

WHAT'S NEW

WHAT'S NEW IN THE ENTERPRISE PRODUCT SUITE VERSION 2.3

This 'What's New?' document covers new features and functions in the latest release of the Micro Focus Enterprise Product Suite. Updates apply to the following products:

- Micro Focus Enterprise Developer which provides a contemporary development suite for developing and maintaining mainframe applications, whether the target deployment is on or off the mainframe. This suite includes Enterprise Developer Connect, Enterprise Developer and Enterprise Developer for z Systems variants.

- Micro Focus Enterprise Test Server which provides a comprehensive test platform that takes advantage of low cost processing power on Windows environments, to supply scalable capacity for testing z/OS applications without consuming z/OS resources.
- Micro Focus Enterprise Server which provides the execution environment to deploy fit-for-purpose mainframe workload on Linux, UNIX and Windows (LUW) environments on System z (IFLs), standalone servers, virtual servers or the Cloud.

This document helps you to quickly understand the new capabilities within the 2.3 release, and the benefits they deliver in each solution area.

SPECIFIC FUNCTIONAL IMPROVEMENTS

Additional Platform Support

Feature Summary	Extending platform support																																																
Feature Detail	<p>New platforms supported in this release:</p> <table border="1" data-bbox="432 1301 1493 1675"> <thead> <tr> <th>Platforms</th> <th>Enterprise Developer Connect</th> <th>Enterprise Developer</th> <th>Enterprise Developer for z Systems</th> <th>Enterprise Test Server</th> <th>Enterprise Server</th> </tr> </thead> <tbody> <tr> <td>SUSE x86-64 12</td> <td>x</td> <td>✓</td> <td>✓</td> <td>x</td> <td>✓</td> </tr> <tr> <td>SUSE 390 12</td> <td>x</td> <td>✓</td> <td>✓</td> <td>x</td> <td>✓</td> </tr> <tr> <td>Red Hat (Intel) 7.1</td> <td>x</td> <td>✓</td> <td>✓</td> <td>x</td> <td>✓</td> </tr> <tr> <td>Red Hat (OS/390) 7.1</td> <td>x</td> <td>✓</td> <td>✓</td> <td>x</td> <td>✓</td> </tr> <tr> <td>Red Hat (Intel) 6.6</td> <td>x</td> <td>✓</td> <td>✓</td> <td>x</td> <td>✓</td> </tr> <tr> <td>Red Hat (OS/390) 6.6</td> <td>x</td> <td>✓</td> <td>✓</td> <td>x</td> <td>✓</td> </tr> <tr> <td>Windows 10</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> </tbody> </table> <p>Going forward the Enterprise Product Set will support future major updates to Redhat and SUSE Linux versions as they are released</p>	Platforms	Enterprise Developer Connect	Enterprise Developer	Enterprise Developer for z Systems	Enterprise Test Server	Enterprise Server	SUSE x86-64 12	x	✓	✓	x	✓	SUSE 390 12	x	✓	✓	x	✓	Red Hat (Intel) 7.1	x	✓	✓	x	✓	Red Hat (OS/390) 7.1	x	✓	✓	x	✓	Red Hat (Intel) 6.6	x	✓	✓	x	✓	Red Hat (OS/390) 6.6	x	✓	✓	x	✓	Windows 10	✓	✓	✓	✓	✓
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Benefit(s)	<p>Extending platform support means:</p> <ul style="list-style-type: none"> ➤ Your code and data are future-proof against platform change ➤ You have greater choice and flexibility on where to develop and deploy your applications ➤ You gain the freedom to experiment with no additional investment. <p>For a full list of supported platforms, please visit the SupportLine pages on www.microfocus.com.</p>																																																

New IDE Version Support

Feature Summary	Support for Eclipse 4.4.2
Feature Detail	<p>Enterprise Developer now ships with Eclipse 4.4.2. This version is installed by default on the target machine with all third-party and Micro Focus plug-ins that are required to use the product.</p> <p>If you have earlier versions of Eclipse, then the Enterprise Developer plug-ins can still be installed with Eclipse versions 4.2.x and 4.3.x. Enterprise Developer includes a script to assist you.</p> <p>With Enterprise Developer 2.3, Eclipse 3.x is no longer supported.</p>
Feature Summary	Support for new versions of Microsoft Visual Studio
Feature Detail	<p>Enterprise Developer is available for the Visual Studio 2012, 2013 and 2015 releases. A separate installer is provided for each of these Visual Studio releases. If you are installing Enterprise Developer for Visual Studio 2015, you must at least have Visual Studio 2015 Community Edition installed on your machine.</p> <p>With Enterprise Developer 2.3, Visual Studio 2010 is no longer supported.</p>
Benefits	<p>With support for the latest versions of the Eclipse and Visual Studio frameworks, Enterprise Developer users can take advantage of the latest features and fixes. A wider choice of IDE framework support ensures that Enterprise Developer is compatible with a customer's site standards for that framework.</p>

IMPROVING DEVELOPER EFFICIENCY

New Features Common to Eclipse and Visual Studio

Feature Summary	Improved COBOL editing features
Feature Detail	<p>The following features have been added or extended to improve COBOL editing capabilities:</p> <ul style="list-style-type: none"> ➤ COBOL IntelliSense within the COBOL editor now offers clearer visibility of code snippets in IntelliSense lists ➤ IntelliSense support for managed COBOL applications.
Benefit(s)	<p>Enhanced IntelliSense, including the extension of code snippets for COBOL, improves usability, simplifies coding and reduces errors, creating an even more user friendly and productive IDE for the developer.</p>

Feature Summary	Integrated code coverage and application profiling
Feature Detail	<p>Support for code coverage (TESTCOVER) and application profiling (PROFILE) is now integrated into the Enterprise Developer IDE.</p> <p>This makes it easier for developers to enable their application for test coverage, to confirm at run-time that new lines of code have been executed. An application can be profiled to identify 'hot spots' in a program that might need optimization.</p>
Benefit(s)	<p>Developers can now easily enable and report on application performance and code coverage during testing cycles.</p>

Feature Summary	Enhanced support for preprocessors
Feature Detail	It is now easier for developers to use third-party or in-house developed code preprocessors directly within the Enterprise Developer IDE. Simply configure new preprocessors using a new project property page called 'Preprocessors'.
Benefit(s)	Simplified integration of third-party or user created preprocessors ensures the developer can easily configure them in the IDE for use in program development. This enables simplified and consistent usage.

Eclipse Specific Features

Feature Summary	Smart Editing support for JCL files
Feature Detail	JCL file editing now benefits from a number of capabilities to improve programmer productivity. These include: <ul style="list-style-type: none"> ➤ Background parsing to identify JCL syntax errors as they are typed ➤ Customizable JCL syntax colorization ➤ An outline view to help you navigate around the file ➤ 'Content assist' to help with the entry of the correct JCL syntax ➤ Standard editing features such as to-do recognition, horizontal ruler, margins, block select, template support and locate definition.
Benefit(s)	Smart Editing support for JCL simplifies the creation and modification of JCL ensuring faster, more efficient coding, especially for developers who do not modify JCL regularly or who have limited experience in doing this.

Feature Summary	Support for PL/I development on remote machines
Feature Detail	Enterprise Developer support for PL/I projects now enables users to create projects on remote UNIX/Linux machines from the Eclipse IDE. This means developers can now remotely edit/compile and debug their PL/I applications on the target machine from within the IDE running on Windows.
Benefit(s)	Developers can develop and test applications on remote UNIX or Linux machines from a single IDE. This makes the use of development tools more consistent and the results from testing more relevant as the applications are running on the target environment.

Feature Summary	Remote mainframe subsystem projects no longer need SAMBA mapped drives
Feature Detail	To create remote mainframe sub-system (MSS) projects in previous releases of Enterprise Developer, you required SAMBA (or any similar NFS) mapped drives. This release now enables you to create remote projects just using Eclipse RSE, without the need to map a SAMBA or equivalent drive. RSE project connections are more secure (use SSL) and they are typically faster in everyday use. However, if you need to access BMS files or edit data or IMS layouts using the Data File Editor, you will still require a SAMBA connection.
Benefit(s)	Remote mainframe subsystem projects using RSE are easier to create, more secure and are typically faster. Users now have more flexibility when developing and testing applications on remote UNIX or Linux platforms.

Feature Summary	Integrated Oracle Pro* COBOL Support
Feature Detail	<p>The Oracle Pro*COBOL pre-compiler SQL options can now be selected for a COBOL or mainframe sub-system project directly from the SQL Settings project pages. These pages enable the user to see which options are available as well as the arguments they take. A detailed description removes the need to keep referring to the documentation.</p> <p>This brings Pro*COBOL Pre-compiler support in line with the other SQL pre-processors the IDE supports.</p> <p>This support is already available in Enterprise Developer for Visual Studio.</p>
Benefit(s)	COBOL developers using the Oracle Pro*COBOL pre-compiler can now easily configure and use it consistently when developing and testing applications that access data in Oracle.

Visual Studio Specific Features

Feature Summary	Improvements to PL/I and COBOL editors
Feature Detail	<ul style="list-style-type: none"> ➤ Enhancements to COBOL verb complete word, content assist and code snippets, and IntelliSense ➤ PL/I editing now supports squiggles, IntelliSense, margins and error checking when editing ➤ VS2015 Light Bulb support is now enabled in the editor and for touch-screen. Users can determine problems more easily by helping with errors for example.
Benefit(s)	Improvements to IntelliSense for COBOL and PL/I and Light Bulb support improves developer productivity by simplifying code development and problem determination.

Feature Summary	Improvements to developer support for creating managed code enterprise projects
Feature Detail	<p>Developers moving enterprise applications to .NET and Azure can now take advantage of these development environment improvements:</p> <ul style="list-style-type: none"> ➤ Integration of Rumba directly in the IDE from managed projects ➤ Integration of Enterprise Server for .NET regions to enable: <ul style="list-style-type: none"> ➤ A list of available servers ➤ Submission of JCL ➤ Starting and stopping of servers ➤ Dynamic debugging ➤ Enterprise Server for .NET console output directly in the IDE. ➤ COBOL verb complete word, content assist and code snippets, and IntelliSense
Benefit(s)	Developers moving IBM Workload to managed .NET or Azure platforms can now easily take full advantage of the development, debug and test tools provided by Enterprise Developer from a single consistent project view.

Integrated Code Analysis and Standards Checking

Feature Summary	Embedded code analysis and standards checking
Feature Detail	<p>Enterprise Developer now offers these out-of-the-box COBOL analysis queries and coding standards checks:</p> <p>General queries:</p> <ul style="list-style-type: none"> ➤ GO TO statement targeting non-exit paragraphs ➤ Uninitialized data items. <p>Code standards:</p> <ul style="list-style-type: none"> ➤ MOVE statements with loss of sign ➤ Explicit scope terminators ➤ IF statements no deeper than 3 levels <p>Performance:</p> <ul style="list-style-type: none"> ➤ Operations with different decimal precision ➤ Operations with different data types - conditions ➤ Usage of ALTER statements. <p>Entire program:</p> <ul style="list-style-type: none"> ➤ Dead code ➤ Unused data. <p>These queries are available to run on demand on a program or programs and can also be invoked as part of a project build. Results are provided in a results tab or directly as points of interest in the editor.</p> <p>These queries are easy to customize and new queries can be created with Enterprise Analyzer then be exposed through the IDEs.</p> <p>This support is in both Eclipse and Visual Studio variants of Enterprise Developer.</p>
Benefit(s)	<p>Developers now have access to code analysis queries within the IDE, so they can deliver knowledge at the point of change. This enables developers to make changes to existing programs with more confidence.</p> <p>Standards checking ensures that developers can easily verify that the code developed meets site-specific standards before being checked in. Enterprise Developer 2.3 ships with a number of predefined analysis queries which can be modified and extended using Enterprise Analyzer to enforce site-specific requirements.</p>

Simplified Customization and Improved Mainframe Integration

Feature Summary	Single Eclipse perspective for all development projects
Feature Detail	<p>The Enterprise Developer 'Team Developer' perspective is now the default when you start the IDE. All enterprise development projects can now be consolidated into a single tree view under one Eclipse perspective.</p> <p>Enterprise Developer provides Application Workflow Manager by default. It enables you to directly define, customize and use any type of enterprise project. This is regardless of whether it is on the mainframe, on the local machine, remote on Linux or UNIX, or using a combination of application languages.</p> <p>Default configuration settings for using the Team Developer perspective are provided with Enterprise Developer and can be easily customized or extended.</p>
Benefit(s)	<p>The Team Developer perspective now means that developers can stay in one perspective and view all of their active projects. As these projects are based around Application Workflow Manager, they are fully customizable. It is also possible to adapt or extend the supplied functionality to integrate tried and trusted tools and processes that are unique to a customer's development environment.</p>

Feature Summary	Easy and extended Eclipse customization
Feature Detail	<p>It is now simpler to create, update and merge models using Application Workflow Manager. This makes it easier to customize the Enterprise Developer Eclipse IDE to integrate into different development processes.</p> <p>Models have been extended by introducing function packages which group tool types. The following function packages are now provided as part of the Enterprise Developer product:</p> <ul style="list-style-type: none"> ➤ Standard Modeling function package including support for workflow manager specific tool types like 'Edit Opener' ➤ Enterprise Developer function packages for accessing tools such project, editor and Enterprise Server functions ➤ An Eclipse function package enables you to more easily customize and integrate standard Eclipse functions like Wizards, file selection dialogs, project synchronization, etc ➤ Mainframe related functions packages enable you to model native MVS tool types, access the UNIX sub-system on the host, and model tool types that require an ISPF environment such as ISPF dialog services ➤ OS function package for modeling Windows tools, such as 'command executor', 'control over folder' and 'file dialogs', etc. <p>It is possible to develop and install custom function packages as required to integrate third-party packages or extend integration capabilities for site specific tools and processes.</p>
Benefit(s)	<p>Application Workflow Manager function packages make it much easier to customize the Enterprise Developer Eclipse based IDE. It can be customized to either integrate existing development processes and tools, or to simplify the user interface so that it only shows tools the developer needs.</p> <p>With access to the right tools from a single IDE while using them in a context familiar to each developer, customers can very easily implement Enterprise Developer and improve developer adoption.</p>

Feature Summary	Improved mainframe source control management system integration
Feature Detail	<p>Improvements to the standard models available for Enterprise Developer mean that:</p> <ul style="list-style-type: none"> ➤ CA Endeavor model now supports bulk processing so that multiple elements can be processed in a single step. Long element names - more than 8 characters - are now supported ➤ Serena ChangeMan model now supports ZMF baseline versions. This includes information (date/time, changes, etc.) and browse/view of the delta versions. Support is also provided to display the promotion history for a package. ➤ IBM SCLM model user interface has been improved so that you can specify a filter or use a hierarchy search when expanding members in the tree view, or displaying members in the table view.
Benefit(s)	<p>With easy access to the most common mainframe based source control systems from a single Eclipse based perspective, developers ensure that they adhere to the existing development process, improving developer adoption. These new enhancements mean you no longer need to spend additional time and effort on customizing the integration to meet your site standards.</p>

Feature Summary	Mainframe pre-compiler support
Feature Detail	<p>You can now integrate mainframe COBOL pre-compilers into Enterprise Developer. This enables you to edit a COBOL file in the pre-compiler format with error feedback referring back to the original lines of source.</p> <p>As long as the pre-compiler input and output files can be compared using standard ISPF comparison tools, any mainframe pre-compiler can be integrated into Enterprise Developer.</p>
Benefit(s)	<p>Support for integrating mainframe pre-compilers means that developers who do not work with standard COBOL on the mainframe can now still take advantage of the Enterprise Developer Eclipse-based tooling. This includes gaining access to powerful COBOL editing capabilities, local syntax checking and copybook dependencies, etc.</p>

Feature Summary	Support for z/OS UNIX Sub-system in Mainframe Explorer View
Feature Detail	<p>It's now possible to access the z/OS UNIX subsystem in the same way you access the MVS subsystem. Support is now provided through a USS Explorer to the z/OS UNIX subsystem. This enables you to:</p> <ul style="list-style-type: none"> ➤ Navigate through the USS directory ➤ Access USS functions like edit, browse, copy, move, etc, available through context menus on USS files ➤ Copy and paste files across systems.
Benefit(s)	<p>You can now easily integrate USS tools and processes directly into the Enterprise Developer IDE. This improves developer adoption and means that you can drive your development process from a single perspective.</p> <p>This support also means file transfer between MVS, USS and Windows can be easily performed and is transparent.</p>

IMPROVED MAINFRAME COMPATIBILITY

Developing and Testing CICS Web Services

Feature Summary	Support for IBM CICS Web Services
Feature Detail	<p>The creation of IBM CICS Web Services is now supported in this release. CICS Transactions can either be exposed as service providers or can make web services calls and act as consumers.</p> <p>Support has been provided within the IDE to enable the creation of a CICS Web Service or existing web service transactions on the mainframe can be imported into an Enterprise Developer project. These can be compiled, debugged and tested end-to-end without reliance on the mainframe.</p> <p>Developers then have the choice of deploying the code back to the mainframe or onto Enterprise Server, if moving the workload to an alternative server platform.</p>
Benefit(s)	<p>Developers now have fully integrated support for CICS Web Services within the Enterprise Developer IDE. They can edit and test from end-to-end within a single IDE environment for faster error resolution, without relying on mainframe resources.</p> <p>Once testing is completed the web services can be deployed back onto the mainframe or alternatively directly onto Enterprise Server.</p>

IBM DB2 Compatibility

Feature Summary	Improved mainframe DB2 compatibility
Feature Detail	<p>For compatibility with later versions of IBM DB2, these capabilities have been added to SQL Option for DB2:</p> <ul style="list-style-type: none"> ➤ Initial support for the use of XML data types with DB2 databases ➤ STRING/VARSTRING data types (to embed CCSID in data and DECLARE VARIABLE) ➤ Improved performance on table expressions and joins, using literal strings ➤ Updated JDBC driver support for result set processing ➤ Better LOB data type support in SQL Wizard ➤ Support for temporal tables and system-period data versioning ➤ Extended support for implicit casting ➤ Greater timestamp precision for applications ➤ Support for TIMESTAMP WITH TIME ZONE.
Benefit(s)	<p>Customers using the latest features of IBM DB2 on the mainframe can now use Enterprise Developer to develop and test these applications off the mainframe. This improves developer productivity and reduces reliance on expensive host resources.</p>

Extended IBM IMS Support

Feature Summary	Direct access to IMS DB data for higher performance batch applications
Feature Detail	<p>Batch IMS applications can now access offline IMS DB data directly to improve performance. The DB data needs to be accessed exclusively and must not be available to online applications such as BMP, IMS and CICS transactions while the batch program is active. This is implemented from JCL using the IMSLOCK DD statement.</p>
Benefit(s)	<p>Performance improves significantly for batch application systems that require access to large amounts of IMS DB data.</p>

EXTENDED DATABASE SUPPORT

Feature Summary	Improved host compatibility support
Feature Detail	<p>The following new features extend support for IBM DB2 LUW, Microsoft SQL Server, Oracle and the Micro Focus Open ESQL environment:</p> <p>IBM DB2 LUW</p> <ul style="list-style-type: none"> ➤ New GUI versions of data migration tooling ➤ New tooling, making it simpler to bind or rebind all packages ➤ New DB2 compiler directive options: <ul style="list-style-type: none"> ➤ OPTPER (NOOPTPER), enhances performance for CHARSET EBCDIC processing ➤ BINDDIR, enables you to specify an alternative directory in which to write the DBRM file created during compilation. <p>Microsoft SQL Server</p> <ul style="list-style-type: none"> ➤ The DATA-CHANGE-TABLE-REFERENCE and the SQL Server OUTPUT clause. <p>Oracle</p> <ul style="list-style-type: none"> ➤ Support for COBOL directives SOURCEFORMAT=TERMINAL and SOURCEFORMAT=VARIABLE. <p>OpenESQL</p> <p>The following features and improvements are now available through the Micro Focus OpenESQL component:</p> <ul style="list-style-type: none"> ➤ ADO.NET Connection Editor improvements to support a series of wizards that guide you through the processes of adding, copying, and removing connections ➤ Date/time processing has been streamlined for ODBC and ADO.NET ➤ A new SQL compiler directive option, OPTPER (NOOPTPER), enhances performance for CHARSET EBCDIC processing ➤ Compatibility with PostgreSQL 9.4. <p>Mainframe Batch Database Tools (MBDT)</p> <p>Extended support for the mainframe batch utility provides the following functionality for Oracle, DB2 LUW, and SQL Server:</p> <ul style="list-style-type: none"> ➤ DSNTEP2 ➤ DSNUTILB LOAD ➤ DSNUTILB UNLOAD. <p>Improved XA switch modules</p> <p>The XA switch modules provided with Enterprise Server have been updated to support:</p> <ul style="list-style-type: none"> ➤ Consistent look and feel for: <ul style="list-style-type: none"> ➤ SQL Server, DB2, and Oracle user personalization ➤ RM dynamic and static registration (SQL Server, DB2, Oracle, generic one-phase commit) ➤ Two instances of the same switch module using CICS and Web Services applications via the new XAID compiler directive.
Benefit(s)	Better host compatibility support improves the process of moving z/OS workloads and DB2 data to alternative server platforms, by simplifying data migration to the target database and minimizing the number of applications changes required to access the migrated data.

ENTERPRISE SERVER HIGH AVAILABILITY

Feature Summary	High availability support for VSAM files
Feature Detail	<p>Enterprise Server now provides high availability support for mainframe format files. This means data files can be replicated across a primary and multiple secondary servers to create a more resilient data environment.</p> <p>In the event of primary server failure, the secondary server can take over the primary role, ensuring any in-flight transactions are rolled back and any active sessions are reconnected to the new primary server.</p> <p>Note: In this release, this capability is provided as a technology preview only. At this stage it is available for testing and feedback rather than production deployment.</p>
Benefit(s)	Enterprise Server's high availability support means applications using mainframe datasets can be protected from failure. This creates a higher availability infrastructure and avoids the need to recover data, ensuring that time to recovery in the event of failure can be kept to a minimum.

IMPROVED DATA FILE EDITING

Feature Summary	Fast, reliable data record editing
Feature Detail	<p>The data record editor provides fast, efficient access to very large data files. New with this release, it supports all data files used within the Micro Focus Enterprise suite, and provides an intuitive GUI for field-level display and editing of data records. Search and filter criteria as well as 'find and locate' make it easy to identify and find specific data records.</p> <p>The data record editor is included in the Enterprise Developer IDE for developers to use, and the Enterprise Server for production data editing.</p>
Benefit(s)	Fast, reliable data editing means that data files can quickly be edited/updated in the event of data corruption. Data can also be quickly manipulated to simulate different development test scenarios.

EXTENDING COBOL APPLICATIONS

Feature Summary	JSON/REST support through Interface Mapping Toolkit (IMTK)
Feature Detail	The IMTK feature has been extended to support RESTful service interfaces using JSON as the media type in request and response messages.
Benefit(s)	COBOL applications can now be extended and modernized to take part in web service transactions using modern transport payloads and protocols.

DEPLOYING WORKLOAD TO MICROSOFT .NET OR AZURE

Feature Summary	Extended application support
Feature Detail	<p>The following new features are included in this release:</p> <ul style="list-style-type: none"> ➤ The public API for CICS has been enhanced to enable customers to call CICS functions from within their C# applications ➤ A JES REST API enables customers to perform JES functions via a HTTP REST request. For example: add initiators and printers, change job class, release jobs ➤ Support for running applications under an Enterprise Server for .NET region in EBCDIC ➤ Limited EZASOKET support: basic open/close, read/write, and some control functionality for the IBM EZACICAL and EZASOKET API. This enables customers to run applications that use IBM EZA functionality.
Benefit(s)	<p>Extended application support simplifies the re-hosting of mainframe workload onto the Enterprise Server for .NET environment. It also means the workloads can be easily integrated into other .NET applications with minimal change which enables you to modernize and re-use the business functions from these re-hosted applications.</p>

Feature Summary	Improved administration and diagnostics
Feature Detail	<p>The following new features improve administration of the Enterprise Server for the .NET environment, making it easier to get diagnostic information in the event of failure:</p> <ul style="list-style-type: none"> ➤ The command line tooling has been enhanced to enable resource definition information to be exported from ES.NET into an Enterprise Server format ➤ The Historical Statistics Facility support is now available for CICS regions. When enabled, event records are created in the region database at run-time for transactions. Both GUI and command line tooling are provided so you can analyze these statistics ➤ Mini dump support enables customers to configure a region to produce a mini dump automatically when an exception occurs.
Benefit(s)	<p>These improvements make it easier to configure an Enterprise Server for the .NET environment and to diagnose problems when they occur in an active server or region.</p>

REHOSTING PL/I WORKLOAD

Feature Summary	Extending language support and IBM PL/I compatibility
Feature Detail	<p>The following new features have been added to extend the Open PL/I language support:</p> <ul style="list-style-type: none"> ➤ Support for the GRAPHIC data type ➤ The Open PL/I Macro Pre-processor now supports: <ul style="list-style-type: none"> ➤ The use of arrays of FIXED and CHAR macro variables ➤ Simplified migration and maintenance of code that uses variable arrays ➤ The macro statement ANSWER ➤ The SYSTEM Built-in Function ➤ IBM Structure Alignment (-zalign), which causes ALIGNED structures to map data elements at the same offsets as IBM's compiler ➤ New compiler options: <ul style="list-style-type: none"> ➤ <i>z float</i> compiler option to control floating point precision ➤ <i>laxbased</i> and <i>-laxdefined</i> to fail programs which declare variables that exceed the size of the underlying data areas upon which they are based/defined ➤ Support for new built-in functions: <ul style="list-style-type: none"> GETENV, GRAPHIC, ONGSOURCE, ONWCHAR, ONWSOURCE, PUTENV. ➤ A new INCLUDE pre-processor to support Panvalet, Librarian and Endeavor.
Benefit(s)	Improved functionality and greater language compatibility makes it easier for organizations to move PL/I workloads from a z/OS environment onto an alternative server platform.

Feature Summary	Improved development tooling
Feature Detail	<p>64-bit PL/I support on Windows and Linux</p> <p>A full 64-bit environment for developing PL/I applications is now available on Windows, Red Hat Linux, and SUSE Linux. This enables developers to take advantage of a 64-bit address space and interact with 64-bit relational databases etc.</p> <p>Improved debugging of PL/I applications</p> <p>The debugger has been enhanced to support the evaluation of the following built-in functions:</p> <p style="text-align: center;"><i>center, centerleft, centerright, hex, left, lowercase, maxlength, packagename, right, reverse, round, search, searchr, tally, uppercase.</i></p> <p>You can now set breakpoints without using the ENVIRONMENT command.</p>
Benefit(s)	Improved debugging makes it easier for developers to track and resolve stubborn run-time issues when moving PL/I workloads onto an alternative server environment. 64-bit support means developers can now modernize their applications to take advantage of 64-bit environments.

EASIER LINUX INSTALLATION

Feature Summary	RPM Installers for Linux Platforms
Feature Detail	The Enterprise Server products are now available as RPM packages alongside the proprietary installers. This is the industry standard packaging system for Linux (Red Hat, SUSE on x86 and 390).
Benefit(s)	Simplifies the installation process for Linux customers by using the industry standard packaging method.

MISCELLANEOUS IMPROVEMENTS

Feature Summary	Support for JCL FTP commands under Enterprise Server
Feature Detail	<p>A new utility called Micro Focus FTP (MFFTP) is now available as part of Enterprise Server. It provides support for FTP commands with Enterprise Server batch regions and supports the following data formats:</p> <ul style="list-style-type: none"> ➤ Fixed Block (FB) files ➤ Variable Block (VB) files ➤ Generation Data Group (GDG) files <p>Support is also provided for configuring end-of-line markers, error codes and text messages.</p>
Benefit(s)	Support for FTP commands within JCL when running under Enterprise Server means that more of the customer application can be rehosted with minimal change, which simplifies the rehost process.

For additional information please visit: www.microfocus.com