
Retrieving Server OS Networking Information through iDRAC with Lifecycle Controller

This Dell Technical White Paper provides detailed information on how to acquire information about the host networking ports with RACADM, WS-Man and GUI

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Executive Summary

Many customers are familiar with the Dell OpenManage Server Administrator (OMSA) as an agent that ran in the operating system to provide features such as hardware configuration, hardware firmware updates, and hardware monitoring. As the features of the integrated Dell Remote Access Controller (iDRAC) with Lifecycle Controller matured, they took over these functions, and no longer need to have an agent in the operating system. Some IT admins do want to have some OS awareness in the iDRAC, but don't want to install a full OMSA agent. Recently, Dell introduced the iDRAC Service Module (iSM) to provide key OS information, such as OS host name and OS IP address, and provide a means to connect the iDRAC with the host OS.

This Dell Technical White Paper provides detailed information on how to acquire server's networking information such as IP address, gateway information through iDRAC .

1. Introduction

As iDRAC feature set continues to improve since the 11th generation PowerEdge servers, the need to use the OpenManage Server Administrator (OMSA) agent is no longer of need to perform key functions such as deploy, update, and monitor a server. However, there are times when an IT admin would prefer to have key OS information available out of band – items such as the OS host name, or OS IP address. The legacy OMSA agent uses ~250MB of memory, while the smaller footprint iDRAC Service Module (iSM) uses ~3-5MB.

Information about host networking ports is available with iSM and this white paper describes the different methods available to retrieve the host OS network interfaces information.

On the Systems running the Microsoft Windows operating system, the “Network and Sharing center” in the Windows Control Panel displays all the logical interfaces. Each of these network interfaces in turn shows the set of IPv4 and IPv6 addresses along with other information like Gateway, DNS Server, Physical address, DHCP Enabled and so on. On Systems running the Linux operating system, “ifconfig” provides the same information. Now with the feature sharing of OS network interfaces, information will be exposed through iDRAC via different interfaces like WSMAN, RACADM, and GUI.

A technical whitepaper about the iSM can be found on the [iDRAC white paper page](#).

2. Sharing OS Network Interfaces

The sharing of OS Network Interfaces can be achieved by installing a lighter agent named as iDRAC Service Module on the host OS. iDRAC Service Module provides information to iDRAC about all the network interfaces available on the host OS. Each of these interfaces are supplemented with the (potentially multiple) OS Network Interfaces address information including the IPv4 and IPv6 addresses, the MAC address, Subnet Mask/Prefix Length, and the FQDD of the Network Device. Changes to IP addresses is polled and updated in iDRAC.

The communication is achieved using secure TCP/IP over the OS-to-iDRAC Pass-through USB Ethernet interface to iDRAC.

Installation details for iDRAC Service Module are mentioned in section 2.2

2.1 About OS-BMC PT

OS-BMC PT provides a bi-directional, high speed, internal management and control plane, for exchange of systems management data between the host OS and iDRAC without having to rely on external software, hardware or other resources.

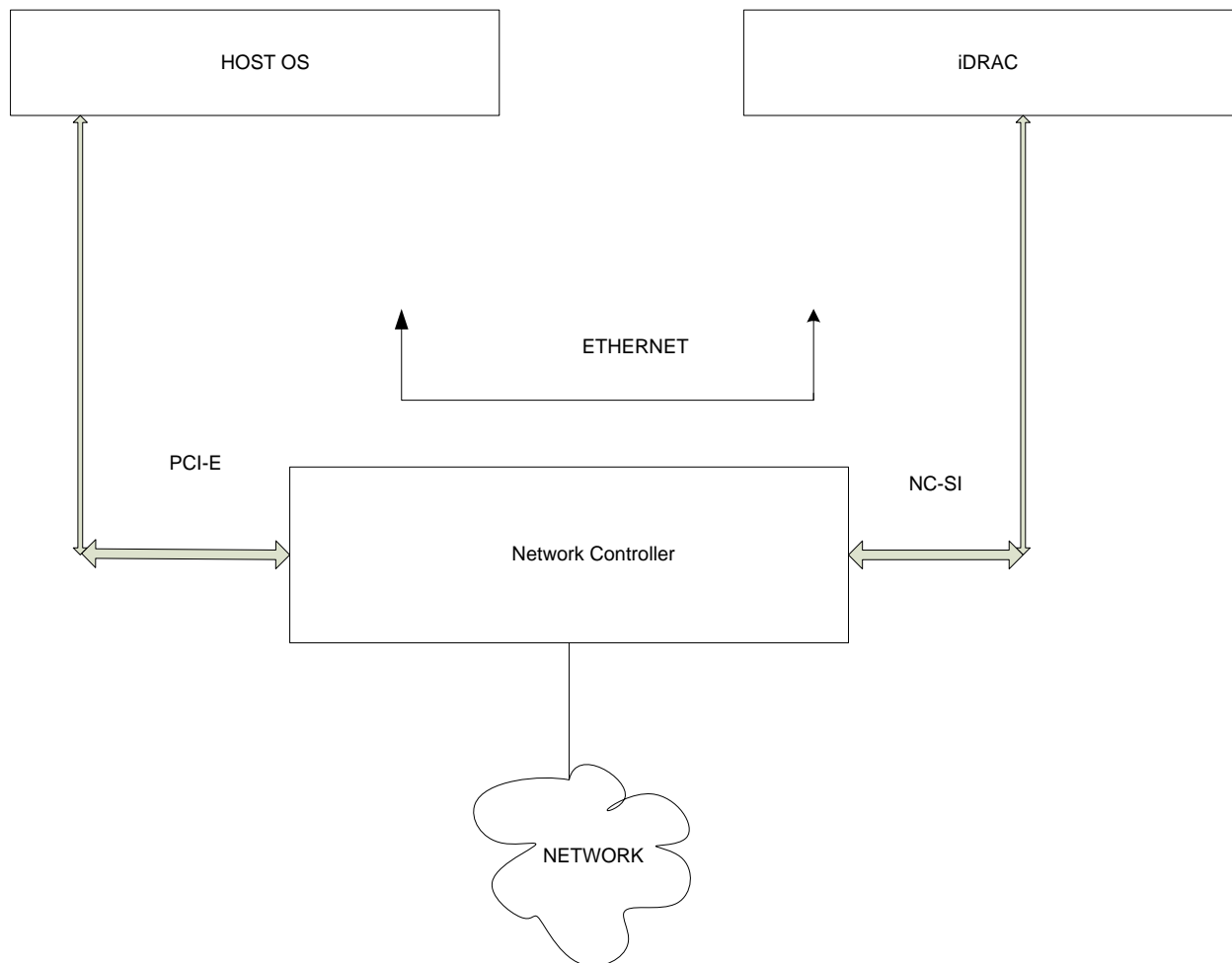


Figure 2.1: OS-BMC PT System Architecture in lom-p2p mode

Payload is Ethernet for both PCIe and NC-SI. The other possible values for PTMode are "usb-p2p", "usb_open", "usb_closed".

The other value for OS-BMC PT is usb-p2p. The OS to BMC communication uses the existing USB interface to send the Ethernet packets over USB. Once this network interface is created, it can be assigned an IP address and otherwise treated as though it were ordinary Ethernet hardware. This USB device can "see" a network, ping other IP addresses, and even "talk" DHCP, HTTP, NFS, telnet, and email.

2.2 Prerequisites

iDRAC Service Module

The integrated Dell Remote Access Controller (iDRAC) Service Module is a lightweight optional software application that can be installed on Dell PowerEdge 12th generation and later servers. The iDRAC Service Module complements iDRAC interfaces – Graphical User Interface (GUI), RACADM CLI and Web Services- Management (WS-Man) with additional monitoring data. You can configure the features on the supported operating system depending on the features to be installed and the unique integration requirements in a work environment.

The iDRAC Service Module architecture uses IP socket communication and provides additional Server Management data to iDRAC.

Installation

Ensure that iDRAC Service Module is installed.

For information on how to install iDRAC Service Module, see the Dell iDRAC Service Module Version 1.0 Installation Guide at dell.com/support/manuals

3. Operating System IP Using WS-Man

Windows Remote Management (WinRM) is a Microsoft implementation of WS-Man protocol. WinRM uses the Simple Object Access Protocol (SOAP) which provides interoperability between operating systems and hardware from different vendors in a large enterprise environment. WS-MAN enables you to access information about the server and change it remotely and securely. Client systems can communicate with the iDRAC on the PowerEdge server to obtain this data. WinRM is the Microsoft implementation of WS-Management Protocol, a standard Simple Object Access Protocol (SOAP)-based, firewall-friendly protocol that allows hardware and operating systems, from different vendors, to interoperate.

To share IP of the OS using WS-Man, ensure that the iDRAC Service Module is enabled and running ,

WinRM supports the following operations :

- Enum
- Get
- Invoke
- Set.

After the iDRAC service module is installed on the host(Section 2.2), we need to ensure that iDRAC Service Module is Enabled and is running.

The following example describes the get operation on the ServiceModuleEnable attribute This attribute indicates the status(enabled or disabled) of Service Module on host.

```
WinRM g http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/DCIM\_iDRACCardEnumeration?\_\_cimnamespace=root/dcim+InstanceID=iDRAC.Embedded.1#ServiceModule.1#ServiceModuleEnable -u:root - p:calvin -r:https://[[idracip]]/wsman -SkipCNcheck -SkipCAcheck -encoding:utf-8 -a:basic
```

```
DCIM_iDRACCardEnumeration
AttributeDisplayName = ServiceModule Enable
AttributeName = ServiceModuleEnable
CurrentValue = Enabled
DefaultValue = Enabled
Dependency = null
DisplayOrder = 2159
FQDD = iDRAC.Embedded.1
GroupDisplayName = ServiceModule
GroupID = ServiceModule.1
InstanceID = iDRAC.Embedded.1#ServiceModule.1#ServiceModuleEnable
IsReadOnly = false
PendingValue = null
PossibleValues = Disabled, Enabled
```

The current value is Enabled.

The following example describes the get operation on the ServiceModuleState attribute to indicate if iDRAC ServiceModule running or not on host ..

```
WinRM g http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/DCIM\_iDRACCardEnumeration?\_\_cimnamespace=root/dcim+InstanceID=iDRAC.Embedded.1#ServiceModule.1#ServiceModuleState -u:root -p:calvin -r:https://10.94.195.42/wsman -SkipCNcheck -SkipCAcheck -encoding:utf-8 -a:basic
```

```
DCIM_iDRACCardEnumeration
AttributeDisplayName = ServiceModule service state on host
AttributeName = ServiceModuleState
CurrentValue = Not Running
```

```
DefaultValue = Not Running
Dependency = null
DisplayOrder = 2160
FQDD = iDRAC.Embedded.1
GroupDisplayName = ServiceModule
GroupID = ServiceModule.1
InstanceID = iDRAC.Embedded.1#ServiceModule.1#ServiceModuleState
IsReadOnly = true
PendingValue = null
PossibleValues = Not Running, Running
```

In this case, iDRAC Service Module is enabled but not running.

To change the state of the iDRAC Service Module to Running, follow the below given steps.

1. On host server, click on **Server Manager**
2. After Server Manager Dashboard appears, click on **Tools** and then select services

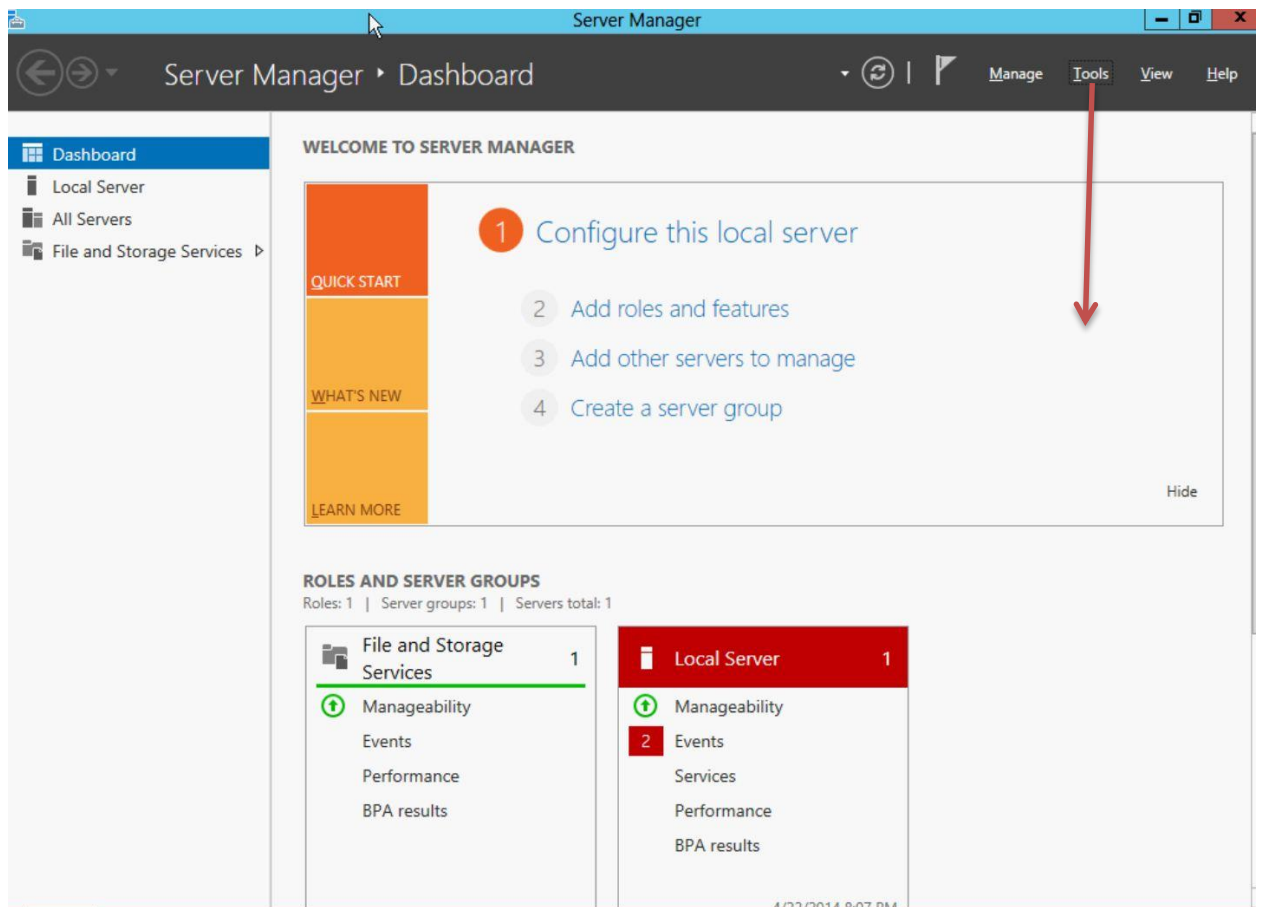


Figure 3.1: Server Manager in Windows operating server

3. Click Start to start the service. The status of DSM iDRAC Service Module displays as Running.

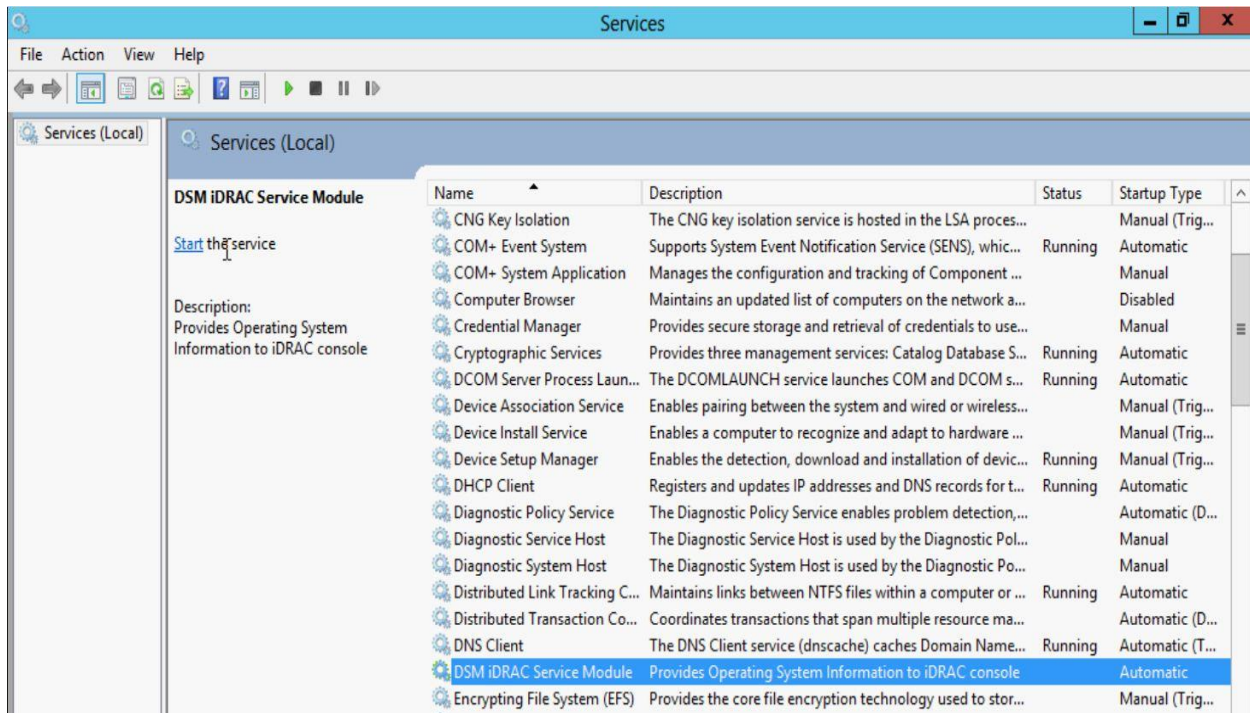


Figure 3.2: DSM: iDRAC Service Module status

As mentioned in Section 2.1, OS to iDRAC communication can happen in 2 modes named as usb-p2p and lom-p2p. The communication between iDRAC Service Module and iDRAC uses secure TCP/IP, and it happens over the OS-to-iDRAC Pass-through USB Ethernet interface, hence the PTMode needs to be usb-p2p. For iDRAC Service Module to communicate with iDRAC, ensure that AdminState attribute is enabled (Command 3.1) and the PT-Mode is set to usb-p2p (Command 3.2)

Let us check the value of AdminState using the following command:

```
winrm g http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/DCIM\_iDRACCardEnumeration?\_\_cimnamespace=root/dcim+InstanceID=iDRAC.Embedded.1#OS-BMC.1#AdminState -u:root -p:calvin -r:https://10.94.195.42/wsman -SkipCNcheck -SkipCAcheck -encoding:utf-8 -a:basic
```

```
DCIM_iDRACCardEnumeration
AttributeDisplayName = LC and Host Private Channel State
AttributeName = AdminState
CurrentValue = Disabled
DefaultValue = Disabled
Dependency = null
DisplayOrder = 1241
FQDD = iDRAC.Embedded.1
GroupDisplayName = OS-BMC Passthru Configuration
GroupID = OS-BMC.1
InstanceID = iDRAC.Embedded.1#OS-BMC.1#AdminState
IsReadOnly = false
```

```
PendingValue = null
PossibleValues = Disabled, Enabled
```

The currentValue is Disabled.

Use the following command to set the **AdminState** attribute to **Enabled**

Command 3.1:

```
winrm i ApplyAttributes http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/root/dcim/DCIM\_iDRACCardService?CreationClassName=DCIM\_iDRACCardService+Name=DCIM\_iDRACCardService+SystemCreationClassName=DCIM\_ComputerSystem+SystemName=DCIM:ComputerSystem -u:root -p:calvin -r:https://10.94.195.42/wsman -SkipCNcheck -SkipCAcheck -encoding:utf-8 -a:basic @
{Target="iDRAC.Embedded.1";AttributeName="OS-BMC.1#AdminState";AttributeValue="Enabled"}

ApplyAttributes_OUTPUT
Job
EndpointReference
  Address = http://schemas.xmlsoap.org/ws/2004/08/addressing/role/anonymous
ReferenceParameters
  ResourceURI = http://schemas.dell.com/wbem/wscim/1/cim-schema/2/DCIM_LifecycleJob
SelectorSet
  Selector: InstanceID = JID_995749065088, __cimnamespace = root/dcim
ReturnValue = 4096
```

Similarly you can check the value of PTMode and set it to usb-p2p as follows:

Command 3.2:

```
WinRM i ApplyAttributes http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/root/dcim/DCIM\_iDRACCardService?CreationClassName=DCIM\_iDRACCardService+Name=DCIM\_iDRACCardService+SystemCreationClassName=DCIM\_ComputerSystem+SystemName=DCIM:ComputerSystem -u:root -p:calvin -r:https://10.94.195.42/wsman -SkipCNcheck -SkipCAcheck -encoding:utf-8 -a:basic @
{Target="iDRAC.Embedded.1";AttributeName="OS-BMC.1#PTMode";AttributeValue="usb-p2p"}
```

Use the following command to view the **CurrentValue** of the **PTMode**

```
WinRM g http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/DCIM\_iDRACCardEnumeration?\_\_cimnamespace=root/dcim+InstanceID=iDRAC.Embedded.1#OS-BMC.1#PTMode -u:root -p:calvin -r:https://10.94.195.42/wsman -SkipCNcheck -SkipCAcheck -encoding:utf-8 -a:basic
```

```
DCIM_iDRACCardEnumeration
AttributeDisplayName = OS-BMC PT Mode
AttributeName = PTMode
CurrentValue = usb-p2p
DefaultValue = usb-p2p
Dependency = null
DisplayOrder = 1244
FQDD = iDRAC.Embedded.1
GroupDisplayName = OS-BMC Passthru Configuration
GroupID = OS-BMC.1
InstanceID = iDRAC.Embedded.1#OS-BMC.1#PTMode
```

```
IsReadOnly = false
PendingValue = null
PossibleValues = lom-p2p, usb-p2p
```

If there are two virtual (logical) network interfaces visible, the keys for these interfaces are displayed as:

"iDRAC.Embedded.1#ServiceModule.1#OSLogicalNetwork.1" and

"iDRAC.Embedded.1#ServiceModule.1#OSLogicalNetwork.2"

We can use the enum operation on the `DCIM_HostNetworkInterfaceView` class or the get operation on a particular InstanceID to retrieve information about the host network interfaces.

Note: This Class is a part of `Dell_SystemInfoProfile`.

3.1 Retrieving all the host network ports

```
WinRM e "http://schemas.dmtf.org/wbem/wscim/1/cim-
schema/2/DCIM_HostNetworkInterfaceView?__cimnamespace=root/dcim" -u:root -p:calvin -
r:https://[[idracip]]/wsman -encoding:utf-8 -a:basic -SkipCNcheck -SkipCAcheck
```

```
DCIM_HostNetworkInterfaceView
DHCPEnabled = true
DeviceDescription = Intel GbE 4P I350c rNDC #4
DeviceFQDD = NIC.Integrated.1-2-1
IPv4Address = 169.254.46.56
IPv4DHCPSTerver = null
IPv4DNSServer = 10.94.192.25
IPv4SubnetMask = 255.255.0.0
IPv6AddrScope = 63
IPv6Address = fe80::8c66:b074:f54c:2e38%63
IPv6DHCPSTerver = null
IPv6PrefixLength = 64
InstanceID = iDRAC.Embedded.1#ServiceModule.1#OSLogicalNetwork.1
MACAddr = BC-30-5B-EE-FB-4D
Name = Ethernet 33
Status = 1
Type = 1
```

```
DCIM_HostNetworkInterfaceView

DHCPEnabled = true
DeviceDescription = iDRAC Virtual NIC USB Device
DeviceFQDD = null
IPv4Address = 169.254.0.2
IPv4DHCPSTerver = 169.254.0.1
IPv4Gateway = 10.94.195.1
IPv4SubnetMask = 255.255.255.0
IPv6AddrScope = 43
IPv6Address = fe80::151e:f9a7:ccb3:c5cc%43
IPv6DHCPSTerver = null
IPv6DNSServer = fec0:0:0:ffff::1%1, fec0:0:0:ffff::2%1, fec0:0:0:ffff::3%1
IPv6PrefixLength = 64
InstanceID = iDRAC.Embedded.1#ServiceModule.1#OSLogicalNetwork.7
MACAddr = 0E-87-49-E1-C5-0B
```

```
Name = Ethernet 15
Status = 1
Type = 1
```

NOTE: The information provided using this functionality is for logical network interfaces on the host OS. Each of these network interfaces has a corresponding physical network interface specified as the DeviceFQDD.

To get further details on the physical NIC, perform WinRm enumeration on DCIM_NICView class to see all the physical network interfaces available

```
winrm e "http://schemas.dmtf.org/wbem/wscim/1/cim-
schema/2/DCIM_NICView?__cimnamespace=root/dcim" -u:root -p:calvin -
r:https://[[idracip]]/wsman -encoding:utf-8 -a:basic -SkipCNcheck -SkipCAcheck
```

3.2 Accessing an interface:

The example below describe the command to be used to access a specific interface such as iDRAC.Embedded.1#ServiceModule.1#OSLogicalNetwork.7

```
WinRM g http://schemas.dell.com/wbem/wscim/1/cim-
schema/2/root/dcim/DCIM_HostNetworkInterfaceView?InstanceID=iDRAC.Embedded.1#ServiceModul
e.1#OSLogicalNetwork.7 -u:root -p:calvin -r:https://[[idracip]]/wsman -SkipCNcheck -
SkipCAcheck -encoding:utf-8 -a:basic
```

```
DCIM_HostNetworkInterfaceView
```

```
DHCPEnabled = true
DeviceDescription = iDRAC Virtual NIC USB Device
DeviceFQDD = null
IPv4Address = 169.254.0.2
IPv4DHCPsServer = 169.254.0.1
IPv4Gateway = 10.94.195.1
IPv4SubnetMask = 255.255.255.0
IPv6AddrScope = 43
IPv6Address = fe80::151e:f9a7:ccb3:c5cc%43
IPv6DHCPsServer = null
IPv6DNSServer = fec0:0:0:ffff::1%1, fec0:0:0:ffff::2%1, fec0:0:0:ffff::3%1
IPv6PrefixLength = 64
InstanceID = iDRAC.Embedded.1#ServiceModule.1#OSLogicalNetwork.7
MACAddr = 0E-87-49-E1-C5-0B
Name = Ethernet 15
Status = 1
Type = 1
```

3.3 Comparison between Windows and iDRAC output

As discussed before, Network and Sharing center in the host window displays the network interfaces, each of which show the IPv4 and IPv6 addresses. iDRAC Service Module enables iDRAC to provide this information through different interfaces such as WSMAn

The following images show the Windows Network and Sharing Center information for an interface and correspondingly the winRM output.

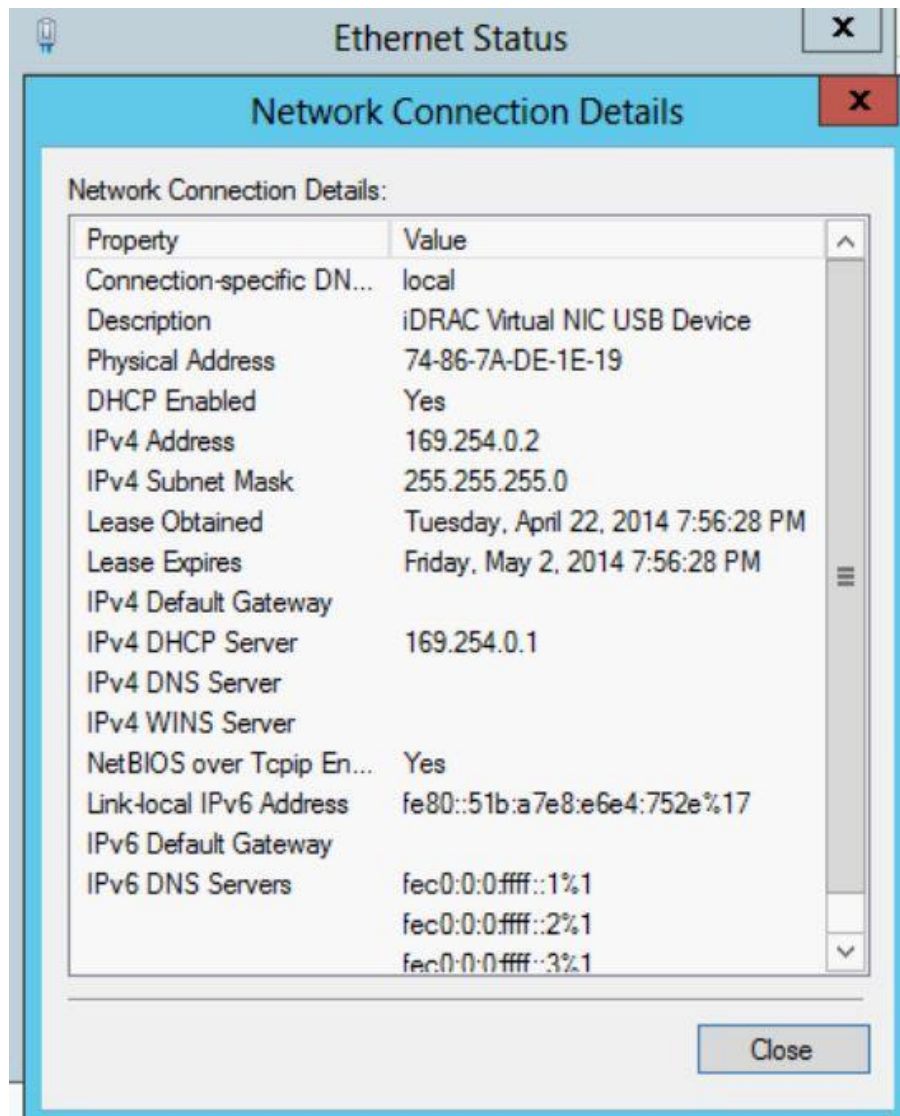


Figure 3.3.1: Shows Windows Network and Sharing Center information for Interface Virtual NIC USB Device

```

C:\Users\Pooja_Sharma3>winrm g http://schemas.dell.com/wbem/wscim/1/cim-schema/2/root/dcim/DCIM_HostNetworkInterfaceView
.1 -u:root -p:calvin -r:https://10.94.195.130/wsman -SkipCNcheck -SkipCAcheck -encoding:utf-8 -a:basic
DCIM_HostNetworkInterfaceView
DHCPEnabled = true
DeviceDescription = iDRAC Virtual NIC USB Device
DeviceFQDD = null
IPv4Address = 169.254.0.2
IPv4DHCPServer = 169.254.0.1
IPv4Gateway = null
IPv4SubnetMask = 255.255.255.0
IPv6AddrScope = 17
IPv6Address = fe80::51b:a7e8:e6e4:752e%17
IPv6DHCPServer = null
IPv6DNSServer = fec0:0:0:ffff::1%1, fec0:0:0:ffff::2%1, fec0:0:0:ffff::3%1
IPv6Gateway = null
IPv6PrefixLength = 64
InstanceID = iDRAC.Embedded.1#ServiceModule.1#OSLogicalNetwork.1
MACAddr = 74-86-7A-DE-1E-19
Name = Ethernet
Status = 0
Type = 1

```

Figure 3.3.2: Shows winRM output for Interface Virtual NIC USB Device

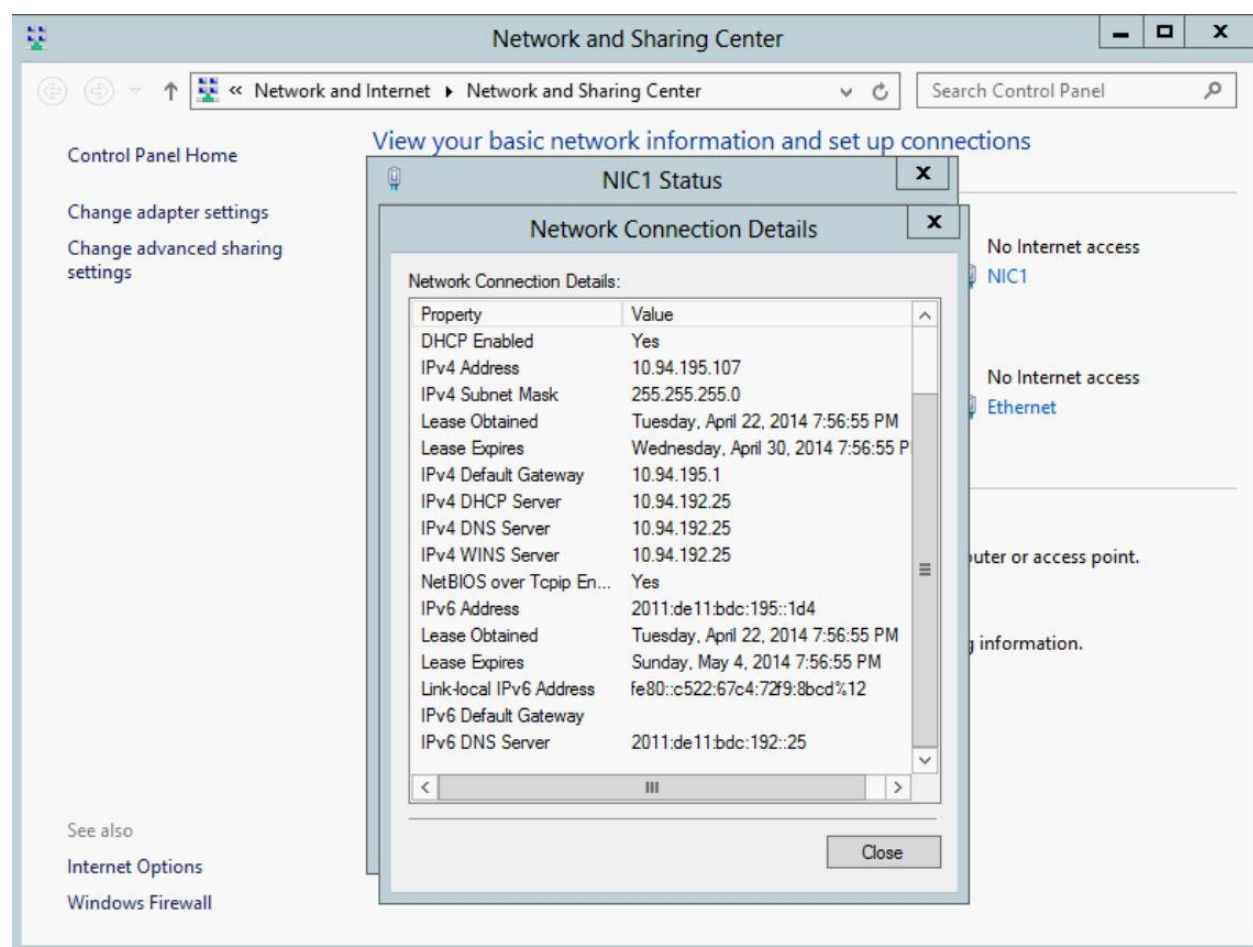


Figure 3.3.3: Shows Windows Network and Sharing Center information for Interface Broadcom NetXtreme Gigabit Ethernet


```

C:\Users\Pooja_Sharma3>winrm g http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/DCIM_iDRACCardEnumeration?__cimnamespac
ot -p:calvin -r:https://10.94.195.130/wsman -SkipCNcheck -SkipCAcheck -encoding:utf-8 -a:basic
C:\Users\Pooja_Sharma3>winrm g http://schemas.dell.com/wbem/wscim/1/cim-schema/2/root/dcim/DCIM_HostNetworkInterfaceView
.5 -u:root -p:calvin -r:https://10.94.195.130/wsman -SkipCNcheck -SkipCAcheck -encoding:utf-8 -a:basic
DCIM_HostNetworkInterfaceView
  DHCPEnabled = true
  DeviceDescription = Broadcom NetXtreme Gigabit Ethernet
  DeviceFQDD = N1C.Integrated.1-1-1
  IPv4Address = 10.94.195.107
  IPv4DHCPServer = 10.94.192.25
  IPv4DNSServer = 10.94.192.25
  IPv4Gateway = 10.94.195.1
  IPv4SubnetMask = 255.255.255.0
  IPv6AddrScope = 0, 12
  IPv6Address = 2011:de11:bdc:195::1d4, fe80::c522:67c4:72f9:8bcd%12
  IPv6DHCPServer = null
  IPv6DNSServer = 2011:de11:bdc:192::25
  IPv6Gateway = fe80::21c:23ff:fe6a:1106%12
  IPv6PrefixLength = 128, 64
  InstanceID = iDRAC.Embedded.1#ServiceModule.1#OSLogicalNetwork.5
  MACAddr = 74-86-7A-D6-DD-E0
  Name = NIC1
  Status = 0
  Type = 1

```

Figure 3.3.4: Shows winRM output for Interface Broadcom NetXtreme Gigabit Ethernet

4. Operating system IP using RACADM

NOTE: Ensure that iDRAC Service Module is enabled and running.

Perform the following steps to check if the iDRAC Service Module is enabled and running.

1. Type the following command to check the status of the iDRAC Service Module:

```

racadm get iDRAC.ServiceModule.ServiceModuleEnable

[Key=iDRAC.Embedded.1#ServiceModule.1]
ServiceModuleEnable=Enabled

```

The current value is "Enabled".

2. Type the following command to check the state of the iDRAC Service Module:

```

racadm get iDRAC.ServiceModule.ServiceModuleState

[Key=iDRAC.Embedded.1#ServiceModule.1]
ServiceModuleState=Not Running

```

NOTE: To set the state as **Running**, navigate to **Services** and click **start**. For further details, refer to Section 3.

NOTE: OS to iDRAC communication can happen in 2 modes named as usb-p2p and lom-p2p.

Communication here is achieved using secure TCP/IP over the OS-to-iDRAC Pass-through USB Ethernet interface to iDRAC and back.

Hence for iDRAC Service Module to communicate with iDRAC we need to ensure that the OS-BMC passthrough is enabled (Command 1) and the PTMode is set to usb-p2p (Command 2).

3. Type the following command to view the state of the **AdminState** attribute:

```
racadm get iDRAC.OS-BMC.AdminState
[Key=iDRAC.Embedded.1#OS-BMC.1]
AdminState=Disabled
```

If the attribute is set to **Disabled**, use the following command to enable the attribute:

```
racadm set iDRAC.OS-BMC.AdminState Enabled
[Key=iDRAC.Embedded.1#OS-BMC.1]
Object value modified successfully
```

4. Type the following command to Get the current value of PTMode:

```
racadm get iDRAC.OS-BMC.PTMode
[Key=iDRAC.Embedded.1#OS-BMC.1]
PTMode=usb-p2p
```

After setting the iDRAC Service Module attribute parameters, use the gethostnetworkinterfaces command to obtain the network interface details.

```
racadm gethostnetworkinterfaces

lo
Description          : lo
Status               : Up
Interface Type       : Loopback
DHCP                 : Disabled
MAC Address          : 00-00-00-00-00-00
IPv4 Address         : 127.0.0.1
Subnet Mask          : 255.0.0.0
IPv6 Address         : ::1
Prefix Length        : 128

em1
Description          : em1
Status               : Up
Interface Type       : Ethernet
DHCP                 : Disabled
MAC Address          : F8-BC-12-32-22-80
FQDD                  : NIC.Integrated.1-1-1

em2
```

```

Description          : em2
Status               : Up
Interface Type       : Ethernet
DHCP                 : Enabled
DHCPServerV4         : 10.94.175.2
MAC Address          : F8-BC-12-32-22-82
FQDD                 : NIC.Integrated.1-2-1
IPv4 Address         : 10.94.170.161
Subnet Mask          : 255.255.255.128
IPv6 Address         : fe80::fab:12ff:fe32:2282
Prefix Length        : 64
IPv4 Gateway Address : 10.94.170.129
IPv4 DNS Server Address : 10.94.175.2

```

```

iDRAC Virtual NIC USB Device
Description          : iDRAC Virtual NIC USB Device
Status               : Up
Interface Type       : Ethernet
DHCP                 : Enabled
DHCPServerV4         : 169.254.0.1
MAC Address          : 52-BD-F2-2E-7B-49
IPv4 Address         : 169.254.0.2
Subnet Mask          : 255.255.0.0

```

To access details about a specific network interface, use the FQDD of the required network interface. The FQDD (if applicable) of the network interface can be obtained using the `gethostnetworkinterfaces` command.

```

racadm gethostnetworkinterfaces NIC.Integrated.1-2-1
em2
Description          : em2
Status               : Up
Interface Type       : Ethernet
DHCP                 : Enabled
DHCPServerV4         : 10.94.175.2
MAC Address          : F8-BC-12-32-22-82
FQDD                 : NIC.Integrated.1-2-1
IPv4 Address         : 10.94.170.161
Subnet Mask          : 255.255.255.128
IPv6 Address         : fe80::fab:12ff:fe32:2282
Prefix Length        : 64
IPv4 Gateway Address : 10.94.170.129
IPv4 DNS Server Address : 10.94.175.2

```

5. Operating system IP using iDRAC GUI

1. Type the user name and password and login to the iDRAC web GUI.
2. On the iDRAC GUI left pane, click **Host OS ->Network Interfaces**.
The network interface details are displayed.

NOTE: Ensure that the iDRAC Service Module is installed and running. An error message is displayed on the **Network Interfaces** page, if the Service Module is not installed.

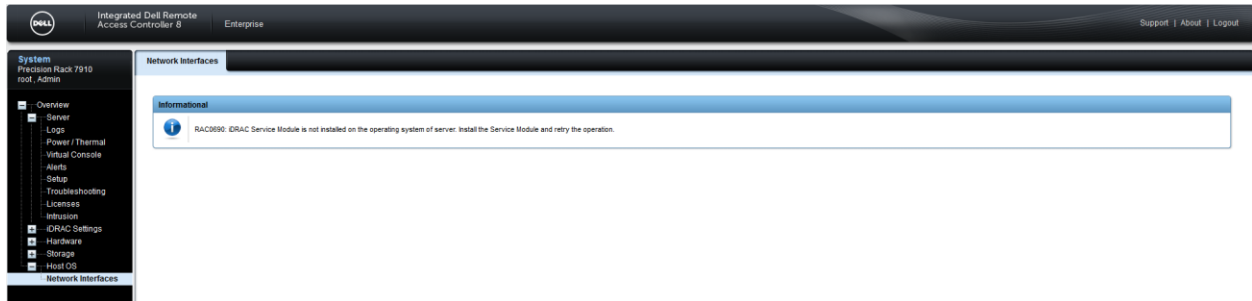


Figure 5.1 iDRAC GUI Network Interfaces page when iDRAC Service Module is not installed on host

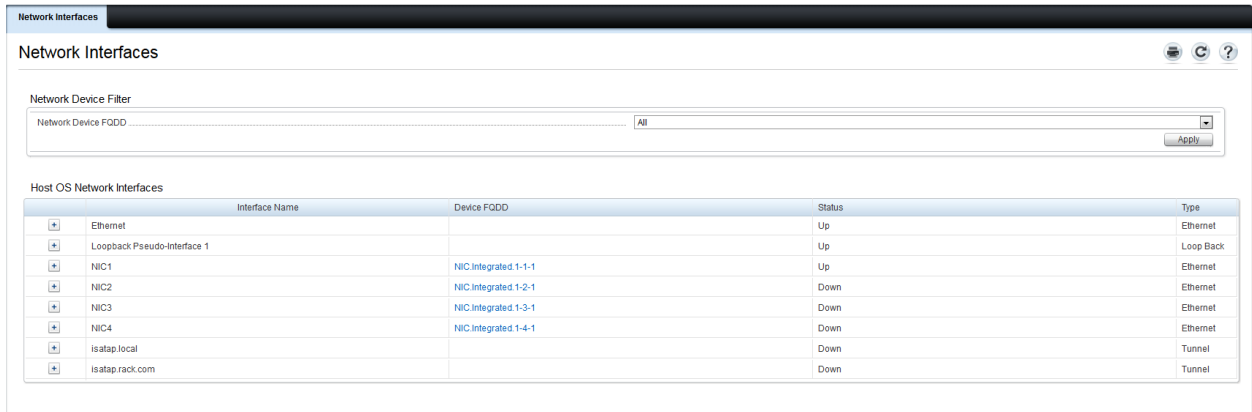


Figure 5.2 iDRAC GUI Network Interfaces page when iDRAC Service Module is installed

To view the complete details of any network interface, click the "+" sign next to the interface name. The details of the network interface such as IPv4 addresses, IPv6 addresses, DHCP server and so on are displayed.

Network Interfaces

Network Device Filter

Network Device FQDD

All

Apply

Host OS Network Interfaces

	Interface Name	Device FQDD	Status	Type
[-]	Ethernet		Up	Ethernet
<div>Ethernet</div> <div> <div>Device FQDD</div> <div>Status</div> <div>Type</div> <div>DHCP Enabled</div> <div>DHCP Server</div> </div> <div> <div>Up</div> <div>Ethernet</div> <div>Yes</div> <div>169.254.0.1</div> </div> <div>IPv4 Settings</div> <div> <div>Default Gateway</div> <div>DNS Server</div> </div> <div> <div>N/A</div> <div>N/A</div> </div> <div>IPv4 Address(es)</div> <div> <div>Address</div> <div>Subnet Mask</div> </div> <div> <div>169.254.0.2</div> <div>255.255.255.0</div> </div> <div>IPv6 Settings</div> <div> <div>Default Gateway</div> <div>DNS Server</div> </div> <div> <div>N/A</div> <div>fe80:0:0:1</div> <div>fe80:0:0:2</div> <div>fe80:0:0:3</div> </div> <div>IPv6 Address(es)</div> <div> <div>Address</div> <div>Prefix Length</div> </div> <div> <div>fe80:51b:a7e8:e6e4:752e</div> <div>64</div> </div>				
[+]	Loopback Pseudo-Interface 1		Up	Loop Back
[+]	NIC1	NIC.Integrated.1-1-1	Up	Ethernet

Figure 5.3: Detailed description about interface

To filter the network interfaces:

1. Select the FQDD name from the **Network Device FQDD** drop-down list under **Network Device Filter**.
2. Click **Apply**.

Network Interfaces

Network Device Filter

Network Device FQDD

NIC.Integrated.1-1-1

Apply

Host OS Network Interfaces

	Interface Name	Device FQDD	Status	Type
[+]	NIC1	NIC.Integrated.1-1-1	Up	Ethernet

Figure 5.4 Filter option in GUI

6. Conclusion

The white paper describes methods to access the operating system IP using different methods such as RACADM, WS-Man, iDRAC GUI using the iDRAC Service Module.

Only dependency is that iDRAC Service Module should be up and running in host.

7. Appendix

List of abbreviations:

Acronym	Definition
iDRAC	Intergerated Dell Remote Access Controller
Usb-p2p	Usb point to point mode
LOM-p2p	LOM point to point mode
OS- BMC PT	OS to BMC communication Pass through
WS-Man	Web services Management