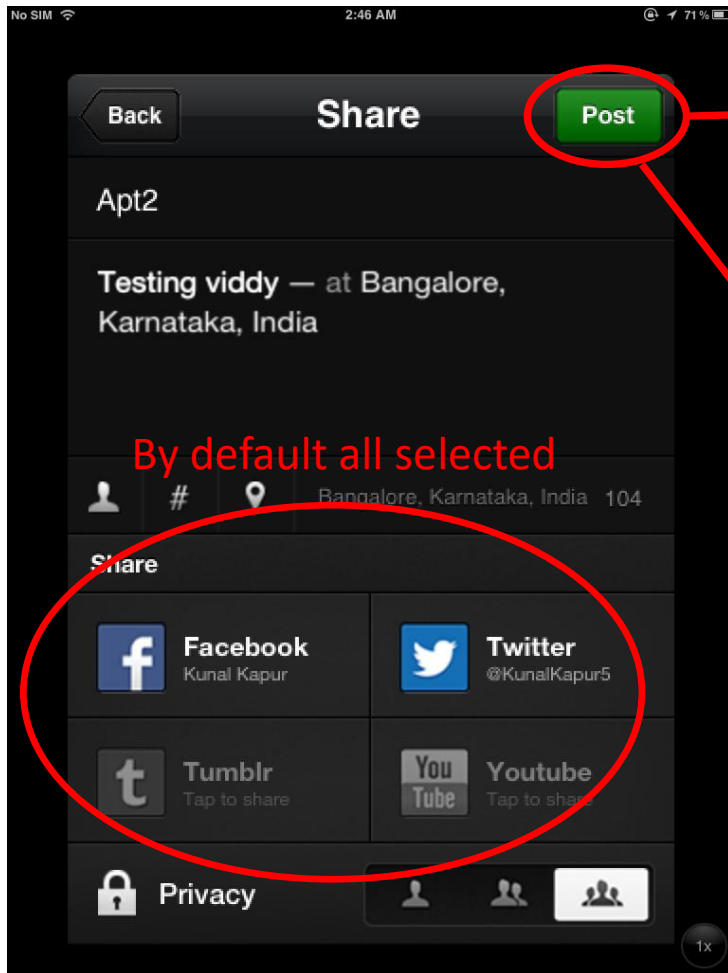
Multiple social channels



Email and PN



FB timeline and tweets



By default all selected

"Apt" "Apt" @ Bangalore, Karnataka, India

Shot with Viddy - <http://viddy.it/RmrmwI>



Email invites

- **Grow virally using email invites**
 - Instagram
 - Whats App

DISCOVERY

Discovery

- **SEO**
- **Cross Promo**
- **Ads**
- **Third party game platforms**

AppStore search position

What matters

- App name
- Keywords



What doesn't matter

- App description
- Updates
- In app purchase names
- Reviews

What's important ?

1. Nice Icon

2. Descriptive Name



3. Favorable Ratings

if your app is good on these three things then people will check out other details...

SUMMARY

Summary

- **Multiplatform development is a design time consideration**
 - Multiple OSs
 - Multiple screen sizes
- **Social loops should be baked in to the app**
 - Maximize all available options
- **App discovery in mobile is challenging**
 - Players carry a great app to the surface

So, how are we doing



More than 50% play
while at home



THANK YOU

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Q & A

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APPENDIX

Multiple market places

- **AppStore**
- **GooglePlay**
- **AmazonStore**
- **Facebook**