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NetScaler Release 10.5 Overview and Features Update

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06.11.2014

Overview

- NetScaler major release, 2014
- Over 100 features in Beta 1
- New feature highlights
  - NetScaler MobileStream™
  - Core
    - Policy Variables, TCP Optimizations, Traffic Domains, Link Redundancy
  - Load Balancing

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Citrix NetScaler 10

Release 10.5

NetScaler MobileStream™

Network Virtualization

Datacenter Enhancements

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Announcement Highlights

MPTCP

SPDY v3

AAA External Support

SSL Enhancements

OWA Force Session Timeout

Minification

Lazy Image Loading

Mobile Micro VPN

Link redundan…

…on

RISE Integration

ACI Integration

SVM M…

…lient Cert Passthrough

Gateway Enhancem…

…

…urve Optimization

Simplified File Operations

LLDP Support

Dynam… Enhancements

…raffic Domains

Domain Sharding

Forms Based SSO Enhancements

Ethernet Jumbo Frames

Major NetScaler Release
Over 100 features in Beta!

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New Licensed Features

Feature	Platinum	Enterprise	Standard
NetScaler MobileStream™	✓	✓	
Policy Variables	✓	✓	✓
Traffic Domains	✓	✓	✓
LLDP	✓	✓	✓
Link Redundancy	✓	✓	✓
Application Firewall	✓	*	
Cisco: RISE*	✓	✓	
Cisco: vPath*	✓	✓	✓

NetScaler MobileStream™	Platinum	Enterprise	Standard
SPDYv3, MPTCP, BIC TCP, CUBIC, TCP Westwood	✓	✓	✓
Domain Sharding, Prefetch, Image Opt, CSS & JS Opt, Lazy loading	✓	✓	
MicroVPN for Mobile Devices (NetScaler Gateway)	✓	✓	✓

* Note: Only RISE or vPath can be enabled at one time per NetScaler instance
* Available as an a-la-cart feature

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NetScaler MobileStream™

Front End Optimization (FEO)

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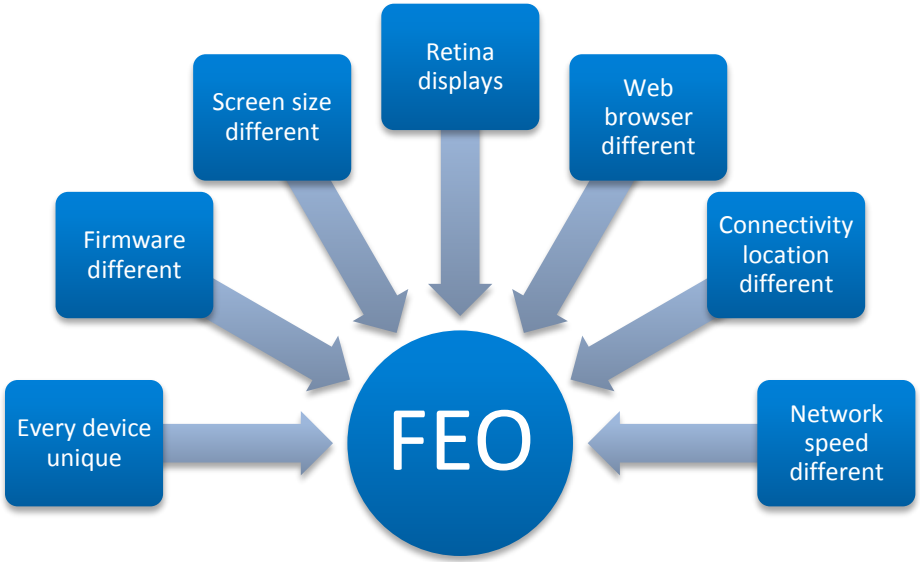
Importance Of Mobile User Acceleration

- Optimization historically focused on optimizing and reducing load at the backend.
- With current trend of Mobility NetScaler Focuses on faster and efficient web content delivery by optimizing the web page components most dependent on client side processing.



Mobile Acceleration Improves Your Mobile Clients' Experience

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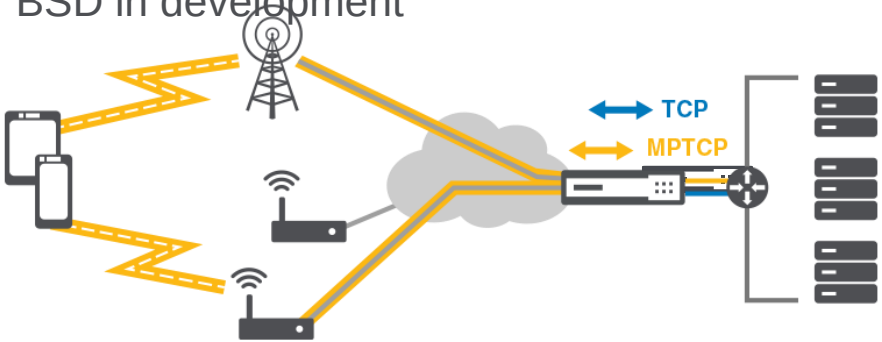
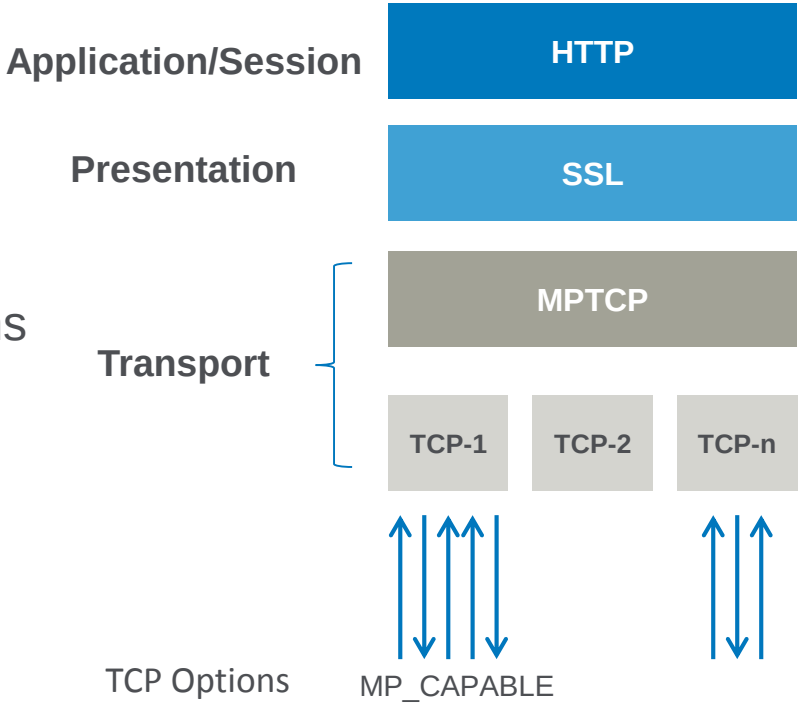
What is MPTCP?

- Transport layer protocol
- Coexist with TCP
- Provides fault tolerance and path failover
- Increase throughput by using multiple paths
- Availability
  - RFC 6824
  - Linux distribution (Standard & Android)
  - BSD in development





Establish secure token on first subflow (SF #1)

Subsequent subflows use the secure token from SF #1 to connect

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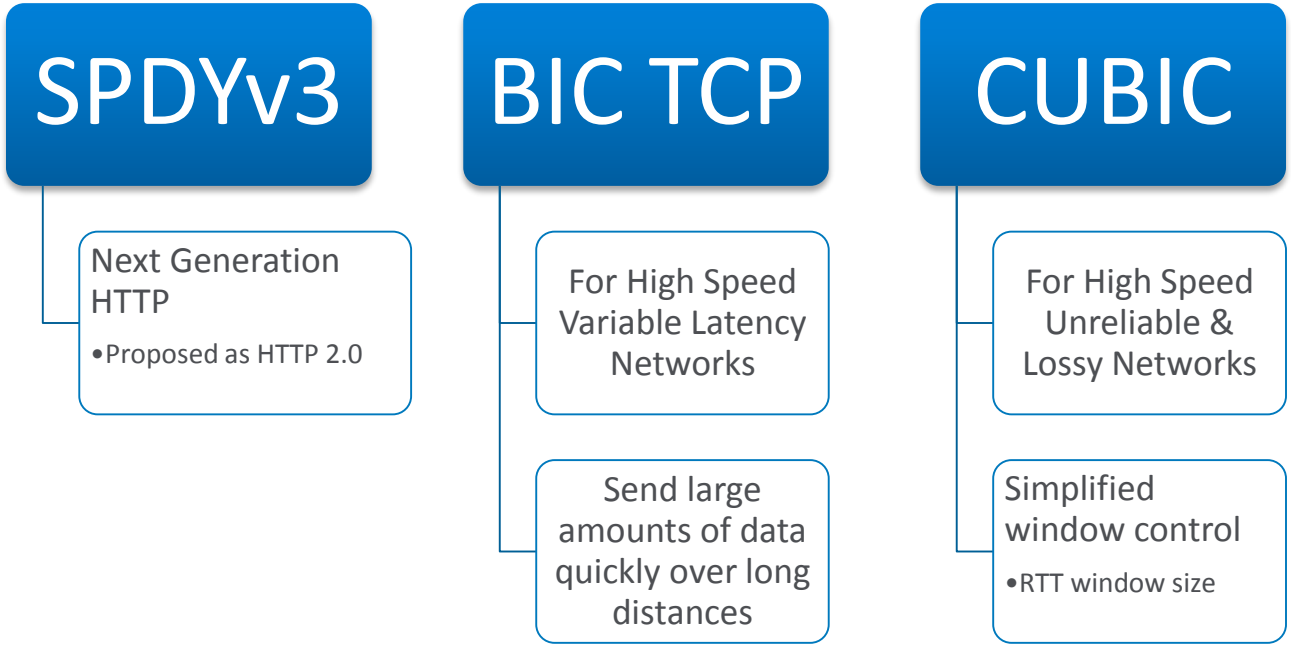
High-Speed Enablement



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How NetScaler Optimizes The Front-End

Domain Sharding

- Change embedded URLs to use sub-domains and trick the browser to open more connections

Minimize & Optimize Order of CSS & JS

- Remove unnecessary characters & space
- Simplify processing & reduce download time to client device
- Move CSS & JS objects to end of HTML body
- Inline Download

Image Optimization

- JPG optimize, Convert GIF to PNG, Image Lazy load, Image shrink to display attributes of the user-device

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Core

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Conversion from Java to HTML5

- 1000s of Views now only in HTML5
- Load time reduced by over 50%
- Improved user efficiency
- Following areas will be converted in a 10.5 maintenance release
  - AppFW, Visualizer, Diagnostics

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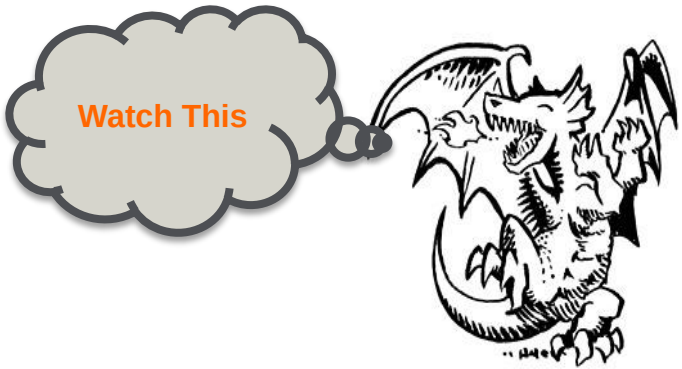
Core Feature

- Policy Variables
  - Store a token (data) from the request or response in a system variable
  - Reference stored data for
    - Fully customized session persistence
    - Internal computation
    - Policy processing



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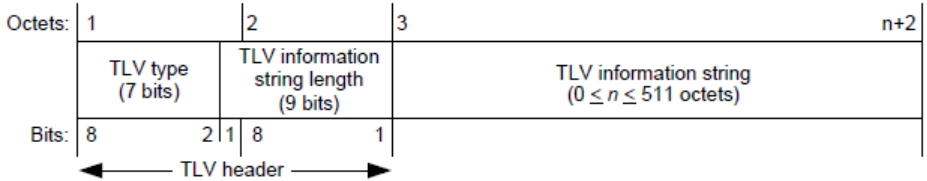
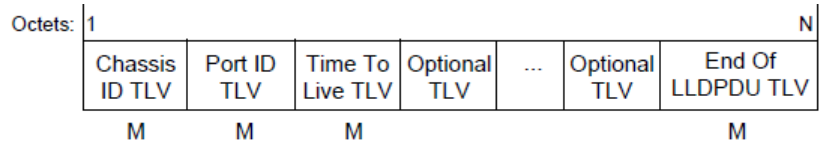
LLDP Support

- Allow stations attached to an IEEE 802 LAN to advertise System Information. Helps to create network topology.
- System information advertised
  - Capabilities
  - Management addresses
  - Connectivity information

LLDP Info consist of multiple TLVs



TLVs must be in following sequence



Dst MAC	Src MAC	Ether Type	LLDP Info
01-80-C2-00-00-0E		88-CC	

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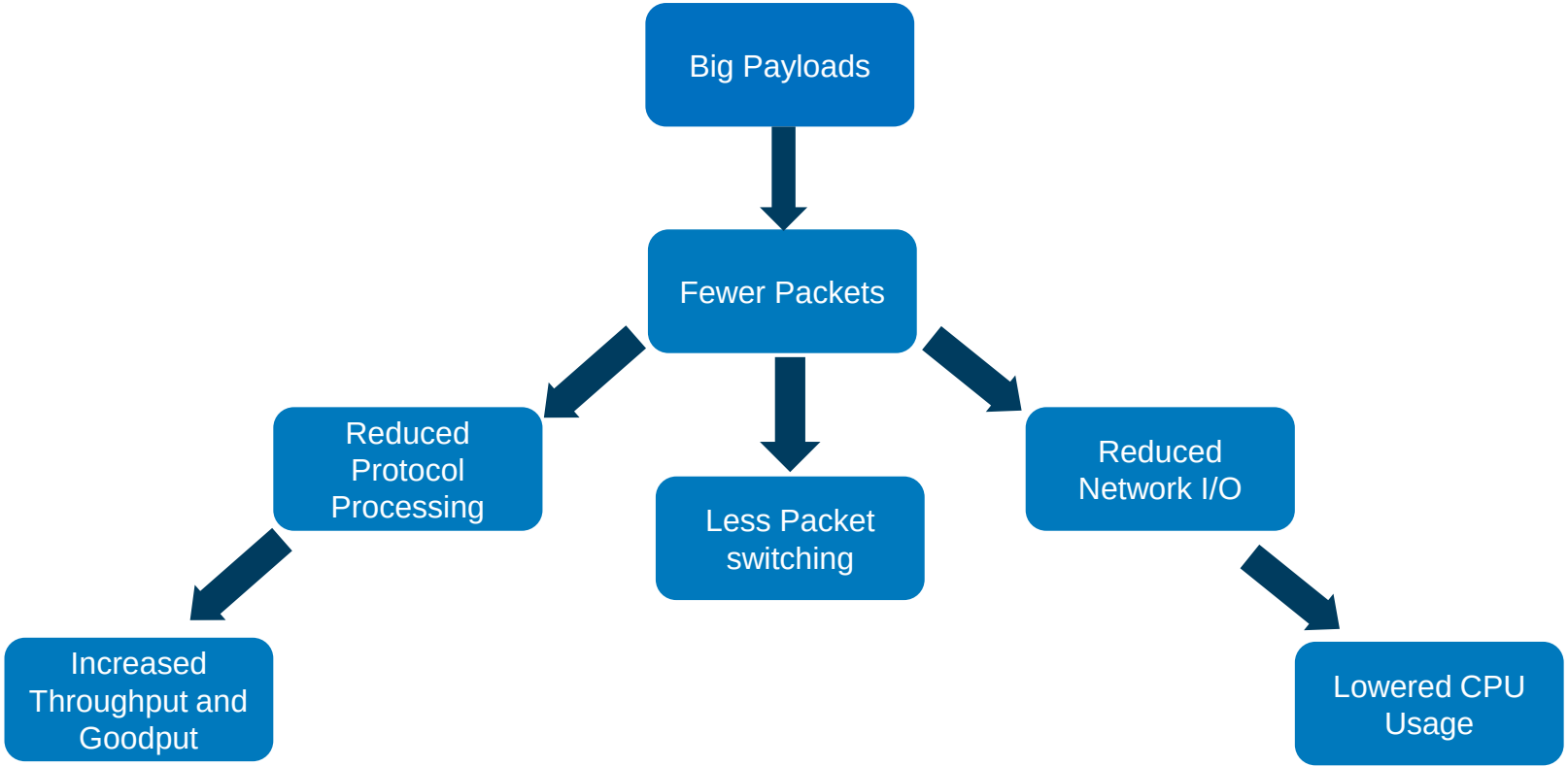
Ethernet jumbo frames



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Traffic Domains

- Inter-Domain Routing
  - Internally communicate across traffic domains. Virtual server and services can now be in different traffic domain
- Rate Limiting per traffic domain
  - Limit the …
    Number of requests per second from clients
    Number of Active Client Connections
    Maximum Bandwidth
- Rates can be
  - SMOOTH - # of requests in a given interval of time spread evenly across the time slice
  - BURSTY - # of permitted requests allowed to exceed the quota within the time slice
- Policies can be combined with others to create complex policy sets
- VMAC Support
  - Map Traffic Domain by destination MAC instead of incoming VLAN
  - VLANs can be shared across traffic domains

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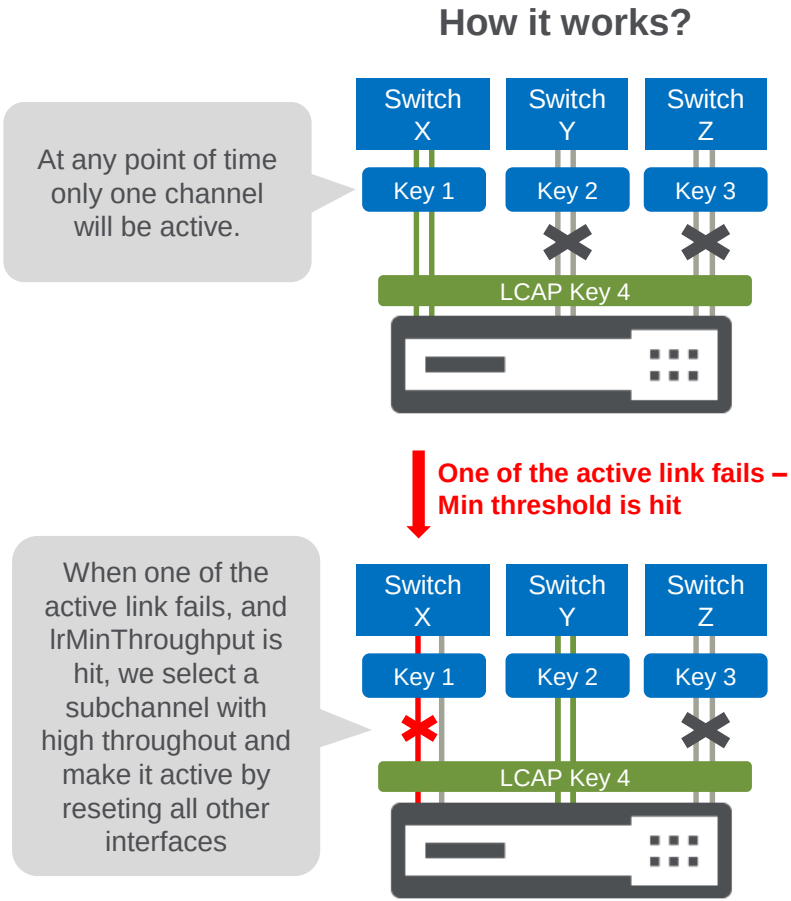
Link Redundancy

- LR Trigger for LACP channels
  - Set a minimum bandwidth for dynamic channels. When throughput falls below threshold, a link failover is triggered to make another channel.
  - For HA pair, when all channels reach threshold, trigger HA failover.
- LR Trigger for generic channels
  - Fail to another channel (to a redundant switch) when threshold reached



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Orchestration

Python SDK	• NITRO API SDK in Python for better server side scripting. Python SDK will be available and supported with python 2.7 and 3+.
Dynamic Routing	• NITRO API support for routing protocols. Changes sync to all peers.
File Operations	• NITRO APIs for Upload, Download, Write and Read methods. Key functional requirements like SSL certkey will be able to get the benefits.
Other Commands	• NITRO APIs and commands for better system manageability • Tech Support, batch, source, show nstrace, start nstrace, stop nstrace

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Service Supporting Features

- Content Switching
  - Multi-port CS
    - Configure a CS vserver on a combination of ports
  - DNS_TCP Support
    - DNS_TCP protocol is now supported with a Content Switching Vserver
- Audit Logging
  - Ability to distinguish whether the command is executed from CLI or the GUI
- AAA Session Stickiness
  - LDAP, RADIUS, & TACACS: We now stick to the server where last session was successful.

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Service Supporting Features (cont)

- AAA-TM
  - Custom error strings
  - Backend HTTP Web-Form Authentication
  - Strong Encryption Support in KCD/Kerberos (AES-256, RC4-HMAC)
- OWA Force Session Timeout
  - Forced timeout on long-lived connections that are open for monitoring
- Client Certificate Pass-through
  - In XenMobile deployments, a client-certificate is required to be passed to Storefront. Now send the client-certificate any Application server. No configuration needed.
- Forms Based SSO – Relative URLs
  - NS can take relative URL and processed for Form based SSO

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SDX SVM Manageability & 3rd Party Software

- CLI Support
- File management via NITRO
- AAA Support
  - Use LDAP/TACACS/RADIUS for SVM access
  - Authorization & Audit log support
  - Password expiration support
  - For more details refer : AAA edocs
- Ethernet Jumbo Frames Support with SR-IOV
- Central SSL Cert & Key Management

NetScaler SDX

Open service delivery platform for 3rd party services

paloalto NETWORKS

websense ESSENTIAL INFORMATION PROTECTION

BLUECAT NETWORKS

CSE

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Load Balancing

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TM & DNS

LB: Increased number of service groups to 8000

DNS LB: CNAME record caching in Proxy mode

- NetScaler to use DNS caching module to cache CNAME record and send it from NS than fetching it every time

DNS: NAPTR

- NAPTR support on NS along with SRV records.

GSLB: Static proximity sync

- Auto sync of static proximity db

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SSL

- ECC Cipher Support
  - More secure & faster ciphers available on N3-based MPX, SDX, & VPX
    - ECDHE-RSA-RC4-SHA, ECDHE-RSA-DES-CBC3-SHA, ECDHE-RSA-AES128-SHA, ECDHE-RSA-AES256-SHA
- Common Name Check
  - Server Auth configuration is enhanced to accept “commonName” check. This check will be performed on SSL certificates received from backend server
- SSL Profiles
  - SSL profiles added for frontend and backend communication
- SSL Cert Chain
  - Helps identify the certificates belonging to a chain and suggest if a cert is missing in the chain.

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Database Deployment Support

✓MSSQL

- AlwaysOn HA: 1 service can join now 2 groups and be primary in one and secondary in the other
- Special Query Handling: queries can change either global or local properties of the server or connection. “use db” can be changed by NetScaler to reduce server-side connections.

✓MYSQL

- Transparent Deployment Mode: Audit log, AppFlow, & stream analytics transparently for DB connections
- Database-Specific LB: A database can be online or offline independent of others on the same server. New monitor enables DB state awareness.

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Q&A

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What is Admin Partition?

- Logical separation of NetScaler into multiple units
- Functions like an independent Netscaler.
- Provides isolation of configuration and data/traffic
- Provides multi-tenancy, but without separation of system resources, like., CPU, Memory, etc.
- Consists of Application resources (services, vservers, policies, monitors, etc.)

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Highlights of Admin Partition

- Entity space separation
- Data or traffic separation
- Resource management using granular user roles
- Audit/web logging
- Statistics and historical data
- Management through SNMP
- Separate config storage and file system
- Traffic rate limit
- 100s of partitions
- 1 admin – multiple partitions

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Highlights of Admin Partition (Contd…)

- Separate GUI/CLI/Monitoring/Report
- IP overlapping
- External Auth - AAA
- No inter partition routing
- No read/write access to others
- Overall System security
- HA – Connection Mirror

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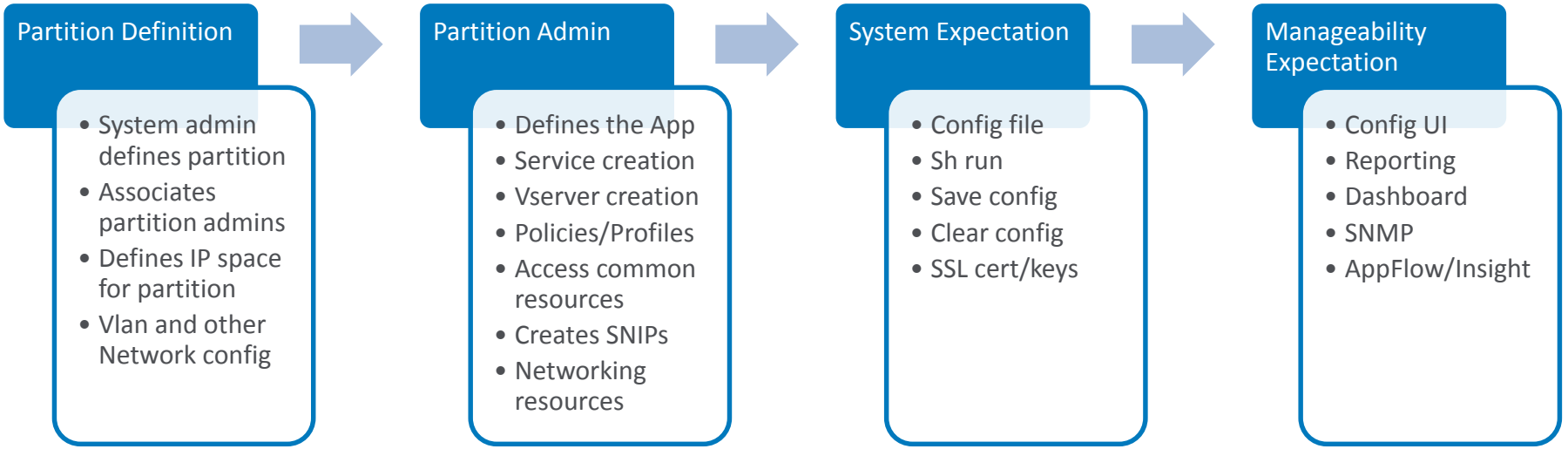
Admin Partition Workflow



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Citrix Login
10.102.37.182
CITRIX
User Name
nsroot
Password
Deployment Type
NetScaler ADC
Show Options
To use Secure HTTPS Click here
Login
CITRIX
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0:00 / 5:00

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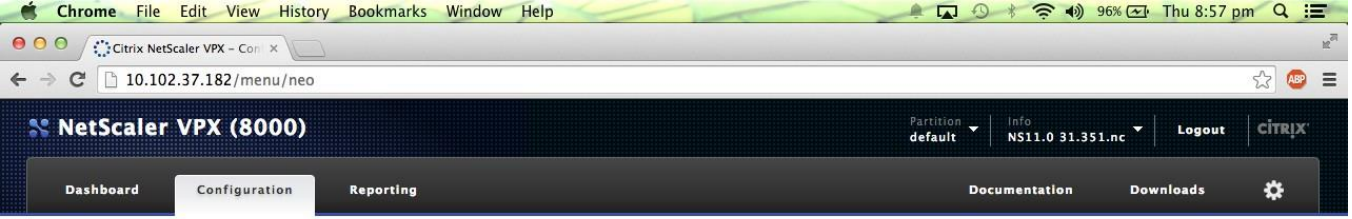

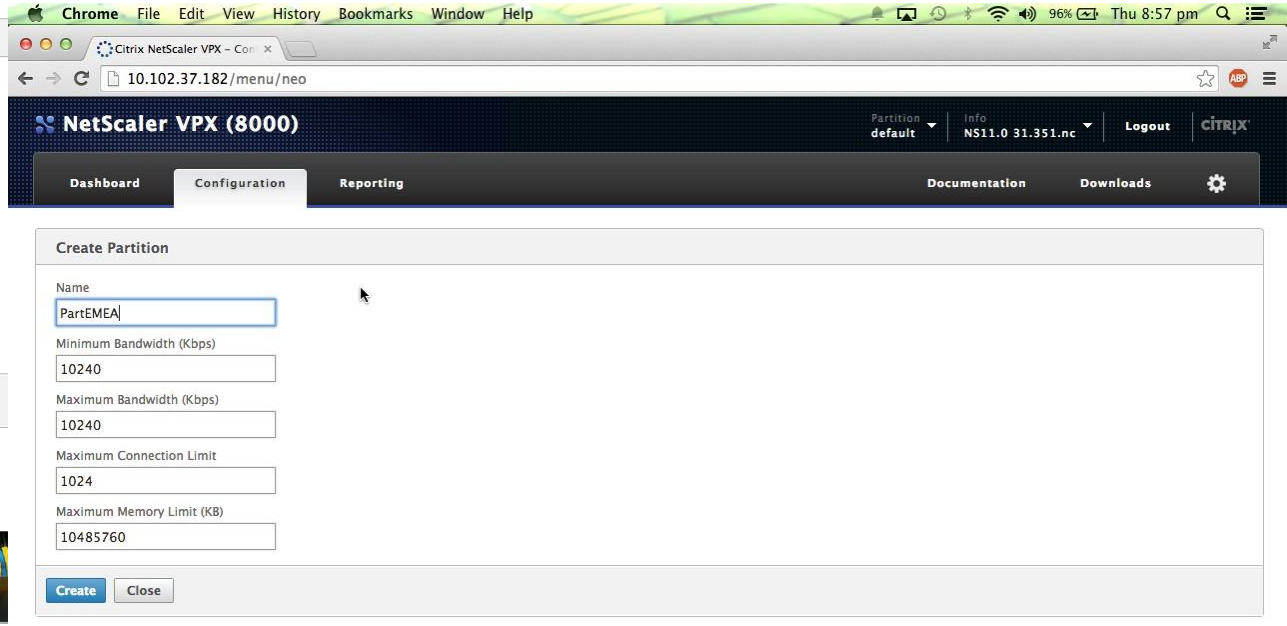

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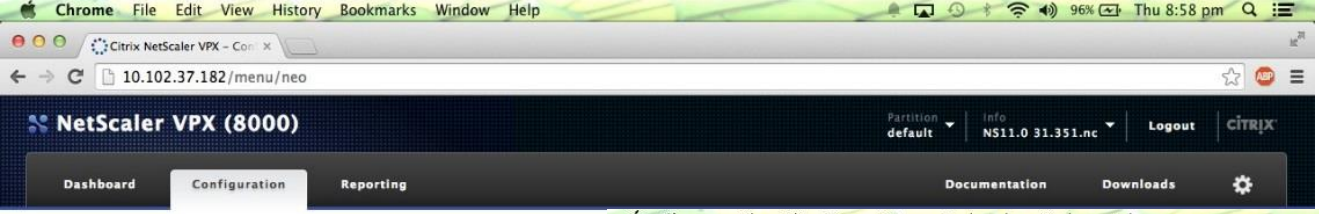
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Partition default
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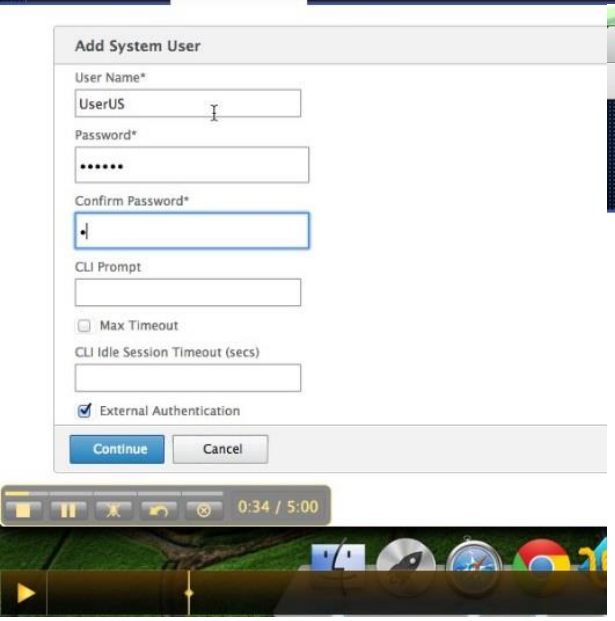
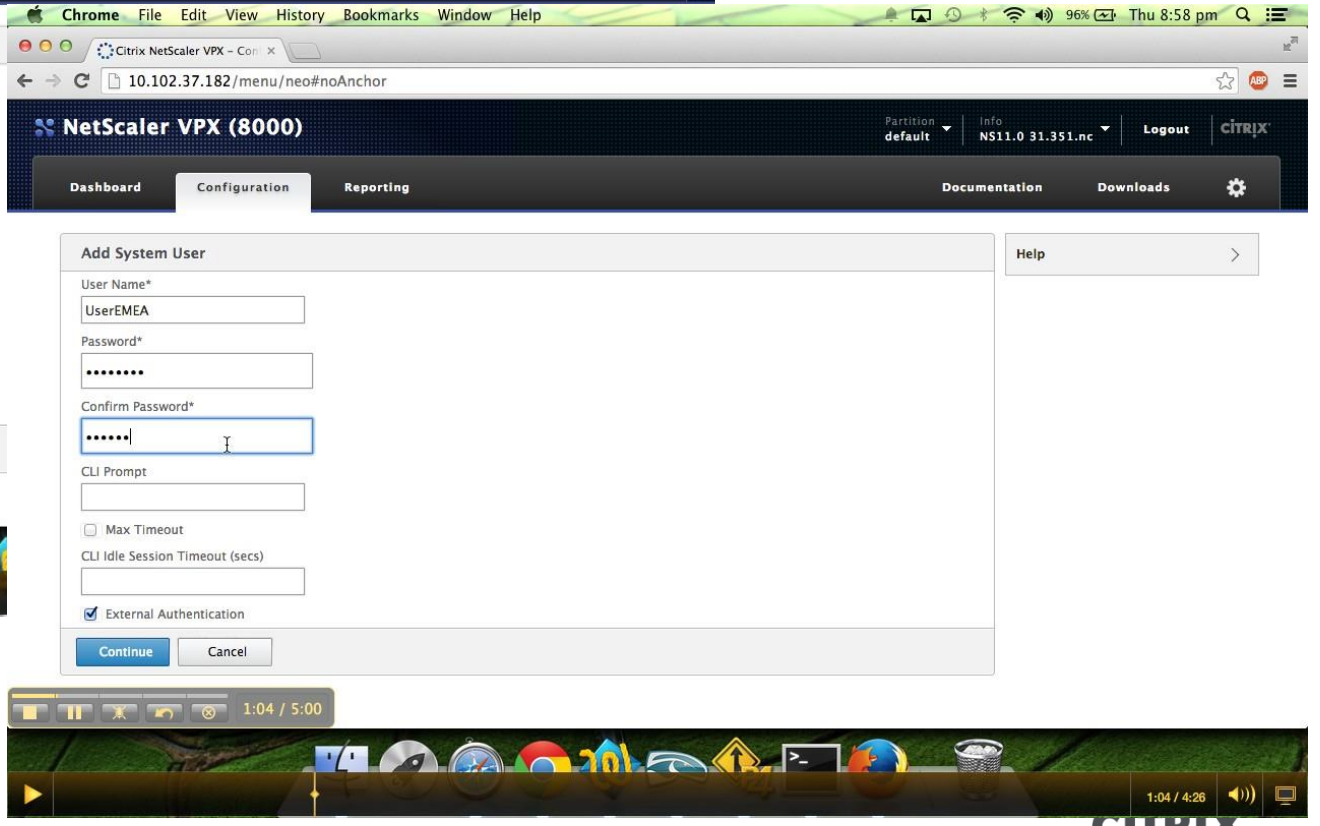
Logout
CITRIX
Dashboard
Configuration
Reporting
Documentation
Downloads


Add System User
User Name*
UserUS
Password*
Confirm Password*
CLI Prompt
Max Timeout
CLI Idle Session Timeout (secs)
External Authentication
Continue
Cancel
0:34 / 5:00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NetScaler VPX (8000)
Partition default
Info NS11.0 31.351.nc
Logout
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Dashboard
Configuration
Reporting
Documentation
Downloads
Add System User
User Name*
UserEMEA
Password*
Confirm Password*
CLI Prompt
Max Timeout
CLI Idle Session Timeout (secs)
External Authentication
Continue
Cancel
Help
1:04 / 5:00
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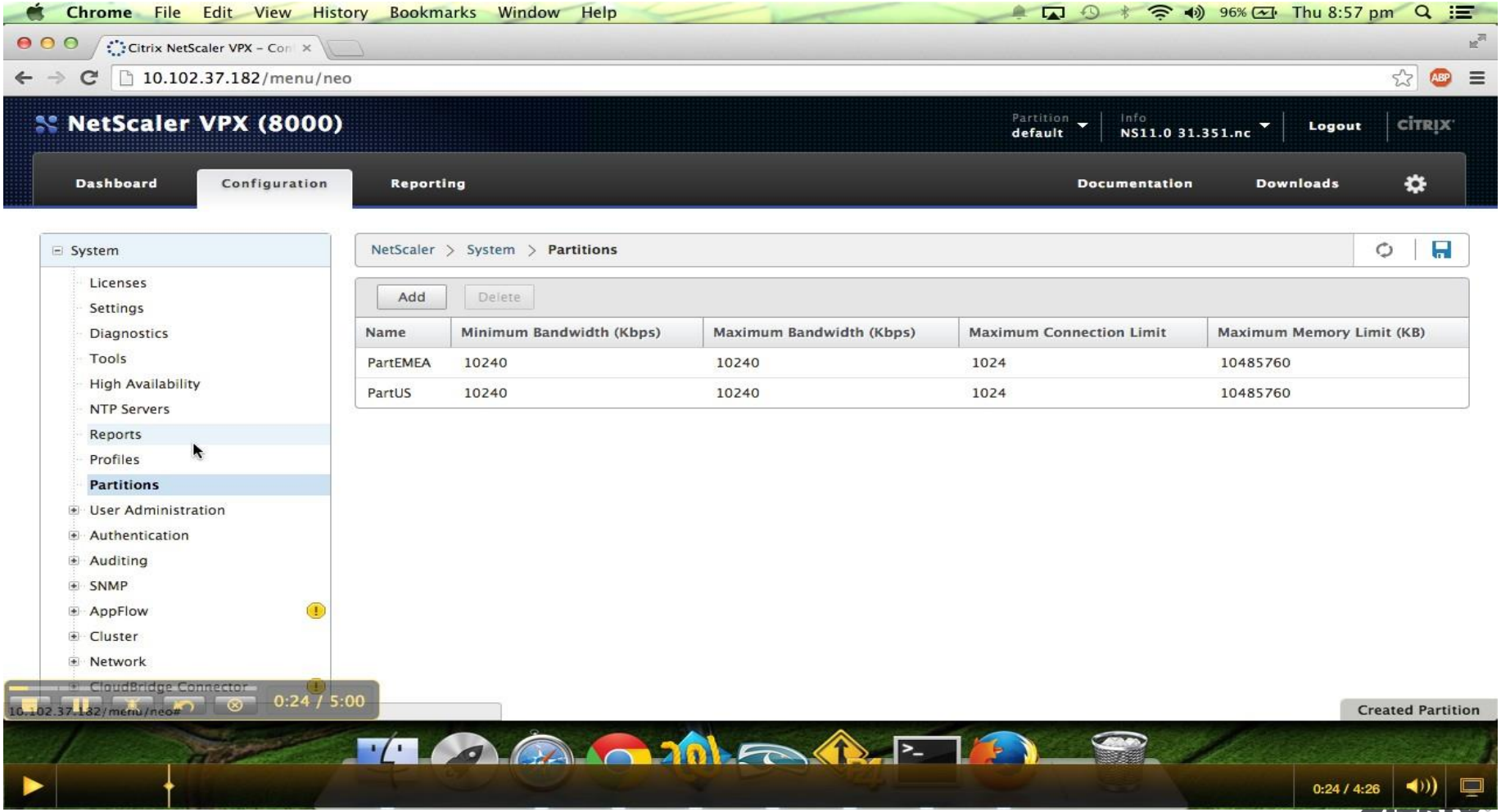
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Documentation
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System
Licenses
Settings
Diagnostics
Tools
High Availability
NTP Servers
Reports
Profiles
Partitions
User Administration
Authentication
Auditing
SNMP
AppFlow
Cluster
Network
CloudBridge Connector
NetScaler > System > Partitions
Add
Delete
Name
Minimum Bandwidth (Kbps)
Maximum Bandwidth (Kbps)
Maximum Connection Limit
Maximum Memory Limit (KB)
PartEMEA 10240 10240 1024 10485760
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0:24 / 4:26

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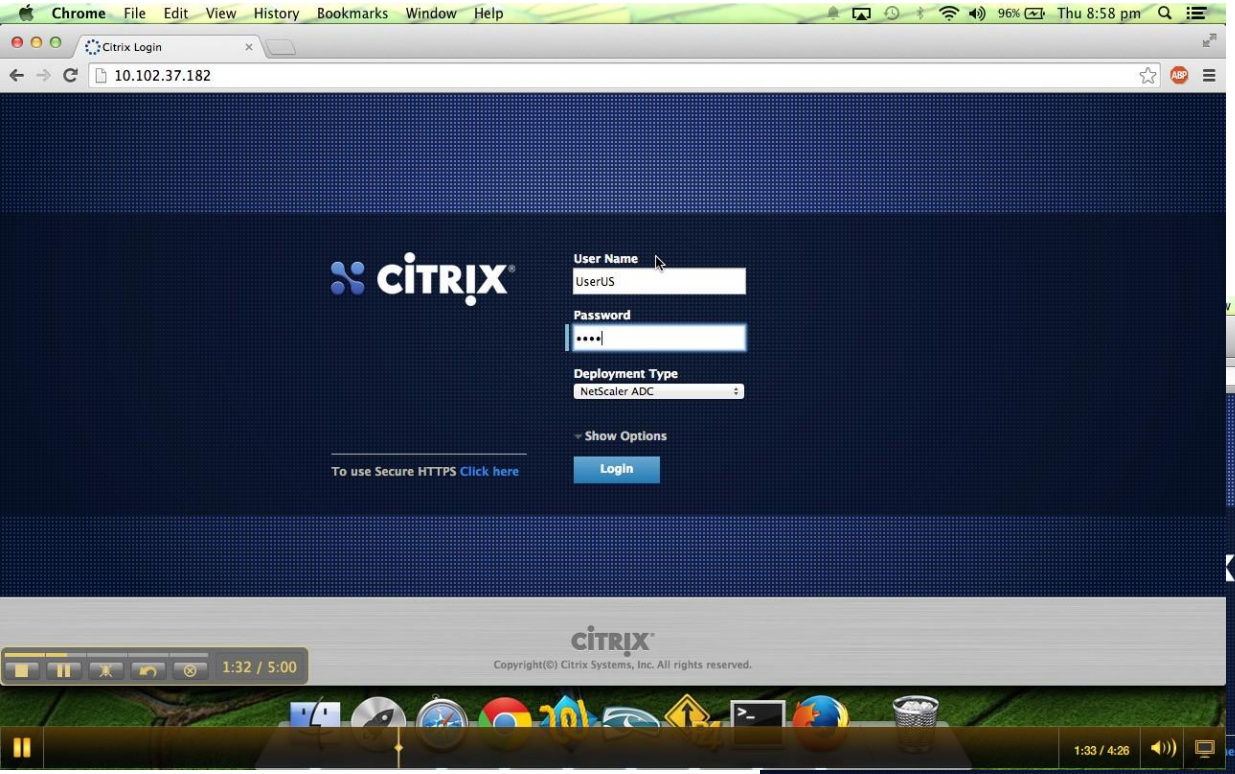
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CITRIX
User Name
UserUS
Password
Deployment Type
NetScaler ADC
Show Options
Login
To use Secure HTTPS Click here
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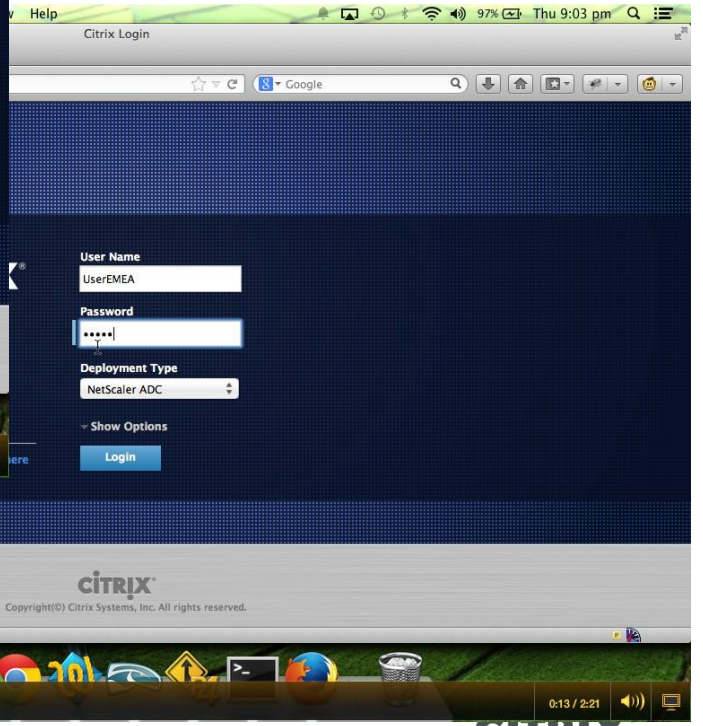
1:33 / 4:26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Google
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UserEMEA
Password
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NetScaler ADC
Show Options
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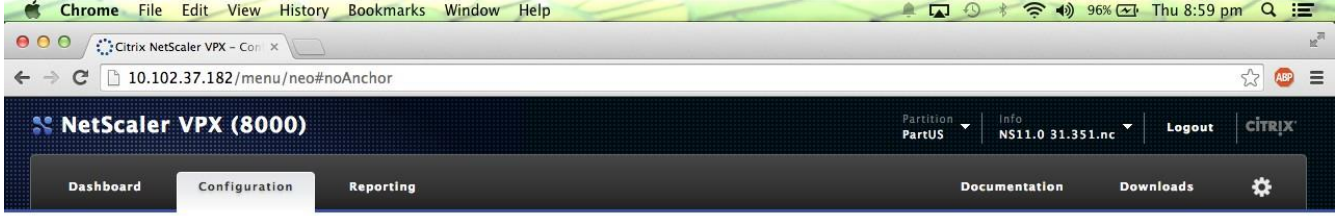
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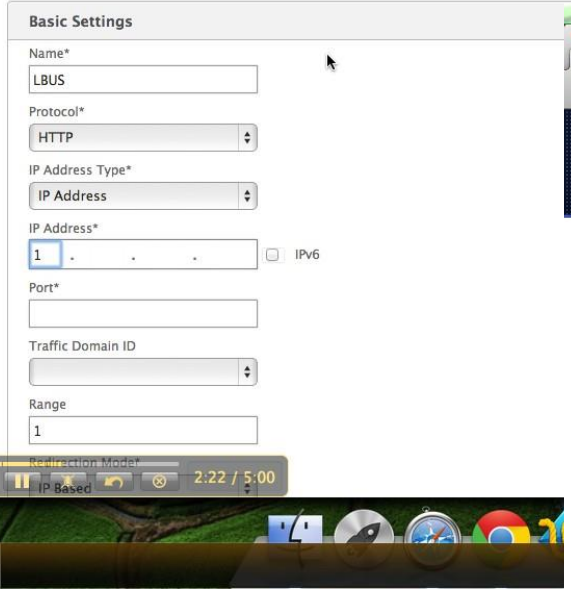
Partition PartUS
Info NS11.0 31.351.nc
Logout
CITRIX
Dashboard
Configuration
Reporting
Documentation
Downloads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Name*
LBUS
Protocol*
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IP Address Type*
IP Address
IP Address*
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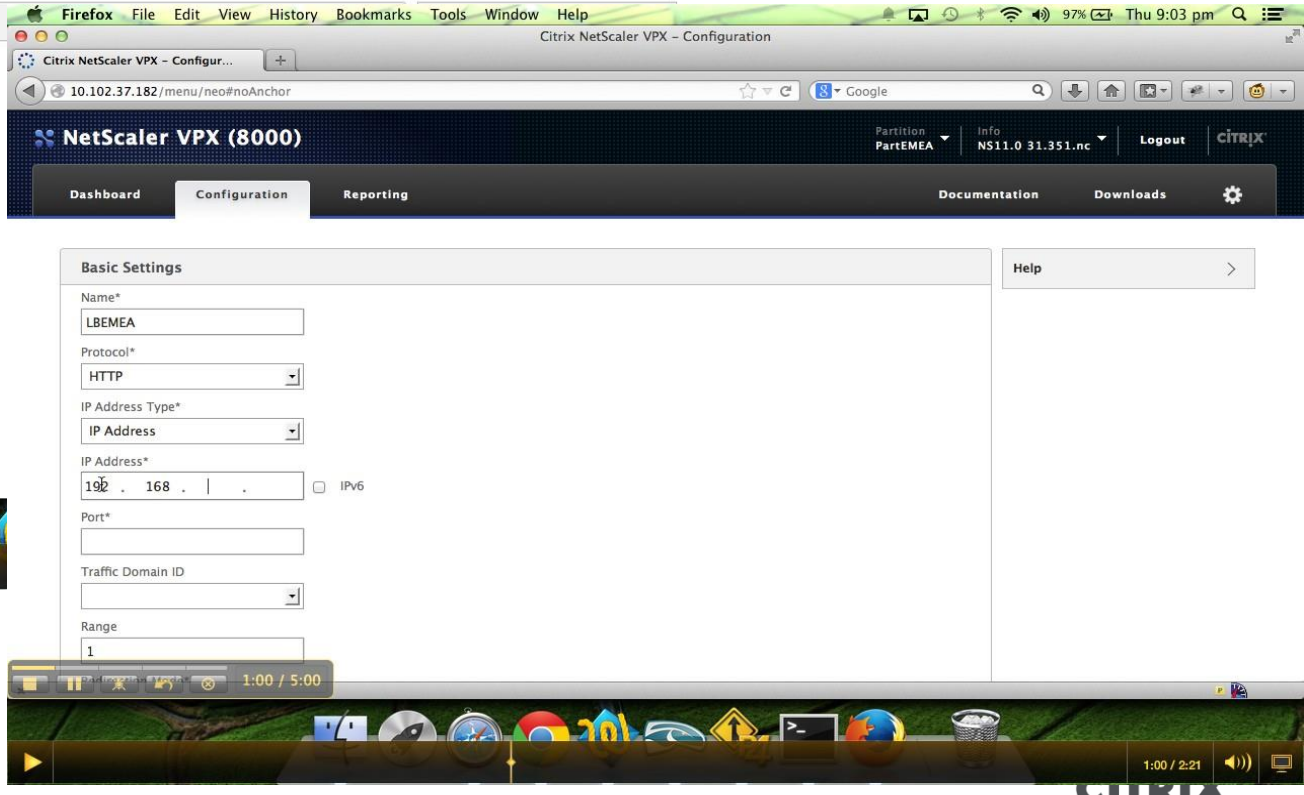
IPv6
Port*
Traffic Domain ID
Range
1
IP Based
2:22 / 5:00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Protocol*
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IP Address Type*
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Port*
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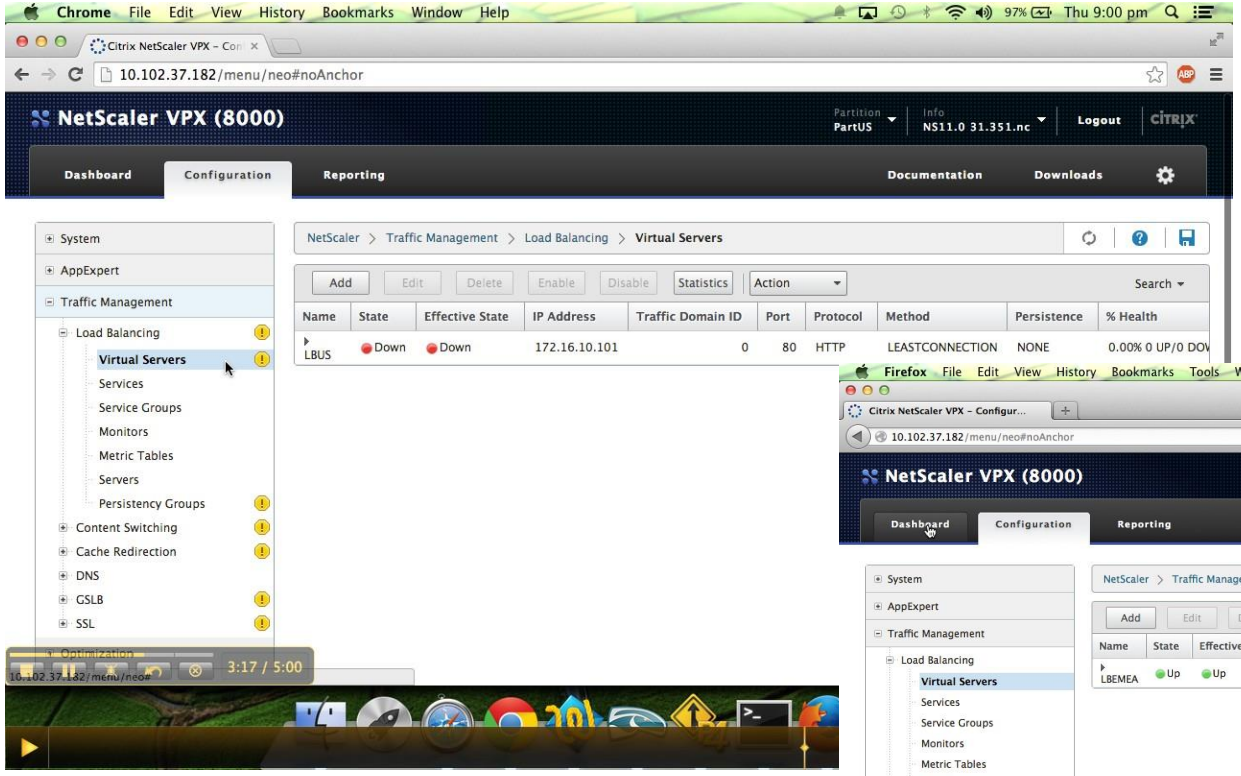
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Load Balancing
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Services
Service Groups
Monitors
Metric Tables
Servers
Persistency Groups
Content Switching
Cache Redirection
DNS
GSLB
SSL
NetScaler > Traffic Management > Load Balancing > Virtual Servers
Add
Edit
Delete
Enable
Disable
Statistics
Action
Search
Name
State
Effective State
IP Address
Traffic Domain ID
Port
Protocol
Method
Persistence
% Health
LBUS
Down
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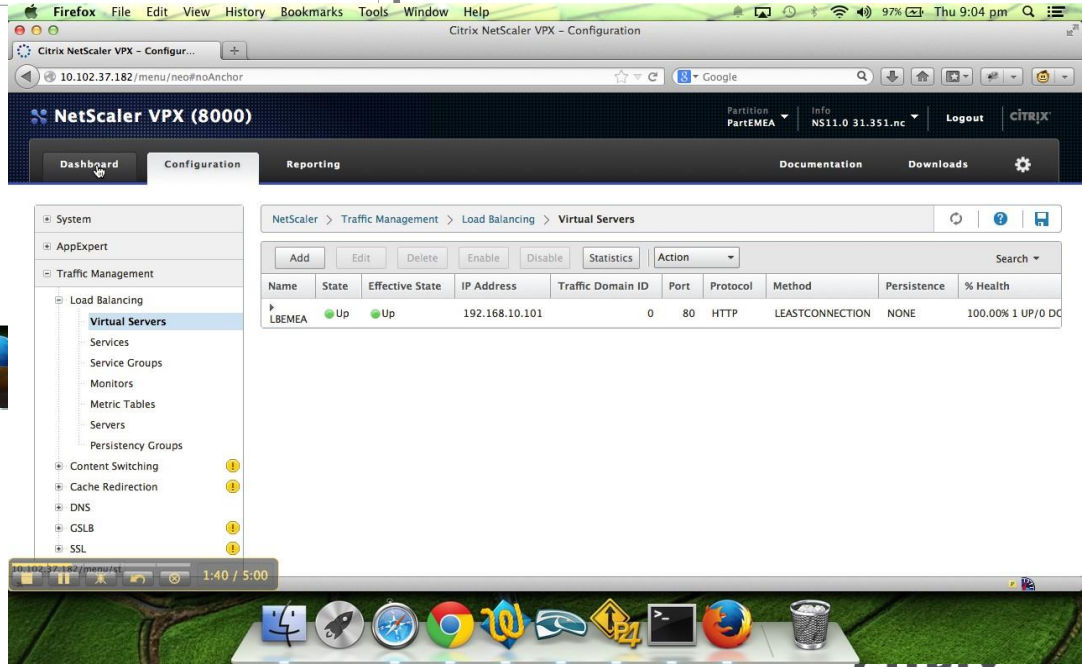
0
80
HTTP
LEASTCONNECTION
NONE
0.00% 0 UP/0 DOV
3:17 / 5:00


Firefox File Edit View History Bookmarks Tools Window Help
Citrix NetScaler VPX – Configuration
Citrix NetScaler VPX – Configur...
10.102.37.182/menu/neo#noAnchor
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NetScaler VPX (8000)
Partition PartEMEA
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Services
Service Groups
Monitors
Metric Tables
Servers
Persistency Groups
Content Switching
Cache Redirection
DNS
GSLB
SSL
NetScaler > Traffic Management > Load Balancing > Virtual Servers
Add
Edit
Delete
Enable
Disable
Statistics
Action
Search
Name
State
Effective State
IP Address
Traffic Domain ID
Port
Protocol
Method
Persistence
% Health
LBEMEA
Up
Up
192.168.10.101
0
80
HTTP
LEASTCONNECTION
NONE
100.00% 1 UP/0 DO
1:40 / 5:00

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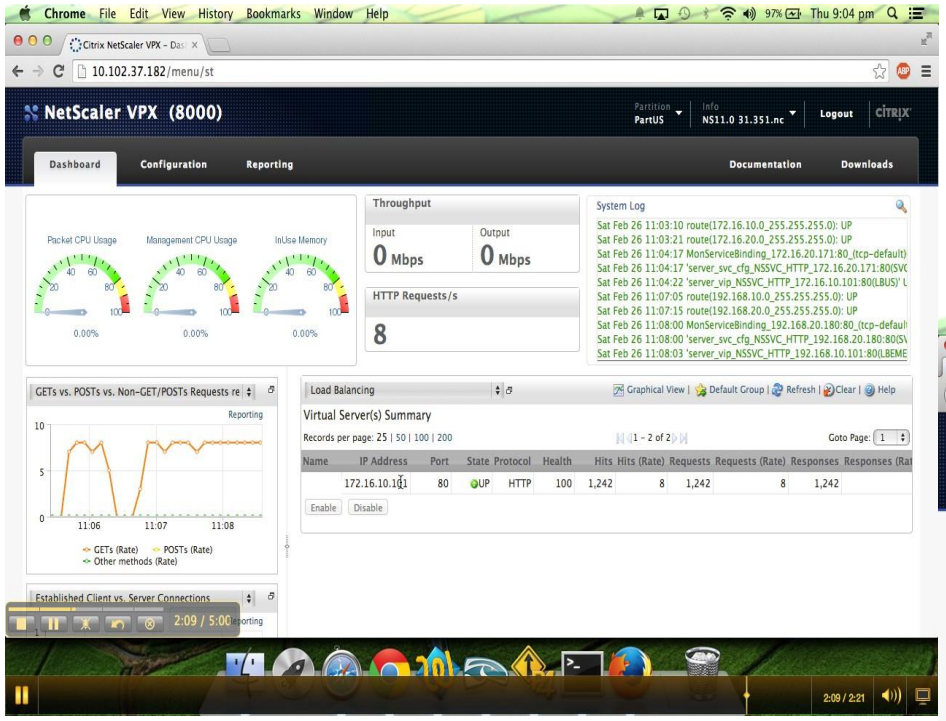
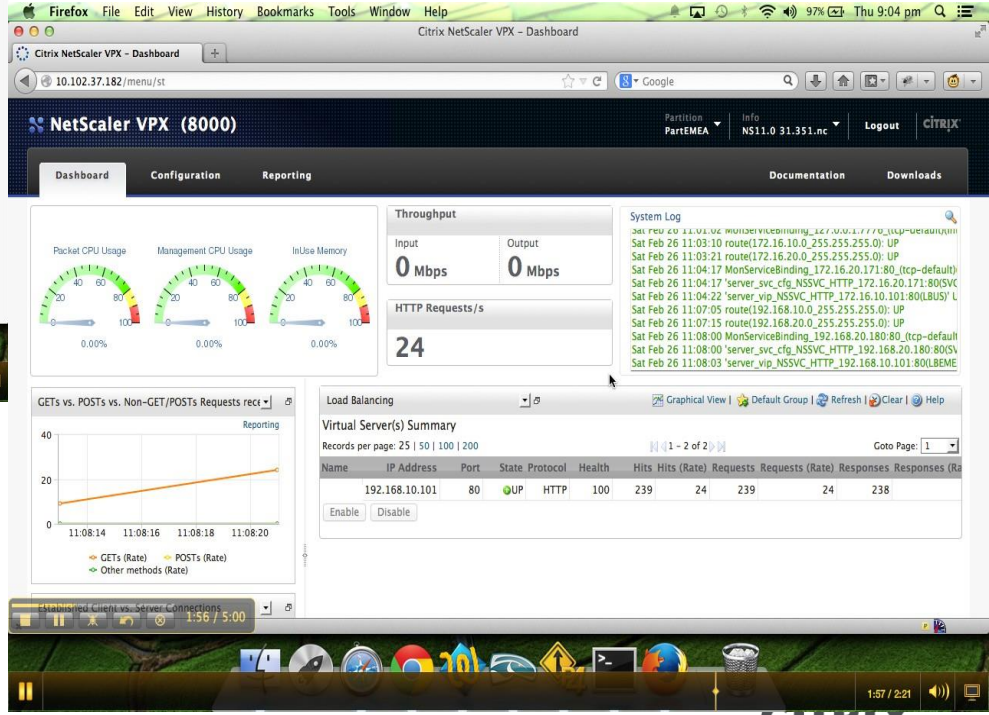

Chrome File Edit View History Bookmarks Window Help
Thu 9:04 pm
10.102.37.182/menu/st
NetScaler VPX (8000)
Partition PartUS
Info NS11.0 31.351.nc
Logout
Dashboard
Configuration
Reporting
Documentation
Downloads
Packet CPU Usage
Management CPU Usage
InUse Memory
Throughput
Input 0 Mbps
Output 0 Mbps
HTTP Requests/s 8
System Log
Load Balancing
Virtual Server(s) Summary
Name IP Address Port State Protocol Health Hits Hits (Rate) Requests Requests (Rate) Responses
172.16.10.101 80 UP HTTP 100 1,242 8 1,242 8 1,242
Enable Disable
GETs (Rate)
POSTs (Rate)
Other methods (Rate)
2:09 / 5:00
2:09 / 2:21


Firefox File Edit View History Bookmarks Tools Window Help
Thu 9:04 pm
Citrix NetScaler VPX – Dashboard
10.102.37.182/menu/st
NetScaler VPX (8000)
Partition PartEMEA
Info NS11.0 31.351.nc
Logout
Dashboard
Configuration
Reporting
Documentation
Downloads
Packet CPU Usage
Management CPU Usage
InUse Memory
Throughput
Input 0 Mbps
Output 0 Mbps
HTTP Requests/s 24
System Log
Load Balancing
Virtual Server(s) Summary
Name IP Address Port State Protocol Health Hits Hits (Rate) Requests Requests (Rate) Responses
192.168.10.101 80 UP HTTP 100 239 24 239 24 238
Enable Disable
GETs (Rate)
POSTs (Rate)
Other methods (Rate)
1:56 / 5:00
1:57 / 2:21

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