



## Installing and configuring manually a SafePeak cluster

*How to deploy SafePeak on two servers in a cluster mode, while installing two SafePeak Standalone installations and then configuring the cluster to work in a Failover mode.*

### Introduction

Welcome to SafePeak for Microsoft SQL Server. This guide explains how to manually configure a SafePeak active-passive Cluster by installing SafePeak at first in a Single mode and then manually configuring them to be part of a SafePeak Cluster.

### Minimum System Requirements

Two servers each with the following system configuration

Operating system	Windows 2008 R2 64-bit
RAM	4GB per SafePeak Instance Minimum RAM recommended: 8GB
CPU	2 Cores Per SafePeak Instance, Minimum 1 CPU with at least 4 Cores
Hard Drive	70GB for each SafePeak Instance
Network Cards	1Gb Ethernet
Power Supply	Two power supplies for redundancy

## SafePeak Installation and Cluster Configuration

### Step #1 – Install SafePeak on two servers each in a Single Mode installation

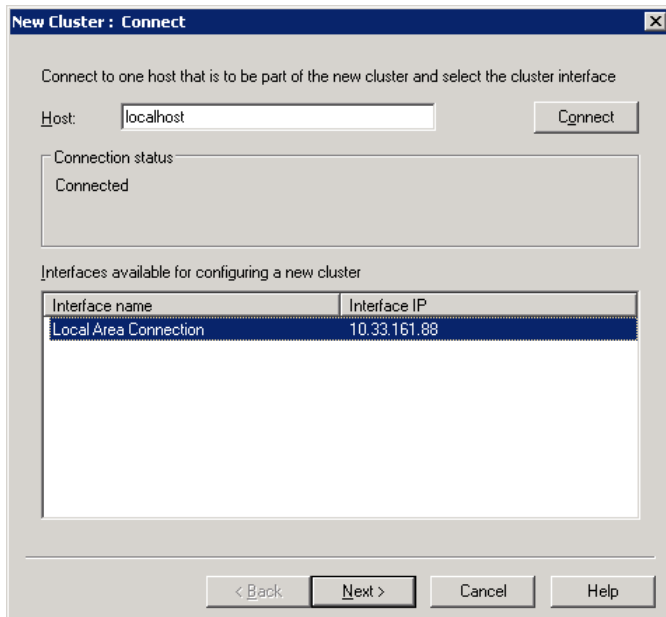
- Install SafePeak on both servers by following installation procedure as defined in “SafePeak Installation Guide” (see [www.safepeak.com/Product/Resource-Library/Installation-Guide](http://www.safepeak.com/Product/Resource-Library/Installation-Guide));
- On the step “Choosing Installation type” choose “Standard” / “Single” mode;
- On the step “Enter license file” – do not enter license (trial license will be used automatically);
- On the step “Administrator login details” enter the same information.

### Step #2 – Install Windows NLB Feature / Role

- Open Windows Server Manager
- Click on “Features” on the right
- Click on “Add Feature” on the left
- Choose from the list Network Load Balancer
- Click Install.
- Do steps a-e on the second server.

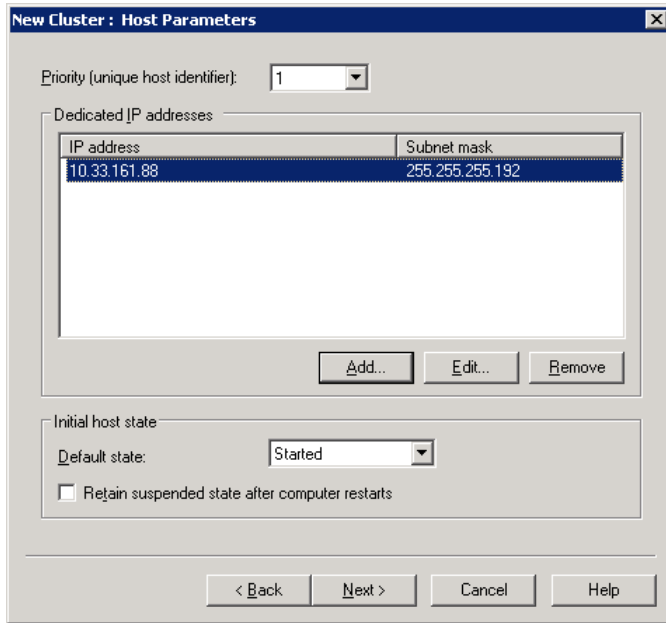
**Step #3 – Configure NLB on servers A (main / active SafePeak Server) and server B (secondary)**

- a. Open NLB Manager on Server A:
  - a. Windows Start → Administrative Tools → Network Load Balancing Manager;
- b. Menu “Cluster” → “New”;
- c. “New Cluster: Connect” screen – Enter “localhost”, click connect and choose interface name (usually “Local Area Connection”). Click Next;



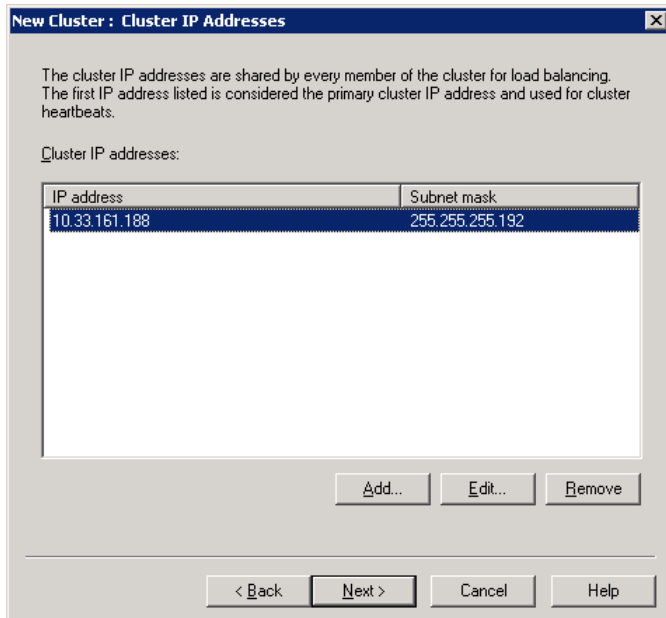
- d. In case a pop screen asks to “Disable DHCP” – click yes/disable;

- e. "New Cluster: Host Parameter" screen – If Dedicated IP addresses list is empty then add "IP v4 address" and the "Subnet mask" of the current computer. Click Next;



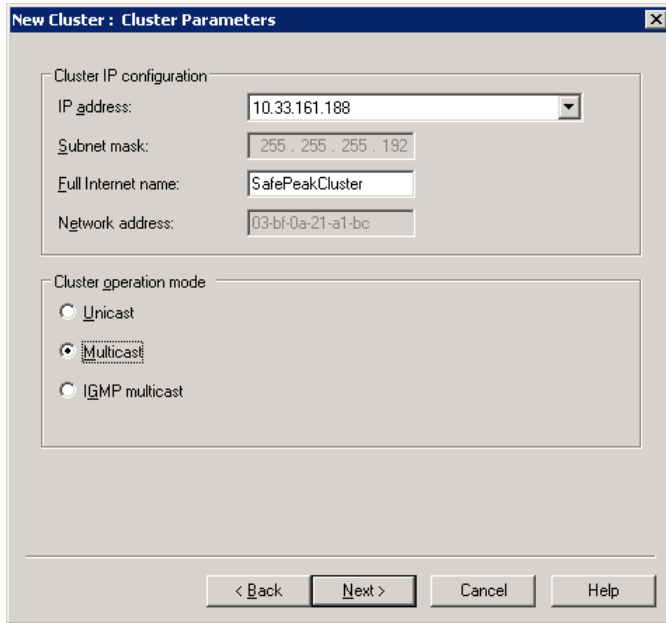
The screenshot shows a dialog box titled "New Cluster : Host Parameters". It features a "Priority (unique host identifier)" dropdown menu set to "1". Below this is a table for "Dedicated IP addresses" with two columns: "IP address" and "Subnet mask". The first row contains "10.33.161.88" and "255.255.255.192". Below the table are "Add...", "Edit...", and "Remove" buttons. Further down, there is an "Initial host state" section with a "Default state:" dropdown menu set to "Started" and a checkbox for "Retain suspended state after computer restarts" which is unchecked. At the bottom are "< Back", "Next >", "Cancel", and "Help" buttons.

- f. "New Cluster: Cluster IP Address" screen – Add an IP address to be used as Virtual IP of the Cluster.



The screenshot shows a dialog box titled "New Cluster : Cluster IP Addresses". It contains explanatory text: "The cluster IP addresses are shared by every member of the cluster for load balancing. The first IP address listed is considered the primary cluster IP address and used for cluster heartbeats." Below this is a table for "Cluster IP addresses" with two columns: "IP address" and "Subnet mask". The first row contains "10.33.161.188" and "255.255.255.192". Below the table are "Add...", "Edit...", and "Remove" buttons. At the bottom are "< Back", "Next >", "Cancel", and "Help" buttons.

- g. “New Cluster: Cluster Parameters” screen –
  - a. “Full Internet Name” – enter cluster name “SafePeakCluster”
  - b. “Cluster operation mode” – choose “Multicast”
  - c. Click Next;



The screenshot shows a dialog box titled "New Cluster : Cluster Parameters". It contains two main sections: "Cluster IP configuration" and "Cluster operation mode".

**Cluster IP configuration:**

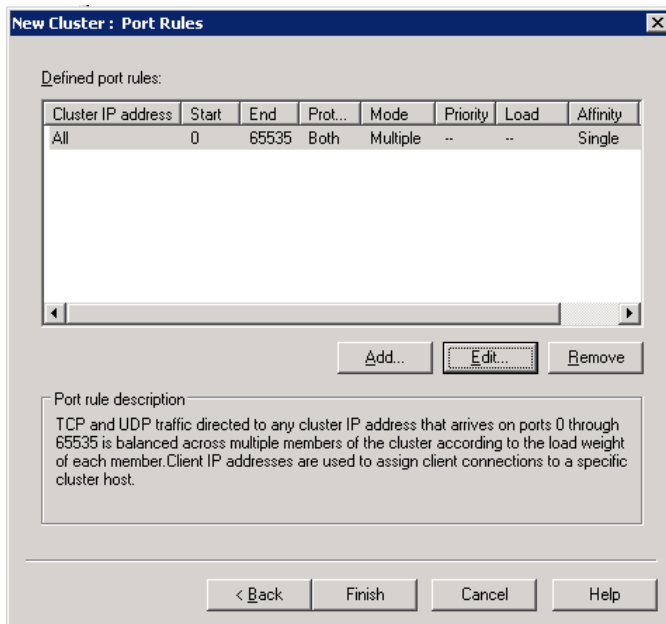
- IP address: 10.33.161.188
- Subnet mask: 255 . 255 . 255 . 192
- Full Internet name: SafePeakCluster
- Network address: 03-bf-0a-21-a1-bc

**Cluster operation mode:**

- Unicast
- Multicast
- IGMP multicast

At the bottom, there are four buttons: "< Back", "Next >", "Cancel", and "Help".

- h. “New Cluster: Port Rules” screen – Click Edit



The screenshot shows a dialog box titled "New Cluster : Port Rules". It features a table of defined port rules and a description area.

**Defined port rules:**

Cluster IP address	Start	End	Prot...	Mode	Priority	Load	Affinity
All	0	65535	Both	Multiple	--	--	Single

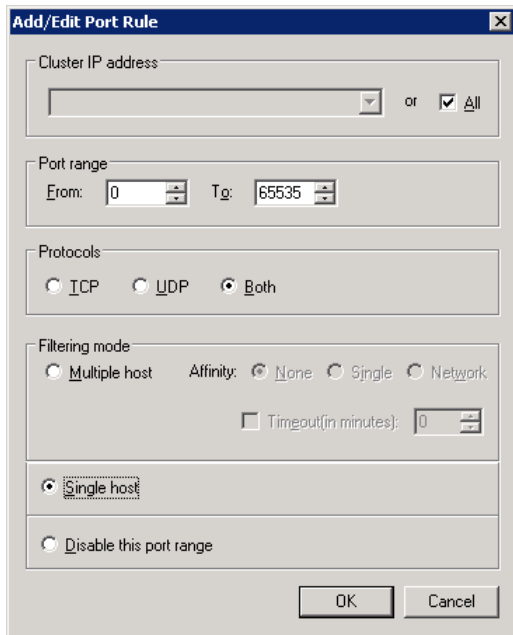
Below the table are three buttons: "Add...", "Edit..." (highlighted), and "Remove".

**Port rule description:**

TCP and UDP traffic directed to any cluster IP address that arrives on ports 0 through 65535 is balanced across multiple members of the cluster according to the load weight of each member. Client IP addresses are used to assign client connections to a specific cluster host.

At the bottom, there are four buttons: "< Back", "Finish", "Cancel", and "Help".

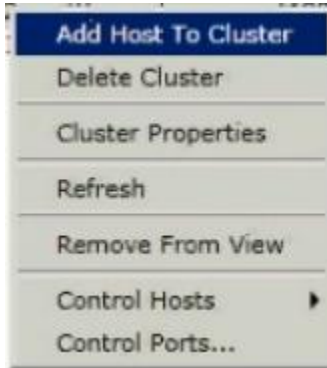
- i. “Add/Edit Port Rule” screen – Under “Filtering mode” choose:
  - a. “Affinity” – set to “None”;
  - b. Set as “Single Host”;
  - c. Click OK;



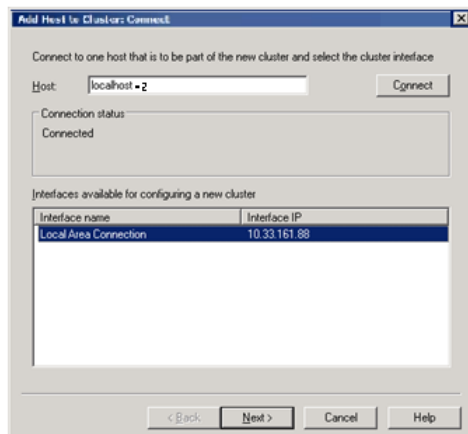
- j. Click Finish;

**Add Secondary SafePeak server to the cluster:**

- k. Right mouse click on the SafePeakCluster in the list. Click on “Add Host To Cluster”



- l. “Add Host To Cluster: Connect” screen – Enter Secondary SafePeak server (server B); Click Connect; Click Next;



- m. Verify “Priority=2”; Click Next;
- n. Click Next;
- o. Click Finish;

## Step #4 – Configure SafePeak MySQL Databases synchronization on two servers.

### SafePeak Server A

Perform the following actions on SafePeak Server A (main / active server):

a. Open CMD

b. Run “*mysql –uroot –psa*”

c. **Update table “control.ServerConfiguration”:**

Copy and paste the following command; Place *Your Cluster IP* and *Server B IP*; Run it (press “enter”);

```
UPDATE control.ServerConfiguration  
SET ClusterIP = “Your Cluster IP”,  
SecondaryIP = “Server B IP”,  
InstallationType = 2 ;
```

Press enter;

d. **Update table “rawdata.whoami”:**

Copy and paste the following command; Place *Secondary Server IP* (SafePeak server B); Run it (press “enter”);

```
UPDATE rawdata.whoami  
SET OtherIP = “Secondary Server IP”;
```

Press enter;

e. Type Exit;

f. **Add Environment setting:**

Run the following command in the CMD (If needed change the “*C:\SafePeak*” to your SafePeak folder):

```
SETX SAFEPEAK_V1_3_TEMP C:\SafePeak\Temp /m
```

**SafePeak Server B:**

Perform the following steps on SafePeak Server B (secondary / passive server).

g. Open CMD

h. Run `“mysql –uroot –psa”`

i. **Update table “control.ServerConfiguration”:**

Copy and paste the following command; Place *Your Cluster IP* and *This Server IP*; Run it (press “enter”);

```
UPDATE control.ServerConfiguration
SET ClusterIP = “Your Cluster IP”,
PrimaryIP = “”,
SecondaryIP = “This Server IP”,
InstallationType = 2 ;
```

Press enter;

j. **Update table “rawdata.whoami”:**

Copy and paste the following command; Place *Primary Server IP* (SafePeak server A); Run it (press “enter”);

```
UPDATE rawdata.whoami
SET OtherIP = “Primary Server IP”;
```

Press enter;

k. Type Exit;

l. **Add Environment setting:**

Run the following command in the CMD (If needed change the `“C:\SafePeak”` to your SafePeak folder):

```
SETX SAFEPEAK_V1_3_TEMP C:\SafePeak\Temp /m
```

**Step #5 – Load SafePeak Cluster License**

On each of the servers perform the following actions:

- Open Windows: Start → All Programs → SafePeak (*version*) → License Manager
- Under “Submit New License” load your license key file
- Press “Submit”.

Repeat steps a-c on both SafePeak servers.