

# Cisco 连结上升和Netscaler集成示例

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## 简介

本文描述Cisco连结与Citrix NetScaler的7000上升集成。

Cisco®远程集成服务引擎(上升)是否是允许所有Citrix NetScaler服务工具的一个创新解决方案，物理或虚拟，出现作为在Cisco连结® 7000系列交换机的一虚拟线卡。Cisco上升建立网络数据层面和服务工具之间的一个通信路径。此紧密的集成在数据中心简化服务部署并且优化应用数据路径，造成增加的运营效率。

Cisco上升的主要优点包括以下：

- 提高了工具可用性：通过得到从服务工具的实时路由更新，从而降低被丢弃的路由的可能性应用数据流的服务工具的Cisco上升enable (event)高效的管理。通过利用延长的控制层面，Cisco上升能提供快速收敛和恢复从服务故障在应用程序和设备级别。Cisco上升通过自动发现和引导也丰富day-0经验，减少对管理员介入的需要。

- 数据PATH最优化：管理员在一个动态数据中心能使用各种各样的Cisco上升功能自动化和优化网络服务发送。在应用程序发运控制器(ADCs)中，自动化的基于策略的路由(APBR) enable (event)需要自动地实现路由得到Cisco连结交换机参数的工具。动态地了解这些路由，每当新应用设置。APBR排除需要对于管理员手工配置基于策略的路由对重定向服务器响应数据流对ADC，当保留客户端的IP原地址时。

与Cisco最初™网络分析模块(NAM)的•也Cisco上升enable (event)控制面板集成2300种平台工具，简化网络管理员的运营经验。集成Cisco Nexus 7000系列交换机，Cisco头等NAM提供应用程序公开性、性能逻辑分析方法和更加深刻的网络智能。此公开性使管理员能够有效管理分布式应用程序发运。Cisco上升集成将演变扩大公开性透明地在多虚拟设备上下文(VDCs)间交换机、进一步改善的操作敏捷性和简单的。可扩展性和灵活性：Cisco上升可以在Cisco Nexus 7000系列交换机间配置并且允许服务工具在VDCs运行，从而允许独立服务实例配置用各种各样的方式例如一对多的，多对一和越来越多的配置一个不计其数的种类支持所有多租方案。

- 增加的企业敏捷性：Cisco上升在实时能适应激增数据中心和客户需求通过设置资源。Cisco上升也减少需要的时间转出新的服务，排除需要重新设计网络，并且动态地回应更改的用户要求。

## Requirements

NXOS和上升基本的了解

NetScaler基本的了解。

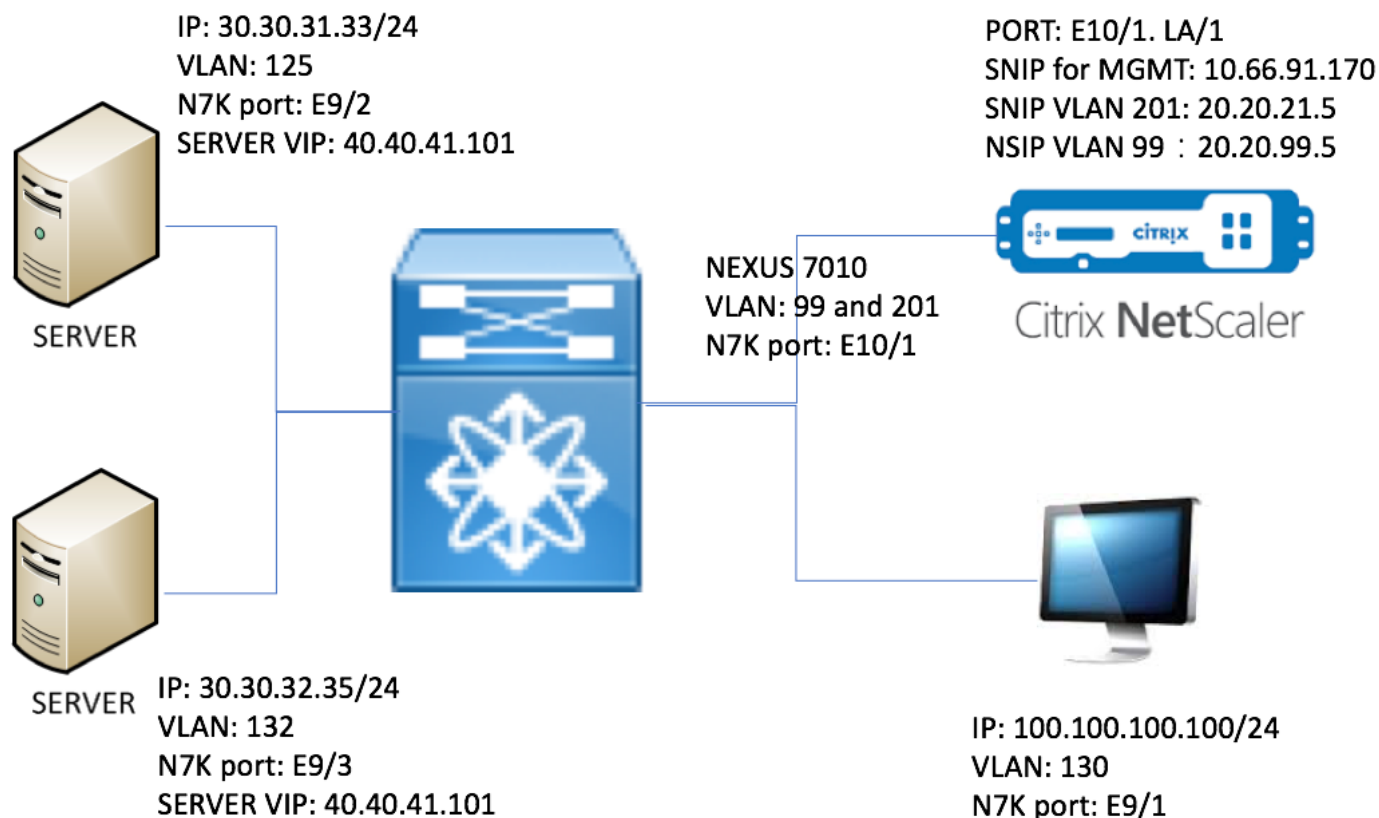
## Components Used

本文档中的信息基于以下软件和硬件版本：

- 连结7010软件NXOS 6.2(16)
- Citrix NetScaler NSMPX-11500。软件版本：NS11.1：修造50.10.nc

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

## 拓扑



## 概述

在实验室里，我们有在设备之下：

1. 运行Windows的两个服务器2008个R2。IIS作为Web服务器。每个服务器有一个测试的网页。
2. 连结7000运行的上升和直接HTTP数据流对NetScaler。
3. Citrix NetScaler执行服务器负载均衡。
4. 测试PC

在此实验室，NetScaler有被启用的USIP在好处之下提供：

- Web服务器日志能使用真的IP地址增加可追踪性
- Web服务器有灵活性使用实际IP地址控制谁能访问什么
- Web应用程序为它要求客户端IP是拥有记录目的
- Web应用程序为认证要求客户端IP

没有USIP，所有HTTP请求IP原地址将看上去来自NetScaler。

有USIP功能，通信流是作为如下：

1. 在PC上，开放Web浏览器和去<http://40.40.41.101/test.html>。
2. HTTP请求将到达连结7000。N7K将重定向数据流对NetScaler。
3. NetScaler发送请求到一个服务器。
4. 服务器HTTP回应到达N7K即，但是IP原地址是服务器的实际地址IP原地址可以是30.30.32.35或30.30.31.33。由于N7K有被配置的上升，不会直接地发送对PC的回应。反而，它使用PBR查找并且再发送对NetScaler的HTTP回应。这保证通信流不是残破的。
5. NetScaler更改HTTP回应IP原地址对VIP 40.40.41.101和发送HTTP回应回到PC

## Configure

### 连结7010配置

```

feature ospf
feature pbr
feature interface-vlan
feature hsrp
feature rise

vlan 1,99,125,130,132,201

route-map _rise-system-rmap-Vlan125 permit 1                                !- - - - - >Generated by RISE.
Manual configuration is NOT required.
  match ip address _rise-system-acl-20.20.21.5-Vlan125                    !- - - - - >Generated by RISE.
Manual configuration is NOT required.
  set ip next-hop 20.20.21.5                                             !- - - - - >Generated by RISE.
Manual configuration is NOT required.
route-map _rise-system-rmap-Vlan132 permit 1                                !- - - - - >Generated by RISE.
Manual configuration is NOT required.
  match ip address _rise-system-acl-20.20.21.5-Vlan132                    !- - - - - >Generated by RISE.
Manual configuration is NOT required.
  set ip next-hop 20.20.21.5                                             !- - - - - >Generated by RISE.
Manual configuration is NOT required.

interface Vlan99

  description RISE control VLAN SVI
  no shutdown
  mtu 9216
  no ip redirects
  ip address 20.20.99.2/24
  no ipv6 redirects
  ip ospf passive-interface
  hsrp version 2
  hsrp 99
    preempt
    priority 110
    ip 20.20.99.1

interface Vlan125

  description RISE server 1 VLAN SVI
  no shutdown
  ip address 30.30.31.1/24
  ip policy route-map _rise-system-rmap-Vlan125                          !- - - - - >Generated by RISE.
Manual configuration is NOT required.

```

```

interface Vlan130

description RISE testing PC VLAN SVI
no shutdown
ip address 100.100.100.1/24

interface Vlan132

description RISE server 2 VLAN SVI
no shutdown
ip address 30.30.32.1/24
ip policy route-map _rise-system-rmap-Vlan132      !- - - - >Generated by RISE. Manual
configuration is NOT required.

interface Vlan201

description RISE Data VLAN SVI
no shutdown
mtu 9216
no ip redirects
ip address 20.20.21.2/24
no ipv6 redirects
ip ospf passive-interface
hsrp version 2
hsrp 201
  preempt
  priority 110
  ip 20.20.21.1

interface Ethernet9/1
description connect to Testing PC
switchport
switchport access vlan 130
no shutdown

interface Ethernet9/2
description connect to Server 1
switchport
switchport access vlan 125
no shutdown

interface Ethernet9/3
description connect to Server 2
switchport
switchport access vlan 132
no shutdown

interface Ethernet10/1
description connect to NetScaler
switchport
switchport mode trunk
switchport trunk allowed vlan 99,201
spanning-tree port type edge
no shutdown

service vlan-group 21 201
service type rise name ns21 mode indirect
  vlan 99
  vlan group 21
  ip 20.20.99.5 255.255.255.0
  no shutdown

```

```
#Configure NSIP, this is also the IP used by N7K for RISE

set ns config -IPAddress 20.20.99.5 -netmask 255.255.255.0

#Configure NSVLAN 99 and bind it to LACP channel LA/1

set ns config -nsvlan 99 -ifnum LA/1

# Enable RISE

enable ns feature WL SP LB CS CMP PQ SSL HDOSP REWRITE RISE
enable ns mode FR L3 USIP CKA TCPB Edge USNIP PMTUD RISE_APBR RISE_RHI

#Configure interfaces

set interface 10/1 -mtu 9000 -throughput 0 -bandwidthHigh 0 -bandwidthNormal 0 -intftype "Intel
10G" -ifnum LA/1

add channel LA/1 -tagall ON -throughput 0 -bandwidthHigh 0 -bandwidthNormal 0
set channel LA/1 -mtu 9000 -tagall ON -throughput 0 -lrMinThroughput 0 -bandwidthHigh 0 -
bandwidthNormal 0
bind channel LA/1 10/1

#Add RISE control and data VLANs

add vlan 99
add vlan 201

#Configure RISE data VLAN IP address and bind interface to data VLAN

add ns ip 10.66.91.170 255.255.254.0 -vServer DISABLED -mgmtAccess ENABLED #This is for
management only
add ns ip 20.20.21.5 255.255.255.0 -vServer DISABLED

bind vlan 201 -ifnum LA/1 -tagged #Need to be tagged because N7K E10/1 is
configured as trunk port.
bind vlan 201 -IPAddress 20.20.21.5 255.255.255.0

# Configure Virtual Servers.

add ns ip 40.40.41.101 255.255.255.0 -type VIP -snmp DISABLED -hostRoute ENABLED -hostRtGw
20.20.21.5 -metric 100 -vserverRHILevel NONE -vserverRHIMode RISE

add server SERV-2 30.30.32.35
add server SERV-1 30.30.31.33

add service SVC-1-tcpHTTP SERV-1 TCP 80 -gslb NONE -maxClient 0 -maxReq 0 -cip DISABLED -usip
YES -useproxyport YES -sp OFF -cltTimeout 180 -svrTimeout 360 -CKA YES -TCPB NO -CMP NO
```

```
add service SVC-2-tcpHTTP SERV-2 TCP 80 -gslb NONE -maxClient 0 -maxReq 0 -cip DISABLED -usip
YES -useproxyport YES -sp OFF -cltTimeout 180 -svrTimeout 360 -CKA YES -TCPB NO -CMP NO

add lb vserver VSRV-40-tcpHTTP TCP 40.40.41.101 80 -persistenceType NONE -connfailover STATEFUL
-cltTimeout 180
add lb vserver VSRV-40-tcpHTTPS TCP 40.40.41.101 443 -persistenceType NONE -connfailover
STATEFUL -cltTimeout 180

bind lb vserver VSRV-40-tcpHTTP SVC-1-tcpHTTP
bind lb vserver VSRV-40-tcpHTTP SVC-2-tcpHTTP

#Configure route
add route 0.0.0.0 0.0.0.0 20.20.21.1
add route 10.0.0.0 255.0.0.0 10.66.91.1 # - - - - > For
management only
add route 30.30.31.0 255.255.255.0 20.20.21.1
add route 30.30.32.0 255.255.255.0 20.20.21.1

#configure RISE to run in indirect mode

set rise param -indirectMode ENABLED

#Save config and reboot

save ns config

reboot
Are you sure you want to restart NetScaler (Y/N)? [N]:y
```

## 服务器

此示例使用微软视窗2008 R2 IIS作为Web服务器。请跟随关于怎样的Windows文档配置IIS。

一旦安装IIS，您能访问网络服务器VIP直接地，无需创建额外的网页。在此文档，展示故障切换，我们创建一测试的页“test.html”在每个服务器在IIS家庭dir (默认情况下c:\inetpub\wwwroot)下。测试的页的内容是作为如下：

测试页内容的Server1：“这是服务器1”

测试页内容的Server2：“这是服务器2”

## Verify

使用本部分可确认配置能否正常运行。

### 验证在PC

1. 打开Web浏览器并且去<http://40.40.41.101/test.html>。它应该显示一测试的页。
2. 关闭服务器1.重复step1。 它应该显示“此是服务器2”

3. 带来Server1在线并且再关闭服务器2.重复step1。它应该显示“此是服务器1”

## 验证在N7K

```
STLD1-630-01.05-N7K-RU21# show ip route static
```

```
IP Route Table for VRF "default"
```

```
'*' denotes best ucast next-hop
```

```
'**' denotes best mcast next-hop
```

```
'[x/y]' denotes [preference/metric]
```

```
'%<string>' in via output denotes VRF <string>
```

```
40.40.41.101/32, ubest/mbest: 1/0 - - - - - >RHI injected routes
```

```
*via 20.20.21.5, Vlan201, [100/0], 03:18:00, static
```

```
STLD1-630-01.05-N7K-RU21# show route-map
```

```
route-map _rise-system-rmap-Vlan125, permit, sequence 1 - - - - - >Generated by  
NetScaler.
```

```
Match clauses:
```

```
ip address (access-lists): _rise-system-acl-20.20.21.5-Vlan125
```

```
Set clauses:
```

```
ip next-hop 20.20.21.5
```

```
route-map _rise-system-rmap-Vlan132, permit, sequence 1 - - - - - >Generated by  
NetScaler.
```

```
Match clauses:
```

```
ip address (access-lists): _rise-system-acl-20.20.21.5-Vlan132
```

```
Set clauses:
```

```
ip next-hop 20.20.21.5
```

```
STLD1-630-01.05-N7K-RU21# sho access-lists dynamic - - - - - >Dynamic ACL download from  
NetScaler (or pushed by Netscaler)
```

```
IP access list __urpf_v4_acl__
```

```
10 permit ip any any
```

```
IPv6 access list __urpf_v6_acl__
```

```
10 permit ipv6 any any
```

```
IP access list _rise-system-acl-20.20.21.5-Vlan125
```

```
10 permit tcp 30.30.31.33/32 eq 443 any
```

```
20 permit tcp 30.30.31.33/32 eq www any
```

```
IP access list _rise-system-acl-20.20.21.5-Vlan132
```

```
10 permit tcp 30.30.32.35/32 eq 443 any
```

```
20 permit tcp 30.30.32.35/32 eq www any
```

```
IP access list sl_def_acl
```

```
statistics per-entry
```

```
10 deny tcp any any eq telnet syn
```

```
20 deny tcp any any eq www syn
```

```
30 deny tcp any any eq 22 syn
```

```
40 permit ip any any
```

```
STLD1-630-01.05-N7K-RU21# show run int vl 132
```

```
!Command: show running-config interface Vlan132
```

```
!Time: Mon Mar 27 03:44:13 2017
```

```
version 6.2(16)
```

```
interface Vlan132
```

```
no shutdown
```

```
ip address 30.30.32.1/24
```

```
ip policy route-map _rise-system-rmap-Vlan132  
generated by RISE
```

```
- - - - - >APBR, this command was
```

```
STLD1-630-01.05-N7K-RU21# show run int vl 125
```

```
!Command: show running-config interface Vlan125
```

```
!Time: Mon Mar 27 03:44:16 2017
```

```
version 6.2(16)
```

```
interface Vlan125
```



no shutdown

ip address 30.30.31.1/24

ip policy route-map \_rise-system-rmap-Vlan125 - - - - - >APBR, this command was generated by RISE

STLD1-630-01.05-N7K-RU21#

TLD1-630-01.05-N7K-RU21# show rise

| Name | Slot | Vdc | Rise-IP | State | Interface |
|------|------|-----|---------|-------|-----------|
|      | Id   | Id  |         |       |           |

|      |     |   |            |        |     |
|------|-----|---|------------|--------|-----|
| ns21 | 300 | 1 | 20.20.99.5 | active | N/A |
|------|-----|---|------------|--------|-----|

RHI Configuration

| ip | prefix len | nhop ip | weight | vlan | vrf | slot-id |
|----|------------|---------|--------|------|-----|---------|
|----|------------|---------|--------|------|-----|---------|

|              |    |            |     |     |         |     |               |
|--------------|----|------------|-----|-----|---------|-----|---------------|
| 40.40.41.101 | 32 | 20.20.21.5 | 100 | 201 | default | 300 | - - - - > RHI |
|--------------|----|------------|-----|-----|---------|-----|---------------|

APBR Configuration

- - - - > APBR

| rs ip | rs port | protocol | nhop ip | rs nhop | apbr state | slot-id |
|-------|---------|----------|---------|---------|------------|---------|
|-------|---------|----------|---------|---------|------------|---------|

|             |     |     |            |         |          |     |
|-------------|-----|-----|------------|---------|----------|-----|
| 30.30.31.33 | 80  | TCP | 20.20.21.5 | Vlan125 | ADD DONE | 300 |
| 30.30.31.33 | 443 | TCP | 20.20.21.5 | Vlan125 | ADD DONE | 300 |
| 30.30.32.35 | 80  | TCP | 20.20.21.5 | Vlan132 | ADD DONE | 300 |
| 30.30.32.35 | 443 | TCP | 20.20.21.5 | Vlan132 | ADD DONE | 300 |