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## Initialize

```
package com.example.yourapplication;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;

import com.supremainc.sdk.SvpManager;
import com.supremainc.sdk.callback.Event;
import com.supremainc.sdk.callback.Fingerprint;
import com.supremainc.sdk.callback.Input;
import com.supremainc.sdk.callback.Punch;
import com.supremainc.sdk.service.DeviceListener;

public class MainActivity extends AppCompatActivity {

    SvpManager svpManager = new SvpManager();
    private static final String TAG = "YourApp";

    /**
     * DeviceListener receives events about a device.
     */
    private DeviceListener deviceListener = new DeviceListener() {
        @Override
        public void onPunchDetected(Punch data) { }
        @Override
        public void onInputDetected(Input data) { }
        @Override
        public void onEventDetected(Event data) { }
        @Override
        public void onCardScanCompleted(Punch data) { }
        @Override
        public void onFingerprintDetected(Fingerprint data) { }
        @Override
        public void onFingerprintScanCompleted(Fingerprint data) { }
        @Override
        public void onFingerprintIdentified(Fingerprint data) { }
        @Override
        public void onFingerprintScanProgress(int scanTimeout) { }
        @Override
        public void onCardScanProgress(int scanTimeout) { }
    };

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        /**
```

```
    * SDK Initialize.
    */
    svpManager.initialize(this, deviceListener);

    /**
     * Set card RF type.
     */
    svpManager.setCardType(Card.RF_HIGH_FREQUENCY);

    /**
     * SDK service run.
     */
    svpManager.run();

    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
}
}
```

## Setting Options

```
package com.example.yourapplication;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

import com.supremainc.sdk.SvpManager;
import com.supremainc.sdk.option.CardOption;
import com.supremainc.sdk.option.FingerprintOption;
import com.supremainc.sdk.service.DeviceListener;

public class MainActivity extends AppCompatActivity {

    SvpManager svpManager = new SvpManager();
    private static final String TAG = "YourApp";

    private DeviceListener deviceListener = new DeviceListener() {
    };

    @Override
    protected void onCreate(Bundle savedInstanceState) {

        /**
         * SDK Initialize.
         */
        svpManager.initialize(this, deviceListener);
    }
}
```

```
/**
 * SDK service run.
 */
svpManager.run();

findViewById(R.id.button).setOnClickListener(mClickListener);

super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
}

Button.OnClickListener mClickListener = new View.OnClickListener() {
    public void onClick(View v) {
        int result = ;

        /**
         * Card option
         */
        CardOption cardOption = new CardOption();
        cardOption.byteOrder = CardOption.BYTE_ORDER_MSB;
        cardOption.scanTimeout = 5;

        result = svpManager.setCardOption(cardOption);

        /**
         * Fingerprint option
         */
        FingerprintOption fingerOption = new FingerprintOption();
        fingerOption.securityLevel =
FingerprintOption.DEFAULT_SECURITY_LEVEL;
        fingerOption.fastMode = FingerprintOption.DEFAULT_FAST_MODE;
        fingerOption.sensitivity =
FingerprintOption.DEFAULT_SENSOR_SENSITIVITY;
        fingerOption.sensorMode = FingerprintOption.DEFAULT_SENSOR_MODE;
        fingerOption.templateFormat =
FingerprintOption.DEFAULT_TEMPLATE_FORMAT;
        fingerOption.scanTimeout =
FingerprintOption.DEFAULT_SCAN_TIMEOUT;
        fingerOption.lfdLevel = FingerprintOption.DEFAULT_LFD_LEVEL;
        fingerOption.useAdvancedEnrollment = true;
        fingerOption.useBitmapImage = true;

        result = svpManager.setFingerprintOption(fingerOption);
    }
};
}
```

## Scan Card

```
package com.example.yourapplication;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Button;

import com.supremainc.sdk.SvpManager;
import com.supremainc.sdk.callback.Punch;
import com.supremainc.sdk.service.DeviceListener;

public class MainActivity extends AppCompatActivity {

    SvpManager svpManager = new SvpManager();
    private static final String TAG = "YourApp";

    private DeviceListener deviceListener = new DeviceListener() {
        /**
         * Called when a card scan completed.
         */
        @Override
        public void onCardScanCompleted(Punch data) {
            Log.i(TAG, "result : " + data.result);
            Log.i(TAG, "card number : " + data.displayString);
        }

        /**
         * Called when a card scan progressed.
         */
        @Override
        public void onCardScanProgress(int scanTimeout) {
            Log.i(TAG, "scanTimeout:" + scanTimeout);
        }
    };

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        /**
         * SDK Initialize.
         */
        svpManager.initialize(this, deviceListener);

        /**
         * Set card RF type.
         */
        svpManager.setCardType(Card.RF_HIGH_FREQUENCY);
    }
}
```

```

    /**
     * SDK service run.
     */
    svpManager.run();

    findViewById(R.id.button).setOnClickListener(mClickListener);

    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
}

Button.OnClickListener mClickListener = new View.OnClickListener() {
    public void onClick(View v) {
        /**
         * Scan card
         */
        int result = svpManager.scanCard();
    }
};
}

```

## Scan Finger

```

package com.example.yourapplication;

import android.graphics.drawable.BitmapDrawable;
import android.graphics.drawable.Drawable;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Button;

import com.supremainc.sdk.SvpManager;
import com.supremainc.sdk.callback.Fingerprint;
import com.supremainc.sdk.service.DeviceListener;

public class MainActivity extends AppCompatActivity {

    SvpManager svpManager = new SvpManager();
    private static final String TAG = "YourApp";

    private DeviceListener deviceListener = new DeviceListener() {
        /**
         * Called when a fingerprint scan completed.
         */
        @Override
        public void onFingerprintScanCompleted(Fingerprint data) {
            Log.i(TAG, "result:" + data.result);
        }
    };
}

```

```
        Log.i(TAG, "quality:" + data.quality);

        /**
         * data.template is managed by your application.
         */
        Log.i(TAG, "template:" + data.template.toString());

        if(null != data.image)
        {
            /**
             * fingerprint bitmap image.
             */
            Drawable ob = new BitmapDrawable(getResources(),
data.image);
        }

        /**
         * Called when a fingerprint scan progressed.
         */
        @Override
        public void onFingerprintScanProgress(int scanTimeout) {
            Log.i(TAG, "scanTimeout:" + scanTimeout);
        }
    };

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        /**
         * SDK Initialize.
         */
        svpManager.initialize(this, deviceListener);

        /**
         * SDK service run.
         */
        svpManager.run();

        findViewById(R.id.button).setOnClickListener(mClickListener);

        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }

    Button.OnClickListener mClickListener = new View.OnClickListener() {
        public void onClick(View v) {
            /**
             * Scan fingerprint.
             */
            int result = svpManager.scanFingerprint();
        }
    };
}
```

```
    }  
};  
}
```

## Setting Fingerprint templates and Fingerprint Identified

```
package com.example.yourapplication;  
  
import android.graphics.drawable.BitmapDrawable;  
import android.graphics.drawable.Drawable;  
import android.support.v7.app.AppCompatActivity;  
import android.os.Bundle;  
import android.util.Log;  
import android.view.View;  
import android.widget.Button;  
  
import com.supremainc.sdk.SvpManager;  
import com.supremainc.sdk.callback.Fingerprint;  
import com.supremainc.sdk.model.Finger;  
import com.supremainc.sdk.model.FingerList;  
import com.supremainc.sdk.service.DeviceListener;  
  
public class MainActivity extends AppCompatActivity {  
  
    SvpManager svpManager = new SvpManager();  
    private static final String TAG = "YourApp";  
  
    private DeviceListener deviceListener = new DeviceListener() {  
        /**  
         * Called when a fingerprint identified.  
         */  
        @Override  
        public void onFingerprintIdentified(Fingerprint data) {  
            Log.i(TAG, "result:" + data.result);  
            Log.i(TAG, "id:" + data.id);  
            Log.i(TAG, "templateSize:" + data.templateSize);  
            Log.i(TAG, "quality:" + data.quality);  
            Log.i(TAG, "fingerprintIndex:" + data.fingerprintIndex);  
            Log.i(TAG, "isUpdated:" + data.isUpdated);  
  
            if (null != data.image)  
            {  
                Drawable ob = new BitmapDrawable(getResources(),  
data.image);  
            }  
        }  
    };  
}
```



```
@Override
protected void onCreate(Bundle savedInstanceState) {
    /**
     * SDK Initialize.
     */
    svpManager.initialize(this, deviceListener);

    /**
     * SDK service run.
     */
    svpManager.run();

    findViewById(R.id.button).setOnClickListener(mClickListener);

    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
}

Button.OnClickListener mClickListener = new View.OnClickListener() {
    public void onClick(View v) {

        /**
         * Fingerprint templates are managed by your application.
         * Template array represents the data received as
         "onFingerprintScanCompleted"
         */
        byte[][] template = new
byte[Finger.TEMPLATE_PER_FINGER][Fingerprint.FINGERPRINT_TEMPLATE_SIZE];

        FingerList fingerList = new FingerList();
        for(int i = 0; i < Finger.MAX_NUM_OF_FINGER; i++)
        {
            Finger finger = new Finger();
            finger.id = i;
            finger.index = (int)(Math.random() *
FingerList.MAX_NUM_OF_FINGER_PER_USER);

            finger.setTemplate(0, template[0]);
            finger.setTemplate(1, template[1]);

            fingerList.addFinger(finger);
        }

        /**
         * Fingerprint matching is done with the set templates.
         * If the fingerprint matches successfully, the
         "onFingerprintIdentified" is called.
         */
        int result = svpManager.setFingerList(fingerList);
    }
}
```

```
};  
}
```

## Users finger management (Insert/Update/Delete/Delete all)

```
package com.example.yourapplication;  
  
import android.support.v7.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
  
import com.supremainc.sdk.SvpManager;  
import com.supremainc.sdk.callback.Fingerprint;  
import com.supremainc.sdk.model.Finger;  
import com.supremainc.sdk.service.DeviceListener;  
  
public class MainActivity extends AppCompatActivity {  
  
    SvpManager svpManager = new SvpManager();  
    private static final String TAG = "YourApp";  
  
    private DeviceListener deviceListener = new DeviceListener() {  
    };  
  
    class RunnableImplements implements Runnable {  
        @Override  
        public void run() {  
            /**  
             * SDK service run.  
             */  
            svpManager.run();  
        }  
    }  
  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
  
        /**  
         * SDK Initialize.  
         */  
        svpManager.initialize(this, deviceListener);  
  
        Runnable r = new RunnableImplements();  
        Thread t = new Thread(r);  
        t.start();  
  
        findViewById(R.id.button).setOnClickListener(mClickListener);  
    }  
}
```

```
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }

    Button.OnClickListener mClickListener = new View.OnClickListener() {
        public void onClick(View v) {
            int result = ;
            /**
             * Fingerprint templates are managed by your application.
             * Template array represents the data received as
            "onFingerprintScanCompleted"
             */
            byte[][] template = new
byte[Finger.TEMPLATE_PER_FINGER][Fingerprint.FINGERPRINT_TEMPLATE_SIZE];
            int id = 1000;

            Finger finger = new Finger();
            finger.id = id;
            finger.index = ;
            finger.setTemplate(, template[]);
            finger.setTemplate(1, template[1]);

            /**
             * Insert new finger.
             */
            result = svpManager.insertFinger(finger);

            /**
             * Update new finger.
             */
            result = svpManager.updateFinger(finger);

            /**
             * Delete finger.
             */
            result = svpManager.deleteFinger(finger);

            /**
             * Delete all fingers.
             */
            result = svpManager.deleteAllFinger();
        }
    };
}
```

## Data detected (Card/Finger/Input)

```
package com.example.yourapplication;
```

```
import android.graphics.drawable.BitmapDrawable;
import android.graphics.drawable.Drawable;
import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;

import com.supremainc.sdk.SvpManager;
import com.supremainc.sdk.callback.Fingerprint;
import com.supremainc.sdk.callback.Input;
import com.supremainc.sdk.callback.Punch;
import com.supremainc.sdk.service.DeviceListener;

public class MainActivity extends AppCompatActivity {

    SvpManager svpManager = new SvpManager();
    private static final String TAG = "YourApp";

    private DeviceListener deviceListener = new DeviceListener() {
        /**
         * Called when a card detected.
         */
        @Override
        public void onPunchDetected(Punch data) {
            Log.i(TAG, "result : " + data.result);
            Log.i(TAG, "card number : " + data.displayString);
        }

        /**
         * Called when a finger detected.
         */
        @Override
        public void onFingerprintDetected(Fingerprint data) {
            Log.i(TAG, "result:" + data.result);
            Log.i(TAG, "template:" + data.template.toString());
            Log.i(TAG, "quality:" + data.quality);

            if(null != data.image)
            {
                /**
                 * fingerprint bitmap image.
                 */
                Drawable ob = new BitmapDrawable(getResources(),
data.image);
            }
        }

        /**
         * Called when an input detected.
         */
        @Override
```

```
        public void onInputDetected(Input data) {
            Log.i(TAG, "result : " + data.result);
            Log.i(TAG, "type : " + data.type);
            Log.i(TAG, "port : " + data.port);
            Log.i(TAG, "status : " + data.status);
        }
    };

    class RunnableImplements implements Runnable {
        @Override
        public void run() {
            /**
             * SDK service run.
             */
            svpManager.run();
        }
    }

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        /**
         * SDK Initialize.
         */
        svpManager.initialize(this, deviceListener);

        /**
         * Set card RF Type.
         */
        svpManager.setCardType(Card.RF_HIGH_FREQUENCY);

        Runnable r = new RunnableImplements();
        Thread t = new Thread(r);
        t.start();

        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```

## LED / Output Control

```
package com.example.yourapplication;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

import com.supremainc.sdk.SvpManager;
```

```
import com.supremainc.sdk.define.Channel;
import com.supremainc.sdk.define.LedColor;
import com.supremainc.sdk.define.Relay;
import com.supremainc.sdk.service.DeviceListener;

public class MainActivity extends AppCompatActivity {

    SvpManager svpManager = new SvpManager();
    private static final String TAG = "YourApp";

    private DeviceListener deviceListener = new DeviceListener() { };

    class RunnableImplements implements Runnable {
        @Override
        public void run() {
            /**
             * SDK service run.
             */
            svpManager.run();
        }
    }

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        /**
         * SDK Initialize.
         */
        svpManager.initialize(this, deviceListener);

        Runnable r = new RunnableImplements();
        Thread t = new Thread(r);
        t.start();

        findViewById(R.id.button).setOnClickListener(mClickListener);

        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }

    Button.OnClickListener mClickListener = new View.OnClickListener() {
        public void onClick(View v) {
            int result = ;
            /**
             * Execute LED action.
             */
            result = svpManager.executeLedAction(LedColor.LED_COLOR_RED);
            /**
             * Execute output action.
             */
            result = svpManager.executeOutputAction(Channel.RELAY_PORT_0,
            Relay.ON);
        }
    }
}
```

```
    }  
};  
}
```

## Firmware upgrade

```
package com.example.yourapplication;  
  
import android.support.v7.app.AppCompatActivity;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
  
import com.supremainc.sdk.SvpManager;  
import com.supremainc.sdk.define.Channel;  
import com.supremainc.sdk.define.LedColor;  
import com.supremainc.sdk.define.Relay;  
import com.supremainc.sdk.service.DeviceListener;  
  
public class MainActivity extends AppCompatActivity {  
  
    SvpManager svpManager = new SvpManager();  
    private static final String TAG = "YourApp";  
  
    private DeviceListener deviceListener = new DeviceListener() {  
        /**  
         * Called when a device event detected.  
         */  
        @Override  
        public void onEventDetected(Event data) {  
            Log.i(TAG, "result : " + data.result);  
            Log.i(TAG, "code : " + data.code);  
  
            if( data.code == EventCode.EVENT_DEVICE_FIRMWARE_UPGRADED )  
            {  
                /**  
                 * Reboot device.  
                 */  
                svpManager.rebootDevice();  
            }  
        }  
    };  
  
    class RunnableImplements implements Runnable {  
        @Override  
        public void run() {  
            /**  
             * SDK service run.  
             */  
        }  
    }  
}
```

```
        svpManager.run();
    }
}

@Override
protected void onCreate(Bundle savedInstanceState) {
    /**
     * SDK Initialize.
     */
    svpManager.initialize(this, deviceListener);

    Runnable r = new RunnableImplements();
    Thread t = new Thread(r);
    t.start();

    findViewById(R.id.button).setOnClickListener(mClickListener);

    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
}

public void ftpUpgrade()
{
    int result = ;
    /**
     * FTP firmware option.
     */
    FirmwareOption option = new FirmwareOption();
    option.type = FirmwareOption.FTP_UPGRADE;
    option.fileName = "omnis_1.0.0_20181201.bin";
    option.host = "127.0.0.1";
    option.port = 21;
    option.username = "suprema";
    option.password = "suprema";

    /**
     * Connect FTP server.
     */
    result = svpManager.connectFtpServer(option);

    /**
     * Get firmware file list.
     */
    ArrayList<String> fileList = new ArrayList<String>();
    result = mManager.getFirmwareFileList(fileList);

    /**
     * Upgrade firmware.
     */
    result = svpManager.upgradeFirmware(option);
}
```



```
        /**
         * Disconnect FTP server.
         */
        result = svpManager.disconnectFtpServer();
    }

    public void usbUpgrade()
    {
        int result = ;
        /**
         * USB firmware option.
         */
        FirmwareOption option = new FirmwareOption();
        option.type = FirmwareOption.USB_UPGRADE;
        option.fileName = "omnis_1.0.0_20181201.bin";

        /**
         * Upgrade firmware.
         */
        result = svpManager.upgradeFirmware(option);
    }

    Button.OnClickListener mClickListener = new View.OnClickListener() {
        public void onClick(View v) {

            /**
             * FTP firmware upgrade.
             */
            ftpUpgrade();

            /**
             * USB firmware upgrade.
             */
            usbUpgrade();
        }
    };
}
```

From:

<http://kb.supremainc.com/svpsdk/> - **SVP Android SDK**

Permanent link:

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