Ruby master - Feature #8368

Socket.getifaddrs

05/04/2013 04:57 PM - akr (Akira Tanaka)

<table>
<thead>
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<th>Status:</th>
<th>Closed</th>
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<td>Priority:</td>
<td>Normal</td>
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<tr>
<td>Assignee:</td>
<td></td>
</tr>
<tr>
<td>Target version:</td>
<td>2.1.0</td>
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**Description**

I'd like to add a method: Socket.getifaddrs.

This method is a wrapper to getifaddrs() function. The result is an array of instances of Socket::Ifaddr class as follows.

```
% ./ruby -rpp -rsocket -e 'pp Socket.getifaddrs'
[#,
 #,
 #,
 #,
 #,
 #,
 #]
```

This method can be used to choose multicast-enabled interfaces. Multicast applications needs to identify a such interface to sending a multicast datagram.

```
% ./ruby -rpp -rsocket -e 'pp Socket.getifaddrs.reject { |ifaddr|
  !ifaddr.addr.ip? || (ifaddr.flags & Socket::IFF_MULTICAST == 0)
}.map { |ifaddr| [ifaddr.name, ifaddr.ifindex, ifaddr.addr] }
[["eth0", 2, 
],["eth0", 2, 
]]
```

This method can be used to obtain broadcast addresses to send a broadcast messages. (use case: [ruby-talk:329921])

Also, the broadcast addresses can be used to receive broadcast messages. (Programming UNIX Sockets in C: 4.12. How can I write a multi-homed server? [http://www.faqs.org/faqs/unix-faq/socket/])

getifaddrs() is not standardized but many platforms have. BSDI, FreeBSD, NetBSD, OpenBSD, DragonFly, MirOS, GNU/Linux, MacOS X, SunOS 5.11 (OpenIndiana), Cygwin 1.7.15

From Gnuilib document, getifaddrs() is not exist on AIX 5.1, HP-UX 11, IRIX 6.5, OSF/1 5.1, Solaris 10, Cygwin 1.5.x, mingw, MSVC 9, Interix 3.5, BeOS. [http://www.gnu.org/software/gnulib/manual/html_node/getifaddrs.html]

I implemented new Socket::Ifaddr class for return value of Socket.getifaddrs, instead of constructing the result from currentn data structures such as Array. This choice make us possible to implement Socket::Ifaddr#inspect to show flags as its names (UP,...). Also, struct getifaddrs contains Address-specific data, ifa_data which may be extended by platforms. When we find a way to extract some data from ifa_data, we can add a method for that.

Socket::Ifaddr is different from Socket::Interface by [http://bugs.ruby-lang.org/issues/8075].
They have no one-to-one mapping.
For example, Socket.getifaddrs returns two or more elements for one interface.

Associated revisions

Revision b323d7d5 - 05/11/2013 08:32 AM - akr (Akira Tanaka)

05/20/2021 1/3
History

#1 - 05/06/2013 12:00 AM - naruse (Yui NARUSE)
- Target version set to 2.1.0

I'm for this method.

#2 - 05/06/2013 01:23 AM - judofyr (Magnus Holm)
Shouldn't this be moved to CommonRuby?

#3 - 05/06/2013 01:40 AM - naruse (Yui NARUSE)
judofyr (Magnus Holm) wrote:

  Shouldn't this be moved to CommonRuby?

There's no such consensus yet, especially bundled libraries.

#4 - 05/06/2013 08:33 PM - akr (Akira Tanaka)
- File getifaddrs2.patch added

I updated the patch to fix compile error on environments which has no getifaddrs(). Also I refined the result of Socket::Ifaddrs#inspect.

  % ./ruby -rsocket -rpp -e 'pp Socket.getifaddrs'
  [#,
   #,
   #,
   #,
   #,
   #]

#5 - 05/11/2013 05:32 PM - akr (Akira Tanaka)
- Status changed from Open to Closed
This issue was solved with changeset r40639.
Akira, thank you for reporting this issue.
Your contribution to Ruby is greatly appreciated.
May Ruby be with you.

- ext/socket: New method, Socket.getifaddrs, implemented. [ruby-core:54777] [Feature #8368]

#6 - 05/11/2013 05:33 PM - akr (Akira Tanaka)
It seems no one against for this method and naruse-san (the release manager of Ruby 2.1.0) supported.
I added Socket.getifaddrs.

Files

<table>
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<tr>
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<th>Size</th>
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<th>Author</th>
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<tr>
<td>getifaddrs.patch</td>
<td>31.6 KB</td>
<td>05/04/2013</td>
<td>akr (Akira Tanaka)</td>
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<td>getifaddrs2.patch</td>
<td>32.7 KB</td>
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