ZebOS-XP™ 1.4 MCAST MIBs

For additional information, please contact marketing@ipinfusion.com.

Release Dates

- December 2014 - 1.2
- July 2015 - 1.3
- December 2015 - 1.4

Legend

No - Not Supported. SET/GET handler is not present for the object
LTD - SET/GET handler is present. However cannot SET anything other than default value. Lack of backend feature support
Yes - SET/GET handler is present. 2 or more values can be SET
NA - Not Applicable

OBJECT NO	ENTRY NO	ENTRY NAME	MAX-ACCESS/ TEMPLATE	Support for GET	Support for SET	Comments
MGMD Router interface table - OID 1.3.6.1.2.1.185.1.2						
1.3.6.1.2.1.185.1.2.1.1	1	mgmdRouterInterfaceIfIndex	not-accessible	NA	NA	Holds the interface information.
1.3.6.1.2.1.185.1.2.1.2	2	mgmdRouterInterfaceQuerierType	not-accessible	YES	YES	Holds the Address type of the interface. Currently ZebOS supports only IPv4.
1.3.6.1.2.1.185.1.2.1.3	3	mgmdRouterInterfaceQuerier	read-only	YES	NA	Holds the IGMP querier on the IP subnet on which the interface is attached.
1.3.6.1.2.1.185.1.2.1.4	4	mgmdRouterInterfaceQueryInterva	read-create	YES	YES	Time duration in which the host membership query is transmitted on this interface
1.3.6.1.2.1.185.1.2.1.5	5	mgmdRouterInterfaceStatus	read-create	YES	YES	Set operaton can be done for: 1 (ACTIVE): Changes the IGMP state to ACTIVE mode. 2 (NOT IN SERVICE): Changes the IGMP state to INACTIVE mode. 4 (CREATE AND GO): Configures IGMP on the Interface in the ACTIVE mode. 5 (CREATE AND WAIT): Configures IGMP on the Interface in the INACTIVE mode. 6 (DESTROY): Unset all the IGMP configuration and the removes the IGMP from the interface. Set operation can't be done for NOT READY (3)(According to the RFC).
1.3.6.1.2.1.185.1.2.1.6	6	mgmdRouterInterfaceVersion	read-create	YES	YES	This object holds the version of IGMP i.e. v1, v2 or v3 running on the interface.
1.3.6.1.2.1.185.1.2.1.7	7	mgmdRouterInterfaceQueryMaxRe	read-create	YES	YES	Maximum response time.
1.3.6.1.2.1.185.1.2.1.8	8	mgmdRouterInterfaceQuerierUpTi	read-only	YES	NA	Time since the interface is acting as the querier
1.3.6.1.2.1.185.1.2.1.9	9	mgmdRouterInterfaceQuerierExpir	read-only	YES	NA	Time remaining for the other querier present timer to expire. If the interface is acting as the querier, value is shown as 0.
1.3.6.1.2.1.185.1.2.1.10	10	mgmdRouterInterfaceWrongVersio	read-only	YES	NA	Number of general queries received whose IGMP or MLD version doesn't matches with the equivalent version of IGMP or MLD version configured on the interface
1.3.6.1.2.1.185.1.2.1.11	11	mgmdRouterInterfaceJoins	read-only	YES	NA	The number of times the entry for this interface has been added to the cache table.
1.3.6.1.2.1.185.1.2.1.12	12	mgmdRouterInterfaceProxyIfIndex	read-create	YES	YES	Holds the interface's proxy interface.
1.3.6.1.2.1.185.1.2.1.13	13	mgmdRouterInterfaceGroups	read-only	YES	NA	Number of entries the interface currently has in the cache table
1.3.6.1.2.1.185.1.2.1.14	14	mgmdRouterInterfaceRobustness	read-create	YES	YES	Default value is 2 but can be increased if the subnet is expected to be lossy. Value can be between 2 to 7. If out of bounds the variable is set back to its default value(2)
1.3.6.1.2.1.185.1.2.1.15	15	mgmdRouterInterfaceLastMember	read-create	YES	YES	This object holds the maximum response time for the last member of the group sent in response to a Leave message. Default value is 10 seconds
1.3.6.1.2.1.185.1.2.1.16	16	mgmdRouterInterfaceLastMember	read-only	YES	NA	This object holds the number of times group-specific and group-and-source-specific queries will be sent before the router assumes there are no local members. Value is set to 7 in ZebOS.
1.3.6.1.2.1.185.1.2.1.17	17	mgmdRouterInterfaceStartupQuer	read-only	YES	NA	Represents the number of queries sent out on start up
1.3.6.1.2.1.185.1.2.1.18	18	mgmdRouterInterfaceStartupQuer	read-only	YES	NA	This object holds the time interval between the general queries sent by querier on startup. In ZebOS it is set to 31
MGMD Router Cache table - OID 1.3.6.1.2.1.185.1.4						
1.3.6.1.2.1.185.1.4.1.1	1	mgmdRouterCacheAddressType	not-accessible	NA	NA	The address type of the mgmdRouterCacheTable entry. ZebOS supports only IPv4.
1.3.6.1.2.1.185.1.4.1.2	2	mgmdRouterCacheAddress	not-accessible	NA	NA	The IP multicast group address for which this entry contains information.
1.3.6.1.2.1.185.1.4.1.3	3	mgmdRouterCacheIfIndex	not-accessible	YES	NA	The interface for which this entry contains information for an IP multicast group address.
1.3.6.1.2.1.185.1.4.1.4	4	mgmdRouterCacheLastReporter	read-only	YES	NA	Holds the address of the source of the last membership report received for a particular multicast group address on the interface. No report received then this object is set to 0. Address type is identified by the mgmdRouterCacheAddressType object.
1.3.6.1.2.1.185.1.4.1.5	5	mgmdRouterCacheUpTime	read-only	YES	NA	This object holds the time elapsed since a group was created. It returns the time elapsed per group.
1.3.6.1.2.1.185.1.4.1.6	6	mgmdRouterCacheExpiryTime	read-only	YES	NA	This object holds the time remaining before group membership interval state expires. This one also has the same problem as mgmdRouterCacheUpTime.
1.3.6.1.2.1.185.1.4.1.7	7	mgmdRouterCacheExcludeModeEx	read-only	YES	NA	Applicable only to MGMDv3. This object holds the time remaining before exclude state of Interface expires and the Interface enters into INCLUDE mode.
1.3.6.1.2.1.185.1.4.1.8	8	mgmdRouterCacheVersion1HostTi	read-only	YES	NA	This object holds the time remaining before the router Interface will think that a version 1 Host is present on the interface. This object is applicable only for the version 1 Host and if there is no version 1 host then hearing any IGMP version 1 membership report this value is refreshed to the group membership timer.
1.3.6.1.2.1.185.1.4.1.9	9	mgmdRouterCacheVersion2HostTi	read-only	YES	NA	This object holds the time remaining before the router Interface will think that a version 2 Host is present on the interface. This object is applicable only for the version 2 Host and if there is no version 2 host then hearing any IGMP version 2 membership report this value is refreshed to the group membership timer.
1.3.6.1.2.1.185.1.4.1.10	10	mgmdRouterCacheSourceFilterMo	read-only	YES	NA	This object holds the current cache state of MGMDv3 node, whether it is INCLUDE(1) or EXCLUDE(2). Seems to have issue. ZebOS maintains cache state for IGMPv1 and IGMPv2.

OBJECT NO	ENTRY NO	ENTRY NAME	MAX-ACCESS/ TEMPLATE	Support for GET	Support for SET	Comments
MGMD Inverse Router Cache table - OID 1.3.6.1.2.1.185.1.6						
1.3.6.1.2.1.185.1.6.1.1	1	mgmdInverseRouterCacheIfIndex	not-accessible	NA	NA	This object holds the interface for which this entry contains information for this multicast group
1.3.6.1.2.1.185.1.6.1.2	2	mgmdInverseRouterCacheAddress	not-accessible	NA	NA	Holds the Inet Address type(Ipv4 or Ipv6) in the inverse router cache table.
1.3.6.1.2.1.185.1.6.1.3	3	mgmdInverseRouterCacheAddress	read-only	YES	NA	Address of the multicast group in the inverse cache router table is stored in this varible.
MGMD Router Source List table - OID 1.3.6.1.2.1.185.1.8						
1.3.6.1.2.1.185.1.8.1.1	1	mgmdRouterSrcListAddressType	not-accessible	NA	NA	The address type of the variables in this table.
1.3.6.1.2.1.185.1.8.1.2	2	mgmdRouterSrcListAddress	not-accessible	NA	NA	The IP Multicast group address for which this entry contains information
1.3.6.1.2.1.185.1.8.1.3	3	mgmdRouterSrcListIfIndex	not-accessible	NA	NA	The interface for which this entry contains information for an IP multicast group address.
1.3.6.1.2.1.185.1.8.1.4	4	mgmdRouterSrcListHostAddress	not-accessible	NA	NA	The host address to which this entry corresponds.
1.3.6.1.2.1.185.1.8.1.5	5	mgmdRouterSrcListExpire	read-only	YES	NA	This value indicates the relevance of SrcList entry. A non-zero value indicates this is an INCLUDE state value, and a Zero value indicates this to be an EXCLUDE state value.

OBJECT NO	ENTRY NO	ENTRY NAME	MAX-ACCESS/ TEMPLATE	Support for GET	Support for SET	Comments
1.3.6.1.2.1.157.1.1		pimInterfaceTable				
1.3.6.1.2.1.157.1.1.1	1	pimInterfaceEntry	Not-accessible	NA	NA	An entry (conceptual row) in the pimInterfaceTable.
1.3.6.1.2.1.157.1.1.1.1	1	pimInterfaceIfIndex	Not-accessible	NA	NA	The ifIndex value of this PIM interface.
1.3.6.1.2.1.157.1.1.1.2	2	PimInterfaceIPVersion	Not-accessible	NA	NA	The IP version of this PIM interface.
1.3.6.1.2.1.157.1.1.1.3	3	pimInterfaceAddressType	Read-only	YES	NA	The address type of this PIM interface.
1.3.6.1.2.1.157.1.1.1.4	4	pimInterfaceAddress	Read-only	YES	NA	The primary ip address of the PIM interface.
1.3.6.1.2.1.157.1.1.1.5	5	pimInterfaceGenerationIDValue	Read-only	YES	NA	The value of the Generation ID this router inserted in the last PIM Hello message it sent on this interface.
1.3.6.1.2.1.157.1.1.1.6	6	pimInterfaceDR	Read-only	YES	NA	The primary IP address of the Designated Router on this PIM interface.
.1.3.6.1.2.1.157.1.1.1.7	7	pimInterfaceDRPriority	read-create	YES	YES	The Designated Router Priority value inserted into the DR Priority option in PIM Hello messages transmitted on this Interface.
1.3.6.1.2.1.157.1.1.1.8	8	pimInterfaceDRPriorityEnabled	Read-only	YES	NA	Evaluates to TRUE if all routers on this interface are using the DR Priority option.
1.3.6.1.2.1.157.1.1.1.9	9	pimInterfaceHelloInterval	read-create	YES	YES	The frequency at which PIM Hello messages are transmitted on this interface. This object corresponds to the \Hello_Period\ timer value defined in the PIM-SM Specification.
1.3.6.1.2.1.157.1.1.1.10	10	pimInterfaceTrigHelloInterval	read-create	YES	YES	The maximum time before this router sends a triggered PIM Hello message on this interface.
1.3.6.1.2.1.157.1.1.1.11	11	pimInterfaceHelloHoldtime	read-create	YES	YES	The value set in the Holdtime field of PIM Hello messages transmitted on this interface.
1.3.6.1.2.1.157.1.1.1.12	12	pimInterfaceJoinPruneInterval	read-create	YES	YES	The frequency at which this router sends PIM Join/Prune messages on this PIM interface.
1.3.6.1.2.1.157.1.1.1.13	13	pimInterfaceJoinPruneHoldtime	read-create	YES	YES	The value inserted into the Holdtime field of a PIM Join/Prune message sent on this interface.
1.3.6.1.2.1.157.1.1.1.14	14	pimInterfaceDFElectionRobustness	read-create	NO	NO	The minimum number of PIM DF-Election messages that must be lost in order for DF election on this interface to fail.ZebOS currently doesn't have support for this.
1.3.6.1.2.1.157.1.1.1.15	15	pimInterfaceLanDelayEnabled	Read-only	YES	NA	Evaluates to TRUE if all routers on this interface are using the LAN Prune Delay option.
1.3.6.1.2.1.157.1.1.1.16	16	pimInterfacePropagationDelay	read-create	YES	YES	The expected propagation delay between PIM routers on this Network or link.
1.3.6.1.2.1.157.1.1.1.17	17	pimInterfaceOverrideInterval	read-create	YES	YES	The value this router inserts into the Override_Interval field of the LAN Prune Delay option in the PIM Hello messages it sends on this interface.
1.3.6.1.2.1.157.1.1.1.18	18	pimInterfaceEffectPropagDelay	Read-only	YES	NA	The Effective Propagation Delay on this interface. This object is always 500 if pimInterfaceLanDelayEnabled isFALSE.
1.3.6.1.2.1.157.1.1.1.19	19	pimInterfaceEffectOverrideIvl	Read-only	YES	NA	The Effective Override Interval on this interface. This object is always 2500 if pimInterfaceLanDelayEnabled is FALSE.
1.3.6.1.2.1.157.1.1.1.20	20	pimInterfaceSuppressionEnabled	Read-only	YES	NA	Whether join suppression is enabled on this interface.This object is always TRUE if pimInterfaceLanDelayEnabled is FALSE.
1.3.6.1.2.1.157.1.1.1.21	21	pimInterfaceBidirCapable	Read-only	YES	NA	Evaluates to TRUE if all routers on this interface are using the Bidirectional-PIM Capable option.
1.3.6.1.2.1.157.1.1.1.22	22	pimInterfaceDomainBorder	read-create	YES	YES	Whether or not this interface is a PIM domain border. This includes acting as a border for PIM Bootstrap Router (BSR) messages, if the BSR mechanism is in use.
1.3.6.1.2.1.157.1.1.1.23	23	pimInterfaceStubInterface	read-create	YES	YES	"Whether this interface is a \stub interface\.
1.3.6.1.2.1.157.1.1.1.24	24	pimInterfacePruneLimitInterval	read-create	YES	YES	The minimum interval that must transpire between two successive Prunes sent by a router. This object corresponds to the \t_limit\ timer value defined in the PIM-DM Specification.
1.3.6.1.2.1.157.1.1.1.25	25	pimInterfaceGraftRetryInterval	read-create	YES	YES	The minimum interval that must transpire between twosuccessive Grafts sent by a router. This object corresponds to the \Graft_Retry_Period\ timer value defined in the PIM-DM specification.
1.3.6.1.2.1.157.1.1.1.26	26	pimInterfaceSRPriorityEnabled	Read-only	YES	NA	Evaluates to TRUE if all routers on this interface are using theState Refresh option. This object is used only by PIM-DM.
1.3.6.1.2.1.157.1.1.1.27	27	pimInterfaceStatus	read-create	YES	YES	The status of this entry.This status object can be set toactive(1) without setting any other columnar objects in this entry.
1.3.6.1.2.1.157.1.1.1.28	28	pimInterfaceStorageType	read-create	YES	NO	The storage type for this row. Rows having the value\permanent\ need not allow write-access to any columnarobjects in the row. Snmpset is not supported.
PIM NEIGHBOR TABLE OID 1.3.6.1.2.1.157.1.2						
1.3.6.1.2.1.157.1.2.1	1	pimNeighborEntry	Not-accessible	NA	NA	An entry (conceptual row) in the pimNeighborTable.
1.3.6.1.2.1.157.1.2.1.1	1	PimNeighborIfIndex	Not-accessible	NA	NA	The value of ifIndex for the interface used to reach this PIM neighbor
1.3.6.1.2.1.157.1.2.1.2	2	pimNeighborAddressType	Not-accessible	NA	NA	The address type of this PIM neighbor
1.3.6.1.2.1.157.1.2.1.3	3	pimNeighborAddress	Not-accessible	NA	NA	The primary IP address of this PIM neighbor. The InetAddressType is given by the pimNeighborAddressType object.
1.3.6.1.2.1.157.1.2.1.4	4	pimNeighborGenerationIDPresent	Read-only	YES	NA	Evaluates to TRUE if this neighbor is using the Generation ID option.
1.3.6.1.2.1.157.1.2.1.5	5	pimNeighborGenerationIDValue	Read-only	YES	NA	The value of the Generation ID from the last PIM Hellomessage received from this neighbor.
1.3.6.1.2.1.157.1.2.1.6	6	pimNeighborUpTime	Read-only	YES	NA	The time since this PIM neighbor (last) became a neighbor of the local router.
1.3.6.1.2.1.157.1.2.1.7	7	pimNeighborExpiryTime	Read-only	YES	NA	The minimum time remaining before this PIM neighbor willtime out. The value zero indicates that this PIM neighbor will never time out.
1.3.6.1.2.1.157.1.2.1.8	8	pimNeighborDRPriorityPresent	Read-only	YES	NA	Evaluates to TRUE if this neighbor is using the DR Priorityoption.
1.3.6.1.2.1.157.1.2.1.9	9	pimNeighborDRPriority	Read-only	YES	NA	The value of the Designated Router Priority from the lastPIM Hello message received from this neighbor. This object is always zero if pimNeighborDRPriorityPresent is FALSE
1.3.6.1.2.1.157.1.2.1.10	10	pimNeighborLanPruneDelayPresen	Read-only	YES	NA	Evaluates to TRUE if this neighbor is using the LAN PruneDelay option.
1.3.6.1.2.1.157.1.2.1.11	11	pimNeighborTBit	Read-only	YES	NA	Whether the T bit was set in the LAN Prune Delay option received from this neighbor.This object is always TRUE if pimNeighborLanPruneDelayPresent is FALSE."
1.3.6.1.2.1.157.1.2.1.12	12	pimNeighborPropagationDelay	Read-only	YES	NA	The value of the Propagation_Delay field of the LAN Prune Delay option received from this neighbor.
1.3.6.1.2.1.157.1.2.1.13	13	pimNeighborOverrideInterval	Read-only	YES	NA	The value of the Override_Interval field of the LAN Prune Delay option received from this neighbor
1.3.6.1.2.1.157.1.2.1.14	14	pimNeighborBidirCapable	Read-only	YES	NA	Evaluates to TRUE if this neighbor is using the Bidirectional-PIM Capable option.
1.3.6.1.2.1.157.1.2.1.15	15	pimNeighborSRCapable	Read-only	YES	NA	Evaluates to TRUE if this neighbor is using the State Refresh Capable option. This object is used only by PIM-DM.

OBJECT NO	ENTRY NO	ENTRY NAME	MAX-ACCESS/ TEMPLATE	Support for GET	Support for SET	Comments
1.3.6.1.2.1.157.1.3		**pimNbrSecAddressTable**				
1.3.6.1.2.1.157.1.3.1	1	pimNbrSecAddressEntry	Not-accessible	NA	NA	The (conceptual) table listing the secondary addresses advertised by each PIM neighbor
1.3.6.1.2.1.157.1.3.1.1	1	pimNbrSecAddressIfIndex	Not-accessible	NA	NA	The value of ifIndex for the interface used to reach this PIM neighbor.
1.3.6.1.2.1.157.1.3.1.2	2	pimNbrSecAddressType	Not-accessible	NA	NA	The address type of this PIM neighbor.
1.3.6.1.2.1.157.1.3.1.3	3	PimNbrSecAddressPrimary	Not-accessible	NA	NA	The primary IP address of this PIM neighbor. The InetAddressType is given by the pimNbrSecAddressType object.
1.3.6.1.2.1.157.1.3.1.4	4	pimNbrSecAddress	Read-only	YES	NA	The secondary IP address of this PIM neighbor. The InetAddressType is given by the pimNbrSecAddressType object.
1.3.6.1.2.1.157.1.4		**pimStarGTable**				
1.3.6.1.2.1.157.1.4.1	1	pimStarGEntry	Not-accessible	NA	NA	An entry (conceptual row) in the pimStarGTable.
1.3.6.1.2.1.157.1.4.1.1	1	pimStarGAddressType	Not-accessible	NA	NA	The address type of this multicast group
1.3.6.1.2.1.157.1.4.1.2	2	pimStarGGrpAddress	Not-accessible	NA	NA	The multicast group address. The InetAddressType is given by the pimStarGAddressType object.
1.3.6.1.2.1.157.1.4.1.3	3	pimStarGUpTime	Read-only	YES	NA	The time since this entry was created by the local router.
1.3.6.1.2.1.157.1.4.1.4	4	pimStarGPimMode	Read-only	YES	NA	Whether this entry represents an ASM (Any Source Multicast, used with PIM-SM) or BIDIR-PIM group.
1.3.6.1.2.1.157.1.4.1.5	5	PimStarGRPAddressType	Read-only	YES	NA	The address type of the Rendezvous Point (RP), or unknown(0) if the RP address is unknown.
1.3.6.1.2.1.157.1.4.1.6	6	pimStarGRPAddress	Read-only	YES	NA	The address of the Rendezvous Point (RP) for the group. The InetAddressType is given by the pimStarGRPAddressType.
1.3.6.1.2.1.157.1.4.1.7	7	pimStarGPimModeOrigin	Read-only	YES	NA	The mechanism by which the PIM mode and RP for the group were learned.
1.3.6.1.2.1.157.1.4.1.8	8	pimStarGRPIsLocal	Read-only	YES	NA	Whether the local router is the RP for the group.
1.3.6.1.2.1.157.1.4.1.9	9	pimStarGUpstreamJoinState	Read-only	YES	NA	Whether the local router should join the RP tree for the group. This corresponds to the state of the upstream (*,G) state machine in the PIM-SM specification
1.3.6.1.2.1.157.1.4.1.10	10	pimStarGUpstreamJoinTimer	Read-only	YES	NA	The time remaining before the local router next sends a periodic (*,G) Join message on pimStarGRPFIfIndex. This timer is called the (*,G) Upstream Join Timer in the PIM-SM specification.
1.3.6.1.2.1.157.1.4.1.11	11	pimStarGUpstreamNeighborType	Read-only	YES	NA	The primary address type of the upstream neighbor, orunknown(0) if the upstream neighbor address is unknown or is not a PIM neighbor.
1.3.6.1.2.1.157.1.4.1.12	12	pimStarGUpstreamNeighbor	Read-only	YES	NA	The primary address of the neighbor on pimStarGRPFIfIndex that the local router is sending periodic (*,G) Join messages to.
1.3.6.1.2.1.157.1.4.1.13	13	pimStarGRPFIfIndex	Read-only	YES	NA	The value of ifIndex for the Reverse Path Forwarding(RPF) interface towards the RP, or zero if the RPF interface is unknown.
1.3.6.1.2.1.157.1.4.1.14	14	pimStarGRPFNextHopType	Read-only	YES	NA	The address type of the RPF next hop towards the RP, orunknown(0) if the RPF next hop is unknown.
1.3.6.1.2.1.157.1.4.1.15	15	pimStarGRPFNextHop	Read-only	YES	NA	The address of the RPF next hop towards the RP. TheInetAddressType is given by the pimStarGRPFNextHopType object.
1.3.6.1.2.1.157.1.4.1.16	16	pimStarGRPFRouteProtocol	Read-only	YES	NA	The routing mechanism via which the route used to find theRPF interface towards the RP was learned.
1.3.6.1.2.1.157.1.4.1.17	17	PimStarGRPFRouteAddress	Read-only	YES	NA	The IP address that, when combined with the corresponding value of pimStarGRPFRoutePrefixLength, identifies the route used to find the RPF interface towards the RP.
1.3.6.1.2.1.157.1.4.1.18	18	pimStarGRPFRoutePrefixLength	Read-only	YES	NA	The prefix length that, when combined with the corresponding value of pimStarGRPFRouteAddress, identifies the route used to find the RPF interface towards the RP.
1.3.6.1.2.1.157.1.4.1.19	19	pimStarGRPFRouteMetricPref	Read-only	YES	NA	The metric preference of the route used to find the RPF interface towards the RP.
1.3.6.1.2.1.157.1.4.1.20	20	pimStarGRPFRouteMetric	Read-only	YES	NA	The routing metric of the route used to find the RPF interface towards the RP.
1.3.6.1.2.1.157.1.5		**pimStarGITable**				
1.3.6.1.2.1.157.1.5.1	1	pimStarGIEntry	Not-accessible	NA	NA	"An entry (conceptual row) in the pimStarGITable."
1.3.6.1.2.1.157.1.5.1.1	1	pimStarGIIfIndex	Not-accessible	NA	NA	The ifIndex of the interface that this entry corresponds to.
1.3.6.1.2.1.157.1.5.1.2	2	pimStarGIUpTime	Read-only	YES	NA	The time since this entry was created by the local router.
1.3.6.1.2.1.157.1.5.1.3	3	pimStarGILocalMembership	Read-only	YES	NA	Whether the local router has (*,G) local membership on this Interface (resulting from a mechanism such as IGMP or MLD).
1.3.6.1.2.1.157.1.5.1.4	4	pimStarGIJoinPruneState	Read-only	YES	NA	The state resulting from (*,G) Join/Prune messages received on this interface.
1.3.6.1.2.1.157.1.5.1.5	5	pimStarGIPrunePendingTimer	Read-only	YES	NA	The time remaining before the local router acts on a (*,G) Prune message received on this interface, during which the router is waiting to see whether another downstream router will override the Prune message.
1.3.6.1.2.1.157.1.5.1.6	6	pimStarGIJoinExpiryTimer	Read-only	YES	NA	The time remaining before (*,G) Join state for this interface expires. This timer is called the (*,G) Join Expiry Timer in the PIM-SM specification.
1.3.6.1.2.1.157.1.5.1.7	7	pimStarGIAssertState	Read-only	YES	NA	The (*,G) Assert state for this interface. This corresponds to the state of the per-interface (*,G) Assert state machine in the PIM-SM specification.
1.3.6.1.2.1.157.1.5.1.8	8	pimStarGIAssertTimer	Read-only	YES	NA	If pimStarGIAssertState is \iAmAssertWinner\, this is the time remaining before the local router next sends a (*,G) Assert message on this interface. If pimStarGIAssertState is \iAmAssertLoser\, this is the time remaining before the (*,G) Assert state expires. If pimStarGIAssertState is \noInfo\, this is zero.
1.3.6.1.2.1.157.1.5.1.9	9	pimStarGIAssertWinnerAddressTyp	Read-only	YES	NA	If pimStarGIAssertState is \iAmAssertLoser\, this is the address type of the assert winner; otherwise, this object is unknown(0).
1.3.6.1.2.1.157.1.5.1.10	10	pimStarGIAssertWinnerAddress	Read-only	YES	NA	If pimStarGIAssertState is \iAmAssertLoser\, this is the address of the assert winner.
1.3.6.1.2.1.157.1.5.1.11	11	pimStarGIAssertWinnerMetricPref	Read-only	YES	NA	If pimStarGIAssertState is \iAmAssertLoser\, this is the metric preference of the route to the RP advertised by the assert winner..

OBJECT NO	ENTRY NO	ENTRY NAME	MAX-ACCESS/ TEMPLATE	Support for GET	Support for SET	Comments
1.3.6.1.2.1.157.1.5.1.12	12	pimStarGIAssertWinnerMetric	Read-only	YES	NA	If pimStarGIAssertState is \iAmAssertLoser\, this is the routing metric of the route to the RP advertised by the assert winner; otherwise, this object is zero.
1.3.6.1.2.1.157.1.6	**pimSGTable**					
1.3.6.1.2.1.157.1.6.1	1	pimSGEntry	Not-accessible	NA	NA	An entry (conceptual row) in the pimSGTable.
1.3.6.1.2.1.157.1.6.1.1	1	pimSGAddressType	Not-accessible	NA	NA	The address type of the source and multicast group for thisEntry.
1.3.6.1.2.1.157.1.6.1.2	2	pimSGGrpAddress	Not-accessible	NA	NA	The multicast group address for this entry. The InetAddressType is given by the pimSGAddressType object.
1.3.6.1.2.1.157.1.6.1.3	3	pimSGSrcAddress	Not-accessible	NA	NA	The source address for this entry. The InetAddressType is given by the pimSGAddressType object.
1.3.6.1.2.1.157.1.6.1.4	4	pimSGUpTime	Read-only	YES	NA	The time since this entry was created by the local router.
1.3.6.1.2.1.157.1.6.1.5	5	pimSGPimMode	Read-only	YES	NA	Whether pimSGGrpAddress is an SSM (Source SpecificMulticast, used with PIM-SM) or ASM (Any Source Multicast, used with PIM-SM) group.
1.3.6.1.2.1.157.1.6.1.6	6	pimSGUpstreamJoinState	Read-only	YES	NA	Whether the local router should join the shortest-path tree for the source and group represented by this entry. This corresponds to the state of the upstream (S,G) state machine in the PIM-SM specification.
1.3.6.1.2.1.157.1.6.1.7	7	pimSGUpstreamJoinTimer	Read-only	YES	NA	The time remaining before the local router next sends a periodic (S,G) Join message on pimSGRPFIfIndex. This timer is called the (S,G) Upstream Join Timer in the PIM-SM specification.
1.3.6.1.2.1.157.1.6.1.8	8	pimSGUpstreamNeighbor	Read-only	YES	NA	The primary address of the neighbor on pimSGRPFIfIndex that the local router is sending periodic (S,G) Join messages to. This is zero if the RPF next hop is unknown or is not a PIM neighbor.
1.3.6.1.2.1.157.1.6.1.9	9	pimSGRPFIfIndex	Read-only	YES	NA	The value of ifIndex for the RPF interface towards the source, or zero if the RPF interface is unknown.
1.3.6.1.2.1.157.1.6.1.10	10	pimSGRPFNextHopType	Read-only	YES	NA	The address type of the RPF next hop towards the source, orunknown(0) if the RPF next hop is unknown.
1.3.6.1.2.1.157.1.6.1.11	11	pimSGRPFNextHop	Read-only	YES	NA	The address of the RPF next hop towards the source.
1.3.6.1.2.1.157.1.6.1.12	12	pimSGRPFRouteProtocol	Read-only	YES	NA	The routing mechanism via which the route used to find theRPF interface towards the source was learned.
1.3.6.1.2.1.157.1.6.1.13	13	pimSGRPFRouteAddress	Read-only	YES	NA	The IP address that, when combined with the corresponding value of pimSGRPFRoutePrefixLength, identifies the route used to find the RPF interface towards the source.
1.3.6.1.2.1.157.1.6.1.14	14	pimSGRPFRoutePrefixLength	Read-only	YES	NA	The prefix length that, when combined with the corresponding value of pimSGRPFRouteAddress, identifies the route used to find the RPF interface towards the source.
1.3.6.1.2.1.157.1.6.1.15	15	pimSGRPFRouteMetricPref	Read-only	YES	NA	The metric preference of the route used to find the RPF interface towards the source.
1.3.6.1.2.1.157.1.6.1.16	16	pimSGRPFRouteMetric	Read-only	YES	NA	The routing metric of the route used to find the RPF interface towards the source.
1.3.6.1.2.1.157.1.6.1.17	17	pimSGSPTBit	Read-only	YES	NA	Whether the SPT bit is set; and therefore whether forwarding is taking place on the shortest-path tree.
1.3.6.1.2.1.157.1.6.1.18	18	pimSGKeepaliveTimer	Read-only	YES	NA	The time remaining before this (S,G) state expires, in the absence of explicit (S,G) local membership or (S,G) Join messages received to maintain it.
1.3.6.1.2.1.157.1.6.1.19	19	pimSGDRRegisterState	Read-only	YES	NA	Whether the local router should encapsulate (S,G) data packets in Register messages and send them to the RP. This corresponds to the state of the per-(S,G) Register state machine in the PIM-SM specification.
1.3.6.1.2.1.157.1.6.1.20	20	pimSGDRRegisterStopTimer	Read-only	YES	NA	If pimSGDRRegisterState is \prune\, this is the time remaining before the local router sends a Null-Register message to the RP. If pimSGDRRegisterState is \joinPending\, this is the time remaining before the local router resumes encapsulating data packets and sending them to the RP. Otherwise, this is zero.
1.3.6.1.2.1.157.1.6.1.21	21	pimSGRPRegisterPMBRAddressTyp	Read-only	YES	NA	The address type of the first PIM Multicast Border Router to send a Register message with the Border bit set. This object is unknown(0) if the local router is not the RP for the group.
1.3.6.1.2.1.157.1.6.1.22	22	pimSGRPRegisterPMBRAddress	Read-only	YES	NA	The IP address of the first PIM Multicast Border Router to send a Register message with the Border bit set. The InetAddressType is given by thepimSGRPRegisterPMBRAddressType object.
1.3.6.1.2.1.157.1.6.1.23	23	pimSGUpstreamPruneState	Read-only	YES	NA	Whether the local router has pruned itself from the tree. This corresponds to the state of the upstream prune (S,G) state machine in the PIM-DM specification. This object is used only by PIM-DM.
1.3.6.1.2.1.157.1.6.1.24	24	pimSGUpstreamPruneLimitTimer	Read-only	YES	NA	The time remaining before the local router may send a(S,G) Prune message on pimSGRPFIfIndex. This timer is called the (S,G) Prune Limit Timer in the PIM-DM specification. This object is zero if the timer is not running.
1.3.6.1.2.1.157.1.6.1.25	25	pimSGOriginatorState	Read-only	YES	NA	Whether the router is an originator for an (S,G) message flow. This corresponds to the state of the per-(S,G) Originator state machine in the PIM-DM specification.
1.3.6.1.2.1.157.1.6.1.26	26	pimSGSourceActiveTimer	Read-only	YES	NA	If pimSGOriginatorState is \originator\, this is the time remaining before the local router reverts to a notOriginator state. Otherwise, this is zero.
1.3.6.1.2.1.157.1.6.1.27	27	pimSGStateRefreshtimer	Read-only	YES	NA	If pimSGOriginatorState is \originator\, this is the time remaining before the local router sends a State Refresh message. Otherwise, this is zero.

OBJECT NO	ENTRY NO	ENTRY NAME	MAX-ACCESS/ TEMPLATE	Support for GET	Support for SET	Comments
1.3.6.1.2.1.157.1.7	**pimSGITable**					
1.3.6.1.2.1.157.1.7.1	1	pimSGIEntry	Not-accessible	NA	NA	An entry (conceptual row) in the pimSGITable.
1.3.6.1.2.1.157.1.7.1.1	1	pimSGIIfIndex	Not-accessible	NA	NA	The ifIndex of the interface that this entry corresponds
1.3.6.1.2.1.157.1.7.1.2	2	pimSGIUpTime	Read-only	YES	NA	The time since this entry was created by the local router.
1.3.6.1.2.1.157.1.7.1.3	3	pimSGILocalMembership	Read-only	YES	NA	Whether the local router has (S,G) local membership on this interface (resulting from a mechanism such as IGMP or MLD). This corresponds to local_receiver_include(S,G,I) in the PIM-SM specification.
1.3.6.1.2.1.157.1.7.1.4	4	pimSGIJoinPruneState	Read-only	YES	NA	The state resulting from (S,G) Join/Prune messages received on this interface. This corresponds to the state of the downstream per-interface (S,G) state machine in the PIM-SM and PIM-DM specification.
1.3.6.1.2.1.157.1.7.1.5	5	pimSGIPrunePendingTimer	Read-only	YES	NA	The time remaining before the local router acts on an (S,G) Prune message received on this interface, during which the Router is waiting to see whether another downstream router will override the Prune message.
1.3.6.1.2.1.157.1.7.1.6	6	pimSGIJoinExpiryTimer	Read-only	YES	NA	The time remaining before (S,G) Join state for this interface expires.
1.3.6.1.2.1.157.1.7.1.7	7	pimSGIAssertState	Read-only	YES	NA	The (S,G) Assert state for this interface. This corresponds to the state of the per-interface (S,G) Assert state machine in the PIM-SM specification.
1.3.6.1.2.1.157.1.7.1.8	8	pimSGIAssertTimer	Read-only	YES	NA	If pimSGIAssertState is \iAmAssertWinner\, this is the time remaining before the local router next sends a (S,G) Assert Message on this interface. If pimSGIAssertState is \iAmAssertLoser\, this is the time remaining before the (S,G) Assert state expires. If pimSGIAssertState is \noInfo\, this is zero.
1.3.6.1.2.1.157.1.7.1.9	9	pimSGIAssertWinnerAddressType	Read-only	YES	NA	If pimSGIAssertState is \iAmAssertLoser\, this is the address type of the assert winner; otherwise, this object is unknown(0).
1.3.6.1.2.1.157.1.7.1.10	10	pimSGIAssertWinnerAddress	Read-only	YES	NA	If pimSGIAssertState is \iAmAssertLoser\, this is the address of the assert winner. The InetAddressType is given by the pimSGIAssertWinnerAddressType object.
1.3.6.1.2.1.157.1.7.1.11	11	pimSGIAssertWinnerMetricPref	Read-only	YES	NA	If pimSGIAssertState is \iAmAssertLoser\, this is the metric preference of the route to the source advertised by The assert winner; otherwise, this object is zero.
1.3.6.1.2.1.157.1.7.1.12	12	pimSGIAssertWinnerMetric	Read-only	YES	NA	If pimSGIAssertState is \iAmAssertLoser\, this is the routing metric of the route to the source advertised by the assert winner; otherwise, this object is zero.
1.3.6.1.2.1.157.1.8	**pimSGRptTable**					
1.3.6.1.2.1.157.1.8.1	1	pimSGRptEntry	Not-accessible	NA	NA	An entry (conceptual row) in the pimSGRptTable.
1.3.6.1.2.1.157.1.8.1.1	1	pimSGRptSrcAddress	Not-accessible	NA	NA	The source address for this entry. The InetAddressType is given by the pimStarGAddressType object.
1.3.6.1.2.1.157.1.8.1.2	2	pimSGRptUpTime	Read-only	YES	NA	The time since this entry was created by the local router.
1.3.6.1.2.1.157.1.8.1.3	3	pimSGRptUpstreamPruneState	Read-only	YES	NA	Whether the local router should prune the source off the RPtree. This corresponds to the state of the upstream (S,G,rpt) state machine for triggered messages in the PIMSM specification.
1.3.6.1.2.1.157.1.8.1.4	4	pimSGRptUpstreamOverrideTimer	Read-only	YES	NA	The time remaining before the local router sends a triggered (S,G,rpt) Join message on pimStarGRPFIfIndex. This timer is called the (S,G,rpt) Upstream Override Timer in the PIM-SM specification.

OBJECT NO	ENTRY NO	ENTRY NAME	MAX-ACCESS/ TEMPLATE	Support for GET	Support for SET	Comments
1.3.6.1.2.1.157.1.11		**pimStaticRPTable**				
1.3.6.1.2.1.157.1.11.1	1	pimStaticRPEntry	Not-accessible	NA	NA	An entry (conceptual row) in the pimStaticRPTable
1.3.6.1.2.1.157.1.11.1.1	1	pimStaticRPAddressType	Not-accessible	NA	NA	The address type of this entry.
1.3.6.1.2.1.157.1.11.1.2	2	pimStaticRPGrpAddress	Not-accessible	NA	NA	The multicast group address that, when combined with pimStaticRPGrpPrefixLength, gives the group prefix for this entry. The InetAddressType is given by the pimStaticRPAddressType object.
1.3.6.1.2.1.157.1.11.1.3	3	pimStaticRPGrpPrefixLength	Not-accessible	NA	NA	The multicast group prefix length that, when combined with pimStaticRPGrpAddress, gives the group prefix for this Entry.
1.3.6.1.2.1.157.1.11.1.4	4	pimStaticRPRPAddress	read-create	YES	YES	The IP address of the RP to be used for groups within this group prefix. The InetAddressType is given by thepimStaticRPAddressType object.
1.3.6.1.2.1.157.1.11.1.5	5	pimStaticRPPimMode	read-create	YES	YES	The PIM mode to be used for groups in this group prefix. If this object is set to ssm(2), then pimStaticRPRPAddress must be set to zero. No RP operations are ever possible for PIM Mode SSM.
1.3.6.1.2.1.157.1.11.1.6	6	pimStaticRPOverrideDynamic	read-create	YES	YES	Whether this static RP configuration will override other group mappings in this group prefix.
1.3.6.1.2.1.157.1.11.1.7	7	pimStaticRPPrecedence	read-create	YES	NO	The value for pimGroupMappingPrecedence to be used for this static RP configuration.Snmp-set function is not supported.
1.3.6.1.2.1.157.1.11.1.8	8	pimStaticRPRowStatus	read-create	YES	LTD	The status of this row, by which rows in this table can be created and destroyed.snmpset is applicable for only (1,2,6) values.
1.3.6.1.2.1.157.1.11.1.9	9	pimStaticRPStorageType	read-create	YES	NO	The storage type for this row. Rows having the value \permanent\ need not allow write-access to any columnar objects in the row.Snmp-set function is not supported.
1.3.6.1.2.1.157.1.12		**PimAnycastRPSetTable**				
1.3.6.1.2.1.157.1.12.1	1	pimAnycastRPSetEntry	Not-accessible	NA	NA	An entry corresponds to a single router within a particularAnycast-RP set.
1.3.6.1.2.1.157.1.12.1.1	1	pimAnycastRPSetAddressType	Not-accessible	NA	NA	The address type of the Anycast-RP address and router address.
1.3.6.1.2.1.157.1.12.1.2	2	pimAnycastRPSetAnycastAddress	Not-accessible	NA	NA	The Anycast-RP address.
1.3.6.1.2.1.157.1.12.1.3	3	pimAnycastRPSetRouterAddress	Not-accessible	NA	NA	The address of a router that is a member of the AnycastRPset.
1.3.6.1.2.1.157.1.12.1.4	4	pimAnycastRPSetLocalRouter	Read-only	YES	NA	Whether this entry corresponds to the local router
1.3.6.1.2.1.157.1.12.1.5	5	pimAnycastRPSetRowStatus	read-create	YES	LTD	"The status of this row, by which rows in this table can be created and destroyed.snmpset is applicable for only (4,5,6) values.
1.3.6.1.2.1.157.1.12.1.6	6	pimAnycastRPSetStorageType	read-create	YES	NO	The storage type for this row. Rows having the value\permanent\ need not allow write-access to any columnar objects in the row.Snmp-set function is not supported.
1.3.6.1.2.1.157.1.13		**pimGroupMappingTable**				
1.3.6.1.2.1.157.1.13.1	1	pimGroupMappingEntry	Not-accessible	NA	NA	An entry (conceptual row) in the pimGroupMappingTable.
1.3.6.1.2.1.157.1.13.1.1	1	pimGroupMappingOrigin	Not-accessible	NA	NA	The mechanism by which this group mapping was learned.
1.3.6.1.2.1.157.1.13.1.2	2	pimGroupMappingAddressType	Not-accessible	NA	NA	The address type of the IP multicast group prefix.
1.3.6.1.2.1.157.1.13.1.3	3	pimGroupMappingGrpAddress	Not-accessible	NA	NA	The IP multicast group address that, when combined withpimGroupMappingGrpPrefixLength, gives the group prefix for this mapping.
1.3.6.1.2.1.157.1.13.1.4	4	pimGroupMappingGrpPrefixLength	Not-accessible	NA	NA	The multicast group prefix length that, when combined with pimGroupMappingGrpAddress, gives the group prefix for this mapping.
1.3.6.1.2.1.157.1.13.1.5	5	pimGroupMappingRPAddressType	Not-accessible	NA	NA	The address type of the RP to be used for groups within this group prefix, or unknown(0) if no RP is to be used orif the RP address is unknown.
1.3.6.1.2.1.157.1.13.1.6	6	pimGroupMappingRPAddress	Not-accessible	NA	NA	The IP address of the RP to be used for groups within this group prefix.
1.3.6.1.2.1.157.1.13.1.7	7	pimGroupMappingPimMode	Read-only	YES	NA	The PIM mode to be used for groups in this group prefix.
1.3.6.1.2.1.157.1.13.1.8	8	pimGroupMappingPrecedence	Read-only	YES	NA	The precedence of this row.

OBJECT NO	ENTRY NO	ENTRY NAME	MAX-ACCESS/ TEMPLATE	Support for GET	Support for SET	Comments
Scalars						
1.3.6.1.2.1.157.1.14.0	0	pimKeepalivePeriod	Read-write	YES	YES	The duration of the Keepalive Timer. This is the periodduring which the PIM router will maintain (S,G) state in the absence of explicit (S,G) local membership or (S,G) join messages received to maintain it.
1.3.6.1.2.1.157.1.15.0	0	pimRegisterSuppressionTime	Read-write	YES	YES	The duration of the Register Suppression Timer. This is the period during which a PIM Designated Router (DR) stops sending Register-encapsulated data to the Rendezvous Point (RP) after receiving a Register-Stop message.
1.3.6.1.2.1.157.1.16.0	0	pimStarGEntries	Read-only	YES	NA	The number of entries in the pimStarGTable.
1.3.6.1.2.1.157.1.17.0	0	pimStarGIEntries	Read-only	YES	NA	The number of entries in the pimStarGITable.
1.3.6.1.2.1.157.1.18.0	0	pimSGEntries	Read-only	YES	NA	The number of entries in the pimSGTable.
1.3.6.1.2.1.157.1.19.0	0	pimSGIEntries	Read-only	YES	NA	The number of entries in the pimSGITable.
1.3.6.1.2.1.157.1.20.0	0	pimSGRptEntries	Read-only	YES	NA	The number of entries in the pimSGRpTable.
1.3.6.1.2.1.157.1.21.0	0	pimSGRptIEntries	Read-only	YES	NA	The number of entries in the pimSGRpTIable.
1.3.6.1.2.1.157.1.22.0	0	pimOutAsserts	Read-only	YES	NA	The number of Asserts sent by this router. Discontinuities in the value of this counter can occur at re-initialization of the management system, for example, when the device is rebooted.
1.3.6.1.2.1.157.1.23.0	0	pimInAsserts	Read-only	YES	NA	The number of Asserts received by this router. Asserts are multicast to all routers on a network. This counter is incremented by all routers that receive an assert, not only those routers that are contesting the assert.
1.3.6.1.2.1.157.1.24.0	0	pimLastAssertInterface	Read-only	YES	NA	The interface on which this router most recently sent or received an assert, or zero if this router has not sent or received an assert.
1.3.6.1.2.1.157.1.25.0	0	pimLastAssertGroupAddressType	Read-only	YES	NA	The address type of the multicast group address in the most recently sent or received assert. If this router has not sent or received an assert, then this object is set to unknown(0).
1.3.6.1.2.1.157.1.26.0	0	pimLastAssertGroupAddress	Read-only	YES	NA	The multicast group address in the most recently sent or received assert.
1.3.6.1.2.1.157.1.27.0	0	pimLastAssertSourceAddressType	Read-only	YES	NA	The address type of the source address in the most recently sent or received assert. If the most recent assert was (*,G), or if this router has not sent or received an assert, then this object is set to unknown(0).
1.3.6.1.2.1.157.1.28.0	0	pimLastAssertSourceAddress	Read-only	YES	NA	The source address in the most recently sent or received assert.
1.3.6.1.2.1.157.1.29.0	0	pimNeighborLossTrapPeriod	Read-write	YES	YES	The minimum time that must elapse between pimNeighborLoss notifications originated by this router. The maximum value 65535 represents an \infinite\ time, in which case, no pimNeighborLoss notifications are ever sent. The storage type of this object is determined by pimDeviceConfigStorageType.
1.3.6.1.2.1.157.1.30.0	0	pimNeighborLossCount	Read-only	YES	NA	The number of neighbor loss events that have occurred.
1.3.6.1.2.1.157.1.31.0	0	pimInvalidRegisterTrapPeriod	Read-write	YES	YES	The minimum time that must elapse between pimInvalidRegister notifications originated by this router.
1.3.6.1.2.1.157.1.32.0	0	pimInvalidRegisterMsgsRcvd	Read-only	YES	NA	The number of invalid PIM Register messages that have been received by this device.
1.3.6.1.2.1.157.1.33.0	0	pimInvalidRegisterAddressType	Read-only	YES	NA	The address type stored in pimInvalidRegisterOrigin
1.3.6.1.2.1.157.1.34.0	0	pimInvalidRegisterOrigin	Read-only	YES	NA	The source address of the last invalid Register message received by this device.
1.3.6.1.2.1.157.1.35.0	0	pimInvalidRegisterGroup	Read-only	YES	NA	The IP multicast group address to which the last invalid Register message received by this device was addressed.
1.3.6.1.2.1.157.1.36.0	0	pimInvalidRegisterRp	Read-only	YES	NA	The RP address to which the last invalid Register message received by this device was delivered.
1.3.6.1.2.1.157.1.37.0	0	pimInvalidJoinPruneTrapPeriod	Read-write	YES	YES	The minimum time that must elapse between pimInvalidJoinPrune notifications originated by this router.
1.3.6.1.2.1.157.1.38.0	0	pimInvalidJoinPruneMsgsRcvd	Read-only	YES	NA	The number of invalid PIM Join/Prune messages that have been received by this device.
1.3.6.1.2.1.157.1.39.0	0	pimInvalidJoinPruneAddressType	Read-only	YES	NA	The address type stored in pimInvalidJoinPruneOrigin, pimInvalidJoinPruneGroup, and pimInvalidJoinPruneRp. If no invalid Join/Prune messages have been received, this object is set to unknown(0)
1.3.6.1.2.1.157.1.40.0	0	pimInvalidJoinPruneOrigin	Read-only	YES	NA	The source address of the last invalid Join/Prune message received by this device.
1.3.6.1.2.1.157.1.41.0	0	pimInvalidJoinPruneGroup	Read-only	YES	NA	The IP multicast group address carried in the last invalid Join/Prune message received by this device."
1.3.6.1.2.1.157.1.42.0	0	pimInvalidJoinPruneRp	Read-only	YES	NA	The RP address carried in the last invalid Join/Prune message received by this device.
1.3.6.1.2.1.157.1.43.0	0	pimRPMappingTrapPeriod	Read-write	YES	YES	The minimum time that must elapse between pimRPMappingChange notifications originated by this router. The default value of 65535 represents an \infinite\ time, in which case, no pimRPMappingChange notifications are ever sent.
1.3.6.1.2.1.157.1.44.0	0	pimRPMappingChangeCount	Read-only	YES	NA	The number of changes to active RP mappings on this device. Information about active RP mappings is available in pimGroupMappingTable. Only changes to active mappings cause this counter to be incremented.
1.3.6.1.2.1.157.1.45.0	0	pimInterfaceElectionTrapPeriod	Read-write	YES	YES	The minimum time that must elapse between pimInterfaceElection notifications originated by this Router.
1.3.6.1.2.1.157.1.46.0	0	pimInterfaceElectionWinCount	Read-only	YES	NA	The number of times this device has been elected DR or DF on any interface.
1.3.6.1.2.1.157.1.47.0	0	pimInterfaceRefreshInterval	Read-write	NO	NO	The interval between successive State Refresh messages sent by an Originator. ZebOS currently doesn't have support for this.
1.3.6.1.2.1.157.1.48.0	0	pimDeviceConfigStorageType	Read-write	YES	NO	The storage type used for the global PIM configuration of this device, comprised of the objects listed below. If this storage type takes the value 'permanent', write-access to the listed objects need not be allowed.snmpset is not supported.

OBJECT NO	ENTRY NO	ENTRY NAME	MAX-ACCESS/ TEMPLATE	Support for GET	Support for SET	Comments	Problems
1.3.6.1.2.1.168.1.1.0	0	IpMcastEnabled	Read-write	YES	YES	The enabled status of IP Multicast function on this system.	
1.3.6.1.2.1.168.1.2.0	0	ipMcastRouteEntryCount	Read-only	YES	NA	The number of rows in the ipMcastRouteTable. This can be used to check for multicast routing activity, and to monitor the multicast routing table size.	
1.3.6.1.2.1.168.1.3		**ipMcastInterfaceTable**					
1.3.6.1.2.1.168.1.3.1	1	ipMcastInterfaceEntry	Not-accessible	NA	NA	An entry (conceptual row) containing the multicast protocol information for a particular interface.	
1.3.6.1.2.1.168.1.3.1.1	1	ipMcastInterfaceIPVersion	Not-accessible	NA	NA	The IP version of this row.	
1.3.6.1.2.1.168.1.3.1.2	2	ipMcastInterfaceIfIndex	Not-accessible	NA	NA	The index value that uniquely identifies the interface to which this entry is applicable.	
1.3.6.1.2.1.168.1.3.1.3	3	ipMcastInterfaceTtl	Read-write	YES	YES	The datagram Time to Live (TTL) threshold for the interface. Any IP multicast datagrams with a TTL (IPv4) or Hop Limit (IPv6) less than this threshold will not be forwarded out the interface.	
1.3.6.1.2.1.168.1.3.1.4	4	ipMcastInterfaceRateLimit	Read-write	YES	NO	The rate-limit, in kilobits per second, of forwarded multicast traffic on the interface. A rate-limit of 0 indicates that no rate limiting is done.	Snmp-set is not supported.
1.3.6.1.2.1.168.1.3.1.5	5	ipMcastInterfaceStorageType	Read-write	YES	NO	The storage type for this row. Rows having the value \permanent\ need not allow write-access to any columnar objects in the row.	Snmp-set is not supported.
1.3.6.1.2.1.168.1.4		**ipMcastSsmRangeTable**					
1.3.6.1.2.1.168.1.4.1	1	ipMcastSsmRangeEntry	Not-accessible	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.4.1.1	1	ipMcastSsmRangeAddressType	Not-accessible	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.4.1.2	2	ipMcastSsmRangeAddress	Not-accessible	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.4.1.3	3	ipMcastSsmRangePrefixLength	Not-accessible	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.4.1.4	4	ipMcastSsmRangeRowStatus	Read-create	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.4.1.5	5	ipMcastSsmRangeStorageType	Read-create	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.5		**ipMcastRouteTable**					
1.3.6.1.2.1.168.1.5.1	1	ipMcastRouteEntry	Not-accessible	NA	NA	An entry (conceptual row) containing the multicast routing information for IP datagrams from a particular source and addressed to a particular IP multicast group address.	
1.3.6.1.2.1.168.1.5.1.1	1	ipMcastRouteGroupAddressType	Not-accessible	NA	NA	A value indicating the address family of the address contained in ipMcastRouteGroup.	
1.3.6.1.2.1.168.1.5.1.2	2	ipMcastRouteGroup	Not-accessible	NA	NA	The IP multicast group address which, when combined with the corresponding value specified in ipMcastRouteGroupPrefixLength, identifies the groups for which this entry contains multicast routing information.	
1.3.6.1.2.1.168.1.5.1.3	3	ipMcastRouteGroupPrefixLength	Not-accessible	NA	NA	The length in bits of the mask which, when combined with the corresponding value of ipMcastRouteGroup, identifies the groups for which this entry contains multicast routing Information.	
1.3.6.1.2.1.168.1.5.1.4	4	ipMcastRouteSourceAddressType	Not-accessible	NA	NA	A value indicating the address family of the address contained in ipMcastRouteSource.	
1.3.6.1.2.1.168.1.5.1.5	5	ipMcastRouteSource	Not-accessible	NA	NA	The network address which, when combined with the corresponding value of ipMcastRouteSourcePrefixLength, identifies the sources for which this entry contains multicast routing information.	
1.3.6.1.2.1.168.1.5.1.6	6	ipMcastRouteSourcePrefixLength	Not-accessible	NA	NA	The length in bits of the mask which, when combined with the corresponding value of ipMcastRouteSource, identifies the sources for which this entry contains multicast routing Information.	
1.3.6.1.2.1.168.1.5.1.7	7	ipMcastRouteUpstreamNeighborType	Read-only	YES	NA	A value indicating the address family of the address Contained in ipMcastRouteUpstreamNeighbor.	
1.3.6.1.2.1.168.1.5.1.8	8	ipMcastRouteUpstreamNeighbor	Read-only	YES	NA	The address of the upstream neighbor (for example, RPF neighbor) from which IP datagrams from these sources to this multicast address are received.	
1.3.6.1.2.1.168.1.5.1.9	9	ipMcastRouteInIfIndex	Read-only	YES	NA	The value of ifIndex for the interface on which IP datagrams sent by these sources to this multicast address are received.	
1.3.6.1.2.1.168.1.5.1.10	10	ipMcastRouteTimeStamp	Read-only	YES	NA	The value of sysUpTime at which the multicast routing information represented by this entry was learned by the Router.	
1.3.6.1.2.1.168.1.5.1.11	11	ipMcastRouteExpiryTime	Read-only	YES	NA	The minimum amount of time remaining before this entry will be aged out.	
1.3.6.1.2.1.168.1.5.1.12	12	ipMcastRouteProtocol	Read-only	YES	NA	The multicast routing protocol via which this multicast forwarding entry was learned.	
1.3.6.1.2.1.168.1.5.1.13	13	IpMcastRouteRtProtocol	Read-only	YES	NA	The routing mechanism via which the route used to find the upstream or parent interface for this multicast forwarding entry was learned.	
1.3.6.1.2.1.168.1.5.1.14	14	IpMcastRouteRtAddressType	Read-only	YES	NA	A value indicating the address family of the address contained in ipMcastRouteRtAddress.	
1.3.6.1.2.1.168.1.5.1.15	15	IpMcastRouteRtAddress	Read-only	YES	NA	The address portion of the route used to find the upstream or parent interface for this multicast forwarding entry.	
1.3.6.1.2.1.168.1.5.1.16	16	ipMcastRouteRtPrefixLength	Read-only	YES	NA	The length in bits of the mask associated with the route used to find the upstream or parent interface for this multicast forwarding entry.	

1.3.6.1.2.1.168.1.5.1.17	17	IpMcastRouteRtType	Read-only	YES	NA	The reason the given route was placed in the (logical) multicast Routing Information Base (RIB). A value of unicast means that the route would normally be placed only in the unicast RIB, but was placed in the multicast RIB due (instead or in addition) to local configuration, such as when running PIM over RIP. A value of multicast means that the route was explicitly added to the multicast RIB by the routing protocol, such as the Distance Vector Multicast Routing Protocol (DVMRP) or Multiprotocol BGP.	
1.3.6.1.2.1.168.1.5.1.18	18	ipMcastRouteOctets	Read-only	YES	NA	The number of octets contained in IP datagrams that were received from these sources and addressed to this multicast group address, and which were forwarded by this router.	
1.3.6.1.2.1.168.1.5.1.19	19	ipMcastRoutePkts	Read-only	YES	NA	"The number of packets routed using this multicast route Entry.	
1.3.6.1.2.1.168.1.5.1.20	20	ipMcastRouteTtlDropOctets	Read-only	NO	NA	The number of packets that this router has received from these sources and addressed to this multicast group address, which were dropped because the TTL (IPv4) or Hop Limit (IPv6) was decremented to zero, or to a value less than ipMcastInterfaceTtl for all next hops.	Not supported
1.3.6.1.2.1.168.1.5.1.21	21	ipMcastRouteTtlDropPackets	Read-only	NO	NA	The number of packets that this router has received from these sources and addressed to this multicast group address, which were dropped because the TTL (IPv4) or Hop Limit (IPv6) was decremented to zero, or to a value less than ipMcastInterfaceTtl for all next hops.	Not supported
1.3.6.1.2.1.168.1.5.1.22	22	ipMcastRouteDifferentInIfOctets	Read-only	NO	NA	The number of octets contained in IP datagrams that this router has received from these sources and addressed to this multicast group address, which were dropped because they were received on an unexpected interface.	Not supported
1.3.6.1.2.1.168.1.5.1.23	23	ipMcastRouteDifferentInIfPackets	Read-only	YES	NA	The number of packets which this router has received from these sources and addressed to this multicast group address, which were dropped because they were received on an unexpected interface.	
1.3.6.1.2.1.168.1.5.1.24	24	IpMcastRouteBps	Read-only	NO	NO	ZebOS currently doesn't have support for this.	Not supported

1.3.6.1.2.1.168.1.6		**ipMcastRouteNextHopTable**					
1.3.6.1.2.1.168.1.6.1	1	IpMcastRouteNextHopEntry	Not-accessible	NA	NA	An entry (conceptual row) in the list of next-hops on outgoing interfaces to which IP multicast datagrams from particular sources to an IP multicast group address are Routed.	
1.3.6.1.2.1.168.1.6.1.1	1	ipMcastRouteNextHopGroupAddressType	Not-accessible	NA	NA	A value indicating the address family of the address contained in ipMcastRouteNextHopGroup.	
1.3.6.1.2.1.168.1.6.1.2	2	ipMcastRouteNextHopGroup	Not-accessible	NA	NA	The IP multicast group address which, when combined with the corresponding value specified in ipMcastRouteNextHopGroupPrefixLength, identifies the groups for which this entry contains multicast forwarding Information.	
1.3.6.1.2.1.168.1.6.1.3	3	IpMcastRouteNextHopGroupPrefixLength	Not-accessible	NA	NA	The length in bits of the mask which, when combined with the corresponding value of ipMcastRouteGroup, identifies the groups for which this entry contains multicast routing Information.	
1.3.6.1.2.1.168.1.6.1.4	4	IpMcastRouteNextHopSourceAddressType	Not-accessible	NA	NA	A value indicating the address family of the address contained in ipMcastRouteNextHopSource.	
1.3.6.1.2.1.168.1.6.1.5	5	IpMcastRouteNextHopSource	Not-accessible	NA	NA	The network address which, when combined with the corresponding value of the mask specified in ipMcastRouteNextHopSourcePrefixLength, identifies the sources for which this entry specifies a next-hop on an outgoing interface.	
1.3.6.1.2.1.168.1.6.1.6	6	IpMcastRouteNextHopSourcePrefixLength	Not-accessible	NA	NA	The length in bits of the mask which, when combined with the corresponding value specified in ipMcastRouteNextHopSource, identifies the sources for which this entry specifies a next-hop on an outgoing interface.	
1.3.6.1.2.1.168.1.6.1.7	7	IpMcastRouteNextHopIfIndex	Not-accessible	NA	NA	The ifIndex value of the interface for the outgoing interface for this next-hop.	
1.3.6.1.2.1.168.1.6.1.8	8	ipMcastRouteNextHopAddressType	Not-accessible	NA	NA	A value indicating the address family of the address contained in ipMcastRouteNextHopAddress.	
1.3.6.1.2.1.168.1.6.1.9	9	IpMcastRouteNextHopAddress	Not-accessible	NA	NA	The address of the next-hop specific to this entry.	
1.3.6.1.2.1.168.1.6.1.10	10	IpMcastRouteNextHopState	Read-only	YES	NA	An indication of whether the outgoing interface and next-hop represented by this entry is currently being used to forward IP datagrams. The value \forwarding\ indicates it is currently being used; the value \pruned\ indicates it is Not.	
1.3.6.1.2.1.168.1.6.1.11	11	ipMcastRouteNextHopTimeStamp	Read-only	YES	NA	The value of sysUpTime at which the multicast routing information represented by this entry was learned by the Router.	
1.3.6.1.2.1.168.1.6.1.12	12	IpMcastRouteNextHopExpiryTime	Read-only	YES	NA	The minimum amount of time remaining before this entry will be aged out.	
1.3.6.1.2.1.168.1.6.1.13	13	IpMcastRouteNextHopClosestMemberHops	Read-only	YES	NA	The minimum number of hops between this router and any member of this IP multicast group reached via this next-hop on this outgoing interface.	
1.3.6.1.2.1.168.1.6.1.14	14	IpMcastRouteNextHopProtocol	Read-only	YES	NA	The routing mechanism via which this next-hop was learned.	
1.3.6.1.2.1.168.1.6.1.15	15	IpMcastRouteNextHopOctets	Read-only	YES	NA	The number of octets of multicast packets that have been forwarded using this route.	
1.3.6.1.2.1.168.1.6.1.16	16	ipMcastRouteNextHopPkts	Read-only	YES	NA	The number of packets which have been forwarded using this Route.	
1.3.6.1.2.1.168.1.7		**ipMcastBoundaryTable**					
1.3.6.1.2.1.168.1.7.1	1	ipMcastBoundaryEntry	Not-accessible	NA	NA	An entry (conceptual row) describing one of this device\s multicast scope zone boundaries.	Zebos currently doesnt support this.
1.3.6.1.2.1.168.1.7.1.1	1	IpMcastBoundaryIfIndex	Not-accessible	NA	NA	The IfIndex value for the interface to which this boundary Applies.	Zebos currently doesnt support this.
1.3.6.1.2.1.168.1.7.1.2	2	ipMcastBoundaryAddressType	Not-accessible	NA	NA	A value indicating the address family of the address contained in ipMcastBoundaryAddress	Zebos currently doesnt support this.
1.3.6.1.2.1.168.1.7.1.3	3	ipMcastBoundaryAddress	Not-accessible	NA	NA	The group address which, when combined with the corresponding value of ipMcastBoundaryAddressPrefixLength, identifies the group range for which the scoped boundary Exists.	Zebos currently doesnt support this.
1.3.6.1.2.1.168.1.7.1.4	4	ipMcastBoundaryAddressPrefixLength	Not-accessible	NA	NA	The length in bits of the mask which when, combined with the corresponding value of ipMcastBoundaryAddress, identifies the group range for which the scoped boundary Exists.	Zebos currently doesnt support this.
1.3.6.1.2.1.168.1.7.1.5	5	IpMcastBoundaryTimeStamp	Read-only	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.7.1.6	6	ipMcastBoundaryDroppedMcastOctets	Read-only	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.7.1.7	7	ipMcastBoundaryDroppedMcastPkts	Read-only	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.7.1.8	8	ipMcastBoundaryStatus	Read-create	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.7.1.9	9	IpMcastBoundaryStorageType	Read-create	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.8		**ipMcastScopeNameTable**					
1.3.6.1.2.1.168.1.8.1	1	ipMcastScopeNameEntry	Not-accessible	NA	NA	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.8.1.1	1	ipMcastScopeNameAddressType	Not-accessible	NA	NA	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.8.1.2	2	ipMcastScopeNameAddress	Not-accessible	NA	NA	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.8.1.3	3	ipMcastScopeNameAddressPrefixLength	Not-accessible	NA	NA	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.8.1.4	4	ipMcastScopeNameLanguage	Not-accessible	NA	NA	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.8.1.5	5	ipMcastScopeNameString	Read-create	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.8.1.6	6	ipMcastScopeNameDefault	Read-create	NO	NO	Zebos currently doesnt support this.	

1.3.6.1.2.1.168.1.8.1.7	7	ipMcastScopeNameStatus	Read-create	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.8.1.8	8	ipMcastScopeNameStorageType	Read-create	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.9		**ipMcastLocalListenerTable**					
1.3.6.1.2.1.168.1.9.1	1	ipMcastLocalListenerEntry	Not-accessible	NA	NA	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.9.1.1	1	ipMcastLocalListenerGroupAddressType	Not-accessible	NA	NA	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.9.1.2	2	ipMcastLocalListenerGroupAddress	Not-accessible	NA	NA	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.9.1.3	3	ipMcastLocalListenerSourceAddressType	Not-accessible	NA	NA	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.9.1.4	4	ipMcastLocalListenerSourceAddress	Not-accessible	NA	NA	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.9.1.5	5	ipMcastLocalListenerSourcePrefixLength	Not-accessible	NA	NA	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.9.1.6	6	ipMcastLocalListenerIfIndex	Not-accessible	NA	NA	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.9.1.7	7	ipMcastLocalListenerRunIndex	Read-only	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.10		**ipMcastZoneTable**					
1.3.6.1.2.1.168.1.10.1	1	ipMcastZoneEntry	Not-accessible	NA	NA	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.10.1.1	1	ipMcastZoneIndex	Not-accessible	NA	NA	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.10.1.2	2	ipMcastZoneScopeDefaultZoneIndex	Read-only	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.10.1.3	3	ipMcastZoneScopeAddressType	Read-only	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.10.1.4	4	ipMcastZoneScopeAddress	Read-only	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.10.1.5	5	ipMcastZoneScopeAddressPrefixLength	Read-only	NO	NO	Zebos currently doesnt support this.	
1.3.6.1.2.1.168.1.11.0	1	ipMcastDeviceConfigStorageType	Read-create	YES	NO	The storage type used for the global IP multicast configuration of this device, comprised of the objects Listed below. If this storage type takes the value 'permanent', write-access to the listed objects need not be Allowed. Snmp-set is not supported.	Snmp-set is not supported.