# Introduction

This guide gives you step by step instructions for setting up the OptiTune Management Server (OTMS) on a Windows Server.

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# **System Requirements**

The OptiTune management server requires the following

- Windows Server 2016
- Microsoft SQL Server 2017 (Express or Standard)
- Xeon class CPU
- 8GB RAM (16 GB recommended)
- 25GB Free Hard Disk Space

It is recommended to install the SQL Database on an SSD, preferably a PCI Express NVMe SSD if one is available.

## **Setup Instructions**

A sales or customer support representative will give you a link to download the OptiTune Management Server binaries, usually in zip file format. Expand the zip file to the following directory on your hard drive: C:\optitune

Once expanded, the contents of C:\optitune should look like the following:



### **IIS Website Setup**

First, you will need to install an IIS Website for OptiTune.

### **IIS Role Installation**

If you have not already installed the IIS role on the server, you need to do so.

Start the "Server Manager" from the desktop

🚡 Server Manager		- 🗆 X
Server Manager • Dashbo	ard 🛛 🗸 🖉   🚩 Manage Iools	<u>V</u> iew <u>H</u> elp
WELCOME TO SERVER I	/ANAGER	^
Local Server     All Servers     File and Storage Services ▷	1 Configure this local server	
	2 Add roles and features	
	3 Add other servers to manage	
WHAT'S NEW	4 Create a server group	
	5 Connect this server to cloud services	
LEARN MORE		Hide
ROLES AND SERVER GR Roles: 1   Server groups: 1 File and Storag Services	OUPS   Servers total: 1 e 1 Local Server 1 All Servers	1
• Manageability	Manageability     Manageability	
Events	Events Events	
Performance	3 Services 3 Services	
BPA results	Performance Performance	
	BPA results BPA results	
	10/26/2018 12:45 AM 10/26/2018	12:45 AM

Go to the "Manage" link at the top right and select "Add Roles or Features"

🚡 Add Roles and Features Wizard		_		×
Before you begin		DESTINA EC2AM	ITION SERV	/ER DDT
Before You Begin Installation Type	This wizard helps you install roles, role services, or features. You determine which r features to install based on the computing needs of your organization, such as sha hosting a website.	oles, role aring doc	services, uments, o	, or or
Server Selection Server Roles	To remove roles, role services, or features: Start the Remove Roles and Features Wizard			
Features Confirmation Results	<ul> <li>Before you continue, verify that the following tasks have been completed:</li> <li>The Administrator account has a strong password</li> <li>Network settings, such as static IP addresses, are configured</li> <li>The most current security updates from Windows Update are installed</li> <li>If you must verify that any of the preceding prerequisites have been completed, cl complete the steps, and then run the wizard again.</li> </ul>	ose the w	vizard,	
	To continue, click Next.			
	Skip this page by default			
	< <u>P</u> revious <u>Next</u> > Inst	all	Cance	:I

Select installation type

### DESTINATION SERVER EC2AMAZ-482GODT

# Before You Begin Installation Type Server Selection Server Roles Features Confirmation Results Server Roles Features Confirmation Results Previous Results Server Roles Features Confirmation Results Server Beletion Configure a single server by adding roles, role services, and features. Server Beletion Install required role services for Virtual Desktop Infrastructure (VDI) to create a virtual machine-based or session-based desktop deployment. Server Selection Server Selection Server Selection Server Beletion Results Server Beletion Server Beletion Beletion Beletion Beletion Server Beletion Beletio

📥 Add Roles and Features Wizard	ł			-		×
Select destination	n server			DESTINA EC2AM	TION SER	VER DDT
Before You Begin	Select a server or a virtua	l hard disk on which	to install roles and features.			
Installation Type	Select a server from the se	he server pool				
Server Selection	<ul> <li>Select a virtual hard d</li> </ul>	lisk				
Server Roles	Server Pool					
Features						
Confirmation	Filter:					
Results	Name	IP Address	Operating System			
	EC2AMAZ-482GODT	172.30.4.241	Microsoft Windows Server 201	l6 Datacente	r	
	1 Computer(s) found This page shows servers t and that have been adde newly-added servers from	that are running Win d by using the Add S n which data collecti	dows Server 2012 or a newer rele Servers command in Server Manag on is still incomplete are not show	ase of Windo ger. Offline s vn.	ows Serv ervers ar	er, 1d
		< <u>P</u> re	vious <u>N</u> ext >	Install	Cance	al

📥 Add Roles and Features Wizard		- 🗆 X
Add Roles and Features Wizard Select server roles Before You Begin Installation Type Server Selection Server Roles Features Confirmation Results	Select one or more roles to install on the selected server.  Roles  Active Directory Lightweight Directory Services Active Directory Rights Management Services Device Health Attestation DHCP Server DNS Server Fax Server Fax Server File and Storage Services (1 of 12 installed) Host Guardian Service Hyper-V MultiPoint Services Network Controller	<ul> <li>— — — X</li> <li>DESTINATION SERVER EC2AMAZ-482GODT</li> <li>Description</li> <li>Web Server (IIS) provides a reliable, manageable, and scalable Web application infrastructure.</li> </ul>
	Network Policy and Access Services         Print and Document Services         Remote Access         Remote Desktop Services         Volume Activation Services         Web Server (IIS)         Windows Deployment Services         Windows Server Essentials Experience         Windows Server Update Services         Vindows Server Update Services	> <u>Install</u> Cancel

Click the checkbox next to "Web Server (IIS)"

🚡 Add Roles and Features Wizard 🛛 🗙 🗙	
Add features that are required for Web Server (IIS)?	
The following tools are required to manage this feature, but do not have to be installed on the same server.	
<ul> <li>Web Server (IIS)</li> <li>Management Tools         [Tools] IIS Management Console     </li> </ul>	
✓ Include management tools (if applicable)     Add Features   Cancel	

A dialog box will come up, click "Add Features".

Add Roles and Features Wizard		– 🗆 X
Add Roles and Features Wizard	Select one or more roles to install on the selected server.  Roles  Active Directory Lightweight Directory Services Active Directory Rights Management Services Device Health Attestation DHCP Server DNS Server Fax Server Fax Server File and Storage Services (1 of 12 installed) Host Guardian Service Hyper-V MultiPoint Services Network Controller Network Controller Network Policy and Access Services Print and Document Services Remote Access Remote Access Remote Desktop Services Volume Activation Services	- C X      DESTINATION SERVER     EC2AMAZ-482GODT      Meb Server (IIS) provides a reliable,     manageable, and scalable Web     application infrastructure.
	Web Server (IIS)     Windows Deployment Services     Windows Server Essentials Experience     Windows Server Ledets Consistent	
	windows server opdate services	
	< <u>Previous</u> <u>N</u> ex	xt > Install Cancel



Select "ASP.NET 4.6".

📥 Add Roles and Features Wizard		- 🗆 X
Select features		DESTINATION SERVER EC2AMAZ-482GODT
Before You Begin	Select one or more features to install on the selected server.	
Installation Type	Features	Description
Server Selection	INET Framework 3.5 Features	HTTP Activation supports process
Server Roles	INET Framework 4.6 Features (2 of 7 installed)	activation via HTTP. Applications
Features	<ul> <li>NET Framework 4.6 (Installed)</li> <li>ASP.NET 4.6</li> </ul>	and stop dynamically in response to
Web Server Role (IIS)	WCF Services (1 of 5 installed)	work items that arrive over the network via HTTP.
Role Services	Message Queuing (MSMQ) Activation	
Confirmation	Named Pipe Activation     TCD Activation	
Results	TCP Port Sharing (Installed)	
	Background Intelligent Transfer Service (BITS)     Bitlocker Drive Excention	
	BitLocker Network Unlock	
	BranchCache Client for NES	
	Containers	
	Data Center Bridging	
	Enhanced Storage	
	< >>	
	< <u>P</u> revious <u>N</u> ext	> Install Cancel

Expand WCF Services, and select "HTTP Activation"

Add features that are req	uired for HTTP Activation?
ou cannot install HTTP Activation r features are also installed.	on unless the following role services
<ul> <li>Web Server (IIS)</li> <li>Web Server</li> </ul>	
<ul> <li>Application Develop</li> </ul>	ment
ASP.NET 4.6	
ISAPI Extensions	
NFT Extensibility	4.6
<ul> <li>Windows Process Activation</li> </ul>	1 Service
Configuration APIs	
Process Model	
Include management tools	(if applicable)
	···

Click "Add Features"



Select "Named Pipe Activation", and "TCP Activation" as well



Scroll down and also select "SMTP Server", if you are going to use the built in SMTP server on the windows server. Accept the defaults for the dialog box that comes up. Finally, click "Next".

🚡 Add Roles and Features Wizard		_		×
Web Server Role	(IIS)	DESTINA EC2AM	TION SERV AZ-482GO	'ER DT
Before You Begin Installation Type Server Selection Server Roles Features	Web servers are computers that let you share information over the Internet, or thro extranets. The Web Server role includes Internet Information Services (IIS) 10.0 with diagnostic and administration, a unified Web platform that integrates IIS 10.0, ASP. Communication Foundation.	ough intra enhance NET, and	anets anc ed securit I Window	i ty, is
Web Server Role (IIS) Role Services Confirmation Results	<ul> <li>The default installation for the Web Server (IIS) role includes the installation of role enable you to serve static content, make minor customizations (such as default of errors), monitor and log server activity, and configure static content compression</li> </ul>	ble servic documen n.	es that ts and H1	ГТР
	More information about Web Server IIS			
	< <u>P</u> revious <u>Next</u> > <u>I</u> nst	all	Cance	

**Click Next** 

п

# Select role services

Before You Begin Installation Type Server Selection Server Roles Features Web Server Role (IIS) Role Services Confirmation Results

Select the role services to install for Web Server (IIS)

▲ ✓ Web Server	Web Server provides support for HTML
▲ Common HTTP Features	Web sites and optional support for
Default Document	ASP.NET, ASP, and Web server extensio
Directory Browsing	You can use the Web Server to host an
HTTP Errors	internal or external Web site or to prov
Static Content	an environment for developers to creat
UTTD Padiraction	Web-based applications.
VebDAV Publishing	
Health and Diagnostics	
✓ HTTP Logging	
Custom Logging	
Logging Tools	
<ul> <li>ODBC Logging</li> </ul>	
<ul> <li>Request Monitor</li> </ul>	
✓ Tracing	
Performance	
Static Content Compression	
Dynamic Content Compression	
▲ ✓ Security	
Request Filtering	
Request Interning     Basic Authentication	
Centralized SSL Certificate Support	
Client Cartificate Manaine Authentical	
Client Certificate Mapping Authenticat	lon
Digest Authentication	
IIS Client Certificate Mapping Authent	ication
IP and Domain Restrictions	
URL Authorization	
<ul> <li>Windows Authentication</li> </ul>	
Application Development	
.NET Extensibility 3.5	
<ul> <li>.NET Extensibility 4.6</li> </ul>	
Application Initialization	
ASP	
ASP.NET 3.5	
ASP.NET 4.6	
CGI	
✓ ISAPI Extensions	
ISADI Filters	
Conjor Sido Includer	
Visk Server Side Includes	
▲ FIP Server	
FIP Service	
FTP Extensibility	
<ul> <li>Management Tools</li> </ul>	
<ul> <li>IIS Management Console</li> </ul>	
🛛 🗹 IIS 6 Management Compatibility	
IIS Management Scripts and Tools	
Management Service	

– 🗆 🗙

DESTINATION SERVER EC2AMAZ-482GODT **Important** - click on every single checkbox (including their child checkboxes), but leave FTP Server blank, and the defaults for "Management Tools". The selection should match the image above when you are done. You will be prompted with several popups while clicking on the checkboxes, and you should accept the defaults. Finally, click Next.

📥 Add Roles and Features Wizard		_		×
Confirm installatio	n selections	DESTINA EC2AM	TION SERV AZ-482GO	'ER DT
Before You Begin	To install the following roles, role services, or features on selected server, click Insta	н.		
Installation Type	Restart the destination server automatically if required			
Server Selection	Optional features (such as administration tools) might be displayed on this page be	cause th	ey have	
Server Roles	been selected automatically. If you do not want to install these optional features, cl their check boxes.	ick Previ	ous to cle	ear
Features				
Web Server Role (IIS)	.NET Framework 4.6 Features			^
Role Services	ASP.NET 4.6			
Confirmation	WCF Services			
Results	HITP Activation			
	Remote Server Administration Tools			
	Feature Administration Tools			
	Sivite Server tools			
	SMTP Server			$\sim$
	Export configuration settings			
	Specify an alternate source path			
	< <u>P</u> revious <u>N</u> ext > <u>Insta</u>	ill	Cance	I

Finally, click on the "Restart the destination server automatically if required" checkbox, and click on "Install" to add the IIS Role and SMTP server on the Windows Server.

The computer may restart after the installation has finished.



Wait for the installation to complete.

📥 Add Roles and Features Wizard		—		$\times$
Installation progre	SS	DESTIN/ EC2AN	ATION SERI IAZ-482GC	VER
Before You Begin	View installation progress			
Installation Type	Feature installation			
Server Selection				
Server Roles	Installation started on EC2AMAZ-482GODT			
Features	.NET Framework 4.6 Features			$\sim$
Web Server Role (IIS)	ASP.NET 4.6			
Role Services	WCF Services			
Confirmation	HTTP Activation			
Results	TCP Activation			
	Remote Server Administration Tools Feature Administration Tools SMTP Server Tools			
	SMTP Server			
	You can close this wizard without interrupting running tasks. View task propage again by clicking Notifications in the command bar, and then Task De Export configuration settings	gress or e etails.	open this	5
	< <u>P</u> revious <u>N</u> ext > Clo	ose	Cance	2

Once the installation has finished, click on "Close"

←	Settings	– 🗆 X
ŝ	Home	Update status
Fi	nd a setting $ ho$	Checking for updates
Upo	date & security	
3	Windows Update	Update history
¢	Windows Defender	Update settings
IJ	Recovery	Available updates will be downloaded and installed automatically, except over metered connections (where charges may apply).
Ø	Activation	Change active hours
Îŧ	For developers	Restart options
		Advanced options
		Looking for info on the latest updates? Learn more

Go to the Start Menu, select "Settings", and then select Windows Updates. Check for Windows updates, and make sure all the latest updates are installed.

### **OptiTune Website Setup**

Finally, start "IIS Manager" (not the 6.0 version, but the latest one):

	S		
≡	🔎 Sea	rch	Windows Serve
	🔁 Sen	ver Manager	_
	🔅 Sett	tings	
	w		Server Manag
		dows Accessories	×
	Uin Nev	ndows Administrative Tools v	A Windows
	🧔 Co	omponent Services	Administrativ.
	Sa 🛃	omputer Management	
	🚯 De	efragment and Optimize Drive	es Remote
		sk Cleanup	Desktop
	Ev	ent Viewer	
	ini Ne	ternet Information Services (I ew	IS
	🦄 Ini	ternet Information Services (I	IS
8	iS(	CSI Initiator	
	Lo	cal Security Policy	
ŝ	🛞 м	icrosoft Azure Services	
Ф	oi	DBC Data Sources (32-bit)	



You will see a Default Web Site already created. Right click on it, and select "Remove", and answer "Yes" to confirm the removal of the default site.

Next, you will need to copy the OptiTune server binaries to a new directory on your computer. The recommended location is C:\optitune, but you can choose a different location if needed.

📙   🛃 📙 🖛   optitune			– 🗆 X
File Home Share View			^ <b>(</b> )
Image: Pin to Quick access     Copy Paste     Image: Copy path       Copy Copy Paste     Image: Copy Paste       Clipboard	Move to • Copy to • Copy to •	New folder New Open	een  Select all Select none Story Select Select Select Select
← → ∽ ↑ 📙 > This PC > Local Disk	: (C:) > optitune	✓ 💆 Search o	ptitune 🔎
<ul> <li>Quick access</li> <li>This PC</li> <li>Desktop</li> <li>Documents</li> <li>Downloads</li> <li>Music</li> <li>Pictures</li> <li>Videos</li> <li>Local Disk (C:)</li> <li>Data (D:)</li> </ul>	Name installers ip2location logs NSIS temp web P optitune-schema.sql Setup Guide.pdf	Date modified 11/14/2017 4:13 P 10/25/2018 6:15 P 11/14/2017 4:13 P 10/25/2018 6:15 P 11/14/2017 4:13 P 10/25/2018 6:15 P 11/14/2017 4:16 P 9/23/2016 12:36 P	Type     Si       PM     File folder       PM     File folder
<ul> <li>Backup (E:)</li> <li>Network</li> <li>8 items 1 item selected</li> </ul>	٢		

The C:\optitune directory should look like the above image.

Next, go back to IIS, and you will need to add an App Pool and IIS Website.

💐 Internet Information Services (IIS)	Manager						-	- 🗆	×
← →	ODT     Application Poo	ols						🔁 🖂 🟠	• 1
<u>F</u> ile <u>V</u> iew <u>H</u> elp									
Connections	Applicat This page lets you view worker processes, con Filter: Name MET v4.5 MET v4.5 DefaultAppPool	ion Pools v and manage tain one or me v v of the Status Started vo Started vo Started vo Started vo	s e the list of ap ore applicatio o ~	plication pools on ns, and provide iso w <u>All</u> Group by: Managed Pipel Integrated Classic Integrated	the server. Application lation among different No Grouping Identity ApplicationPoolld ApplicationPoolld	pools are associated with applications. Applications 0 0 0	Actions Add Applica Set Applica Help	ation Pool tion Pool De	faults
Ready									¶.:

Click on "Application Pools" at the top left, and then click on "Add Application Pool" at the top right

Add Application Pool	?	×					
<u>N</u> ame: optitune							
.NET <u>C</u> LR version:							
.NET CLR Version v4.0.30319 $\qquad \lor$							
<u>Managed pipeline mode:</u>							
Integrated $\checkmark$							
Start application pool immediately							
ОК	Cancel						

Enter "optitune" for the name of the application pool, and click OK

Internet Information Services (IIS)	Manager						- 🗆 X
←→ @ ► EC2AMAZ-482G	ODT  Application Poo	ols					😉 🔤 🔞 🕡 🗸
<u>F</u> ile <u>V</u> iew <u>H</u> elp							
Connections	Applicat This page lets you view worker processes, con Filter: Name NET v4.5 Cassic DefaultAppPool Optitune	ion Pool v and mana tain one or Status Started Started Started Started	y y y y y y y y y y y y y y	pplication pools on ons, and provide iso w <u>All</u>   Group by: Managed Pipel Integrated Classic Integrated Integrated	the server. Application lation among different No Grouping Identity ApplicationPoolld ApplicationPoolld ApplicationPoolld	Applications Applications 0 0 0 0 0 0 0 0 0 0 0 0 0	Actions         Image: Set Application Pool Defaults         Application Pool Tasks         Image: Stop         Image: Stop         Recycle         Edit Application Pool         Image: Basic Settings         Recycling         Advanced Settings         Rename         View Applications         Image: Help
Ready							• <b>1</b> .:

Click on the new "optitune" application pool, and then click on "Advanced Settings..." on the right

### Advanced Settings

?

* Weletan				
NET CL B Version				
INET CLR Version		V4.0		
Enable 32-Bit Application	ns	Irue		
Managed Pipeline Mode	!	Integrated		
Name		optitune		
Queue Length		1000		
Start Mode		AlwaysKunni	ng	
V CPU				
Limit (percent)		0		
Limit Action		NoAction		
Limit Interval (minutes)		5		
Processor Affinity Enable	ed	False		
Processor Affinity Mask		4294967295		
Processor Affinity Mask	(64-bit option)	4294967295		
<ul> <li>Process Model</li> </ul>				
> Generate Process Model	Event Log Ent			
Identity		ApplicationP	oolldentity	
Idle Time-out (minutes)		0		
Idle Time-out Action		Terminate		
Load User Profile		True		
Maximum Worker Proce	sses	1		
Ping Enabled		True		
Ping Maximum Respons	e Time (secon	90		
Ping Period (seconds)		30		
Shutdown Time Limit (s	econds)	90		
Startup Time Limit (seco	nds)	90		
<ul> <li>Process Orphaning</li> </ul>				
Enabled		False		
Executable				
Executable Parameters				
<ul> <li>Rapid-Fail Protection</li> </ul>				
"Service Unavailable" Re	sponse Type	HttpLevel		
Enabled		True		
Failure Interval (minutes	)	5		
Maximum Failures		5		
Shutdown Executable				
Shutdown Executable Pa	rameters			
<ul> <li>Recycling</li> </ul>				
<ul> <li>Recycling</li> <li>Disable Overlapped Recycling</li> </ul>	rcle	True		
<ul> <li>Recycling</li> <li>Disable Overlapped Recy</li> <li>Disable Recycling for Co</li> </ul>	cle nfiguration Ch	<b>True</b> False		
Recycling     Disable Overlapped Recy     Disable Recycling for Co     Generate Recycle Event 1	vcle nfiguration Ch .og Entry	<b>True</b> False		
<ul> <li>Recycling         Disable Overlapped Recy         Disable Recycling for Co         Generate Recycle Event I         Private Memory Limit (K     </li> </ul>	rcle nfiguration Ch .og Entry B)	True False		
<ul> <li>Recycling         <ul> <li>Disable Overlapped Recy</li> <li>Disable Recycling for Co</li> <li>Generate Recycle Event I</li> <li>Private Memory Limit (K</li> <li>Regular Time Interval (m)</li> </ul> </li> </ul>	rcle nfiguration Ch .og Entry B) inutes)	True False 0 5760		
<ul> <li>Recycling         Disable Overlapped Recy         Disable Recycling for Co         Generate Recycle Event I         Private Memory Limit (K         Regular Time Interval (m         Request Limit     </li> </ul>	rcle nfiguration Ch .og Entry B) iinutes)	True False 0 5760 0		
<ul> <li>Recycling</li> <li>Disable Overlapped Recy</li> <li>Disable Recycling for Co</li> <li>Generate Recycle Event I</li> <li>Private Memory Limit (K</li> <li>Regular Time Interval (m</li> <li>Request Limit</li> <li>Specific Times</li> </ul>	rcle nfiguration Ch Log Entry B) iinutes)	True False 0 5760 0 TimeSpanD 4	Arrav	
<ul> <li>Recycling</li> <li>Disable Overlapped Recy</li> <li>Disable Recycling for Co</li> <li>Generate Recycle Event I</li> <li>Private Memory Limit (K</li> <li>Regular Time Interval (m</li> <li>Request Limit</li> <li>Specific Times</li> <li>Virtual Memory Limit (K)</li> </ul>	rcle nfiguration Ch Log Entry B) iinutes) 3)	True False 0 5760 0 TimeSpan[] / 0	Array	
<ul> <li>Recycling         <ul> <li>Disable Overlapped Recy</li> <li>Disable Recycling for Co</li> <li>Generate Recycle Event I</li> <li>Private Memory Limit (K</li> <li>Regular Time Interval (m</li> <li>Request Limit</li> <li>Specific Times</li> <li>Virtual Memory Limit (K)</li> </ul> </li> </ul>	vcle nfiguration Ch Log Entry B) ninutes) B)	True False 0 5760 0 TimeSpan[] / 0	Array	
<ul> <li>Recycling         <ul> <li>Disable Overlapped Recy</li> <li>Disable Recycling for Co</li> <li>Generate Recycle Event I</li> <li>Private Memory Limit (K</li> <li>Regular Time Interval (m</li> <li>Request Limit</li> <li>Specific Times</li> <li>Virtual Memory Limit (K</li> </ul> </li> <li>Disable Overlapped Recycling for Co</li> </ul>	vcle nfiguration Ch Log Entry B) ninutes) 3) e	True False 0 5760 0 TimeSpan[] / 0	Array	
<ul> <li>Recycling         <ul> <li>Disable Overlapped Recy</li> <li>Disable Recycling for Co</li> <li>Generate Recycle Event I</li> <li>Private Memory Limit (K</li> <li>Regular Time Interval (m</li> <li>Request Limit</li> <li>Specific Times</li> <li>Virtual Memory Limit (KI</li> </ul> </li> <li>Disable Overlapped Recycl</li> <li>[disallowOverlappingRotatic</li> </ul>	vcle nfiguration Ch Log Entry B) ninutes) 3) 8) e e n] If true, the a	True False 0 5760 0 TimeSpan[] / 0	Array ol recycle will ha	appen such that
<ul> <li>Recycling         <ul> <li>Disable Overlapped Recy</li> <li>Disable Recycling for Co</li> <li>Generate Recycle Event I</li> <li>Private Memory Limit (K</li> <li>Regular Time Interval (m</li> <li>Request Limit</li> <li>Specific Times</li> <li>Virtual Memory Limit (K</li> </ul> </li> <li>Disable Overlapped Recycl</li> <li>[disallowOverlappingRotation the existing worker process of the existing worker proces of the existing work</li></ul>	vcle nfiguration CF Log Entry B) ninutes) ainutes) 3) e m] If true, the accession of the second seco	True False 0 5760 0 TimeSpan[] / 0	Array ol recycle will ha	appen such that d. Set to true if
<ul> <li>Recycling         <ul> <li>Disable Overlapped Recy</li> <li>Disable Recycling for Co</li> <li>Generate Recycle Event I</li> <li>Private Memory Limit (K</li> <li>Regular Time Interval (m</li> <li>Request Limit</li> <li>Specific Times</li> <li>Virtual Memory Limit (K</li> </ul> </li> <li>Disable Overlapped Recycl</li> <li>[disallowOverlappingRotation the existing worker process of the existing worker proces of the existing work</li></ul>	vcle nfiguration Ch Log Entry B) ninutes) ainutes) 3) e e m] If true, the a exits before and	True False 0 5760 0 TimeSpan[] / 0	Array ol recycle will ha rocess is created	appen such that I. Set to true if

- Change "Enable 32-Bit Applications" to "True"
- Change "Start Mode" to "AlwaysRunning".
- Change "Idle Time-out (minutes)" to "0"
- Change "Load User Profile" to True
- Change "Disable Overlapped Recycle" to True
- Change "Regular Time Interval (minutes)" to "5760"

Finally, press OK to save the changes

Now, we will create the OptiTune website.



Right click on "Sites", and select "Add Website"

Add Website ?	×
Site name:     Application pool:       optitune     optitune     Select	
Content Directory         Physical path:         c:\optitune\web         Pass-through authentication         Connect as         Test Settings	
Binding   Type:   Ip address:   http     All Unassigned     B0     Host name:      Example: www.contoso.com or marketing.contoso.com	
Start Website immediately	cel

Enter "optitune" for the site name

Select Application Pool	? ×
App <u>l</u> ication pool:	
optitune	~
Properties:	
.Net CLR Version: 4.0 Pipeline mode: Integrated	
ОК	Cancel

Click on "Select..." next to the application pool, and select the "optitune" application pool you created earlier. Press OK.

Add Website ? X
Site name:     Application pool:       optitune     optitune
Content Directory         Physical path:         c:\optitune\web         Pass-through authentication         Connect as         Test Settings
Binding         Iype:       IP address:       Port:         http       All Unassigned       80         Host name:       Example: www.contoso.com or marketing.contoso.com
✓ Start Website immediately       OK     Cancel

Select the path where you copied the OptiTune website files (C:\optitune\web in this case), and finally press OK.

**Important** OptiTune requires the use of an SSL certificate. If you have one ready and already installed in IIS, you can change the binding type to HTTPS in the above dialog, and select it here.

Otherwise, you will need to install an SSL certificate later, and change the binding of the website to <u>only</u> have the HTTPS protocol with your website certificate on port 443. Otherwise, the OptiTune agent will not be able to connect to the OptiTune server.



The "optitune" website has now been created, but we still have to setup SQL Server and the OptiTune database in order for it to function.

### **Folder Permissions**

After creating the website under IIS, you will need to setup appropriate folder permissions.

🏪   🛃 📙 🖛   Local Disk	: (C:)		– 🗆 X			
File Home Share	View		~ (	?		
← → ~ ↑ 🟪 > Th	← → ∽ ↑ 🖕 > This PC > Local Disk (C:) v Ö Search Local Disk (C:)					
	Name	Date modified Type	Size			
📌 Quick access	inetpub	10/26/2018 1:06 AM File folder				
📃 Desktop 🛛 🖈	optitune	10/26/2018 7:10 AM File folder				
👆 Downloads 🛛 🖈	PerfLogs	2/23/2018 11:06 AM File folder				
🚆 Documents 🛛 🖈	Program Files	10/26/2018 6:18 AM File folder				
📰 Pictures 🛛 🖈	Program Files (x86)	10/26/2018 6:20 AM File folder				
optitune	Users	10/26/2018 6:14 AM File folder				
This PC	Windows	10/26/2018 1:06 AM File folder				
Deskton						
Desktop						
Documents						
- Downloads						
J Music						
Pictures						
🙀 Videos						
🏪 Local Disk (C:)						
Petwork						
7 items 1 item selected						

In File Explorer, navigate to the C Drive and click on "optitune". Right click on it, and select "Properties".

📜 optitune Properties		>	<
General Sharing Security	Previous Versions	Customize	
Object name: C:\optitune			
Group or user names:			
<b>CREATOR OWNER</b>			
SYSTEM			
Administrators (EC2AM	AZ-482GODT\Admir	histrators)	
Sers (EC2AMAZ-4820	GODT\Users)		
To change permissions, clic	k Edit.	<u>E</u> dit	
Permissions for CREATOR			
OWNER	Alloy	v Deny	
Full control		~	
Modify			
Read & execute			
List folder contents			
Read			
Write		~	
For special permissions or ac click Advanced.	dvanced settings,	Ad <u>v</u> anced	
C	OK Cance	Apply	

Click on the "Security" tab, and then click "Edit".

Permissions for optitune		×
Security		
Object name: C:\optitune		
Group or user names:		
CREATOR OWNER		
SYSTEM		
Administrators (EC2AMAZ-48)	2GODT\Administra	ators)
Sers (EC2AMAZ-482GODT)	(Users)	
	A <u>d</u> d	<u>R</u> emove
Permissions for CREATOR	A <u>d</u> d	<u>R</u> emove
Permissions for CREATOR OWNER	A <u>d</u> d Allow	<u>R</u> emove Deny
Permissions for CREATOR OWNER Full control	A <u>d</u> d Allow	Deny
Permissions for CREATOR OWNER Full control Modify	Add Allow	Deny
Permissions for CREATOR OWNER Full control Modify Read & execute	A <u>d</u> d Allow	Deny
Permissions for CREATOR OWNER Full control Modify Read & execute List folder contents	A <u>d</u> d Allow	Deny
Permissions for CREATOR OWNER Full control Modify Read & execute List folder contents Read	A <u>d</u> d Allow	<u>R</u> emove Deny □ ^ □ ↓
Permissions for CREATOR OWNER Full control Modify Read & execute List folder contents Read	A <u>d</u> d Allow	Remove Deny □ ^ □ ↓ □ ↓
Permissions for CREATOR OWNER Full control Modify Read & execute List folder contents Read	A <u>d</u> d Allow	<u>R</u> emove Deny □ ^ □ ↓

Click on "Add ... "

Select Users or Groups		×
Select this object type:		
Users, Groups, or Built-In security principals		Object Types
EC2AMAZ-482GODT		Locations
Enter the object names to select ( <u>examples</u> ):	[	<u>_</u> 0001010
IIS APPPOOL\Optitune	[	Check Names
<u>A</u> dvanced	OK	Cancel

Type in "IIS APPPOOL\Optitune" without quotes and press OK.

Permissions for optitune		×
Security		
Object name: C:\optitune <u>G</u> roup or user names: Strain CREATOR OWNER		
SYSTEM Statisticators (EC2AMAZ-48 aptitune Statisticators (EC2AMAZ-482GODT	2GODT\Administra \Users)	ators)
	A <u>d</u> d	<u>R</u> emove
Permissions for optitune	A <u>d</u> d Allow	<u>R</u> emove Deny
Permissions for optitune Full control Modify Read & execute List folder contents	Add Allow	Remove
<u>P</u> ermissions for optitune Full control Modify Read & execute List folder contents Read	Add Allow	Remove

Click on the new "optitune" user, and then make sure the "Modify" permission is allowed. Finally, press OK.

The application pool "optitune" you created before will now have write access to the "C:\optitune" folder.

### **SQL Server Database Setup**

You will need the latest MS SQL 2017 Database Server. If you don't have a paid version, you can download and install the free version (SQL 2017 Express), which can support databases up to 10GB in size.

https://www.microsoft.com/en-us/sql-server/sql-server-editions-express

Also, you will need to install the management tools for SQL Server:

https://docs.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms

Once you have installed SQL Server and SSMS (using the default installation options), start up SSMS to create the OptiTune database.

### **SQL Server Setup**

Visit the following webpage to download and run the SQL Server 2017 Express Edition setup

https://www.microsoft.com/en-us/sql-server/sql-server-editions-express



# sql Server 2017 Express Edition

### <u>B</u>asic

Select Basic installation type to install the SQL Server Database Engine feature with default configuration.

### <u>C</u>ustom

Select Custom installation type to step through the SQL Server installation wizard and choose what you want to install. This installation type is detailed and takes longer than running the Basic install.

# Download Media

Download SQL Server setup files now and install them later on a machine of your choice.

SQL Server transmits information about your installation experience, as well as other usage and performance data, to Microsoft to help improve the product. To learn more about data processing and privacy controls, and to turn off the collection of this information after installation, see the <u>documentation</u>

14.1805.4072.1

Choose "Custom"


Press "Install"

sql Server 2017 Express Edition		© – ×
Downloading install package		
Getting Started with SQL Server		
Thank you for installing Microsoft SQL Server. If you are connecting to SQL Server from a rem prerequisites mentioned in the "Before you get started" file located in the Resources folder.	ote machine, then you nee	d to complete the
	<u>P</u> ause	<u>C</u> ancel
		14.1805.4072.1

Wait for it to download the installation files

# sql Server 2017 Express Edition

Download successful!

Your SQL Server installation will begin shortly...

14.1805.4072.1

☺ – ×

The SQL setup wizard will launch:



Select "New SQL Server stand-alone installation..." at the top

🃸 SQL Server 2017 Setup	– –	×
License Terms To install SQL Server 2017, you	must accept the Microsoft Software License Terms.	
License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Feature Configuration Rules Installation Progress Complete	<ul> <li>MICROSOFT SOFTWARE LICENSE TERMS</li> <li>MICROSOFT SQL SERVER 2017 EXPRESS</li> <li>These license terms are an agreement between Microsoft Corporation (or based on when you live, one of its affiliates) and you. Please read them. They apply to the software name above, which includes the media on which you received it, if any. The terms also apply to any Microsoft</li> <li>updates,</li> <li>updates,</li> <li>Internet-based services, and</li> </ul>	e d Print
	rocessing and privacy controls, please see the Privacy Statement.       < Back	1

Read and accept the EULA, and click "Next"

📸 SQL Server 2017 Setup	-	-		×
Microsoft Update				
Use Microsoft Update to check	for important updates			
License Terms Global Rules <b>Microsoft Update</b> Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Feature Configuration Rules Installation Progress Complete	Microsoft Update offers security and other important updates for Windows and other software, including SQL Server 2017. Updates are delivered using Automatic Updates, the Microsoft Update website. ☐ Use <u>Microsoft Update to check for updates (recommended)</u> <u>Microsoft Update FAQ</u> <u>Microsoft Update Privacy Statement</u>	r Micri or yc	osoft ou can vi	sit
	< <u>B</u> ack <u>N</u> ext >		Cancel	

Click "Use Microsoft Update to check for updates" and click "Next"

髋 SQL Server 2017 Setup		_		×
Install Rules				
Setup rules identify potential p can continue.	oblems that might occur while running Setup. Failures must be corrected before	Setup		
License Terms Global Rules Microsoft Update Product Updates Install Setup Files	Operation completed. Passed: 3. Failed 0. Warning 1. Skipped 0. Hide detail <u>s</u> << <u>View detailed report</u>		<u>R</u> e-	run
Feature Selection	Rule Status			
Feature Rules	Fusion Active Template Library (ATL) Passed			
Instance Configuration	Consistency validation for SQL Server registry keys Passed			
Server Configuration	Computer domain controller Passed			
Database Engine Configuration	Windows Firewall Warning	1		
Consent to install Microsoft R				
Consent to install Python				
Feature Configuration Rules				
Installation Progress				
Complete				
	< <u>B</u> ack	<u>N</u> ext >	Cance	2

Click Next

髋 SQL Server 2017 Setup			- 🗆 ×			
Feature Selection Select the Express features to in	istall.					
License Terms Global Rules Microsoft Update	October 1 Cooking for Reporting Service <u>Features</u> :	ces? <u>Download it fro</u>	<u>m the web</u> Feature description:			
Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Consent to install Microsoft R Consent to install Python Feature Configuration Rules	Instance Features  Database Engine Services  SQL Server Replication  Machine Learning Services  R  Python  Full-Text and Semanti  PolyBase Query Service  Shared Features  Client Tools Connectivity  Select <u>A</u> II  Unselect All	<pre></pre>	The configuration and operation of each instance feature of a SQL Server instance is         Prerequisites for selected features:         Already installed:         Windows PowerShell 3.0 or higher         Microsoft .NET Framework 4.6         Disk Space Requirements         Drive C: 2994 MB required, 12177 MB available			
Installation Progress Complete	Instance <u>r</u> oot directory: Shared feature directory: Shared feature directory ( <u>x</u> 86):	C:\Program Files\Microsoft SQL Server\ C:\Program Files\Microsoft SQL Server\ ): C:\Program Files (x86)\Microsoft SQL Server\				
			< <u>B</u> ack <u>N</u> ext > Cancel			

Leave the default install options as is, and click Next

髋 SQL Server 2017 Setup					_		×
Instance Configuration Specify the name and instance	ID for the instance of SC	QL Server. Instance ID b	ecomes part of	f the installation path.			
License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Consent to install Microsoft R Consent to install Python Eesture Configuration Rules	<ul> <li><u>D</u>efault instance</li> <li>N<u>a</u>med instance:</li> </ul>	SQLExpress					
	Instance <u>I</u> D:	SQLEXPRESS					
	SQL Server directory: Insta <u>l</u> led instances:	C:\Program Files\Micr	osoft SQL Serve	er\MSSQL14.SQLEXPRESS	5		
	Instance Name	Instance ID	Features	Edition	Ve	rsion	
Installation Progress Complete							
				< <u>B</u> ack <u>N</u> ext	>	Cance	

Leave the default options, and click Next

髓 SQL Server 2017 Setup				_	o x
Server Configuration	d collation configuration.				
License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Instance Configuration <b>Server Configuration</b> Database Engine Configuration Consent to install Microsoft R Consent to install Microsoft R Consent to install Python Feature Configuration Rules Installation Progress Complete	Service Accounts       Collation         Microsoft recommends that you use       Service         SQL Server Database Engine       SQL Server Launchpad         SQL Full-text Filter Daemon Launc       SQL Server Browser         Grant Perform Volume Maintenan       This privilege enables instant file is to information disclosure by allow         Click here for details       Section Sectio	a separate account for each Account Name NT Service\MSSQLSSQL NT Service\MSSQLLaun NT Service\MSSQLFDLa NT AUTHORITY\LOCAL Ince Task privilege to SQL Servinitialization by avoiding zero ring deleted content to be account	SQL Server serv Password ver Database En bing of data pag cessed.	ice. Startup <sup>1</sup> Automat Manual Disabled gine Service ges. This may	Fype ic V lead
		< <u>B</u> ack	k <u>N</u> ext	t> (	Cancel

Leave the default options, and click Next

髋 SQL Server 2017 Setup						_		Х
Database Engine Config	uration							
Specify Database Engine authent	ication security mode, a	administrators, data	a directori	es and Temp	DB settings.			
License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Consent to install Microsoft R Consent to install Python Feature Configuration Rules Installation Progress Complete	Server Configuration Specify the authenti Authentication Mod Windows authenti Mixed Mode (SQL Specify the password Enter password: Confirm password: Specify SQL Server a EC2AMAZ-482GOD Add Current User	Data Directories cation mode and a le tication mode L Server authentica d for the SQL Serve dministrators T\Administrator (A Add Re	TempDB administrat tion and W er system a dministrat	User Instance For the D Vindows auth dministrator	es FILESTR atabase Engi nentication) (sa) account	EAM ne. SQL Server a have unrest to the Datab	idministrat ricted acces base Engine	ors ss
				< ]	<u>B</u> ack	<u>N</u> ext >	Cance	el

Press the "Add Current User" button to add the current user, if it has not already been done.

髋 SQL Server 2017 Setup					_		Х
Database Engine Config	juration						
Specify Database Engine authen	tication security mode, administrato	ors, data directorie	es and TempDB	settings.			
License Terms	Server Configuration Data Direct	tories TempDB	User Instances	FILESTREAM			
Global Rules	C Enable Ell ESTREAM for Trans	act-SOL access					
Microsoft Update		act-SQL access					
Product Updates	Enable FILESTREAM for <u>file</u>	e I/O access					
Install Setup Files	Windows share name:	SOLEXPRESS					
Install Rules	windows share name.	oqueri nebo					
Feature Selection	Allow <u>r</u> emote clien	its access to FILES	TREAM data				
Feature Rules							
Instance Configuration							
Server Configuration							
Database Engine Configuration							
Consent to install Microsoft R							
Consent to Install Python							
Installation Progress							
Complete							
complete							
			< <u>B</u> ac	k <u>N</u> ext	>	Cance	I

 $\ensuremath{\mathsf{Press}}$  the "FILESTREAM" tab, and check the first two checkboxes. Then, press Next

髋 SQL Server 2017 Setup		_		×
Consent to install Micr	osoft R Open			
Download and install necessary	pre-requisite.			
License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration <b>Consent to install Microsoft R</b> Consent to install Python Feature Configuration Rules Installation Progress Complete	Microsoft R Open is an enhanced distribution of R made available by Microsoft under the Public License v2. R is © the R Foundation for Statistical Computing. For more information on R-related privit http://r-project.org. By clicking "Accept" you are choosing to download Microsoft R Open and install it on y agreeing to accept patches and updates to this software according to your SQL Server under the software ac	roducts rour maa	General and servi chine, and reference	ices, d
	< <u>B</u> ack <u>N</u> ext >		Cancel	

Accept the agreement, and press Next

髋 SQL Server 2017 Setup		_		×
Consent to install Pyth	on			
Download and install necessary	pre-requisite.			
License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Consent to install Microsoft R <b>Consent to install Python</b> Feature Configuration Rules Installation Progress Complete	Anaconda is a Python distribution released by Continuum Analytics, Inc the Python runtime and certain Python packages from Anaconda will b under the licenses provided to you by Continuum Analytics and its licen Microsoft is making these packages available to you for convenience ar More information about Anaconda is available from Continuum Analyt By clicking Accept, you are choosing to download this software and ins to accept patches and updates to this software according to your SQL S	:. To enable your use e downloaded to you isors. id does not support t ics. tall it on your machin erver update preferen	of this feat r machine nis softwar e, and agro ces.	eeing
	< <u>B</u> ack	<u>N</u> ext >	Cance	<u>ا</u> د

Accept the agreement, and press Next

髕 SQL Server 2017 Setup	-		×
Installation Progress			
License Terms Global Rules Microsoft Update Product Updates Install Setup Files Install Rules Feature Selection Feature Rules Instance Configuration Server Configuration Database Engine Configuration Consent to install Microsoft R Consent to install Microsoft R Consent to install Python Feature Configuration Rules <b>Installation Progress</b> Complete	Install_MsMpi_Cpu64_Action		
	<u>N</u> ext >	Cancel	

Wait for the installation to complete

髋 SQL Server 2017 Setup			-		×
Complete					
complete					
Your SQL Server 2017 installat	ion completed successfully with product updates.				
License Terms	Information about the Setup operation or possible	next steps:			
Global Rules	Featura	Ctatur			~
Microsoft Update	Fedure	Status			
Product Updates	Pull-Text and Semantic Extractions for Search	Succeeded			-
Install Setup Files	R	Succeeded			
Install Rules	Machine Learning Services (In-Database)	Succeeded			
Feature Selection	Oatabase Engine Services	Succeeded			
Feature Rules	SOL Server Replication	Succeeded			~
Instance Configuration					
Server Configuration	Details				
Detabase Facility Configuration	<u>D</u> etails.				
	Install successful.				
Consent to install Microsoft K					
Consent to install Python					
Feature Configuration Rules					
Installation Progress					
Complete					
	Summary log file has been saved to the following lo	ocation:			
	C:\Program Files\Microsoft SQL Server\140\Setup -482GODT 20181026 055734.txt	Bootstrap\Log\20181026 055734\Si	umman	y EC2AN	IAZ
				Close	

Press Close

## Install SQL Server Management Studio (SSMS)

If you have not already installed SSMS, download and run it from:

https://docs.microsoft.com/en-us/sql/ssms/download-sql-server-management-studio-ssms

RELEASE 17.9 Microsoft SQL Server Management Studio
Welcome. Click "Install" to begin.
By dicking the "Install" button, Lacknowledge that Laccont the License Terms and
Privacy Statement.
SQL Server Management Studio transmits information about your installation experience, as well as other usage and performance data, to Microsoft to help improve the product. To learn more about data processing and privacy controls, and to turn off the collection of this information after installation, see the <u>documentation</u> .
Install Close

Click "Install"



RELEASE 17.9 Microsoft SQL Server Management Studi	io
Package Progress	
Microsoft SQL Server 2017 Policies	
Overall Progress	
Cancel	

\_\_\_\_

Wait for the install to finish

**OptiTune Database Setup** 

Start SSMS





Hit "Connect"



Right Click "Databases", and select "New Database..."

New Database							_		×
Select a page	🖵 Script 🔻 😮	Help							
Options     Elegenue	Detelessor			antituma l					
Filegroups	Database <u>n</u> ame:			oputuriej					
	Owner:			<default></default>	>				
	✓ Use full-text in	Use full-text indexing							
	Database <u>fi</u> les:								
	Logical Name	File Type	Fileg	group	Initial Size (MB)	Autogrow	th / Mao	size	
	optitune	ROWS	PR	IMARY	8	By 64 ME	3, Unlimi	ted	
	optitune_log	LOG	Not	Applicable	8	By 64 ME	3, Unlimi	ted	
Connection Server: EC2AMAZ-482GODT\SQLEXPRE Connection: EC2AMAZ-482GODT\Administrator Intervention Properties									
Progress									
Ready	<				Add		Ē	Remove	>
						Oł	(	Car	ncel

Enter the name "optitune", and click on the "Filegroups" icon at the top left.

New Database						_		×
Select a page General	🖵 Script 🔻 😭	Help						
<ul><li>Øptions</li><li>Filegroups</li></ul>	R <u>o</u> ws							
	Name	Files	Read-Only	Default		Autogr	row All File	s
	PRIMARY	1			$\checkmark$			
				<u>A</u> dd Filegrou	qu	Ē	<u>R</u> emove	
	<b>EILESTREAM</b>							
	Name		FILESTREAM Files	Read-Only	/	Default		
	Files		0	[				
Connection								
Server:								
Connection:				A <u>d</u> d Filegrou	qu	F	Re <u>m</u> ove	
EC2AMAZ-482GODT\Administrator	MEMORY OPT	IMIZED DA	ATA					
View connection properties	Name			FILESTREAM	1 Files			
Progress								
Ready				Add Filegrou	q	F	Remo <u>v</u> e	
11					(	ОК	Cano	cel

Press the "Add Filegroup" buton, and under the name type "Files". The screen should match what is shown above.

New Database					_		×		
Select a page	🖵 Script 🔻 🕜 Help	p							
General									
Filegroups	Database <u>n</u> ame:		optitune						
	Owner:		<default></default>						
	✓ Use full-text indexi	<u> </u>							
	Database <u>fi</u> les:								
	Logical Name	File Type		Filegroup	Initial Size (MB)	Autogrow	th / N		
	optitune	ROWS Data		PRIMARY	8	By 64 MB	3, Uni		
	optitune_log	LOG		Not Applicable	8	By 64 MF	3, Uni		
	optitune_files	FILESTREA	M Data	Files		Unlimited	I		
Connection Server: EC2AMAZ-482GODT\SQLEXPRE Connection: EC2AMAZ-482GODT\Administrator Y									
Progress									
Ready	<			<u>A</u> dd		<u>R</u> emove	>		
					ОК	Cano	;el		

Go back to the General page, and click "Add" at the bottom. Enter "optitune\_files" for the name, and select "FILESTREAM Data" for the type. Finally, press OK to create blank database.



Select the "optitune" database on the left

Press the "open" icon, and select the schema script that is included in the OptiTune install package, which would typically be: c:\optitune\optitune-schema.sql



**Important** – make sure the "optitune" database is selected in the drop down in the top left (to the left of the "execute" button), and then click on "Execute" to create the optitune schema.



Verify that you can expand the "Tables" folder of the database, and that you see some new tables that were created by the script.



Next, right click on the "Logins" folder under "Security", and select "New Login"

📕 Login - New				_		×
Select a page	🖵 Script 🔻 😮 Help					
<ul> <li>General</li> <li>Server Roles</li> <li>User Mapping</li> <li>Securables</li> <li>Status</li> </ul>	Login <u>n</u> ame: <u>Windows authentication</u> <u>SQL Server authentication</u> <u>Password:</u> <u>Confirm password:</u> <u>Specify old password</u>	IIS APPPOOL\optitune			S <u>e</u> arch	1
	Old password: Enforce password policy Enforce password expiration User must change password Mapped to certificate	tion vord at next login		~		
Connection	<ul> <li>Mapped to asymmetric key</li> </ul>			$\sim$		
Server: EC2AMAZ-482GODT\SQLEXPRE	Map to Credential Mapped Credentials	Credential	Provider	~	<u>A</u> dd	
EC2AMAZ-482GODT\Administrator						
Progress					Remoy	<u>/</u> e
Ready	Default <u>d</u> atabase: Default lan <u>g</u> uage:	master <default></default>		~		
				ОК	Cano	el

Type in "IIS APPPOOL\optitune" (without quotes) in the Login Name text box.

Login - New				_		×
Select a page	Script	🔻 🕜 Help				
Server Roles						
User Mapping	Users ma	ppe <u>d</u> to this login:				
Securables	Мар	Database	User	Default Schema	в	
- Status		master				
		model				
		msdb				
		optitune	IIS APPPOOL\optitune			
		tempdb				
Connection Server: EC2AMAZ-482GODT\SQLEXPRE Connection:	Guest	account enabled for role membership for coessadmin	or: optitune or: optitune			
EC2AMAZ-482GOD I VAdministrator	db_ba	ackupoperator				
View connection properties		atareader atawriter				
	dbdd	dladmin				
	db_de	enydatareader				
Progress		enydatawriter				
Ready	☐ db_se	ecurityadmin				
				ОК	Ca	ncel

Click on "User Mapping" on the left, and then click on the "optitune" checkbox in the top right section of the screen. Click on "db\_owner" as well. Finally, press OK to add the IIS App pool user to SQL server, mapped to the OptiTune database.



You should then see the new IIS App Pool user added to SQL server.

#### **Geo Location Setup**

OptiTune includes the ability to perform basic geo location of computers based on IP address.

You will need to signup for an account at <a href="https://lite.ip2location.com/">https://lite.ip2location.com/</a> and download the DB11 CSV database to c:\optitune\ip2location\IP2LOCATION-LITE-DB11.CSV before starting the import. You can repeat this process every few months, as this geo location database will be updated periodically.

To start the import, open SSMS and navigate to the OptiTune database.



Go to Databases > optitune > Programmability > Stored Procedures, and click on dbo.ImportAndCacheIP2Location.

🖲 Execute Procedure - [dbo].[l	mportAndCack	nelP2Location]			_		×
Select a page	🗐 Script 👻	? Help					
Je General							
	Parameter	Data Type	Output Parameter	Pass Null Value	Valu	e	
<b>0</b> <i>i</i>							
Connection							
Server: EC2AMAZ-482GODT\SQLEXPRE							
Connection:							
EC2AMAZ-482GODT\Administrator							
View connection properties							
_							
Progress							
Ready							
.db.	L						
						-	
				OF		Cano	iel

Rick click on dbo.ImportAndCacheIP2Location, and select "Execute stored procedure..." Press OK to begin importing location data from c:\optitune\ip2location. If you are not using C:\optitune, you will need to modify the stored procedure with the correct path before executing the stored procedure.



It will take several minutes to complete.

### Web.Config Customization

Finally, once you have setup the OptiTune Database and OptiTune Website, you will need to further edit the web.config file located at C:\optitune\web\Web.config

Here is an example web.config, note that it will vary depending on your version of the OptiTune management server. The areas highlighted in yellow must be examined and customized as needed. You can also search for \*\*customize\*\* to find settings that can be customized.

```
<?xml version="1.0" encoding="UTF-8"?>
<!--
 For more information on how to configure your ASP.NET application, please visit
 http://go.microsoft.com/fwlink/?LinkId=169433
 -->
<configuration>
   <!-- Define the custom configuration sections in the <configSections> element... -->
   <configSections>
        <sectionGroup name="OptiTune">
            <section name="RelayServers"</pre>
type="Optitune.RemoteConnect.RelayServerConfigSection" />
        </sectionGroup>
   </configSections>
   <appSettings>
        <!-- Optitune Settings -->
        <add key="DebugMode" value="2" />
        <add key="DebugDir" value="C:\Optitune\Logs" /><!-- **customize** writeable</pre>
location to store logs -->
        <add key="LogFile" value="C:\Optitune\Logs\OptituneSystem.log" /> <!--</pre>
**customize** name of OptiTune system log file -->
        <add key="LogCategories" value="31" />
```

```
<!-- Set to "1" to have secure pages check for https protocol initially,
otherwise "0" -->
        <add key="checkhttps" value="1" />
        <!-- The interval in minutes that OptiTune should check for periodic events -->
        <add key="PeriodicEventsInterval" value="15" />
        <!-- Chart Control Settings -->
        <add key="ChartImageHandler"
value="storage=memory;timeout=60;deleteAfterServicing=false;privateImages=false;" />
        <!-- Static Content Settings, used mostly for mail templates -->
        <add key="StaticContentUrl" value="https://manage.opti-tune.com" /> <!--</pre>
**customize** the https address of your OptiTune server -->
        <!-- Dynamic Content, webpages, management console, used mostly for mail
templates -->
        <add key="DynamicContentUrl" value="https://manage.opti-tune.com" /> <!--</pre>
**customize** the https address of your OptiTune server -->
        <!-- Don't allow autocomplete for the login page -->
        <add key="AllowLoginAutoComplete" value="0" />
        <!-- These values must be specified to allow the compilation of nsis based
installers for the OptiTune agent -->
        <add key="NSISDirectory" value="C:\optitune\nsis" /> <!-- **customize** -->
        <add key="TempDirectory" value="C:\optitune\installers" /> <!-- **customize** -->
        <!-- Twilio Credentials -->
        <add key="TwilioSid" value="XXXX"/> <!-- **customize** -->
        <add key="TwilioAuthToken" value="XXXXX"/> <!-- **customize** -->
        <add key="TwilioFromNumber" value="4255555555"/> <!-- **customize** -->
   </appSettings>
   <!-- Provide the custom configuration settings OUTSIDE of <system.web>. You can have
multiple relay servers. -->
   <OptiTune>
        <RelayServers>
            <Servers>
                <add name="relay.opti-tune.com" />
            </Servers>
        </RelayServers>
   </OptiTune>
   <connectionStrings>
       <!-- **customize** The first line is if you are using a windows account in SQL
server, the second is for an SQL user account -->
  <add name="Optitune"
connectionString="Server=localhost\SQLEXPRESS;Database=Optitune;Trusted Connection=Yes;Mu
ltipleActiveResultSets=True;Connection Timeout=1200;"/>
        <!--<add name="Optitune"
connectionString="Server=localhost;Database=Optitune;User
Id=optitune; Password=mypassword123; MultipleActiveResultSets=True; Connection
Timeout=1200;"/>-->
   </connectionStrings>
   <!-- Content Removed For Clarity ... -->
```

```
<system.net>
        <mailSettings>
            <smtp>
                <!-- **customize** Install the SMTP service on this server, or supply
your own SMTP server details here -->
                <network defaultCredentials="true" host="localhost" port="25" />
            </smtp>
        </mailSettings>
    </system.net>
    <runtime>
        <gcAllowVeryLargeObjects enabled="true" /> <!-- This allows us to allocate</pre>
arrays larger than 2GB in size -->
   </runtime>
    <!-- Console directory permissions -->
    <location path="console">
        <system.web>
            <authorization>
                <allow roles="MasterAdmin" />
                <allow roles="Admin" />
                <deny users="*" />
            </authorization>
        </system.web>
    </location>
    <!-- Content Removed For Clarity ... -->
</configuration>
```

The only two fields which **must** be customized in all cases are StaticContentUrl and DynamicContentUrl. The rest may be left as is if you followed the instructions in this guide carefully.

#### **SMTP Server Setup**

If you want OptiTune to be able to send alert emails, you will need to either install the SMTP server on Windows, or provide SMTP server connection details.
The default settings above assume that there is a local SMTP server running on the same server as IIS hosting the OptiTune website. If you want to use a relay server on a different machine (e.g. gmail), you can find the documentation for this configuration element here: <u>https://msdn.microsoft.com/en-us/library/ms164242(v=vs.100).aspx</u>

#### **Local SMTP Server configuration**

If you elect to use the local Windows SMTP server that is installed on the same server as IIS, follow these instructions to complete the setup of SMTP



Search for "IIS 6.0", and launch the result found from the start screen



The screen shown above will come up. You will need to enable the SMTP service, and configure it. Right click on "SMTP Virtual Server #1", and select "Properties".

[SMTP Virtual Server #1] Properties 2
General Access Messages Delivery LDAP Routing Security
Fully-qualified domain name: otsample
I <u>P</u> address:
(All Unassigned)
Limit number of connections to:
Connection time-out (minutes):
Enable logging
Active log format:
W3C Extended Log File Format
OK Cancel Apply Help

Click on the "Delivery" tab

[SMTP Virtual Server #1	1] Properties ? ×
General Access Messages Delivery LD	AP Routing Security
Outbound	
First retry interval (minutes):	15
Second retry interval (minutes):	30
Third retry interval (minutes):	60
Subsequent retry interval (minutes):	240
Delay notification:	12 Hours 💌
Expiration timeout:	2 Days 💌
Local	
Delay <u>n</u> otification:	12 Hours -
Expiration timeout:	2 Days 💌
Outbound Security Outbound connect	ctions
OK Cancel	Apply Help

Click "Advanced ... "

Advanced Delivery ×
Maximum hop count:
Masquerade <u>d</u> omain:
<u>Fully-qualified domain name:</u>
bptitune.mycompany.com Check DNS
<u>S</u> mart host:
Attempt direct delivery before sending to smart host
Perform reverse DNS lookup on incoming messages
OK Cancel <u>H</u> elp

Enter the full DNS name of the optitune website, for example optitune.mycompany.com, and press OK. Then, click on the "Security" tab.

[SMTP Virtual Server #1] Properties ? ×
General Access Messages Delivery LDAP Routing Security
Grant operator permissions to these Windows user accounts.
Operators:
INT AUTHORITY\NETWORK SERVICE
Add <u>R</u> emove
OK Cancel <u>A</u> ppiy Help

Click Add...

Select Users or Groups	x
<u>S</u> elect this object type:	
Users, Groups, or Built-in security principals	Object Types
From this location:	
OTSAMPLE	Locations
Enter the object names to select ( <u>examples</u> ):	
IIS_IUSRS	Check Names
Advanced OK	Cancel

Click on Object Types and click on the Groups checkbox. Then, enter "IIS\_IUSRS" Then press OK.

[SMTP Virtual Server #1] Properties ? ×
General Access Messages Delivery LDAP Routing Security
Grant operator permissions to these Windows user accounts.
Operators:
MT AUTHORITY NETWORK SERVICE
≝≹ IIS_IUSRS
OK Cancel <u>A</u> pply Help

Finally, press OK.

Next, you will need to enable the SMTP service to start automatically, and start the service.

Open the "Services" administrative tool, and locate the "Simple Mail Transport Protocol (SMTP)" service. This was installed above when you added the IIS role to the server.

Eile       Action       Yiew       Help         Image: Services (Local)       Image: Services (Local)       Image: Services (Local)         Simple Mail Transfer Protocol (SMTP)       Simple Mail Transfer Protocol (SMTP)       Name       Descr         Start the service       Resultant Set of Policy Provider       Provid         Start the service       RPC Endpoint Mapper       Resolution and Remote Access       Offers         Description:       Transports electronic mail across the network.       Secure Socket Tunneling Protocol Service       Provid         Server       Support       Service       Service       Service	iption ^ des a n ; routi ves RP
Image: Services (Local)       Image: Services (Local)         Simple Mail Transfer Protocol (SMTP)       Simple Mail Transfer Protocol (SMTP)         Start the service       Name         Start the service       Resultant Set of Policy Provider         Description:       RPC Endpoint Mapper         Transports electronic mail across the network.       Secure Socket Tunneling Protocol Service         Services (Local)       Secure Socket Tunneling Protocol Service	iption <u>^</u> des a n ; routi ves RP
Services (Local)       Simple Mail Transfer Protocol (SMTP)       Name       Description:         Start the service       Resultant Set of Policy Provider       Provider         Start the service       RPC Endpoint Mapper       Resolution and Remote Access         Description:       Transports electronic mail across the network.       Secure Socket Tunneling Protocol Service         Security Accounts Manager       The securit of Security Accounts Manager       The securit of Securit Superior Superior	iption <u>^</u> des a n ; routi ves RP
Simple Mail Transfer Protocol (SMTP)       Name       Descr         Start the service	iption ^ des a n s routi ves RP
(SMTP)       Resultant Set of Policy Provider       Provider         Start the service       Routing and Remote Access       Offers         Secondary Logon       Enable         Description:       Secure Socket Tunneling Protocol Service       Provid         Transports electronic mail across the network.       Secure Socket Tunneling Protocol Service       Provid         Server       Server       Support       Support	des a n s routi ves RP
Start the service       Routing and Remote Access       Offer:         Start the service       RPC Endpoint Mapper       Resolution         Description:       Secure Socket Tunneling Protocol Service       Provid         Transports electronic mail across the network.       Security Accounts Manager       The st         Operation       Server       Support         Operation       Support       Support         Support       Support       Support         Support       Support       Support	s routi ves RP
Start the service     RPC Endpoint Mapper     Resol       Secondary Logon     Enabl       Description:     Secure Socket Tunneling Protocol Service     Provid       Transports electronic mail across the network.     Security Accounts Manager     The st       Operation     Security Accounts Manager     Support       Operation     Security Accounts Manager     Support	ves RP
Description: Secure Socket Tunneling Protocol Service Provid Transports electronic mail across the network. Secure Socket Tunneling Protocol Service Support Of the security Accounts Manager Server Support	
Description: Secure Socket Tunneling Protocol Service Provid Transports electronic mail across the network. Security Accounts Manager The st Server Suppo	es star
Transports electronic mail across the Security Accounts Manager The sinetwork. Server Support	des su
Network. Suppo	tartup
	orts fil
Shell Hardware Detection Provid	des no
Simple Mail Transfer Protocol (SMTP) Trans	ports
Smart Card Mana	ges ac
Smart Card Device Enumeration Service Create	es soft
Smart Card Removal Policy Allow	s the s
SNMP Trap Receiv	ves tra ≡
Software Protection Enabl	es the
Special Administration Console Helper Allow	s adm
😪 Spot Verifier Verifie	es pot
SQL Full-text Filter Daemon Launcher (SQLEXPRESS) Servic	e to la
SQL Server (SQLEXPRESS) Provid	des sto
SQL Server Agent (SQLEXPRESS) Execu	tes jo
SQL Server Browser Provid	des SQ
SQL Server CEIP service (SQLEXPRESS) CEIP :	service 🗸
< III	
Extended Standard	>
	>

Right click on "Simple Mail Transport Protocol (SMTP)" and select Properties.

Simple Mail Tra	nsfer Protocol (SMTP) Properties (Loca 🗴		
General Log On	Recovery Dependencies		
Service name:	SMTPSVC		
Display name:	Simple Mail Transfer Protocol (SMTP)		
Description:	Transports electronic mail across the network.		
Path to executable C:\Windows\syste	e: em32\inetsrv\inetinfo.exe		
Startup typ <u>e</u> :	Automatic 🗸		
Service status:	Running		
<u>S</u> tart	Stop Pause Resume		
You can specify the start parameters that apply when you start the service from here.			
Start parameters:			
	OK Cancel <u>Apply</u>		

Set the startup type to "Automatic", and press the "Start" button. Then press OK.

Your SMTP server should be up an running. You can test it from the "mail templates" page in the OptiTune website to see if it works.

### **Twilio.com Setup**

If you want to allow the management server to send SMS text messages, you will need to sign up for an account at <u>https://www.twilio.com</u> and fill in the following fields in web.config

```
<!-- Twilio Credentials -->
<add key="TwilioSid" value="<mark>XXXX</mark>"/> <!-- **customize** -->
<add key="TwilioAuthToken" value="<mark>XXXX</mark>"/> <!-- **customize** -->
<add key="TwilioFromNumber" value="<mark>4255555555</mark>"/> <!-- **customize** -->
```

The TwilioSid and TwilioAuthToken are credentials for your Twilio Account, and TwilioFromNumber is the authorized mobile number that will send the text messages, and appear on the caller id.

# **Post Installation**

Importantly, you need to install an SSL certificate for the OptiTune website, and set the "optitune" website to use it in its "bindings".



click on the "optitune" website, and then click on "bindings" at the right part of the screen.

Add Site Binding		? X
Ipe:       IP address:         https       ✓         All Unassigned         Host name:         optitune.mycompany.com         Require Server Name Indication	P <u>o</u> rt: ▼ 443	
SSL certificate:		
Not selected V	Se <u>l</u> ect	iew
	ОК	Cancel

Type in the host name, and select the SSL certificate you installed with IIS. The vendor of your SSL certificate will be able to provide you with detailed instructions for generating the certificate request and completing the certificate request in IIS.

Press OK to add the binding for the OptiTune website. Finally, remove the http binding for the OptiTune website, and check that the firewall rules for the server allow HTTPS incoming.

### Setting up your account

Finally, navigate to your brand new OptiTune website, using its https:// prefix, for example <a href="https://optitune.mycompany.com">https://optitune.mycompany.com</a>



In this screenshot, we have navigated to the website on the local webserver, for illustration purposes. You will need to remove the http binding, and add the https binding described above, and navigate using the real url to setup your organization. The OptiTune agent needs to access this server using the HTTPS protocol, so you must install an SSL certificate before proceeding.

Click on "Registration Page" under "Setup Account", and enter the registration code you received when you purchased OptiTune licenses to complete the setup of your first organization in OptiTune.

## **Summary**

To complete the OptiTune installation, all sections of this document need to be followed carefully. If you have any questions or problems deploying the website, please contact us at <u>customer support@bravurasoftware.com</u>