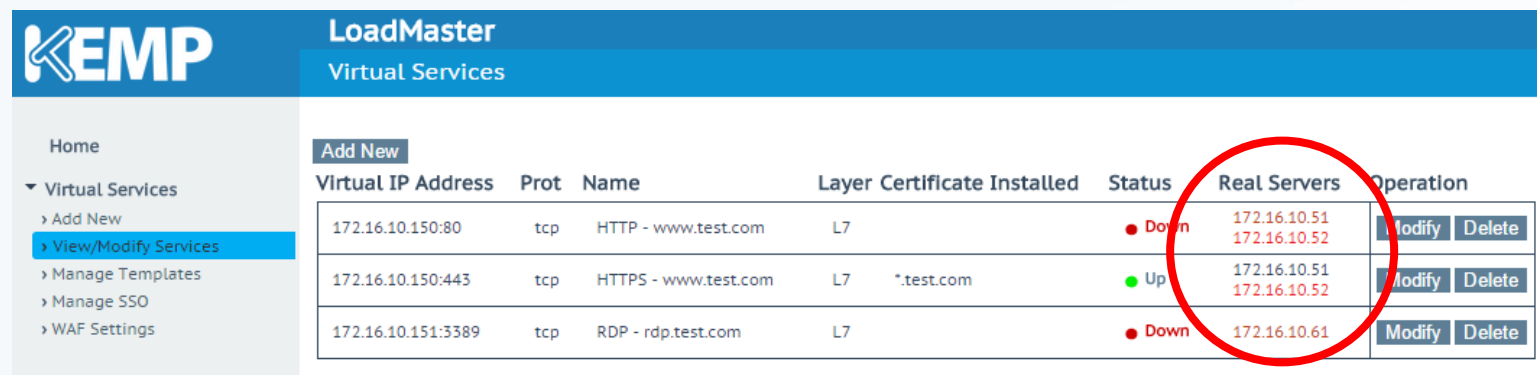# Real Servers

August 2021

Contents/Agenda

Goals:
Understand what health checks the LoadMaster can provide.

Identify what a server failing health checks looks like and how to obtain diagnostics to help remedy the issue.

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Real Servers

Real Server is the term for one of the destinations applied to a virtual service. Often these are your application servers but can be VS IP's.

- Real Servers are added via IP address to a virtual service or sub virtual service.

- A single Real Server can be added to multiple virtual services.

- View/Modify Services page will give you a high level overview of the status of each virtual service and server.
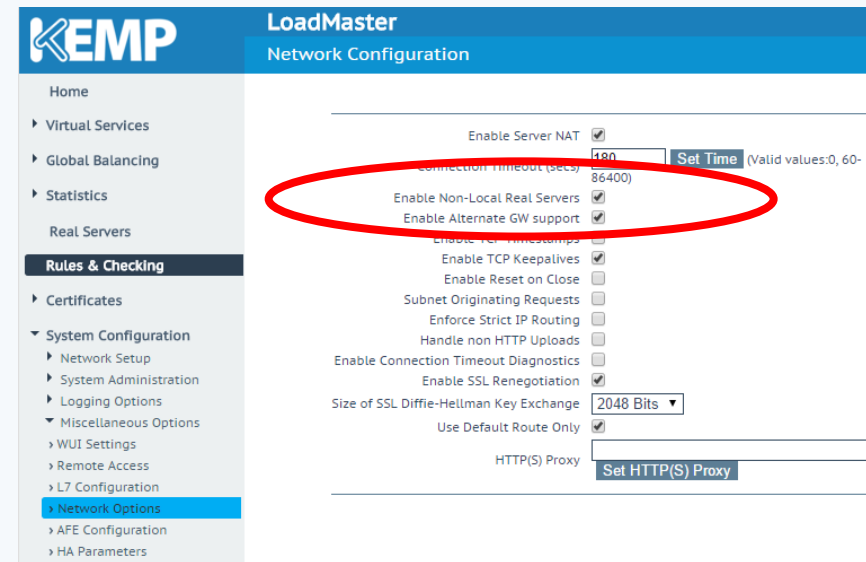   - Red == Down
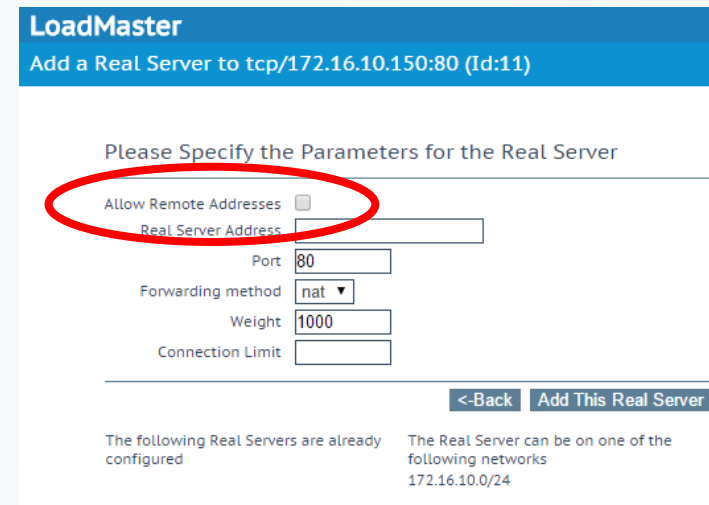   - Black == Up
    - Orange == Disabled

Non-Local Real Servers

Real Servers can be located on the same subnet as the LoadMaster or considered "Non-local".

- Any IP address can be added as a Real Server, local or non-local.
  - "Enable Non-Local Real Server" located within "Network Options".
  - When adding a non-local server, ensure that the LoadMaster has proper routing configured to reach the server in question.
  - Transparency must be disabled for the virtual service for the "Allow Remote Addresses" box to appear.

Server Health Checking

Application Specific Health Checks

- Commonly referred to as Layer 7 checks.
- Application health checks are more accurate than ICMP Ping or TCP check.
- Configured on a per virtual service or sub virtual service basis.
- HTTP/HTTPS checks are highly configurable.
- Layer 7 checks also include various mail related protocols.
- Layer 7 Health checks can be applied to Layer 4 TCP services.
- UDP services can use ICMP Ping check or DNS request if applicable.

Application Health Checks

UDP Health Checks

HTTP/HTTPS Health Checks

HTTP/HTTPS Application Checks

- Granular request, specify:
  - Hostname
  - URL

- Supports HTTP Methods:
  - HEAD
  - GET
  - POST

- Pattern matching available with GET and POST requests.

- Ability to add custom headers if required by the server.

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Advanced Health Checking

Enhanced Options

- Allows you to set the minimum amount of servers that are required to pass health checks for the virtual service to be considered 'Up'.

- By default, without Enhanced Options enabled, the minimum value is 1.

Critical Servers

- Checking the Critical box for a server indicates that the server must be up for the virtual service to be up as a whole.

- If a critical server fails the entire virtual service will be marked as down.

Advanced Health Checking

Applications with multiple health check requirements.

- Some applications require/suggest that multiple ports or URL's be checked, ensuring that the application will work correctly when requested.

- This configuration can be accomplished by using Sub Services.

    - Product Sub service will have the "Default" Content rule applied to it.

    - Other sub services are configured for health checking purposes only.

    - All 3 sub services will be marked as critical.

    - If a server fails in one sub service, it will fail in all other sub services in the same virtual service.

Virtual IP Address	Prot	Name	Layer	Certificate Installed	Status	Real Servers	Operation	
172.16.10.150:80	tcp		L7		⇒ Redirect	Production Traffic TCP Check 8000 URL Check 1	Modify	Delete
#1	tcp	Production Traffic	L7		● Down	172.16.10.51 172.16.10.52	Modify	
#2	tcp	TCP Check 8000	L7		● Down	172.16.10.51:8000 172.16.10.52:8000	Modify	
#3	tcp	URL Check 1	L7		● Down	172.16.10.51 172.16.10.52	Modify	

Real Servers   Add New ...

Real Server Check Parameters   HTTP Protocol ▼   Checked Port [   ]   Set Check Port

URL: /healthcheck.htm   Set URL

Use HTTP/1.1: ☐

HTTP Method: HEAD ▼

Custom Headers: Show Headers

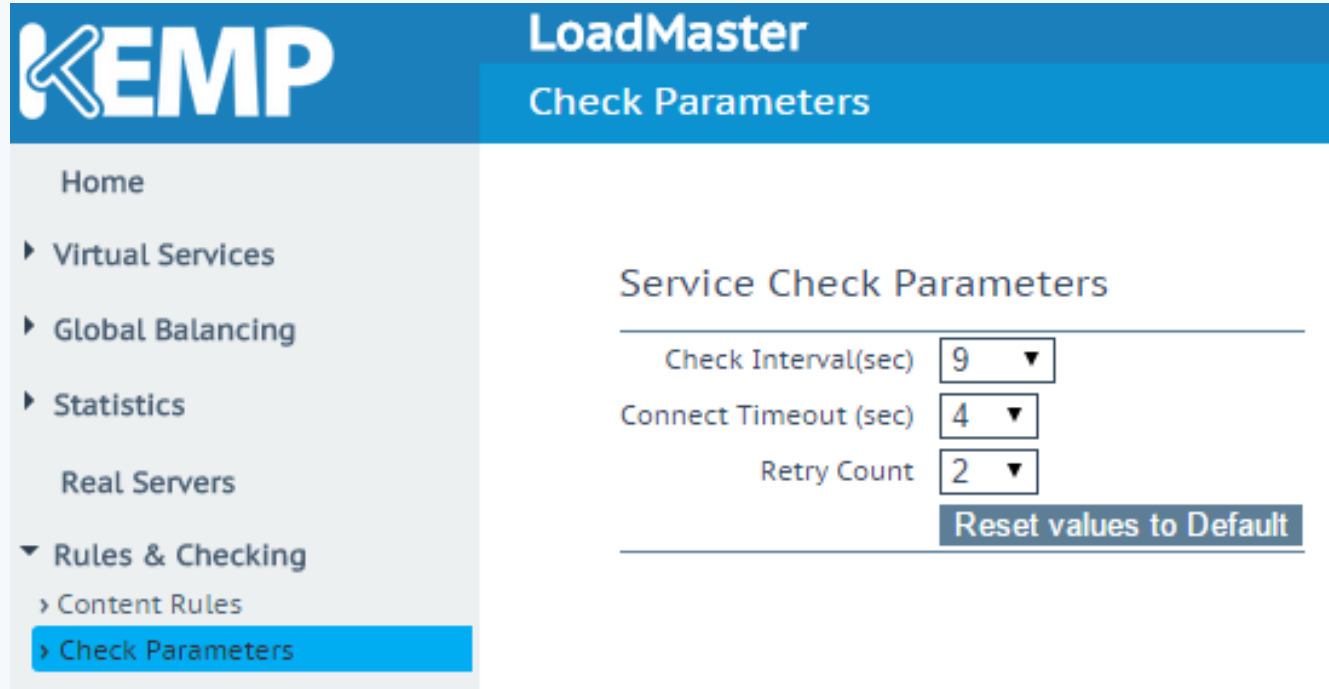Enhanced Options: ☑ Minimum number of RS required for VS to be considered up 1 ▼

Id	IP Address	Port	Forwarding method	Weight	Limit	Critical	Status	Operation		
19	172.16.10.51	80	nat	1000	0	☑	Enabled	Disable	Modify	Delete
20	172.16.10.52	80	nat	1000	0	☑	Enabled	Disable	Modify	Delete

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Global Health Check Settings

Check Parameters

- Initially set as aggressive as possible to detect server failures.

- Failing health checks will ignore Interval for subsequent checks.

- Server failures will be logged.

- Servers will automatically be reinstated once a passing health check is received.

- Verbose server failure logging found within the LoadMaster's System Message File.

Disabling Real Servers

Administrating Servers

- Real Servers can be disabled globally, for all instances in which that server is used, or on a per virtual service basis.

- L7 services will apply a drain timer when server is disabled.
  - Once disable the server will be taken out of the scheduling algorithm.
  - Persistent users are permitted to open new connections before timer expires.
  - Once the timer expires, no new connections will be created, leaving active connections only.
  - "Drop at Drain Time End" will sever active connections when the drain timer expires.
    - Located within Misc. Options -> L7 Configuration

Real Server	Status	Operation
172.16.10.51	Partially Enabled	Enable Disable
172.16.10.52	Enabled	Enable Disable
172.16.10.61	Disabled	Enable Disable

Enable Disable

Real Servers   Add New ...

Real Server Check Parameters   ICMP Ping ▼

Id	IP Address	Port	Forwarding method	Weight	Limit	Status	Operation
3	172.16.10.51	80	nat	1000	0	Disabled	Enable Modify Delete
4	172.16.10.52	80	nat	1000	0	Enabled	Disable Modify Delete

LoadMaster
L7 Configuration

Drop at Drain Time End ☑
L7 Connection Drain Time (secs) 300   Set Time (Valid values:0, 60 - 86400)

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Thank You

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