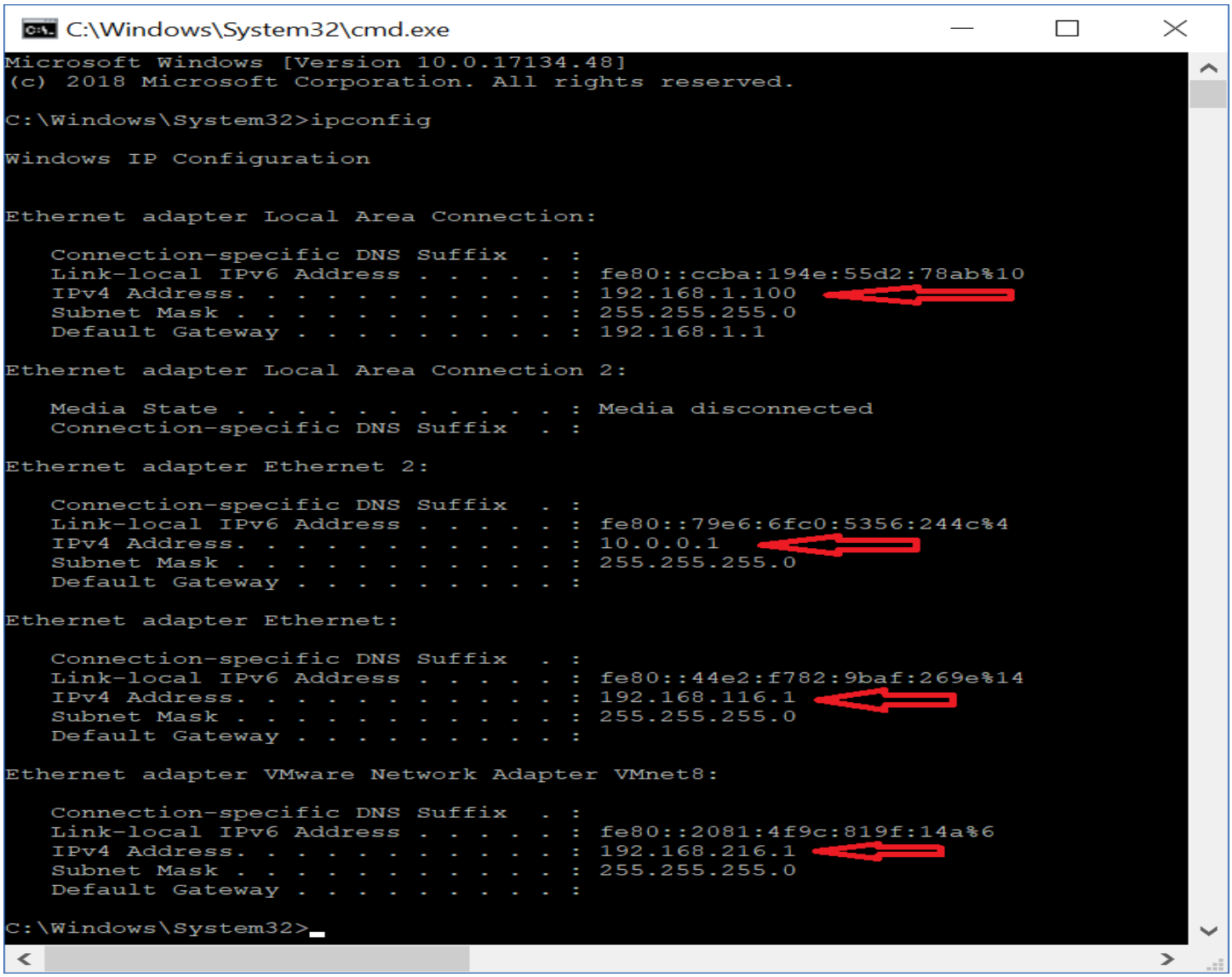
SMQ Cluster Example

(including auto script configuration for running the cluster on one computer)

This tutorial shows how to run the included SMQ cluster example on one computer. You may of course setup a cluster test that incorporates several computers, but it is much easier to initially test the cluster setup on one computer. This tutorial includes a script (bundled as an LSP page) that auto configures an SMQ cluster setup by inspecting your network settings. The script is designed for Windows, but you may also configure your own setup if you run this on say Linux. The tutorial includes information on how to also manually create the necessary configuration files.

Most computers include more than one network interface. Your computer may for example have a wired interface and a wireless interface. In addition, a loopback adapter may be created for the purpose of simulating a network.

The following shows the output from running the command ipconfig (use ifconfig on Linux):



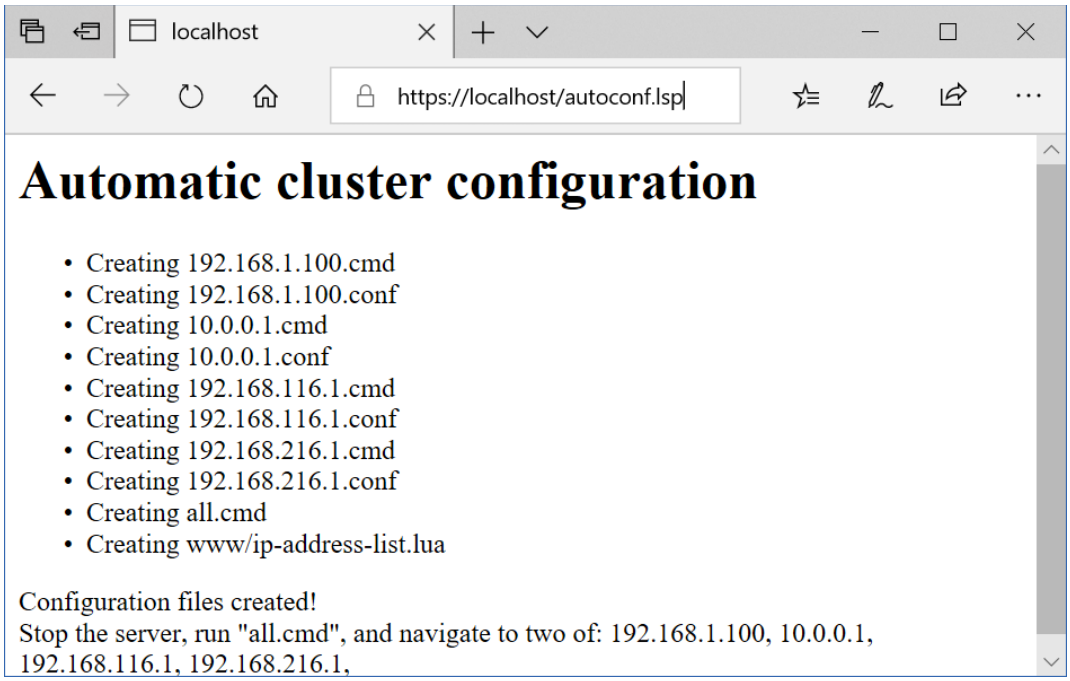
The above screenshot shows four network interfaces on the selected computer, where two are physical and two are virtual network interfaces (the second interface is a loopback and the fourth is created by VmWare). On this computer, an SMQ cluster comprising four network nodes can be tested, where each node binds to one of the network addresses above.

Automatic Cluster Configuration for Windows

Download the Mako Server for Windows, unpack, and start the Mako Server as follows in the Cluster Example directory (in the directory where this document can be found):

path/2/mako -l::www

Take note of the server listening port number and navigate to http://localhost:portno, where portno is the port number the server listens on. Your browser should navigate to autoconf.lsp and you should see a page similar to the following:

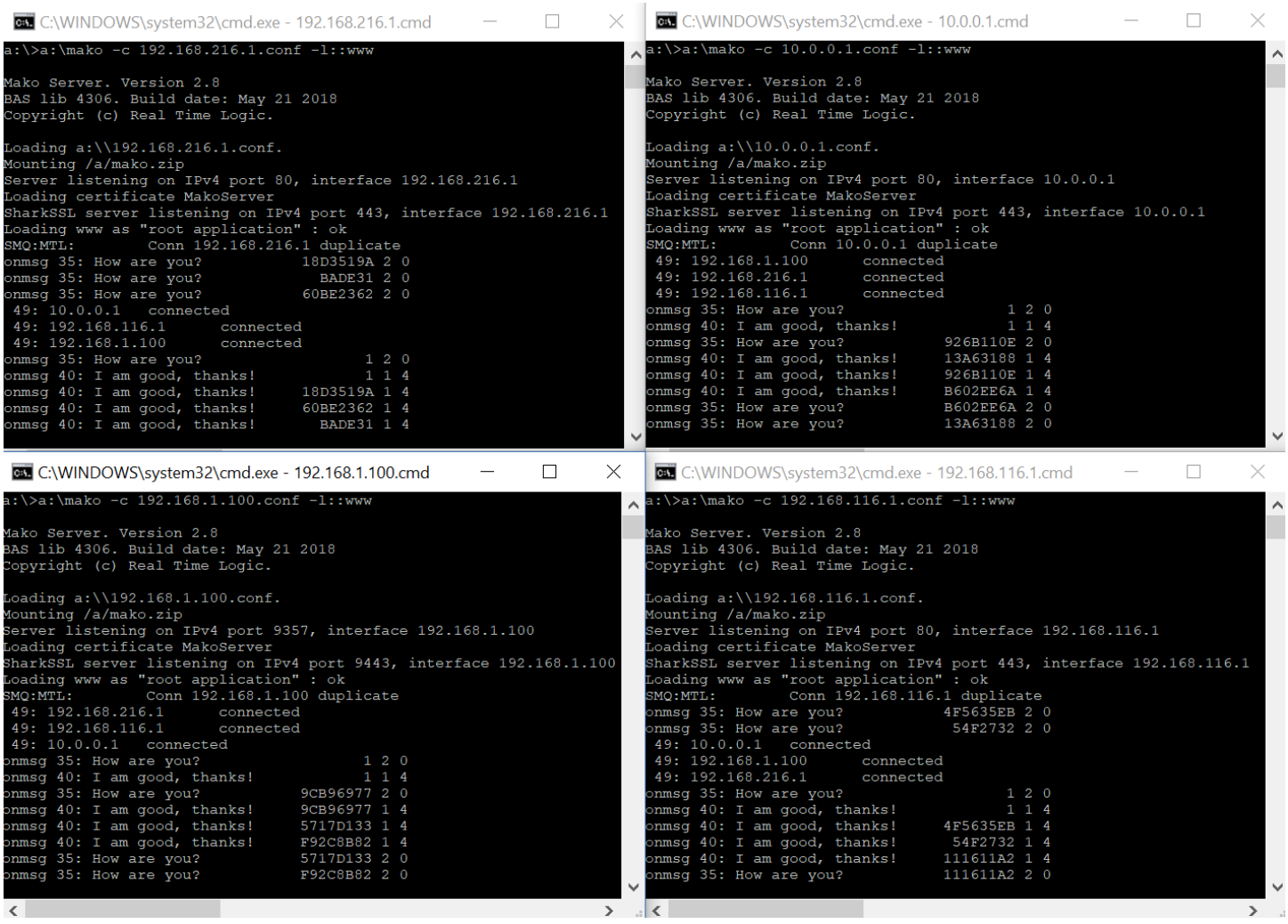


Running the Cluster Example

When you have run the autoconf.lsp configuration script, stop the server, and run the generated file "all.cmd" by double clicking on the file. This command file starts one Mako Server instance for each of the network interfaces found by autoconf.lsp.

Use two browser windows and navigate to two of the IP addresses in the list of network interfaces. Each of the browser windows should redirect to the SMQ Chat demo. Enter a user name for each Chat window and notice that the Chat works across the cluster nodes.

The Lua SMQ cluster startup code can be found in www/.preload. See this script for more information on the printouts in the screenshot below.



The above screenshot shows the four Mako Servers started by the command file 'all.cmd'.

Manual Cluster Configuration

The Mako Server, by default, binds to all available network interfaces on your computer; however, you may configure the Mako Server to bind to a specific interface. You may for this reason run multiple Mako Servers on one computer, where each server binds to its own network interface.

For each network interface, create a configuration file and name each file IP.conf, where IP is the IP address for the interface. Enter the following in each configuration file:

host="IP"
sslhost="IP"

The string IP above must be the IP address of the network interface (e.g. 10.0.0.1).

Open www/.preload and change the line:
local list
to:
local list = {"IP1",IP2"}
Where IP1, etc.. is one IP address from the list of available network interfaces.

Save all files and start one Mako Server instance for each configuration file as follows:
mako -c IP.conf -l::www, where IP is the name of the configuration file.

Files

- www/**.preload** - Cluster setup and server to server communication example
- www/**autoconf.lsp** - Script designed to create the cluster configuration files
- www/**index.lsp** - Redirects to autoconf.lsp (if no configuration files) or /chat/
- www/**chat/** - Chat application. See the chat application tutorial for details.
- www/**smq.lsp** - HTTP to SMQ upgrade. Used by chat application when initiating SMQ connection.

Creating a Loopback Adapter on Windows

You may create a new loopback adapter if you do not have a sufficient number of network interfaces for the SMQ cluster example. The following information applies to Windows 7. Similar information applies to Windows 10.

Create the Loopback Adapter on Windows

1. System -> Control Panel -> Add Hardware
2. Select "Yes, I have already connected the hardware" and click Next
3. Select "Add a new hardware device" (at bottom of list) and click Next
4. Select "Install the hardware that I manually select..." and click Next
5. Select "Network adapters"
6. Select "Microsoft" and then "Microsoft Loopback Adapter"
7. Go through the installation procedure

Configure the Loopback Adapter

1. Open your new new loopback ethernet adapter (Network Connections)
2. Enable Client for Microsoft Networks
3. Disable File and Printer Sharing for Microsoft Networks
4. Enable Internet Protocol (TCP/IP)
5. Click on properties for TCP/IP
6. Enter your chosen IP address (10.0.0.1), subnet mask (255.255.255.0). You can leave gateway blank.
7. Under advanced->IP Settings, Deselect Automatic metric and fill in the value of 9999 as the 'Interface metric' as shown above.
8. Under advanced->WINS, Enable LMHosts Lookup and Disable NetBIOS over TCP/IP

Reboot

You may have to reboot your computer. Check if your new 10.0.0.1 network is up and running by using ipconfig or simply reboot.