# DreamFactory on Microsoft SQL Azure

*Account Setup and Installation Guide*

For general information about the Azure platform, go to http://www.microsoft.com/windowsazure/.

For general information about the DreamFactory line of products, go to www.dreamfactory.com.

## Provisioning an Azure Account

To see the available offers on the Azure platform, start by going to the offers webpage at http://www.microsoft.com/windowsazure/offers/. Near the bottom of the page is the 'Windows Azure Platform Consumption' offer, click the 'Buy' button and proceed to the Microsoft Online Services Customer Portal. Sign in using your Windows Live ID.

Alternatively, go to the Microsoft Online Services Customer Portal directly. Sign in using your Windows Live ID, click on the 'Services' tab and select the 'Buy Now' button on the 'Windows Azure Platform Consumption' offer near the bottom of the Available Services window. Fill the appropriate profile and billing information to open the account. Once done, you should be able to see your new subscription in the listing on the 'Subscriptions' tab. Under the Actions menu, select 'View subscription details' and click 'Go'. At the bottom of the details page is a link to Microsoft SQL Services, select the link or alternatively go directly there via https://sql.azure.com/ProjectViewer.aspx.

Now that you are in the Windows Azure Services portal, you can set up the rest of the necessary parts to get up and running. There are three parts that will need to be setup from this website. They are the SQL Azure relational database, the Windows Azure generic storage account and the hosted DreamFactory service.

### SQL Azure

If not already there, click on the 'SQL Azure' tab on the far left to enter the SQL Azure setup. Click on the project you defined earlier in the My Projects listing (or create a new one if not there?). Provision an Administrator username and password and select a Server Location. Note this location because later provisioning will need to match this location to optimize performance and pricing. Also note the auto-generated Server Name, which will also be needed in later provisioning.

This should then take you to the Server Administration page. Here you should see one database listed as 'master'. This database is there by default and cannot be removed. It controls further provisioning of other databases and user logins. You can create new databases through the 'Create Database' interface here or later using the DreamFactory Admin Panel.

Next you need to enable the ability for hosted services to communicate with the SQL Azure databases. Simply go to the 'Firewall Settings' tab and click the 'Allow Microsoft Services access to this server'. If you have other desktop applications or services running elsewhere that you would like to connect to the SQL Azure databases, you must add a firewall rule to the listing with the hosting IP Address range (i.e. your desktop or router IP address), to do this click the 'Add Rule' button.

## Windows Azure

To run DreamFactory applications on SQL Azure, two different services offered by Windows Azure are necessary. One is a hosted service that provides a REST-based API into the SQL Azure databases. This API provides a secure login, data provisioning and retrieval, as well as, certain administrative operations. This API is used by DreamFactory applications but is also open for use by other applications.

The other service that is required is a Windows Azure storage service. This essentially serves as a general storage for things like documents, pictures, etc and is primarily used by the DreamFactory Document Manager.

### Provisioning a Storage Account

To provision a new storage service, click on the 'Windows Azure' tab on the far left, and then click the 'New Service' link just above. Select the 'Storage Account' listing and provide a label and description of this storage service, this can be anything and is just displayed in this portal environment. Click 'Next'.

On the next screen, provide a unique account name and check for availability. This name is appended to all REST-based API request and serves as a unique URL for your storage. Note this name for later provisioning.

Also on this screen is the location setting for this storage, i.e. the datacenter at which it is housed. To ensure the best throughput performance between accessing this storage, the SQL Azure databases and the later-provisioned hosted service, it is best if this setting matches the SQL Azure location selected earlier. Select 'Yes', and 'Create a new Affinity Group'. Select the region to be the same as the SQL Azure location noted earlier and provide an affinity grouping name. Once these are set, click the 'Create' button.

Two pieces of information to note displayed on the resulting page of this provisioning are the service name you provided (see the 'Endpoints') and the Primary Access Key. These two values will be needed to provision the hosted service so that it can communicate with this storage account.

### Provisioning a Hosted Service

To provision a new hosted service, click on the 'New Service' link just above the 'Windows Azure' tab on the far left. Select the 'Hosted Services' listing and provide a label and description of this hosted service, this can be anything and is just displayed in this portal environment. Click 'Next'.

On the next screen, provide a unique account name and check for availability. This name serves as a unique URL for access to your service. This URL will serve as the primary entry point into the DreamFactory application launching website.

Also on this screen is the location setting for this service, i.e. the datacenter at which it is housed. To ensure the best throughput performance between accessing this service, the SQL Azure databases and the storage account, it is best if this setting matches the SQL Azure location selected earlier. Select 'Yes', and 'Use existing Affinity Group'. Select the affinity group name created earlier from the menu. Once these are set, click the 'Create' button.

The resulting summary page displays the configuration of the hosted service. At this point, the service is created but has not been deployed.

Go to www.dreamfactory.net/sqlazure/api/ and download the necessary files for installation. At this point you have two choices, an application that provides SSL support (secure connections used by https calls) and requires SSL certificates or one that does not provide secure connections and does not require SSL certificates, but may be easier for initial development and testing (only supports http calls). These applications can be switched at a later time without losing stored data.

**For SSL connections (HTTPS):**

Download the application package file (SQLAzure_SSL_API.cspkg) and the configuration settings file (ServiceConfiguration_SSL.cscfg) to your computer.

To use secure connections via https, you must upload your SSL certificate to the Azure service. You cannot get a certificate for the 'mycompany.cloudapp.net' domain. Microsoft recommends getting a customer-friendly domain name (ex. www.mycompany.com) and then using CNAME mapping on that server to point to your cloud app (ex. mycompany.cloudapp.net). Once you have obtained your certificate, click the 'Manage' link in the Certificates section. Browse to the location of your PFX file, enter the password, and then click 'Upload'. Note the thumbnail value for later use. Chained certificates will have multiple thumbnails, all of which will be needed for the configuration process.

Open the ServiceConfiguration_SSL.cscfg file in Notepad or similar editor to edit it offline. Change the "AzureCloudStorageAccountName" value to be your new storage account name, likewise for the "AzureCloudStorageAccountKey" value. Change the "SqlServerHost" value to be your new SQL server host name. By default, the "LandingGraphic" value is internally set to display a DreamFactory graphic. This can be customized by providing a link (full url path) to your graphic file. If secure connections are desired, set the "LoginProtocol" to "https", otherwise set it to "http". In the Certificates section, enter the thumbnail value(s) recorded earlier. Save the file.

**For standard connections (HTTP):**

Download the application package file (SQLAzure_API.cspkg) and the configuration settings file (ServiceConfiguration.cscfg) to your computer.

Open the ServiceConfiguration.cscfg file in Notepad or similar editor to edit it offline. Change the "AzureCloudStorageAccountName" value to be your new storage account name, likewise for the "AzureCloudStorageAccountKey" value. Change the "SqlServerHost" value to be your new SQL server host name. By default, the "LandingGraphic" value is internally set to display a DreamFactory graphic.

This can be customized by providing a link (full url path) to your graphic file. Make sure the "LoginProtocol" is set to "http". Save the file.

**Deploying the application:**

Click the 'Deploy' button under the Production area. Choose the 'Upload a file from your local storage' option and browse to the location of each file, first the package file (.cspkg) then the configuration file (.cscfg). For the Service Deployment Name, we recommend putting the date of the package file you downloaded, and then click the 'Deploy' button at the bottom of the page. The deployment will take a few minutes. When completed, the Production label should now contain the deployment label and the WebRole status should be 'Stopped'.

To enable this service, click the 'Run' button. The service will now be initialized with your configuration and is ready for usage when the WebRole status changes to 'Ready'. This may take a few minutes.

To test the setup, click the link under the 'Web Site URL' section. If the 'DreamFactory on Microsoft SQL Azure' webpage appears the service is up and running.

### Running DreamFactory Applications

All DreamFactory applications run as a browser plug-in called the DreamFactory Player. If you have never installed the player, click the 'Get It Now' button located in the DreamFactory Player section. Once this is installed, see the DreamFactory Admin Panel section below.

## DreamFactory Admin Panel

On the welcome webpage of your new Azure site, click the 'Admin' heading and select the 'Cloud Admin' option. This will launch the DreamFactory Cloud Admin. You will be prompted for the Administrator login credentials, enter the username and password for the SQL Azure server administrator setup earlier. Once logged in, you will see there is a listing of the databases and logins that currently exists (at this point only the master database and the server administrator login may exist).

### Create a New Database to Store Your Information

Click the 'New…' button in the Database section of the home page in the right pane. Alternatively, right-mouse click on the Databases section of the tree in the left tree pane, and select 'New Database…' and enter a name and select the desired size. Note there are different costs associated with the database size selected, this will be added to your bill each month.

If this database is to be used to run DreamFactory applications, select the newly created database on the left, then select the 'Load…' button from the Load DreamFactory Schema section of the main page. This will prepare the essential tables and storage for DreamFactory Information. The schema is controlled separately from any existing tables and will not affect any existing data or table layout.

This step will also prompt you for creating an additional login called 'panellogin'. This login and the master database user associated with it will have no access to do anything other than read a list of databases. It will enable the DreamFactory Suite Login site to give the list of databases as a choice

during login. If not created, the end-user will have to manually enter the database name they need to access every time they log in.

Alternatively, the admin can create a URL link specifically for that database by adding the database name parameter to the Suite Login URL, i.e. https://www.dreamfactory.net/sqlazure/enterprise_entrance.html?sqlazure_server_url=*myuniquename*.cloudapp.net&sqlazure_db_name=*myDfDatabaseName*&. This can then be sent out to all of the necessary users to make the login process easier.

### *Adding new users to the database*

For a person to have access to the database, and therefore the DreamFactory Suite of applications, several objects must be created on the database. To add access for a new person, click the 'New…' button in the login section of the Cloud Admin home page. Alternatively, right-mouse click the 'Logins' area of the tree in the left-hand pane and select 'New Login…'. Here you can simply create the login by providing a login name and password and select 'Save'. This dialog can also automatically create the necessary user object in the new database, assign its roles, and even use our web services to email a notification to the new user about their new login creation.

### *Assigning roles and permissions*

The easiest way to control access to the data in your database is to use the existing system-owned roles (db_data_reader, db_data_writer, etc) or create new roles, assign detailed permissions to it, and then add users to the roles. This can all be accomplished in the Cloud Admin via the 'New…' button in the Role menu.

## DreamFactory Suite Applications

Again, on the welcome webpage of your new Azure site, click the 'Login' button in the center displayed image (assuming this image was not customized). This will launch the DreamFactory Suite Login Panel. Here you can enter the user login credentials, the username and password provisioned by your administrator. Select the application that you wish to launch and click 'Login'.  If prompted, select the desired database that has been set up for DreamFactory usage.