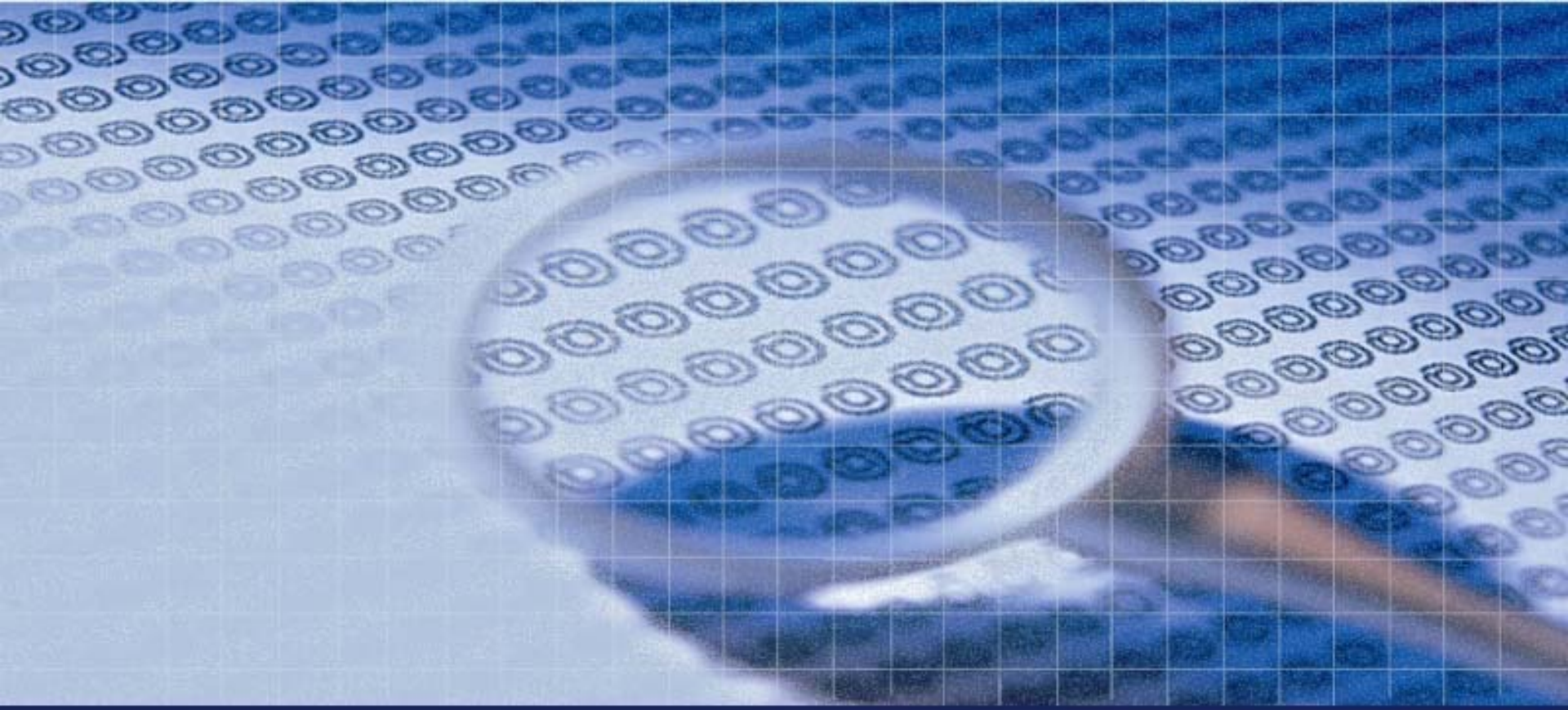
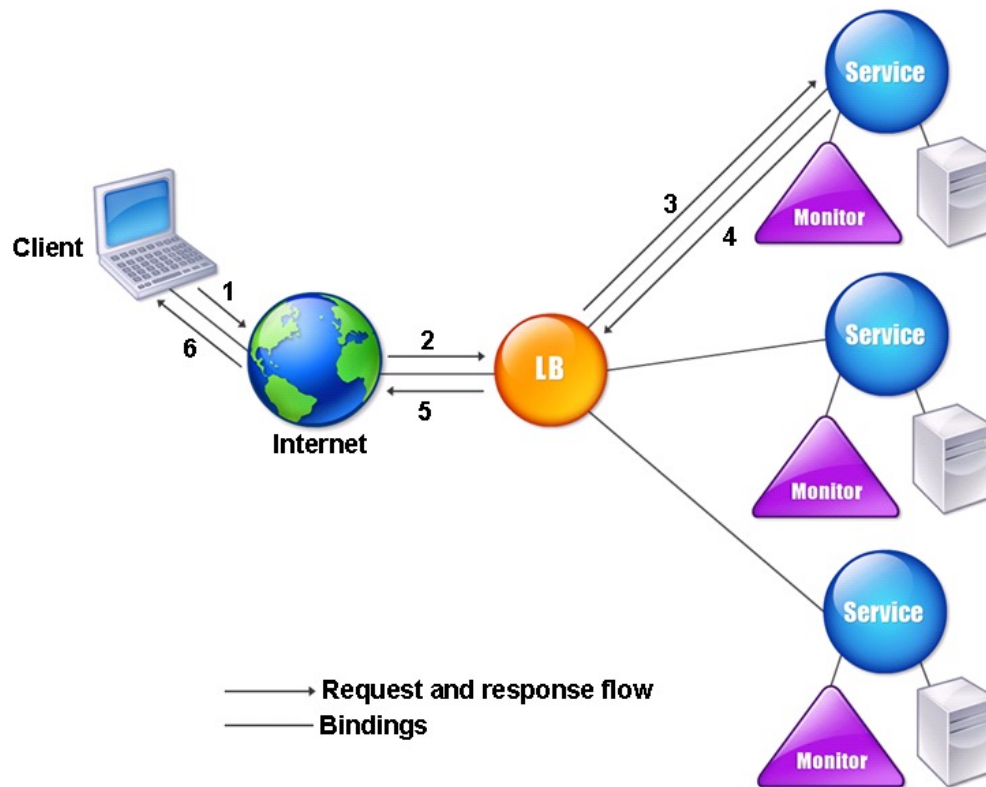




Load Balancing



工作原理



Load Balancing 網站新增流程



1. 啟用 Load Balancing 功能
2. 新增 Server
3. 新增 Service
 - ▶ Monitor
 - ▶ Advanced
4. 新增 Virtual Server
 - 可為實體 VIP / port
 - 或為虛擬伺服器 (0.0.0.0:0)
 - Advanced
5. 於 VServer 中指定對應之 Service
 - Method and Persistence
6. 日常維護
7. 運作狀態檢視

啟用 Load Balancing 功能

➤ Configure Basic Features

Citrix NetScaler VPX (5)

Dashboard Configuration Reporting Documentation

← Configure Basic Features

☒ SSL Offloading	☐ HTTP Compression
☒ Load Balancing	☒ Content Switching
☒ Content Filter	☐ Integrated Caching
☒ Rewrite	☐ NetScaler Gateway
☐ Authentication, Authorization and Auditing	☒ Application Firewall

OK Close

Add Server (可省略)

HA Status
● Not configured

Citrix NetScaler VPX (5)

Dashboard

Configuration

Reporting

Documentation

Downloads

Search in Menu

System

AppExpert

Traffic Management

Load Balancing

Virtual Servers

Services

Service Groups

Monitors

Metric Tables

☆ Servers

Persistence Groups

Radius Nodes

Content Switching

Cache Redirection

DNS

Traffic Management / Load Balancing / Servers

Servers

Add

Edit

Delete

Select Action

Name

State

IPAddress / Domain

No items

Create Server

➤ Server Name*

- ✓ 填入自行識別用名稱
- ✓ 不可重複

➤ IP Address / Domain Name*

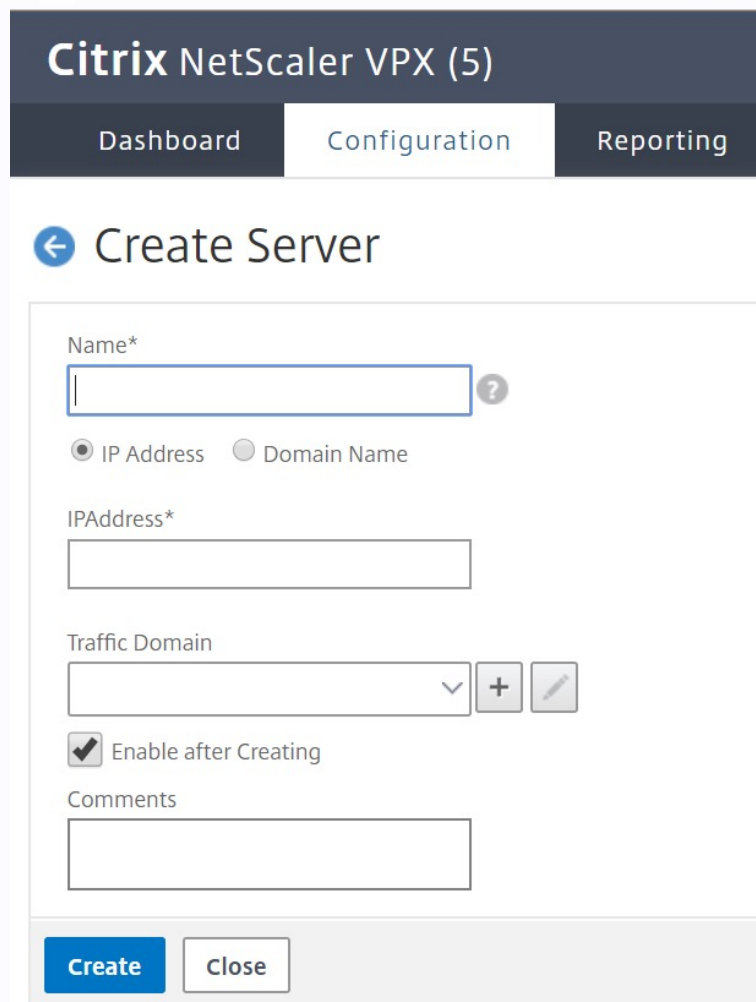
- ✓ 填入該主機之 IP 或 DN
- ✓ 於內網中建議使用 IP 而非 DN
- ✓ 如欲使用 DN，需設定 NetScaler 之 DNS

➤ 以下設定僅有當使用 Domain Name時才選填

- ✓ Translation IP Address
- ✓ Translation Mask
- ✓ Resolve Retry

➤ Traffic Domain ID

- ✓ 區分同網路中使用重複的IP地址



The screenshot displays the Citrix NetScaler VPX (5) Configuration interface. The top navigation bar includes 'Dashboard', 'Configuration' (selected), and 'Reporting'. The main heading is 'Create Server'. The form contains the following fields and options:

- Name***: A text input field with a help icon (?) to its right.
- Selection**: Two radio buttons, 'IP Address' (selected) and 'Domain Name'.
- IPAddress***: A text input field.
- Traffic Domain**: A dropdown menu with a '+' button and an edit icon.
- Enable after Creating**: A checked checkbox.
- Comments**: A text input field.
- Buttons**: 'Create' and 'Close' buttons at the bottom.

Add Service



Citrix NetScaler VPX (5)

[Dashboard](#)[Configuration](#)[Reporting](#)[Documentation](#)[Downloads](#)[System](#)[AppExpert](#)[Traffic Management](#)[Load Balancing](#)[Virtual Servers](#)[★ Services](#)[Service Groups](#)[Monitors](#)[Metric Tables](#)[Servers](#)[Persistence Groups](#)[Radius Nodes](#)[Content Switching](#)[Cache Redirection](#)[DNS](#)[Traffic Management](#) / [Load Balancing](#) / [Services](#) / Services

Services

Services 0

Auto Detected Services 0

Internal Services 8

[Add](#)[Edit](#)[Delete](#)[Statistics](#)[No action](#)

▼

	Name	State	IP Address/Domain Name	Port	Protocol	Max Clients
No items						

Create Service



Citrix NetScaler VPX (5)

[Dashboard](#)[Configuration](#)[Reporting](#)[Documentation](#)[Downloads](#)

← Load Balancing Service

Basic Settings

Service Name*



☒ New Server ☐ Existing Server

IP Address*

Protocol*



Port*

► More

Create Service



- **Service Name***
 - ✓ 填入自行識別用之名稱
 - ✓ 不可重覆
- **Protocol***
 - ✓ 選擇該服務之協定
- **New Server / Existing Server**
 - ✓ 選擇該服務之主機
 - ✓ 可選先前加入之Server、或在此直接新 IP 新增
- **Port***
 - ✓ 選擇該服務之Port
 - ✓ 可為數字、或 * (表示所有port)
- **Server ID**
 - ✓ 指定使用Persistency Type CUSTOMSERVERID 時之代號
- **Enable Service / Health Monitoring**
 - ✓ 啟用此Service / 啟用可用性監測
- **AppFlow Logging**
 - ✓ 啟用AppFlow Logging
 - ✓ 使用Web Insight 須啟用

常見Protocol



➤ HTTP

- ✓ 明碼 HTTP 網頁服務

➤ SSL

- ✓ 加密 HTTPS 網頁服務
- ✓ 於 NetScaler 上載入憑證/私鑰

➤ SSL_BRIDGE

- ✓ 加密 SSL 網頁服務
- ✓ 不於 NetScaler 上處理加解密，直接透通

➤ TCP

- ✓ 一般 TCP 服務（如TELNET、SMTP ... etc）

➤ TCPS

- ✓ 加密 TCP 服務（如POP3S、LDAPS ... etc）
- ✓ 於 NetScaler 上載入憑證/私鑰

常見Protocol (續)



➤ FTP

- ✓ FTP 服務
- ✓ 會自動對應 DATA PORT

➤ UDP

- ✓ 一般 UDP 服務 (如 NTP、SNMP)

➤ DNS、DNS-TCP

- ✓ 作DNS的查詢 (DNS Monitor可設定六組解析的IP Address)

➤ Ping

- ✓ 以ICMP的方式

➤ ANY

- ✓ 所有協定封包全對應 (TCP/UDP/...)

Services - Monitors

➤ Monitors

- ✓ 選擇該服務之 Healthy Check 方式
- ✓ TCP services 預設為使用 tcp-default ,
- ✓ non-TCP services 預設為使用 ping-default

Monitors

1 Service to Load Balancing Monitor Binding

Service Settings

Sure Connect
Surge Protection **OFF**
Use Proxy Port **YES**
Down State Flush **ENABLED**
Access Down **NO**

Use Source IP Address **NO**
Client Keep-Alive **NO**
TCP Buffering **NO**
Compression **NO**
Insert Client IP Address **ENABLED**
Header **X-Forwarded-For**

Done

Add Monitor

HA Status
● Not configured

Dashboard

Configuration

Reporting

Documentation

Downloads

Search in Menu

System

AppExpert

Traffic Management

Load Balancing

Virtual Servers

Services

Service Groups

☆ Monitors

Metric Tables

Servers

Persistency Groups

Radius Nodes

Content Switching

Cache Redirection

DNS

Traffic Management / Load Balancing / Monitors

Monitors

Add

Edit

Delete

No action



☐	Name	State	Type
☐	ping-default	● ENABLED	PING
☐	tcp-default	● ENABLED	TCP
☐	arp	● ENABLED	ARP
☐	nd6	● ENABLED	ND6
☐	ping	● ENABLED	PING
☐	tcp	● ENABLED	TCP
☐	http	● ENABLED	HTTP
☐	tcp-ecv	● ENABLED	TCP-ECV
☐	http-ecv	● ENABLED	HTTP-ECV
☐	udp-ecv	● ENABLED	UDP-ECV
☐	dns	● ENABLED	DNS
☐	ftp	● ENABLED	FTP

Monitor Type



➤ TCP-ECV

➤ HTTP-ECV

- ✓ ECV-Extended Content Verify
- ✓ 與監視目標建立了3向握手
- ✓ 當建立了連接後發送參數，以特定的數據發送到服務，並接收參數的特定回應

➤ HTTP-INLINE

- ✓ 僅有在收到request的時候才會去檢查Service狀態
- ✓ 適用很忙碌的Server

Monitor Type (續)



➤ HTTP

✓ HTTP Request

- 送出一行 HTTP Request (通常用 HEAD)

✓ Response Codes

- 視為 UP 之 Response Status Code

➤ HTTP-ECV (Extended Content Verify)

✓ Send String

- 送出自訂之 HTTP Request

✓ Receive String

- 回應內容中需含有之字串
- 若未填，代表有回應即可

Create Monitor



Citrix NetScaler VPX (5)

HA Status
● Not configured

Partition
default

nsroot

Dashboard

Configuration

Reporting

Documentation

Downloads

⏪ Create Monitor

Name*

Type*

Click to select

Create

Close

Monitor Types

Select

Search

Type	Description
☐ APPC	Recommended for monitoring APPC-based services.
☐ ARP	Recommended for monitoring ARP-based services.
☐ CITRIX-AAC-LAS	Recommended for monitoring CITRIX-AAC-LAS-based services.
☐ CITRIX-AAC-LOGINPAGE	Recommended for monitoring CITRIX-AAC-LOGINPAGE-based services.
☐ CITRIX-AG	Recommended for monitoring CITRIX-AG-based services.
☐ CITRIX-STA-SERVICE	Recommended for monitoring CITRIX-STA-SERVICE-based services.
☐ CITRIX-STA-SERVICE-NHOP	Recommended for monitoring CITRIX-STA-SERVICE-NHOP-based services.
☐ CITRIX-WEB-INTERFACE	Recommended for monitoring the Web Interface services. Service health is evaluated by monitoring the dynamic page at the location.
☐ CITRIX-WI-EXTENDED	Recommended for monitoring CITRIX-WI-EXTENDED-based services.
☐ CITRIX-XD-DDC	Recommended for monitoring the XenDesktop Delivery Controller servers. Service health is evaluated on the basis of the server response.
☐ CITRIX-XDM	Recommended for monitoring CITRIX-XDM-based services.
☐ CITRIX-XML-SERVICE	Recommended for monitoring XML Broker services used by Citrix XenApp. Service health is evaluated on the basis of the server response.
☐ CITRIX-XNC-ECV	Recommended for monitoring CITRIX-XNC-ECV-based services.
☐ DIAMETER	Recommended for monitoring DIAMETER-based services.

Create Monitor



← Create Monitor

Name*

test



Type*

HTTP-ECV



Basic Parameters

Interval

5

Second



Response Time-out

2

Second



Custom Header

Send String

Receive String

☐

Secure

Monitor 設定



➤ Name*

- ✓ 填入 Monitor 名稱
- ✓ 不可重覆

➤ Type

- ✓ 本 Monitor 之類型

● Basic Parameters

➤ Interval

- ✓ Healthy Check 偵測之間隔

➤ Response Time-out

- ✓ Healthy Check 偵測之 Time-out

➤ Custom Header

- ✓ 可以HTTP 相關類型帶入設定的Header
- ✓ 常用的為HOST Header

➤ Secure

- ✓ 使用SSL連線

Monitor 設定 (續)



➤ Response Codes

- ✓ 適用 HTTP 類型
- ✓ 設定的 Response Code 視為 UP

➤ Receive String

- ✓ 適用 HTTP-ECV 類型
- ✓ HTML Body Response 特定的字串視為 UP

● Advanced Parameters

➤ Destination IP/Port

- ✓ 指定本 Monitor 之偵測 IP/Port
- ✓ 若未設定，表示偵測套用服務之IP/Port

➤ Down Time

- ✓ 當狀態標為DOWN後，至下一次作Check之間隔

➤ TROFS Code / String

- ✓ 收到設定的Response Code / String 就進入TROFS狀態(transition out of service)

➤ Deviation

- ✓ 作Dynamic Response Time Monitoring時之誤差值

Monitor 設定 (續)



● Advanced Parameters

➤ Retries

- ✓ 偵測失敗後，將連續偵測幾次

➤ Resp Time-out Threshold

- ✓ 偵測逾時 百分比後，發出 SNMP Alert
- ✓ 需啟用 SNMP MONITOR-RTO-THRESHOLD

➤ SNMP Alert Retries

- ✓ 偵測失敗幾次後，發出 SNMP Alert
- ✓ 需小於 Retries 值

➤ Failure / Success Retries

- ✓ 連續失敗幾次後，將狀態標為 DOWN/UP
- ✓ FailureRetries 若設 0 表示使用 Retries 值
- ✓ Success Retries 預設是 1

➤ Net Profile

- ✓ 綁定特定來源 IP 做 Monitor

Monitor 設定 (續)



- **Enabled**
 - ✓ 是否啟用本 Monitor
 - ✓ 若關閉，所有使用本 Monitor 之服務將不參考結果
- **Reverse**
 - ✓ 將偵測結果反轉
- **LRTM (Least Response Time Monitoring)**
 - ✓ 本 Monitor 值將作為 LRTM 演算法之參考依據
- **Transparent**
 - ✓ 偵測 Transparent 設備後方之服務
 - ✓ 若勾選，需填入Destination IP
- **IP Tunnel**
 - ✓ 透過IP Tunnel 傳送探測封包
 - ✓ 須設定Destination IP

Services - Settings



Monitors



1 Service to Load Balancing Monitor Binding



Service Settings



Sure Connect
Surge Protection **OFF**
Use Proxy Port **YES**
Down State Flush **ENABLED**
Access Down **NO**

Use Source IP Address **NO**
Client Keep-Alive **NO**
TCP Buffering **NO**
Compression **NO**
Insert Client IP Address **ENABLED**
Header **X-Forwarded-For**

Done

Services - Settings (續)



➤ Settings

- ✓ **Sure Connect**
 - 本服務是否啟用 Sure Connect 功能
- ✓ **Surge Protection**
 - 本服務是否啟用 Surge Protection 功能
 - 於 Use Source IP 模式下，建議關閉！
- ✓ **Use Proxy Port**
 - 啟用USIP後使用netscaler來取代Client's Request Source Port
- ✓ **Down State flush**
 - 當服務 Monitor 為 DOWN 時，是否清空連線
- ✓ **Access Down**
 - 若服務 Monitor 為DOWN/DISABLED，是否開放存取
 - 通常於 In-Line Transparent 模式下才需考量是否啟用

Services - Advanced (續)



✓ Use Source IP

- 帶使用者原始 IP 連接 Server
- 若未勾選，即代表以 MIP 或 SNIP 連接 Server

✓ Client Keep-Alive

- 若 Server 不支援 Keep-Alive，於 Client <-> NetScaler 間保持 HTTP 連線
- 處理 Server 回應之 “Connection” Header

✓ TCP Buffering

- 作為 Client <-> Server 間之 DATA Buffer
- 遇到較慢速之 Client 時，可使 Server 資料較快傳出
- 將降低傳輸速度

✓ Compression

- 本服務是否進行 HTTP Compression

✓ Insert Client IP Address

- 於 HTTP Header 中插入 Client IP

✓ Header

- 插入 Client IP 的 HTTP Header 名稱

Services – Thresholds & Timeouts



➤ Thresholds

- ✓ **Max Bandwidth**
 - 最多佔用頻寬 (kbps)
- ✓ **Monitor Threshold**
 - UP 之 Monitor 成功門檻 (UP 的權重總和之最小值)
 - 預設 0，任一 Monitor fail 則為 Down
- ✓ **Max Requests**
 - 單一連線最多可進行幾個 HTTP Requests
- ✓ ☆ **Max Clients** ☆
 - 最多可同時服務多少 Clients (connections)

➤ Idle Time-out (secs)

- ✓ 若未 Override，會填入 Global 預設值
- ✓ **Client**
 - 與 Client 之 Idle timeout 值 (秒)
- ✓ **Server**
 - 與 Server 之 Idle timeout 值 (秒)

Add Virtual Server



Citrix NetScaler VPX (5)

HA Status
● Not configured
Partition
default

Dashboard

Configuration

Reporting

Documentation

Downloads

Search in Menu

System

AppExpert

Traffic Management

Load Balancing

Virtual Servers

Services

Service Groups

Monitors

Metric Tables

Servers

Persistence Groups

Radius Nodes

Content Switching

Cache Redirection

Traffic Management / Load Balancing / Virtual Servers

Virtual Servers

Add

Edit

Delete

Enable

Disable

Statistics

Select Action



Name

State

Effective State

IP Address

Port

Protocol

Method

Persistence

% Health

No items

Create Virtual Server



← Load Balancing Virtual Server

Basic Settings

Create a virtual server by specifying a name, an IP address, a port, and a protocol type. If an application is accessible from the Internet, the virtual server IP (VIP) address is a public IP address. If the application is accessible only from the local area network (LAN) or wide area network (WAN), the VIP is usually a private (ICANN non-routable) IP address.

You can configure multiple virtual servers to receive client requests, thereby increasing the availability of resources to process client requests.

Name*



Protocol*

IP Address Type*

IP Address*



Port*

Traffic Domain



Range

Redirection Mode*

☒ Virtual Server State

☐ RHI State

☒ AppFlow Logging

☐ Retain Connections on Cluster

Listen Priority

Listen Policy Expression

[Expression Editor](#)

Press Control+Space to start the expression and then type '!' to get the next set of options

[Evaluate](#)

Comments

► More

OK

Cancel

Add Virtual Server



➤ Name*

- ✓ 填入自行識別用之名稱
- ✓ 不可重覆

➤ Protocol*

- ✓ 選擇該服務之協定
- ✓ Virtual Server 之協定需與 Service 中一致
 - 但 HTTP <-> SSL 可互通

➤ IP Address Type

- ✓ IP Address
 - 填入VIP
 - 可為數字、或 * (代表所有IP，常用於Listen Policy)
- ✓ IP Pattern (網段)
 - IP Mask
 - IP遮罩
 - 可是用十進制表示或萬用遮罩 255.255.240.0 or 0.0.255.255

Add Virtual Server (續)



- ✓ **Non-addressable**
 - 搭配 **Content Switching** 使用

➤ **Port**

- ✓ 填入**Port**
- ✓ 可為數字、或 * (代表所有port)

➤ **Rang**

- ✓ 連續的**IP**位址
- ✓ 該位址的最後一個數值指定的**IP**地址加上參數**N-1**

➤ **Redirection mode**

- ✓ **IP-Based forwarding**(改變封包的目的**IP**欄位，並會參考**ARP**)
- ✓ **MAC-Based forwarding**(適用**LLB**或**WAF Transparent**架構)

➤ **Listen Priority**

- ✓ **Listen Policy** 優先順序，同一**Service**不可重複

Add Virtual Server (續)



➤ Listen Policy

- ✓ 套用此VServer的封包條件，常與VIP設定為「*」對應

➤ Virtual Server State

- ✓ 啟用或停用Virtual Server

➤ AppFlow Logging

- ✓ 預設啟用
- ✓ 搭配 ADM 收集Web insight 數據

➤ Redirect From Port v11.1

- ✓ 類型是SSL
- ✓ 將設定的Port 轉導成SSL

➤ HTTPS Redirect URL v11.1

- ✓ 設定轉導至SSL連線的URL

Virtual Server Services and Service Groups

Load Balancing Virtual Server | [Export as a Template](#)

Basic Settings

Name	test	Listen Priority	-
Protocol	HTTP	Listen Policy Expression	NONE
State	● DOWN	Range	1
IP Address	1.2.3.4	Redirection Mode	IP
Port	80	RHI State	PASSIVE
Traffic Domain	0	AppFlow Logging	ENABLED
		Retain Connections on Cluster	NO

Services and Service Groups

A service is a logical representation of an application running on a server.

A service group enables you to manage a group of services as though it were a single service. After creating a service group, you can bind it to a virtual server, and you can add services to the group. You can also bind monitors to service groups.

Note: Bind at least one service or service group to the virtual server.

Click **Continue** to display the advanced settings and select the method, persistence type, and any other configuration detail that you might need.

No Load Balancing Virtual Server Service Binding >

No Load Balancing Virtual Server ServiceGroup Binding >

Continue

Virtual Server Services and Service Groups

➤ Service Binding

- ✓ 以 Service 為單位加入負載平衡Virtual Server中
- ✓ 每一Service可對應一台Server

➤ Service Weight

- ✓ 設定連線分配比率
- ✓ 數字越大分配越多

➤ ServiceGroup Binding

- ✓ 以 Service Group為單位加入負載平衡Virtual Server中
- ✓ Service Group 中可以設定一至多台Server套用Group設定
- ✓ 多個Service Group 則以第一個Service Group內成員輪續完才換第二個Service Group成員

Method and Persistence



Method



Method is a load balancing algorithm that the NetScaler ADC uses to select a service to which to direct the client request. In addition to selecting a method, you can specify a delay in accepting requests on a new service.

Load Balancing Method*

LEASTCONNECTION



New Service Startup Request Rate

0

Backup LB Method*

ROUNDROBIN

New Service Request unit*

PER_SECOND

Increment Interval

OK

Persistence



Configure persistence to route all connections from the same user to the same service, such as an application that includes a shopping cart or that handles banking transactions. With some persistence types, you can configure backup persistence, which takes effect if the primary persistence type fails.

Select Persistence Type*

☐ SOURCEIP ☐ COOKIEINSERT ☒ OTHERS



NONE

OK

Method and Persistence



➤ LB Method / Backup LB Method

- ✓ 將進來的流量負載平衡分配給服務的方式
 - 建議使用 **LEASTCONNECTION**
 - **Token**:可自訂**RULE**，如設定資料庫名稱作負載平衡
- ✓ **New Service Startup Request Rate (Slow Start Mode)**
 - 逐漸增加**Service**的負載，避免瞬間大量連線造成**Service Crash**
 - 適用 **Least (Connections/Response Time/Bandwidth/Packets)**
 - 新的**Service**被加入到**Vserver**中時會啟用
 - **Service**狀態從**DOWN**變為**UP**或是**Disable**變為**Enable**時會啟用
- ✓ **New service request unit / increment interval**
 - **Request rate**設定範為：10, 20, 40 (秒 or %)，0為手動啟用**Slow**

➤ Persistence

- ✓ 相同**Client**維持連線到相同的**Service**
 - 部分方式可設定第二個備援方式
 - 可自訂**RULE**

Assign weights to services



➤ Support methods (常用)

- ✓ Round Robin
- ✓ Least Connection
- ✓ Least Response Time
- ✓ LRTM (Least Response Time Method using Monitors)
- ✓ Least Bandwidth
- ✓ Least Packets
- ✓ Custom Load (SNMP)

➤ Not support methods

- ✓ Hashing methods and Token method

➤ 公式

- ✓ $N\{w\} = (\text{Number of active transactions}) * (10000 / \text{weight})$
- ✓ 先比較 $N\{w\}$ 相同才會判斷 Method

Example using least connections method when the weights are assigned.

➤ $Nw = (\text{Number of active transactions}) * (10000 / \text{weight})$

- ✓ Server-1 is assigned a weight of 1
- ✓ Server-2 is assigned a weight of 2
- ✓ Server-3 is assigned a weight of 4

Request	Server1 , Nw	Server2 , Nw	Server3 , Nw	Remarks
Request-1	1 conn , 10000	0 conn , 0	0 conn , 0	round robin 選1
Request-2	1 conn , 10000	1 conn , 5000	0 conn , 0	round robin 選2
Request-3	1 conn , 10000	1 conn , 5000	1 conn , 2500	選3
Request-4	1 conn , 10000	1 conn , 5000	2 conn , 5000	選3
Request-5	1 conn , 10000	2 conn , 10000	2 conn , 5000	round robin 選2
Request-6	1 conn , 10000	2 conn , 10000	3 conn , 7500	選3
Request-7	1 conn , 10000	2 conn , 10000	4 conn , 10000	選3
Request-8	2 conn , 20000	2 conn , 10000	4 conn , 10000	round robin 選1
Request-9	2 conn , 20000	3 conn , 15000	4 conn , 10000	round robin 選2

Example using least bandwidth method when the weights are assigned.

➤ $Nw = (\text{Number of active transactions}) * (10000 / \text{weight})$

- ✓ Server-1 is assigned a weight of 2 , requires 3 Mbps
- ✓ Server-2 is assigned a weight of 4 , requires 3 Mbps
- ✓ Server-3 is assigned a weight of 5 , requires 3 Mbps

Request	Server1 , Nw	Server2 , Nw	Server3 , Nw	Remarks
Request-1	1 M , 5000	0 M , 0	0 M , 0	round robin 選1
Request-2	1 M , 5000	1 M , 2500	0 M , 0	round robin 選2
Request-3	1 M , 5000	1 M , 2500	1 M , 2000	選3
Request-4	1 M , 5000	1 M , 2500	2 M , 4000	選3
Request-5	1 M , 5000	2 M , 5000	2 M , 4000	選2
Request-6	1 M , 5000	2 M , 5000	3 M , 6000	選3
Request-7	2 M , 10000	2 M , 5000	3 M , 6000	round robin 選1
Request-8	2 M , 10000	3 M , 7500	3 M , 6000	選2
Request-9	2 M , 10000	3 M , 7500	4 M , 8000	選3

Persistence 常用類型



➤ SOURCEIP

- ✓ IPv4 / IPv6 Netmask
 - 定義Persistent IP範圍
 - 預設為1個IP

➤ Cookie Insert

- ✓ Cookie Name 可自訂
- ✓ 預設命名 NSC_XXXX=<ServiceIP ><ServicePort>

➤ Time-out (mins)*

- ✓ Persistence session的有效時間

➤ Persistent Connections Supported

- ✓ Source IP, SSL Session ID, Rule, destination IP, source IP/destination IP, SIP Call ID, RTSP Session ID
 - Persistent Connections Supported 250 K
- ✓ Cookie, URL Server ID, Custom Server ID
 - Memory limit.
 - In case of Cookie Insert, if timeout is not 0, the number of connections is limited by memory.

Persistence 支援表



Persistence Type	HTTP	HTTPS	TCP	UDP/IP	SSL_Bridge	SSL_TCP	RTSP	SIP_UDP
SOURCEIP	YES	YES	YES	YES	YES	YES	NO	NO
COOKIEINSERT	YES	YES	NO	NO	NO	NO	NO	NO
SSLSESSION	NO	YES	NO	NO	YES	YES	NO	NO
URLPASSIVE	YES	YES	NO	NO	NO	NO	NO	NO
CUSTOMSERVERID	YES	YES	NO	NO	NO	NO	NO	NO
RULE	YES	YES	YES	NO	NO		NO	NO
SRCIPDESTIP	YES	YES	YES	YES	YES	YES	NO	NO
DESTIP	YES	YES	YES	YES	YES	YES	NO	NO
CALLID	NO	NO	NO	NO	NO	NO	NO	YES
RTSPID	NO	NO	NO	NO	NO	NO	YES	NO

Persistence Group

➤ 不同的Virtual Server視為同一組Persistence
合併做計算

✓ 例如：Http、Https Session應維持在同一台Server

The screenshot displays the Citrix NetScaler VPX (5) Configuration page. The left sidebar shows the navigation menu with 'Persistence Groups' highlighted. The main content area shows the 'Persistence Groups' section with an 'Add' button. A red arrow points to the 'Add' button. The right panel shows the 'Create Persistenceency Group' dialog with the following fields:

- Group Name*:
- Persistence*:
- Time-out:
- Backup Persistence*:
- ☐ Use vServer Persistence*
- Virtual Server Name*:

Configured (0) Remove All

No items

At the bottom of the dialog are 'Create' and 'Close' buttons.

Persistence Group (續)

➤ Use vServer Persistence* v12.0

- ✓ 應用為相同**Server Farm**
 - 如：**DNS** , **RADIUS**
- ✓ 沿用原**vServer Persistence**
- ✓ 不可設定**Group**的**Persistence**

➤ Master vServer

- ✓ 從**Master**繼承 **Persistence**
- ✓ 僅限**Rule Base**
 - 不同的**Rule**

← Create Persistency Group

Group Name*

Persistence*

NONE

Time-out

2

Backup Persistence*

NONE

☐ Use vServer Persistence*

Virtual Server Name*

Configured (0)

Remove All

No items

+ Add

Create

Close

Virtual Server - Protection



Protection ✕

Redirect URL

?

Backup Virtual Server

▼ ?

☐ Disable Primary When Down

Spillover

Spillover Method*

▼

Spillover Backup Action

▼

Spillover Persistence Timeout (mins)

☐ Spillover Persistence

OK

Done

Virtual Server - Protection



➤ Redirect URL

- ✓ 當狀態為 DOWN、或DISABLE時，將使用者導向指定之URL
- ✓ 網址最後是否加 / 影響轉址後是否附加原路徑

➤ Backup Virtual Server

- ✓ 優先權大於 Redirect URL
- ✓ 當狀態為 DOWN、或DISABLE時，將使用者導向備用之 Virtual Server
- ✓ 可為實體 (有IP:PORT)、或虛擬 (0.0.0.0) 之Virtual Server

➤ Disable Primary When Down

- ✓ 如果主要Virtual Server狀態變Down，狀態變為UP後不要恢復服務，直到手動啟用。

Virtual Server - Spillover



➤ Spillover

- ✓ **Persistence / Persistence time-out**
 - 即使VServer負載降低於設定值，已連線於Backup VServer仍會持續維持連線，並會在Timeout時間後連回VServer。
- ✓ **Spillover Backup Action**
 - 沒有Backup VServer的處理動作。
- ✓ **Method**
 - **CONNECTION**
 - 限制可進入此 Virtual Server 之連線數
 - **DYNAMICCONNECTION**
 - 由旗下狀態為 UP 之 Service Max Client 加總
 - **BANDWIDTH**
 - 限制此 Virtual Server 之使用頻寬 (kb/s)
 - **HEALTH**
 - 旗下 Services 之健康度 (%)
- ✓ **Spillover Persistence**
 - Spillover動作後使用source IP address based persistence

Virtual Server - Traffic Settings



Traffic Settings



Health Threshold



Client Idle Time-out

Minimum Autoscale Members

Maximum Autoscale Members

Virtual Server IP Port Insertion*

Virtual Server IP Port Header*

ICMP Virtual Server Response

- ☐ Cacheable
- ☐ Priority Queuing
- ☐ Sure Connect
- ☒ Down State Flush
- ☐ Redirect Port Rewrite
- ☐ Layer 2 Parameters
- ☒ Trofs Persistence

OK

Done

Virtual Server - Traffic Settings



➤ Health Threshold

- ✓ Service狀態為UP須達到多少百分比後Virtual Server 視為UP
- ✓ 0 代表其中一個Service狀態為UP即Virtual Server 視為UP

➤ Client Time-out(secs)

- ✓ 與 Client 之 Idle timeout 值 (秒)

➤ Minimum Autoscale Members

- ✓ Autoscale 最小百分比

➤ Maximum Autoscale Members

- ✓ Autoscale 最大百分比

➤ Virtual Server IP Port Insertion*

- ✓ 在HTTP header插入Virtual Server VIP及Port

➤ Virtual Server IP Port Header*

- ✓ 插入Virtual Server VIP及Port 的HTTP header名稱

Virtual Server - Traffic Settings (續)

➤ ICMP VServer Response

- ✓ 當所有的VServer設定為PASSIVE，不論VServer狀態是否UP，永遠都會回應。
- ✓ 當所有的VServer設定為ACTIVE，至少要有一個VServer狀態是UP，才會回應。
- ✓ 部分VServer設定為PASSIVE，部分設定為ACTIVE，至少要有一個設定為ACTIVE的VServer狀態是UP，才會回應。

➤ Cacheable

- ✓ cache redirection virtual server使用
- ✓ 當VServer為Transparent 架構是否啟用Cache

➤ Priority Queuing

- ✓ 是否啟用Priority Queuing

➤ Sure Connect

- ✓ 是否啟用Sure Connect

Virtual Server - Traffic Settings (續)

➤ Down State flush

- ✓ 當VServer狀態為 DOWN時，是否清空連線
- ✓ 有可能TCP可建立連線但Service無法正常回應，建議Enable
- ✓ Surge Queue啟用狀態下也會清空連線
- ✓ Service也有相同設定

➤ Layer 2 Parameters

- ✓ 帶入L2的參數，例如：Channel number, VLAN ID、MAC Address (LLB 架構使用)
- ✓ 允許multiple TCP and non-TCP 連線

➤ Redirect Port Rewrite v12.0

- ✓ 將Service的Redirect網址Port轉成VServer的Port

➤ Trofs Persistence

- ✓ TROFS狀態的Service Persistence 仍有效
- ✓ TROFS：即將停止的服務