

# How to scale GSLB deployment using parent-child topology in NetScaler ADC load balancer?

## Use Case

Load balancing between large number of sites which are geographically far from each other.

## Introduction

NetScaler GSLB provides global load balancing and disaster recovery functionality by creating mesh connections between all the involved sites and takes intelligent load balancing decisions. Each site talk to every other site to exchange server and network metrics via a Citrix proprietary protocol called Metric Exchange Protocol (MEP), at a regular interval. As the number of sites grows, the traffic flow grows exponentially due to the mesh topology. To counter this issue, NetScaler supports GSLB parent-child topology.

Other reasons for implementing parent-child topology can be to increase the number of sites that can be part of GSLB deployment. In a GSLB active-active or active-passive scenario, a maximum of 32 sites can participate. With GSLB parent-child topology, a total of 1024 Child sites can be configured in addition to 32 parent sites. So, GSLB parent-child topology solves dual problem of limitation of sites and exponential growth of traffic with more number of sites.

GSLB parent-child topology is a hierarchical design where parent sites take GSLB load balancing decisions and child sites only does local load balancing. Parent sites talk to each other over MEP and take GSLB decisions. Child sites only talk to their parent sites and take up actual traffic after GSLB decision is made by the parent sites.

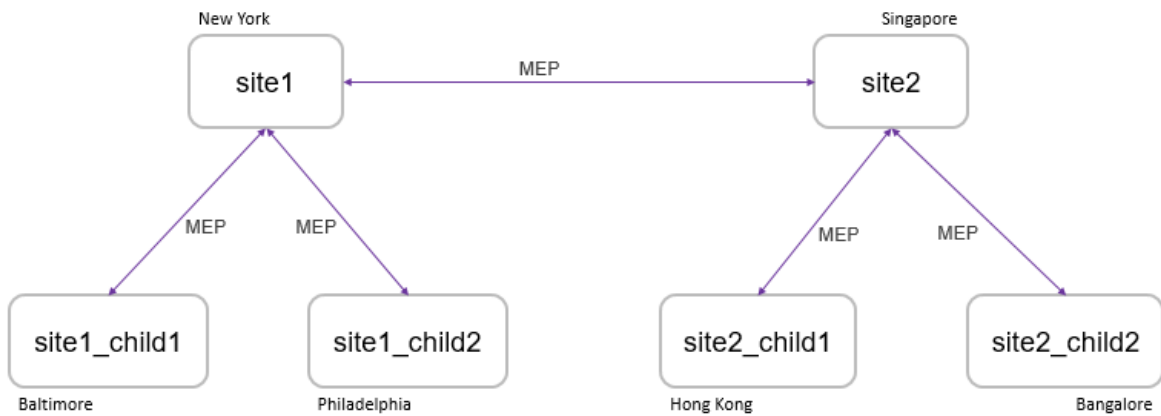
More details about the design and config is captured in the official docs link -

<https://docs.citrix.com/en-us/netscaler/11-1/gslb/configure-gslb-parent-child-topology.html>

## Configuration Steps in NetScaler ADC

The following logical topology diagram shows how the GSLB parent-child hierarchy looks like. Location names are provided for example.

Sample configuration for this topology follows. Sample configuration only covers configuration on parent site "site1" and its 2 child sites – "site1\_child1" and "site1\_child2". Configuration on other sites should follow the same methodology.



**CLI:**

```

site1-----site2
site1_child1      site1_child2      site2_child1      site2_child2

```

site1:

```
add gslb site site1 10.102.82.164 -publicIP 10.102.82.164
```

```
add gslb site site2 10.106.24.164 -publicIP 10.106.24.164
```

```
add gslb site site1_child1 10.102.82.131 -publicIP 10.102.82.131 -nwMetricExchange DISABLED -
sessionExchange DISABLED -parentSite site1
```

```
add gslb site site1_child2 10.102.82.67 -publicIP 10.102.82.67 -nwMetricExchange DISABLED -
sessionExchange DISABLED -parentSite site1
```

```
add gslb site site2_child2 10.106.24.67 -publicIP 10.106.24.67 -nwMetricExchange DISABLED -
sessionExchange DISABLED -parentSite site2
```

```
add gslb site site2_child1 10.106.24.132 -publicIP 10.106.24.132 -nwMetricExchange DISABLED -
sessionExchange DISABLED -parentSite site2
```

```
add gslb service site1_child1_http_gsvc1 10.102.82.132 HTTP 80 -publicIP 10.102.82.132 -publicPort
80 -maxClient 0 -siteName site1_child1 -cltTimeout 180 -svrTimeout 360 -downStateFlush ENABLED
```

```
add gslb service site1_child2_http_gsvc1 10.102.82.68 HTTP 80 -publicIP 10.102.82.68 -publicPort 80
-maxClient 0 -siteName site1_child2 -cltTimeout 180 -svrTimeout 360 -downStateFlush ENABLED
```

```
add gslb service site1_http_gsvc1 10.102.82.165 HTTP 80 -publicIP 10.102.82.165 -publicPort 80 -
maxClient 0 -siteName site1 -cltTimeout 180 -svrTimeout 360 -downStateFlush ENABLED
```

```
add gslb service site2_child1_http_gsvc1 10.106.24.134 HTTP 80 -publicIP 10.106.24.134 -publicPort
80 -maxClient 0 -siteName site2_child1 -cltTimeout 180 -svrTimeout 360 -downStateFlush ENABLED
```

```
add gslb service site2_child2_http_gsvc1 10.106.24.68 HTTP 80 -publicIP 10.106.24.68 -publicPort 80 -maxClient 0 -siteName site2_child2 -cltTimeout 180 -svrTimeout 360 -downStateFlush ENABLED
```

```
add gslb service site2_http_gsvc1 10.106.24.166 HTTP 80 -publicIP 10.106.24.166 -publicPort 80 -maxClient 0 -siteName site2 -cltTimeout 180 -svrTimeout 360 -downStateFlush ENABLED
```

```
add gslb service site1_child1_http_gsvc2 10.102.82.133 HTTP 80 -publicIP 10.102.82.133 -publicPort 80 -maxClient 0 -siteName site1_child1 -cltTimeout 180 -svrTimeout 360 -downStateFlush ENABLED
```

```
add gslb vserver gv1 HTTP -backupLBMethod ROUNDROBIN -tolerance 0 -appflowLog DISABLED
```

```
bind gslb vserver gv1 -serviceName site1_child2_http_gsvc1
```

```
bind gslb vserver gv1 -serviceName site1_child1_http_gsvc1
```

```
bind gslb vserver gv1 -serviceName site1_child1_http_gsvc2
```

```
bind gslb vserver gv1 -serviceName site1_http_gsvc1
```

```
bind gslb vserver gv1 -serviceName site2_child2_http_gsvc1
```

```
bind gslb vserver gv1 -serviceName site2_child1_http_gsvc1
```

```
bind gslb vserver gv1 -serviceName site2_http_gsvc1
```

```
bind gslb vserver gv1 -domainName www.gslb.com -TTL 5
```

```
add service svc1 10.102.82.25 HTTP 80 -gslb NONE -maxClient 0 -maxReq 0 -cip DISABLED -usip NO -useproxyport YES -sp ON -cltTimeout 180 -svrTimeout 360 -CKA NO -TCPB NO -CMP NO
```

```
add lb vserver lb1 HTTP 10.102.82.165 80 -persistenceType NONE -cltTimeout 180
```

```
bind lb vserver lb1 svc1
```

```
site1_child1 :
```

```
add gslb site site1 10.102.82.164 -publicIP 10.102.82.164
```

```
add gslb site site1_child1 10.102.82.131 -publicIP 10.102.82.131 -nwMetricExchange DISABLED -sessionExchange DISABLED -parentSite site1
```

```
add service svc1 10.102.82.25 HTTP 80 -gslb NONE -maxClient 0 -maxReq 0 -cip DISABLED -usip NO -useproxyport YES -sp ON -cltTimeout 180 -svrTimeout 360 -CKA NO -TCPB NO -CMP NO
```

```
add lb vserver lb1 HTTP 10.102.82.132 80 -persistenceType NONE -cltTimeout 180
```

```
add lb vserver lb2 HTTP 10.102.82.133 80 -persistenceType NONE -cltTimeout 180
```

```
bind lb vserver lb1 svc1
```

```
bind lb vserver lb2 svc1
```

site1\_child2:

```
add gslb site site1 10.102.82.164 -publicIP 10.102.82.164
```

```
add gslb site site1_child2 10.102.82.67 -publicIP 10.102.82.67 -nwMetricExchange DISABLED -  
sessionExchange DISABLED -parentSite site1
```

```
add service svc1 10.102.82.25 HTTP 80 -gslb NONE -maxClient 0 -maxReq 0 -cip DISABLED -usip NO -  
useproxyport YES -sp OFF -cltTimeout 180 -svrTimeout 360 -CKA NO -TCPB NO -CMP NO
```

```
add lb vserver lb1 HTTP 10.102.82.68 80 -persistenceType NONE -cltTimeout 180
```

```
bind lb vserver lb1 svc1
```

## GUI:

The configuration steps for GSLB parent-child remains same as normal GSLB configuration but on each child site, parent should be specified as seen below.

### ← Create GSLB Site

Name*	<input type="text" value="site1_child1"/>
Type	<input type="text" value="LOCAL"/>
Site IP Address*	<input type="text" value="10 . 102 . 82 . 164"/>
Public IP Address	<input type="text" value="10 . 102 . 82 . 164"/>
Parent Site Name	<input type="text" value="site_1"/>
Trigger Monitors*	<input type="text" value="ALWAYS"/>
Cluster IP	<input type="text"/>
Public Cluster IP	<input type="text"/>
NAPTR Replacement Suffix	<input type="text"/>