PROCESS MANUAL

Document Code: PM-SCI (AAD)

SCIM Integration

AZURE ACTIVE DIRECTORY (AAD)

Admin By Request

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Introduction

Admin By Request provides the ability to automatically synchronize data from your Identity Provider (IDP) to your Admin By Request User Portal according to the System for Cross-Domain Identity Management (SCIM) protocol, eliminating the need for manual entering and managing individual users on the Admin By Request side. This process manual provides a step-by-step guide on how to enable and configure the integration and provision users and groups in your User Portal with Azure AD.

Assumptions and Limitations

This implementation is targeted towards Admin By Request Portal users (i.e., company administrators who have access to the User Portal). It does not integrate with endpoint users.

The tasks described in this manual assume that the user has access to and is familiar with Azure Active Directory, the Admin By Request User Portal, and features of the software (e.g., Inventory, Requests, etc.).

Breakdown of Tasks

Seven tasks are covered in this manual:

1. Task A: Enable SCIM
2. Task B: Define Group-Based Roles
3. Task C: Create Azure Application
4. Task D: Set up Provisioning
5. Task E: Assign Users and Groups
6. Task F: Start Provisioning
7. Task G: View Data in User Portal

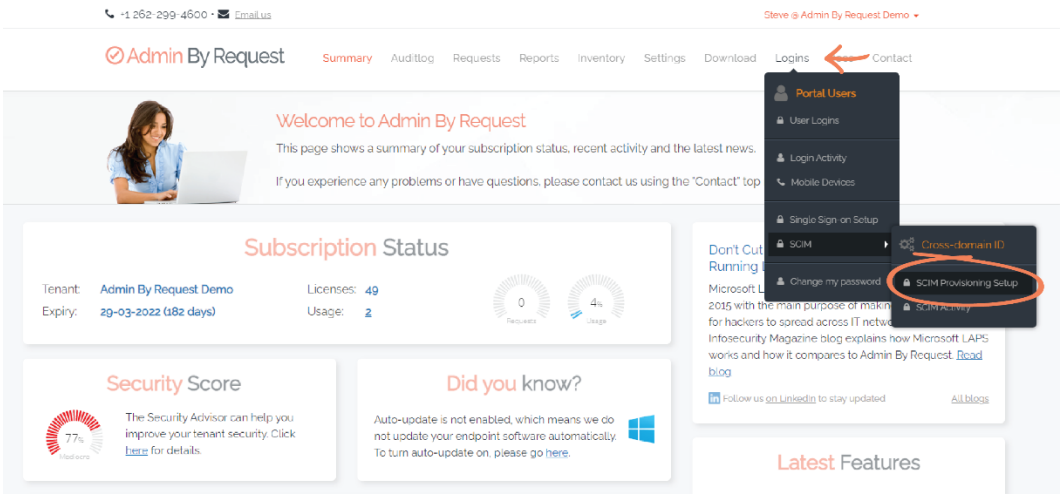
NOTE: Before you begin, we recommend you have a tab open in your Admin By Request User Portal and a second tab open in your Azure portal, as the tasks listed above switch back and forward frequently between the two.

Integration Tasks

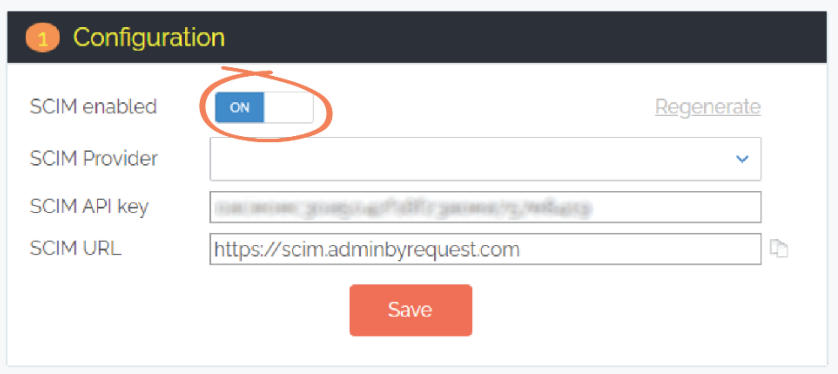
Task A: Enable SCIM

The first task of this process involves enabling the integration in the Admin By Request User Portal.

1. In your Admin By Request User Portal, locate **Logins** in the top menu and navigate to **SCIM** > **SCIM Provisioning Setup**:

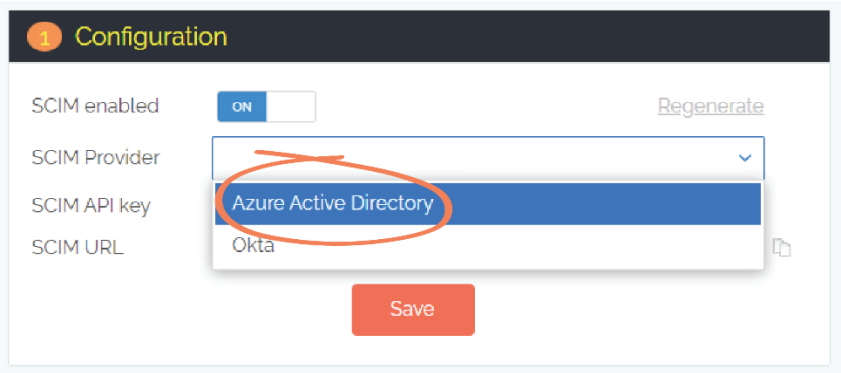


2. In section **1. Configuration**, toggle **SCIM enabled** to **ON**:



NOTE: This action generates an API key (blurred out in this document), which appears in the **SCIM API key** field. Using the API key is covered in Task D.

3. From the **SCIM Provider** drop-down menu, select **Azure Active Directory**:



4. Click **Save**:

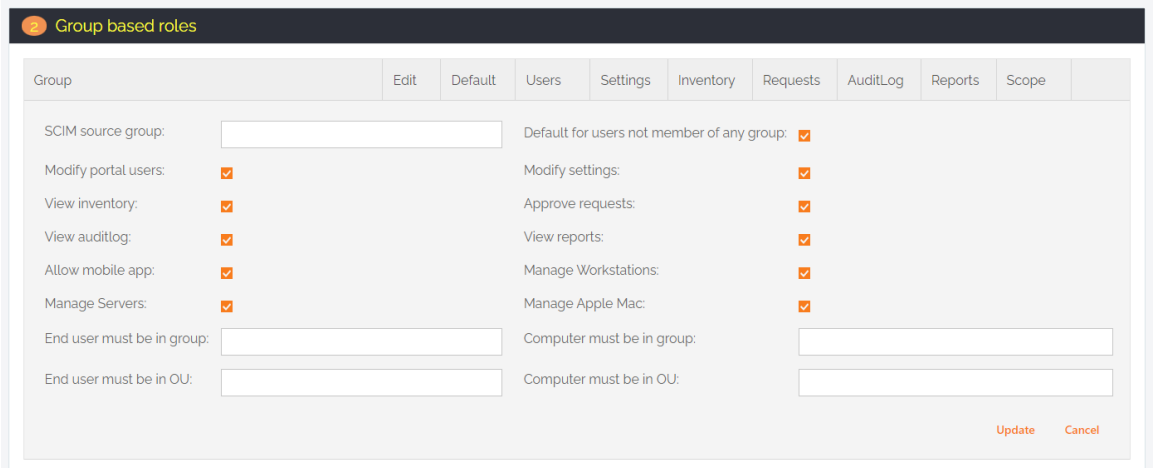
NOTE: Whenever the **Save** button is selected in the Admin By Request User Portal, a green icon appears next to the button when the action is successfully completed.

Task B: Define Group-Based Roles

Admin By Request's SCIM implementation provides the ability to define rules about what synchronized users have access to within the User Portal, based on their SCIM source group (i.e., their group in the IDP). This means that if you don't want all imported users having access to everything within the User Portal, you can create a Group-Based Role for each Azure AD group specifying exactly what the users in that group do and do not have access to. As soon as users are synchronized to Admin By Request, their designated permissions are applied.

If you do not create any Group-Based Roles, all synchronized users will have complete access to the User Portal. If a user belongs to multiple groups – all of which have Group-Based Roles defined – the first Role in the list will apply for that user. You can also create a Default Group-Based Role (covered in detail further down).

The filter options available for Group-Based Roles are as follows:



- **SCIM source group** – This refers to the source group in the IDP (i.e., Azure AD). Whatever group is typed here needs to match the name of a group in Azure AD.

- **Default for users not member of any group** – When checked, the permissions defined for this Role become the 'default' permissions, applying to all users who aren't assigned any of the other Group-Based Roles defined for other groups. This checkbox can only be applied to one Group-Based Role.

The checkbox properties such as **Modify Settings**, **View Auditlog**, and **Manage workstations** refer to the various features in Admin By Request. If checked, users assigned the Role have access to the respective feature / can do the specified action.

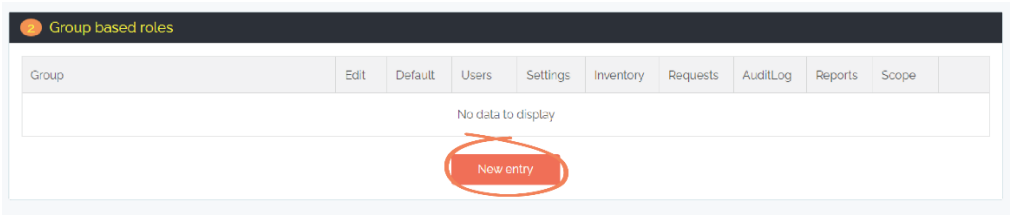
The four textboxes (**End user** and **Computer** etc.) are used to filter out end point data. Here you can specify IDP groups or OUs (Organizational Units) of end users and / or computers, so that Admin By Request Portal users assigned this Group-Based Role only have access to end users and / or computers that fall into those groups / OUs.

NOTE: You can specify multiple groups or OUs in these textboxes, separated by commas.

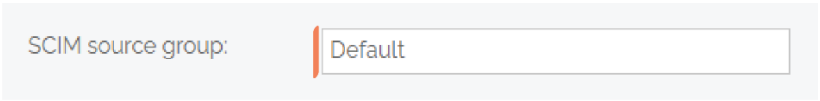
Before creating Group-Based Roles for specific groups, we recommend that you create a Default Role specifying permissions for the 'general' user; these are all synchronized users who are not members of any of the other groups that you have defined Group-Based Roles for. When synchronized, they get assigned the Default permissions in the User Portal (demonstrated in the example below).

Create Default Group-Based Role

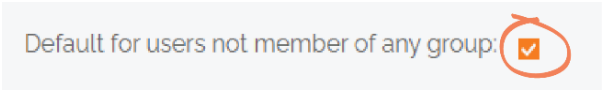
1. In the Admin By Request **SCIM Provisioning Setup** page, section **2. Group based roles**, select the **New entry** button:



2. In the **SCIM source group** textbox, type the desired name for this group – this example uses *Default*:

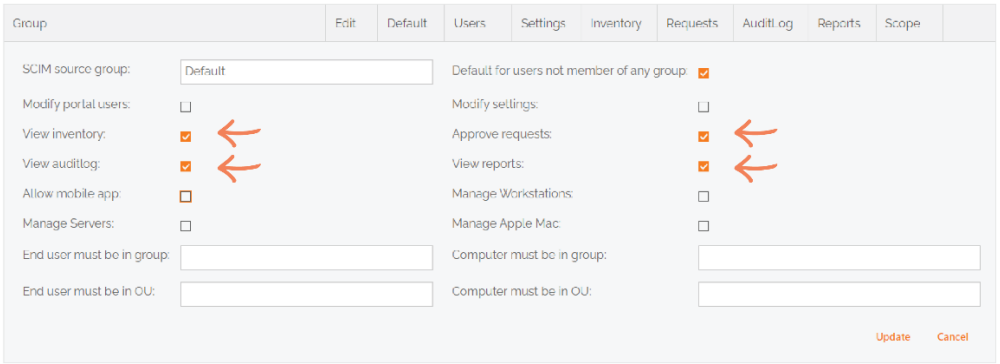


3. Ensure the **Default for users not member of any group** checkbox is checked:



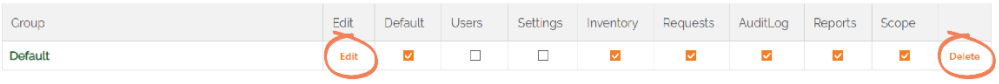
> **IMPORTANT:** Only one Group-Based Role can have this property checked, i.e., there can only be one set of default permissions that users without any other Group-Based Role are assigned.

4. Use the filters to define default permissions. In this example, permissions for default users include viewing the Inventory, Auditlog, and Reports, and Approving requests:

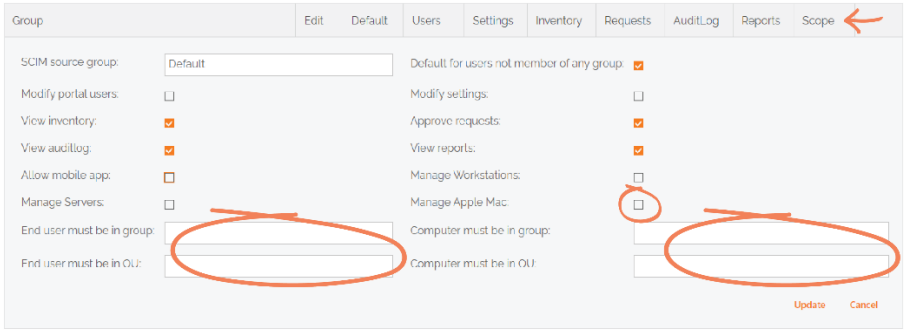


5. Click the **Update** button to save the Role:

6. To **Edit** or **Delete** the rule, use the respective buttons to the left and right of the eight filter columns:



NOTE: The first seven filter columns correspond to their matching checkbox in the Edit window (i.e., **Default** to **Reports**), however, the **Scope** checkbox corresponds to multiple properties: the **Manage Apple Mac** checkbox and the **End user** and **Computer** textboxes at the bottom of the window:

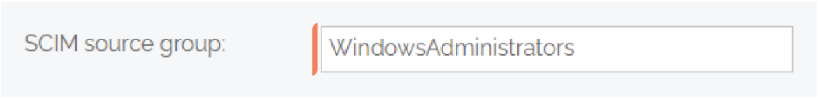


The process for assigning Roles with specific permissions to actual IDP groups follows a similar set of steps to those described above. The section below uses a common example to illustrate how Group-Based Roles could be applied.

Create Group-Based Role for Windows Admins

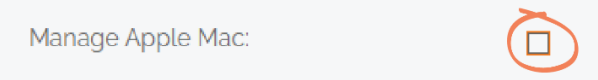
You have a group in Azure AD called 'WindowsAdministrators' whose members only require access to Windows-related data. You therefore want to prevent all users in this group from accessing Mac data in the Admin By Request User Portal (e.g., Inventory, Requests and Auditlogs from Mac devices / users, etc.). The solution is to create a Group-Based Role which filters out Mac access for members of the WindowsAdministrators source group.

1. After creating a **New entry** in the **SCIM source group** textbox, type the name of the IDP source group you want to define specific permissions for – in this example, *WindowsAdministrators*:



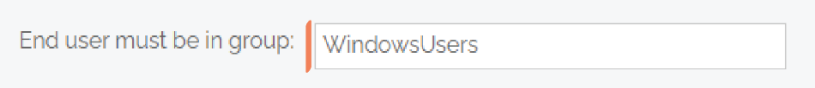
NOTE: If you have created a Default group as described above, the **Default for users not member of any group** checkbox will automatically be unchecked when you come to create another Group-Based Role, as this property can only be applied once.

2. Use the checkboxes to filter out the source group's access to the appropriate features. For this example, uncheck the **Manage Apple Mac** checkbox to remove Mac access for the *WindowsAdministrators* source group:



NOTE: You could also use any of the other Scope textboxes to ensure the *WindowsAdministrators* group has the correct permissions. For example:

- If you have a group in Azure AD for Windows end users called *WindowsUsers*, you could type this group name into the **End user must be in group** textbox, which would prevent the *WindowsAdministrators* source group from seeing any data other than that of end users in the *WindowsUsers* Azure AD group:



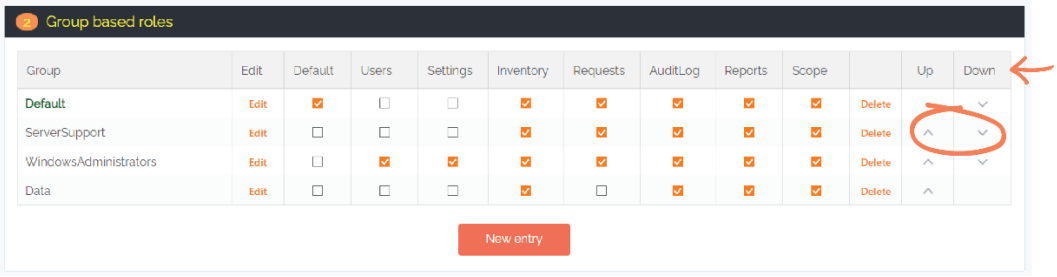
3. Click the **Update** button to save the Role. When users in the *WindowsAdministrators* Azure AD group are synchronized, they will only have the permissions defined in this Role within the Admin By Request User Portal.

The Group-Based Roles appear in the list according to the order they were created: the first appearing at the top of the list, and the most recent getting added to the bottom. If a user belongs to multiple groups – all of which have Group-Based Roles defined – the first Role in the list will apply for that user.

NOTE: Four Roles have been created in the example below with the following properties checked:

- **Default** – *Default*, *Inventory*, *Requests*, *Auditlog*, *Reports*, *Scope*.
- **ServerSupport** – *Inventory*, *Requests*, *Auditlog*, *Reports*, *Scope*.
- **WindowsAdministrators** – *Users*, *Settings*, *Inventory*, *Requests*, *Auditlog*, *Reports*, *Scope*.
- **Data** – *Inventory*, *Auditlog*, *Reports*, *Scope*.

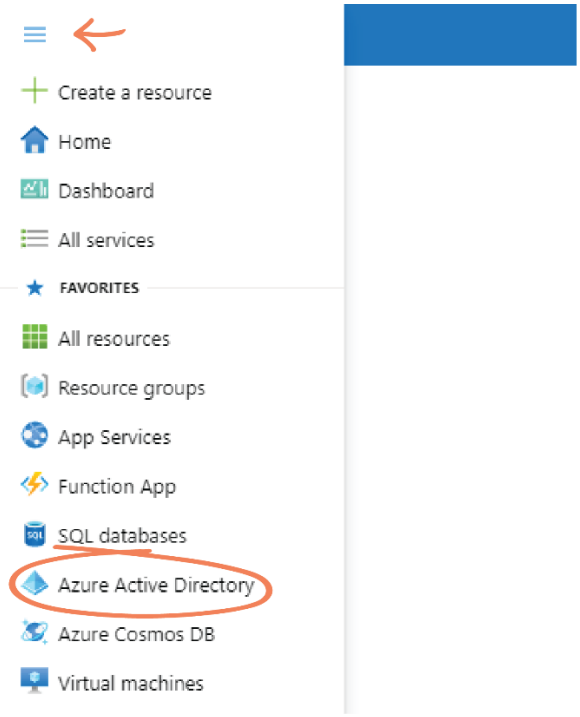
To change the order of Roles in the list, use the up and down arrows to the right of each entry:



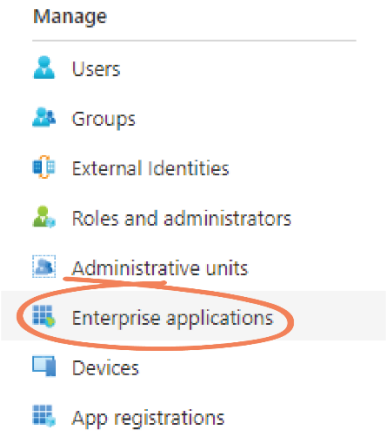
Task C: Create Azure Application

Task C in the integration process involves creating a custom Admin By Request application on the IDP side. In Azure AD, this is done in the form of an Enterprise Application, which acts as the SCIM connector.

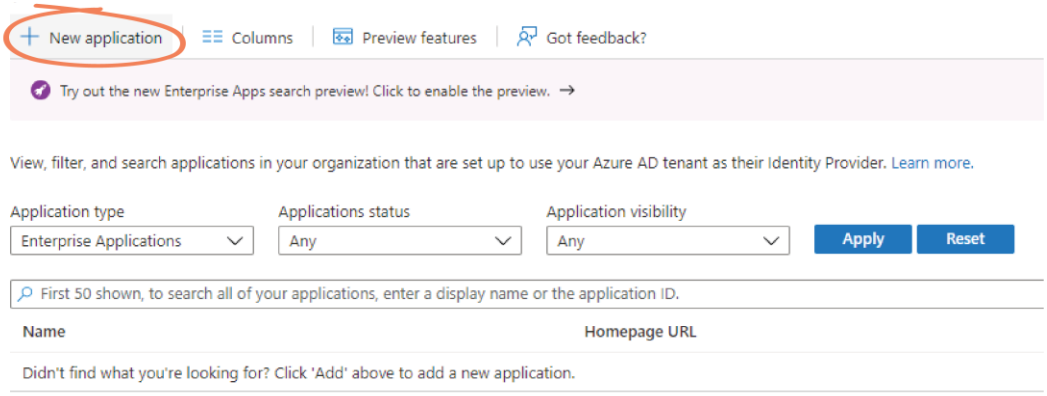
1. In your Azure portal, click the top-left menu icon and select **Azure Active Directory** from the left-hand menu:



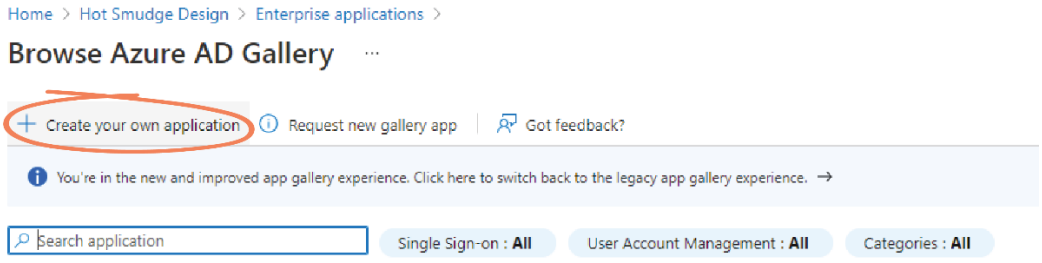
2. When the Directory opens, select **Enterprise applications** from the left-hand menu:



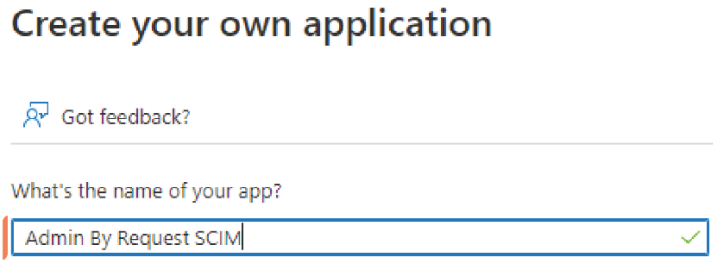
3. Click the **+ New Application** tab:



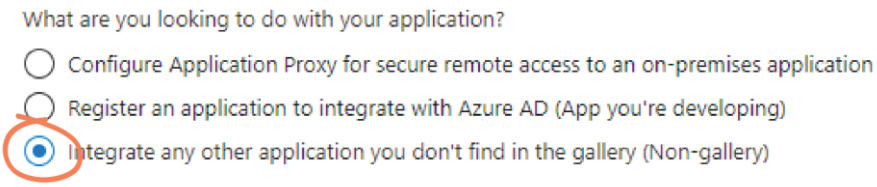
4. Select **+ Create your own application**:



5. In the **What's the name of your app** textbox, type *Admin By Request SCIM*:

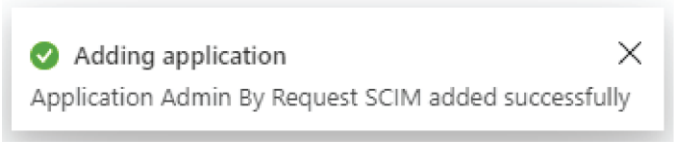


6. In the **What are you looking to do with your application** section, ensure the **Integrate any other application you don't find in the gallery (Non-gallery)** radio button is selected:

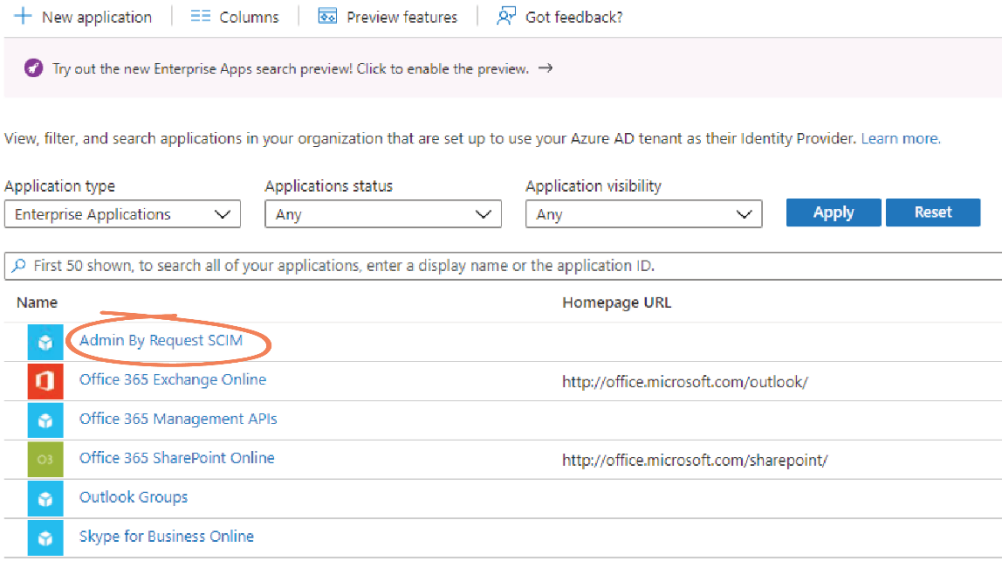


7. Click **Create**:

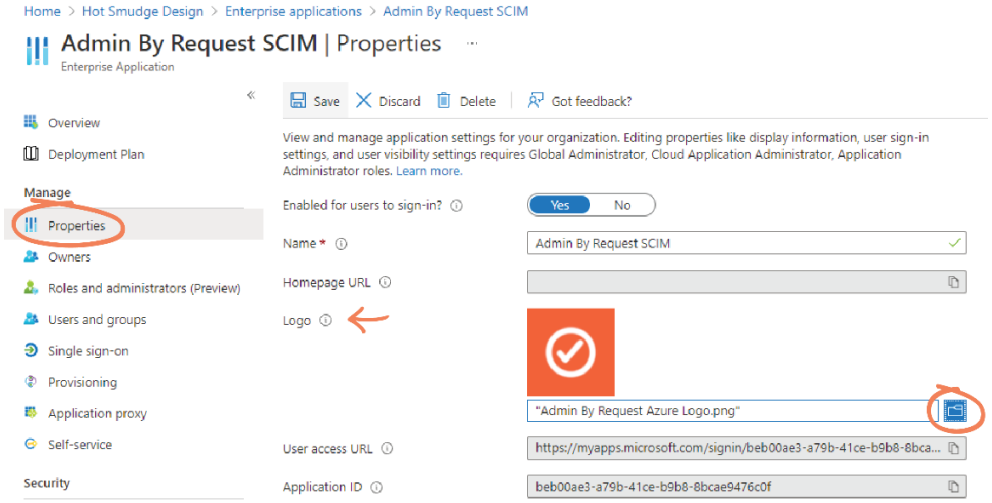
NOTE: The application may take a few moments to create, with a progress message displaying in the top-right corner of the screen during the process; this is the location of all similar progress and success messages in the Azure portal. The following success message displays upon app creation:



IMPORTANT: If you encounter a **404 Not Found** page after the app is created (even if the success message above was displayed) navigate back to **Enterprise applications** to locate the **Admin By Request SCIM** app:



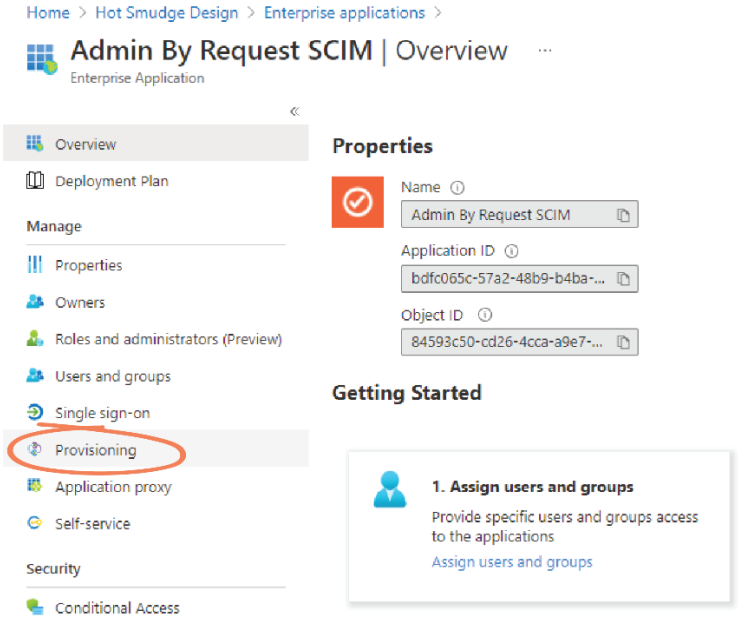
NOTE: Once in the application page, further configuration steps are available. **Step 1. Users and Groups** is covered in Task E of this process manual; **Step 3. Provision User Accounts** is covered in Task D. You have the option of configuring any of the other settings (e.g., **4. Conditional Access**, **5. Self service**) but these do not affect the Admin By Request integration. You also have the option of navigating to **Properties** in the left-hand menu and setting the **Logo** to the following image:



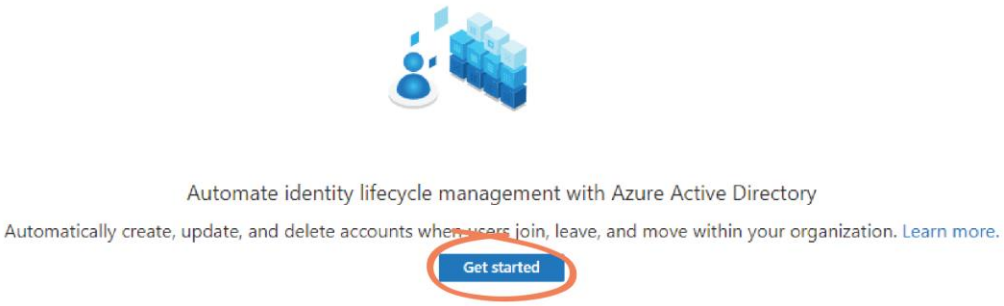
Task D: Set Up Provisioning

This task involves connecting the newly created SCIM app to the Admin By Request SCIM endpoint.

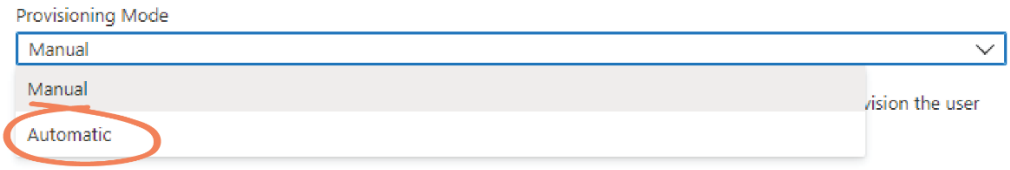
1. From the left-hand menu of the **Admin By Request SCIM** application page, select **Provisioning** (located in either the left-hand menu or the main page):



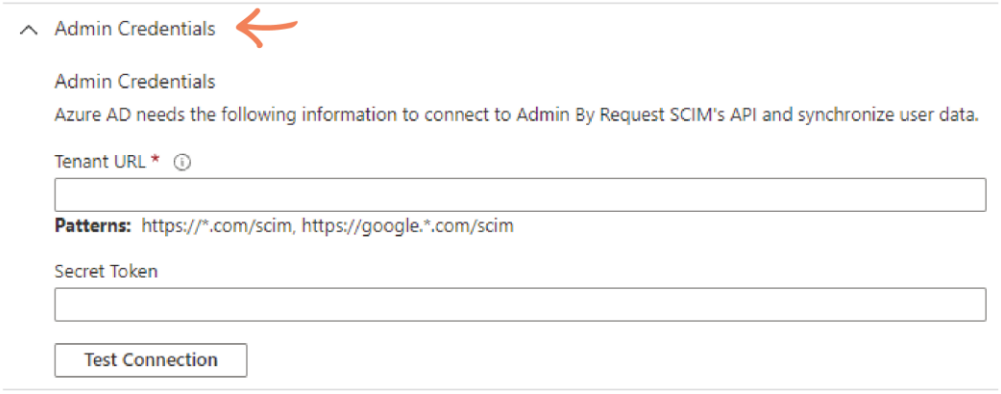
2. Click the **Get Started** button:



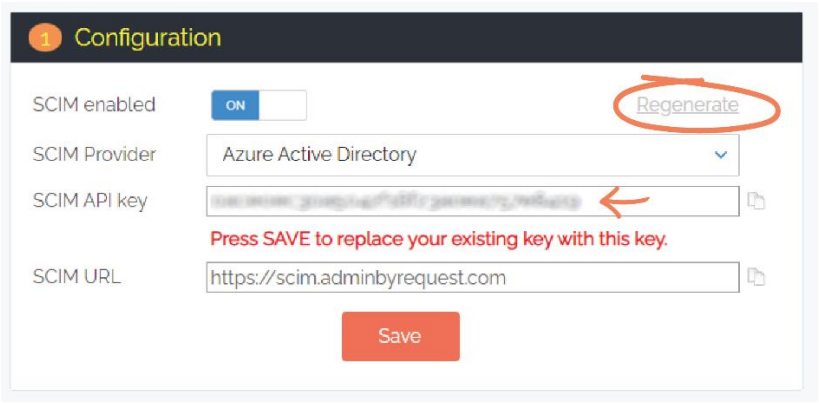
3. From the **Provisioning Mode** drop-down menu, select **Automatic**:



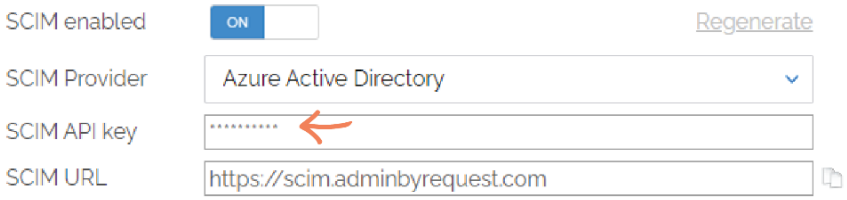
NOTE: Doing so displays a new **Admin Credentials** section on the page, used in subsequent steps of this Task (i.e., Task D):



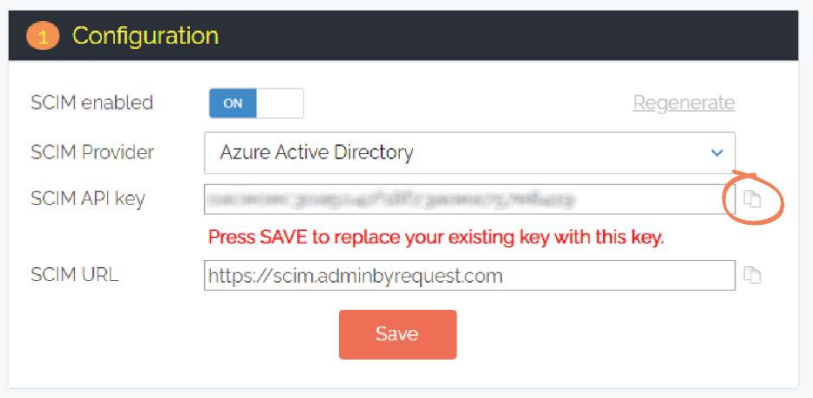
4. In your Admin By Request User Portal, ensure you are in the **SCIM Provisioning Setup** page, and select the **Regenerate** button in section **1. Configuration**, to generate a new API key:



NOTE: A new API key needs to be generated so that it can be copied to the clipboard for future use. Prior to clicking **Regenerate**, the API key is hidden and cannot be copied:



5. Click the clipboard icon to the right of the **SCIM API key** field to copy the key:

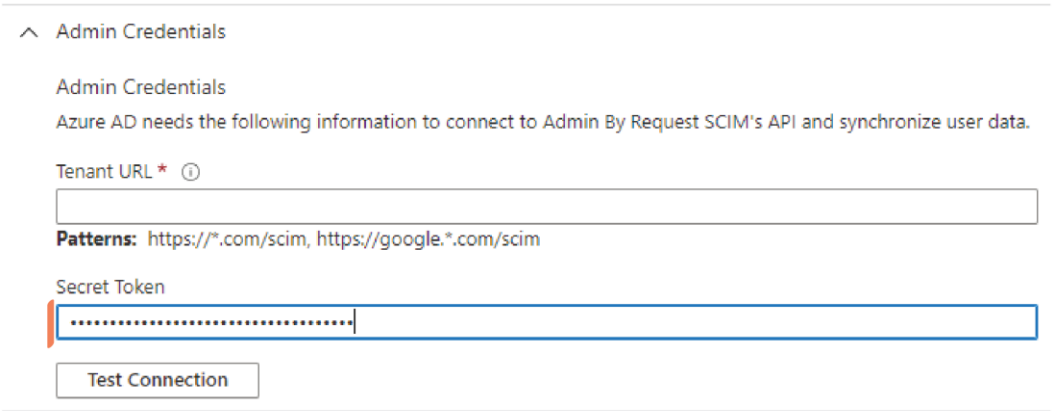


NOTE: Click **OK** to dismiss the confirmation pop-up that appears.

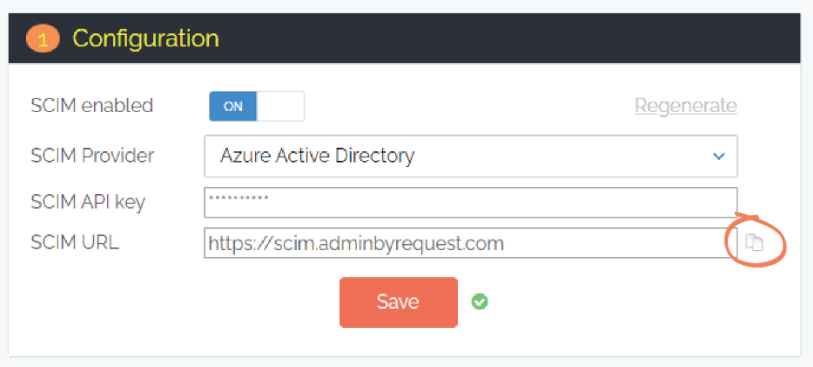
6. Click **Save** to ensure the new API key is used:

IMPORTANT: Do not click the **Save** button until you have copied the API key. Doing so will hide the key and it will then need to be regenerated before it can be copied. However, it is imperative that you save *after* copying the API key, to ensure this key is used in the SCIM integration.

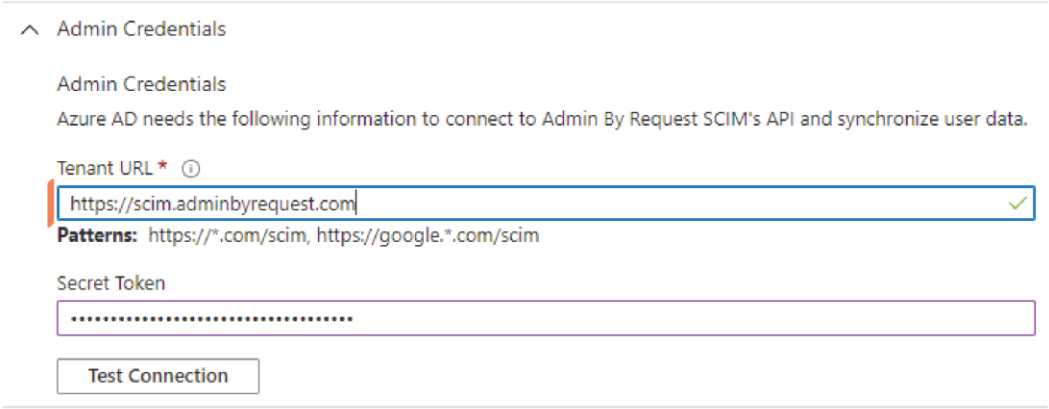
7. In your Azure portal, in the **Secret Token** field of the **Admin Credentials** section, paste the API key copied from Admin By Request:



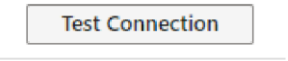
8. In your Admin By Request User Portal, copy the **SCIM URL**:



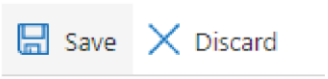
9. In your Azure portal, paste the URL into the **Tenant URL** textbox:



10. Click the **Test Connection** button:



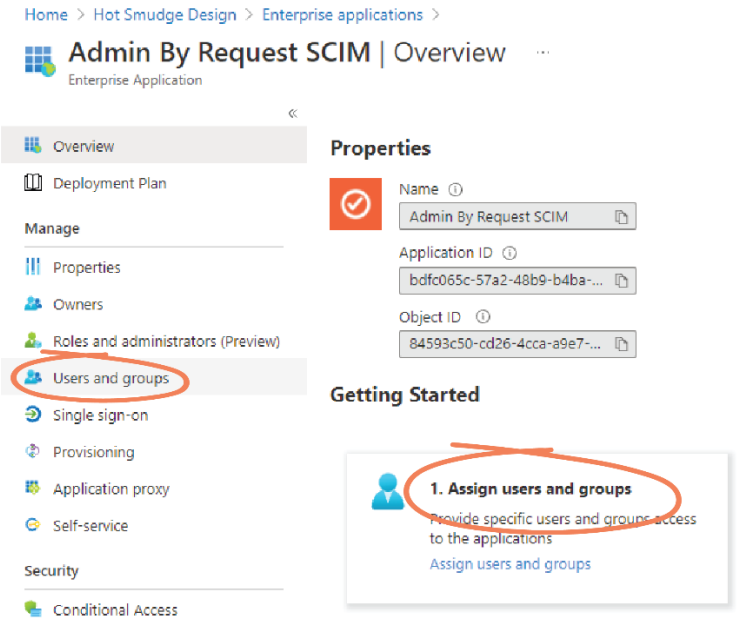
11. Click the **Save** button in the top left:



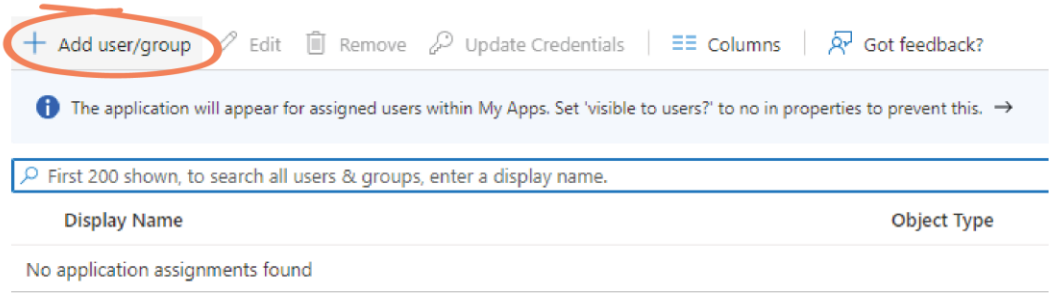
Task E: Assign Users and Groups

Assigning users and groups determines what data will be synchronized to the Admin By Request User Portal when the provisioning cycle runs.

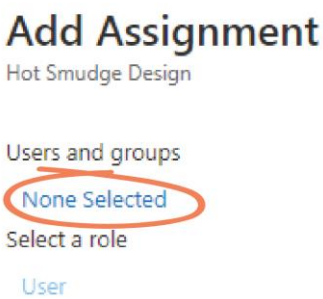
1. Navigate to the application page (**Home** > **Enterprise applications** > **Admin By Request SCIM**) and select **Users and Groups** (located in either the left-hand menu or the main page):



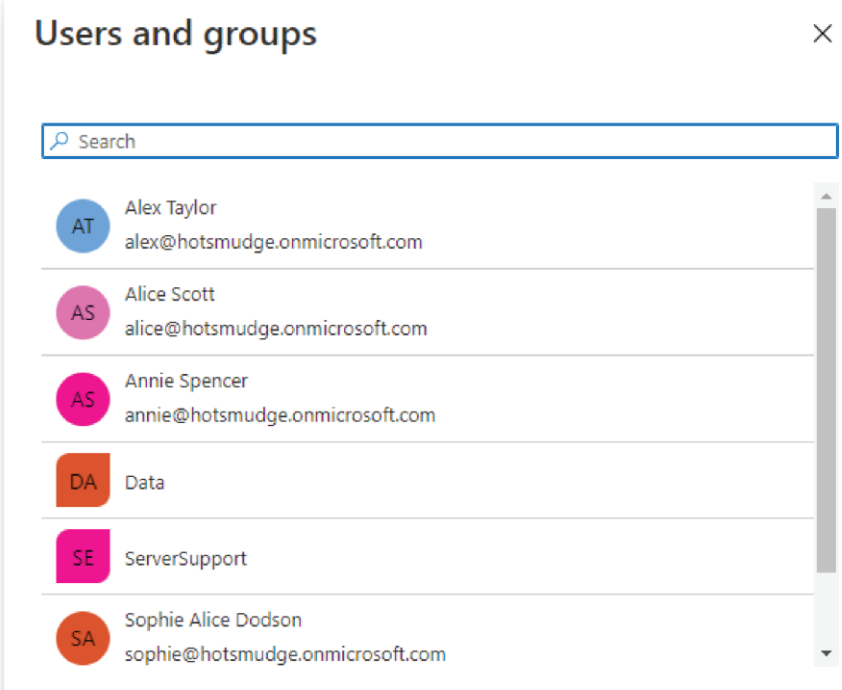
2. Click the **+ Add user/group** tab:



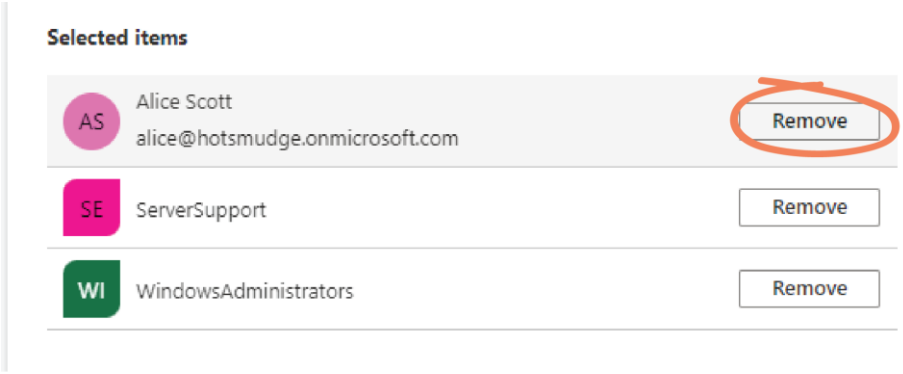
3. Under **Users and groups**, click **None selected**:



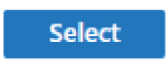
4. From the **Users and groups** list on the right-hand side, select the users and / or groups you want to assign:



NOTE: Multiple users / groups can be selected. As each user / group is selected, they appear in the **Selected items** section. Click the **Remove** button to remove a selection:



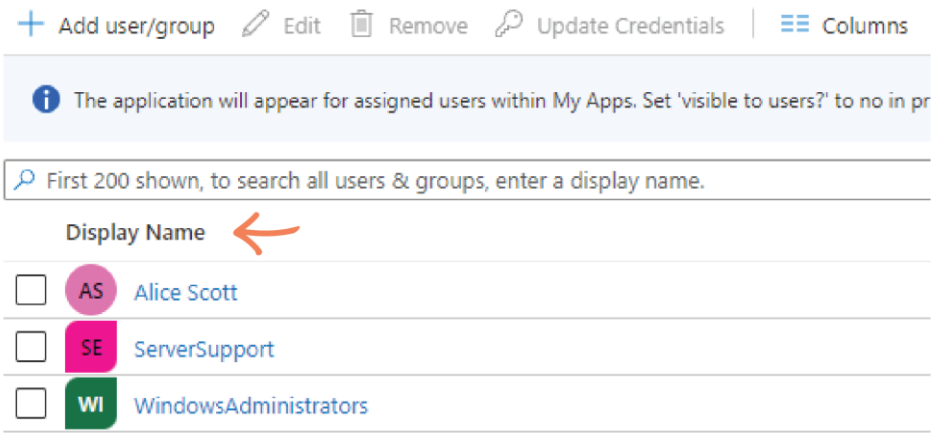
5. When the desired users are selected, click **Select**:



NOTE: The number of selected users is now listed under **Users** in the **Users and Groups** page:

6. Click the **Assign** button at the bottom of the page:

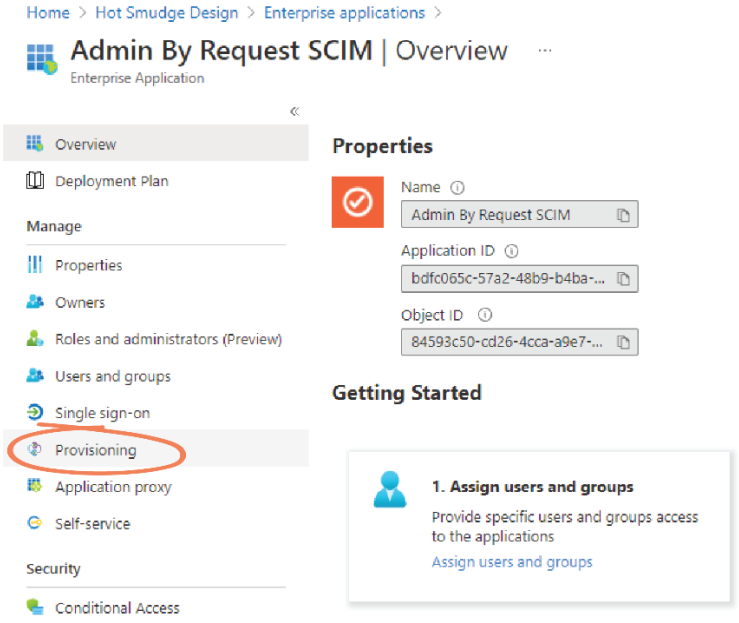
NOTE: This action returns you to the **Users and Groups** page. A success message appears upon completion, stating the number of users and that have been successfully assigned access to the application. The assigned users are listed under **Display name**:



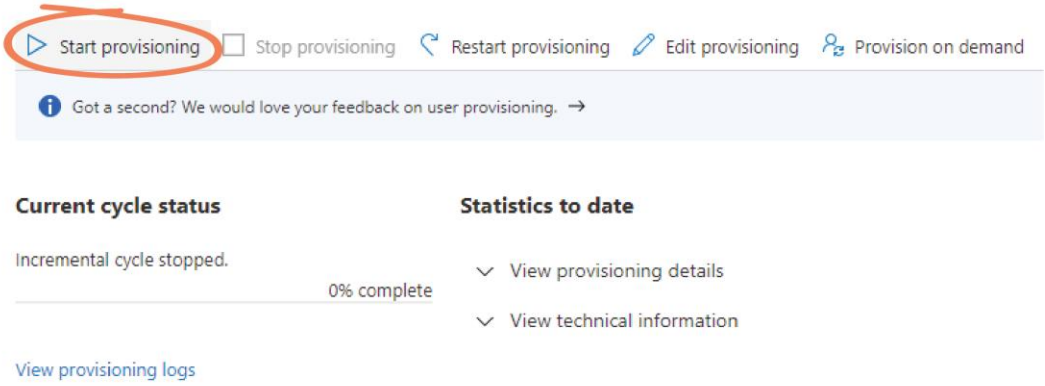
Task F: Start Provisioning

Task F initiates the provisioning cycle, in which requests are made to create, update, and delete users within Admin By Request.

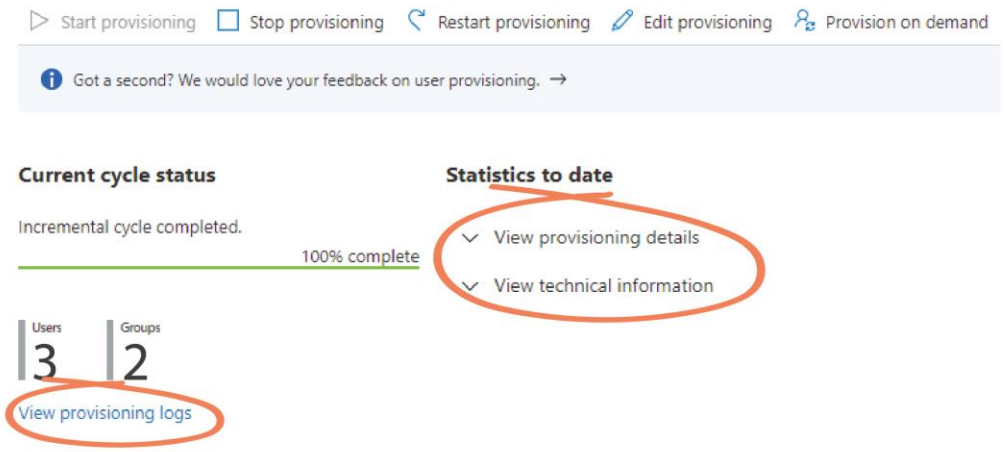
1. From the application page (**Home** > **Enterprise applications** > **Admin By Request SCIM**) select **Provisioning** (located in either the left-hand menu or the main page):



2. Click the **Start Provisioning** tab from the top menu:



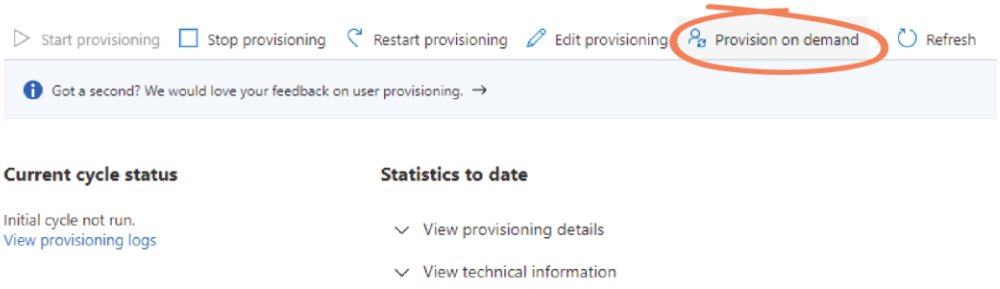
NOTE: Eventually users and groups are synchronized to your Admin By Request User Portal. This usually occurs approximately every 20 to 40 minutes. When synchronization is complete, the page displays provisioning details:



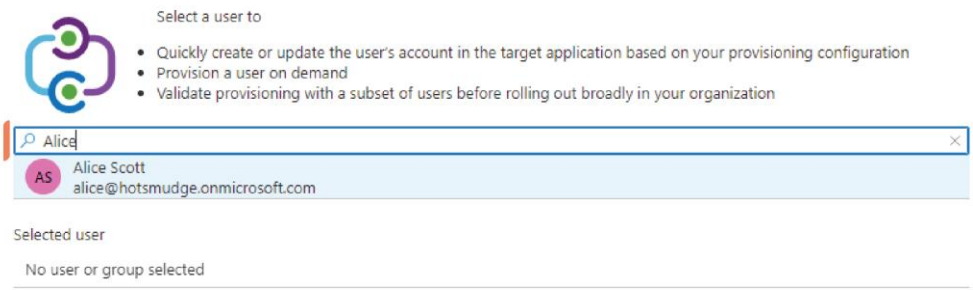
Provision On Demand

Azure AD provides a Provision on demand option which force the synchronization of a user immediately. This is a good way to validate provisioning with a small number of users before rolling out broadly for your organization. You can only **Provision on demand** one user at a time.

1. To do this, select the **Provision on demand** tab from the top menu:



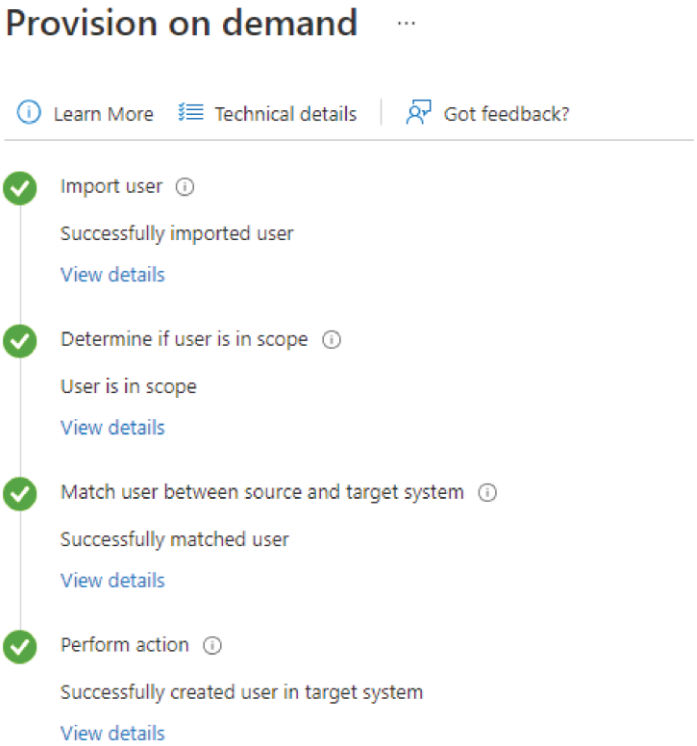
2. In the search bar, type the name of one of the assigned users – in this case, *Alice Scott*:



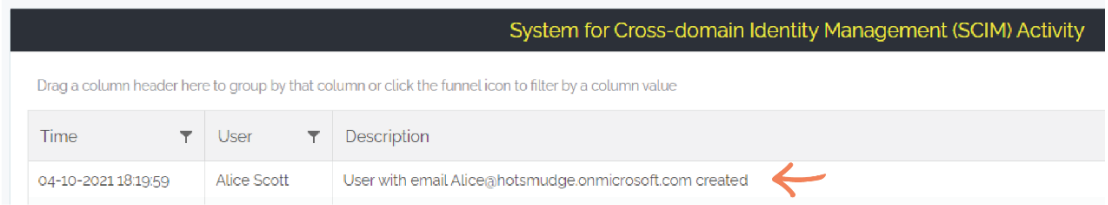
IMPORTANT: You can only provision users that have been assigned to the application (covered in Task E). Users that have not been assigned are still able to be selected if you type their name into the search bar, but the user will not be synchronized to the Admin By Request User Portal (you will receive an **out of scope** error message). However, if you have unassigned a user from the application, you can **Provision on demand** this change to immediately remove them from the Admin By Request User Portal (instead of waiting for the provisioning cycle to run). This is covered in the Deprovisioning section further on in this Task (i.e., Task E).

3. Select the user from the list, and click the **Provision** button at the bottom of the screen:

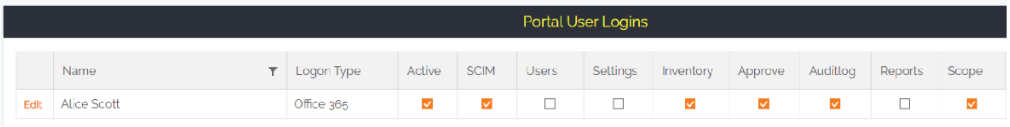
NOTE: If successful, the **Provision on demand** window details the four completed actions and provides **Export details** listing each target attribute name and its value:



In the Admin By Request User Portal, the user that was **Provisioned on demand** (*Alice Scott*) is now synchronized (viewing data in the User Portal is covered in detail in Task G):



IMPORTANT: You cannot use **Provision on demand** for groups. Therefore, all Group-Based Roles other than the *Default* Role are not implemented until the provisioning cycle runs and groups are synchronized. This means that individual users who are **Provisioned on demand** (such as *Alice Scott* in our example) will have the *Default* permissions assigned, as can be seen in the user portal:



Deprovisioning

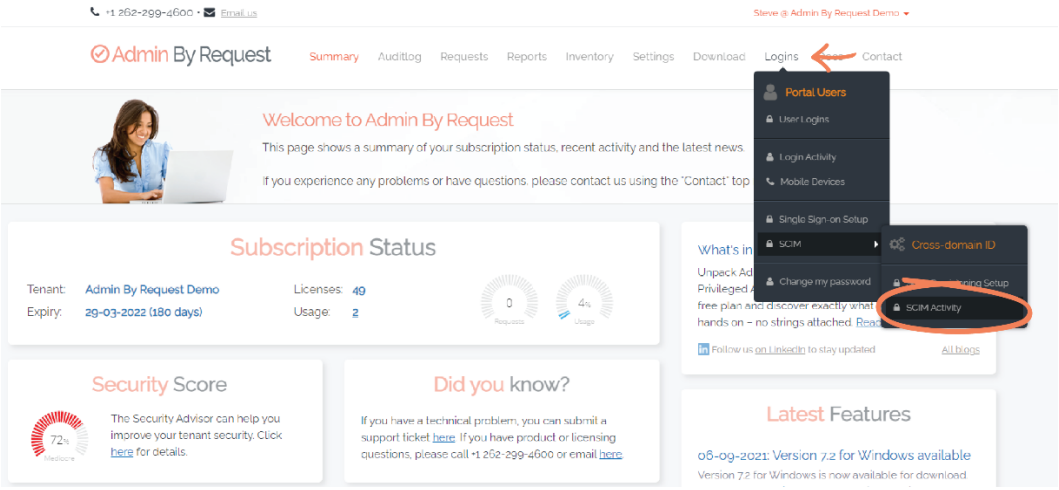
To deprovision users and / or groups, navigate to **Users and Groups** and unassign the desired users / groups from the Admin By Request SCIM app. When the provisioning cycle runs, they will be deleted from the Admin By Request User Portal.

To force the immediate deprovisioning of a user, unassign them as described above, then navigate to **Provisioning** > **Provision on demand**, type the name of the user you have just unassigned in the search box, and click the **Provision** button at the bottom of the screen.

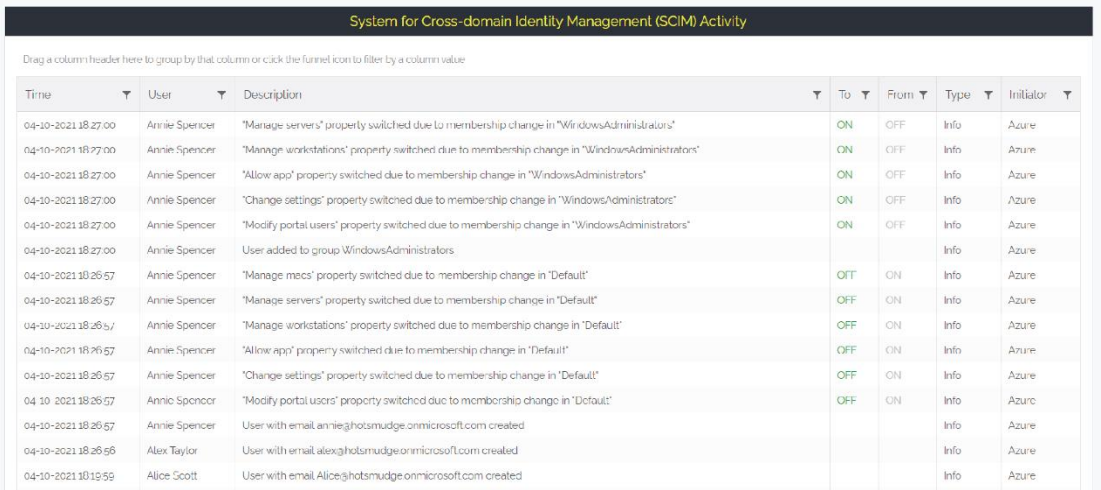
Task G: View Data in User Portal

Provisioned users and groups are now available in the Admin By Request User Portal.

1. In the Admin By Request User Portal, navigate to **Logins** > **SCIM** > **SCIM Activity**:

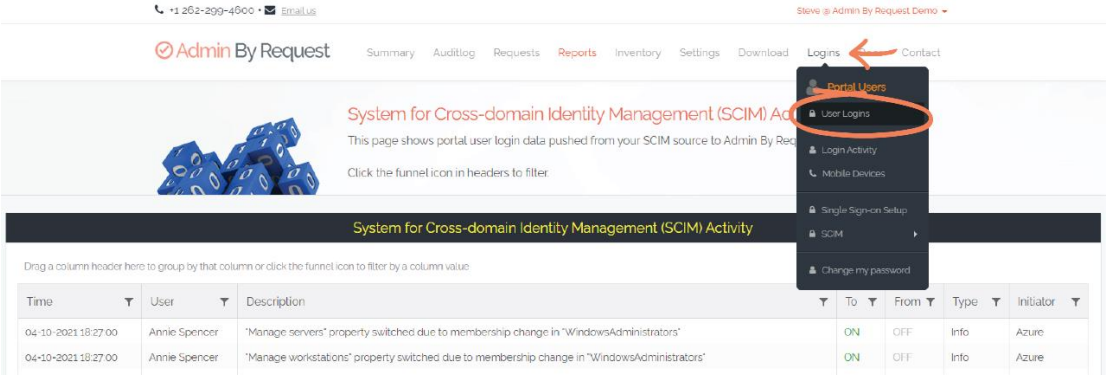


2. The table The table displays all synchronized user and group data, including the **Time** synchronization occurred, the name of the **User**, a **Description** of the activity, **To** and **From** columns (which only display content if a permission has changed – i.e., a property has 'switched' from checked to unchecked, such as when a user has been added to a group or their Group-Based Role has been edited, etc.), and the **Initiator** (the IDP – i.e., Azure AD):



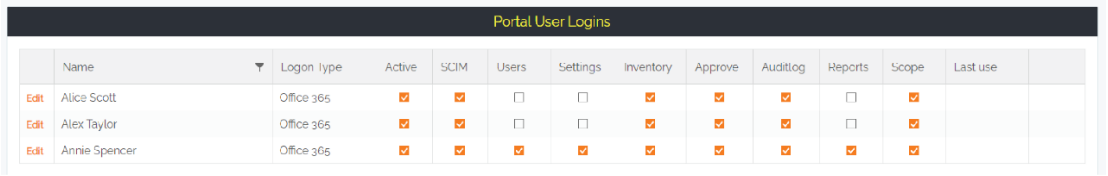
Time	User	Description	To	From	Type	Initiator
04-10-2021 18:27:00	Annie Spencer	"Manage servers" property switched due to membership change in "WindowsAdministrators"	ON	OFF	Info	Azure
04-10-2021 18:27:00	Annie Spencer	"Manage workstations" property switched due to membership change in "WindowsAdministrators"	ON	OFF	Info	Azure
04-10-2021 18:27:00	Annie Spencer	"Allow app" property switched due to membership change in "WindowsAdministrators"	ON	OFF	Info	Azure
04-10-2021 18:27:00	Annie Spencer	"Change settings" property switched due to membership change in "WindowsAdministrators"	ON	OFF	Info	Azure
04-10-2021 18:27:00	Annie Spencer	"Modify portal users" property switched due to membership change in "WindowsAdministrators"	ON	OFF	Info	Azure
04-10-2021 18:27:00	Annie Spencer	User added to group WindowsAdministrators			Info	Azure
04-10-2021 18:26:57	Annie Spencer	"Manage mecs" property switched due to membership change in "Default"	OFF	ON	Info	Azure
04-10-2021 18:26:57	Annie Spencer	"Manage servers" property switched due to membership change in "Default"	OFF	ON	Info	Azure
04-10-2021 18:26:57	Annie Spencer	"Manage workstations" property switched due to membership change in "Default"	OFF	ON	Info	Azure
04-10-2021 18:26:57	Annie Spencer	"Allow app" property switched due to membership change in "Default"	OFF	ON	Info	Azure
04-10-2021 18:26:57	Annie Spencer	"Change settings" property switched due to membership change in "Default"	OFF	ON	Info	Azure
04-10-2021 18:26:57	Annie Spencer	"Modify portal users" property switched due to membership change in "Default"	OFF	ON	Info	Azure
04-10-2021 18:26:57	Annie Spencer	User with email annie@hotsmudge.onmicrosoft.com created			Info	Azure
04-10-2021 18:26:56	Alex Taylor	User with email alex@hotsmudge.onmicrosoft.com created			Info	Azure
04-10-2021 10:19:59	Alice Scott	User with email Alice@hotsmudge.onmicrosoft.com created			Info	Azure

3. All provisioned users should have the appropriate permissions as defined in Group-Based Roles (Task B). To view this, navigate to **Logins** > **User Logins**:



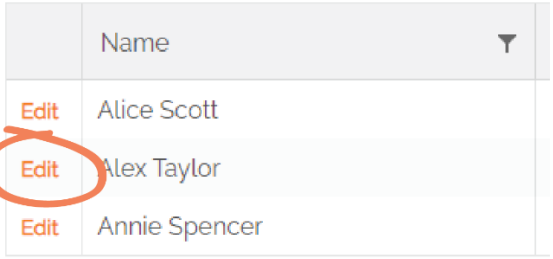
4. The appropriate checkboxes should be ticked next to each user depending on their group and the Group-Based Role defined for that group:

   - *Alice Scott* has the *Default* permissions assigned as she is not a member of any group.
   - *Alex Taylor* has permissions defined for the *ServerSupport* Group-Based Role.
   - *Annie Spencer* has permissions defined for the *WindowsAdministrators* Group-Based Role.

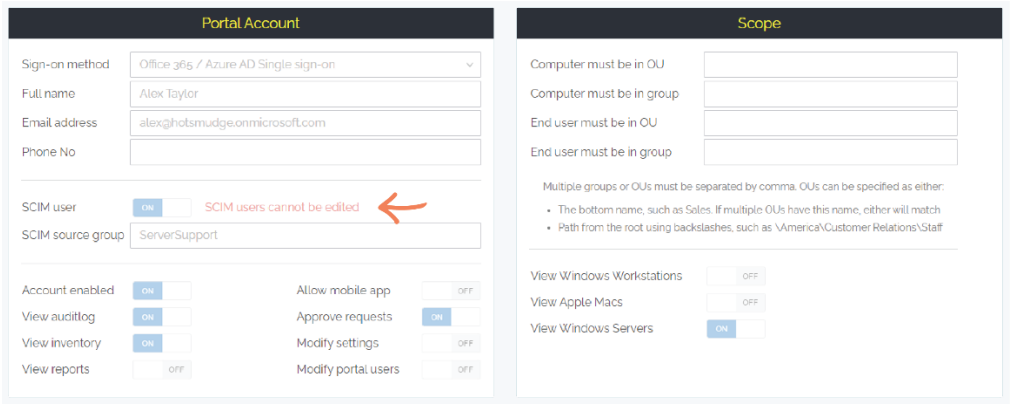


IMPORTANT: As soon as a user is synchronized, they get the permission defined for their group in Group-Based Roles (either Default or specific IDP group). If Group-Based Roles are edited, the users assigned that Role get the updated permissions as soon as the provisioning cycle runs again.

5. Click the **Edit** button next to a user in **Portal User Logins** – in this example, *Alex Taylor*:



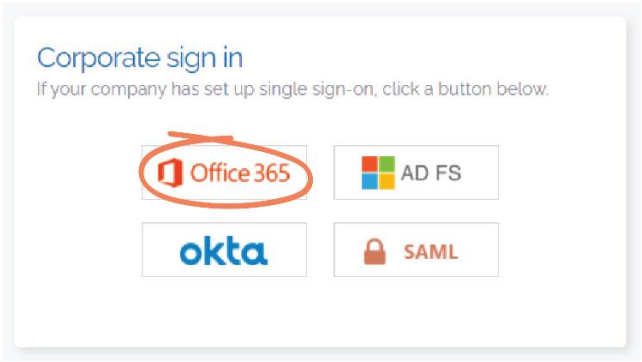
IMPORTANT: Users that have been synchronized with SCIM cannot be edited within the Admin By Request User Portal. You can view their data in the Portal Account section, but are not able to make changes because the data is controlled by the IDP (i.e., Azure AD):



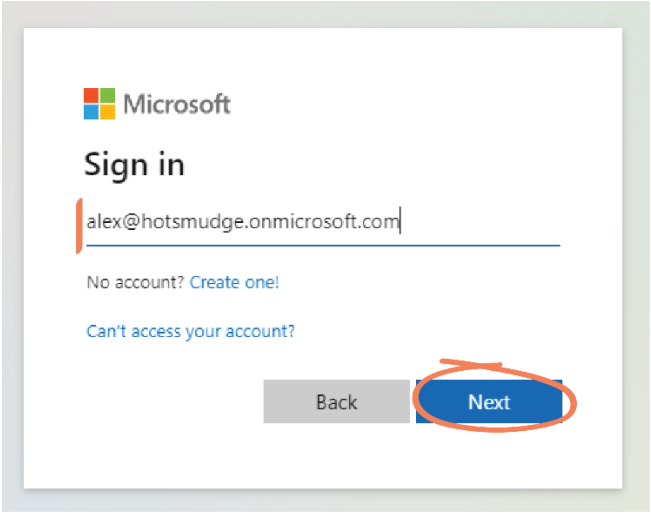
User Login

Now that users are provisioned, they can sign into the Admin By Request User Portal using their IDP credentials.

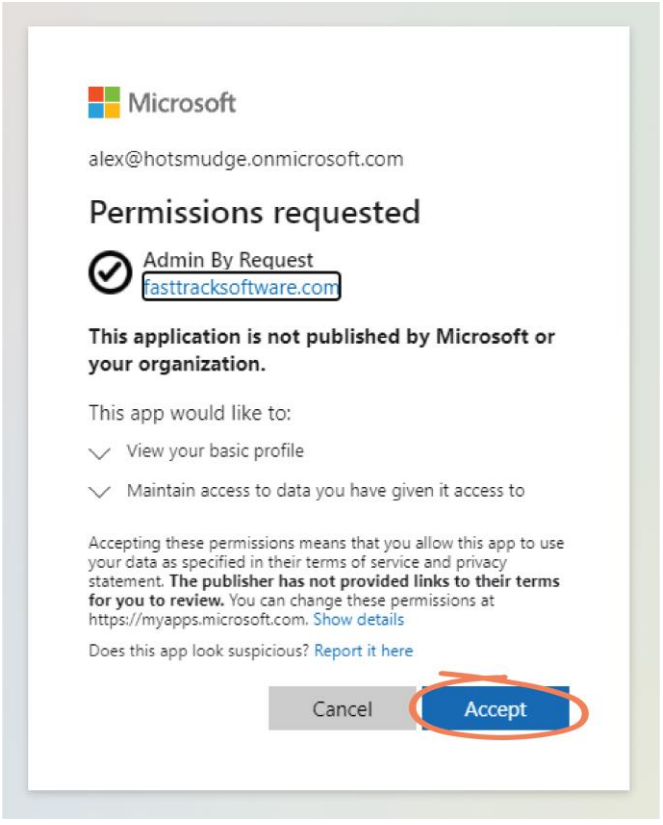
1. Go to the Admin By Request Sign in page and select **Office 365** from the **Corporate Sign-in** section:



2. Provisioned users can use their Office 365 user name to sign in. This example uses *Alex Taylor*. Click **Next**:



3. Select **Accept** to give permission to the app the required permissions (listed in the window):



4. Once signed in, the user only has access to User Portal features according to the permissions defined in their Group-Based Role. *Alex Taylor* is in the *ServerSupport* group, with access to view the *Auditlog*, *Inventory*, and *Reports* data, approve *Requests*, and *Manage Servers* (not shown on this page):