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Platform SDK Developer's Guide

IPv6 Resolution

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IPv6 Resolution

Java

Overview

Platform SDK provides two connection configuration options that control IPv4/IPv6 address resolution:

Option Name	Java Constant	Values	Description
enable-ipv6	Connection.ENABLE_IPV6_KEY	0 (default)	This option enables and disables IPv6 support. When set to 0, IPv6 support is disabled, even if IPv6 is supported by the platform.
ip-version	Connection.IP_VERSION_KEY	4, 6 (default) 6, 4	Defines the order in which connection attempts will be made to IPv6 and IPv4 addresses. Option values do not contain spaces. This option has no effect if the option enable-ipv6 is set to 0. Note: This option only applies to clients. Note: In Java you can use the predefined value constants: Connection.IP_VERSION_4_6 or Connection.IP_VERSION_6_4

To enable the use of a Netty connection with OIO transport, use one of the following methods:

- start your Java application with the follow JVM option:
-Dcom.genesyslab.platform.commons.connection.impl.netty.transport=OIO
- include the following code at the beginning of your application, before any Platform SDK classes are used:

```
System.setProperty(NettyConnectionFactory.TRANSPORT_TYPE_PARAMETER, "OIO");
```

For additional information about working with IPv6, refer to the Networking IPv6 User Guide (https://docs.oracle.com/javase/8/docs/technotes/guides/net/ipv6_guide/index.html).

Code Samples

[+] Genesys Server needs to open the IPv6-only port for listening

```
PropertyConfiguration cfg = new PropertyConfiguration();
cfg.setIPv6Enabled(true); // cfg.setBoolean(Connection.ENABLE_IPV6_KEY, true) OR
cfg.setOption("enable-ipv6", "1")

Endpoint endpoint = new Endpoint("testServer", ":", 1234, cfg);
ServerChannel server = new ServerChannel(endpoint, new SomeProtocolFactory());
server.open();
```

[+] Genesys Server needs to open IPv4-only port for listening

```
PropertyConfiguration cfg = new PropertyConfiguration();
cfg.setIPv6Enabled(false); // cfg.setBoolean(Connection.ENABLE_IPV6_KEY, false) OR
cfg.setOption("enable-ipv6", "0")

Endpoint endpoint = new Endpoint("testServer", "0.0.0.0", 1234, cfg);
ServerChannel server = new ServerChannel(endpoint, new SomeProtocolFactory());
server.open();
```

[+] Genesys Server needs to open IPv4/IPv6 dual stack port for listening

```
PropertyConfiguration cfg = new PropertyConfiguration();
cfg.setIPv6Enabled(true); // cfg.setBoolean(Connection.ENABLE_IPV6_KEY, true) OR
cfg.setOption("enable-ipv6", "1")

Endpoint endpoint = new WildcardEndpoint("testServer", 1234, cfg);
ServerChannel server = new ServerChannel(endpoint, new SomeProtocolFactory());
server.open();
```

[+] Genesys application needs to open connection to IPv6 network interface of backend server

```
PropertyConfiguration cfg = new PropertyConfiguration();
cfg.setIPv6Enabled(true); // cfg.setBoolean(Connection.ENABLE_IPV6_KEY, true) OR
cfg.setOption("enable-ipv6", "1")
cfg.setIPvVersion(Connection.IP_VERSION_6_4); // cfg.setOption(Connection.IP_VERSION_KEY,
Connection.IP_VERSION_6_4) OR cfg.setOption("ip-version", "6,4")

Endpoint endpoint = new Endpoint("testServer", 1234, cfg);
SomeProtocol protocol = new SomeProtocol(endpoint);
protocol.open();
```

[+] Genesys application needs to open connection to IPv4 network interface of backend server

```
PropertyConfiguration cfg = new PropertyConfiguration();
```

```
cfg.setIPv6Enabled(false); // cfg.setBoolean(Connection.ENABLE_IPV6_KEY, false) OR
cfg.setOption("enable-ipv6", "0")
```

```
Endpoint endpoint = new Endpoint("testServer", 1234, cfg);
SomeProtocol protocol = new SomeProtocol(endpoint);
protocol.open();
```

[+] Genesys application needs to open connection to IPv6 or IPv4 network interface of backend server, with explicit order of preference (try IPv4 then IPv6)

```
PropertyConfiguration cfg = new PropertyConfiguration();
cfg.setIPv6Enabled(true); // cfg.setBoolean(Connection.ENABLE_IPV6_KEY, true) OR
cfg.setOption("enable-ipv6", "1")
cfg.setIPVersion(Connection.IP_VERSION_4_6); // cfg.setOption(Connection.IP_VERSION_KEY,
Connection.IP_VERSION_4_6) OR cfg.setOption("ip-version", "4,6")
```

```
Endpoint endpoint = new Endpoint("testServer", 1234, cfg);
SomeProtocol protocol = new SomeProtocol(endpoint);
protocol.open();
```

Using the Application Template Application Block

Refer to the [Using the Application Template Application Block](#) article for details about defining the IPv6 options in Configuration Manager or loading connection configuration details.

.NET

Overview

Platform SDK provides two connection configuration options that control IPv4/IPv6 address resolution:

Option Name	C# Constant	Values	Description
enable-ipv6	CommonConnection.EnableIPv6Key	0 (default) 1	This option enables and disables IPv6 support. When set to 0, IPv6 support is disabled, even if IPv6 is supported by the platform.
ip-version	CommonConnection.IpVersionKey	4, 6 (default) 6, 4	Defines the order in which connection attempts will be made to IPv6 and IPv4 addresses. Option values do not contain

Option Name	C# Constant	Values	Description
			spaces. This option has no effect if the option enable-ipv6 is set to 0. Note: This option only applies to clients.

Code Samples

[+] Genesys Server needs to open IPv6-only port for listening

```
PropertyConfiguration cfg = new PropertyConfiguration();
cfg.IPv6Enabled = true; // cfg.SetBoolean(CommonConnection.EnableIPv6Key, true) OR
cfg.SetOption("enable-ipv6", "1")
```

```
Endpoint endpoint = new Endpoint("testServer", "::", 1234, cfg);
ServerChannel server = new ServerChannel(endpoint, new SomeProtocolFactory());
server.Open();
```

[+] Genesys Server needs to open IPv4-only port for listening

```
PropertyConfiguration cfg = new PropertyConfiguration();
cfg.IPv6Enabled = false; // cfg.SetBoolean(CommonConnection.EnableIPv6Key, false) OR
cfg.SetOption("enable-ipv6", "0")
```

```
Endpoint endpoint = new Endpoint("testServer", "::", 1234, cfg);
ServerChannel server = new ServerChannel(endpoint, new SomeProtocolFactory());
server.Open();
```

[+] Genesys Server needs to open IPv4/IPv6 dual stack port for listening

```
PropertyConfiguration cfg = new PropertyConfiguration();
cfg.IPv6Enabled = true; // cfg.SetBoolean(CommonConnection.EnableIPv6Key, true) OR
cfg.SetOption("enable-ipv6", "1")
```

```
Endpoint endpoint = new WildcardEndpoint("testServer", 1234, cfg);
ServerChannel server = new ServerChannel(endpoint, new SomeProtocolFactory());
server.Open();
```

[+] Genesys application needs to open connection to IPv6 network interface of backend server

```
PropertyConfiguration cfg = new PropertyConfiguration();
cfg.IPv6Enabled = true; // cfg.SetBoolean(CommonConnection.EnableIPv6Key, true) OR
cfg.SetOption("enable-ipv6", "1")
cfg.IPVersion = "6,4"; // cfg.SetOption(CommonConnection.IpVersionKey, "6,4") OR
```

```
cfg.SetOption("ip-version", "6,4")
```

```
Endpoint endpoint = new Endpoint("testServer", 1234, cfg);  
SomeProtocol protocol = new SomeProtocol(endpoint);  
protocol.Open();
```

[+] Genesys application needs to open connection to IPv4 network interface of backend server

```
PropertyConfiguration cfg = new PropertyConfiguration();  
cfg.IPv6Enabled = false; // cfg.SetBoolean(CommonConnection.EnableIPv6Key, false) OR  
cfg.SetOption("enable-ipv6", "0")
```

```
Endpoint endpoint = new Endpoint("testServer", 1234, cfg);  
SomeProtocol protocol = new SomeProtocol(endpoint);  
protocol.Open();
```

[+] Genesys application needs to open connection to IPv6 or IPv4 network interface of backend server, with explicit order of preference (try IPv4 then IPv6)

```
PropertyConfiguration cfg = new PropertyConfiguration();  
cfg.IPv6Enabled = true; // cfg.SetBoolean(CommonConnection.EnableIPv6Key, true) OR  
cfg.SetOption("enable-ipv6", "1")  
cfg.IPVersion = "4,6"; // cfg.SetOption(CommonConnection.IpVersionKey, "4,6") OR  
cfg.SetOption("ip-version", "4,6")
```

```
Endpoint endpoint = new Endpoint("testServer", 1234, cfg);  
SomeProtocol protocol = new SomeProtocol(endpoint);  
protocol.Open();
```