



**MICRO
FOCUS**

The Future of COBOL



Migrating COBOL Applications From HP3000

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Micro Focus

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Agenda

- Today's IT Landscape
 - The New Micro Focus
 - Platform Migration With Micro Focus
 - What's Involved In An HP 3000 Migration
 - Potential Approaches
 - Related Micro Focus Products
 - Looking To The Future
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Setting The Context: Today's IT Landscape

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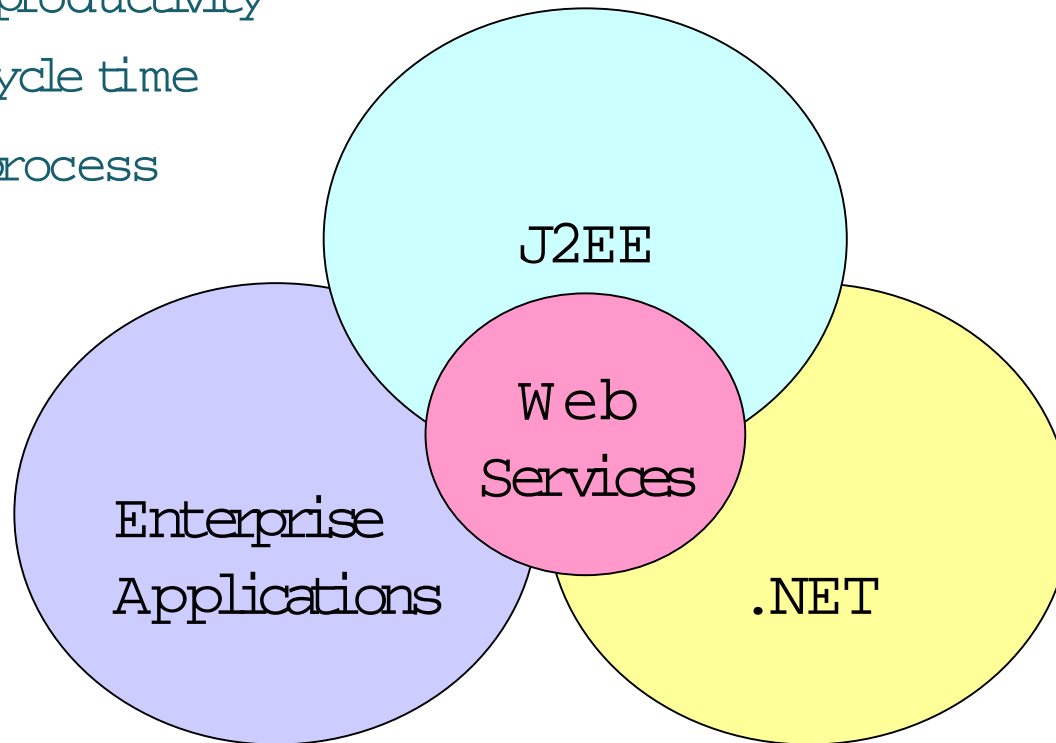
"Back to basics Key"

- Increase productivity
- Reduce cycle time
- Improve process

Source: Meta Group

"Application Integration Key"

Source: Gartner Group



Micro Focus Helps In All Key Areas

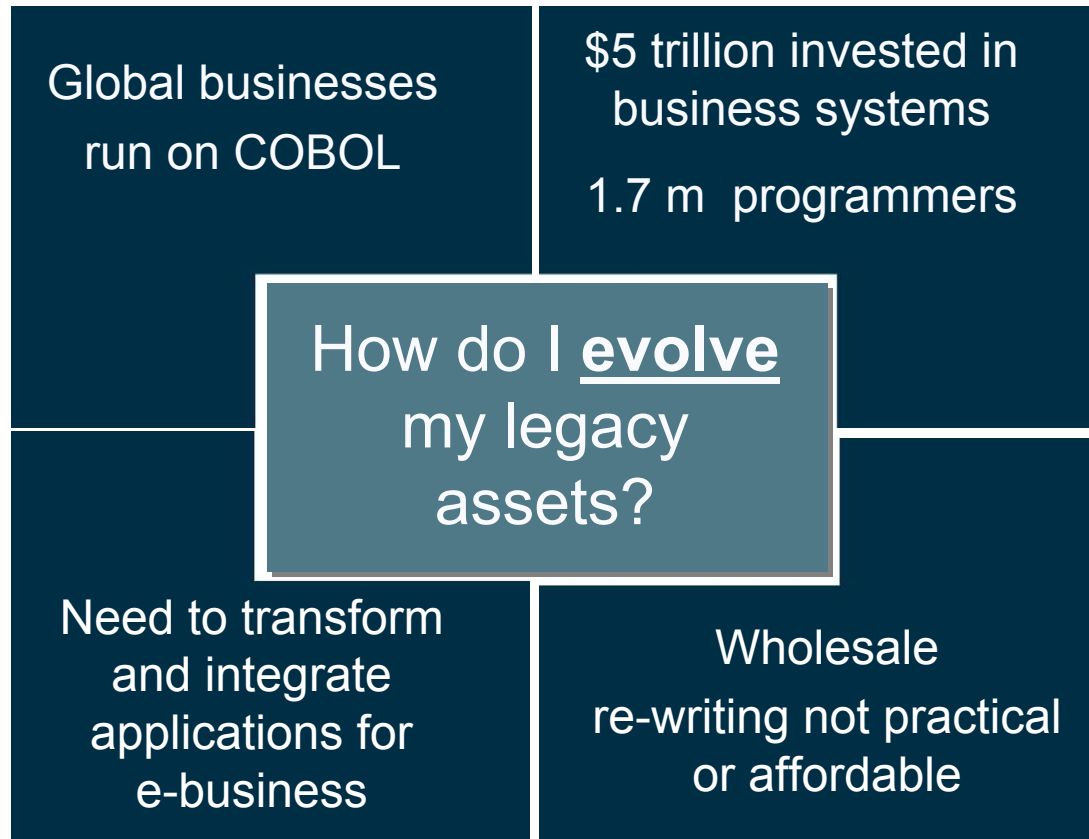
The New Micro Focus

Micro Focus: a 26 Year Old Start-up

- Leader in COBOL development solutions
- Founded in 1976 - and independent in 2001
- Global company with over 450 employees world-wide
- Principal offices in the UK, US & Japan
- Over 10,000 customers

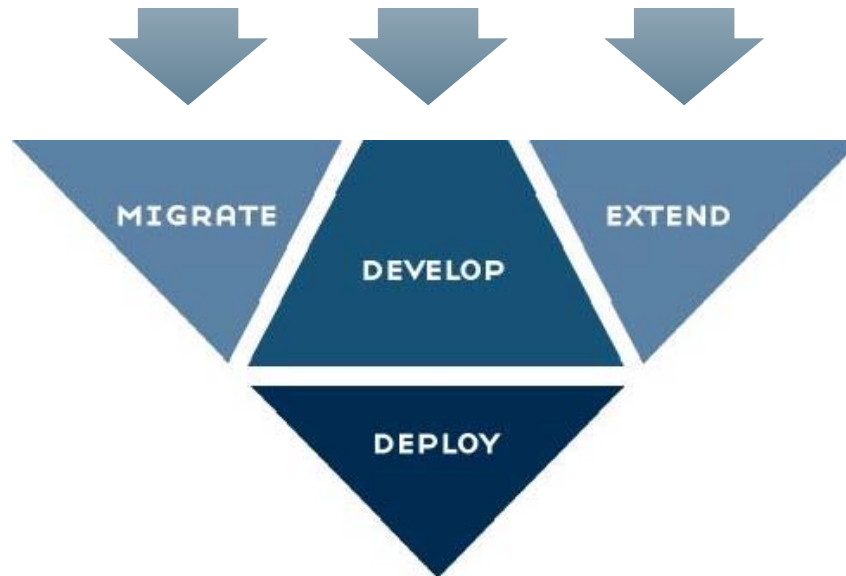
Track Record of Success, Renewed Focus

COBOL is Alive and Well



... To Meet The Needs of the Business

Enterprise Application Assets



New Applications on New Platforms

“The fastest, most effective way to migrate, develop, extend and deploy enterprise applications”

Where We Specialize

IBM Mainframe System Evolution

1. Application Development
4. Web-enablement & Integration



IBM zSeries
S/390



Open System Application Evolution

2. Application Development, Extension & Deployment



Platform Migration

3. Application Migration



Migrations from Wang, UNISYS, Data General, HP3000, DEC, etc.
IBM zOS & DOS/VSE Re-hosting

5. System Renovation
6. Application Re-engineering & Replacement

Interoperability: WebSphere, XML, J2EE, .NET and Web Services

Platform Migration With Micro Focus

Why Migrate with Micro Focus?

- Clients Migrate to MF COBOL because
 - We offer the de-facto COBOL for Windows/UNIX
 - All major OEMs license our COBOL technology
 - We offer breadth and depth of COBOL products and expertise
- We focus on
 - Facilitating cost effective migrations
 - Maximizing development team productivity on new platform
 - Future proofing COBOL applications
- Migration & Transformation Consortium (MTC)
 - Vital to Micro Focus and our customers success
 - We do NOT focus our resources on doing actual migrations
 - This is a key reason why we are a "trusted advisor" to clients

Migration is the Beginning, Not the End

Service Providers and Levels of Involvement

Strategic Consulting	Other Partners
Project Management	MTC
Code Modification/Testing Staff	MTC
Specialist Consulting	Micro Focus & MTC
Analysis & Migration Tools	Micro Focus & MTC
Platform	Micro Focus

Service Providers Are Key

The HP OEM Partnership

- HP and Micro Focus partnership has delivered Micro Focus COBOL for all HP UNIX platforms for nearly two decades
 - COBOL Developer Suite
 - Object COBOL developer suite
 - Server Express
- HP Provide Equipment
- Historically HP developed their own Native Code Generator
- Micro Focus now develops whole product working with appropriate HP labs
- HP, Oracle and Micro Focus work together to ensure Micro Focus Cobol on HP boxes supports latest releases of Oracle
- Oracle support issues with Micro Focus COBOL and Oracle

HP COBOL = Micro Focus COBOL

what's Involved In HP300o Migrations

User Interface

HP3000 System Component	What's Involved In Migration?
VPLUS Screen Form Management System	VPLUS emulator on target platform OR VPLUS to Browser or GUI conversion technology OR Re-engineer to new client using Java or VB.Net
HP3000 Intrinsic Functions Called from Forms	Intrinsic Function emulation libraries on target platform OR Re write necessary functions in new client language as part of re-engineering

Application Code

HP3000 System Component	What's Involved In Migration?
Business Logic	Automatically convert the HP COBOL II proprietary language syntax to supported ANSI standard or Micro Focus COBOL dialect OR Re-engineer code to remove duplication and to modularise it before it is migrated to new target platform
HP3000 Intrinsic functions called from COBOL source	Intrinsic Function emulation libraries on target platform OR Rewrite necessary functions in COBOL or another language called from COBOL making use of native OS capabilities

Data stores and Data

HP3000 System Component	What's Involved In Migration?
<p>Data I/O</p> <p>Database</p> <p>KSAM Files</p>	<p>Database I/O stays intact if</p> <ul style="list-style-type: none"> -IMAGE or TurboIMAGE emulator is used -IMAGE call to RDBMS mapping utilized <p>OR</p> <p>Is removed if re-engineering to RDBMS.</p> <p>KSAM file I/O stays intact as it uses standard ANSI COBOL file I/O syntax</p>
<p>HP3000 Intrinsic functions called from COBOL source</p>	<p>Intrinsic Function emulation libraries on target platform</p> <p>OR</p> <p>Re write necessary functions in COBOL or another language called from COBOL making use of native OS capabilities</p>

Bridge "Islands of Technology" and..

System Functions

HP3000 System Component	What's Involved In Migration?
OLTP capabilities within MPE	Provide using OLTP system on target platform
Batch Control, Scheduling and JCL	Utilize JCL emulation capabilities on target platform OR Convert or Rewrite JCL in UNIX script or .Bat scripts for Windows OR Re-engineer batch programs to provide a set of application service components for the new target environment
3 rd Party System Aids like Print Spoolers etc.	Utilize emulation capabilities OR Convert, Replace or Re-write

Potential Migration Approaches

Three Basic Approaches

Re-hosting is making the minimum changes possible and utilizing HP3000 emulation technology on the target platform to replicate existing application functionality.

Native Migration is making the necessary changes to fully exploit native technology on the target platform, rather than utilizing HP3000 emulation technology, to replicate existing application functionality.

Re-engineering is making whatever changes are required to fully exploit native technology to provide existing application functionality and deliver incremental improvements.

Which Approach(es) is Best For You?

Which Is The Best Approach?

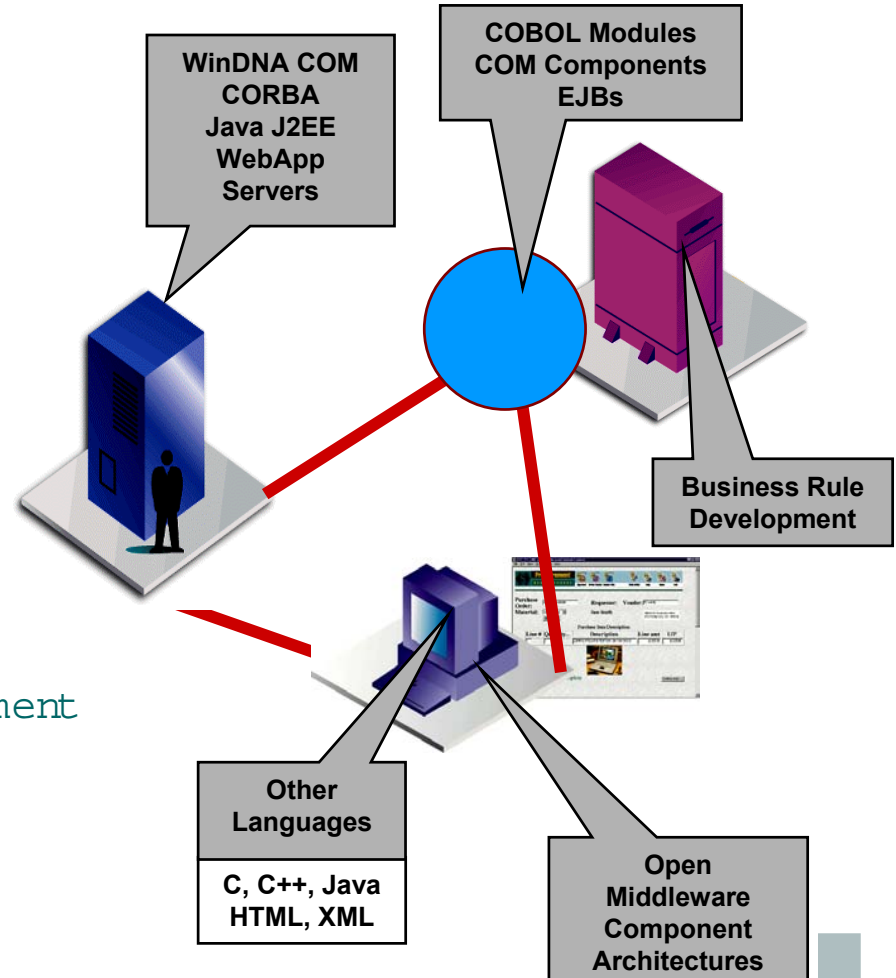
- Will depend on your particular organizations
 - Business drivers
 - Budget
 - IT strategy
- Using different approaches can make sense
 - All three in three different phases
 - Using different approaches on different applications based on their importance to the business
 - Using different approaches on distinct elements of the application
- Micro Focus can help by ensuring you
 - Have all the information you need to develop a sound strategy
 - Know what will be required to implement your strategy within budget
 - Understand how we can supplement your internal skills to deliver on time

Develop Your Strategy Before Starting Migration

Related Micro Focus Products

Application Migration Products

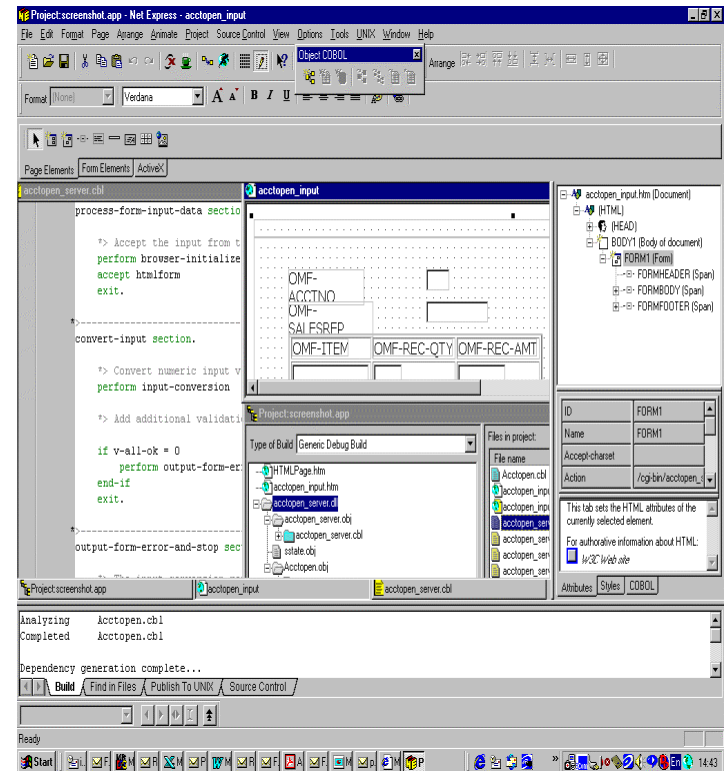
- **Net Express**
 - Desktop COBOL IDE
- **Revolve**
 - COBOL analysis and understanding
- **Net Express Studio**
 - Net Express with Revolve
- **Server Express**
 - UNIX COBOL development environment
- **Application Server**
 - Enables *write once, run anywhere*



Faster Development, Flexible Deployment

Net Express

- **Develop/Extend COBOL Applications**
 - Sophisticated IDE including data tools
 - OpenESQL Assistant for fast ODBC development
 - GUI Screen Painting with Dialog System
- **Web Application Development**
 - Internet Application Wizard to create COBOL application with Web Forms
 - Form Designer and script assistant to develop Web Forms
 - Wrap COBOL processes as COM or EJB Components for e-business
- **Benefits**
 - Re-use existing COBOL assets
 - Integrate with e-business systems
 - Accelerate time to market
 - Publish to Server Express for UNIX



Market Leading COBOL IDE

- **Application Understanding**

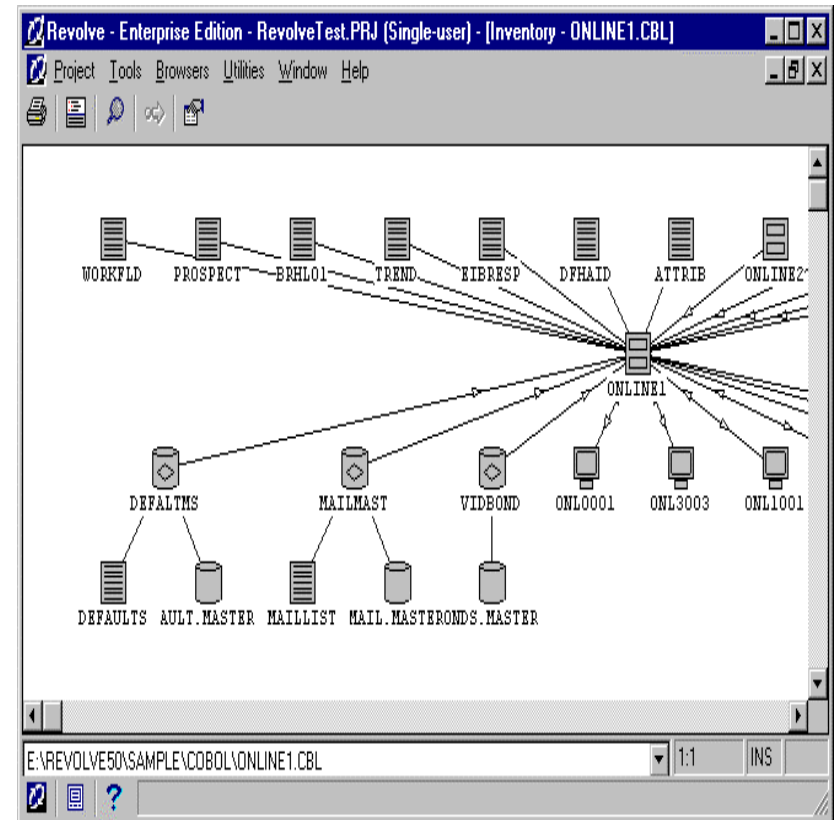
- Inventory/missing components
- Visual views/unused elements
- Documentation

- **Local change analysis**

- Change research/annotations
- Eliminate unused code
- Impact analysis/scoping effort

- **Benefits**

- Documentation of assets
- Improved quality/less rework
- Increased productivity (65 %!)
- Faster time-to-market
- Reduction in backlog of issues



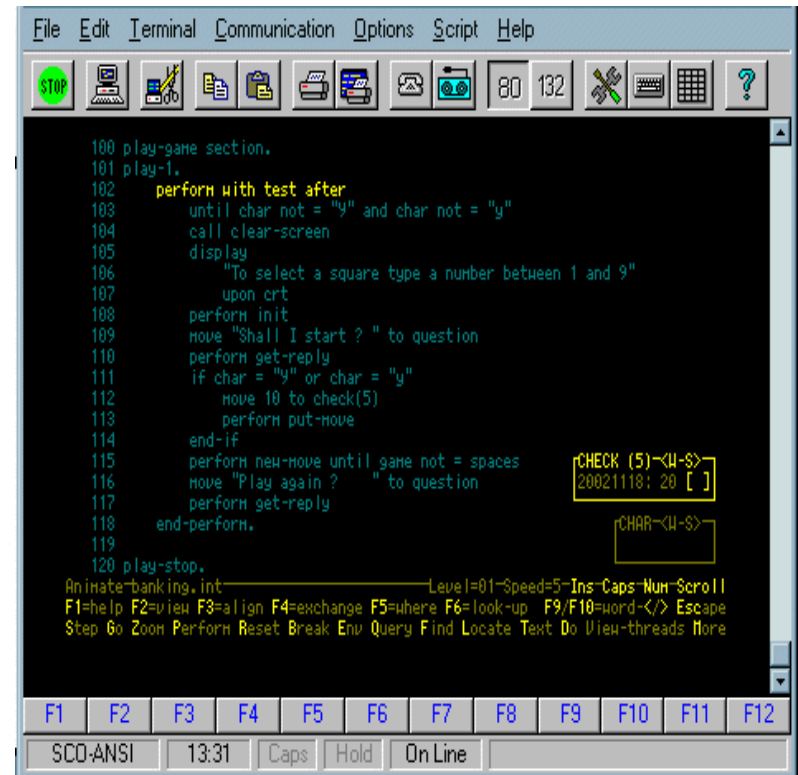
Server Express

- **Powerful UNIX development environment for COBOL**

- Tight coupling with Net Express
- Cross platform portability
- Rapid edit, compile, debug
- Utilise full power of chosen platform including 64-bit
- Supports terabytes of data
- Production debug/monitoring facilities
- Database access via standard ODBC

- **Benefits**

- Re-use existing COBOL assets
- Brings the power of COBOL to the Internet
- Access COBOL business logic on UNIX via EJB interfaces



The screenshot shows a terminal window with the following COBOL code:

```

100 play-game section.
101 play-1.
102     perform with test after
103         until char not = "y" and char not = "y"
104         call clear-screen
105         display
106             "To select a square type a number between 1 and 9"
107         upon crt
108         perform init
109         move "Shall I start ? " to question
110         perform get-reply
111         if char = "y" or char = "y"
112             move 10 to check(5)
113             perform put-move
114         end-if
115         perform new-move until game not = spaces
116         move "Play again ? " to question
117         perform get-reply
118         end-perform.
119
120 play-stop.
  
```

At the bottom of the terminal, there is a debugger interface with the following text:

```

Animate=banking.int Level=01-Speed=5-Ins-Caps-Num-Scroll
F1=help F2=view F3=align F4=exchange F5=where F6=look-up F9/F10=word-</> Escape
Step Go Zoom Perform Reset Break Env Query Find Locate Text Do View-threads More
  
```

The terminal also shows a prompt for input: "CHECK (5) <U-S> 20021118: 20 []" and "CHAR <U-S>".

Optimized development/deployment for COBOL on UNIX

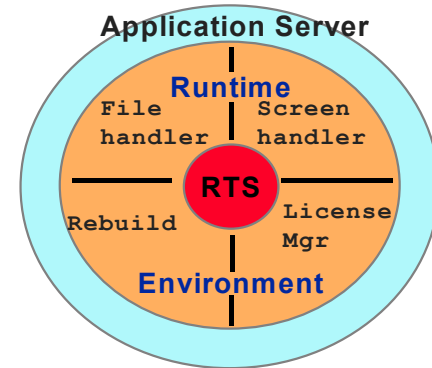
Application Server

- **COBOL Deployment on Any Platform**

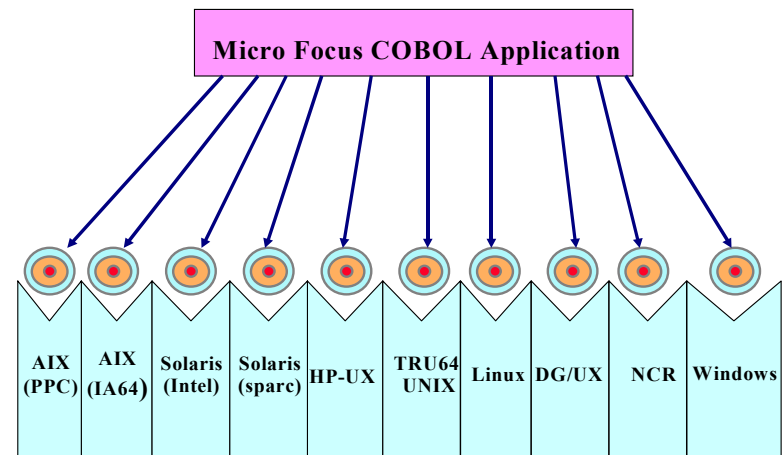
- Single source, multiple deployment platforms
- Allows best of breed development for deployment on any environment
- Insulation from architecture variations
- Production debug, diagnostics and recovery facilities

- **Benefits**

- Create business processes once
- Optimized application performance
- Increased reliability and scalability



Write 'once' run 'anywhere'



J2EE for COBOL, For 2 Decades

Extend your COBOL Assets

- **Reuse your COBOL Business Logic – No Need to Rewrite!**
- **Chose how to Web enable**
 - **Use extensions to the COBOL language**
 - Server-Side scripting with HTML from COBOL
 - **Componentize your COBOL Logic**
 - Build your COBOL as a COM component and invoke from Microsoft Active Server Pages
 - **Use Java to build a Web Front End**
 - Use COBOL/Java Interoperability to access COBOL components from Java Server Pages
- **Deploy Distributed Applications**
 - **Deploy with Net Express Application Server on Windows**
 - **Publish for UNIX deployment with Server Express Application Server**

Bridge "Islands of Technology" and..

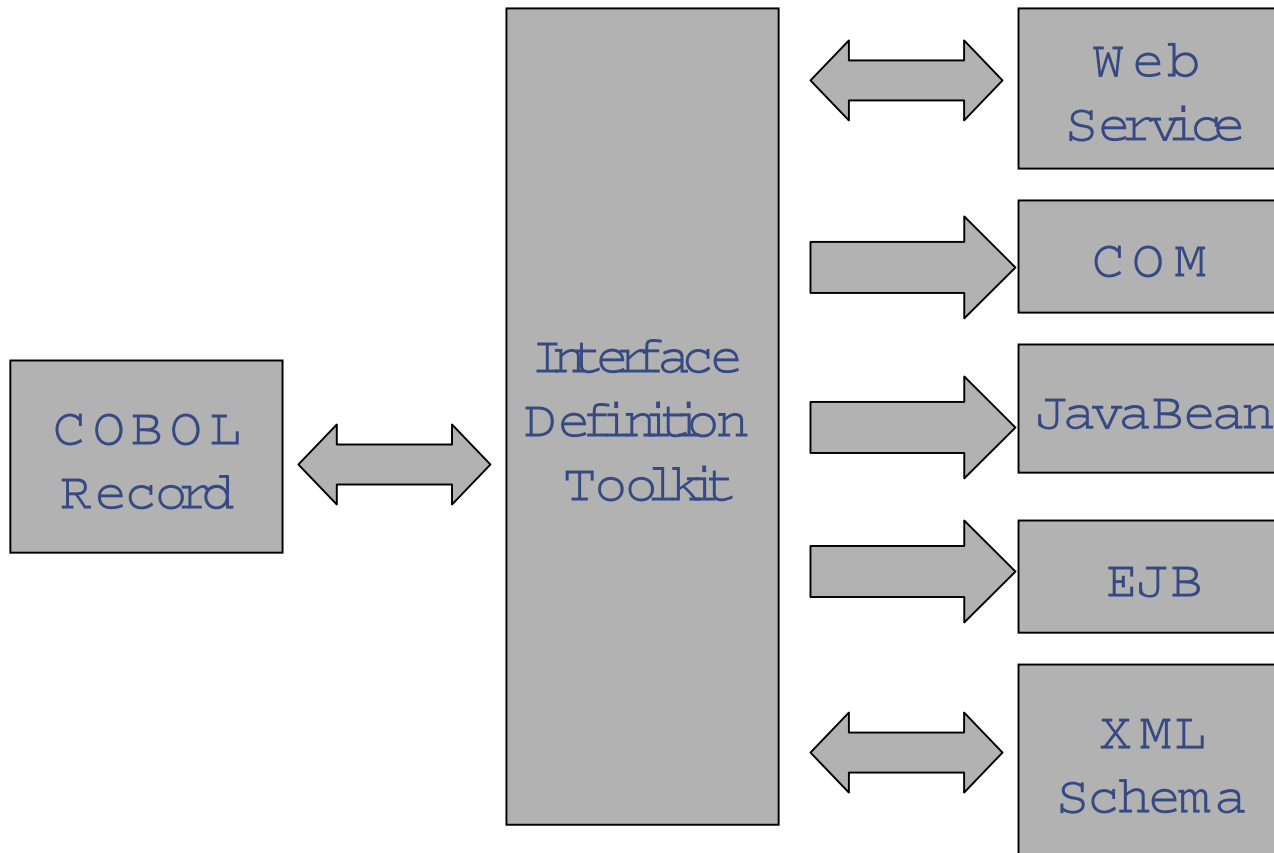
Integrate With Today's Platforms

- **Micro Focus enables organizations to choose your component and deployment architecture**
 - **Java/EJB**
 - Access COBOL from Java based e-business applications
 - COBOL applications can access Java classes
 - Wizards help wrap COBOL Components as Enterprise JavaBeans (EJBs)
 - **COM/DCOM and MTS**
 - Wizards to create COM Components in COBOL
 - Build Transactional Components for use with Microsoft Transaction Server
 - **Microsoft .NET Interoperability**
 - Access COBOL Business Logic from .NET Code
 - Access code written in NET Languages such as C# from COBOL
 - **Combine technologies by creating single Java/ActiveX Object COBOL classes**

To Deliver On Business Requirements

Looking To The Future

Interface Definition Toolkit



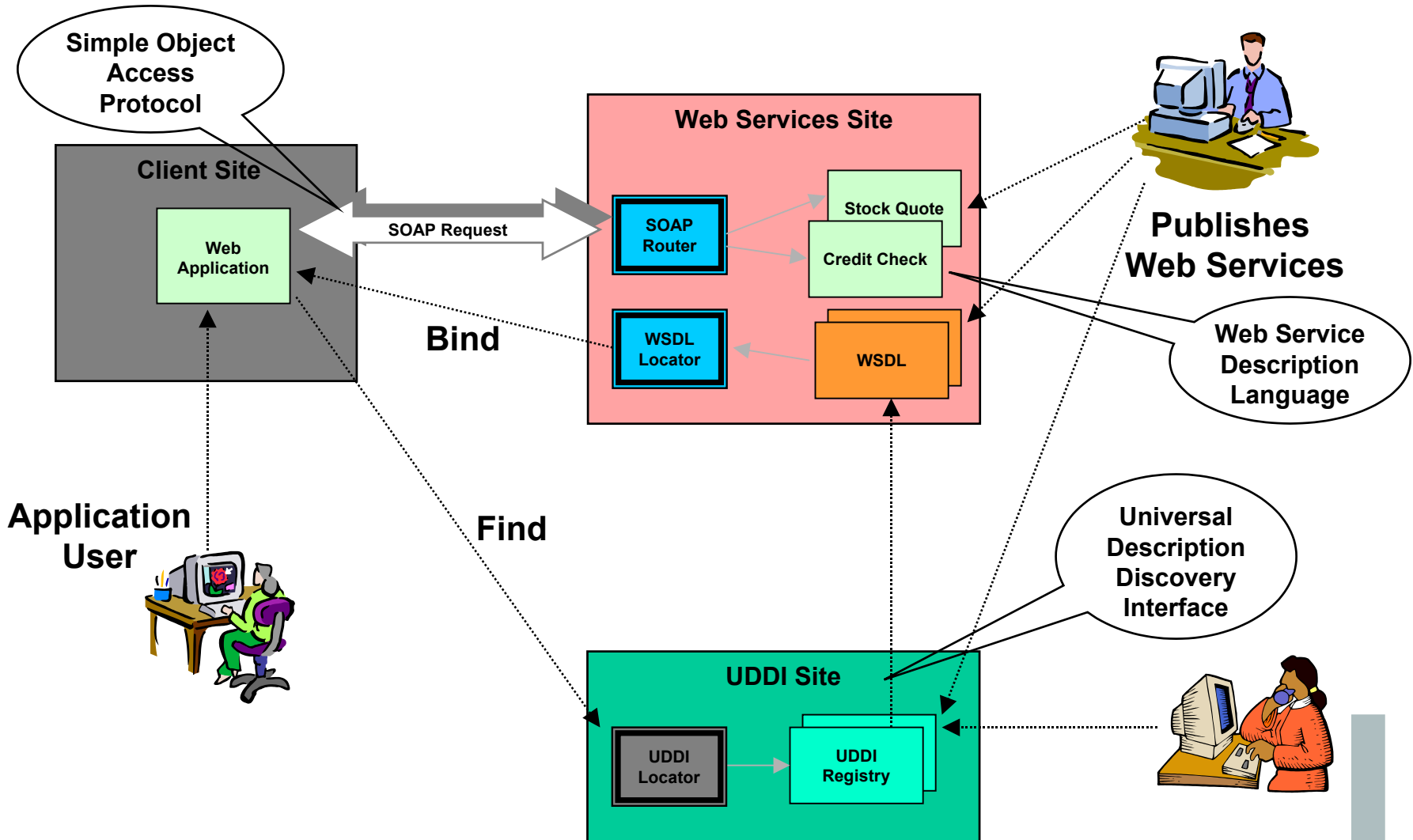
COBOL Meets the Outside World as Never Before!

What are Web Services?

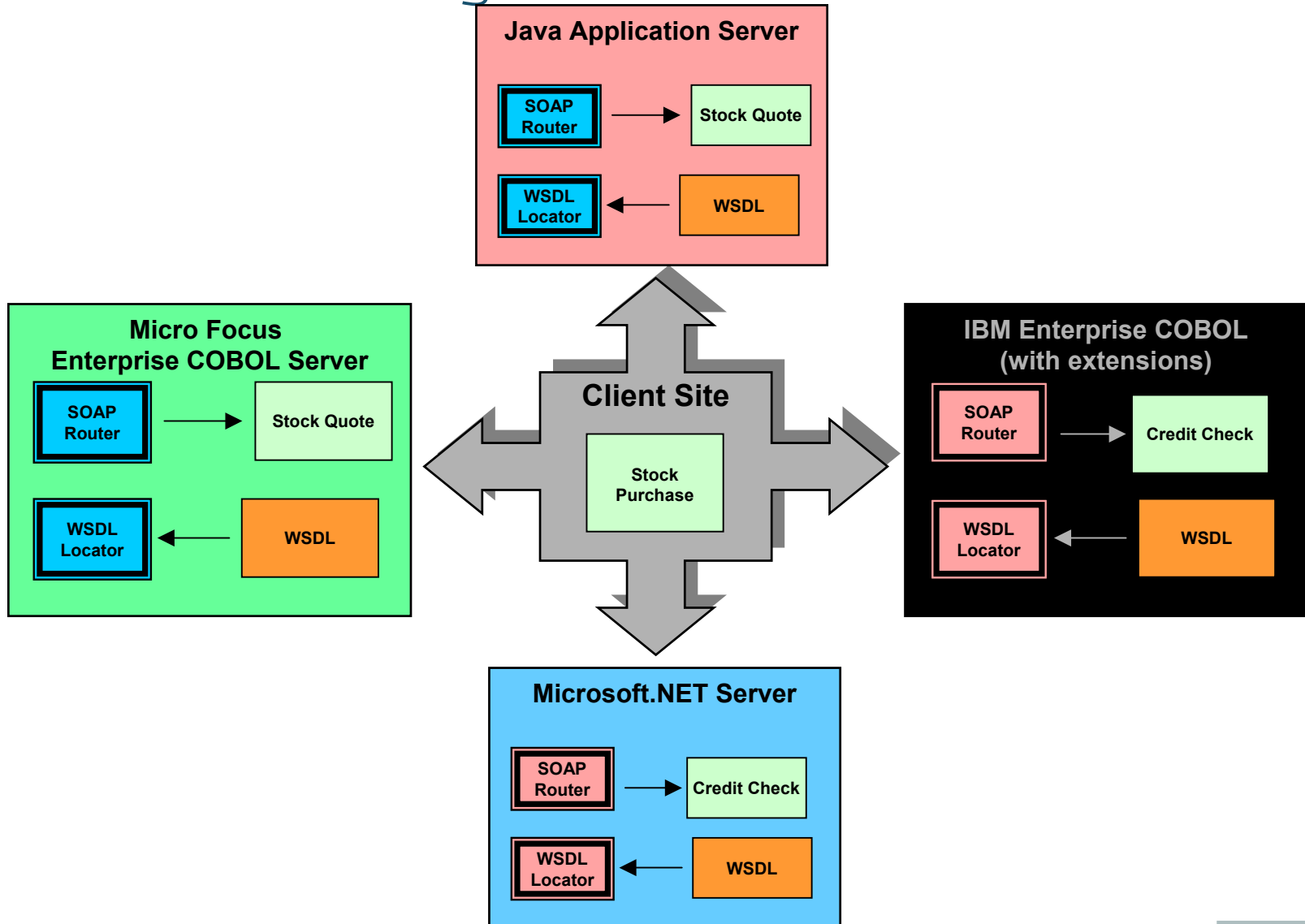
- “They are self-contained, self-describing, modular applications that can be published, located and invoked across the Web”
 - “Web services perform functions, which can be anything from simple requests to complicated business processes”
 - “A sample Web service might provide stock quotes or process credit card transactions.”
- Source: Web services — the Web's next revolution.
Doug Tidwell, Evangelist for Web services, IBM
- Micro Focus are focusing on them because our customers need to integrate COBOL applications and web services
 - **heal** the component wars
 - Are **simple** to understand and deploy
 - Integrate with .NET or J2EE
 - Do **not** require J2EE or .NET training
 - Will become **the standard** for Intranet (EAI) as well as Internet (B2B) Integration
 - Have widespread **Industry backing**

Potentially The Key To Component Re-use

Web Services Overview



Web Services Integration for COBOL



Micro Focus Summary

- We act as a trusted adviser on migrations
 - Facilitating cost effective migrations that meet YOUR need
 - Ensuring development team are productive going forward
 - Helping you to “future proof” applications
- We are the de-facto standard COBOL and HP’s COBOL Vendor
 - High performance but cross platforms
 - Unsurpassed Reliability, Availability and Serviceability
- We provide unmatched breadth of COBOL based technology
 - Business rule mining, understanding, analysis and development
 - Debug, production defect analysis and recovery
- We will deliver cross platform Web Services for **COBOL**
 - To future proof business processes and enable integration and re-use



**MICRO
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The Future of COBOL

