Application Management

Revision 1.1

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Introduction

Generally we have multiple PDS applications like GOAPDS, KERALAPDS, APPDS etc., in our POS devices.

Here individual POS device having only one PDS application. POS device should not have more than one PDS application in device.

The POS PDS application is updating it's own application through application ftp server.

And also writing current version of application into /mnt/sysuser/app_ver file in device.

File Name : /mnt/sysuser/app_ver

Data **:** APP_TYPE:100
APP_VERSION:1.3

Where APP_TYPE is writing default 100 to all PDS applications.

Now we changed that management into new systematic way

RHMS Application Management

Basically RHMS (Remote Health Management System) is server and client model system.

So we have to know about server application management and client application management.

RHMS Server Application Management

1. Application and Firmware details creation

2. Single device and Bulky number devices registration and de registration

3. Moving/Changing one application/Firmware to another

4. Upload Application patch

RHMS Client Application Management

1. Device Communication / Device Health Information updation

2. Downloader

3. Installer

4. Application Management Versions and Running Applications Versions

* In new RHMS development is facilitating multiple application type management.

Rule: POS device should not have more than one PDS application. That's why we are dividing the application under application type. By this division we can control to single application type

For example: If project having Total 5 applications of two application types. Type 1.PDS Type 2. BANKING. Here application means

PDS→ APPDS, PDS → Testing, PDS→ GOAPDS, BANKING: FINO, BANKING: ICICI

Device can have multiple application types like PDS, BANKING as per above you can choose one PDS app, one BANK app can be possible to device.

RHMS Server Application Management

1. Application and Firmware details creation

* Device should have at least one firmware type and application type.

* Through **Software Management → Create Firmware Details** option, we can create firmware type name

Firmware Type Examples: 2G, 3G, 4G, Testing

* Through **Software Management → Create Application Details** option, we can create our application type and application name.

Application Type Examples: PDS, BANK, Testing

Application Name: appds , goapds , icici, fino

Application Example : PDS-> appds, BANK-> Fino

2. Single device and Bulky number devices registration and de registration

* Registration is one of the major part of the RHMS.

***** Before registration you should know about whar are the applications and firmware going to give. Majorly firmware type. Like the device is 3G or 4G or 2G. Then only we can manage particular type software.

* After login, **Device Management -> Single Registration** menu, we can register single device.

mandatory fields for registration are

1. Device Serial Number

2. Select Firmware Type

3. Select Applications

* Depending on the selection only , RHMS client application will get registered related management (App and Firmware updates).

* After login, **Device Management -> Bulk Registration** menu, we can register multiple devices into Project. You can list the bulky numbers of serial numbers in RHMS provided format excel sheet. And choose Firmware and applications.

* After login, **Device Management -> Bulk De-Registration** menu, we can de register multiple devices in Project. You can list the bulky numbers of serial numbers in RHMS provided format excel sheet. Then devices management disabled.

* After login, **Device Management -> DeviceInfo -> De Register** menu, we can de register single device.

3. Moving/Changing one application/Firmware to another

De registration means total entire device serial number records will removed.

Moving / Changing device is shifting or allocating new application to it.

After login, **Device Management -> Single Registration , Device Management -> Bulk Registration** re select all firmware and required applications.

This feature is only allowed within the same project. You can not change / move the device serial number which has already registered in another project.

4. Upload application patch

After login **Software Management -> Upload Application**

1. Here you have to select application name
2. Enter Application version: Only single decimal float value support , Example 1.0,1.1, 100.1, 33.3.

Rule: RHMS Downloader will support only float type of version of single doted decimal value , like example 1.1 , 2.1 , 3.3

3. Select Application patch zip file
4. Enter Description for patch
5. then click on submit to apply patch.

Procedure to make Application patch

Step 1: create app directory **mkdir app**

Step 2 : Place your files in required directory

mkdir app/usr/bin/ -p ; cp goapds app/usr/bin/ ; Like wise arrange patch.

Step 3: Some time you need run commands before copy files or after copy files. If you want to run commands before applying application patch keep the commands in app/tmp/start_app.sh

If you want to run commands After applied application patch then keep the commands in app/tmp/end_app.sh

Important Note: By default all patches are Critical. Critical Means Battery must and should be connect and also minimum voltage required.

If you don't want that behavior then you should keep **app/tmp/NonCritical** file.

Step 4: Create app.tar.bz2 patch with tar command

tar -cvf app.tar.bz2 app

Step 5: Calculate md5sum of patch and direct the output into app.md5 file

app.tar.bz2 > app.md5

Step 6: zip the created app.app.tar.bz2 patch and calculated md5sum file

zip appds.zip app.tar.bz2 app.md5

Don't require chmod permission, by default we are going before applying patch in POS device.

For easy app patch creation and verification and extraction , we wrote some scripts. create_app_patch.sh verify_application_patch.sh extract_app_patch.sh

create_app_patch.sh **-** Application Patch creation script

verify_application_patch.sh **-** Verification of created application patch

extract_app_patch.sh **-** Extraction of created application zip

RHMS Client Application Management

1. Device Communication / Device Health Information updation

RHMSClientapp is client binary which will fetch the all the details versions/modules health information and it that will post to RHMS server application.

Client application take device serial number and requested the RHMS server. If device is register then we will get repsonse. Based on api request we will get that related response.

Like wise we have different types of api requests in RHMS server.

2. Downloader

Application request – Device request the server, based on the serial number, RHMS Server will give application response. This is tells registered applications and versions and Download URL and project Name.

Based the response device will check application update. If any update found it will download

3. Installer : On the every boot installer application is check for patch downloads, if any downloads are present it will automatically update to the device.

4. Application Management Versions and Running Applications Versions

Running applications versions : Previously application version details will be write in /mnt/sysuser/app_ver file. Now we have to maintain multiple application types. So need to write in proper format.

End of this document have c api source code for write versions and application related information.

API : void Write_RunningApp_info(char *ApplicationType,char *ApplicationName,char *Version);

Above API will write app info in required format for RHMS, Give App type, app name , app version arguments, app version can be any version format like 1.3 or 1.3.1 or 1.2.3.4 etc.,
Note : Maximum application version characters should be less than 24 only.

If you want write versions as your language source code, then
Application should write application details in below format. Otherwise RHMS client application will not send application details to RHMS server.

Format is
/etc/vision/RHMS/RunningApps/ApplicationType/ApplicationName/app.info

Example:

cat /etc/vision/RHMS/RunningApps/PDS/goapds/app.info

ApplicationType:PDS
ApplicationName:GOAPDS
Version:1.3

Application Management Versions: Based on registered application details RHMS Downlaoder and Installer will automatically write registered app versions and application details.

Format : /etc/vision/RHMS/Apps/Projectname/ApplicationType/ApplicationName/AppUpdated.info

Example

cat /etc/vision/RHMS/Apps/GOAPDS/PDS/goapds/AppUpdated.info

File for all registered applications details

cat /etc/vision/RHMS/Apps/ServerApplicationsRelease.info

Summarized example

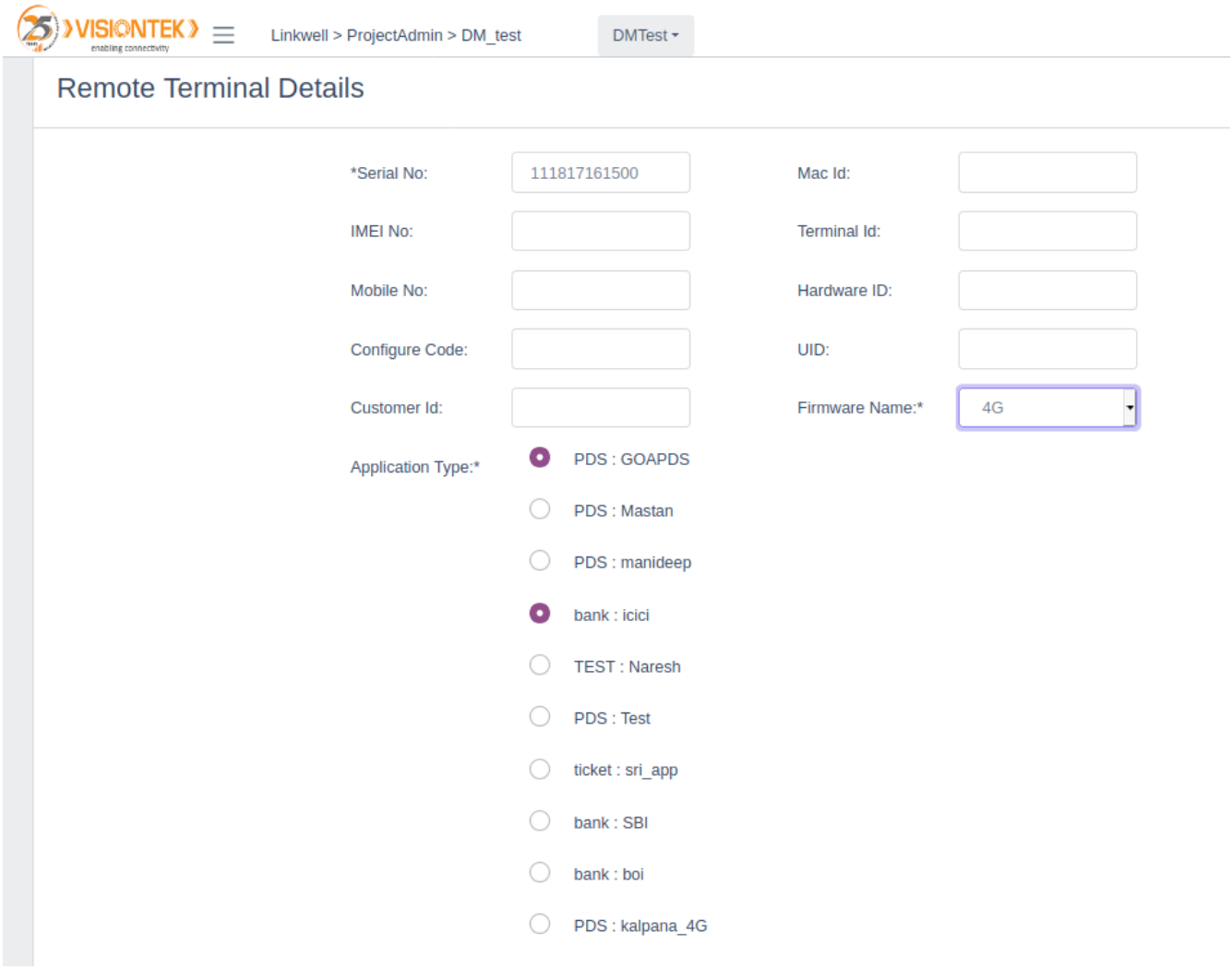

Figure: Single registration

In above figure having three mandatory fields for registration.

1. Serial number
2. Firmware Name
3. Application Type

So Before registration you should known, what is the device firmware type and how many applications types are device needed.

As per above figure my device requirement is two application types those are PDS, bank,
And firmware selection also a very important. If you are not registered right one. There may be chance to go wrong patches to device.

Here POS device is 4G configuration. So at the time of firmware name selection have to choose 4G.

1. Serial Number - 111817161500
2. Firmware Name - 4G
3. Application Type - PDS:GOAPDS
   - bank:icici

Rule: POS device should not have more than one PDS application. That's why we are dividing the application under application type. By this division we can control to single application type

So that you can't select two PDS applications, avoided that selection.

That's why here multiple application types are only possible. But not multiple applications of same application type.

After successful registration in RHMS server.
In device side Downloader application will connect to the server and as per registration selection server will give their registered Apps and firmware information.

POS device side after registration, you will see total registered applications in **/etc/vision/RHMS/Apps/ServerApplicationsRelease.info :** These file having information about all registered applications details,

cat /etc/vision/RHMS/Apps/ServerApplicationsRelease.info

ProjectName:DMTest
ApplicationType:PDS
ApplicationName:GOAPDS
Version:1.3
ApplicationURL:https://rhms2.callippus.co.uk/FilePath/044df4d6-507c-45b7-a4c5-32521a50c9ee_app1.3.zip

ProjectName:DMTest
ApplicationType:bank
ApplicationName:icici
Version:1.8
ApplicationURL:https://rhms2.callippus.co.uk/FilePath/f21805b4-fbb6-4c59-89f9-a0b8c3028e0b_app1.8.zip

Write Running app info api source code

void Write_RunningApp_info(char *ApplicationType,char *ApplicationName,char *Version);

```
#include<stdio.h>
#include<stdlib.h>
#include<string.h>

void Write_RunningApp_info(char *ApplicationType,char *ApplicationName,char *Version)
{
	char App_info_file[560];
	FILE *fp=NULL;
	memset(App_info_file,0,sizeof(App_info_file));

	sprintf(App_info_file,"mkdir -p /etc/vision/RHMS/RunningApps/%s/%s",ApplicationType,ApplicationName);
	system(App_info_file);
	memset(App_info_file,0,sizeof(App_info_file));

sprintf(App_info_file,"/etc/vision/RHMS/RunningApps/%s/%s/app.info",ApplicationType,ApplicationName);

	fp = fopen(App_info_file,"w");
	if ( fp == NULL)
	{
		fprintf(stderr,"%s file not found \n",App_info_file);
		return;
	}
	fprintf(fp,"ApplicationType:%s\nApplicationName:%s\nVersion:%s\n",ApplicationType,ApplicationName,Version);
	fprintf(stdout,"App info file = %s\nApplicationType:%s\nApplicationName:%s\nVersion:%s\n",App_info_file,ApplicationType,ApplicationName,Version);

	fclose(fp);
	return;
}
int main()
{
	Write_RunningApp_info("PDS","APPDS","1.3.2"); // Example APP type, App name, version
	return 0;
}
```