COMNET III for Windows

Release 1.3

Installation Notes

December 20, 1996

COMNET III requires Windows 95 or Windows NT Version 3.5 or later. COMNET III also runs under Windows Version 3.1 or Windows for Workgroups Version 3.11, but it performs much better under Windows 95 or NT. To run Release 1.2 on Windows 3.x, you must first install Microsoft Win32s Version 1.30. Microsoft Win32s lets 32-bit Windows programs run on Windows 3.x.

The minimum hardware is a 486 PC with 16MB of memory for Windows 3.x, 32MB of memory for Windows 95, and 32MB for Windows NT. A fast Pentium with 32 - 64MB of RAM is recommended.

You must install a separate single-computer license for each PC on which you run COMNET III or a floating license for operation from multiple PCs on a Windows 95/NT network. You will also need a separate license to run AutoBaseliner. The procedure for establishing a valid license is explained immediately after the Program Installation section.

PROGRAM INSTALLATION

For Windows 3.x Installations Only:

Skip this section if you are using Windows 95 or NT.

If you are installing COMNET III on a Windows 3.x system and you have not already installed Microsoft Win32s Version 1.30, insert Disk 1 of the set labeled Microsoft Win32s in drive A: (or some other appropriate drive).

Choose Run from the Program Manager's File Menu.

Type **A:\SETUP** for the Command Line and choose OK. Then follow the Win32s Setup program's instructions. After installing Win32s, proceed to the next section for instructions on installing COMNET III.

If you do not have disks for Microsoft Win32s, you can download a copy via anonymous ftp from ftp.microsoft.com. Download the file **/Softlib/MSLFILES/PW1118.EXE**. Run **PW1118** to unzip the files and then run the extracted **SETUP.EXE** to install Win32s. You can also download **PW1118.EXE** via anonymous ftp from caciasl.com; the file is in **/caci/ftp/pub/comnet/Windows**. Again Win32s is required only for Windows 3.x installations.

For Windows 95, NT, and 3.x Installations:

Installation from a CD ROM

To install COMNET III, insert the CD ROM in the CD ROM drive.

Choose Run from the Program Manager's File Menu (or, for Windows 95, use the Start button followed by Run...).

Type **X:\SETUP** for the Command Line (where **X** is the letter of the CD ROM drive) and choose OK.

Installation from Floppy Disks

To install COMNET III, insert floppy disk #1 in the floppy drive.

Choose Run from the Program Manager's File Menu (or, for Windows 95, use the Start button followed by Run...).

Type **X:\SETUP** for the Command Line (where **X** is the letter of the floppy drive) and choose OK.

The SETUP program determines where you want to install COMNET III and then installs the files. It creates a Program Group called COMNET III that contains program icons for COMNET III, SIMDRAW, and HELP.

If you are updating an existing Windows 3.1 or Windows for Workgroups installation, exit and restart Windows before running the new COMNET III release to be sure that the newest versions of the COMNET III DLLs are loaded.

License Key activation

The commercial version of COMNET III version 1.3 will be shipping with a hardware license key which will be attached to a parallel port on the PC. Once the

hardware key is attached to the parallel port COMNET III will be able to be run. You will not have to call into the CACI License Manager for a license key.

The University version of COMNET III will not be shipping with a hardware key, and will require that the user call into the CACI License Manager to receive a license key. It is imperative that the University customer have their serial number and host code as well as the version number of COMNET III ready when they call in for their license key.

Please read through the appropriate installation sections below based upon whether you are a commercial customer or a University customer.

HARDWARE LICENSE KEY ACTIVATION:

The hardware license key requires that certain drivers that come on the COMNET III CD ROM be installed and active on your workstation. For Windows 95 and Windows NT PCs you **MUST** be logged onto your workstation as the **administrator** in order for the hardware key drivers to be installed correctly.

After COMNET III has finished installing and creating a program group and icons, you will need to launch COMNET III to complete the installation and license activation. When you first launch COMNET III the *Activation* dialog window will appear and you will be prompted to choose the method of software licensing you wish to use.

The default will be *Hardware security device on...* and this is the method you will use for a commercial license of COMNET III. You then need to click on the pull down window to the right of the *Hardware security device on...* and select the Windows operating system that is running on the PC. The *Hardware drivers*

option should read **X:\drivers** where **X** is the drive letter of the CD ROM drive you are installing from (ex: **F:\drivers**). When everything is set to your PC specifications you will click the *Install driver first* button. If the hardware key drivers were installed successfully you will be prompted with a message to reboot your PC before you run COMNET III. Once you have rebooted your PC you can then run COMNET III.
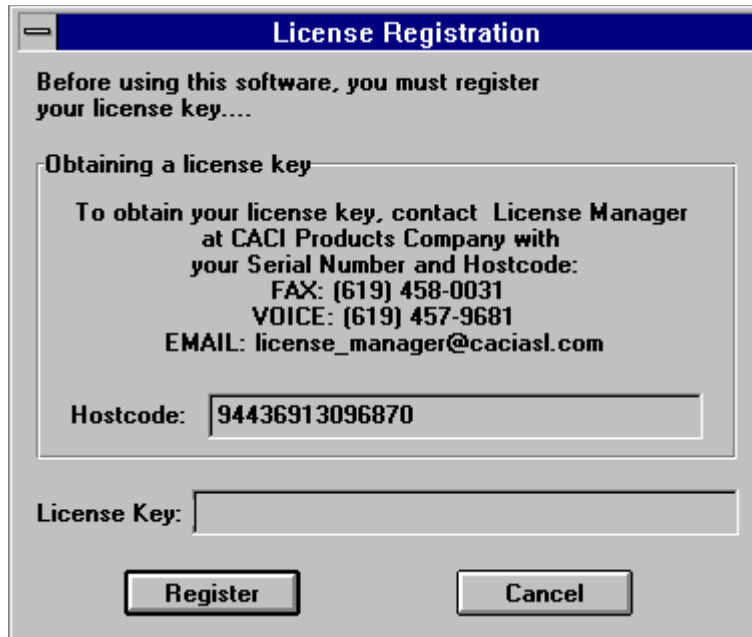
SOFTWARE LICENSE INSTALLATION

If you have a University license of COMNET III then you will need to choose the *Software license key* option from the *Activation* dialog window pictured above. You will then click the *OK* button and will be prompted to install a software license. You will now follow the instructions listed below.

Single PC License

When you try to run COMNET III, it will check in your Windows directory for a valid license file. If you do not have write access to the Windows directory, COMNET uses the current working directory for the license file. If no valid license exists, then you must contact the License Manager at CACI to obtain a License Key that allows COMNET III to establish a valid license file.

When you contact the License Manager, you will need to provide a Serial Number and a Hostcode. The Serial Number can be found at the bottom of the letter included with your distribution package. To obtain the Hostcode for the PC on which COMNET III is executing, start execution of COMNET III and then click on Yes when COMNET III asks "Would you like to register a license now?" The following dialog box then appears and provides the Hostcode for your PC. Give the CACI License Manager the Serial Number and Hostcode; the License Manager will then provide your License Key. Enter the License Key on the License Registration dialog box and click on Register to establish a valid license.

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┌─────────────────────────────────────────────────────────┐
│ ▄ │           License Registration                       │
├─────────────────────────────────────────────────────────┤
│ Before using this software, you must register            │
│ your license key....                                     │
│                                                          │
│ ┌─Obtaining a license key──────────────────────────────┐ │
│ │                                                      │ │
│ │   To obtain your license key, contact  License Manager│ │
│ │             at CACI Products Company with             │ │
│ │           your Serial Number and Hostcode:            │ │
│ │                  FAX: (619) 458-0031                  │ │
│ │                 VOICE: (619) 457-9681                 │ │
│ │          EMAIL: license_manager@caciasl.com           │ │
│ │                                                      │ │
│ │   Hostcode:   │ 94436913096870                    │   │ │
│ │                                                      │ │
│ └──────────────────────────────────────────────────────┘ │
│                                                          │
│ License Key: │                                      │     │
│                                                          │
│        ┌──────────────┐        ┌──────────────┐          │
│        │   Register   │        │    Cancel    │          │
│        └──────────────┘        └──────────────┘          │
└─────────────────────────────────────────────────────────┘
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To contact the CACI License Manager, use voice, fax, or e-mail as indicated on
the License Registration dialog box.

Floating License

To have COMNET III access a floating license, you must first install the CACI
License Server software on a server on your network. You can obtain the CACI
License Server software on diskette from the CACI License Manager.

The license-server PC must run Windows NT; client PCs (i.e., the PCs where you
plan to run COMNET III) can run Windows 95 or NT.

To install the CACI License Server software, insert the diskette and run SETUP.
After the License Server is running on the server PC and you have installed a valid
license key, you can access COMNET III from a client PC on the network by
setting the environment variable CACILMHOST to @*hostname*, where *hostname*
is the name of the server computer. Do NOT set the environment variable
CACILMHOST if you plan to use a single-computer license, since the presence of
the environment variable CACILMHOST is what tells COMNET III to look for a
floating license, rather than a locally-installed, single-computer license.
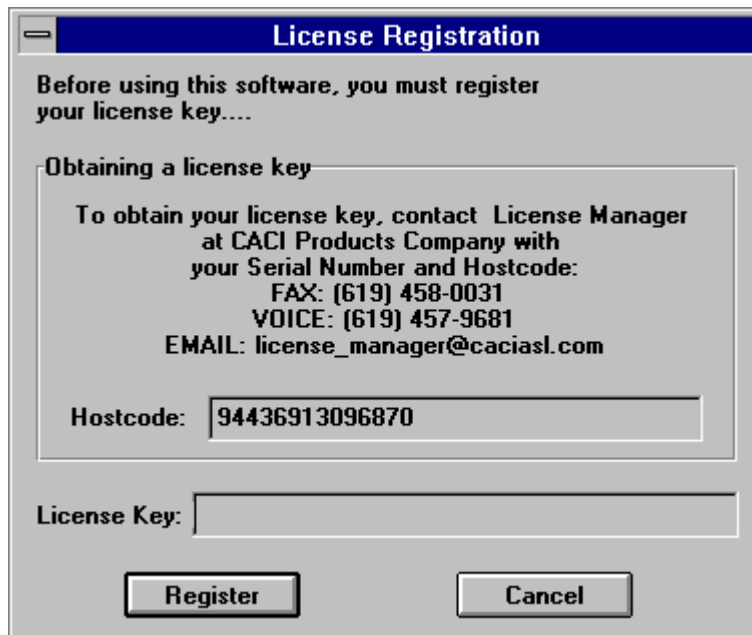
AutoBaseliner License

If you have purchased the AutoBaseliner module, you will need to contact the
License Manager for a license key for AutoBaseliner. When you contact the
License Manager, you will need to provide a Serial Number and a Hostcode. The

Serial Number can be found at the bottom of the letter included with your distribution package.

In order to obtain the Hostcode for AutoBaseliner you must first have installed COMNET III on the PC, and acquired a valid license key as described in the **Single PC License** section above. Once COMNET III has been started under Windows, you will pull down under the *File* menu and highlight the *Import* option and select the *Network Topology* option. This will bring up the *CACI License Manager* dialog box

Click the *OK* button which will bring up *License Registration* dialog box which will provide a host code for AutoBaseliner. ***It is very important that you mention the Hostcode and License Key are for AutoBaseliner***. Give the CACI License Manager the Serial Number and Hostcode; the License Manager will then provide your License Key. Enter the License Key on the License Registration dialog box and click on the *Register* button to establish a valid license.

To contact the CACI License Manager, use voice, fax, or e-mail as indicated on the License Registration dialog box.

PROGRAM OPERATION

After SETUP has created the COMNET III program group, you can execute COMNET III by double-clicking on the COMNET III icon. On Windows 95, use Start/Programs to get to the COMNET III program group and click on the COMNET III program item. The SIMDRAW program is used only if you need to create your own vector-graphics icons for background maps, nodes, links, or workload generators. Bitmap icons can be imported directly into COMNET III and no longer require SIMDRAW. On Windows 95 and NT systems, SETUP installs the command C3BATCH that you can execute from a command window. Just type **C3BATCH <model name>** at a command prompt to run a simulation in batch mode.

MODEL DIRECTORY

The default installation puts the COMNET III programs and system libraries in the single directory **x:\COMNET32**, where **x** is the installation drive designator. The installation also puts the sample model files (**ACME.C3** and **SIMPLE.C3)** in the directory **x:\COMNET32\MODELS** , where **x** is the installation drive designator. Suppose you want instead to keep your COMNET III models in **y:\MYFILES**, i.e., a directory different from the program installation directory.

  - First, select the COMNET III program icon.

  - Choose Properties from the Program Manager's File Menu.

  - Change the Working Directory to **y:\MYFILES**.

  - Choose OK on the Program Item Properties dialog box.

You may want to move the sample model files (***.C3**), the topology files (***.TOP**), and the historical traffic files (***.PRN**) from **x:\COMNET32\MODELS** to **y:\MYFILES**.

WINDOWS 3.x LAN INSTALLATION

Most LAN or network installations with multi-user COMNET III licenses will install a floating license as already described. This section applies only to multi-user installations that do not have access to a Windows NT server--typically university networks still running Windows 3.x. If you have a network with a Windows NT server and plan to run COMNET III from Windows 95 or NT client PCs, then you can install the floating license described previously and you can skip the remainder of this section.

For a Windows 3.x LAN installation, first install COMNET III on the PC that will function as the server.

If you need to run COMNET III on the server, you will need to install a separate license file for the server PC, as well as for each client PC that is to execute COMNET III. To obtain the Hostcode for a particular PC (server or client) that is allowed to run COMNET III, you must start COMNET III on that PC and then follow the procedure explained on page 2 of these notes for establishing a valid license. A separate Hostcode must be provided to the CACI License Manager for each PC that will run COMNET III.

For university network installations, it is not necessary to provide a Hostcode for each PC on the network. The CACI License Manager will give you an "Any Host" License Key that can be used to establish a valid license on any PC. The "Any Host" License Key does have an expiration date and is intended for use by students who only need temporary access to COMNET III. The same "Any Host" License Key can be used on any client PC that needs to access the copy of COMNET III on the server PC.

The COMNET III directory on the server should be set to read-only for each client PC. For installation on a client PC, suppose the model files are to be kept in **z:\MYFILES**, where **z** is a drive designator on the client PC. After COMNET III has been installed on the server, setup each client PC as follows:

1. Use the Program Manager to create, on the client PC, a new COMNET III program group:

    - Choose New from the Program Manager's File menu.

    - The New Program Object dialog box appears.

    - Select the Program Group option and choose OK.

- The Program Group Properties dialog box appears.

- Enter COMNET III for the group description and choose OK .

2. After creating the COMNET III Program Group, add an icon for COMNET III to the group:

    - Open the COMNET III group window.

    - Choose New from the Program Manager's File menu.

    - The New Program Object dialog box appears.

    - Select the Program Item option and choose OK.

    - The Program Item Properties dialog box appears.

    - Set the Description to COMNET III.

    - Set the Command Line to **j:\COMNET32\COMNET.EXE**, where **j** is the network drive designator for the server.

    - Set the Working Directory to **z:\MYFILES**.

    - Choose OK on the Program Item Properties dialog box.

3. Ordinarily only the server should have access to the COMNET III object libraries. However, if an individual client PC needs to add objects, the client PC can make a local copy of the system libraries. A note of caution: keeping local copies of system libraries will create an extra burden for you when future releases of COMNET III are installed, because you will need to make sure that you update the local copies of certain files in the system libraries. To make a local copy of the system libraries:

    - Copy both the **OBJLIBS** and **SG2LIBS** directories and their contents from the COMNET III installation directory on the server to a directory on the PC .

    - To tell COMNET III to look for a local copy of the system libraries, set the DOS environment variable **SIMLIBS** to **z:\MYLIBS**, where **z:\MYLIBS** is the local directory containing **OBJLIBS** and **SG2LIBS**.

You can do this by adding the line

SET SIMLIBS=z:\MYLIBS

to the **AUTOEXEC.BAT** on the client PC.

- The object libraries are accessed when running COMNET III by using Archive on the menubar and then clicking on Objects on the pulldown menu.

4. Ordinarily, only the server should have access to the COMNET III graphics libraries for adding icons for background maps, nodes, links, or traffic generators. If an individual client PC needs access to the graphics libraries, you can make a local copy of the system libraries as described above. Note that local copies of both the **OBJLIBS** and **SG2LIBS** directories are required.

SIMDRAW

You can import your own bitmap icons directly into COMNET III by using File/Import/Bitmap... on the menubar. However, if you wish to create your own vector-graphics icons, you must use the SIMDRAW utility program to add your own icons for background maps, nodes, links, or workload generators. Refer to the COMNET III User's Manual for information on the operation of SIMDRAW.

Save your own icons in the appropriate file in the **SG2LIBS** directory as follows:

USERBACK.SG2	Background Maps
USERNODE.SG2	Nodes
USERLINK.SG2	Links
USERCLD.SG2	Clouds, Nets, Subnets
USERAPP.SG2	Application Sources
USERCALL.SG2	Call Sources
USERMSG.SG2	Message Sources
USERREM.SG2	Remote Pads, Sockets
USERRES.SG2	Response Sources
USERSES.SG2	Session Sources
USERGEN.SG2	Virtual Circuits

The above files do not exist until you import a bitmap using File/Import or you create them using SIMDRAW. The files contain only user-provided icons; the CACI-provided icons are in files with names of the form **CACI*.SG2**.

ONLINE DOCUMENTATION

The COMNET III CD ROM disk should contain the following online documents:
- COMNET III Reference Manual
- COMNET III Tutorial
- AutoBaseliner Manual
- Modeling ATM with COMNET III

All of the above documents can be viewed on line from the COMNET III CD ROM. The Reference Manual can be launched from within COMNET III by pulling down the **Help** menu and selecting **Reference Manual**.

The online Tutorial which can be accessed directly from the COMNET III CD ROM by running a program called **AcroRd32.exe**. The **AcroRd32.exe** program is located at **X:\Reader\AcroRd32.exe** where **X** is the drive letter of the CD ROM drive. Once the program is loaded, you can then open the **TUTORIAL.PDF** located at either **X:\Manuals\TUTORIAL.PDF** or **X:\Reader\TUTORIAL.PDF** where **X** is the drive letter of the CD ROM drive. The Tutorial (TUTORIAL.PDF) is an excellent tutorial to help you learn how to use COMNET III. The tutorial has exercises at the end of most of the chapters which involve various aspects of network modeling. Each of the exercise models can be found on the CD ROM in the appropriate directories located under **X:\Models\Tutorial** where **X** is the drive letter of the CD ROM drive. The directories located under the **X:\Models\Tutorial** correspond to the chapters in the book, and the sample models correspond to each exercise in the tutorial.

The AutoBaseliner manual can also be viewed from the **AcroRd32.exe**. Once the **AcroRd32.exe** is loaded, you can then open the **BASELINR.PDF** file. The **BASELINR.PDF** file can be found in the following location on the CD ROM: **X:\Manuals\BASELINR.PDF.** The **BASELINR.PDF** file details the use of the AutoBaseliner module of COMNET III, which allows for the import of network topology information from various network management consoles. Please refer to the on line AutoBaseliner documentation for more details.

The Modeling ATM with COMNET III documentation is an excellent guide for understanding how to model ATM networks with COMNET III. The Modeling ATM with COMNET III document can also be viewed from the **AcroRd32.exe.**

Once the **AcroRd32.exe** is loaded, you can then open the **ATM.PDF** file. The **ATM.PDF** file can be found in the following location on the CD ROM: **X:\Manuals\ATM.PDF**. The sample models **(*.c3)** can be found in the following location on the CD ROM: **X:\Models\ATMMODEL** where **X** is the drive letter of the CD ROM drive. The sample models correspond to the examples described in Chapter 4 of the Modeling ATM with COMNET III document.

HARDCOPY OUTPUT

To print COMNET III tabular output reports, select Report from the COMNET III menubar and then Browse Reports on the pulldown menu. COMNET III displays the output reports from the last simulation using Windows Notepad. Then select File-Print from within Notepad. You may need to adjust the margins in Notepad to maintain alignment of the report columns on the printed pages.

If you wish to use some editor other than Notepad (e.g., Microsoft Write), edit the appropriate line in the **COMNET3.INI** file in the COMNET III installation directory before starting COMNET III. With Windows 3.x, this may be necessary for large report files. If you use Microsoft Write or other word processor, use a fixed width font to maintain alignment of the report columns.