

# Introduction to Android PM & Wake lock

CS 436 Software Development on Mobile

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# Wakelock

## APPLICATIONS

Home

Contacts

Phone

Browser

...

## APPLICATION FRAMEWORK

Activity Manager

Window Manager

Content Providers

View System

Notification Manager

Package Manager

Telephony Manager

Resource Manager

Location Manager

GTalk Service

## LIBRARIES

Surface Manager

Media Framework

SQLite

OpenGL | ES

FreeType

WebKit

SGL

SSL

libc

## ANDROID RUNTIME

Core Libraries

Dalvik Virtual Machine

## LINUX KERNEL

Display Driver

Camera Driver

Bluetooth Driver

Flash Memory Driver

Binder (IPC) Driver

USB Driver

Keypad Driver

WiFi Driver

Audio Drivers

Power Management

# Wakelock

## Power Management

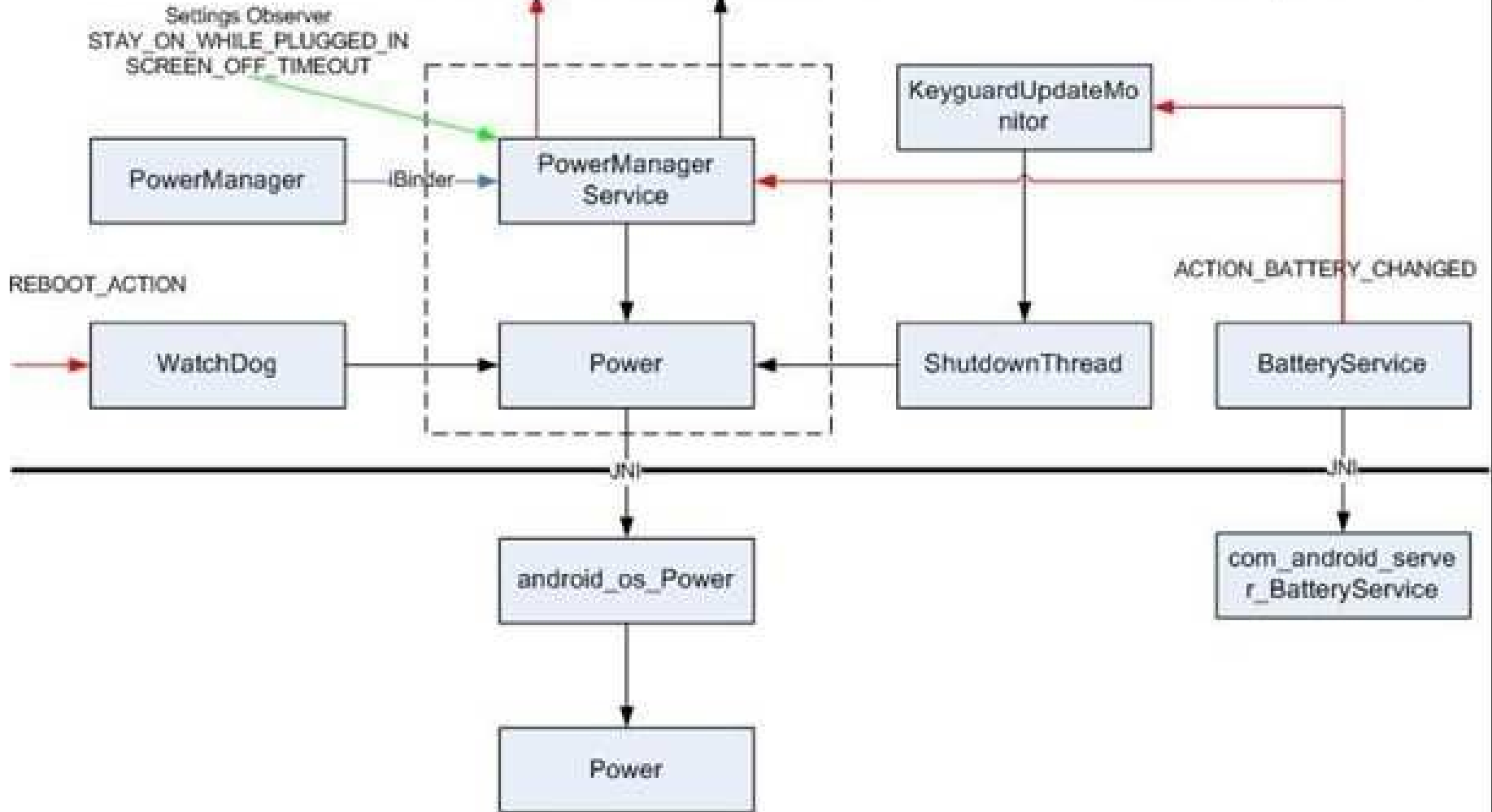
- Built on top of standard Linux Power Management (PM)
- More aggressive power management policy
- Components make requests to keep the power on through *"wake locks"*
- Supports different types of wake locks



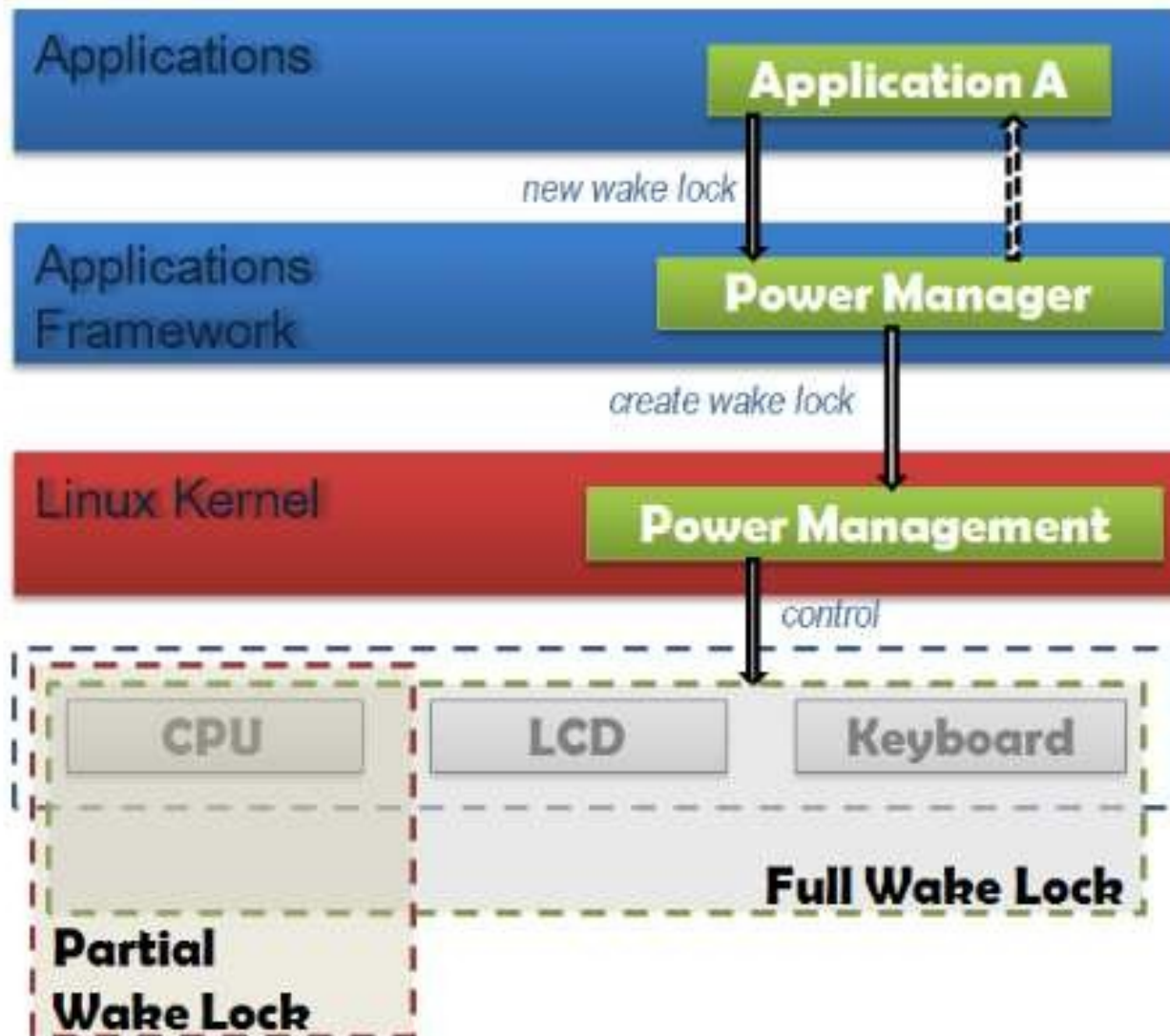
# Wakelock

ACTION\_SCREEN\_ON ActivityManagerService  
ACTION\_SCREEN\_OFF PhoneWindowManager

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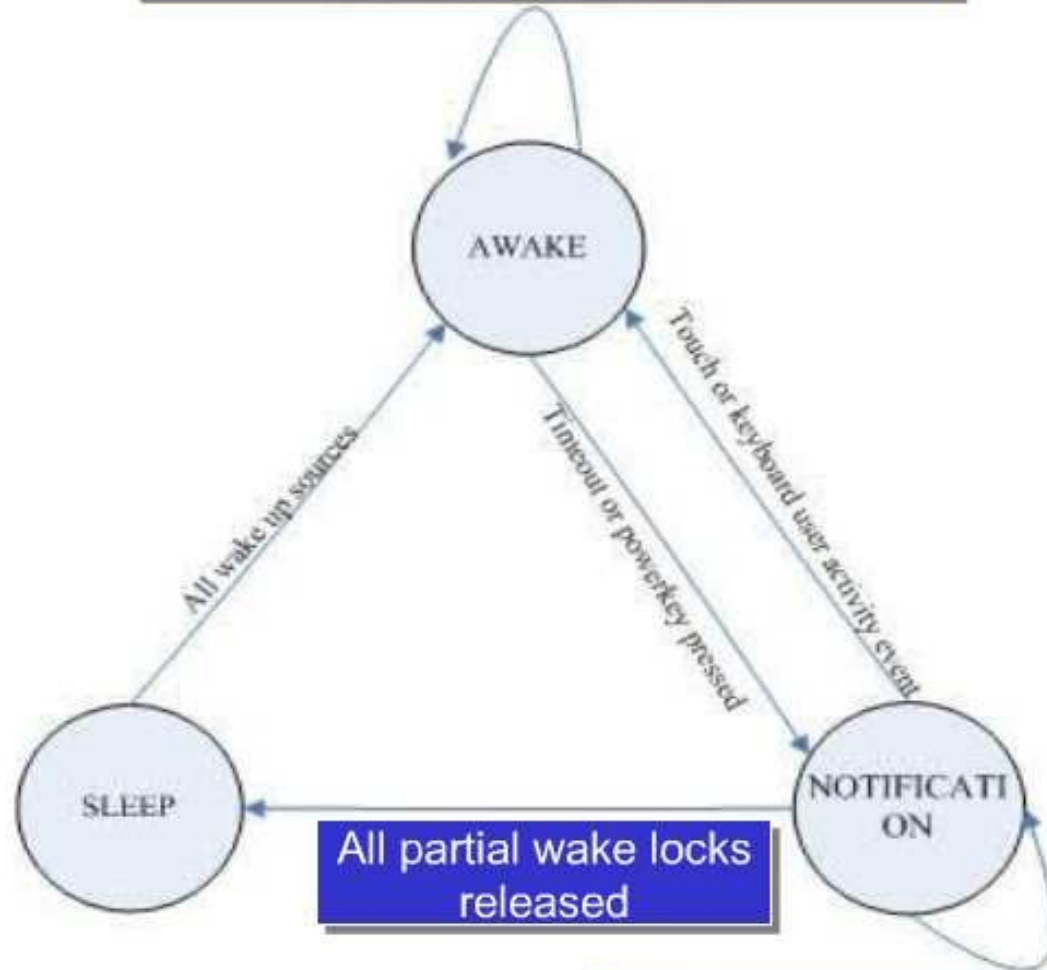


# Wakelock



# Wakelock

Touchscreen or keyboard user activity event or full wake locks acquired.



All partial wake locks released

Partial wake locks acquired

# Wakelock

```
PowerManager pm = (PowerManager) getSystemService(Context.POWER_SERVICE);  
PowerManager.WakeLock wl = pm.newWakeLock(PowerManager.SCREEN_DIM_WAKE_LOCK,  
"My Tag");  
wl.acquire();  
..screen will stay on during this section..  
wl.release();
```

Flag Value	CPU	Screen	Keyboard
<u>PARTIAL_WAKE_LOCK</u>	On*	Off	Off
<u>SCREEN_DIM_WAKE_LOCK</u>	On	Dim	Off
<u>SCREEN_BRIGHT_WAKE_LOCK</u>	On	Bright	Off
<u>FULL_WAKE_LOCK</u>	On	Bright	Bright

\* Ignore power button press

Thank you 😊