

SNMP Discovery Options and OIDs

This page describes the behavior associated with SNMP discovery options and the data provided from each selection.

SNMP Discovery Options

When creating a collector, a user is given the option to enable SNMP discovery. Below are examples of the options available and detailed behavior. SNMP discovery happens in two steps. In the first, the system tests all qualified addresses with the provided SNMP credentials. Once Lumeta has enumerated the responsive SNMP credentials the system then gathers detailed SNMP data using the first (as determined by the order of the configured SNMP credentials) responsive credential. Lumeta gathers different SNMP OIDs based primarily on the scan configuration. The main configuration options are:

- "Collect interface data"
- "Collect layer2 data"
- "Collect routes"
- "Collect Entity and Host Resource MIB data"

You need to select "Collect interface data" in order to do any other scanning. The OIDs Lumeta gathers are dynamically adjusted based on the data already collected for a given address. Lumeta requests OIDs in the order of the "Order" column shown in the table below. Typically the latest RFCs are requested, then older ones if the latest is not available. Lumeta performs a getBulk for the items listed below unless there's a "singleton" flag (in which case we do a getNext). The "unscheduled" flag means Lumeta doesn't ask for that OID unless we schedule that OID based on the results from previous OIDs. The underlying code schedules and unschedules other OIDs as scanning progresses. For any given device, Lumeta will gather some subset of the OIDs in each table below (only querying OIDs from the tables referenced by the individual SNMP checkboxes).

Collect Interface Data

This option gets us the bulk of the information. It's not just interfaces but also the equivalent of the ARP cache information, serial numbers, and system information.

Name	OID	Order	Flags
cvVrfName	1.3.6.1.4.1.9.9.711.1.1.1.1.2	1	No Flags
cContextMappingVrfName	1.3.6.1.4.1.9.9.468.1.1.1.2	2	No Flags
cContextMappingVacmContextName	1.3.6.1.4.1.9.9.468.1.1.1.1	3	unscheduled
cContextMappingTopologyName	1.3.6.1.4.1.9.9.468.1.1.1.3	4	unscheduled
cContextMappingProtoInstName	1.3.6.1.4.1.9.9.468.1.1.1.4	5	unscheduled
system	1.3.6.1.2.1.1	8	No Flags
entPhysicalSerialNum	1.3.6.1.2.1.47.1.1.1.1.11	9	singleton
jnxBoxSerialNo	1.3.6.1.4.1.2636.3.1.3	10	singleton
prtGeneralSerialNumber	1.3.6.1.2.1.43.5.1.1.17	11	singleton
ifNumber	1.3.6.1.2.1.2.1	12	singleton
ifIndex	1.3.6.1.2.1.2.2.1.1	13	interface
ifDescr	1.3.6.1.2.1.2.2.1.2	14	interface
ifName	1.3.6.1.2.1.31.1.1.1.1	15	interface
ifType	1.3.6.1.2.1.2.2.1.3	16	interface

ifAlias	1.3.6.1.2.1.31.1.1.1.18	17	interface
ifPhysAddress	1.3.6.1.2.1.2.2.1.6	18	interface
ifAdminStatus	1.3.6.1.2.1.2.2.1.7	19	interface
ifOperStatus	1.3.6.1.2.1.2.2.1.8	20	interface
ipForwarding	1.3.6.1.2.1.4.1	21	singleton
ipv6Forwarding	1.3.6.1.2.1.55.1.1	22	singleton
ipv6IpForwarding	1.3.6.1.2.1.4.25	23	No Flags
dot11StationID	1.2.840.10036.1.1.1.1	24	singleton
ipv6Interfaces	1.3.6.1.2.1.55.1.3	25	singleton
ipv6IfDescr	1.3.6.1.2.1.55.1.5.1.2	26	interface
ipv6IfAdminStatus	1.3.6.1.2.1.55.1.5.1.9	27	interface
ipv6IfOperStatus	1.3.6.1.2.1.55.1.5.1.10	28	interface
ipAddressPrefix	1.3.6.1.2.1.4.34.1.5	29	interface
ipAddressIfIndex	1.3.6.1.2.1.4.34.1.3	30	interface
ipAddressType	1.3.6.1.2.1.4.34.1.4	31	interface
ipv6AddrPfxLength	1.3.6.1.2.1.55.1.8.1.2	32	interface
ipAdEntIfIndex	1.3.6.1.2.1.4.20.1.2	33	interface,unscheduled
ciilPIfAddressPrefixLength	1.3.6.1.4.1.9.9.309.1.1.3.1.1	34	interface,unscheduled
ipAdEntNetMask	1.3.6.1.2.1.4.20.1.3	35	unscheduled,interface
ipNetToPhysicalPhysAddress	1.3.6.1.2.1.4.35.1.4	36	host
ipNetToMediaPhysAddress	1.3.6.1.2.1.4.22.1.2	37	unscheduled,host
ipv6NetToMediaPhysAddress	1.3.6.1.2.1.55.1.12.1.2	38	host
bgpLocalAs	1.3.6.1.2.1.15.2	39	singleton

Collect Layer2 Data

This option gathers layer-2 In this table, if we hear from a Cisco device we unschedule all the "noncisco" items.

Name	OID	Order	Flags
lldpRemManAddrIfId	1.0.8802.1.1.2.1.4.2.1.4	7	layer2
vtpVlanName	1.3.6.1.4.1.9.9.46.1.3.1.1.4	65	layer2
vlanTrunkPortDynamicStatus	1.3.6.1.4.1.9.9.46.1.6.1.1.14	66	layer2
vmMembershipSummaryMember2kPorts	1.3.6.1.4.1.9.9.68.1.2.1.1.3	67	layer2
vmPortStatus	1.3.6.1.4.1.9.9.68.1.2.2.1.3	68	layer2
vmVlan	1.3.6.1.4.1.9.9.68.1.2.2.1.2	69	layer2
vmVoiceVlanId	1.3.6.1.4.1.9.9.68.1.5.1.1.1	70	layer2
dot1dBaseBridgeAddress	1.3.6.1.2.1.17.1.1	71	layer2,singleton
dot1dStpDesignatedRoot	1.3.6.1.2.1.17.2.5	72	layer2,singleton
dot1dStpRootPort	1.3.6.1.2.1.17.2.7	73	layer2,singleton
dot1dBasePort	1.3.6.1.2.1.17.1.4.1.1	74	layer2
dot1dBasePortIfIndex	1.3.6.1.2.1.17.1.4.1.2	75	ciscoindexed,layer2
dot1dStpPortDesignatedBridge	1.3.6.1.2.1.17.2.15.1.8	76	ciscoindexed,layer2
dot1dStpPortDesignatedPort	1.3.6.1.2.1.17.2.15.1.9	77	ciscoindexed,layer2
dot1dTpFdbAddress	1.3.6.1.2.1.17.4.3.1.1	78	ciscoindexed,layer2
dot1dTpFdbPort	1.3.6.1.2.1.17.4.3.1.2	79	ciscoindexed,layer2
dot1dTpFdbStatus	1.3.6.1.2.1.17.4.3.1.3	80	ciscoindexed,layer2
dot1qTpFdbPort	1.3.6.1.2.1.17.7.1.2.2.1.2	81	layer2,unscheduled
dot1qTpFdbStatus	1.3.6.1.2.1.17.7.1.2.2.1.3	82	layer2,unscheduled
dot1qVlanStaticName	1.3.6.1.2.1.17.7.1.4.3.1.1	83	layer2
dot1qVlanStaticEgressPorts	1.3.6.1.2.1.17.7.1.4.3.1.2	84	layer2

dot1qPvid	1.3.6.1.2.1.17.7.1.4.5.1.1	85	layer2
cdpCacheAddress	1.3.6.1.4.1.9.9.23.1.2.1.1.4	86	layer2
cdpCacheAddressType	1.3.6.1.4.1.9.9.23.1.2.1.1.3	87	layer2
ctCDPNeighborIP	1.3.6.1.4.1.52.4.1.2.19.1.3.1.3	88	noncisco,layer2
ctCDPNeighborType	1.3.6.1.4.1.52.4.1.2.19.1.3.1.5	89	noncisco,layer2
s5EnMsTopIpAddr	1.3.6.1.4.1.45.1.6.13.1.1	90	noncisco,layer2
s5EnMsTopNmmPort	1.3.6.1.4.1.45.1.6.13.2.1.1.2	91	noncisco,layer2
s5EnMsTopNmmlpAddr	1.3.6.1.4.1.45.1.6.13.2.1.1.3	92	noncisco,layer2
s5EnMsTopBdglpAddr	1.3.6.1.4.1.45.1.6.13.3.1.1.3	93	noncisco,layer2
extremeEdpPortIfIndex	1.3.6.1.4.1.1916.1.13.2.1.1	94	noncisco,layer2
extremeEdpNeighborId	1.3.6.1.4.1.1916.1.13.2.1.2	95	noncisco,layer2
extremeEdpNeighborVlanName	1.3.6.1.4.1.1916.1.13.3.1.1	96	noncisco,layer2
extremeEdpNeighborVlanIpAddress	1.3.6.1.4.1.1916.1.13.3.1.3	97	noncisco,layer2
extremeEdpNeighborVlanId	1.3.6.1.4.1.1916.1.13.3.1.2	98	noncisco,layer2
snFdpCacheAddress	1.3.6.1.4.1.1991.1.1.3.20.1.2.1.1.5	99	noncisco,layer2
jnxExVlanName	1.3.6.1.4.1.2636.3.40.1.5.1.5.1.2	100	noncisco,layer2
jnxExVlanTag	1.3.6.1.4.1.2636.3.40.1.5.1.5.1.5	101	noncisco,layer2,unscheduled
jnxExVlanSnmplfIndex	1.3.6.1.4.1.2636.3.40.1.5.1.6.1.8	105	noncisco,layer2,unscheduled

Collect Routes

If "Skip BGP routes" is checked and if we get a non-zero result for the bgpLocalAs OID we will skip gathering routes. If "Maximum route table size" is configured and if we exceed that number of routes (either by getting a route count line inetCidrRouteNumber or by collecting that many routes), we stop gathering routes (and discard any we may have gathered (so as to not gather inconsistent, partial data).

Name	OID	Order	Flags
inetCidrRouteNumber	1.3.6.1.2.1.4.24.6	40	singleton,routeoid
inetCidrRouteIfIndex	1.3.6.1.2.1.4.24.7.1.7	41	routeoid
inetCidrRouteType	1.3.6.1.2.1.4.24.7.1.8	42	routeoid,unscheduled

inetCidrRouteProto	1.3.6.1.2.1.4.24.7.1.9	43	routeoid,unscheduled
ipCidrRouteNumber	1.3.6.1.2.1.4.24.3	44	singleton,routeoid
ipCidrRouteMask	1.3.6.1.2.1.4.24.4.1.2	45	routeoid
ipCidrRouteNextHop	1.3.6.1.2.1.4.24.4.1.4	46	routeoid,unscheduled
ipCidrRouteInstance	1.3.6.1.2.1.4.24.4.1.1	47	routeoid,unscheduled
ipCidrRouteIfIndex	1.3.6.1.2.1.4.24.4.1.5	48	routeoid,unscheduled
ipCidrRouteType	1.3.6.1.2.1.4.24.4.1.6	49	routeoid,unscheduled
ipCidrRouteProto	1.3.6.1.2.1.4.24.4.1.7	50	routeoid,unscheduled
ipRouteMask	1.3.6.1.2.1.4.21.1.11	51	routeoid
ipRouteNextHop	1.3.6.1.2.1.4.21.1.7	52	routeoid,unscheduled
ipRouteIfIndex	1.3.6.1.2.1.4.21.1.2	53	routeoid,unscheduled
ipRouteType	1.3.6.1.2.1.4.21.1.8	54	routeoid,unscheduled
ipRouteProto	1.3.6.1.2.1.4.21.1.9	55	routeoid,unscheduled
ipv6RouteNumber	1.3.6.1.2.1.55.1.9	56	singleton,routeoid
ipv6RouteIfIndex	1.3.6.1.2.1.55.1.11.1.4	57	routeoid
ipv6RouteNextHop	1.3.6.1.2.1.55.1.11.1.5	58	routeoid,unscheduled
ipv6RouteType	1.3.6.1.2.1.55.1.11.1.6	59	routeoid,unscheduled
ipv6RouteProtocol	1.3.6.1.2.1.55.1.11.1.7	60	routeoid,unscheduled
mplsVpnVrfRouteProto	1.3.6.1.3.118.1.4.1.1.10	61	routeoid
mplsVpnVrfRouteDestAddrType	1.3.6.1.3.118.1.4.1.1.2	62	routeoid,unscheduled
mplsVpnVrfRouteType	1.3.6.1.3.118.1.4.1.1.9	63	routeoid,unscheduled
mplsVpnVrfRouteIfIndex	1.3.6.1.3.118.1.4.1.1.8	64	routeoid,unscheduled

Collect Entity and Host Resource MIB data

If "Collect Entity and Host Resource MIB data" is checked we gather Entity-MIB data and various things about host resources and VMWare server inventory

Name	OID	Order	Flags
entityPhysical	1.3.6.1.2.1.47.1.1	102	entitemib
hrSWInstalledName	1.3.6.1.2.1.25.6.3.1.2	103	entitemib
hrSWInstalledDate	1.3.6.1.2.1.25.6.3.1.5	104	entitemib,unscheduled
vmwVMDisplayName	1.3.6.1.4.1.6876.2.1.1.2	106	entitemib
vmwVMGuestOs	1.3.6.1.4.1.6876.2.1.1.4	107	entitemib,unscheduled
vmwVMMemSize	1.3.6.1.4.1.6876.2.1.1.5	108	entitemib,unscheduled
vmwVMGuestState	1.3.6.1.4.1.6876.2.1.1.8	109	entitemib,unscheduled
vmwVMCpus	1.3.6.1.4.1.6876.2.1.1.9	110	entitemib,unscheduled
vmwVMMAC	1.3.6.1.4.1.6876.2.4.1.7	111	entitemib,unscheduled