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Introduction

Squadra Technologies security Removable Media Manager (secRMM) software is Windows security software that runs on your company’s workstations and servers. secRMM manages and monitors removable media. In this context, Removable media is defined as external hard disks, USB (flash) drives, smart phones, tablets, SD-Cards, CD-ROM and DVD. Such devices typically use the computers Universal Serial Bus (USB) ports to connect to the computer. Removable media devices are popular because they are very convenient when you want to copy files around or backup data. secRMM allows you to track all write activity to the removable media devices in your computer environment as well as giving you the ability to control (or authorize) who can write to the removable media devices.

This document is focused on removable media that is contained within mobile devices (either the devices flash storage or an SD-card). Mobile devices are so popular now that there are many software products which help organizations manage how mobile devices are used within the work place. These software products are called/categorized as “Mobile Device Management” (MDM) products. Microsoft has a MDM product named Intune that runs in the Microsoft cloud. Microsofts cloud is named Azure. All of the MDM products focus on security.

Unfortunately, when it comes to connecting the mobile device over a USB cable, the MDM products either allow or disallow a USB connection (i.e. either on or off). This is a sub-optimal solution for two reasons:

1. The device must be enrolled in the MDM to enforce this rule (i.e. either USB allowed or disallowed). This is roughly analogous to saying that police officers can catch all criminals but only if the criminals first go to the police station to get finger-printed. Otherwise it is not possible to catch them.
2. A rule that only enforces allowed or disallowed is on the one hand (allowed) too relaxed and on the other hand (disallowed) to restrictive. The right solution is to have policy such as secRMM to control read, write and who can have this access, from where they can copy data from, etc.

secRMM can be configured to use the mobile device definitions in Microsoft Intune to decide if a mobile device can be used over the USB connection. A mobile device can be used over a USB connection to transfer files to and from the mobile device to the Windows Desktop computer it is connected to (over the USB cable). You can configure secRMM to check if the mobile device is simply enrolled in Intune or that the device’s state (within the MDM) must be “compliant” before it can be used over the USB connection. Whether or not a mobile device is compliant is defined by the organization configuring the MDM and the devices within the MDM. An example would be that a device is compliant if the organizations apps were installed on the device.

If the functionality in the paragraph above is a desirable feature for your environment, this document will help you setup this secRMM feature.

Prerequisites

You will need to have a licensed Intune instance in Azure. By default, this also means you will have an “Azure Active Directory” (AAD) instance. Both Intune and AAD are defined within your Azure tenant. A tenant is a Microsoft term that can be thought of as a container that holds services, programs, device
definitions, data and virtual computers in the cloud that your company can access. Each tenant within Azure has a unique id (Microsoft calls this the “tenant id” and “directory id”).

Setup overview

Here are the high-level steps we will take to setup the secRMM connection to your Azure tenant (i.e. AAD and Intune).

1. Setup an Azure application
2. Configure secRMM to get mobile device state from Intune via the Azure application

Setup details

Setup an Azure “application”

Of course, Microsoft does not allow external programs access to your Azure tenant by default. If you want to allow a program access to the services (i.e. Intune) within your Azure tenant, you must define an “application” within your Azure tenant (via your AAD). The external program must go through these Azure applications to access the services and data within Azure. These Azure applications are really nothing more than a collection of security settings that tell Azure what parts of Azure the external program can access. This document will walk you through the process of setting up the application so you really do not need to have a deep understanding of the whys and hows. Once you follow the steps, the end result will be that secRMM can access the mobile device data in your AAD and Intune so that secRMM can make the decision about mounting your mobile devices over USB connections based on your Azure tenant data.

Login to your Azure tenant

Using a web browser, go to URL https://portal.azure.com. You will need to supply your Azure userid and password. The userid you use must be defined as the Azure Global Administrator account. Azure Global Administrators are the only userids that can define Azure applications.
Create Azure Application

Once you are logged in, you will be at your Azure tenant Dashboard. On the left hand side of the web page, find and select “Azure Active Directory”.

A new column will appear just to the right of the Dashboard column. In the new column, select “App registrations”.
A new page will appear just to the right of the “App registrations” column. In the new page, at the top, select “New application registration”.

A form will appear that wants you to specify the “Application name”, “Supported account types” and a “Platform configuration” as shown in the screenshot below. For the “Application name”, type `secRMMIntuneApp` (although this is a free form text field and can have any value you want, we recommend you specify secRMMIntuneApp so the documentation below will match your environment). For
the “Supported account type”, select the Single tenant. For the “Platform configuration”, select “Web API”. Now click the Register button.

**Register an application**

* Name

The user-facing display name for this application (this can be changed later).

```
secRMMIntuneApp 1.
```

**Supported account types**

Who can use this application or access this API?

2. Accounts in this organizational directory only (Squadra Technologies only - Single tenant)
   - Accounts in any organizational directory (Any Azure AD directory - Multitenant)
   - Accounts in any organizational directory (Any Azure AD directory - Multitenant) and personal Microsoft accounts

Help me choose...

**Platform configuration (Optional)**

Depending on the platform or device this application is targeting, additional configuration may be required such as authentication settings, or fields specific to the platform.

3. Client Application (Web, iOS, Android, Desktop+Devices)
   - Background process and Automation (Daemon) Application

By proceeding, you agree to the Microsoft Platform Policies.

4. Register

Azure AAD will create the application when you click the Register button and will show you the new application as shown in the screenshot below. We will need to use the “Application ID” and Directory ID on this screen when we configure secRMM later in this document.
Next, click the "View API permissions" button (in the middle part of the page) as shown in the screenshot below.

When you click the “View API permissions” button, you will see a new column to the right of the Application information named “API permissions“ as shown in the screenshot below.

API permissions
Applications are authorized to call APIs when they are granted permissions by users/admins as part of the consent process. The list of configured permissions should include all the permissions the application needs.

<table>
<thead>
<tr>
<th>API / Permissions name</th>
<th>Type</th>
<th>Description</th>
<th>Admin Consent Required</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Graph (1)</td>
<td>Delegated</td>
<td>Sign in and read user profile</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

These are the permissions that this application requests statically. You may also request user consentable permissions dynamically through code. See best practices for requesting permissions.

Grant consent
These permissions have been granted for undefined but aren’t in the configured permissions list. If your application requires these permissions, you should consider adding them to the configured permissions list.

You will need to add only 1 API/Permissions to the application as shown in the screenshot below.
To add the new API/Permission, click the “Add a permission” button. A new window will appear on the right hand side of the screen as shown in the screenshot below. Click the Microsoft Graph button.

Commonly used Microsoft APIs

- **Microsoft Graph**
  Take advantage of the tremendous amount of data in Office 365, Enterprise Mobility + Security, and Windows 10. Access Azure AD, Excel, Intune, Outlook/Exchange, OneDrive, OneNote, SharePoint, Planner, and more through a single endpoint.

- **Azure DevOps**
  Integrate with Azure DevOps and Azure DevOps server

- **Azure Rights Management Services**
  Allow validated users to read and write protected content

- **Azure Service Management**
  Programmatic access to much of the functionality available through the Azure portal

- **Azure Storage**
  Secure, massively scalable object and data lake storage for unstructured and semi-structured data

- **Dynamics 365 Business Central**
  Programmatic access to data and functionality in Dynamics 365 Business Central

- **Intune**
  Programmatic access to Intune data

Click the Delegated button as shown in the screenshot below.
Select the "DeviceManagementManagedDevices.Read.All" permission and then click the "Add permissions" button as shown in the screenshot below.

You will now be back on the "Configured permissions" page. Wait for the "Grant admin consent" button to become active and then click the "Grant admin consent" button as shown in the screenshot below.
Configured permissions

Applications are authorized to call APIs when they are granted permissions by users/admins as part all the permissions the application needs. Learn more about permissions and consent

![Add a permission](image)

<table>
<thead>
<tr>
<th>API / Permissions name</th>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Microsoft Graph (2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DeviceManagementManagedDevices</td>
<td>Delegated</td>
<td>Read Microsoft Intune devices</td>
</tr>
<tr>
<td>User.Read</td>
<td>Delegated</td>
<td>Sign in and read user profile</td>
</tr>
</tbody>
</table>

A new window will appear asking you to select an Azure user account as shown in the screenshot below. Make sure you select the Azure global administrator account.
Click the "Accept" button as shown in the screenshot below.
You will now see that the permissions have been granted as shown in the screenshot below.
Click the “Manifest” button on the left side of the page as shown in the screenshot below.
Change the word “null” on the line with “allowPublicClient” to “true” as shown in the screenshots below.
Click the “Save” button as shown in the screenshot below.

The editor below allows you to update this application by directly modifying its JSON representation. Details, see: Understanding the Azure Active Directory application manifest.
Note that if you do not change the “allowPublicClient” to “true” in the Manifest, when you do a “Test Connection” in the secRMM console, you will get the error:

Error: AADSTS7000218: The request body must contain the following parameter: 'client_assertion' or 'client_secret'.

Configure secRMM to get mobile device state

Now that we have setup where secRMM will get the mobile device state, we will give secRMM the information about how to get the mobile device state data. secRMM can be centrally managed with either System Center Configuration Manager (SCCM) or Active Directory Group Policy Objects (AD GPO). You can also individually manage a single computer using the Windows “Computer Management” MMC interface (a good tool when you are testing...before you deploy a policy to your entire environment).

Regardless of which interface you use to configure secRMM, there is a secRMM property named “RequireMDMEnrollment”. Double click the “RequireMDMEnrollment” row to open the window that lets you configure the Intune or SCCM connection. As you can see in the screenshot, there are several options available to you. We will break down each option below.

The first checkbox (labeled “On”) is required to be checked. It is here to be consistent with all of the other secRMM on/off properties. The second checkbox (labeled “Enforce when device is plugged in.”) will make secRMM communicate with Intune as soon as the end-user connects the mobile device using the USB cable. If you do not check this checkbox, secRMM will enforce the rule when an end-user tries to transfer a file to the mobile device. Next, is the drop-down listbox (labeled “Required state”). There are two options: Enrolled and Compliant. This tells secRMM what state is required to allow the mobile device to be used over a USB connection. The compliant state is the most strict since the mobile device must be both enrolled and compliant at the same time. It is not possible for the device to be compliant if it is not enrolled.
Next, you need to specify the Azure connection credentials. At this point in time, you must specify the “UserIdPassword” method. Once Azure applications support the other methods, we will update this document.
Once you have all the required properties filled in, click the “Test” button to make sure the connection succeeds. A success message will look like the screenshot below. If the test is unsuccessful, you can look in "C:\Program Files\secRMM\AdminUtils\MDM\Intune\secRMMMDMIntune.log for trace where you can see the detailed errors.

Once you have a successful connection, save the secRMM values by clicking the OK button on the “Require MDM Enrollment” dialog.
Event Data

The secRMM event log will collect data from Azure Intune when mobile devices come ONLINE (over a USB connection) as shown in the screenshot below.

Below is a screenshot of an end-user trying to copy a file (but the file copy was unsuccessful) to the mobile device over a USB connection where the mobile device was not Intune enrolled.
Contacting Squadra Technologies Support

Squadra Technologies Support is available to customers who have purchased a commercial version of secRMM and have a valid maintenance contract or who are in a trial mode of the product.

When you contact Support please include the following information:

1. The version of secRMM you have installed.
2. The Windows versions you have installed: XP, 2003 Server, 2008 Server R2, Vista, Windows 7, etc.
3. Whether the Windows Operating System is 32bit or 64bit.
4. The specific issue you are contacting support for.

About Squadra Technologies, LLC.

Squadra Technologies delivers innovative products that help organizations get more data protection within the computer infrastructure. Through a deep expertise in IT operations and a continued focus on what works best, Squadra Technologies is helping customers worldwide.

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