Internet Enabling the Mainframe



Using Automatic HTML and XML



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Agenda

- IntellWare at WAVV 2002
- IntellWare Systems, Inc.
- Our Business Focus
- Our Product Set
- Internet enabling the mainframe
 - z/Web-Host
 - z/XML-Host



IntelliWare at WAVV 2002

CICS TS Migration Class preceding WAVV

- CICS TS Tuning and Problem Determination following WAVV
- Speakers of 8 sessions on a variety of topics
- You'll know us from our shirts!





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IntelliWare at WAVV 2002...

Continuing the tradition...
 One Major Announcement





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IntelliWare Systems, Inc.

- Since 1990 focused on delivering innovative products and services to the S/390 customer base
- Special relationship with VSE customers
- IBM Business Partner since 1995
- CA Business Partner since 1994
- Key focus is on bridging the mainframe to the rapid growth e-business market





Open for e-business[™]

≽e-hardWare™

≥e-softWare[™]

>e-serviceWare™



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e-hardWare

http://www.S390eBIZ.com e-business hardware for S/390



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ISI and Cornerstone Systems Partnership

- Agreement signed February 1, 2002
- Cornerstone has full responsibility for ISI hardware business
 - iFrame brand
 - Multiprise 3000 & Raptor z800



- iFrame commercial and PartnerWorld for Developers (PWD)
- Allows ISI to focus on software solutions
- Strong partnership between firms



http://www.S390eBIZ.com Comprehensive e-business services for S/390



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The Best Class of Services Anywhere...

First U.S. Distributor for SuSE Linux for S/390 for

- VM/VSE marketplace
 - Complete distribution package
 - Planning and implementation services
 - ≻Hands-on education
 - > 1st and 2nd level technical support
 - Total turnkey offerings including hardware, software and services

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The Best Class of Services Anywhere

- > Turn-key, integrated services
 - ➤ IntelliMOVETM Hardware and software installations and migrations
 - ► *Intelli*BUILDTM Off-site system build and staging
 - ► *Intelli*TUNETM Performance analysis and tuning
 - ► IntelliPLANTM System capacity planning
 - ➤ IntelliCONNECTTM -Complete TCP/IP and SNA network design and implementation
 - IntelliASSISTTM CA and other third party product installation and education
 - ► IntelliHELPTM Remote system support via network access
 - ➤ IntelliCALLTM Telephone based support



The Best Class of Services Anywhere...



- The <u>Best</u> Education co-sponsored with IBM Learning Services
 - VSE/ESA Under the Covers
 - TCP/IP Under the Covers
 - CICS Transaction Server for VSE/ESA Under the Covers
 - CICS Transaction Server for VSE/ESA Migration
 - CICS Transaction Server for VSE/ESA Tuning and Problem Determination



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Access Applications from Anywhere "

- Native, 2-tier implementation
- Designed to quickly and easily deploy the thousands of applications available on the mainframe worldwide
- Native web-browser access to <u>any</u> 3270 application



z/Web-Host Benefits

- Grants instant access to existing application systems
- Uses standard browser interface
- Instantly transforms 3270 application to intuitive, web-browser interface
- Saves money by eliminating re-engineering or new application functionality



z/Web-Host Benefits...

- Improves productivity---new users can immediately use applications without training
- Rejuvenation saves money by delivering the promise of new computing without new machines, applications, staff
- Concurrent user license reduces cost



- Runs native on mainframe, either OS/390z/OS, or VSE/ESA
- Only requires a TCP/IP stack (works with all stacks)
- No client side software installation
 - Straight HTML
 - Optional Javascript (but not JAVA!)
 - Works with all browsers



- Compatible with <u>any</u> 3270 application; CICS or non-CICS based
- Allows customer to instantly have access to 100% of their applications
- Includes WebScreen facility for interface rejuvenation



3 main components tightly integrated

- Integrated Web Server
- TN3270 Client
- HTML Generator



Internal Web Server

- Provides communication between z/Web-Host and web browser
- Uses HTTP protocol to and from the browser
- Can serve static HTML as well as other MIMEformat documents
- Documents contained in a PDS library (OS/390)
- Internally handles communications with internal TN3270 client



Internal TN3270 Client

- Provides communication between z/Web-Host and 3270 apps through connection to a TN3270 server
- TN3270/TN3270E is used to send and receive native 3270 data streams between Internal Web Server and user app



User Control of HTML Generation

- Different levels
 - Simple, default 3270 screen translation
 - Basic WebScreen customization
 - Low-level WebScreen customization
 - User coded HTML templates



- Simple, default screen translation
 - Basic features happen automatically
 - Screen layout is the same (geometry)
 - Any unprotected field becomes an input text box
 - Background and text colors will be same for every page
 - PF-Keys become buttons
 - Cursor position maintained
 - No work required



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Simple, default screen translation

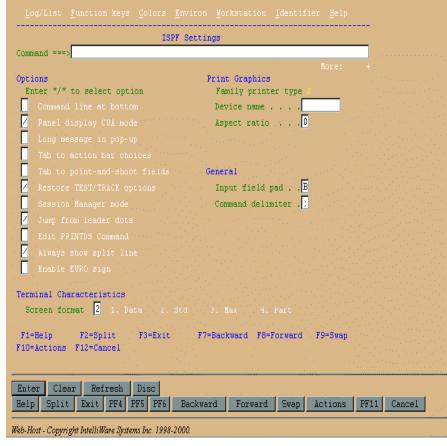
Log/List Function keys Colors	Environ	Workstation	Identifier	Help
ISPF Settings				
Command_===>				
				More:+
Options Enter "/" to select option	· · · · ·	rint Graphics Family print		
Command line at bottom		Device name		
/ Panel display CUA mode		Aspect ratio		
Long message in pop-up				
Tab to action bar choices	e da se se se	an an <u>e</u> nta a ag		
Tab to point-and-shoot fields	G	eneral	nad ki	
A Restore TEST/TRACE options Session Manager mode		Input field Command deli		
/ Jump from leader dots		oomana acti	matter i j	
Edit PRINTDS Command				
/ Always show split line				
Enable EURO sign				
Terminal Characteristics				
Screen format 1 1. Data 2.	Std	3. Max 4.	Part	
F1=Help F2=Split F3=Exit	F7=	Backward F8=	Forward F	9=Swap
F10=Actions F12=Cancel Action		0.0 - 0.1	704 40.00.	00/00/00
5:IBM-3278-2 04,15		00:01.	701 13:38:	35 08/29/00

Default 3270 Screen



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Simple, default screen translation



Intelli Ware

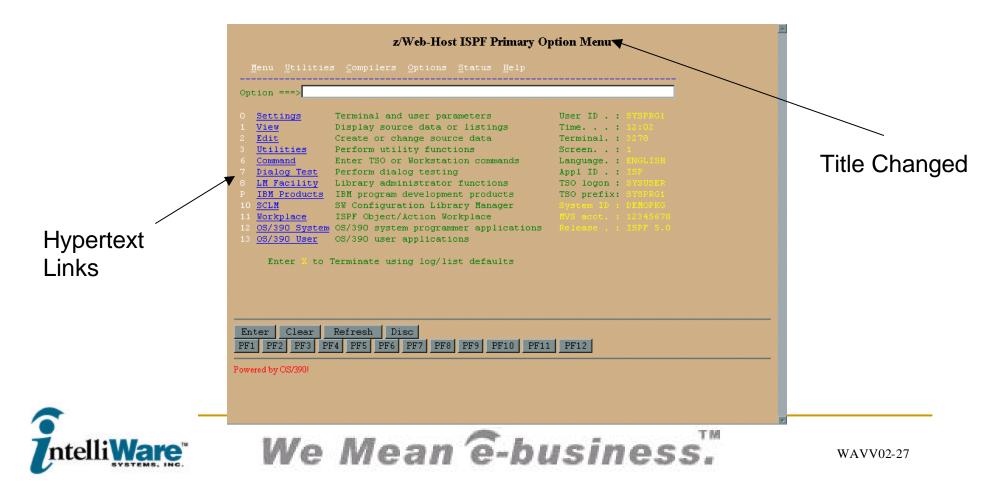
Simple Screen Translation (No customization)

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- Basic WebScreen Customization
 - Allows for vast improvements with a minimum of effort
 - Keys off of "trigger text"
 - When trigger-text is found, WebScreen definitions/options are applied
 - Same 3270 geometry, but some data can be hidden
 - No HTML coding



Basic WebScreen Customization

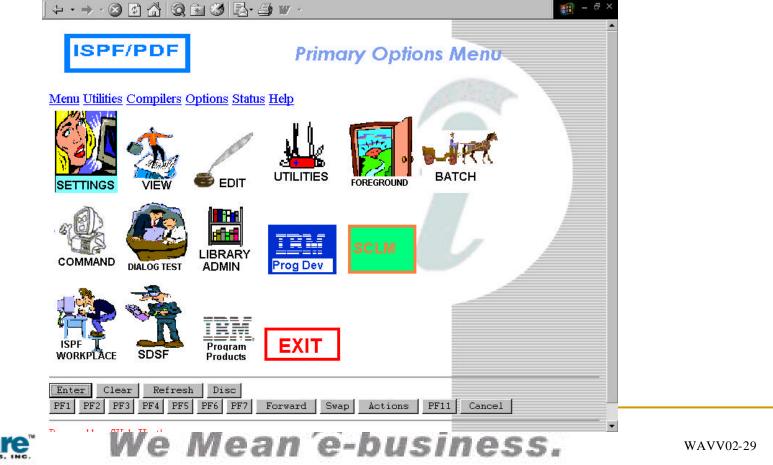


Low-level WebScreen facility

- Complete control over output
- No respect for geometry
- 24x80 can now be nn X mm
- HTML coding required
- Can use existing HTML design tools, e.g. Frontpage
- Essentially supplies the 3270 data only to be processed
- Allows for input boxes, pull-down lists, icons
- Data can be re-ordered, changed or deleted



Low-level WebScreen facility





HTML Templates

- Allows for broad changes with a minimum of effort
- HTML document used as a template
- System wide changes can be used to create common look-and-feel without coding for specific screens
- Can be global, for specific groups, or particular screens



WebScreen Control

- Defined and placed in PDS or LIBR sub-libraries
- DISPLAY, DEFINE and DELETE operator commands can dynamically activate/deactivate and display information for easy, real-time management





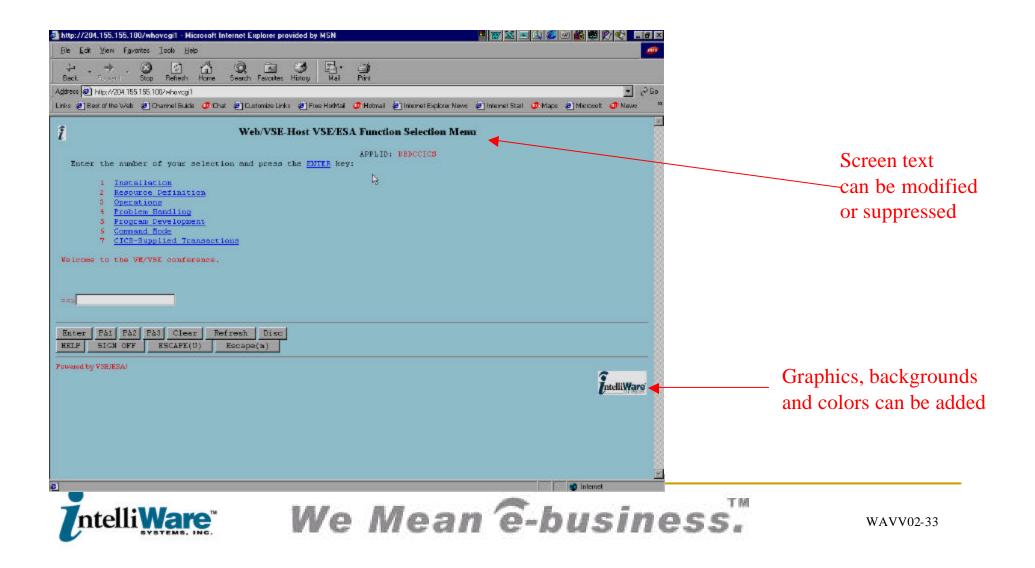
USE/ESA FUNCTION SELECTION APPLID: DBDCCICS Installation 2 Resource Definition 3 Operations 4 Problem Handling 5 Program Development 6 Command Mode 7 CICS-Supplied Transactions ==>



From Raw 3270... We Mean e-business."













Gateway support

- z/Web can run on one mainframe server but provide support for any other system
- Can act as gateway to any TN3270 server
- VM applications can be WebScreened
- OS/390 could provide gateway to other OS/390, or VSE and VM systems
- Central management



z/Web Application Automation Feature

- Brand new facility not yet released
- Enhances existing 3270 apps by allowing screen combining
- Scripting language enhances WebScreen facilities
- Allows for variable substitution, automatic screen input
- Example: One hyperlink could retrieve an entire file instead of paging through



- z/Web Application Automation Feature
 - Hide intermediate screens
 - Provide a "portal view"

IntelliWare	Welcome	e to Intelli	Ware.com	Welcome to CA/CUI	Corrector Associates-
					CUI
	Resource Definition		Help!	CA Common User Interface Primary Selection Panel	🖕 GO! 🕐 HELP
Cperotions	Program bevelopment	Cormord Mode	Sign Off Escape (U) Escape (m) Refresh Disconnect	Select an Option or Enter a Valid Command CUI Session Status Selection CUI Manteniance Systems Programmer Interfaces File Management Catalog Management Maintenance Event Notification Maintenance Event Notification Selection It is 12:11:19 AM on Thursday, 11th April	 () QUIT <i>BACK</i> <i>FORWARL</i> <i>S^D EXIT</i> <i>DISC.</i>
Powered by 2/Web-Hosti			_	System Messages: Proceed by 2000 Host]
ntelliWar			- 6	business."	

- z/Web Application Automation Feature
 - Retrieve an entire listing and send as one HTML Page

○ z/Web-Host Listing	Viewer
PF1 PF2 PF3 PF4 PF5 PF6 PF7 PF8 P z/Refresh	F9 PF10 PF11 PF12 Disc
Č	
<pre></pre>	DATE 01/16/2 SILIB.ALL)
<pre> GOTO CAT CAT LIBDEF PHASE,CATALOG=ISILIB.ALL O/ OPTION ERRS,CATAL,NODECK PHASE COBDATE,* INCLUDE DFHELII </pre>	
 Ø. ENDCAT Ø/ EXEC IGYCRCTL, SIZE=IGYCRCTL PP 5686-068 IBM COBOL FOR VSE/ESA 1.1.1 9CL OPTION PARAMETERS: WODECK, LINK, LIST, NOLISTX, NOSYM, NOTERM, SXREF 	DATE 01
O IGYOS4027-I THE SYSTEM OPTION "SXREF" IS O IGYCDOPT.	5 INTERPRETED AS "XREF (SHORT)"
O BROCESS(CBL) STATEMENTS: CBL LIB, APOST, NOADV, NOD YNAM, RENT, BUF (4096)	



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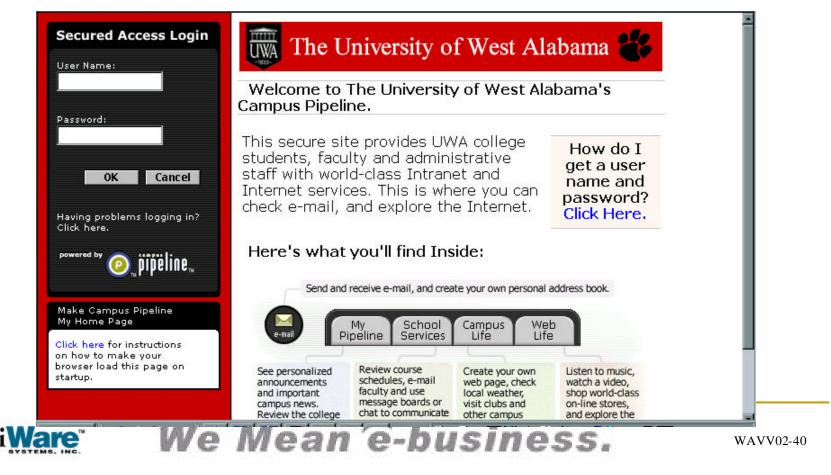
- z/Web Application Automation Feature
 - Call a CGI in the Web Server to process Security Information, then pass on to the target application



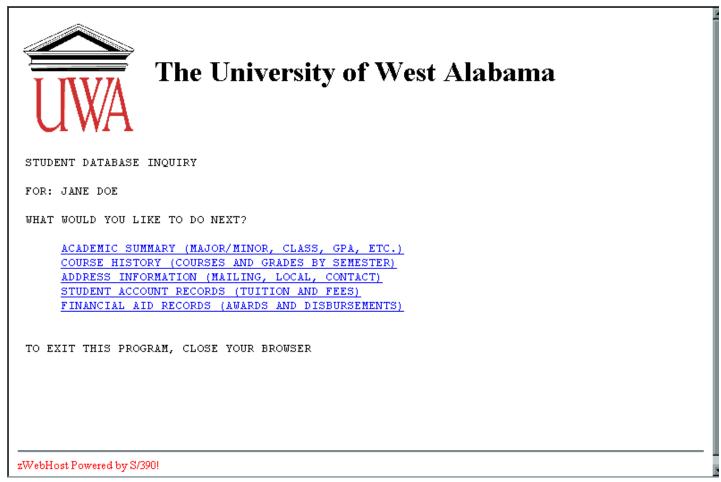


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- Customer Success Story Student Access System
 - Special modification to retain security information in cookies
 - Cookie information is used to authenticate user after 1 sign-on
 - Student goes directly to CICS menu



Customer Success Story – Student Access System





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Customer Success Story – Student Access System

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			PREVIOUS NEXT OFFICE SCREEN



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Customer Success Story – Mersey Docks, Liverpool England





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- Standard web-browser support
 - Not just PCs---any device using HTML browser
 - Doesn't use JAVA---simplifies environments
 - Nokia Communicator, Handspring Treo, Microsoft WebTV
 - Kiosks at airports and other public locations



- Product is licensed on <u>concurrent</u> sessions
- Live demo is available from our web site on an actual VSE/ESA or OS/390 system
 - www.intelliware.com/zwebdemo.htm
- Software and documentation can be downloaded, installed for 30 day trial
- Hands-on in the Exhibit Hall immediately following this session!



- "Web Services" is emerging as the answer
- Web Services can provide:
 - Remote Procedure Call (RPC) type interface
 - Component interface mechanism
 - Enterprise Application Integration (EAI)
 - Standardizing portal technologies
 - Means of linking businesses over the Internet



Web Services deployment

- Transform presentation to universal viewer (HTML)
- Standardize and normalize data to remove platform characteristics
 - eXtensible Markup Language (XML)
 - Allows dynamic definition and normalization of data using standard "markup language"
 - Derivative of SGML
 - Published by the "W3C" in 1996



Transforms data to universal exchange language/format



XML versus HTML

- HTML not "extensible"
- HTML has vocabulary to define how it looks
- XML provides capabilities to allow the data to be defined



HTML for presentation...

<!-- The original html recipe --> <HTML> <HEAD> <TITLE>Lime Jello Marshmallow Cottage Cheese Surprise</TITLE> </HFAD> <BODY> <H3>Lime Jello Marshmallow Cottage Cheese Surprise</H3> My grandma's favorite (may she rest in peace). <H4>Ingredients</H4> <TABLE BORDER="1"> <TR BGCOLOR="#308030"><TH>Qty</TH><TH>Units</TH><TH>Item</TH></TR> <TR><TD>1</TD><TD>box</TD><TD>lime gelatin</TD></TR> <TR><TD>500</TD><TD>q</TD><TD>multicolored tiny marshmallows</TD></TR> <TR><TD>500</TD><TD>ml</TD><TD>cottage cheese</TD></TR> <TR><TD></TD><TD>dash</TD><TD>Tabasco sauce (optional)</TD></TR> </TABLE> <P> <H4>Instructions</H4> < 0 | >Prepare lime gelatin according to package instructions... <!-- and so on --> </BODY> </HTML>



HTML presentation...

Lime Jello Marshmallow Cottage Cheese Surprise

My grandma's favorite (may she rest in peace).

Ingredients

Qty	Units	Item
1	box	lime gelatin
500	g	multicolored tiny marshmallows
500	ml	Cottage cheese
	dash	Tabasco sauce (optional) Instructions 1. Prepare lime gelatin according to package instructions



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XML can deliver data, and application access

<?xml version="1.0"?> <Recipe> <Name>Lime Jello Marshmallow Cottage Cheese Surprise</Name> <Description> My grandma's favorite (may she rest in peace). </Description> <Ingredients> <Ingredient> <Qty unit="box">1</Qty> <Item>lime gelatin</Item> </Ingredient> <Ingredient> <Qty unit="g">500</Qty> <Item>multicolored tiny marshmallows</Item> </Inaredient> <Ingredient> <Qty unit="ml">500</Qty> <Item>Cottage cheese</Item> </Ingredient> <Ingredient> <Qty unit="dash"/> <Item optional="1">Tabasco sauce</Item> </Ingredient> </Ingredients> <Instructions> <Step> Prepare lime gelatin according to package instructions </Step> <!-- And so on... --> </lnstructions> </Recipe>





Introducing...





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e-softWare

- Transform any 3270 application data into industry standard eXtensible Markup Language (XML) document
- XML documents allow for data to be shared across data, system and processing architectures and environments
- Allows for full interoperatibility with other platforms and languages, including Visual Basic, Java and others
- No changes required to any existing application
- Key to exchanging data with e-business systems including IBM's WebSphere and Microsoft's BizTalk Server



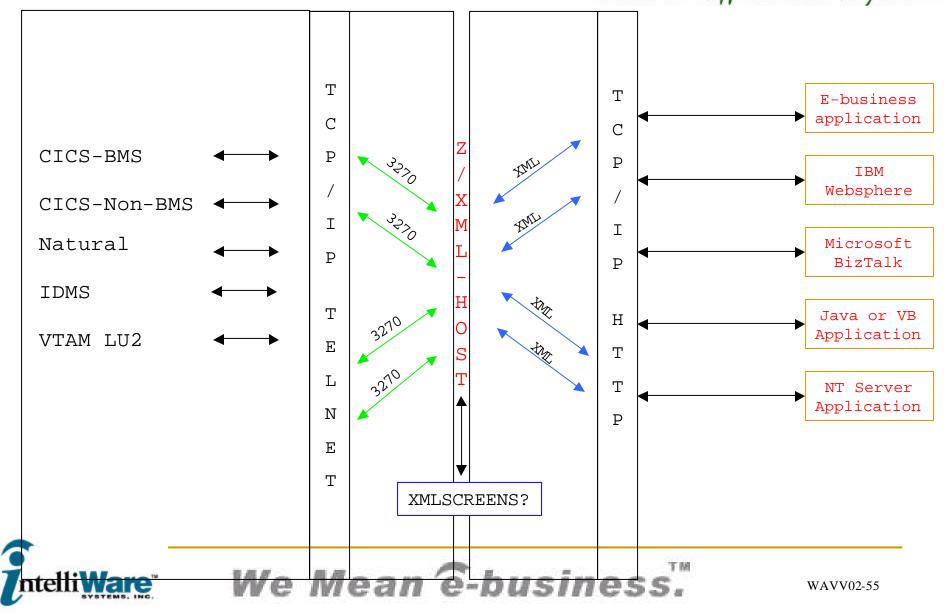
e-softWare

- Runs natively on VSE/ESA or OS/390-z/OS
- Supports z/VM through gateway function
- Provides default translation without customization
- Document Type Definition (DTD) support for better validation
- Key to exchanging data with e-business systems including IBM's WebSphere and Microsoft's BizTalk Server
- Powerful XMLScreen facility allows for full filtering, specification or transformation













IESADMSL.IESEADM USE/ESA FUNCTION SELECTION						DBDCCICS		
Enter th								DEDCCICS
2 3								
PF1=HELP								ESCAPE(U)
==>								

Transform 3270 Data...



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```
<?xml version="1.0"standalone="yes" encoding="UTF-8"?>
<!-- Generated by z/XML-Host, Copyright 2002 IntelliWare
Systems, Inc. -->
<Screen>
    <Panel-Id>IESADMSL.IESEADM</Panel-Id>
    <Title>
    VSE/ESA FUNCTION SELECTION
    </Title>
    <APPLID>DBDCCICS</APPLID>
    <Options>
         <Option num="1">Installation</Option>
         <Option num="2">Resource Definition</Option>
         <Option num="3">Operations</Option>
         <Option num="4">Problem Handling</Option>
         <Option num="5">Program Development</Option>
         <Option num="6">Command Mode</Option>
         <Option num="7">CICS-Supplied Transactions</Option>
    </Options>
    <Keys>
         <Key Desc="Help">PF1</Key>
         <Key Desc="SIGN OFF">PF3</Key>
         <Key Desc="Escape(U)">PF6</Key>
         <Key Desc="Escape(m)">PF9</Key>
    </Keys>
</Screen>
```

...Into a "Well-Formed" XML Document

Mainframe Security on the Web

- Mainframe can reside behind firewall and DMZ
- Organizations have "mature" network security infrastructure
- Mainframe has 30+ years of commercial security measures---Top Secret, Alert, RACF
- Mainframe is not a likely target, esoteric environments
- z/Web-Host and z/XML-Host provides only a subset of functions for its specific purpose---means fewer holes than UNIX/NT



e-hardWare

Internet

Intranet

*Intelli*Ware's $\overline{\c.y.a}^{TM}$ Network Security

- ISI's <u>Control</u> Your <u>Access</u> Network Security Appliance
- Turnkey, plug-n-play SSL security solution for S/390 users
- > Up to 168 bit, RSA approved encryption/decryption
- Secure Web, FTP and Telnet traffic makes VSE/ESA COLUMNER
- Available in ethernet or token-ring
- Delivered completely configured for your network
- > 90 day warranty extended maintenance available



WAVV02-59

SECURED

S/390 Serve



- After 12 years, IntelliWare has refocused to deliver software solutions
- Mission to bridge mainframes to e-business needs
- At least 1-2 major product innovations every year
- We are committed to your needs!

 \rightarrow Thank you for your business \leftarrow



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