

MIMIC[®]

SNMP Agent Simulator

Installation Guide

Version: 20.00



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Overview

MIMIC is distributed as a compressed file for each of the platforms referred to in this manual. MIMIC is available on a CD-ROM or by a download from the Web. In either case, it is necessary to uncompress the file and extract its contents onto your system.

You only need to download MIMIC when a new release is issued; the retail version of MIMIC is identical to the evaluation version except for the license keys. Permanent license keys are included with your purchase.

If MIMIC is already installed, determine the version you are running by looking at the **Help>About** menu in MIMICView or at the contents of the `config/version` file. Download MIMIC again only if a newer version is available. If you are upgrading from an older release, terminate from MIMIC before running the install program. Uninstalling the older release is not necessary, since this will provide a backup in case of problems with the newer release.

To terminate from MIMIC:

1. Click on **File**.
2. Click on **Terminate**.

Please review the [MIMIC Frequently Asked Questions](#) page after having installed MIMIC.

Preparing for Installation

Windows Platforms

MIMIC supports the following Windows platforms:

- Windows Vista Business Edition
- Windows Server 2008
- Windows 7
- Windows Server 2012
- Windows 8
- Windows 10
- Windows Server 2016 Standard

It is highly recommended to install the latest service pack for the respective OS. This section describes requirements for the Windows platforms. Later in this section, common problems encountered while running MIMIC on Windows are discussed, along with their related fixes.

Administrator Privileges

For Windows Vista, Server 2008, Windows 7 and newer, please refer to the section “[Windows Vista and Server 2008](#)”.

Firewalls

Due to pervasive security attacks against Windows systems connected to the Internet, it has become common to run a software firewall on recent versions of Windows.

MIMIC will coexist with a software firewall, provided that the firewall is configured to recognize MIMIC as a program allowed to access the network. MIMIC will, due to its very nature of simulating networked components, open network sockets and communicate with external applications (eg. network management applications, telnet clients, etc).

There are certain components of MIMIC that will access the Internet (eg. specific web sites to determine software updates, etc), but only if explicitly configured by the user.

Assigning IP Addresses

MIMIC requires at least one operational network interface card (NIC). On Windows Vista or later, as on the Unix platforms, MIMIC dynamically assigns IP addresses when starting each agent instance.

5000 / 10000 agent support

Different versions of Windows have performance limitations while running large numbers of IP addresses. The following are the limits on the different versions of Windows.

- Windows Vista: 10000 agents;
- Windows Server 2008: 10000 agents;
- Windows 7: 10000 agents;
- Windows Server 2012: 30000 agents;
- Windows 8: 30000 agents;
- Windows 10: 30000 agents;

In empirical tests, going beyond those limits introduced non-deterministic instability and performance problems.

20000 / 30000 agent support

You can run 20000 agents only on Windows Server 2003, and 30000 agents only on Windows Server 2012, Windows 8 or Windows 10, and then only with [64-bit executables](#), and more on the Unix platforms..

Virtual Memory

MIMIC is a specially memory-intensive application, and it needs plenty of physical memory (RAM) and virtual memory (swap space) for the more complex device simulations. We recommend an absolute minimum 64MB of RAM and 128MB of swap space to start. Verify that you have enough swap space in the System Control Panel.

You should, as a rule of thumb have twice the swap space as your physical memory.

Different versions of Windows on Intel systems impose different limits on the amount of virtual memory accessible for the MIMIC Simulator, but currently the absolute limit is below four (4) GB due to 32-bit addressing limitations, which the [64-bit architecture](#) does not have.

On all versions of Windows there is a 2 GB limit on per-process virtual memory.

On all 32-bit versions of Windows there is a 2 GB limit on per-process virtual memory.

On Windows Vista and later Microsoft has removed the boot.ini file and provided the BCDEdit command to enable 3 GB addressing as documented [in Microsoft's document](#).

To enable this expanded capability on Windows Vista and later, as an Administrator in a Command Prompt window, type the command:

```
BCDEdit /set IncreaseUserVA 3072
```

And then restart your computer.

This will make "a full 3 GB of virtual address space available to applications and reduces the amount available to the system to 1 GB."

Duplicate IP Address

For Windows Vista, Server 2008 and Windows 7, please refer to the section "[Windows Vista and Server 2008](#)".

If Windows detects that an IP address on one of its Network Interface Cards (NICs) conflicts with another system (resulting in a duplicate IP address), then it tries to resolve this problem by shutting down the NIC and displays a message such as:

The System has detected an IP address conflict with another system on the network. The local interface has been disabled. More details are available in the system event log. Consult your network administrator to resolve the conflict.

You must not have duplicate IP addresses on a connected network, neither with MIMIC or otherwise.

NOTE: you can disable duplicate IP address detection by following the instructions in the article in the Microsoft Knowledge Base titled [How to Disable the Gratuitous ARP Function](#). It is appended here:

How to Disable the Gratuitous ARP Function

View products that this article applies to.

Article ID : 219374
Last Review : February 24, 2007
Revision : 3.2
This article was previously published under Q219374

SYMPTOMS

When a Windows NT-based computer starts, a packet is broadcast on the network containing the computer's TCP/IP address to prevent the use of

duplicate addresses on the same network. This is called a gratuitous Address Resolution Protocol (ARP) packet. Routers and other network hardware may cache routing information gained from multiple gratuitous ARP packets. For both performance and maintenance reasons, it is possible to disable this feature in Windows NT.

RESOLUTION

To resolve this problem, obtain the latest service pack for Windows NT 4.0. For additional information, click the following article number to view the article in the Microsoft Knowledge Base: 152734 (<http://support.microsoft.com/kb/152734/EN-US/>) How to Obtain the Latest Windows NT 4.0 Service Pack

STATUS

Microsoft has confirmed that this is a problem in the Microsoft products that are listed at the beginning of this article. This problem was first corrected in Windows NT 4.0 Service Pack 5.

MORE INFORMATION

To disable gratuitous ARPs after applying this hotfix:

1. Click Start, click Run, type `regedt32`, and then click OK.
2. On the Windows menu, click `HKEY_LOCAL_MACHINE` on Local Machine.
3. Click the `\System\CurrentControlSet\Services\TcpIp\Parameters` folder.
4. Double-click the `ArpRetryCount` value, type 0, (for Windows XP, type 1) and then click OK.
5. Quit Registry Editor, and then restart the computer.

Media Sense on Windows Vista and newer

Newer versions of Windows (Windows Vista onwards) have a TCP/IP feature whereby it can sense if a NIC is actually connected to the network. By default, a NIC is disabled if it is not found to be on the network, which prevents agents from starting in MIMIC. There is a way to disable this behavior so that you can work on standalone Windows machines. Attached is the [Microsoft KB](#) article on this topic. Please remember to make a copy of your registry before making any changes just to be on the safe side.

NOTE Windows Vista and newer have no way to disable this feature. You can only run MIMIC on Windows Vista and newer with the system connected to a network.

How to Disable Media Sense for TCP/IP in Windows

SUMMARY

On a Windows-based computer that uses TCP/IP, you can use the Media Sensing feature to detect whether the network media are in a link state. Ethernet network adapters and hubs typically have a "link" light that indicates the connection status. This status is the same condition that Windows interprets as a link state. Whenever Windows detects a "down" state, it removes the bound protocols from that adapter until it is detected as "up" again. Sometimes, you may not want the network adapter to detect this state. You can set this configuration by modifying the registry.

Let me fix it myself

Important - This section, method, or task contains steps that tell you how to modify the registry. However, serious problems might occur if you modify the registry incorrectly. Therefore, make sure that you follow these steps carefully. For added protection, back up the registry before you modify it. Then, you can restore the registry if a problem occurs. For more information about how to back up and restore the registry, click the following article number to view the article in the Microsoft Knowledge Base: 322756 How to back up and restore the registry in Windows

To prevent the network adapter from detecting a link state, follow these steps:

Note The NetBEUI protocol and the IPX protocol do not support Media Sensing.

Start Registry Editor.

Locate the following registry subkey:

HKEY_LOCAL_MACHINE\System\CurrentControlSet\Services\Tcpip\Parameters

Add the following registry entry to the Parameters subkey:

Name: DisableDHCPMediaSense

Data type: REG_DWORD (Boolean)

Value: 1

Note: This entry controls the behavior of Media Sensing. By default, Media Sensing events trigger a DHCP client to take an action. For example, when a connect event occurs, the client tries to obtain a lease. When a disconnect event occurs, the client may invalidate the interface and routes. If you set this value data to 1, DHCP clients and non-DHCP clients ignore Media Sensing events.

Restart the computer.

IPv6 Support

IPv6 is supported only on Windows Vista and newer. This is an OS platform limitation.

IPv6 is installed as detailed at the Microsoft support website. IPv6 addresses use an additional Scope ID as detailed on the Microsoft website.

If the IPv6 module gets corrupted, you can fix this with this command from the COMMAND prompt:

```
netsh interface ipv6 reset
```

NOTE: check the Known Problems section for limitations.

Performance impact of Windows services

Running unnecessary Windows services impacts performance adversely on a MIMIC system. The observed impact has been an approximate 300% slowdown in starting and 1000+% slowdown stopping agents, and a 10-20% slowdown in servicing requests. This is documented in a [Microsoft support page](#) titled "Memory Usage by the Lsass.exe Process on domain controllers that are running Windows Server 2003 or ...". The executables running the services end up hogging the CPU. This can easily be seen in a process listing in the Windows Task Manager.

Thus if you are running large lab configurations, we recommend to stop the following unnecessary services in the Services Control Panel:

Display Name	Service Name	Path to executable
IPSEC Services	PolicyAgent	WINDOWS\system32\lsass.exe
Protected Storage	ProtectedStorage	WINDOWS\system32\lsass.exe
Print Spooler	Spooler	WINDOWS\system32\spoolsv.exe
DHCP Client	Dhcp	WINDOWS\system32\svchost.exe -k NetworkService
DNS Client	Dnscache	WINDOWS\system32\svchost.exe -k NetworkService
TCP/IP NetBIOS Helper	LmHost	WINDOWS\system32\svchost.exe -k LocalService
Windows Time	W32Time	WINDOWS\system32\svchost.exe -k netsvcs

Additionally, on Windows Server 2003 we have seen the RPC service hog the CPU while MIMIC is busy servicing SNMP requests. On Windows XP SP2 we have seen the RPC service crash when stress testing MIMIC, thus rebooting the system by default. We recommend stopping all svchost.exe processes, and make sure that the services are configured not to restart or reboot the system.

64-bit Support

The optional 64-bit MIMIC simulator and protocol module shared libraries can run on a x64 or AMD64 processor. To do so, you need to run a [64-bit version of Windows](#), and use [Update Wizard](#) to download the optional update package with the MIMIC 64-bit executables.

Windows Vista and newer

1. User Account Control

Windows Vista and later has the new User Account Control feature, which impacts the running of MIMIC. For details, consult this [Analysis of the Windows Vista Security Model](#) from Symantec. In order to enable to run MIMIC on Vista and later, you have 2 options:

- Disable User Account Control

This turns UAC off globally. NOTE: do this only if you are aware of the implications of this action.

- ◆ On Windows 7:

Open User Accounts via Start->Control Panel->User Accounts->User Accounts>User Account Control settings.

Slide scrollbar to bottom (Never notify)..

- ◆ On Windows Vista and Server 2008:

Open User Accounts via Start->Control Panel->User Accounts->User Accounts.

Click on Turn User Account Control on or off

Clear the checkbox for Use User Account Control (UAC) to help protect your computer.

- ◆ Click Ok

- ◆ A dialog will popup prompting you to Restart Now or Restart Later. Choose appropriately. User Account Control will be disabled once the system reboots.

- ◆ On Windows Server 2012:

Follow directions at [this Microsoft article](#).

- Run MIMIC with User Account Control enabled

This involves changing the access control level of the MIMIC programs.

- Change the privilege level of MimicView application in the Mimic Start Program group using the following steps:

- ◆ Click Start->All Programs->Mimic Simulator x.xx

- ◆ Move the cursor to the MimicView entry

- ◆ Right click and select Properties.

- ◆ In the Compatibility tab, check Run this program as an administrator

- ◆ Once this is done, MimicView can be started as above or by running the MimicView.bat script in the bin folder of the MIMIC installation.
- If MimicD.exe will be run directly, set the privilege level of it using the following steps:
 - ◆ In Windows Explorer, select it.
 - ◆ Right click and select Properties.
 - ◆ In the Compatibility tab, check Run this program as an administrator

2. Duplicate Address Detection

On Windows Vista and later, the new TCP/IP stack tries to do "duplicate address detection" by default. This prevents MIMIC from starting agents, because IP aliasing is delayed, and even with a workaround in our software would unacceptably slow down the starting of agents. To correctly workaround the problem, you need to disable "duplicate address detection" for the network interface using the Windows netsh utility:

```
netsh interface ipv4 set interface "name or index" dadtransmits=0
```

The interface name and index info can be obtained by

```
netsh interface ipv4 show interfaces
```

For example:

```
H:\>netsh interface ipv4 show interfaces
```

Idx	Met	MTU	State	Name
1	50	4294967295	connected	Loopback Pseudo-Interface 1
7	20	1500	connected	Local Area Connection

```
H:\>netsh interface ipv4 set interface "7" dadtransmits=0
```

3. Services

Windows Vista and later has the problem of services interfering with MIMIC operation as documented [above](#).

Here is the list of already documented services and their paths:

Display Name	Service Name	Path to executable
IPsec Policy Agent	PolicyAgent	WINDOWS\system32\svchost.exe -k NetworkServiceNetworkRestricted
Protected Storage	ProtectedStorage	WINDOWS\system32\lsass.exe
Print Spooler	Spooler	WINDOWS\system32\spoolsv.exe

DHCP Client	Dhcp	WINDOWS\system32\svchost.exe -k NetworkServiceNetworkRestricted
DNS Client	Dnscache	WINDOWS\system32\svchost.exe -k NetworkService
TCP/IP NetBios Helper	lmhosts	WINDOWS\system32\svchost.exe -k NetworkServiceNetworkRestricted
Windows Time	W32Time	WINDOWS\system32\svchost.exe -k LocalService

Additionally, these new services in Windows Vista and later **MUST** be disabled for reasonable start/stop performance.

Display Name	Service Name	Path to executable
Function Discovery Resource Publication	FDResPub	WINDOWS\system32\svchost.exe -k LocalService
IKE and AuthIP Keying Modules	IKEEXT	WINDOWS\system32\svchost.exe -k netsvcs
Network List Service	netprofm	WINDOWS\system32\svchost.exe -k LocalService
Network Location Awareness	NlaSvc	WINDOWS\system32\svchost.exe -k NetworkService
SSDP Discovery	SSDPDRV	WINDOWS\system32\svchost.exe -k LocalService
UPnP Device Host	upnphost	WINDOWS\system32\svchost.exe -k LocalService
Windows Remot Management (WS-Management)	WinRM	WINDOWS\system32\svchost.exe -k NetworkService

These are new services that may be disabled for better start/stop performance on Windows Vista and later.

Display Name	Service Name	Path to executable
Background Intelligent Transfer Service	BITS	WINDOWS\system32\svchost.exe -k netsvcs
Transfer Service IP Helper	iphlpsvc	WINDOWS\system32\svchost.exe -k netsvcs

Service Details

- Function Discovery Resource Publication

Used for publishing network resources. Stopping will prevent other computers from discovering the network resources. Will impact applications that work with Network Connected Devices, Plug-n-Play Extensions and Web Services on Devices.

- IKE and AuthIP Keying Modules

Internet Key Exchange (IKE) and Authenticated Internet Protocol (AuthIP) keying modules are used for authentication and key exchange in IPSec. Stopping them will prevent IPSec from working.

- Network List Service

Used to determine the networks to which the system is connected, collect/store their properties and notify applications.

Stopping this will prevent the Network Status tray icon from working properly.

- Network Location Awareness

Used to collect/store network configuration information and notify applications.

Stopping this will prevent any applications (like Network List Service) that depend on this data from working.

- SSDP Discovery

Used to provide Simple Service Discovery Protocol based services. Stopping this will prevent UPnP from working.

- UPnP Device Host

Used to provide Universal Plug-n-Play services. Stopping this will prevent UPnP based devices from working.

- Windows Remote Management (WS-Management)

Used for Web Services for Management functionality. Stopping will disable Windows Remote Management and WS Management

4. Vista Power Management

The default power options will put the Windows Vista system to sleep after 1 hour of inactivity. To disable this, perform the following:

Open Power Options using Control Panel->System and Maintenance->Power Options.

Change Preferred Plan from Balanced to High Performance.

Verify by clicking on Change Plan Settings for High Performance. Ensure that Put the computer to sleep setting is Never.

5. Program Compatibility Assistant

After the install is completed or aborted, the Program Compatibility Assistant may prompt with the message

This program might not have installed correctly.

Please select `This program installed correctly` if the install completed. Else, select `Cancel`.

Debugging

Prior to Windows Vista, crashes can be analyzed post-mortem using the Dr. Watson's crash dumps. This requires that Dr. Watson be enabled to handle any application exceptions on the system.

To install Dr. Watson as the default exception handler:

Click `Start->Run`.

Type `drwtsn32 -i`

Click `Ok`.

A subsequent crash should popup the Dr. Watson dialog. Search for the following files in the Windows directory (this location can be changed using the Dr. Watson GUI): `drwtsn32.log` and `user.dmp`. Send these to Gambit Technical Support (support@gambitcomm.com).

On Windows Vista and later, by default the `Problem Reports and Solutions` feature handles program crashes. Crash information, including minidumps when available, is automatically sent to Microsoft.

You can check if a MIMIC program crashed and if minidumps are available. Please use the following steps to extract any available MIMIC program crash data and forward it to Gambit Technical Support (support@gambitcomm.com).

- Go to `Problem Reports and Solutions` using `Control Panel->System and Maintenance->Problem Reports and Solutions` *or* using `Control Panel->Problem Reports and Solutions`
- Click on `View problem history`
- Find MIMIC programs in the list
- Double click on an entry to view the problem details
- If there is a `Files that help describe the problem` section, click on the `View a temporary copy of these files` link below that section
- The files will be extracted into a temporary directory and an Explorer window will be opened to view them
- Forward these to Gambit Technical Support

If the `Problem Reports and Solutions` settings are changed to check with the user before sending the crash information to Microsoft, Windows Vista will prompt the user when a program crash occurs. If you choose `Close the program`, no additional details are generated. If you choose `Check online for a solution and close the program`, crash data may be saved.

Microsoft's [Debug Diagnostic Tool](#) version 1.1 onwards may be used on Windows Vista and later to handle program crashes. If this is installed, please use the following steps to generate crash data.

- Open Debug Diagnostic Tool
- Click on the Rules tab
- Click on Add Rule button
- In the Select Rule Type dialog, choose Crash and click on Next
- In the Select Target Type dialog, choose A specific process and click on Next
- In the Select Target dialog, browse the process list, select MimicD.exe and click on Next
- In the Advanced Configurations (Optional) dialog, change the number of userdumps as needed and click on Next
- In the Select Dump Location and Rule Name (Optional) dialog, change the path and name as needed and click on Next
- In the Rule Completed dialog, choose Activate the rule now and click on Finish

When a crash occurs, the Rules tab in Debug Diagnostic Tool will show the userdump count. Forward the available files from the configured dump location to Gambit Technical Support.

Known Problems

Gambit is constantly improving MIMIC's performance. The following problems while running MIMIC on a Windows platform have been identified:

- On Windows Vista and newer you cannot run MIMIC on a standalone PC (not connected to a network). This is due to the OS having removed the ability to [disable media sense](#). We have found no workaround for this limitation.
- *Windows NT* — if the host is using DHCP to obtain its address, no agent instance can use that same address to export a MIB. The problem is that on stopping the agent this address is deleted which shuts off the TCP/IP services (ftp/telnet/internet). To restore working you either need to REBOOT or start the agent on the DHCP assigned address again (keep it running).
- On Windows Vista you can only configure upto 10000 agents and 15000 +/- IP addresses. On Windows Server 2008 you can only configure upto 10000 agents and 12000 +/- IP addresses. On Windows 7 you can only configure upto 10000 agents and 11000 +/- IP addresses. Any subnets can be used for these addresses.
- On all versions of Windows you can only run up to 64 MIMIC clients over the local management channel. [bug 2371]. The Unix versions of MIMIC have no such limitations on the number of clients.

- On Windows, certain network interface cards have limitations supporting multiple IP addresses. In particular, some adapters and/or drivers from 3com have been giving us trouble (e.g. 3C905-TX or 3Com 3C90x Ethernet Adapter). The symptom is that a small number of agent instances can be started and polled correctly, but connectivity is lost to the box when starting more.
- On Windows, certain software is incompatible with MIMIC. In particular, if Novell Client is running, your machine may hang after starting and stopping a small number of agents (the System task will use 99+% of CPU). Just unchecking the box in Local Area Connection Properties is not sufficient - you have to uninstall it.

This problem is unrelated to MIMIC. Any test program (e.g. `ifdiag` shipped with MIMIC) which uses the Windows API to register/unregister network addresses will reproduce the problem.

- If you want to run MIMIC inside virtual machine software such as VMWare, please contact Gambit Communications Technical Support (support@gambitcomm.com).
- MAC Bridge Miniport in Windows Vista and later is not supported. To remove the adapters from the network bridge, follow the instructions at this (<http://support.microsoft.com/default.aspx?scid=kb;en-us;824922>) Microsoft support page.
- IPv6 will only work on Windows Vista or later. It runs on all supported versions of Unix. When adding or deleting IPv6 aliases to/from an agent it can take 2 to 3 seconds for the operation to complete per agent. This slowness is caused by the Domain Name System (DNS) performing a lookup to see if the address is actually a registered domain name. To resolve this problem you must follow both the steps listed below:
 - ◆ Do not use domain names and only use IPv4 or IPv6 addresses for all agents.
 - ◆ Do either of the following:
 - add the line "hostname_resolve = 0" to your `mimicd.cfg` file in your MIMIC config/directory;
 - set the environment variable "MIMIC_HOSTNAME_RESOLVE=0" on your Windows system.

Even with this workaround, adding and deleting IPv6 aliases is approximately 5 to 10 times slower than on Linux or Solaris. If you are running thousands of agents, your performance will suffer.

Furthermore, our testing uncovered that the Microsoft `netsh` utility used to add aliases sometimes fails silently. There is no workaround, until Microsoft publishes an API.

- On Windows you cannot add IPv6 addresses on disconnected NICs, contrary to IPv4, where there is no problem. This is an OS limitation that we cannot overcome. There is no such limitation on other OS platforms.

- On Windows 8.1 adding large numbers of IPv6 addresses crashes the Windows Explorer due to `STACK_OVERFLOW`. MIMIC continues to run correctly. Windows quickly recovers with no apparent harm, since Windows Explorer automatically restarts. This is reproducible with the Windows netsh tool, thus is a limitation outside of MIMIC.
- Performance on Windows Vista is much worse than Windows 7 or later, specially with large scenarios. For this reason, we DO NOT recommend running MIMIC on Windows Vista.
- On all versions of Windows, there is a configurable limit on per-process "USER objects". The default limit of 10000 interferes with MIMICView for large-scale simulations. Eg. if you want to display a large number of device types (more than 1000) with `Simulation->Devices`, the display may hang and leave droppings on the screen, in particular a line of text at the top of the display.

To work around this limitation, you have to increase the number of USER objects as described in this [Microsoft support page](#). The absolute limit is 18000, which you will NOT be able to overcome. With this limit, you'll be able to display about 2000 average-sized devices.

In addition, there is a limit on the "desktop heap", as detailed in this [Microsoft support page](#). Change this parameter in the registry to overcome heap limitations.

MIMIC on other platforms has no such limitation.

- On Windows, the `NVidia ForceWare Network Access Manager` that is enabled by default for `NVIDIA nForce Networking Controller` cards causes problems when MIMIC is starting and stopping agents. The symptoms are that connectivity to the network is disabled. The only workaround we have found is to uninstall the program, since disabling it seems to have no effect.
- The native telnet client on Windows has problems as documented in detail in the Virtual Lab Windows Installation Instructions.

In case of difficulties, please contact Gambit Technical Support (support@gambitcomm.com).

Linux

MIMIC runs on any version of Linux with a kernel version greater than 2.0, but preferably [Red Hat Linux](#) Fedora Core 19 or later (kernel version 3.14 or later) or Red Hat Enterprise Linux 7. By default it runs on newer versions of Linux (Fedora 15 or later) in 64-bit mode, but we publish a legacy release for older versions of Linux and 32-bit mode.

Although we have reports of MIMIC running on a variety of distributions (such as Debian, SuSE, Caldera, etc), the latest release has been tested at Gambit to run out-of-the-box with

- Fedora 8 through 25
- Enterprise Linux 7, 9
- CENTOS 7, 8

Graphical User Interface

Even though MIMIC can be run entirely without a graphical user interface (GUI), using a GUI initially will speed your tasks significantly. The MIMICview GUI is a X Windows client and requires an [X server](#) either on the local desktop or remotely.

To display on Microsoft Windows we have had success with the [Cygwin/X](#) or [MobaXterm](#) X servers, but other implementations like Xming do not work as well. On headless machines you can run a [RDP](#) implementation such as [Xrdp](#) to display on Windows desktops.

Additionally, any window manager running on the desktop will impact the behavior of the MIMICview GUI. For example, keyboard focus is entirely dependent on the window manager. If you use keyboard control of MIMICview, the window manager focus policy impacts the behavior after dismissing dialogs.

Swap Space

MIMIC is an especially memory-intensive application, and it needs plenty of RAM and swap space for the more complex device simulations. We recommend an absolute minimum 64MB of RAM and 128MB of swap space to start. Verify that you have enough swap space with the following command from any shell:

```
% cat /proc/meminfo
```

It should display something like

```
% cat /proc/meminfo
MemTotal:      1000448 kB
MemFree:       37100 kB
...
SwapTotal:     1000448 kB
```

```
SwapFree:      1000448 kB
...
```

This system has 1 GB of RAM (MemTotal), and 1 GB of swap space (SwapTotal). You should have, generally speaking, twice as much swap space as physical memory.

If you need more swap space, you can easily create it with the **mkswap(8)** and **swapon(8)** commands. A 2 GB swap file on the local filesystem can be created with the following commands:

```
# dd if=/dev/zero of=SWAP bs=1M count=2048
2048+0 records in
2048+0 records out
2147483648 bytes (2.1 GB) copied, 63.9475 s, 33.6 MB/s

# mkswap SWAP
Setting up swapspace version 1, size = 2147483648 bytes
# swapon [ABSOLUTE-PATH-TO]/SWAP
```

Different versions of Linux on Intel systems impose different limits on the amount of virtual memory accessible for the MIMIC Simulator. If you run [64-bit Linux](#) the VM limits are of no concern, but on 32-bit systems the absolute limit is below 4 GB due to 32-bit addressing limitations. We have run MIMIC on common Red Hat distributions with upto approximately 3 GB of virtual memory.

1000/2000/5000/10000 Agent Support

You need to perform an extra kernel configuration step on Linux before running MIMIC with a large numbers of agents in order to increase the global file descriptor table. We recommend:

```
# cat /proc/sys/fs/file-max
4096
# echo "8192" > /proc/sys/fs/file-max
# cat /proc/sys/fs/file-max
8192
```

To apply this parameter permanently, add this command to the boot startup files (e.g., in `/etc/rc*`). Contact your MIS department for more information.

20000/50000/100000 Agent Support

You can only run 20000 and more agents on [64-bit Linux](#), and need to apply the appropriate configuration step detailed in the [previous section](#).

Yellow Pages with large configurations

If you are running MIMIC on a system that is using Yellow Pages for name resolution, then you may encounter the following problem: the Yellow Pages client may lock up if you are running a large-scale configuration. The symptoms include delayed command response, error messages in the system log of the form `ypbind: YPBINDPROC_DOMAIN: Domain not bound`.

This is likely due to `ypbind` using broadcast to find the Yellow Pages server, as configured in the file `/etc/yp.conf` with this entry

```
domain SOMETHING broadcast
```

To solve the problem, comment out the broadcast line and specify an explicit Yellow Pages server, with an entry such as

```
ypserver 192.9.200.1
```

Performance impact of certain daemons

Linux is a general-purpose operating system, and as such runs a variety of daemons to provide services. Certain daemons interfere with the operation of MIMIC. This is a partial list, if you encounter any others, please let us know:

- `avahi-daemon`
The `avahi-daemon` hogs the CPU for large configurations, because it tries to configure DNS entries for the configured IP aliases.
- `NetworkManager`
The `NetworkManager` hogs the CPU trying to maintain all those IP aliases that get created and removed when starting and stopping agents.
- `dnsmasq`
You can stop this since you don't need to run a DNS server.

To diagnose the problem, look at CPU consumption of running processes. To solve the problem, stop the daemon.

IPv6 Support

IPv6 is supported on all Linux platforms that MIMIC runs on.

Prior to running agents with IPv6 addresses, the loadable IPv6 protocol kernel module needs to be installed. This is a boot-time configurable, eg. in

```
# ifconfig -a
eth0      Link encap:Ethernet  HWaddr 00:A0:24:07:C7:8A
```

```

inet addr:192.9.200.23 Bcast:192.9.200.255 Mask:255.255.255.0
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:2740928883 errors:80 dropped:0 overruns:125 frame:80
TX packets:2196208374 errors:0 dropped:0 overruns:0 carrier:96
collisions:51506073 txqueuelen:100
RX bytes:286144626 (272.8 Mb) TX bytes:1540102588 (1468.7 Mb)
Interrupt:10 Base address:0x220

lo Link encap:Local Loopback
inet addr:127.0.0.1 Mask:255.0.0.0
UP LOOPBACK RUNNING MTU:16436 Metric:1
RX packets:1836705765 errors:0 dropped:0 overruns:0 frame:0
TX packets:1836705765 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:0
RX bytes:3869230693 (3689.9 Mb) TX bytes:3869230693 (3689.9 Mb)

# modprobe ipv6
# ifconfig -a
eth0 Link encap:Ethernet HWaddr 00:A0:24:07:C7:8A
inet addr:192.9.200.23 Bcast:192.9.200.255 Mask:255.255.255.0
inet6 addr: fe80::2a0:24ff:fe07:c78a/10 Scope:Link
UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
RX packets:2740929031 errors:80 dropped:0 overruns:125 frame:80
TX packets:2196208477 errors:0 dropped:0 overruns:0 carrier:96
collisions:51506073 txqueuelen:100
RX bytes:286160140 (272.9 Mb) TX bytes:1540116436 (1468.7 Mb)
Interrupt:10 Base address:0x220

lo Link encap:Local Loopback
inet addr:127.0.0.1 Mask:255.0.0.0
inet6 addr: ::1/128 Scope:Host
UP LOOPBACK RUNNING MTU:16436 Metric:1
RX packets:1836705775 errors:0 dropped:0 overruns:0 frame:0
TX packets:1836705775 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:0
RX bytes:3869232221 (3689.9 Mb) TX bytes:3869232221 (3689.9 Mb)

sit0 Link encap:IPv6-in-IPv4
NOARP MTU:1480 Metric:1
RX packets:0 errors:0 dropped:0 overruns:0 frame:0
TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
collisions:0 txqueuelen:0
RX bytes:0 (0.0 b) TX bytes:0 (0.0 b)

```

When using ping6 to check connectivity to an IPv6 target, for link-local IPv6 destinations you must supply the `-I` option, eg.

```

% ping6 -I eth0 fe80::a00:20ff:feb0:2780
PING fe80::a00:20ff:feb0:2780(fe80::a00:20ff:feb0:2780) from
fe80::d0:b760:a3f7 eth0: 56 data bytes
Warning: time of day goes back, taking countermeasures.

```

```
64 bytes from fe80::a00:20ff:feb0:2780: icmp_seq=0 hops=255 time=4.618 msec
64 bytes from fe80::a00:20ff:feb0:2780: icmp_seq=1 hops=255 time=244 usec
64 bytes from fe80::a00:20ff:feb0:2780: icmp_seq=2 hops=255 time=235 usec
```

```
--- fe80::a00:20ff:feb0:2780 ping statistics ---
3 packets transmitted, 3 packets received, 0% packet loss
round-trip min/avg/max/mdev = 0.235/1.699/4.618/2.064 ms
```

When using `netstat` or `route` to check or configure routing tables, you need to use the `-A inet6` command line option, eg.

```
# netstat -A inet6 -r -n
Kernel IPv6 routing table
Destination          Next Hop          Flags Metric Ref    Use Iface
::1/128              ::                U      0     404    0 lo
3ffe::1/128          3ffe::1          UC     0     1     1 eth0
3ffe:bc0:c56:1::1/128  ::              U      0     0     0 lo
3ffe:bc0:c56:1::2/128  ::              U      0     0     0 lo
fe80::/10            ::              UA     256   0     0 eth0
ff00::/8             ::              UA     256   0     0 eth0
::/0                 ::              UDA   256   0     0 eth0
```

```
# route add -A inet6 3ffe::/16 eth0
```

For more details see Peter Bieringer's Linux IPv6 HOWTO document.

Please check effects of duplicate address detection [below](#).

Core Dumps

This section only applies to MIMIC before release 9.00.

The MIMIC Simulator `mimicd` runs as a `setuid-root` daemon on Linux. By default, core files are not produced if it terminates abnormally. If you see the `mimicd` crashing, you need to run it as `root` to enable core dumps to help us diagnose the problem:

```
su
export MIMIC_IGNORE_SIGSEGV=1
ulimit -c unlimited
./mimicd
```

File system

If you are setting up a partition on your hard disk to contain MIMIC data, you will want to consider tuning the block and inode allocation of the filesystem. Since MIMIC data typically consists of many small files, on Unix filesystems it uses up a filesystem resource called "inodes". When these run out, you will get error messages such as "file system full", even though the output of `df (1)` shows plenty of space available.

To change the inode allocation from the default for the `mkfs` (8) utility, use the `-b` command line option to reduce the block-size to 1024 bytes (the smallest possible, since fragments are not supported), and the `-i` command line option to set the bytes-per-inode to 1024 (to allocate the maximum number of inodes).

For details see the `mkfs` or `mke2fs` man pages or consult your system administrator.

In modern Linux systems you can use a [loop device](#) to configure a file as a **virtual disk** to be formatted and mounted with the preferred parameters. This is the recommended procedure to setup a 10GB filesystem, eg. as root user in `/usr/local`:

```
# pwd
/usr/local

# dd if=/dev/zero of=mimic.img bs=1MB count=10000
10000+0 records in
10000+0 records out
10000000000 bytes (10 GB) copied, 119.391 s, 83.8 MB/s

# ls -la mimic.img
-rw-r--r-- 1 root root 10000000000 Mar  7 13:47 mimic.img

# mkfs -t ext3 -b 1024 -i 1024 mimic.img
mke2fs 1.42.7 (21-Jan-2013)
mimic.img is not a block special device.
Proceed anyway? (y,n) y
Discarding device blocks: done
Filesystem label=
OS type: Linux
Block size=1024 (log=0)
Fragment size=1024 (log=0)
Stride=0 blocks, Stripe width=0 blocks
9762144 inodes, 9765624 blocks
488243 blocks (5.00%) reserved for the super user
First data block=1
Maximum filesystem blocks=76995072
1194 block groups
8184 blocks per group, 8184 fragments per group
8176 inodes per group
Superblock backups stored on blocks:
    8185, 24553, 40921, 57289, 73657, 204601, 220969, 401017, 662905,
    1023001, 1988713, 2807113, 5115001, 5966137

Allocating group tables: done
Writing inode tables: done
Creating journal (32768 blocks): done
Writing superblocks and filesystem accounting information: done

# mount -t auto -o loop /usr/local/mimic.img /usr/local/mimic
```



```
# df /usr/local/mimic
Filesystem      1K-blocks  Used Available Use% Mounted on
/dev/loop2      7289346   3983   6797120   1% /usr/local/mimic
```

By setting it up as root, the permissions prevent accidental corruption of the `mimic.img` file.

If you need to later **increase this virtual disk** you can use the `resize2fs` utility, eg. to add 10GB, first unmount the image, then resize and mount:

```
# umount /usr/local/mimic.img

# dd if=/dev/zero bs=1MB of=mimic.img conv=notrunc oflag=append count=10000
10000+0 records in
10000+0 records out
10000000000 bytes (10 GB) copied, 152.072 s, 65.8 MB/s

# e2fsck -f mimic.img
e2fsck 1.42.9 (28-Dec-2013)
Pass 1: Checking inodes, blocks, and sizes
Pass 2: Checking directory structure
Pass 3: Checking directory connectivity
Pass 4: Checking reference counts
Pass 5: Checking group summary information
mimic.img: 518409/9762144 files (1.3% non-contiguous), 9276883/9765624 blocks

# resize2fs mimic.img
resize2fs 1.42.9 (28-Dec-2013)
Resizing the filesystem on mimic.img to 19531248 (1k) blocks.
The filesystem on mimic.img is now 19531248 blocks long.

# mount -t auto -o loop /usr/local/mimic.img /usr/local/mimic

# df /usr/local/mimic
Filesystem      1K-blocks  Used Available Use% Mounted on
/dev/loop2      14613461 6800269   6836706  50% /usr/local/mimic
```

NFS

We recommend not running MIMIC on NFS mounted file systems but on a local disk filesystem as detailed above. When the simulator accesses persistent storage for its configuration or simulation data, NFS could slow things down considerably.

Shared libraries

If you are getting the error `error while loading shared libraries` while running MIMIC on a newer version of Linux, you need to install the compatibility libraries as detailed in the [Frequently Asked Questions](#) document.

64-bit support

By default, MIMIC runs in 64-bit mode (and requires 64-bit x86_64 Linux on 64-bit systems) on RHEL 7, Fedora 15 or later.

The optional 32-bit MIMIC simulator and protocol module shared libraries can run on either x86_64 or older ix86 processors, Fedora Core 5 or later. On older Linux releases on 64-bit processors you need to first install the 32-bit MIMIC release, then use [Update Wizard](#) to download the optional update package with the 64-bit executables. Once installed, the extra step is to manually give the `mimicd` executable `setuid-root` permissions and restart MIMIC with `File->Terminate`.

Bonded Interface

MIMIC supports [NIC bonding](#) in Linux, that is we have tested that agents configured on bonded NICs perform correctly, although we have not seen much performance benefit.

ARP Cache

The ARP cache on a system resolves IP addresses to MAC addresses. In the case of a large number of MIMIC agents, the Linux ARP cache garbage collection mechanism on the system running the management application can interfere interoperability with MIMIC, limiting performance or even failing. This is the case if the management station and MIMIC system are on the same LAN (without routers in between). In the case of intermediate routers, the issue will apply to the router connected to the MIMIC system, but usually ARP tables are configured adequately on such systems.

The major clue will be kernel messages of the form

```
kernel: Neighbour table overflow.
```

In this case, you need to configure garbage collection on the other system to allow more ARP table entries, eg. as detailed [at this page](#), eg. to allow 100000 entries

```
echo "100000" > /proc/sys/net/ipv4/neigh/default/gc_thresh3  
echo "100000" > /proc/sys/net/ipv4/neigh/default/gc_thresh2
```

Known Problems

We are constantly working to remove limitations, but currently we know of the following:

- Linux kernels up to 2.4.2 have problems dumping core of multi-threaded applications, including MIMIC. There is no such limitation on the 2.6.x kernels in Red Hat Linux 9 and later.
- Red Hat Linux 6.2 has problems with logging to automounted filesystems. In the default configuration, this will impact only the Trap Wizard if your private area is automounted. Red Hat Linux versions 7.0 and later have no such problems.
- If you use non-standard network masks with agents in the same network, stopping the agent that was started first will remove all the addresses in the same network. This is a limitation only on Linux.
- You can only start upto 200 agents with IPv6 addresses on Red Hat Linux 9.x . After that, the system hangs. There is no such limitation on Fedora Core 3 and later, or Red Hat Enterprise Linux 4 or later.
- As of kernel 2.6.18 there is a hardcoded limit of 4096 IPv6 route entries, which limits the number of IPv6 aliases to +/- 4096. This can only be overcome by increasing the number of route entries from a root shell.

```
# sysctl net.ipv6.route.max_size
net.ipv6.route.max_size = 4096
# sysctl -w net.ipv6.route.max_size=8192
net.ipv6.route.max_size = 8192
```

- Starting agents with IPv6 addresses on RedHat Linux 9 is slow (approx. 10 agents per second) due to default duplicate address detection. There is no such limitation on later versions of Red Hat Linux (Fedora or Enterprise).

In order to disable duplicate address detection, you can change the `dad_transmits` kernel configurable as follows (assuming that `eth0` is your network interface):

```
# cat /proc/sys/net/ipv6/conf/eth0/dad_transmits
1
# echo "0" > /proc/sys/net/ipv6/conf/eth0/dad_transmits
# cat /proc/sys/net/ipv6/conf/eth0/dad_transmits
0
```

Still, while it takes a couple of seconds to start 1000 agents with only IPv4 addresses configured on a common PC, it takes on the order of 140 seconds with just one IPv6 alias

per agent with `dad_transmits` set to 0, and on the order of 400 seconds with `dad_transmits` set to 1. Optimistic DAD settings don't seem to help performance.

On newer Linux versions (Fedora 25 and newer), duplicate address detection can interfere with the startup of agents with IPv6 addresses, leading to errors in the MIMIC log containing

```
cannot bind receive IP address IPV6-ADDRESS port 161
bind: Cannot assign requested address
```

for some IPv6 address `IPV6-ADDRESS`.

The workaround is to disable duplicate address detection with

```
sysctl -w net.ipv6.conf.INTERFACE.dad_transmits=0
sysctl -w net.ipv6.conf.INTERFACE.accept_dad=0
```

for your network interface `INTERFACE`. Eg. if your network is `eth0`, you would use

```
sysctl -w net.ipv6.conf.eth0.dad_transmits=0
sysctl -w net.ipv6.conf.eth0.accept_dad=0
```

On older Linux releases, although DAD does not make MIMIC fail, it does slows down starting many agents. We have sped up agent startup at least a factor of 10 by disabling DAD in our tests.

- If you want to run MIMIC inside virtual machine software such as VMWare or Xen, please contact Gambit Communications Technical Support (support@gambitcomm.com).
- On Linux releases older than RHEL 7 or Fedora 15, Linux on AMD64 systems needs 32-bit compatibility libraries installed for the 32-bit MIMIC executables to run. A tell-tale symptom of this problem would be:

```
% file mimicd
mimicd: setuid ELF 32-bit LSB executable, Intel 80386, version 1
(SYSV),
for GNU/Linux 2.6.9, dynamically linked (uses shared libs), stripped

% ldd mimicd
not a dynamic executable
```

On Ubuntu, to install these libraries, as root, run

```
# apt-get install ia32-libs
```

On Fedora distributions, to install these libraries, as root run

```
# yum whatprovides /lib/ld-linux.so.2
Loaded plugins: refresh-packagekit
Importing additional filelist information
glibc-2.10.1-2.i686 : The GNU libc libraries
Repo                : fedora
Matched from:
Filename           : /lib/ld-linux.so.2
...

# yum install glibc-2.10.1-2.i686
...
```

- On Fedora Core 6, Java or Perl MIMIC clients will fail to connect to the local MIMIC daemon with an error such as

```
ERROR: socket - cannot connect. localhost, 9797
```

The root cause of this problem is that the `/etc/hosts` file by default defines `localhost` with an IPv6 address `::1`. Changing this back to an IPv4 address `127.0.0.1` as it has always been, or defining a new entry, will solve this problem. This has been fixed in Fedora 7.

- If you are running intensive TCP performance tests that open/close many connections in a short amount of time, then you will run into the well-known `TIME_WAIT` condition: after a while the agents will fail to respond to new connections even though the system seems idle. You can verify this condition with

```
% netstat -a -n | grep TIME_WAIT
```

and it would list many lines. For the details and solutions, search on the Internet for Linux `TIME_WAIT`, for example [this page](#).

- Firewalls interfere with the functioning of MIMIC. We have seen all kinds of limitations with different firewalls, among them:
 - no connectivity to simulated devices due to restrictive filters
 - throttling of rates via Linux Netfilter, resulting in spurious connection drops and rejections. This usually results in networking errors all over the system, like

```
do_ypcall: cnt_call: RPC: Unable to send; errno = Operation not permitted
```

or in `/var/log/messages`:

```

Mar 24 15:29:01 dmb kernel: [970079.411385] net_ratelimit: 50
callbacks suppressed
Mar 24 15:29:01 dmb kernel: [970079.411388] nf_contrack: table full,
dropping packet

```

If you want to diagnose connectivity problems, turn off your firewall first.

- Network interfaces with long labels interfere with MIMIC. If the active network interface to be used by MIMIC, eg. as shown with

```

% ip link show
1: lo: mtu 65536 qdisc noqueue state UNKNOWN mode DEFAULT group default
   link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
2: eno16780032: mtu 1500 qdisc pfifo_fast state UP mode DEFAULT group
   default qlen 1000
   link/ether d4:be:d9:cb:58:9f brd ff:ff:ff:ff:ff:ff

% netstat -i
Kernel Interface table
Iface MTU RX-OK RX-ERR RX-DRP RX-OVR TX-OK TX-ERR TX-DRP TX-OVR Flg
lo 65536 1979263 0 0 0 1979263 0 0 0 LRU
eno16780032 1500 382210306 0 17720 0 542194465 0 0 0 BMRU

```

(in this case `eno16780032`) is more than 10 characters long, then it can overflow the 16-character limit for network interface names for the IP aliases that MIMIC creates, causing ERROR messages when agents start.

This is an OS limit, and the only workaround is to rename your network interface.

Installation

Step 1: Get the MIMIC distribution

If you have a CD-ROM, copy the distribution file for your platform from the CD-ROM to a temporary directory. Go to Step 2.

If you do not have a CD-ROM, you can request a download of MIMIC from Gambit Communications' website at www.gambitcomm.com/site/support. The download URL will then be e-mailed to you.

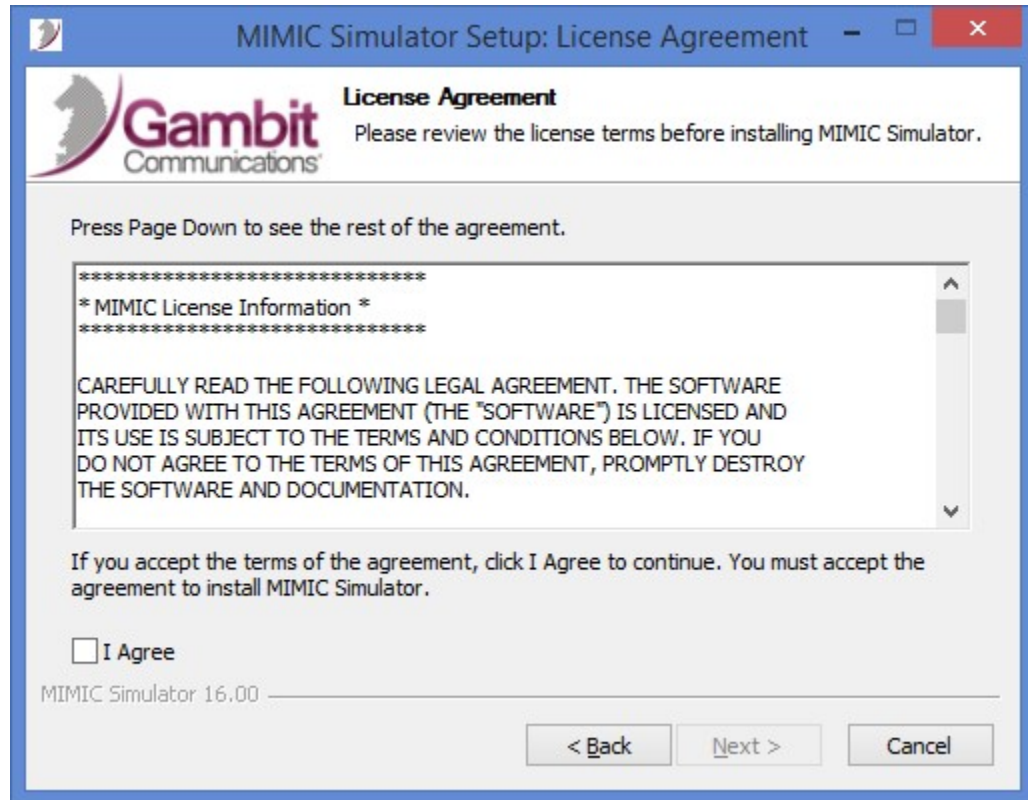
Step 2: Uncompress, extract and install the distribution

Windows

1. Run the self-extracting **mimic_windows.exe** from a system with an Administrator account. The Welcome screen appears:

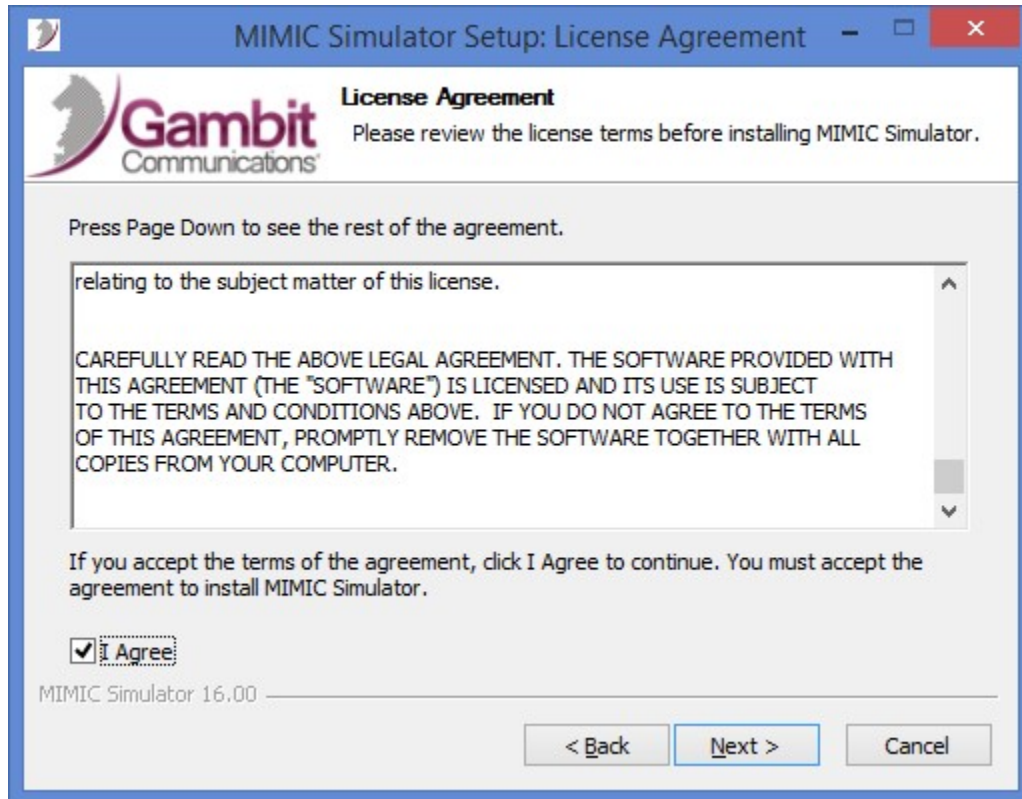


2. Click on **Next**. The following screen appears:



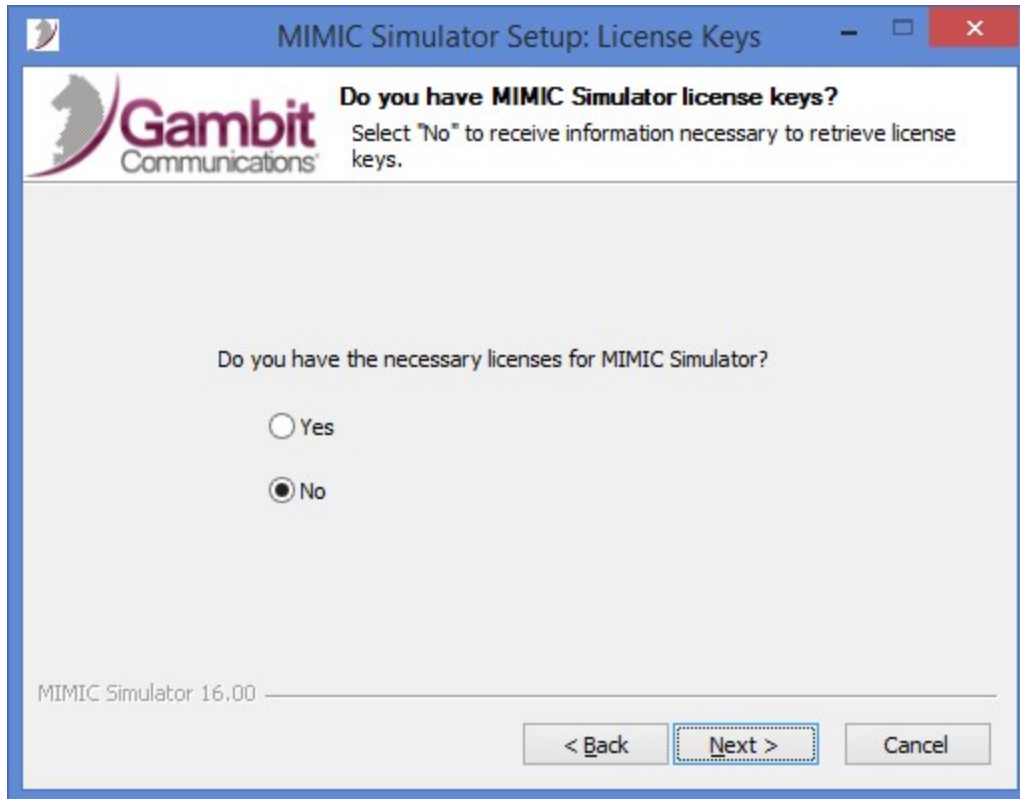
Continued next page...

3. Read the License Agreement, and click I Agree. The next screen will not appear unless you accept the License Agreement. Click Next to continue.



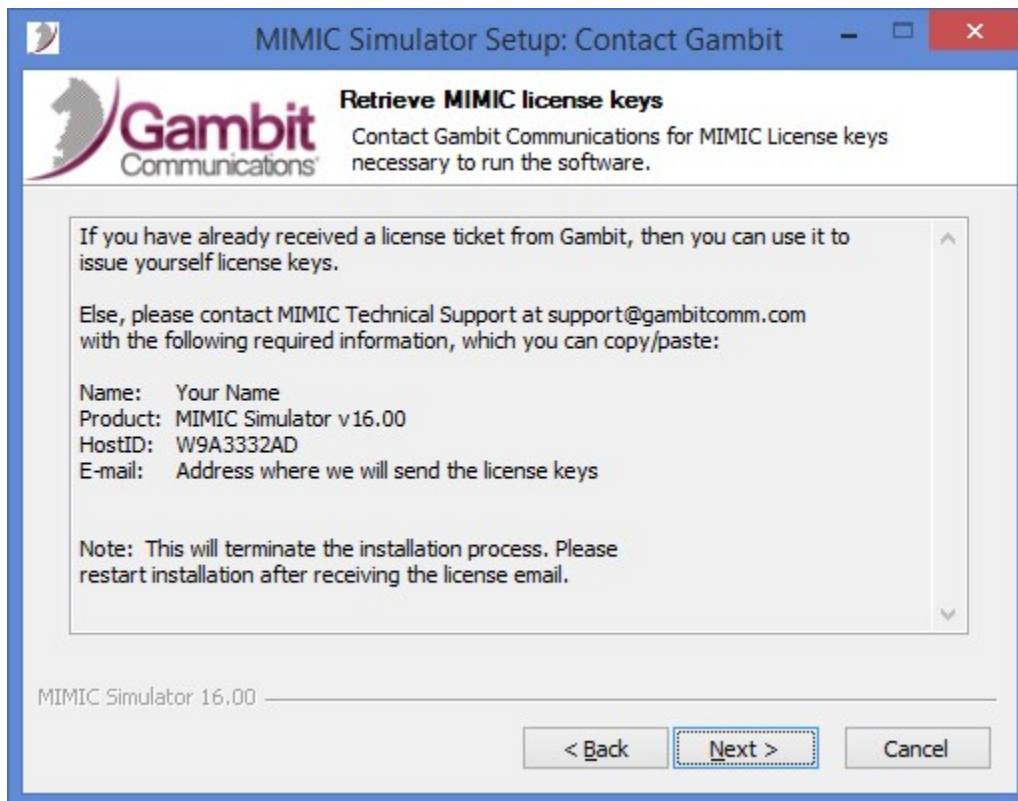
Continued next page...

4. Then following screen appears:



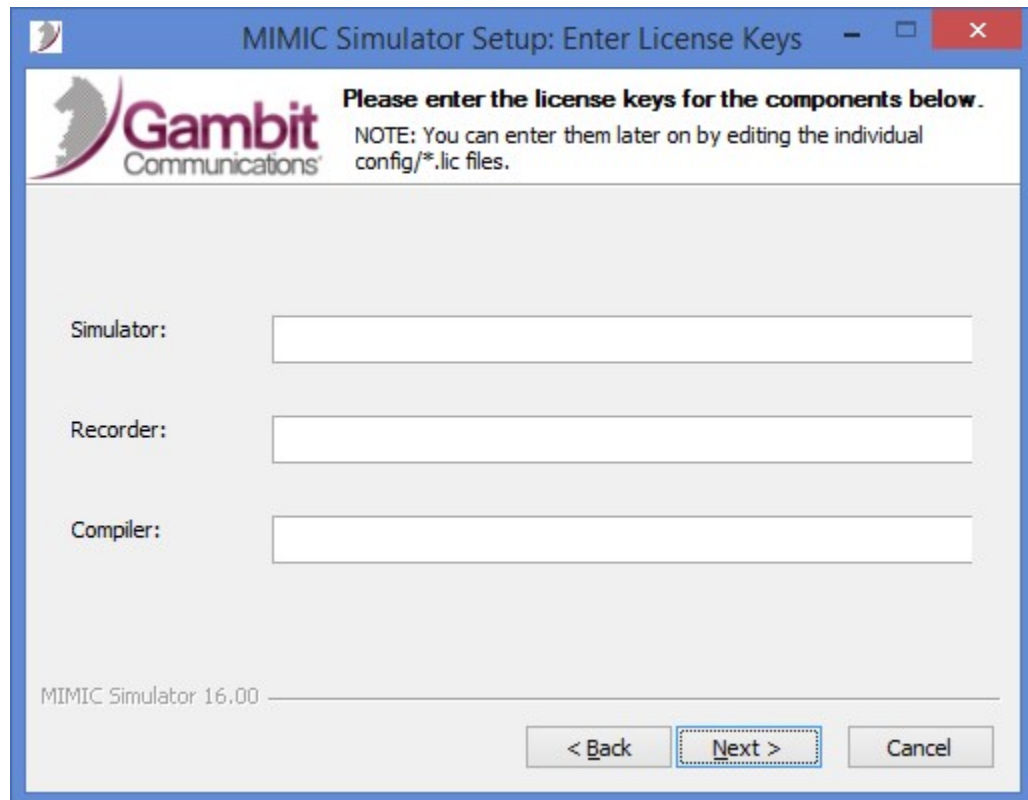
Continued next page...

5. Click on **No** if you do not have the necessary license keys, then click Next to continue. The following dialog pop-up will provide you with the instructions and information required to obtain one. **If you have received a licensing ticket, you can redeem it for a license key yourself by providing the HOSTID displayed in this dialog.** Otherwise, copy/paste the information into an e-mail request to us.



Continued next page...

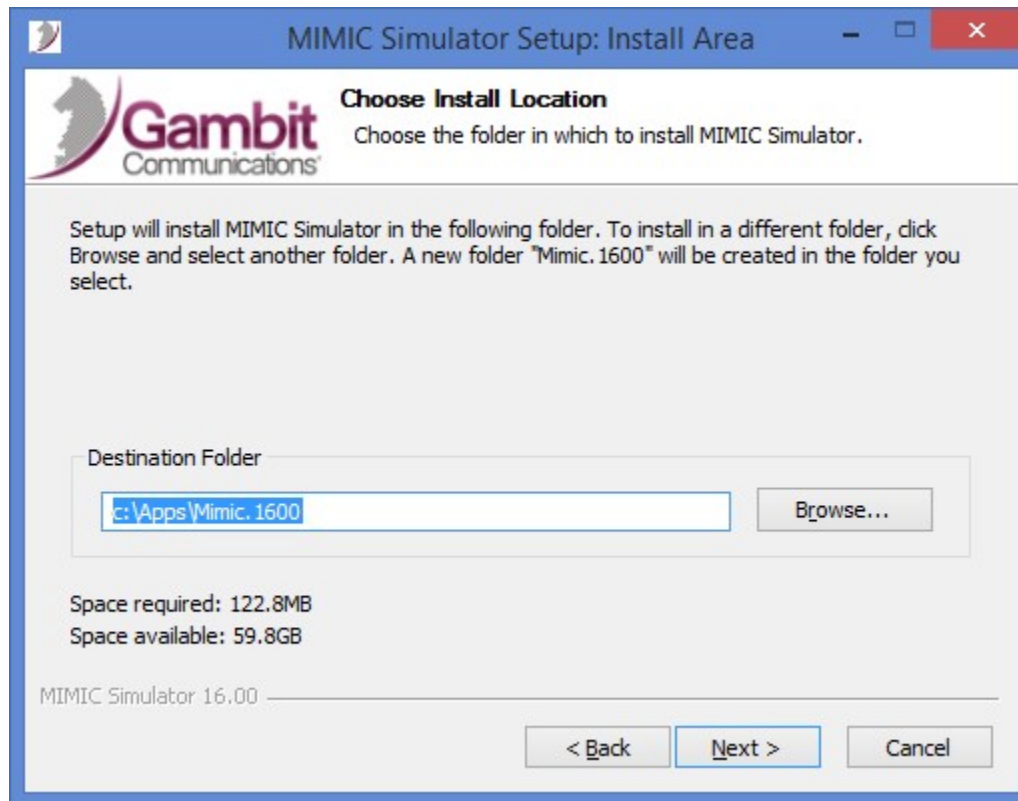
Click on **Yes** if you have the necessary licenses for MIMIC Simulator. The MIMIC Simulator License keys screen appears:



The screenshot shows a Windows-style dialog box titled "MIMIC Simulator Setup: Enter License Keys". The dialog box has a blue title bar with standard window controls (minimize, maximize, close). The main content area has a white background with the Gambit Communications logo on the left. The text reads: "Please enter the license keys for the components below." followed by a note: "NOTE: You can enter them later on by editing the individual config/*.lic files." Below this, there are three input fields labeled "Simulator:", "Recorder:", and "Compiler:". At the bottom left, it says "MIMIC Simulator 16.00". At the bottom right, there are three buttons: "< Back", "Next >" (which is highlighted with a dashed border), and "Cancel".

6. Enter the License Keys. This is best done by using the Windows copy/paste feature. Then click **Next**.

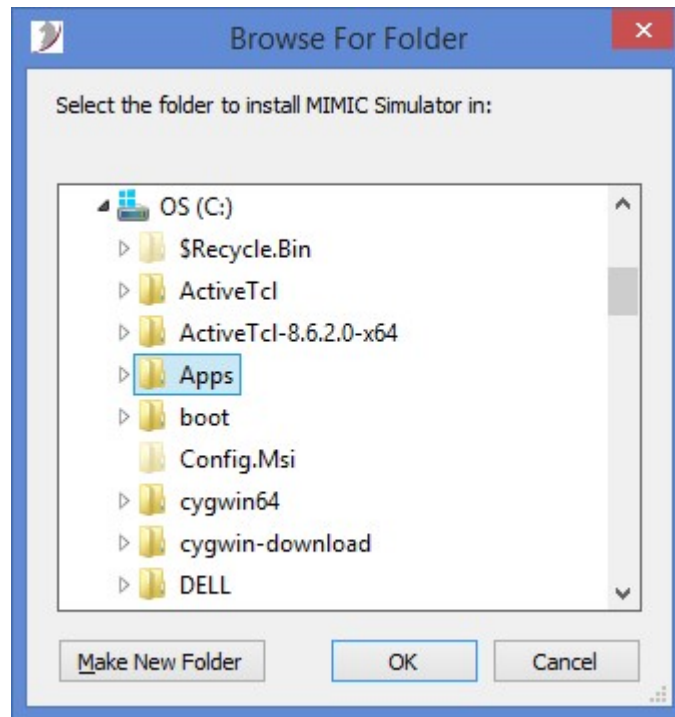
Continued next page...



Select a destination folder for your MIMIC Simulator installation:

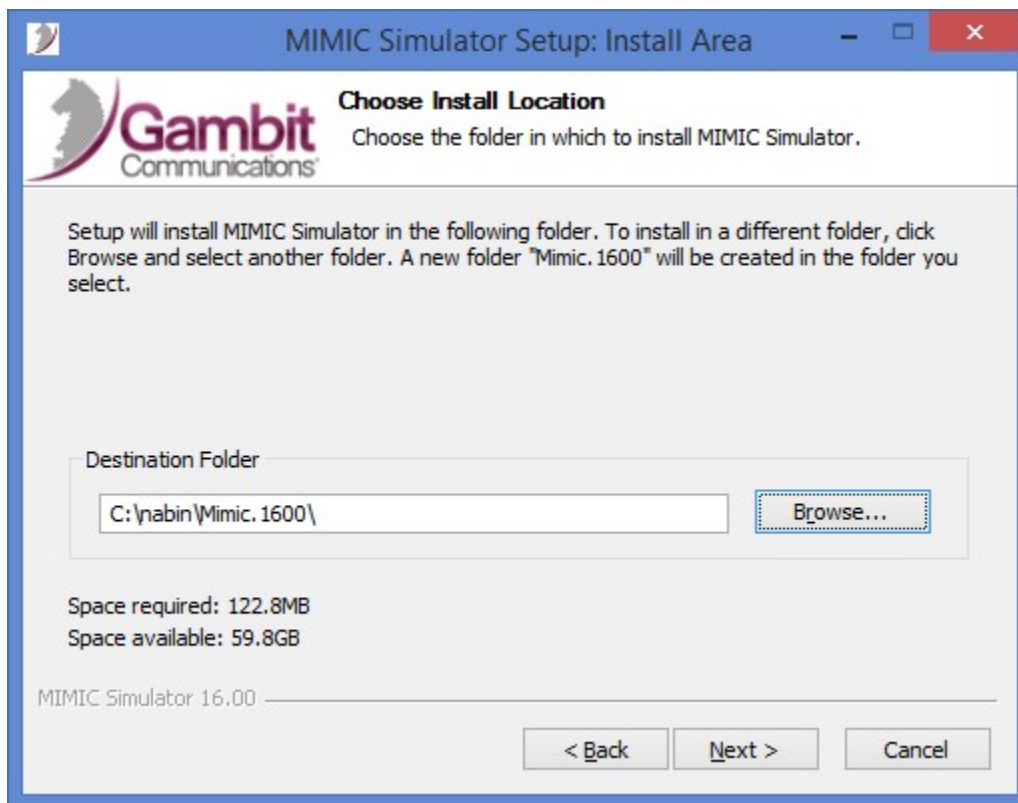
- Click on *Next* to install MIMIC Simulator in the default folder shown next to the Browse button; or,
- Click on Browse and follow the instructions on screen to select a different folder for MIMIC Simulator. The following screen appears:

Continued next page...



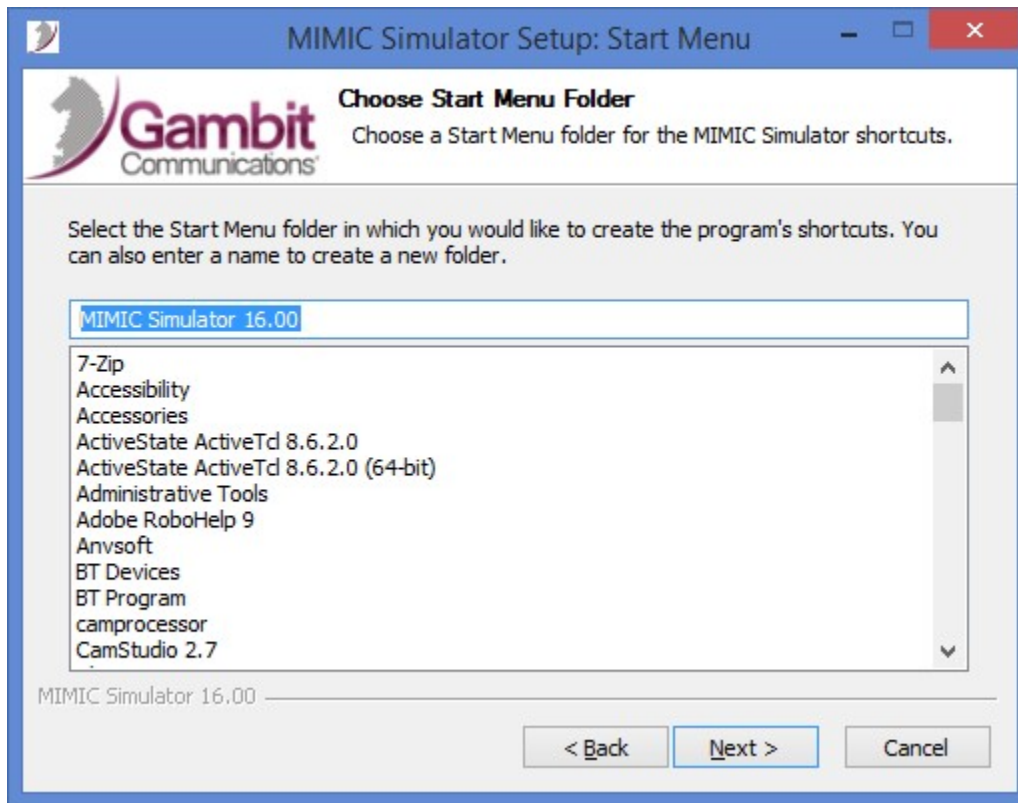
Click OK after selecting the desired folder to install. Then following screen appears:

Continued next page...



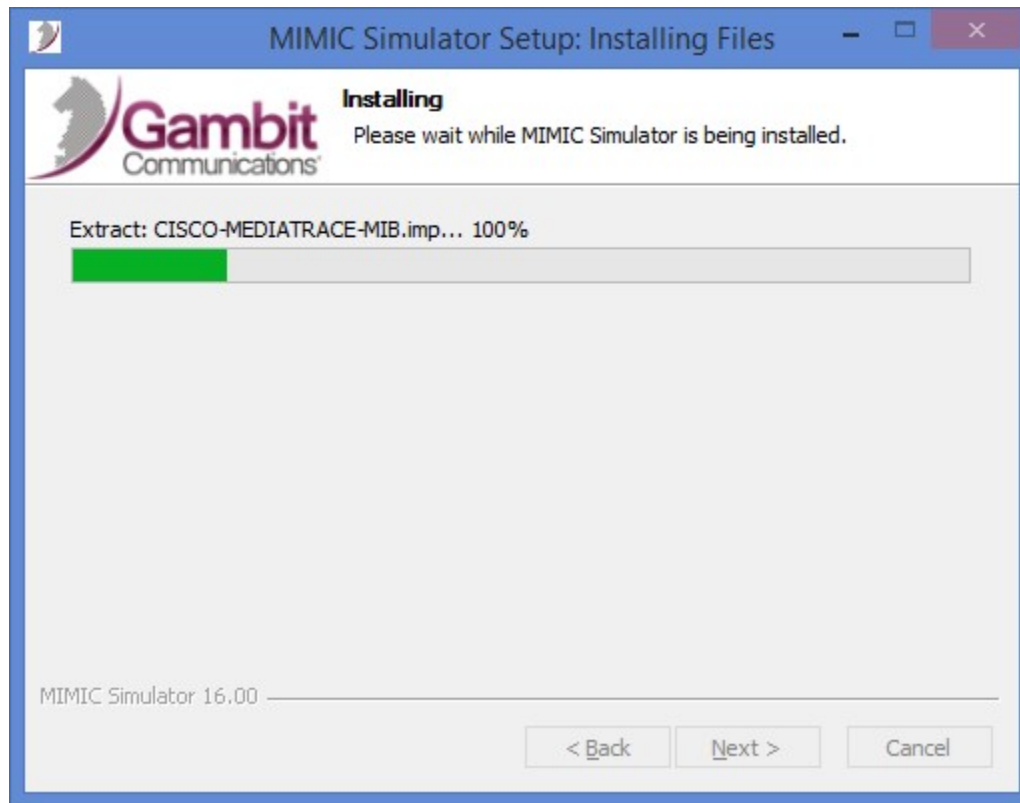
Click on **Next** to install MIMIC Simulator. Then following screen appears:

Continued next page...



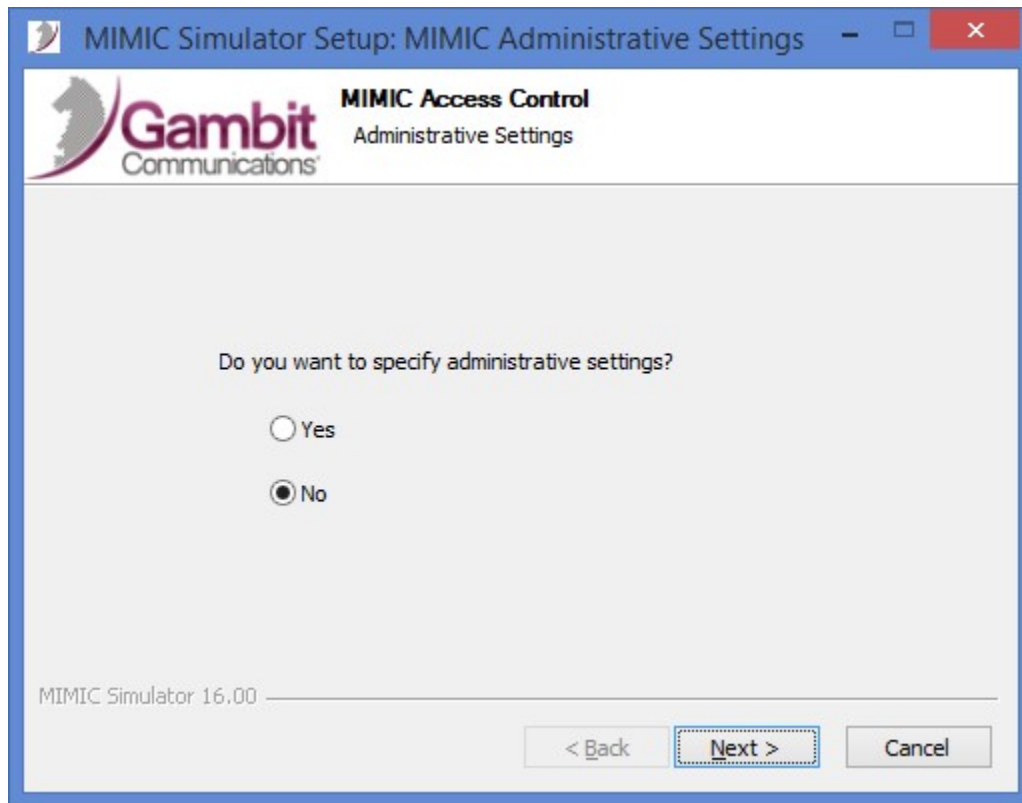
7. You may type a new folder name, or select one from the existing Folders list, or use default Folder e.g., MIMIC Simulator 16.00. Click on *Next* to continue.

Continued next page...



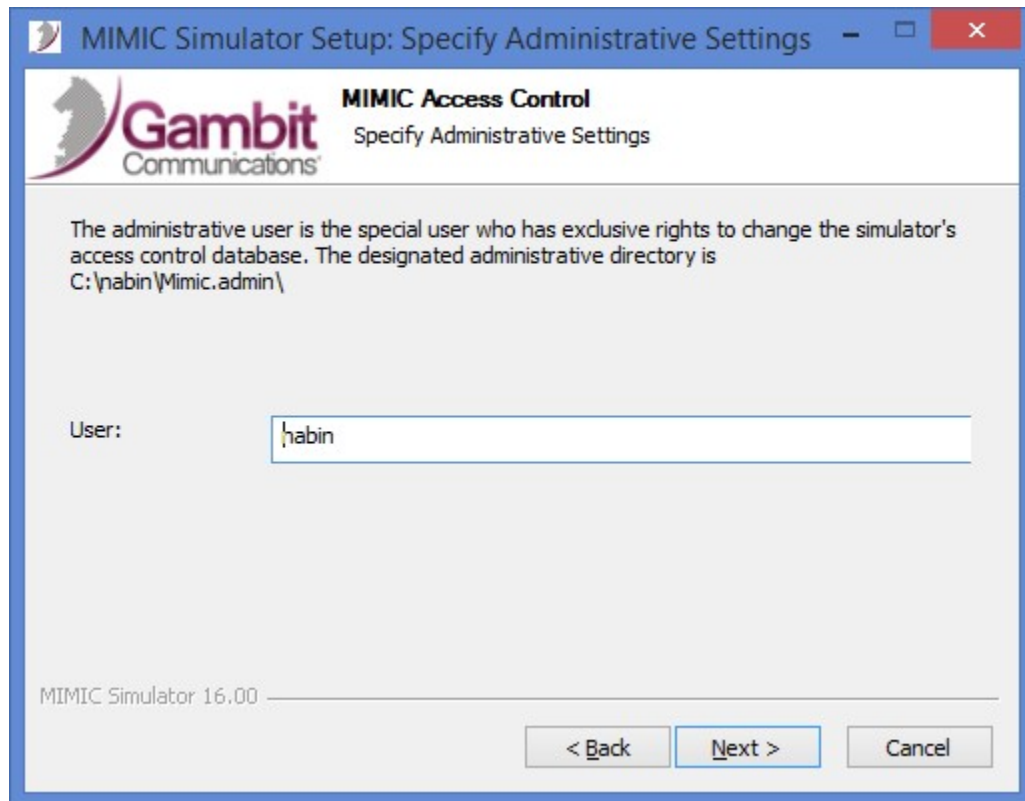
8. MIMIC will be installed in the directory selected in Step 6. After copying installation files, following screen pops up:

Continued next page...



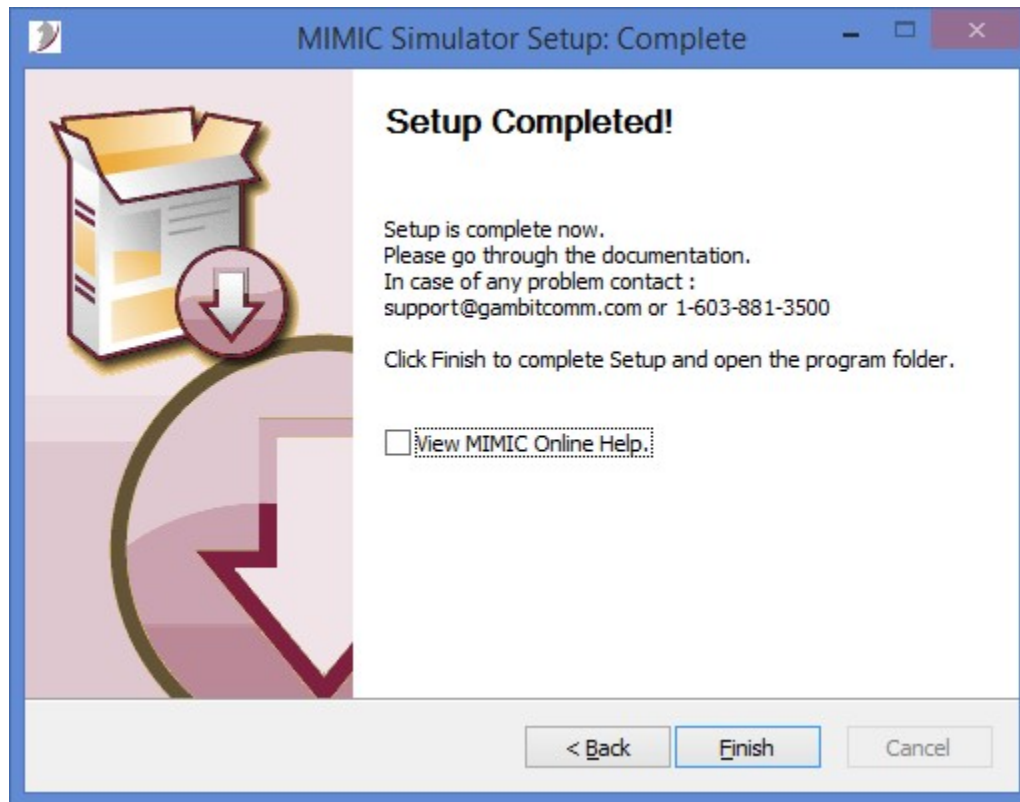
Click on **Yes** only if you want to set MIMIC administrative settings. Following screen appears:

Continued next page...

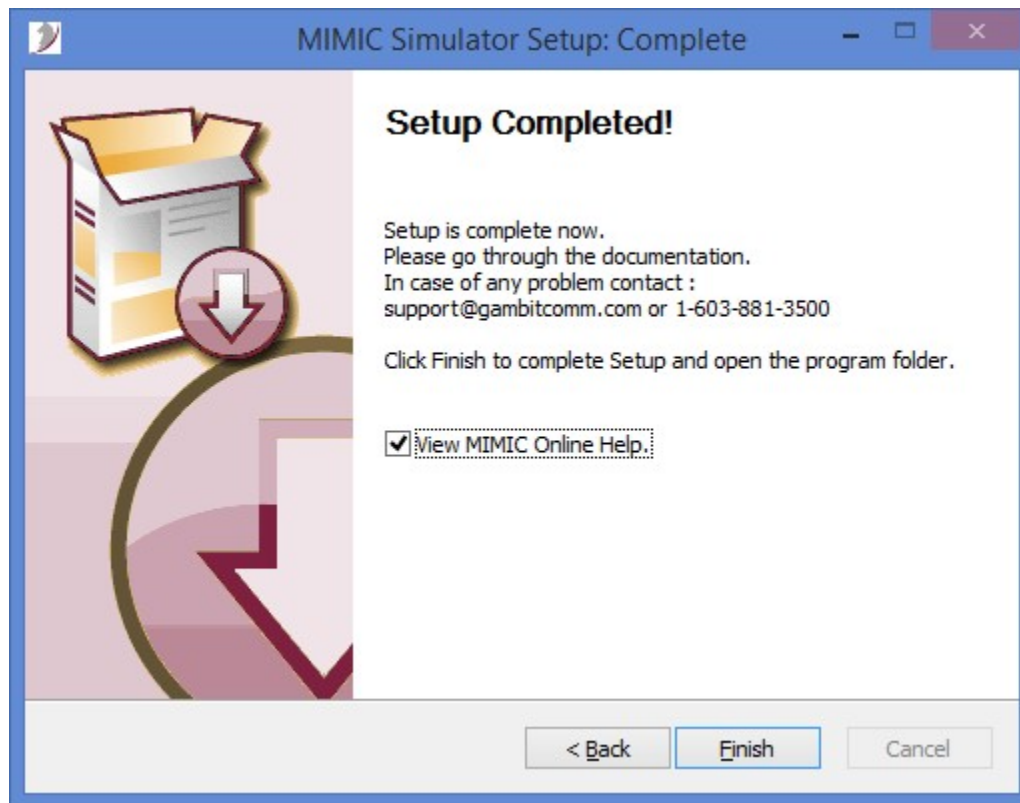


9. Click **Next** to accept default MIMIC Administrative settings or type User and Directory to specify different MIMIC Administrative settings and click **Next**, following screen pops up:

Continued next page...

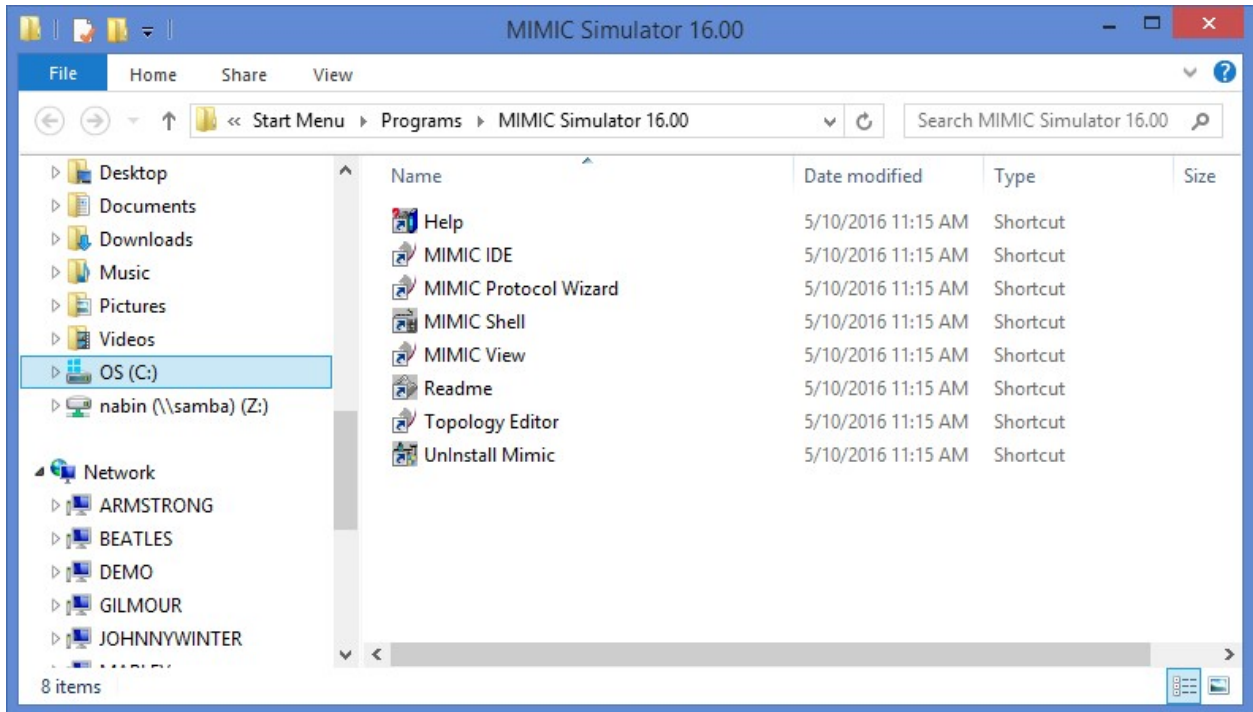


Continued next page...

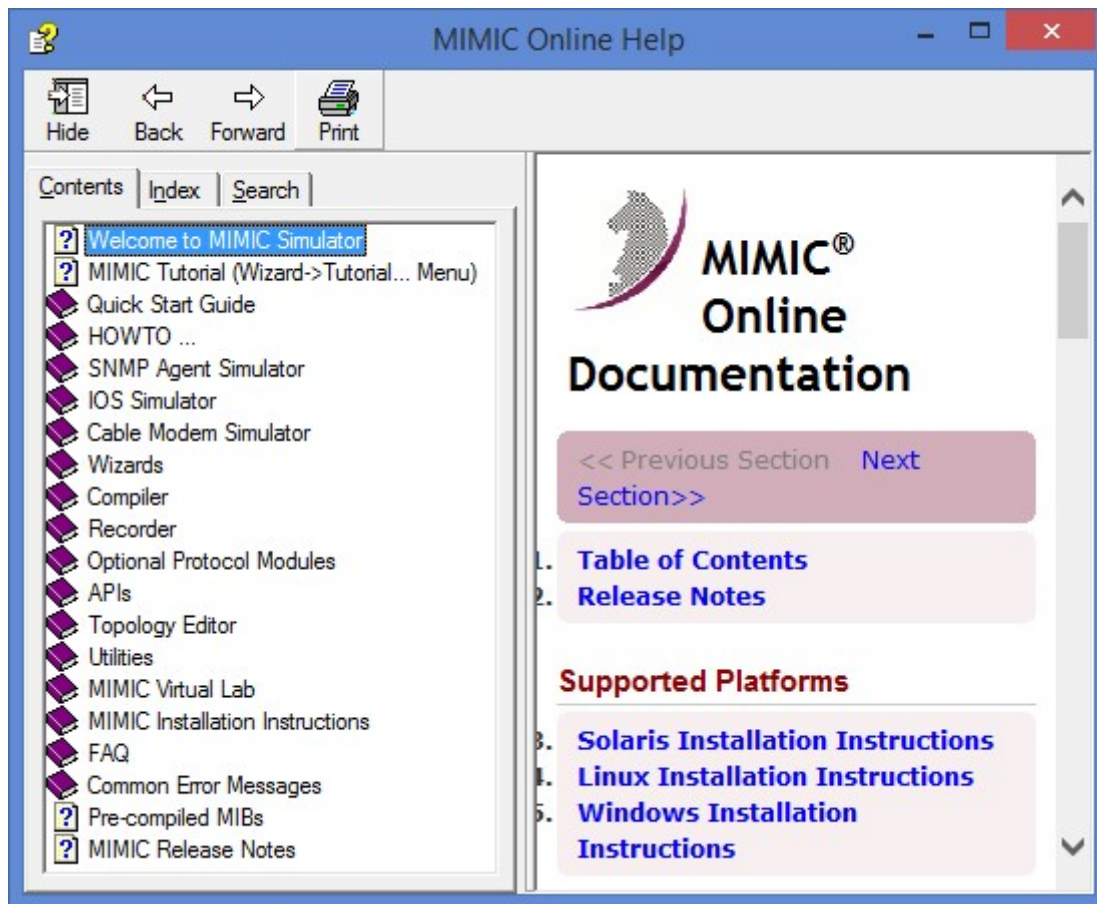


Continued next page...

Select “View MIMIC Online Help” to view MIMIC online documentation after finishing the installation. Then MIMIC Installation will complete with following windows:



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Solaris and Linux:

```
# gunzip -c mimic_platform.tar.gz | tar xf -
```

platform is one of the following:

```

solaris      for Solaris/SPARC
solaris-i86pc for Solaris/Intel
linux       for Linux/Intel

```

There should be four files in the directory extracted to:

- README - further release-specific instructions
- license.txt - the license agreement
- install - the installation script
- mimic.tar - the product
- tar – tar utility (only on Solaris)

Below is a sample session for Solaris/SPARC:

```

#. /install
MIMIC Installation

Copyright (c) 1997-2003 Gambit Communications, Inc.
76 Northeastern Blvd., Suite 30B, Nashua, NH 03062
email: support@gambitcomm.

[license agreement]
Do you agree with these terms and want to proceed? (y/n)[y]: y
=====

Before you start the installation, you need to obtain the evaluation license key for
MIMIC. Please contact Gambit Communications Technical Support at
(603) 881-3500 or support@gambitcomm.com
with your HOSTID S80b5615c
=====

Do you have the license information and want to proceed? (y/n)[y]: y
Enter the absolute path where you want MIMIC installed [/usr/local/mimic]:
/path/to/mimic
MIMIC will be installed in /path/to/mimic

Checking available disk space...
Required space = 84264 kb
Available space = 705688 kb
You have enough space to install MIMIC.

Extracting files (this may take a while)...

Who should own the MIMIC area?

This should be the user (not root) who will primarily be using the
MIMIC software. If you just press the Return key, then the area will

```


be owned by "joe_user". All other users will have mostly read-only access to the MIMIC area, ie. they will be able to run simulations, but not change them. It is easy to later change permissions to allow a group of users to have write access to the MIMIC area.

Please enter a username [joe_user]: **mimic_user**

Please enter the Simulator license key: **License_key_for_Simulator**

Please enter the Recorder license key: **License_key_for_Recorder**

Please enter the Compiler license key: **License_key_for_Compiler**

Cleaning up...

You can optionally enable access control, if multiple users are sharing this MIMIC installation. If so, you need to first setup 2 administrative settings:

- the administrative user is the special user who has exclusive rights to change the Simulator access control database;
- the administrative directory is where special files like persistent settings and access control database is stored.

Do you want to configure administrative settings? (y/n) [n]: **y**

Please enter the administrative user [joe_user]:

Please enter the administrative directory [/path/to/mimic.admin]:

Are you upgrading MIMIC from an earlier version? (y/n) [y]: **n**

=====

Your installation is now complete.

To start, exit out of the root shell, change directory to

/path/to/mimic/bin and invoke MIMICView by typing

./mimicview

at the shell command prompt.

The online documentation is accessible from within MIMICView with the Help menu or with your favorite HTML browser at URL file: /path/to/mimic/help/mimic.htm

=====

You can leave the **License_key** entries blank if you do not already have a set of license keys. The license keys can be copied into the /path-to-mimic/config directory after the installation is complete.

Step 3: Additional Support

If you have any problems or questions, contact Gambit technical support by e-mail support@gambitcomm.com or by telephone at (603) 881-3500.

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