

Dynamically Configure Mobile Applications

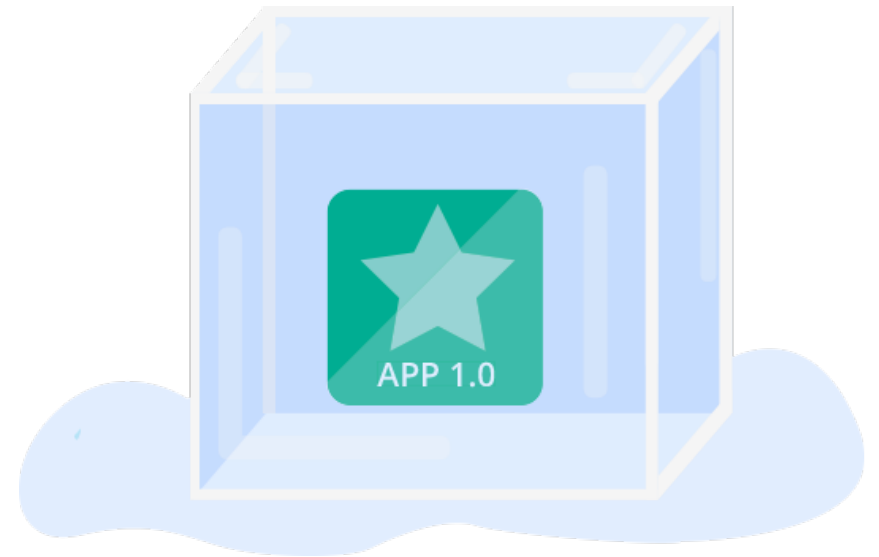
Google Tag Manager for Mobile Apps

Russell Ketchum, Product Manager
Neil Rhodes, Engineering Lead



The Problem

Once an app ships,
it's **frozen**.



The Problem

Once an app ships,
it's **locked in**.



The Problem

Once an app ships,
it's **stuck**.



The Problem

Once an app ships,
it's **set in stone**.



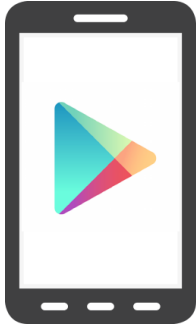
What it takes to make a change...



Secure approvals



Ship new version



Upgrade cycle



Version uncertainty



Solution: Google Tag Manager for Mobile Apps



Configure Virtually Anything

- **Ad values**
 - § Frequency
 - § Duration
 - § Type
 - § Location
- **Network settings**
 - § Timeouts
 - § Hostnames
- **Gameplay values**
 - § Rewards and upsells
 - § Number of lives
 - § In-game events
- **Content**
 - § URLs for help
 - § URLs for manual
 - § URLs for demo
- **UI Settings**
 - § Colors
 - § Names
 - § Layout
 - § Enable features
- **Miscellaneous**
 - § Message-of-the-day greeting



Constants: NO. GTM Macro Values: YES.



```
public static long TIMEOUT_IN_MILLIS = 1500;  
public static boolean USE_NEW_DIALOG = false;  
public static int GOLD_PIECES_PER_WIN = 32;
```



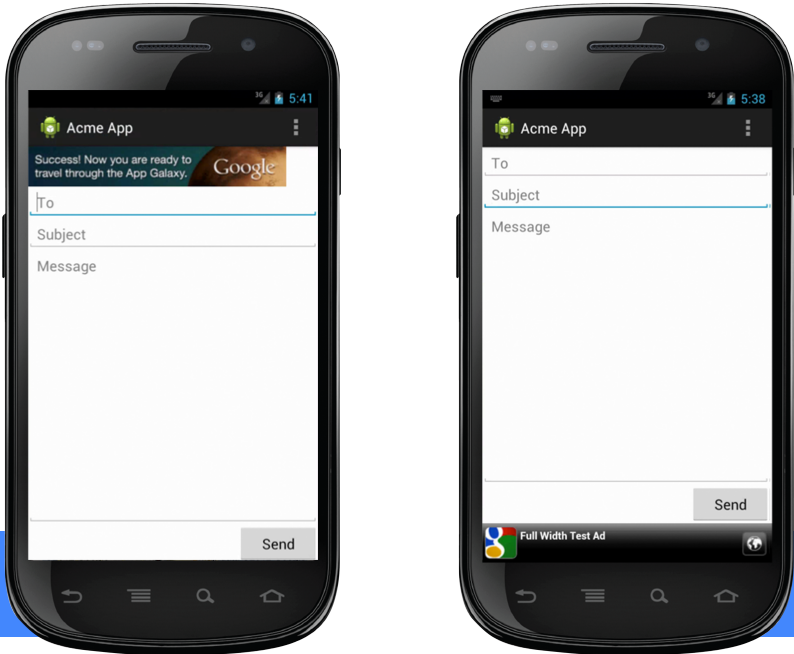
```
container.getLong("timeoutInMillis")  
container.getBoolean("useNewDialog")  
container.getLong("goldPiecesPerWin")
```



Example: Ad Layout with AdMob

JSON

```
{  
  "adSize": "BANNER",  
  "adLocationTop": true  
}
```



JSON

```
{  
  "adSize":  
    "SMART_BANNER",  
  "adLocationTop":  
    false  
}
```

The image illustrates two different ad layouts for an application. On the left, a smartphone displays a success message with a banner ad at the top. On the right, a smartphone displays a form with a full-width test ad at the bottom. The JSON code blocks show the configuration for each layout.



Example: Content

JSON

```
{  
  "helpUrl": "http://www.acme.com/flywalker/help?problem=",  
  "upgradeUrl": "http://www.acme.com/flywalker/upgrade",  
  "demoMovieUrl": "http://www.acme.com/flywalker/demo.mov"  
}
```

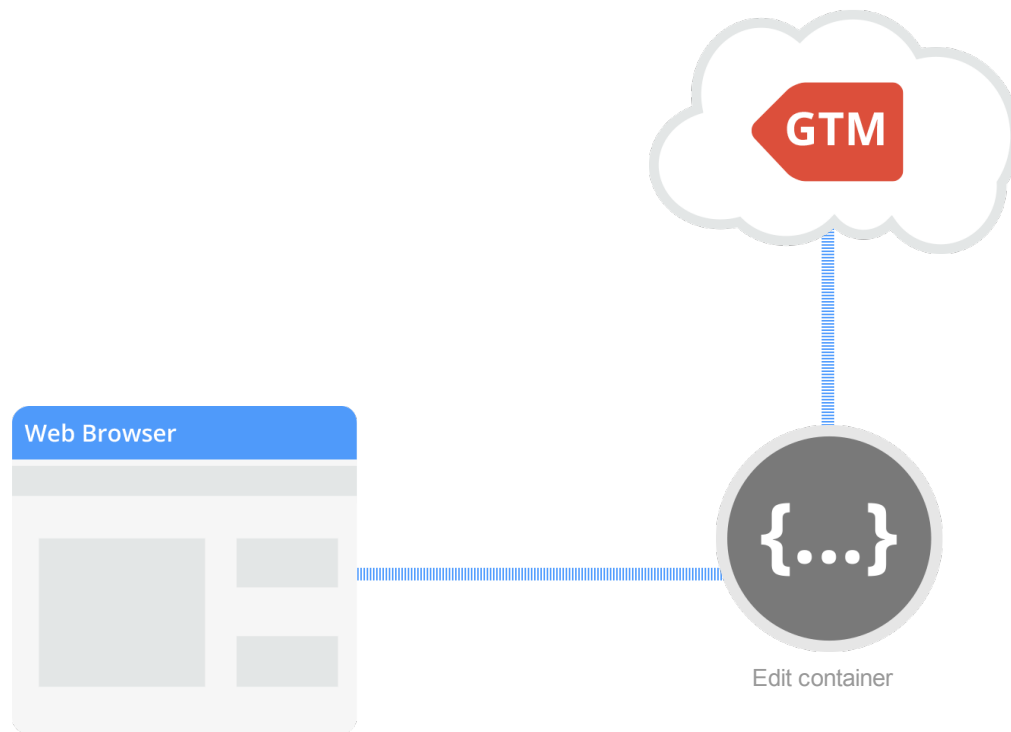


Example: Gameplay

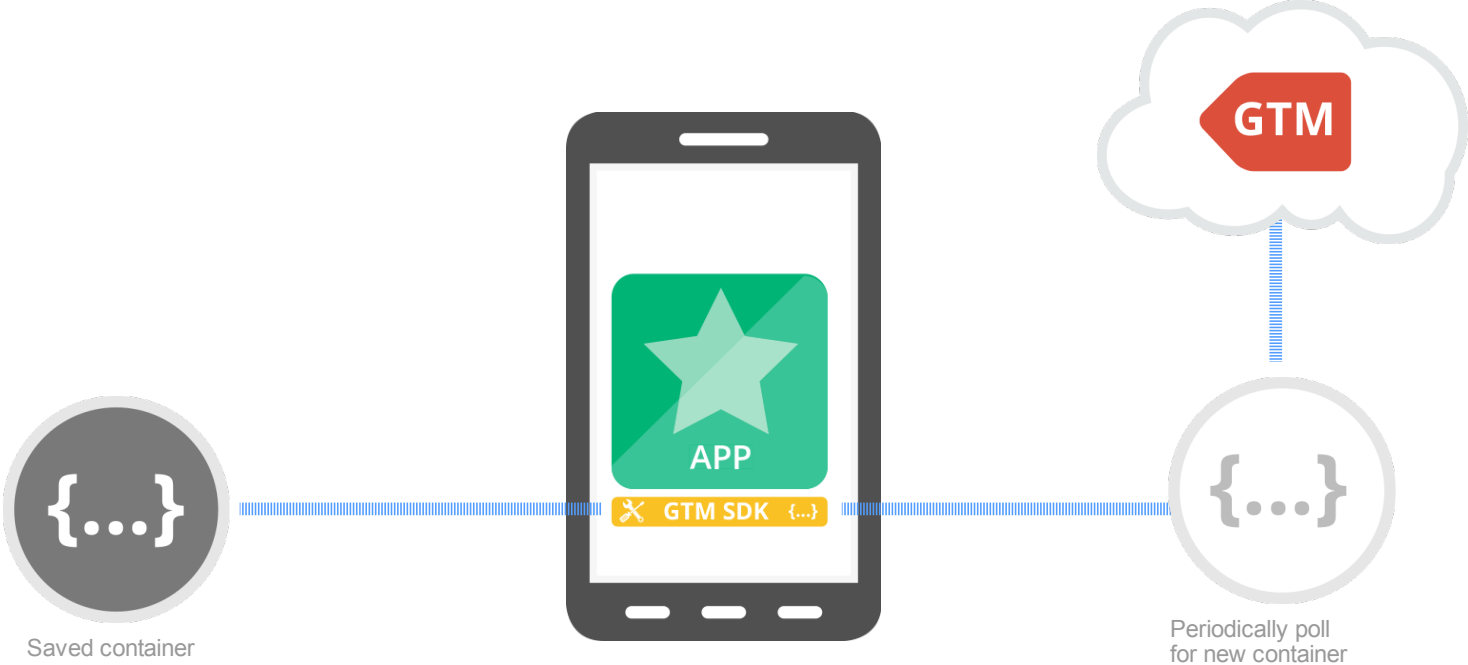
JSON

```
{  
  "physics": {  
    "downAccelerationPerSecond": 35,  
    "fireAccelerationPerSecond": 80,  
    "initialFuel": 60,  
    "maxFuel": 100,  
    "fuelPerSecond": 10,  
    "slewPerSecond": 120,  
    "speedHyperspace": 180,  
    "initialSpeed": 10,  
    "maxSpeed": 120  
  },  
  "target": {  
    "angle": 18,  
    "bottomPadding": 17,  
    "padHeight": 8,  
    "speed": 28,  
    "width": 1.6  
  }  
}
```

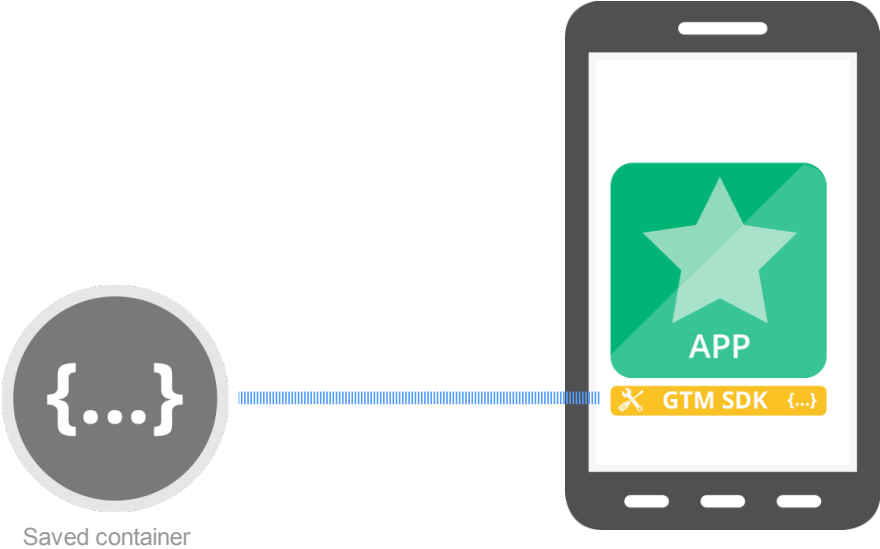
Architecture: Setting Values



Architecture: Receiving New Values



Architecture: Using Values



DEMO

Server-side Configuration



Initializing the Container

YourCode.java

```
TagManager tagManager = TagManager.getInstance(this);  
ContainerOpener.ContainerFuture containerFuture  
    = ContainerOpener.openSaved (tagManager, CONTAINER_ID, null, null);  
  
... // Additional non-GTM initialization while container is doing disk/network I/O  
  
Container container = containerFuture.get();
```



Using Container Values

YourCode.java

```
container.getLong("timeoutInMilliseconds");  
container.getString("hostname");  
container.getDouble("speed");  
container.getBoolean("showNewFormat");
```

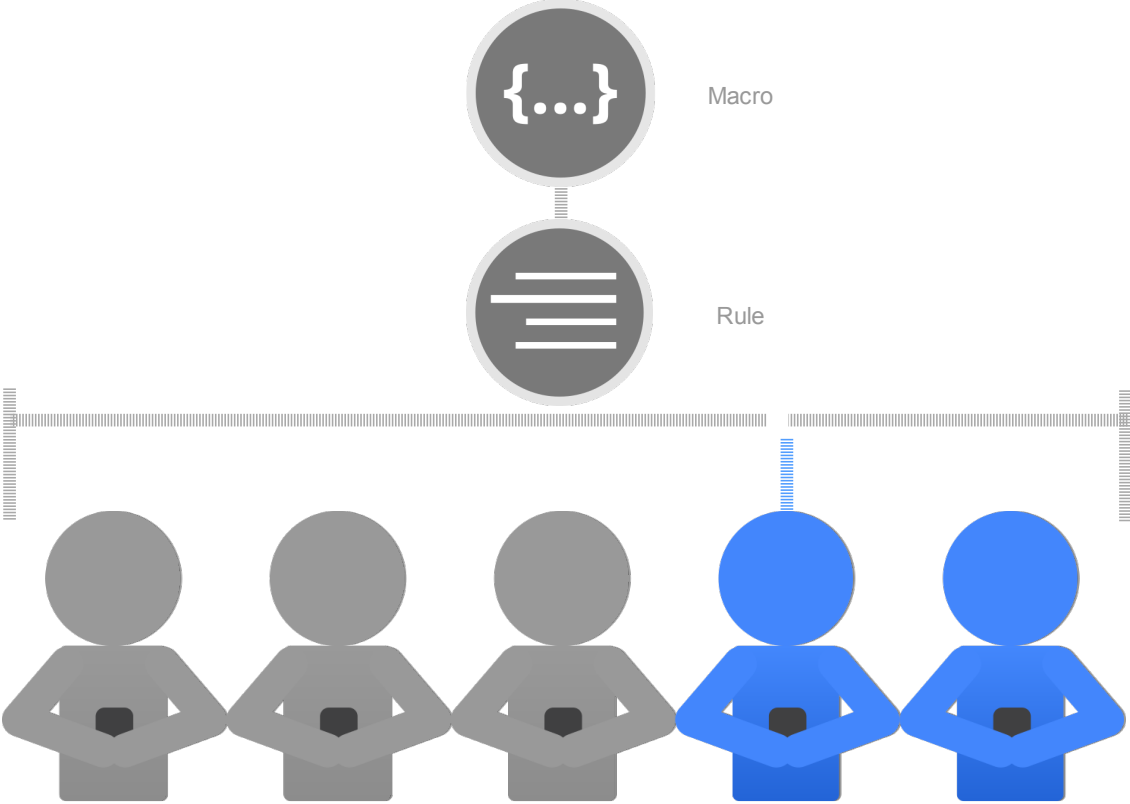


The Default Container (json or binary container format)

```
{  
  "physics": {  
    "downAccelerationPerSecond": 35,  
    "fireAccelerationPerSecond": 80,  
    "initialFuel": 60,  
    "maxFuel": 100,  
    "fuelPerSecond": 10,  
    "slewPerSecond": 120,  
    "speedHyperspace": 180,  
    "initialSpeed": 10,  
    "maxSpeed": 120  
  },  
  ...  
}
```

Assets/tagmanager/CONTAINER_ID.json

Now to Make it Interesting.....



Change Value for a Certain Configuration

Rule Name

Android Froyo

Conditions

The rule is considered matched only when every condition below is satisfied.

{{platform}} equals Android

{{os version}} starts with 2.2

```
{
  "communicationTimeout": 5000
}
```

This macro is only available for use when one of the enabling rules is matched.

Enabling Rules (1)		
Name ↑	Description	Actions
Android Froyo	{{platform}} equals Android, ...	Remove

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Enabling Rules (1)		
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True	{{Always}} equals true	Remove

+ Add Enabling Rule

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Disabling Rules (1)		
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Disabling Rules (1)

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Remove

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Enabling Rules (1)

Find Rules

Name ↑

Description

Actions

True

{{Always}} equals true

Remove

+ Add Enabling Rule

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Disabling Rules (1)

Find Rules

Name ↑

Description

Actions

Android Froyo

{{platform}} equals Android, ...

Remove



Change a Value on a Given Date and Time

Create New Macro

Macro Name
Enable Whiz Bang Feature June First

Macro Type
Value Collection

This macro contains a set of key-value pairs expressed in JSON format. A mobile app can retrieve a value in the macro by providing the key.

Value Collection

```
{  
  'enableWhizBangFeature': true  
}
```

Advanced Settings

Enable custom availability schedule.

Start date: 06/01/2013 Start time: 00:00

End date: 06/01/2020 End time: 23:59

Time zone: GMT -07:00 (local time)

This macro is only available for use when one of the enabling rules is match

Enabling Rules (1)

Name	Description	Actions
Always	{{true}} equals true	Remove

This macro is only available for use when none of the disabling rules are ma

- Advanced Settings

Enable custom availability schedule.

Start date: 06/01/2013 Start time: 00:00

End date: 06/01/2020 End time: 23:59

Time zone: GMT -07:00 (local time)



Change a Value Based on App-Specific Signals

Macro Name

Show hint

Value Collection

YourCode.java

```
public Object functionCallHandler(String macroName, Map<String, Object> params)
{
    if (macroName.equals("numFailedAttempts") {
        return numFailedAttempts;
    }
    return null;
}
```



+ Add Enabling Rule

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Macros/Operators Available in Google Tag Manager for Apps

Available Macros

- Screensize
- Language
- App version
- Platform
- OS version
- Function call (executes your code)

Available Operators

- String
 - § Equals
 - § Contains
 - § Starts with
 - § Ends with
 - § Regexp
- Numeric
 - § Greater than
 - § Less than

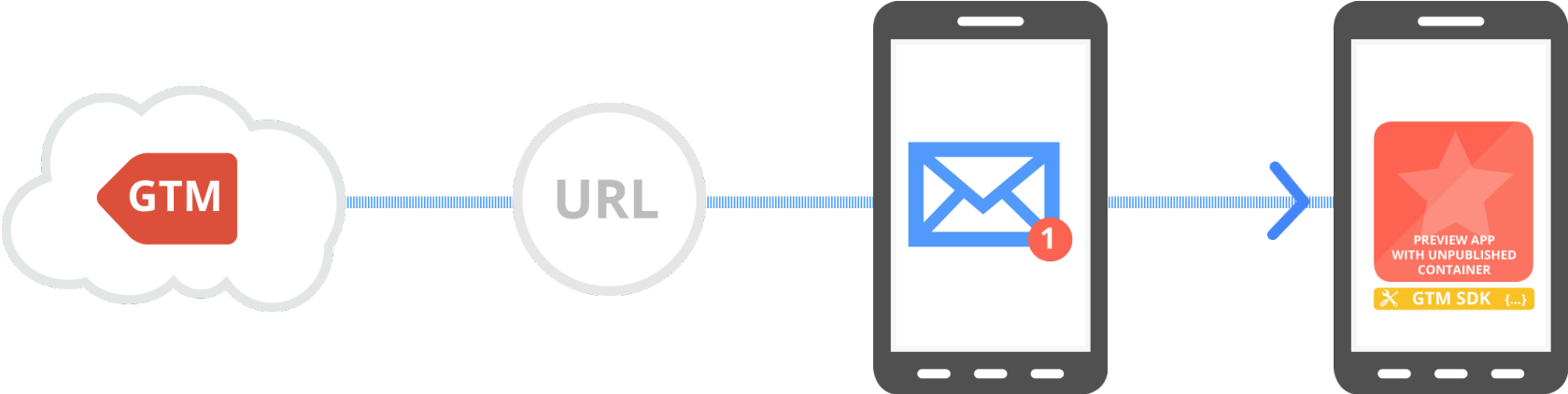


DEMO

Adding Rules

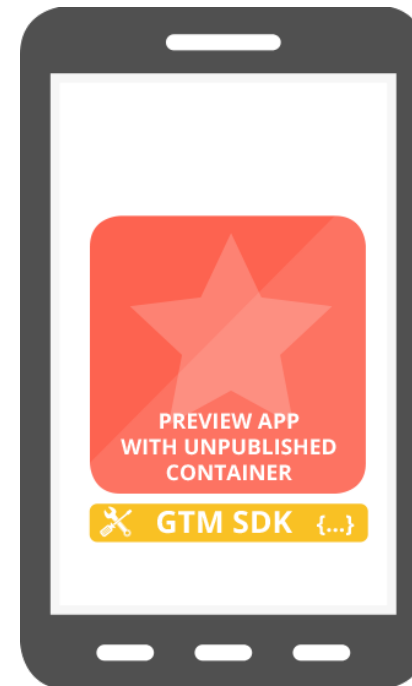


Container Preview



Best Practices

1. Read container values at the right time...
2. Set appropriate defaults...
3. Test container before publishing...



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<Thank You!>

Russell Ketchum: **+rketchum**

Neil Rhodes: **+rhodes.neil**

Whitelist signup: **goo.gl/5kezt**

