

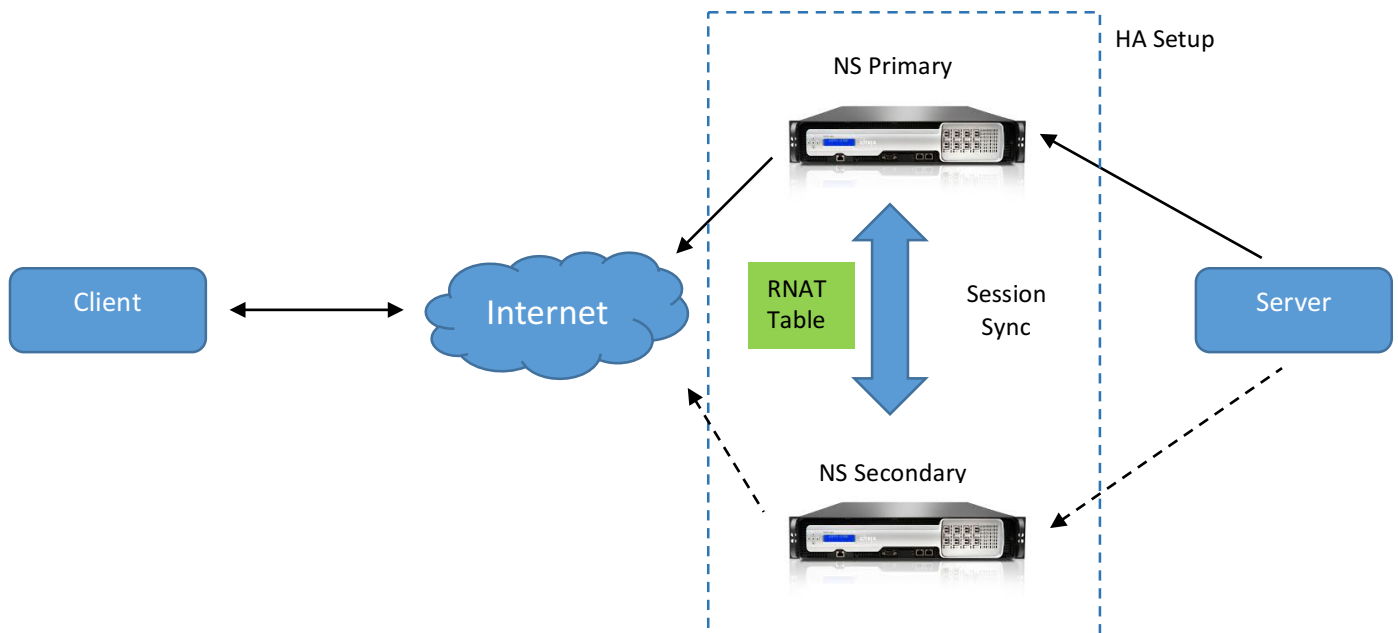
## How to enable Connection Mirroring for RNAT traffic in NetScaler?

Connection Mirroring / Session Synchronization enables NetScaler to duplicate connection and persistence information to a standby system in a HA pair. The state information of the connection is shared with standby system regularly when connection mirroring is enabled. Enabling connection mirroring provides more reliability, but this comes at the cost of some system time being used up for sharing the state information. The connection data is synchronized to the standby unit with every packet or flow state update. Hence it should be used only at places where connection level reliability is of prime importance.

### When is Connection Mirroring used?

- 1) Connection Mirroring is useful where failover condition would cause the user session to disconnect causing inconvenience to the user.
- 2) When base protocol automatically doesn't reconnect when there is a failure, connection mirroring comes in to picture. E.g Telnet , FTP , SSH etc. are cases where user session gets disconnected when there is no state information available with the standby.
- 3) Connection Mirroring also comes in to picture in NAT scenario where the non-availability of NAT translation at secondary device in High Availability setup leads to session disconnection. So Connection Mirroring support is required when RNAT is used, where the Source IP address(Private IP) of packets from Server to Client is replaced with RNAT IP(Public IP). This Source IP to RNAT IP mapping has to be synchronised with secondary in a High availability setup so that connection can remain intact even after failover.

*Fig. Connection Mirroring in RNAT*



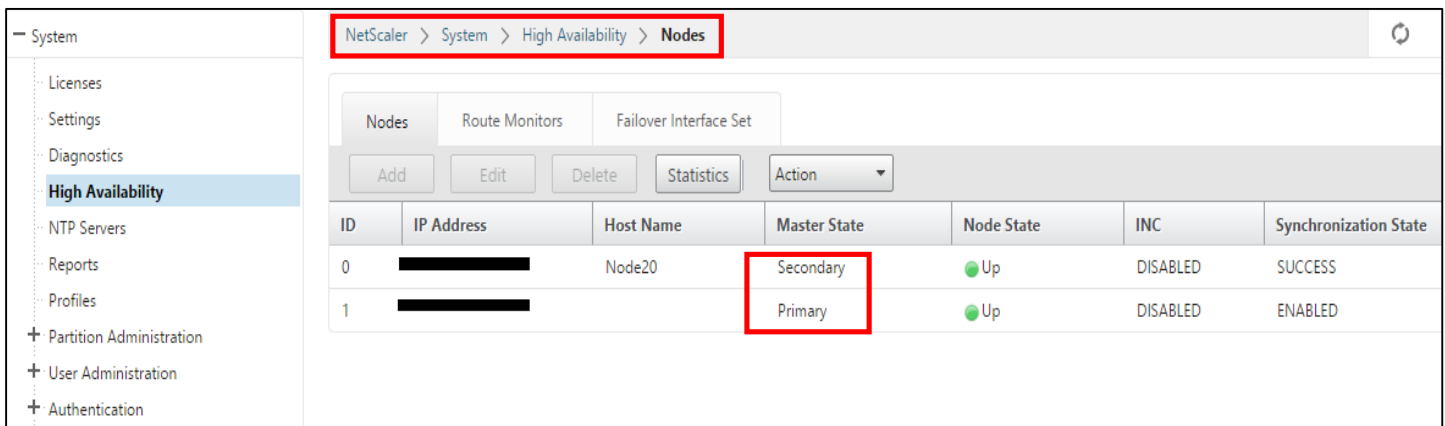
## How to enable Connection Mirroring for RNAT in NetScaler?

A prerequisite for connection mirroring of RNAT traffic is a High Availability (HA) setup using NetScaler so that RNAT traffic flowing through primary device can switch to secondary device during failover.

Steps to configure HA setup can be found in the link: <http://docs.citrix.com/en-us/netscaler/11/system/high-availability-introduction/configuring-high-availability.html>

To check the status of HA nodes, navigate to System > High Availability

We can see information like Master State, Synchronization State, Node state of both the NetScalers in HA pair.

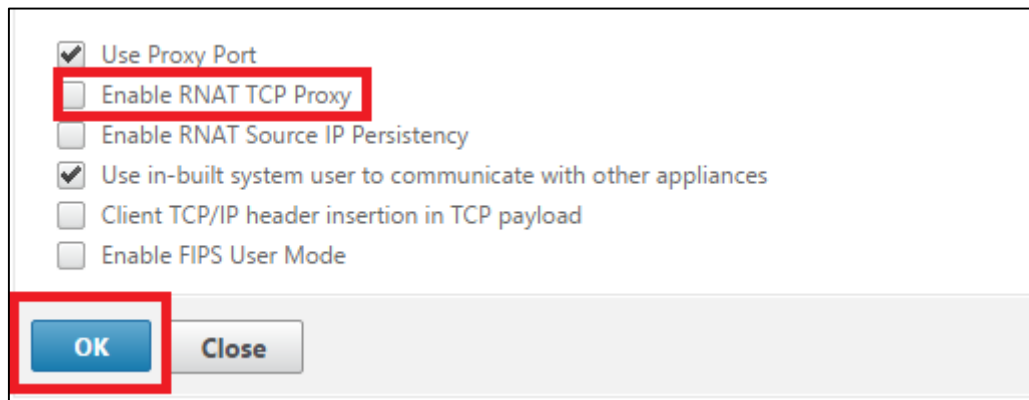


ID	IP Address	Host Name	Master State	Node State	INC	Synchronization State
0	[REDACTED]	Node20	Secondary	Up	DISABLED	SUCCESS
1	[REDACTED]		Primary	Up	DISABLED	ENABLED

For connection mirroring to work in RNAT scenario, TCP Proxy has to be disabled. TCP Proxy for RNAT is enabled by default.

To disable TCPProxy using Configuration utility, Navigate to System > Setting > Change Global Settings

Uncheck "Enable RNAT TCP Proxy" and click OK.



- Use Proxy Port
- Enable RNAT TCP Proxy
- Enable RNAT Source IP Persistency
- Use in-built system user to communicate with other appliances
- Client TCP/IP header insertion in TCP payload
- Enable FIPS User Mode

OK Close

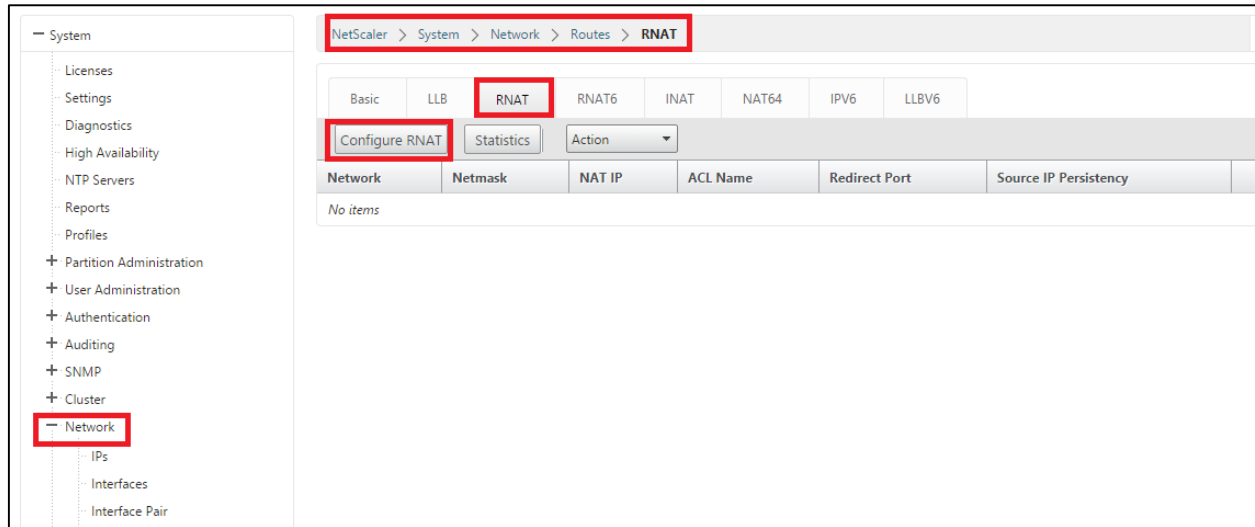
To disable TCPProxy using command line interface use below command.

```
>set rnatparam tcpproxy DISABLED
```

To configure Connection Mirroring for RNAT using Configuration Utility, the following steps have to be followed.

**Step1:** Navigate to System > Network > Routes > RNAT

Click configure RNAT to set new RNAT parameters.



RNAT can be set for a network or an Access Control List (ACL).

**Step2:** Enter the network/ACL parameters as shown below and check the box next to "Connection Failover" to enable Connection Mirroring for RNAT session that matches the network/ACL.

### Configure RNAT

Network  ACL

Network\*  
192 . 168 . 1 . 0

Netmask\*  
255 . 255 . 255 . 0

Enable Source IP Persistency

Use Proxy Port

Connection Failover

Traffic Domain  
[ ] + [ ]

Available (3)	Select All
[REDACTED]	+
192.168.1.10	+
172.16.1.11	+

Configured (1)	Remove All
172.16.1.10	-

A similar procedure has to be followed for enabling Connection Mirroring for RNAT with ACL.

### Configure RNAT

Network    ACL

ACL Name\*

Redirect Port

Enable Source IP Persistency

Use Proxy Port

Connection Failover

Traffic Domain  
 +  ?

**Available (3)**   Select All

[Redacted]	+
192.168.1.10	+
172.16.1.11	+

**Configured (1)**   Remove All

172.16.1.10	-
-------------	---

OK

Close

To configure Connection Mirroring for RNAT session using Command Line Interface (CLI), the following steps have to be followed.

```
> set rnatparam tcpproxy DISABLED
```

```
Done
```

```
> set rnat <IP Address> <Netmask> -natIP <NATIP> -connfailover ENABLED
```

```
Done
```

To enable connection mirroring for RNAT with Access Control Lists,

```
> set rnatparam tcpproxy DISABLED
```

```
Done
```

```
> set rnat <aclname> -connfailover ENABLED
```

Once the above mentioned steps are completed to enable Connection Mirroring, the RNAT sessions, for example a SSH session that goes through RNAT, will persist even after failover from Primary NetScaler to Secondary NetScaler . This provides seamless experience to users while using RNAT in NetScaler.