



TFTP API Documentation

Product Version 1.00
Rev 01

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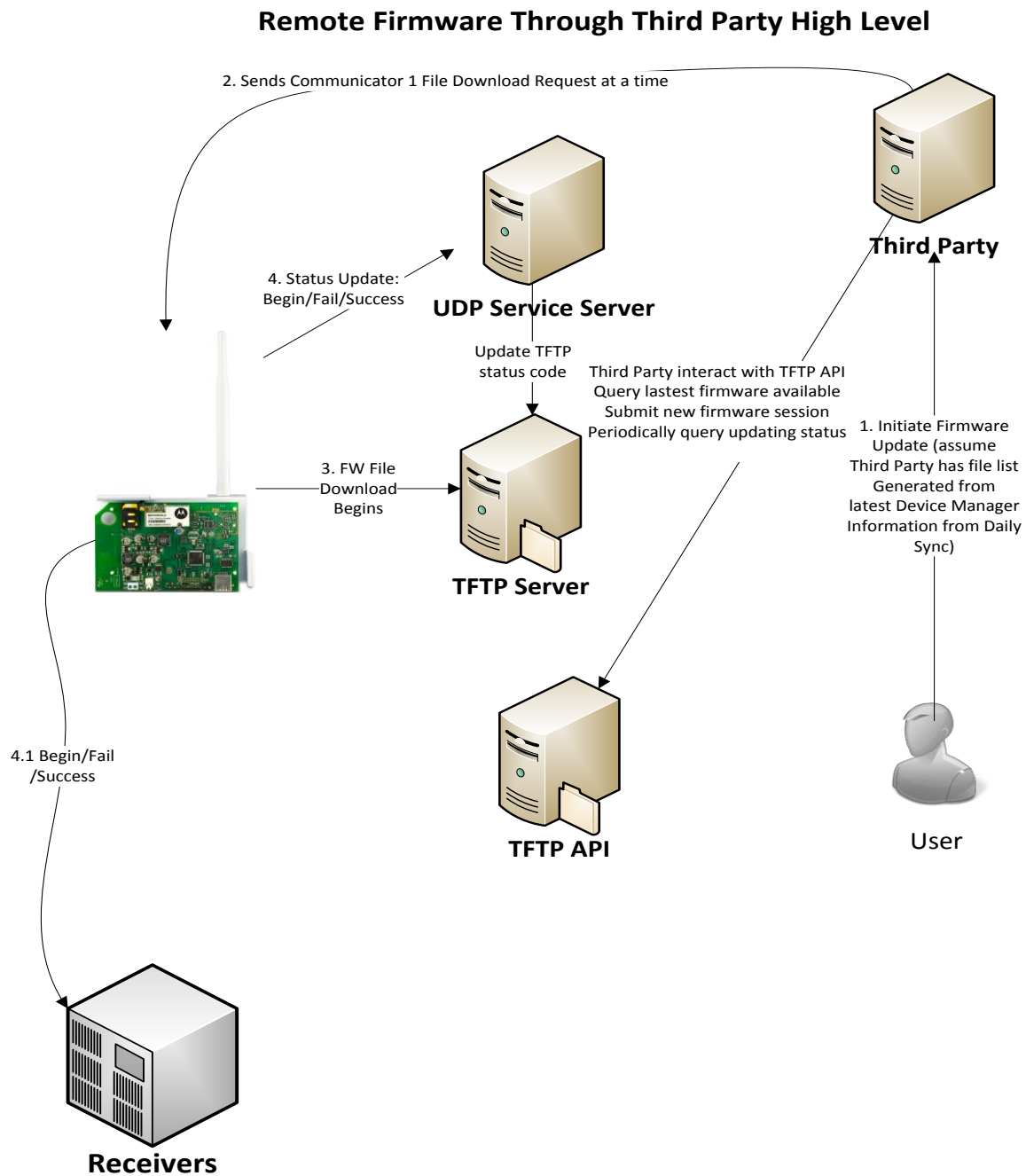
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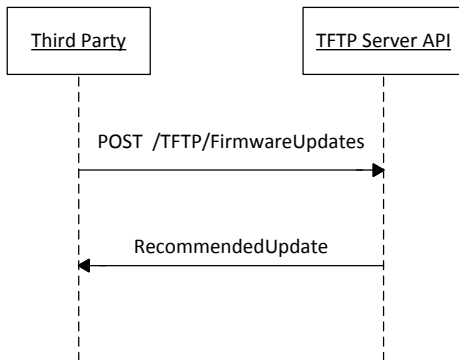
Version	Date	Author	Description
1.0	18-Dec-2013	Camson Giang	Initial draft

1. Overview

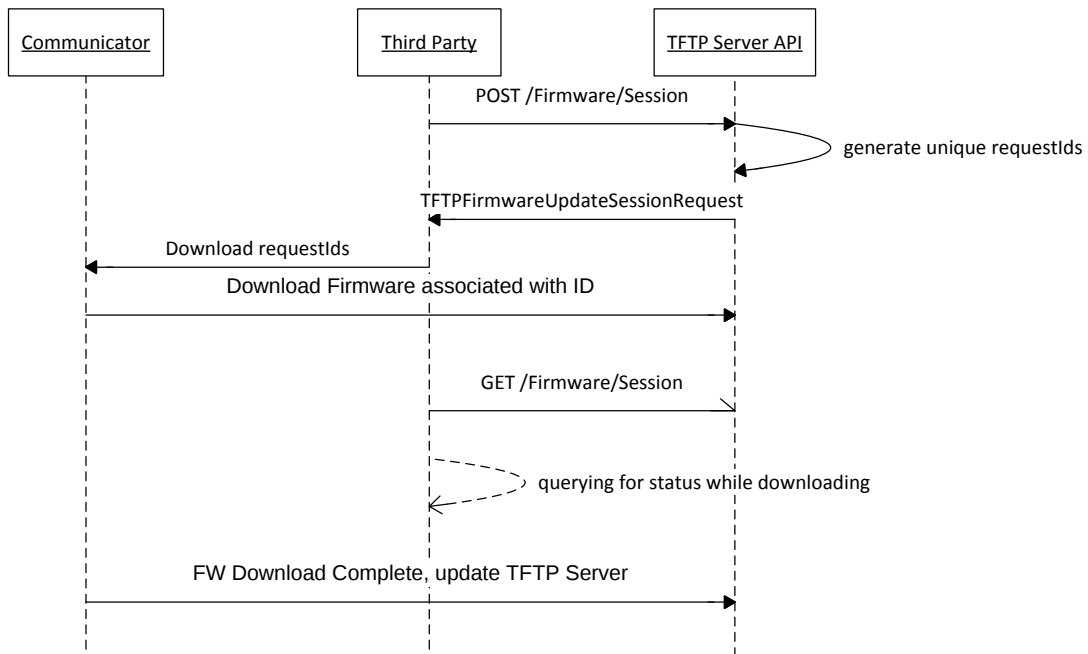
TFTP API has provided a secure REST Web Service allowing remote firmware update security system. This API will allow developers to integrate to remote firmware update. These API provides ability to query for latest release firmware version, tracking progress of each individual update.



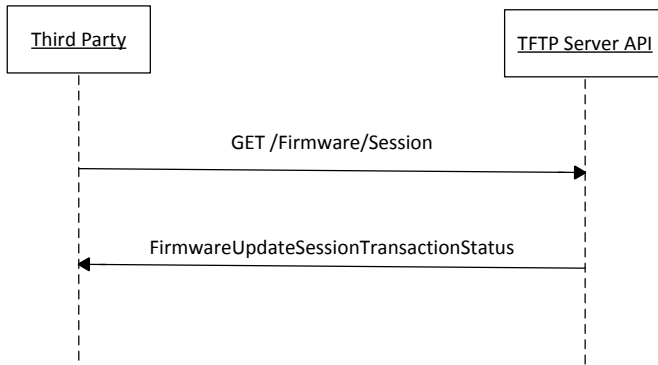
1.1 Query Latest Available Firmware



1.2 Start Download Session



1.3 Query Download Session Status



2. Security

2.1 Authentication

Authenticate user with the system and obtain a SessionId

Request Definition

Method	URL	Format
POST	/auth/basic?format=json	json,xml

Params	Type	Description
userName	string	Username obtained from Tyco system administrator
password	string	Password for the username

Request Format

json data
<pre>{ "userName": "yourUsername", "password": "yourPassword" }</pre>

Response Definition

Status	Response
200	<pre>{ "SessionId": "QdXwUPudklfxJE5SKXah", "UserName": "C24", "ReferrerUrl": "", "ResponseStatus": {} }</pre>
	SessionId must be sent with all client requests. The SessionId will be timeout after 30 minutes

2.2 ChangePassword

Change authentication password initially assigned by the system administrator

Request Definition

Method	URL	Format
POST	/changepassword?format=json	json,xml

Params	Type	Description
Password	string	Existing password
NewPassword	string	New password
NewPassword2	string	New password for verification

Request Format

json data
<pre>{ "Password": "CurrentPassword", "NewPassword": "NewPassword", "NewPassword2": "NewPassword" }</pre>

Response Definition

Status	Response
200	<pre>{ "statusCode": "0", "statusMessage": "RequestStatus" }</pre>
	SessionId must be sent with all client requests. The SessionId will be timeout after 30 minutes

3. Firmware

3.1 Get latest firmware updates

This method will determine if firmware updates for a given set of input devices are. This method will return a recommended update package and optional update package(s). Recommended update package will provide an ordered list of devices for the entire system that need to be updated. The update order is indicated by "UpdateOrder". The optional update package(s) will allow third party to update individual device without any order.

Request Definition

Method	URL	Format
POST	/TFTP/FirmwareUpdates?format=json	json,xml

Type	Params	Values	Description
HEAD	SessionId	String	SessionId obtain from authentication above
POST	languageId	string	The languageId for English "en"
POST	uid	string	A unique identifier to identify the system eg. SIM, MAC, IMEI
POST	inputDeviceList	list	A list of devices
POST	Type	string	A device type eg. Quasar type "0329"
POST	Version	string	A device version eg. Quasar version "4.00.04.038"
POST	Market	string	A market id. If you don't know what the market id then provide "000000"
POST	ImageFiles	list	A list of images
POST	ImageFileID	string	An image file Id: 01=Master 02=Slave 03=LanguageFile 04=Boot Loader

POST	ImageFileVer	string	A version of an image eg. An image version of Quasar Master "4.00.04.038"
POST	VersionToUpdate	string	If blank is provided then the server will suggest to go to latest version. However if the VersionToUpdate is provided then server will check to see if the current system provided can be updated to this version for this device. Note: This value is provided if you know the exact version that you're going to be update to.

Request Format

json data
<pre>{ "languageId":"String", "uid":"String", "inputDeviceList": [{"Type":"String", "ImageFiles": [{"ImageFileID":"String","ImageFileVer":"String"}], "Version":"String", "Market":"String" }] }</pre>

Request Example

This is an example of a system where it contains 5 devices:

- 1 Communicator
- 1 Panel
- 3 Key pads

```

{
  "languageId": "en",
  "uid": "2128000000",
  "inputDeviceList":
    [
      {
        "Type": "0219",
        "ImageFiles":
          [
            {
              "ImageFileID": "01",
              "ImageFileVer": "1.01.00.044"
            }
          ],
        "Version": "1.01.00.044",
        "Market": "010103"
      },
      {
        "Type": "0250",
        "ImageFiles":
          [
            {
              "ImageFileID": "01",
              "ImageFileVer": "1.00.01.046"
            }
          ],
        "Version": "1.00.01.046",
        "Market": "010103"
      },
      {
        "Type": "0252",
        "ImageFiles":
          [
            {
              "ImageFileID": "01",
              "ImageFileVer": "1.00.01.046"
            }
          ],
        "Version": "1.00.01.046",
        "Market": "010103"
      },
      {
        "Type": "0140",
        "ImageFiles":
          [
            {
              "ImageFileID": "01",
              "ImageFileVer": "1.00.01.046"
            }
          ],
        "Version": "1.00.01.046",
        "Market": "010103"
      },
      {
        "Type": "032C",
        "ImageFiles":
          [
            {
              "ImageFileID": "01",
              "ImageFileVer": "4.00.04.036"
            }
          ],
        "Version": "4.00.04.036",
        "Market": "010103"
      }
    ]
}

```

Response Definition

Params	Type	Description
OperationStatus	bool	True if the call of this method successfully executed. false there is an error on this operation
StatusCode	int	1=success 2=NoUpdateForCurrentSystem 3=InvalidParameter 4=NotFound 5=RequestAlreadyExists 100=QueueFull 1000=Unexpected exception

		Refer to 4. Possible Status Code for more status code
StatusMessage	string	Error message to why operation fail.
ExtendedStatusMessage	String	Extended error message.
RecommendedUpdate	FirmwareUpdatePackage	A most up to date version released by Tyco that recommended their customer should be update their devices to these latest version.
Name	string	Name of the package, and it is can empty
PackageId	string	Random guid generated by the server
FirmwareDeviceList	list	List of firmware to be update within this package
FileName	string	Name of the file to be update into
UpdateOrder	int	The order firmware should be downloaded from security system. Third party needs to use this order to tell security to download in this order
DisplayName	string	Display name to show on GUI
TranslatedDescription	string	Information of translated description of what this firmware contains.
EstimatedLocalUpdateTimeInMinutes	int	Estimated time to complete the download of this file
Type	string	Product type id of the firmware
Version	string	Full version of the firmware
ImageFiles	list	List of firmware images
ImageFileID	string	An image file Id: 01=Master 02=Slave 03=LanguageFile
ImageFileVersion	string	A version of an image eg. An image version of Quasar Master "4.00.04.038"
Market	string	Market ID for this firmware

Response Format

json data

```
{
  "RecommendedUpdate":
  {
    "Name": "String",
    "PackageId": "String",
    "FirmwareDeviceList":
    [
      {
        "FileName": "String",
        "UpdateOrder": 0,
        "DisplayName": "String",
        "TranslatedDescription": "String",
        "EstimatedLocalUpdateTimeInMinutes": 0,
        "Type": "String",
        "ImageFiles":
        [
          {
            "ImageFileID": "String",
            "ImageFileVer": "String"
          }
        ],
        "Version": "String",
        "Market": "String"
      }
    ],
    "OtherUpdate":
    {
      "Name": "String",
      "PackageId": "String",
      "FirmwareDeviceList":
      [
        {
          "FileName": "String",
          "UpdateOrder": 0,
          "DisplayName": "String",
          "TranslatedDescription": "String",
          "EstimatedLocalUpdateTimeInMinutes": 0,
          "Type": "String",
          "ImageFiles":
          [
            {
              "ImageFileID": "String",
              "ImageFileVer": "String"
            }
          ],
          "Version": "String",
          "Market": "String"
        }
      ],
      "OperationStatus": false,
      "StatusCode": 0,
      "StatusMessage": "String",
      "ExtendedStatusMessage": "String"
    }
  }
}
```

Response Example

Status	Response json
200	<pre>{ "RecommendedUpdate": { "PackageId": "9e39fffd-b0db-4ede-804c-ab96c29f9cf7", "FirmwareDeviceList": [{ "FileName": "HSM2HOST_v100_01_044.bin", "UpdateOrder": 1, "EstimatedLocalUpdateTimeInMinutes": 30, "Type": "0219", "ImageFiles": [{ "ImageFileID": "01", "ImageFileVer": "1.01.00.044" }], "Version": "1.01.00.046", "Market": "000000" }, { "FileName": "HSK2LCD_ICON_v100_01_048.bin", "UpdateOrder": 2, "DisplayName": "en", "TranslatedDescription": "en", "EstimatedLocalUpdateTimeInMinutes": 30, "Type": "0250", "ImageFiles": [{ "ImageFileID": "01", "ImageFileVer": "1.00.01.048" }], "Version": "1.00.01.049", "Market": "000000" }, { "FileName": "QuasarV40004037.bin", "UpdateOrder": 3, "DisplayName": "Quasar V4.0", "TranslatedDescription": "Quasar V4.0", "EstimatedLocalUpdateTimeInMinutes": 30, "Type": "032C", "ImageFiles": [{ "ImageFileID": "01", "ImageFileVer": "0.0.04.1" }, { "ImageFileID": "03", "ImageFileVer": "0.0.04.1" }, { "ImageFileID": "04",</pre>

	<pre> "ImageFileVer": "0.0.04.1"}], "Version": "4.00.04.038", "Market": "000000" }, { "FileName": "HS2128_v100_01_048.bin", "UpdateOrder": 4, "DisplayName": "en", "TranslatedDescription": "en", "EstimatedLocalUpdateTimeInMinutes": 30, "Type": "0140", "ImageFiles": [{ "ImageFileID": "01", "ImageFileVer": "1.00.01.048"}], "Version": "1.00.01.049", "Market": "000000" }], </pre>
	<pre> "OtherUpdate": { "PackageId": "85a3bd75-fa75-4b87-81b0-316096e9aacf", "FirmwareDeviceList":[{ "FileName": "HSM2HOST_v100_01_044.bin", "UpdateOrder": 1, "EstimatedLocalUpdateTimeInMinutes": 30, "Type": "0219", "ImageFiles": [{ "ImageFileID": "01", "ImageFileVer": "1.01.00.044"}], "Version": "1.01.00.046", "Market": "000000" }, { "FileName": "HSK2LCD_ICON_v100_01_048.bin", "UpdateOrder": 1, "DisplayName": "en", "TranslatedDescription": "en", "EstimatedLocalUpdateTimeInMinutes": 30, "Type": "0250", "ImageFiles": [{ "ImageFileID": "01", "ImageFileVer": "1.00.01.048"}], "Version": "1.00.01.049", "Market": "000000" }], </pre>

```

{
  "FileName": "QuasarV40004037.bin",
  "UpdateOrder": 1,
  "DisplayName": "Quasar V4.0",
  "TranslatedDescription": "Quasar V4.0",
  "EstimatedLocalUpdateTimeInMinutes": 30,
  "Type": "032C",
  "ImageFiles": [
    {"ImageFileID": "01",
     "ImageFileVer": "0.0.04.1"},
    {"ImageFileID": "03",
     "ImageFileVer": "0.0.04.1"},
    {"ImageFileID": "04",
     "ImageFileVer": "0.0.04.1"}],
  "Version": "4.00.04.038",
  "Market": "000000"
},
{
  "FileName": "HS2128_v100_01_048.bin",
  "UpdateOrder": 1,
  "DisplayName": "en",
  "TranslatedDescription": "en",
  "EstimatedLocalUpdateTimeInMinutes": 30,
  "Type": "0140",
  "ImageFiles": [
    {"ImageFileID": "01",
     "ImageFileVer": "1.00.01.048"}],
  "Version": "1.00.01.049",
  "Market": "000000"
}]
},
"OperationStatus": true,
"StatusCode": 1
}

```

3.2 Start Download Session

This method will create a unique requestId for each firmware file provided.

Request Definition

Method	URL	Format
POST	/Firmware/Session?format=json	json,xml

Params	Type	Description
uid	string	Sim or Mac address or IMEI
FirmwareDeviceList	list	A list of firmware devices to be created session, this data typically used from the previous method
FileName	string	Name of the file to be update into
UpdateOrder	int	The order firmware should be downloaded from security system. Third party needs to use this order to tell security to download in this order
DisplayName	string	Display name to show on GUI
TranslatedDescription	string	Information of translated description of what this firmware contains.
EstimatedLocalUpdateTimeInMinutes	int	Estimated time to complete the download of this file
Type	string	Product type id of the firmware
Version	string	Full version of the firmware
ImageFiles	list	List of firmware images
ImageFileID	string	An image file Id: 01=Master 02=Slave 03=LanguageFile
ImageFileVersion	string	A version of an image eg. An image version of Quasar Master "4.00.04.038"
Market	string	Market ID for this firmware
requestIds	string	This can leave as empty, it will return after the session is created

Request Format

json data

```

{
  "uid":"String",
  "FirmwareDeviceList":
  [{"FileName":"String",
    "UpdateOrder":0,
    "DisplayName":"String",
    "TranslatedDescription":"String",
    "EstimatedLocalUpdateTimeInMinutes":0,
    "Type":"String",
    "ImageFiles":
    [{"ImageFileID":"String",
      "ImageFileVer":"String"}]},
    "Version":"String",
    "Market":"String"
  ]},
  "requestIds":"String"
}

```

Request Example

This is an example to request a session for 3 devices:

```

{"requestIds":null,
"uid":"00344FFF0FC8",
"FirmwareDeviceList":
[{"FileName":"HSM2HOST_v100_01_048.bin",
"UpdateOrder":1,
"DisplayName":null,
"TranslatedDescription":null,
"EstimatedLocalUpdateTimeInMinutes":30,
"Type":"0219",
"ImageFiles":
[{"ImageFileID":"01","ImageFileVer":"1.01.00.049"}]},
"Version":"1.01.00.049",
"Market":"000000"},
{"FileName":"HS2128_v100_01_049.bin",
"UpdateOrder":2,
"DisplayName":null,
"TranslatedDescription":null,
"EstimatedLocalUpdateTimeInMinutes":30,
"Type":"0110",

```

```

"ImageFiles":
[{"ImageFileID":"01","ImageFileVer":"1.00.01.050"}],
"Version":"1.00.01.050",
"Market":"000000"},
{"FileName":"QuasarV40004039.bin",
"UpdateOrder":3,
"DisplayName":"Quasar V4.0",
"TranslatedDescription":"Quasar V4.0",
"EstimatedLocalUpdateTimeInMinutes":30,
"Type":"032C",
"ImageFiles":[{"ImageFileID":"01","ImageFileVer":"0.0.04.1"},
{"ImageFileID":"03","ImageFileVer":"0.0.04.1"},
{"ImageFileID":"04","ImageFileVer":"0.0.04.1"}],
"Version":"4.00.04.040",
"Market":"000000"}
]}

```

Response Definition

Params	Type	Description
OperationStatus	bool	True if the call of this method successfully executed. false there is an error on this operation
StatusCode	int	1=success 2=NoUpdateForCurrentSystem 3=InvalidParameter 4=NotFound 5=RequestAlreadyExists 100=QueueFull 1000=Unexpected exception Refer to 4. Possible Status Code for more status code
StatusMessage	string	Error message to why operation fail.
ExtendedStatusMessage	String	Extended error message.
DisplayName	string	Display name to show on GUI
TranslatedDescription	string	Information of translated description of what this firmware contains.
EstimatedLocalUpdateTimeInMinutes	int	Estimated time to complete the download of this file

Type	string	Product type id of the firmware
Version	string	Full version of the firmware
ImageFiles	list	List of firmware images
ImageFileID	string	An image file Id: 01=Master 02=Slave 03=LanguageFile
ImageFileVersion	string	A version of an image eg. An image version of Quasar Master "4.00.04.038"
Market	string	Market ID for this firmware

Response Format

json data
<pre>{ "SessionFirmwareDevices": [{ "RequestId": "String", "FileName": "String", "UpdateOrder": 0, "DisplayName": "String", "TranslatedDescription": "String", "EstimatedLocalUpdateTimeInMinutes": 0, "Type": "String", " ImageFiles": [{ "ImageFileID": "String", "ImageFileVer": "String" }], "Version": "String", "Market": "String" }], "OperationStatus": false, "StatusCode": 0, "StatusMessage": "String", "ExtendedStatusMessage": "String" }</pre>

Response Example

Status	Response json
200	<pre>{ "SessionFirmwareDevices": [{ "RequestId": "590c7ce9f3504ceeb312468d9.bin", "FileName": "HSM2HOST_v100_01_048.bin", "UpdateOrder": 1, "EstimatedLocalUpdateTimeInMinutes": 30, "Type": "0219", "ImageFiles": [{ "ImageFileID": "01", "ImageFileVer": "1.01.00.049" }], "Version": "1.01.00.049", "Market": "000000" }, { "RequestId": "58afb4c4adaa4023a35a83650.bin", "FileName": "HS2128_v100_01_049.bin", "UpdateOrder": 2, "EstimatedLocalUpdateTimeInMinutes": 30, "Type": "0110", "ImageFiles": [{ "ImageFileID": "01", "ImageFileVer": "1.00.01.050" }], "Version": "1.00.01.050", "Market": "000000" }, { "RequestId": "5c9f2606d2224ce0aab500ecf.bin", "FileName": "QuasarV40004039.bin", "UpdateOrder": 3, "EstimatedLocalUpdateTimeInMinutes": 30, "Type": "032C", "ImageFiles": [{ "ImageFileID": "01", "ImageFileVer": "0.0.04.1" }], {</pre>

	<pre> "ImageFileID": "03", "ImageFileVer": "0.0.04.1" }, { "ImageFileID": "04", "ImageFileVer": "0.0.04.1" }], "Version": "4.00.04.040", "Market": "000000" }], "OperationStatus": true, "StatusCode": 1, "StatusMessage": "Success", "ExtendedStatusMessage": "" } </pre>
--	--

3.3 Query Firmware Update by UID / SIM

This method will bring back all records for the requested uid or SIM.
Once every HistoryRequest statusCode 5 or 9 which indicate success, this is where you want to prompt your user to apply the update using *6 menu from the keypad.

Request Definition

Method	URL	Format
GET	/TFPT/{uid}/Request?format=json	json,xml

Params	Type	Description
uid	string	Sim or Mac address or IMEI

Request Format

json data

```
{  
  "uid": "sim or mac or imei"  
}
```

Request Example

Since this is a get method only need to provide “uid”

/TFPT/00344FFF0FC8/Request?format=json

Response Definition

Params	Type	Description
FileName	string	Name of the file downloaded by the device
Percentage	int	Percentage of file download completed
RequestID	String	Internal ID used to identify this firmware download
Retries	int	Number of retries for download
SIMNumber	string	SIM number
StartTime	DateTime	Start time for download
StatusCode	int	This is the status code of individual requestId, please not that it is different than StatusCode of other function. Please Refer to Response History StatusCode for detail.
TimeStamp	DateTime	Time when record is entered into the DB
UpdateTime	DateTime	Download completion time
FinishTime	DateTime	Download completion time
Retries	DateTime	Download completion time

Response Example

Status	Response json
200	<pre>{ "HistoryRequests": [{ "TimeStamp": "2013-12-03 11:07:02", "SIMNumber": "00344FFF0FC8", "FileName": "QuasarV40004035.bin", "RequestID": "0812d58c05374bc3a5f531afd.bin", "StartTime": "2013-12-03 11:12:47", "StatusCode": 5, "Percentage": 100, "UpdateTime": "2013-12-03 11:13:43", "FinishTime": "2013-12-03 11:13:43", "Retries": 0 }, { "TimeStamp": "2013-12-20 16:10:25", "SIMNumber": "00344FFF0FC8", "FileName": "HSK2LCD_ICON_v100_01_048.bin", "RequestID": "f203e706e2c34981a561e699a.bin", "StartTime": "2013-12-20 16:27:16", "StatusCode": 10, "Percentage": 40, "UpdateTime": "2013-12-20 16:30:00", "FinishTime": "2013-12-20 16:30:00", "Retries": 0 }], "OperationStatus": true, "StatusCode": 1 }</pre>

Response HistoryRequest Status Code

This status code is specifically for file downloading and only found within HistoryRequests

Code	Definition
0	"Not started" – the data record had been added but download hasn't started yet
1	"Initiate" – the TFTP server received download request from a communicator and is initializing session
2	"Download" – the requested file is being downloaded now
3	"FileLost" – the file requested for download is missing or has disappeared during the download
4	"Timeout" – the TFTP session timed out before the download could complete
5	"Success" – the download completed and was confirmed (TFTP ACK of all data packets)
6	"Failure" – the download failed due to other reasons than "Timeout" (bad or out of sequence block numbers, connection problems, etc.)
7	"Aborted" – the download was aborted by the TFTP server – usually as a result of shutting down the server in the middle of the download
8	"SendSMSFail" – the download record was 'invalidated' by C24 – for example if new firmware becomes available before old one is downloaded, etc.
9	"Success" - the download completed and was confirmed (TFTP ACK of all data packets, this applied to legacy units)
10	"Retire" -SMS TFTP send out to unit but unit never started the TFTP session within an amount of time, this value is set by Connect24 SMS Monitor Service

3.4 Query UDP Firmware Update Status

This method will bring back UDP status from the communicator.

This method will query for both uid and requestId, if there is no match then it will check using only requestId.

Request Definition

Method	URL	Format
GET	/UDP/QueryUDPFirmwareUpdateStatusByRequestId?format=json&uid={uid}&requestId={requestId}&latestOnly={latestOnly}	json,xml

Params	Type	Description
uid	string	Sim or Mac address or IMEI
requestId	string	Internal ID used to identify this firmware download
latestOnly	string	true or false (optional) if latestOnly is true then it will return only the latest UDP status only.

Request Format

json data
<pre>{ "uid": "String", "requestId": "String", "latestOnly": "String" }</pre>

Request Example

Example below showing 2 and 3 parameters
<pre>/UDP/QueryUDPFirmwareUpdateStatusByRequestId?format=json&uid=00344FFF0FC2&requestId=76dec10c65db448aa6d323484.bin</pre>
<pre>/UDP/QueryUDPFirmwareUpdateStatusByRequestId?format=json&uid=00344FFF0FC2&requestId=76dec10c65db448aa6d323484.bin&latestOnly=true</pre>

Response Definition

Params	Type	Description
OperationStatus	bool	True if the call of this method successfully executed. false there is an error on this operation
StatusCode	int	1=success 2=NoUpdateForCurrentSystem 3=InvalidParameter 4=NotFound 5=RequestAlreadyExists 100=QueueFull 1000=Unexpected exception Refer to 4. Possible Status Code for more status code
StatusMessage	string	Error message to why operation fail.
ExtendedStatusMessage	string	Extended error message.
UDPPacketPayloadFirmwareUpdateStatusList	list	A list of udp status response
Header	string	FW Status
UniqueFileNameID	string	This is requestId
FirmwareUpdateResponseCode	string	The status response from the communicator it is 2 digits hex, please refer to UDP Status Response Code
Network	string	This is a 2 digits hex. 00: GPRS Network 01: EGPRS Network 02: WCDMA Network 03: HSDPA Network 04: Unknown or Not Registered
ServingCellTowerInfo	string	Serving Cell Tower Info shall be obtained from AT#Servinfo? Command and AT+CREG? Command
NeighbouringCellTowerInfo	string	
CurrentAPN	string	Current APN shall be obtained from Communicator RAM from last connected APN. This field shall never be Empty as APN must be accessed to transmit UDP Packet to TFTP Server/C24 for Status Update.
PacketReceivedTimeStamp	string	Date and time stamp when server received the packet

Response Example

Status	Response json
200	<pre>{ "UDPPacketPayloadFirmwareUpdateStatusList": [{ "Header": "02", "UniqueFileNameID": "af298c807fed4e49ba3375804.bin", "FirmwareUpdateResponseCode": "a0", "Network": "02", "ServingCellTowerInfo": "37a232", "NeighbouringCellTowerInfo": " 9662 -70 302720 e", "CurrentAPN": "a70apn1.connect24.com", "PacketReceivedTimeStamp": "/Date(1391437578500-0500)/" }], "OperationStatus": true, "StatusCode": 1, "StatusMessage": "Success", "ExtendedStatusMessage": "" }</pre>

UDP Status Response Code

Response Code	Description of Response Code	Communicator will, Firmware Image is
00	Version Check Failed	Image Erased; update [983] send UDP packet
01	Image Type Mismatch	

02	Panel Type Mismatch	
03	Hardware Type Mismatch	
04	Software Variant Mismatch	
05	Firmware header Wrong Length	
20	Device Update Pending - Panel is Armed	Firmware Update Pending Status Clearance; update [983] send UDP packet; do not constantly send
21	Device Update Pending -AC Trouble (Any AC Trouble; Device/Module)	
22	Device Update Pending - Low Battery (Any AC Trouble; Device/Module)	
23	Device Update Pending - Unviewed Alarm	
24	Device Update Pending - FTC Trouble	
25	Device Update Pending - communication in Progress	
2X	Panel in Alarm (Ensure this checks all Partitions)	
A0	Device Firmware Update Successful	update [983] send UDP packet
A1	Device Firmware Update Failure	update [983] send UDP packet
A2	Device Firmware Update Failure - Module Not found	update [983] send UDP packet
AA	Device Firmware Transfer Begin	update [983] send UDP packet ;Transfer Image to Device=
AB	Device Firmware Update Begin	
E0	RIS in progress	update [983] send UDP packet
E1	DLS Session is active (SA will work with FW update concurrently)	update [983] send UDP packet
E2	FW update in progress (Panel or Module)	update [983] send UDP packet
E3	ITV2 FW transfer in progress	update [983] send UDP packet
E4	C24 Programming in Progress (R2P and receiving programming) if Received z Block it should work	update [983] send UDP packet
E5	Remote Firmware Update Disabled	update [983] send UDP packet
FE	Firmware File Empty (Software Default, brand new units will have this, when you perform a comms default you will have this)	update [983]

FD	Firmware Download in Progress (This is for installers' viewing purposes; should not need to trigger a UDP packet, however it should be reflect in section [983])	update [983]
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4. Possible Status Code

status code below applied to all functions.

Code	Definition
1	Successful
2	No Update For Current System
3	Invalid Parameter
4	Not Found
5	Request Already Exists
100	Queue Full
1000	Unexpected Exception