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OC VISUAL 3270

*"By Developers for Developers who need
Client/Server, Internet, and Host Systems to
interact in a seamless technology solution!"*

*-Eddie Zaremba
Chief Architect*

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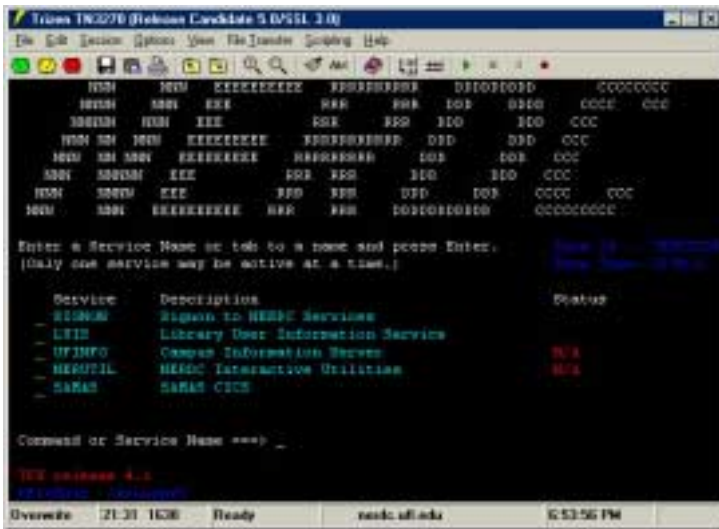
OC Visual 3270

“Visual 3270 represents the premiere solution for developers and administrators who need to give Host access to their employees and customers. First and foremost its not just about delivering Emulation to an enterprise’s desktops, its about bringing the Internet, Client/Server and Host Systems together under one umbrella—and Visual 3270 is the only product in the world to conquer all three spheres of technology.”

-Eddie Zaremba

Introduction

With OC Visual 3270, **administrators** can quickly deliver 3270/5250 emulation via a browser or standalone to any Microsoft Windows Machine, Macintosh OS X or Linux Machine. For the **developer**, OC Visual 3270 comes loaded with a set of Borland VCLs, J2EE JavaBeans, Microsoft ActiveX controls, Linux CLX’s, COM Objects, and .Net Components that enable any developer to simply drag-n-drop 3270/5250 emulation into their environments and control the emulation as they see fit. Developers can utilize the following programming languages to create custom Emulation and Screen Scraping (Rejuvenation) packages, ActiveX controls, Visual Control Libraries, .Net Components, Linux CLX’s, and J2EE JavaBeans: Delphi, Kylix, C++Builder, RealBasic for Macintosh, Visual Studio 6.0, Visual Studio .Net and any J2EE Compliant Programming Language such as Borland’s JBuilder.



Of course, any Integrated Development Environment that can handle ActiveX, VCL, CLX, .Net, COM or J2EE can use our products including Excel, Access, ASP, Word, and many more.

Our products also allow developers to create Host-to-Web applications with ease and flexibility as either custom HTML displays, or complete 1:1 screen sessions in pure HTML. Administrators wishing to deploy a host access solution can utilize our ActiveX controls to deliver 3270/5250 emulation to client machines in a

matter of minutes across an entire enterprise!

Unlike other products, which make you learn their scripts, or their proprietary language, OC Visual 3270 empowers the developer to utilize their own programming language of choice to accomplish these seemingly daunting tasks!

What was all that about?

This section is for those that need some background information for the previous topic. 3270 and 5250 represent the protocols that allow a mainframe to communicate with an end user. If you have registered for a college course, or renewed your vehicle you have probably interacted with this type of system, which currently manipulates about 70% of the world's information! OC Visual 3270 provides this type of emulation natively for all 32-bit versions of Windows, Linux, and Macintosh. As good as this may seem, the "green screen" has a major flaw when it comes to the internet—the information is formatted explicitly for the green screen NOT HTML!

There have been many attempts to get this type of information on the Internet but most of them require a complete re-engineering of the application on the host system and expensive installs on the host machine—all cost prohibitive. The best solution to date, and definitely the cheapest is to use the "green screen" behind the scenes, sort of like having a person type into the emulator to get the data out and then pass that information on to the web client.

Screen Scraping is exactly what this process is and is what OC Visual 3270 provides like no other product in the world. The most powerful feature of OC Visual 3270 is its ability to let developers use their choice of development languages:

- Visual Basic
- Visual C++
- Visual C#.Net
- Visual Basic.Net
- Borland's Delphi
- Borland's C++Builder
- Borland's Kylix for Linux
- Borland's Jbuilder or J2EE
- Active Server Pages and COM

By following simple rules, developers can add our components to an existing application or web application and provide "screen scraping" access to host systems, thus making it available to Internet users such as when you renew your vehicle on-line, or register for a college course on-line, or pay your parking ticket on-line. The number of applications that can benefit from OC Visual 3270 are endless.

OC Visual SSL

Furthermore, our products all include Secure Sockets Layer 3.0 (TLS 1.0) cryptography to provide extra security accessing host systems! Even more than this, OpenConnect Systems is providing a OC Visual SSL for developers to use within their own applications based upon the OpenSSL library. We have packaged a complete guide on developing SSL applications using our VCL libraries and OpenSSL utilizing Delphi and Borland C++. Visual Basic SSL is accomplished through our OC Visual SSL for ActiveX. We encourage our users to experiment with OC Visual SSL.

We wouldn't leave out the Macintosh! Our OC Visual 3270 represents a great solution for developers trying to implement SSL/TLS in their applications. Our product for the Macintosh utilizes OpenSSL compiled natively for Carbon, PPC and x86 processors and will be released with RealBASIC 5.5 later in 2003.

Source Code

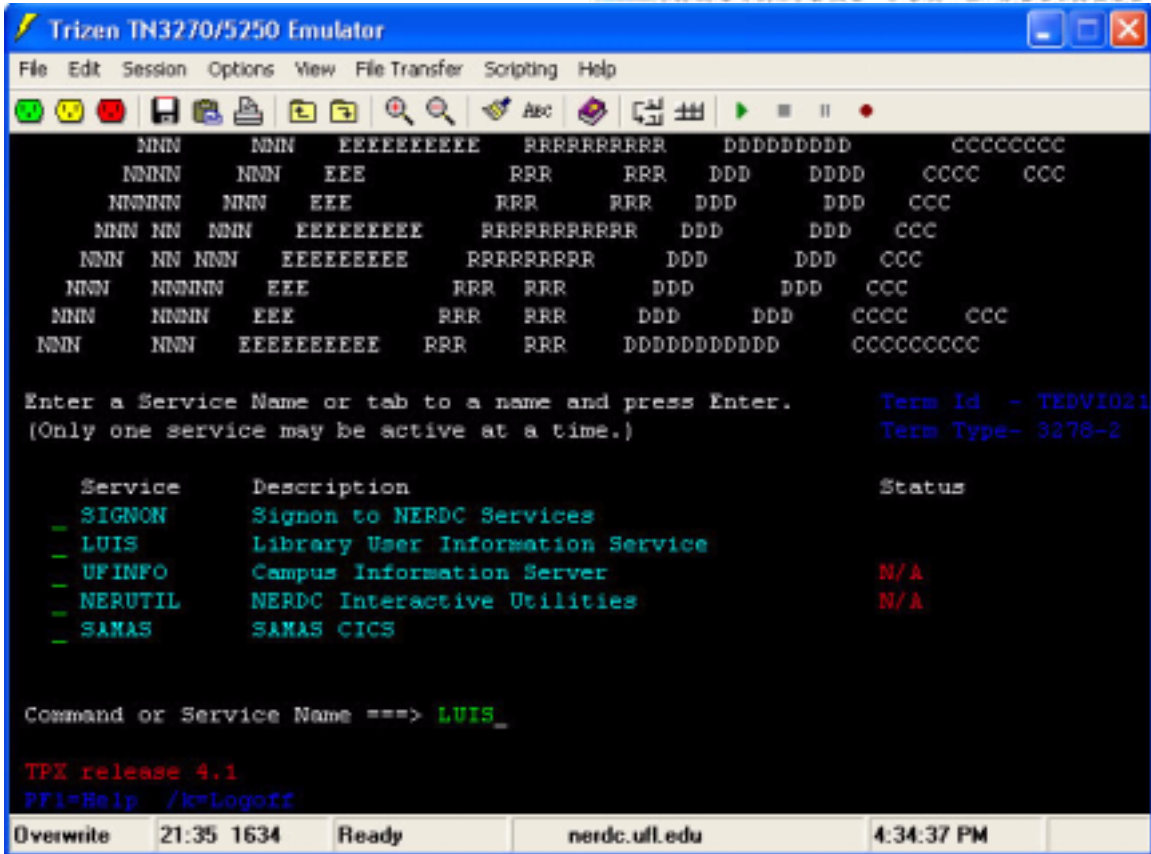
OC Visual SSL comes complete with source code so that enterprises can utilize e-Commerce and OC Visual 3270 in one COM object for use within ASP! OC Visual 3270 source can be escrowed into an account upon request and for a fee.

The Product List

Significant resources have been devoted to designing and developing some of the best host access software products for your organization. We are proud to present the following titles that are included in OC Visual 3270:

OC Visual 3270/5250 Emulators

Our flagship product, which enables all the other products, is our 3270/5250 Emulator for Windows (95, 98, NT, 2000, XP). This emulator offers all the bells and whistles for any enterprise use and includes a few more to help get your mainframe on the internet quickly and easily.

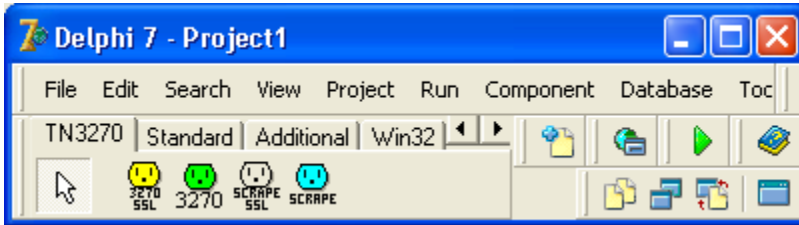


OC Visual 3270's emulators and components all support the following standard TN3270/5250 requirements:

- 3270
- 5250
- LU1
- LU3
- IND\$FILE
- FTP
- Extended Fields (Blinking, Highlighting, Underline, etc)
- Simple VT100 Client Gateway for TN3270/5250
- Pure VT100 (Telnet)
- SSH1 SSH2
- SSLv2, SSLv3, SSLv23, TLSv1
- SOCKSv4, SOCKSv5
- Macros
- VBA
- KeyMap
- AutoSize
- Much More

OC Visual 3270 for Delphi

Since our first OC Visual 3270 product in early 1997, we have always used Delphi as the prototype language of choice and as such, OC Visual 3270 for Delphi represents our flagship product in the OC Visual 3270 line of products. The products has over 5 years worth of stability and an efficient evolutionary prototyping life cycle that has created the best product in this market. The following screen shot represents the components that come with our OC Visual 3270 for Delphi:



From the above screen shots it is clear that there are four (4) Emulation type components to choose from:

| Name | Description |
|-------------------|--|
| TNEmulator | Full TN3270/5250 Emulation Control Non-Blocking Async |
| TNEmulatorSSL | Full TN3270/5250 SSL Emulation Control Non-Blocking Async |
| TScreenScraper | Non-Visual Full TN3270/5250 Emulation Screen Scraper Non-Blocking Async |
| TScreenScraperSSL | Non-Visual Full TN3270/5250 Emulation Screen Scraper with SSL Non-Blocking Async |

The next page shows all the properties and events that come standard with our OC Visual 3270 for Delphi, and represents a small portion of the capabilities:

Object TreeView, Object Inspector

Object TreeView | Object Inspector

TNEmulatorSSL1 TTNEmulatorSSL

Properties | Events

| | |
|-----------------------|--|
| OnAID | |
| OnCertReceived | |
| OnConnect | |
| OnCopyAvailable | |
| OnCopyBoxClosed | |
| OnCreate | |
| OnCursorPosChanged | |
| OnDisconnect | |
| OnEOR | |
| OnEOS | |
| OnError | |
| OnFileTransferStatus | |
| OnHighlightAvailable | |
| OnHighlightClosed | |
| OnKeyboardRestore | |
| OnKeyDown | |
| OnKeyDownComplete | |
| OnKeyPress | |
| OnKeyPressComplete | |
| OnKeyUp | |
| OnKeyUpComplete | |
| OnLUAssignment | |
| OnMacroComplete | |
| OnMacroError | |
| OnMacroScreenComplete | |
| OnMouseDoubleClick | |
| OnMouseDown | |
| OnMouseMove | |
| OnMouseUp | |
| OnPasswordRequired | |
| OnRead | |
| OnSingleMacroComplete | |
| OnUpdateScreen | |
| OnWrite | |
| PopupMenu | |

All shown

Object TreeView, Object Inspector

Object TreeView | Object Inspector

TNEmulatorSSL1 TTNEmulatorSSL

Properties | Events

| | |
|-------------------|---------------------------|
| Align | alNone |
| ⊞ Anchors | [akLeft,akTop] |
| AutoSize | True |
| BlinkRate | 500 |
| CaptureKeys | True |
| CertFile | |
| Color | ■ clBlack |
| Connected | False |
| ConnectMethod | cmNone |
| Cursor | crDefault |
| CursorType | ctUnderline |
| EditMode | emOverwrite |
| ⊞ EmulationColors | (TEmulationColors) |
| EncryptionType | EXP-RC4-MD5 |
| ⊞ FileTransfer | (TFileTransfer) |
| ⊞ Font | (TFont) |
| HandleErrors | True |
| HangTime | 0 |
| HasKey | True |
| Height | 384 |
| HelpContext | 0 |
| HelpKeyword | |
| HelpType | htContext |
| Hint | |
| Host | |
| Keyboard | kbPC |
| KeyFile | |
| KeyPassword | |
| Left | 171 |
| LUName | |
| Name | TNEmulatorSSL1 |
| PopupMenu | |
| Port | 23 |
| ⊞ ProxyInfo | (TProxy) |
| TabStop | False |
| Tag | 0 |
| TerminalType | IBM-3279-2-E |
| Timeout | 0 |
| TN3270E | False |
| Top | 51 |
| Trace | False |
| TraceFile | |
| UseCertificate | False |
| Visible | True |
| Width | 640 |

All shown

Obviously our software packs a punch when it comes to offering the best tools for enabling your mainframe or AS/400 to communicate with the Internet, Client/Server or as a stand-alone application. In fact our Entire TN3270 Emulator was written in pure Object Pascal, with no 3rd party tools. Completely from scratch, so you can be sure that you are getting a high quality and non-proprietary component that is thread-safe and ready for the enterprise.

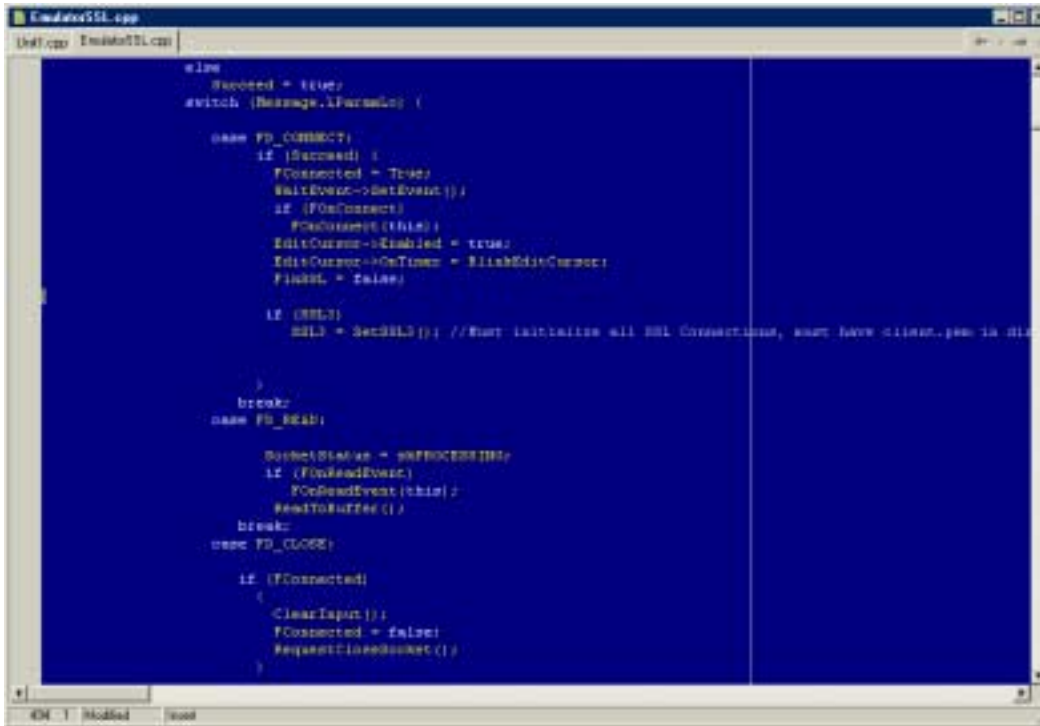
Winsock 1.1 Compliance

Our entire Windows product line adheres to Winsock 1.1 specification utilizing Asynchronous Sockets. In fact, the Enterprise Edition of OC Visual 3270 demonstrates complete Winsock capabilities so you can utilize our software not just as a Terminal Emulator, but as a Winsock control by stripping out the 3270/5250 data stream.

SSL BIO Compliance over an existing TCP/IP Socket

Our OC Visual 3270 Emulator for Delphi utilizes the OpenSSL organization libraries and demonstrates how to implement SSL on an already existing socket. Developers will quickly be able to extract the necessary knowledge on PKI techniques including: Certificate Signing & Authority, SSL Verification, SSL Negotiating, Encryption Strength, and many more. By utilizing our OC Visual SSL for Delphi, developers can just drop it into their applications and not have to worry about the complexities of PKI, but we hope you will experiment with the code to find your best security practice.

OC Visual 3270 for C++Builder



```

EmulatorSSL.cpp
Delphi: EmulatorSSL.cpp

while
  Succeeded = true;
switch (Message.LParam) {

case FD_CONNECT:
  if (Succeeded) {
    FConnected = true;
    WaitEvent->GetEvent();
    if (FOnConnect)
      FOnConnect(this);
    EditCursor->Enabled = true;
    EditCursor->OnTimer = EditEditCursor;
    FIdle = false;
  }
  if (SSL)
    SSL = SecSSL(); //Start initialize all SSL Connections, must have cipher.pem in dir
}
break;
case FD_READ:
  SocketStatus = SPROCESSING;
  if (FOnReadEvent)
    FOnReadEvent(this);
  ReadToBuffer();
break;
case FD_CLOSE:
  if (FConnected)
  {
    ClearInput();
    FConnected = false;
    RequestCloseSocket();
  }
}

```

A natural transition from Borland's Delphi is Borland's C++ Builder which utilizes the same architecture; however, we decided it was best to write the OC Visual 3270 C++Builder in native C++Builder Code rather than write in Borland and import it into C++Builder. This version is the exact same version as the Delphi version except the source code is written in C++ code.

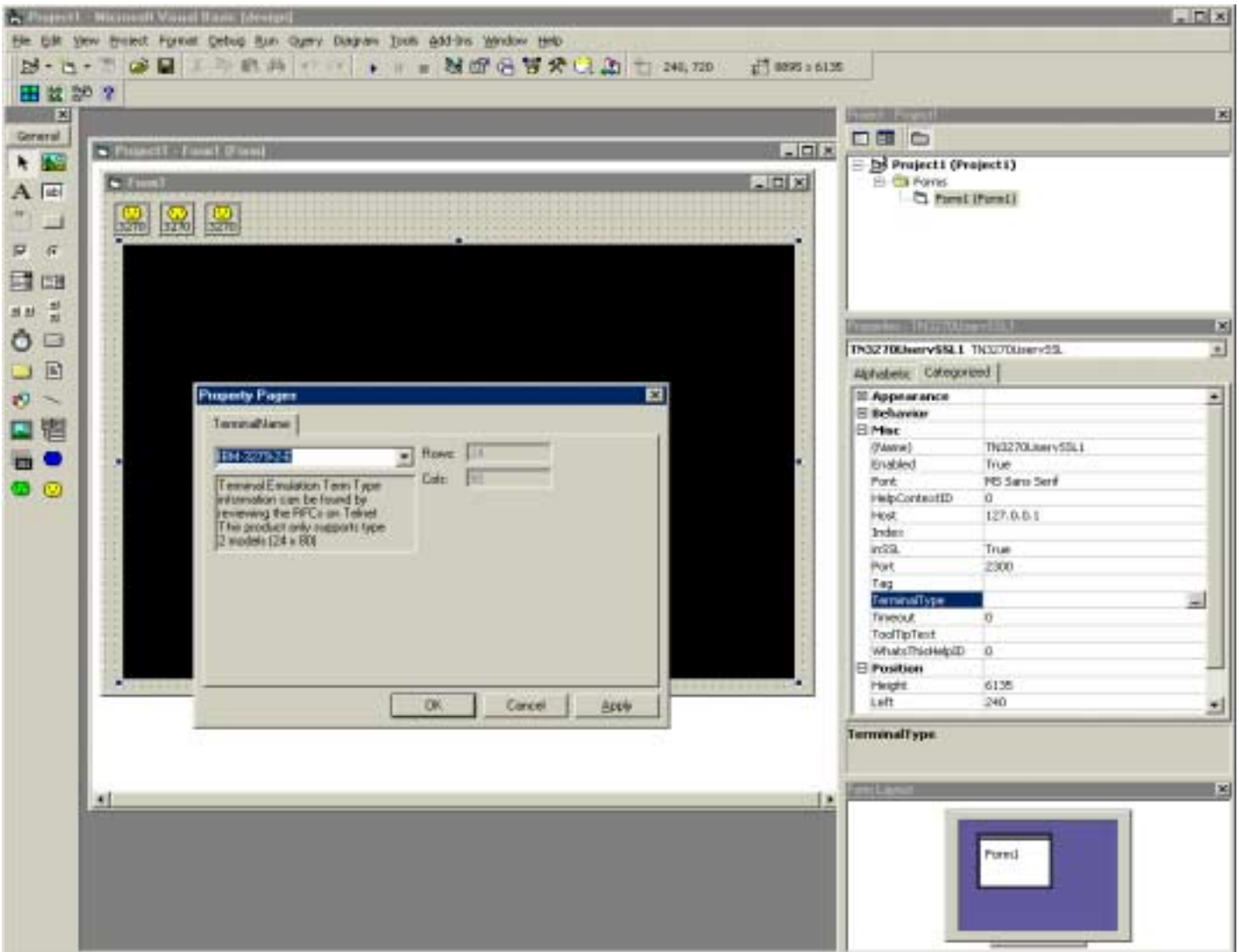
Once again, we wrote the entire application from scratch, utilizing NO 3rd party tools so you can be assured that the application is ready for use without having any dependencies. We also separated the SSL versions from the standard versions as a little more detail is required to operate SSL connections through the OpenSSL toolkit.

OpenSSL and TCP/IP

Naturally our approach was the same as before, write a standard Winsock 1.1 socket and then overlay SSL. The implementation was completely done utilizing Asynchronous Sockets and Winsock C++ methods for a fast and efficient execution.

| Name | Description |
|--------------|--|
| TEmulator | Full TN3270/5250 Emulation Control Non-Blocking Async |
| TEmulatorSSL | Full TN3270/5250 SSL Emulation Control Non-Blocking Async |
| TScraper | Non-Visual Full TN3270/5250 Emulation Screen Scraper Non-Blocking Async |
| TScraperSSL | Non-Visual Full TN3270/5250 Emulation Screen Scraper with SSL Non-Blocking Async |

OC Visual 3270 for Visual Basic



Here we can see the Visual Basic Multi-Document Interface that is currently holding a new OC Visual 3270 Project. On the toolbar we have referenced three (3) components, placing several on the Visual Designer.

| Name | Description |
|----------------|---|
| TNEmulatorX | Full TN3270/5250 Emulation Control (Non-Blocking Async) |
| TNEmulatorSSLX | Full TN3270/5250 SSL Emulation Control (Non-Blocking Async) |

There are no comparable “Non-Visual” components for ActiveX due to Microsoft’s requirements.

OC Visual 3270 for Visual Basic 2 components that offer the same services as the Delphi and C++Builder controls. These two controls are derivatives from the Delphi controls but compiled as ActiveX objects.

Controls in ASP

OC Visual 3270 comes with complete documentation on how to utilize ActiveX controls in ASP projects. All products in the OC Visual 3270 product line come complete with the necessary documentation for including emulation within web pages including IIS, Apache, AppServer, and other Middleware servers. The following represents a pure VBScript ASP page utilizing our COM object—notice that there is no coding required in any specific programming language like Visual C++, just HTML/ASP.

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.0 Transitional//EN">
<%@ Language=VBScript %>
<%

if (Session("MySession") = false) then
    Set Session("Obj1") = Server.CreateObject("ocCOMScrapper.mtCOM")
    Set Scrapper = Session("Obj1")
    Session("MySession") = true
else
    Set Scrapper = Session("Obj1")
end if

Private Function createSession()
    Scrapper.Port = 23
    Scrapper.Host = "nerdc.ufl.edu"
    Scrapper.TN3270E = false
    Scrapper.Connect
    Scrapper.WaitForScreen(1000)
    createSession = true
End Function

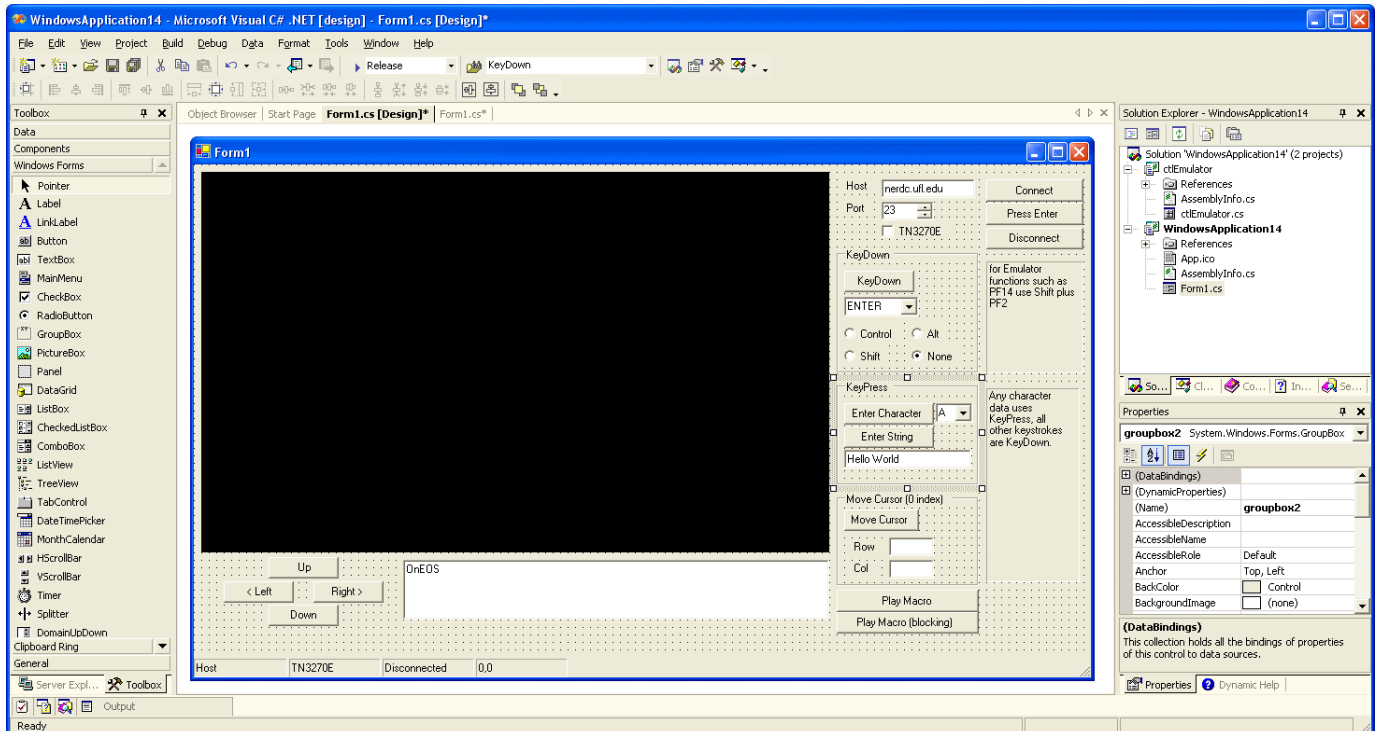
Private Sub Scrapper_OnMacroComplete()
    MsgBox "Complete"
End Sub

Private Function killSession()
    Session("MyConnection") = False
    Scrapper.Disconnect
    killSession = true
End Function

Private Function GetScreenText(intRow, intCol, intLength)
GetScreenText = Scrapper.GetScreenPortion(intRow, intCol, intLength)
End Function
```

OC Visual 3270 for .Net

With the release of .Net in 2002, OpenConnect would be remiss if we didn't cater to this emerging technology. With OC Visual 3270 for .Net, the same components have been created that are available in our ActiveX, Delphi and C++Builder components.

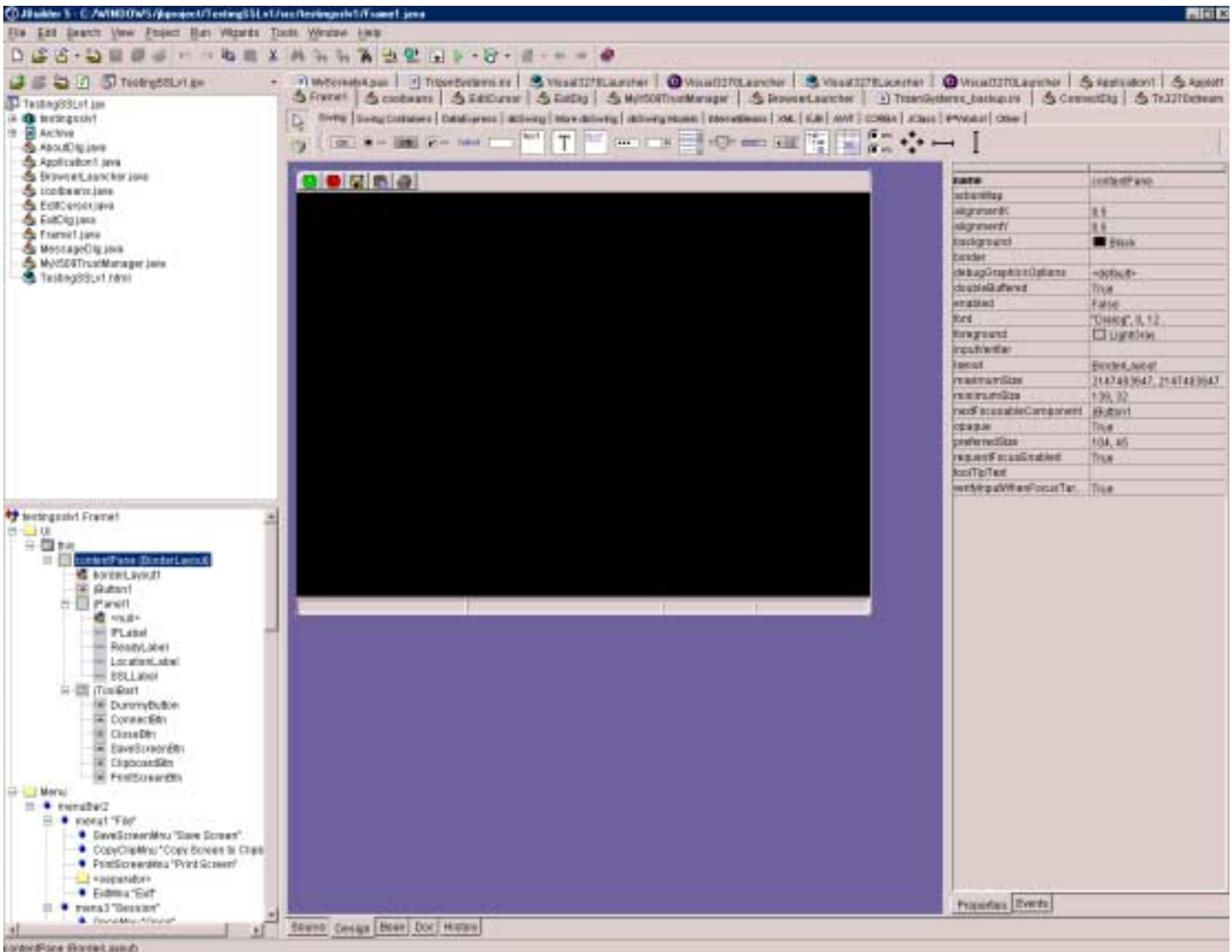


The above screenshot represents the “SupreDemo” that comes with OC Visual 3270 for .Net and demonstrates the capabilities of the emulator in action! Of course this only represents a portion of the capabilities but an important one for learning by example how the emulator can function in a programming environment such as Delphi for .Net, C#, Visual Basic .Net and other .Net frameworks.

All of our components for .Net are written in C# with additional components planned for Delphi for .Net and others.

OC Visual 3270 for Java

The developers of OC Visual 3270 pretty much program in every language, and we feel Java is maturing to a nice platform development environment, especially with the advent of J2EE. We chose JBuilder as our development environment as it adheres very strictly to Java2 and had a similar interface to Borland's Delphi, Visual Basic and C++Builder. We are pleased to present OC Visual 3270 for Java which adheres to JDK 1.4.1



The above image represents our OC Visual 3270 for Java which houses our Java source code to enable virtually any platform running JDK 1.4 to have Access to Host resources.

JavaBean

Our OC Visual 3270 for Java JavaBean enables enterprises to add our components to J2EE environments including Java Server Pages. Our sample application demonstrates exactly how to process and control our JavaScraper component to screen scrape from any 3270 and 5250 host. Lightning fast speed gives this component the same processing speed as any native executable.

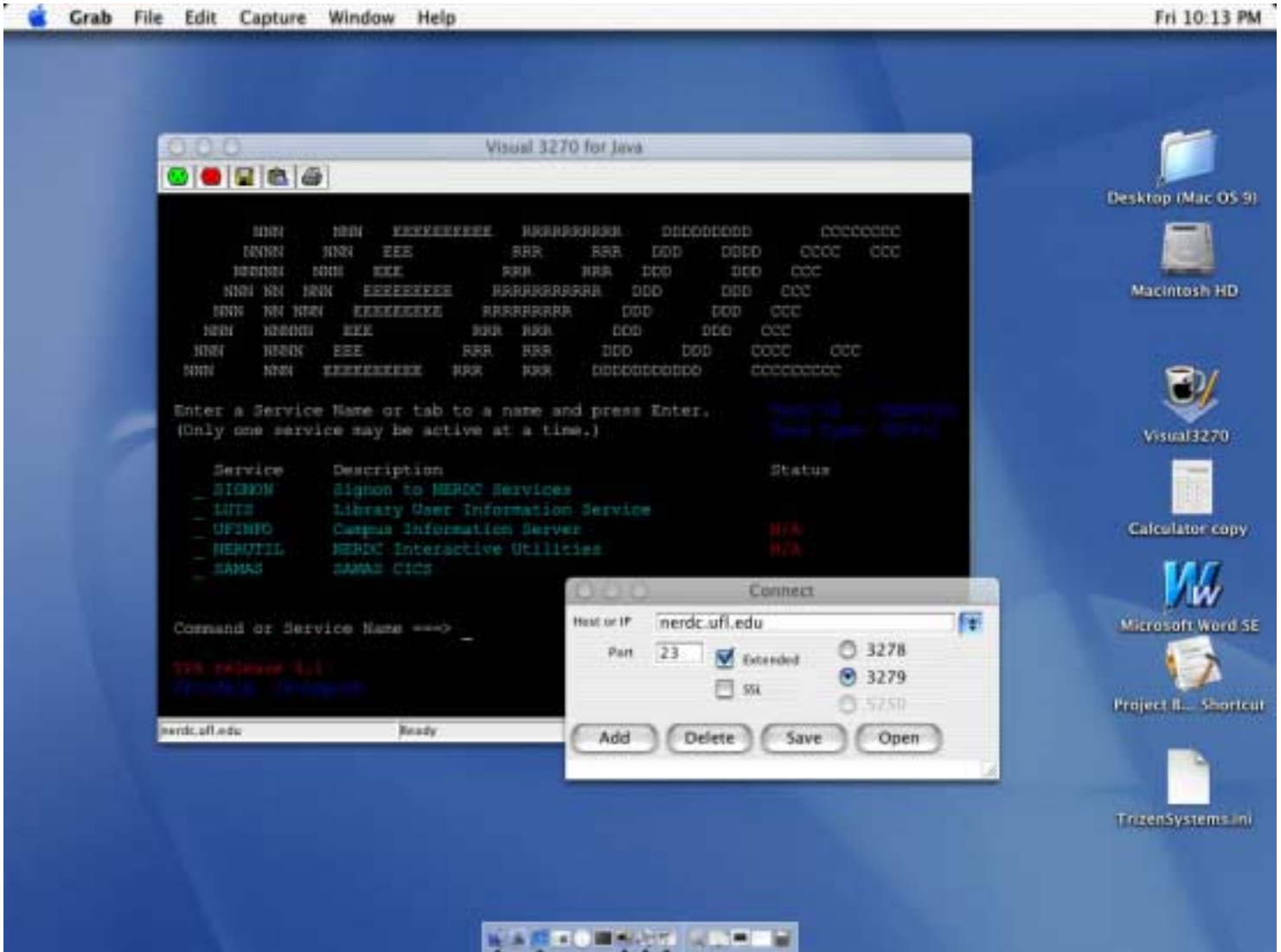
SSL with JSSE 1.0.2, JDK 1.3 and 1.4 (Java 2)

OC Visual 3270 for Java supports complete emulation for 3270 and offers Java Secure Sockets Extensions 1.0.2 which must be added to JDK 1.3 but will become standard in JDK 1.4. This is great news for the Java developer community who need to operate in a secure way.

OC Visual 3270 for Macintosh



Our main goal in providing OC Visual 3270 for Macintosh was to handle the absolutely sensational new MAC OS X operating system. With a UNIX engine, we could NOT let another vendor provide TN3270 services for this platform—to this end we chose to write our first version of the MAC Emulator in Java which utilizes JSSE to communicate over a non-blocking existing socket in a secure manner with SSL as the protocol.

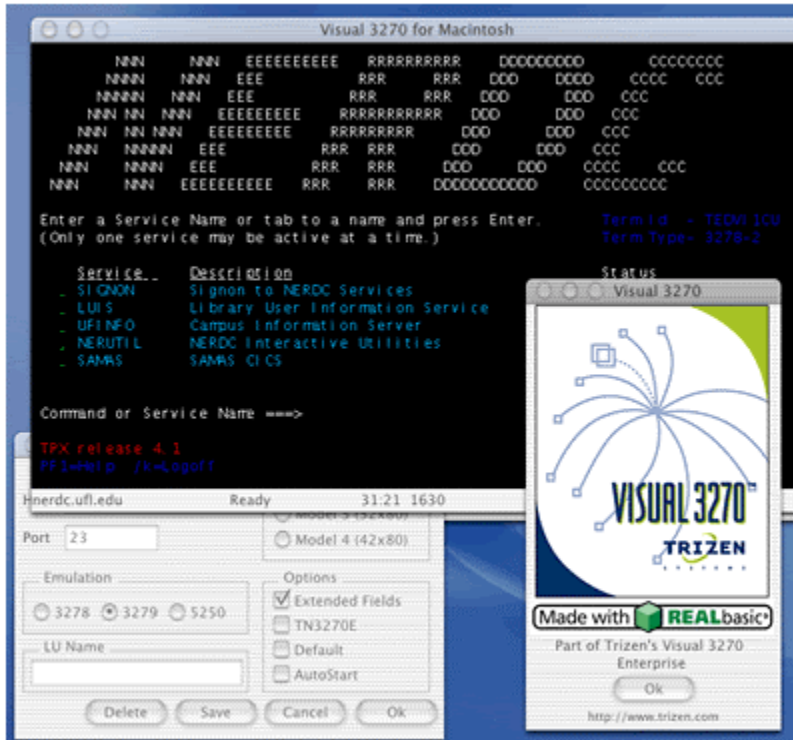


But we didn't stop there; we made a completely native Macintosh Emulator with SSL for OS 7,8,9 and 10 (OS X). This was awarded Enterprise Product of the Year by REALSoftware and will have the same components as our Delphi components by the middle of 2003. These components will be based on our OC Visual 3270 for Macintosh PPC and OS X

OC Visual 3270 for Macintosh PPC and OS X

A native version for running OC Visual 3270 natively on MAC OS 7,8,9 and 10 has been created and also includes a special compilation for the New OS-X Aqua interface.

We also support SSLv2, SSLv23, SSLv3, & TLSv1 in our Macintosh product.



OC Visual 3270 for RealBASIC and CodeWarrior

Later this year we will release components that operate on the Macintosh similar to our OC Visual 3270 for Delphi and ActiveX but will run in CodeWarrior and RealBASIC. These components will offer all the latest features as well as some Macintosh specific features. We have been working with RealSoftware to make sure that Macintosh is ready for the enterprise in 2003!

OC Visual 3270 for Linux

RedHat, Mandrake, and SuSE will all have the same capabilities that our OC Visual 3270 for Delphi has—in fact, Kylix is Borland’s Delphi for Linux and will have the same source code as the Delphi code. It will be required that developers utilize the Kylix Development Environment to develop their applications but this provides users with the capabilities to use C++Builder for Kylix or Delphi for Kylix:



Web-to-Host Connectivity

The screenshot shows a Microsoft Internet Explorer window titled "TN3270 SCREEN EMULATION - Microsoft Internet Explorer". The address bar contains "http://127.0.0.1/WebTest/Web2HostCOM.dll/webhost". The main content area displays a mainframe terminal interface with a header of asterisks and a table of services. Below the table, there is a prompt "Enter a Service Name or tab to a name and press Enter." and a list of services. The "LUIS" service is selected, and its command "LUIS" is entered in the input field. At the bottom of the terminal, there are function key labels (F1-F12) and a footer with "PA1 PA2 PA3 ENT CLR Refresh Close".

| Service | Description | Status |
|---------|----------------------------------|--------|
| SIGNON | Signon to NERDC Services | |
| LUIS | Library User Information Service | |
| UFINFO | Campus Information Server | N/A |
| NERUTIL | NERDC Interactive Utilities | N/A |
| SAMAS | SAMAS CICS | |

Command or Service Name ==> LUIS

TPX release 4.1
PF1=Help /k=Logoff

F1 F2 F3 F4 F5 F6 F7 F8 F9 F10 F11 F12
F13 F14 F15 F16 F17 F18 F19 F20 F21 F22 F23 F
PA1 PA2 PA3 ENT CLR Refresh Close

The "ISAPI Sessions Manager" window is overlaid on the bottom right. It features a list of sessions (0-21) with checkboxes, a "Current Session" section with "Close" and "Re/Start" buttons, an "All Sessions" section with "Close All" and "Stop All" buttons, a "Statistics" section showing "Active Sessions: 1" and a "Refresh" button, and a "Start Sessions" section with a "Sessions" dropdown set to "100" and a "Start Sessions" button. At the bottom, there are "Sessions" and "Connections" tabs.

In this section we show you a quick and easy way to provide simple screen scraping technologies to your enterprise. With just two programs installed into your IIS Server, you can have this up and running in minutes! Developers can then follow the routines within the source code to make custom screen scraping applications! This is the best and easiest way to put mainframe data on the Internet! We look forward to seeing what our developer community can come up with to Web enable their legacy applications over the Internet. This application uses ISAPI and pre-loaded sessions from the ISAP Sessions manager.

This document is for evaluation purposes only and should not be distributed for any other reason. Please contact OpenConnect Systems at <http://www.oc.com> for more information

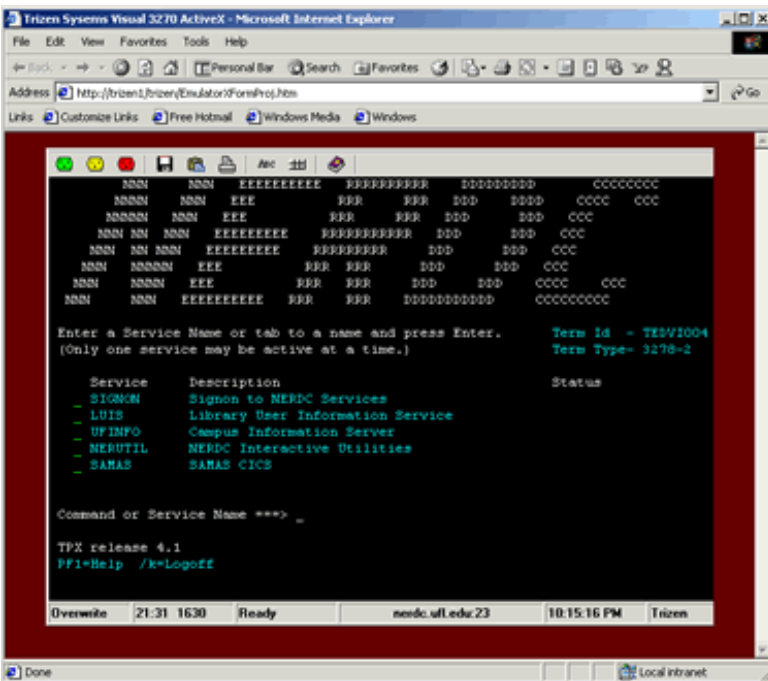
What is even better is the ISAPI sessions manager can exist anywhere on your network, just load in the IP into the web page scripts and you can access the Non-Visual Screen Scrapers over TCP/IP.

Pure HTML Conversion

Developers will be keenly aware of the benefits of having a pure HTML presentation. This application can quickly be distributed to hand held devices, thin clients and other Internet Explore or Netscape applications. We have chosen to exploit some DHTML elements to make a better presentation, but other than this, the application is platform independent.

Active X over the Internet

We wouldn't go without letting our Internet Explorer developers see how easy it is to distribute 3270 Emulation over the Internet through ActiveX controls. Here we have



distributed our TN3270/5250 Emulator to our client through an IE 4.0+ browser with only 250K! We have also code-signed the application for you with Verisign, but you are free to use OC Visual 3270 to make your own emulator that you can distribute and code sign. Even more, the ActiveX Emulator can be installed on the mainframe or host system and then because it is an ActiveX control it can be manipulated in HTML using **VBScript or JavaScript!**

The best thing about OC Visual 3270 is that the enterprise has all the options and all the control because we have developed the controls to be

utilized in whatever development environment fits best. You the administrator decide what features to implement such as SSLv3, SSH, Telnet, or strip it down for minimal distribution. Even more than that OpenConnect Systems is a full Systems Integration organization and can help put your host access into place.

As developers we always look forward to answering questions and helping the developer community, we are a developer's developer—eager to work with our community in creating great products!



Contact Us

If you have questions, comments, concerns, or would like to purchase products or order “try-before-you-buy” please call us at the following numbers:

Corporate Sales – U.S.: 972-888-0470
Corporate Sales – U.K.: +44 0870 420 2765

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