# 1 smt与各个模块之间的调用关系

# 2 核心方法实现

## 1 smt\_getDeviceInfo ()

### 时序

### 涉及模块

smtIosService

settingService

### 实现

传入：设备请求类型 和index

enum SmtDevReqType

{

SMT\_IOS\_DEV\_ALL\_REQ,

SMT\_IOS\_DEV\_SINGLE\_REQ,

};

传出：SmtDevice设备信息。

封装成类。

SmtDeviceInfo():

reqType(),

total(),

index(),

code(),

pop(),

popAndroid(),

nameLen(),

name()

### 总结

获取设备信息方法

android::status\_t SmartIosServiceProxyBase::smt\_getDeviceInfo(const SmtDevReqType& reqType, const uint8\_t& index)

参数：

const SmtDevReqType& reqType ：获取sartphone的请求类型，All/Single

const uint8\_t& index：设备index，1~5为已记录设备，6~15为未记录设备  
 发送异步请求，通过传入的枚举参数COMMAND\_SMT\_GET\_DEVICE\_INFO来区分

GetDeviceInfo方法中，通过传入的设备请求类型，经过调用，最终在SmtIosSettingProxy类的getDeviceInfo方法中进行逻辑处理。具体处理逻辑没整明白。

核心处理逻辑（smtIsoServiceSettingProxy）

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| bool SmartIosSettingProxy::getDeviceInfo(SmtDevReqType reqType, uint8\_t index, std::vector<IosDeviceName\*> \*mDevList, SmtDeviceType deviceType)  {  UNUSED(index);  char sql[SQL\_MAX\_LENGTH] = {0};  char \* errMsg = NULL;  char \*\*result = NULL;  int nRow = 0;  int nCol = 0;  enum SMT\_SQL\_RET resultRet;    if (SMT\_DEVICE\_TYPE\_IOS == deviceType){  snprintf(sql,SQL\_MAX\_LENGTH,"select \* from popDevices order by priority");  }  else{  snprintf(sql,SQL\_MAX\_LENGTH,"select \* from popDevicesAndr order by priority");  }  resultRet = dbOperateRetJudgement(sqlite3\_get\_table(mdb,sql,&result,&nRow,&nCol,&errMsg));  if(SMT\_SQL\_RET\_SUCCESS == resultRet) {  SMTLOGD("get table success");  SMTLOGD("nrow %d,ncol %d",nRow,nCol);  int index = nCol;  int len = 0;  for(int i = 0; i < nRow; ++i) {  if(reqType == SMT\_IOS\_DEV\_ALL\_REQ) {  IosDeviceName\* device = new IosDeviceName;  if (NULL == device){  DTLOG\_PTRASSERT(device);  break;  }  else{  memset(device,0,sizeof(IosDeviceName));  SMTLOGD("seirnum %s,priority %s,popStatus %s,devname %s",result[index],result[index + 1],result[index + 2],result[index + 3]);  len = strlen(result[index]);  if(len > SMT\_IOS\_DEVICE\_SERIALNUM\_MAX) {  len = SMT\_IOS\_DEVICE\_SERIALNUM\_MAX;  }  memcpy(device->format.serinum, result[index], len);  device->format.serinum[SMT\_IOS\_DEVICE\_SERIALNUM\_MAX] = '\0';  device->format.priority = atoi(result[index + 1]);  device->format.popStatus = atoi(result[index + 2]);  len = strlen(result[index + 3]);  if(len > SMT\_IOS\_DEVICE\_NAME\_MAX\_LEN) {  len = SMT\_IOS\_DEVICE\_NAME\_MAX\_LEN;  }  memcpy(device->format.deviceName, result[index + 3], len);  mDevList->push\_back(device);  index += nCol;  }  }  else {  IosDeviceName\* device = new IosDeviceName;  if (NULL == device){  DTLOG\_PTRASSERT(device);  break;  }  else{  memset(device,0,sizeof(IosDeviceName));  len = strlen(result[index]);  if(len > SMT\_IOS\_DEVICE\_SERIALNUM\_MAX) {  len = SMT\_IOS\_DEVICE\_SERIALNUM\_MAX;  }  memcpy(device->format.serinum, result[index], len);  device->format.serinum[SMT\_IOS\_DEVICE\_SERIALNUM\_MAX] = '\0';  device->format.priority = atoi(result[index + 1]);  device->format.popStatus = atoi(result[index + 2]);  len = strlen(result[index + 3]);  if(len > SMT\_IOS\_DEVICE\_NAME\_MAX\_LEN) {  len = SMT\_IOS\_DEVICE\_NAME\_MAX\_LEN;  }  memcpy(device->format.deviceName, result[index + 3], len);  mDevList->push\_back(device);  break;  }  }  }  sqlite3\_free\_table(result);  }  else {  DTLOG\_ERR(0x408022, "get table faild");  SMTLOGD("get table faild,errMsg %s",errMsg);  cleanTablesWhenOpeErr(resultRet, SMT\_DB\_TABLE\_TYPE\_POP\_IOS);  return false;  }  if(mDevList->size() != 0){  return true;  }    DTLOG\_INFO(0x408022, "mDevList->size() == 0");  return false;  }  } /\* namespa |

涉及到smtIosService模块与Setting模块之间的项目调用，也涉及到了sqlite数据库的操作。

具体逻辑暂且不清晰。

## 2 smt\_launchSource()

IOS设备Carplay/Weblink/iPod机能使用，启动资源

**参数：**

const uint8\_t& index---设备index

const SmtIosSource& source----要使用的机能Carplay/Weblink/iPod。

SmtIosSource 是定义的一个设备类型枚举

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| android::status\_t SmartIosServiceProxyBase::smt\_launchSource(const uint8\_t& index, const SmtIosSource& source) /\* \_\_0x101005\_DTFUNCID\_\_ \*/  {  DTLOG\_INFO(0x101005, "smt\_launchSource index = %d source = %d", index, source);//打log, 0x101005,该方法的ID  android::Parcel \_data;  prepareAsyncData(\_data);  \_data.writeInt32(index);  \_data.writeInt32(static\_cast<SmtIosSource>(source));  return sendAsyncRequest(COMMAND\_SMT\_LAUNCH\_SOURCE, \_data);//将数据包和命令序号作为参数，发送一个异步请求  } |

在functionManager中，FIosLauncherProxy文件中定义了launchSourceReq方法，在这个方法中调用了service层的launchSource方法。

在smt\_launchSource方法中，接收调用方传过来的请求参数，通过proxy,stubBase,stub，ServiceManager，smtIosConnectManagerProxy,connectProxy等文件，将参数传到ConnectManagerService服务中，在该服务中完成资源的加载。

## 3 smt\_delAllDevices()

删除所有设备

在SmtIosSettigProxy文件中，delAllDevices方法中调用了deleteTableFromDB()方法，执行具体删除所有设备的方法。

在该方法中，使用了sqlite事务。Begin …. commit

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| //在从数据库中执行删除表操作时，使用了事务。  void SmartIosSettingProxy::deleteTableFromDB(enum SMT\_DB\_TABLE\_TYPE tableType) /\* \_\_0x408008\_DTFUNCID\_\_ \*/{  char sql[SQL\_MAX\_LENGTH] = {0};    DTLOG\_INFO(0x408008, "SmartIosSettingProxy::deleteTableFromDB tableType = %d", tableType);  SMTLOGD("SmartIosSettingProxy::deleteTableFromDB");  if (NULL != mdb){  //开始事务  if (SMT\_SQL\_RET\_SUCCESS != dbOperateRetJudgement(sqlite3\_exec(mdb, "begin", NULL, NULL, NULL))){  DTLOG\_ERR(0x408008, "DB operate begin fail");  SMTLOGD("SmartIosSettingProxy::deleteTableFromDB, begin fail");  return;  }  //根据传入的参数判断删除哪张表  switch (tableType){  case SMT\_DB\_TABLE\_TYPE\_POP\_IOS:  snprintf(sql, SQL\_MAX\_LENGTH, "delete from popDevices");  break;  case SMT\_DB\_TABLE\_TYPE\_NO\_POP\_IOS:  snprintf(sql, SQL\_MAX\_LENGTH, "delete from noPopDevices");  break;  case SMT\_DB\_TABLE\_TYPE\_POP\_ANDROID:  snprintf(sql, SQL\_MAX\_LENGTH, "delete from popDevicesAndr");  break;  case SMT\_DB\_TABLE\_TYPE\_NO\_POP\_ANDROID:  snprintf(sql, SQL\_MAX\_LENGTH, "delete from noPopDevicesAndr");  break;  case SMT\_DB\_TABLE\_TYPE\_VERSION:  snprintf(sql, SQL\_MAX\_LENGTH, "delete from versionInfo");  break;  default:  return;  break;  }  //执行删除语句  if (SMT\_SQL\_RET\_SUCCESS != dbOperateRetJudgement(sqlite3\_exec(mdb, sql, NULL, NULL, NULL))){  DTLOG\_ERR(0x408008, "DB operate fail");  SMTLOGD("SmartIosSettingProxy::deleteTableFromDB, delete popDevices fail");  return;  }  //提交事务  if (SMT\_SQL\_RET\_SUCCESS != dbOperateRetJudgement(sqlite3\_exec(mdb, "commit", NULL, NULL, NULL))){  DTLOG\_ERR(0x408008, "DB operate commit fail");  SMTLOGD("SmartIosSettingProxy::deleteTableFromDB, commit fail");  return;  }  }  else{  DTLOG\_ERR(0x408008, "smartphone mdb is NULL");  SMTLOGD("SmartIosSettingProxy::deleteTableFromDB, smartphone mdb is NULL");  return;  }    return;  } |

## 4 smt\_setPopStatus

设置设备排他性

这里涉及到了smtIosService模块和SettingService的交互。

在代理类smtIosServiceproxy类中开始调用该方法，经过层层的调用，最终在SmartIosSettingProxy类中的setPopStatusReq方法中处理设备排他性的具体逻辑

业务逻辑分析；

//set priority logic

//1. when insert a new device，if device list is not full，get the max priortiy ，if is empty，set 0，

//then the new device priority is max priority + 1

//2. if device list is full，find the priority equal 1 position，in the position insert new serinum，then priority set max，other device

// priorit all need minus one

//3. when delete a device，other device waht priority more than deleted devices need minus one，because a device deleted，

//the after it into the device list device need minus one

//pop up set is divided into 4 situation

//1 the dev is pop device and setting is pop value,only need update popStatus

//2 the dev is pop device and setting is no pop value,need pop device -> no pop device

//3 the dev is no pop device and setting is no pop value,only need update popStatus

//4 the dev is no pop device and setting is pop value,need no pop device -> pop device

代码如下：

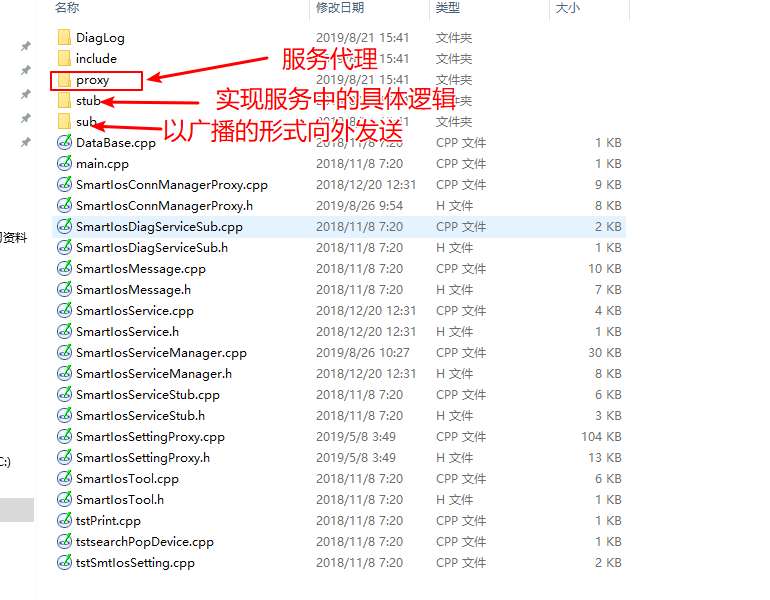
|  |
| --- |
| /\*\*  \*  \* index explain:  \* for pop device,index equal priority,value range is [1,5]  \* for no pop device,index > priority,and index = priority + 5(pop device max num),value range is [6,15]  \*/  int SmartIosSettingProxy::setPopStatusReq(SmtSetType setType, uint8\_t index, SmtPopStatus setting, SmtDeviceType deviceType) /\* \_\_0x40801B\_DTFUNCID\_\_ \*/  {  std::vector<SmartIosIosDevInfo\*> mDeviceList;  SmartIosIosDevInfo\* mSelectDev = NULL;  std::vector<uint16\_t> mIndexList;  int newIndex = index;  enum SMT\_SQL\_RET resultRet;    SMTLOGD("SmartIosSettingProxy setPopStatusReq setType = %d,index %d, setting %d", setType,index, setting);  //pop set,index = index  if (NULL != mdb){  if(setType == SMT\_IOS\_POPUP\_SET) {  SMTLOGD("line %d,pop set",\_\_LINE\_\_);  SMTLOGD("use sqlite3 db");  char sql[SQL\_MAX\_LENGTH] = {0};  char \*errMsg = NULL;  IosDeviceName devname;    //no pop device  if((index >= SMT\_IOS\_NOPOP\_INDEX\_START) && (index <= SMT\_IOS\_NOPOP\_INDEX\_END)) {  if(isPopStatusValidHigh(setting)) {  if (SMT\_DEVICE\_TYPE\_IOS == deviceType){  snprintf(sql,SQL\_MAX\_LENGTH,"select \* from noPopDevices where priority = '%d'",index-SMT\_IOS\_POP\_DEVICE\_MAX);  }  else{  snprintf(sql,SQL\_MAX\_LENGTH,"select \* from noPopDevicesAndr where priority = '%d'",index-SMT\_IOS\_POP\_DEVICE\_MAX);  }  resultRet = dbOperateRetJudgement(sqlite3\_exec(mdb,sql,sqlite3\_callback,(void\*)&devname,&errMsg));  if(SMT\_SQL\_RET\_SUCCESS == resultRet) {  SMTLOGD("resultCountOpe = %d",resultCountOpe);  if(resultCountOpe == 0) {  DTLOG\_ERR(0x40801B, "not the no pop device");  SMTLOGD("not the no pop device");  return index;  }  else {  SMTLOGD("line %d,serinum %s,priority %d,pop %d,name %s,nameisValid %d,index %d",\_\_LINE\_\_,devname.format.serinum,devname.format.priority,devname.format.popStatus,devname.format.deviceName,devname.format.nameIsValid,devname.format.index);  }  }  else {  DTLOG\_ERR(0x40801B, "select faild");  SMTLOGD("select faild,errMsg %s",errMsg);  cleanTablesWhenOpeErr(resultRet, SMT\_DB\_TABLE\_TYPE\_NO\_POP\_IOS);  return index;  }    bool ret;  //Delete nopopdevice  ret = deleteNoPopDevice(index, deviceType);    if (true != ret){  DTLOG\_ERR(0x40801B, "deleteNoPopDevice return false");  return index;  }    //update no pop devices priority  updateNoPopStatusDevicesPriority(index - SMT\_IOS\_POP\_DEVICE\_MAX, deviceType);  //insert the device into popDevices table  int maxPriority = getPopDeviceMaxPriority(deviceType);  if(maxPriority < SMT\_IOS\_POP\_PRIORITY\_END) {  newIndex = maxPriority + 1;  DTLOG\_INFO(0x40801B, "pop device is not full");  SMTLOGD("pop device is not full");    if(devname.format.nameIsValid == NAME\_IS\_VALID) {  SMTLOGD("the devname is valid");  ret = insertPopDevice(&devname, setting, maxPriority, deviceType);    if (true != ret){  DTLOG\_ERR(0x40801B, "insertPopDevice return false");  newIndex = index;  return index;  }  }//name is invalid  else {  SMTLOGD("the name is invalid");  ret = insertPopDeviceNoName(&devname, setting, maxPriority, deviceType);    if (true != ret){  DTLOG\_ERR(0x40801B, "insertPopDeviceNoName return false");  newIndex = index;  return index;  }  }  }//pop device is full,replace priority = 1 device  else {  SMTLOGD("the pop device is full");  newIndex = SMT\_IOS\_POP\_PRIORITY\_END;  if(devname.format.nameIsValid == NAME\_IS\_VALID) {  SMTLOGD("the devname is valid");  replacePopDevice((char\*)devname.format.serinum,setting,(char\*)devname.format.deviceName,NAME\_IS\_VALID,0, deviceType);  }//name is invlaid  else {  SMTLOGD("the devname is invalid");  IosDeviceName name;  int maxIndex = 0;  memset(&name,0,sizeof(name));  if (SMT\_DEVICE\_TYPE\_IOS == deviceType){  snprintf(sql,SQL\_MAX\_LENGTH,"select nonameindex from popDevices where priority = (select max(priority) from popDevices where nameIsValid = '%d')",NAME\_IS\_INVALID);  }  else{  snprintf(sql,SQL\_MAX\_LENGTH,"select nonameindex from popDevicesAndr where priority = (select max(priority) from popDevicesAndr where nameIsValid = '%d')",NAME\_IS\_INVALID);  }  resultRet = dbOperateRetJudgement(sqlite3\_exec(mdb,sql,sqlite3\_callback,(void\*)&name,&errMsg));  if(SMT\_SQL\_RET\_SUCCESS == resultRet) {  SMTLOGD("resultCountOpe = %d",resultCountOpe);  maxIndex = name.format.priority % SMT\_DEVICE\_NONAMEINDEX\_MAX;  SMTLOGD("select nameIsInvalid max index success,maxindex %d",maxIndex);  char invalidname[SMT\_IOS\_DEVICE\_NAME\_MAX\_LEN] = {0};  if (SMT\_DEVICE\_TYPE\_IOS == deviceType){  snprintf(invalidname,SMT\_IOS\_DEVICE\_NAME\_MAX\_LEN,"%s%d","iPhone",maxIndex + 1);  }  else{  snprintf(invalidname,SMT\_IOS\_DEVICE\_NAME\_MAX\_LEN,"%s%d","Android Phone",maxIndex + 1);  }  SMTLOGD("invalidname is %s",invalidname);  replacePopDevice((char\*)devname.format.serinum,setting,invalidname,NAME\_IS\_INVALID,maxIndex + 1, deviceType);  }  else {  DTLOG\_ERR(0x40801B, "sqlite3\_exec find the max noname index fail");  SMTLOGD("sqlite3\_exec find the max noname index fail");  cleanTablesWhenOpeErr(resultRet, SMT\_DB\_TABLE\_TYPE\_POP\_IOS);  return index;  }    }  }  }  else {  #if 0 //Unused in 18HPMDA  snprintf(sql,SQL\_MAX\_LENGTH,"update noPopDevices set popStatus = '%d' where priority = '%d'",setting,index-SMT\_IOS\_POP\_DEVICE\_MAX);  if(SQLITE\_OK == sqlite3\_exec(mdb,sql,NULL,NULL,&errMsg)) {  SMTLOGD("set nopopStatus %d success",setting);  }  else {  SMTLOGD("set nopopStatus %d faild,errMsg %s",setting,errMsg);  }  #endif  }  }  //the device is pop device  else {  if(isPopStatusValidHigh(setting)) {  if (SMT\_SQL\_RET\_SUCCESS != dbOperateRetJudgement(sqlite3\_exec(mdb, "begin", NULL, NULL, NULL))){  DTLOG\_ERR(0x40801B, "DB operate begin fail");  SMTLOGD("SmartIosSettingProxy::setPopStatusReq, begin fail");  return index;  }    if (SMT\_DEVICE\_TYPE\_IOS == deviceType){  snprintf(sql,SQL\_MAX\_LENGTH,"update popDevices set popStatus = '%d' where priority = '%d'",setting,index);  }  else{  snprintf(sql,SQL\_MAX\_LENGTH,"update popDevicesAndr set popStatus = '%d' where priority = '%d'",setting,index);  }  resultRet = dbOperateRetJudgement(sqlite3\_exec(mdb,sql,NULL,NULL,&errMsg));  if(SMT\_SQL\_RET\_SUCCESS == resultRet) {  SMTLOGD("update pop value success,index %d,popValue %d",index,setting);  }  else {  DTLOG\_ERR(0x40801B, "update pop value faild");  SMTLOGD("update pop value faild,errMsg %s",errMsg);  if (SMT\_SQL\_RET\_SUCCESS != dbOperateRetJudgement(sqlite3\_exec(mdb, "rollback", NULL, NULL, NULL))){  DTLOG\_ERR(0x40801B, "DB operate rollback fail");  SMTLOGD("SmartIosSettingProxy::setPopStatusReq, rollback fail");  }  cleanTablesWhenOpeErr(resultRet, SMT\_DB\_TABLE\_TYPE\_POP\_IOS);  return index;  }    if (SMT\_SQL\_RET\_SUCCESS != dbOperateRetJudgement(sqlite3\_exec(mdb, "commit", NULL, NULL, NULL))){  DTLOG\_ERR(0x40801B, "DB operate commit fail");  SMTLOGD("SmartIosSettingProxy::setPopStatusReq, commit fail");  return index;  }  }  //pop device -> no pop device  //1 select pop device info,delete pop device ,update other pop device priority  //2 insert the device into no pop device table  else {  #if 0//Unused in 18HPMDA  snprintf(sql,SQL\_MAX\_LENGTH,"begin");  if(SQLITE\_OK == sqlite3\_exec(mdb,sql,NULL,NULL,&errMsg)) {  SMTLOGD("begin success");  }  else {  SMTLOGD("begin faild");  return newIndex;  }  snprintf(sql,SQL\_MAX\_LENGTH,"select \* from popDevices where priority = '%d'",index);  if(SQLITE\_OK == sqlite3\_exec(mdb,sql,sqlite3\_callback,&devname,&errMsg)) {  if(resultCountOpe != 0) {  SMTLOGD("this is pop device");  resultCountOpe = 0;  }  else {  SMTLOGD("is not pop device");  return newIndex;  }  }  else {  SMTLOGD("select faild,errMsg %s",errMsg);  return newIndex;  }  snprintf(sql,SQL\_MAX\_LENGTH,"delete from popDevices where priority = '%d'",index);  if(SQLITE\_OK == sqlite3\_exec(mdb,sql,NULL,NULL,&errMsg)) {  SMTLOGD("delete pop device success");  }  else {  SMTLOGD("delete faild");  }  updatePopStatusDevicesPriority(index);  int maxNoPopIndex = getNoPopStatusDeviceMaxPriority();  char \*sql2 = NULL;  if(maxNoPopIndex < SMT\_IOS\_NOPOP\_DEVICE\_MAX) {  newIndex = maxNoPopIndex + 1 + SMT\_IOS\_POP\_DEVICE\_MAX;  SMTLOGD("no pop device is not full");  sql2 = sqlite3\_mprintf("insert into noPopDevices values('%q','%d','%d','%q','%d','%d')",devname.format.serinum,maxNoPopIndex + 1,setting,devname.format.deviceName,devname.format.nameIsValid,devname.format.index);  if(SQLITE\_OK == sqlite3\_exec(mdb,sql2,NULL,NULL,&errMsg)) {  SMTLOGD("insert into no pop device success");  }  else {  SMTLOGD("insert into no pop device faild");  return newIndex;  }  }  else {  SMTLOGD("no pop device is full");  newIndex = SMT\_IOS\_NOPOP\_PRIORITY\_END + SMT\_IOS\_POP\_DEVICE\_MAX;  uint8\_t mIndex = 0;  replaceNoPopDevice((char\*)devname.format.serinum,setting,(char\*)devname.format.deviceName,devname.format.nameIsValid,devname.format.index,mIndex);  }  #endif  }  }  }  //manu set,index = priority  else {  SMTLOGD("line %d,manu set\n",\_\_LINE\_\_);  char sql[SQL\_MAX\_LENGTH] = {0};  char \*errMsg = NULL;    if (SMT\_SQL\_RET\_SUCCESS != dbOperateRetJudgement(sqlite3\_exec(mdb, "begin", NULL, NULL, NULL))){  DTLOG\_ERR(0x40801B, "DB operate begin fail");  SMTLOGD("SmartIosSettingProxy::setPopStatusReq, begin fail");  return index;  }    if (SMT\_DEVICE\_TYPE\_IOS == deviceType){  snprintf(sql,SQL\_MAX\_LENGTH,"update popDevices set popStatus = '%d' where priority = '%d'",setting,index);  }  else{  snprintf(sql,SQL\_MAX\_LENGTH,"update popDevicesAndr set popStatus = '%d' where priority = '%d'",setting,index);  }  resultRet = dbOperateRetJudgement(sqlite3\_exec(mdb,sql,NULL,NULL,&errMsg));  if(SMT\_SQL\_RET\_SUCCESS == resultRet) {  SMTLOGD("update success");  }  else {  DTLOG\_ERR(0x40801B, "update faild");  SMTLOGD("update faild,errMsg %s",errMsg);  if (SMT\_SQL\_RET\_SUCCESS != dbOperateRetJudgement(sqlite3\_exec(mdb, "rollback", NULL, NULL, NULL))){  DTLOG\_ERR(0x40801B, "DB operate rollback fail");  SMTLOGD("SmartIosSettingProxy::setPopStatusReq, rollback fail");  }  cleanTablesWhenOpeErr(resultRet, SMT\_DB\_TABLE\_TYPE\_POP\_IOS);  return index;  }    if (SMT\_SQL\_RET\_SUCCESS != dbOperateRetJudgement(sqlite3\_exec(mdb, "commit", NULL, NULL, NULL))){  DTLOG\_ERR(0x40801B, "DB operate commit fail");  SMTLOGD("SmartIosSettingProxy::setPopStatusReq, commit fail");  return index;  }  }  }  else {  DTLOG\_ERR(0x40801B, "smartphone mdb is NULL");  SMTLOGD("smartphone mdb is NULL");  //reopen DB  initSqlite3DB();  }  return newIndex;  } |

# 3 核心事件

## 1 ios设备插入

# 4 Smartphone总结

代码结构



## Proxy-**Stub**模式分析

Stub 跟 Proxy 是一对，俗称“代理-桩”，一般用在远程方法调用。

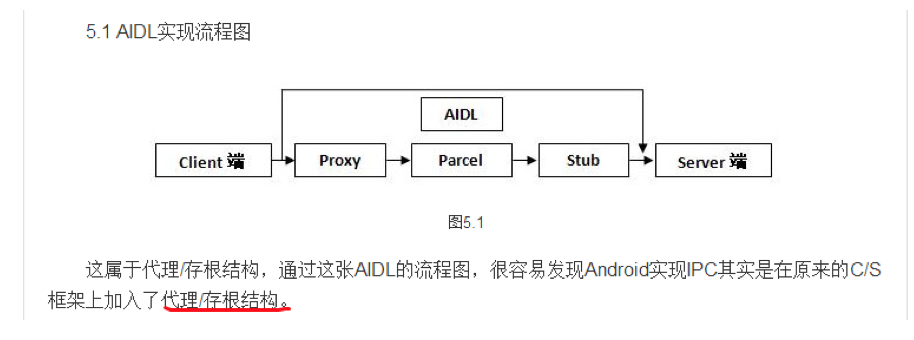
Proxy 的接口供客户端程序调用，然后它内部会把信息包装好，以某种方式（比如 RMI）传递给 Stub，而后者通过对应的接口作用于服务端系统，从而完成了“远程调用”。

一般不同进程间通信的时候都会用到这种模式。

应用场景：

android ipc方式aidl

AIDL属于Android的IPC机制，常用于跨进程通信，主要实现原理基于底层Binder机制。



## Service层的流程

在proxy层中定义了对外的接口，供其他service使用该服务。

在stub中实现具体的service功能，其实还是调用的serviceManager中的方法。

在manager中调用LoopThread类中的postMessage方法发送请求的message到消息队列中。

具体谁从消息队列中取走了消息，暂时不清楚

Proxy层

Replie类，应答类，当服务调用方需要请求的响应信息时，通过REplie类中的方法来实现service返回给调用方消息。该类在调用方实现。

ProxyBase类，服务的代理类，是smartPhone模块和其他service建立连接的一种方式

在proxyBase类中，该服务对外的结口，通过将请求的数据封装在Pacle数据包中，以发布同步或者异步请求的方式，通过sendAsyncRequest/sendSyncRequest方法，将该请求转发到stub，在stub中通过onAsyncResponse/ondSyncResponse方法，将proxy传过来的数据进行处理，处理的方式一般是通过调用serviceManager类中的方法实现。

在proxy中通过发送请求的方式，将数据传到stub中

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| android::status\_t SmartIosServiceProxyBase::smt\_getDeviceInfo(const SmtDevReqType& reqType, const uint8\_t& index) /\* \_\_0x101009\_DTFUNCID\_\_ \*/  {  android::Parcel \_data;  prepareAsyncData(\_data);  \_data.writeInt32(static\_cast<SmtDevReqType>(reqType));  \_data.writeInt32(index);  return sendAsyncRequest(COMMAND\_SMT\_GET\_DEVICE\_INFO, \_data);//发送一个异步请求  } |

在stub中，通过onAsyncRequest方法接受请求，根据请求状态值调用不同的case.

|  |
| --- |
| int SmartIosServiceStubBase::onAsyncRequest(SenderId &id, unsigned int code, const android::Parcel &data) /\* \_\_0x202004\_DTFUNCID\_\_ \*/  {  switch (code) {  case COMMAND\_SMT\_GET\_DEVICE\_INFO:  {  SmtDevReqType reqType = static\_cast<SmtDevReqType>(data.readInt32());  uint8\_t index = data.readInt32();  smt\_getDeviceInfo(id, reqType, index);  break;  }  ｝  } |

通过在serviceManager中调用 mThread.postMessage()的方法，实现将消息发送到消息队列中，实现不同进程之间的通信

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| --- |
| android::status\_t SmartIosServiceManager::smt\_getDeviceInfo(SenderId id, const SmtDevReqType& reqType, const uint8\_t& index) /\* \_\_0x406013\_DTFUNCID\_\_ \*/  {  SmartIosMessage::GetDevInfoReq devInfoReq;  devInfoReq.id = id;  devInfoReq.index = index;  devInfoReq.reqType = reqType;  android::sp<SmartIosMessage>msg = new SmartIosMessage(devInfoReq);  if (msg != NULL) {  mThread.postMessage(reinterpret\_cast<Message\*>(msg.get()), 0);//将消息post到消息队列中，由该线程将此消息处理  }  return 0;  } |

问题：postMessage方法执行后，将消息添加到消息队列中后，消息最后怎么处理的不清楚。

有handle类专门处理消息对列中的消息。