

# **What's New in Studio and Server Enterprise Edition 6.0 Service Pack 2 - Wrap Pack 1**

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## INTRODUCTION

This 'What's New' document covers the new features and functions in the latest Service Pack 2 Wrap Pack 1 release of this family of products which support two solution areas:

### Application Migration

Micro Focus Studio Enterprise Edition provides a contemporary development suite for migrating applications away from traditional mainframe environments, and modernizing them to meet the needs of your business.

Micro Focus Server Enterprise Edition provides the execution environment to deploy migrated applications on all popular Linux, UNIX and Windows (LUW) servers.

### Re-host Testing

Micro Focus Studio Enterprise Edition Test Server provides a comprehensive test platform that takes advantage of the lower cost Windows environment and supports a wide variety of pre-production testing of mainframe applications before they are deployed back to the mainframe.

If you are already familiar with Studio Enterprise Edition and Server Enterprise Edition 6.0 SP1, this document will help you quickly understand the new capabilities within the 6.0 SP2 WP1 release and the benefits they deliver in each of the solution areas.

## NEW FEATURES

### 1. Improved PL/I Support and Integration – PL/I within Studio and Server now GA level

Feature Summary	Integration of the Open PL/I Compiler, Debugger and Run Time System (RTS) into Microsoft Visual Studio 2008 (1)
Feature Details	<ul style="list-style-type: none"> <li>➤ PL/I Project Types which allow for creation of .EXE(s), .DLL(s), and user application programs (.DLLs) targeted to execute within the Server Enterprise Edition JCL, CICS, and IMS rehosting environment</li> <li>➤ Source Colorizing</li> <li>➤ User Customizable Templates</li> <li>➤ Compile, link and debug (using Open PL/I Debugger) from the Visual Studio IDE</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Improved productivity for PL/I programmers post migration so they can deliver updates faster than previously possible on the mainframe</li> </ul>

Feature Summary	Support for Open PL/I applications that use CICS
Feature Details	<ul style="list-style-type: none"> <li>➤ A new PL/I CICS Precompiler</li> <li>➤ Enhanced source level debugging</li> <li>➤ PL/I RTS Support for CICS applications</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Ability to migrate mainframe CICS PL/I applications to lower cost LUW platforms while keeping PL/I and EXEC CICS code intact to minimize application updates, simplify migration and mitigate risk</li> </ul>

Feature Summary	Support for Microsoft SQL Server within PL/I applications
Feature Details	<ul style="list-style-type: none"> <li>➤ The mature OpenESQL technology Micro Focus has supported for many years for its COBOL customers, is now available for use with PL/I applications</li> <li>➤ This means PL/I SQL can now execute against popular relational databases like Microsoft SQL Server without requiring a database specific SQL preprocessor for PL/I</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Customers now have the option to select Microsoft SQL Server as their target database when migrating PL/I applications that utilize DB2 on z/OS</li> </ul>

Feature Summary	Support for PL/I Dynamic Calls (FETCH/RELEASE)
Feature Details	<ul style="list-style-type: none"> <li>➤ New language and runtime level support for PL/I Dynamic calls</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Greater efficiency during migration and less risk as applications using dynamic calls can be re-hosted without significant changes to application logic</li> </ul>

Feature Summary	Improvements to the Open PL/I DB2 LUW Precompiler
Feature Details	<ul style="list-style-type: none"> <li>➤ Support for ROWID</li> <li>➤ Support for BLOB</li> <li>➤ Support for CLOB</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Widens the breadth of applications that can be re-hosted</li> <li>➤ Without this support, applications using such features would not be considered as good candidates for migration due to the significant reengineering that would be required</li> </ul>

Feature Summary	Improved language compatibility with IBM's z/OS based PL/I Compiler
Feature Details	<p>Support for new language elements</p> <ul style="list-style-type: none"> <li>➤ Variable names up to 100 bytes (1)</li> <li>➤ Support for user written PLIDUMP routines (1)</li> <li>➤ Support for STDCALL linkage on Intel Platforms (1)</li> <li>➤ Support of named constants using the VALUE attribute (1)</li> <li>➤ Compound assignment operators +=, -=, /=,  =,   =, *=, **= (1)</li> <li>➤ Support for optional parameters to the INDEX built-in function</li> </ul> <p>Support for new BUILTIN functions</p> <ul style="list-style-type: none"> <li>➤ ADDRDATA (1)</li> <li>➤ CENTERLEFT/CENTRELEFT, CENTERRIGHT/CENTRERIGHT (1)</li> <li>➤ FILEOPEN, FILEDDINT, FILEDDWORD (1)</li> <li>➤ HEX</li> <li>➤ LEFT, LOWERCASE (1)</li> <li>➤ MAXLENGTH</li> <li>➤ PACKAGENAME, PROCEDURENAME (1)</li> <li>➤ RANDOM, REVERSE, RIGHT (1)</li> <li>➤ SEARCH, SEARCHR (1)</li> <li>➤ TALLY (1)</li> <li>➤ UPPERCASE (1)</li> <li>➤ Use of the DIM built in function to size static arrays</li> <li>➤ STRING built in function enhanced to allow for CHAR VARYING structure elements</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Applications using these IBM mainframe PL/I language features no longer need code modification to function in the same manner as they did on the mainframe. This reduces risk while accelerating migration of such programs</li> </ul>

Feature Summary	Improved debugging capabilities for applications under development and running in production (2)
Feature Details	<ul style="list-style-type: none"> <li>➤ Support for PLIDUMP() which will generate a call stack, and show all static variables, local variables and API parameters that were in effect at the time of the call to PLIDUMP. This facility is typically used for analysis of application failures while running in production</li> <li>➤ Support for an enhanced PLITEST API which allows for dynamic attachment of a PLI Debugger at a point specified by the application programmer. In addition the PLITEST interface has the capability of displaying the CodeWatch Debugger UI on any platform capable of hosting an X-Windows Server.</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Faster time to resolution of production issues impacting customer service level agreements</li> </ul>

Feature Summary	Generation of ASA Control Characters when writing to PL/I files with the STREAM, PRINT attributes (2)
Feature Details	<ul style="list-style-type: none"> <li>➤ When writing PL/I files that are defined to have the STREAM and PRINT attributes appropriate control characters are now written to column 1 of the output dataset to represent a new page, skip(1) skip(2), skip(3), and skip(0) (aka overstrike)</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Ease migration and integration with existing printing subsystems</li> </ul>

Feature Summary	Improved emulation of mainframe compiler and runtime behaviors in the treatment of CONTROLLED storage (2)
Feature Details	<ul style="list-style-type: none"> <li>➤ Open PL/I now allows the passing of unallocated CONTROLLED storage data items from one procedure to another. These variables can then be checked for ALLOCATION() and allocated as appropriate</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Ease migration and reduced coding changes to existing application logic</li> </ul>

## 2. CORE ENTERPRISE SERVER IMPROVEMENTS

Feature Summary	LDAP password management improvements
Feature Details	<ul style="list-style-type: none"> <li>➤ Recording last login time when a user is verified</li> <li>➤ Keeping a configurable password history and rejecting a password change if the password matches one in the history</li> <li>➤ Lock out after a configurable number of consecutive failed logins</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Helps customers meet security audit compliance requirements</li> </ul>
Re-host Testing	<ul style="list-style-type: none"> <li>➤ Maintaining the security levels within a testing environment is important especially when testing areas of an application that contain sensitive data. Test Server comes with a security layer, the External Security Facility or ESF, which is based on mainframe SAF and RACF. ESF uses plug-in security managers to control user authentication and resource access. These enhancements help customers meet security requirements within their test environment.</li> </ul>
Feature Summary	New Historical Statistics Facility (HSF) to gather statistical information about transaction execution within the Enterprise Server environment
Feature Details	<ul style="list-style-type: none"> <li>➤ Historical timing statistics are generated for Enterprise Server transactions. Statistics can be written to a .CSV file format and a limited number of records can also be held in memory for viewing through ESMAC</li> <li>➤ The Statistics generated include information about                         <ul style="list-style-type: none"> <li>➤ The type of task (CICS, IMS, JCL, Web Service, CGI)</li> <li>➤ Task number and start time</li> <li>➤ Transaction ID/Program name and user that initiated</li> <li>➤ Latency and response times</li> <li>➤ Files accessed duration and number of occurrences</li> <li>➤ Time spent in SQL and CICS API</li> </ul> </li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Enable system administrators to identify poorly performing transactions</li> <li>➤ Provide statistics for quantifying the time taken for execution of a given transaction which can be utilized to fulfill common accounting and costing requirements off the mainframe</li> </ul>
Re-host Testing	<ul style="list-style-type: none"> <li>➤ Once performance benchmarks have been established for applications running under Test Server, the QA team can use these statistics to identify whether the root cause of a performance problem is an environment or development issue. In this way potential performance issues can be identified and managed without using expensive mainframe MIPs.</li> </ul>

### 3. JCL SUPPORT IMPROVEMENTS

Feature Summary	Improved VSE and MVS JCL support
Feature Details	<ul style="list-style-type: none"> <li>➤ Internal reader support for VSE JCL</li> <li>➤ Support for multiple logical files within a single in-stream dataset (VSE JCL)</li> <li>➤ User exit for POWER statements (VSE JCL)</li> <li>➤ Allow in-stream data to be included via SLI INCLUDE statements (VSE JCL)</li> <li>➤ Improved JESYSMSG layout for VSE (previously it was very difficult to read)</li> <li>➤ GDG scratch processing at step end</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ The new VSE features mean that a migration to a Server Enterprise Edition platform requires fewer changes to the original host JCL making it quicker and easier to migrate</li> <li>➤ SMS managed GDGs scratch processing now mimics latest mainframe release behavior avoiding unexpected results during the migration process which can be very difficult to track down</li> </ul>
Re-host Testing	<ul style="list-style-type: none"> <li>➤ The new VSE features means that host JCL can be executed with minimal change on Test Server</li> <li>➤ SMS managed GDGs scratch processing now emulates the latest mainframe release behavior when running in test</li> </ul>

### 4. IMPROVEMENTS TO CICS SUPPORT

Feature Summary	Additional CICS Web Interface (CWI) support to include DOCUMENT and EXTRACT TCPIP CICS APIs and to provide support for or CICS as an HTTP client
Feature Details	<p>Support is provided for the following APIs</p> <ul style="list-style-type: none"> <li>➤ CREATE DOCTEMPLATE (1)</li> <li>➤ INQUIRE DOCTEMPLATE (1)</li> <li>➤ DOCUMENT DELETE (1)</li> <li>➤ DISCARD DOCTEMPLATE (1)</li> <li>➤ DOCUMENT INSERT (1)</li> <li>➤ DOCUMENT RETRIEVE (1)</li> <li>➤ DOCUMENT SET (1)</li> <li>➤ EXTRACT TCPIP (1)</li> <li>➤ As well as associated resources and infrastructure</li> <li>➤ Support for CICS as an HTTP client provides a common gateway for business to business communications whether this be controlling hardware or software applications or posting and retrieving data through the HTTP protocol</li> </ul>

Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ CICS applications using these specific CWI APIs can be migrated without change to the existing CWI logic</li> <li>➤ CICS applications that act as consumers of HTTP content from Web Servers can now be migrated</li> </ul>
Re-host Testing	<ul style="list-style-type: none"> <li>➤ Allows CICS applications that use these specific CWI APIs to be tested under Test Server without change</li> </ul>

Feature Summary	Added support for EXEC CICS INQUIRE REQID
Feature Details	<ul style="list-style-type: none"> <li>➤ This API provides a mechanism for querying information about a queued request. This initial support returns the INTERVAL value i.e. time remaining until the request expires</li> <li>➤ This feature provides improved control over queued requests by providing a way for an application to access information about queued requests such as START TRANSID(...)</li> </ul>

Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Enables applications which make heavy use of this API to be migrated without having to find alternative means of providing existing behavior</li> </ul>
Re-host Testing	<ul style="list-style-type: none"> <li>➤ Ensures that applications that use this API can be tested without change to source code or application behavior</li> </ul>

Feature Summary	The CICS Inter-System Communications (ISC) support within Server Enterprise Edition has been improved to support 2-Phase Commit communications flows using various third-party UNIX APPC communications products
Feature Details	<ul style="list-style-type: none"> <li>➤ Enterprise Server "Sys62" connections to a remote peer now support the standard communications flows required for 2-Phase Commit support</li> <li>➤ Uses IBM Communications Server (on AIX, Red Hat and SuSE SLES), HP SNAPPlus2 (on HP/UX) and Metaswitch SNAP-IX (on Solaris) to enable Enterprise Server to take part as a peer in distributed Sync Level 2 Sync Point processing conversations</li> </ul>

Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Improves transactional data integrity between CICS applications on UNIX and CICS applications that continue to reside on z/OS</li> </ul>

## 5. IMS SUPPORT IMPROVEMENTS

Feature Summary	Batch backout support has been added for IMS batch applications running in Enterprise Server
Feature Details	<ul style="list-style-type: none"> <li>➤ Provides the ability to recover database changes made by IMS batch applications (DLI and DB) to a point before a program was initiated or to a checkpoint (1)</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Database changes made by a failed batch IMS applications when running in Enterprise Server can now be recovered</li> <li>➤ This provides increased compatibility with IMS applications running on the mainframe and reduces effort and risk when migrating such applications</li> </ul>

Feature Summary	IMS transactions can now be protected by password (2)
Feature Details	<ul style="list-style-type: none"> <li>➤ Password reverification is now supported, requiring that a signon password be entered with each transaction code. A MFS message field may be defined to hold the password</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ An additional mechanism is provided for securing IMS transactions that run under Micro Focus Server</li> <li>➤ This provides increased compatibility with IMS applications running on the mainframe and reduces effort and risk when migrating such applications</li> </ul>

## 6. HOST COMPATIBILITY OPTION FOR MICROSOFT SQL SERVER (HCOSS) UPDATES

<p>Feature Summary</p>	<p>HCOSS makes it simple to migrate both code and data from mainframe DB2 to SQL Server. In addition to the host compatibility features, HCOSS also provides assessment capability to analyze your COBOL code and identify every SQL statement that would require amendments, with and without the use of HCOSS, when updating applications to operate against SQL Server.</p>
<p>Feature Details</p>	<p>Key improvements since the last release include:</p> <ul style="list-style-type: none"> <li>➤ Usability enhancements to Assessment Tool and various Data and Code Migration Tools (1)</li> <li>➤ Code Assessment tool enhanced with mapping facility for reserved words (2)</li> <li>➤ addition of Data Assessment tool (2)</li> <li>➤ all tools enhanced to provide easier management of log files (2)</li> <li>➤ enhanced Manage Package/Plans tool to include enhanced FREE PACKAGE/ FREE PLAN features, and the ability to bind applications on your deployment server (2)</li> <li>➤ Support for dynamic SQL (1)</li> <li>➤ Support for additional mainframe DB2 syntax including:             <ul style="list-style-type: none"> <li>➤ Case expressions (1)</li> <li>➤ Date/Time directive (1)</li> <li>➤ DECLARED global temporary tables</li> <li>➤ DYNAMiCRULES BIND option</li> <li>➤ OLAP (Online Analytical Processing) specifications (1)</li> <li>➤ Result Set Processing for Stored Procedures</li> <li>➤ XML functions (1)</li> <li>➤ SELECT WHERE IN clauses which support multiple columns (2)</li> <li>➤ SELECT CAST specifications which return SQL expressions for a given sql data type (2)</li> <li>➤ stored procedure name in a host variable (2)</li> </ul> </li> <li>➤ Plan Name Support in JCL</li> <li>➤ Enhanced support for SQLClient, .NET Data provider for SQL Server 2008, enabling COBOL/CICS applications running as managed code under the .NET framework to take advantage of all the capabilities HCOSS provides</li> <li>➤ Enhanced connection editor experience for .NET platforms</li> </ul>

Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Assessment tool clearly identifies problematic COBOL SQL code so customers can get early idea of what needs to change and potential costs</li> <li>➤ HCOSS now caters for over 90% of the most commonly used mainframe DB2 SQL statements that would otherwise require code changes when migrating to SQL Server. This dramatically drives down code conversion costs and reduces risk when migrating DB2 applications to Windows and SQL Server</li> <li>➤ Earlier time to market to ensure cost savings can be realized when expected</li> </ul>
Re-host Testing	<ul style="list-style-type: none"> <li>➤ By following portability guidelines to make appropriate minor changes to mainframe SQL, it's possible to utilize HCOSS and SQL Server to enable efficient testing against very large databases with the Test Server Environment</li> </ul>

**7. ENHANCEMENTS TO INTERFACE MAPPING TOOLKIT (IMTK)**

Feature Summary	Support for Workflow Capture added to IMTK running within Visual Studio 2008 and addition of WPF test clients for service interfaces
Feature Details	<ul style="list-style-type: none"> <li>➤ Service interface operations can be created based on a recording (capturing) of the CICS or IMS application flow</li> <li>➤ A graph can be displayed showing the screens captured as well as the flow between screens</li> <li>➤ Users can now generate WPF clients to test service interfaces</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Simplifies creation of service interfaces for CICS or IMS applications that contain moderate to large numbers of screens when modernizing application user interfaces post migration</li> <li>➤ Users now have a choice of generating WPF, Windows Forms or ASPX .NET test clients for service interfaces during the modernization process</li> </ul>

## 8. MAINFRAME ACCESS (MFA) CLIENT CAPABILITIES (NEW!)

<p>Feature Summary</p>	<p>Mainframe Access (MFA) client capabilities have been added to Studio Enterprise Edition and Studio Enterprise Edition Test Server.</p> <p>Note: This capability is NOT supported in production. It is only supported within development and testing environments.</p>
<p>Feature Summary</p>	<p>Mainframe Access (MFA) client capabilities have been added to Studio Enterprise Edition and Studio Enterprise Edition Test Server.</p> <p>Note: This capability is NOT supported in production. It is only supported within development and testing environments.</p>
<p>Feature Details</p>	<p>Key features added</p> <ul style="list-style-type: none"> <li>➤ Mainframe Drag &amp; Drop to enable mainframe source and data artifacts to be dragged from mainframe and dropped into Studio EE projects</li> <li>➤ MFA Synchronization and Control Monitor (aka 'Syncmon') – synchronizes selected source components between mainframe hosted source and a Windows development or test environment</li> <li>➤ Automatic Synchronize and Compile to automatically compile modules after source code synchronization</li> <li>➤ Remote Job (JCL) Step Execution to enable execution of jobs on mainframe that cannot be rehosted to Windows</li> <li>➤ Mainframe Call Generator – enables remote execution of mainframe programs that cannot be re-hosted to Windows</li> <li>➤ SourceConnect – allows direct access to source hosted on mainframe</li> <li>➤ DataConnect – allows COBOL file access to data files hosted on mainframe</li> </ul>
<p>Benefits</p>	
<p>Migrations</p>	<ul style="list-style-type: none"> <li>➤ Source and data can be transferred from the mainframe, and projects can be set up more efficiently within the Studio EE environment to make it easier to demonstrate rapid progress to key stakeholders</li> <li>➤ Once projects are set up the synchronization with mainframe artifacts can be automated to deliver significant efficiency gains</li> </ul>
<p>Re-host Testing</p>	<ul style="list-style-type: none"> <li>➤ Seamless but secure access to mainframe application source code and data simplifies set up and deployment of the Test Server platform</li> <li>➤ Significantly increases the breadth of applications that can be tested within the Studio EE Test Server environment as jobs, programs and utilities that cannot be rehosted to Windows can be remotely accessed on the mainframe</li> <li>➤ Allows source synchronization with mainframe source control systems. Test Server can then be configured to automatically compile changes as they are checked into source libraries. This provides early exposure to test teams performing smoke or regression testing</li> <li>➤ Data can continue to reside on the mainframe. COBOL programs running under Test Server can directly access mainframe files. This not only allows multiple test levels against different subsets of data, it means that sensitive or archive data can remain in-situ</li> </ul>

## 9. HIGH LEVEL ASSEMBLER DEVELOPMENT AND TEST EXECUTION SUPPORT

Feature Summary	<p>Support for High Level Assembler (HLA) has been added to Studio Enterprise Edition and Studio Enterprise Edition Test Server.</p> <p>Note: This capability is NOT supported in production. It is only supported within development and testing environments.</p>
Feature Details	<ul style="list-style-type: none"> <li>➤ IBM HLL Assembler available via product command line (1)</li> <li>➤ Assembler linker capable of generating assembler data tables or executable code added (1)</li> <li>➤ COBOL runtime loader modified to load and execute assembler executables</li> <li>➤ Assembler files can now be added to Visual Studio projects and be edited, assembled and linked using the Visual Studio 2008 IDE</li> <li>➤ Assembler programs can now be executed for testing purposes within the Studio Enterprise Edition and Studio Enterprise Edition Test Server environments</li> </ul>
<b>Benefits</b>	
Migrations	<ul style="list-style-type: none"> <li>➤ During migration projects COBOL or PL/I programs which call Assembler programs can be demonstrated running on Windows before the Assembler programs have to be converted. This can be instrumental in proof of value exercises that may be required before investing in the conversion of the Assembler programs is approved.</li> </ul>
Re-host Testing	<ul style="list-style-type: none"> <li>➤ This capability enables comprehensive testing of mainframe applications that contain 370 Assembler on low cost Windows environments rather than having to utilize expensive mainframe MIPS</li> </ul>

## 10. SERVER ENTERPRISE EDITION FOR .NET IMPROVEMENTS

Feature Summary	<p>Managed code CICS capability to provide scale out solution and architecture for the Azure cloud</p>
Feature Details	<p>User Interface</p> <ul style="list-style-type: none"> <li>➤ Copy/Paste support. Multiple nodes can now be selected (1)</li> <li>➤ Non-administrators are now able to run the MMC UI (1)</li> <li>➤ Ability to create, edit and delete resource definition files residing in the cross-region database (1)</li> <li>➤ Transaction programs and BMS maps can now be deployed to the cross-region and/or custom database from the MMC UI. Previously this could only be achieved by using the sedeploy command-line tool</li> <li>➤ Regions can now be started and stopped on a remote machine. Previously regions could only be started and stopped on the same machine that the MMC UI, or seestart command-line tool, was running on</li> <li>➤ Region startup and resource definition files can now be deployed to the cross-region database. These files can be edited in situ using the MMC UI's configuration file editor</li> <li>➤ 'Cmdlets' are provided to allow CICS regions to be started, stopped and monitored from within PowerShell scripts</li> </ul>

Feature Details	<ul style="list-style-type: none"> <li>➤ 'seeupgrade' utility introduced to allow the upgrading of region startup and resource definition files to the current product release level</li> <li>➤ Dynamic debugging view added to the MMC UI. Users are able to enable or disable dynamic debugging for a running region and view all active debugging sessions (2)</li> <li>➤ In the CICS Resource file editor resources can now be renamed (2)</li> <li>➤ Context-sensitive help is now provided in the MMC UI (2)</li> </ul>
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Benefits
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Migrations	<ul style="list-style-type: none"> <li>➤ Simplifies the deployment and administration of scaled-out regions</li> <li>➤ Deploying files to a central database location helps minimize the risk of file version conflicts in scaled-out regions</li> </ul>
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Feature Summary	Managed code CICS capability to provide scale-out solution and architecture for the Azure cloud
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Feature Details	<p>Security</p> <ul style="list-style-type: none"> <li>➤ CICS applications can now run under the identity of the signed-on Windows user. As the OS controls access to system resources, some application actions, such as direct (COBOL or system API) file access, will be restricted by the privileges of the signed-on user. Support for single-signon to regions scaled out across multiple machines. Two mechanisms are provided to support this functionality: protocol transition (PT) and credential passing (CP)</li> </ul>
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Benefits
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Migrations	<ul style="list-style-type: none"> <li>➤ Use Windows security to control access to system resources to further improve overall system security</li> </ul>
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Feature Summary	Managed code CICS capability to provide scale-out solution and architecture for the Azure cloud
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Feature Details	<p>Improved mainframe compatibility</p> <ul style="list-style-type: none"> <li>➤ The following system programmer APIs are now supported or have been enhanced:             <ul style="list-style-type: none"> <li>➤ SEND TEXT (enhanced support) (2)</li> <li>➤ POP HANDLE (new) (2)</li> <li>➤ PUSH HANDLE (new) (2)</li> <li>➤ SEND PAGE (new) (2)</li> <li>➤ PURGE MESSAGE (new) (2)</li> <li>➤ GETMAIN (enhanced support) (2)</li> <li>➤ WRITE OPERATOR (enhanced support) (2)</li> </ul> </li> </ul>
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Feature Details	<ul style="list-style-type: none"> <li>➤ The following system programmer APIs are now supported or have been enhanced:             <ul style="list-style-type: none"> <li>➤ INQUIRE PROGRAM (enhanced support)</li> <li>➤ INQUIRE TRANSACTION (new)</li> <li>➤ SET PROGRAM (enhanced support)</li> <li>➤ SET TRANSACTION (new)</li> <li>➤ INQUIRE TASK LIST (updated) (2)</li> <li>➤ INQUIRE TASK (new) (2)</li> <li>➤ INQUIRE TERMINAL (new) (2)</li> <li>➤ INQUIRE SYSTEM (new) (2)</li> </ul> </li> <li>➤ Supplied transactions:             <ul style="list-style-type: none"> <li>➤ CINS (new) – same functional level as native Server EE</li> <li>➤ CPMT updated to the same functional level as native Server EE</li> </ul> </li> <li>➤ The verbosity level of messages written to the system console can now be configured. This provides similar functionality to the CICS MSGLVL system initialization parameter found on the mainframe</li> <li>➤ PPT entries are now used to determine whether BMS maps are resident or non-resident. Previously all maps were considered to be resident</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Fewer changes and so less risk when migrating applications</li> </ul>

Feature Summary	Managed code CICS capability to provide scale-out solution and architecture for the Azure cloud
Feature Details	<p>System Center Operations Manager (SCOM) integration</p> <ul style="list-style-type: none"> <li>➤ A management pack is provided that allows CICS regions to be discovered, and their current state (e.g. 'stopped' or 'started'), active SEP pools and running transactions to be monitored</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ The health and state of .NET managed code CICS regions can now be monitored using SCOM</li> </ul>

Feature Summary	Managed code CICS capability to provide scale-out solution and architecture for the Azure cloud
Feature Details	<p>Support for Windows Azure(2)</p> <ul style="list-style-type: none"> <li>➤ CICS systems can now be deployed as Windows Azure hosted services</li> <li>➤ The CICS systems can be administered from on-premise machines using the MMC UI</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Exploit the operational efficiencies and cost efficient pricing elasticity of Windows Azure</li> <li>➤ Reduce risk by enabling applications to behave just as they did on the mainframe by reusing the original code defining existing online business processes</li> </ul>

### 11. LATEST PLATFORM SUPPORT

Feature Summary	This version of Server Enterprise Edition has been tested and will be supported against the 32-bit and 64-bit environments shown in the supported platforms table
Feature Details	<ul style="list-style-type: none"> <li>➤ Verified on latest versions of operating systems on latest processors</li> </ul>
Benefits	
Migrations	<ul style="list-style-type: none"> <li>➤ Open choice of platform to deploy migrated applications</li> </ul>
Re-host Testing	<ul style="list-style-type: none"> <li>➤ Migrated applications can take advantage of new technologies only available on latest operating environments</li> </ul>

### SUPPORTED PLATFORMS TABLE

Operating System and Processor	Notes
HP-UX 11iv2 and 11i v3 on Integrity servers with Itanium 64-bit processors	<ul style="list-style-type: none"> <li>➤ PL/I is not supported on this platform</li> <li>➤ 64-bit COBOL support requires Server EE 6.0 or above</li> </ul>
IBM AIX 5.3, 6.1 and 7.1 on System p servers with Power PC 64-bit processors	<ul style="list-style-type: none"> <li>➤ 64-bit COBOL support requires Server EE 6.0 or above</li> <li>➤ AIX 7.1 requires Server EE 6.0 SP2 or above</li> </ul>
Sun Solaris 10 on SUN SPARC Servers with SPARC 64-bit processors	<ul style="list-style-type: none"> <li>➤ COBOL support requires Server EE 6.0 WP1 or above</li> </ul>
SuSE Linux ES 10SP2 and 11SP1 on servers with x86-64-bit processors	<ul style="list-style-type: none"> <li>➤ 64-bit COBOL support requires Server EE 6.0 WP1 or above</li> <li>➤ SuSE 11SP1 requires Server EE 6.0 SP2 or above</li> </ul>

SuSE Linux ES 10SP2 and 11SP1 on System z servers with z/390 processors	<ul style="list-style-type: none"> <li>➤ PL/I is not supported on this platform</li> <li>➤ 64-bit COBOL support requires Server EE 6.0 WP1 or above</li> </ul>
Red Hat Enterprise Linux 5.7 servers with x86-64-bit processors	<ul style="list-style-type: none"> <li>➤ 64-bit COBOL support requires Server EE 6.0 or above</li> <li>➤ RHEL 5.7 requires Server EE 6.0 SP2 WP1 or above</li> </ul>
Red Hat Enterprise Linux 5.3, 5.4 and 5.5 servers with Itanium 64-bit processors	<ul style="list-style-type: none"> <li>➤ PL/I is not supported on this platform</li> <li>➤ Only supported with Server EE 6.0 or above</li> <li>➤ RHEL 5.5 requires Server EE 6.0 SP2 or above</li> </ul>
Red Hat Enterprise Linux 5.3, 5.4 and 5.5 System z servers with z/390 processors	<ul style="list-style-type: none"> <li>➤ PL/I is not supported on this platform</li> <li>➤ COBOL support requires Server EE 6.0 WP1 or above</li> <li>➤ RHEL 5.5 requires Server EE 6.0 SP2 or above</li> </ul>
Windows 7 on servers with x86-64-bit processors	<ul style="list-style-type: none"> <li>➤ COBOL support requires Server EE 6.0 WP2 or above</li> </ul>
Windows Server 2003, 2003 R2 and 2008 SP1 on servers with x86-64-bit processors	<ul style="list-style-type: none"> <li>➤ 64-bit COBOL support requires Server EE 6.0 or above</li> </ul>
Windows Vista SP1 on servers with x86-64-bit processors	<ul style="list-style-type: none"> <li>➤ 64-bit COBOL support requires Server EE 6.0 or above</li> </ul>
Windows XP SP2 on servers with x86-64-bit processors	<ul style="list-style-type: none"> <li>➤ 64-bit COBOL support requires Server EE 6.0 or above</li> <li>➤ Managed code features are not fully supported so not recommended</li> </ul>

Notes:

- (1) These features were made available in an earlier Wrap Pack updates to SP1.
- (2) These features were made available in SP2 Wrap Pack 1 release.

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