



## WAN Link Load Balancing – for Inbound Traffic:

### (Inbound link Load Balancing)

Ver.1.1

A common inquiry we receive is whether or not any of our solutions have the capability to automate switching **inbound traffic** between common office WAN Internet connections, such as DSL, Cable and Lease lines. The quick answer is "absolutely!" Total Uptime Failover solutions are perfect for automatically failing inbound traffic over these types of WAN links if your organization has something that needs to be accessed externally, like a Remote Desktop server, mail server, web server, VPN or almost any IP accessible device.

In Other word - Inbound Link Load Balancing distributes inbound data traffic over multiple WAN links to computers/servers behind NetXGATE NextGen Firewall. This brings in an additional responsibility of ensuring continuous availability of the application from outside --from the Internet.

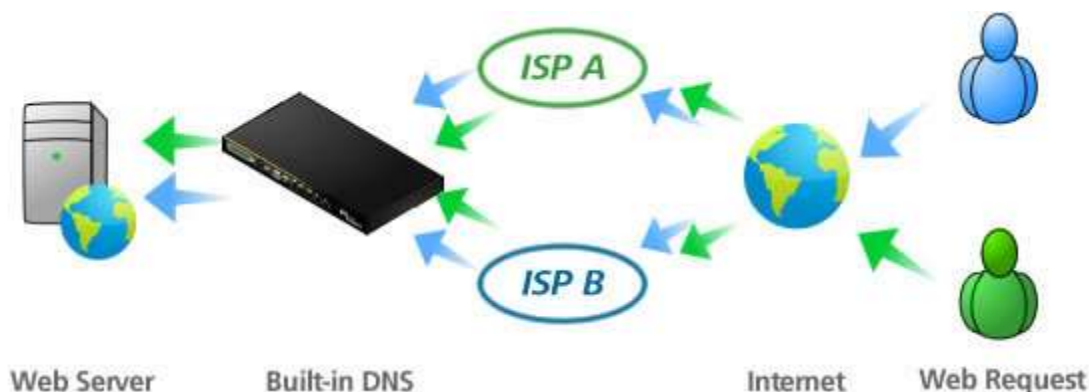
- Traditionally such a problem is addressed by BGP. This is always preceded by obtaining an Autonomous Number from respective NIC.
- This approach, compared to BGP-based solution, is cost-effective and operator independent.

Inbound Link Load Balancing is configured via following way:

- DNS records configured within NetXGATE NG- All the records of the domain (A, MX, CNAME, TXT, etc) will be hold on NetXGATE. It is required to modify the Name Server record (NS) on Domain Registrar in order to migrate from old DNS server to NetXGATE NG.

The following is a simplified example of an Inbound Load Balancing scenario when NetXGATE NG is acting as an authoritative DNS server, further details subsequently follow:

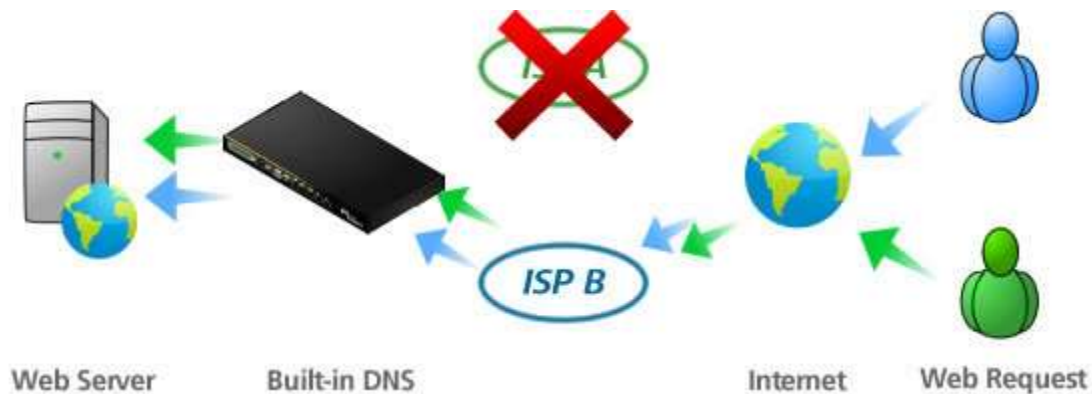
1. NetXGATE NG is being an authoritative DNS server of domain 'fw.netx.in'
2. The web server that serves 'fw.netx.in' is housed behind NetXGATE NG, where NetXGATE NG distributes the web server's data traffic across two WAN links (i.e. WAN1 and WAN2).



*Both WANs are available and traffic are load balanced.*

In further detail, with the aforementioned DNS records, the following steps take place when resolving the hostname fw.netx.in:

1. A client computer requires resolution for fw.netx.in, and queries the build-in DNS server of NetXGATE for 'fw.netx.in'
2. The client computer queries, via WAN1, the DNS of NetXGATE for the resolution of 'fw.netx.in'. In the event that the WAN1 connection is down, the DNS query would not succeed. However, as a built-in mechanism of the DNS protocol, the client computer then queries via WAN2 to resolve the hostname fw.netx.in
3. NetXGATE, upon receiving the DNS query, returns to the client computer the IP addresses of 'fw.netx.in' that correspond to available WAN links. For example:
  - o If both WAN1 and WAN2 are available, then both the IP address that corresponds to WAN1 and that of WAN2 are returned.
  - o If WAN1 is available but WAN2 is down, then the IP address that corresponds to WAN1 is returned, but that of WAN2 is not returned.



*WAN1 is down and incoming traffic goes through WAN2.*

