

# IBM MQ for z/OS, V9.1 delivers new features and enhancements for clients who choose MQ to deliver robust, secure, and scalable enterprise messaging solutions

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## Overview

IBM<sup>(R)</sup> MQ for z/OS<sup>(R)</sup>, V9.1 connects applications, systems, and services in on-premise and hybrid cloud environments. Version 9.1 is a Long Term Support release that includes all capabilities that were delivered in the Continuous Delivery releases, from Version 9.0.1 through Version 9.0.5.

Additional features and enhancements for clients with MQ for z/OS entitlement include:

- New web-based MQ Console for administration
- New MQ REST API for administration and messaging operations
- Java™ client enhancements
- Improved workload balancing options for shared queues
- New MQ Service Provider for IBM z/OS Connect Enterprise Edition

### Backwards migration support

MQ for z/OS, V9.1 allows clients to migrate from supported Long Term Support releases Version 8.0 and Version 9.0 and retain the ability to return to the Long Term Support release they migrated from. Backwards migration to Continuous Delivery releases, such as Version 9.0.5, is not supported.

## Key prerequisites

MQ for z/OS, V9.1 runs on any IBM Z<sup>(R)</sup> server that supports IBM z/OS V2.2 operating system, with enough storage to meet the combined requirements of the programming prerequisites for MQ for z/OS, the access methods, and the application programs.

## Planned availability date

August 10, 2018

## Description

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New and enhanced capabilities in the MQ for z/OS, V9.1 release include:

- MQ Console

The MQ Console, a browser-based administration tool, can be used to configure and manage queue managers across all deployment options, which include MQ for z/OS, V9.1. The MQ Console is a web application that is automatically deployed within an embedded IBM WebSphere<sup>(R)</sup> Application Server Liberty runtime that is supplied with MQ.

The MQ Console provides a simple to use and customizable view of MQ. The choice of messaging resources can be selected and added to the view as widgets to display only that which is required. The MQ Console was designed to reflect the latest user interface standards, which are common with other IBM offerings.

As a web-based thin client, the MQ Console has the advantage of not requiring a component installation for each individual user. This simplifies security and administration. Users can continue to use MQ Script Commands (MQSC) and the MQ Explorer for tasks not currently available in the MQ Console.

- MQ REST API

A RESTful API is added to simplify programmatic access to the administration and messaging capabilities of MQ for z/OS, V9.1. The MQ REST API is provided alongside existing MQSCs and programmable command format (PCF) functions.

The MQ REST API provides an alternative programmable interface. It is designed to allow for new HTTPS-based applications that offer custom tooling to meet the needs of every user, helping to embed IBM MQ administration into popular DevOps and automation tooling.

As more programming becomes reliant on using RESTful APIs, some developers want to use the same approach for sending and receiving messaging data. The MQ REST API also provides a simple means to send and receive messages.

- Java client enhancements

MQ for z/OS, V9.1 includes the MQ V9.1 resource adapter that supports connections from a CICS<sup>(R)</sup> TS V5.3 Liberty JVM server to MQ by using either client or bindings mode transports.

CICS standard-mode Liberty supports local bindings by using resource recovery services (RRS) and client extended architecture (XA), two-phase commit, connections. This is suitable for porting of existing Java EE applications that utilize JMS.

CICS integrated-mode Liberty supports client (XA) connections only. This provides a suitable environment for integrating Java EE applications with CICS transactions.

Java Message Service and Java client connections to MQ Advanced for z/OS VUE queue managers on remote z/OS systems can now use AMS.

- Improved workload balancing options for shared queues

MQ for z/OS, V9.1 can take advantage of new options provided by configurations that exploit the z/OS Parallel Sysplex<sup>(R)</sup>. Queue sharing groups are used to create highly available messaging environments by using one or more Coupling Facility (CF) components to store messages on shared queues. Messages remain available even if a queue manager fails mid-processing. This allows another queue manager in the queue sharing group to complete processing through automatic peer recovery.

Default CF workload balancing policy notifies all members when a queue is no longer empty. At low or infrequent queue volumes, this policy can cause workload skewing where geographically closer members or those with better

network connections always get to messages first. This leaves other members underutilized and performing many unsuccessful attempts to retrieve messages.

The new policy enables a "round-robin" notification process, where each member of the queue sharing group is given the opportunity to process messages in turn. This reduces the frequency of unsuccessful MQGET operations and improves the distribution of work between members in these scenarios.

This function requires CFLEVEL=22 or higher and z/OS 2.3.

- MQ Service Provider for IBM z/OS Connect Enterprise Edition

z/OS Connect Enterprise Edition (z/OS Connect EE) provides a framework that enables z/OS-based programs and data to participate fully in the API economy for mobile and cloud applications. MQ for z/OS, V9.1 enables access message-driven z/OS subsystems through the use of RESTful APIs with JSON-formatted messages. The z/OS Connect framework provides concurrent access, through a common interface, to multiple z/OS subsystems that now includes MQ.

The MQ service provider is delivered within the UNIX<sup>(R)</sup> System Services (USS) component of MQ for z/OS, V9.1 and allows existing messaging services, which are fronted by MQ, to be accessed through a RESTful front end. The MQ service provider supports two distinct types of service:

- One-way service that provides MQPUT and MQGET support to a single destination, where a destination can be an MQ queue or an MQ topic
- Two-way service that provides a request-reply capability where some form of response is expected as a result of the initial request

### Functional deprecations and removals

- Support for using IBM Db2<sup>(R)</sup> for shared message offload is superseded by Shared Message Data Sets (SMDS).
- The capability to define buffer pools without the LOCATION/LOC attribute or with LOCATION(BELOW), that is 31-bit buffer pools, is deprecated. Clients should define new buffer pools with LOCATION(ABOVE), and alter existing buffer pools to specify LOCATION(ABOVE).
- The MAKECLNT CSQUTIL tool was stabilized at IBM WebSphere MQ V7.1. It is now deprecated. The runmqsc -n command should be used instead. For further information, see [runmqsc information](#) in the Knowledge Center.
- Support for any table space type that was not a universal table space was deprecated by Db2 11. Support for queue sharing groups using non-universal table spaces is now deprecated. Clients should migrate existing table spaces to universal table spaces.
- The MQ classes for Java package com.ibm.mq.pcf is now deprecated. Any new code developed for PCF operations under Java should use the com.ibm.mq.headers.pcf package. Existing code should be migrated to this package when it is convenient to do so.
- Transport Layer Security (TLS) 1.0 has been disabled by default for MQ V9.1. TLS 1.2 should be used. TLS 1.0 will be removed in a future release.
- Microsoft<sup>TM</sup> Internet Explorer 11 browser support has been removed. The Microsoft Edge browser is now supported by the MQ Console.
- The zosConnectMQ-1.0 feature has been removed. You can use the MQ Service Provider for IBM z/OS Connect EE.

### Section 508 of the US Rehabilitation Act

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IBM MQ for z/OS is capable as of August 10, 2018, when used in accordance with associated IBM documentation, of satisfying the applicable requirements of Section 508 of the Rehabilitation Act, provided that any assistive technology used with the product properly interoperates with it. A US Section 508 Accessibility Conformance Statement can be requested on the [Product accessibility information](#) website.

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## Hardware and software support services

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### **SmoothStart/installation services**

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IBM SmoothStart Services and Installation Services are not provided.

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## Reference information

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For information on MQ for z/OS, see Software Announcement [217-416](#), dated October 24, 2017.

For information on MQ for z/OS, V9.1 Value Unit Edition, see Software Announcement [218-213](#), dated July 3, 2018.

For information on MQ for Multiplatforms, V9.1, see Software Announcement [218-246](#), dated July 3, 2018.

For information on MQ Appliance, V9.1, see Software Announcement [218-249](#), dated July 3, 2018.

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## Availability of national languages

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<b>Description</b>	<b>Availability date</b>	<b>Language</b>
IBM MQ for z/OS, V9.1	August 10, 2018	English, French, Japanese, Chinese

Translation information, if available, can be found at the [Translation Reports](#) website.

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## Program number

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<b>Program number</b>	<b>VRM</b>	<b>Program name</b>
5655-MQ9	9.1.0	IBM MQ for z/OS

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## Business Partner information

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If you are a Direct Reseller - System Reseller acquiring products from IBM, you may link directly to [BP Attachment for Announcement Letter 218-252](#) for this announcement. A PartnerWorld ID and password are required (use IBMid).

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## Technical information

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### **Specified operating environment**

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#### **Hardware requirements**

MQ for z/OS, V9.1 runs on any IBM Z server that supports z/OS V2.2. It must have enough storage to meet the combined requirements of the programming prerequisites MQ for z/OS, the access methods, and the application programs

#### **Software requirements**

The Program Directory shipped with the product contains the latest level of information and includes APAR or PTF levels of supported products.

For additional information, go to the [IBM MQ System requirements](#) website.

## Planning information

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### Packaging

Packaging includes, for MQ for z/OS, V9.1 base product, one copy of *IBM MQ for z/OS, V9.1 Licensed Program Specifications* (GC34-7366).

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## Ordering information

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### Ordering z/OS through the Internet

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Shopz provides an easy way to plan and order your z/OS ServerPac or CBPDO. It will analyze your current installation, determine the correct product migration, and present your new configuration based on z/OS. Additional products can also be added to your order (including determination of whether all product requisites are satisfied). Shopz is available in the US, Canada, and several countries in Europe. In countries where Shopz is not available yet, contact your IBM representative (or IBM Business Partner) to handle your order through the traditional IBM ordering process. For more details and availability, go to the [Shopz](#) website.

### New licensees

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Orders for new licenses can be placed now. Registered customers can access IBMLink for ordering information and charges. Shipment will not occur before the availability date. Unless a later date is specified, orders entered before the planned availability date will be assigned a schedule date of one week following availability.

Orders entered after the planned availability date will be assigned a schedule date for the week following order entry.

Shipment will begin on the planned availability date.

Orders that ship after the planned availability date will receive MQ for z/OS, V9.1. New users of MQ for z/OS, V9.1 should specify:

Type	Model
5655	MQ9

### Parallel Sysplex license charge (PSLC)

To order a basic license, specify the program number and the quantity of MSUs.

If there is more than one program copy in a Parallel Sysplex<sup>(R)</sup>, the charge for all copies is associated to one license by specifying the applicable PSLC license options and the quantity represented by the sum of the Service Units in Millions (MSUs) in the Parallel Sysplex. For all other program copies, specify the System Usage Registration No-Charge (SYSUSGREG NC) Identifier on the licenses.

Program name: IBM MQ for z/OS, V9.1

Program PID: 5655-MQ9

Entitlement identifier	Description	License option/Pricing metric
S017ZPX	IBM MQ for z/OS, V9.1	Basic MLC, PSLC (ABCD)

### Advanced Workload License Charges (AWLC)

To order a basic license, specify the program number and the quantity of MSUs.

If there is more than one program copy in a Parallel Sysplex, the charge for all copies is associated to one license by specifying the applicable AWLC license options and the quantity represented by the sum of the Service Units in Millions (MSUs) in

the Parallel Sysplex. For all other program copies, specify the Workload Registration No-Charge (WLREG NC) Identifier on the licenses.

Program name: IBM MQ for z/OS, V9.1

Program PID: 5655-MQ9

Entitlement identifier	Description	License option/Pricing metric
S017ZPX	IBM MQ for z/OS, V9.1	Basic MLC, AWLC

### **Advanced Entry Workload License Charges (AEWLC)**

To order a basic license, specify the program number and the quantity of MSUs.

Program name: IBM MQ for z/OS, V9.1

Program PID: 5655-MQ9

Entitlement identifier	Description	License option/Pricing metric
S017ZPX	IBM MQ for z/OS, V9.1	Basic MLC, AEWLC

### **Country Multiplex License Charges (CMLC)**

#### **Country Multiplex License Charges (CMLC) basic license**

To order a basic license, specify the program number and quantity of MSUs.

If there is more than one program copy in a Country Multiplex, the charge for all copies is associated to one license if all the copies are licensed to one customer number within the multiplex. If there is more than one customer number, the charge for all copies is prorated to one license for each customer within the multiplex.

For each license being charged, specify the applicable CMLC license options and the prorated quantity of the Service Units in Millions (MSUs) for each customer number within the multiplex. For all other program copies, specify the Workload Registration No-Charge (WLREG NC) Identifier on the licenses.

Program name: IBM MQ for z/OS, V9.1

Program PID: 5655-MQ9

Entitlement identifier	Description	License option/Pricing metric
S017ZPX	IBM MQ for z/OS, V9.1	Basic MLC, CMLC

### **Variable Workload License Charge (VWLC)**

To order a basic license, specify the program number and the quantity of MSUs.

If there is more than one program copy in a Parallel Sysplex, the charge for all copies is associated to one license by specifying the applicable Variable WLC license options and the quantity represented by the sum of the Service Units in Millions (MSUs) in the Parallel Sysplex. For all other program copies, specify the Workload Registration No-Charge (WLREG NC) Identifier on the licenses.

Program name: IBM MQ for z/OS, V9.1

Program PID: 5655-MQ9

Entitlement identifier	Description	License option/Pricing metric
S017ZPX	IBM MQ for z/OS, V9.1	Basic MLC, Variable WLC

### **Entry Workload License Charge (EWLC)**

To order a basic license, specify the program number and the quantity of MSUs.

Program name: IBM MQ for z/OS, V9.1

Program PID: 5655-MQ9

Entitlement identifier	Description	License option/Pricing metric
S017ZPX	IBM MQ for z/OS, V9.1	Basic MLC, Entry WLC

### ***S/390 and z Systems Usage License Charge***

To order a basic license, specify the program number and the quantity of usage MSUs.

Charges will be based upon the usage MSUs. Usage reported from 0.01 to 0.25 MSUs will be rounded up to 0.25 MSUs. Usage reported from 0.26 to 0.50 MSUs will be rounded up to 0.50 MSUs. Usage reported from 0.51 to 1.0 MSUs will be rounded up to 1.0 MSU. Above 1.0 MSU, usage will be rounded to the nearest whole MSU. For example, 2.4 MSUs would round to 2.0 MSUs for pricing, and 2.5 MSUs would round to 3.0 MSUs for pricing.

If there is more than one program copy on a stand-alone machine or in a Parallel Sysplex, or more than one program version in either environment, the charge for all copies is associated to one license of the highest program version by specifying the applicable ULC license options and quantity represented by the sum of the Service Units in Millions (MSUs) in the environment. For all other program copies, specify the System Usage Registration No-Charge (SYSUSGREG NC) Identifier on the licenses.

Program name: IBM MQ for z/OS, V9.1

Program PID: 5655-MQ9

Entitlement identifier	Description	License option/ Pricing metric
S017ZPX	IBM MQ for z/OS, V9.1	Basic MLC, ULC

### ***Growth opportunity license charge (GOLC)***

To order a basic license, specify the program number and the machine model.

Program name: IBM MQ for z/OS, V9.1

Program PID: 5655-MQ9

Entitlement identifier	Description	License option/ Pricing metric
S017ZPX	IBM MQ for z/OS, V9.1	Basic MLC, GOLC

### ***z Systems entry license charge (zELC)***

To order zELC software, specify the program number and machine model.

Program name: IBM MQ for z/OS, V9.1

Program PID: 5655-MQ9

Entitlement identifier	Description	License option/ Pricing metric
S017ZPX	IBM MQ for z/OS, V9.1	Basic MLC, zELC

### ***Selected Application License Charge (SALC)***

To order a basic license, specify the program number and the quantity of usage MSUs.

Charges will be based upon the usage MSUs. Usage reported from 0.01 to 1.0 MSUs will be rounded up to 1.0 MSU. Above 1.0 MSU, usage will be rounded to the nearest whole MSU. For example, 2.4 MSUs would round to 2.0 MSUs for pricing, and 2.5 MSUs would round to 3.0 MSUs for pricing.

If there is more than one program copy on a stand-alone machine or in a Parallel Sysplex, or more than one program version in either environment, the charge for all copies is associated to one license of the highest program version by specifying the applicable SALC license options and the quantity represented by the sum of the Service Units in Millions (MSUs) in the environment. For all other program copies, specify the System Usage Registration No-Charge (SYSUSGREG NC) Identifier on the licenses.

Program name: IBM MQ for z/OS, V9.1

Program PID: 5655-MQ9

Entitlement identifier	Description	License option/ Pricing metric
S017ZPX	IBM MQ for z/OS, V9.1	Basic MLC, SALC

**Basic machine-readable material**

Orderable Supply ID	Language	Description
S017ZPW	US English	IBM MQ for z/OS, V9.1

**Customization options**

Not applicable.

**Publications**

MQ, V9.1 documentation is published in [IBM Knowledge Center](#), which can be viewed from a web browser with internet access.

On August 10, 2018, the online version of the MQ V9.1 product documentation will be available.

The following softcopy publications are available in pdf format to download from the [Publications Center](#).

Title	Order number
IBM MQ for z/OS, V9.1 Program Directory	GI13-4418
IBM MQ for z/OS, V9.1 Licensed Program Specifications	GC34-7366

The Publications Center is a worldwide central repository for IBM product publications and marketing material with a catalog of 70,000 items. Extensive search facilities are provided. A large number of publications are available online in various file formats, and they can all be downloaded by all countries.

To order a previous edition of a publication, use the correct suffix level for the version desired.

Subsequent updates (technical newsletters or revisions between releases) to the publications shipped with the product will be distributed to the user of record for as long as a license for this software remains in effect. A separate publication order or subscription is not needed.

**Customized Offerings**

Product deliverables are shipped only through CBPDO and ServerPac. These customized offerings are offered for internet delivery from Shopz. For more details on internet delivery, go to the Help section on the [Shopz](#) website.

You choose the delivery method when you order the software. IBM recommends internet delivery. However, if you still require physical media, you can choose DVD.

Most products can be ordered in ServerPac the month following their availability in CBPDO. z/OS can be ordered through CBPDO and ServerPac at general availability.



Most products will also be orderable in a Product ServerPac without also having to order the z/OS operating system or subsystem.

Shopz and CFSW will determine the eligibility based on product requisite checking. For more details on Product ServerPac, go to the Help section on the [Shopz](#) website.

Production of software product orders will begin on the planned general availability date.

- CBPDO shipments will begin one week after general availability.
- ServerPac shipments will begin two weeks after general availability.

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## Terms and conditions

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The terms for MQ for z/OS, V9.1, as previously announced in Software Announcement [216-206](#), dated April 19, 2016, and licensed under the IBM Customer Agreement are unaffected by this announcement, except for the following technical support.

### Program technical support

#### Continuous Delivery support model

MQ for z/OS, V9.1 follows the terms and conditions of the Continuous Delivery (CD) support model. These terms provide for technical support of a program product version or release to be available for a minimum of five years from the general availability date.

Defect support for a CD release is available for 12 months from the availability of the release or while it remains one of the two most recent CD releases, whichever is longer.

For additional information on the CD Lifecycle Policy, see the [IBM Software Support Lifecycle Policy](#) website.

This technical support allows you to obtain assistance (by telephone or electronic means) from IBM for product-specific, task-oriented questions regarding the installation and operation of the program product and publications. Program services support also provides you with access to versions, releases, and updates (CD releases, Long Term Support Releases (LTSRs) or fixes) of the program. You will be notified, through an announcement letter, of discontinuance of support with a six months' notice. If you require additional technical support from IBM, including an extension of support beyond the discontinuance date, contact your IBM representative or IBM Business Partner. This extension may be available for a fee.

MQ for z/OS, V9.1 is a LTSR and provides predictable support through iFixes and fixpacks for a minimum period of five years from the general availability date. A minimum, three-year extension of support is available for an additional fee.

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## Statement of good security practices

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IT system security involves protecting systems and information through prevention, detection, and response to improper access from within and outside your enterprise. Improper access can result in information being altered, destroyed, or misappropriated or can result in misuse of your systems to attack others. Without a comprehensive approach to security, no IT system or product should be considered completely secure and no single product or security measure can be completely effective in preventing improper access. IBM systems and products are designed to be part of a lawful, comprehensive security approach, which will necessarily involve additional operational procedures, and may require other systems, products, or services to be most effective.

**Important:** IBM does not warrant that any systems, products, or services are immune from, or will make your enterprise immune from, the malicious or illegal conduct of any party.

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## IBM Electronic Services

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Electronic Service Agent™ and the IBM Electronic Support web portal are dedicated to providing fast, exceptional support to IBM Systems customers. The IBM Electronic Service Agent tool is a no-additional-charge tool that proactively monitors and reports hardware events, such as system errors, performance issues, and inventory. The Electronic Service Agent tool can help you stay focused on your company's strategic business initiatives, save time, and spend less effort managing day-to-day IT maintenance issues. Servers enabled with this tool can be monitored remotely around the clock by IBM Support, all at no additional cost to you.

Now integrated into the base operating system of AIX® V5.3, AIX V6.1, and AIX V7.1, Electronic Service Agent is designed to automatically and electronically report system failures and utilization issues to IBM, which can result in faster problem resolution and increased availability. System configuration and inventory information collected by the Electronic Service Agent tool also can be viewed on the secure Electronic Support web portal, and used to improve problem determination and resolution by you and the IBM support team. To access the tool main menu, simply type `smitty esa_main`, and select Configure Electronic Service Agent. In addition, ESA now includes a powerful web user interface, giving the administrator easy access to status, tool settings, problem information, and filters. For more information and documentation on how to configure and use Electronic Service Agent, go to the [IBM Electronic Support](#) website.

The IBM Electronic Support portal is a single internet entry point that replaces the multiple entry points traditionally used to access IBM internet services and support. This portal enables you to gain easier access to IBM resources for assistance in resolving technical problems. The My Systems and Premium Search functions make it even easier for Electronic Service Agent tool-enabled customers to track system inventory and find pertinent fixes.

### Benefits

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**Increased uptime:** The Electronic Service Agent™ tool is designed to enhance the Warranty or Maintenance Agreement by providing faster hardware error reporting and uploading system information to IBM Support. This can translate to less wasted time monitoring the symptoms, diagnosing the error, and manually calling IBM Support to open a problem record. Its 24 x 7 monitoring and reporting mean intervention is not required to report errors.

**Security:** The Electronic Service Agent tool is designed to be secure in monitoring, reporting, and storing the data at IBM. The Electronic Service Agent tool is designed to securely transmit either through the internet (HTTPS or VPN) or modem to provide customers a single point of exit from their site. Communication is one way. Activating Electronic Service Agent does not enable IBM to call into a customer's system.

For additional information, go to the [IBM Electronic Service Agent](#) website.

**More accurate reporting:** Because system information and error logs are automatically uploaded to the IBM Support Center in conjunction with the service request, you are not required to find and send system information, decreasing the risk of misreported or misdiagnosed errors. Once inside IBM, problem error data is run through a data knowledge management system and knowledge articles are appended to the problem record.

**Customized support:** Using the IBMid entered during activation, you can view system and support information in the *My Systems and Premium Search* sections of the [IBM Electronic Support](#) page.

My Systems provides valuable reports of installed hardware and software using information collected from the systems by Electronic Service Agent. Reports are available for any system associated with your IBMid. Premium Search combines the function of search and the value of Electronic Service Agent information, providing advanced search of the technical support knowledgebase. Using Premium search and the Electronic Service Agent information that has been collected from your system, you are able to see search results that apply specifically to your systems.

For more information on how to utilize the power of IBM Electronic Services, contact your IBM Systems Services Representative, or go to the [IBM Electronic Support](#) website.

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## Order now

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To order, contact the IBM Digital Sales Center, your local IBM representative, or your IBM Business Partner. To identify your local IBM representative or IBM Business Partner, call 800-IBM-4YOU (426-4968). For more information, contact the IBM Digital Sales Center.

Phone: 800-IBM-CALL (426-2255)

Fax: 800-2IBM-FAX (242-6329)

For IBM representative: askibm@ca.ibm.com

For IBM Business Partner: pwcs@us.ibm.com

IBM Digital Sales Offices  
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Coppell, TX 75019-4642, US

The IBM Digital Sales Center, our national direct marketing organization, can add your name to the mailing list for catalogs of IBM products.

**Note:** Shipments will begin after the planned availability date.

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