

Savvis Symphony Database Startup Guide Microsoft SQL

Quick Look

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About Your Service

Symphony Database is a highly available and scalable cloud based relational database platform built on Microsoft SQL Server. With Symphony Database developers do not have to install, configure, maintain or manage any database server software. High availability and fault tolerance are built into the architecture and no systems administration is necessary. Because Symphony Database uses Microsoft SQL Server as its underlying technology, existing client applications and software require little to no modification to begin using the service. Additionally, the same powerful development and management tools used for traditional Microsoft SQL Server deployments work seamlessly with Symphony Database (including the familiar T-SQL based relational model).

Purchasing a Symphony Database provides you with:

- Assured access to compute capacity with the ability to burst on CPU
- Tiered storage billed by usage
- Dedicated firewall rules and a TCP TDS listener in MSSQL
- An SFTP site for access to your files
- Portal based user and role management.

The Symphony Database portal has been designed to be used in conjunction with database management tools like SQL Server Management Studio (SSMS) providing very little limitations from a traditional environment in regards to database management and design.

When Savvis initially configures your Symphony Database service, an Admin account is created that you can use to access your databases for administrative purposes. The Admin account password is randomized and not provided after installation, the password must be reset through the SavvisStation Portal in order to use the account. If you are going to use Microsoft SQL Server Management Studio (SSMS) to manage your databases, and would like to see the database and all of its objects in object explorer, you will need to use this account.¹

Once you have initiated a Symphony Database configuration, you may create a database using an empty template or using a pre-existing backup. The route you choose will depend on your application. To import Databases into your Symphony Database you will need to enable SFTP access which is covered later in this document.

Access to your Symphony Database databases is limited to the IP Addresses and/or Subnets you allow in the Symphony Database firewall.

¹ This requirement is due to the Admin account being the database owner for all of your databases. While you can add additional users to the db_owner role of a database, these users do not actually own the database and cannot see the database in the SSMS object explorer.

By default Savvis creates a backup of your database nightly; this can be disabled in the SavvisStation Portal. If Database mirroring is subscribed to, Transaction Log backups occur in conjunction with the nightly backup. Savvis does support Tape Backups, but tape backups are not included; please see the Tape Backup SSG for details around backups, backup retention policies and integration with Tape Backups.

Monitoring

Symphony Database is a fully managed offering, and all critical systems are monitored 24x7. Due to the shared/multi-tenant architecture of the Symphony Database environment, and the significant investment in redundant components, access to the infrastructure monitoring feeds will be limited to Savvis personnel. Savvis does provide trap feeds for customer level components, like the database, and these traps are outlined in the Savvis service guide (SSG). Savvis does not have the ability to provide custom monitoring from within the environment but can provide remote monitoring from the client side. This custom monitoring could include health checks validating everything from network latency to simple connectivity tests.

System Maintenance

An important component of system administration and management is keeping the system up-to-date. System maintenance includes keeping the system current with all patches, to help prevent security compromises or operational reliability issues. Savvis will, from time to time, schedule the installation of system patches, as deemed necessary by Savvis' support staff. Savvis will schedule the installation with you in advance. The advanced notification will allow both parties to prepare for the patching, as well as provide ample time for discussion regarding the potential impact the patch may have on your specific applications.

Support

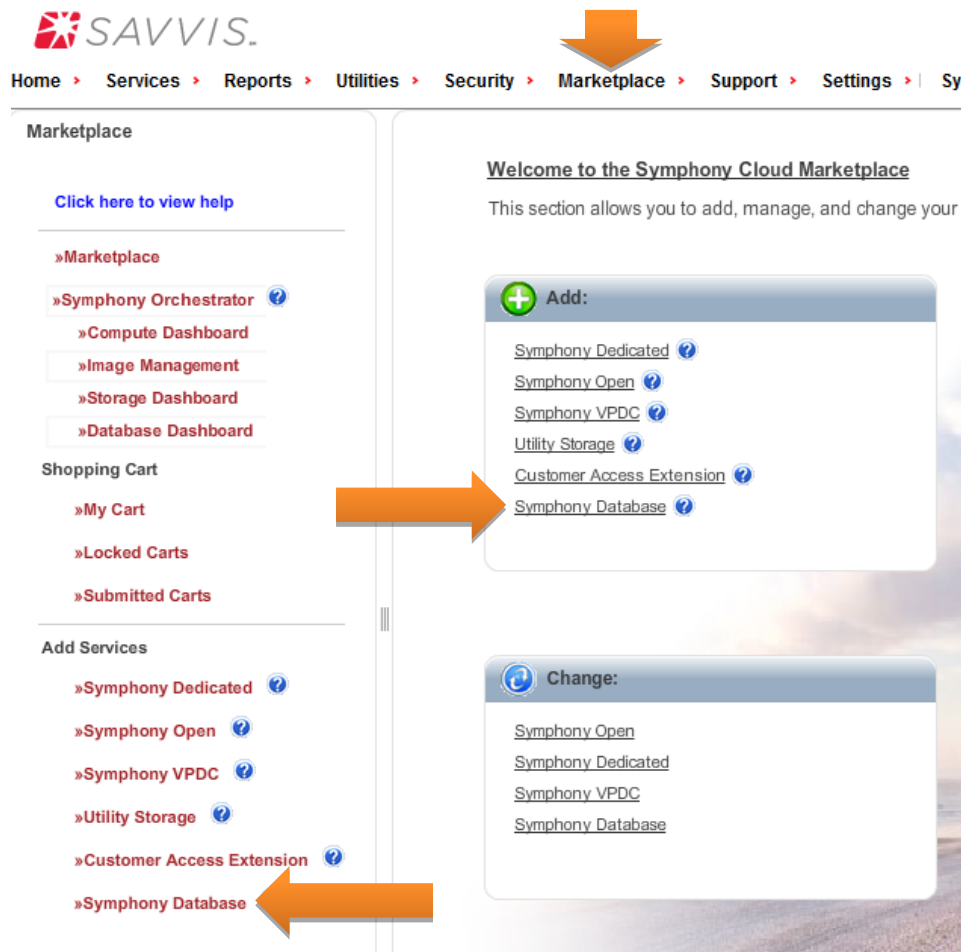
If you need support for any reason, please call the **Savvis Hosting Help Desk at 888-638-6771 opt. 2** or email Request@Savvis.net before performing the maintenance. The Help Desk is available on a 24/7 basis.

Getting Started

How to create your Symphony Database subscription

Symphony Database Resources are created in the Savvis Marketplace. This action creates a new Symphony Database Compute Resource providing the compute layer, sftp framework and firewall for databases. When creating a Symphony Database you will need to select the Database Platform of "Microsoft SQL" and enter at least one IP Address for the firewall to be created. The IP Address pre-populated is the IP Address you are currently coming from, and no more than five IP Addresses can be added during the creation of the service.

Note: Symphony Database Compute Resources are not accessible from Private IP Addresses like those found in the following three ranges: 10.0.0.0 thru 10.255.255.255, 172.16.0.0 thru 172.31.255.255 & 192.168.0.0 thru 192.168.255.255 the firewall only accepts IPv4 addresses at this time, contact the Savvis helpdesk if an IPv6 address is required.



How to enable SFTP access

SFTP access to your Symphony Database Subscription can be enabled in the General tab of your Symphony Database as "Enable SFTP", this action enables SFTP access to the backup folder of a Symphony Database Compute Resource. The process includes creating an account to access the SFTP site and granting access to the site to this user. When SFTP Access is enabled the SFTP site is available to the general internet, and it is recommended to enable Encryption for your databases if you intend to leave the SFTP site enabled. If you forget the password to your SFTP user account you can either disable and enable SFTP access or call the Savvis helpdesk and have them reset the password. The password submitted when enabling SFTP must have at least 1 number, lower case & upper case letter and special character.

The screenshot shows the management console for a Symphony Database resource. At the top, there are navigation tabs: Compute Dashboard, Image Management Repository, Storage Dashboard, and Database Dashboard. Below this, the breadcrumb path is Dashboard >> S608514SC8SQL07. The 'General' tab is selected, showing details for the resource: Symphony DB Resour... S608514SC8SQL07, Service Tier: 1 Core 4 GB RAM, and FTPS Server: sc8sftp.sdb.savvis.net. At the bottom, there is a row of action buttons: Create, Enable SFTP (highlighted with an orange arrow), Delete, and Change Service Tier.

The dialog box is titled "Enable SFTP Access" and contains the following text: "Enabling SFTP Access will allow you to upload and download native Microsoft SQL Server Database Backups. Backups can be uploaded for migrating databases into Symphony Database and backups can be downloaded. Any backup file intended for long term usage should be placed in the archive folder. All other folders are subject to deletion after 4 days." Below the text is a "Password:" label followed by an empty text input field. At the bottom, there are "Confirm" and "Cancel" buttons, along with a help icon (question mark in a circle).

How to add rules to the firewall

Firewall rules can be added from the Firewall tab of your Symphony Database as “Add IP Address”, this action will open the firewall allowing network access to the Symphony Database Compute Resource databases and data to the requested IP Address or Subnet.

Each Symphony Database Compute Resource has its own firewall rules that are managed through the SavvisStation Portal. The Firewall must have at least 1 IP Address or Subnet defined at all times, and subnets can be no larger than /24 (255.255.255.0). The firewall does not prohibit access to the SavvisStation Portal, but to accessing the databases and data within. The firewall is not limited in the number of IP Addresses or Subnets defined for a Symphony Database Compute Resource.

Note: Symphony Database Compute Resources are not accessible from Private IP Addresses like those found in the following three ranges: 10.0.0.0 thru 10.255.255.255, 172.16.0.0 thru 172.31.255.255 & 192.168.0.0 thru 192.168.255.255 the firewall only accepts IPv4 addresses at this time, contact the Savvis helpdesk if an IPv6 address is required.

Compute Dashboard | Image Management Repository | Storage Dashboard | Database Dashboard

[Dashboard](#) >> S608514SC8SQL07

General | **Firewall** | User Ma... | Databases

Symphony DB Resour... S608514SC8SQL07

IP Address: 207.189.70.16

DNS Name: S608514SC8SQL07.SDB.SAVVIS.NET

TCP Port: 20402

Add IP Address

Allowed IP Addresses

IP Address	
10.12.142.100	✖ Remove

Add IP Address to Firewall

IP Address

24 - 178 - 51 - 64

Subnet Mask

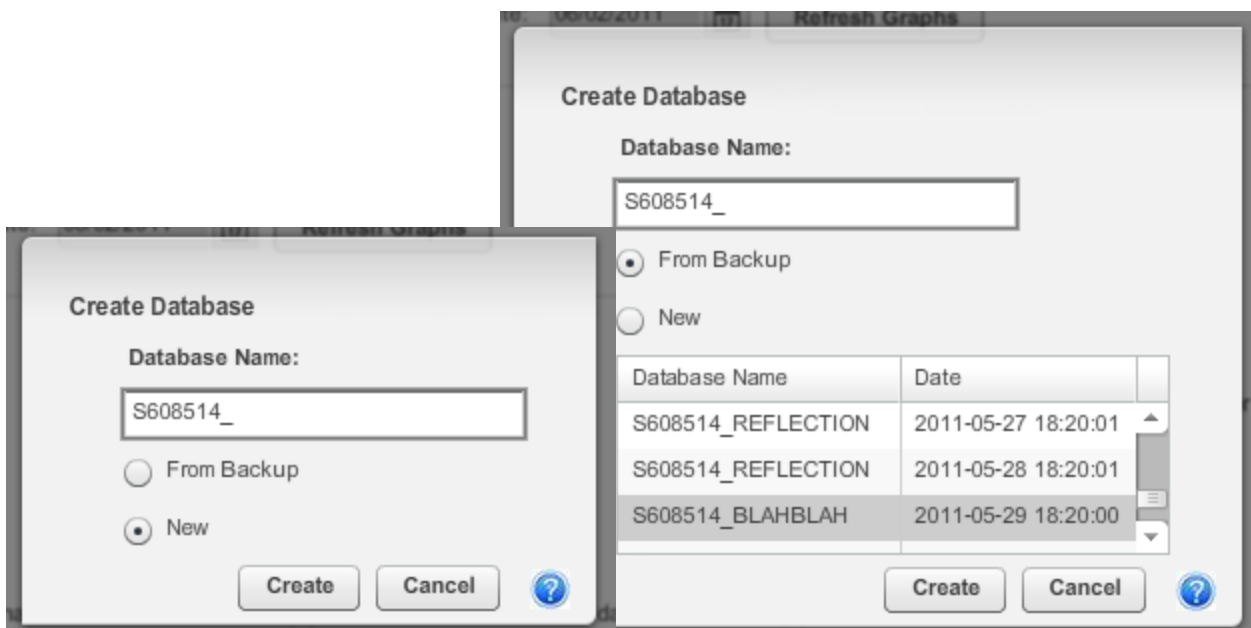
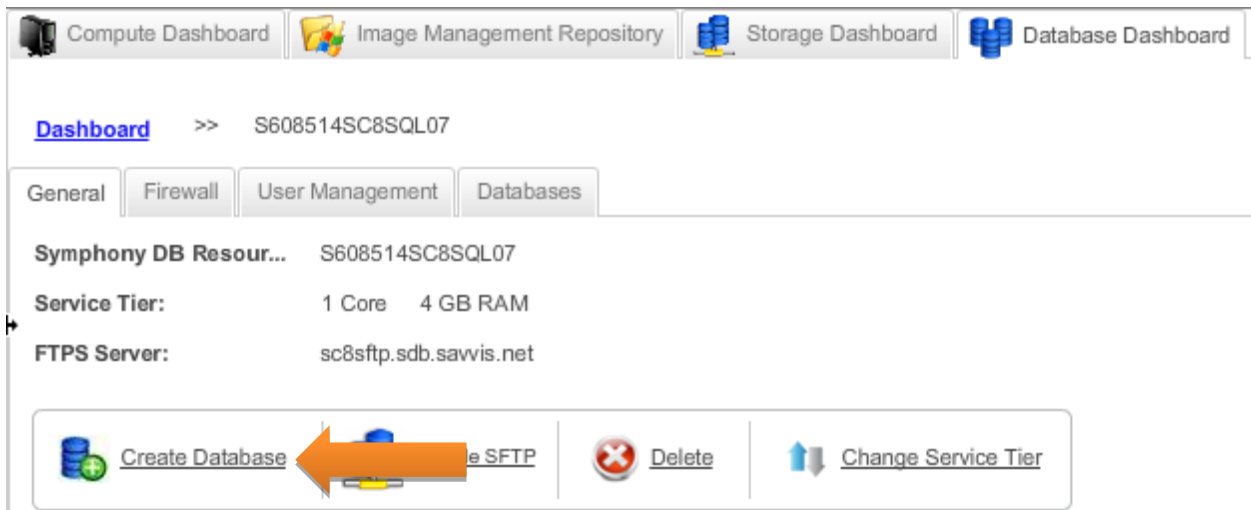
24 26 28 30 32

255.255.255.192 /26

Apply Cancel ?

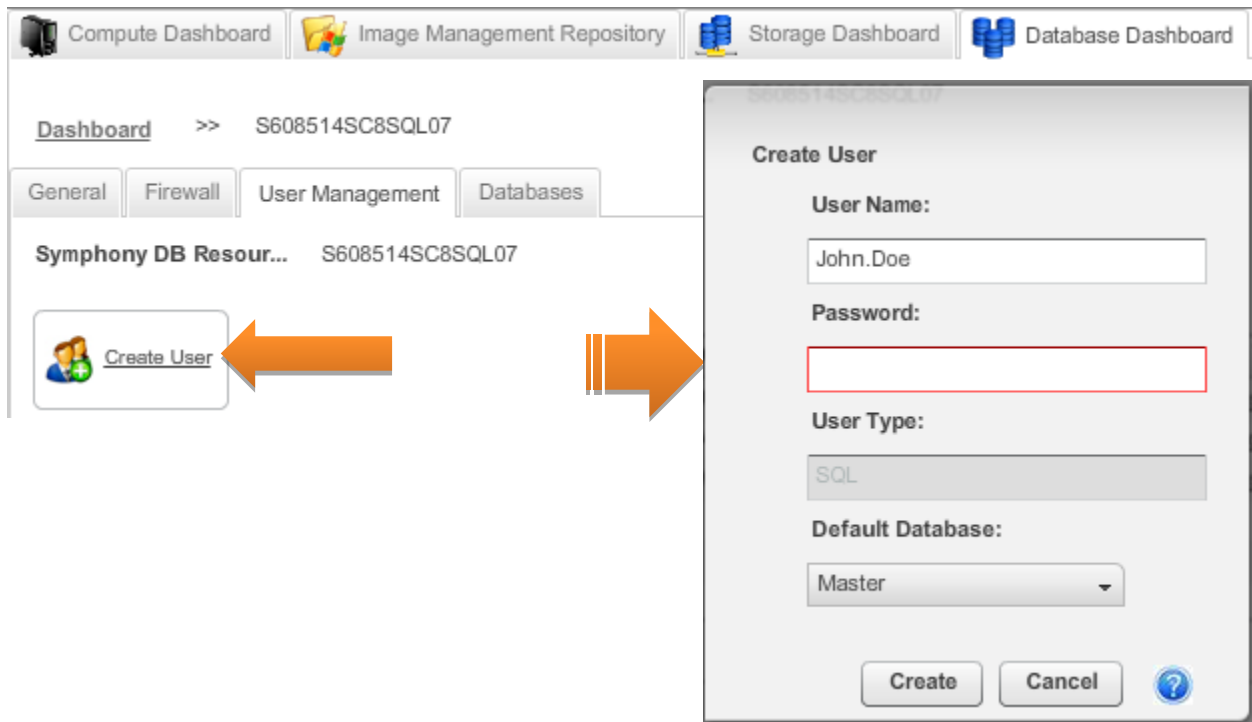
How to create databases

Available in the General tab of your Symphony Database as "Create Database", this action will create a new empty database or a database from backup under the Symphony Database Compute Resource. Backups are comprised of either existing databases under the Symphony Database Compute Resource or from uploading an external backup to the SFTP site. All Database names start with the billing site id at Savvis with an underscore similar to: s600986_ and have the name requested appended. At this time custom names are not supported by the Symphony Database service.



How to create logins

Available in the User Management tab of your Symphony Database as "Create User", this action creates a SQL Server Login. Server Logins may be used by Applications/developers/administrators to access, manage, maintain, design or manipulate the databases. Users by default do not have access to any databases. Rights to databases are granted within each database in the SavvisStation Portal using the "Add User" feature. When a user is created you will be prompted to supply the username and password for the new user, the username will actually have your Symphony Database name prepended to it like "s123456sc8sql01.John.Doe" when "John.Doe" was entered by you as the username. The Default Database can always be "master" as long as you specify the database in the connection string for you applications and services.



How to grant access to a database

Available in the Security tab of your Symphony Database Databases as "Add User", this task will create a database user with the same name as the login in the database and add the user to the requested database role. This task gives a user access to connect to the database and perform functions within the database as defined by the role.

Note: By default there are 10 roles available for a database; additional roles can be added to a database by a DBA and will automatically show up in the SavvisStation Portal.

Compute Dashboard | Image Management Repository | Storage Dashboard | Database Dashboard

Dashboard >> S608514SC8SQL07 >> S608514_REFLECTION

General | Storage | Security | Backups | Mirror | Snapshot

Database Name: S608514_REFLECTION
 Encryption Status: Unencrypted
 Access Mode: MULTI_USER
 Write Mode: Read-Write

Encrypt Database | Change Access Mode | Change Write Mode

Authorization

Role	Task
[-] public S608514SC8SQL07.Admin	+ Add User
[+] db_owner	+ Add User

Add User

Please select a User Name:

S608514SC8SQL07.grant
 S608514SC8SQL07.grant
 S608514SC8SQL07.george

Create Cancel ?

Connecting To Your Symphony Database Database

When connecting to your database you will need to gather the following information from the SavvisStation Portal in order to properly generate the appropriate connection string:

- ServerName
- TCP Port
- Database Name
- User Name
- Password

Each database in the SavvisStation Portal has an example .Net Framework connection string under the General tab, the details in this string can be used to create other connection strings like the examples below.

Note: the username and password for the connection string in the portal use "?" for the values, the "?" must be replaced with an actual username and password for the connection string to work.

If Database Mirroring is enabled for a database you will need to append the *blue* text at the end of each example to your connection string using the appropriate ServerName and TCP Port for the Mirror to take advantage of automated failover in your applications.

.Net framework data provider for SQL Server:

```
Data Source=tcp:s123456sc8sql01.sdb.Savvis.net,20101;Initial Catalog=master;
User=s123456sc8sql01.MyUser; Password=myPass;
```

```
Failover Partner=s123456sc8sql02.sdb.Savvis.net,20601;
```

SQL native client 10.0 OLE DB:

```
Provider=SQLNCLI10;Server=s123456sc8sql01.sdb.Savvis.net,20101;Database=master;
Uid=s123456sc8sql01.MyUser; Pwd=myPassword;
```

```
Failover Partner=s123456sc8sql02.sdb.Savvis.net,20601;
```

SQL Server native client 10.0 ODBC:

```
Driver=(SQL Server Native Client 10.0);Server=tcp:s123456sc8sql01.sdb.Savvis.net,20101;
Database=master; Uid=s123456sc8sql01.MyUser; Pwd=myPassword;
```

```
Failover_Partner=s123456sc8sql02.sdb.Savvis.net,20601;
```

SQLCMD:

```
C:\>SQLCMD -Stcp:s123456sc8sql01.sdb.Savvis.net,20101 -dmaster -Us123456sc8sql01.MyUser
-PmyPassword
```

SQL Server management studio:



Managing Your Symphony Database Service

The Symphony Database service has been designed to be managed from both the SavvisStation Portal and SQL Server Management Studio (SSMS).

Using SQL Server Management Studio

SQL Server Management Studio is still used to manage the objects in your database and can also be used to reset your accounts password and create additional roles. ²

User Management: Reset Password

Through SSMS users can reset their passwords when logging and while logged in.

Databases: DML

All DML within a database is supported by Savvis at this time.

Databases: DDL

All DDL for a database is supported except ALTER, CREATE and DROP Database at this time.

Databases: Restore Database

Databases can be restored using SSMS, however the SavvisStation Portal will not be aware of this restore and automation requests against the database may fail during the restore. If you are planning to restore the database with SSMS and not the SavvisStation Portal please call the helpdesk and open a ticket to track this maintenance.

Using third party management tools

Third party management tools like Quest Toad, Idera SQL Toolbox, Idera Admin Toolset and RedGate SQL Toolbelt can connect to your Symphony Database Databases but the functionality may be limited because of more restrictive permissions in Symphony Database then a standard SQL Server. Success with third party tools will likely come from always using your Admin account when connecting to your databases.

² If you do not login to SQL Server Management Studio with your Admin account you will not see your databases in Object Explorer

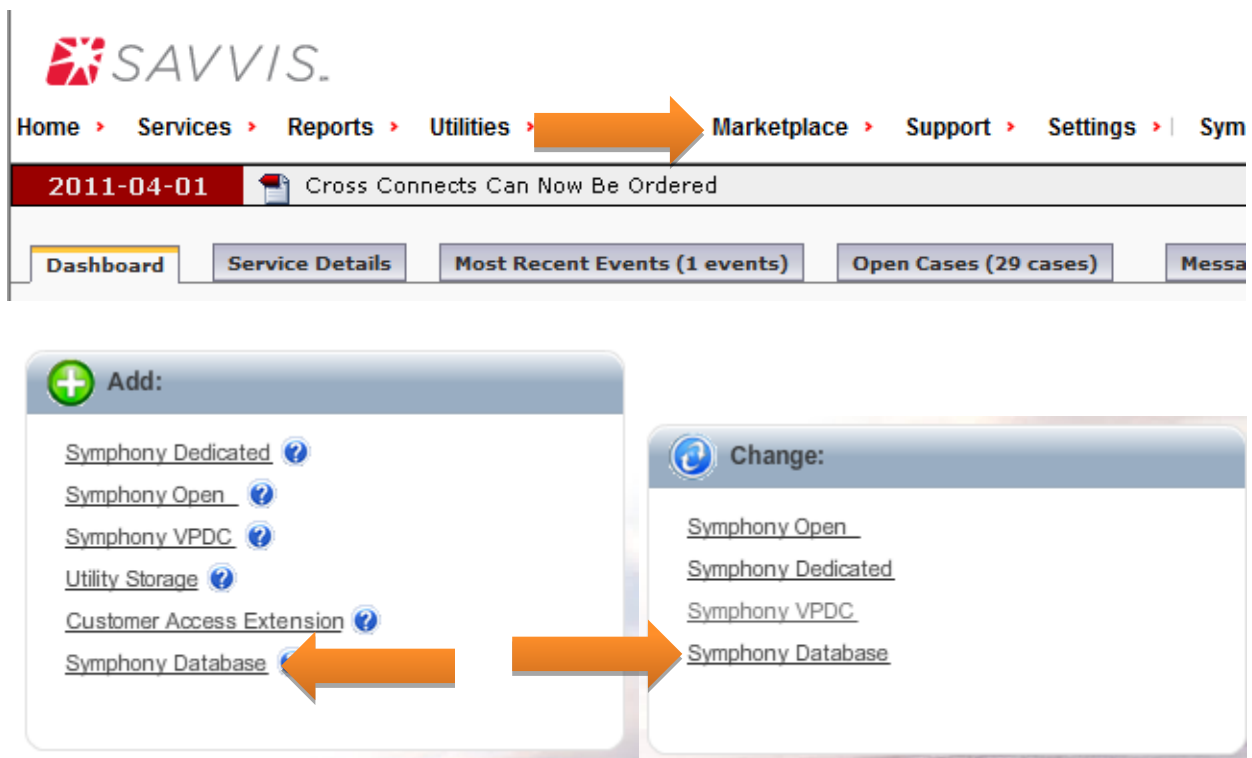
Navigating the SavvisStation Portal

The SavvisStation Portal has two interfaces for Symphony Database; Marketplace and Orchestrator.

Marketplace

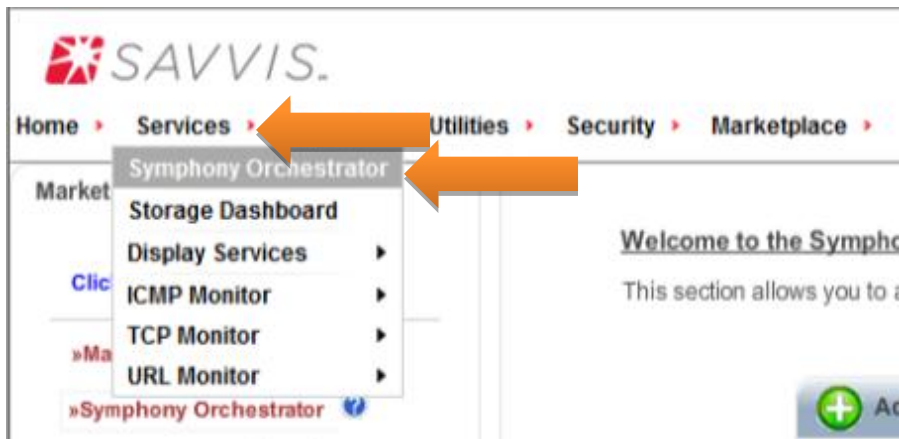
Marketplace is where new Symphony Database subscriptions can be created and existing subscriptions can be altered by increasing and decreasing the service tier.

The SavvisStation Portal provides the functionality that is not available in SQL Server Management Studio in Marketplace:



Orchestrator

Orchestrator is available to all customers who have purchased Symphony Database services. Symphony Orchestrator allows you to manage several operational aspects of your Symphony Database services such as managing the firewall, creating databases, adding and deleting users etc.




When you first open the Orchestrator Database Dashboard you are presented with a hierarchical view of all your Symphony Databases. This view provides both health at a glance and the ability to drill down into your services. The tree provides a root for each data center, and the immediate children are Symphony Database subscriptions with children of Databases.

Object	Health	CPU Usage
ZZSC8	N/A	
S603107SC8SQL03	●	0.0 %
S608514SC8SQL06	●	0.0 %
S608514_NAT05191043	●	
S608514_NAT05191048	●	
S608514SC8SQL07	●	0.0 %
S608514SC8SQL04	●	0.0 %
S608514SC8SQL03	●	0.0 %

Managing your subscription

How to change your Symphony Database subscription

Symphony Database Resources can be increased or decreased in the Savvis Marketplace or the Database Dashboard in Orchestrator. This action changes the service tier for a Symphony Database Compute Resource. The service tier can be increased or decreased at any time without downtime with available capacity.³



The screenshot shows the 'Database Dashboard' for resource S608514SC8SQL07. The 'Databases' tab is active, displaying the current configuration: 'Symphony DB Resour...' S608514SC8SQL07, 'Service Tier: 1 Core 4 GB RAM', and 'FTPS Server: sc8sftp.sdb.savvis.net'. A navigation bar at the top includes 'Compute Dashboard', 'Image Management Repository', 'Storage Dashboard', and 'Database Dashboard'. Below the resource details, there are three buttons: 'Create Database', 'Enable SFTP', and 'Change Service Tier'. A large orange arrow points to the 'Change Service Tier' button.

Change Symphony Database Order Form

Step 1: Service Selection -- Please Configure

Cart Name:

Database Platform:

Resource Name:

Current Tier: 1 CPU Core / 4 GB RAM

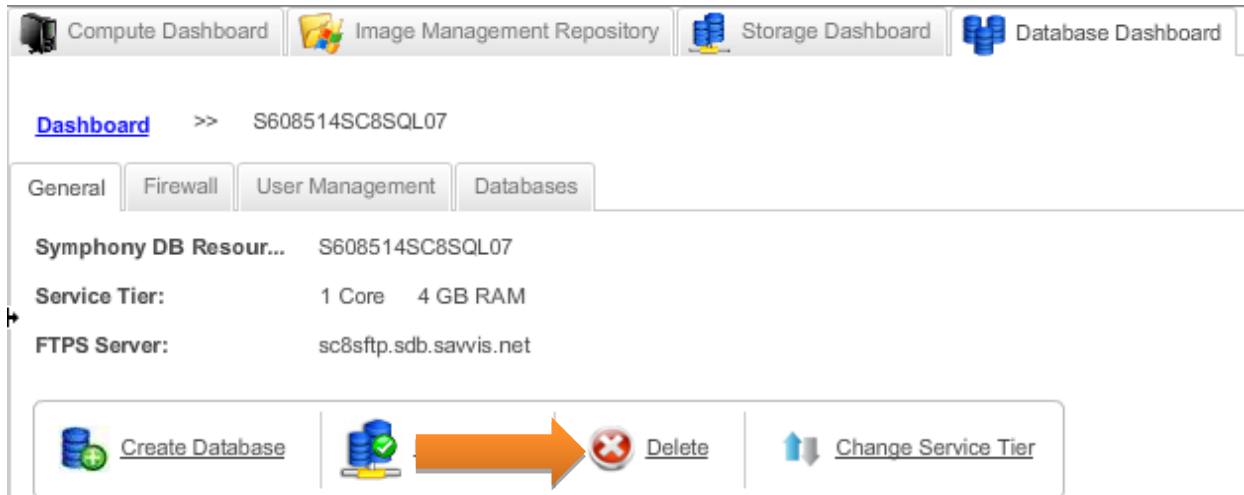
New Tier:

- Please select a Tier
- 0.5 CPU Core / 2 GB RAM
- 2 CPU Core / 8 GB RAM
- 4 CPU Core / 16 GB RAM
- 8 CPU Core / 32 GB RAM

³ When capacity is not available, but the datacenter can satisfy the request a migration of the entire Symphony Database Compute Resource will be required which is an offline operation.

How to delete your Symphony Database Subscription

Available in the General tab of your Symphony Database as “Delete”, this action allows a Symphony Database to be permanently deleted including all associated databases, snapshots, backups and breaks any applicable mirrors. **WARNING: This ACTION CANNOT BE REVERSED.**



The screenshot shows the Symphony Database management interface. At the top, there are navigation tabs: Compute Dashboard, Image Management Repository, Storage Dashboard, and Database Dashboard. Below this, the breadcrumb path is 'Dashboard >> S608514SC8SQL07'. The 'Databases' tab is selected, showing details for 'Symphony DB Resour...' S608514SC8SQL07. The service tier is '1 Core 4 GB RAM' and the FTPS server is 'sc8sftp.sdb.savvis.net'. At the bottom, there are three buttons: 'Create Database', 'Delete', and 'Change Service Tier'. The 'Delete' button is highlighted with a large orange arrow pointing to it.

Note: when a Symphony Database Subscription is deleted its contents are unrecoverable, this includes backups, snapshots, mirrors and databases. If you have inadvertently deleted your subscription contact the Savvis helpdesk immediately.

Managing SFTP access

How to enable SFTP access

See page 8

How to disable SFTP access

SFTP Access can be disabled from the General tab of your Symphony Database as “Disable SFTP”, this action deletes the user and removes the SFTP configuration for the Symphony Database Compute Resource SFTP Access.



The screenshot shows the Symphony Database management interface with the 'General' tab selected. At the bottom, there are four buttons: 'Create Database', 'Disable SFTP', 'Delete', and 'Change Service Tier'. The 'Disable SFTP' button is highlighted with a large orange arrow pointing to it.

Managing the firewall

How to add rules to the firewall


See page 9


How to remove rules from the firewall

Firewall rules can be removed from the Firewall tab of your Symphony Database as “Remove”, this action will remove network access to a Symphony Database Compute Resource databases and data for a requested IP Address or subnet that has access.

Note: the firewall must have at least 1 IP address or subnet at all times.

Allowed IP Addresses

IP Address	
10.12.142.100	 Remove



Managing Logins

How to create logins

See page 11

How to delete logins

Available in the User Management tab of your Symphony Database as “Delete”, this action permanently deletes a Login from the Symphony Database Compute Resource.

Note: When a login is deleted its permissions are also deleted and will no longer appear under a database.

The screenshot shows the Symphony Database User Management interface. At the top, there are navigation tabs: Compute Dashboard, Image Management Repository, Storage Dashboard, and Database Dashboard. Below these, the breadcrumb path is Dashboard >> S608514SC8SQL07. The main navigation tabs are General, Firewall, User Management (selected), and Databases. The page title is Symphony DB Resour... S608514SC8SQL07. There is a 'Create User' button with a user icon. Below this is the 'Authentication' section, which contains a table of logins.

Username	Type	Task
S608514SC8SQL07.grant	SQL_LOGIN	Delete Reset Password
S608514SC8SQL07.Admin	SQL_LOGIN	Reset Password
S608514SC8SQL07.george	SQL_LOGIN	Delete Reset Password

How to unlock logins and reset passwords

Available in the User Management tab of your Symphony Database as “Reset Password”, this action is used to reset the password for a login. By default an Admin account is created with a random password, use this feature to reset the accounts password, or the password of any account whose password has been forgotten, lost or compromised.

Authentication

Username	Type	Task
S608514SC8SQL07.grant	SQL_LOGIN	Delete Reset Password
S608514SC8SQL07.Admin	SQL_LOGIN	Reset Password
S608514SC8SQL07.george	SQL_LOGIN	Delete Reset Password

Managing your Symphony Database subscriptions

Databases can be managed from the Databases tab of your subscription or from the Symphony Orchestrator dashboard.

How to create databases

See page **10**

How to delete databases

Available in the General tab of your Symphony Database Databases as “Delete”, this action will permanently delete a database from the Symphony Database Compute Resource along with the databases backups, snapshots and any other related objects.

WARNING: This action is not-recoverable, however backups are not deleted until 7 days after the database has been deleted. If a database has been accidentally deleted you can recreate the database using the “Create Database from Backup” action at the Compute Resource level.

Compute Dashboard | Image Management Repository | Storage Dashboard | Database Dashboard

Dashboard >> S608514SC8SQL07 >> S608514_REFLECTION

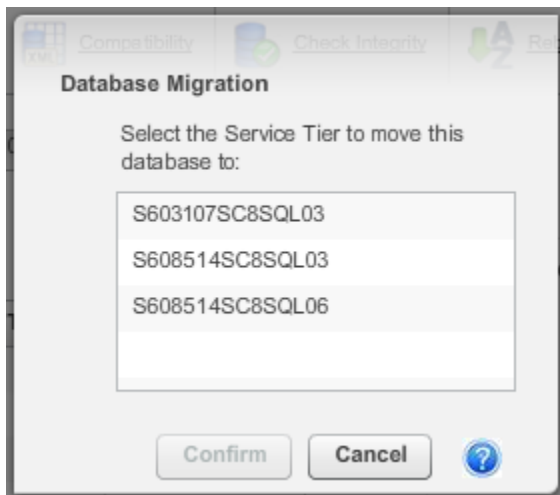
General | Storage | Security | Backups | Mirror | Snapshot

Database Name: S608514_REFLECTION
Collation: SQL_Latin1_General_CP1_CI_AS
Compatibility: 2008 Mode
Maintenance: Disabled
Connectivity String: Data Source=tcp:S608514SC8SQL07.SDB.SAVVIS.NET,20402;Initial Catalog=S608514_REFLECTION;User=?;Password=?

Database Maintenance | Migrate | Collation | Compatibility | Check Integrity | **Delete**

How to migrate Symphony Database databases between subscriptions

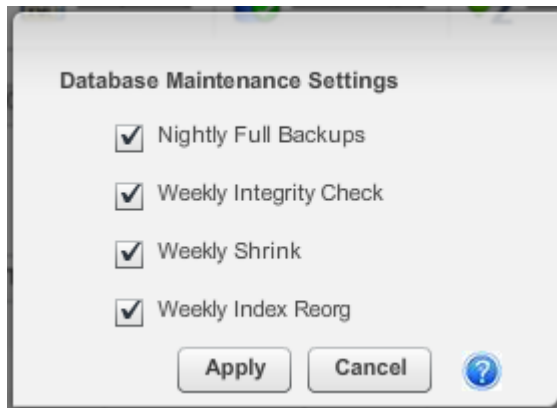
Available in the General tab of your Symphony Database Databases as "Migrate", this action will move a database to a different Symphony Database Compute Resource, and is commonly used to distribute resources. Database migrations take the database offline for the duration of the move and all snapshots and mirrors are lost with the move. Backups remain on the original Symphony Database Compute Resource.



When you migrate your database you will be prompted to select the subscription within your company that you have access to that you would like to move your database to.

Managing Symphony Database database maintenance

Available in the General tab of your Symphony Database Databases as "Database Maintenance", this action will Enable and/or Disable Nightly Full Backups of a database, Weekly Integrity Checks of a database, Weekly Data and Log File Shrinks, and/or Weekly Database Index Reorganization



Nightly full backups of a database:

By default a Full Backup of a database to disk every night. The time cannot be adjusted through the portal but the Savvis helpdesk can assist with altering the time to a more appropriate window for your business needs. Savvis maintains 4 days of backups for a database that has backups enabled, if backups are disabled the ability to recover a database may be impossible.

Weekly integrity checks of a database:

By default a "DBCC CHECKDB" is run against a database weekly, if any errors are reported from the command the Savvis helpdesk will notify you and address the errors.

Weekly data and log file shrinks:

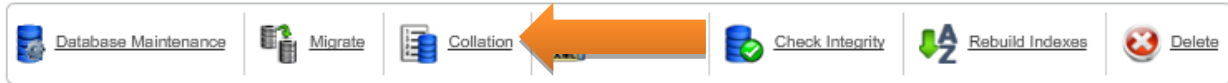
By default all data and log files for a database are compacted with data at the end of the data files being moved to unallocated pages in the file. This action can cause fragmentation in the files for contiguous data but defragments the pages in the file. This task will not alter files with less than 20% of free space.

Weekly database index reorganization:

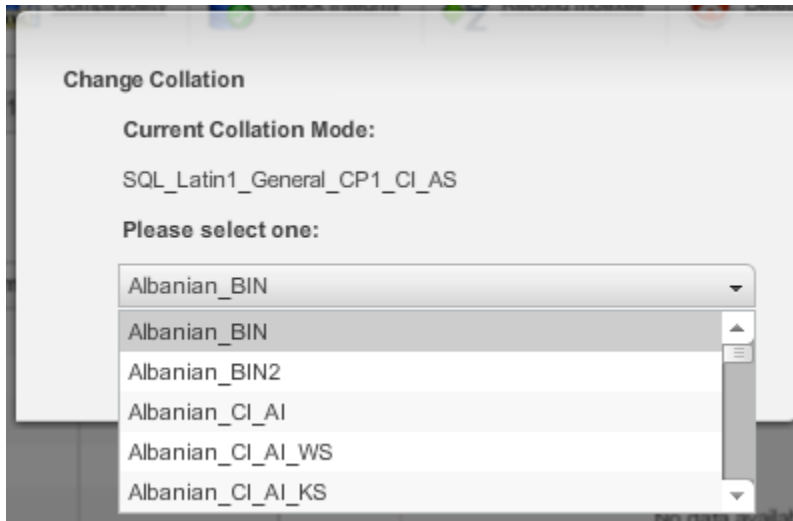
By default all indexes with more than 50% of fragmentation are reorganized every week, and the Compiler statistics recomputed for the Reorganized Indexes only.

How to change database collation

Available in the General tab of your Symphony Database Databases as "Collation", this action will change a databases collation to a collation selected by the requester.



When selected a popup will appear requesting the selection of the collation you would like to change the database to.



Note: the collation of TempDB is not changed in conjunction with the database, and the COLLATE clause should be used for all temporary objects.

How to change database compatibility modes

Available in the General tab of your Symphony Database Databases as "Compatibility", this action will change a database to use the requested MSSQL engine functionality. Supported compatibility modes are 2000, 2005 and 2008



How to check database integrity

Available in the General tab of your Symphony Database Databases as "Check Integrity", this action performs a "DBCC CHECKDB" against a database checking the logical and physical integrity of all objects in the database. The results of this command are sent in an email to the requester.



How to rebuild database indexes

Available in the General tab of your Symphony Database Databases as "Rebuild Indexes", this action will rebuild every index in a database that has more than X% fragmentation, where X is provided by the requestor. All Indexes being rebuilt will remain online during this operation but will be partially filled, this may make queries run longer than normal but will only for the duration of the rebuild.

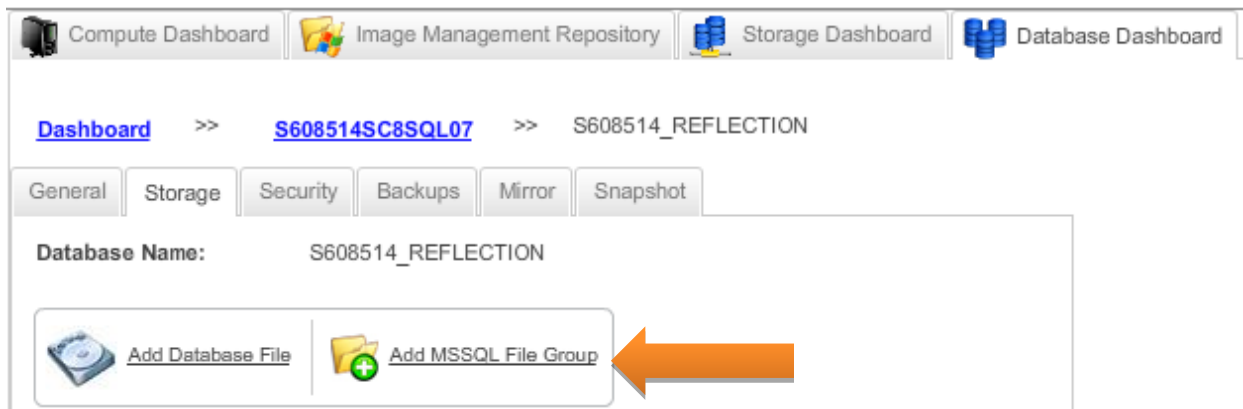


Managing Symphony Database database storage

How to add database file groups

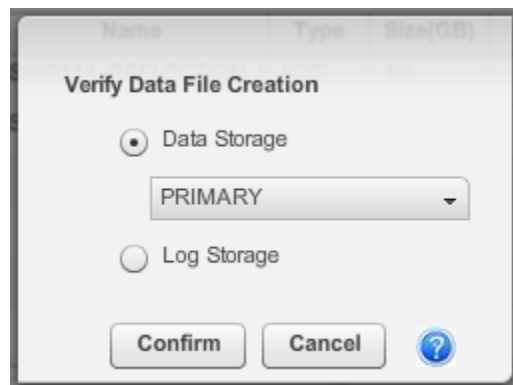
Available in the Storage tab of your Symphony Database Databases as "Add MSSQL File Group", this action creates a File Group named by the requester to create data files in. This action is commonly used for partitioning.

Note: File Groups cannot be deleted from the portal at this time.



How to add database files

Available in the Storage tab of your Symphony Database Databases as "Add Database File", this action will create an additional data file to a database with the .NDF extension or an additional log file to a database with the .LDF extension. All new files are 1GB in initial size, grow in 1GB increments and are limited to 100GB in size. The 100GB size limitation can be increased by calling the Savvis helpdesk. Data files can be placed into different File Groups commonly used for partitioning, at this time File Stream file groups and data files are not available (Log Files do not support File Groups in MSSQL). As data is inserted into the database it will be distributed into the database files proportionally until all files have the same amount of data. Data and Log files cannot be removed from the portal at this time.




How to shrink and grow database files

Available in the Storage tab of your Symphony Database Databases as "Resize File", this action will increase a data or log file to the requested size in GB up to 100GB or decrease the size of a data or log file to the requested size in GB. The request to increase a file would be in anticipation of a bulk loading of data to decrease the time to load the data due to file growth operations. The request to decrease a file would be in response to significant data deletion (commonly known as grooming) from a database, this operation will decrease the size of the file to the requested size or the size of the data in the file (whichever comes first).

Database Files

Group Name	Name	Type	Size(GB)	Task
LOG	S608514_REFLECTION_log	LOG	1.0	Resize File
PRIMARY	S608514_REFLECTION	ROWS	1.0	Resize File



Managing Symphony Database database security




How to grant access to a database


See page 12

How to revoke access to a database

Available in the Security tab of your Symphony Database Databases as "Revoke", this task removes the database user that is mapped to a Login from the database in turn removing the role assigned. If a role is revoked but the user has other roles the user account is not removed just the role membership.

Authorization

Role	Task
public	 Add User
S608514SC8SQL07.Admin	
S608514SC8SQL07.grant	 Revoke
db_owner	 Add User



Managing Symphony Database database encryption

How to encrypt a database

Available in the Storage tab of your Symphony Database Databases as "Encrypt Database", This action will enable TDE for a database which encrypts all data at rest. This action is asynchronous so the task will complete but the database will take time depending on its size to fully encrypt. All database backups created after Encryption is enabled will be fully encrypted until the database is unencrypted. Note: If a database backup is downloaded from Symphony Database via SFTP the Encryption Keys will also be needed, however the private key is password protected (the Savvis helpdesk can provide the password upon request)



How to decrypt a database

Available in the Storage tab of your Symphony Database Databases as "Decrypt Database", this action will remove TDE from a database, however once completed all prior database backups will still be encrypted.

Note: this action is asynchronous and completion times depend on database size.



How to change a database access mode

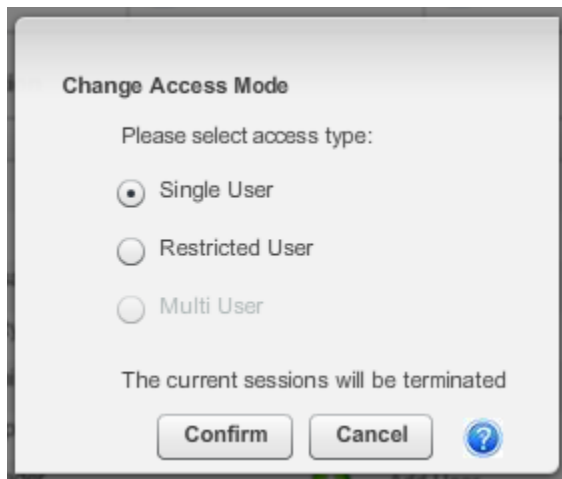
Available in the Storage tab of your Symphony Database Databases as "Change Access Mode", this task will place a database into SINGLE_USER, RESTRICTED_USER or MULTI_USER mode. Database Access modes are commonly changed by customers when upgrading the database to keep end users out of the database during the upgrade.

SINGLE_USER: only the first user to access the database with ownership rights can use the database.

RESTRICTED_USER: only database owners can access the database

MULTI_USER: all users can access the database

Note: When a database is in SINGLE_USER mode the SavvisStation Portal will provide limited functionality until the database is placed into a less restrictive mode.



How to change a database write mode

Available in the Storage tab of your Symphony Database Databases as "Change Write Mode", this task will make a database Read-Only or Read-Write. If a database is Read-Only data cannot be changed, access cannot be modified and the database in general cannot be manipulated.

Note: When a database is in Read-Only mode the SavvisStation Portal will provide limited functionality until the database is placed into Read-Write mode.



Managing database backups

How to create a database backup

Available in the Backups tab of your Symphony Database Databases as "Backup Database", this action will create a full database backup of a database to be used for database recovery. If Encryption is enabled the database encryption keys must be restored onto any external server to Symphony Database. All Encryption Key backups are password protected, passwords can be provided for a backup by the Savvis Help Desk upon request.

Note: Log backups are only created for mirrors, and on-demand backups never include a log backup at this time.

How to restore a database

Available in the Backups tab of your Symphony Database Databases as "Restore", this action will restore a database to the point in time that the database was created. There are additional fees for point-in-time restores, which are only available if database mirroring is enabled as default database logging does not provide a facility for point-in-time database restores outside of mirroring in the Savvis Symphony Database model.

The screenshot shows the Symphony Database management interface. At the top, there are navigation tabs: Compute Dashboard, Image Management Repository, Storage Dashboard, and Database Dashboard. Below these, the breadcrumb path is Dashboard >> S608514SC8SQL07 >> S608514_REFLECTION. A set of tabs includes General, Storage, Security, Backups, Mirror, and Snapshot. The 'Backups' tab is active, showing the Database Name: S608514_REFLECTION. A 'Backup Database' button is highlighted with an orange arrow. Below this is a 'Backup History' table with columns for Date, Type, Size(MB), and Task. The 'Task' column contains 'Restore' links, with an orange arrow pointing to one of them.

Date	Type	Size(MB)	Task
2011-05-27 18:20:01	Full	148.919	Restore
2011-05-22 18:20:01	Full	148.777	Restore
2011-05-23 18:20:02	Full	148.785	Restore
2011-05-24 18:20:02	Full	148.831	Restore
2011-05-25 18:20:02	Full	148.852	Restore
2011-05-26 18:20:01	Full	148.885	Restore

Managing Symphony Database database mirrors

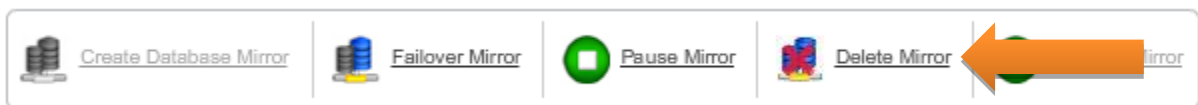
How to create a database mirror

Available in the Mirror tab of your Symphony Database Databases as "Create Database Mirror", this action will create a mirror of a database between two Symphony Database Compute Resources in asynchronous mode. This action also mirrors all Logins with access to the database between both Symphony Database Compute Resources and all users created or deleted after the mirror are also synchronized between Symphony Database Compute Resources.



How to delete a database mirror

Available in the Mirror tab of your Symphony Database Databases as "Delete Mirror", this action will delete a mirror of a database between two Symphony Database Compute Resources. A result of this action is that the database in the destination Symphony Database Compute Resource will be deleted.



How to pause a database mirror

Available in the Mirror tab of your Symphony Database Databases as "Pause Mirror", this action will halt a database mirror session keeping any and all changes on the source database from being sent to the destination, commonly used for maintenance.



How to resume a database mirror

Available in the Mirror tab of your Symphony Database Databases as "Resume Mirror", this action will resume a paused database mirroring session, allowing all pending changes from the source database to be applied to the destination database.



How to failover a database mirror

Available in the Mirror tab of your Symphony Database Databases as "Failover Mirror", this action will failover the mirror, swapping roles for the Symphony Database Compute Resources. Once failover has completed the mirror will be reversed between Symphony Database Compute Resources.



Database snapshots

How to create a database snapshot

Available in the Snapshot tab of your Symphony Database Databases as “Create Snapshot”, this action will create a point in time read-only static view of a database that can be used for reporting and/or recovery of a database. Users that have access to the database will have access to the snapshot. All database snapshots have “_SNAPSHOT” appended to the name and can be accessed the same way as the original database.

Note: Database snapshots are exact copies of the original databases data files and will double data billing for the database.



How to delete a database snapshot

Available in the Snapshot tab of your Symphony Database Databases as “Delete Snapshot”, this action removes a database snapshot from a database. When a snapshot has been removed it cannot be recreated to the same point in time, only a new database snapshot from the present time can be created.



How to restore your database from a snapshot

Available in the Snapshot tab of your Symphony Database Databases as “Restore from Snapshot”, this action will restore a database to its snapshot time, any data that has changed in the database since the snapshot was created will be lost and any database object changes since the snapshot will also be lost.

Note: the snapshot will be destroyed in this process.



How to create a database snapshot refresh schedule

Available in the Snapshot tab of your Symphony Database Databases as “Create Schedule”, this action will create an automated database snapshot refresh job for a database. The job will create a snapshot if one does not exist, or delete an existing snapshot and create a new snapshot in its place with the same name.

Note: All users that are connected to a snapshot when it is being refreshed will be forcefully disconnected from the snapshot.

Database snapshot refresh schedules can be created to refresh the snapshot every day or specific days at a X time, or every 4, 6, 8 or 12 hours starting at X time and ending at Y time.



Database Name:

Schedule Database Snapshots

Daily

Occurs once at:

Occurs every:

Starting at:

Ending at:

Weekly

Monday Tuesday Wednesday Thursday

Friday Saturday Sunday

Occurs once at:

How to delete a database snapshot refresh schedule

Available in the Snapshot tab of your Symphony Database Databases as “Delete Schedule”, this action will removes an automated database snapshot refresh job from the database. When the refresh job has been removed the snapshot will no longer refresh automatically.

Note: removing the schedule does not remove the snapshot.



Appendix A: Importing and Exporting Symphony Database Databases

Savvis provides access to Import (upload) and export (download) databases to and from your Symphony Database through Secure FTP. You may see this access referred to as SFTP, FTP, FTPS or FTPES. Technically the access is FTPES which standard for FTP over Explicit SSL. FTPES is a secure form of FTP that is fully encrypted like an HTTPS website. By default no Symphony Database can be accessed using FTP, this access has to be enabled in the SavvisStation Portal. Only when FTP access is enabled in the SavvisStation Portal is a Symphony Database accessible through FTP.

FTP is open to the internet from a firewall perspective, however when SFTP is not enabled for a Symphony Database there is no attack surface. This is important as Savvis recommends enabling SFTP access only when it is needed, and disabling it when not in use. Savvis does have precautions in place to mitigate attacks ranging from account lockouts on invalid login attempts and explicit home directory mapping to command filters, URL sequence filters and file type filters.

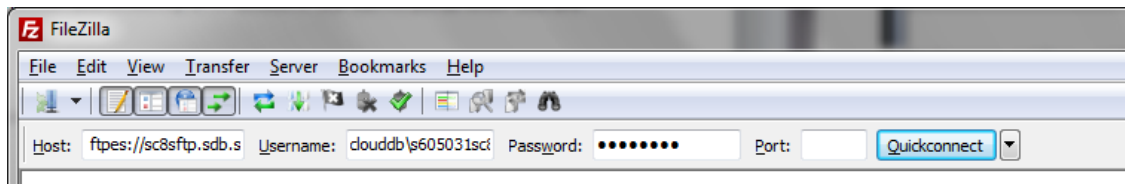
If your company limits outbound access you will need to have your corporate or personal firewalls updated to allow FTP over TCP port 21 to Symphony Database for the control channel and TCP ports 5000 through 5999 for the Data channel. It is important to reiterate that this is not plain FTP, and attempts to connect with traditional FTP are prohibited by Savvis' systems. Only FTPES is allowed making some traditional command line utilities inoperable for accessing your Symphony Database. Because of this limitation with traditional command line utilities Savvis recommends the use of FileZilla or WS_FTP for connecting to your Symphony Database FTPES site.

Using FileZilla

This is a step by step guide on how to use the free FileZilla client to connect using FTPES to your Symphony Database.

Connect using quickconnect

1. In the "Host:" textbox type ftpes:// in front of the domain name you are connecting to.



2. The "Username:" and "Password:" textboxes will be filled out with your username and password for FTP access. The Username was emailed to you when SFTP access was enabled, and the password was set when the account was created.
3. The "Port:" should be set to the standard 21
4. You are ready to connect, just click the "Quickconnect" button and accept the security certificate.

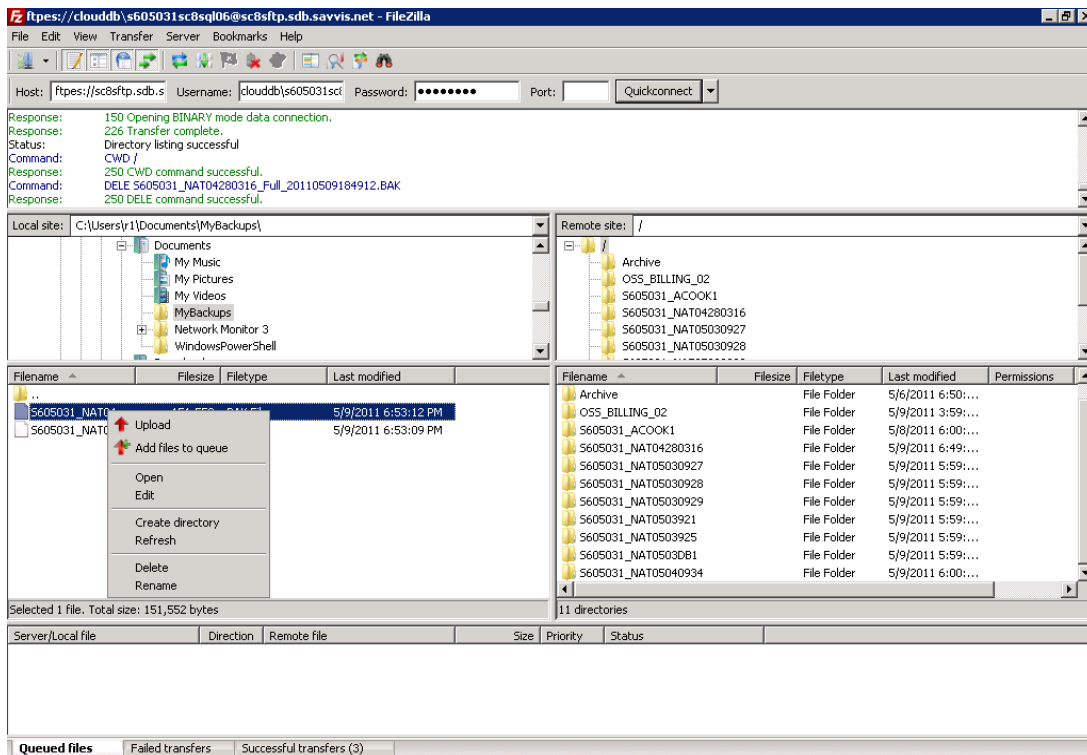
Uploading files

The files on your local computer are in the left pane and the files in your Symphony Database are in the right pane. It is important to note the following:

- Only .BAK and .TRN files can be uploaded into your Symphony Database
- Only Microsoft SQL Server Native Backup files can be uploaded
- Only Full, Differential and Log backups are supported at this time
- All folders other than the \Archive folder have content retention policies deleting all contents older than 4 days. If you need to keep a backup for more than 4 days it should be placed in the \Archive folder.

To upload files into your Symphony Database:

1. Connect to the Savvis SFTP server using Quickconnect
2. Navigate to the folder in the right pane that you want to place the file(s) typically the Archive folder.
3. Navigate to the local folder in the left pane that contains the backup file(s)
4. Right click the file(s) in the left pane and select "Upload"



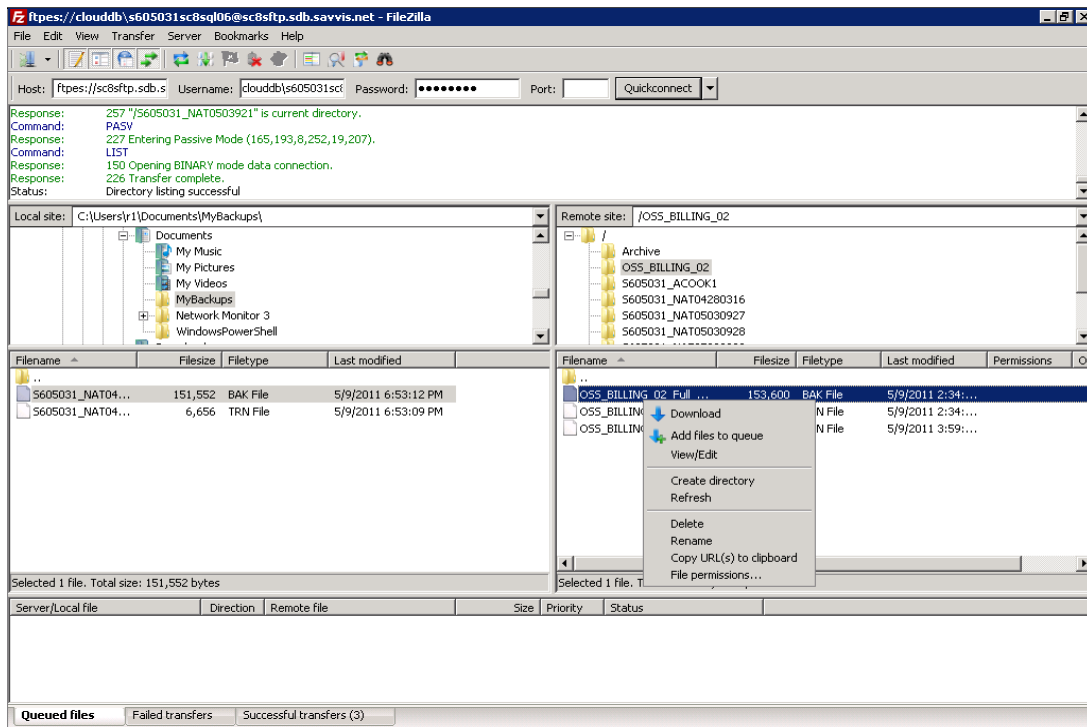
Downloading files

The files on your local computer are in the left pane and the files in your Symphony Database are in the right pane. It is important to note the following:

- .TRN files are Transaction Log backups; these are only available when Database Mirroring is enabled.
- .BAK files are Full Backups
- If you download a .TRN file make sure that you also download all of the .TRN files up to an including the last .BAK file before the .TRN file you are downloading was created.
- If Database Encryption is enabled you will need to download the last .CER and .PVK files that were created for the database in order to restore the database outside of your Symphony Database. The .PVK file is password protected and the password can be obtained from the Savvis helpdesk through a support ticket.

To download files from your Symphony Database:

1. Connect to the Savvis SFTP server using Quickconnect
2. Navigate to the folder in the left pane that you want to place the file(s) on your local computer.
3. Navigate to the remote folder in the right pane that contains the backup file(s) you want to download
4. Right click the file(s) in the right pane and select "Upload"

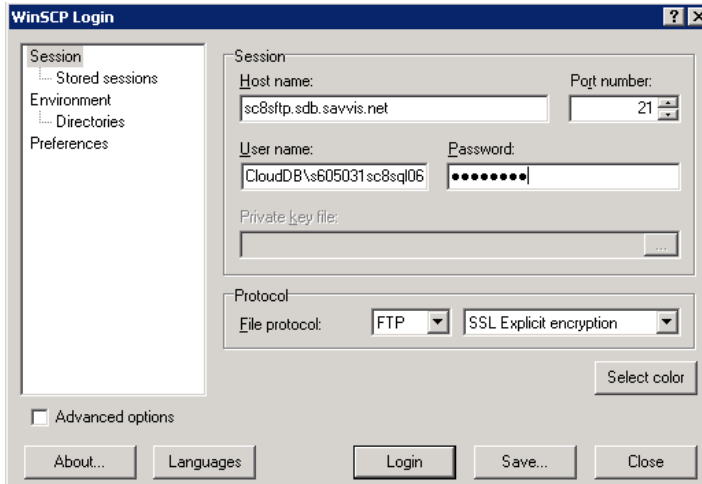


Using WinSCP

This is a step by step guide on how to use the free WinSCP client to connect using FTPES to your Symphony Database.

Connect screen

1. In the "Host name:" textbox enter the domain name you are connecting to.



2. Select "FTP" in the "File Protocol" drop down list
3. Select "SSL Explicit encryption" in the drop down list
4. The "Username:" and "Password:" textboxes will be filled out with your username and password for FTP access. The Username was emailed to you when SFTP access was enabled, and the password was set when the account was created.
5. The "Port:" should be set to the standard 21
6. You are ready to connect, just click the "Login" button and accept the security certificate.

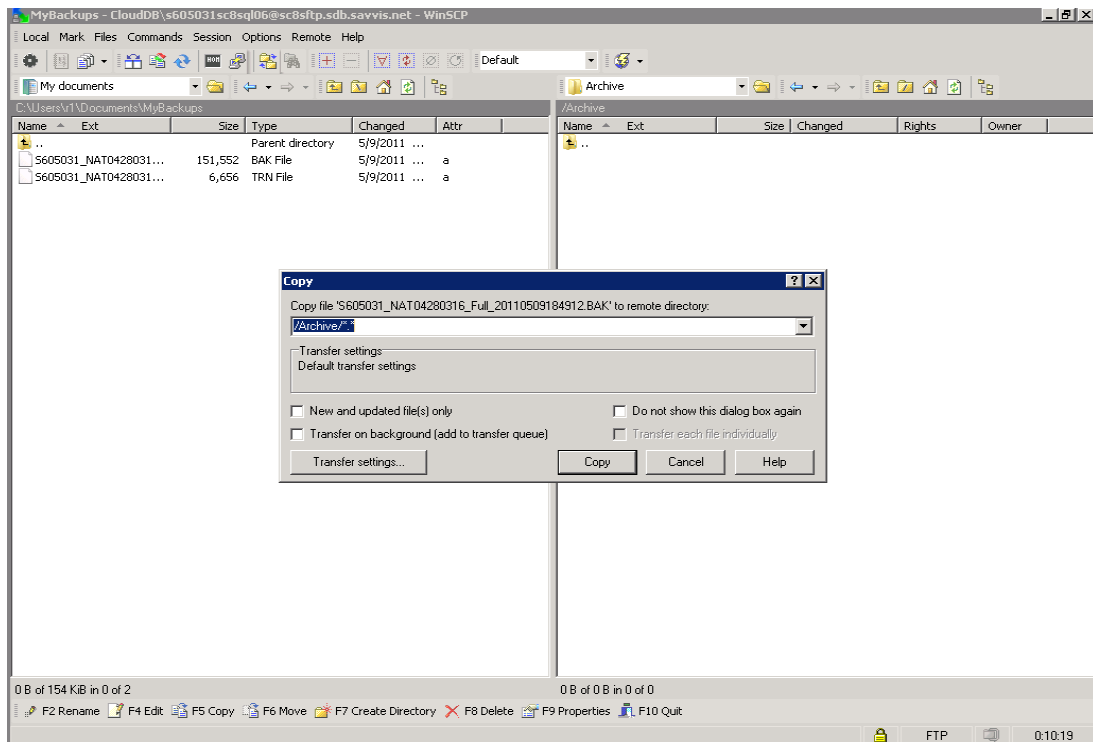
Uploading files

The files on your local computer are in the left pane and the files in your Symphony Database are in the right pane. It is important to note the following:

- Only .BAK and .TRN files can be uploaded into your Symphony Database
- Only Microsoft SQL Server Native Backup files can be uploaded
- Only Full, Differential and Log backups are supported at this time
- All folders other than the \Archive folder have content retention policies deleting all contents older than 4 days. If you need to keep a backup for more than 4 days it should be placed in the \Archive folder.

To upload files into your Symphony Database:

1. Connect to the Savvis SFTP server using the Connect screen
2. Navigate to the folder in the right pane that you want to place the file(s) typically the Archive folder.
3. Navigate to the local folder in the left pane that contains the backup file(s)
4. Drag the file(s) from the left screen into the right screen and select "Copy" on the dialog as shown below:



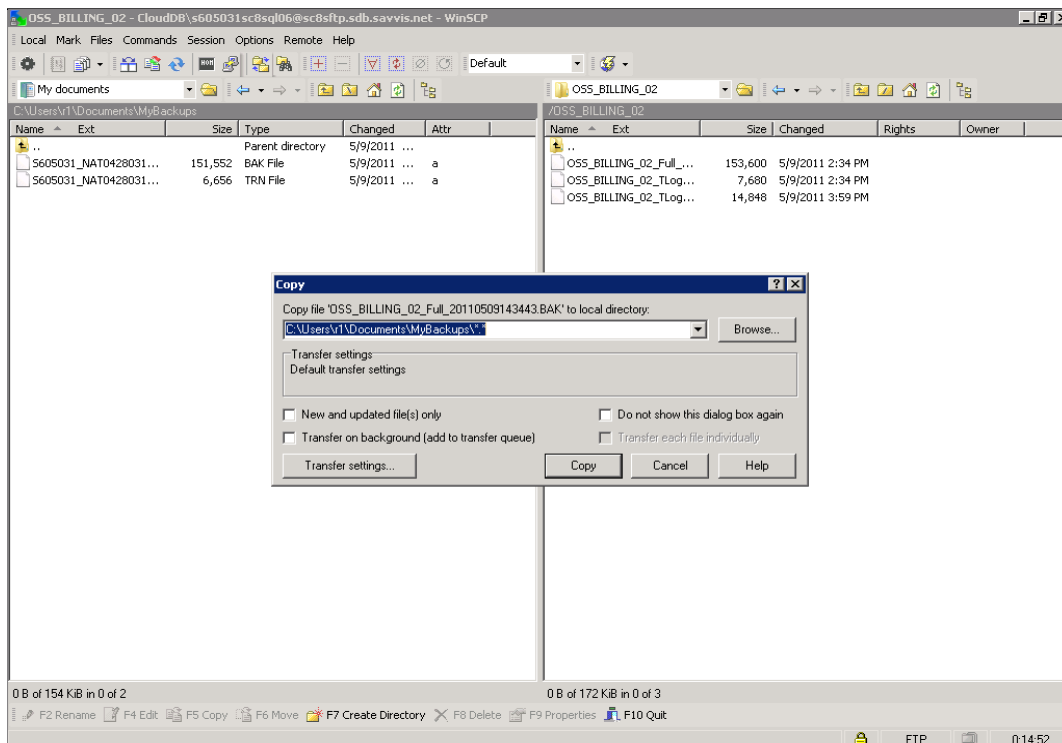
Downloading files

The files on your local computer are in the left pane and the files in your Symphony Database are in the right pane. It is important to note the following:

- .TRN files are Transaction Log backups; these are only available when Database Mirroring is enabled.
- .BAK files are Full Backups
- If you download a .TRN file make sure that you also download all of the .TRN files up to an including the last .BAK file before the .TRN file you are downloading was created.
- If Database Encryption is enabled you will need to download the last .CER and .PVK files that were created for the database in order to restore the database outside of your Symphony Database. The .PVK file is password protected and the password can be obtained from the Savvis helpdesk through a support ticket.

To download files from your Symphony Database:

1. Connect to the Savvis SFTP server using the connect screen
2. Navigate to the folder in the left pane that you want to place the file(s) on your local computer.
3. Navigate to the remote folder in the right pane that contains the backup file(s) you want to download
4. Drag the file(s) from the right screen into the left screen and select "Copy" on the dialog as shown below:



Appendix B: Network Access and Proxies

The greatest hurdle to consuming your Symphony Database subscription may be your network access to the service.

If you have to make any network changes you should note the following:

- The protocol is TCP
- The destination address is the IP Address of your Symphony Database subscription ⁴
- The destination port is the port of your Symphony Database subscription⁵
- The source port is 1024 through 65535
- The source address can be ANY, an IP Address or a Subnet

Accessing your Symphony Database service from a Savvis data center

Accessing your service from a Savvis data center may require an outbound firewall rule be created to allow your web and/or application servers to access and consume your Symphony Database subscription. If a firewall rule must be created you should open a ticket with the Savvis helpdesk and complete a firewall change request form.

Accessing your Symphony Database service from your corporate office

Accessing your service from your corporate office may require an outbound firewall rule be created to allow your web and/or application servers to access and consume your Symphony Database subscription. If you traverse a proxy server to access your subscription and your application is not proxy aware you may have to alter your proxy server to make an exclusion for TDS (SQL Server access) which may include configuring a direct NAT/PAT connection.

Accessing your Symphony Database service remotely

Most home and small business routers and firewalls allow all outbound connections, however if your device limits outbound connections to web services you may have to alter your device to allow access to your Symphony Database

⁴ Available in the SavvisStation Portal under the firewall tab as "IP Address"

⁵ Available in the SavvisStation Portal under the firewall tab as "TCP Port"

Appendix C: Management Software

SQL Server Management Studio Express

64bit: <http://go.microsoft.com/?linkid=9729745>

32bit: <http://go.microsoft.com/?linkid=9729744>

FileZilla

<http://filezilla-project.org/>

WinSCP

<http://winscp.net>

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