Workflow Manager 1.0 CU 2 Installation guide for SharePoint 2016.

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Introduction

As we all know, with the release of SharePoint 2013 Microsoft introduced the workflow manage for it. With the help of workflow Manager, we will get two workflow platform SharePoint 2010 Workflow and SharePoint 2013 workflow. When we install the SharePoint, 2010 platform installed with it but for 2013 platform we have to perform extra steps, which involve from Installation to configuration of Workflow Manager 1.0.

Same thing applies to SharePoint 2016, no change in term of workflow platform title (in SharePoint 2016, it is still called SharePoint 2013 workflow).

In this chapter, we will walk through all the steps involved in a sucessfully installation and configuration of Workflow Manager 1.0 for SharePoint 2016.

Let us explain little bit about the core definition of the component involve in this configuration.

Workflow Manager 1.0

Workflow manager is not new for SharePoint, it 1st introduced with SharePoint 2013. Workflow Manger 1.0 is host and process all the workflows which are based on 2013 Workflow Platform.

Workflow Manager 1.0 provides the capability to host workflows in a high scale, high density, and multitenant environment. Workflows are authored using a fully declarative model, using Microsoft .NET Framework 4.5 and Windows Workflow Foundation (WF45).(Ref: MSDN)

Workflow Manager brings a lot of advantaged to SharePoint Server. It's take off the workflow processing load from SharePoint and process it on Workflow Manager server. User will get fast response on the workflow, as we have dedicated resource for processing. SharePoint overall performance improved due to offloading the workflow processing to workflow manager server. Workflow Manager use the Service bus (messaging platform) as a core state management and messaging layer. Workflow Manager and SharePoint communication based on the message.

Workflows built by using Workflow Manager can take advantage of several new capabilities. These include enterprise features such as:

- High Density and Multi-Tenancy
- Elastic Scale
- Activity / Workflow Artifact Management
- Tracking and Monitoring
- Instance Management
- Fully Declarative Authoring
- REST and Service Bus Messaging

• Managed Service Reliability

Workflow Manager Client

Workflow Manager Client allow the communication between SharePoint Server and Workflow Manager. Workflow Manager Client 1.0 contains the core assemblies and client API for Workflow Manager 1.0.

Workflow Tools

Tools which will be used to develop the workflow.

- SharePoint Designer 2013(Microsoft is not releasing new version of SharePoint designer for the 2016 but SPD 2013 still supported with SharePoint 2016.)
- Visual Studio

Workflow Manager Requirement

Before start, we will take a look what are the software requirement for Workflow Manager 1.0 CU2. Here are the minimum requirements for each server in the Workflow manager 1.0 farm.

Operating System:

• Windows Server 2008 R2 SP1, Windows Server 2012, Windows Server 2012 R2

Database Server

- SQL Server 2008 R2 SP1, SQL Server 2012 R2, SQL Server 2014 SP1
- TCP/IP connections or named pipes must be configured in SQL Server.
- Default Collation
- SP Collation
- Binary Collation
- Clustering
- Mirroring
- Windows authentication
- SQL Server Authentication

Prerequisites

- 1. NET Framework 4 Platform Update 3 or .NET Framework 4.5
- 2. Service Bus 1.0
- 3. Workflow Client 1.0
- PowerShell 3.0

Firewall

If firewall enabled on the server then make sure the following Ports are not blocked.

Workflow Manager Installation Guide

- For WFManager: Ports 12290 and 12291 must be available.
- For Service Bus:

Service Account.

- Run As account for Workflow Manager Farm, it can be domain account or local account. But should have access to the SQL server instance.
- Run As account for Service Bus Farm, a domain account and should have access to the SQL server instance.
- Install Account, Account under which Workflow Manager setup and configuration will run. It should be local admin on WF manager server and Have DB creator and Security admin on the SQL Server.
- Admin Group, the group which will manage the Workflow Manager and Service Bus databases. All the users in this group will get the access to the all 6 databases.

Certificate:

If you using the auto generated Certificate, then it will be fine but if you using the existing certificate then make sure following things.

- The certificate must have a subject name, a subject alternative name, and both the private and public key.
- The certificate is also installed in the personal store of all computers in the farm or any computer that intends to join the farm.
- The certificate must be valid with respect to:
 - The start date.
 - The end date.
 - The trust chain.
- The certificate must have AT_KeyExchange set.
- The certificate can be used as a server certificate.
- The corresponding CRL list for the signing authority must be present.

Scenario

Krossfarm has multiple SharePoint farms (1 single server, 1 Multi Server) and now they want to configure a dedicated Workflow Manager Farm for all farm. They want to use the Custom Settings with Default Ports.

Tasks:

- Install the Microsoft Web Platform Installer 5.0
- Install Workflow Manager
- Apply Cumulative Update 3.0 for Workflow Manager 1.0
- Configure the Workflow Manager

- Install the WorkFlow Manager Client on SharePoint Server
- Register Workflow Proxy for SharePoint Servers
- Verify the Installation.

Checklist:

Please complete this checklist.

Item	Descriptions	Values
WF manager Server Name	Name of WF server	Kf-SPw
Farm Type	Is it Dedicated WFManager Farm or Part of SharePoint Farm	Dedicated WFManager Single Server Farm.
Allow Http	Is this farm use the http for coomunication or Https	WFManager use the https for server communication
Install Account	Account under which you install the WF manager	krossfarm\Kfinst
WF Admin account	Account under which WF services will run, if different then Instal Account	krossfarm kfwfm
WF Configuration Type	Do you want Default Settings or Custom	Custom
DB Server Name	Name of SQL Server Name	Kf-SQL
Database Names	If Custom Settings, then you have to Name All 6 DB names(3 WF farm and 3 for Service Bus)	WfManagementDB WFInstanceManagementDB WFResourceManagementDB SbGatewayDatabase SBContainer01 SBManagementDB
Certification Key	Certification Key is kind of passphrase,	W0kfl)WM

	this required if new server joins the farm	
SSL Certs	If not using the auto generated Certificates then you need it.	Auto-Generated Certs
Firewall	Firewall Enabled or Disabled	Disabled
WF Ports	Ports for the workflow Manager, Https: 12290. Http: 12291	https: 12290 http: 12291
Service Bus Port	Ports for the Service Bus, Https 9355, TCP 9354, MB Port 9356, Internal Communication Port 9000	https:9355 TCP:9354 MB PORT:9356 Internal Com: 9000
Admin Group	User in this group will access all WF Database	Default Group(Built-in Administrator)
Internet Access to server	Make Sure Server connected to Internet	Enabled
SharePoint Server	List All Server in the SharePoint Farm	Kf-SP
SharePoint Site Collection URL	Site Collection URL which will be used for registering workflow proxy.	http://kfsp:9101/sites/workflow

Tips for Successful installation

- 1. Make Sure the Run the Workflow Manager with a **domain account.**
- 2. Login with an account which has **DB creator and Security admin** on the SQL Server and **local admin** on the WFM server.
- 3. Run As account should be in **proper format** i.e **domain\username or username@domain.com.**
- 4. Account Running the **Register-SPWorkflowService** command should have access to the **WorkFlow Databases.**
- 5. Add the Workflow Manager Certs into SharePoint Trust.

- 6. Make Sure the **Workflow client install** on all server in the farm(if workflow manager not installed on them).
- 7. Make sure Bypass proxy server for local addresses option is enabled.
- 8. Make sure **App Management Service** and **Subscription Settings Service**, as Workflow Manager has some hidden dependencies on these services. These services required when you try to publish SharePoint 2013 Designer Workflow then this error will happen "The workflow files were saved but cannot be run".
- 9. Install the Service Bus 1.1 Hotfix ☐ before register the workflow proxy. This fix is required for .net 4.6.
- 10. Make Sure Firewall is not blocking following Ports
 - a. WorkFlow Manager Ports 12290 & 12291
 - b. Service Bus Ports
 - A. Https **9335**
 - B. TCP **9354**
 - C. Message Broker Port 9356
 - D. Internal Communication Port Range 9000 9004

Install the Microsoft Web Platform

In this article, I will walk through the steps to install the Web Platform Installer 5.0.

- Go the following link" https://go.microsoft.com/?linkid=9737537 I to download the WebPlatformInstaller
- Double click on "WebPlatformInstaller_amd64_en-US.msi"



• Accept the Agreement and Click Next

Microso	fr Internet	Please read the Microsoft Web Platform Insta 5.0 License Agreement	ller
	Pri	MICROSOFT SOFTWARE LICENSE TERMS MICROSOFT WEB PLATFORM INSTALLER These license terms are an agreement between Microsoft Corporation (or based on where you live, one of its affiliates) and you. Please read them. They apply to the software named above, which includes the media on which you received it, if any. The terms also apply to any Microsoft • updates, If accept the terms in the License Agreement	
ait for	completion Microsc alling Microsoft V	oft Web Platform Installer 5.0 Setup – – – – – – – – – – – – – – – – – – –	×
Please Status	e wait while the Setup	Wizard installs Microsoft Web Platform Installer 5.0.	
		Back Next Cance	ł

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• Click Finish

Microsoft Internet Information Services	Completed the Microsoft Web Platform Installer 5.0 Setup Wizard Click the Finish button to exit the Setup Wizard.
	Back Finish Cancel

• To validate successful installation, go to the Start and click on Search(top Right Hand Side), Then type **Web platform**



This will conclude the installation of Web Platform Installer 5.0

Installation of Workflow Manager 1.0

Now, we will install the Workflow Manager 1.0 using the Web platform installer 5.0.

- Go to Start and on top Right click on Search Icon
- Type the Web PlatForm Installer in the Search Box and click it.



• It will load the Web Platform Installer like this.

0	Web Platform Installe	r 5.0	- 0 X
Spotlight	Products Applications	[م [
	Name	Released	Install
	Microsoft Azure PowerShell	5/4/2016	Add
	Microsoft Azure Cross-platform Command Line Tools	5/4/2016	Add
0	Microsoft Azure Service Fabric SDK - 2.0.217 (VS2015)	5/3/2016	Add
ŵ	Microsoft Azure Service Fabric SDK - 2.0.217 (VS "15" Preview)	5/3/2016	Add
0 Items to b	cinstalled	<u>Options</u> Install	Exit

• On this page type **Workflow Manager** on top right hand.



• Click Add on the Workflow manager 1.0 Refresh (CU2) and Click Install.

0	Web Platform Installer S	0		X
O Sear	ch results for Workflow Manager		[م [
	Name		Released	install
4	Workflow Manager 1.0		9/22/2012	Add
4	Workflow Manager Tools 1.0 Cumulative Update 3 for Visual Studio 2012		12/7/2015	Add
	Workflow Manager 1.0 Cumulative Update 3		12/2/2015	Add
4	Workflow Manager 1.0 Refresh (CU2)		1/30/2014	Add
	Workflow Manager Client 1.0 Cumulative Update 3		12/2/2015	Add
N	Windows Server AppFabric		7/23/2010	Add
0 hems.b	s be installed	Options	install	Exit

• Click I Accept

	Web Platforn	n Installer 5.0	
PREREQUISITES	INSTALL	CONFIGURE	FINISH
Review the following list of thi software identified below to b products are provided by the t responsible for and must sepa	rd party application software, e installed and Windows com hird parties listed here. Micro rately locate, read and accept	Microsoft products and components, ponents to be turned on. Third party a soft grants you no rights for third party these third party license terms.	and any additional pplications and y software. You are
			1
X Workflow Manager <u>View license terms</u> Windows Azure Pacl Compatibility (KB30)	1.0 Refresh (CU2) c: Update for Service Bus 1.1 86798)	NET Framework 4.6	
View license terms			
Click here to see additional so	ftware to be installed and revi	ew the associated Microsoft license ten	ms
By clicking "I Accept", you agr software identified above. If y	ee to the license terms for the ou do not agree to all of the li	third party and Microsoft software, an cense terms, click "I Decline".	d any additional
Some Microsoft software usage info. By checking t below. Privacy Statements	above use the Customer Expe his box, you agree to send thi	rience Improvement Program, to send s info. To learn which do, read the Priv	us basic setup and acy Statements
threef statements			

• Check the I don't Want to user Microsoft Update and click Continue.



• Now sit back and relax, wait for successful installation message.

	Web Platfo	rm Installer 5.0	
PREREQUISITES	INSTALL	CONFIGURE	FINISH
Download progress: Microsof	t Visual C++ 2012 SP1 Redist	Microsoft Azure Microsoft Azure is an open and fle platform that enables you to quick deploy and manage applications a network of Microsoft-managed da Easily create web sites, virtual mac databases in a few clicks. Inv it free now! ributable Package (x64)	xible cloud ly build, cross a global tacenters. hines or 2846 KB/sec
Install progress: Installing Wo	rkflow Manager 1.0 Refresh (CU2) [3 out of 8]	

• Click **Continue**

Web Platform Installer 5.0				1
PREREQUISITES	INSTALL	CONFIGURE	FINISH	
The following product(s will continue the installa) have additional v ation.	work to complete. Clicking the Co	ontinue button	
Product		Additional Actions		
Workflow Manager 1.0 Refresh ((CU2)	Launching the Configuration Wizard v configure and get started with Workfl	which helps you ow Manager.	
		2		
			Continue	

• Click **Finish**

	Web Platforr	n Installer 5.0	
PREREQUISITES	INSTALL	CONFIGURE	FINISH
✓ The following produces of the following produces of the following produces of the following of the fol	cts were successfully i ice legistration tool lient 1.0 Cumulative Update 0 Refresh (CU2) 2012 SP1 Redistributable Par abric V1 RTM abric V1 CU1 Service Bus 1.1 Update for Service Bus 1.1 -	nstalled. 3 :kage (x64) .NET Framework 4.6 Compatibility (KE	3086798)

• Cancel the Wizard

Workflow Manager Installation Guide

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7 - WORKFLOW MANAGER CONFIGURATION WIZARD
Welcome
This wizard helps you configure a Workflow Manager farm. The wizard also configures the Service Bus farm required by the Workflow Manager farm.
Sonfigure Workflow Manager with Default Settings (Recommended) Apply default configuration settings and configure Workflow Manager on the machine. A Workflow Manager farm will be created and you can join other computers to the farm later.
Configure Workflow Manager with Custom Settings Override default configuration settings to configure Workflow Manager on the machine. A Workflow Manager farm will be created and you can join other computers to the farm later.
Soin an Existing Workflow Manager Farm Choose this option to add this computer to existing Workflow Manager farm and Service Bus farm.

() Performing configuration operations simultaneously from multiple computers or configuration wizards is not supported.

Now we have to Apply the Update to Workflow Manager 1.0.

Apply CU3 to Workflow Manager 1.0 CU2

Now, we will install the CU 3 for Workflow Manager 1.0 using the Web platform installer 5.0.

Note: CU3 is the latest CU for the Workflow Manager 1.0, In future may be you have to apply latest CU.

• Go to Start and on top Right click on Search Icon

• Type the **Web PlatForm Installer** in the **Search Box** and click it.



• It will load the Web Platform Installer like this.

	The Provident Instance are		
Spotlight	Products Applications	[٩ [
	Name	Released	Install
	Microsoft Azure PowerShell	5/4/2016	Add
	Microsoft Azure Cross-platform Command Line Tools	5/4/2016	Add
0	Microsoft Azure Service Fabric SDK - 2.0.217 (VS2015)	5/3/2016	Add
0	Microsoft Azure Service Fabric SDK - 2.0.217 (VS "15" Preview)	5/3/2016	Add
0 Items to b	rs installed	ptions Install	Ent
0 Items to b	re-installed Qu	otions Install	Exit
0 tenstek)n this pa	reinstalled Que type Workflow Manager on top right han Web Platform Installer 5.0	ations Install nd.	Evit
0 Items to b)n this pa 0 Spotlight	ge type Workflow Manager on top right har Web Platform Installer 5.0	ations Install nd.	Evit - C X orificow Manager{ ×

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• Click Add Workflow Manager 1.0 Cumulative Update 3 and then Click Install

	Web Platform Installer 5	5.0		
C Sear	ch results for workflow manager		[] ,
	Name		Released	Install
4	Workflow Manager 1.0		9/22/2012	Installed
	Workflow Manager 1.0 Cumulative Update 3		12/2/2015	Remove
de.	Workflow Manager Tools 1.0 Cumulative Update 3 for Visual Studio 2012		12/7/2015	Add
A	Worldiow Manager 1.0 Refresh (CU2)		1/30/2014	Installed
4	Workflow Manager Client 1.0 Cumulative Update 3		12/2/2015	installed
N	Windows Server AppFabric		7/23/2010	Add



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Workflow Manager Installation Guide

• Click Finish



This will complete the Installation process of the Workflow manager and Updates.

Configuration of Workflow Manager.

In this wiki, I will walk through the steps for Installation of Workflow Manager 1.0 cu2.

•	Go to Start and on top Right click on Search Icon
•	Type the Workflow Manager Configuration in the Search Box and click it.
	Search
	Everywhere 🗸
	workflow manager Configuration 🔎
	Workflow Manager Configuration
	Workflow Manager PowerShell

• Open the **Workflow Manager 1.0 config wizard**, Click on Using Custom settings

- on Workflow Manager Configuration page, Please provide the below information
 - 1. In the **Configure Farm management Database** Section, Please Enter the **SQL Server Name** And **DB name**
 - a. Check this "Use the Above SQL Server Instance Settings for All Database." If you want to use same settings for all DBs. As per our settings,

we are using same settings.

2. In the **Configure Instance management Database** Section, Please Enter the **SQL**

Server Name And DB name

3. In the Configure Resource management Database Section, Please Enter the SQL

Server Name And DB name

4. In the **Configure the Service Account**, Please provide the **Service account**(Account will run the Worklfow Services) and **password**.

Configure Service Account

User account under which the services will run (RunAs Account) using the format 'domain\user' or 'user@domain'. Credentials for the
same account are required every time you join a computer to the Workflow Manager farm.

krosstarm\ktwfm	
PASSWORD	

- 5. In the **Configure Certificate Sections**, Please provide the following information
 - a. As per our requirement, we are selecting **Auto-Generated Certificate.** If you want different then Uncheck it and provide your custom certificates.
- 6. In **Certificate Generation Key Section**. Please provide the Key(which is very much

important in case you want to join another server on this farm).

- 7. In **Configure ports section**, please provide the **Http** and **https** Port. if you want to use the custom ports then provide here but as per our requirement, we will use default ports.
 - a. Https: 12290
 - b. HTTP: 12291
 - c. If you want communication over HTTP then Select "Allow Workflow management over HTTP on this Computer"
 - d. If you have a firewall on the server, Please Check "enable firewall rules on this computer".

Configure Ports
WORKFLOW MANAGER MANAGEMENT PORT
Port on which Workflow Manager listens for management requests.
HTTP PORT
The unsecured HTTP port on which Workflow Manager listens for management requests. Note that this feature should not be enabled in production deployments.
12291
Allow Workflow management over HTTP on this computer
Enable firewall rules on this computer

8. In **Configure Admin Group Section** Please Provide the User Group which will manage the Workflow farm.

Configure Admin Group

This user group will be granted access to all the databases configured as part of the Workflow Manager farm. You must restart this computer if an administrators group is created as part of this configuration.

BUILTIN\Administrators



• On the Service Bus Configuration Page, Please Provide the following information.

Service Bus Configuration

Workflow Manager runs on a Service Bus deployment. Service Bus uses the following data have been provided.

 In the Configure Farm management Database Section, Please Enter the SQL Server Name And DB name Configure Farm Management Database

Kf-SQL	Test Connection
DATABASE NAME	
SbManagementDB	
In the Configure Gateway management Database Section	on, Please Enter the SQL
Configure Gateway Database	
SOL SERVER INSTANCE	
Kf-SOI	Tast Connection
	Test Connection
DATABASE NAME	
SbGatewayDatabase	
In the Configure Message Container Database Section,	Please Enter the SQL
Server Name And DB name Configure Message Container Database	2
SQL SERVER INSTANCE	
KE SOL	THE

DATABASE NAME

SBMessageContainer01

4. **In Configure Service Account Section,** Please Provide the **Service Account** Under Which Service Bus will run.

a. As we want to use the Same account so we Selected "Use the Same Service Account credentials as provided for Workflow Manager Configure Service Account

User account under which the services will run (RunAs Account) using the format 'domain\user' or 'user@domain'. Credentials same account are required every time you join a computer to the Service Bus farm.

 \blacksquare Use the same service account credentials as provided for Workflow Manager

- 5. In the Configure Certificate Sections, Please provide the following information
 - a. As per our requirement, we are selecting **Auto-Generated Certificate.** If you want different then Uncheck it and provide your custom certificates.

Configure Certificate

Service Bus requires a farm certificate. To provide a custom certificate, uncheck the Auto-generate optio

✓ Auto-generate

6. In Certificate Generation Key Section. Please provide the Key(which is very much important in case you want to join another server on this farm).

CERTIFICATE GENERATION KEY

This key is required every time you join a computer to the Service Bus farm.

Use the same certificate generation key as provided for Workflow Manager

7. In the Configure Ports Section. Please provide Following information.

- a. HTTPS PORT: 9355
- b. TCP PORT : **9354**
- c. MESSAGE BROKER PORT: **9356**
- d. INTERNAL COMMUNICATION PORT RANGE: 9000
- e. IF You have firewall on the server, Please Check **"enable firewall rules on this computer".**

Configure Ports

HTTPS PORT

SSL accessible port for a Service Bus deployment

9355

TCP PORT

Network-accessible port for a Service Bus deployment

9354

MESSAGE BROKER PORT

This port is used for message broker port communication

9356

INTERNAL COMMUNICATION PORT RANGE

Port range used for communication between Service Bus computers in the farm. The port configured here is the starting port for a range of 5 ports.

9000

Enable firewall rules on this computer

f. Please enter the group

Configure Admin Group

This user group will be granted access to all the databases configured as part of the Service Bus farm. You must restart this computer if an administrators group is created as part of this configuration.

BUILTIN\Administrators



On the Summary Page, please verify the settings before start the installation. Click
 Configuration for Workflow Manager

	Management Database SQL Instance	Kf-SQL
	Enable SSL connection with SQL Server instance	False
	Authentication	Windows Authentication
	Management Database Name	WFManagementDB
	Instance Management Database SQL Instance	Kf-SQL
	Enable SSL connection with SQL Server instance	False
	Authentication	Windows Authentication
	Instance Management Database Name	WFInstanceManagementDB
	Resource Management Database SQL Instance	Kf-SQL
	Enable SSL connection with SQL Server instance	False
	Authentication	Windows Authentication
	Resource Management Database Name	WFResourceManagementDB
	RunAs Account	KROSSFARM\kfwfm
	RunAs Password	*****
	Certificate Generation Key	*****
	Workflow Manager Outbound Signing Certificate	Auto-generated
	Service SSL Certificate	Auto-generated
	Encryption Certificate	Auto-generated
	Workflow Manager Management Port	12290
	HTTP Port	Disabled
	Enable firewall rules on this computer	True
Next	Administrators Group	BUILTIN\Administrators

Configuration for Service Bus

Management Database SQL Instance	Kf-SQL
Enable SSL connection with SQL Server instance	False
Authentication	Windows Authentication
Management Database Name	SbManagementDB
Gateway Database SQL Instance	Kf-SQL
Enable SSL connection with SQL Server instance	False
Authentication	Windows Authentication
Gateway Database Name	SbGatewayDatabase
Message Container SQL Instance	Kf-SQL
Enable SSL connection with SQL Server instance	False
Authentication	Windows Authentication
Message Container Database Name	SBMessageContainer01
RunAs Account	KROSSFARM\kfwfm
RunAs Password	******
Certificate Generation Key	*****
Farm Certificate	Auto-generated
Encryption Certificate	Auto-generated
HTTPS Port	9355
TCP Port	9354
Message Broker Port	9356
Internal Communication Port Range	9000 - 9004
Enable firewall rules on this computer	True
Administrators Group	BUILTIN\Administrators

• Wait for several Minutes

WORKFLOW MANAGER CONFIGURATION WIZARD



Applying configuration. This may take up to 10 minutes to complete.

Create a new Service Bus farm.

Create a new Workflow Manager farm.

Add host to Service Bus farm.

Details:

Create Service Bus service namespace.

Get Service Bus client configuration.

Add host to Workflow Manager farm



(View Log)

Starting				

• Once it successfully installed then Click Yes.

Now Workflow Manager 1.0 successfully configured. let's move to the next step.

Installation of Workflow Manager Client

Now Install the Workflow Manager Client 1.0 CU 3 on the All SharePoint Servers.

- Login on the SharePoint Server with Install account,
- Open the Microsoft Web PlatForm Installer 5.0, if not installed on the server then follow this
- Now start

- Go to Start and on top Right click on Search Icon
- Type the **Web PlatForm Installer** in the **Search Box** and click it.



• It will load the Web Platform Installer like this.

0	Web Platfor	m Installer 5.0		- 0 X
Spotlight	Products Applications		[م
	Name		Released	Install
-	Microsoft Azure PowerShell		5/4/2016	Add
	Microsoft Azure Cross-platform Command Line Tools		5/4/2016	Add
0	Microsoft Azure Service Fabric SDK - 2.0.217 (VS2015)		5/3/2016	Add
\$	Microsoft Azure Service Fabric SDK - 2.0.217 (VS "15" Preview)		5/3/2016	Add
0 Items to 3	installed	Options	Install	Exit
On this pa	ge type Workflow Manager on t	op right hand.		
0	Web Platfor	m Installer 5.0		- • ×
Spotlight	Products Applications		World	
	Troduces Applications		(TOTAL	ow Managed ×

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Click On Workflow Manager Client 1.0 Cumulative Update 3 and Click Add

0	Web Platform Installer 5.	0		- • ×
🔾 Sear	rch results for workflow manager		workflow	manager ×
	Name		Released	Install
- A-	Workflow Manager 1.0		9/22/2012	Add
- A-	Workflow Manager Tools 1.0 Cumulative Update 3 for Visual Studio 2012		12/7/2015	Add
- A-	Workflow Manager 1.0 Cumulative Update 3		12/2/2015	Add
- A.	Workflow Manager 1.0 Refresh (CU2)		1/30/2014	Add
	Workflow Manager Client 1.0 Cumulative Update 3		12/2/2015	Remove
N	Windows Server AppFabric		7/23/2010	Add
1 Items t	o be installed	Options	Install	Exit

• Click on I Accept



• Wait for Several Minutes



• On Successful page, Please Click Finish

Web Platform Installer 5.0			2
PREREQUISITES	INSTALL	CONFIGURE	FINISH
The following produced	icts were successfully i	installed.	
Workflow Manager (lient 1.0 Cumulative Update	3	
			Finish

Now **Repeat** the Same Steps for **All remaining SharePoint 2016 Server In the Farm**. If you missed a single server in the farm then Workflow's will see the difficulties.

Add Workflow Manager Certificate into SharePoint

Now, In this wiki article, we will add the Workflow Manager 1.0 Certificate into SharePoint trust. After this step, we will avoid almost all the errors related to certificate.

This is 2 step process, in step 1, we will export the certificate from Workflow Manager server and in 2nd step, we will import that certificate into SharePoint and build a trust.

Please make sure you login on the server where workflow Manager Installed with Install Account.

Export the Workflow Certificate.

- Login on the Server with Install account(krossfarm\kfinst)
- Open Internet Information Services(IIS), By typing the Inetmgr in the search window

• In the Internet Manager expands the Sites (on left-hand side), Click on Workflow Manager Site and On right-Hand side under Actions click on Bindings



• On this Page, Select Https and Click

on	Edi

•

Edit						
			Site	Bindings		? X
Туре	Host Name	Port	IP Address	Binding Informa	••• /	Add
https		12290	*			
	1				2	e Edit
						Remove
						Browse
						Close
this Page	e Under the SSL C	ertificate, c	lick on View cert	ificates		
			Edit Si	te Binding		
Type:		IP addr	ESS:		Port:	_
https	~	All Una	assigned		12290	
						_
Host r	name:					
	quire Server Na	me Indica	tion			
						A
SSL ce	rtificate:					
VE.SD	w krossfarm co				Calant	1. The second second
KF-SP	w.krossiann.co	m		L	Select	View
					011	
					OK	Cancel

• On this page click on **Details tab**

R	Certificate	x
General	Details Certification Path	-
Thi	 s certificate is intended for the following purpose(s): Ensures the identity of a remote computer All issuance policies 	-
	Issued to: KF-SPw.krossfarm.com Issued by: KF-SPw.krossfarm.com	-
9	Valid from 5/28/2016 to 5/28/2021 You have a private key that corresponds to this certificate.	
	Issuer Statemen	t
	OK	



• On this page Click Copy to File

On Welcome to the certificate Export Wizard Click Next

🔘 🍠 Certificate Export Wizard	
Welcome to the Certificate Export Wizard	
This wizard helps you copy certificates, certificate trust lists and certificate revocation lists from a certificate store to your disk.	on
A certificate, which is issued by a certification authority, is a confirmation of your ide and contains information used to protect data or to establish secure network connections. A certificate store is the system area where certificates are kept.	entity
To continue, click Next.	
Next	Cancel

• On Export Private Key page Please Select, No, Do not export the private key and click Next

Export Private Key You can choose to export the pr	ivate key with t	the certificate.	
Private keys are password prote certificate, you must type a pass	cted. If you wa sword on a late	ant to export the r page.	e private key with the
Do you want to export the priva	te key with the	certificate?	
○ Yes, export the private k	æy		
No, do not export the pr	ivate key		

• On export File Format page, Select Der encoded binary X.509(.cer) and click Next

e 🦻	Certificate Export Wizard	^
Exp	port File Format Certificates can be exported in a variety of file formats.	
	Select the format you want to use:	
	DER encoded binary X.509 (.CER)	
	O Base-64 encoded X.509 (.CER)	
	 Cryptographic Message Syntax Standard - PKCS #7 Certificates (.P7B) Include all certificates in the certification path if possible 	
	 Personal Information Exchange - PKCS #12 (.PFX) Include all certificates in the certification path if possible 	
	Delete the private key if the export is successful	
	Export all extended properties	
	O Microsoft Serialized Certificate Store (.SST)	
	Next Cancel	

• On File to export page, Please select the path where certificate will be SaVe and Click Next



• On **Completing the Certificate export wizard**, Click **Finish**

	×
🛞 🍠 Certificate Export Wizard	
Completing the Certificate Exp	oort Wizard
You have successfully completed the Certificate	Export wizard.
You have specified the following settings:	
File Name	c:\wfcert.cer
Export Keys	No
Include all certificates in the certification path	No
File Format	DER Encoded Binary X.509 (*.cer)
	Finish Cancel

• You will get **Message** "the export was **sucessful**". and click **ok**



Move the File

Now move the Certificate to the SharePoint Server.

Import Certificate into SharePoint.

- Now Login on the SharePoint Server with Farm Admin account
- Open the Central Admin Site
- Click on Security and Click on Trust on right-hand side



• on **Trust page** Click on **New**

New Edit Delete		
New trust relationship for this farm Configure a new trust relationship for this farm.	Description	Type Trusted Service Consumer
System Settings		

- On Establish Trust Relationship Page enter the following information
 - Name of the Certificate
 - **Path of Certificate**(where you save the certificate)
- Click **Ok**.

Establish Trust Relatio	onship	×
General Setting The name for this trust relationship. Learn about trusts.	Name: Workflow Manager	-1
Root Certificate for the trust relationship This is mandatory regardless of whether you want to provide to or consume trust from the other farm. Please add the Root Certificate for the other farm with which you want to establish a trust relationship. Learn about certificates.	Root Authority Certificate	Browse
Security Token Service (STS) certificate for providing Trust This step is optional. Only add this certificate if you want to provide trust to another farm.	Provide Trust Relationship Token Issuer Description: Token Issuer Certificate	Browse 3 OK Cancel

• You will see your **certificate added**.

Name	Description
local	
Workflow Manager	

That's it, we successfully build the trust. Now move to the next Step and register the workflow Proxy.

Register Workflow Service Proxy

In this Wiki article, we will walk through the Steps to register workflow Service Proxy with SharePoint Server 2016.

- Please, login on the SharePoint Server (I picked the App server where Central admin Hosted).
- Open the SharePoint PowerShell window
- In the PowerShell console type this command.

```
Register-SPWorkflowService -SPSite
"http://kfsp.krossfarm.com:9101/sites/workflow" -WorkflowHostUri "http://kf-
spw.krossfarm.com:12291"
```

- -SPSite : URL of Site collections.
- -WorkflowHostURI: Workflow Host URI is the url of the Workflow site.
 PS C1\> Register -SPWorkflowService -SPSite "https://kfsp.krossfarm.com/1010f/sites/workflow" -WorkflowHostWri "https://kf-spw.krossfarm.com/10200"

This completes the configuration of the Workflow Manager and let's move to verification step

Validation of Configuration of Workflow Manager 1.0

In this wiki, we will go through the steps to verify the installation and configuration of the Workflow Manager for SharePoint 2016. We will test it from Central admin of SharePoint then open the site (any site collection) in the SharePoint Designer and verify that SharePoint 2013 Workflow

Verify from Central Admin

• Login on SharePoint Central Admin with farm Admin account

• Click on Application Management > Under Service Application Click on Manager Service Application

5>	Арр	lication Management		
Central Administration Application Management	-	Web Applications Manage web applications Configure alternate access mappings		
System Settings	100	Site Collections		
Monitoring		Create site collections Delete a site collection Confirm site use and deletion Specify quota templates Configure quotas and locks Chan		
Backup and Restore	131	Service Applications		
Security		Manage service applications Configure service application associations Manage services on server		
Upgrade and Migration	100	Databases		
General Application Settings		Manage content databases Specify the default database server Configure the data retrieval service		
Apps				
Office 365				

On this Page you will see Workflow Service Application proxy

Sev Canada Debe Manage	and and a second	
Central Administration	Note -	lue.
Application	Application Discovery and Load Balance Service Application	Application Discovery and Load Balancer Service Application
Management	Application Discourry and Load Balancer Service Application Prose, aTcNe554 395-4643 3040-004b000052c	Application Discovery and Load Balancer Service Application
System Settings	KTARKS	Managed Metadata Service
Monitoring	KINMS	Managed Metadata Service Connection
Backap and Restore	87-025	User Profile Service Application
Security	AP-UPA	User Profile Service Application Proty
Upgrade and Migration	Fecunity Token Service Application	Senarity Token Service Application
General Application	SattingGenicologi	Microsoft SharePoint Foundation Subscription Settings Servi-
Settings	Microsoft SharePoint Foundation Subscription Settings Service Application Provy	Mensoft SharePoint Foundation Subscription Settings Service
7004	State Service	State Service
Office 365	State Service	State Sensitio Proxy
Configuration Waterds	Workflow Service Application Prints	Workflow Service Application Proxy

Highlight Workflow Service Application Proxy and Click on Manage

Total Constant	22 22 22 22 22 22 22 22 22 22 22 22 22
Central Administration	And a second
Application Management	Application Discoursy and Load Balance Service Application Application Discoursy and Load Balance Territie Application Proor, al-Onclui 1975 -8-45 (666) 4045-656-521
Settern Settings	REMARK.
Monitoring	ETAMAS
Backup and Restore	KO-LUTA
Security:	N2-LIFW
Uppraite and Migration	Security Taken Service Application
General Application Settings	SettingsbeversApp Microsoft StopeRose Foundation Subscription Settings Service Application Prov
Appa	State Service
C1964-365	The lands
Configuration Weards	Weathfree Service Application Prony

• On this Page, You will see the message" Workflow is Connected"

Workflow Service Status

Workflow is Connected

- Now Go to Application management > under Service Application > Click on Configure service application associations
- On this page Make Sure Workflow Service Application proxy is associated with all required Web Application.

Verify Using the PowerShell

Let's Check the Status of Workflow Manager Service Application status using the powerShell.

Open the SharePoint PowerShell console on the SharePoint Server. Run the Below Command.

Get-SPWorkflowServiceApplicationProxy | Select *

Output will be likely this.	
PS C:\Users\kfinst> Get-SPWorkflowServic	eApplicationProxy Select *
Partitioned	: False
IsClientValid	: True
QueueMaxMessageConcurrency	: 20
QueueMaxRetry	: 5
QueueRetryMaximumPause	: 200
QueueRetryInitialPause	: 20
AllowQueue	: True
WorkflowServiceRequestTimeout	: 00:00:20
WorkflowServiceDeploymentRequestTimeout	: 00:03:20
TypeName	: Workflow Service Application Proxy
ManageLink	: Microsoft.SharePoint.Administration.SPAdministrationLink
PropertiesLink	
CanUpgrade	: True
IsBackwardsCompatible	: True
NeedsUpgradeIncludeChildren	: False
NeedsUpgrade	: False
UpgradeContext	: Microsoft.SharePoint.Upgrade.SPUpgradeContext
ShouldDeferUpgradeActions	: False
Name_	: Workflow Service Application Proxy
DisplayName	: Workflow Service Application Proxy
Id	: fbff443e-c35e-46b1-987d-be4668fdee4e
Status	: Online
Parent	: WorkflowServiceProxy
Version	: 25531
DeploymentLocked	: False
Properties	: ()
Farm	: SPFarm Name=SharePoint_Config
UpgradedPersistedProperties	: 1
SolutionProviderFactory	: Microsoft.SharePoint.WorkflowServices.FabricSolutionProviderFactory
CanSelectForBackup	: False
DiskSizeRequired	: 0
CanSelectForRestore	: False
CanRenameOnRestore	: False

PS C:\Users\kfinst>

Verify from SharePoint Designer 2013

Now we will use the SharePoint Designer and verify the configuration,

Note: We don't have SharePoint Designer version for Server 2016, as per MSFT SharePoint Designer 2013 still works with Sharepoint 2016. Also in the workflow platform it is still saying SharePoint 2013 Workflow platform.

- 1. Open SharePoint Designer 2013 by selecting it on the **Start** menu. Click **Start** icon, click **All Programs**, click **Microsoft Office 2013**, and then click **SharePoint Designer 2013**.
- 2. Click **Open Site** on the SharePoint Designer 2013 start page.
- 3. Enter the SharePoint 2013 site that you want to connect to. For example, **http://www.contoso.com/sites/a-sharepoint-site**.
- 4. Click **Open** to open the site.
- 5. Enter your credentials, if prompted. (If security is not integrated with the computer you signed in on then you are prompted to enter your credentials.) Make sure to use credentials that have access to the SharePoint 2013 site.

6. In Designer Click on Workflows and from Ribbon Click on List Workflow and select any one



7. On the **Create List Workflow** dialog box, Click on **Platform Type** drop down and you will see the **SharePoint 2013 Workflow**.

С	reate List Workflow - Documents
Γ	
	Add a new workflow to your list
	Enter a name and description for your new workflow
	Name:
	My First SharePoint 2013 Workflow
	Description:
	A sample workflow for MSDN.
	Choose the platform to build your workflow on
	Platform Type: SharePoint 2013 Workflow
	OK Cancel

This will complete our testing / validation of the Installation and configuration. Now we can create the 2013 Platform workflows.

Reference:

https://msdn.microsoft.com/en-us/library/jj193528.aspx?f=255&MSPPError=-2147217396