

# Simple Firmware Update via WSMAN Feature Design Documentation

## Background

This feature is aimed to replace RACADM dependencies in Redfish API, to achieve single firmware update.

## Actuality

Existing features in RackHD for firmware update

- Redfish API (*/UpdateService/Actions/UpdateService.SimpleUpdate*)  
This API achieves single firmware update via RACADM firmware update graph. It only supports local image stored in RackHD host, and it was designed to update single firmware for multiple nodes.
- RACADM Firmware Update Graph (*Graph.Dell.Racadm.Update.Firmware*)  
Originally, this graph was designed to achieve single firmware update, and use local images. Now it also support leverage image stored in nginx server. But there are some bugs to support this feature.
- WSMAN Firmware Update Graph (*Graph.Dell.Wsman.Update.Firmware*)  
This graph supports multiple-firmware update one-time. It only support using images stored in share folder (CIFS/NFS).

## Requirement

Design a new graph, to achieve single firmware update for dell node via WSMAN. Replace references of RACADM firmware update graph with the new designed one. Leverage http/https image web URL. Keep original Redfish API entry, including API URL, payload.

## Investigation

This feature is required to leverage WSMAN to achieve single firmware update. As an investigation result, SMI micro service API could be leveraged in this feature including:

- POST */api/1.0/server/firmware/updater/dup*  
This API is leveraged to update single firmware on target dell node. It accepts payload as below:  

```
{  
  "componentId": "string",  
  "fileName": "string",  
  "path": "string",
```

```
"serverAddress": "string"
}
```

- POST /api/1.0/server/firmware/updater/status  
As the single firmware update API could returns two job ids for polling job status, this API is leveraged to poll firmware update job status. It accepts payload as below:

```
{
  "jobs": [
    "string"
  ],
  "password": "string",
  "serverAddress": "string",
  "userName": "string"
}
```

It seems these exists gaps that RackHD Redfish API only accept a *imageURI* input, but SMI micro service firmware update API requires *componentId* to update specified firmware. As a result, package.xml which includes component id(s) exists in firmware image file, and it could be unzipped from image file.

## Architecture Design and Implementation

Then backend logic is built based on the following situation:

- Where to get component id
- How to get component id
- How to poll firmware update job status
- How to deal a firmware update request timeout case

As implemented, *Graph.Dell.Wsman.Update.Firmware* creates a temp folder named with */tmp/graphid*, downloads image into temp folder via *wget* command, unzips package.xml from image file, then reads *<Device>* tags to retrieve component ids. And some package.xml could include multiple *<Device>* targets. A demo xml section shows below:

```
<Device componentID="25227" embedded="1">
  <Display lang="en"><![CDATA[iDRAC with Lifecycle Controller]]></Display>
</Device>
```

After component id(s) retrieved, traverse component id(s), invoke */updater/dup* API to update firmware specified with component id. Response could include two job id, one starts with *JID\_*, another starts with *RID\_*. RID job depends on JID job status, and the final status of firmware update job depends on the RID job. That is to say, JID job fails, entire job fails; JID job completes, but RID job failed, then entire job fails.

Another core logic is to poll each job status with job id. Each job is designed to be polled every 30 seconds, and be failed in 1 hour as timeout.

Figure-1 shows the architecture design outline of the implementation of *Graph.Dell.Wsman.Update.Firmware*.

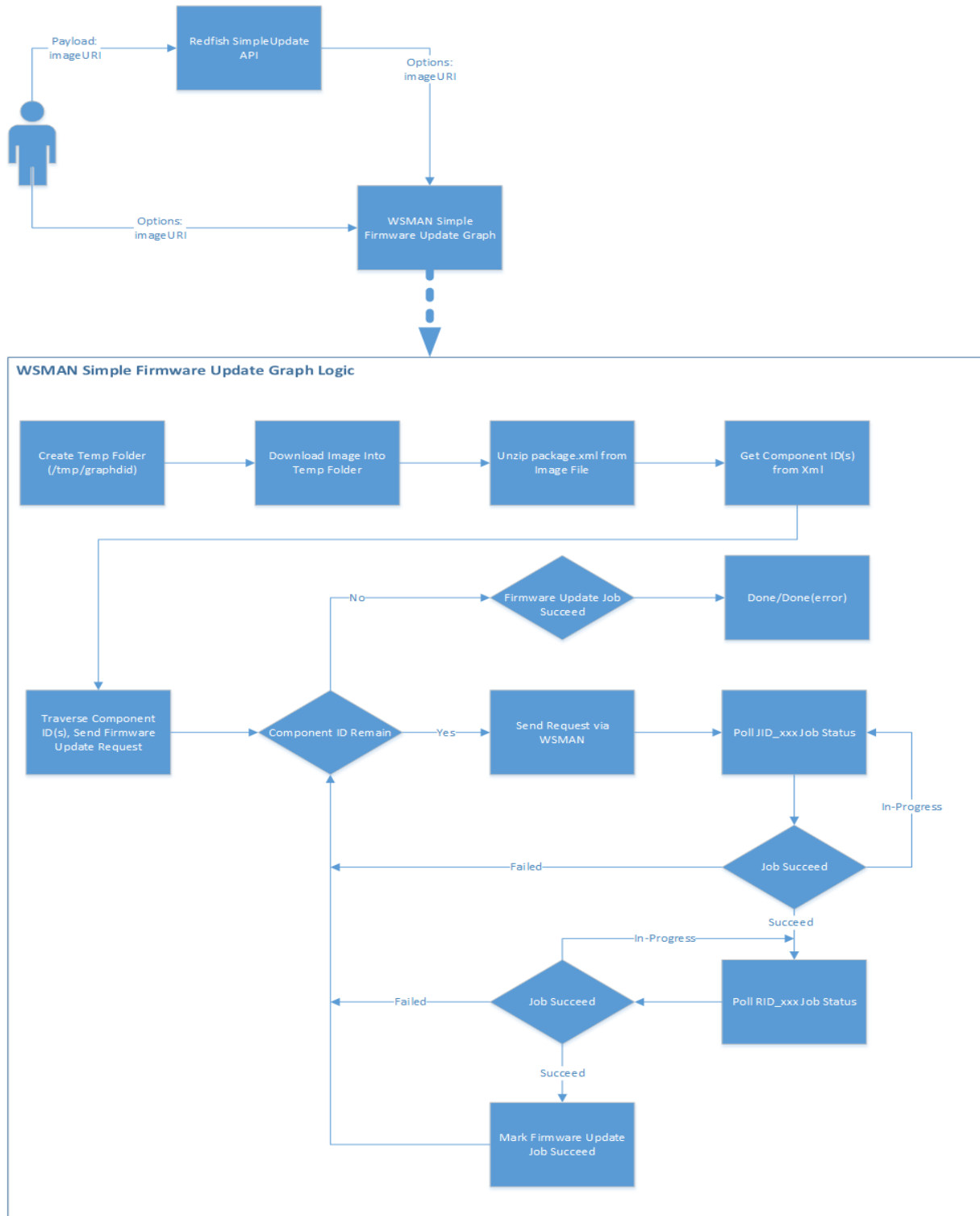


Figure-1 Logic Diagram

## Test Cases

Currently, this feature only passes the case that update iDRAC with firmware built by RackHD on-http service, among firmware types of BIOS, RAID and iDRAC. Dug into SMI Service, it seems there exists some gaps or bugs in its implementations.

Firm ware	Compon ent ID (package.xml)	Firmware Location	SMI Service (~/updater/dup)	WSMAN Simple Update (via ~/updater/dup)	Redfish API via RACADM
BIOS	159	<a href="http://downloads.dell.com/FOLDER04129266M/1/BIOS_12RN6_WN64_2.4.2.EXE">http://downloads.dell.com/FOLDER04129266M/1/BIOS_12RN6_WN64_2.4.2.EXE</a>	Failed. Could not download image.	Failed	Succeed. Support using local image.
		<a href="http://192.168.128.70:8080/common/BIOS_12RN6_WN64_2.4.2.exe">http://192.168.128.70:8080/common/BIOS_12RN6_WN64_2.4.2.exe</a>	Started. Firmware downloaded, hung pending reboot.	Started. Firmware downloaded, hung pending reboot.	
RAID	101548/ 101550/ 101551	<a href="http://downloads.dell.com/FOLDER04166468M/2/SAS-RAID_Firmware_03NXN_WN64_25.5.2.0001_A07_01.EXE">http://downloads.dell.com/FOLDER04166468M/2/SAS-RAID_Firmware_03NXN_WN64_25.5.2.0001_A07_01.EXE</a>	Failed. Unable to download Update Package. And Firmware Update Type displayed in Job Queue is CPLD.	Failed. Unable to download Update Package. And Firmware Update Type displayed in Job Queue is CPLD.	Succeed. Support using local image.
		<a href="http://192.168.128.70:8080/common/SAS-RAID_Firmware_03NXN_WN64_25.5.2.0001_A07_01.EXE">http://192.168.128.70:8080/common/SAS-RAID_Firmware_03NXN_WN64_25.5.2.0001_A07_01.EXE</a>	Failed. Unable to complete the firmware update operation because the specified firmware image is for a component that is not in the target system inventory. And Firmware Update Type displayed in Job Queue is CPLD.	Failed. Unable to complete the firmware update operation because the specified firmware image is for a component that is not in the target system inventory. And Firmware Update Type displayed in Job Queue is CPLD.	

iDRA C	25227	http://downloads.dell.com/ FOLDER03526203M/3/iDRA C-with-Lifecycle- Controller_Firmware_5GCH C_WN64_2.30.30.30_A00.E XE	Failed. Unable to download Update Package.	Failed. Unable to download Update Package.	Succeed. Support using local image.
		http://192.168.128.70:8080 /common/iDRAC-with- Lifecycle- Controller_Firmware_5GCH C_WN64_2.30.30.30_A00.E XE	Succeed.	Succeed.	

### Issues Remaining

As test case results show, only iDRAC firmware was updated successfully. There are still some issues remaining to be investigated or fixed.

- For the BIOS firmware update case, job was started successfully, resulted as pending reboot, but the BIOS firmware version was updated successfully, as was shown in Dell iDRAC (Integrated Dell Remote Access Controller). There are some gaps or bugs in SMI service, after discussed with team who is responsible for SMI service.
- For the RAID firmware update case, the job was resulted that the specified firmware image is for a component that is not in the target system inventory. And Firmware Update Type displayed in Job Queue is CPLD.

After call getting updateable components API (\* /uci), the resulted component id was different with the component id from image file.

```
{
  "name": "PERC H330 Adapter",
  "componentType": "FIRMWARE",
  "targetIdentifier": "1000005F10281F44"
}
```

It seems that the difference between updateable components with input component id caused the failure of RAID firmware update job. And the issue is that what causes the difference.

## Appendix

The following is an investigation result of history stores of firmware update features.

Git histories in story of update firmware using RACADM

1. Remove OBM settings lookup in update-service.js - dalebremner  
<https://github.com/RackHD/on-http/commit/aeffd2af44cf89e7beaf0b4dda6d0f9b606dbb76>
2. update-service.js created - dalebremner  
<https://github.com/RackHD/on-http/commit/1cab813d0dca1e2bfa3fce70f32fea52dc67d016#diff-edd614f964f486b1da33eea8b3bcf34b>
3. RACMADM update firmware graph created - sunny  
<https://github.com/RackHD/on-taskgraph/commit/Oea25d3804e6d1d112eb66d19863426c616b6065#diff-8c6213b6dca05a8a06df0ce87ef6df9a>
4. Download file task added into RACADM firmware update graph  
<https://github.com/RackHD/on-taskgraph/commit/c3b370214e2c6f8a6869395b360149480069479b#diff-8c6213b6dca05a8a06df0ce87ef6df9a>
5. Story for firmware update  
<https://rackhd.atlassian.net/browse/RAC-4269>

### Story Timeline

#1 2016.02.29 <https://github.com/sunnyqianzhang>

Add workflow for getting bios and update firmware

Story: N/A

PR:

<https://github.com/RackHD/on-taskgraph/pull/68>  
<https://github.com/RackHD/on-tasks/pull/133>

Details:

In these code changes, sunny implemented workflow for getting bios and update firmware. Functionality of firmware update requires options including server username, server password and server file path.

Test Case:

Update firmware with image in share folder

Payload: (failed)

```

{
  "name": "Graph.Dell.Racadm.Update.Firmware",
  "options": {
    "defaults": {
      "serverUsername": "alaric",
      "serverPassword": "Onrack_123456",
      "serverFilePath": "\\10.62.59.248\\firmware\\SAS-
RAID_Firmware_760K4_WN32_25.5.3.0005_A09.EXE"
    }
  }
}

```

```

TaskName: Task.Dell.Racadm.Update.Firmware
[ debug ] [2017-11-02T08:10:17.184Z] [Server] -----alaric, options: {"action":"updateFirmware","forceReboot":true,"serverUsername":"alaric","serverPassword":
> /home/vagrant/src/on-tasks/lib/jobs/racadm-control.js:47
[ info ] [2017-11-02T08:10:17.184Z] [Server] Running task job.
-> /home/vagrant/src/on-tasks/lib/task.js:370
taskId: 9d2db12f-454a-4576-abcd-fb106c52370a
name: dell racadm update firmware image
job: Job.Dell.RacadmTool
[ debug ] [2017-11-02T08:10:17.195Z] [df131d] Running job.
> /home/vagrant/src/on-tasks/lib/jobs/base-job.js:112
module: Job.Dell.RacadmTool
name: RacadmToolJob
options:
  action: updateFirmware
  forceReboot: true
  serverUsername: alaric
  serverPassword: [REDACTED]
  serverFilePath: \\10.62.59.248\\firmware\\SAS-RAID_Firmware_760K4_WN32_25.5.3.0005_A09.EXE
  taskTimeout: 86400000
taskId: 9d2db12f-454a-4576-abcd-fb106c52370a
target: 59ca21d73a0bb58304df131d
[ error ] [2017-11-02T08:10:17.204Z] [Server] Task failed
-> /home/vagrant/src/on-tasks/lib/task.js:346
Error: Error: file path format is incorrect
taskId: 9d2db12f-454a-4576-abcd-fb106c52370a
graphId: be15228b-3f76-4329-ac1a-1d04d8ba851d
injectableName: Task.Dell.Racadm.Update.Firmware
node: 59ca21d73a0bb58304df131d
[ info ] [2017-11-02T08:10:17.221Z] [Server] Task finished
-> /lib/task-runner.js:299
instanceId: 9d2db12f-454a-4576-abcd-fb106c52370a
taskName: Task.Dell.Racadm.Update.Firmware
state: failed

```

Payload: (use Linux file path format instead) (pass)

```

{
  "name": "Graph.Dell.Racadm.Update.Firmware",
  "options": {
    "defaults": {
      "serverUsername": "alaric",
      "serverPassword": "Onrack_123456",
      "serverFilePath": "//10.62.59.248/firmware/SAS-
RAID_Firmware_760K4_WN32_25.5.3.0005_A09.EXE"
    }
  }
}

```

```

taskRunnerId: 5747f4fe-32ab-445a-8b7f-fe75725a5d51
taskId: 0b4b0d49-2269-40db-8ba5-64231ac8433f
taskName: Task.Dell.Racadm.Update.Firmware
[ debug ] [2017-11-02T08:33:16.348Z] [Server] -----alaric, options: {"action":"updateFirmware","forceReboot":true,"serverUsername":"alaric"},"s
-> /home/vagrant/src/on-tasks/lib/jobs/racadm-control.js:47
[ info ] [2017-11-02T08:33:16.349Z] [Server] Running task job.
-> /home/vagrant/src/on-tasks/lib/task.js:370
taskId: 0b4b0d49-2269-40db-8ba5-64231ac8433f
name: dell racadm update firmware image
job: Job.Dell.RacadmTool
[ debug ] [2017-11-02T08:33:16.358Z] [df131d] Running job.
-> /home/vagrant/src/on-tasks/lib/jobs/base-job.js:112
module: Job.Dell.RacadmTool
name: RacadmToolJob
options:
  action: updateFirmware
  forceReboot: true
  serverUsername: alaric
  serverPassword: [REDACTED]
  serverFilePath: //10.62.59.248/firmware/SAS-RAID_Firmware_760K4_WN32_25.5.3.0005_A09.EXE
  taskTimeout: 86400000
taskId: 0b4b0d49-2269-40db-8ba5-64231ac8433f
target: 59ca21d73a0bb58304df131d
[ debug ] [2017-11-02T08:33:47.336Z] [Server] ***number of new SEL entries :0. Poller: 59ca22c8a9c4fca9044f457a nodeID: 59ca21d73a0bb58304df131d
-> /home/vagrant/src/on-tasks/lib/jobs/ipmi-job.js:368
[ debug ] [2017-11-02T08:34:48.820Z] [Server] ***number of new SEL entries :0. Poller: 59ca22c8a9c4fca9044f457a nodeID: 59ca21d73a0bb58304df131d
-> /home/vagrant/src/on-tasks/lib/jobs/ipmi-job.js:368
[ debug ] [2017-11-02T08:35:50.212Z] [Server] ***number of new SEL entries :0. Poller: 59ca22c8a9c4fca9044f457a nodeID: 59ca21d73a0bb58304df131d
-> /home/vagrant/src/on-tasks/lib/jobs/ipmi-job.js:368
[ debug ] [2017-11-02T08:36:52.467Z] [Server] ***number of new SEL entries :0. Poller: 59ca22c8a9c4fca9044f457a nodeID: 59ca21d73a0bb58304df131d
-> /home/vagrant/src/on-tasks/lib/jobs/ipmi-job.js:368
[ debug ] [2017-11-02T08:37:53.516Z] [Server] ***number of new SEL entries :0. Poller: 59ca22c8a9c4fca9044f457a nodeID: 59ca21d73a0bb58304df131d
-> /home/vagrant/src/on-tasks/lib/jobs/ipmi-job.js:368
[ debug ] [2017-11-02T08:38:59.255Z] [Server] ***number of new SEL entries :0. Poller: 59ca22c8a9c4fca9044f457a nodeID: 59ca21d73a0bb58304df131d
-> /home/vagrant/src/on-tasks/lib/jobs/ipmi-job.js:368
[ debug ] [2017-11-02T08:39:59.326Z] [Server] Completed
-> /home/vagrant/src/on-tasks/lib/jobs/racadm-control.js:86
[ info ] [2017-11-02T08:39:59.346Z] [Server] Task finished
-> /lib/task-runner.js:299
instanceId: 0b4b0d49-2269-40db-8ba5-64231ac8433f
taskName: Task.Dell.Racadm.Update.Firmware
state: succeeded
taskRunnerId: 5747f4fe-32ab-445a-8b7f-fe75725a5d51

```

## #2 2017.03.21 <https://github.com/dalebremner>

Story:

<https://rackhd.atlassian.net/browse/RAC-4269>

Dell BIOS Firmware Upgrade

PR:

<https://github.com/RackHD/on-http/pull/610>

Details:

In this story, Dale implemented a new Redfish API of firmware update, which call the RACADM firmware update graph in backend, and the payload includes a firmware image URI and node ids.

A truth: As refined, in update-service, image URI is assigned to serverFilePath in the options of RACADM firmware update graph, and server user name and password are set to null. That is to say, the image URI in payload of firmware update API must be a local file path in RackHD service host.

Q: Redfish API of firmware update could not use file in share folders or CIFS or and web URI, as lacking of logic to get these parameters.

A: Update service in Redfish API should have the ability to parse the payload into option parameters for firmware update graph and related tasks.

Test Case: (pass)

Update iDRAC with Lifecycle controller

Payload:

```
{
```



```

"ImageURI": "/var/renasar/on-http/iDRAC-with-Lifecycle-
Controller_Firmware_278FC_WN32_2.50.50.50_A00.EXE",
"Targets": [
  "59ca21d73a0bb58304df131d"
]
}

```

**Firmware**

Update
Rollback

**System Alert**

SUP0108: A firmware update operation is already in progress. Wait for the update operation to conclude and then re-try.

Firmware Inventory ▲ Back To Top

Component	Firmware Version
Integrated Dell Remote Access Controller	2.50.50.50
Lifecycle Controller	2.50.50.50
Dell 32 Bit uEFI Diagnostics, version 4239, 4239A29, 4239.37	4239A29
Dell OS Driver Pack, 16.03.00, A00	16.03.00
OS COLLECTOR 1.1, OSC_1.1, A00	OSC_1.1
System CPLD	1.0.0
Intel(R) Ethernet 10G X520 LOM - 7C:D3:0A:B0:52:9E	16.5.0
Intel(R) Ethernet 10G X520 LOM - 7C:D3:0A:B0:52:A0	16.5.0
BIOS	2.0.2
PERC H330 Adapter	25.3.0.0016
SGPIO 0:0	N A

```

injectableName: Graph.Dell.Racadm.Update.Firmware
instanceId: ec0be866-6f35-44d8-b314-96090b8b9d8b
logContext:
  graphInstance: ec0be866-6f35-44d8-b314-96090b8b9d8b
  graphName: Dell Racadm Update Firmware Graph
  id: 59ca21d73a0bb58304df131d
  name: Dell Racadm Update Firmware Graph
  node: 59ca21d73a0bb58304df131d
  serviceGraph: null
  tasks:
    12b96497-a042-4dea-805e-cbd20d89e9f2:
      friendlyName: dell-racadm update firmware image
      ignoreFailure: false
      implementsTask: Task.Base.Dell.Racadm.Control
      injectableName: Task.Dell.Racadm.Update.Firmware
      instanceId: 12b96497-a042-4dea-805e-cbd20d89e9f2
      jobOptionsSchema: null
      label: dell-racadm-update-firmware
      name: Task.Dell.Racadm.Update.Firmware
      options:
        action: updateFirmware
        forceReboot: true
        serverUsername:
        serverPassword: [REDACTED]
        serverFilePath: /var/renasar/on-http/iDRAC-with-Lifecycle-Controller_Firmware_278FC_WN32_2.50.50.50_A00.EXE
        taskTimeout: 8640000
      optionsSchema: dell-racadm-control.json
      properties:
        funJob: Job.Dell.Racadm.Tool
        state: succeeded
        taskEndTime: Thu Nov 02 2017 06:40:43 GMT+0000 (UTC)
        taskStartTime: Thu Nov 02 2017 06:21:13 GMT+0000 (UTC)
      terminalOnStates:
        - timeout
        - cancelled
        - failed
      waitingOn:
        be6f2aeb-94fc-4660-8ald-1696f121b3f4:
          - finished
        195cae0b-2f77-4df2-8aa0-707b1863c274:
          friendlyName: Catalog bmc
          ignoreFailure: false
          implementsTask: Task.Base.Linux.Catalog
          injectableName: Task.Catalog.bmc
          instanceId: 195cae0b-2f77-4df2-8aa0-707b1863c274

```

#3 2017.10.02 <https://github.com/uppalk1>

Added download task

Story:

<https://rackhd.atlassian.net/browse/RAC-6274>

Firmware update support using nginx server

PR:

<https://github.com/RackHD/on-taskgraph/pull/291>

<https://github.com/RackHD/on-tasks/pull/519>

Details:

In this task, Kranti created download task and add it into RACADM firmware update graph.

Remaining story:

<https://rackhd.atlassian.net/browse/RAC-6364>

Check if firmware file already exists before downloading from nginx server

AC:

- there are a lot of binary files left in a flat structure in the /var/renesar/on-taskgraph
- I'm thinking the current implementation should either check if the binary already exists on the RackHD execution folder or if there is no check at least maybe delete the file after the process finishes?

Q: A confusion here, in #1 Sunny implemented RACADM firmware update, and I guess the user credential and fileServerPath in options are used for getting latest firmware images. In #3, firmware image is downloaded into local folder in RackHD server host, but firmware update task still use fileServerPath to assemble RACADM command. So I guess there would be a confusion or gap in the combination between download file task and firmware update task.

Test Case:

Update firmware with image from web URI, via RACADM firmware update graph

Case-1: (failed)

Payload:

```
{
  "name": "Graph.Dell.Racadm.Update.Firmware",
  "options": {
    "download-http-file": {
      "filePath": "https://downloads.dell.com/FOLDER04166468M/2/SAS-RAID\_Firmware\_03NXN\_WN64\_25.5.2.0001\_A07\_01.EXE"
    }
  }
}
```

Response:

```
{
  "message": "Task.Dell.Racadm.Update.Firmware: JSON schema validation failed - data.serverUsername should be string, data.serverPassword should be string, data.serverFilePath should be string",
  "status": "400",
}
```

```
"UUID": "9fce05c6-909e-4b16-881d-405b8ff3f43c"
}
```

Case-2: (failed)

Payload:

```
{
  "name": "Graph.Dell.Racadm.Update.Firmware",
  "options": {
    "defaults": {
      "serverUsername": "",
      "serverPassword": "",
      "serverFilePath": ""
    },
    "download-http-file": {
      "filePath": "https://downloads.dell.com/FOLDER04166468M/2/SAS-RAID\_Firmware\_03NXN\_WN64\_25.5.2.0001\_A07\_01.EXE"
    }
  }
}
```

```
root@rackhd:/home/vagrant/src/on-taskgraph# ls -l
total 119828
drwxr-xr-x  2 root root    4096 Oct 17 03:23 alpha
drwxr-xr-x  4 root root    4096 Oct 31 03:22 api
-rwxr-xr-x  1 root root   5828 Oct 17 10:01 app.js
drwxr-xr-x  5 root root    4096 Oct 17 10:01 data
drwxr-xr-x  3 root root    4096 Oct 31 03:22 debian
-rw-r--r--  1 root root    736 Oct 17 10:01 Dockerfile
drwxr-xr-x  2 root root    4096 Oct 17 03:23 extra
-rw-r--r--  1 root root   4366 Oct 17 03:22 Gruntfile.js
-rwxr-xr-x  1 root root   1401 Oct 17 03:23 HWIMO-BUILD
-rwxr-xr-x  1 root root    573 Oct 17 03:22 HWIMO-TEST
-rw-r--r--  1 root root 106296160 Aug  3 16:06 iDRAC-with-Lifecycle-Controller_Firmware_278FC_WN32_2.50.50.50_A00.EXE
-rw-r--r--  1 root root   2772 Oct 17 10:01 index.js
drwxr-xr-x  4 root root    4096 Oct 17 10:01 lib
-rw-r--r--  1 root root  11357 Oct 17 10:01 LICENSE
drwxr-xr-x 41 root root    4096 Oct 17 03:39 node_modules
-rw-r--r--  1 root root   1768 Oct 31 03:22 package.json
-rw-r--r--  1 root root  12520 Oct 17 10:01 README.md
-rw-r--r--  1 root root  16282064 Jun 28 07:21 SAS-RAID_Firmware_03NXN_WN64_25.5.2.0001_A07_01.EXE
-rw-r--r--  1 root root    3858 Oct 17 10:01 scheduler.proto
drwxr-xr-x  2 root root    4096 Oct 17 03:23 scripts
drwxr-xr-x  5 root root    4096 Oct 17 10:01 spec
drwxr-xr-x  3 root root    4096 Oct 17 03:23 static
drwxr-xr-x  2 root root    4096 Oct 31 03:22 test
```

```

label: download-http-file
name: Task.Download.Http.File
options:
  filePath: https://downloads.dell.com/FOLDER04166468M/2/SAS-RAID_Firmware_03NXN_WN64_25.5.2.0001_A07_01.EXE
  taskTimeout: 8640000
properties:
runJob: Job.Download.File
state: succeeded
taskEndTime: Thu Nov 02 2017 09:12:47 GMT+0000 (UTC)
taskStartTime: Thu Nov 02 2017 09:11:57 GMT+0000 (UTC)
terminalOnStates:
  (empty array)
waitingOn:
47e7a20e-44fe-43f8-8e99-09ef094b5567:
error:
  ""
  Error: Can not find file path required for iDRAC image update
    at RacadmTool.updateFirmware (/home/vagrant/src/on-tasks/lib/utlils/job-utlils/racadm-tool.js:248:17)
    at /home/vagrant/src/on-tasks/lib/jobs/racadm-control.js:80:47
    at tryCatcher (/home/vagrant/src/on-core/node_modules/bluebird/js/main/util.js:26:23)
    at Promise._settlePromiseFromHandler (/home/vagrant/src/on-core/node_modules/bluebird/js/main/promise.js:510:31)
    at Promise._settlePromiseAt (/home/vagrant/src/on-core/node_modules/bluebird/js/main/promise.js:584:18)
    at Promise._settlePromises (/home/vagrant/src/on-core/node_modules/bluebird/js/main/promise.js:700:14)
    at Async._drainQueue (/home/vagrant/src/on-core/node_modules/bluebird/js/main/async.js:123:16)
    at Async._drainQueues (/home/vagrant/src/on-core/node_modules/bluebird/js/main/async.js:133:10)
    at Immediate.Async.drainQueues [as onImmediate] (/home/vagrant/src/on-core/node_modules/bluebird/js/main/async.js:15:14)
    at processImmediate [as _immediateCallback] (timers.js:396:17)
  ""
friendlyName: dell racadm update firmware image
ignoreFailure: false
implementsTask: Task.Base.Dell.Racadm.Control
injectableName: Task.Dell.Racadm.Update.Firmware
instanceId: 47e7a20e-44fe-43f8-8e99-09ef094b5567
jobOptionsSchema: null
label: dell-racadm-update-firmware
name: Task.Dell.Racadm.Update.Firmware
options:
  action: updateFirmware
  forceReboot: true
  serverUsername:
  serverPassword: [REDACTED]
  serverFilePath:
  taskTimeout: 8640000
optionsSchema: dell-racadm-control.json
properties:
runJob: Job.Dell.RacadmTool
state: failed

```

Case-3: (pass)

Payload:

```

{
  "name": "Graph.Dell.Racadm.Update.Firmware",
  "options": {
    "defaults": {
      "serverUsername": "",
      "serverPassword": "",
      "serverFilePath": "/home/vagrant/src/on-taskgraph/SAS-RAID_Firmware_03NXN_WN64_25.5.2.0001_A07_01.EXE"
    },
    "download-http-file": {
      "filePath": "https://downloads.dell.com/FOLDER04166468M/2/SAS-RAID_Firmware_03NXN_WN64_25.5.2.0001_A07_01.EXE"
    }
  }
}

```

```

root@rackhd:/home/vagrant/src/on-taskgraph# ls -l
total 123028
drwxr-xr-x 2 root root 4096 Oct 17 03:23 alpha
drwxr-xr-x 4 root root 4096 Oct 31 03:22 api
-rwxr-xr-x 1 root root 5828 Oct 17 10:01 app.js
drwxr-xr-x 5 root root 4096 Oct 17 10:01 data
drwxr-xr-x 3 root root 4096 Oct 31 03:22 debian
-rw-r--r-- 1 root root 736 Oct 17 10:01 Dockerfile
drwxr-xr-x 2 root root 4096 Oct 17 03:23 extra
-rw-r--r-- 1 root root 4366 Oct 17 03:22 Gruntfile.js
-rwxr-xr-x 1 root root 1401 Oct 17 03:23 HWIMO-BUILD
-rwxr-xr-x 1 root root 573 Oct 17 03:22 HWIMO-TEST
-rw-r--r-- 1 root root 106296160 Aug 3 16:06 IDRAC-with-Lifecycle-Controller_Firmware_278FC_WN32_2.50.50.50_A00.EXE
-rw-r--r-- 1 root root 2772 Oct 17 10:01 index.js
drwxr-xr-x 4 root root 4096 Oct 17 10:01 lib
-rw-r--r-- 1 root root 11357 Oct 17 10:01 LICENSE
drwxr-xr-x 41 root root 4096 Oct 17 03:39 node_modules
-rw-r--r-- 1 root root 1768 Oct 31 03:22 package.json
-rw-r--r-- 1 root root 12520 Oct 17 10:01 README.md
-rw-r--r-- 1 root root 16282064 Jun 28 07:21 SAS-RAID_Firmware_03NXN_WN64_25.5.2.0001_A07_01.EXE
-rw-r--r-- 1 root root 3276096 Nov 2 09:20 SAS-RAID_Firmware_03NXN_WN64_25.5.2.0001_A07_01.EXE.1
-rw-r--r-- 1 root root 3858 Oct 17 10:01 scheduler.proto
drwxr-xr-x 2 root root 4096 Oct 17 03:23 scripts
drwxr-xr-x 5 root root 4096 Oct 17 10:01 spec
drwxr-xr-x 3 root root 4096 Oct 17 03:23 static
drwxr-xr-x 2 root root 4096 Oct 31 03:22 test

```

## Response Body

```

node : 59ca21d73a0bb583040f131d ,
  "_status": "running",
  "context": {
    "graphId": "4befe2c8-6242-447d-b94d-c552b2abcdf2",
    "graphName": "Graph.Dell.Racadm.Update.Firmware",
    "target": "59ca21d73a0bb583040f131d"
  },
  "createdAt": "2017-11-02T09:19:44.640Z",
  "definition": {
    "friendlyName": "Dell Racadm Update Firmware Graph",
    "injectableName": "Graph.Dell.Racadm.Update.Firmware",
    "options": {
      "defaults": {
        "serverUsername": "",
        "serverPassword": "",
        "serverFilePath": "/home/vagrant/src/on-taskgraph/SAS-RAID_Firmware_03NXN_WN64_25.5.2.0001_A07_01.EXE"
      },
      "dell-racadm-get-firmware-list-catalog": {
        "updateExistingCatalog": true
      }
    }
  }

```