

Windows 95/98, and NT

Installation and Setup Guide



for the

TNT Products

Installation for Windows 95/98/ME/2000 and NT

The TNT Products run on Windows, Macintosh and UNIX computers. This booklet gives you installation and configuration instructions for using the TNT products on Windows computers. If you are installing the TNT products on a UNIX or Macintosh computer, refer to the companion booklet for your machine.

IMPORTANT: The TNT products are no longer offered for Windows 3.1x. If you are trying to install a pre-6.1 version of the TNT products on a Windows 3.1x system, refer to the companion booklet *Optimizing Windows 3.1x for the TNT Products*.

FREE Upgrade

Please take a few moments to fill out the Product Registration Form located in the middle of this booklet. All clients who register their professional TNT product receive their first quarterly upgrade from MicroImages FREE.

11 October 2001

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(See illustration, page 9)
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6 June 2001

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MicroImages software support engineers are ready to help you with TNT installation, setup, and operational problems. If you are using the TNT professional products, contact us at:

Software Support: (402) 477-9562

FAX (402) 477-9559

Email support@microimages.com

If you are using the TNTlite versions of the TNT products, ask for help from your campus computer lab supervisor or your organization's computer support and training specialists. TNTlite users may contact MicroImages directly (preferably by email or FAX), but our support staff gives priority to our professional clients.

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Overview

Welcome to professional GIS, Image Processing, and Desktop Cartography at its best. The TNT products from MicroImages, Inc. are the most innovative and technically sophisticated professional products for geospatial data management and analysis available today. A host of professionals in over 135 nations use the TNT products for production tasks in a wide variety of disciplines.

To use the TNT products on a Windows PC, your computer needs 32 Mb or more of RAM, a CD-ROM drive, and about 100Mb of free hard drive space. If you have only 16Mb of RAM, you can install and run TNT, but the performance will suffer.

Install and set up the TNT products according to the on-screen instructions in the setup program and the supplemental information in this booklet as needed. You may install the free-use TNTlite products without a software license key, or you may install the TNT professional products with the key supplied by MicroImages, Inc. The software license key attaches to a parallel or serial port on your computer and authorizes your TNT professional products for the product level, special peripheral support, and special software (such as TNTsdk) that you purchased. In either case, you will get the best performance from your system by following the configuration and optimization recommendations in this manual. The general sequence is:

1. Install the software license key,
2. Configure and optimize your computer,
3. Install the TNT products from CD-ROM, and
4. Customize your TNT environment.

If you are a professional client (using a software license key with the TNT professional products), please contact MicroImages software support:

Phone (402) 477-9562,
FAX (402) 477-9559, or
email support@microimages.com.

TNTlite users should contact the computer lab administrator at their school or company for technical support.

TNTlite

TNTlite is the free "lite" version of the TNT products (TNTmips, TNTedit, and TNTview). The TNTlite products have the same features and functions as the TNT professional products, except that export is disabled, and the data objects are limited in size:

Raster objects: 314,368 cells with a maximum dimension of 1024 (such as 1024 x 307, 614 x 512, or 307 x 1024)

Vector objects: 500 points, 1500 lines, 500 polygons

CAD object: 500 elements

TIN objects: 1500 nodes

Database objects: 1500 records per table

These size limitations are designed to provide you with enough capability to accomplish small projects in lab settings where there is no need for the full production capabilities of the professional TNT products.

The export processes in TNTlite are disabled. However TNT project materials prepared or modified in TNTlite can be used with the professional TNT products.

TNTlite requires no key and has no time limit. You are encouraged to copy and share TNTlite freely. A TNTlite kit containing the current TNT products CD and a series of *Getting Started* booklets can be ordered from MicroImages for the cost of shipping and reproduction. You may download TNTlite and the *Getting Started* booklets from the MicroImages Web site (<http://www.microimages.com>).

If you are installing TNTlite, follow the installation instructions for each of the TNT products you want to try. The installation process installs the same executables for TNTlite as it does for the TNT professional products.

If you remove the Software License Key from a computer, you can switch to TNTlite mode by changing the TNTlite value in `tnthost.ini`:

[KEY]

TNTlite=1

Upgrade TNTlite to a Full License

If you like what you see of the TNT products with TNTlite, contact MicroImages or an authorized TNT dealer to upgrade to a professional TNT system.

Step 1

Software License Key Installation

The first step in installing the TNT products is to connect the MicroImages software license key to your computer. After you complete this step, proceed to Step 2: System Configuration. (If you want to install only the TNTlite versions of the TNT products, then you do not need a key.)

IMPORTANT: Your software license key IS your TNT professional product. Without your key, you can run only the TNTlite versions of the TNT products. Therefore, you should take steps to safeguard your key, even as you take normal precautions to safeguard other valuable possessions. Insure your key for loss, theft, or damage. If you lose a diamond ring, the jeweler does not give you a new one. If you lose your key, MicroImages does not give you a new one. Keys are very sensitive to spurious electronic signals. If you attach your key to the wrong kind of device, the key could be damaged beyond repair. For example, you may install a parallel key in-line only with a printer: do not put a key in-line on a port with a device other than a printer (no "Parallel-to-SCSI" adapters, no ZIP drives, no tape backup units).

If you want to use only the TNTlite versions of the TNT products, then you do not need a software license key. But to run the TNT professional products, you must attach the key supplied by MicroImages, Inc. The key contains sealed circuitry that is individually programmed to work with your version, product level, and optional hardware. TNT products have no other copy protection, so you can install one copy on as many machines as you want and then move the key between them (within the hardware limitations described below). When you run a TNT product, the system looks for the key to verify your version, product level, and optional peripheral equipment support.

Before you install the TNT professional products, attach the software license key. The key is labeled "SERIAL", "PARALLEL", or "USB" (or "ADB" for Macintosh). Be sure to attach your key to the right kind of port. The install process looks for the key and does not let you install the TNT professional products if it can't find the key. Be sure you do not attach a parallel key to a serial port, or a serial key to a parallel port. *DO NOT install a parallel key in line with any non-printer device, such as a "Parallel-to-SCSI" adapter, tape drive, or parallel modem.*

If you plan on moving your key from machine to machine, you may wish to attach a short extension cable to the port and then attach the key to the free end of the cable. You can position the cable so the key is easy to reach. On the other hand, in high-traffic shops, you may wish to make the key more secure so it does not get moved to another machine without authorization. You can loop the extension cable back inside the computer case, out of sight. Your case may even have been designed with a knock-out panel where such an internal key could be mounted to provide external access to the pass-through socket to the port. The physical flexibility of an extension cable will also be attractive to you if you have multiple applications on your computer that each require a key. Electronically, any number of keys can be connected to the same port without creating any mutual interference. But stacking multiple keys directly on a port could require more space behind the computer than the physical arrangement of your equipment provides. The use of a flexible extension cable allows a chain of keys of any length to be arranged according to the space available.

The hardware characteristics of the various kinds of computers require the use of four basic kinds of keys: Parallel, Serial, USB, and ADB.

Windows and LINUX computers can use a Parallel port key. NT and LINUX computers must use the Parallel key. Parallel keys reliably support pass-through connection of a printer to the same port. (*DO NOT install a parallel key in line with any device other than a printer: no GPS devices, no ZIP drives, and no CD-ROMs on the same port.*)

Windows 98/ME/2000 and Mac computers should use the USB key. UNIX computers must use a serial key. Serial keys often do not support transparent pass-through connection of peripherals to the same port. Macs may use an ADB (Apple Desktop Bus) key that connects with the keyboard and mouse, but the USB key is recommended.

Key Details

Platform	USB Key	Parallel Key	Serial Key
Windows 95	not supported	RECOMMENDED	not recommended
Windows 98	RECOMMENDED	available	not recommended
Windows ME	RECOMMENDED	available	not recommended
Windows NT	not supported	RECOMMENDED	not recommended
Windows 2000	RECOMMENDED	available	not recommended
Windows XP	RECOMMENDED	available	not recommended
LINUX (various)	not supported	RECOMMENDED	not recommended
UNIX (various)	not supported	not supported	REQUIRED
MacOS 9.x*	REQUIRED	not supported	not supported

* Mac can also use an ADB Key, but USB Key is recommended.

Step 2

System Configuration

The second step in installing the TNT products is to configure the hardware and operating system of your computer. After you complete this step, proceed to *Step 3: TNT Installation for Windows*.

To use the TNT products with Windows 95, 98, or NT your computer needs at least 32Mb of RAM, a CD-ROM drive, and about 100Mb of free hard drive space. If you have only 16Mb of RAM, you can install and run TNT, but the performance will be slower.

Display Boards

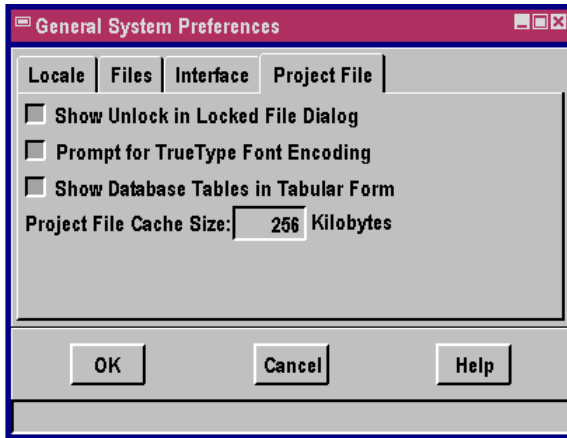
TNT products work with several color display modes. The TNT products require a display mode of at least 640 x 480 pixels with at least 256 colors. Depending on the size of your monitor, you will probably prefer a screen resolution of 1024 x 768 or higher. You may also choose color depths of either 8-bit (256-colors), 16-bit (32,000 colors), or 24-bit (16 million colors). All TNT products automatically and transparently handle all color display and conversion matters. Use the display mode controls on your system to choose the setting you want.

Project File Buffers

Most memory management issues are handled by Windows. You don't have to change any settings for the TNT products running under Windows 95/98/NT. The TNT products are among the fastest and most efficient in the industry.

Some additional performance gain can be realized if you have a computer with lots of RAM. You can increase the size of the internal buffer used by the Project File (RVC) read/write functions in the TNT products if you computer has plenty of RAM (not virtual memory). The default RVC

buffer size is 256K. It can be set to some other value in the TNTmips Support / Setup / Preferences process. Set the Project File Cache size in the Project File tab in the General System Preferences dialog:



Note, the RAM you set aside for RVC buffering is reserved only during the operation of TNT. Changing the size of the buffer has no impact on your other software. On the other hand, this buffer memory is not available to other TNT processes, so if you set it too high, other TNT processes will start swapping out to disk for virtual memory.

Choosing a buffer size depends on what you typically do with TNTmips, how much RAM you have, and how many TNT processes you use concurrently. Increasing the buffer size is most useful when you are working with large vector, CAD, and/or database objects. Some TNT processes, such as the object editor and validate topology, do not deal with such objects in a linear fashion. Thus they work faster with a large buffer. On the other hand, raster processes use transparent caching of raster tiles and operate efficiently without any changes in the RVC buffers.

Technically, the buffer size depends on the total amount of memory available and the number of TNT processes running concurrently. If you usually run only one TNT process (in addition to TNTmenu and MI/X), and if you have 16 megabytes of RAM, then increasing the buffer to 512 kilobytes or 1 megabyte is recommended. But if you run two or more processes at a time, the buffer size should not be increased unless you have more than 16 megabytes of RAM. As a rule of thumb, set the buffer at 1 megabyte for each 16 megabytes of RAM.

Windows 95/98 and NT

TNT products work well with the default Windows 95/98 and NT configuration. MicroImages does not recommend that you change any default Windows 95/98 or NT configuration settings before installing the TNT products. Windows 95/98 and NT memory management and hardware device controller settings should give an optimal performance environment for the TNT products.

Peripheral Hardware

You can install and configure most peripheral hardware devices for use with TNT products without special instructions. Follow the installation instructions in the manufacturer's documentation. Be sure to install any device drivers that the documentation specifies. If the device comes with a disk that contains supporting software, install the software according to the installation instructions. Run the manufacturer's demo program to make sure the device works with your computer.

Note that you can use special hardware devices with TNTmips only if your TNT product license includes support for the hardware in question. Thus for example, if you acquire a special large-format color scanner, you may need to upgrade your TNT license if you want to use the scanner directly in TNT processes. Contact MicroImages if you have questions about what peripheral devices your current license supports. Remember, too, that your large format color scanner may come with its own scanning software. You may decide to do all you scanning outside TNTmips, and then import or link to the resulting rasters with TNT.

After your peripheral device is connected and working, you can select its device type and interface port in TNT from the Support / Setup process. You may also select and control your peripheral's settings from within the TNT processes that use that hardware device.

TWAIN

Most scanners and video digitizers today support the TWAIN interface standard. TWAIN ("Technology With An Interesting Name") support means that a raster image from any TWAIN source can be transferred and received by software that has no knowledge of the hardware particulars of the source device. TNTmips supports the TWAIN specification, so you can install and use any TWAIN compliant device without any further configuration. Just follow the installation instructions that came with

the device, installing any device drivers supplied by the manufacturer.

Howtek Scanmaster III, III+, and Sharp scanners

The Howtek Scanmaster (and the equivalent Sharp) series uses a software driver from National Instruments. The driver is supplied with the materials that come with the Scanmaster. Install the National Instruments driver according to the instructions in its documentation.

There are five DIP switches on the Scanmaster itself, and the word “open” is printed along one edge for orientation. (Refer to the diagram in the Scanmaster documentation for the location of the DIP switches.) Set DIP switches 1 and 2 to the “open” position, and switches 3, 4, and 5 to “closed” (the closed position is NOT labeled). Thus, the configuration should be: 0 0 1 1 1 (0 = “open”, 1=“closed”).

The Scanmaster cable connects to a GPIB expansion board. Install the GPIB board according to the manufacturer’s documentation. The setup program for the GPIB board for Windows is named WIBCONF.EXE and comes with the GPIB board. Run WIBCONF.EXE (Select File / Run... from the Program Manager in Windows) to set the dev7 parameter to HTSCAN (all upper case) for PC’s.

Finally, you can select the device type and port for the Scanmaster from the Support / Setup process in TNTmips.

UMAX scanners

For all UMAX scanners, follow the installation instructions in the manufacturer’s documentation.

In the TNTmips Support / Setup process, select UMAX from the device list and set the port address:

I/O Port: 768

GPIB: IBCONF and WIBCONF

Some peripheral devices use a standard IEEE 488 interface known as the General Purpose Interface Board (GPIB). One GPIB can control from 16 to 32 different devices, such as scanners, printers, or digital cameras. The GPIB interface for particular devices is controlled by WIBCONF or the Windows “GPIB” Control Panel. Refer to the documentation that came with the board. NOTE: the distribution software for your GPIB device may include DOS drivers, but you need not install them since TNT uses only the Windows drivers on a PC.

IMPORTANT: For certain GPIB peripherals, you must use these TNT de-

vice number assignments and parameter settings:

Eikonix 1412 digital camera: dev1

device: EC1412	Terminate read on EOS: no
address:1	Set EOI with EOS on Write: no
timeout:T30s	Type of compare with EOS: 7-bit
EOS byte: 00H	Set EOI w/ last byte of Write: yes

Mitsubishi scanner: dev2

device: SCNIMITS	Terminate read on EOS: no
address:2	Set EOI with EOS on Write: no
timeout:T30s	Type of compare with EOS: 7-bit
EOS byte: 00H	Set EOI w/ last byte of Write: yes

Howtek or Sharp scanner: dev7

device: HTSCAN	Terminate read on EOS: no
address:7	Set EOI with EOS on Write: no
timeout:T30s	Type of compare with EOS: 7-bit
EOS byte: 00H	Set EOI w/ last byte of Write: yes

Howtek or Sharp 35mm scanner: dev8

device: HTSCAN35	Terminate read on EOS: no
address:8	Set EOI with EOS on Write: no
timeout:T100s	Type of compare with EOS: 7-bit
EOS byte: 00H	Set EOI w/ last byte of Write: yes

Nikon digital camera: dev15

device: NIKON35	Terminate read on EOS: no
address:15	Set EOI with EOS on Write: no
timeout:T30s	Type of compare with EOS: 7-bit
EOS byte: 00H	Set EOI w/ last byte of Write: yes

Other Peripherals

If you have problems configuring peripherals to work with TNT whose setup and testing software does work on your Windows computer, contact MicroImages software support by phone, FAX, or email.

Step 3

TNT Installation

The third step in installing the TNT products is to run the installation program. After you complete this step, proceed to *Step 4: TNT Customization*. If you are installing a new version of the TNT products over an existing version, refer to the chapter **Upgrades and Updates**.

The instructions in this section are intended only for those who wish to install TNT products to a Windows 95/98 or NT system. Insert the TNT Products “A” CD-ROM into the CD-ROM drive on your PC.

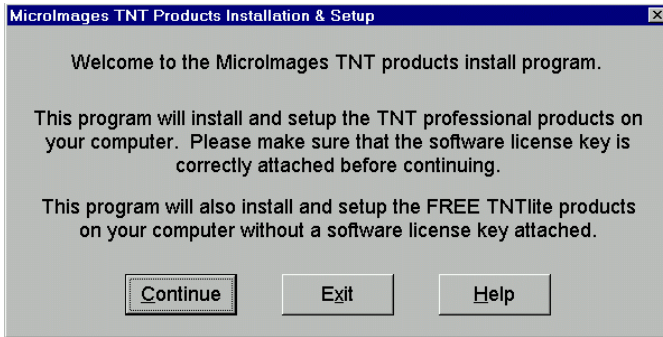
Autorun If your Windows system is configured to recognize automatic setup programs on any newly inserted CD, then the TNT products setup program starts automatically. The autorun screen offers three buttons: Install, Browse, and Exit. Click the **Install** button to proceed with the installation of one or more of the TNT products. Click the **Browse** button to browse the CD with Windows Explorer. Click **Exit** to close the setup program.

Run Setup If your computer does not run the setup program automatically, you can run the setup program manually. On Windows 95/98, use the Run... selection from the Start menu. On Windows NT, select Run... from the File menu in the Program Manager. If your CD-ROM drive is drive E, for example, your command would be:

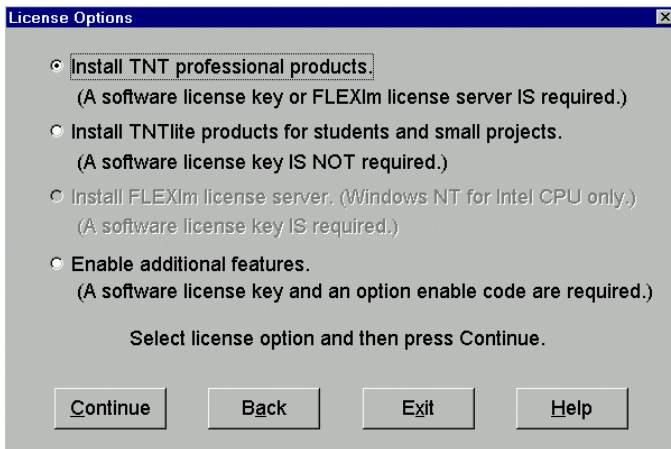
```
e:\setup.exe
```

The Install Process

The TNT install process presents a series of control and information windows that present product installation options. If you are installing the TNTlite versions, the install process presents a series of extra informational windows before it shows you the TNT products installation options.



The License Options window lets you choose the type of installation you want to perform. Click the radio button next to the option you want, and press the Continue button to proceed.

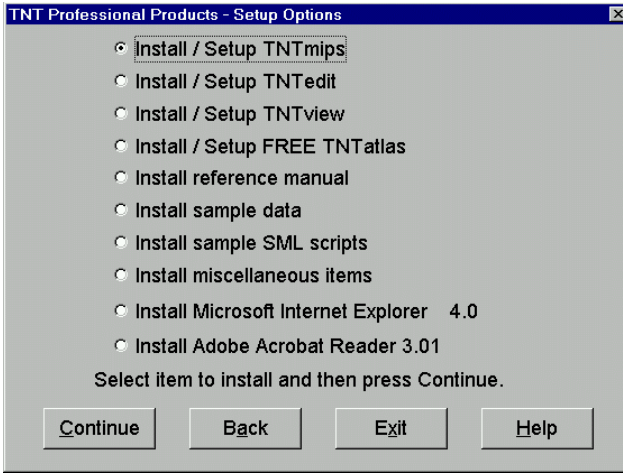


Software License Key Upgrade. When you renew your subscription to the professional TNT products, the install process opens a window and asks you to enter an authorization code to enable your key for the new version. Enter the code exactly as it appears on the authorization notice that you receive from MicroImages.

Setup Options

The Setup Options window offers a list of TNT products and installation options. Select an option and click the Continue button. After the selected option has been installed, the install process returns you to the Setup Options window so you can select another installation option, or exit the install process.

In addition to the TNT products, manual, sample data, and scripts, the



Setup Options window lets you select Microsoft Internet Explorer and Adobe Acrobat Reader. If you don't already have browser software on your computer, then install Internet Explorer so you can view the TNT online reference manual, which is in HTML format. Likewise, install Adobe Acrobat Reader in order to view the Getting Started booklets, which are provided in PDF format.

Which TNT Products?

TNTmips includes all the features of TNTedit, TNTview, and TNTatlas, so you need not install the other products separately unless you want a separate desktop icon / Start menu item for each product. You can run TNTedit in TNTmips by selecting Edit / Spatial Data from the menu. You can run TNTview in TNTmips by selecting Display / Spatial Data from the menu. You can run TNTatlas in TNTmips by selecting Display / Spatial Data from the menu and opening any TNTatlas stack object in a display layout and selecting the HyperIndex Navigator tool.

If you do not install TNTmips, or if you want a separate desktop icon for each product, then choose TNTedit, TNTview, and / or the free TNTatlas in the Setup Options window (your product license must include support for the products you choose). Installing the TNTlite or professional versions of TNTedit, TNTview, or TNTatlas in addition to TNTmips adds only a few preference and control files to your hard drive: the large executable files that are common to the products are not copied again.

Remember, you may also mix the professional products with the TNTlite versions. For example, you may have a product license for TNTedit and so install the professional versions of TNTedit and TNTview. At the same

time, you may install the TNTlite version of TNTmips. However, always remember that *any project materials that you modify in TNTlite cannot be used thereafter in the professional products.*

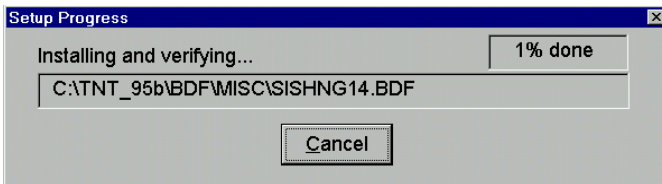
Select Drive Destination

The install process asks you to name and locate the destination directory for the TNT product you want to install. The process offers a default destination in the form

Path: C:\TNT_95

You can type in a different directory, or click the Browse button and use the standard Windows file and directory tools to select the destination.

It takes only three minutes to install the 100 Mb of TNTmips files from a 4X CD-ROM drive on a Pentium PC. As the setup program copies files from the CD, it displays status information in a Progress dialog. You can press the Cancel button to abort the process.

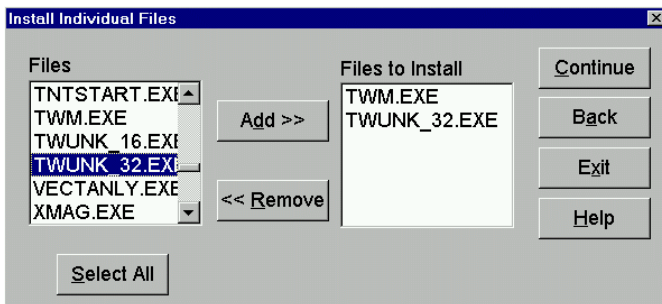


After you install one TNT product, the setup program returns you to the Setup Options window, so you can exit or select another option.

When the process is complete, it opens the TNT Products directory (or Program Group) so you can click the product icon and launch TNT.

Install Individual Files

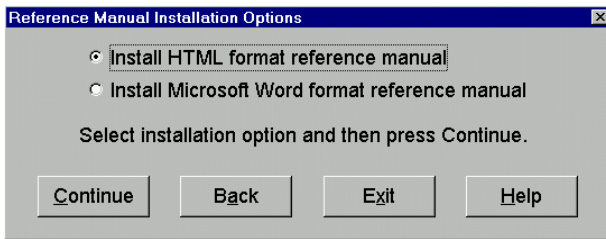
You can replace missing or damaged files in your TNT installation by choosing the option to Install Individual Files. You can save disk space by omitting files for processes that you never use (not recommended). You may also wish to revert to the release version of a process after



having tried an update or prototype process that you downloaded from the MicroImages Web site.

Online Reference Manual

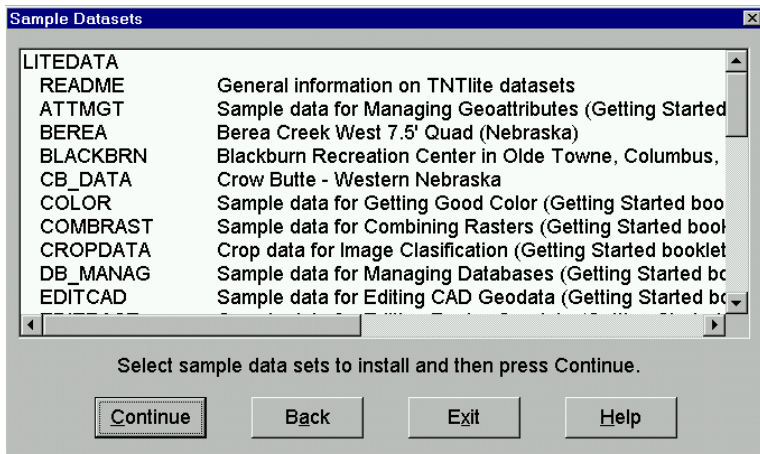
The illustrated TNT online reference manual is available in HTML and Microsoft Word formats. When you select Display / Reference Manual from the TNTmips menu, the system opens your default Web browser (such as Netscape or Internet Explorer) with a table of contents document. Alternatively, you can access the Microsoft Word versions of the reference manual documents.



Sample Datasets

MicroImages supplies two sets of sample data for your initial use of the TNT products. The litedata is a large collection of data that fits within the size limits of TNTlite. For learning and initial exploration, work your way through the Getting Started booklets (provided on the TNT Products CD's in Adobe Acrobat PDF format) and follow the exercises using the sample litedata.

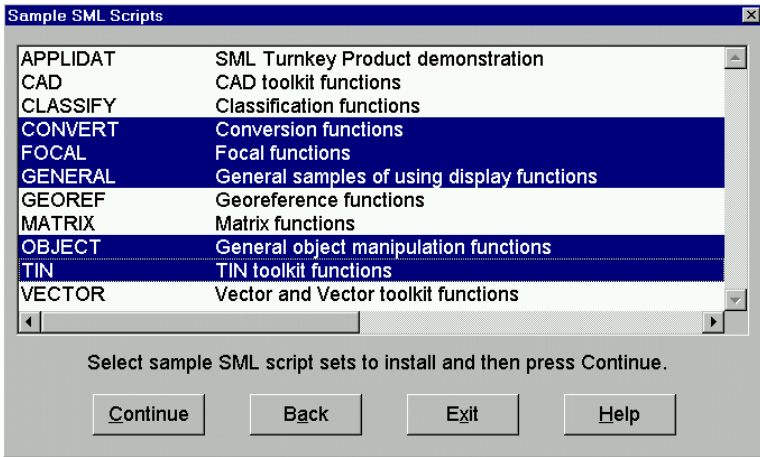
The sample data also includes prodata (which exceeds the TNTlite size limits). The prodata lets you see how TNT handles professional tasks.



The prodata also includes sample data for the DEM and orthoimage process. The Getting Started booklet *Making DEMs and Orthophotos* uses sample data that exceed the TNTlite limits.

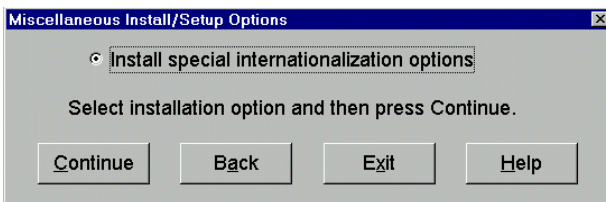
SML Scripts

A number of sample SML scripts are provided to illustrate SML programming techniques. Several categories of scripts are offered, each illustrating the use of another type of SML function. SML contains many powerful capabilities. The sample scripts give you a starting point for your own SML development efforts. (Refer to the Getting Started booklet *Spatial Manipulation Language*.)



Miscellaneous Items: Internationalization Options

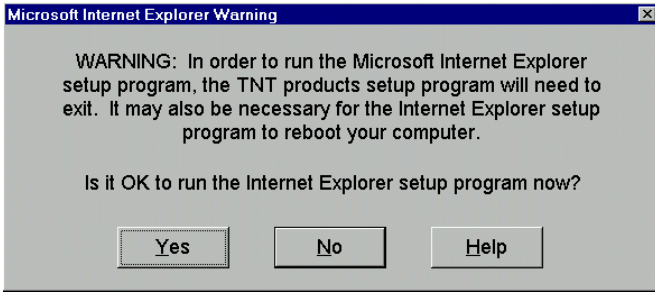
The TNT products are designed to support the internationalization specifications for computer software. You can easily translate the TNT interface text for menus, messages, and other elements to appear in any font and language. And of course, the map and poster output products you create can have annotations and labels in any font and language. The TNT products CD-ROM contains extra font support needed for Chinese, Japanese, Russian, and Thai. (If you have special internationalization requirements, contact MicroImages Software Support: voice (402) 477-9554, FAX (402) 477-9559, email support@microimages.com.)



You can use the international fonts and other internationalization features of the TNT products no matter what version of Windows you have. However, for full localization, you should install the version of Windows that best supports the language and interface requirements your locale. Refer to the Getting Started booklet, *Changing Languages (Localization) in the TNT Products*.

Internet Explorer and Acrobat Reader

The TNT product CD's contain the free Internet Explorer and Acrobat Reader software for Windows 95/98 and NT. The TNT online reference manual invokes your system's default HTML browser (such as Netscape or Internet Explorer). Internet Explorer is provided on the CD's in case you do not already have an HTML browser. Likewise, the Getting Started booklets are provided in Acrobat's PDF format. The free Acrobat Reader lets you view and print the Getting Started booklets easily.



Starting TNTmips

Double click on the **TNT product** icon. TNT displays a MicroImages splash screen and opens a full-screen **MicroImages X Window System** window. All TNT processes take place within this unique X Server. Treat the MicroImages X Window System as a background window.

Any time during a TNT session, you can use the normal Windows commands (such as Alt-Tab and Alt-Esc) to jump from MI/X back to the Windows system environment. As always, the <PrintScreen> key captures a snapshot of the current screen on the Windows clipboard.

Begin with TNTmips by doing the exercises presented in the Getting Started booklet *Displaying Geospatial Data*. The entire series of Getting Started booklets is available in PDF format on the TNT Products CD-ROM and on the MicroImages Web site.

Step 4

TNT Customization

The last step in installing the TNT products is to customize the control files. Of course, you may completely skip this step and use the TNT products with the default configuration. Later, you may wish to return to this section after you are familiar with the default settings and have an idea of what you want to change.

A number of control files let you change your TNT configuration. This section explains how to change those files in order to customize elements of the TNT interface, including things like window colors, or default window positions for various processes. Many of these interface elements can be changed in TNTmips with Support / Setup / Preferences. Changes you make in that process are recorded in these control files. Other interface elements cannot be changed from within TNTmips. To customize those elements, you must edit the files introduced here.

The control files are shared among all the TNT products that you install: TNTmips, TNTedit, TNTview and TNTatlas. Preferences that you set in the control files appear the same way in all of the TNT products. If you want different settings for each product, then you must maintain multiple versions of the control files.

MicroImages, Inc. has designed TNT products to be so flexible that it is possible to translate the entire interface (including menus, buttons, and processing messages) into another language, even a language that uses a non-Latin alphabet. (Refer to the Getting Started booklet entitled *Changing Languages (Localization)*.)

TNTHOST.INI

The TNTHOST.INI file contains setup and default information for your installation of the TNT products. Many of the sections are managed

automatically, recording changes you make in TNTmips in the Support / Preferences processes. Thus, you have little need to edit TNTHOST.INI directly.

TNTHOST.INI uses a logical structure like that of the .INI files in Microsoft Windows. Each section of TNTHOST.INI begins with a class word enclosed in square brackets, in the form

```
[class]
```

Each line following the class declaration controls a variable or default associated with that feature of TNT in the form

```
KeyWord=value
```

NOTE: if your TNTHOST.INI file is accidentally erased, you can make a new one by copying the TNTHOST.SAV file that is installed as a normal part of the installation process. In DOS, for example, you would use a command in the form

```
C:\>copy c:\tnt\tnthost.sav c:\tnt\tnthost.ini
```

The TNTHOST.INI file that comes with the TNT distribution is relatively short:

```
#  
#   TNT Process host settings file (TNTHOST.INI)  
#
```

```
[Files]  
TempFile=c:  
TNTPATH=  
HTMLBrowser=
```

```
[AppAssoc]  
htm=netscape  
html=netscape  
mpg=  
mpeg=
```

```
[KEY]  
driver=KEYLOC  
TNTlite=0  
RVCLiteProtectionLevel=0  
UseFLEXlm=No
```

```
[TCP/IP]  
InitTCP/IP=Yes
```

```
[RVC]  
AllowUnlockInOpen=No  
MinBufferSize=256
```

```
[DIGITIZERS]  
Port=COM2  
Type=serial_port  
Name=none
```

File=0

The **[Files]** section tells TNTmips where to find (or put) certain files during a work session. Some processes create temporary files, and the **TempFile** assignment above specifies drive C: for temp files. The **HTMLBrowser** assignment lets you specify the location of your browser software (such as Netscape or Internet Explorer) that TNT launches for the online documentation.

The **[AppAssoc]** section lets you specify which applications you want TNT to launch when you open certain file types in TNTmips (such as the .HTM files of the online reference manual). TNT looks first at these assignments in TNTHOST.INI. If the assignments are not made here, then TNT uses the associations (if any) of the Windows environment.

The **[KEY]** section contains control information for your software license key. If you use the TNT professional products and want to try TNTlite, modify the TNTlite line in the form

```
TNTlite=1
```

IMPORTANT: any project materials that you modify in TNTlite mode CANNOT BE USED AGAIN in the TNT professional products. ***So, DO NOT use TNTlite to modify any project materials that you want to use in the TNT professional mode.*** If you have important project materials, MAKE COPIES and use TNTlite ONLY on the copies. Set TNTlite=0 to return to the TNT professional products mode. **RVCLiteProtectionLevel** lets you turn on warning messages in TNTlite so that you are less likely to change your project materials and thus make them unusable in the professional TNTmips product.

Serial Key Support If you use a serial key (such as a key borrowed from a workstation version of TNT) with a Windows version, you must modify the **[key]** section of TNTHOST.INI in the form:

```
[key]  
driver=com1
```

The install program sets the initial port value (such as LPT or COM1) automatically during installation. But after installation, if you swap a parallel key with a serial key from another computer in your shop (such as to use special peripherals supported by the serial key), you will have to change the key value yourself. (If you attach the serial key to a different port on the PC, substitute its designation for “com1”.)

The **[TCP/IP]** section lets you turn off TCP/IP initialization when the MI/X server starts up at the beginning of a TNT session. Some users need

to turn off **InitiTCPIP** to prevent Windows from dialing their modems and attempting to connect with a remote ISP every time they launch a TNT session.

The **[RVC]** section lets you change the way TNT opens Project Files. **MinBufferSize** lets you set aside a larger buffer in RAM, which generally speeds up file access. (Increase the default 256 value to 1024 if your computer has plenty of RAM.) **AllowUnlockInOpen** lets TNT offer an Unlock button in the dialog that TNT shows you when you try to access a locked Project File. The AllowUnlockInOpen value can be set in TNTmips in the Project File tab of the Support / Setup / Preferences process.

As you use TNTmips, the system automatically creates and updates sections of TNTHOST.INI according to your use of the processes, saving the changes you make as defaults. For example, if you change your Localization preferences, (Support / Localization / Change Text File Encoding), then TNTHOST.INI will contain an **[Encoding]** section that records your preferences.

TNTSERV.TWM

The TNTSERV.TWM file controls the appearance and features of the TWM window manager used by the TNT products. NOTE: If you have access to a UNIX installation that includes the X Window System, you can read all about TWM in the system documentation. Invoke the UNIX help manual entry for TWM with a command in the form

```
man twm
```

The distribution version of TNTSERV.TWM uses only a subset of the TWM features. (You can add others if you wish.) This documentation presents an overview of only three parts of TNTSERV.TWM that are relatively easy to customize. Many optional TWM features are included in TNTSERV.TWM on commented lines (lines that begin with the "#" character). You can turn on such TWM features by removing the comment character.

The sections of TNTSERV.TWM are "self-documented" with comment lines. To begin with, look for the line near the beginning of the file with a comment to the effect, "# The following lines set fonts:"

TWM Interface Fonts

```
# The following lines set fonts:
TitleFont "-misc-fixed-bold-r-normal--13-120-75-75-c-70-iso8859-1"
#TitleFont "-adobe-helvetica-bold-r-normal--*-120-*-*-*-*-*"
```

```

ResizeFont "-adobe-helvetica-bold-r-normal--*-120-*-*-*-*-*"
MenuFont "-adobe-helvetica-bold-r-normal--*-120-*-*-*-*-*"
IconFont "-adobe-helvetica-bold-r-normal--*-100-*-*-*-*-*"
IconManagerFont "-adobe-helvetica-bold-r-normal--*-100-*-*-*"

```

You may wish to edit the lines `TitleFont`, `ResizeFont`, `MenuFont`, `IconFont`, `IconManagerFont` to select a different interface bitmapped font for those window manager elements. You can specify any bitmapped X font (*.BDF, “Bitmapped Distribution Format”) that is available on your system. (More information on font specification is available in the Getting Started booklet *Changing Languages (Localization)* from MicroImages, Press.)

TWM Window Manager Colors

The next section of general interest controls the color scheme for the window manager:

```

Color {
  BorderColor "Navy"
  BorderTileBackground "gray60"
  BorderTileForeground "gray60"
  DefaultBackground "maroon"
  DefaultForeground "gray85"
  TitleBackground "maroon"
  TitleForeground "gray85"
  MenuBackground "maroon"
  MenuForeground "gray85"
  MenuItemBackground "gray70"
  MenuItemForeground "maroon"
  IconBackground "maroon"
  IconForeground "gray85"
  IconBorderColor "gray85"
  IconManagerBackground "maroon"
  IconManagerForeground "gray85"
}

```

You can experiment with any color combinations you like. You must use color names as they are listed in the RGB.TXT file in your TNT directory.

TWM Menu Items

The final section of TNTSERV.TWM discussed here controls the items on the window manager’s button menus. First, the mouse buttons are “bound” to certain menus with lines in the form

```

Button1 = : root : f.menu "defops"
Button3 = : root : f.menu "defprogs"

```

Subsequently, the items on the menus are defined. The “defops” menu definition has the form

```

menu "defops" {
  "Operations"      f.title
  "Move"            f.move
  "Size"           f.resize
}

```

```

"Minimize"           f.iconify
"Maximize"          f.fullzoom
"Raise"             f.raise
"Lower"             f.lower
"Tile"              f.menu "tile"
""                  f.nop
"Focus"             f.focus
"Unfocus"          f.unfocus
"Show Iconmgr"      f.showiconmgr
"Hide Iconmgr"      f.hideiconmgr
""                  f.nop
"Kill Process"      f.menu "kill"
"Close Window"      f.delete
}

menu "kill"
{
"Use only to close processes that"      f.nop
"have hung. Data may be lost."         f.nop
""                                       f.nop
"Kill A Process"                        f.destroy
}

```

The defops menu illustrates how a menu cascade is constructed. The "Kill Process" entry calls `f.menu "kill."` The menu "kill" is defined immediately thereafter.

The "defprogs" menu has the form

```

menu "defprogs" {
  "MENU"           f.title
  ""               f.nop
  "Xmag"           f.exec "xmag"
  ""               f.nop
}

```

The defprogs menu illustrates how any X process can be included on the mouse menu with the `f.exec` command. For example, you may have an executable X process called "myprogram" that you want to be able to run in the MI/X server by launching it from a TNT process. Modify the defprogs menu definition by adding a line in the form

```
"Menu Label" f.exec "myprogram"
```

Your modified version would look like this:

```

menu "defprogs" {
  "MENU"           f.title
  ""               f.nop
  "Xmag"           f.exec "xmag"
  "My Program"     f.exec "myprogram"
  ""               f.nop
}

```

TNTSERV.INI

The values in TNTSERV.INI control settings for the MI/X server. The TNT products for Windows use the MI/X server as a host environment.

The TNTSERV.INI file has the form:

```
# '#' is a comment line marker
#
#     MicroImages X Server (MI/X) settings file (TNTSERV.INI)
#

[Files]
WManRCFile=tntserv.twm

[XSERVER]
ScreenWidthMM=169
ScreenHeightMM=127
CloseOnMenuExit=Yes
AskOnClose=NO
MSWindowBorder=Yes
BitBltOverride=64
RootColor=0 0 151
MultipleMonitors=No

# Remote startup parameters, can be overwritten in TNTstart command line
ServerName=
Port=4321
Username=guest
Password=
```

The **WManRCFile** keyword in the **[Files]** section tells TNT which window manager resource file to use. Notice that the value "tntserv.twm" points to the TNTSERV.TWM file described in the previous section.

The values in the **[XSERVER]** section are set in the MI/X tab of the Support / Setup / Preferences process. Refer to the TNT Reference Manual for further information. The values related to remote startup are set automatically by TNT's remote login dialog.

TNTPROC.INI

The last control file is TNTPROC.INI, which records default values for each of the TNT processes. For example, the **[tntdisp]** section records the state and preferences from your most recent use of the Display Spatial Data process. In any process, when you move and resize windows, TNT records their position as a new default in TNTPROC.INI, so that the next time you use that process, you will find everything the way you left it.

Most of the values in TNTPROC.INI are thus maintained automatically by the TNT processes. Other settings are changed by the Support / Setup / Preferences process.

Upgrades and Updates

New Quarterly Releases

When you receive a new quarterly release of the TNT products, the install process lets you select the target directory for the installation. In most cases, you should just select the same directory that contains your existing TNT product files. That way, all of your user preferences will carry over to the new version.

As an alternative, you may consider installing the new version to a new directory and 'start clean.' Then you have the option of using the old version alongside the new version during a transition period (you want to work quickly with the old, familiar features for a while until you have time to learn the new features). Of course you need 100Mb of disk space for the new version and the new version will not use your existing setup preferences, so for most users, MicroImages recommends installing each new release to your existing TNT products directory.

Software License Key Upgrade. When you renew your subscription to the TNT products, the install process opens a window and asks you to enter an authorization code to enable your key for the new version. Enter the code exactly as it appears on the authorization notice that you receive from MicroImages.

Upgrades

The software license key distributed with the TNT professional products is programmed to support the version number and the product level and peripheral options you purchased. MicroImages, Inc. makes it easy to extend your product subscription for a newer version, and to move to a higher product level, for example, when you add a special new peripheral device to your configuration.

When you purchase a new version or product level, MicroImages, Inc. will fax you an option enable code. Select Enable Options... from the Support menu. Enter your option enable code, and press the Apply but-

ton. TNT re-programs your key to support the new version or product level.

Updates

Between quarterly releases, MicroImages can ship you Windows update files on disk only by special arrangement with MicroImages software support. It is better to get updates from the MicroImages Internet site. (See below.)

Internet Updates

You can reach MicroImages on the Internet for email and file transfer. Our Internet address is **tnt.microimages.com**. Web access is available at www.microimages.com. FTP access is available at [ftp.microimages.com](ftp://ftp.microimages.com). As a matter of security, our Internet computer is completely separated from our other machines at MicroImages.

Compressed Files. Files for Windows are posted in the compressed .zip format. After you download the files you want, use a utility (such as PKZIP) to decompress the files.

Web Site General product and company information is posted on the MicroImages web page:

<http://www.microimages.com>

Our web site also provides links to the `tntpatch` directories, so you can download fixes and updates through your web browser rather than using an FTP command line interface. (See below.)

FTP You can use FTP (File Transfer Protocol) to send and receive files. You can send MicroImages sample data to accompany error reports, and you can also receive files of new features or fixes. Use the command

ftp ftp.microimages.com

and log in as user **anonymous** with the password equal to your email address.

- **Send** Please send your files to the `/pub/incoming/<yourname>` directory. Use the `mkdir` command to create a directory in `/pub/incoming` for your files. Please remember to notify MicroImages software support by email or FAX saying where you put your files. Also include a `readme` file that explains why you are sending the file. You may send **tar** and **zip** compressed files if you wish. Do not send data files by email. All files not placed in a `<yourname>` directory under `/pub/incoming` will be deleted.

- **Receive** In some cases, fixes and updates will be posted in directories

specific to individuals:

/pub/outgoing/<yourname>/<files> (as arranged)

Download both the executable module and the needed.zip file (if there is one), which will contain reference information and other system replacement components.

Other general fixes will be posted for each supported platform:

/pub/tntpatch/win32	32-bit Windows 95/98 and NT (Intel)
/pub/tntpatch/nt_alpha	DEC/Alpha Windows NT
/pub/tntpatch/linux	LINUX PC (Intel)
/pub/tntpatch/linux5	LINUX (2.0.36 kernel)
/pub/tntpatch/ppc	Macintosh PowerPC
/pub/tntpatch/sparsol2	Sun workstations, Solaris 2.x
/pub/tntpatch/osf1	DEC/Alpha OSF/1
/pub/tntpatch/hp	Hewlett Packard workstations
/pub/tntpatch/rs6kppc	IBM RS/6000 PowerPC workstations
/pub/tntpatch/sgi	Silicon Graphics workstations

Please check with software support before copying any fixes for your computer. Not every client needs every fix that is posted. Often, special fixes have not been thoroughly tested, and they may cause unforeseen problems elsewhere.

FTP presents a command line in the form

ftp>

You can read all about FTP in the help facility on any UNIX system. Use the UNIX manual command:

man ftp

Common FTP commands:

binary tells ftp to use binary mode. Use binary before you send or receive any files.

bye ends this FTP session.

cd *directory name* changes to the directory specified

dir or **ls** lists the files in the current directory on the remote machine (tnt).

get *filename* retrieves the specified file to your Internet host.

help lists the major FTP commands.

mget *filenames* same as get but transfers multiple files and allows wild cards.

mkdir *dirname* creates a directory (same as DOS).

- prompt** toggles prompting for each filename.
put filename sends one file to the remote machine.
pwd shows you what directory you are currently in.

You can also send email to MicroImages. However, please continue to conduct business transactions such as purchases and upgrades by FAX or phone. Please do not send data files by email attachment. When you report an error by email, be sure to include all the information requested on the sample **Software Problem Report** forms included in your TNT Products shipping materials. Also remember to include your name and company. Without this information we may be unable to reply, fix the problem, or know where to send the correction. Contact software support at **support@microimages.com**.

TNT product information can be requested by sending email to
info@microimages.com

Advanced Software for Geospatial Analysis

MicroImages, Inc. publishes a complete line of professional software for advanced geospatial data visualization, analysis, and publishing. Contact us or visit our web site for detailed product information.

TNTmips TNTmips is a professional system for fully integrated GIS, image analysis, CAD, TIN, desktop cartography, and geospatial database management.

TNTedit TNTedit provides interactive tools to create, georeference, and edit vector, image, CAD, TIN, and relational database project materials. TNTedit can access geospatial data in a wide variety of commercial and public formats.

TNTview TNTview has all the same powerful display features for complex visualization and interpretation of geospatial materials as TNTmips. TNTview is perfect for those who need flexible access to the TNT project materials but do not need the technical processing and preparation features of TNTmips.

TNTatlas TNTatlas lets you publish and distribute your spatial project materials on CD-ROM at low cost. TNTatlas CDs contain multiple versions of the TNTatlas software so that a single CD can be used on any popular computing platform.

TNTserver TNTserver lets you publish TNTatlases on the Internet or on your intranet. Navigate through massive geodata atlases with your web browser by using the free, open-source TNTclient Java applet (or any custom applet you create) to communicate with TNTserver.

TNTlite TNTlite is a free version of TNTmips, TNTedit, and TNTview for students and professionals with small projects. You can download TNTlite for your computer (about 100MB) from MicroImages' web site, or you can order TNTlite on CD-ROM (shipping charges apply).



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