Next Session: 3:45pm

Building the Fabric SDKs

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Building the Fabric SDKs

October 22, 2014

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Powerful

Lightweight

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Powerful

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Ease of Integration

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Ease of Integration

```
Fabric.with(this, new Crashlytics());
```

Extensible

Extensible

```
Crashlytics.start(this);
```

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Extensible

```
Crashlytics.start(this, 5);

Crashlytics.setListener(createCrashlyticsListener());
Crashlytics.setPinningInfo(createPinningInfoProvider())
Crashlytics.getInstance().setDebugMode(true);
```

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Extensible

```
Crashlytics.setListener(createCrashlyticsListener());
Crashlytics.setPinningInfo(createPinningInfoProvider());
Crashlytics.getInstance().setDebugMode(true);

Crashlytics.start(this, 5);
```

Extensible

```
Crashlytics.start(this, delay, listener, pinningInfo,
                  debugMode);
```

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Extensible

```
Crashlytics.start(this, 0, null, null, null, true);
```

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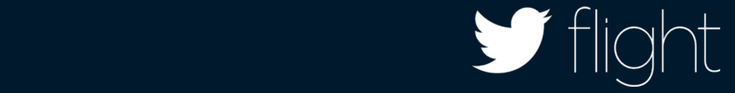
Fluent Pattern

```
Crashlytics crashlytics = new Crashlytics.Builder()
            .delay(1)
            .listener(createCrashlyticsListener())
            .pinningInfo(createPinningInfoProvider())
            .build();
Fabric.with(this, crashlytics);
```

Fluent Pattern

```
Fabric.with(this, new Fabric.Builder(this)
                .kits(new Crashlytics())
                .debuggable(true)
                .logger(new DefaultLogger(Log.VERBOSE))
                .looper(getCustomLooper())
                .executor(getCustomExecutorService())
                .build());
```

Gracefully Degrade



Gracefully Degrade

```
if (TextUtils.isEmpty(apiKey)
   if (debuggable){
      throw new IllegalArgumentException(
          “apiKey is null!");
   } else {
      return null;
   }
}
```

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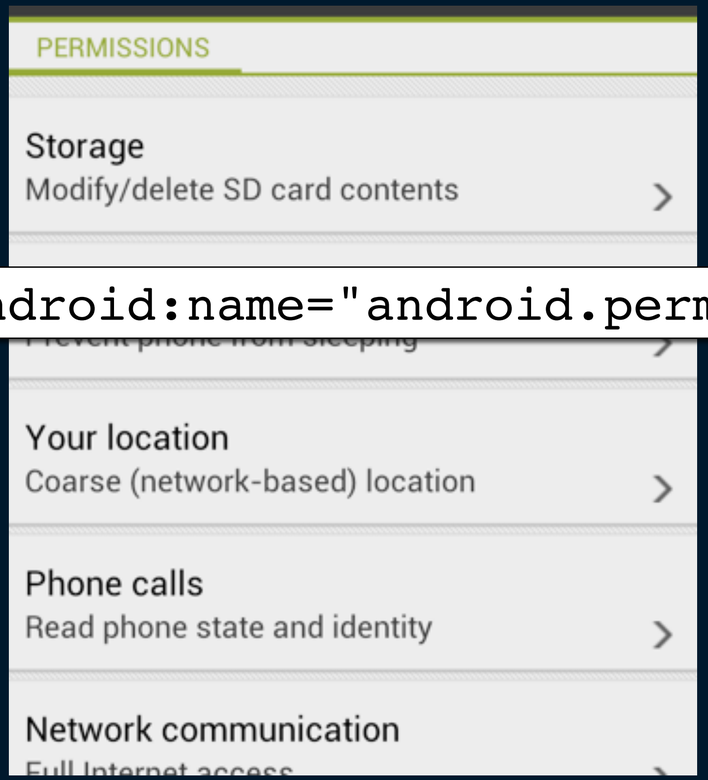
Minimizing Permissions

Minimizing Permissions




```
<uses-permission android:name="android.permission.INTERNET"/>
```

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Minimizing Permissions

```
Crashlytics.setUserEmail(“appuser@domain.com”);
```

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Permissions: Runtime Detection

```
protected boolean canCheckNetworkState() {
  String permission =
      “android.permission.ACCESS_NETWORK_STATE”;
  int result =
      context.checkCallingOrSelfPermission(permission);
  return (result == PackageManager.PERMISSION_GRANTED);
}
```

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Multiple Application Types

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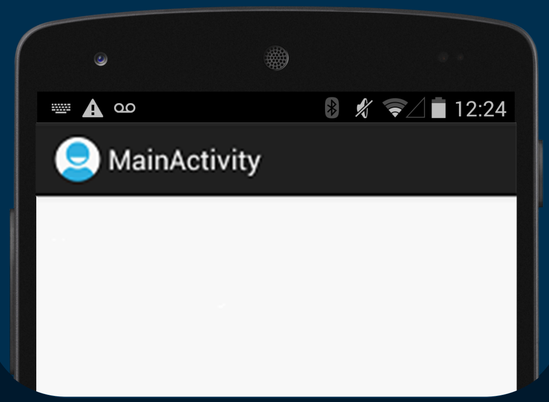
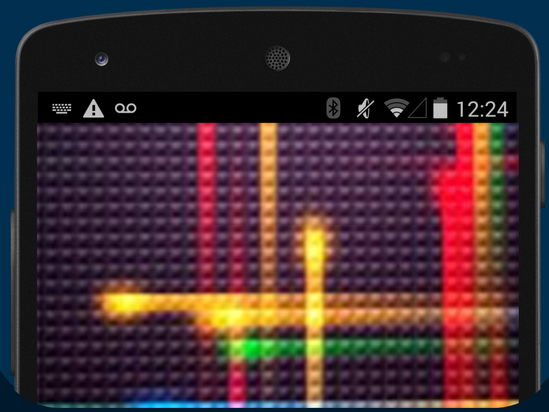
Multiple Application Types




```
package com.example;

import android.app.Service;

public class MyService
extends Service {
}
```



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UI from Application Context

```
private WeakReference<Activity> currentActivity = new
WeakReference<Activity>();

@TargetApi(Build.VERSION_CODES.ICE_CREAM_SANDWICH)
private void registerLifecycleCallbacks() {
  if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.FROYO) {
      final Application app = ((Application)context);
      app.registerActivityLifecycleCallbacks(
        new ActivityLifecycleCallbacks() {
          @Override
          public void onActivityResumed(Activity activity) {
              currentActivity.set(activity);
          }
        });
  }
}
```

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Powerful SDKs

Ease of Integration

Extensibility

Support all app types

Permission detection

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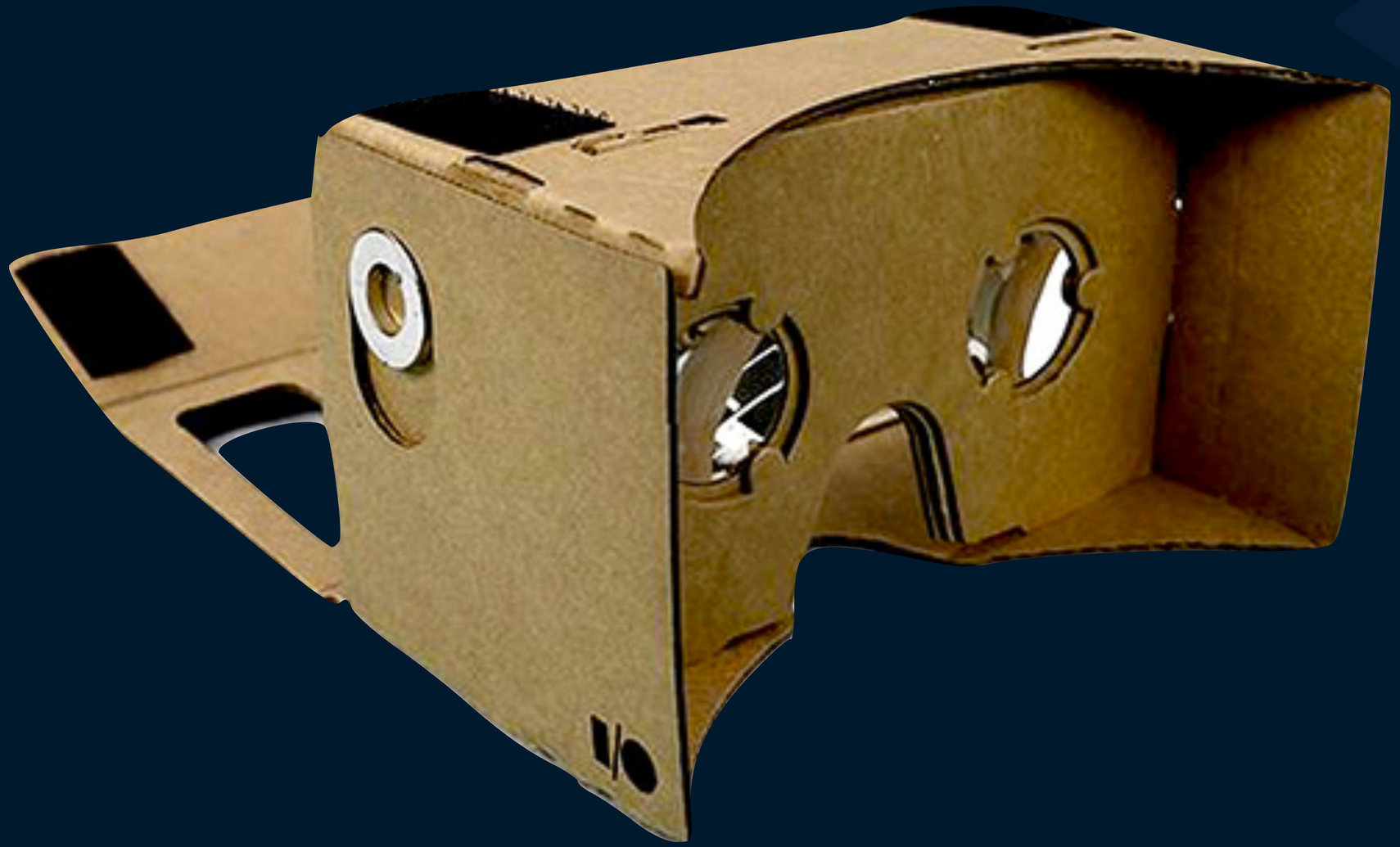
Lightweight

Binary Size

Binary Size



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3rd Party Library Mindfulness

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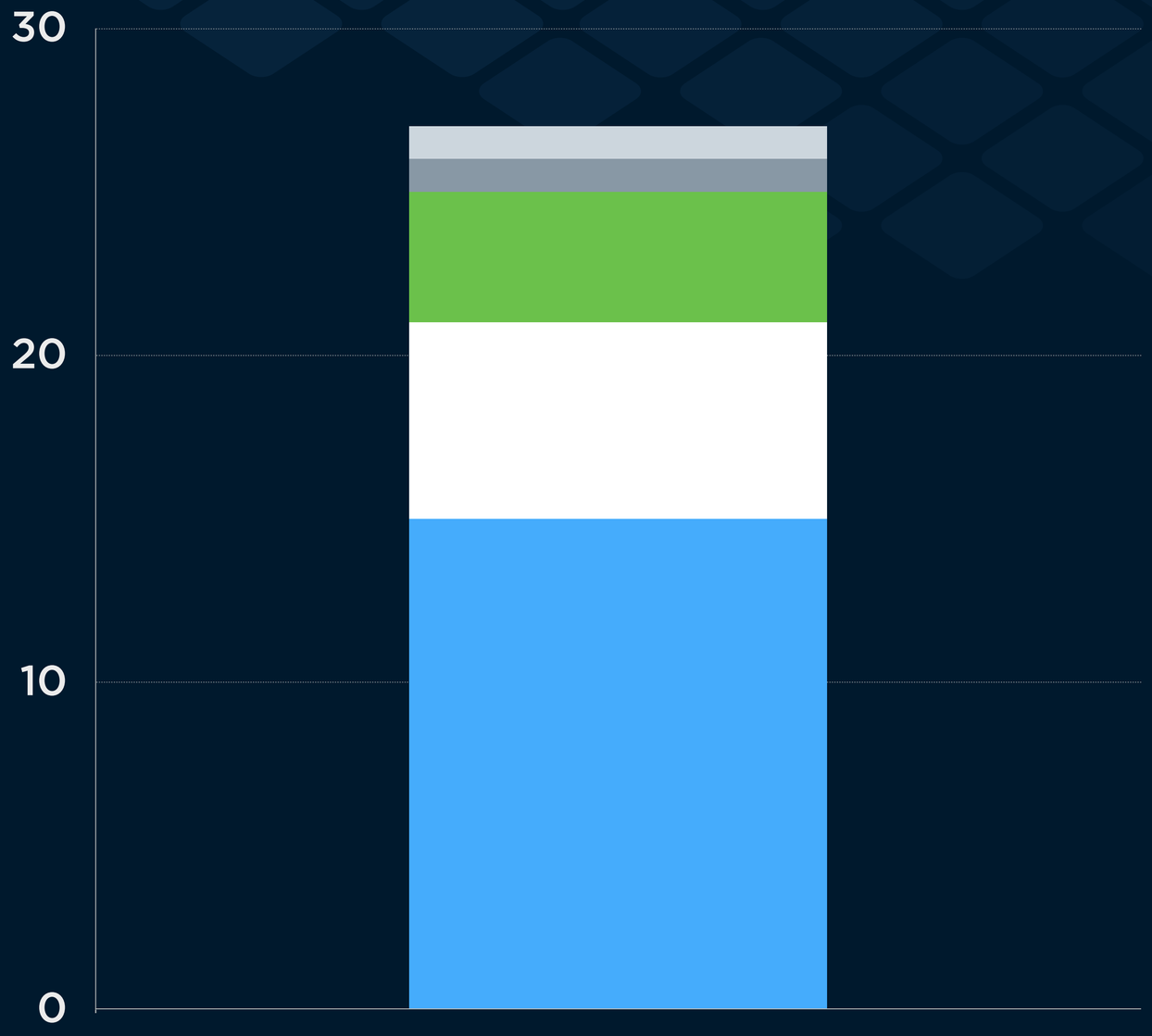
3rd Party Library Mindfulness



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3rd Party Library Mindfulness

PROTOBUF

KB

OURS

KB

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Dalvik Method Count

Dalvik Method Count

```
>./gradlew assemble


…
Unable to execute dex: method ID not in [0,
0xffff]: 65536
Conversion to Dalvik format failed: Unable to
execute dex: method ID not in [0, 0xffff]: 65536
```

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Dalvik Method Count

```
> git clone git@github.com:mihaip/dex-method-counts.git
> cd dex-method-counts
> ant jar
> ./dex-method-counts path/to/App.apk

Read in 65490 method IDs.
<root>: 65490
    : 3
        accessibilityservice: 6
        bluetooth: 2
        content: 248
            pm: 22
            res: 45
        ...
    com: 53881
        adjust: 283
            sdk: 283
```

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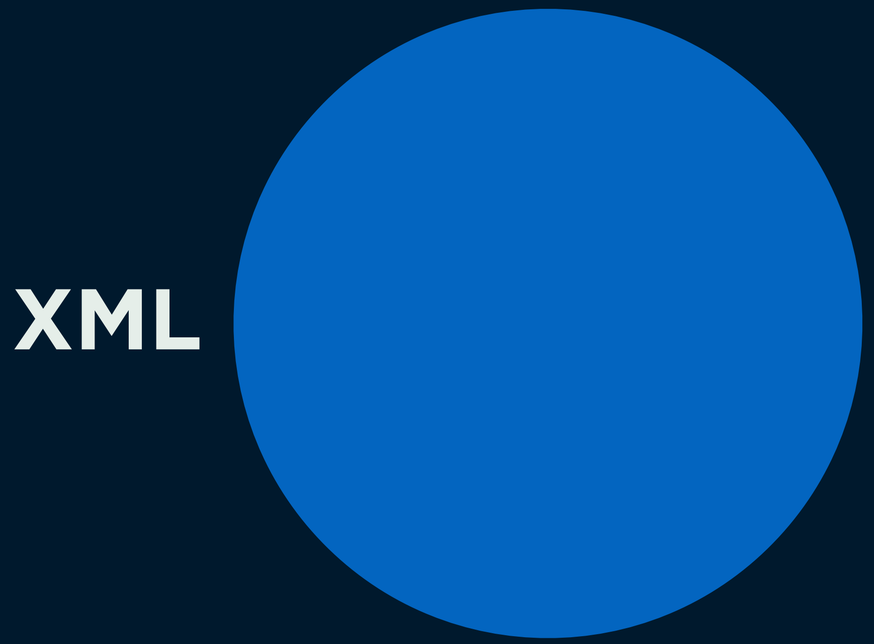
Minimize Network Usage

Network Usage



10X SMALLER

100X FASTER

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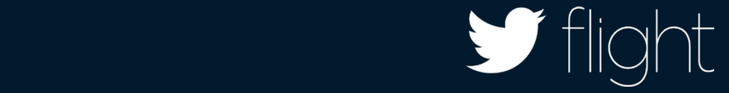
Reduce Startup Time



Startup Time

```
Thread.start();
```

```
Executors.newSingleThreadExecutor();
```

Startup Time

```
class MyThreadFactory implements ThreadFactory {

    @Override
    public Thread newThread(Runnable runnable) {
        final Thread thread = new Thread(runnable);
        thread.setPriority(Process.THREAD_PRIORITY_BACKGROUND);
        return thread;
    }
}
```

Lightweight SDKs

Binary size

3rd party library mindfulness

Dalvik Method Count

Network usage

Startup time

Lightweight

Powerful

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Thank You