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## Take Control of Multiple ISP Connections

Your ISP connections are your link to the outside world. Having multiple connections can increase availability and performance, but managing multiple links can be difficult.

BIG-IP® Link Controller™ puts the management of these links under your control. It monitors the performance and availability of each link and directs connections—both inbound and outbound—over the best possible link. It also improves application performance by prioritizing and optimizing traffic. BIG-IP Link Controller gives you the tools to direct traffic over the most cost-effective connections first so you can keep your ISP costs at a minimum.

The result is more effective use of multiple ISP connections for greater reliability, better performance, and lower costs.

### Key benefits

#### Eliminate downtime caused by link and ISP failures

Monitor the health and availability of each connection to dynamically direct users around ISP outages.

#### Improve application performance

Route users over the best link and optimize the connection to provide the best application experience.

#### Control ISP costs

Aggregate inexpensive links and create policies to control your bandwidth costs.

## Reliable Network Connectivity

BIG-IP Link Controller dynamically distributes traffic to ensure that your business is always connected.

### Comprehensive link monitoring

With a comprehensive view into the health and throughput of links going through the gateway router, BIG-IP Link Controller provides visibility into the bandwidth and capacity of any given link.

### High availability

BIG-IP Link Controller combines multiple monitors to quickly and accurately determine the health and availability of every link. If a problem is detected, traffic can be rerouted to other available links, maintaining client connectivity without incurring the costs of downtime.

### Programmable link routing with iRules

Using the F5 iRules<sup>®</sup> scripting language, you can intelligently route traffic over multiple WAN links, based on TCP/IP parameters such as source IP address, destination IP address, and port. With iRules, you can define policies to distribute traffic over the best performing links based on application type, quality of service, and client types, improving application performance and user experience.

## Better User Experience

BIG-IP Link Controller routes users over the best link and optimizes the connection to provide a better application experience.

### Best performing link

Using round-trip time and line quality calculations, BIG-IP Link Controller tests which connection will provide the best service for each user, and then it directs the user to that link. This ensures the fastest possible service and highest quality connections.

### Link capacity and throughput

You can use BIG-IP Link Controller to define and control how traffic is distributed across links based on real-time traffic flows and throughput. This increases application performance and available bandwidth while removing the risk of saturating any one link. When a link nears its capacity, traffic is shifted to less congested links, boosting overall site performance.

### Integrated rate shaping

BIG-IP Link Controller gives you a powerful way to classify and prioritize application traffic on WAN links to use bandwidth more efficiently. Rate shaping enables you to define traffic and application limits, control the rate at which those resources are allowed to spike or burst, use queuing to prioritize traffic types, and define relationships where certain traffic types can borrow from other types. With quality of service (QoS) and terms of service (ToS), you can identify critical traffic or applications for special handling by upstream routers. This ensures that high-priority traffic is routed first.

BIG-IP Link Controller provides advanced link traffic distribution capabilities.

- Round robin
- Round-trip time
- Global availability
- Hops
- Static persistence
- Packet completion rate
- Topology
- User-defined QoS
- Virtual server capacity
- Dynamic ratio
- Least connections
- Random
- Packets rate
- Ratio
- Kilobytes per second

### Topology-based routing

BIG-IP Link Controller can accurately determine the location of users and route traffic over the desired link based on pre-defined policies. This lets you choose the best performing link based on location, while avoiding inter-ISP routing issues that can result in high latency and poor performance.

### Optimized TCP performance

TCP protocol inefficiencies can cause unnecessary chattiness. BIG-IP Link Controller leverages TCP Express™ to overcome TCP protocol inefficiencies. This gives you the ability to completely fill the pipe over long distances for lower bandwidth bills and prioritize bandwidth availability for mission-critical applications.

### Compression

Compression enables fewer bytes and data, reduces WAN link bandwidth, and removes bottlenecks for faster application delivery. Granular control of link bandwidth utilization for different connection types results in an improved client experience, with more efficient WAN link administration and improved productivity. You can configure the compression engine based on document type, traffic type, and network conditions such as round-trip time.

## Lower ISP Costs

Control your ISP costs with BIG-IP Link Controller.

### Bandwidth scalability

Regardless of the link type or provider, BIG-IP Link Controller can aggregate small, inexpensive lines to lower bandwidth costs and minimize the money spent on dark fiber or unused standby lines.

### Link cost load balancing

BIG-IP Link Controller gives you the ability to define the cost of each connection and the billing scheme, and then it will automatically direct traffic based on your criteria. This enables you to define policies that direct traffic over the least expensive link or maximize bandwidth across different connections to eliminate bandwidth bottlenecks and minimize inefficient bandwidth.

**Note:** BIG-IP Link Controller and link load balancing currently not available in the United States of America.

### Eliminates barriers of multi-homing with BGP

BIG-IP Link Controller eliminates deployment barriers and reduces the cost of multi-homing via Border Gateway Protocol (BGP). You can direct traffic over the best route without purchasing larger routers, coordinating with ISPs, or obtaining specialized staff and IP addressing to run BGP.

## BIG-IP Link Controller Platform

BIG-IP Link Controller is available on the BIG-IP 2000S platform. It is available as an add-on module for BIG-IP Local Traffic Manager (LTM) on any BIG-IP hardware platform. For detailed specifications, refer to the [BIG-IP System Hardware Datasheet](#).



2000S Series

## F5 Global Services

F5 Global Services offers world-class support, training, and consulting to help you get the most from your F5 investment. Whether it's providing fast answers to questions, training internal teams, or handling entire implementations from design to deployment, F5 Global Services can help ensure your applications are always secure, fast, and reliable. For more information about F5 Global Services, contact [consulting@f5.com](mailto:consulting@f5.com) or visit [f5.com/services](http://f5.com/services).

## More Information

Browse for these and other resources on [f5.com](http://f5.com) to learn more about BIG-IP Link Controller.

### Datasheet

[BIG-IP System Hardware Datasheet](#)

### White paper

[Conquering Multi-Homed ISP Link Challenges](#)

### Case studies

[Interswitch Delivers 100% Uptime for Key Payment Services with F5 Platform](#)

[SingularLogic Gains a Secure, Scalable Platform for SaaS with F5](#)

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an application world.

