

Installing iDRAC Service Module (iSM) by using iDRAC9 on the 14th generation (14G) Dell EMC PowerEdge servers

ABSTRACT

This technical white paper describes various options available in the iDRAC9 of Dell EMC 14G PowerEdge servers for installing iDRAC Service Module (iSM) in Host by using various iDRAC9 interfaces. It also provides resources and information required to build on the options available in iDRAC.

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Authors

Sanjay Rao

Divya Vijayvargiya

Diwahar Natarajan

Kiran Krishnappa

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EXECUTIVE SUMMARY

The 14G iDRAC carries the iSM Dell Update Package (DUP) on a partition that can be utilized to install the iSM in supported host OS, thus eliminating the necessary to download the DUP from the Dell EMC support site or use OMDVD.

AUDIENCE

This technical white paper is intended for a system administrator or a technical support personnel who intends to install iSM by using iDRAC on the 14G Enterprise PowerEdge servers.

Introduction

iDRAC Service Module (iSM) is an integral component of iDRAC. The iSM service is a light-weight agent that is focused on complementing iDRAC with its enhanced monitoring capabilities. iSM is lighter than OpenManage Server Administrator (OMSA), because instead of offering a complete monitoring solution by itself, it communicates with the iDRAC Data Manager to populate the necessary host-based monitoring data. iSM then uses this data to respond to commands triggered by the iDRAC user.

Specifically for SupportAssist solution introduced in 14G and earlier generation of Enterprise servers, iSM plays a crucial role. iSM enables collection of OS Application Data across all supported Operating Systems (OSs). Also, iSM is required for SupportAssist registration and availing registration features such as event-based monitoring, auto-case creation, and Collection upload to SupportAssist backend.

iSM uses a network interface that could be either the USB NIC, or the LOM PT to communicate with the iDRAC. Apart from the OS BMC network configuration, iSM is agnostic of the actual communication mechanism being employed as long as it is a TCP/IP interface.

Overview of iSM installation by using iDRAC9

iDRAC in the 14G Enterprise servers will include a `MASER` partition containing iSM installer packages. The installer package contains:

- iSM Webpacks for Supported OS
- Wrapper scripts for triggering install for Supported OS
 - `ISM_Win.bat` (Windows)
 - `ISM_Lx.sh` (Linux)
- SHA256 checksum for package content encryption

Prerequisites for iSM installation by using iDRAC9

- To access any of the iDRAC interfaces, user must have the minimum operator privileges.
- Host should be turned on and booted to the OS.
- An OS supported by iSM should be installed in Host. For the list of iSM supported OS, see the *iSM User's Guide* available on the support site.
- iDRAC9 on the 14G Enterprise servers contains pre-populated MASER partition with an iSM Dell Update Package (DUP). This is factory-installed in iDRAC for 14G and later servers, unless LC Wipe or System Erase has been performed.

If iSM DUP is removed because of LC Wipe or System Erase operation, user needs to install the iSM LC DUP from the support site.

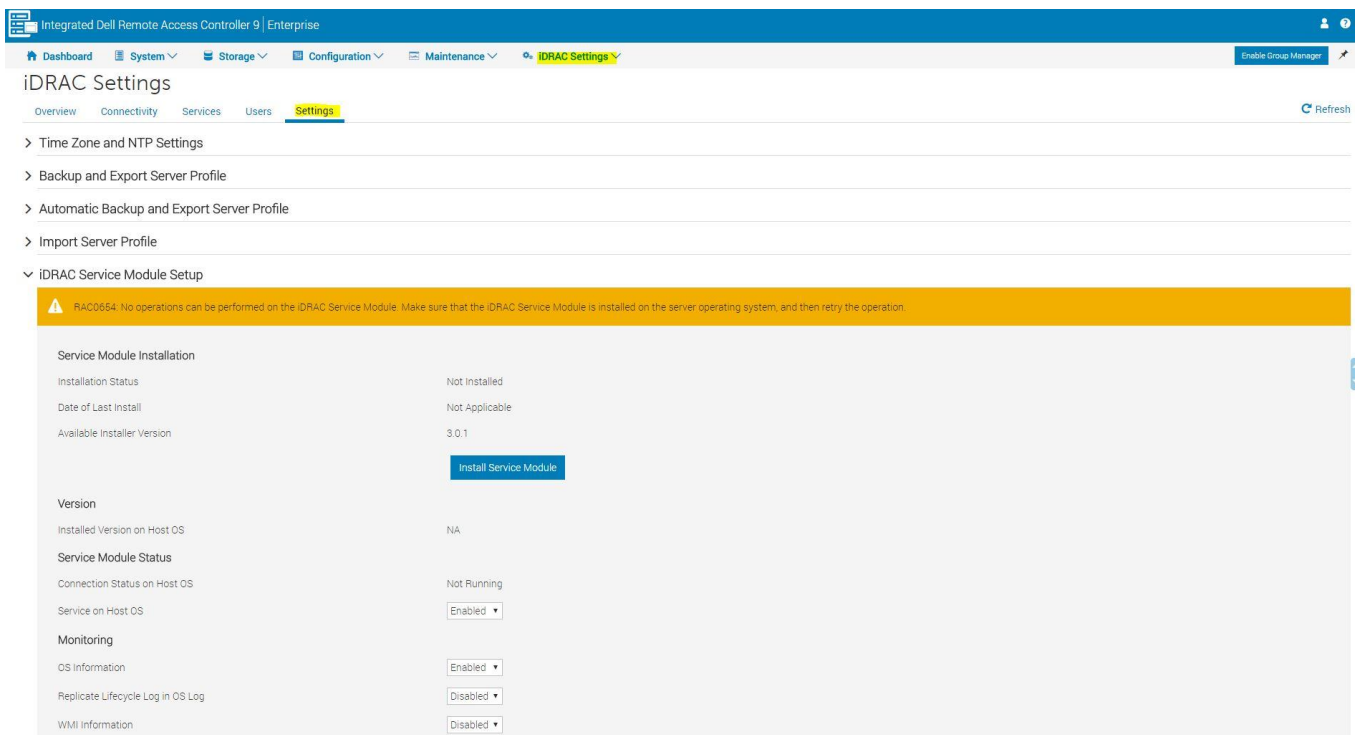
There are no license restrictions for installation of iSM by using iDRAC. However, Enterprise license is recommended for easy navigation to Host OS. For specific commands, see the respective interface sections.

Installing iSM by using iDRAC GUI

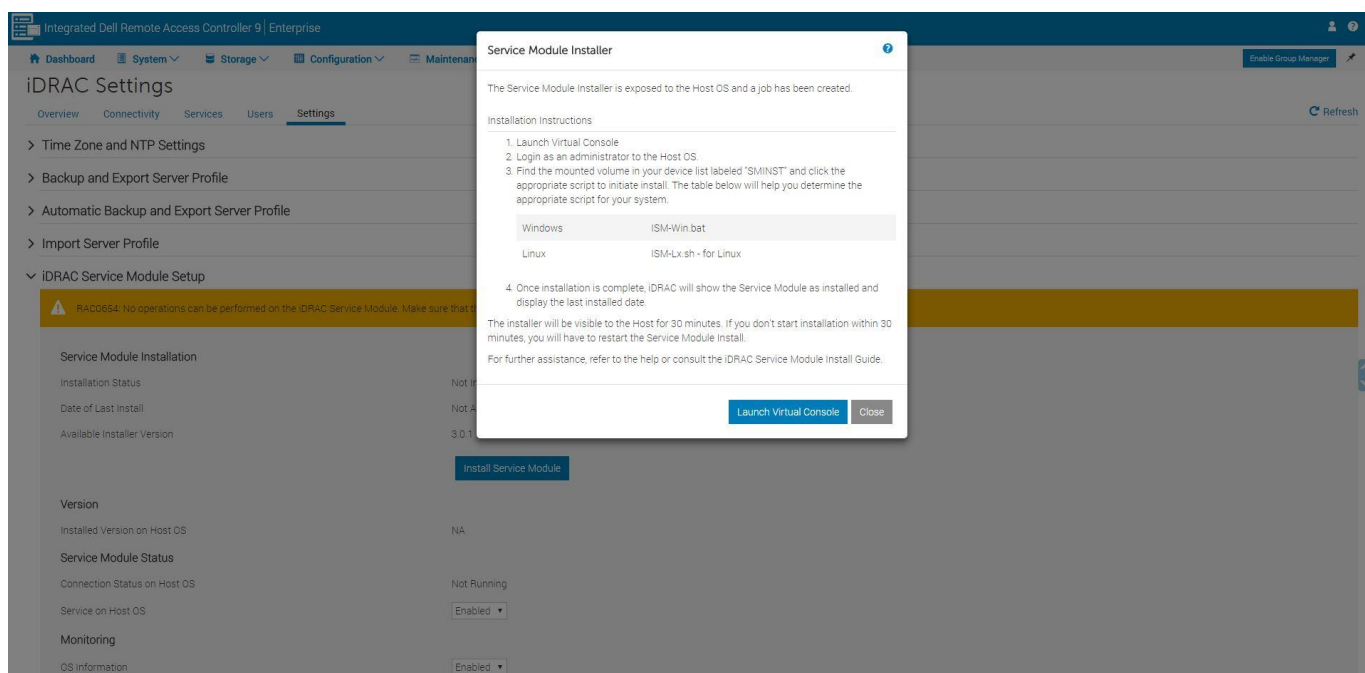
For installing iSM by using iDRAC GUI, use any one of the following interfaces:

iDRAC Settings

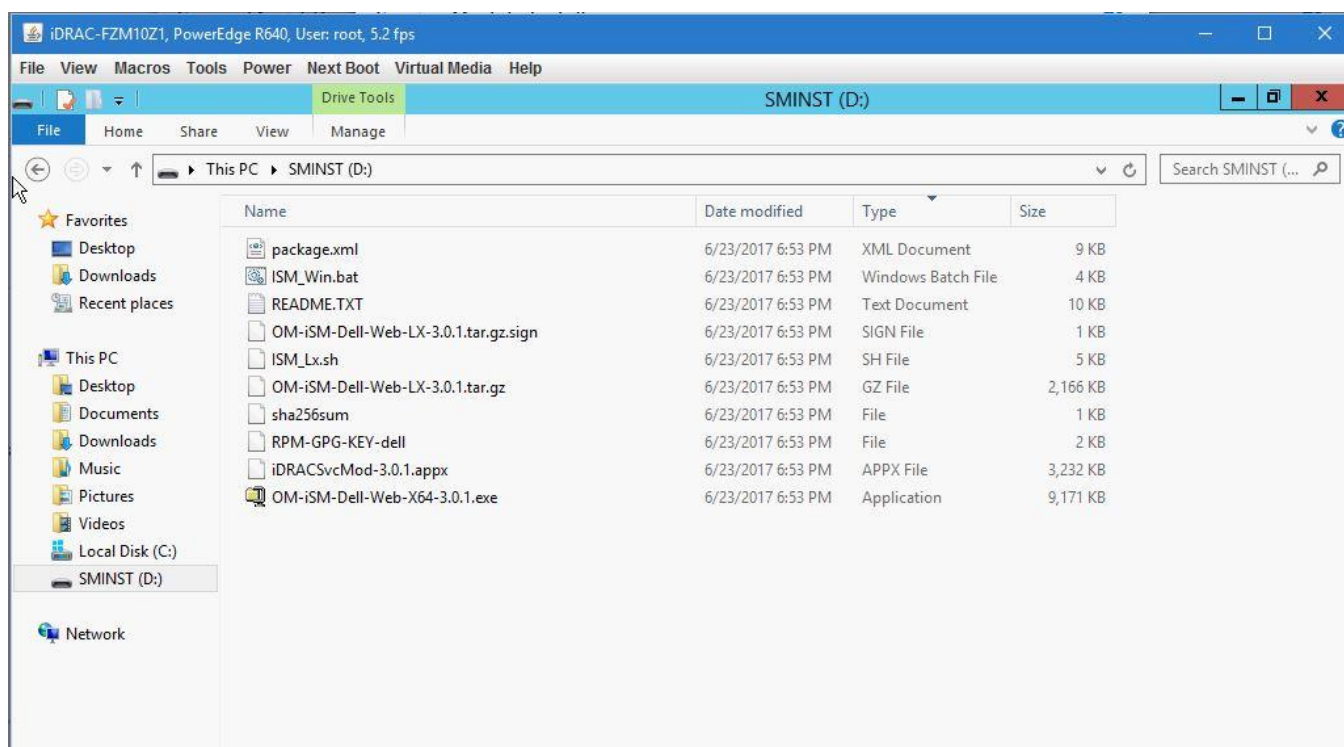
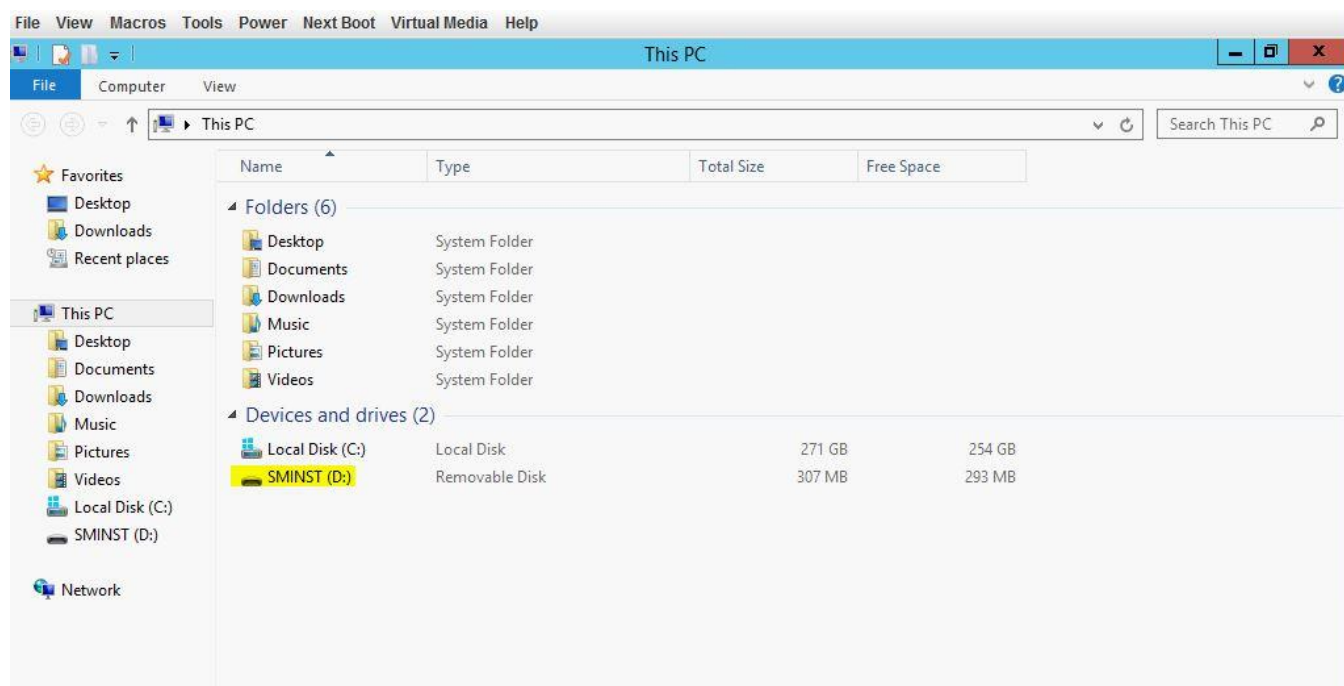
1. Log in to the iDRAC GUI.
2. Click **iDRAC Settings** → **Settings**.



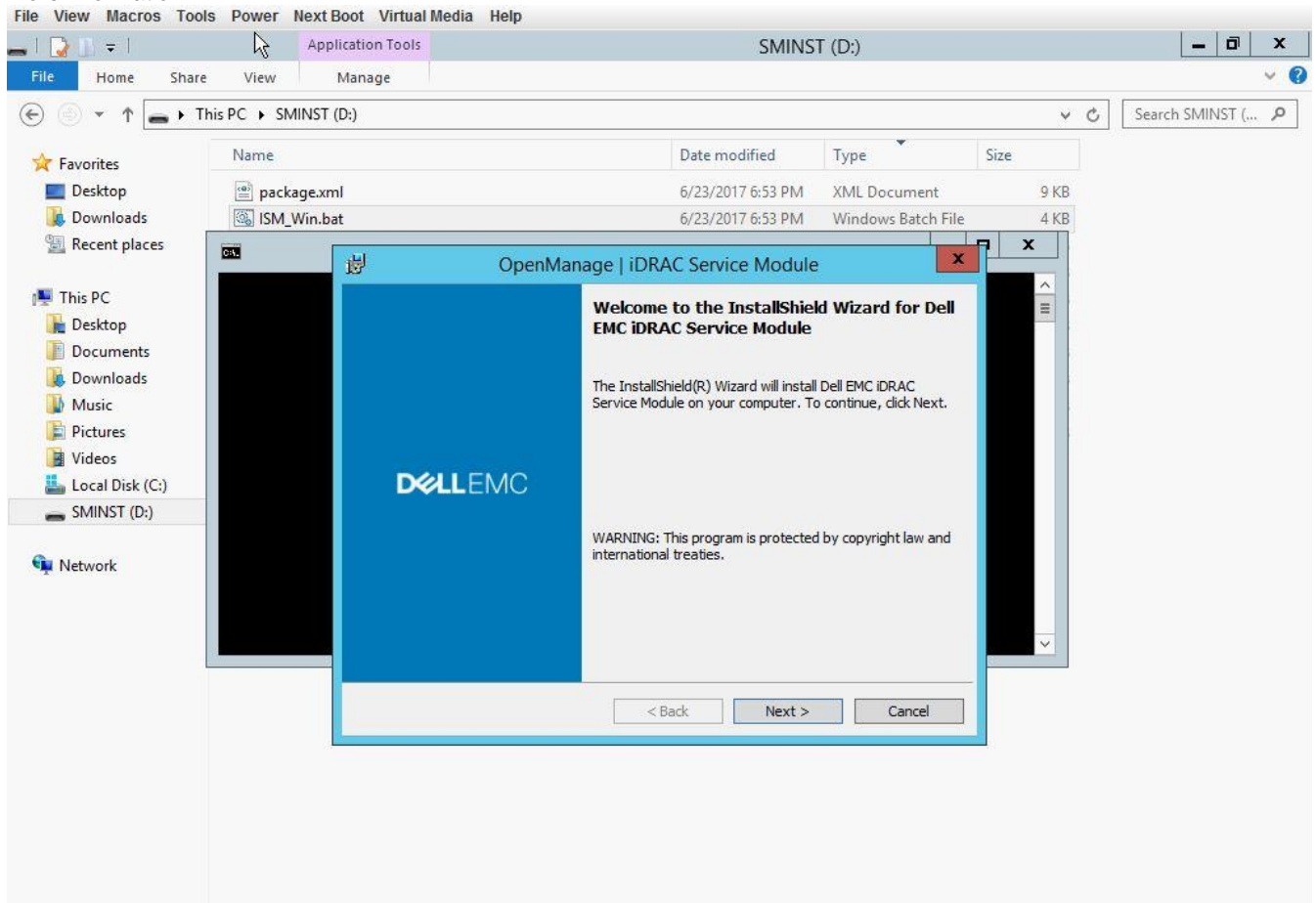
3. Select **iDRAC Service Module Setup**.
4. Click **Install Service Module**.
This will use the iSM Update Package pre-installed in iDRAC and expose it as a removable drive in Host OS.
5. Click **Launch Virtual Console**.



The removable drive is listed in the Host OS.



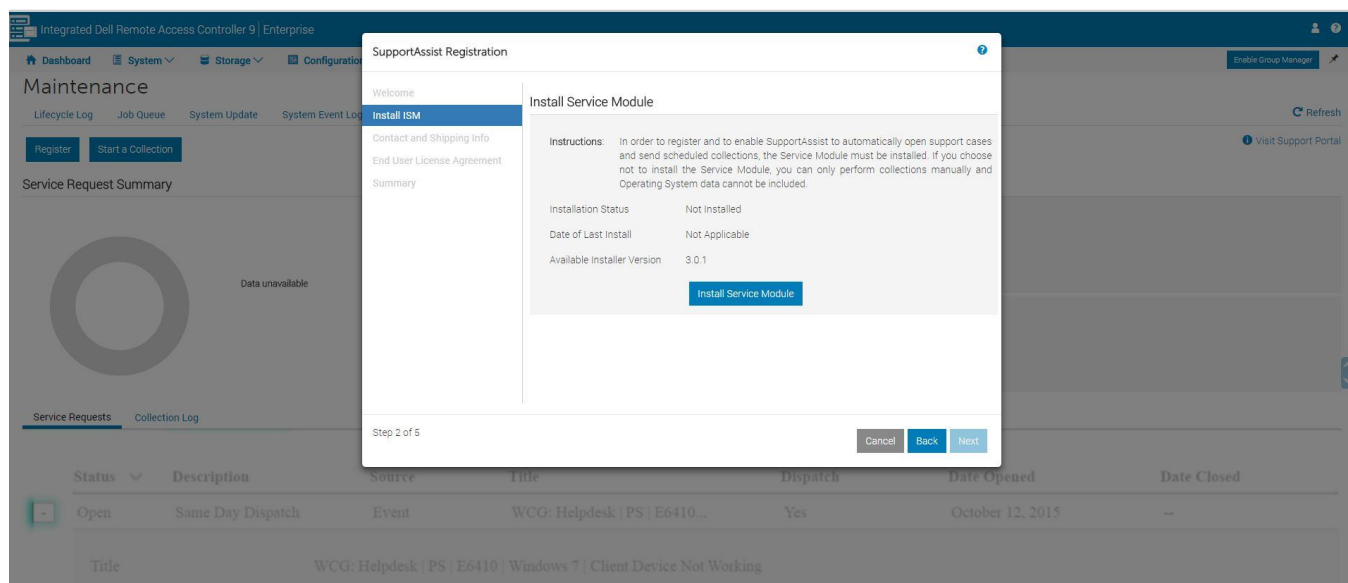
6. Select the OS-specific installer script and proceed with the iSM installation. Refer to the README.TXT present in the drive for more information.



7. After the iSM installation is successfully completed, remove the removable drive from the Host OS.

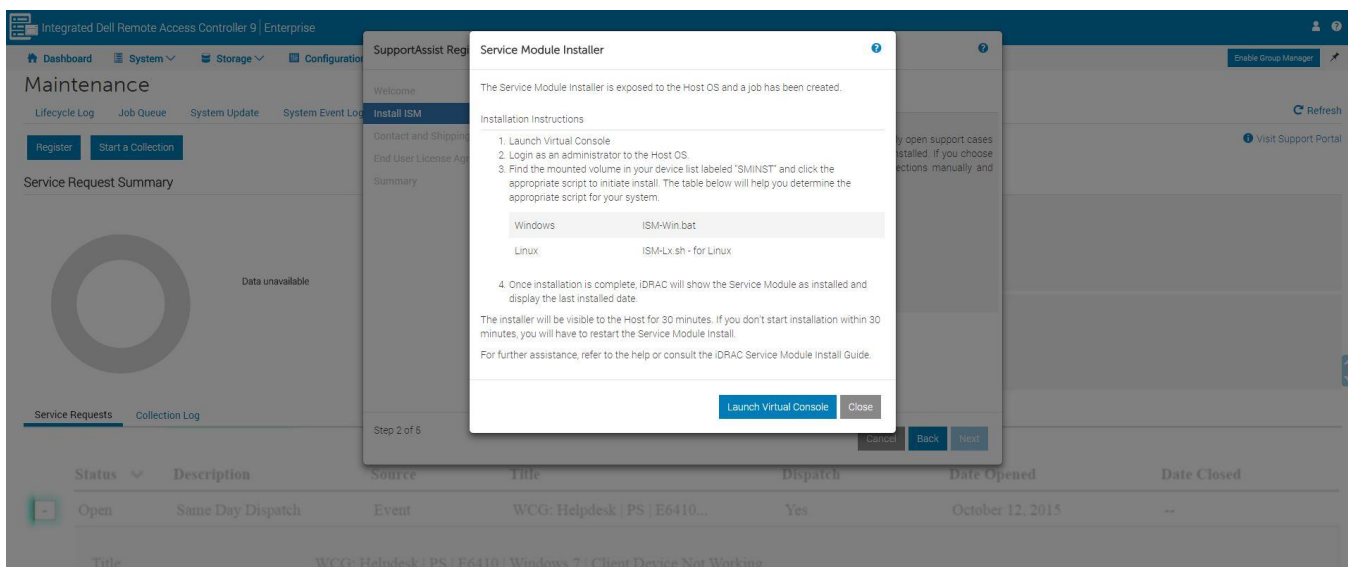
Maintenance

1. Log in to the iDRAC GUI.
2. Navigate to **Maintenance** → **SupportAssist**.
If the server is not registered for SupportAssist workflow, the **SupportAssist Registration Wizard** is displayed.
3. On the **Welcome** page, click **Next**.
4. Click **Install Service Module**.

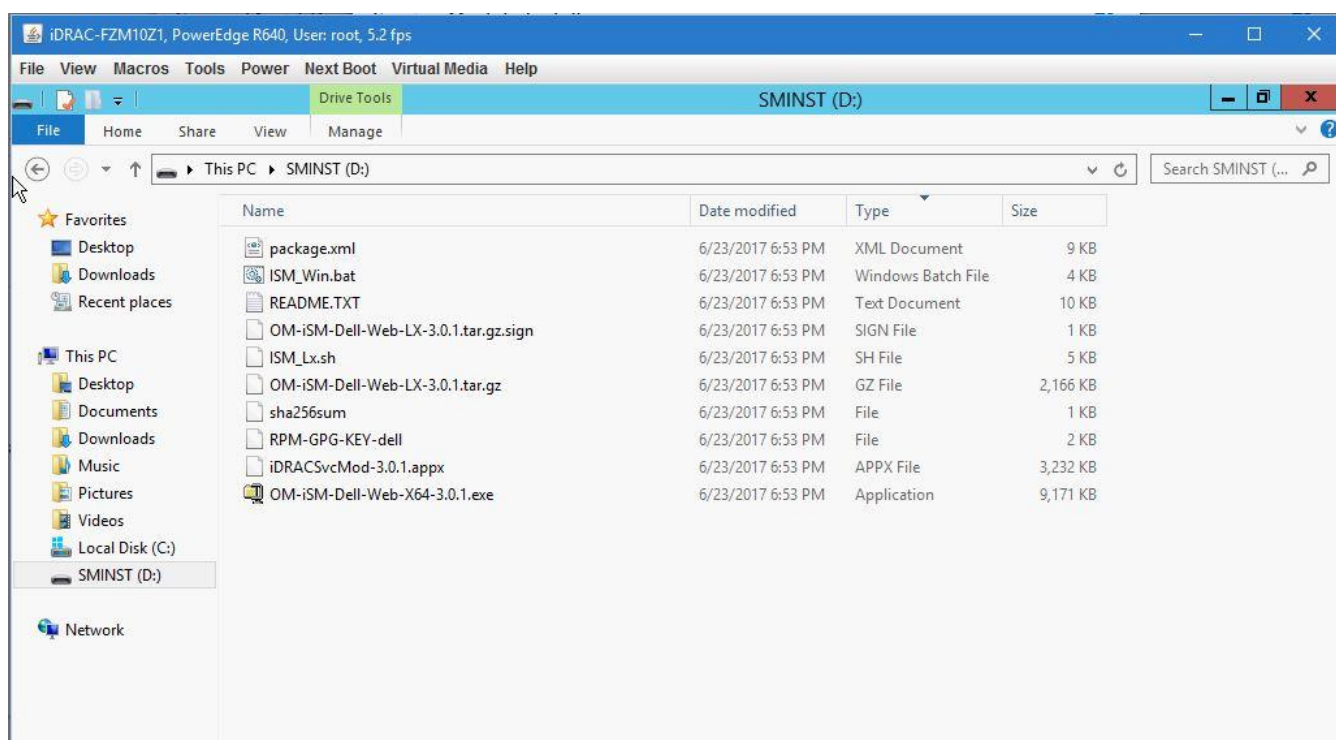
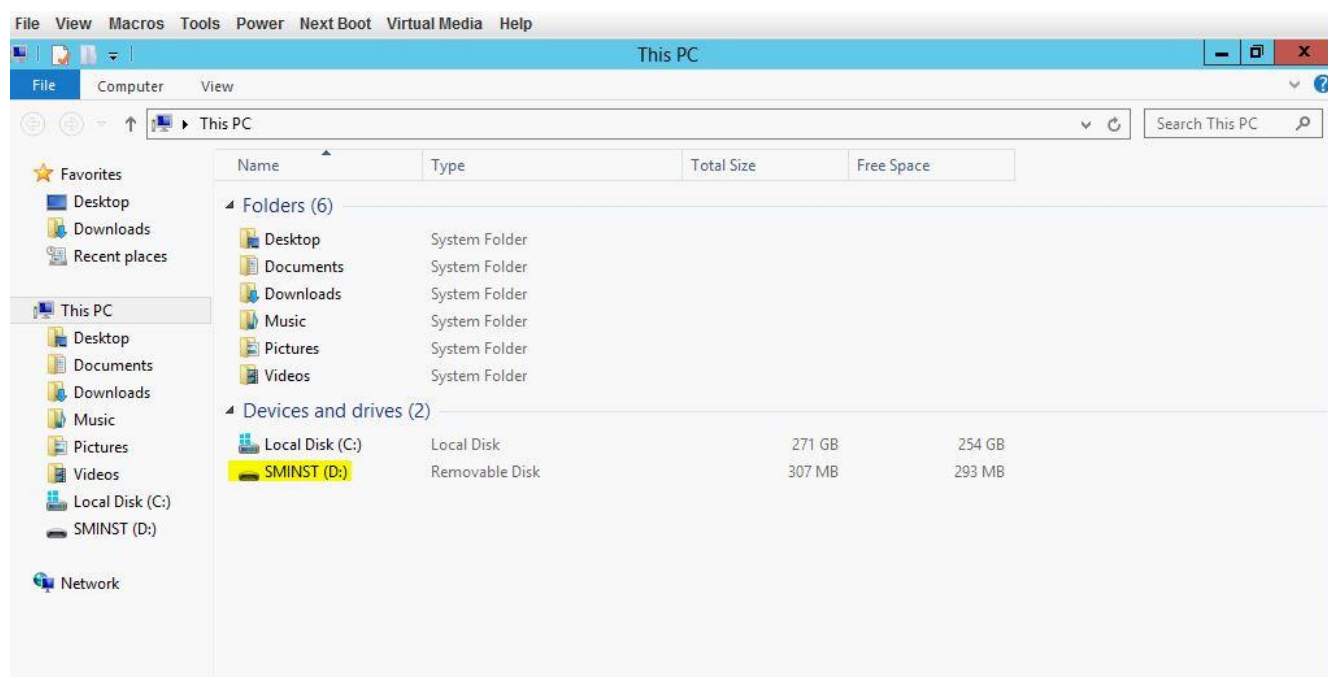


This will use the ISM DUP pre-installed in iDRAC and expose it as a removable drive in Host OS.

5. Click **Launch Virtual Console**.

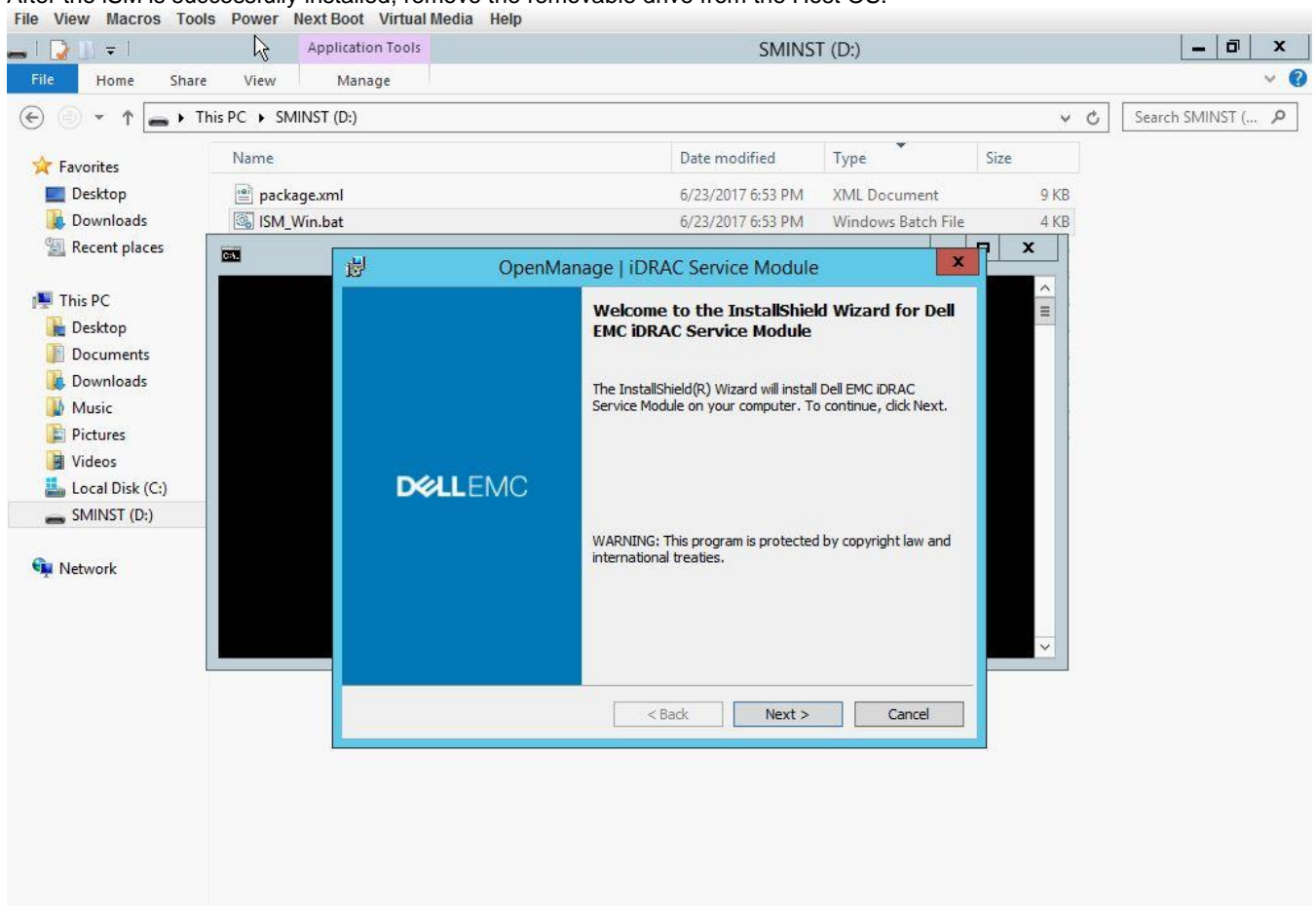


The drive (labeled SMINST) is listed in the Host OS.



6. Select the OS specific installer script and proceed with iSM installation. Refer to the README.TXT present in the drive for more information.

7. After the iSM is successfully installed, remove the removable drive from the Host OS.



Note: The Enterprise license is recommended for easy navigation to the Host OS by using Virtual Console.

WS-Man

For exposing the iDRAC partition containing iSM DUP to Host OS by using WS-Man, run the following method:

DCIM_LCService.ExposeiSMInstallerToHostOS()

This method will use the iSM Update Package, pre-installed in iDRAC, and exposes it as a removable drive in the Host OS.

Input WS-Man SOAP packet:

```
<?xml version="1.0"?>
<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
xmlns:wsman="http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd"
xmlns:n1="http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/root/dcim/DCIM_LCService">
  <s:Header>
    <wsa:Action s:mustUnderstand="true">http://schemas.dmtf.org/wbem/wscim/1/cim-
schema/2/root/dcim/DCIM_LCService/ExposeiSMInstallerToHostOS</wsa:Action>
    <wsa:To s:mustUnderstand="true">https://100.101.21.62:443/wsman</wsa:To>
    <wsman:ResourceURI s:mustUnderstand="true">http://schemas.dmtf.org/wbem/wscim/1/cim-
schema/2/root/dcim/DCIM_LCService</wsman:ResourceURI>
    <wsa:MessageID s:mustUnderstand="true">uuid:a9f51b58-4fdc-1fdc-8002-
6cbb576a0064</wsa:MessageID>
    <wsa:ReplyTo>

```

Output WS-Man SOAP packet

```
<?xml version="1.0" encoding="UTF-8"?>
<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
xmlns:n1="http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/root/dcim/DCIM_LCService"
xmlns:wsman="http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd">
  <s:Header>
    <wsa:To>http://schemas.xmlsoap.org/ws/2004/08/addressing/role/anonymous</wsa:To>
    <wsa:Action>http://schemas.dmtf.org/wbem/wscim/1/cim-
schema/2/root/dcim/DCIM_LCService/ExposeiSMInstallerToHostOSResponse</wsa:Action>
    <wsa:RelatesTo>uuid:a9f51b58-4fdc-1fdc-8002-6cbb576a0064</wsa:RelatesTo>
    <wsa:MessageID>uuid:7449aa50-f673-1673-81ac-2403d5eb7b84</wsa:MessageID>
  </s:Header>
  <s:Body>
    <n1:ExposeiSMInstallerToHostOS_OUTPUT>
      <n1:Job>
        <wsa:EndpointReference>

```

```
<wsa:Address>http://schemas.xmlsoap.org/ws/2004/08/addressing/role/anonymous</wsa:Address>
```

Dell - Internal Use - Confidential

```

        <wsa:ReferenceParameters>
            <wsman:ResourceURI>http://schemas.dell.com/wbem/wscim/1/cim-
schema/2/DCIM_LifecycleJob</wsman:ResourceURI>
            <wsman:SelectorSet>
                <wsman:Selector Name="InstanceID">JID_783506161638</wsman:Selector>
                <wsman:Selector Name="__cimnamespace">root/dcim</wsman:Selector>
            </wsman:SelectorSet>
        </wsa:ReferenceParameters>
    </wsa:EndpointReference>
</n1:Job>
    <n1:ReturnValue>4096</n1:ReturnValue>
</n1:ExposeiSMInstallerToHostOS_OUTPUT>
</s:Body>
</s:Envelope>

```

After you successfully run the above command, the drive (labeled SMINST) will be visible in the Host OS.

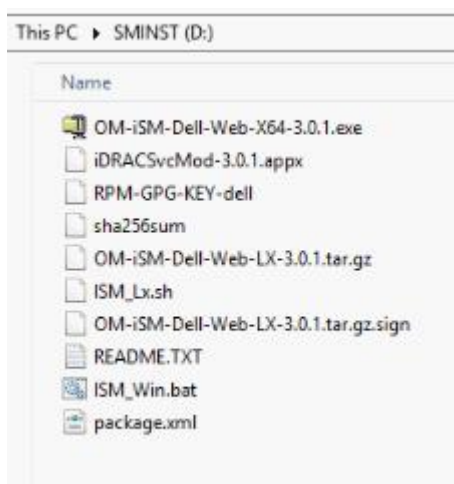


Figure 1. SMINST drive in the Host OS

Manually select the OS-specific installer script and proceed with iSM installation. For more information, see the README.TXT file present in the drive. After the iSM successfully installed, remove the removable drive from the Host OS.

Job Status

To check the status of a job, use the following command:

```

<?xml version="1.0"?>
<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
xmlns:wsman="http://schemas.dmtf.org/wbem/wsman/1/wsman.xsd">
    <s:Header>
        <wsa:Action
s:mustUnderstand="true">http://schemas.xmlsoap.org/ws/2004/09/transfer/Get</wsa:Action>
        <wsa:To s:mustUnderstand="true">https://100.101.21.62:443/wsman</wsa:To>
        <wsman:ResourceURI s:mustUnderstand="true">http://schemas.dmtf.org/wbem/wscim/1/cim-
schema/2/root/dcim/DCIM_LifeCycleJob</wsman:ResourceURI>
        <wsa:MessageID s:mustUnderstand="true">uuid:b1cbf192-4fdc-1fdc-8002-
6cbb576a0064</wsa:MessageID>
        <wsa:ReplyTo>
<wsa:Address>http://schemas.xmlsoap.org/ws/2004/08/addressing/role/anonymous</wsa:Address>
        </wsa:ReplyTo>
        <wsman:SelectorSet>

```

```
<wsman:Selector Name="InstanceID">JID_783506161638</wsman:Selector>
</wsman:SelectorSet>
</s:Header>
<s:Body/>
</s:Envelope>
```

Output

```
<?xml version="1.0" encoding="UTF-8"?>
<s:Envelope xmlns:s="http://www.w3.org/2003/05/soap-envelope"
xmlns:wsa="http://schemas.xmlsoap.org/ws/2004/08/addressing"
xmlns:n1="http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/root/dcim/DCIM_LifeCycleJob"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
  <s:Header>
    <wsa:To>http://schemas.xmlsoap.org/ws/2004/08/addressing/role/anonymous</wsa:To>
    <wsa:Action>http://schemas.xmlsoap.org/ws/2004/09/transfer/GetResponse</wsa:Action>
    <wsa:RelatesTo>uuid:b1cbf192-4fdc-1fdc-8002-6cbb576a0064</wsa:RelatesTo>
    <wsa:MessageID>uuid:7c19f0a0-f673-1673-81b5-2403d5eb7b84</wsa:MessageID>
  </s:Header>
  <s:Body>
    <n1:DCIM_LifeCycleJob>
      <n1:ElapsedTimeSinceCompletion>4<n1: ElapsedTimeSinceCompletion>
      <n1:InstanceID>JID_783506161638</n1:InstanceID>
      <n1:JobStartTime>NA</n1:JobStartTime>
      <n1:JobStatus>Completed</n1:JobStatus>
      <n1:JobUntilTime>NA</n1:JobUntilTime>
      <n1:Message>The SupportAssist Expose Partition for Service Module Operation is completed
successfully</n1:Message>
      <n1:MessageArguments>NA</n1:MessageArguments>
      <n1:MessageID>SRV076</n1:MessageID>
      <n1:Name>Expose Partition for Service Module Installation</n1:Name>
      <n1:PercentComplete>100</n1:PercentComplete>
    </n1:DCIM_LifeCycleJob>
  </s:Body>
</s:Envelope>
```

RACADM

For exposing iDRAC partition containing iSM DUP to the Host OS by using RACADM, run the following command:

```
racadm supportassist exposeisminstallertohostos
```

This command uses the iSM DUP pre-installed in iDRAC and exposes it as a removable drive in the Host OS.

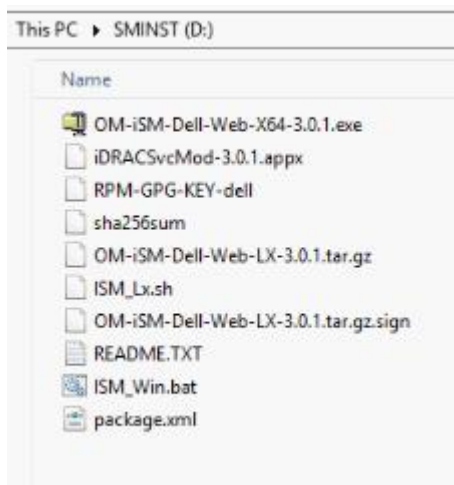
Output

Job ID JID_947367468241

RAC1154: The requested operation is initiated.

Run the RACADM jobqueue sub-command, using the job id to check the status of the requested operation.

The drive (labeled SMINST) will be visible in Host OS, after the above command is successfully run.



Manually select the OS-specific installer script and proceed with the iSM installation. For more information, see the README.TXT present in the drive for more information.

After iSM installation is successfully completed, the removable drive must be removed from the Host OS.

Job status

To check the status of a job, run the following command

```
racadm jobqueue view -i JID_947367468241
```

[Job ID=JID_947367468241]

Job Name=Expose Partition for Service Module Installation

Status=Completed

Start Time=[Not Applicable]

Expiration Time=[Not Applicable]

Message=[SRV088: The SupportAssist Expose Partition for Service Module Installation Operation is completed successfully.]

Percent Complete=[100]

INTELLIGENT PLATFORM MANAGEMENT INTERFACE-IPMI (HOST OS)

You can install the iSM by using the iDRAC from Host OS by using the following IPMI commands:

The default version of iSM required for 14G servers can be installed by requesting iDRAC to share the factory-installed version available in iDRAC.

Expose a Removable Drive containing ISM installer in Host OS

1. Run the following IPMI command to expose a Removable Drive on the Host OS server. After the IPMI command is successfully processed, the removable drive containing the iSM installer is presented to the Host OS. The Host user must select the respective installer for the Host OS and complete the iSM installation.

```
C:\tools\IPMITool>ipmitool -I wmi raw 0x30 0xa8 0x03 0x00 0x00
Data length = 3
02 00 00
```

The status of the IPMI command is pending (0x02), which indicates that the “expose removable drive” operation is on-going and the user must check the status of the operation by using the [Get Command Status](#).

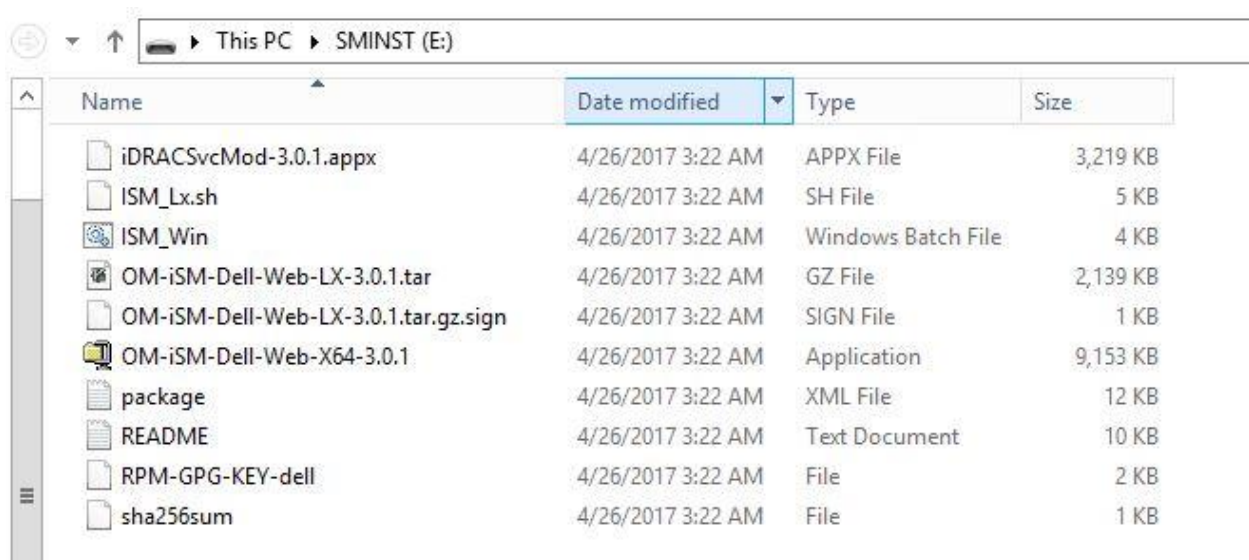


Figure 2. Removable drive on the host OS

2. Manually trigger the iSM installer for the installed OS.

Close the Removable Drive

3. After successfully installing the iSM by using the removable drive, the drive must be manually ejected or closed. Run the following IPMI Command to close the Removable Drive on Host OS.

```
C:\tools\IPMITool>ipmitool -I wmi raw 0x30 0xa8 0x04 0x00 0x00
Data length = 3
02 00 00
```

The response IPMI command indicates the current status of the operation (Pending – 0x02). The completion status of the operation can be verified using the [Get Command Status](#).

Get Command Status

4. The IPMI command for exposing or closing the ISM Installer returns Pending (0x02) or a failure reason, if pre-conditions fail. Verify the completion of the command by using the following status command. The output returned is the status of last triggered iSM install IPMI command. Some of the key return values of the Status command are:

- 0x00 – Success
- 0x01 – Failure
- 0x02 – Pending

```
C:\tools\IPMITool>ipmitool -I wmi raw 0x30 0xa8 0x05 0x00 0x00
Data length = 3
00 00 00
```

After the Hide/Expose Removable Drive Partition commands are run, the above status command returns a SUCCESS code (0x00 – offset 4).

References

1. iDRAC GUI User's Guide: <http://dell.com/idracmanuals>
2. RACADM User's Guide: <http://dell.com/idracmanuals>
3. How to build and execute WS-Man: <http://en.community.dell.com/techcenter/systems-management/w/wiki/4374.how-to-build-and-execute-wsman-method-commands>