



CASPER

Software Protection that Works

Casper User Manual

SOFTWARE PROTECTION THAT WORKS

Casper User Manual

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Chapter 1: Key Points

Welcome to Casper, the reliable way to automate the distribution and licensing of your software

Casper (**C**rypKey **A**utomated **S**oftware **P**urchase and **E**lectronic **R**egistration) is a software security system designed to enable you, the software manufacturer, to automate and secure the distribution and licensing of your products, and the processing of payments made by your customers.

In this Chapter

In this chapter you will find information on:

- CrypKey Canada Inc.
- Casper, CrypKey's automated software copy authorization product
- what's new in Casper
- how to best use the resources of this book
- an overview of issuing licenses for your CrypKey-protected software

About CrypKey (Canada) Inc.

To find out more about CrypKey and our approach to preventing software piracy—one of the most costly and intimidating problems for software developers—visit our web site at www.CrypKey.com.

About Casper

Casper was created to automate the processes of issuing licenses and collecting customer payments. Its main advantages are that it:

- allows users to obtain authorization automatically, which saves on labor and allows payments over the Internet in return for an authorization
- minimizes unauthorized use of software, and
- secures payment for products.

Casper automates the authorization of CrypKey-protected products by verifying serial numbers (Casper eRegister) or by verifying credit card purchases (Casper eCommerce) before authorizing a CrypKey-protected product. See Chapters 5 and 6 for more information on these products.

Important

In order to use the capabilities of Casper, you must have previously purchased either CrypKey Instant or CrypKey SDK.

Issuing Licenses

To provide your customer with a license to use your software product:

1. You provide software, protected by CrypKey SDK or CrypKey Instant, to your customer. You can choose to offer your product on a trial basis, either by number of consecutive days used or number of program runs. CrypKey protection restricts your customer's access to the software.
2. When prompted by the Casper Wizard—which you bundled with your software package—the customer sends your Casper Server an authorization request is sent either via the Internet or by email and asks for authorization to use your software. The message includes an encrypted Site Code created by the CrypKey-protected software, based on information extracted from your customer's computer.
3. Casper automatically processes the request.
4. If the customer made the authorization request by email, Casper sends a return message containing a software license. The license consists of a Site Key generated by Casper, specifying the type of license restriction that you granted to your customer. The Site Key, which contains the license restrictions that you specify, is a unique key that only your customer can use to run the software on his or her computer. The customer enters the Site Key into the license registration box. If the request was made over the Internet, the authorization is automatic and invisible to the customer, who simply receives a message saying the software is now authorized for use.

See *Figure 2-1: Casper — Software Licensing Process* in Chapter 2 for an illustrated explanation of the license issuing process.

What's New in Casper

Casper version 2.0 incorporates a number of new features and enhancements.

The most obvious change is the new **CasperWeb**, which together with the Casper Wizard provides the full functionality of defining your software products, receiving and processing customer authorization requests, and issuing software

licenses. CasperWeb provides a new interface for managing the Casper database (which contains product and customer information), and replaces the Casper Server interface. A new feature available in CasperWeb is **System Administration**, available through the main menu. Another new feature is **eTransfer**. **eTransfer** is offered by CrypKey as a new means of transferring CrypKey licenses from one computer to another over the Internet, anywhere in the world, within seconds. Import file formats have been extended.

How to Use this Book

This book is intended for users familiar with Windows NT/2000/2003/XP. It contains chapters to:

- get you started by installing and testing the product
- use and configure Casper eRegister (authorizes software based on customer-entered Serial Numbers)
- use and configure Casper eCommerce (authorizes software based on credit card transactions)
- understand and configure the Casper Wizard (your customer's online interface to request a software licenses)
- use eTransfer (to transfer your Casper license up to the Internet, and back to another computer, in seconds)

Note: We recommend that *only* a systems/network administrator installs and configures your Casper software.

To configure and enable Casper, you will need to read through the sections in this order:

- Part 1: Setting Up Casper – Installing Casper
- Part 1: Setting Up Casper – Testing Casper
- Part 2: Casper eRegister – setting up and enabling Casper's basic authorization system
- Part 3: Casper eCommerce – setting up and enable Casper's credit card transaction system
- Part 4: Casper Wizard – setting up and enabling the Client side Wizard for your customer's use
- Part 5: Casper eTransfer – how to enable this feature, which allows you to transfer the product license between computers over the Internet

Chapter 2: Technical Help

To use this manual successfully, you require basic information about how Casper software works.

Casper is a real-time, Internet-based application with a design based on the client-server model. The Casper program resides on your (the software vendor's) computer. The Client program, which we will call the *Casper Wizard*, is embedded in the CrypKey-protected application, and is capable of communicating with your Casper Server.

In this Chapter

In this chapter you will find information on:

- system requirements for running Casper
- how the Casper client-server process interacts with your customers
- CasperWeb, Casper's web-based user interface which manages the database
- the data structure in the Casper database
- the Casper Wizard, your customer's interface with Casper
- security considerations
- CrypKey technical support and contact information

HELPFUL NOTES AND TIPS FOR USING CASPERWEB

- CasperWeb is best viewed using Internet Explorer 5.0 (or later). Cookies are not used in the application.
- Some screen pages take several seconds to load. Clicking a button multiple times will not speed up this process, but may in fact confuse the browser. It is best to wait for the page to be fully displayed.
- CasperWeb has many complex screens that display a lot of information. For this reason, a 1024x768 pixel screen was used to develop the pages. Although you can view CasperWeb with a smaller screen resolution, you may have to

scroll the window to see all the information contained in the screen page. For correct display of CasperWeb screens, use small font in your Internet Explorer settings.

- By default CasperWeb does not use Hyper Text Transfer Protocol Secure sockets (HTTPS) encryption. However, CasperWeb can be configured manually to use HTTPS after installation.
- CasperWeb and Casper Wizard do use an internal Public Key Encryption to communicate securely with each other.

System Requirements

Casper system requirements include the following:

- Pentium 4® or Intel® Celeron® microprocessor, with 256MB and 100MB of free space on your hard drive
- monitor capable of 1024 X 768 resolution
- mouse
- SMTP/POP3 mail (for email communications)
- Windows NT/2000/2003/XP
- Internet Information Services (IIS) installed (for direct Internet connection)

Casper Functions and Processes

This section gives an overview of the main components of Casper and how the software functions.

CLIENT-SERVER ARCHITECTURE

Casper software uses client-server architecture to process your customers' requests. **Casper** receives software license requests from your customers via electronic messages transmitted by **the Client program** (the Casper Wizard).

CrypKey's software design assumes a standard approach in which Casper is configured to respond automatically to Internet and/or email license requests. For each validated request, Casper generates an authorization Site Key and sends it to the customer as part of an email message, or applies the Site Key automatically if the request is sent via the Internet.

CASPER COMPONENTS

Casper consists of two interdependent components: **CasperWeb** and the **Client**. CasperWeb is the Internet-based user interface for maintaining and configuring Casper. The Client contains the Casper Wizard, the customer's user interface for licensing your product. See below for details.

CasperWeb and database programs reside on your, the software vendor's, computer. The Casper database contains information on products, customers, licenses and customer-specific restrictions. Typically, Casper is configured to reference the database when issuing licenses.

CASPERWEB

CasperWeb allows you to maintain the information needed to issue licenses to your customers. These licenses are configured by product codes that relate to serial numbers with individual or common license restrictions. When a user enters a valid serial number or processes a credit card transaction for authorization, they will be issued a license with the restrictions specified in the product code or serial number.

CasperWeb manages the Casper database, which provides the information used by Casper to issue software licenses to your customers. You use CasperWeb to configure product codes, license types, products and product families. You can also manually issue licenses using CasperWeb's Site Key Generator (more about this in *Part 2: Casper eRegister*).

CasperWeb performs the following functions:

- configures product families, products, executables, license restrictions, and product codes
- records customer information, including Serial Number, customer name, customer number, product name, license restrictions, and invoice number
- enables you to apply and enforce restrictions on the use of your software
- provides a history of product license authorizations
- imports customer, license, and product data

Table 2-1: Information Structure describes the general types of information contained in the Casper database and managed by CasperWeb.

Table 2-1: Information Structure

Data	Description
Family	Category of products. Every product must be a member of a product family.
Product	Product name, description, and version number.
Product Version	Product version identifier.
Executable	Executable name, file name, description,

Data	Description
	and password.
Executable Version	Executable version identifier.
Options and Levels	Records defining certain features released with executables. Each executable options and levels record refers to an already-defined executable record. To be fully implemented, options and levels must reference features defined in the executable code.
Product Code	Code representing a unique association of relationship of Family, Product, Product Version, Executable, Executable Version, type of License, and price.
Customer Information	Serial Number, customer name, product name, invoice number, and restrictions on the customer's software use, contact information, address, etc.

CLIENT PROGRAM

The Client side of Casper is called the **Casper Wizard** and runs on your customer's computer, bundled with the CrypKey-protected software you provide to the customer. The Wizard asks your customer to send a request to Casper for a license to use your software. Casper responds by generating a Site Key.

The Wizard presents a series of windows that guide users through the various available options. The Wizard interface is configurable if you are calling it using CrypKey SDK. If you are using CrypKey Instant, the Wizard is not configurable with e-Register. For the Casper eCommerce option, the Wizard changes to contain the credit card information, product code and price.

LICENSING REQUESTS

Casper receives software license requests via either Internet messages transmitted by the Client program or by email messages. Internet messages transmit using the user's email program or, usually within 15 seconds. Email messages are transmitted using the user's email program or via SMTP, as quickly as possible. They can be delayed by becoming stored temporarily in various servers along the route to the destination. Internet requests are not configurable; they happen automatically when the request is made. Email requests are checked on an interval that you specify in CasperWeb; the smallest interval you can set is once every minute.

Casper provides three options for communicating licensing information (see Table 2-2: License Communication Options):

1. Direct via Internet
2. Automatic Email
3. Manual Email

Table 2-2: License Communication Options

Option	Description
Direct via Internet	The Casper Client sends authorization requests directly to Casper. Casper processes an authorization request and immediately sends the authorization or an error message to the customer. If the processing is successful, the authorization is automatically entered into the program and the software is enabled.
Automatic Email	The customer sends an email message authorization request to Casper. Casper then processes the information and automatically replies with an email message that contains the authorization. The customer enters the Site Key manually.
Manual Email	The customer sends the authorization request manually via email. Casper then processes the information and automatically replies. This method is used only if a customer has an unusual network configuration that prohibits the automatic send function.

CONFIGURING CASPER

In order for Casper to respond automatically to Internet or email messages, you must configure it to acknowledge authorization requests (for details, see *Part 2: Casper eRegister*).

You can configure Casper for two general types of authorization requests:

1. **Casper eRegister** (Serial Number Authorization): Casper issues a Site Key based on an encrypted Site Code contained in the customer's message, plus information extracted from CasperWeb. Casper searches the Casper database for a Serial Number, which is included in the customer's message. Casper compares the Serial Number sent with the authorization request to the information in the database from a previous order. The Serial Number *must* be included when using CrypKey e-Register.
2. **Casper eCommerce** (credit card authorization): Casper issues a Site Key based on approval of payment by credit card. The approval is obtained through third-party software—if you purchased the Casper eCommerce

version of Casper, CrypKey provides PC Charge® as the payment gateway. Casper also supports Payflow Pro®.

GENERATING SITE KEYS MANUALLY

Casper automatically generates a Site Key based on a validated request. However, you can generate **Site Keys** manually using the **Site Key Generator**. Access the Site Key Generator via the CasperWeb menu at: <http://localhost/casperweb/> >Edit Customer Info, enter the Serial Number and click on the **Serial Number** button, then click on the **Site Key Gen** button. You would choose this method when your customer communicates a license request via telephone, fax, or regular email, rather than via the Casper Wizard. Or, use the Site Key Generator (a stand-alone Windows program) provided with CrypKey Instant or CrypKey SDK.

SOFTWARE LICENSING AND AUTHORIZATION

See *Figure 2-1: Casper — Software Licensing Process* for an illustration of the software licensing process.

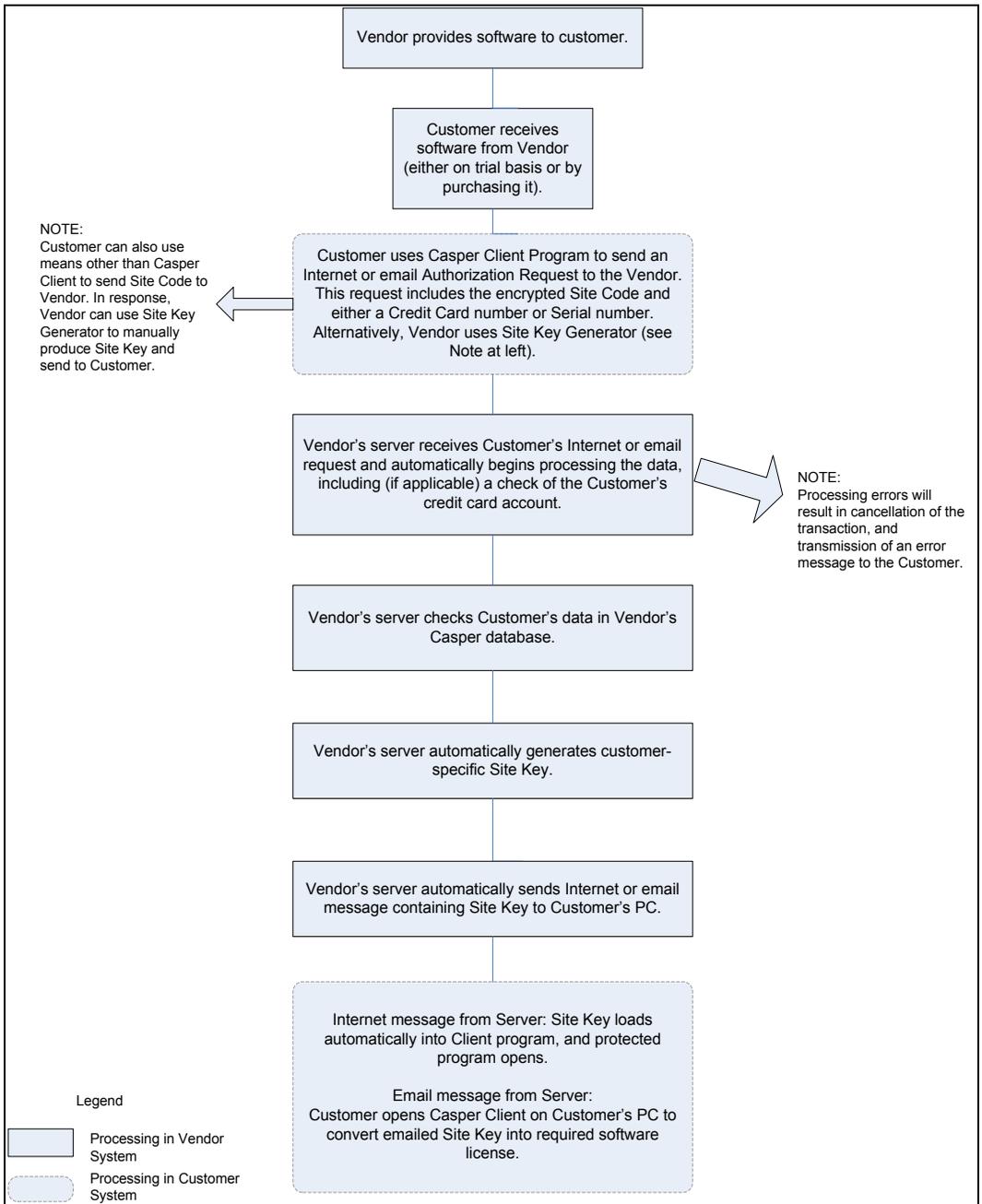


Figure 2-1: Casper — Software Licensing Process

Security

Caution

Since Casper is connected to the Internet, you should ensure the security of your server machine. See the following paragraphs for guidelines.

FIREWALL SETTINGS

Windows operating system software is prone to attack via network connections. As a result, a software- or hardware-based firewall is needed to control access. In general, the firewall should be set to block **all** traffic. You should open only a single specific access path for users. For example, if you want users to license their product via the Internet using HTTP (rather than by email using SMTP), then you should open only the incoming port 80.

POTENTIAL SECURITY BREACHES

Microsoft Windows software is highly network-enabled. Casper uses the **Microsoft Data Engine (MSDE)** as its database. If you connect your server to the Internet, it is possible for anyone in the world to connect to your server and read or update the data in your database. Since they would require a password in order to have this access, you should pick a nearly impenetrable password – or, better still, use a firewall to block access altogether.

SOFTWARE UPDATES

In general, if a software update or upgrade is made available, it should not be installed just for the sake of being updated – unless it is a security patch, as discussed in the next paragraph. When you make a change to the system, an incompatibility issue or other problem can result.

Note: For every update that you make to the operating system, you must completely retest all functions of Casper to ensure that it still operates correctly.

Microsoft Windows software often has security flaws that allow people to breach the security of your server. For this reason, when Microsoft releases a patch or update it is usually advisable to install it. For updates to other software, the install should be performed *only* if it addresses a specific problem or adds a specific required feature.

ANTI-VIRUS SOFTWARE

Any Windows server should have anti-virus software from a reputable vendor installed and active on the system. Full system scans should be scheduled regularly (ideally, daily) to protect the system. Even the most heavily-protected systems have virus infection risks. The risk is significantly reduced if the server

system is used only as a server and not for other tasks, such as browsing the Internet.

Note: Ensure that your anti-virus software updates itself automatically with the latest virus definitions.

ISSUES IN TESTING

You should not use the Casper server for testing software under development, since changes may result that cause an incompatibility. As well, testing of CrypKey-protected software should not be conducted on the Casper server. Some installations cause the wrong version of the NT driver to be installed, or other undesirable results to occur. The Casper server consists of a complex group of applications that can be damaged by any security system changes that a new driver may introduce.

An Internet server is very sensitive to change, and often an entire rebuild is the fastest or only way to fix a problem caused by changes made by other software. In order to minimize risk of business interruption and loss of time, we recommend you dedicate the machine to running only the Casper server, and relentlessly disallow any other software to run on it.

CrypKey Contact Information

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Support email Support@CrypKey.com
Sales email Sales@CrypKey.com
Website <http://www.CrypKey.com>

Chapter 3: Getting Started

CrypKey offers a streamlined procedure for installing Casper either by downloading from the Internet or from a CD.

In this chapter you will find step-by-step instructions on how to:

- install or upgrade Casper
- test Casper (with test data)

Installing Casper

This section pertains to the initial installation of Casper. For directions on upgrading your current version to the latest version, see Upgrading from Casper version 2.X to current version below. You can install Casper in either of two ways:

1. By downloading the installation files from the CrypKey website (www.CrypKey.com, select Support>Download). You must you must have a valid Casper support contract or have purchased within the last 60 days.
2. From a CD provided by CrypKey (Canada) Inc.

Note: If you are using a CD to install Casper, you should check the CrypKey website to ensure that you have the most recent version. The most recently released version is always on the site at www.CrypKey.com, Support>Download.

PROCEDURE FOR INSTALLING CASPER

Follow the steps in Table 3-1 to successfully install Casper.

Table 3-1: Procedure for Installing Casper

This step	is in this section . . .
1. Complete the Pre-Install	Pre-Install

This step	is in this section . . .
2. Install Casper using either of these options: (a) Download and install from Internet OR (b) Install from supplied CD	(a) Download from the Internet – Initial Steps for Installing Casper OR (b) CD-ROM – Initial Steps for Installing Casper
3. Complete the Casper installation – this applies to both the Internet and CD-ROM option	Installation of Casper – Final Steps
3. Complete the Post-install	Post-Install
4. Test the installation	Testing Your Casper Installation

Pre-Install. Before installing, you must prepare your system to receive and manage these files. This preparation work is called the *Pre-Install*, and is described in the section *Pre-Install* below.

Post-Install. Some tasks need to be completed after the installation. This is called the *Post-Install*, and is described both below in the section *Post-Install* and in the file **Casper Install Steps.rtf**, which comes with the product and is displayed during the install process. Always check the **Casper Install Steps.rtf** file, as it contains the latest instructions for your version.

Latest Installation Instructions

The installation process often undergoes changes and enhancements from a previous version. The install instructions for your version of Casper are included with the software in the file *Casper Install Steps.rtf*. You can also download the current version's installation file and instructions from <http://www.crypkey.com/download.asp>. For any further queries, please contact CrypKey support.

Warning

Casper installs a new instance of SQL Server. If you have any existing instances of SQL Server, you will need to back up all pre-existing databases. We suggest installing Casper on a computer that has no existing instances of SQL Server.

PRE-INSTALL

Procedure

Before installing Casper, please ensure that:

1. IIS (Internet Information Services) is installed. If not, install it, using the default settings. (To install IIS, select Add/Remove Programs, select Add/Remove Windows Components. For Windows 2000/XP select IIS. For Windows 2003, select Application Server, click Details, make sure Application Server Console and ASP.NET are checked.)

Note: .NET Framework must be installed *after* IIS or Casper will not run. .NET Framework will be installed by the Casper installation program if you do not already have it on your computer. If you've already installed .NET Framework, you can simply uninstall it, and then install IIS. .NET Framework will be reinstalled by the Casper installation program.

2. For new installations: You may have to delete the directory **C:\Program Files\Microsoft SQL Server** if you had Microsoft SQL Server installed in the past.
3. The installer must use an administrator account.

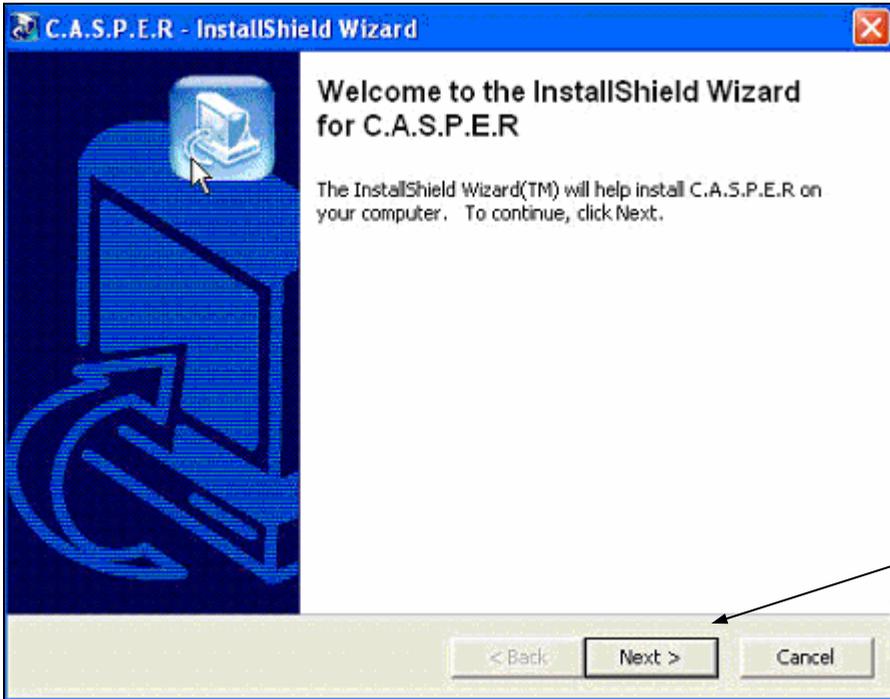
IMPORTANT

Do not install via a Terminal Services session.

DOWNLOAD FROM THE INTERNET – INITIAL STEPS FOR INSTALLING CASPER

Procedure

1. Download Casper from the Internet and store it in a convenient place, such as your desktop. The latest version is available from the download page at <http://www.CrypKey.com/download.asp>.
2. From the Downloads page, click on “**here**” (the upgrade link).
3. Enter the user name and password supplied when you purchased the product. Click **OK**. The Registered Users Downloads page is displayed. If you cannot get access to the Downloads page, please contact CrypKey support at Support@CrypKey.com.
4. Scroll down and choose the latest version of Casper for download. Download time will vary according to the speed of your Internet connection.
5. Save the downloaded executable to a convenient location such as your desktop.
6. Run the executable. The InstallShield Wizard is displayed (see *Figure 3-1: Starting Installation from Download*).



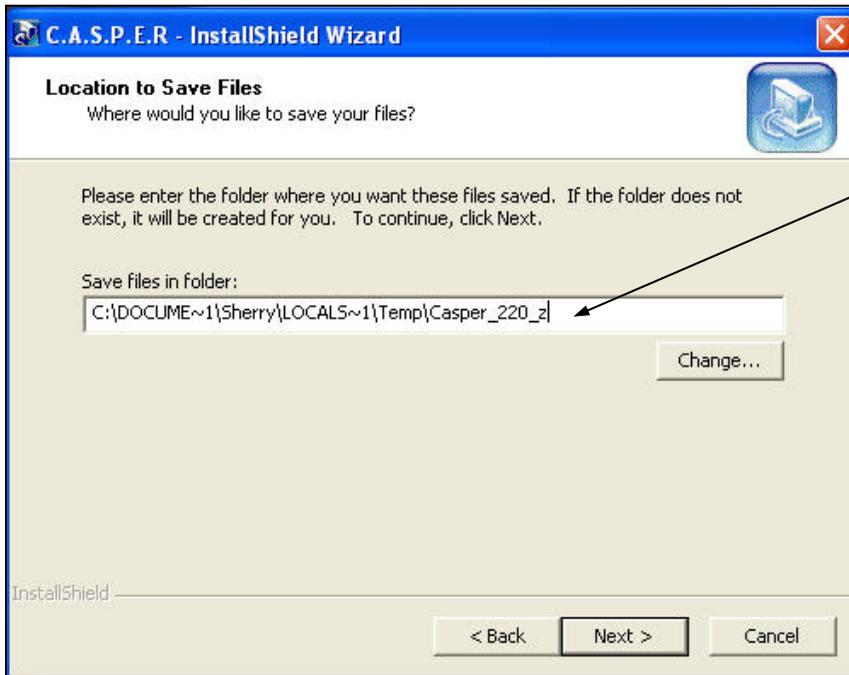
Click Next to proceed or Cancel to abort the install.

Figure 3-1: Starting Installation from Download



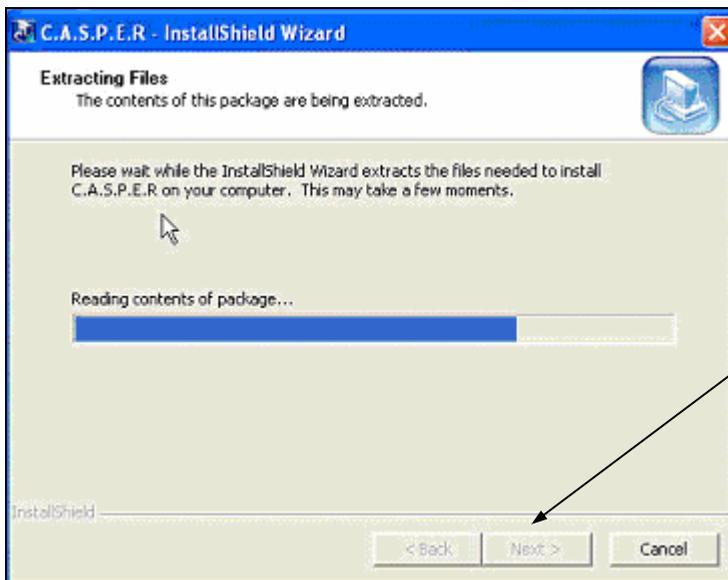
Enter the password to unwrap the Casper installation files. The password is case-sensitive (use all caps). To obtain the password, contact CrypKey Support at Support@CrypKey.com

Figure 3-2: Installation from Download password



Specify a directory name, rather than using the default directory (e.g. add a letter to the end of the directory path).

Figure 3-3: Installation from Download Temporary file location



Click the Next button. The system will launch the sequence of windows discussed in Installation of Casper – Final Steps to complete your installation.

Figure 3-4: Installation Download – extracting files

CD-ROM – INITIAL STEPS FOR INSTALLING CASPER

Procedure

This procedure is intended for users who are installing Casper from a CD-ROM.

Note: The following steps replace the initial installation steps described above in *Download from the Internet – Initial Steps*. Once the CD-ROM install is complete, go to the section *Installation of Casper – Final Steps*.

1. Insert the CrypKey CD-ROM. The CD should automatically run. If it does not, double-click the **CrypKey.exe** program on your CD-ROM drive.
2. The Welcome to CrypKey screen displays. It includes several functions that you can explore to obtain information about Casper and other CrypKey products. Use the **install** button to install Casper.
3. Click the **install** button. The CrypKey Install screen displays, with options for the different CrypKey products.
4. Click the **install CrypKey CASPER** button. The system launches the sequence of screens discussed in the next section, *Installation of Casper – Final Steps*.

INSTALLATION OF CASPER – FINAL STEPS

Ensure all pre-install steps are done before proceeding.

The different components that will be installed are:

- MSDE (Microsoft Desktop Engine) for SQL support
- Microsoft .NET Framework
- MDAC (Microsoft Data Access Components) 2.8

Procedure

1. In the installation sequence, follow the prompts as shown in the screens below.

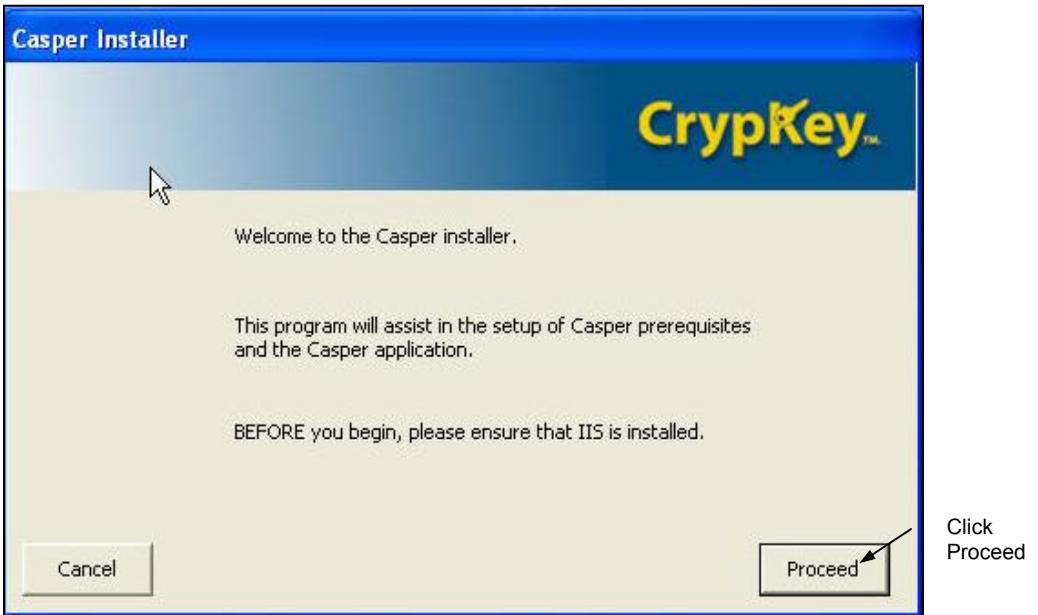
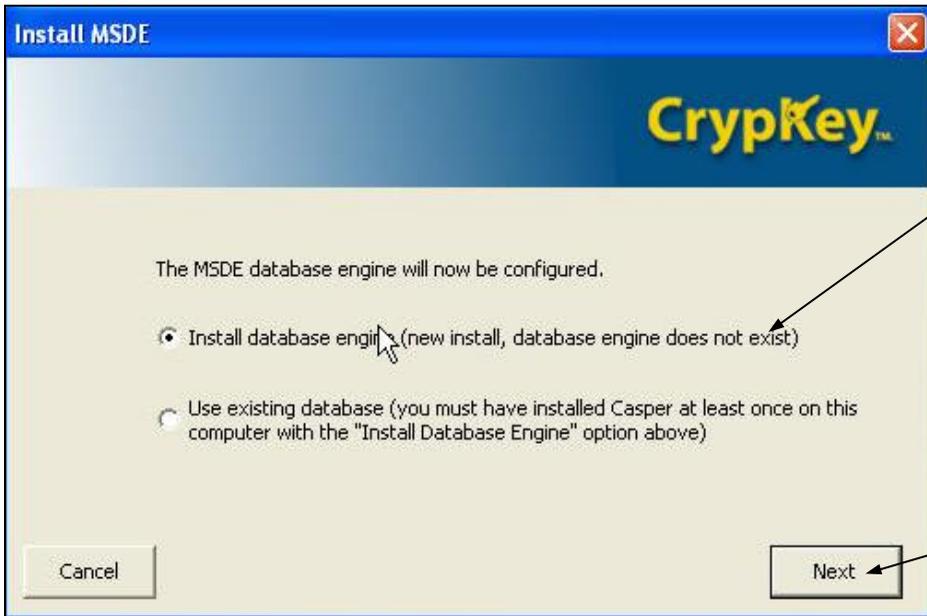


Figure 3-5: Installation – Main Sequence



Figure 3-6: Installation – MS .NET Framework screen

2. Install Microsoft .NET Framework at this point, even if it was previously installed.



Select Install database engine (new install, database engine does not exist)

Click Next.

Figure 3-7: Installation – MSDE screen

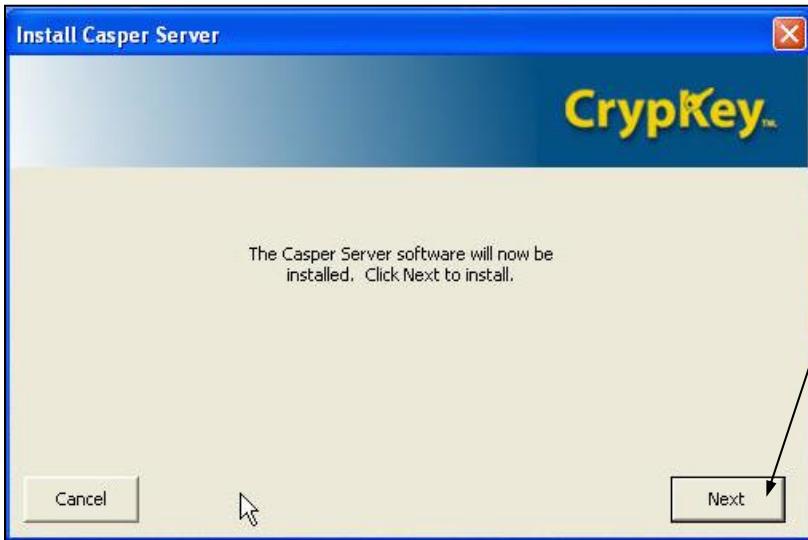


Figure 3-8: Installation – MSDE Install progress screen



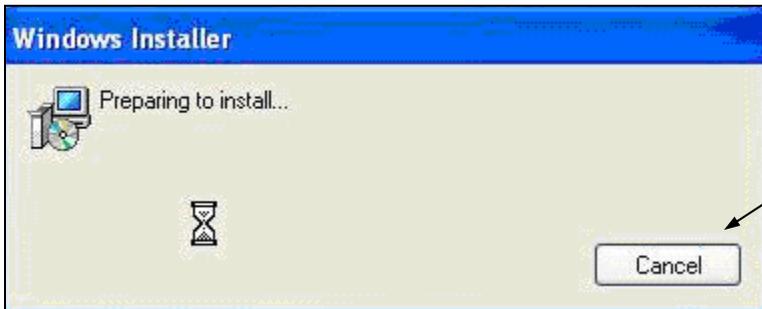
Click OK.

Figure 3-9: Installation – MSDE Install successful screen



Click Next. Note this process make take a few moments, during which you will see the Preparing to Install screen (see the following screen).

Figure 3-10: Installation – Casper Server install message



Click Cancel to abort the install.

Figure 3-11: Preparing to Install message

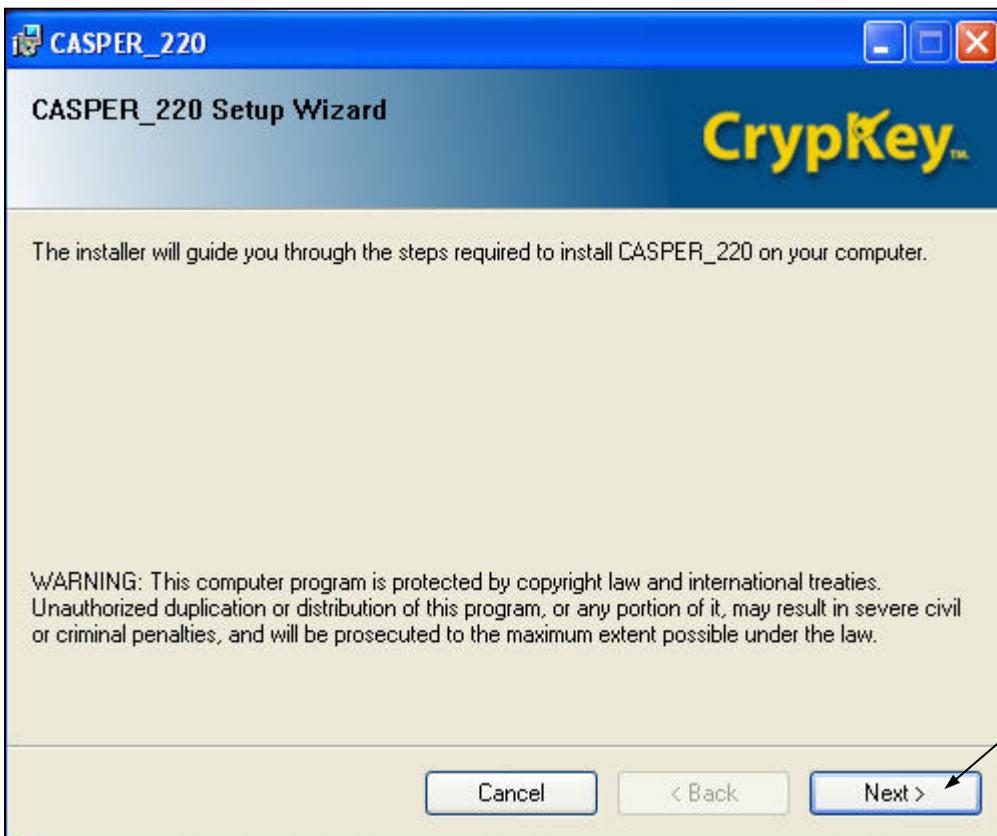


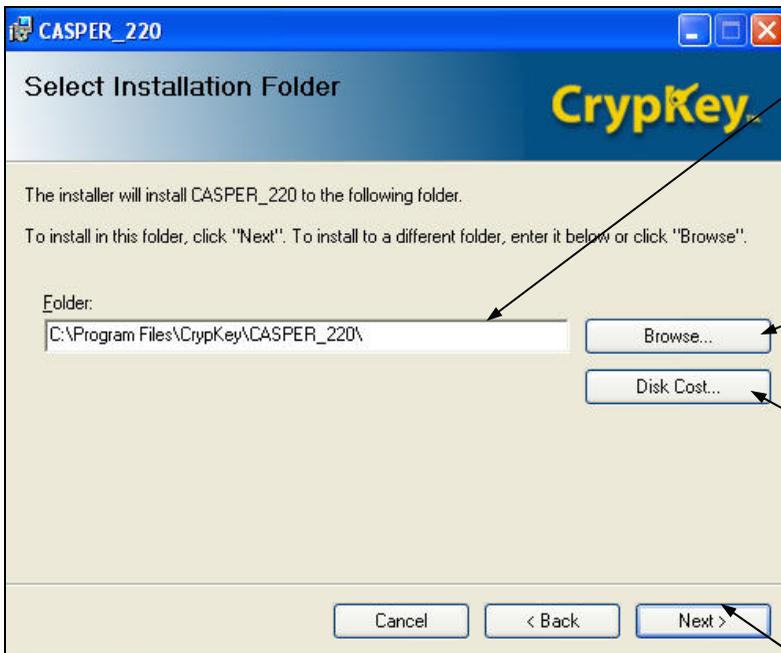
Figure 3-12: Installation – Setup Wizard screen



The Casper Install Steps.rtf document is displayed. These instructions will be correct for the version you are installing.

Click Next.

Figure 3-13: Installation – Pre- and Post-Install steps



Save Casper to a directory. We recommend accepting the default directory -- this will be the permanent location for the files.

To select a different directory, click Browse.

To view the space available on each drive on your computer, click Disk Cost. (See the Disk Space figure below.)

Click Next.

Figure 3-14: Installation – Select Installation Folder

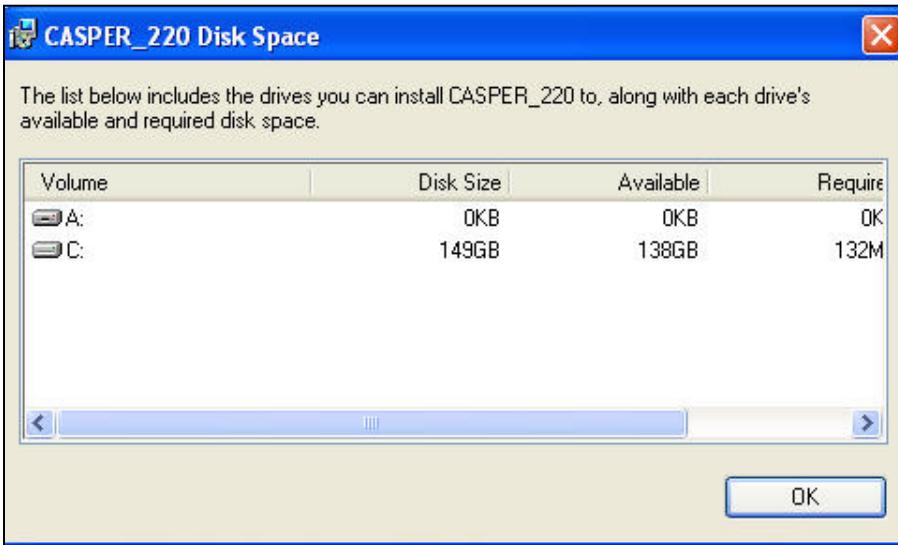
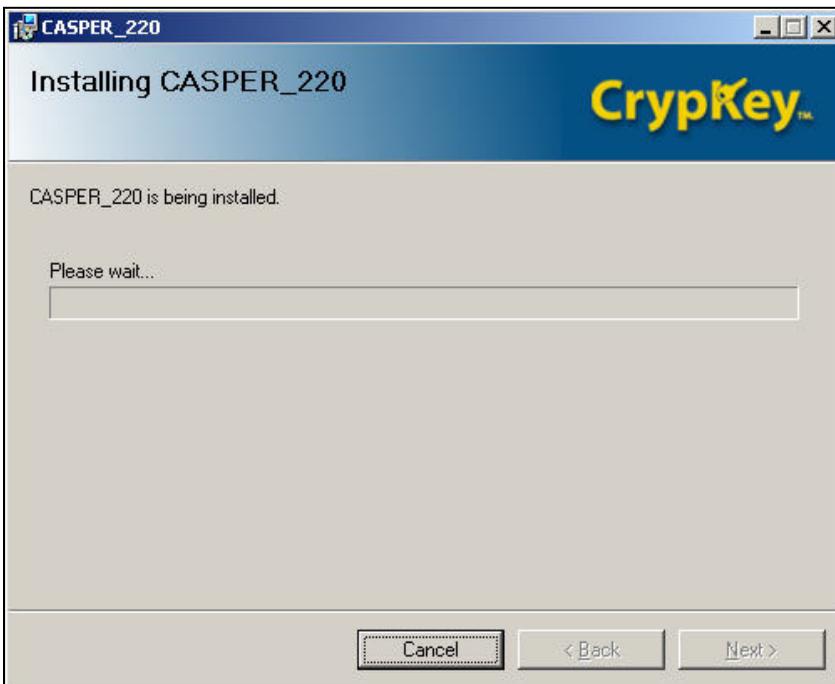
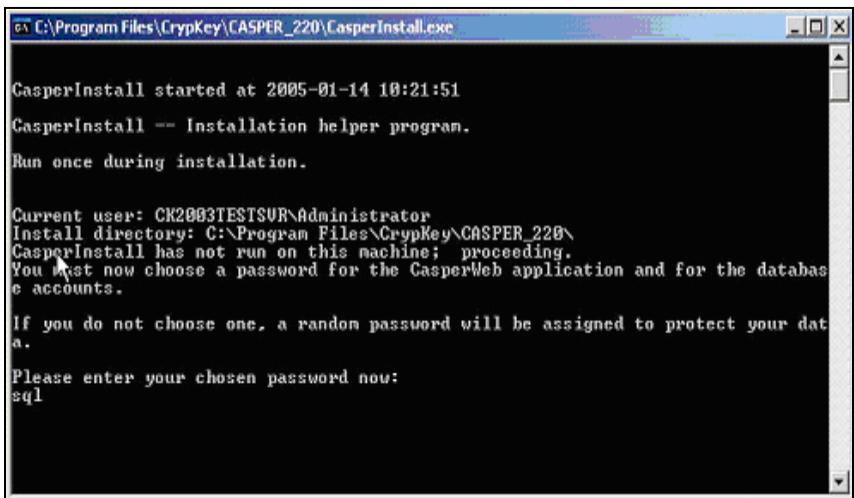


Figure 3-15: Installation – Disk Space availability



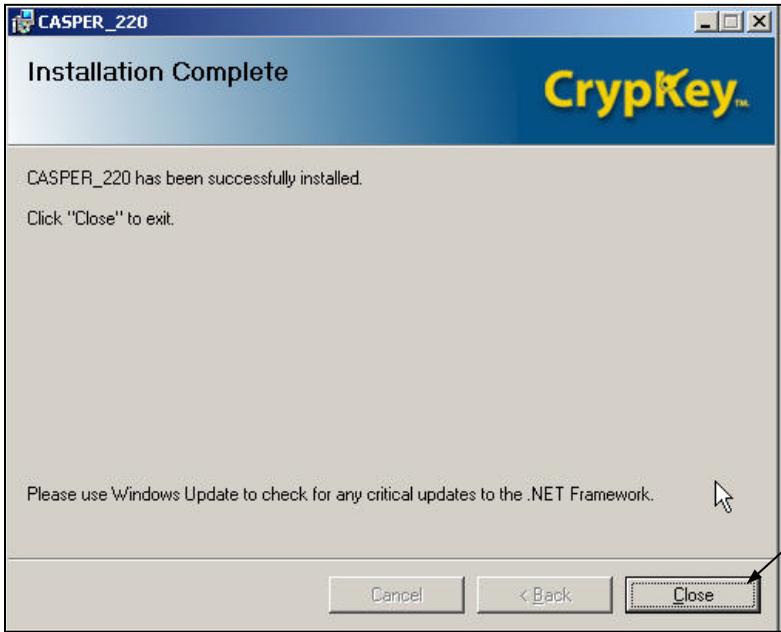
This screen is a sample only. The most current version of Casper will be installed.

Figure 3-16: Installation – Install in progress screen



Enter the password. The default password is **sql**. If you choose a different password, take care to remember it as it will be the administrator password. Press **Enter** on your keyboard to complete the install.

Figure 3-17: Installation – Administrator password



Casper returns a successful installation message. Click Close.

Figure 3-18: Installation Successful screen

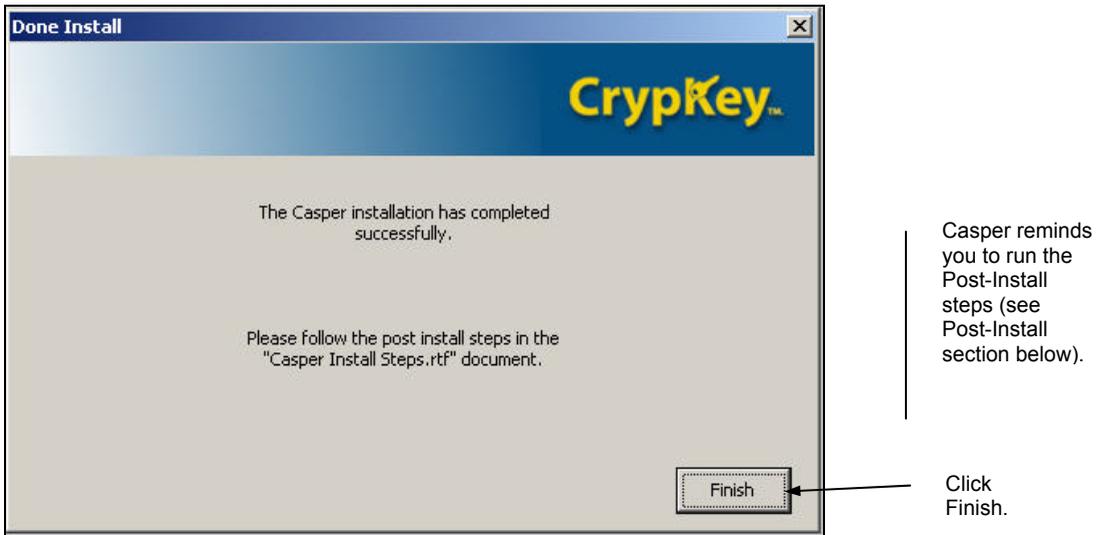


Figure 3-19: Installation – Post-Install screen

LOG FILES

During the installation, your system will create three log files and place them on your C: drive: **Casperinstall.log**, **CasperSetupDb.log**, and **CasperSetupAsp.log**. You can use these files, or send them to CrypKey Technical Support to help troubleshoot problems with your installation.

POST-INSTALL

Important

After installing Casper, follow the instructions for the post-install in *CasperInstallSteps.rtf*. The post-install also instructs you on how to authorize your Casper software.

Note: *Casper Install Steps.rtf* is available in the installation folder you selected for Casper in *Figure 3-14: Installation – Select Installation Folder*, or by selecting **Start menu>Programs>Casper**.

Upgrading from Casper version 2.X to current version

PRE-UPGRADE STEPS

Procedure

These steps are for upgrading your system from version 2.X to the current version.

1. Create a backup of your database. Make a backup of the files **casper_data.mdf** and **casper_log.ldf** files in the SQL Server install directory. This is typically the directory c:\Program Files\Microsoft SQL Server\MSSQL\Data.
2. Make a backup of the **sk32mmtd.dll** file, which is found in the Casper install directory.
3. Make a backup of the **pub.key** and **priv.key** files from the Casper install directory.
4. Note: The **skmmtd32.dll**, **pub.key** and **priv.key** files are company-specific files that CrypKey provided to you when you purchased the Casper product. The **pub.key** file may exist only on the Client software side.

On all systems: If possible, uninstall any instances of SQL Server prior to installing Casper. As part of uninstalling SQL Server, delete the directories \Program Files\MSSQL7 and \Program Files\Microsoft SQL Server.

Note: For some versions of Casper, the installation of SQL Server and Casper are tightly coupled. Uninstall Casper to simultaneously uninstall SQL Server.

5. Stop the CrypKey License Service. To do this, go to the DOS prompt and type: `net stop "crypkey license"`.
6. Follow the install and post-install steps for upgrading from these versions to the latest version (see the sections below).

INSTALL STEPS FOR UPGRADE

Procedure

1. Follow the instructions for new installs in the section above, *Download from the Internet – Initial Steps for Installing Casper*, or *CD-ROM – Initial Steps for Installing Casper*, as applicable.
2. Follow the steps above in *Installation of Casper – Final Steps*.

POST-INSTALL STEPS FOR UPGRADE

Procedure

1. Follow the post-install steps for a new install as outlined in the *Casper Install Steps.rtf* file for the version you are installing.

Note: *Casper Install Steps.rtf* is available in the installation folder you selected for Casper in *Figure 3-14: Installation – Select Installation Folder*, or by selecting **Start menu>Programs>Casper/Casper Install Steps.rtf**.

TESTING CASPER UPGRADE

Follow the instructions in the section below for authorizing and testing the Casper installation.

Testing Your Casper Installation

After installing Casper, you must perform tests to verify that the Server, Client and database are operating correctly.

The strategy for testing your Casper installation is straightforward:

- a. Verify that your local browser can communicate with the Server (see *Test Local Communications* below);
- b. Verify that a browser on a remote computer can communicate with the Server (see *Test Remote Communications* below);
- c. Verify that CasperWeb has access to the Casper database (see *Test CasperWeb Database Access* below); and
- d. Test Internet-based and email-based authorization requests and issuing of licenses (see *Testing Email Authorization Requests and Issuing of Licenses* below).

TEST LOCAL COMMUNICATIONS

Procedure

From the local browser on your machine, type in the following URL:

<http://localhost/casper/InternetServer.dll?ping&test>

If your local communication is operating, the system displays the following window:



Figure 3-20: Successful Local Communications Test

If the above window does not appear with the value specified in the URL (in this case, “test”), there is a problem with your configuration. Please contact CrypKey Technical Support.

TEST REMOTE COMMUNICATIONS

Procedure

From a browser on a remote system, type in the following URL:

`http://pcname/casper/InternetServer.dll?ping&test`

where *pcname* is replaced by the name of the computer where Casper is installed.

If your remote communication is operating, the system displays the following window:



Figure 3-21: Successful Remote Communications Test

TEST CASPERWEB DATABASE ACCESS

Procedure

1. To test CasperWeb's access to the Casper database, open a browser and type:

`http://pcname/CasperWeb`

- or -

`http://localhost/CasperWeb`

where *pcname* is replaced by the name of the computer on which Casper is installed, and the value `localhost` is for local test.

Log in to CasperWeb as instructed above in the *Post-Install* section.

2. The system will display the Main Menu (see *Figure 3-22: CasperWeb Main Menu* below).



Figure 3-22: CasperWeb Main Menu

3. To test access to database information, click on a link (e.g. Product Code Browser) and view the test product code supplied by CrypKey.
4. You are now finished testing the Casper installation.

Generating Software Licenses

You can configure Casper to generate software licenses (in response to your customers' requests from the Casper Wizard) in two ways:

1. **Serial Number:** Generates licenses based on customer record information stored in the Casper database. This component of Casper, **Casper eRegister**, uses the customer's assigned Serial Number to verify the request is valid.

Note: Vendors create their own serial numbers, which they provide to their customers at point of sale.

2. **Casper eCommerce:** Generates licenses based on approval of payment using the customer's credit card number through third-party software.

For instructions on how to configure Casper to use either of the above methods—using the online user interface CasperWeb—see *Part 2: Casper eRegister*, and *Part 3: Casper eCommerce*, respectively.

Testing Internet-based Authorization Requests and Issuing of Licenses

First, you will test the system's default method of processing requests, via the Internet. The tests below use Serial Numbers to process the authorization request of CrypKey-protected products—the customer is given a prepaid serial number to use when they wish to have their software authorized for their own use. The other option is to enable credit card transactions (see *Part 3: Casper eCommerce* for details on authorizing software purchase transactions using credit cards).

Note: For these initial tests, you will use default data supplied with Casper. In *Part 2: Casper eRegister*, you will enter your company-specific product information and customer serial numbers and run tests using your own data. **We strongly recommend that you run the test below before using live data.**

In the procedures below, CrypKey has supplied a test product and test serial number.

There are two methods of testing Internet communications (both use Serial Number processing):

1. Run the Client Test Program (see *Client Test Program* below)—this test offers more flexibility than the Simple Test; or
2. Run the Simple Test Program (a simplified version of the same test program). See *Simple Test Program* below.

CLIENT TEST PROGRAM – INTERNET-BASED METHOD

Procedure

1. Display the Casper Client Test Application window (Start menu>Programs> Casper>Client Programs>Client Test Program) (see *Figure 3-37: Casper Client Test Application* below).
2. Enter the following information:
 - a valid Product Code (use the default, TESTING, the test product code included with Casper)
 - your Casper URL (this is the URL for the server on which Casper is installed; typically this is `http://localhost/casper`).

Note: The Site Code is automatically populated for you.

3. Click the **Run** button. The system prepares to send an Internet message and displays the following screen:



Figure 3-23: Casper Serial Number Test wizard

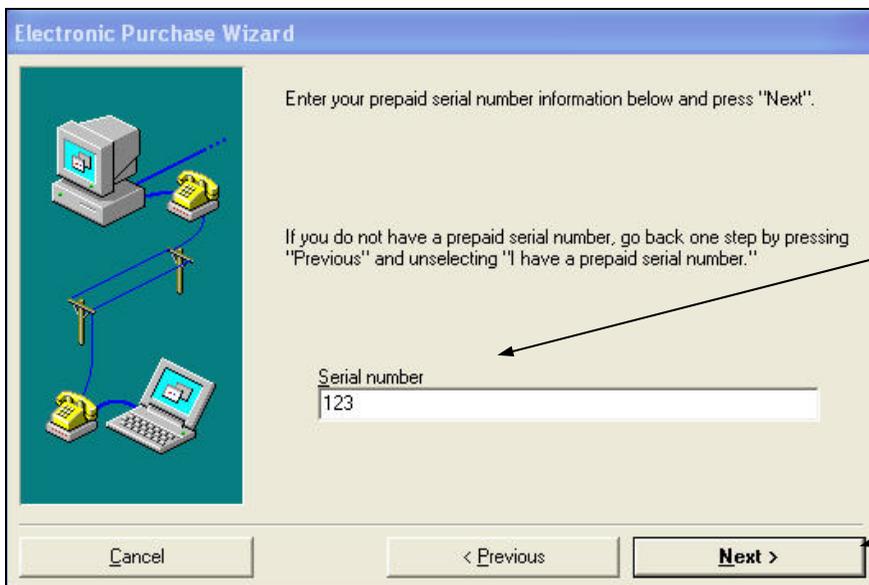


Check the Serial Number box. This is how Casper will verify the software authorization request.

Click Next.

Figure 3-24: Serial Number test selection

Note: Be sure the **I have a prepaid serial number** box is checked.



Enter 123, the Serial Number supplied for testing.

Click Next.

Figure 3-25: Serial Number test entry

Note: Be sure you enter **123**, the test serial number included with Casper.

- The information for the customer information screen below does not have to be authentic, but the email address you enter should be your own email account, which represents the customer's email address.

Electronic Purchase Wizard

Please fill out the following form. Fields marked with (*) are required. Your information will be securely encrypted before being sent.

First name: * Jane
 Last name: * Green
 Company: ACME

Address: * Main Street
 Additional address:

City: * Anytown
 Country: * United States

Postal code: * 99081
 Province/State: * AL Alabama

Email address: * Jane.Green@ACME.com

Phone number:
 Fax number:

Buttons: Cancel, < Previous, **Next >**

Click Next.

Figure 3-26: Test customer information entry

Verify Email Address

Please take a moment to verify that your email address is correct. If it is incorrect, your unlocking code cannot be sent to you.

You entered:
Jane.Green@ACME.com

Is this correct?

Buttons: Yes, No

Verify the email address and click Yes.

Figure 3-27: E-mail Address Verification window



Figure 3-28: Internet Message Processing underway message



Figure 3-29: Authorization Request complete



Click OK. This message informs you that the test Client was able to send an authorization request, and Casper was able to receive it and send back an authorization via HTTP.

Figure 3-30: Client Test Authorization Request successful

The message above informs you that the Internet authorization request was successful. The test Client was able to send an authorization request, and the Server was able to process and receive the request.

Note: If the above message popup does not appear, there is a problem with your communications. Please contact CrypKey Technical Support.

Note: Your customer will not see the site key message when they use Casper to authorize your software. Authorization is invisible and automatic. The customer will only receive a message that the software is authorized.

SIMPLE TEST PROGRAM

Instead of running the Client Test Program above, you can use the simplified "Simple Test Program" to test Casper quickly. If you run the Simple Test Program on your Casper server, do not modify any of the entry fields and press the **Send** button to test. The result should look similar to Figure 3-31: Simple Test Authorization Request successful.



Figure 3-31: Simple Test Authorization Request successful

Procedure

1. Display the Casper Test Application window (Start menu>Programs>Casper>Client Programs>Casper Simple Test Program).
2. Enter the serial number **123**.
3. Enter your Casper URL.
4. Click **Send**. Casper should return a response value of "0", indicating the test was successful. It also shows that the Server was able to receive and process your authorization request.

Note: If the return value of "0" does not appear, there is a problem with your installation. Please contact CrypKey Technical Support.

Client Interface Demo – What your Customer Sees

Now that you have conducted a successful test of the software registration request over the Internet, you can run a demo program to simulate what your customer will see when making an authorization request. This demo program uses the serial number verification method. The credit card demo program is shown in *Part 3: Casper eCommerce*. To run the Casper eRegister test:

1. Go to the CrypKey web site at <http://www.CrypKey.com/downloaderegister.asp> and click on CrypKey Casper Demonstration **Download here, OR** run the demo program from the Start menu>Casper>Client Programs>Casper Client Demo.
2. If you downloaded the demo program, save the program to your desktop or other convenient location.
3. Unzip the file and install example.exe.
4. Run the program (double click on the executable). The Casper Demo window appears (see *Figure 3-32: Casper Client demo*).

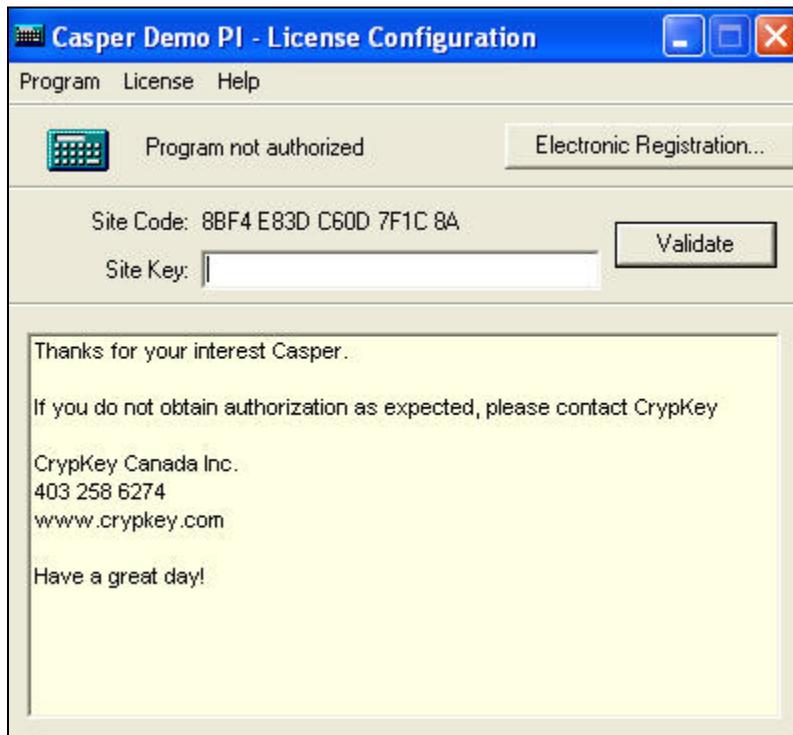


Figure 3-32: Casper Client demo

5. Click the **Electronic Registration** button.

6. Follow the screens and enter the prepaid serial number **123**. This example captures customer information and stores it in the Casper database. This prepaid serial number is valid for a 3 day authorization. By default, the demo uses the HTTP for requests. If that is not available, Casper defaults to email requests.
7. If the Site Key is sent by email, enter it into the Site Key field in the Casper Demo window.
8. Click **Validate**. A message pop-up appears informing the customer that their copy is authorized.

See *Part 4: Casper Wizard* for more information on how your customers use the Client side of Casper to send you a request for authorization to use your CrypKey-protected software. Instructions for enabling Casper and configuring the Wizard are included, for both CrypKey Instant and CrypKey SDK, depending on which product you use to protect your software.

Testing Email Authorization Requests and Issuing of Licenses

After you have tested Casper's ability to process requests via the Internet, you are ready to test authorization of software requests by email. You will need to test the ability of Casper to process software authorization requests via email if you plan to offer this option to your customers. Be sure to configure a test email account and then run the tests as shown in Table 3-2.

Casper supports only POP3 and SMTP email protocols.

Note: The following email authorization requests test the serial number processing capability of Casper eRegister. (Credit card transactions are discussed in *Part 3: Casper eCommerce*).

Table 3-2 Procedure for Testing Casper Functionality

This step . . .	is in this section . . .
1. Set up email account	Set up a Test Email Account
2. Test customer authorization requests using automated email	Test Authorization Requests via Email: Automatic Email Authorization Request
3. Test customer authorization requests using manual email	Test Authorization Requests via Email: Manual Email Authorization Request
4. Run a demo program of Casper eRegister's Casper Wizard to simulate what your customer will see from the Client side.	Client Interface

Figure 3-33: CasperWeb System Maintenance Menu page 1

3. **Check Email every** fields: in the General section of the page, enter how often (in hours and minutes) you want Casper to check email from your customers. The Casper Client sends email registration requests to the server whenever an HTTP request is unable to be processed. Later, on page 2 of the System Maintenance screen you will set up the email account to be used for this purpose (see *Figure 3-35: Email Test Page* below).
4. **Trigger on subject** field: acts as a filter for messages. Only emails with the specified subject in the subject line (e.g. "Registration Request" will be processed by Casper.
5. **Response text** field: Enter the response message to be sent to your customers when licensing your software via email. In your message, be sure to instruct your customer to enter the site key that Casper generates and sends with the reply email, to complete the authorization.

Click the checkbox options that you require. Typically you should select the checkbox **Send license/eReceipt to email address supplied in Wizard**. If you select this checkbox, Casper will send the reply email to both the Server and the customer's email address as entered in the Casper Wizard. If this option is not selected, the reply is sent to the originating email address.

6. Click **Update** to save your changes.

- Click **Next Page** to go to page 2 of the System Maintenance menu. The Email Configuration screen is displayed (see *Figure 3-34: System Maintenance Menu page 2 - Email Configuration* below).

System Maintenance

Update Page 2 of 4 Prev Page Next Page

Email Server Email Test

Incoming Email (POP3)

Server: mail.myserver.com
 Logon User: systems.admin
 Logon Password:

Outgoing Email (SMTP)

Server: mail.myserver.com
 Logon User: systems.admin
 Logon Password:
 Return Address: testemail@myserver.com

E-Receipt

Subject line:
 Body:
 Notification Address: (blank for no notification)

Other

Casper Log File: C:\Program Files\CrypKey\CASPER_220\casper.log
 CallBack DLL:

Update Back

Figure 3-34: System Maintenance Menu page 2 - Email Configuration

- Incoming Email, Outgoing Email:** enter the name(s) of the **Server** that handles incoming and outgoing email; the **Logon User** (either your user name or email address, depending on how the email server is set up); the **Logon Password**; and the **Return Address** to which customers may reply. This should be an email address that is checked by a human, such as a support group's email address, and is usually different from the Casper server email address. Click **Update** to save the changes.

Note: The return email address *must* be filled in. Some email servers require it.

Note: The incoming email server logon user and the outgoing email server logon user may be different.

E-Receipt Subject line field: this section pertains to credit card transactions, but can also be used to send you notification that Casper recognized the serial number processing transaction. If the reply is an eReceipt, it goes to the customer as well. For information on how to configure E-Receipts for credit card transactions made via the Internet, see *Part 3: Casper eCommerce*, in this manual.

9. Under the **Other** section, the **Casper Log File** location is set by default. This is a log of all the Casper events which can be used for troubleshooting.

Call Back DLL: Callback information is optional and not required to test email.

10. Click **Update**. The email configuration is finished.
11. Click **Email Test**. The Email Test screen is displayed (see *Figure 3-35: Email Test Page*).
12. You will need to run three tests to ensure the email server and Casper can communicate: **Send** (a test message from Casper to the email server); **Read** (the test email retrieved by Casper); and **Process** (processes the software registration request you sent).

These tests will confirm that the overall process is functional:

- the email server receives the email from the Client program, which calls the Casper Wizard
- Casper retrieves the Client email from the email server
- Casper generates a Site Key and mails it to the user (via email server)

Email Test **Back**

Email Actions

Send Send Test Message to

Read Read a Message (it is not processed)

Delete Delete a Message (it is not processed) **Process One** Process One Message Now

Listing Message Listing (no processing) **Process All** Process All Messages Now

Email Test Output **Clear Output** **Send To Support**

Email Test Output

Email Settings **Update**

Check Email every hours minutes (set both to zero to disable)

Trigger on subject

	Server	Logon User	Logon Password
Incoming Email (POP3)	<input type="text" value="mail.myserver.com"/>	<input type="text" value="systems admin"/>	<input type="text"/>
Outgoing Email (SMTP)	<input type="text" value="mail.myserver.com"/>	<input type="text" value="systems admin"/>	<input type="text"/>
SMTP Return Address	<input type="text" value="testemail@myserver.com"/>		

Figure 3-35: Email Test Page

13. **Send test:** In the Send Test Message line, enter the Casper server email address you are using to test the system. Click **Send**.
14. Scroll down in the **Email Test Output** area to view the message confirming the test email was sent successfully. This means CasperWeb was able to send email to the email server.

Note: If you have trouble interpreting the output, copy and paste the output in an email message and send to CrypKey support.

15. View the test email account to see if the message from the Casper server was delivered.

Note: Make sure the email in the incoming Inbox is not set to mark email as read upon delivery, or Casper will not be able to detect the registration request.
16. **Read test:** Click **Read**. Scroll down in the **Email Test Output** area to view the message confirming the test email was received and read by Casper successfully.

Tip: You can click the **Clear Output** button after each test to clear the message area.

17. Other function buttons and fields on this page:

Delete: deletes one message from the Casper email account.

Listing: Lists all unprocessed messages in Casper email inbox and numbers the emails consecutively.

Clear Output: Clears the data in the Email Test Output area.

Email Test Output: message area for emails sent, read or processed

Process One: Processes the first message in the Casper email inbox.

Process All: Processes all messages in the Casper email inbox.

Send to Support: displays the following page (see *Figure 3-36: Email Support Page*), where you can fill out contact information and send a message to CrypKey support. The data in the Email Test Output area on the previous page is automatically copied to the Data area.

Figure 3-36: Email Support Page

18. The information you entered in the Email Support page is copied to your email program and addressed to CrypKey support.

19. At this point you have run the Send and Read tests. Click **Process** to process the first email in the Casper inbox. If the test email you sent contains valid customer information (encrypted site Key), CasperWeb will return a “successfully processed” message in the Email Output Area.
20. If the Process test is not successful, send a message to CrypKey support using the Send to Support page.

TEST AUTHORIZATION REQUESTS VIA EMAIL

You can test authorization requests sent by your customers to use your software with the Client Test Program (Start menu>Programs>Casper>Client Programs>Client Test Program). The following tests use email-based messaging.

Note: Throughout these tests, note any errors and contact CrypKey Technical Support if required. You can also perform some troubleshooting by analyzing the `casper.log` file. Please include the `casper.log` file in correspondence with CrypKey support so that we can use it for analysis as well.

You will run two tests:

1. Automated email communication—this is an alternative method your customer can use to send you software license authorization requests (see *Automatic Email Authorization Request* below).
2. Manual email communication (see *Manual Email Authorization Request* below).

AUTOMATIC EMAIL AUTHORIZATION REQUEST

Using the server-side Client Test Program (see *Client Test Program – Internet-based Method*), you will process an authorization request sent from the Casper Wizard on your customer’s side, to your Casper server via email.

Note: This test uses a serial number to verify the request. For information on how to test serial number requests using the Internet-based method instead of email, see the subsection *Testing Internet-based Authorization Requests and Issuing of Licenses*.

Procedure

1. Double-click the Client Test Program (CaspTest.exe) in the \Client directory.

- or -

Select Start>Programs>Casper>Client Programs>Client Test Program

- The Casper Client Test Application screen appears. Type in an invalid URL in the format:

http://pcname/casper/

where *pcname* is replaced by the name of the computer on which the Client software is installed.

Note: If testing e-mail the URL must be invalid or the HTTP transaction will work.

- The Casper Client Test Application screen appears, similar to the example below:

C.A.S.P.E.R. Test Application

Site Code: D624 026A 2C5A 420C A4

Product information

Product code: TESTING

Description: Example product

Price: \$1.00

Email address: testemail@myserver.com

Email subject: Registration Request

Url: http://mail.myserver.com

Currency: US Dollars

Custom input fields

Configure...

Run Exit

Enter required information (see the following step)

Click Run.

Figure 3-37: Casper Client Test Application screen

4. In the Casper Test Application Window, the **Site Code**, **Product Information**, **Email subject** and **Currency** are all filled in by default.

Email address: Enter the test email account Casper will access to process the authorization request. This is the address from which the email registration request will be sent. This should be the same email address you specified in CasperWeb when setting up the email account (see *Figure 3-33: CasperWeb System Maintenance Menu page 1*).

URL: Enter an invalid URL (to force Casper to use email rather than Internet messaging).

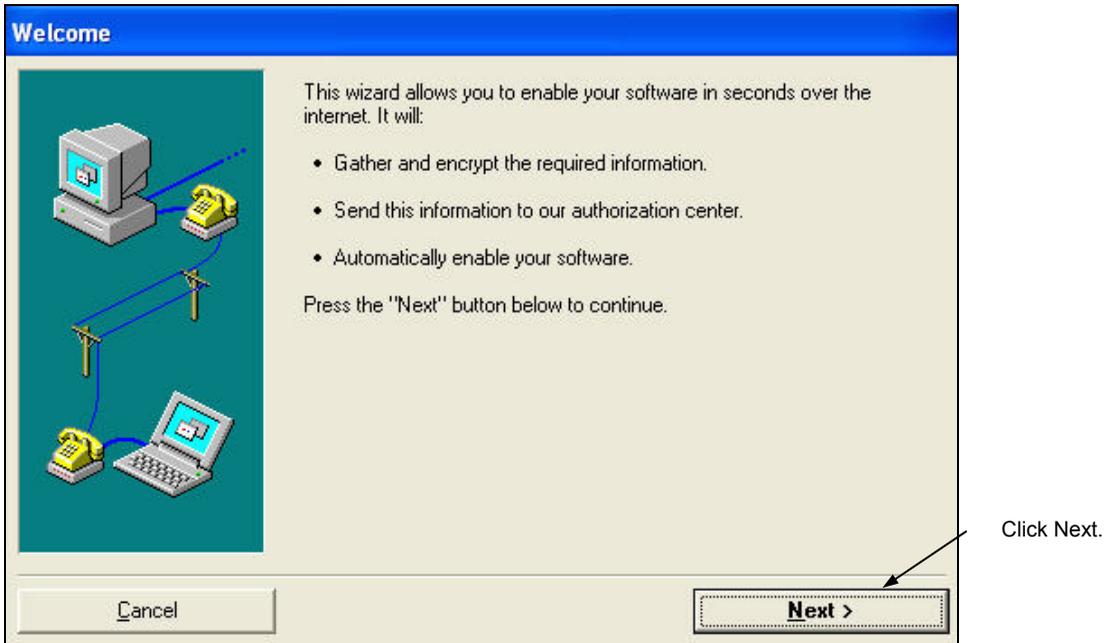


Figure 3-38: Casper Test Application wizard

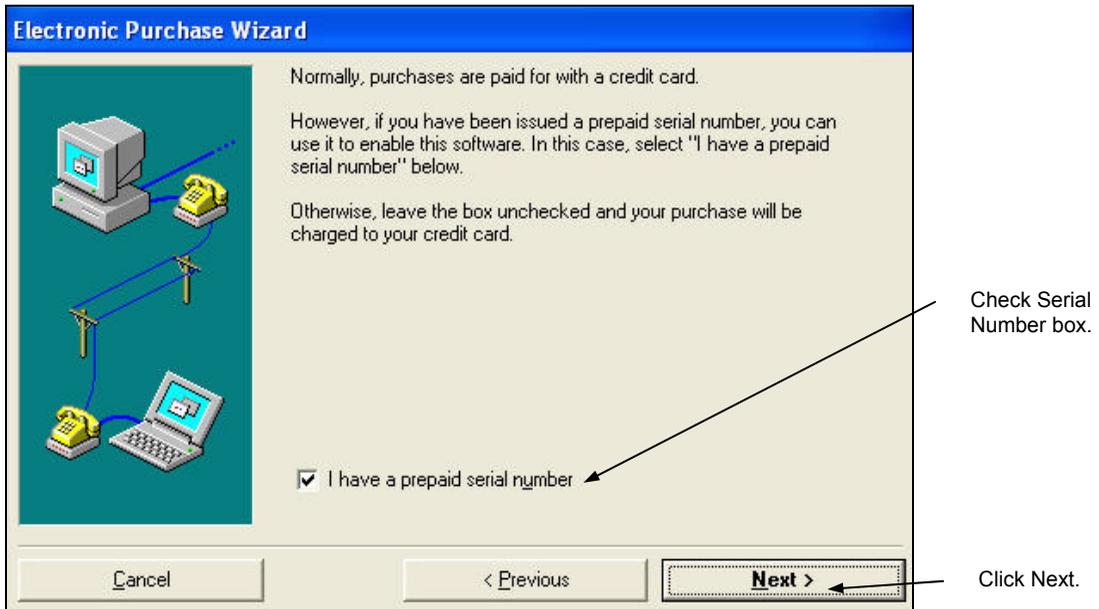


Figure 3-39: Casper serial number mode

5. This information for the customer information screen below does not have to be authentic, but the email address you enter should be your own test email account, which represents the customer's email address. If you selected the **Send license/eReceipt to email address supplied in Wizard** option (see *Figure 3-33: CasperWeb System Maintenance Menu page 1*), the Site Key will be sent to this address. If you did not select this option, the reply email containing with the Site Key will be sent to the originating email address.

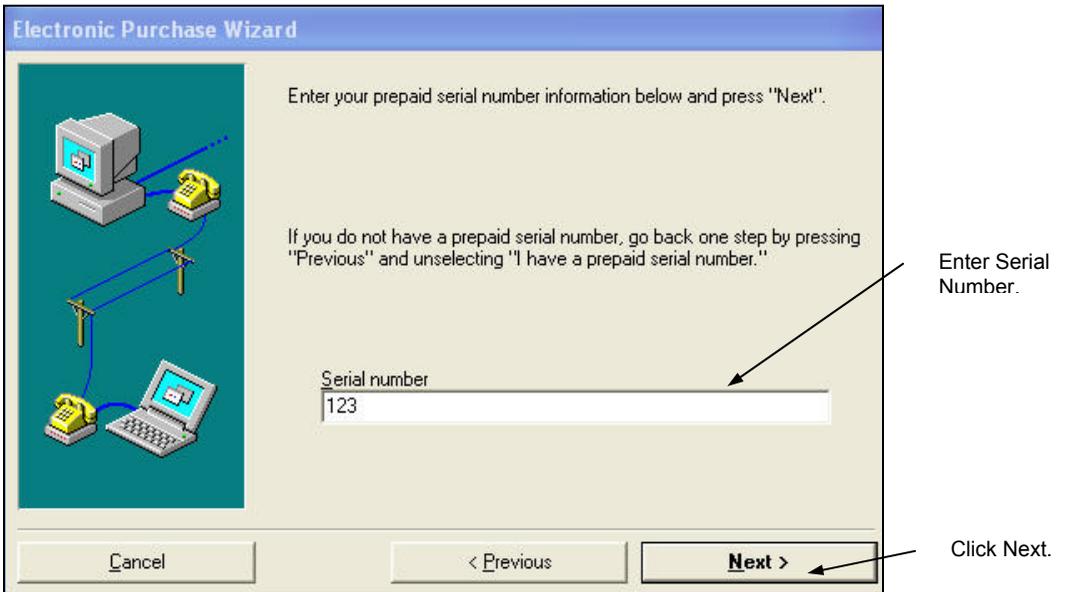


Figure 3-40: Casper serial number entry screen



Figure 3-41: Casper customer information – Casper Wizard



Verify the email address and click Yes.

Figure 3-42: Casper email verification



The system prepares to send an Internet message – but as you entered an invalid URL, it will fail.

Click Next.

Figure 3-43: Casper Authorization Request screen



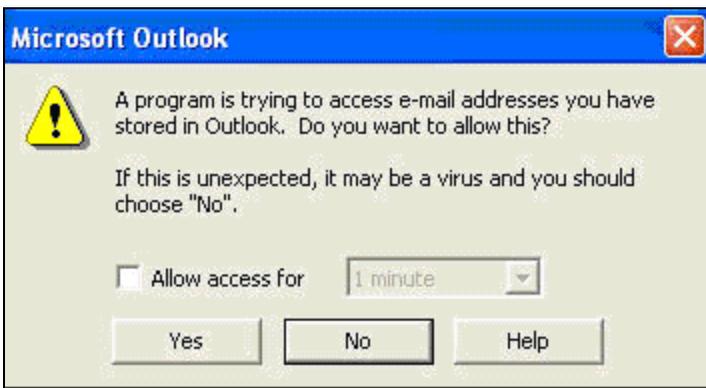
Figure 3-44: Authorization request processing message



Casper offers the option of using email.

Click OK.

Figure 3-45: Email authorization failure message



You may receive confirmation messages similar to these. Allow the email program to send an email by clicking Yes.

Figure 3-46: Email access confirmation

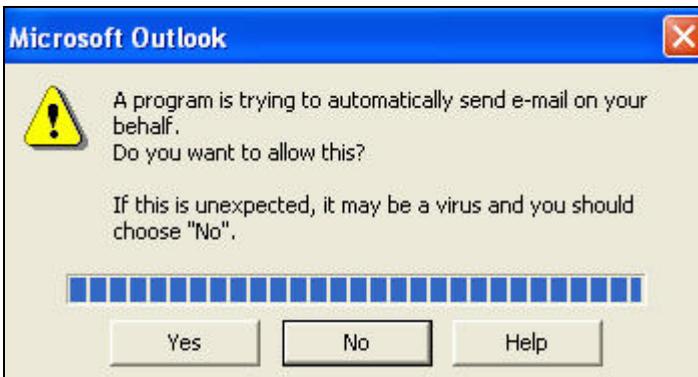


Figure 3-47: Send Email Confirmation



Figure 3-48: Email authorization request sent



This message reports the email was sent successfully.

Click OK.

Figure 3-49: Automated email test successful message

If the message above does not appear, there is a problem with your configuration. Please contact CrypKey Technical Support.

The message above tells you that the email communication worked, meaning that the test Client was able to send an authorization request.

The process is:

- a. Casper sends an encrypted registration request email to the Casper email account (specified in the Client Test Application window, see *Figure 3-37: Casper Client Test Application*).
- b. Casper then processes the received email.
- c. Casper sends another email containing the Site Key to the customer email account you specified in the customer information window (see *Figure 3-41: Casper customer information*).
- d. The customer will then copy and pastes the Site Key into the CrypKey-protected software to authorize it. To view a simulation of what the customer sees on the Client side, refer to the *Client Interface* paragraph below.

If your attempt to verify authorization requests by automatic email fails, you will see the error message in *Figure 3-21: Successful Remote Communications Test*. In this case you would use the manual email authorization request test. We advise you to try the manual email authorization test to ensure it is working correctly.



Figure 3-50: Automated email test failed message

MANUAL EMAIL AUTHORIZATION REQUEST

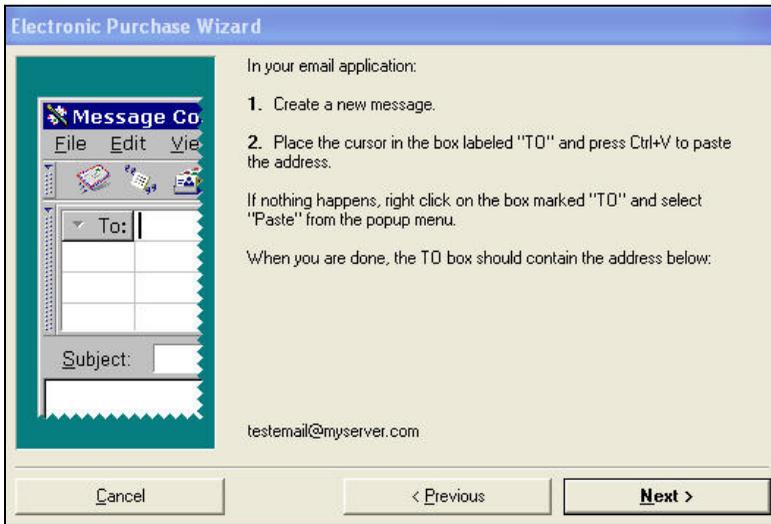
This is another method of requesting license authorization if there is a problem with an automated email request.

Procedure

1. In the Casper Test Application window, enter an invalid URL in order to force the system to use email rather than Internet messaging.
2. Click the **Run** button and follow the instructions on the screens as in the *Automatic Email Authorization Request* section above.
3. The system displays the Casper Authorization screen as shown in *Figure 3-51: Manually send email*.



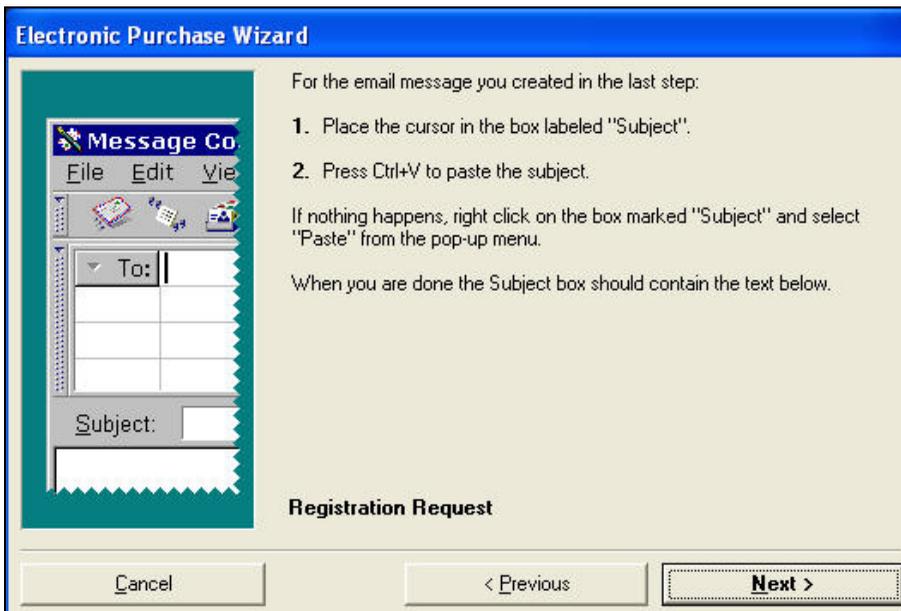
Figure 3-51: Manually send email



Follow the on-screen instructions to create a test email To address.

Click Next.

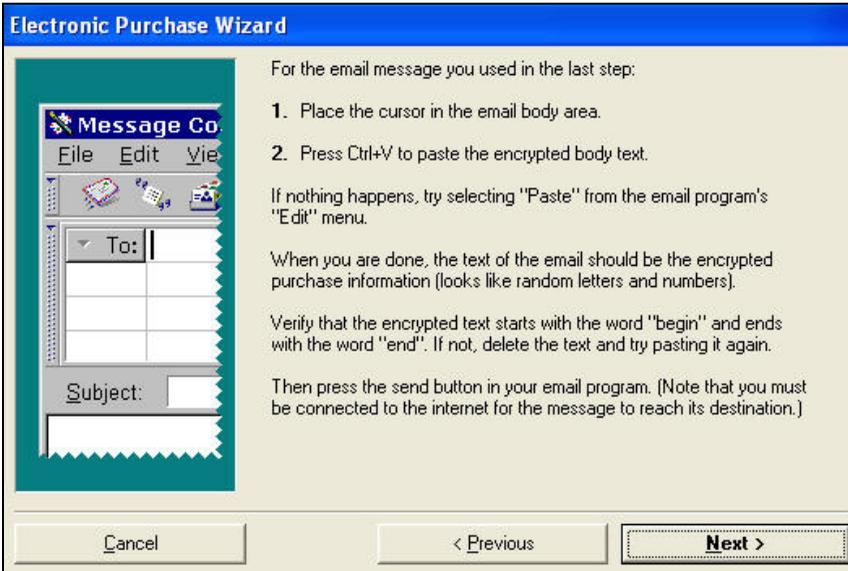
Figure 3-52: Manual email test set-up: To address



Follow the on-screen instructions to create a test email Subject.

Click Next.

Figure 3-53: Manual email test set-up: Subject



Follow the on-screen instructions to create a test email Body.

Click Next.

Figure 3-54: Manual email test set-up: Body



This is what your customer would see when receiving confirmation of a successful authorization request via the Casper Wizard.

Click Next.

Figure 3-55: Manual email test: Customer message



This message reports the email was sent successfully.

Click OK.

Figure 3-56: Manual email test successful message

If the message above does not appear, there is a problem with your configuration. Please contact CrypKey Technical Support.

The message tells you that the manual email communication worked, meaning that the test Client was able to send an authorization request. The process is:

- a. Casper sends an encrypted registration request email to the Casper email account (specified in the Client Test Application window, see *Figure 3-37: Casper Client Test Application*).
- b. Casper then processes this email and sends an email containing the Site Key to the customer email account you specified in the customer information window (see *Figure 3-41: Casper customer information*).
- c. The customer then copy and pastes the Site Key into their CrypKey-protected software to authorize it.

CANCELLING THE CLIENT TEST PROGRAM

To cancel the Client Test Program from any screen:

1. Click the **Cancel** button. The following pop-up message appears:



Click Yes. The Client Test Program returns to the main menu.

Figure 3-57: Client Test Program cancellation message

2. Click **Yes**, and another pop-up message is displayed:



Figure 3-58: Client Test Program cancellation return value

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