
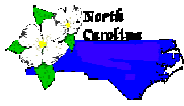


NC VSE User Group
Greensboro, NC

Web-enabling 3270 Applications

North Carolina
VSE User Group

Greensboro, NC
03/22/2005



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Agenda

- Why should you web-enable 3270 applications and what options do you have?
- One solution to web-enabling
 - z/Web-Host
- z/Web-Host
 - Features
 - System structure and how it works
 - What you can do with it



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Why Web-enable?

- Most of the computing world uses the Internet and the Web
- Power of computing is in everyone's hands
- One simple interface---intuitive navigation
- Internet infrastructure provides unparalleled access



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Why Web-enable?...

- Open new constituencies, offer access to new markets with existing systems
- Quick return on investment
- Extends existing, "mega-investment"
- Create appearance of "updated applications"



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Approaches to Web-enabling

- Device emulation
- New application development
- Immediate application access
- Screen re-engineering



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Approaches to Web-enabling... Device Emulation

- Pros
 - Immediate access
 - No application changes
- Cons
 - Not true Web applications
 - Usually three-tier implementation



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Approaches to Web-enabling... New Application Development

- Pros
 - New applications engineered for Web access
 - Use existing skills for development and maintenance
 - Still executing under CICS on the mainframe



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Approaches to Web-enabling... New Application Development

- Cons
 - High development costs
 - Long development cycles delay availability
 - New code to debug
 - Loss of investment in existing applications



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Approaches to Web-enabling... Immediate Access

■ Pros

- ❑ Native Web interface
- ❑ No application changes required
- ❑ No user effort, beyond product installation
- ❑ VSE based solutions available

■ Cons

- ❑ Limited Web enhancement of 3270 screen design
- ❑ No HyperText links or graphic buttons



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Approaches to Web-enabling... Screen Re-engineering

Pros

- ❑ Re-engineer 3270 screens without programming
- ❑ Click through menus with HyperText links or graphic buttons
- ❑ Two-tier VSE solution available

■ Cons

- ❑ Effort required to define screen changes



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Our Solution



- Available since WAVV 1998 (Albany)



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Features...

- A native VSE application running in a VSE partition
- Works well with CICS but is NOT dependent on CICS
- Supports customizing individual screens
- Supports combining data from multiple 3270 screens into a single web page



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Features...

- Supports automatic navigation thru application screens
- Works well with popular HTML authoring tools such as FrontPage or DreamWeaver

The goal is to make integrating mainframe 3270 applications with the Web *Easy*



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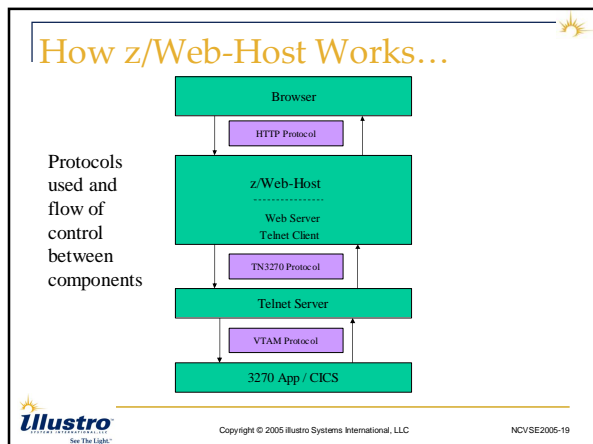
How z/Web-Host Works

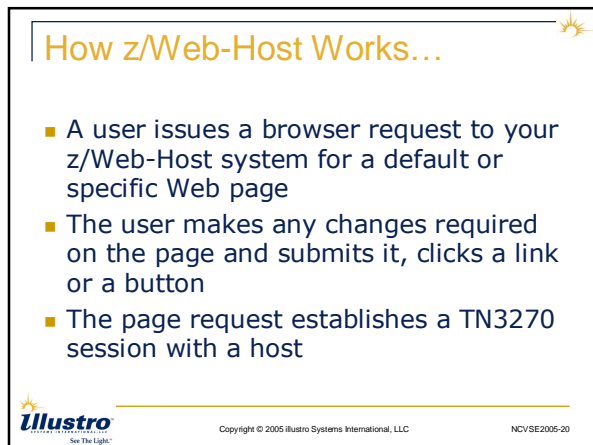
- There are three major components in z/Web-Host - all tightly integrated:
 - Web Server talks to a browser
 - TN3270 client talks to 3270 applications
 - HTML generator converts data streams to Web pages and back again

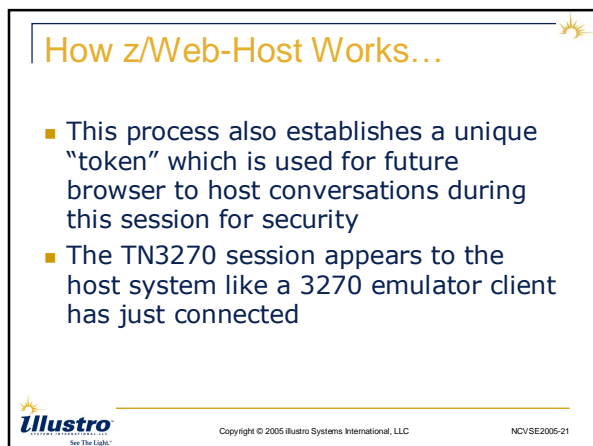


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How z/Web-Host Works...

- Now the 3270 application is in control. Typically it sends out a screen to the "new 3270". The fun begins!
- For each output 3270 screen the following steps occur:



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How z/Web-Host Works...

- z/Web-Host checks the screen to see if it is in the list of "WebScreens" that are defined
- If it is, the specifications in the WebScreen are applied. These can do quite a number of changes to the 3270 screen - but we will get to that.

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How z/Web-Host Works...

- Next the HTML generator builds a web page. This may include:
 - Data from the 3270 screen
 - Data from an "HTML template" file associated with the WebScreen or a default template
 - Data from other 3270 screens saved as z/Web-Host variables from the Application Automation Facility (AAF)

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How z/Web-Host Works...

- The Web page is delivered to the user's browser window by the Web Server. The user is now in control
- Depending on the display he may:
 - Just look at the data displayed
 - Fill in input fields
 - Select from pull-downs or other controls
 - Press a control key (such as a PF-key)
 - or just hit Enter



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How z/Web-Host Works...

- Now that the modified Web page has been submitted, z/Web-Host is in control again
 - The 3270 screen buffer is modified by mapping input fields from the received Web page to input areas on the screen
 - An inbound data stream is built from the modified data
 - The TN3270 client returns the new data stream to the host



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How z/Web-Host Works...

- Now the host is back in control
 - The data stream is processed and a new 3270 screen is created for output
 - And the whole cycle starts over again!
- It may sound complicated, but the whole process is very quick



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Basic WebScreen Facility

- Provides instructions on how the Web page HTML is generated from the 3270 screen
- Free format English like statements
- Stored as a VSE library text member
- Activated automatically at start up or dynamically by developer when creating new definitions



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Basic WebScreen Facility...

- Identification
 - Screen_Name Assign a name to the WebScreen
 - Screen_Data How to match a 3270 screen to this definition
 - Row/column of string
 - Character string to match



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Basic WebScreen Facility...

- Omit parts of 3270 data from web page
 - Cut_Region Remove entire rows
 - Hide_Region Blank a screen area
- HyperText Links
 - Link Define link location and action when clicked
- Text alteration
 - Text_Replacement Replace text strings




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Basic WebScreen Facility...

- Display attributes
 - Body HTML Body attributes (bgcolor, text color, background)
 - Map_Color Map 3270 colors to web page colors
 - High_Intensity Color for highlighted text

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Basic WebScreen Facility...

- Virtual Keyboard Management
 - Keyboard_Processing Dynamic or Manual
 - Keyboard_Location Bottom, top, both
 - Key_Enable Show a 3270 key
 - Key_Disable Don't show a key
 - Key_Region Screen area for dynamic processing
 - Key_Legend String to locate key descriptions

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Basic WebScreen Facility...

- HTML Template definition
 - HTML_Template
 - VSE library member name
 - Encoding type of library member
 - EBCDIC Text library member
 - ASCII String library member

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```

      *+
      UU   UU    $$$$$$ EEEEEEE
      UU   UU    $$$$UUU$ EEEEEEE
***** **     UU   UU    $$$$UU$ EEEEEEE
***** **     UU   UU    $$$$UU$ EEEEEEE
**          UU   UU    $$$$UU$ EEEEEEE
**          UU   UU    $$$UU$  EEEEEEE
**          UU   UU    $$$UU$  EEEEEEE
***** **     UU   UU    $$$UU$  EEEEEEE
***** **     UU   UU    $$$UU$  EEEEEEE

```

```

Your terminal is L304 and its name in the network is D72L304
Today is 02/10/2005 To sign on to DBDCCICS -- enter your:

USER-ID..... The name by which the system knows you.
PASSWORD..... Your personal access code.

```

PF1=HELP 2=TUTORIAL 4=REMOTE APPLICATIONS
10=NEW PASSWORD



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```

z/Web_Host z/VSE_Signon Screen
      ++
      ++ VV VV 333333 #####
222222 ++ VV VV 333333 #####
22222 ++ VV VV 333333 #####
22 ++ VV VV 333333 #####
22 ++ VV VV 333333 #####
222222 ++ VV VV 333333 #####
222222 ++ VV 333333 #####

```

```

Your terminal is T050 and its name in the network is T050
Today is 02/11/2005 To sign on to DBDOCICS -- enter your:

USER-ID.....[ ] The name by which the system knows you.
PASSWORD.....[ ] Your personal access code.

```

Enter PF3 PA1 PA2 Clear z/Refresh z/Disconn
PF7 PF8 NEW PASSWORD HELP TUTORIAL REMOTE APPLICATIONS



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```

*
**SCREEN:: Screen Definition for VSE Signon Screen
*
  Screen_Name      VSE_Signon
  Screen_DATA      Row 1 Column 2 String IESADMS01
  HTML_Template    vsesign.template Encoding EBCDIC
*
  Cut_Region       1 4
  Cut_Region       21 24

```



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Basic Template Facility

- HTML stored in a VSE library member
 - EBCDIC
 - ASCII
- Any desired user supplied HTML
- Template trigger statements
 - Screen trigger
 - Keyboard trigger
 - Error message trigger
 - Refresh trigger



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Basic Template Facility...

```
<HTML>
<HEAD><TITLE>z/Web-Host Sample HTML
      Template</TITLE>
<STYLE>INPUT {FONT-FAMILY:COURIER}</STYLE>
</HEAD>
<BODY BGCOLOR="DARKBLUE" TEXT="YELLOW"
      ONLOAD="INITCURSOR()">
<H3><CENTER>z/Web-Host z/VSE Signon
      Screen</CENTER></H3>

<!-- Z/WEB-HOST SCREEN -->

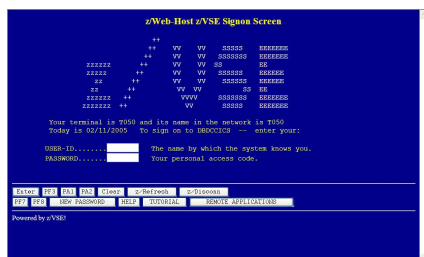
<HR><FONT SIZE="-1" COLOR="WHITE">
      Powered by z/VSE!
</FONT></BODY></HTML>
```



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Basic Template Example...



AAF WebScreen Facility


- Application Automation Facility
 - Specific group of WebScreen statements
 - Supports assigning values to user variable names
 - Allows automatic input of data values
 - Allows automatic navigation of application screens
 - Provides ability to combine data from multiple screens into a single Web page
 - Supports Advanced Template facility

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AAF WebScreen Facility...


- Statements

□ Assign	Store value in a variable
□ Drop	Forget a variable
□ Exit	Terminate AAF processing
□ If/Else/End_If	Conditional constructs
□ Input_Data	Put data into 3270 field
□ Refresh	Get waiting data streams
□ Send_Screen	Send data stream to app
□ Wait	Wait before proceeding

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AAF WebScreen Facility... Example

```
Assign !ZWH-acct Screen 5 10 10
If !ZWH-ctr = "ctr"
    Assign !ZWH-ctr 0
End_If
Assign !ZWH-ctr !ZWH-ctr + 1
Assign !ZWH-line.!ZWH-ctr Screen 20 1 80
If "More..." = Screen 24 72 7
    Send_Screen PF8
End_If
```

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Advanced Template Facility

- Use your favorite HTML generator or editor tool (FrontPage, DreamWeaver) to design the page layout and content
- Imbed variable names where you want the 3270 data to appear
- Assign the data to the variables in your WebScreen
- FTP your template to VSE library in ASCII (binary FTP).



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Advanced Template Facility...

- In your WebScreen
 - Process_Region None No dynamic HTML
 - Ignore_Row_Align Yes No row alignment
 - Keyboard_Loc None No virtual keyboard
 - HTML_Template Define template
 - Map_Field_Name Map 3270 fields to names in HTML form
 - Assign data to your variable names



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Advanced Template Facility...

- In your template
 - Code variable names where you want the 3270 data
 - Input field values
 - Clear text
 - Hidden fields used to set other variables
 - Code input fields with names specified in WebScreen Map_Field_Name
 - JavaScript is your friend!




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The Power of AAF and Advanced Templates

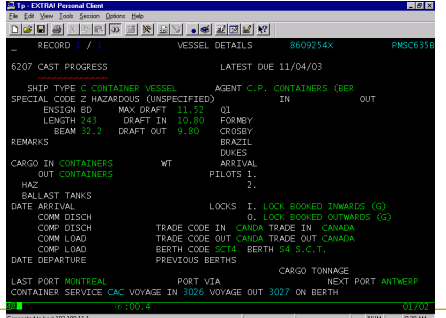
- Mersey Docks and Harbour
 - UK's number 2 port operator
 - Operates several ports and marine terminals, including the port of Liverpool on the River Mersey
 - Uses VSE CICS, VSAM, COBOL applications




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The Power of AAF and Advanced Templates...

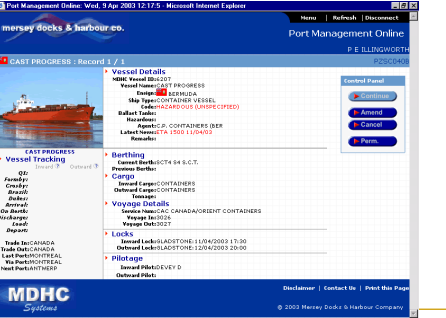





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The Power of AAF and Advanced Templates...





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Web Administration Application

- Secure Web application for administrators and WebScreen developers
 - Displays for system status
 - Dynamic system configuration
- Extensive command help and automatic command generation
- Provides control of the z/Web-Host system without accessing a VSE console

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Web Administration Application...



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z/Web-Host Resources

- Product Information
www.illustro.com/zwebhost.htm
- Live Demo
www.illustro.com/livedemos.htm
- Download
www.illustro.com/downloads.htm

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Summary

- Web-enabling makes your existing applications look much better
- Turn them into true Web applications for the greatest acceptance by users
- z/Web-Host provides all the tools needed for
 - immediate Web access
 - Full redesign of the application's user interface



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