

Flume

Accelerate challenged military communications

End to end acceleration for high latency, high intermittency networks

About Flume

- Overcomes latency, intermittency and congestion on any network, from the data center to the tactical edge.
- 100% software solution
- Runs on commodity hardware in cloud, grid and virtualized environments
- Lowers communication and networking costs
- Extends acceleration capabilities to the tactical edge

Advantages

- Accelerate communications by up to 100x TCP
- Patent pending acceleration on any data format: compressed, encrypted, binary files, etc.
- 100% software, no specialized hardware to purchase or maintain
- Ensure 100% data accuracy
- IPV6 support
- Flexible license and subscriptions available

As DOD is creating Net Centric environments to better support world wide operations, cost efficient and instantaneous access to key mission data is a top priority.

Today's worldwide communications networks challenge Net Centric environments. Congestion, high latency in long haul connections, and high intermittency in tactical networks, often slow down data transfer speeds to unacceptable rates.

For the first time, Warfighters on the tactical edge can experience faster data transmission rates, while network administrators rely on a single technology to accelerate all of their networks – from landlines, to satellite links to IP over radio.

Flume can enable any link within minutes

Flume supports the agile computing environment required by today's DOD. Deployment in forward locations is hassle free, as Flume is a 100% software solution that can be set up and administered remotely. Unlike other data accelerators, no specialized hardware, gateways or changes to TCP/IP are required. Flume presents users with the ability to accelerate data over any packetized network and seamlessly adapts to changing network topologies. Flume runs on any commodity PCs and can even run in virtualized, cloud or grid environments.

Acceleration without limitations

Flume directly attacks the challenges of latency, intermittency and congestion, so encrypted, compressed, even random binary data is accelerated at the same rate.

Flume is not restricted by data volumes and because of its portability, even the smallest element or platform accelerates communications in a manner never before possible.

Ensure 100% data accuracy

Flume uses industry standard algorithms to ensure that literally every bit of transmitted data is accurate – guaranteeing, even in the most challenging network environments, that mission critical data is sent quickly and accurately.

Reduce Networking Costs

Latency and intermittency make IP communications over expensive connections inefficient, often increasing costs to add more bandwidth.

With Flume, users receive data 3-100x faster and consume less of the expensive bandwidth than before. In addition, Flume is an end to end solution, that works as efficiently on landlines as expensive satellite connections. Expensive gateways and unique protocols to operate on satellite links are made obsolete.

Site 1	Site 2	“Latency/ Ping (ms)”	Line Speed	File Size	“Standard TCP time”	Flume time	“Flume Speed up”
Perth, AUS	San Jose, USA	219	1.5MB/s	500MB	1730	385	4.5
SATCOM		500	500KB/s	15MB	310	30	10.3
JTRS		100	56KB/s	4MB	200	60	3.3
Boston, USA	San Jose, USA	105	1.5MB/s	250MB	791	188	4.2
Isreal	India	470	60 Mb/s	100MB	1503	39.5	38
Isreal	RTP, USA	170		1GB	4791	445	10.8
RTP,USA	San Jose, USA	85		8.6GB	18937	1549	12.2
New York City, USA	Hyderabad, India	288	1.75MB/s	100MB	400	100	4.0
Shanghai, CN	San Jose, USA	150	10MB/s	150MB	280	30	9.3
Taiwan	San Jose, USA	148	5.6MB/s	100MB	258	56	4.6

Case study – US Air Force

The US Air Force’s Electronic Systems Center has proven Flume’s performance improvements on a number of military networks. Running on a military satellite link, Flume was able to improve transfer speeds by more than 10 times. Transferring data over a Joint Tactical Radio (JTRS), Flume was able to accelerate data by more than 3 times. The ESC also employed Flume to transfer data to and from vehicles in tactical situations, moving in and out of range and out of line of site of a wireless mesh network. Flume was able to successfully transfer data when other methods were crippled by the intermittency and degradation presented by the challenging conditions .

Case Study Financial Services

A large US Financial services company with operations in New York City and Hyderabad, India was unable to replicate all operation data between the two locations despite having a dedicated T1 line between the two sites. Despite an approximate available bandwidth of 250 KB per second, the company was only able to attain a 35KB/s rate of throughput, due to long haul latency. Installing Flume on the link allowed the customer to increase their throughput to 170 200KB/second with the data throughput rate dependent upon concurrent network traffic. Interested in conducting full nightly replication between the two sites, the customer leased 3 more T1 lines between their operations and leveraged Flume on the expanded link. As predicted, Flume scaled linearly with the added bandwidth giving 930-970KB/s of throughput of the available 1MB/s of bandwidth all the while allowing completely uninterrupted regular IP communications between the sites.

System Requirements: (add RAM)

Hardware Requirements:

Flume 2.2 runs on 32-bit x86 or 64-bit x86_64 Intel or AMD processors with 256MB of RAM .

Operating System Requirements:

32-bit Linux 2.4 on Red Hat Enterprise Linux 3 and CentOS 3 - ARCH.linux_24_i86 in the distribution and when installed
32-bit Linux 2.6 kernel on Red Hat Enterprise 4 and 5, CentOS 4 and 5, and Ubuntu 7.10 - ARCH.linux_26_i86 in the distribution and when installed

64-bit Linux 2.6 kernel on 64-bit x86_64 Red Hat Enterprise 4 and 5 - ARCH.linux_26_i86 in the distribution and when installed
Windows: Flume can run on virtualized linux machines on Windows XP / Vista machines