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# MS SQL Server Scheduling a Job

# **Run a Stored Procedure with SQL Server or Windows Scheduler**

SQL Server has a scheduler built-in, but SQL Express is unable to use it. One of the limitations of SQL Express is it won't run SQL Server Agent which is responsible for running the SQL Server Scheduler subsystem (separate instructions below). So if you are using Standard or Enterprise versions of SQL Server, we recommend you use the SQL Server Scheduler. We will cover this first and you can find instructions for using the Windows Scheduler down below.

#### **SQL Server Agent Service**

For the SQL Server "Job" system to work, SQL Server Agent must be running. In the latest version of SQL Server, this service is installed and runs by default. To check or to turn on the service, run SQL Server Configuration Manager. Open the SQL Server Services configuration panel.

Sql Server Configuration Manager						-		×
File Action View Help								
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SQL Server Configuration Manager (Local) SQL Server Services SQL Server Network Configuration (32bit) SQL Server Network Configuration (32b) SQL Native Client 11.0 Configuration SQL Native Client 11.0 Configuration	Name	State Running Running Running	Slart Mode Automatic Automatic Automatic	Log On As NT Service/MSSQLS_ NT AUTHORITYLOC_ NT Service/SQLSERV_	Process ID 5564 3496 7100		Service SQL Ser	lype ver int
< >	<							>

If the service is not running, change the start mode to Automatic.

#### Scheduling an SQL Server Job

The most common reason to use a job is either to run a scheduled backup or run one of our builtin APIs:

• Create Work Orders from Requests (dbo.API\_ProcessWorkOrderFromRequest\_P\_sp)



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Create Work Orders from Service PM • (dbo.API\_ProcessWorkOrderFromServicePM\_P\_sp)



Fill out the general info. You can make a separate job for each API or group them together in one job and multiple steps. You may need to go to the "Advanced" tab to allow each step to fail and the next API (step) to start.

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I Job Properties - Run Create	WO fro	m Request			—		$\times$
Select a page	Scr	ipt 🔻 😯 Help					
Steps	Job st	ep list:					
	Step	Name		Type	On Success	On Failur	re
Notifications	1	Run API Proces	s Request	Transact-S	Go to the n	Go to the	e ne
> Targets	2	Run API Proces	s Service PM	Transact-S	Quit the job	Quit the j	ob
Connection							
Server: DESKTOP-3TQJLJT Connection: DESKTOP-3TQJLJT\Tom							
Progress							
Ready	Move *	step: *	Start step: 1:Run API Processes I	Request			~
		New	Insert	Edit	Dele	ete	
					ОК	Cano	cel

Move onto the scheduling tab. Schedule how often you want the job to run and when.

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New Job Schedule		_		>
Name:	Monday Early Morning	Jobs in a	Schedule	
Schedule type:	Recurring	Imabled		
One-time occurrence				
Date:	6/ 9/2022 V Time: 11:13:16 PM 🛟			
Frequency				
Occurs:	Weekly			
Recurs every:	1 veek(s) on			
	✓ Monday Wednesday Friday	Saturda	у	
	Tuesday Thursday	🗸 Sunday		
Daily frequency				
Occurs once at:	4:00:00 AM 🚖			
Occurs every:	1 hour(s) Starting at: 12:00:00 AM	∕I ÷		
	Ending at: 11:59:59 PM	A 🗘		
Duration				
Start date:	6/ 9/2022  → C End date: 6/ 9	9/2022		
	No end date:			
Summary				
Description:	Occurs every week on Monday, Sunday at 4:00:00 AM. Schedule wi 6/9/2022.	ill be used starting o	on	^
				$\checkmark$
				-

You can find additional information on scheduling a job here.

## **SQL Express and Windows Task Scheduler**

As discussed earlier, SQL Express won't run SQL Server Agent which is responsible for running the SQL Server Scheduler subsystem. So you will have to use the Windows Server build int scheduler.

On Windows Server, you should be able to look up the Task Scheduler and run it. If not (and with Windows Workstation), use the "Run" menu options to run a program: taskschd.msc



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	Winc schedule tasks	ows Settings	×		
Ele Action View Help				- 0	^
Control Scheduler (Local ) Control Scheduler Liberry Display: Your ac vio		Tak Scheduler Summary (Lett rehreched 6/16/2020/2020/2020/2020/2020/2020/2020/	· · · · · · · · · · · · · · · · · · ·	Actions Task Sockaler (Jocal) Connect the Another Computer Connect the Another Computer Connect Task Context Ta	•

You can use Create Basic Task "wizard" that will walk you through making a task. The downside is the scheduling is very basic. You can always edit it afterward to support a more complex schedule or use the "Create Task" option.

-oporal T:	A 15	0.0	-	<b>.</b>								
Ing	gers Action	ns Condit	lions	Set	tings							
Name:	My EM AP	l Task										
Location:	λ											
Author:	BROWNAN	<b>IDASSOCIA</b>	4\tmil	ller								
Description:												
_												
-Security op	tions											
When runr	ing the task,	use the fo	llowin	ng us	er acco	unt:						
BROWNAM	IDASSOCIA\t	tmiller								Change l	Jser or Gro	oup
O Run on	y when user	is logged o	n									
Run wh	ether user is l	logged on	or not	t								
Do Do	not store pase	sword. The	e task	will	only ha	ve acce	ss to lo	cal com	nputer re	sources.		
	h highest pri	vileges										
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M Kun Wit												

Fill in the General tab as shown above. Move to the Triggers tab and select "New". Set the schedule and save.



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New Trigger	×
Begin the task: On a schedule ~	
One time     Start:     6/17/2022 ■▼     3:00:00 AM ●     Synchronize across time zone       O Daily     Recur every:     1     weeks on:       ● Weekly     Sunday     Tuesday     Wednesday       ● Monthly     Friday     Saturday	;
Advanced settings	
Delay task for up to (random delay): 1 hour	
□ Repeat task every: 1 hour ∨ for a duration of: 1 day ∨	
Stop all running tasks at end of repetition duration	
□ Stop task if it runs longer than: 3 days ∨	
Expire: 6/17/2023 T1:01:53 AM 🔹 Synchronize across time zones	
✓ Enabled	
OK Cance	2 <b> </b>

First, let's deconstruct the command line we will run:

sqlcmd.exe -S "MYSQLSERVERNAME" -U username -P userpassword -d EMDatabase -Q
"dbo.API\_ProcessWorkOrderFromRequest\_P\_sp"

We suggest that you run the code in a command prompt to make sure the code is correct. You can find additional information on sqlcmd <u>here</u>.

Flag	Description
-S "MYSQLSERVERNAME"	Server
-U username	User Name
-P userpassword	Password
-d EMDatabase	Database Name
-Q "dbo.API_ProcessWorkOrderFromRequest_P_sp"	SQL Statement to run and then close connection



-Q	SQL Statement to run and then
"dbo.API_ProcessWorkOrderFromServicePM_P_sp"	close connection

Select the action and create a new action. Split the command between the program and flags as shown below.

Name	Status Tri	New Action	×
Create Task		You must specify what action this task will perform.	
General Trigge When you cre	n Actions Co ate a task, you n	Action: Start a program Settings Program/script:	v
Action	Crespig	sqlcmd.eve	Browse
New	Edt_	Add arguments (optional): Start in (optional):	Is "MYSCLSERVERNAME
			OK Cancel
ALL		ALMA CH	

Review the *Conditions* and *Settings* tabs, but the API should run fine without changes to these settings. You will have to create a scheduled task per API that you want to activate.

# **Express Maintenance API Configuration**

Once the APIs are installed and scheduled the Admin user needs to make fill in the API settings in Express Maintenance. Once logged into Express Maintenance Please go to Administration - Configuration - API

1. If users want to have Work Orders created from Requests the box must be checked as shown below.

Users can choose to filter what requests get turned into work orders with Request Priority or Unit Criticality as shown below. Email notifications can be turned on and off as needed and a custom email list can be created.



2. If users want to have Work Orders created from Services with a schedule date of 7 days before and 31 days after today's date the box must be checked as shown below. Email notifications can be turned on and off as needed and a custom email list can be created.

M expressiviain	tenance: Eiv	12						
File Adm	inistration	Maintenance Purchasing	g Dashboard Exp	ress Analytics	Utilities H	Help		
Configuration	Services	Codes Start Cost Centers Start Companies Field	s tions Locks	User Activity       Reports       Registration	Check Upo Email Test 👯 SQL Stater	dates 😹 Back & Restore 🛼 Connectivity 🖀 Archiving ments 🦧 Rebuild Views		
		Setup	Man	age	System			
🏓 Configuratio	on					2		
▲ Edit Config	uration 🗸	' Save Changes 🗙 Cancel Cha	nges 🕜 🔀					
Main	API							
Sub System								
Sub System	Confi	Key Name	Key Value	Key Value Large	G	onfig Desc Help		
Sub System	: API							
API	10010	WrAPIEnabled			Er	nable / Disable Create Work Orders from equest API		
API	10011	WrLastProcRecordID	12110		La	ast Record processed by the WO Request API		
API	10012	WrFilterByPriority		'Urgent','Normal'	Cist	omma Quotes delimited list for an 'IN' SQL tatement.		
API	10013	WrFilterByUnitCriticality			Cist	omma Quotes delimited list for an 'IN' SQL tatement.		
API	10014	WrSendEmail			Ti	urn on send Email for Work Order Request		
API	10015	WrSendEmailSubject	Work Order Created from Request		Er Re	mail Subject Line for Work Orders create from a equest by the API.		
API	10016	WrSendEmailRecipientList			If	f this is empty, then email is turned off. For ultiple emails, seperate with a space.		
API	10017	WrSendEmailFromUnit			Se	end email to Unit.EmailList.		
API	10020	WoAPIEnabled			Er Se	nable / Disable Create Work Orders from PM ervices API		
API	10021	WoPMIncludeUsageCountServices			In	ndude Usage Count Services when processing ecords.		
API	10022	WoPMSendEmail			Т	urn on send Email for Work Order Request		
API	10023	WoPMSendEmailSubject	Work Order Created from PM Service		Er Re	mail Subject Line for Work Orders create from a equest by the API.		
API	10024	WoPMSendEmailRecipientList		I	If m	f this is empty, then email is turned off. For ultiple emails, seperate with a space.		
API	10025	WoPMSendEmailFromUnit			Se	end email to Unit.EmailList.		

3. Before any email notifications can be sent the information the Email Server box must be checked and the email settings must be properly filled out. See below

Sub System :	EMAIL		
EMAIL	10050 EmailServerEnabled		Enable / Disable the email server.
EMAIL	10051 EmailRestApiListenPort	59003	Port number the Email Services listens to for commands
EMAIL	10055 EmailTransportPort	587	Port 587 (2525 if 581 is blocked) should be used for submissions (mail client to mail server). Port 25 should only be used for relaying (mail server to mail server communications). Port 465 should no longer be used.
EMAIL	10056 EmailTransportHost	Outlook365	Email Server hostname or IP address to connect to or Node Mailer Server Type. For a list of types see https://nodemailer.com/smtp/well-known/
EMAIL	10057 EmailTransportSecure		If true the connection will use TLS when connecting to server. If false (the default) then TLS is used if server supports the STARTILS extension. In most cases set this value to true if you are connecting to port 465. For port 537 or 25 keep it false
EMAIL	10058 EmailTransportRequireTLS		If frue and secure is false then Nodemaler tries to use STARTILS even if the server does not advertise support for it. If the connection can not be encrypted then message is not sent
EMAIL	10059 EmailTransportAuthUser		User name that has permission to send emails
EMAIL	10060 EmailTransportAuthPass		User password that has permission to send emails



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Once this is all set the user must save at the top.

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-	Setup			-	
Sa 🗸 Sa	ave Changes	× Car	ncel Changes	0	8
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