



XMPP

XEP-0279: Server IP Check

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2013-04-17
Version 0.2

Status	Type	Short Name
Deferred	Standards Track	sic

This specification defines a simple XMPP extension that enables a client to discover its external IP address.

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1 Introduction

There are times when a client might want or need to discover what its external Internet Protocol (IP) address and port are, e.g. when gathering transport candidates for protocols such as [SOCKS5 Bytestreams \(XEP-0065\)](#)¹ or [Jingle ICE-UDP Transport Method \(XEP-0176\)](#)². One way to do so is for the client to ask the XMPP server to which it has connected. This specification defines such a method. The information provided by the server cannot necessarily be relied upon because there might be intermediate entities between the client and the server, but if the IP address and port returned by the server is different from the client's notion of its IP address and port then at the very least the client has received a hint that it might be behind a network address translator (NAT) and therefore cannot usefully provide its private IP address as a candidate for use in multimedia negotiations.

2 Protocol

First the client sends an IQ-get request to its server.

Listing 1: Client requests its IP address from the server

```
<iq from='romeo@montague.lit/orchard'
  id='ik2s7159'
  type='get'>
  <address xmlns='urn:xmpp:sic:1' />
</iq>
```

The server then returns an IQ-result containing an <address/> element containing an <ip/> element specifying the client's external IP address and, optionally, a <port/> element specifying the client's external port.

Listing 2: Server returns IP address and port

```
<iq id='ik2s7159'
  to='romeo@montague.lit/orchard'
  type='result'>
  <address xmlns='urn:xmpp:sic:1'>
    <ip>192.168.4.1</ip>
    <port>12345</port>
  </address>
</iq>
```

Note that the IP address could be IPv4 or IPv6.

¹XEP-0065: SOCKS5 Bytestreams <<https://xmpp.org/extensions/xep-0065.html>>.

²XEP-0176: Jingle ICE-UDP Transport Method <<https://xmpp.org/extensions/xep-0176.html>>.

Listing 3: Server returns IPv6 address

```
<iq id='ik2s7159'
  to='romeo@montague.lit/orchard'
  type='result'>
  <address xmlns='urn:xmpp:sic:1'>
    <ip>2001:db8::9:1</ip>
    <port>12345</port>
  </address>
</iq>
```

3 Determining Support

If an entity supports this protocol, it MUST report that by including a service discovery feature of "urn:xmpp:sic:1" in response to disco#info requests (see Protocol Namespaces regarding issuance of one or more permanent namespaces).

Listing 4: Service discovery information request

```
<iq from='romeo@montague.lit/orchard'
  id='ux71f395'
  to='montague.lit'
  type='get'>
  <query xmlns='http://jabber.org/protocol/disco#info' />
</iq>
```

Listing 5: Service discovery information response

```
<iq from='montague.lit'
  id='ux71f395'
  to='romeo@montague.lit/orchard'
  type='result'>
  <query xmlns='http://jabber.org/protocol/disco#info'>
    <feature var='urn:xmpp:sic:1' />
  </query>
</iq>
```

4 Security Considerations

XMPP Core³ specifies that client IP addresses shall not be made public. If a client requests its own IP address, that policy is not violated. However, a server MUST NOT return the IP address of another client (e.g., if a connected client sends a SIC request to the bare JID of another user); instead, it MUST return a <forbidden/> error.

³RFC 6120: Extensible Messaging and Presence Protocol (XMPP): Core <<http://tools.ietf.org/html/rfc6120>>.

5 IANA Considerations

This document requires no interaction with the [Internet Assigned Numbers Authority \(IANA\)](#)⁴.

6 XMPP Registrar Considerations

6.1 Protocol Namespaces

This specification defines the following XML namespace:

- urn:xmpp:sic:1

Upon advancement of this specification from a status of Experimental to a status of Draft, the [XMPP Registrar](#)⁵ shall add the foregoing namespace to the registry located at [<https://xmpp.org/registrar/namespaces.html>](https://xmpp.org/registrar/namespaces.html), as described in Section 4 of [XMPP Registrar Function \(XEP-0053\)](#)⁶.

6.2 Protocol Versioning

If the protocol defined in this specification undergoes a revision that is not fully backwards-compatible with an older version, the XMPP Registrar shall increment the protocol version number found at the end of the XML namespaces defined herein, as described in Section 4 of XEP-0053.

7 XML Schema

```
<?xml version='1.0' encoding='UTF-8'?>

<xs:schema
  xmlns:xs='http://www.w3.org/2001/XMLSchema'
  targetNamespace='urn:xmpp:sic:1'
  xmlns='urn:xmpp:sic:1'
  elementFormDefault='qualified'>
```

⁴The Internet Assigned Numbers Authority (IANA) is the central coordinator for the assignment of unique parameter values for Internet protocols, such as port numbers and URI schemes. For further information, see <http://www.iana.org/>.

⁵The XMPP Registrar maintains a list of reserved protocol namespaces as well as registries of parameters used in the context of XMPP extension protocols approved by the XMPP Standards Foundation. For further information, see <https://xmpp.org/registrar/>.

⁶XEP-0053: XMPP Registrar Function [<https://xmpp.org/extensions/xep-0053.html>](https://xmpp.org/extensions/xep-0053.html).

```
<xs:element name='address' type='xs:string' />
<xs:element name='address'>
  <xs:complexType>
    <xs:sequence minOccurs='0'>
      <xs:element name='ip' maxOccurs='unbounded' type='xs:string' />
      <xs:element name='port' maxOccurs='unbounded' type='
        xs:positiveInteger' use='optional' />
    </xs:sequence>
  </xs:complexType>
</xs:element>
</xs:schema>
```

8 Acknowledgements

Thanks to Joe Hildebrand for his feedback.