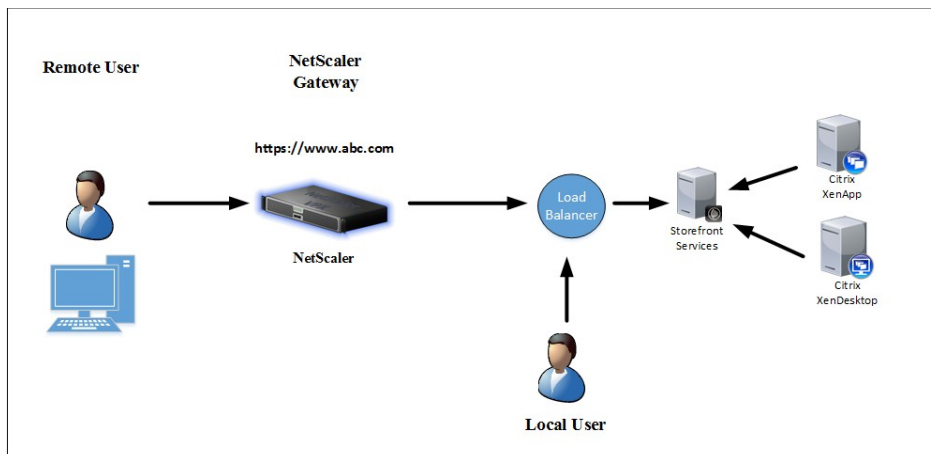
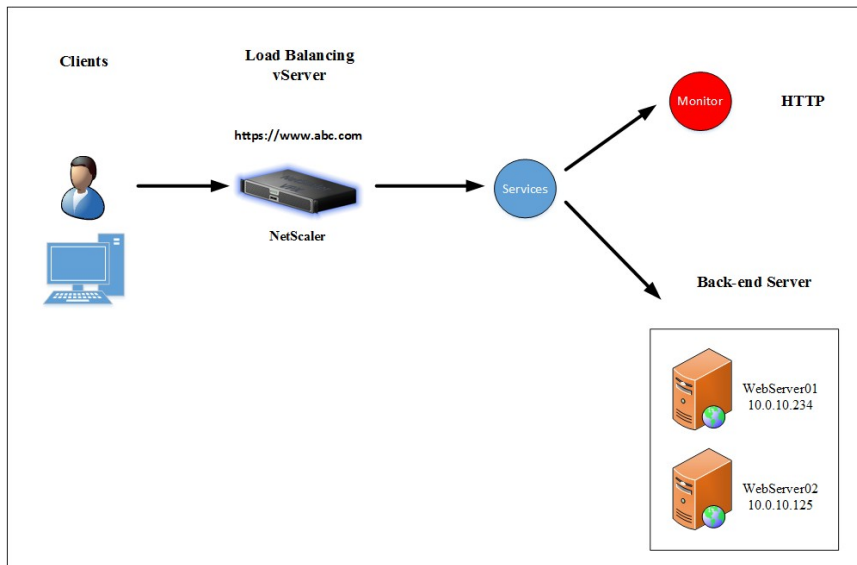


# Chapter 1: Configuring the Standard Features of NetScaler®



### Create Monitor

Name\*

Type\*  
 STOREFRONT ▼

Standard Parameters    Special Parameters

Store Name

Storefront Account Service  
 Check Backend Services

Create    Close

Name  
 vADC01

Server Name     Server IP

IP Address\*  
 192 . 168 . 20 . 205  IPv6

Security Type\*  
 PLAINTEXT ▼

Port\*  
 389

Server Type\*  
 AD ▼

Time-out (seconds)  
 3

Authentication

---

Connection Settings

Base DN (location of users)  
 CN=Contoso Users,DC=CONTOSO,D

Administrator Bind DN  
 admin@contoso.com

BindDN Password Retrieve Attributes

---

Other Settings

Server Logon Name Attribute  
 sAMAccountName ▼

Search Filter

Group Attribute  
 memberOf ▼

Sub Attribute Name  
 cn ▼

SSO Name Attribute  
 ---< New >---

sAMAccountName

Default Authentication Group

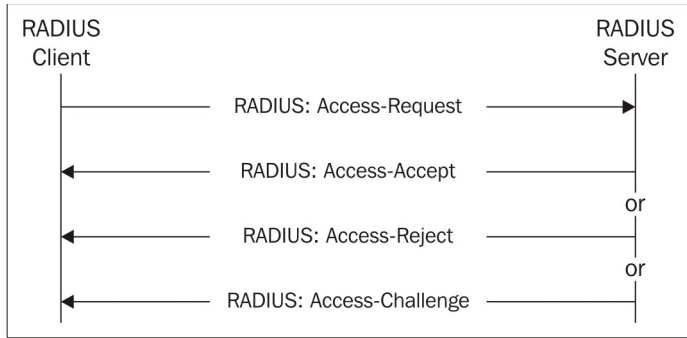
User Required  
 Referrals

Maximum Referral Level  
 1

Referral DNS Lookup  
 A-REC ▼

Validate LDAP Server Certificate

LDAP Host Name



Name\*

vRADIUS01

Server Name  Server IP

IP Address\*

192 . 168 . 20 . 250  IPv6 ?

Port\*

1812

Time-out (seconds)

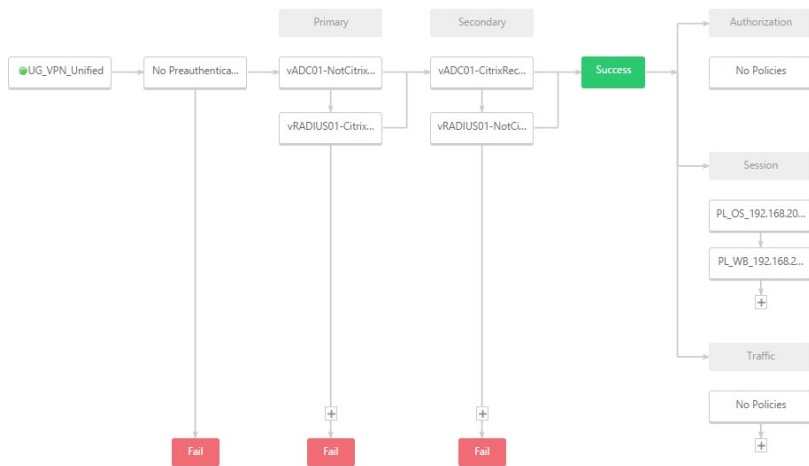
3

Secret Key\*

.....

Confirm Secret Key\*

.....





Authentication	
Dashboard	
Logs	
Thu, 29 Oct 2015 16:25:10	[1166]: RADIUS auth: In process_radius: Authentication failed for user ctxtest2 from server Invalid Credentials
Thu, 29 Oct 2015 16:25:09	[1166]: RADIUS auth: In make_radius_request: Making radius request for user
Thu, 29 Oct 2015 16:25:09	[1166]: RADIUS auth: In continue_radius_auth: Starting RADIUS authentication for user @

<p>Accounting Policy</p> <p><input type="text" value=""/></p> <p><input type="checkbox"/> Display Home Page</p> <p>Home Page</p> <p><input type="text" value=""/></p> <p>URL for Web-Based Email</p> <p><input type="text" value=""/></p> <p>Split Tunnel*</p> <p><input type="text" value="OFF"/></p> <p>Session Time-out (mins)</p> <p><input type="text" value="30"/></p> <p>Client Idle Time-out (mins)</p> <p><input type="text" value=""/></p>	<p>Override Global</p> <p>Clientless Access*</p> <p><input type="text" value="Allow"/></p> <p>Clientless Access URL Encoding*</p> <p><input type="text" value="Obscure"/></p> <p>Clientless Access Persistent Cookie*</p> <p><input type="text" value="DENY"/></p> <p>Plug-in Type*</p> <p><input type="text" value="Windows/MAC OS X"/></p> <p>Windows Plugin Upgrade</p> <p><input type="text" value="Always"/></p> <p>Linux Plugin Upgrade</p> <p><input type="text" value="Always"/></p> <p>MAC Plugin Upgrade</p> <p><input type="text" value="Always"/></p> <p><input type="checkbox"/> Single Sign-on to Web Applications</p> <p>Credential Index*</p> <p><input type="text" value="PRIMARY"/></p> <p>KCD Account</p> <p><input type="text" value=""/></p> <p>Single Sign-on with Windows*</p> <p><input type="text" value="OFF"/></p> <p>Client Cleanup Prompt*</p> <p><input type="text" value="ON"/></p> <p><input type="checkbox"/> <b>Advanced Settings</b></p>
--	---

Override Global

Default Authorization Action\*

DENY

Secure Browse\*

ENABLED

Smartgroup

Override Global

ICA Proxy\*

OFF

Web Interface Address

Web Interface Address Type\*

Web Interface Portal Mode\*

NORMAL

Single Sign-on Domain

Citrix Receiver Home Page

Account Services Address

### Create NetScaler Gateway Session Policy

Name\*

Action\*

VPN

Expression\*

OPSWAT EPA Editor Expression Editor

Operators Saved Policy Expressions Frequently Used Expressions

Create

Close

**Add NetScaler Gateway Appliance**

**StoreFront**

**General Settings**  
Secure Ticket Authority

**General Settings**

The display name is visible to users in Citrix Receiver preferences.

Display name:

NetScaler Gateway URL:

Version:

Subnet IP address:

Logon type:

Smart card fallback:

Callback URL:  /CitrixAuthService/AuthService.aspx

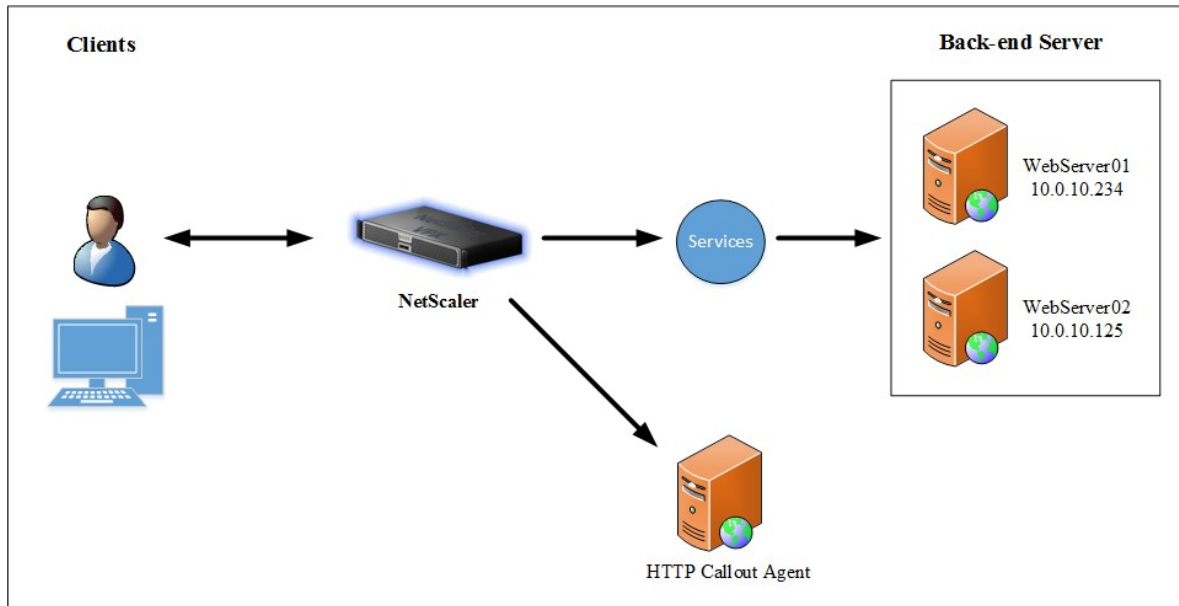
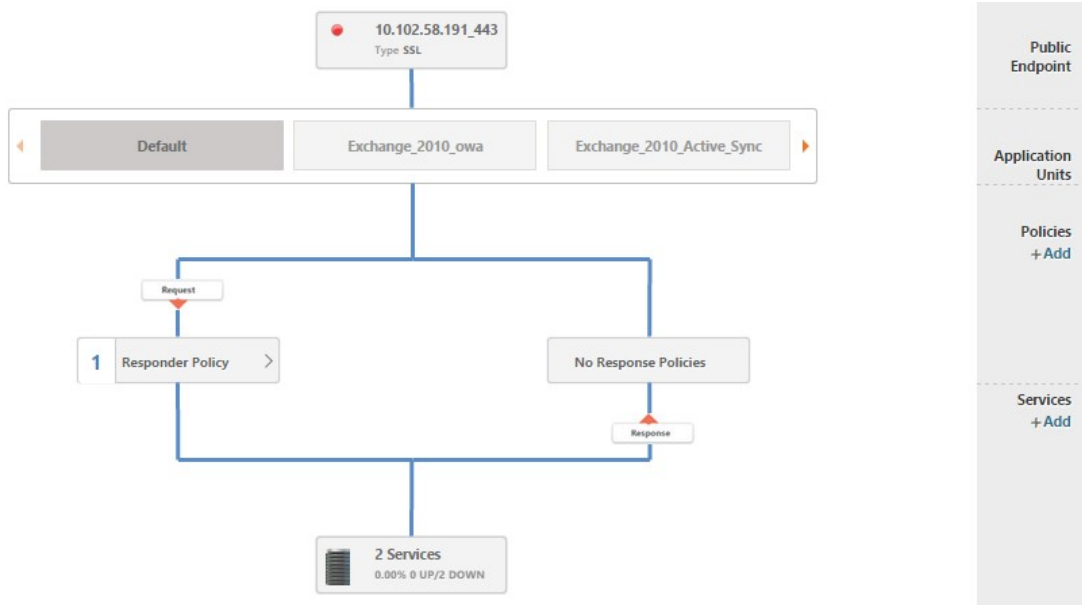
## Chapter 2: Using the Features of NetScaler® AppExpert

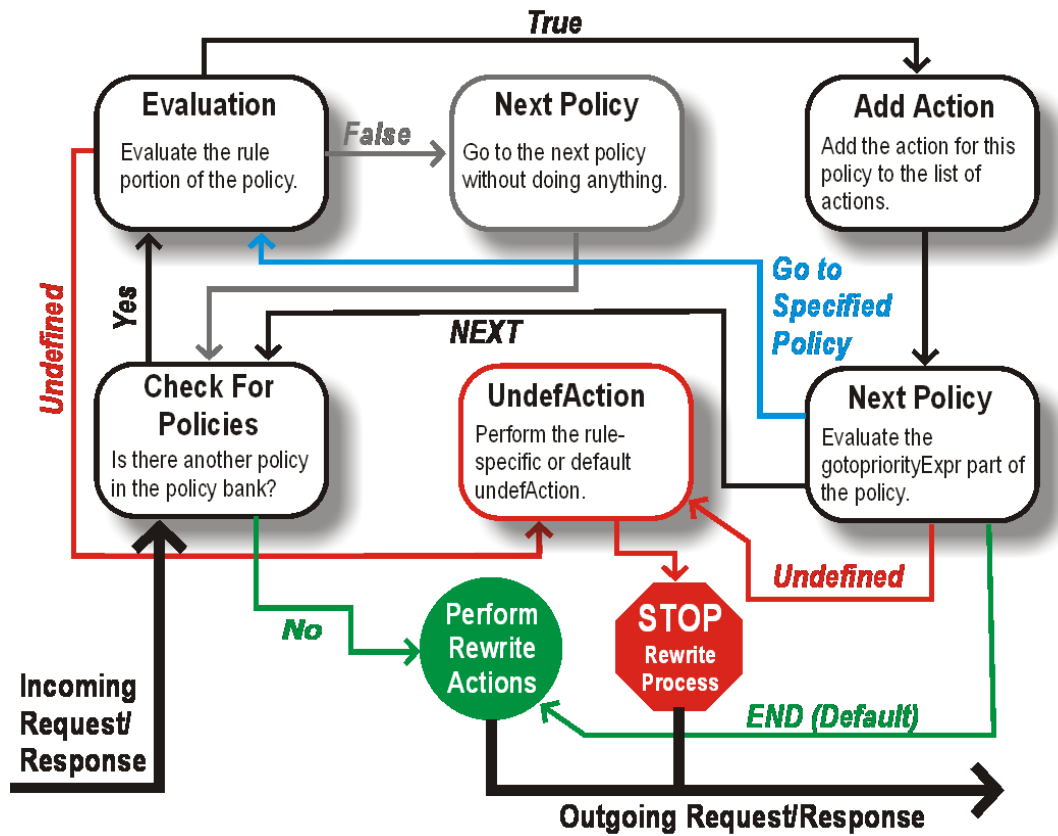
**Import**

Application Name\*

Template File\*

Use Deployment File





### Chapter 3: Integration with Citrix® Components

License/ Version	9.3	10	10.1	10.5
Standard	ⓘ	ⓘ	✓	✓
Enterprise	ⓘ	ⓘ	✓	✓
Platinum	ⓘ	✓	✓	✓

License/Duration	5 minutes	1 Hour	1 Day	1 Week	1 Month
Standard	✗	✗	✗	✗	✗
Enterprise	✓	✓	✗	✗	✗
Platinum	✓	✓	✓	✓	✓

```

1. NetScaler Insight Server.
2. Connector Node.
3. Database Node.
4. NetScaler Insight Agent.
5. Cancel and quit.
Select a choice from 1 to 5 [5]:
  
```



Device Type  NetScaler  CloudBridge

IP Address  .  .  .

Username

Password

NetScaler Gateway

**Add** **Cancel**

Return to Inventory list		Action	State
IP Address		<ul style="list-style-type: none"> <li>Select Action</li> <li>Enable AppFlow</li> <li style="background-color: #0070C0; color: white;">Clear AppFlow Configuration</li> </ul>	●
192.168.20.221			●

### Enable AppFlow

Select Expression \*

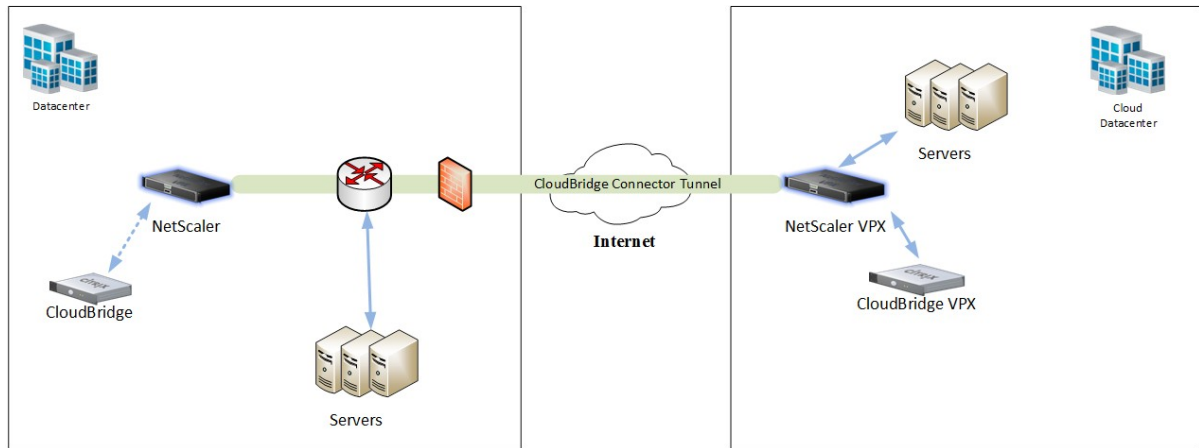
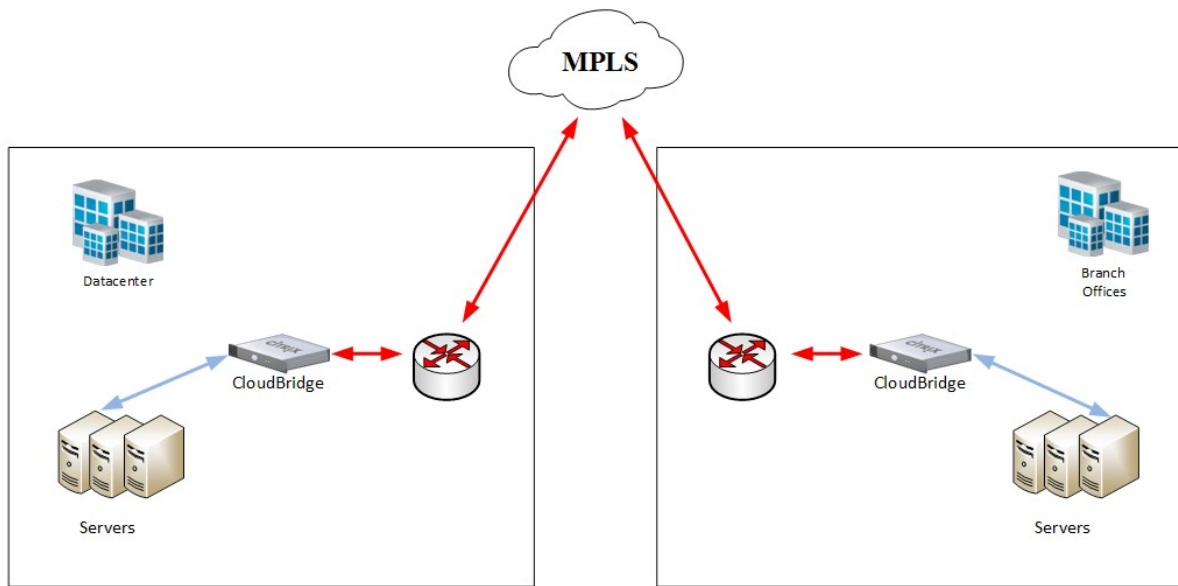
VPN

true

Export Option

⚠ If the AppFlow for a virtual server is enabled on more than one NetScaler Insight Center appliance, then the appliance on which the AppFlow is enabled most recently has the highest priority for collecting the information.

**OK** **Cancel**



Citrix Command Center						
Inventory						
Device Type	Critical	Major	Minor	Warning	Clear	Failed
NS NetScaler	2	1	-	-	-	9
NS VPX NetScaler VPX	3	9	-	1	-	30
AG Access Gateway	-	-	-	-	-	1
R Repeater	-	-	-	-	-	-
BR Branch Repeater	-	-	-	-	-	-
BR Branch Repeater VPX	-	1	-	-	-	3
XS Xen Server	-	-	-	-	-	2
NS SDX NetScaler SDX	1	-	-	-	1	2
NS CL NetScaler Cluster	1	-	-	-	-	2
<b>Total</b>	<b>7</b>	<b>11</b>	<b>-</b>	<b>1</b>	<b>1</b>	<b>49</b>

Active Alarms	
Warning	1
Minor	1
Major	11
Clear	1

**Configure Inventory Settings**

You can configure inventory settings to archive all configuration

Archive on "Save Config" Trap ?

Archive Interval (in hours)\*

12

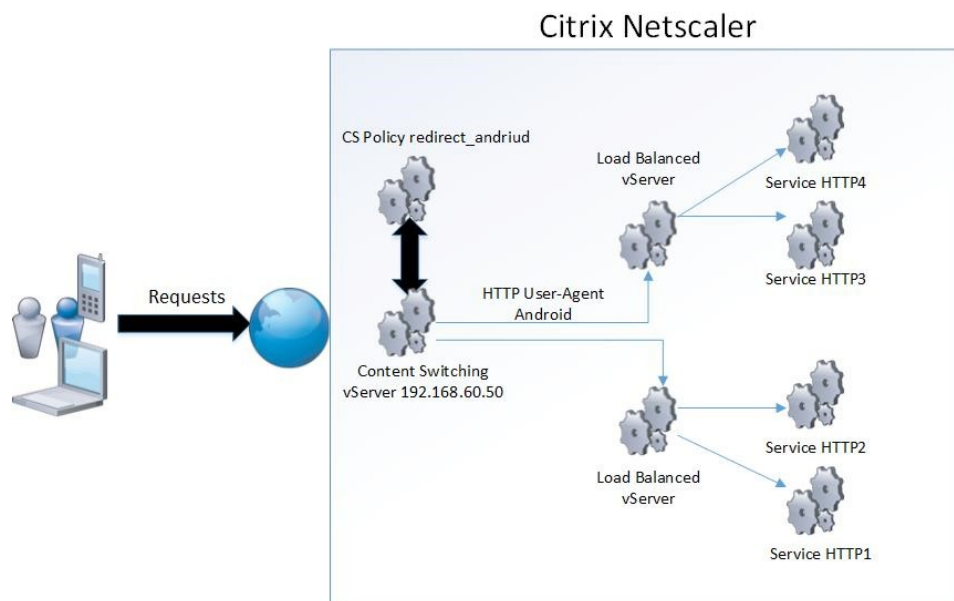
Number of previous archive files to retain\*

50

Configuration and license files are downloaded by default.

OK Close

## Chapter 4: Traffic Management



[← Back](#)

### Create Content Switching Policy

Name\*

Action  
 + ?

Log Action  
 +

Domain

Expression  Url

Expression\* Expression Editor

Clear

[Switch to Classic Syntax](#) [Evaluate](#)

### Configure Content Switching Action

Name

#### Target Load Balancing Virtual Server

Name  Expression

Target Load Balancing Virtual Server\*  
 +

Comment  
 ?

## Content Switching Virtual Server

Basic Settings			
Name	<b>contentswitchingvserver</b>	Listen Priority	-
Protocol	<b>HTTP</b>	Listen Policy Expression	-
State	<b>UP</b>	Range	<b>1</b>
IP Address	<b>192.168.60.50</b>	Traffic Domain	<b>0</b>
Port	<b>80</b>	RHI State	<b>PASSIVE</b>
		AppFlow Logging	<b>true</b>
		Comments	-

CS Policy Binding	
<b>No</b>	Content Switching Policy Bound
<b>No</b>	Default Load Balancing Virtual Server Bound

Protection	
Redirect URL	<input type="text" value="http://nsvserver.test.local"/>
Backup Virtual Server	<input type="text" value="testtes2"/>
<input type="checkbox"/>	Disable Primary When Down <span>?</span>

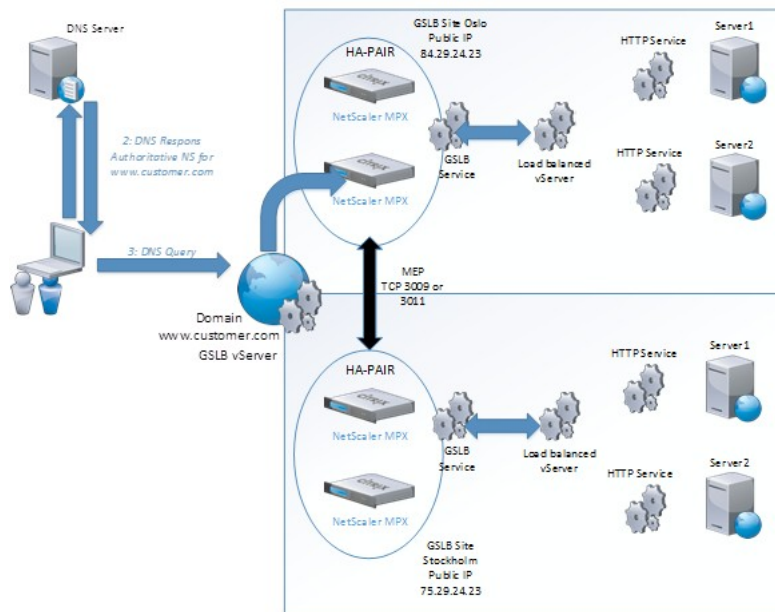
  

Spillover	
Spillover Method*	<input type="text" value="CONNECTION"/>
Spillover Threshold	<input type="text" value="10000"/>
Spillover Backup Action	<input type="text" value="REDIRECT"/>
Spillover Persistence Timeout (mins)	<input type="text" value="2"/>
<input checked="" type="checkbox"/>	Spillover Persistence

```
C:\Users\msandbu>nslookup test.local 192.168.60.53
Server: Unknown
Address: 192.168.60.53

Name: test.local
Address: 192.168.60.77

C:\Users\msandbu>
```



```
> add gslb site OSLO LOCAL 192.168.0.77
Done
> █
```

### Basic Settings

Service Name\*

Site Name\*

Site Type

Type\*

Service Type\*

Port\*

Existing Servers
  New Server
  Virtual Servers

Virtual Server\*

Server IP

Public IP  
  IPv6

Public Port

### GSLB Virtual Server

Basic Settings <span style="float: right;">✎</span>	
Name <b>WEB</b> DNS Record Type <b>A</b> Service Type <b>HTTP</b> State <b>Down</b>	AppFlow Logging <b>DISABLED</b> EDR <b>DISABLED</b> MIR <b>DISABLED</b>
Method <span style="float: right;">✎ ✕</span>	
Choose Method <b>LEASTCONNECTION</b> Tolerance (ms) <b>0</b> IPv4 Netmask <b>255.255.255.255</b>	Backup Method <b>ROUNDROBIN</b> IPv6 Mask Length <b>128</b> Dynamic Weight <b>DISABLED</b>
GSLB Virtual Server GSLB Service Binding <span style="float: right;">✕</span>	
<b>No</b> GSLB Virtual Server to GSLBService Binding <span style="float: right;">&gt;</span>	

## Create AppQoE Action

Name\*

 ?

Action Type\*

 ▼

Priority

 ▼

Policy Queue Depth

Queue Depth

Maximum Connections

Delay (microseconds)

Alternate Content Server Name\*

 ▼

Alternate Content Path\*



## Load Balancing Virtual Server

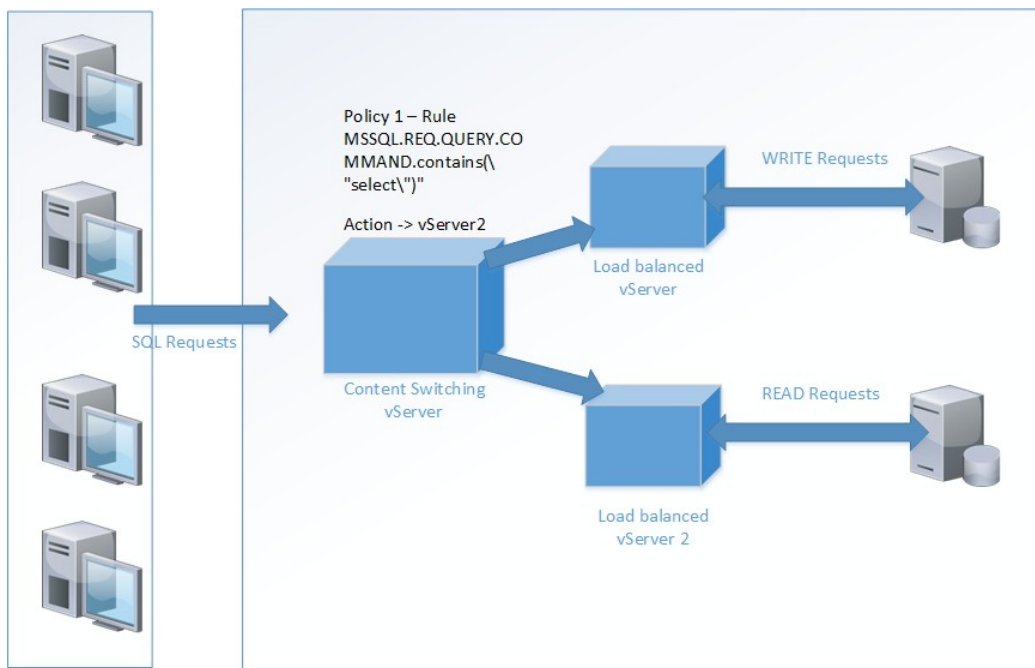
Basic Settings			
Name	MSSQL_2012	Listen Priority	-
Protocol	MSSQL	Listen Policy Expression	NONE
State	Down	Range	1
IP Address	192.168.0.20	Redirection Mode	IP
Port	1433	RHI State	PASSIVE
Traffic Domain	0	AppFlow Logging	ENABLED

Services and Service Groups	
1	Load Balancing Virtual Server Service Binding
No	Load Balancing Virtual Server ServiceGroup Binding

MsSql	
Server Version*	2012
<input type="checkbox"/>	Enable Database specific Load Balancing
OK	
Done	



## Chapter 5: Tuning and Monitoring NetScaler® Performances

SPDY\*

ENABLED

Maximum Header Length

24820

Client IP Header Expression

Expression Editor

Operators Saved Policy Expressions Frequently Used Expressions Clear

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

Evaluate

HTTP/2

HTTP/2

HTTP/2 Header Table Size

4096

HTTP/2 Initial Window Size

65535

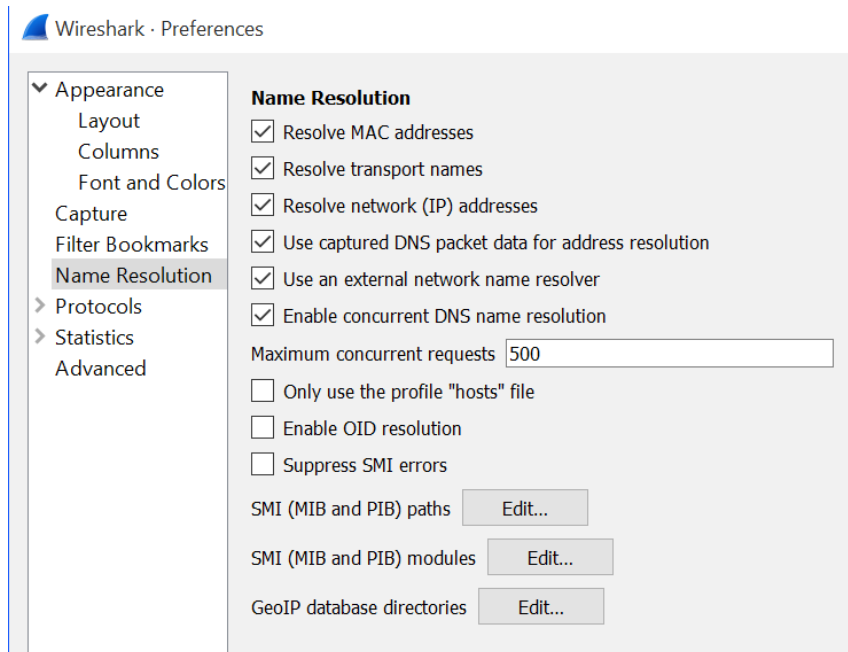
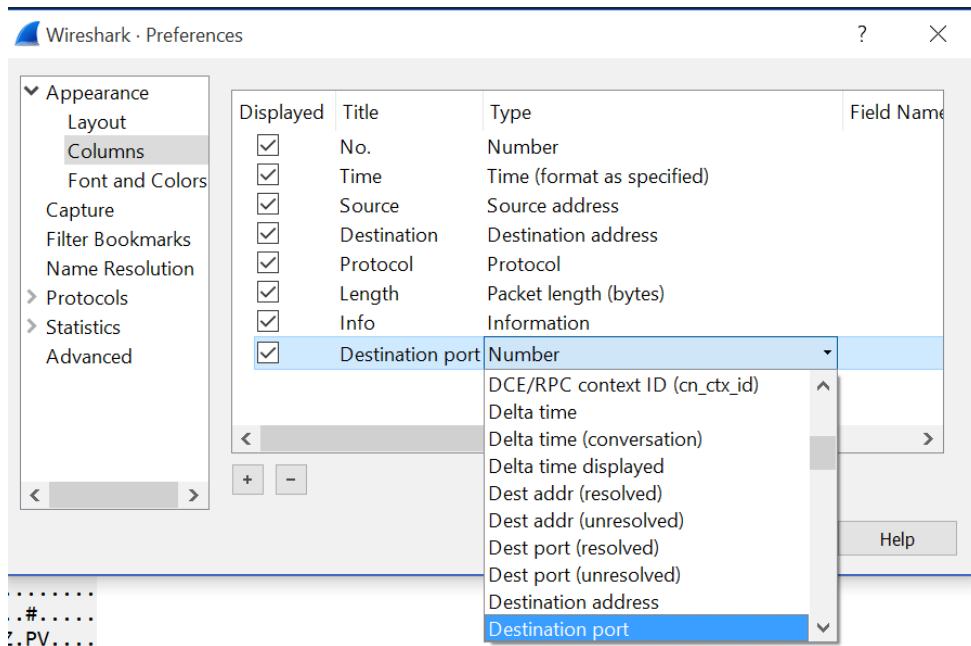
HTTP/2 Maximum Concurrent Streams

100

41	0.0264...	192.168.0.55	192.168.0.2	HTTP	302	HTTP/1.1	304	Not Modified	[Packet size limited during capture]
42	0.0264...	192.168.0.55	192.168.0.2	TCP	318	[TCP Retransmission]	80→7790	[PSH, ACK]	Seq=414 Ack=731 Win=8212 Len=213
43	0.0264...	192.168.0.55	192.168.0.2	HTTP	318	HTTP/1.1	304	Not Modified	[Packet size limited during capture]
44	0.0269...	192.168.0.55	192.168.0.2	TCP	318	[TCP Retransmission]	80→51758	[PSH, ACK]	Seq=414 Ack=702 Win=512 Len=213
45	0.0269...	192.168.0.55	192.168.0.2	TCP	302	[TCP Retransmission]	80→51758	[PSH, ACK]	Seq=414 Ack=702 Win=512 Len=213
46	0.0269...	127.0.0.1	127.0.0.1	RSL	153	DEACTIVATE	SACCH		
47	0.0269...	127.0.0.1	127.0.0.1	TCP	169	[TCP Retransmission]	59747→5000	[PSH, ACK]	Seq=673 Ack=961 Win=8212 Len=64
48	0.0269...	127.0.0.1	127.0.0.1	TCP	111	5000→59747	[ACK]	Seq=961 Ack=737 Win=512 Len=0	
49	0.0269...	127.0.0.1	127.0.0.1	RSL	169	DEACTIVATE	SACCH		
50	0.0389...	127.0.0.1	127.0.0.1	RSL	153	DEACTIVATE	SACCH		
51	0.0389...	127.0.0.1	127.0.0.1	TCP	169	[TCP Retransmission]	59747→5000	[PSH, ACK]	Seq=737 Ack=1025 Win=8212 Len=64
52	0.0389...	127.0.0.1	127.0.0.1	TCP	111	5000→59747	[ACK]	Seq=1025 Ack=801 Win=512 Len=0	

> Frame 41: 302 bytes on wire (2416 bits), 199 bytes captured (1592 bits)

NetScaler Packet Trace  
Operation: RX (0xae)  
Nic No: 2  
> Activity Flags: 0x00000000  
> Capture Flags: 0x00000000  
Errorcode: No Error (0x00)  
App: L2 (0x18)  
Core Id: 0  
Vlan: 0  
PcbDevNo: 0x00000000  
Linked PcbDevNo: 0x00000000



Mark/Unmark Packet	Ctrl+M
Ignore/Unignore Packet	Ctrl+D
Set/Unset Time Reference	Ctrl+T
Time Shift...	Ctrl+Shift+T
Packet Comment...	
Edit Resolved Name	
Apply as Filter	▶
Prepare a Filter	▶
Conversation Filter	▶
Colorize Conversation	▶
SCTP	▶
Follow	▶
Copy	▶
Protocol Preferences	▶
Decode As...	
Show Packet in New Window	

```

> Frame 958: 101 bytes on wire (808 bits), 101 bytes captured (808 bits)
> NetScaler Packet Trace
> Ethernet II, Src: 192.168.0.2 (00:50:56:c0:00:01), Dst: 192.168.0.100 (00:0c:29:f9:25:5a)
> Internet Protocol Version 4, Src: 192.168.0.2 (192.168.0.2), Dst: 192.168.0.80 (192.168.0.80)
▼ Transmission Control Protocol, Src Port: 51765 (51765), Dst Port: http (80), Seq: 0, Len: 0
  Source Port: 51765 (51765)
  Destination Port: http (80)
  [Stream index: 16]
  [TCP Segment Len: 0]
  Sequence number: 0 (relative sequence number)
  Acknowledgment number: 0
  Header Length: 32 bytes
  > ... 0000 0000 0010 = Flags: 0x002 (SYN)
  Window size value: 8192
  [Calculated window size: 8192]
  > Checksum: 0xac34 [validation disabled]
  Urgent pointer: 0
  > Options: (12 bytes), Maximum segment size, No-Operation (NOP), Window scale, No-Operation (NOP), No-Operation (NOP), SACK permitted

```

```

▼ Transmission Control Protocol, Src Port: 51765 (51765), Dst Port: http (80), Seq: 1, Ack: 1, Len: 0
  Source Port: 51765 (51765)
  Destination Port: http (80)
  [Stream index: 16]
  [TCP Segment Len: 0]
  Sequence number: 1 (relative sequence number)
  Acknowledgment number: 1 (relative ack number)
  Header Length: 20 bytes
  > ... 0000 0001 0000 = Flags: 0x010 (ACK)
  Window size value: 64240
  [Calculated window size: 64240]
  [Window size scaling factor: -2 (no window scaling used)]
  > Checksum: 0xc766 [validation disabled]
  Urgent pointer: 0
  ▼ [SEQ/ACK analysis]
    [This is an ACK to the segment in frame: 964]
    [The RTT to ACK the segment was: 0.000824966 seconds]
    [iRTT: 0.000847641 seconds]

```

```

Hypertext Transfer Protocol
  GET / HTTP/1.1\r\n
    [Expert Info (Chat/Sequence): GET / HTTP/1.1\r\n]
      [GET / HTTP/1.1\r\n]
      [Severity level: Chat]
      [Group: Sequence]
      Request Method: GET
      Request URI: /
      Request Version: HTTP/1.1
      Host: 192.168.0.80\r\n
      Connection: keep-alive\r\n
      Accept: text/html,application/xhtml+xml,application/javascript;q=0.9,*/*;q=0.8\r\n
      [Full request URI: http://192.168.0.80/]
      [HTTP request 1/1]
    [Packet size limited during capture: HTTP truncated]

```

Wireshark · Expert Information · nstrace1

Severity	Group	Protocol	Count
Warn	Sequence	TCP	576
Warn	Sequence	ARP/RARP	63

167: Duplicate IP address configured (192.168.0.55)  
 169: Duplicate IP address configured (192.168.0.55)  
 170: Duplicate IP address configured (192.168.0.55)  
 172: Duplicate IP address configured (192.168.0.55)  
 920: Duplicate IP address configured (192.168.0.55)  
 922: Duplicate IP address configured (192.168.0.55)  
 923: Duplicate IP address configured (192.168.0.55)  
 925: Duplicate IP address configured (192.168.0.55)  
 937: Duplicate IP address configured (192.168.0.55)  
 940: Duplicate IP address configured (192.168.0.55)

No display filter set.

Limit to Display Filter    Search:    

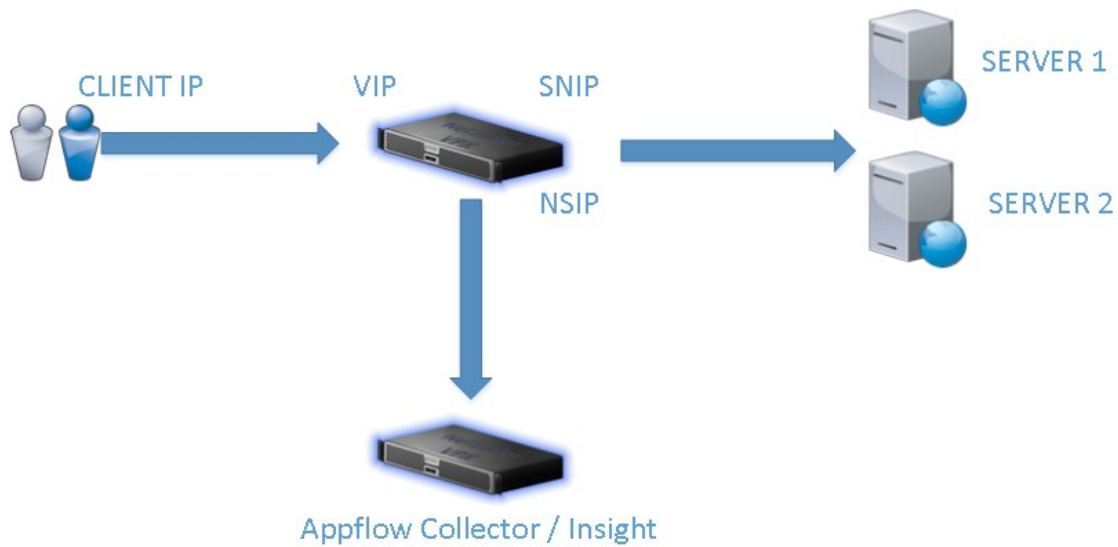
  

Wireshark · Follow TCP Stream (tcp.stream eq 26) · nstrace1

```

GET / HTTP/1.1
Host: 192.168.0.80
Connection: keep-alive
Cache-Control: max-age=0
Accept: text/html,application/xhtml+xml,application/javascript;q=0.9,*/*;q=0.8
Content-Length: 71
Connection: close
Cache-Control: no-cache,no-store
P

```



```

NetScaler Insight Deployment Type. This menu allow you to set an
agent type.
Selecting the listed number allows deployment type selected.
-----
 1. NetScaler Insight Server.
 2. Connector Node.
 3. Database Node.
 4. NetScaler Insight Agent.
 5. Cancel and quit.
Select a choice from 1 to 5 [5]: 1

```

### Enable AppFlow

Select Expression \*

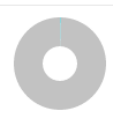
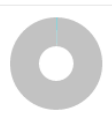
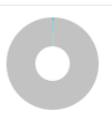
VPN

Export Option

If the AppFlow for a virtual server is enabled on more than one NetScaler Insight Center appliance, then the appliance on which the AppFlow is enabled most recently has the highest priority for collecting the information.

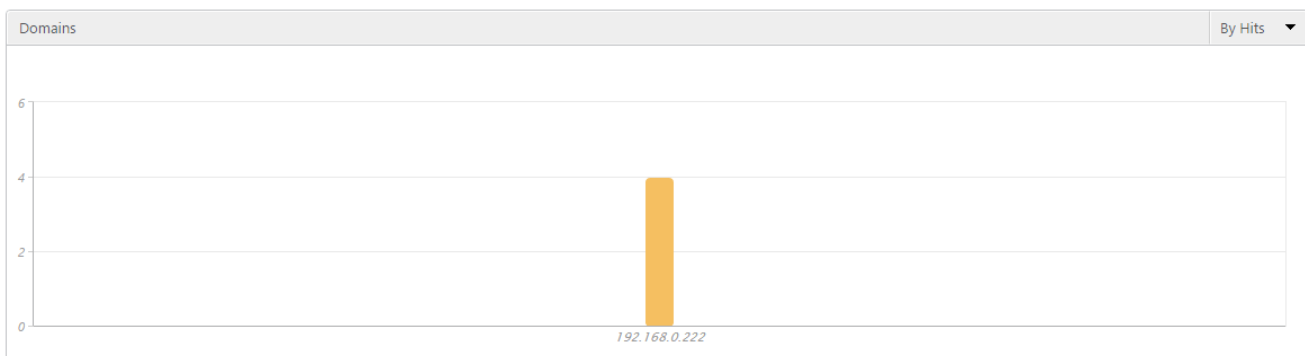
### Datstore Cluster

Capacity Planning Guide Download VM Image File

Agents   1	Connectors   1	Database Nodes   1 <span style="float: right;">Deploy</span>
 <p>CPU Used <b>0.50%</b></p> <p><b>192.168.0.47</b></p> <p>RAM 187 MB of 2.41 GB CPU 0.50%</p>	 <p>CPU Used <b>0.22%</b></p> <p><b>192.168.0.46</b></p> <p>RAM 287 MB of 2.41 GB CPU 0.44%</p> <p>Recommended <span style="float: right;">✕</span></p>	 <p>CPU Used <b>0.12%</b></p> <p><b>192.168.0.45</b></p> <p>RAM 169 MB of 2.41 GB CPU 0.24% Disk Space 407 MB of 110.54 GB</p> <p>Recommended <span style="float: right;">✕</span></p>

### Domains 📄 ↻ ?

1 Hour | 
 15 September 2015 02:04:02 - 15 September 2015 03:04:02
Go



Domains <span style="float: right;">⚙️ ▾</span>			
Name	Hits ↑	Bandwidth	Response Time
192.168.0.222	4	206.75 KB	2.92 ms

## Chapter 6: Security Features and Troubleshooting

### SSL Ciphers ✕

Cipher Suites     Cipher Groups

Available (38) Select All

Search Ciphers

- EXPORT
- EXPORT40
- EXPORT56
- LOW
- MEDIUM
- HIGH
- AES
- ECDHE
- AES-GCM
- SHA2

➤

➤

Configured (7) Remove All

- TLS1-ECDHE-RSA-AES256-SHA -
- TLS1-ECDHE-RSA-AES128-SHA -
- TLS1-DHE-RSA-AES-256-CBC-SHA -
- TLS1-DHE-RSA-AES-128-CBC-SHA -
- TLS1-AES-256-CBC-SHA -
- TLS1-AES-128-CBC-SHA -
- SSL3-DES-CBC3-SHA -

### SSL Profile ✕

SSL Profile

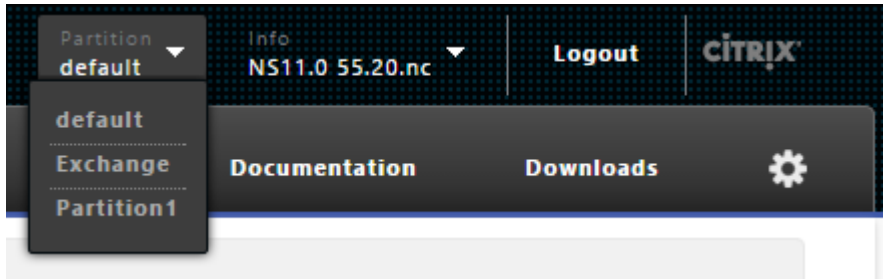
frontend-tls1.vpx ▼ + ✎

Partition User Binding > Users > System User > User

### Command Policies

	Name
<input type="radio"/>	operator
<input type="radio"/>	read-only
<input type="radio"/>	network
<input type="radio"/>	superuser
<input type="radio"/>	sysadmin
<input type="radio"/>	partition-operator
<input type="radio"/>	partition-read-only
<input type="radio"/>	partition-network
<input type="radio"/>	partition-admin





- NetScaler Overview
- Health Check Summary
- Appliance Overview**
- NetScaler Environment
- Environment Diffing

**Health Check Summary**

**Diagnostic Report (7 live alerts)**

- 💡 We are constantly feeding Insight Services new problem and best practices definitions. If we haven't solved your issue or [Click here](#) to open a case with Support (support contract required), or search our [Knowledge Base](#).
- 🚨 **Issue Name:** [Integrated Caching memory limit](#)  
**Description:** Integrated Caching memory limit is either set to 0 or is more than 50% of system memory.

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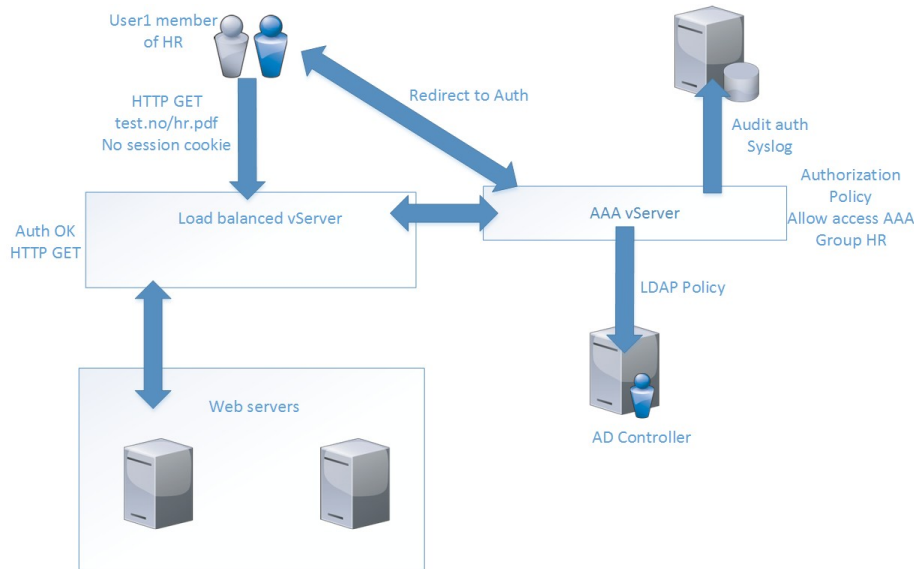
  - 🚨 **Issue Name:** [Crash file found on NetScaler](#)  
**Description:** Crash file has been detected on the NetScaler appliance. The core files are located in /var/core directory.

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  - ⚠️ **Issue Name:** [A VPN Virtual Server is in DOWN state due to missing certificate key pair bound to it.](#)  
**Description:** Upgrade / downgrade of appliance firmware could cause certkey pair bindings to disappear and VPN vserver to go DOWN.

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  - ⚠️ **Issue Name:** [1519-Drop invalid HTTP requests NetScaler 10x](#)  
**Description:** NetScaler defaults to allowing all HTTP requests. Best practice is to drop invalid HTTP requests or responses.









# LDAP\_100

 Bind  Edit

This authentication server is bound at the points shown below.

Server Type	Server Name/IP Address	Port	Status
LDAP	192.168.0.100	389	<span style="color: green;">●</span> Up 

 VPN Virtual Server  Authentication Virtual Server  System Global  VPN Global

 Unbind  Visualizer Search ▾

Name	Policy Name	State	IP Address	Port	Protocol	Bound As	Priority
AAA	LDAP_AAA	<span style="color: green;">●</span> Up	192.168.0.60	443	SSL	Primary	100

## Authentication

Form Based Authentication  401 Based Authentication  None

Authentication FQDN

aaa.commaxx.no

Choose Authentication Virtual Server Type\*

Authentication Virtual Server ▾

Authentication Virtual Server

AAA ▾   

Authentication Profile

▾  




**Create Authentication Profile**

Name\*

Authentication Host\*  
 ?

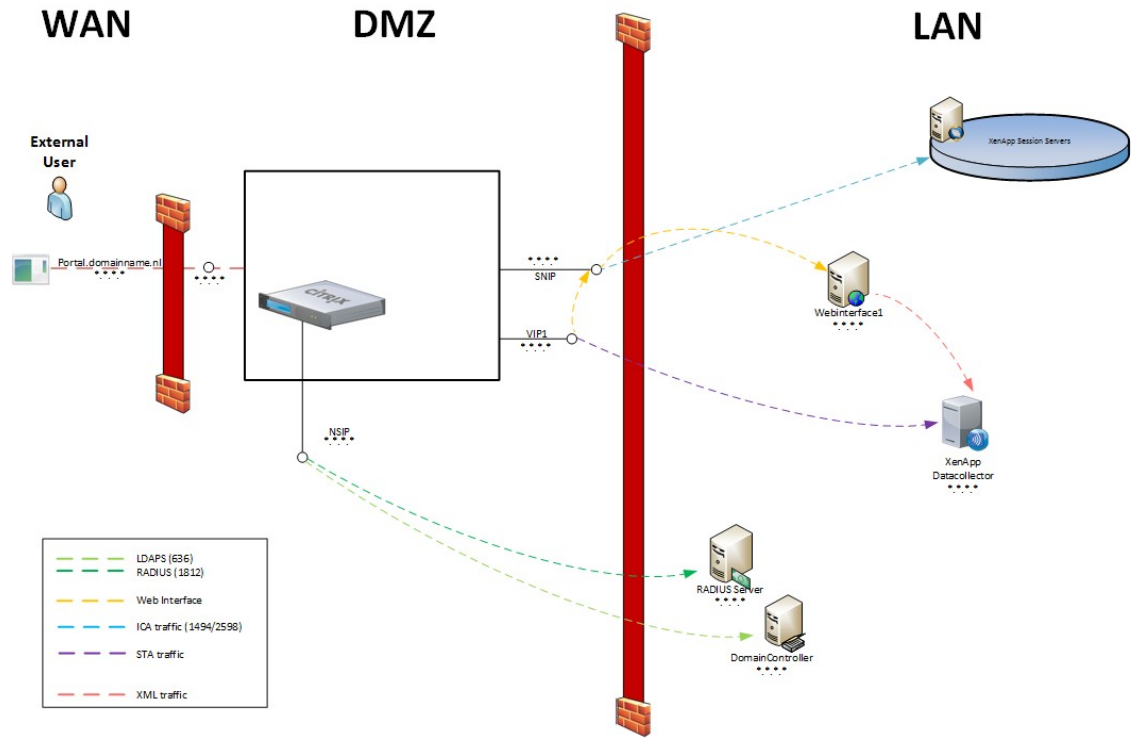
Choose Authentication Virtual Server Type  
 ▼

Authentication Virtual Server\*  
 > + 

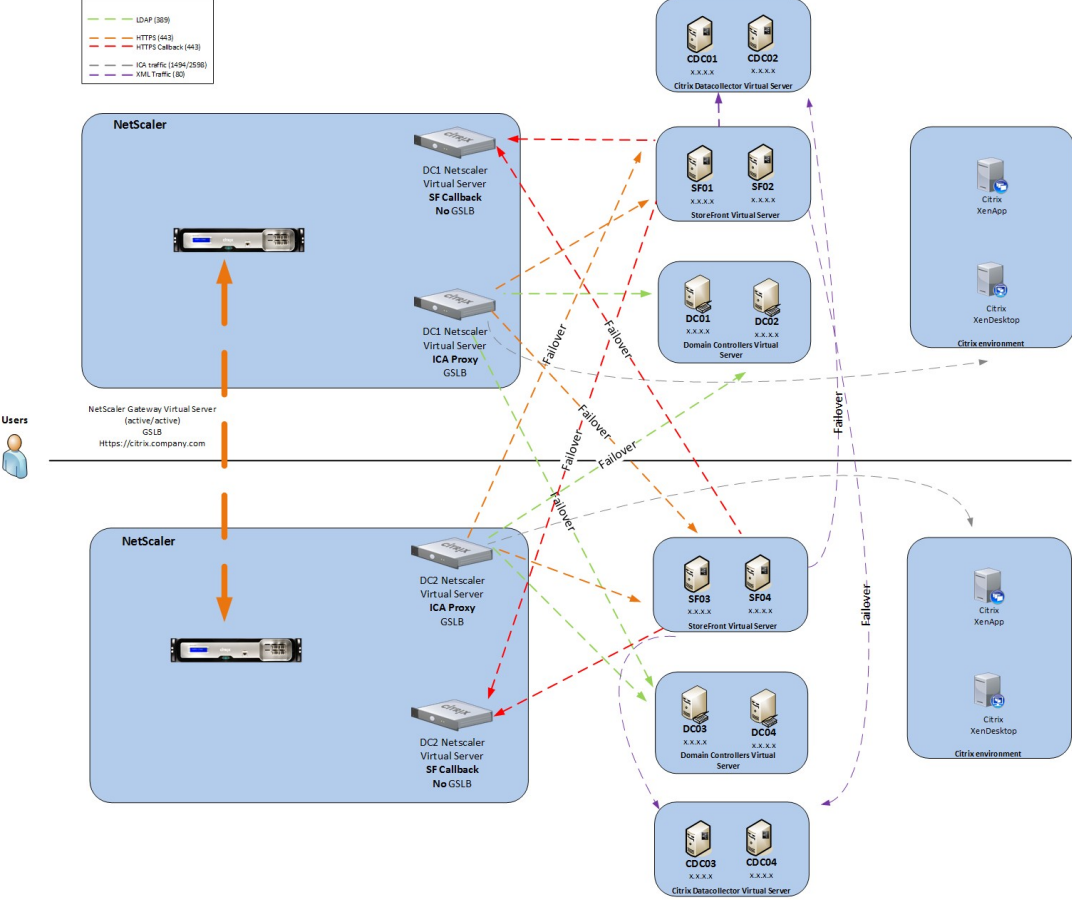
Authentication Domain

Authentication Level

## Chapter 7: Real-World Deployment Scenarios

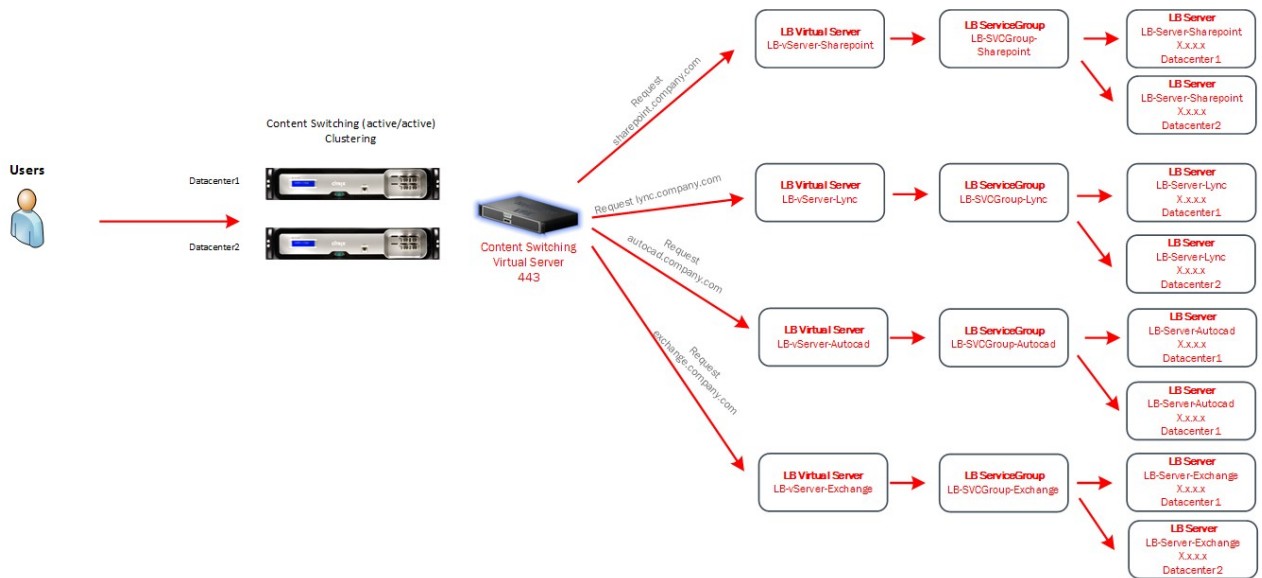
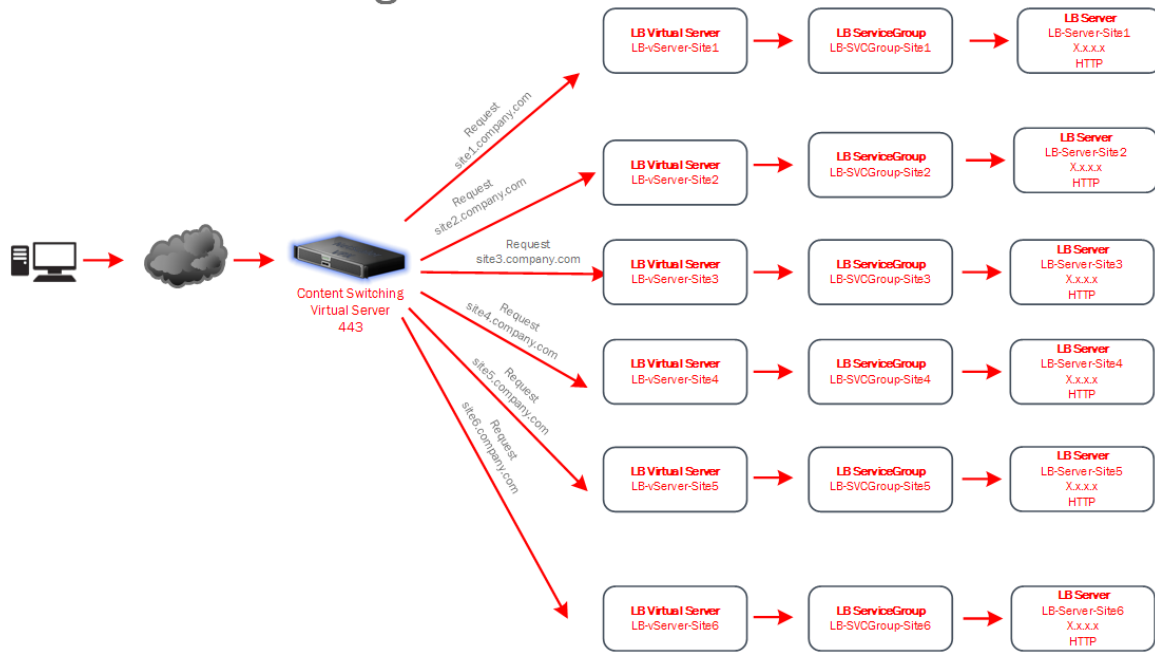


# Datacenter 1

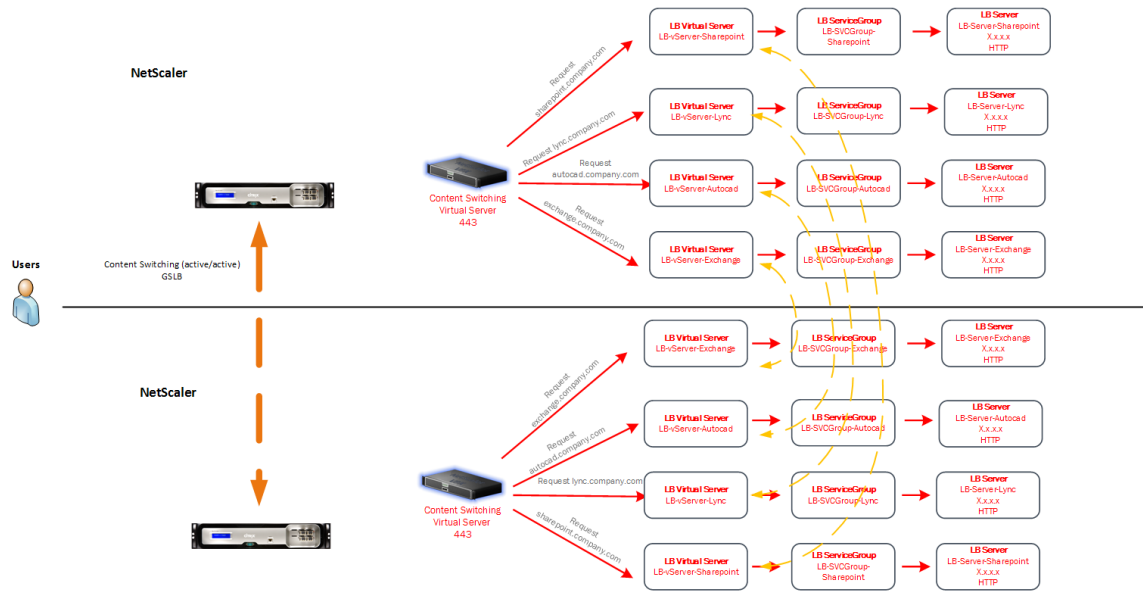


# Datacenter 2

# Content Switching

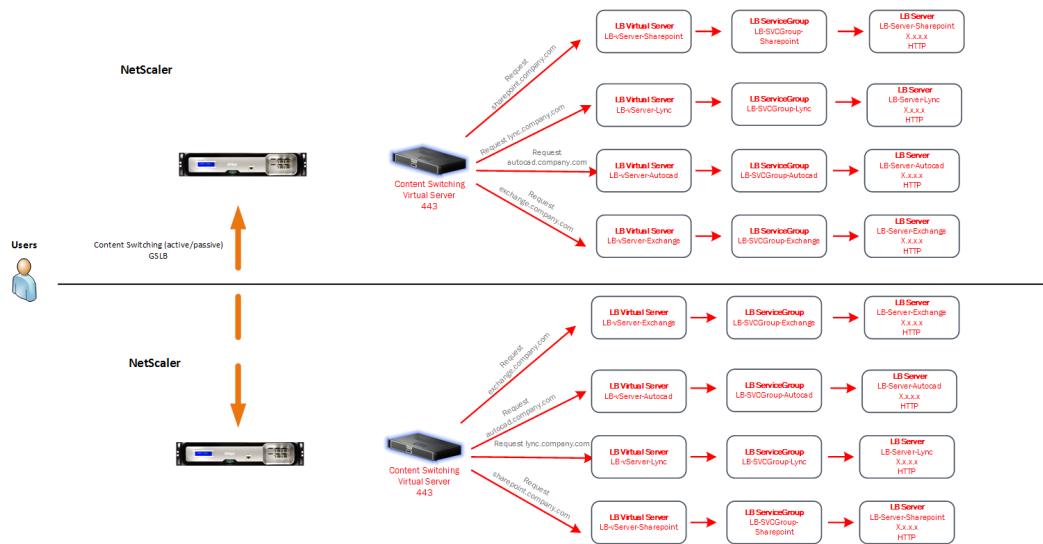


# Datacenter 1



# Datacenter 2

## Datacenter active



## Datacenter passive