



hp WBEM solutions



hp technical  
data sheet

## hp-ux internet protocol CIM provider

### provider overview

#### description

The Internet Protocol (IP) Provider makes available information on what IP addresses can be used to access a platform. The provider also supports an association to a LAN Endpoint (CIM\_LANEndpoint), making correlation between IP addresses and LAN interfaces possible. Further, the provider instruments a list of IP routes supported by the platform.

Client applications can use this provider to determine all the IP addresses for a platform, determine which LAN interface is associated with a given IP address, and to determine which IP routes are supported by the platform. For platforms that have the LAN provider installed, it is possible to relate a given IP address to its LAN interface, MAC address, logical port, and network interface card (NIC).

The Internet Protocol (IP) Provider instruments the CIM\_IPProtocolEndpoint, PG\_BindsIPToLANEndpoint, and the PG\_IPRoute classes.

This provider is for use by clients as part of a basic understanding of the identity of the managed system on which it is running (typically a server or appliance). The current implementation is for HP-UX only.

#### requirements

The provider requires HP WBEM Services for HP-UX.

#### release history

Initial release with HP WBEM Services for HP-UX version 1.5.

#### supported managed resources

Managed systems running HP WBEM Services for HP-UX. This provider supports IPv4 only.

### setting up this provider

#### installing this provider

The Internet Protocol (IP) Provider is contained within an internet protocol provider module (it is the only provider within that module). The provider module is bundled with HP WBEM Services for HP-UX including:

- Schema MOF file: PG\_IP20.mof (in /etc/opt/wbem/mof)
- Provider registration MOF file: PG\_IP20R.mof (in /etc/opt/wbem/mof)
- Provider module executable: libIPProviderModule.sl (in /opt/wbem/providers/lib, and is the target of the /opt/wbem/lib/libIPProviderModule.1 symbolic link)

table 1: CIM\_IPProtocolEndpoint properties

Table 1 describes the properties of the CIM\_IPProtocolEndpoint class. It has three columns. The first is the property name (including type and units), the second is the property inheritance (indicating which class or superclass defines the property), and the third is the property's value and data source. Each row describes a property.

Property name	property inheritance	property value (and data source)
string Caption	Inherited from CIM_ManagedElement	<u>HP-UX</u> : Returns the IP Address in dot notation
string Description	Inherited from CIM_ManagedElement	<u>HP-UX</u> : Returns "IP Protocol Endpoint for <ip_address> (IPv4)."
datetime InstallDate	Inherited from CIM_ManagedSystemElement	<u>HP-UX</u> : Not implemented.
string Status	Inherited from CIM_ManagedSystemElement	<u>HP-UX</u> : Not implemented.
<b>string SystemCreationClassName [Key]</b>	Inherited from CIM_ServiceAccessPoint	<u>HP-UX</u> : Always returns string "CIM_UnitaryComputerSystem".
<b>string SystemName [Key]</b>	Inherited from CIM_ServiceAccessPoint	<u>HP-UX</u> : Returns the fully qualified host name if available from the gethostbyname() system call; otherwise it returns the hostname from the gethostname() system call.
<b>string CreationClassName [Key]</b>	Inherited from CIM_ServiceAccessPoint	<u>HP-UX</u> : Returns the string "CIM_IPProtocolEndpoint"
<b>string Name [Key]</b>	Inherited from CIM_ManagedSystemElement, overridden in CIM_ServiceAccessPoint and CIM_ProtocolEndpoint	<u>HP-UX</u> : Returns the concatenation of the Protocol Type, an underscore character, and the LAN interface name (for example "IPv4_Lan0").
string NameFormat	Inherited from CIM_IPProtocolEndpoint	<u>HP-UX</u> : Returns the string "<ProtocolType>_<InterfaceName>".
uint16 ProtocolType	Inherited from CIM_IPProtocolEndpoint	<u>HP-UX</u> : Returns 2 for "IPv4" and 3 for "IPv6".
string OtherTypeDescription	Inherited from CIM_IPProtocolEndpoint	<u>HP-UX</u> : Returns NULL.
string Address	Local to CIM_IPProtocolEndpoint	<u>HP-UX</u> : Returns the IP Address in dot notation as obtained from the ID_ipAddrTable object through the get_mib_info() system call.
string SubnetMask	Local to CIM_IPProtocolEndpoint	<u>HP-UX</u> : Returns the IP Subnet Mask in dot notation as obtained from the ID_ipAddrTable object through the

Table 2: PG\_BindsIPToLANEndpoint properties

Table 2 describes the properties of the PG\_BindsIPToLANEndpoint association class. It has three columns. The first is the property name (including type and units), the second is the property inheritance (indicating which class or superclass defines the property), and the third is the property's value and data source. Each row describes a property.

<i>property name</i>	<i>property inheritance</i>	<i>property value (and data source)</i>
<b>CIM_LANEndpoint REF</b> <b>Antecedent</b>	Inherited from CIM_Dependency, overridden by CIM_SAPSAPDependency, overridden by CIM_BindsTo, overridden by CIM_BindsToLANEndpoint.	<u>HP-UX</u> : Within the reference property: CreationClassName returns "CIM_LANEndpoint". Name returns the Interface Name (e.g. "lan0").
<b>CIM_IPProtocolEndpoint REF</b> <b>Dependent</b>	Inherited from CIM_Dependency, overridden by CIM_SAPSAPDependency, overridden by CIM_BindsTo, overridden by PG_BindsIPToLANEndpoint.	<u>HP-UX</u> : Within the reference property: CreationClassName returns "CIM_IPProtocolEndpoint". Name returns the concatenation of the protocol type ("IPv4"), an underscore ("_"), and the LAN interface name (e.g. "IPv4_lan0"). See the CIM_IPProtocolEndpoint.Name property in Table 1 above.
uint16 FrameType	Inherited from CIM_BindsToLANEndpoint.	<u>HP-UX</u> : Returns 1 ("Ethernet").

table 3: PG\_IPRoute properties

Table 3 describes the properties of the PG\_IPRoute class. It has three columns. The first is the property name (including type and units), the second is the property inheritance (indicating which class or superclass defines the property), and the third is the property's value and data source. Each row describes a property.

property name	property inheritance	property value (and data source)
string Caption	Inherited from CIM_ManagedElement.	<u>HP-UX</u> : Returns the IP Destination Address in dot notation.
string Description	Inherited from CIM_ManagedElement.	<u>HP-UX</u> : Returns "IP Route Information for Destination <ip_destaddress> (IPv4)."
string Status	Inherited from CIM_ManagedSystemElement.	Not implemented.
datetime InstallDate	Inherited from CIM_ManagedSystemElement.	Not implemented.
string Name	Inherited from CIM_ManagedSystemElement	<u>HP-UX</u> : Returns the IP Destination Address in dot notation.
string NextHop	Inherited from CIM_NextHopRouting.	<u>HP-UX</u> : Returns the route gateway in dot notation as obtained from the ID_ipRouteTable object through the get_mib_info() system call.
boolean IsStatic	Inherited from CIM_NextHopRouting.	Not implemented.
<b>string SystemCreationClassName [Key]</b>	Local to CIM_IPRoute, propagated from CIM_ForwardingService.SystemCreationClassName.	<u>HP-UX</u> : Always returns string "CIM_UnitaryComputerSystem".
<b>string SystemName [Key]</b>	Local to CIM_IPRoute, propagated from CIM_ForwardingService.SystemName.	<u>HP-UX</u> : Returns the fully qualified host name if available from the gethostbyname() system call; otherwise it returns the hostname from the gethostname() system call.
<b>string ServiceCreationClassName [Key]</b>	Local to CIM_IPRoute, propagated from CIM_ForwardingService.CreationClassName.	<u>HP-UX</u> : Returns the empty string.
<b>string ServiceName [Key]</b>	Local to CIM_IPRoute, propagated from CIM_ForwardingService.Name.	<u>HP-UX</u> : Returns the empty string.
<b>string CreationClassName [Key]</b>	Inherited from CIM_IPRoute.	<u>HP-UX</u> : Returns "PG_IPRoute".
<b>string IPDestinationAddress [Key]</b>	Inherited from CIM_IPRoute.	<u>HP-UX</u> : Returns the IP Destination Address in dot notation as obtained from the ID_ipRouteTable object through the get_mib_info() system call.
<b>string IPDestinationMask [Key]</b>	Inherited from CIM_IPRoute.	<u>HP-UX</u> : Returns the IP Destination Mask in dot notation.

table 4: intrinsic methods for CIM\_IPProtocolEndpoint, PG\_BindsIPToLANEndpoint, and PG\_IPRoute

Table 4 describes the intrinsic methods supported by this provider. It has three columns. The first is the method name, the second is a description of the provider's actions based on invoking that method, and the third is a list of any exceptions that could result from invoking the method. Each row describes a method.

Method name	description	exceptions thrown
enumerateInstances	Returns all instances of class with all properties and respective values.	None
enumerateInstanceNames	Returns object path of all instances of class.	None
getInstance	Supported.	CIM_ERR_INVALID_PARAMETER if wrong class for a key. CIM_ERR_NOT_FOUND if wrong number of keys, or instance is not found.
modifyInstance	Does nothing.	CIM_ERR_NOT_SUPPORTED
deleteInstance	Does nothing.	CIM_ERR_NOT_SUPPORTED
initialize	Does nothing.	None.
terminate	Does nothing.	None
createInstance	Does nothing.	CIM_ERR_NOT_SUPPORTED

- Indications generated by this provider  
This provider does not currently generate any indications.
- Associations provided by this provider

table 5: associations

Table 5 describes the associations supported by this provider. It has four columns. The first is the name of the association class, the second lists the classes referenced by the associations, the third is a brief description of the associations, and the fourth describes possible applications for this association. Each row describes an association. Note that each of these associations is also covered in a properties table above.

name	references	description	how association is used
PG_BindsIPToLANEndpoint	CIM_IPProtocolEndpoint CIM_LANEndpoint	Instances of this association exist for each LAN Endpoint. They can be used to associate an IP address with a particular LAN Endpoint.	Clients can use this association to relate IP addresses to a particular interface. The association ties layers 2 and 3 in ISO network model.

- Client information  
None.
- Support contacts  
The HP-UX Internet Protocol Provider is supported as part of HP WBEM Services for HP-UX.  
For additional information on HP products and services, visit us at [www.hp.com](http://www.hp.com)

For the location of the nearest sales office, call:

United States: +1 800 637 7740

Canada: +1 905 206 4725

Japan: +81 3 3331 6111

Latin America: +1 305 267 4220

Australia/New Zealand: +61 3 9272 2895

Asia Pacific: +8522 599 7777

Europe/Africa/Middle East: +41 22 780 81 11

For more information, contact any of our worldwide sales offices or HP Channel Partners (in the U.S. call 1 800 637 7740).

Technical information contained in this document is subject to change without notice.

© Copyright Hewlett-Packard Company 2002

10/2002

