

IBM Aspera fasp.io Gateway Admin Guide 1.0.1

Linux

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Introduction

IBM Aspera fasp.io is a lightweight software component for high-speed bidirectional data transport. Using the patented Aspera FASP protocol, fasp.io achieves speeds of up to 2.5 Gb/sec per single process instance over unmanaged networks.

Aspera fasp.io fully utilizes available bandwidth to transfer data in byte-order sequence at the maximum possible speed with near-zero latency. It removes the barriers of size, distance, and complexity to move data between on-premises and cloud infrastructures.

Aspera fasp.io provides significant improvements in performance and service quality when transferring data between highly remote or dispersed locations in unfavorable network conditions, such as high latency and packet loss.

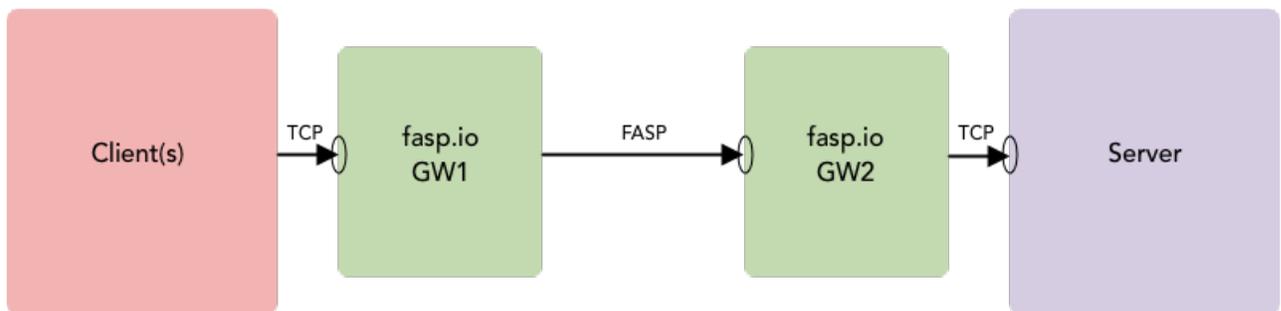
IBM Aspera extends its existing data transfer software portfolio with a new option, the Aspera fasp.io Gateway. Gateway is a software component that can be integrated quickly and easily with existing applications that use a TCP connection for their data flow. It improves nearly all server-to-server TCP-based data flows regardless of the distance and network conditions.

The IBM Aspera fasp.io Gateway acts as a transport layer proxy between TCP and Aspera FASP.

Usage

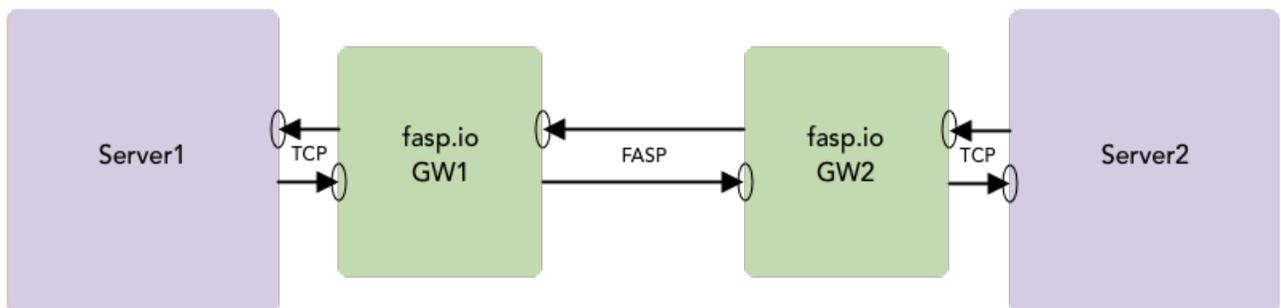
Gateway Client/Server Usage

In this configuration, two fasp.io Gateways are used to bridge one (or several) TCP connections from TCP clients to a TCP server over FASP:



Gateway Server/Server Usage

For some use cases, such as DB replication or messaging services (like MQ or Event Streams), communication must be established by both sides. In this mode, each server initiates a connection to the other:



For information on how to configure these two cases, see [Configuration](#) on page 4

Installation

DEB or RPM Package

Install from the `.deb` or `.rpm` package as appropriate to your system.

- Linux `.deb`:

```
$ sudo apt install ./ibm-fasp.io-gateway_version_arch.deb
```

- Linux `.rpm`:

```
$ sudo yum install ./ibm-fasp.io-gateway_version_arch.rpm
```

Location of installed files:

Executable:	<code>/usr/bin</code>
Default configuration files:	<code>/etc/fasp.io</code>
Documentation:	<code>/usr/share/fasp.io-gateway</code>
SystemD startup file:	<code>/etc/systemd/system/fasp.io-gateway.service</code>

Configuration

fasp.io Gateway Configuration File

The `fasp.io` Gateway configuration file, `gateway.toml`, is located in the system `/etc` directory:

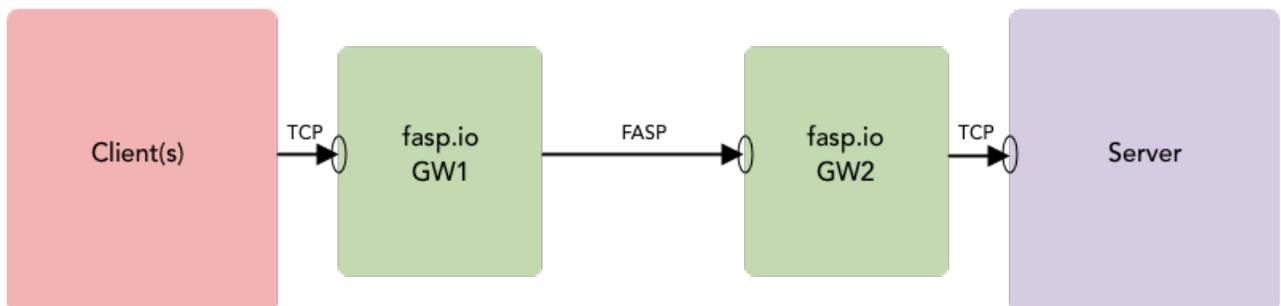
```
/etc/fasp.io/gateway.toml
```

The `gateway.toml` included in the installation is provided as an example. Modify this file to specify your ports, hostnames, and so on.

Configuration Examples

Gateway Client/Server Example

In this configuration, two `fasp.io` Gateways are used to bridge one (or several) TCP connections from TCP clients to a TCP server over FASP:



Given a Server listening on port 12345, configure your client to point to the `fasp.io` Gateway 1 (GW1 IP) and port 12345:

fasp.io GW1 Configuration

```
[[bridge]]
  [bridge.local]
    protocol = "tcp"
    host = "0.0.0.0"
    port = 12345

  [bridge.forward]
    protocol = "fasp"
    host = "GW2"
    port = 12345
```

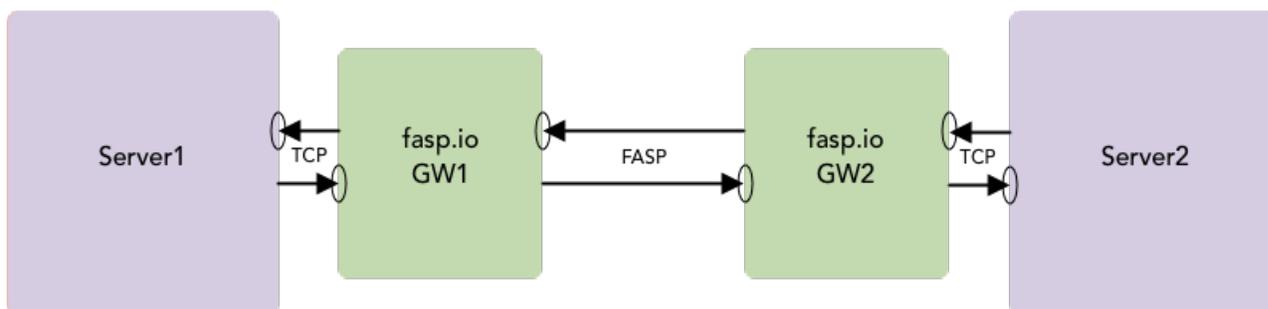
fasp.io GW2 Configuration

```
[[bridge]]
  [bridge.local]
    protocol = "fasp"
    host = "0.0.0.0"
    port = 12345

  [bridge.forward]
    protocol = "tcp"
    host = "Server"
    port = 12345
```

Gateway Server/Server Example

For some use cases, such as DB replication or messaging services (like MQ or Event Streams), communication must be established by both sides. In this mode, each server initiates a connection to the other:



fasp.io GW1 Configuration

```
[[bridge]]
  name = "Outbound"
  [bridge.local]
    protocol = "tcp"
    host = "0.0.0.0"
    port = 12345

  [bridge.forward]
    protocol = "fasp"
    host = "GW2"
    port = 12345

[[bridge]]
  name = "Inbound"
  [bridge.local]
    protocol = "fasp"
    host = "0.0.0.0"
```

```

        port = 54321

[bridge.forward]
    protocol = "tcp"
    host = "Server1"
    port = 54321

```

fasp.io GW2 Configuration

```

[[bridge]]
    name = "Outbound"
    [bridge.local]
        protocol = "tcp"
        host = "0.0.0.0"
        port = 54321

    [bridge.forward]
        protocol = "fasp"
        host = "GW1"
        port = 54321

[[bridge]]
    name = "Inbound"
    [bridge.local]
        protocol = "fasp"
        host = "0.0.0.0"
        port = 12345

    [bridge.forward]
        protocol = "tcp"
        host = "Server2"
        port = 12345

```

Logging Configuration File

Logging configuration is defined in `logging.toml`. This file is located in the same `config` directory as `gateway.toml` (location described above). Warning, error, and info logs are sent to the console by default. In the default `logging.toml` file, four loggers are made available:

- `gateway` – High-level logger for the gateway.
- `s2s` – Stream-to-stream session class logger.
- `fasp.io-cpp` – Logger for the Asio/C++ FASP SDK.
- `fasp.io-c` – Logger for the FASP protocol.

For more information on how to configure logging, see the full reference at:

https://github.com/guangie88/spdlog_setup

Notes:

- The `level` setting is optional for both sinks and loggers.
- The level for error logging is `err`, not `error`.
- The `_st` suffix means single-threaded.
- The `_mt` suffix means multi-threaded.
- `syslog_sink` is thread-safe by default. No `_mt` suffix is required.

The `spdlog` default logging format is:

```
[2014-10-31 23:46:59.678] [loggername] [info] Some message
```

For information on how to customize `spdlog` formatting, see:

<https://github.com/gabime/spdlog/wiki/3.-Custom-formatting>

Launching fasp.io Gateway

To start, stop, or enable the `fasp.io-gateway` service, as well as to check service status and access service logs, run the following commands as root:

- Start service:

```
# sudo systemctl start fasp.io-gateway
```

- Stop service:

```
# sudo systemctl stop fasp.io-gateway
```

- Enable service (to restart after reboot):

```
# sudo systemctl enable fasp.io-gateway
```

- Service status:

```
# sudo systemctl status fasp.io-gateway
```

- See service logs:

```
# sudo journalctl --unit=fasp.io-gateway
```

Examples

Simple Echo Test Through netcat

On the Server machine, listen:

```
# nc -v -l 12345
```

On the client machine, connect to Gateway 1:

```
# nc GW1_ip_addr 12345
```

Stream Data Through netcat

On the Server machine, listen:

```
# nc -v -l 12345 > /dev/null
```

On the client machine, connect and stream 1 GB of data:

```
# dd if=/dev/zero count=1024 bs=1m | nc -v -n GW1_ip_addr 12345 >/dev/null
```

Technical Support

Support Websites

For an overview of IBM Aspera Support services, visit <https://www.ibm.com/products/aspera/support>.

To view product announcements, webinars, and knowledgebase articles, as well as access the Aspera Support Community Forum, sign into the IBM Aspera Support site at <https://www.ibm.com/mysupport/> using your IBMid (not your company Aspera credentials), or set up a new account.

Technical Support

You may contact Aspera support using the IBM Aspera Support Guide: <https://www.ibm.com/support/home/pages/support-guide/?product=3712142>

You may contact an Aspera support technician 24 hours a day, 7 days a week, through the following methods, with a guaranteed 4-hour response time.

Phone (North America)	+1 (510) 849-2386, option 2
Phone (Europe)	+44 (0) 207-993-6653 option 2
Phone (Singapore)	+81 (0) 3-4578-9357 option 2

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