

Email and Amazon Web Service

Setting Up Goolara Symphonie on an AWS Server



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INTRODUCTION



This guide goes over the basic setup in AWS and how to configure Symphonie. Amazon Web Services (AWS) is a subsidiary of Amazon.com that provides on-demand cloud computing platforms for businesses. Goolara's Symphonie email marketing system can be used with AWS as a much more powerful alternative to Amazon's Simple Email Service (SES). Symphonie has long been available in both hosted and on-premise configurations. With AWS, you now have a "best of both worlds" third method of running Symphonie.

In its hosted configuration, Symphonie runs on computers purchased and maintained by Goolara in a colocation facility, while the on-premise version is installed and runs on your own computers. The hosted and on-premise versions are the same. The AWS version of Symphonie is also the same software, but is installed on a computer that is part of the AWS cloud. It uses the on-premise license, which allows unlimited sending. No additional payment is required to send email using Symphonie with this configuration. Once the Symphonie software is installed in AWS it can be used perpetually to send email as fast as the license allows with no additional charges from Goolara. For large volume senders this can mean a considerable cost savings over traditional hosted pricing plans.

For those customers who have moved much of their infrastructure to AWS, the ability to install Symphonie into their cloud means that Symphonie becomes part of their local infrastructure, and is able to have a high-speed, firewalled access to other internal resources, such as database servers, POS, CRM, or other systems. Goolara sells software only, not hardware, which enables Symphonie to be installed in AWS. Goolara does not add any "back-door" or other methods to be able to access our software, so Goolara will not have access to your system or data, unless you explicitly request it.

CHAPTER 1: AWS SERVICES



AWS has a large number of services, and a myriad of options, so no two customers are likely to configure things identically. If you are familiar with AWS you may be able to breeze through this guide quickly, but for those who are new to AWS, we'll attempt to document some of the options.

The main service you will need from AWS is their EC2 offering. This gets you a computer that has shared resources, but is yours to use as a dedicated machine. There are options for Linux, and several different options for Windows, but Symphonie is a .NET Windows application, so that operating system must be chosen. The other service you'll need is Microsoft SQL Server. This can be purchased as a separate service in AWS, or as a bundle of EC2 with SQL Server.

The first decision point for creating your EC2 instance is the operating system. Windows is required, but you have options for different versions of Windows. You can go back as far as Windows Server 2003 and 2008, but to run Symphonie you need at least Windows Server 2008 R2, and given the option, 2012 or later is recommended. When purchasing a Microsoft license to run on your own hardware, a DataCenter or Enterprise license is more expensive than the Standard license, but for AWS it appears they are all the same price. Symphonie only needs the Standard version of Windows, but will also work with a more expensive version.

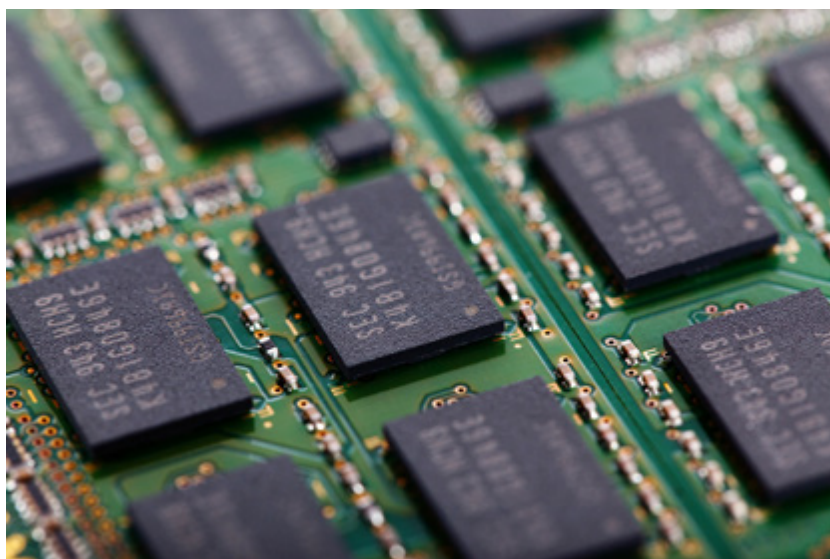
Options exist for Windows with SQL Server, in which case you must find the combination of the version of Windows you want with the version of SQL Server. It doesn't appear that AWS charges any different amounts for the year-release of SQL Server, but does have different pricing for Express, Web, Standard, or Enterprise version of SQL Server. Express should not be used except for testing or a very small installation of

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Symphonie. The Web version is for “web facing applications.” Symphonie is an application that is accessed through the web, so it would seem to qualify, but you can check with your lawyers to see if they agree. The “Web” version has all the features needed to support Symphonie. If you want advanced replication or other features that are only available in more expensive versions of SQL Server you’ll need to pay for a more expensive license. Symphonie works well with versions of SQL Server from 2008 forward.



CHAPTER 2: DETERMINING RAM



If you purchase computer hardware yourself, the cost of RAM is fairly low, at least in small quantities. As a quick example, as of this writing Dell charges \$150 for 4GB memory strips, and \$225 for 8GB strips. This pricing may vary by machine, but in this example it costs \$75 for 4 GB of additional memory, as a one-time purchase cost. Since RAM has been cheap, Symphonie is designed to reduce the cost of the SQL Server by caching some commonly used data in memory. This

means that in a big system that sends many large postings of hundreds of thousands of recipients, Symphonie may take 16GB or more of RAM. When purchasing this hardware it only costs a few hundred dollars, as a one-time cost, for this memory. However, AWS pricing is charged on an hourly basis and is significantly driven by the amount of RAM in the system.

One of the challenges in picking the AWS configuration to use for Symphonie is determining how much memory you will need. The smallest AWS configuration, which is in the free tier, is 0.5GB of RAM, which is also the smallest amount of memory that Microsoft says Windows needs to run. The decision must be made for both the EC2 instance running the Symphonie instance, and probably the IIS web sites, but may also be where SQL Server is run, depending on the option selected. AWS has the option for SSD drives to use for database storage, and these drives are quite fast, so you may be able to get by with less RAM for SQL Server, but traditionally, the more data can be cached in RAM, the faster the system, so many people like to load up their SQL Servers with 64 or 128GB or more of RAM. This is possible with AWS, but would be very expensive.

CHAPTER 3: THE SYMPHONIE COMPONENTS



There are four components to a Symphonie installation: the backend service, the website that provides the administrative interface, the website that provides the user (external) interface, and the SQL Server database server. The web sites run under Windows's IIS, which is available for no extra cost in the Server version of Windows. These four Symphonie components can be installed on one machine, or on four or more machines, as desired. The backend service can only be

run from one machine, but the web sites can run on multiple machines, and you may have multiple instances of each of the web site, if desired. The backend service can communicate with multiple SQL Servers, if the partitioning option is purchased for Symphonie.

For this guide we will assume that you will install the Symphonie backend service and the two web sites on a single machine, with options detailed for SQL Server installed also, or as a separate installation.

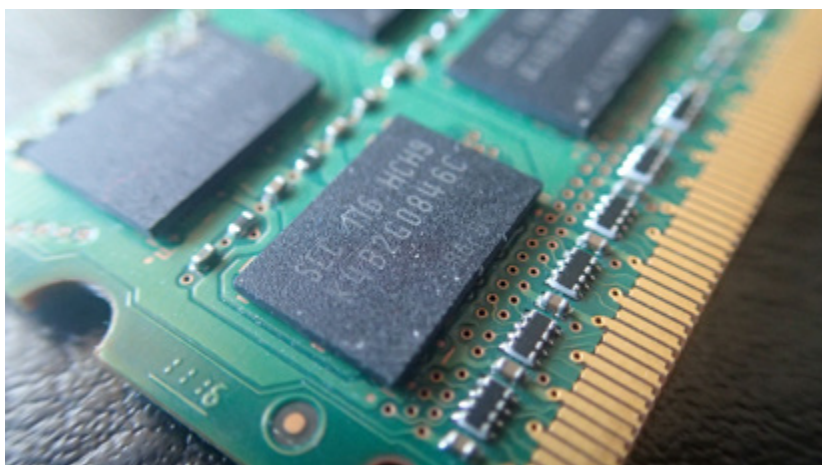
Here are some minimums that seem reasonable for a Symphonie installation:

- 1 GB for Windows. Although the minimum for Windows Server is listed as 0.5GB by Microsoft, it is hard to find any version of Windows which is actually using only this small amount.
- 1 GB IIS. The two web sites running on IIS need some memory.
- 1 GB SQL Server. This is the absolute minimum recommended by Microsoft. Their recommendation is a minimum of 4GB, and more if possible.
- 0.5 GB Symphonie.

Symphonie can run in around 0.5GB of RAM if the membership size is small. If you have 50,000 recipients or less, and only one mailings being sent at a time, you may be able to run in 0.5 GB. As the membership size increases, and especially as the recipient count in mailings goes up, and more mailings are pending, the more memory Symphonie will need.



CHAPTER 4: AUTO SCALING



AWS has a feature to auto scale the number of instances based on load. You can define parameters that will cause EC2 instances to be brought on line as demand grows. For many applications this could be very useful, and could help to reduce the cost during low utilization periods. However, this method will not work well with an email marketing application like Symphonie. One issue is that

email marketing must use static IP addresses that are always available. If a new instance is brought on-line, it cannot share that same static IP address. It could potentially have a static IP address assigned, but with ethical email marketing the IP addresses used for sending should also be available to receive bounce mail and email-based unsubscribes. If the instance holding the static IP address is not running, it cannot be receiving email. Therefore, to scale an email marketing application like Symphonie requires more memory, or possible more CPUs, in an existing instance. Therefore, bringing up an additional EC2 instance with a different IP address will not help scale Symphonie.

From what we have seen, it is possible to change the resources assigned to an EC2 instance, but the work involved is non-trivial and does require downtime. An EC2 instance can be shutdown, and the disk drive (EBS) system can be reassigned to a new EC2 instance. The static IP address would also need to be moved to the new instance. It takes some time to make these changes, and during that time the system is not responding to open, clickthroughs, unsubscribes, bounce mail, and more. So it is not an easy way to scale out in a hurry.

CHAPTER 5: PRICING



How much it will cost you to set up your AWS account and use Symphonie will depend on several factors. Here are some breakdowns on the pricing profiles for small and medium installations.

Small Installation

Based on the values in the previous chapter, the minimum installation of Symphonie without SQL Server is 2.5GB. Currently Amazon offers a 2 GB system and a 4 GB system, so you'll need the 4 GB system. There are other factors which could

increase the costs, but the minimum cost for this system, as of March 2018, is \$0.0644 per hour. This means the cost is \$1.54 per day, or \$564 for the year.

To add SQL Server, Web Edition, as installed software in the partition increases the memory requirement. 2.5 GB was needed without SQL Server, and adding Microsoft's recommended minimum memory of 4GB gets the total to 6.5 GB. Amazon offers an 8 GB system for \$0.1918 per hour. This would cost \$4.60 a day, or \$1,680 a year.

The SQL Server instance can be purchased separately. As with all the AWS products, there are many options. One of the cheapest is an 8 GB system running the Web edition for \$0.311 per hour. That's \$7.46 per day, or \$2,724 per year.

This then totals to two options. An EC2 instance with SQL Server included for a minimum of \$1,680 per year, or an EC2 instance without SQL Server for \$564 per year plus a separate SQL Server for \$1,680 per year, for a total of \$2,244 a year.

Medium Installation

If you have several hundred thousand recipients that you send to several times a week, you'll need a medium-sized installation. The EC2 instance should have at least 8 GB for Symphonie, so the next tier for AWS is a 16 GB installation. We'll assume you use a separate instance of SQL Server. The

“The Symphonie license is perpetual and allows for unlimited sending with no additional payments to Goolara.”

Amazon price for this is a minimum of \$0.2266 per hour. That’s \$5.44 a day, or \$1,985 per year. Let’s bump the SQL Server up to 16 GB of RAM, which changes the price to \$1.102 per hour. That’s \$26.44 a day, or \$9,653 a year. That makes the total for these two components a minimum of \$11,638 for the year.

Symphonie Pricing

The pricing figures do not include the cost for Symphonie. A license for Symphonie is a one-time purchase, with optional yearly cost for support and maintenance. Deliverability and monitoring services can also be purchased on a monthly basis. The license for Symphonie is based on two factors: the unique email addresses in the system, and the sending speed. All features are included in a license purchase. As noted previously, the license is a perpetual license that allows for unlimited sending for no additional payments to Goolara. The smallest license Goolara sells is for 25,000 unique email addresses sending at 2500 messages/hour for \$2,875. For different capacities, please contact Goolara.

CHAPTER 6: SENDING EMAIL WITH AWS



AWS allows you to send email from your own EC2 partition. Amazon's competitor, Microsoft Azure, currently does not allow email to be sent from their network. AWS features their own email sending engine, SES, which can be used as an email relay. Some email marketing software uses SES as their email delivery engine. Symphonie has its own SMTP engine included in the product, so there is no need to use SES. You could use

Symphonie's mail engine to relay mail to SES, but it would reduce the features in Symphonie and cost extra for SES, so there's no good reason for this option.

Amazon allows you to purchase a static IP address, which is a requirement for email marketing. You can then request to set the reverse DNS information for this IP address, which is another requirement for successful email delivery. The same form that allows you to request a reverse DNS name also allows you to request a higher send limit for your SMTP traffic. This form should be completed before sending is started with AWS.

CHAPTER 7: DISK DRIVE SPACE



When creating an EC2 instance you must assign a hard drive to the instance, which is controlled through Amazon's EBS service. The default size is 30 GB of SSD storage. When Windows is installed it looks like there is about 8-10 GB free for your use. It appears this size of storage is free from Amazon, but if you need more storage there would be a charge. Symphonie stores all the critical data in the database, so there is little need for local storage. Logs are written

to disk, and the bounce messages can optionally be saved to disk. These can add up to a fair amount of space in a busy system, so it is wise to keep an eye on the usage. However, it is certainly not data that needs high speed drives, so the option to use cheaper magnetic storage, rather than SSD, is one that may work out well.

CHAPTER 8: ADDITIONAL AWS CONFIGURATION



This is a general guide to using Symphonie with AWS, not a step-by-step instruction manual. There are so many options with AWS that step-by-step instructions would likely only apply to a small subset of users. However, here are a few more things to be aware of with the AWS setup.

A permission group has to be established, and the default setup is no access. So you will need to grant access to the SQL Server from your ECs partition and from your office machines. It is convenient to use Remote Desktop to log into your EC2 instance, but you'll need to go through a screen to get a password after you establish a unique key. Once this is done, the password appears to remain valid, but will get reset if you shutdown your instance. Shutting down the instance stops the billing, but also releases the non-static IP addresses and resets the Remote Desktop password, so there are drawbacks to doing this.

Amazon has options for automatic replication of data across different geographical locations, but this adds to the cost. Support can also be purchased at different tiers of responsiveness.

For information about any of the AWS features, please refer to the documentation provided by Amazon.

CONCLUSION

If you are planning to move your computing platform to an AWS cloud-based environment, Goolara Symphonie can be used in its on-premise deployment installed on the AWS platform. Symphonie is sold as a perpetual license, so once purchased, you can send as much email as you want for no additional costs. The ability for Symphonie to run on AWS computers means companies that have moved their infrastructure to the cloud can now have an integrated email marketing solution that has local access to other infrastructure components, such as databases, POS systems, CRM's, and more, all within the secured private cloud offered by AWS.

Symphonie uses the EC2 and RDS services from Amazon. AWS has many different options for the version of Windows or SQL Server to install, and different pricing significantly driven by the amount of RAM needed. You can pick the version of Windows and SQL Server based on your needs, with Symphonie supporting many versions of both of these. Symphonie uses small amounts of RAM for low volume email marketing, but can take more memory for higher volumes, so determining the minimum RAM to purchase from AWS can be a bit challenging.

AWS allows for static IP addresses, which are needed for email marketing, and does allow email to be sent from your EC2 instance, unlike their competitor, Microsoft Azure. AWS features their own email relay, SES, but that is not needed by Symphonie since it features its own, integrated SMTP mail sending engine.

Please contact Goolara if you have any questions about running Symphonie in AWS.



About Goolara

Goolara has been in the email marketing business since 2005. Symphonie, Goolara's premiere email marketing solution is available in on-premise and cloud-based, SaaS deployments. The powerful software features many advanced capabilities, such as full-featured dynamic content, transactional and triggered email, and customizable report generation features. It is easy to use and runs from a browser-based interface using Chrome, Firefox, Internet Explorer, or Safari. Goolara is headquartered in Moraga, California and can be found online at www.goolara.com.

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