



Keishin Yokomaku / potatotips #34 @ UIEvolution

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# TransactionTooLargeException

## About Me

▶ Keishin Yokomaku

 Drivemode, Inc. / Principal Engineer

 Keith Yokoma: [GitHub](#) / [Twitter](#) / [Qiita](#) / [Tumblr](#) / [Stack Overflow](#)

▶ Books: [Mobile App Dev Guide](#) / [Android Academia](#) / [Grimoire of Android](#)

▶ Fun: Gymnastics / Cycling / Photography / Motorsport

▶ Today's Quote: “ガッキー最高”

# Transaction TooLargeException

## Inter-Process Communication (IPC)

- ▶ Mechanisms that OS provides to allow processes to share(transfer) data.
  - ▶ Underlying system
    - ▶ [Deep Dive into Android IPC/Binder Framework](http://bit.ly/2dsFzal) (<http://bit.ly/2dsFzal>)
  - ▶ Key classes built upon IPC framework in Android
    - ▶ Parcelables (Intent, Bundle, Bitmap, etc...) and Binder
    - ▶ System Services (PackageManager, ActivityManager, etc...)

# Example of IPC

```
public class MainActivity extends Activity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        View button = findViewById(R.id.button);
        button.setOnClickListener(v -> {
            Intent intent = new Intent(this, ImageViewActivity.class);
            intent.putExtra(ImageViewActivity.EXTRA_IMAGE, getBitmap());
            startActivity(intent);
        });
    }

    public Bitmap getBitmap() {
        // returns huge bitmap object
    }
}
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**!!! FAILED BINDER TRANSACTION !!! (parcel size = 1048700)**

# !!! FAILED BINDER TRANSACTION !!! (parcel size = 1048700)

- ▶ A process is allowed to use 1Mb memory space (for buffer) for IPC
  - ▶ NEVER transfer a large data (e.g. Bitmap) across processes through IPC.
    - ▶ Otherwise you will see **TransactionTooLargeException**.
- ▶ Also be aware NOT to make too many transactions at the same time
  - ▶ When the sum of all individual data exceeds 1Mb, you will see **TransactionTooLargeException**.



# How to avoid

- ▶ 3 ways to avoid TransactionTooLargeException
  - ▶ Split a huge data into small pieces
    - ▶ e.g. PackageManager defines flags to control data size
  - ▶ Use Uri to share a huge data
    - ▶ cf. Intent#setData()
  - ▶ Cache the data to reduce the number of IPC

## Similar exceptions

- ▶ CursorWindowAllocationException
  - ▶ The app opens too many cursors, or allocate too many data in a cursor.



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# TransactionTooLargeException



# Call for Speakers will close on November 1st

