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Changes done to Windows system after installing IBM MQ

https://www.ibm.com/support/pages/node/6600015

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Angel Rivera IBM MQ Support https://www.ibm.com/products/mq/support Find all the support you need for IBM MQ

+++ Objective

The objective of this tutorial is to highlight the changes to a Windows system after installing IBM MQ.

Refer to the following tutorial for the installation steps:

https://www.ibm.com/support/pages/node/6600017 Installing IBM MQ 9.3 in Windows

https://www.ibm.com/support/pages/node/7157973 Installing and uninstalling IBM MQ 9.4 in Windows

After the installation, you must restart Windows.

Then let's explore the changes:

+ Windows 10: The Start menu includes a section: IBM MQ
With 2 entries: IBM Key Management (Installation1)
Prepare IBM MQ Wizard (Installation1)

Starting with MQ 9.3, notice that in contrast to previous releases, there is no entry for the MQ Explorer in the Start menu under the folder for "IBM MQ"



+ MQ Service

Let's take a look at the MQ Service.

Windows 10: Start button. Expand: Windows System And launch: Windows Administrative Tools



In Windows 11, you need to use Start / Windows Tools



In Windows 10, A new window appears.

File Home Share	View	
$\leftarrow \rightarrow \ \cdot \ \uparrow$ 🕆 s	ystem > Administrative Tools V 🗸	
~	Name	Date mo
📌 Quick access		
📃 Desktop 🛛 🖈	Component Services	12/7/201
- Downloads	🔧 Computer Management	12/7/201
	🐞 Defragment and Optimize Drives	12/7/201
🛅 Documents 🖈	秒 Disk Cleanup	12/7/201
🔚 Pictures 🛛 🖈	🗿 Event Viewer	12/7/201
📙 contrasenas	🔝 iSCSI Initiator	12/7/201
MQ	🛺 Local Security Policy	12/7/201
techdocs	🛺 ODBC Data Sources (32-bit)	12/7/201
	👦 ODBC Data Sources (64-bit)	12/7/201
lext-docs	🔊 Performance Monitor	12/7/201
OneDrive	📷 Recovery Drive	12/7/201
	🍂 Registry Editor	12/7/201
SThis PC	Resource Monitor	12/7/201
🧊 3D Objects	Services	12/7/201
Desktop	System (Starts, stops, and configures Windows	services. 201
(F-2)		40.17.1004

In Windows 11:



Launch "Services".

You will see the "Services" window. Scroll down to find: IBM MQ (Installation1)

E Services					- X	-	
File Action View	Help						
: 🔶 🏟 💼 🔯	2 🗟 🔽 🖬 🕨 🗉 🛙	Þ					
Services (Local)	Name	Description	Status	Startup Type	Log On As		
	Q.	Activates and maintains the use of hot buttons on keyboards, remote controls, and o	Running	Manual (Trigg	Local System		
	Q.	Provides an interface for the Hyper-V hypervisor to provide per-partition performanc	Running	Manual (Trigg	Local System		
-	Q.	Provides a mechanism to exchange data between the virtual machine and the operati		Manual (Trigg	Local System		
	0	Provides an interface for the Hyper-V host to interact with specific services running i		Manual (Trigg	Local System		
	Q.	Provides a mechanism to shut down the operating system of this virtual machine fro		Manual (Trigg	Local System		
	Q.	Monitors the state of this virtual machine by reporting a heartbeat at regular interval		Manual (Trigg	Local System		
	Q.	Provides a mechanism to manage virtual machine with PowerShell via VM session wit		Manual (Trigg	Local System		
r	Q.	Provides a platform for communication between the virtual machine and the operati		Manual (Trigg	Local System		
	Hyper-V Time Synchroniza	Synchronizes the system time of this virtual machine with the system time of the phy		Manual (Trigg	Local Service		
2	Hyper-V Volume Shadow C	Coordinates the communications that are required to use Volume Shadow Copy Serv		Manual (Trigg	Local System		
1	BM Command Line Trace	Enables command line tracing for Personal Communications		Manual	Local System	_	
	IBM MQ (Installation1)	Provides startup and administration services for IBM MQ installation 'Installation1'	Running	Automatic	.\MUSR_MQADMI	N	
	DriveService		Running	Automatic (De	Local System		

Notice the values:

Name:

IBM MQ (Installation1) Description: Provides startup and administration services for IBM MQ installation 'Installation1' Status: Running Startup Type: Automatic Lon On As: .\MUSR_MQADMIN

+ MQ processes

Under the "Task Manager" select the tab "Services"

Task Manager				- 0				
Processes Performance Ann hi	story Sta	tun Users Details Services						
recesses renormance roppin								
Name	PID	Description	Status	Group				
Service HCLAUTService	5664	HCL Auto Update Service	Running					
Superior Contract Con		HCL Notes Smart Upgrade Service	Stopped					
Shidserv	2324	Human Interface Device Service	Running	LocalSystemNe				
🔍 HvHost	1524	HV Host Service	Running	LocalSystemNe				
🧠 vmickvpexchange		Hyper-V Data Exchange Service	Stopped	LocalSystemNe				
wnicguestinterface		Hyper-V Guest Service Interface	Stopped	LocalSystemNe				
🔍 vmicshutdown		Hyper-V Guest Shutdown Service	Stopped	LocalSystemNe				
🔍 vmicheartbeat		Hyper-V Heartbeat Service	Stopped	ICService				
🧠 vmicvmsession		Hyper-V PowerShell Direct Service	Stopped	LocalSystemNe				
🥰 vmicrdv		Hyper-V Remote Desktop Virtualizati	Stopped	ICService				
🧠 vmictimesync		Hyper-V Time Synchronization Service	Stopped	LocalServiceNe				
🥰 vmicvss		Hyper-V Volume Shadow Copy Requ	Stopped	LocalSystemNe				
🔍 cstrcser		IBM Command Line Trace	Stopped					
MQ_Installation1	6496	IBM MQ (Installation1)	Running					
S IDriveService	15836	IDriveService	Running					

Notice:

Name: MQ_Installation1 PID 6496 Description: IBM MQ (Installation1) Status: Running

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Let's see what MQ programs are running after the installation (no MQ queue managers have been created yet):

₩ Task Manager <u>File O</u> ptions <u>V</u> iew		\frown				
Processes Performance App history Startup User: Details Services						
Name	PID	Status	User name			
💷 acumbrellaagent.exe	3372	Running	SYSTEM			
amqmtbrn.exe	16220	Running	594079897			
amqpsrvn.exe	6956	Running	MUSR_MQADMIN			
🍳 amqsvc.exe	6496	Running	MUSR_MQADMIN			
AnalyticsSrv.exe	17316	Kunning	594079897			

Notice 3 programs that begin with these letters, which is a convention used by many of the MQ programs:

amq

Here are the details: amqmtbrn.exe => IBM MQ Alert Monitor Task Bar application (see next section) amqpsrvn.exe => IBM MQ Service amqsvc.exe => IBM MQ Service

+ MQ icon in Task Bar

In the lower right corner you can look at the icon for the IBM MQ Alert Monitor Task Bar application (amqmtbrn.exe):



For more information on this icon, see: <u>https://www.ibm.com/support/pages/node/6599231</u> IBM MQ Alert Monitor task bar application in Windows (amqmtbrn.exe)

The context menu for this icon is shown below:



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+ What group and userid were created during the installation?

Group: mqm User: MUSR_MQADMIN

In contrast with Unix (Linux, AIX - in which the same name "mqm" could be used for both the user name "mqm" and group name "mqm"), in Windows it is not possible to use the same name for both.



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Computer Management			
<u>F</u> ile <u>A</u> ction <u>V</u> iew <u>H</u> elp			
🗢 🔿 🖄 📰 😫	?		
Computer Management (Local)	Name	Full Name	Description
 W System Tools 	🛃 Administrator		Built-in account for administering
> 🕑 Task Scheduler	🛃 DefaultAccount		A user account managed by the sy
> 🛃 Event Viewer	defaultuser 100000	New User	
> 22 Shared Folders	Suoct		Built in account for guest accors t
 Local Users and Groups 	MUSR_MQADMIN	MUSR_MQADMIN	IBM MQ Administrator
Groups	2 WDAGUtilityAccount		A user account managed and used
> N Performance			

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+ How to find out all the MQ entries in the Windows Registry:

- Using "wmic" to get more installation details:

C:\> wmic product where "(Name like '%MQ%') AND (not Name like '%bitSupport')" get Name, Version, InstallLocation

InstallLocationNameVersionC:\Program Files\IBM\MQ\IBM MQ (Installation1)9.4.0.0

- Using "reg.exe"

C:\> reg.exe query "HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\IBM\WebSphere MQ\Installation" /s

HKEY LOCAL MACHINE\SOFTWARE\Wow6432Node\IBM\WebSphere MQ\Installation\Installation1 ProductCode REG SZ {7A4C1DB4-086E-11EF-B0F2-841EDA455A43}
 PackageCode
 REG_SZ
 {3BA336D2-0A3F-4039-84B9-B8A5A378F1FB}

 UpgradeCode
 REG_SZ
 {8D1C5EA1-A4C5-4967-97FA-77FE6D4B5EA7}
 VRMF REG_SZ 9.4.0.0 FilePath REG_SZ C:\Program Files\IBM\MQ MQServerRelease REG_DWORD MQServerVersion REG_DWORD 0x4 0x9 Language REG_SZ English LanguageCode REG SZ a Identifier REG SZ 1 Description REG SZ Name REG SZ Installation1 AllowUpgrade REG SZ 0 Package REG SZ Server ProductType REG SZ Server HKEY LOCAL MACHINE\SOFTWARE\Wow6432Node\IBM\WebSphere MQ\Installation\Installation1\Components Server REG SZ Installed REG SZ Installed AMS REG SZ Installed Local Clients\Windows NT Client JavaMsg REG SZ Installed MFT Agent REG SZ Installed MFT Logger REG SZ Installed MFT Service REG SZ Installed MFT Tools REG SZ Installed Development Toolkit REG SZ Installed XR Service REG SZ Installed AMQP REG SZ Installed Web REG_SZ Installed JRE REG_SZ Installed HKEY LOCAL MACHINE\SOFTWARE\Wow6432Node\IBM\WebSphere MQ\Installation\Installation1\Maintenance Applied Shipped REG SZ 0.0

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+ MQ Environment Variables set by the installation

- When you open a Command window, you will get the following by default:

C:\> set MQ MQ_FILE_PATH=C:\Program Files\IBM\MQ MQ_JAVA_DATA_PATH=C:\ProgramData\IBM\MQ MQ_JAVA_INSTALL_PATH=C:\Program Files\IBM\MQ\java MQ_JAVA_LIB_PATH=C:\Program Files\IBM\MQ\java\lib64;C:\Program Files\IBM\MQ\java\lib MQ_JRE_PATH=C:\Program Files\IBM\MQ\java\jre

- You need to use "setmqenv" to setup the rest of the MQ environment variables

C:\>"C:\Program Files\IBM\MQ\bin\setmqenv" -n Installation1

C:\> set MQ MQ_DATA_PATH=C:\ProgramData\IBM\MQ MQ_ENV_MODE=64 MQ_FILE_PATH=C:\Program Files\IBM\MQ MQ_INSTALLATION_NAME=Installation1 MQ_INSTALLATION_PATH=C:\Program Files\IBM\MQ MQ_JAVA_DATA_PATH=C:\ProgramData\IBM\MQ MQ_JAVA_INSTALL_PATH=C:\Program Files\IBM\MQ\java MQ_JAVA_LIB_PATH=C:\Program Files\IBM\MQ\java\lib64 MQ_JRE_PATH=C:\Program Files\IBM\MQ\java\jre

+ "Program Files"

C:\Program Files\IBM\MQ

← → ▼ ↑ 🖡 C:\Program Files\IBM\MQ								
- Quick accord	Name	Date modified	Туре	Size				
 Desktop Downloads Documents Pictures 	 amqp bin bin64 conv 	6/24/2022 12:35 PM 6/24/2022 12:36 PM 6/24/2022 12:35 PM 6/24/2022 12:35 PM	File folder File folder File folder File folder					
 contrasenas MQ techdocs 	 acc gskit8 java Licenses maft 	6/24/2022 12:35 PM 6/24/2022 12:35 PM 6/24/2022 12:35 PM 6/24/2022 12:35 PM 6/24/2022 12:35 PM	File folder File folder File folder File folder File folder					
 Iext-aocs OneDrive This PC 	 mqxr Readmes samp 	6/24/2022 12:35 PM 6/24/2022 12:35 PM 6/24/2022 12:35 PM 6/24/2022 12:35 PM	File folder File folder File folder					
 3D Objects Desktop Documents 	 swidtag tools uninst web 	6/24/2022 12:36 PM 6/24/2022 12:35 PM 6/24/2022 12:35 PM 6/24/2022 12:35 PM	File folder File folder File folder File folder					
 Downloads Music Pictures Videos 	 zips instinfo.tsk isa.xml mqpatch.dat 	6/24/2022 12:35 PM 6/6/2022 1:00 AM 6/6/2022 1:00 AM 6/6/2022 1:00 AM	File folder TSK File XML Document DAT File	15 KB 102 KB 0 KB				

+ ProgramData

C:\ProgramData\IBM\MQ

Outiels access	Name	Date modified	Туре	Size
	🔎 config	6/24/2022 12:36 PM	File folder	
	conv	6/24/2022 12:36 PM	File folder	
Downloads	errors	6/24/2022 12:36 PM	File folder	
Documents	🖈 📙 exits	6/24/2022 12:36 PM	File folder	
Pictures	* exits64	6/24/2022 12:36 PM	File folder	
contrasenas	📜 log	6/23/2022 1:50 PM	File folder	
MQ	📜 mqft	6/24/2022 12:36 PM	File folder	
techdocs	📜 qmgrs	6/24/2022 11:45 AM	File folder	
Text-docs	📜 shared	6/24/2022 12:36 PM	File folder	
	📜 sockets	6/24/2022 12:36 PM	File folder	
OneDrive	📜 trace	6/24/2022 12:36 PM	File folder	
This PC	📜 web	6/5/2022 11:27 AM	File folder	
3D Objects	amqmjpse.txt	6/24/2022 12:44 PM	Text Document	6 K
	🛐 mqclient.ini	6/24/2022 12:36 PM	Configuration settings	2 K
	🛐 mqs.ini	6/24/2022 12:36 PM	Configuration settings	3 K
Documents	service.env	10/27/2021 12:00 AM	FNV File	2 К

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+ The 'Programs and Features' in the Windows Control Center will show an entry:

Name: IBM MQ (Installation1)

ā	Programs and Features							—	
~	ightarrow $ ightarrow$ $ ig$	Programs and Features	~	Ū	Search Programs and	l Features			
Control Panel Home Uninstall or change a program									
	View installed updates	To uninstall a program,	select it	from th	e list and then click Ur	ninstall, Cl	hange, o	or Repair.	
•	Turn Windows features on or								
	off	Organize 🔻							•
		vame	Publ	isher	Installed On	Size		Version	
		BIBM MQ (Installation1)	IBM		6/24/2022	2	2.06 GB	9.3.0.0	

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+++ If MQ Explorer is installed

Starting with MQ 9.3, the MQ Explorer needs to be installed separately. <u>https://www.ibm.com/support/pages/node/6598657</u> Installing Standalone MQ Explorer 9.3 in Windows and Linux

After installing the MQ Explorer you need to reboot.

After the reboot you can notice the following:

- Windows 10: Entry in the Start menu:

Folder: IBM MQ Explorer V9.4 Item: IBM MQ Explorer



- In Windows 11, there is no folder for MQ Explorer in the Start menu, just the item: IBM MQ Explorer

0	Google Chrome	
I		
(P)	IBM MQ Explorer New]
М		
	Mail	

The folder for the MQ Explorer files is: C:\Program Files\IBM\MQ Explorer

📜 🛃 📜 🗢 IBM			
File Home Share	View		
\leftarrow \rightarrow \checkmark \uparrow] \blacktriangleright Thi	is PC > Windows (C:) > Program Files > IBM >	~	ບ
techdocs ^	Name	Date modified	Туре
Text-docs	MQ	6/24/2022 12:35 PM	File folder
len OneDrive	MQ Explorer	6/24/2022 3:21 PM	File folder

++ The 'Programs and Features' in the Windows Control Center will show an entry:

Name: IBM MQ Explorer V9.4 Version: 9.4.0.0

T Programs and Features							
$\leftrightarrow \rightarrow \checkmark \uparrow \Box \diamond cc$	↑ Control Panel → Programs → Programs and Features						
Control Panel Home View installed updates	Uninstall or change To uninstall a program, se	e a program elect it from the li	st and then click U	ninstall,	Change, o	r Repair.	
Turn Windows features on or off	Organize Uninstall/Cha	nge				≡	
	Name	Publisher	Installed On	Size		Version	
	IBM MO (Installation1)	IRM	6/18/2024		2 01 GR	9400	
	IBM MQ Explorer V9.4	IBM	6/18/2024		470 MB	9.4.0.0	
	IBM Personal Communic	IRIM	6/1/2022		392 MB	14.0.4.0	

++ Registry entries

The installation of the Standalone MQ Explorer provides its own set of entries in the Windows Registry.

- Using command line "reg.exe"

Open a command prompt as an Administrator:

C:\> reg.exe query "HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\IBM\WebSphere MQ Explorer\CurrentVersion" /s

HKEY_LOCAL_MACHINE\SOFTWARE\WOW6432Node\IBM\WebSphere MQ Explorer\CurrentVersion VRMF REG_SZ 9.4.0.0 InstallDir REG_SZ C:\Program Files\IBM\MQ Explorer

+++ end