NATed Network Testing

IxChariot

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IxChariot Testing in Address-Translated Environments

1. Test Overview

Address-translated environments are a reality in virtually all IPv4-based test networks. This test primer explains the key concepts to effectively use IxChariot with devices performing traditional static Network Address Translation (i.e. one-to-one NAT) and static Network Address Port Translation (NAPT). Configuration parameters for the Device Under Test (DUT) are specific to a Cisco PIX.

Objective

Many firewalls, gateways and routers contain the ability to statically map a public (outside) IP address to a private (inside) IP address. This section will explain a typical network topology as well as the configuration parameters for IxChariot and the DUT.

Setup

The DUT in the topology shown below is performing traditional static NAT for Performance Endpoint 1 (E1). This means that private IP address 192.168.2.61 is translated to 'public' IP address 99.99.99.61.
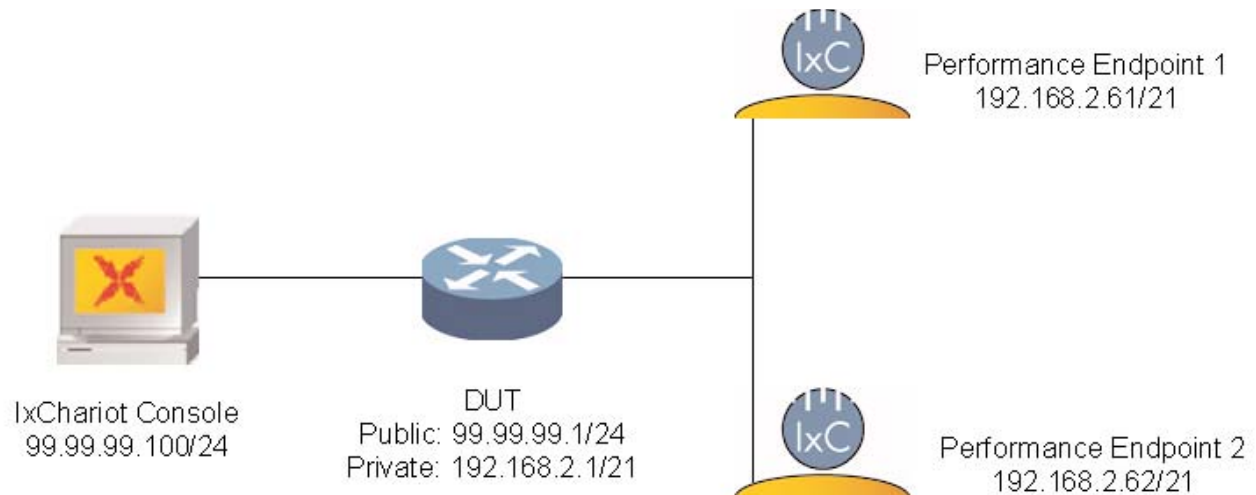

Figure 1. Test Topology

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Methodology

IxChariot Configuration
First, access 'Options' -> 'Change User Settings' -> 'Firewall' tab from the main IxChariot Console and verify the settings below (default settings).
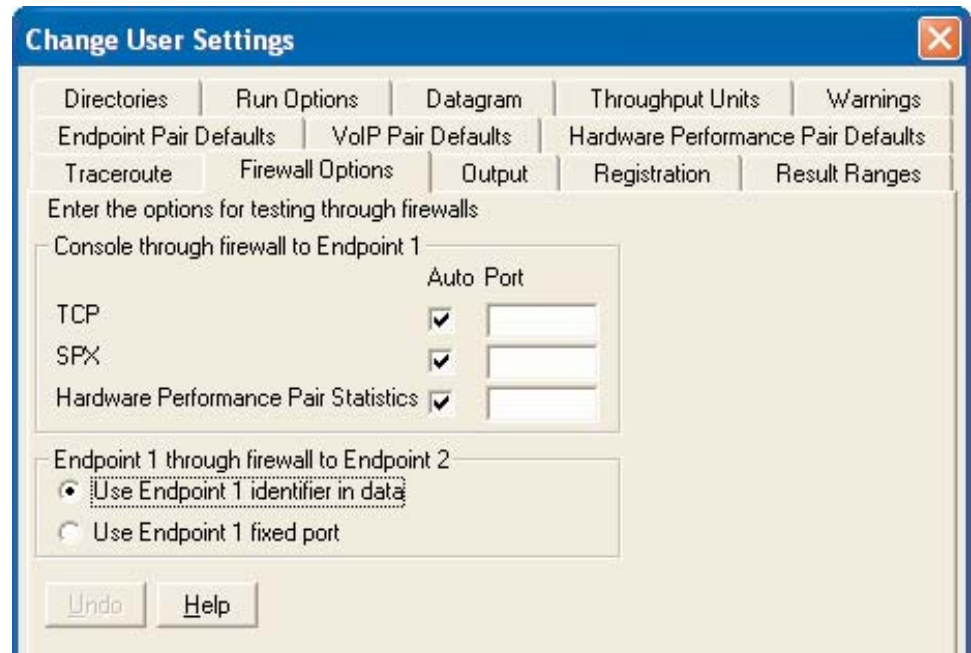

Figure 2. Change User Settings Option

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When creating the Performance Endpoint pairs, use 192.168.2.61 as 'Endpoint 1 network address' and use 192.168.2.62 as 'Endpoint 2 network address'. Select the Network protocol, application script and any applicable Service quality policy.
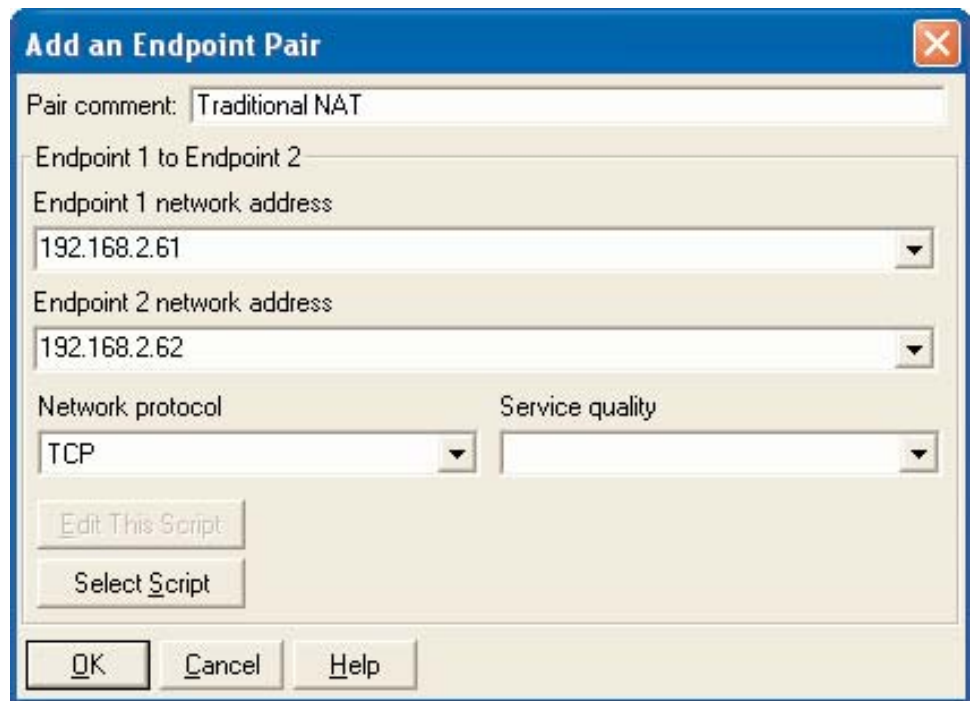

Figure 3. Add an Endpoint Pair Option

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Next, go to 'Edit Pair Setup', uncheck 'Use Endpoint 1 values from pair' and type in the public IP address that is being used for the one-to-one mapping, i.e. 99.99.99.61. Leave "Use Endpoint 2 values from pair' checked.
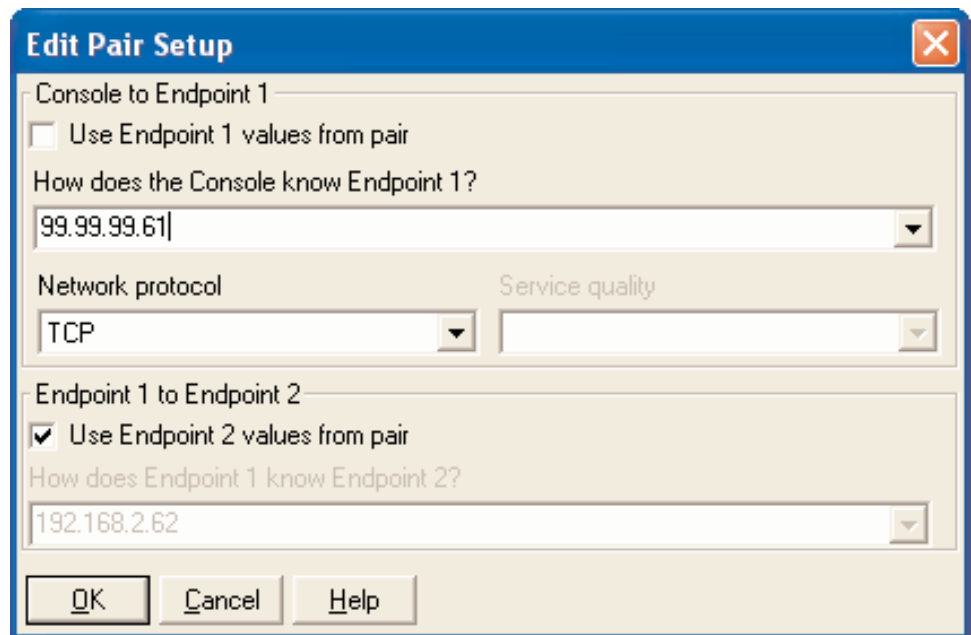

Figure 4. Edit Pair Setup Option

DUT Configuration
A summary of the PIX configuration is shown below:

```
global (outside) 1 interface
nat (inside) 1 0.0.0.0 0.0.0.0 0 0
access-list outside permit tcp host 99.99.99.100 host
99.99.99.61 eq 10115
access-group outside in interface outside
static (inside, outside) 99.99.99.61 192.168.2.61
```

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2. Configuring IxChariot for NAPT

Objective and Setup

The firewall in the Figure 1 is doing port redirection for all hosts behind it, including the Performance Endpoints. Incoming traffic destined to tcp port 10115 (default IxChariot TCP port for traffic between Console and E1) is translated to Performance Endpoint 1.

Note: IxChariot allows you to change the default port number to an alternative number to comply with any access list policies you may have. See screenshot on how to change the default port 10115 to 10234.
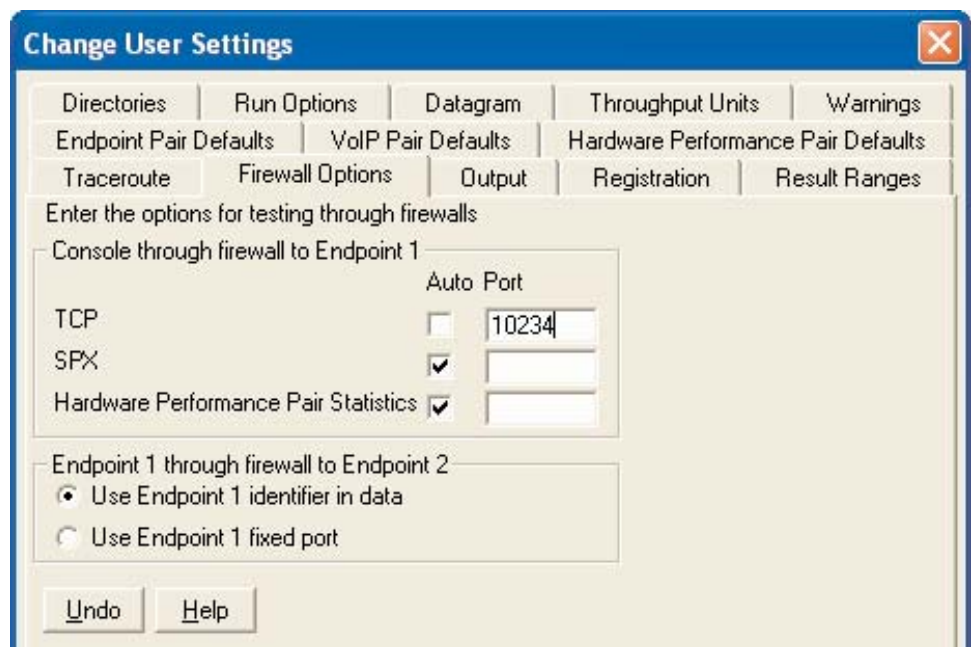
Methodology

IxChariot Configuration
The IxChariot configuration for NAPT is the same as for traditional static NAT described above.

DUT Configuration

```
global (outside) 1 interface
nat (inside) 1 0.0.0.0 0.0.0.0 0 0
static (inside,outside) tcp interface 10115 192.168.2.61 10115
netmask 255.255.255.255 0 0
```

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