

Windows Analytics and Upgrade Readiness configuration

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1. Introduction

This document identifies a process of configuring Upgrade Readiness in Windows Analytics.

2. Feature overview

Windows Analytics uses Azure Log Analytics (formerly known as Operations Management Suite or OMS), a collection of cloud-based servicing for monitoring and automating your on-premises and cloud environments. Windows Analytics is a set of solutions that provide you with extensive data about the state of devices in your deployment. There are currently three solutions which you can use singly or in any combination:

Device Health provides the following:

- Identification of devices that crash frequently, and therefore might need to be rebuilt or replaced
- Identification of device drivers that are causing device crashes, with suggestions of alternative versions of those drivers that might reduce the number of crashes
- Notification of Windows Information Protection misconfigurations that send prompts to end users

Update Compliance shows you the state of your devices with respect to the Windows updates so that you can ensure that they are on the most current updates as appropriate. In addition, Update Compliance provides the following:

- Dedicated drill-downs for devices that might need attention
- An inventory of devices, including the version of Windows they are running and their update status
- The ability to track protection and threat status for Windows Defender Antivirus-enabled devices
- An overview of Windows Update for Business deferral configurations (Windows 10, version 1607 and later)
- Powerful built-in log analytics to create useful custom queries
- Cloud-connected access utilizing Windows 10 diagnostic data means no need for new complex, customized infrastructure

Upgrade Readiness offers a set of tools to plan and manage the upgrade process end to end, allowing you to adopt new Windows releases more quickly. With new Windows versions being released multiple times a year, ensuring application and driver compatibility on an ongoing basis is key to adopting new Windows versions as they are released. Upgrade Readiness not only supports upgrade management from Windows 7 and Windows 8.1 to Windows 10, but also Windows 10 upgrades in the Windows as a Service model.

Use Upgrade Readiness to get:

- A visual workflow that guides you from pilot to production
- Detailed computer and application inventory
- Powerful computer-level search and drill-downs
- Guidance and insights into application and driver compatibility issues, with suggested fixes
- Data-driven application rationalization tools

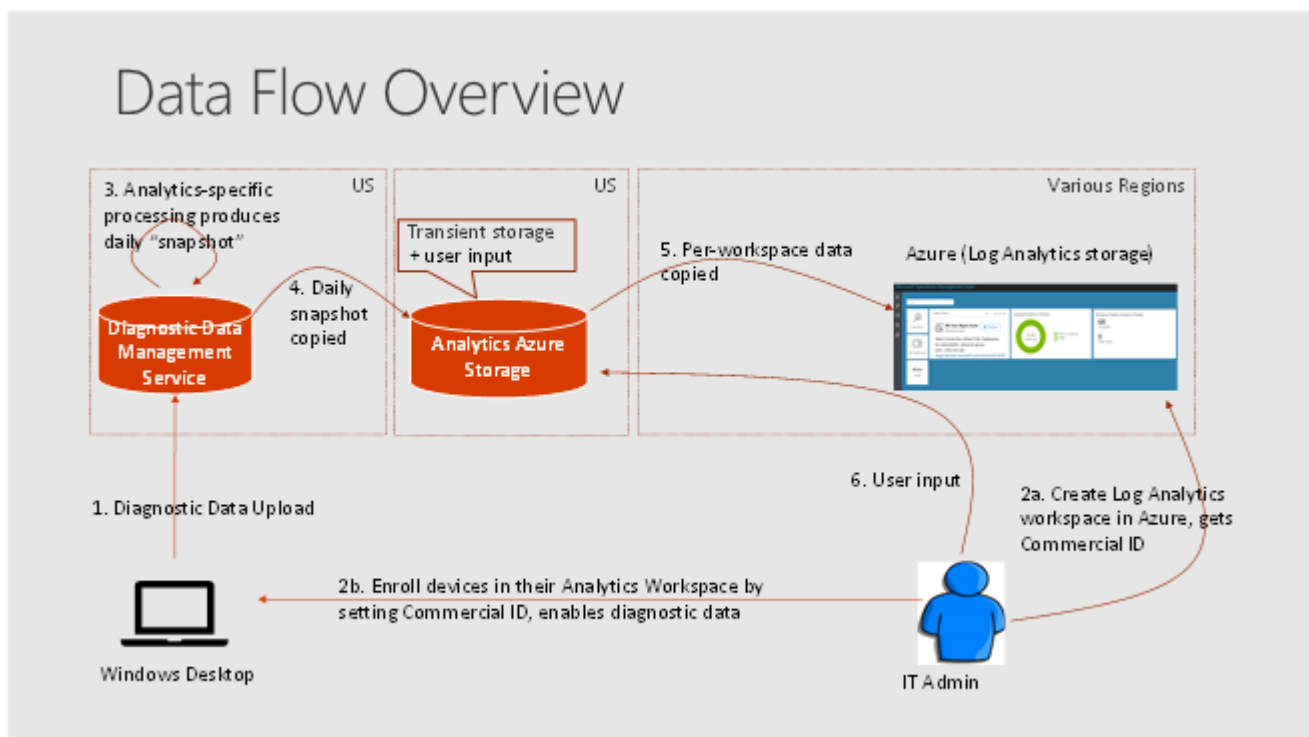
- Application usage information, allowing targeted validation; workflow to track validation progress and decisions
- Data export to commonly used software deployment tools, including System Center Configuration Manager

3. Windows Analytics and privacy

Windows Analytics is fully committed to privacy, centering on these tenets:

- **Transparency:** We fully document the Windows Analytics diagnostic events (see the links for additional information) so you can review them with your company's security and compliance teams. The Diagnostic Data Viewer lets you see diagnostic data sent from a given device (see [Diagnostic Data Viewer Overview](#) for details).
- **Control:** You ultimately control the level of diagnostic data you wish to share. In Windows 10 1709 we added a new policy to Limit enhanced diagnostic data to the minimum required by Windows Analytics
- **Security:** Your data is protected with strong security and encryption
- **Trust:** Windows Analytics supports the Microsoft Online Service Terms

The following illustration shows how diagnostic data flows from individual devices through the Diagnostic Data Service, Azure Log Analytics storage, and to your Log Analytics workspace:



The data flow sequence is as follows:

1. Diagnostic data is sent from devices to the Microsoft Diagnostic Data Management service, which is hosted in the US.
2. An IT administrator creates an Azure Log Analytics workspace. The administrator chooses the location, copies the Commercial ID (which identifies that workspace), and then pushes Commercial ID to devices they want to monitor. This is the mechanism that specifies which devices appear in which workspaces.

3. Each day Microsoft produces a "snapshot" of IT-focused insights for each workspace in the Diagnostic Data Management service.
4. These snapshots are copied to transient storage which is used only by Windows Analytics (also hosted in US data centers) where they are segregated by Commercial ID.
5. The snapshots are then copied to the appropriate Azure Log Analytics workspace.
6. If the IT administrator is using the Upgrade Readiness solution, user input from the IT administrator (specifically, the target operating system release and the importance and upgrade readiness per app) is stored in the Windows Analytics Azure Storage. (Upgrade Readiness is the only Windows Analytics solution that takes such user input.)

4. Manage Windows upgrades with Upgrade Readiness

Upgrading to new operating systems has traditionally been a challenging, complex, and slow process for many enterprises. Discovering applications and drivers and then testing them for potential compatibility issues have been among the biggest pain points.

With the release of Upgrade Readiness, enterprises now have the tools to plan and manage the upgrade process end to end, allowing them to adopt new Windows releases more quickly. With new Windows versions being released multiple times a year, ensuring application and driver compatibility on an ongoing basis is key to adopting new Windows versions as they are released. Windows Upgrade Readiness not only supports upgrade management from Windows 7, Windows 8.1 to Windows 10, but also Windows 10 upgrades in the [Windows as a service](#) model.

Microsoft developed Upgrade Readiness in response to demand from enterprise customers looking for additional direction and details about upgrading to Windows 10. Upgrade Readiness was built taking into account multiple channels of customer feedback, testing, and Microsoft's experience upgrading millions of devices to Windows 10.

With Windows diagnostic data enabled, Upgrade Readiness collects system, application, and driver data for analysis. We then identify compatibility issues that can block an upgrade and suggest fixes when they are known to Microsoft.

Use Upgrade Readiness to get:

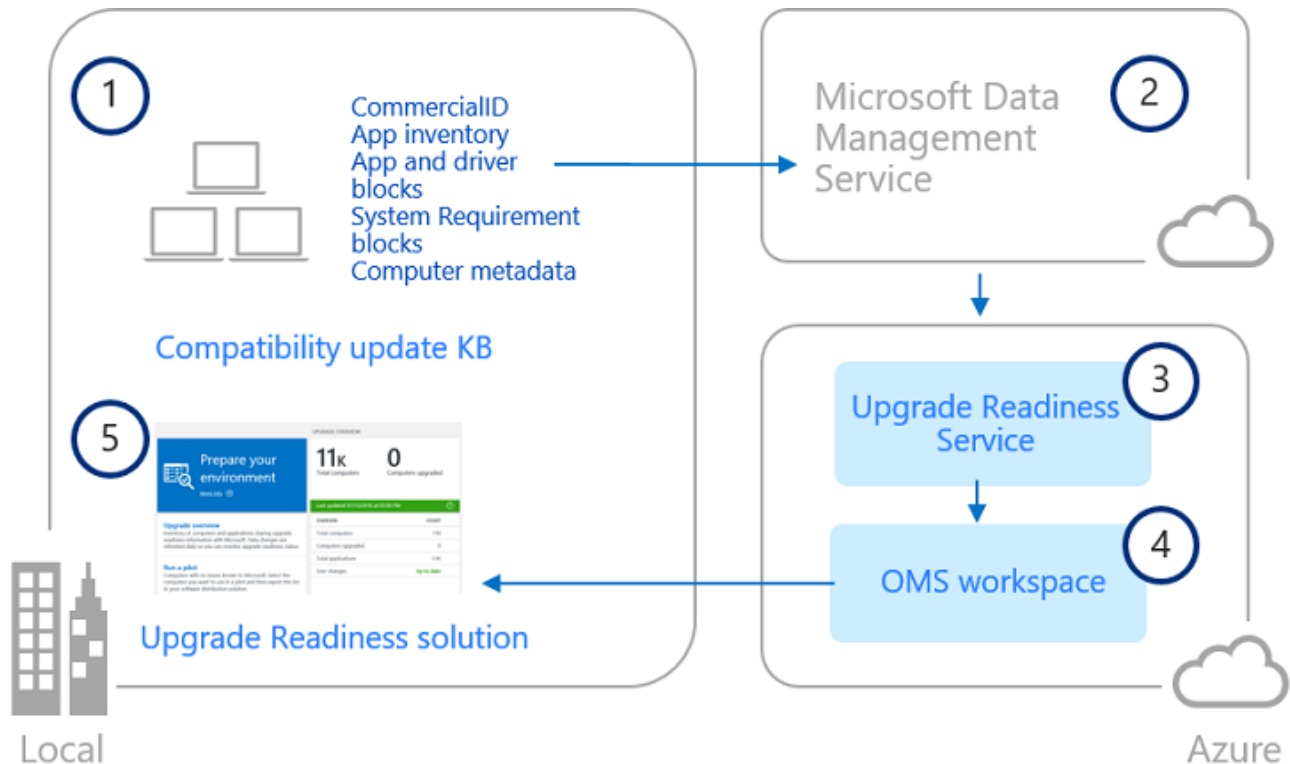
- A visual workflow that guides you from pilot to production
- Detailed computer and application inventory
- Powerful computer level search and drill-downs
- Guidance and insights into application and driver compatibility issues, with suggested fixes
- Data driven application rationalization tools
- Application usage information, allowing targeted validation; workflow to track validation progress and decisions
- Data export to commonly used software deployment tools, including System Center Configuration Manager

The Upgrade Readiness workflow steps you through the discovery and rationalization process until you have a list of computers that are ready to be upgraded.

Important For system, application, and driver data to be shared with Microsoft, you must configure user computers to send data.

4. Upgrade Readiness architecture

Microsoft analyzes system, application, and driver diagnostic data to help you determine when computers are upgrade-ready, allowing you to simplify and accelerate Windows upgrades in your organization. The diagram below illustrates how Upgrade Readiness components work together in a typical installation.



After you enable Windows diagnostic data on user computers and install the compatibility update KB (1), user computers send computer, application and driver diagnostic data to a secure Microsoft data center through the Microsoft Data Management Service (2). After you configure Upgrade Readiness, diagnostic data is analyzed by the Upgrade Readiness Service (3) and pushed to your OMS workspace (4). You can then use the Upgrade Readiness solution (5) to plan and manage Windows upgrades.

5. Upgrade Readiness requirements and costs

5.1 Windows 7 and Windows 8.1

To perform an in-place upgrade, user computers must be running the latest version of either Windows 7 SP1 or Windows 8.1. After you enable Windows diagnostic data, Upgrade Readiness performs a full inventory of computers so that you can see which version of Windows is installed on each computer.

The compatibility update that sends diagnostic data from user computers to Microsoft data centers works with Windows 7 SP1 and Windows 8.1 only. Upgrade Readiness cannot evaluate Windows XP or Windows Vista for upgrade eligibility.

If you need to update user computers to Windows 7 SP1 or Windows 8.1, use Windows Update or download and deploy the applicable package from the Microsoft Download Center.

Note: Upgrade Readiness is designed to best support in-place upgrades. In-place upgrades do not support migrations from BIOS to UEFI or from 32-bit to 64-bit architecture. If you need to migrate computers in these scenarios, use the wipe-and-reload method. Upgrade Readiness insights are still valuable in this scenario; however, you can ignore in-place upgrade specific guidance.

5.2 Windows 10

Keeping Windows 10 up to date involves deploying a feature update, and Upgrade Readiness tools help you prepare and plan for these Windows updates. The latest cumulative updates must be installed on Windows 10 computers to make sure that the required compatibility updates are installed. You can find the latest cumulative update on the [Microsoft Update Catalog](#).

While Upgrade Readiness can be used to assist with updating devices from Windows 10 Long-Term Servicing Channel (LTSC) to Windows 10 Semi-Annual Channel, Upgrade Readiness does not support updates to Windows 10 LTSC. The Long-Term Servicing Channel of Windows 10 is not intended for general deployment, and does not receive feature updates, therefore it is not a supported target with Upgrade Readiness.

5.3 Operations Management Suite or Azure Log Analytics

Upgrade Readiness is offered as a solution in Microsoft Operations Management Suite (OMS) and Azure Log Analytics, a collection of cloud-based services for managing on premises and cloud computing environments.

If you're already using OMS or Azure Log Analytics, you'll find Upgrade Readiness in the Solutions Gallery.

Important

You can use either a Microsoft Account or a Work or School account to create a workspace. If your company is already using Azure Active Directory, use a Work or School account when you sign in to OMS. Using a Work or School account allows you to use identities from your Azure AD to manage permissions in OMS. You also need an Azure subscription to link to your OMS workspace. The account you used to create the workspace must have administrator permissions on the Azure subscription in order to link the workspace to the Azure account. Once the link has been established, you can revoke the administrator permissions.

5.4 System Center Configuration Manager integration

Upgrade Readiness can be integrated with your installation of Configuration Manager.

5.5 Windows Analytics costs

Windows Analytics solution	Windows license requirements	Windows version requirements	Minimum diagnostic data requirements
Upgrade Readiness	No additional requirements	Windows 7 with Service Pack 1, Windows 8.1, Windows 10	Basic level in most cases; Enhanced level to support Windows 10 app

Windows Analytics solution	Windows license requirements	Windows version requirements	Minimum diagnostic data requirements
			usage data and IE site discovery
Update Compliance	No additional requirements	Windows 10	Basic level
Device Health	Any of the following licenses: - Windows 10 Enterprise or Windows 10 Education per-device with active Software Assurance - Windows 10 Enterprise E3 or E5 per-device or per-user subscription (including Microsoft 365 F1, E3, or E5) - Windows 10 Education A3 or A5 (including Microsoft 365 Education A3 or A5) - Windows VDA E3 or E5 per-device or per-user subscription - Windows Server 2016 or later	Windows 10	- For Windows 10 version 1709 or later: Enhanced (Limited) - For earlier versions: Enhanced

Note

Regarding licensing requirements for Device Health, you do not need per-seat licensing, but only enough licenses to cover your total device usage. For example, if you have 100 E3 licenses, you can monitor 100 devices with Device Health.

Beyond the cost of Windows operating system licenses, there is no additional cost for using Windows Analytics. Within Azure Log Analytics, Windows Analytics is "zero-rated;" this means it is excluded from data limits and costs regardless of the Azure Log Analytics pricing tier you have chosen. To be more specific, Azure Log Analytics is available in different pricing tiers as described in [Pricing - Log Analytics](#).

- If you are using the free tier, which has a cap on the amount of data collected per day, the Windows Analytics data will not count towards this cap. You will be able to collect all the Windows Analytics data from your devices and still have the full cap available for collecting additional data from other sources.
- If you are using a paid tier that charges per GB of data collected, the Windows Analytics data will not be charged. You will be able to collect all the Windows Analytics data from your devices and not incur any costs.

Note that different Azure Log Analytics plans have different data retention periods, and the Windows Analytics solutions inherit the workspace's data retention policy. So, for example, if your workspace is on the free plan then Windows Analytics will retain the last weeks' worth of "daily snapshots" that are collected in the workspace.

5.6 Important information about this release

Before you get started configuring Upgrade Analytics, review the following tips and limitations about this release.

Upgrade Readiness does not support on-premises Windows deployments. Upgrade Readiness is built as a cloud service, which allows Upgrade Readiness to provide you with insights based on the data from user computers and other Microsoft compatibility services. Cloud services are easy to get up and running and are cost-effective because there is no requirement to physically implement and maintain services on-premises.

In-region data storage requirements. Windows diagnostic data from user computers is encrypted, sent to, and processed at Microsoft-managed secure data centers located in the US. Our analysis of the upgrade readiness-related data is then provided to you through the Upgrade Readiness solution in the Microsoft Operations Management Suite (OMS) portal. Upgrade Readiness is supported in all OMS regions; however, selecting an international OMS region does not prevent diagnostic data from being sent to and processed in Microsoft's secure data centers in the US.

6. Get started with Upgrade Readiness

This topic explains how to obtain and configure Upgrade Readiness for your organization.

You can use Upgrade Readiness to plan and manage your upgrade project end-to-end. Upgrade Readiness works by establishing communications between computers in your organization and Microsoft. Upgrade Readiness collects computer, application, and driver data for analysis. This data is used to identify compatibility issues that can block your upgrade and to suggest fixes that are known to Microsoft.

6.1 Add the Upgrade Readiness solution to your Azure subscription

Sign in to the [Azure Portal](#) with your work or school account or a Microsoft account. If you don't already have an Azure subscription you can create one (including free trial options) through the portal. In the Azure portal go to **Marketplace**, search for "Upgrade Readiness", and then select **Create** on the **Upgrade Readiness** solution.

Create a resource

All services

FAVORITES

Dashboard

All resources

Resource groups

Azure Active Directory

Cost Management + Billing

Subscriptions

Azure AD Connect Health

Azure Information Protecti...

Intune

Log Analytics

Marketplace

Home > Marketplace > Everything

Marketplace

My Saved List 0

Everything

Compute

Networking

Storage

Web

Mobile

Containers

Databases

Analytics

Everything

Filter

Upgrade Readiness

Results

NAME	PUBLISHER	CATEGORY
Upgrade Readiness	Microsoft	Management Tools

Upgrade Readiness

Microsoft

The Upgrade Readiness solution gives enterprises the tools to plan and manage the upgrade process end to end. Using information known to Microsoft, we provide recommendations for resolving blocking issues, allowing you to streamline and accelerate Windows upgrades.

With Windows telemetry enabled, Upgrade Readiness collects and analyzes your data to identify device, application, and driver compatibility issues that can block your upgrade.

The Upgrade Readiness visual workflow steps you through the discovery and rationalization process until you have a list of devices that are ready to be upgraded.

With Upgrade Readiness you can:

- Decide which computers you want to use in a pilot and then export this list to your software deployment tool
- See which applications are used the most, grouped by the computers they're installed on
- Decide which computers are ready to be upgraded and then export this list to your software deployment tool

IMPORTANT: For upgrade readiness information to be shared with and analyzed by Upgrade Readiness, you must enable and configure Windows telemetry on user computers. After you've added this solution to your workspace, go to Connected Sources in Settings for information about how to enable telemetry. [Learn more.](#)

Save for later

Prepare your environment

Manual

Upgrade overview

Inventory of computers and applications sharing upgrade readiness information with Microsoft. Data changes are reflected daily so you can monitor upgrade readiness status.

Run a pilot

Computers with no issues known to Microsoft. Select the computers you want to use in a pilot and then export this list to your software deployment solution.

Prioritize applications

Assign importance levels to prioritize the applications you plan to test and validate. Applications installed on 2% or less of your computer inventory are included in the applications reviewed count.

UPGRADE OVERVIEW

5k Total computers

0 Computers upgraded

Last updated: 06/27/2018 at 11:09 AM

Overview	Count
Total computers	5k
Computers upgraded	0
Total applications	35k
User changes	Data refresh pending

RUN A PILOT

Computers with no issues known to Microsoft. Select the ones you want to use in a pilot.

227

Operating System	Computer Count
Windows 8.1	130
Windows 8	46
Windows 7	30
Windows Server 2008 R2	1

Export computers

PRIORITIZE APPLICATIONS

35k Total applications

34k Applications included in applications with low install count

Importance	Application Count
Low install count	24k
Not reviewed	1.3k
Business critical	5k
Important	5

Assign importance

Create

Choose an existing workspace or create a new workspace to host the Upgrade Readiness solution.

Upgrade Readiness	OMS Workspaces	Log analytics workspace	Pricing Tier
Create new Solution	Create new or link existing one created in OMS Portal		
<div>* OMS Workspace Select a workspace</div>	<div>+ Create New Workspace</div>	<div><input checked="" type="radio"/> Create New <input type="radio"/> Link Existing</div>	<div>The cost of your workspace depends on the pricing tier and what solutions you use. Learn more about Log Analytics pricing.</div>
<div>OMS Workspace settings</div>	<div>None</div>	<div>* OMS Workspace OMSSCCM</div>	<div>This subscription is currently in an older pricing model with access to multiple pricing tiers. Learn more about the new pricing model and assessing if you should adopt it. Change the monitoring pricing model for this subscription on the Pricing model selection page under Monitor > Usage and estimated costs.</div>
		<div>* Subscription Visual Studio Ultimate with MSDN 1-13-...</div>	<div>Pricing Tier Free</div>
		<div>* Resource group SCCM-OMS-RS</div>	
		<div>* Location West Europe</div>	
		<div>* Pricing tier Free</div>	

If you create a new workplace, provide an **OMS Workplace name**, **Resource group name**, choose **Azure subscription**, **Location** and **Pricing tier**. After creating the resource group click on **OMS Workplace settings** and choose created resource group, then click **Create**:

Upgrade Readiness	Log analytics workspace
Create new Solution	Create new or link existing one created in OMS Po...
<div>* OMS Workspace OMSSCCM</div>	<div>* OMS Workspace OMSSCCM</div>
<div>OMS Workspace settings OMSSCCM</div>	<div>* Subscription Visual Studio Ultimate with MSDN 1-13-...</div>
	<div>* Resource group <input checked="" type="radio"/> Use existing SCCM-OMS-RS</div>
	<div>* Location West Europe</div>
	<div>* Pricing tier Per GB</div>
<div>Create Automation options</div>	


Wait for a successful validation:

Upgrade Readiness

Create new Solution

* OMS Workspace
OMSSCCM

OMS Workspace settings
OMSSCCM

 Validation successful

CreateAutomation options

Log analytics workspace

Create new or link existing one created in OMS Po...

* OMS Workspace
OMSSCCM

* Subscription
Visual Studio Ultimate with MSDN 1-13-...

* Resource group ⓘ

Use existing

SCCM-OMS-RS

* Location
West Europe

* Pricing tier
Per GB

Create new Solution

★ OMS Workspace
OMSSCCM

OVS Workspace settings
OMSSCCM



Validation successful

Create

Automation options

Log analytics workspace

★ OMS Workspace
OMSSCCM

★ Subscription

Visual Studio Ultimate with MSDN 1-13-...

* Resource group

☒ Use existing

SCCM-OMS-RS

★ Location

West Europe

★ Pricing tier

Per GB

And click **Create** again. Then go to **Notifications** and wait until service is created.

Notifications

Dismiss all ...

Deployment in progress...

Running

Deployment to resource group 'sccm-oms-rs' is in progress.

by me

a few seconds ago

When creating the resource group is finished **Go to resource:**

Notifications

Dismiss all ...



Deployment succeeded

Deployment 'Microsoft.CompatibilityAssessmentOMS' to resource group 'sccm-oms-rs' was successful.

[Go to resource](#) Pin to dashboard

6.2 The Upgrade Readiness configuration settings

Home > Resource groups > SCCM-OMS-RS

Resource groups
mail (Default Directory)

+ Add Edit columns More

Filter by name...

NAME

SCCM-OMS-RS

SCCM-OMS-RS
Resource group

Search (Ctrl+J)

Overview

Activity log

Access control (IAM)

Tags

Events

Settings

Quickstart

Resource costs

Deployments

+ Add Edit columns Delete resource group Refresh Move Assi

Subscription (change)
Visual Studio Ultimate with MSDN 1-13-2...

Subscription ID
54dc4cb0-9478-4a66-...

Tags (change)
Click here to add tags

Filter by name... All types All locations

2 items Show hidden types

NAME	TYPE
CompatibilityAssessment(OMSSCCM)	Solution
OMSSCCM	Log Analytics

On the **Upgrade Readiness settings** page copy your **Commercial ID** and specify **Windows 10 target version to be evaluated**:

Home > Resource groups > SCCM-OMS-RS > CompatibilityAssessment(OMSSCCM) - Upgrade Readiness Settings

CompatibilityAssessment(OMSSCCM) - Upgrade Readiness Settings

Search (Ctrl+J) Save

Overview

Activity log

Access control (IAM)

Diagnose and solve problems

Settings

Locks

Automation script

Upgrade Readiness Settings

General

OMS Workspace

Properties

Saved searches

Commercial Id Key
0f68ed33-38ad-480c-b78a-...
Regenerate

Warning: Regenerate a Commercial ID only if your original ID can no longer be used. Regenerating a commercial ID requires you to deploy the new commercial ID to your computers in order to continue to collect data and so can result in data loss.

Demo mode
Enabled Disabled

Target version to be evaluated
Windows 10 Version 1809

Microsoft recommends : Windows 10 Version 1809
Certain target version choices have different minimum required compatibility update KBs. Make sure you install the most recent version for your target version.
Learn more about Windows 10 servicing options at [Windows 10 release information](#).

New computers being processed and Script Insights
Generate

Then click **Save**.

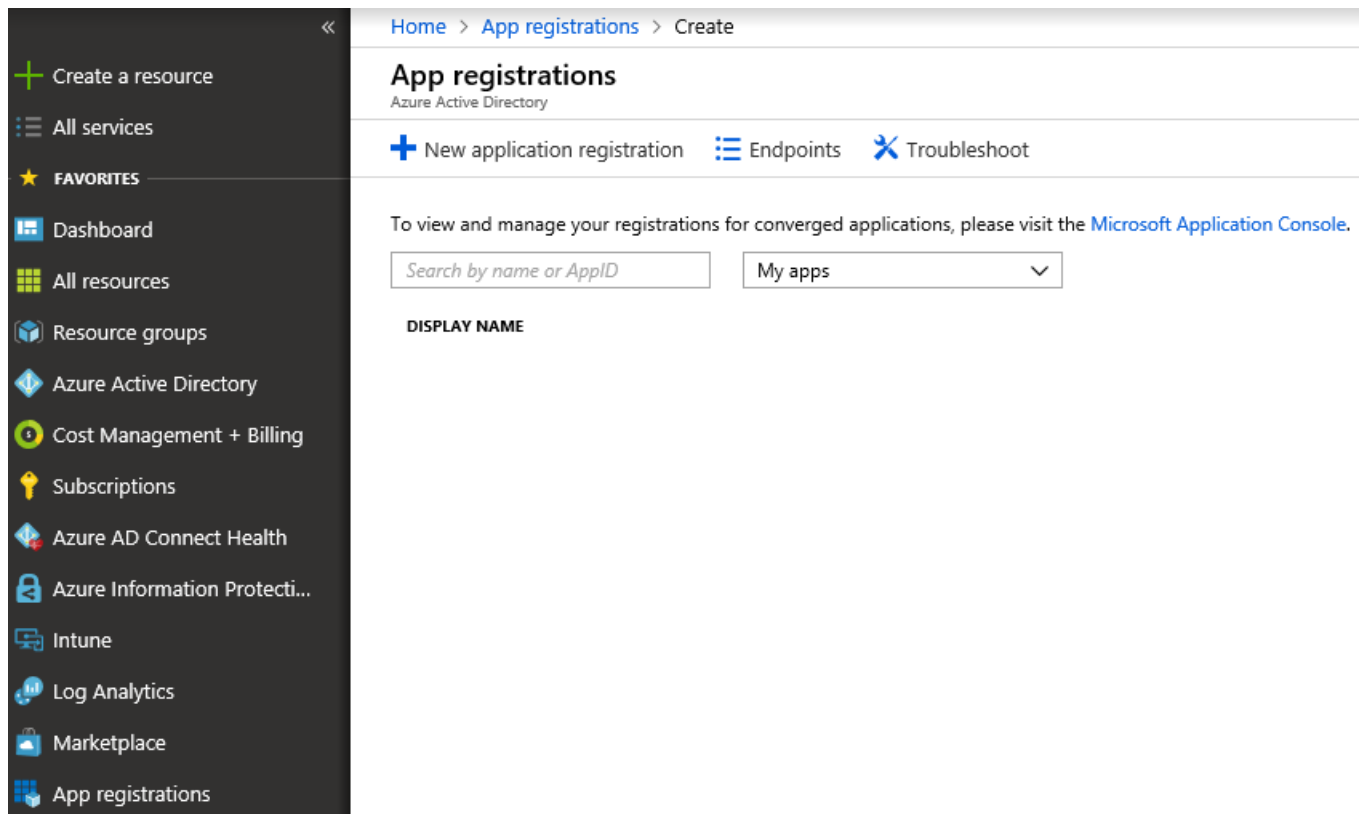
6.3 Integrate Upgrade Readiness with Configuration Manager

Integrate Upgrade Readiness with Configuration Manager to access client upgrade compatibility data in the Configuration Manager console. Then use this data to create collections, and target devices for upgrade or remediation.

6.3.1 Web app creation

Open the Azure Management portal (<https://portal.azure.com>) and go to **App registrations** pane. The Azure services wizard uses this app registration to allow Configuration Manager to communicate securely with Azure AD and connect your infrastructure to your Upgrade Readiness data.

Click **Create**:



Enter the following information :

- **Name:** Specify a name for the application
- **Type: Web app / API**
- **Sign-on URL:** Specify any URL. (This URL doesn't need to resolve)

Create □ ×

* Name ⓘ

FIRMA UR ✓

Application type ⓘ

Web app / API ▼

* Sign-on URL ⓘ

http://liashov.com/UR ✓

Create

And click **Create**. Select your application and click on **All Settings**. Click on **Keys**, enter a name, select a duration and click **Save**. The key will be created after clicking **Save** and can only be retrieved on this page:

FIRMA UR

Registered app

[Settings](#)
[Manifest](#)
[Delete](#)

Display name

FIRMA UR

Application type

Web app / API

Home page

<http://lashov.com/UR>

Application ID

bd5c37be-1035-4f46-b671-.....

Object ID

f6d1614c-859f-486c-ad52-.....

Managed application in local directory

[FIRMA UR](#)

Settings

GENERAL

[Properties](#)

[Reply URLs](#)

[Owners](#)

API ACCESS

[Required permissions](#)

[Keys](#)

TROUBLESHOOTING + SUPPORT

[Troubleshoot](#)

[New support request](#)

Keys

[Save](#)
[Discard](#)
[Upload Public Key](#)

Passwords

DESCRIPTION	EXPIRES	VALUE
FIRMA-UR	Never expires	Value will be displayed on save
Key description	Duration	Value will be displayed on save


Public Keys

THUMBPRINT	START DATE	EXPIRES
No results.		

Copy the **Key** and **Application ID** from this page. It will be needed later.

Keys

[Save](#)
[Discard](#)
[Upload Public Key](#)

 Copy the key value. You won't be able to retrieve after you leave this blade.

Passwords

DESCRIPTION	EXPIRES	VALUE
FIRMA-UR	12/31/2299	NH6IIIMuUZrqhEcVOfpYuv6FYkxrQDZ2+.....
Key description	Duration	Value will be displayed on save

Still in your application, click on **General / Properties** and copy the **App ID URI**:

Settings

×

Properties

□ ×

Filter settings

GENERAL

Properties >

Reply URLs >

Owners >

API ACCESS

Required permissions >

Save

×

Discard

* Name ⓘ

ConfigMgr OMS

Object ID ⓘ

99889285-f007-47fa-ba13-.....

Application ID ⓘ

c28fd82e-2fa4-4dd5-b41c-.....

* App ID URI ⓘ

https://.....;mail.onmicrosoft.com/c238c7bf

6.3.2 Web app permissions

Grant *contributor* permissions to the app itself, not to an Azure AD user identity. It's the registered app that accesses the data on behalf of your Configuration Manager infrastructure. To grant the permissions, search for the name of the app registration in the **Add users** area when assigning the permission.

This process is the same as when providing Configuration Manager with permissions to Log Analytics. These steps must be completed before the app registration is imported into Configuration Manager with the *Azure services wizard*.

Go to **Resource groups**, select the resource group in which you create your OMS Workspace. Select **Access Control (IAM)**, then click **Add**. Select the **Contributor** role and select your application, click **Save**.

ntrol (IAM)

+ Add

Remove

Roles

Refresh

Help

Name ⓘ

Type ⓘ

Role ⓘ

Search by name or email

All

2 selected

3 items (3 Users)

NAME

TYPE

ROLE

OWNER

IL

levgen Liashov

admin@punksnotdead.onmicrosoft....

User

Owner ⓘ

IL

levgen Liashov

.....@mail.ru

User

Owner ⓘ

USER ACCESS ADMINISTRATOR

IL

levgen Liashov

.....@mail.ru

User

User Access Admin

Add permissions

Role ⓘ

Contributor

Assign access to ⓘ

Azure AD user, group, or application

Select ⓘ

firma

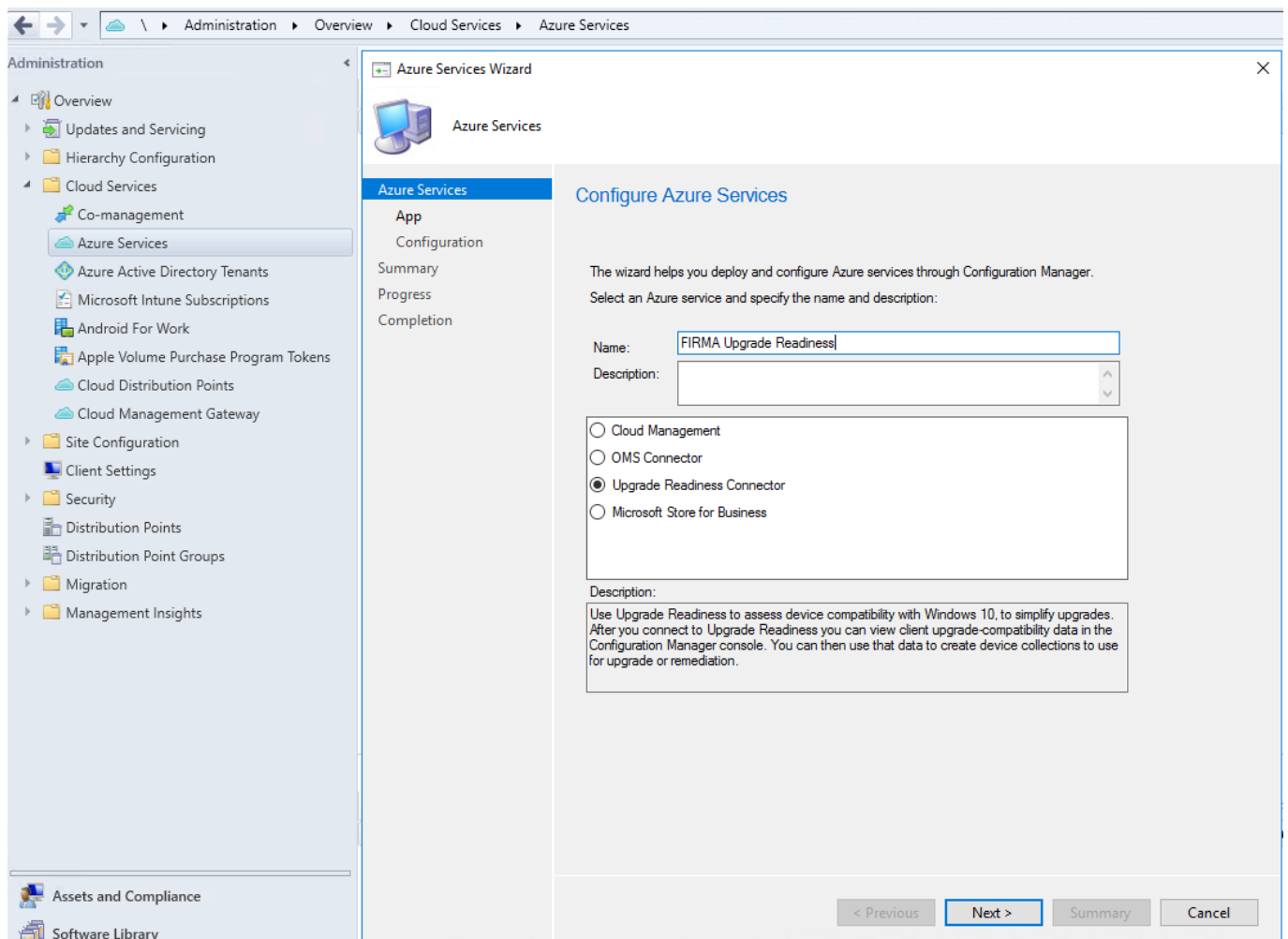
Selected members:

FIRMA UR

Remove

6.3.3 Configure the SCCM Upgrade Readiness Connector

Open the SCCM Console. Go to **Administration / Cloud Services / Azure Services**. Right-click **Azure Services** and select **Configure Azure Services**. On the **Azure Services** tab, name your connection and select **Upgrade Readiness Connector**:



On the **App** page, select your Azure environment and click **Import**.

On the **Import Apps** page, specify the following information :

- **Azure AD Tenant Name:** Specify any name
- **Azure AD Tenant ID:** Specify the Azure AD tenant – You can find this information under **Azure Active Directory / Properties**
- **Application Name** – Specify your application name
- **Client ID:** Specify the **Application ID** of the created Azure AD app. You can see where to find this information in the previous steps
- **Secret key:** Specify the Client secret key of the created Azure AD app. You can see where to find this information in the previous steps
- **Secret Key expiry:** Specify the expiration date of your key
- **App ID URI:** Specify the **App ID URI** of the created Azure AD app. You can see where to find this information in the previous steps

Click on **Verify** then **OK**:

Import Apps [X]

Import a Web Application that already exists in your Azure Active Directory.

Azure AD Tenant Name: FIRMA Azure AD

Azure AD Tenant ID: fcf910a-6223-4258-86b8-.....

Application Name: FIRMA UR

Client ID: bd5c37be-1035-4f46-b671-.....

Secret Key:

Secret Key Expiry: 12/31/2299 [Calendar Icon]


App ID URI: http://liashov.com/UR

[Verify] Successfully verified!

[OK] [Cancel]

Check **App Properties** again:

Azure Services Wizard [X]


 App

Azure Services


- App
- Configuration
- Summary
- Progress
- Completion

App Properties

Specify the Azure environment and app


 An Azure environment is an independent deployment of Microsoft Azure based on regions and geopolitical boundaries.

Azure environment: AzurePublicCloud [v]

 Add an application that represents a web application, a web API, or both.

Web app: FIRMA UR [Import...]

Then click **Next**. On the configuration page, the information will be pre-populate once the Azure AD app has enough permissions on the resource group. If the fields are empty, your application doesn't have the necessary rights.



Configuration

Azure Services	Configure the connection to Upgrade Readiness
App	
Configuration	
Summary	
Progress	
Completion	

Azure subscriptions:
Visual Studio Ultimate with MSDN 1-13-2015 ()

Azure resource group:
SCCM-OMS-RS

Windows Analytics workspace:
OMSSCCM (e0b25a7b-c073-495d-b9c6-)

And finish the configuration wizard.

6.3.4 Configure SCCM device settings

Go to SCCM client settings, enable Windows Analytics section and configure next parameters:

- **Manage Windows telemetry:** Yes
- **Commercial ID key:** provide the key you collected before
- **Windows 10 telemetry:** Enhanced
- **Windows 8.1 and earlier telemetry:** Enable
- **Enable Windows 8.1 and earlier Internet Explorer data collection for:** Disabled

The screenshot shows the 'FIRMA Custom Settings' window. On the left is a sidebar with a list of settings categories: General, Background Intelligent Transfer, Client Cache Settings, Client Policy, Computer Agent, Endpoint Protection, Hardware Inventory, Remote Tools, Software Deployment, Software Inventory, Software Metering, Software Updates, Windows Analytics (highlighted), and Security. The main area is titled 'Custom Device Settings' and contains instructions: 'Specify the settings for devices. These settings override the default settings when they are assigned to a collection.' Below this, it says 'Specify a Commercial ID key and configure data settings to enable Windows Analytics related telemetry reporting.' A section titled 'Device Settings' contains four items: 'Manage Windows telemetry settings with Configuration Manager' (set to 'Yes'), 'Commercial ID key' (text box containing 'bf68ed33-38ad-480c-b78a-e2f'), 'Windows 10 telemetry' (dropdown set to 'Enhanced'), 'Windows 8.1 and earlier telemetry' (dropdown set to 'Enable'), and 'Enable Windows 8.1 and earlier Internet Explorer data collection for' (dropdown set to 'Disable'). At the bottom right are 'OK' and 'Cancel' buttons.

Then deploy these settings on a collection you want to enable collecting telemetry for Windows Analytics.

6.4 Pre-configuring infrastructure for supporting Windows Analytics

Microsoft uses a unique commercial ID to map information from user computers to your OMS workspace. This should be generated for you automatically. Copy your commercial ID key in OMS and then deploy it to user computers.

6.4.1 Enable data sharing

To enable data sharing, configure your proxy server to whitelist the following endpoints. You might need to get approval from your security group to do this.

Endpoint	Function
https://v10.events.data.microsoft.com	Connected User Experience and Diagnostic component endpoint for use with Windows 10, version 1803
https://v10.vortex-win.data.microsoft.com	Connected User Experience and Diagnostic component endpoint for Windows 10, version 1709 or earlier
https://vortex-win.data.microsoft.com	Connected User Experience and Diagnostic component endpoint for operating systems older than Windows 10
https://v10c.events.data.microsoft.com	Connected User Experience and Diagnostic component endpoint for use with Windows versions that have KB4458469 installed
https://settings-win.data.microsoft.com	Enables the compatibility update to send data to Microsoft.
http://adl.windows.com	Allows the compatibility update to receive the latest compatibility data from Microsoft.
https://watson.telemetry.microsoft.com	Windows Error Reporting (WER); required for Device Health and Update Compliance AV reports. Not used by Upgrade Readiness.
https://oca.telemetry.microsoft.com	Online Crash Analysis; required for Device Health and Update Compliance AV reports. Not used by Upgrade Readiness.
https://login.live.com	This endpoint is required by Device Health to ensure data integrity and provides a more reliable device identity for all of the Windows Analytics solutions on Windows 10. If you want to disable end-user managed service account (MSA) access, you should apply the appropriate policy instead of blocking this endpoint.

Endpoint	Function
https://www.msftncsi.com	Windows Error Reporting (WER); required for Device Health to check connectivity.
https://www.msftconnecttest.com	Windows Error Reporting (WER); required for Device Health to check connectivity.

6.4.2 Configuring endpoint access with SSL inspection

To ensure privacy and data integrity Windows checks for a Microsoft SSL certificate when communicating with the diagnostic data endpoints. Accordingly SSL interception and inspection is not possible. To use Windows Analytics services you should exclude the above endpoints from SSL inspection.

6.4.3 Configuring endpoint access with proxy server authentication

If your organization uses proxy server authentication for outbound traffic, use one or more of the following approaches to ensure that the diagnostic data is not blocked by proxy authentication:

- **Best option: Bypass** Configure your proxy servers to **not** require proxy authentication for traffic to the diagnostic data endpoints. This is the most comprehensive solution and it works for all versions of Windows 10.
- **User proxy authentication:** Alternatively, you can configure devices to use the logged on user's context for proxy authentication. First, update the devices to Windows 10, version 1703 or later. Then, ensure that users of the devices have proxy permission to reach the diagnostic data endpoints. This requires that the devices have console users with proxy permissions, so you couldn't use this method with headless devices.
- **Device proxy authentication:** Another option--the most complex--is as follows: First, configure a system level proxy server on the devices. Then, configure these devices to use machine-account-based outbound proxy authentication. Finally, configure proxy servers to allow the machine accounts access to the diagnostic data endpoints.

6.4.4 Deploy the compatibility update and related updates

The compatibility update scans your devices and enables application usage tracking. If you don't already have these updates installed, you can download the applicable version from the Microsoft Update Catalog or deploy it using Windows Server Update Services (WSUS) or your software distribution solution, such as System Center Configuration Manager.

Operating System	Updates
Windows 10	Windows 10 includes the compatibility update, so you will automatically have the latest compatibility update so long as you continue to keep your Windows 10 devices up-to-date with cumulative updates.
Windows 8.1	KB 2976978 Performs diagnostics on the Windows 8.1 systems that participate in the Windows Customer Experience Improvement Program. These diagnostics help determine whether compatibility issues might be encountered when the latest Windows operating system is installed. For more information about this update, see https://support.microsoft.com/kb/2976978
Windows 7 SP1	KB2952664 Performs diagnostics on the Windows 7 SP1 systems that participate in the Windows Customer Experience Improvement Program. These diagnostics help determine whether compatibility issues might be encountered when the latest Windows operating system is installed. For more information about this update, see https://support.microsoft.com/kb/2952664

Important

Restart devices after you install the compatibility updates for the first time.

6.5 Enroll a few pilot devices

6.5.1 Overview of Upgrade Readiness deployment script

You can use the Upgrade Readiness deployment script to automate and verify your deployment. The recommended way is manually running this script on a few representative devices to verify things are properly configured and the device can connect to the diagnostic data endpoints. Make sure to run the pilot version of the script, which will provide extra diagnostics.

After data is sent from devices to Microsoft, it generally takes 48-56 hours for the data to populate in Windows Analytics. The compatibility update takes several minutes to run. If the update does not get a chance to finish running or if the computers are inaccessible (turned off or sleeping for example), data will take longer to populate in Windows Analytics. For this reason, you can expect most of your devices to be populated in Windows Analytics in about 1-2 weeks after deploying the update and configuration to user computers.

Either version of the script will do the following:

- Sets commercial ID key + CommercialDataOptIn + RequestAllAppraiserVersions keys.
- Verifies that user computers can send data to Microsoft (note that this check does not currently work in auth proxy environments).
- Verifies that the latest version of KB package 10.0.x is installed (version 10.0.14913 or later is

required).

- Checks whether the computer has a pending restart.
- If enabled, turns on verbose mode for troubleshooting.
- Initiates the collection of the telemetry data that Microsoft needs to assess your organization's upgrade readiness.
- If enabled, displays the script's progress in a cmd window, providing you immediate visibility into issues (success or fail for each step) and/or writes to log file.

6.5.2 Running the script manually

There should be no performance impact caused by the script. The script is a light wrapper of Windows in-box components that undergo performance testing and optimization to avoid any performance impact. However, typically the script is scheduled to be run outside of working hours.

Do not run the script at each sign-on. It is recommended to run the script once every 30 days.

The length of time the script takes to run on each system depends on the number of apps and drivers, and the type of hardware. Anti-virus software scanning simultaneously can increase the script run time, but the script should require no longer than 10 minutes to run, and typically the time is much shorter. If the script is observed running for an extended period of time, please run the Pilot script, and collect logs to share with Microsoft. Log files are created in the drive that is specified in the RunConfig.bat file. By default, this is set to: **%SystemDrive%\UADiagnostics**.

To run the Upgrade Readiness deployment script:

1. Download the [Upgrade Readiness deployment script](#) and extract the .zip file. Inside, there are two folders: **Pilot** and **Deployment**. The **Pilot** folder contains advanced logging that can help troubleshoot issues and is intended to be run from an elevated command prompt. The **Deployment** folder offers a lightweight script intended for broad deployment through ConfigMgr or other software deployment system. We recommend manually running the Pilot version of the script on 5-10 machines to verify that everything is configured correctly. Once you have confirmed that data is flowing successfully, proceed to run the Deployment version throughout your organization.
2. Edit the following parameters in RunConfig.bat:
 - a. Provide a storage location for log information. You can store log information on a remote file share or a local directory. If the script is blocked from creating the log file for the given path, it creates the log files in the drive with the Windows directory. Example:
`%SystemDrive%\UADiagnostics`
 - b. Input your commercial ID key. This can be found in your OMS workspace under Settings -> Connected Sources -> Windows Telemetry.
 - c. By default, the script sends log information to both the console and the log file. To change the default behavior, use one of the following options:

logMode = 0 log to console only

logMode = 1 log to file and console

logMode = 2 log to file only

3. To enable Internet Explorer data collection, set AllowIEData to IEDataOptIn. By default, AllowIEData is set to Disable. Then use one of the following options to determine what Internet Explorer data can be collected:

IEOptInLevel = 0 Internet Explorer data collection is disabled

IEOptInLevel = 1 Data collection is enabled for sites in the Local intranet + Trusted sites + Machine local zones

IEOptInLevel = 2 Data collection is enabled for sites in the Internet + Restricted sites zones

IEOptInLevel = 3 Data collection is enabled for all sites

```
RunConfig.bat - Notepad
File Edit Format View Help

@echo off
@echo Running config batch

:: Run Mode, set runMode=Pilot for debugging with verbose logs or else set runMode=Deployment
set runMode=Pilot
set runMode=%runMode:"=%

:: File share to store telemetry logs
set logPath=\\sccm\URlogs
set logPath=%logPath:"=%

:: Commercial ID provided to you
:: Go to your OMS workspace navigate to path \Settings\Connected Sources\Windows Telemetry
:: Copy COMMERCIAL ID KEY in above path and replace it in the line below
set commercialIDValue=0f68ed33-38ad-480c-b78a-e28bd8a8d57f

:: By Default script logs to both console and log file.
:: logMode == 0 log to console only
:: logMode == 1 log to file and console
:: logMode == 2 log to file only
set logMode=1
```

4. A recent version of the deployment script is configured to collect and send diagnostic and debugging data to Microsoft. If you wish to disable sending diagnostic and debugging data to Microsoft, set **AppInsightsOptIn = false**. By default, **AppInsightsOptIn** is set to **true**.

The data that is sent is the same data that is collected in the text log file that captures the events and error codes while running the script. This file is named in the following format: **UA_yyyy_mm_dd_hh_mm_ss_machineID.txt**. Log files are created in the drive that is specified in the RunConfig.bat file. By default this is set to: **%SystemDrive%\UADiagnostics**.

This data gives us the ability to determine the status of your machines and to help troubleshoot issues. If you choose to opt-in to and send this data to Microsoft, you must also allow https traffic to be sent to the following wildcard endpoints:

```
*vortex*.data.microsoft.com
*settings*.data.microsoft.com
```

5. The latest version of the deployment script configures insider builds to continue to send the device name to the diagnostic data management service and the analytics portal. If you do not want to have insider builds send the device name sent to analytics and be available in the analytics portal, set **DeviceNameOptIn = false**. By default it is true, which preserves the behavior on previous versions of Windows. This setting only applies to insider builds. Note that

the device name is also sent to AppInsights, so to ensure the device name is not sent to either place you would need to also set **AppInsightsOptIn = false**.

6. After you finish editing the parameters in RunConfig.bat, you are ready to run the script. If you are using the Pilot version, run RunConfig.bat from an elevated command prompt. If you are using the Deployment version, use ConfigMgr or other software deployment service to run RunConfig.bat as system.
7. Run the script on a test computer with a local administrator rights:

```

C:\Users\administrator>cd D:\UpgradeReadiness10102018\Pilot
C:\Users\administrator>d:
D:\UpgradeReadiness10102018\Pilot>RunConfig.bat
Running config batch
1 file(s) copied.

PsExec v2.11 - Execute processes remotely
Copyright (C) 2001-2014 Mark Russinovich
Sysinternals - www.sysinternals.com

Administrator: C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe
2018-10-17T10:50:21 :
2018-10-17T10:50:21 : Powershell Execution Policies:
2018-10-17T10:50:21 : @{Scope=MachinePolicy; ExecutionPolicy=Unrestricted}
2018-10-17T10:50:21 : @{Scope=UserPolicy; ExecutionPolicy=Undefined}
2018-10-17T10:50:21 : @{Scope=Process; ExecutionPolicy=Bypass}
2018-10-17T10:50:21 : @{Scope=CurrentUser; ExecutionPolicy=Undefined}
2018-10-17T10:50:21 : @{Scope=LocalMachine; ExecutionPolicy=Undefined}
2018-10-17T10:50:21 :
2018-10-17T10:50:21 : Start: CheckCommercialId
2018-10-17T10:50:21 : Passed: CheckCommercialId
2018-10-17T10:50:21 : Start: SetupCommercialId
2018-10-17T10:50:21 : Commercial Id already set to the same value as provided in
the script parameters.
2018-10-17T10:50:21 : Passed: SetupCommercialId
2018-10-17T10:50:21 : Start: CheckTelemetryOptIn
2018-10-17T10:50:21 : Enabling sending inventory by setting CommercialDataOptIn
property at registry key path: HKLM:\SOFTWARE\Microsoft\Windows\CurrentVersion\P
olicies\DataCollection
2018-10-17T10:50:21 : CommercialDataOptIn property is already set at registry ke
y path: HKLM:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\DataCollection.
Inventory sending is already enabled
2018-10-17T10:50:21 : Passed: CheckTelemetryOptIn
2018-10-17T10:50:21 : Start: CheckProxySettings
2018-10-17T10:50:21 : WinHTTP Proxy settings:
  
```

8. If an exit code is different than 0, check captured errors in generated log. For example, there is a conflict between two Commercial IDs – first is configured in GPO, second comes from SCCM client settings:

Log Text	
2018-10-17T10:17:44 : Info :	
2018-10-17T10:17:44 : Info : Start: CheckCommercialId	
2018-10-17T10:17:44 : Info : Passed: CheckCommercialId	
2018-10-17T10:17:44 : Info : Start: SetupCommercialId	
2018-10-17T10:17:44 : Info : Commercial Id already set to the same value as provided in the script parameters.	
2018-10-17T10:17:44 : Error : ErrorCode 53 : There is a different CommercialID: 7ba065ba-eedf-456b-ba5f-... present at the GPO path: HKLM:\SOFTWARE\Policies\Microsoft\...	
2018-10-17T10:17:45 : Info : Passed: SetupCommercialId	
2018-10-17T10:17:45 : Info : Start: CheckTelemetryOptIn	
2018-10-17T10:17:45 : Info : Enabling sending inventory by setting CommercialDataOptIn property at registry key path: HKLM:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\...	
2018-10-17T10:17:45 : Info : CommercialDataOptIn property is already set at registry key path: HKLM:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\DataCollection. Inventory ...	
2018-10-17T10:17:45 : Info : Passed: CheckTelemetryOptIn	
2018-10-17T10:17:45 : Info : Start: CheckProxySettings	
Date/Time:	Component:
Thread:	Source:
2018-10-17T10:17:44 : Error : ErrorCode 53 : There is a different CommercialID: 7ba065ba-eedf-456b-ba5f-... present at the GPO path: HKLM:\SOFTWARE\Policies\Microsoft\Windows DataCollection. This will take precedence over the CommercialID: 0f68ed33-38ad-480c-b78a-... provided in the script. Please fix the CommercialID mismatch at the GPO location.	

Or computer requires to install a KB before capturing the telemetry:

Log Text

Failed to get diagtrack.dll version size: 2Connecting to https://vortex-win.data.microsoft.com/health/keepalive

Connected to https://vortex-win.data.microsoft.com/health/keepalive.

Service returned HttpStatus: 200.

2018-10-17T10:17:58 : Info : Passed: CheckVortexConnectivity

2018-10-17T10:17:58 : Info : Start: CheckRebootRequired

2018-10-17T10:17:58 : Info : Checking if there is a pending reboot

2018-10-17T10:17:58 : Info : Passed: CheckRebootRequired. Reboot is not needed.

2018-10-17T10:17:58 : Info : Start: CheckAppraiserKB

2018-10-17T10:17:58 : Info : Checking if KB2952664 is installed

2018-10-17T10:17:59 : Error : ErrorCode 18 : KB2952664 is not installed. Please install via <http://www.catalog.update.microsoft.com/Search.aspx?q=KB2952664>

2018-10-17T10:18:00 : Failure : Script finished with error(s)

Date/Time:	Component:
Thread:	Source:
2018-10-17T10:17:59 : Error : ErrorCode 18 : KB2952664 is not installed. Please install via http://www.catalog.update.microsoft.com/Search.aspx?q=KB2952664	

9. Exit code 0 means computer was configured in a proper way and telemetry data was successfully sent to Windows Analytics service:

```
C:\UpgradeReadiness10102018\Pilot>RunConfig.bat
Running config batch
    1 file(s) copied.

PsExec v2.11 - Execute processes remotely
Copyright (C) 2001-2014 Mark Russinovich
Sysinternals - www.sysinternals.com

C:\Windows\System32\WindowsPowerShell\v1.0\powershell.exe exited on WIN10 with error code 0.
0
```

6.5.3 Exit codes

The deployment script displays the following exit codes to let you know if it was successful, or if an error was encountered.

Exit code and meaning	Suggested fix
0 - Success	N/A
1 - Unexpected error occurred while executiEng the script.	The files in the deployment script are likely corrupted. Download the latest script from the download center and try again.
2 - Error when logging to console. \$logMode = 0. (console only)	Try changing the \$logMode value to 1 and try again. \$logMode value 1 logs to both console and file.

3 - Error when logging to console and file. \$logMode = 1.	Verify that you have set the logPath parameter in RunConfig.bat, and that the configuration script has access to connect and write to this location.
4 - Error when logging to file. \$logMode = 2.	Verify that you have set the logPath parameter in RunConfig.bat, and that the configuration script has access to connect and write to this location.
5 - Error when logging to console and file. \$logMode = unknown.	Verify that you have set the logPath parameter in RunConfig.bat, and that the configuration script has access to connect and write to this location.
6 - The commercialID parameter is set to unknown. Modify the runConfig.bat file to set the CommercialID value.	The value for parameter in the runconfig.bat file should match the Commercial ID key for your workspace. See Generate your Commercial ID key for instructions on generating a Commercial ID key for your workspace.
8 - Failure to create registry key path: HKLM:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\DataCollection	The Commercial Id property is set at the following registry key path: HKLM:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\DataCollection Verify that the context under which the script is running has access to the registry key.
9 - The script failed to write Commercial Id to registry. Error creating or updating registry key: CommercialId at HKLM:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\DataCollection	Verify that the context under which the script is running has access to the registry key.
10 - Error when writing CommercialDataOptIn to the registry at HKLM:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\DataCollection	Verify that the deployment script is running in a context that has access to the registry key.
11 - Function SetupCommercialId	The SetupCommercialId function updates the Commercial Id at the registry key

failed with an unexpected exception.	<p>path: HKLM:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\DataCollection</p> <p>Verify that the configuration script has access to this location.</p>
12 - Can't connect to Microsoft - Vortex. Check your network/proxy settings.	<p>Http Get on the end points did not return a success exit code.</p> <p>For Windows 10, connectivity is verified by connecting to https://v10.vortex-win.data.microsoft.com/health/keepalive.</p> <p>For previous operating systems, connectivity is verified by connecting to https://vortex-win.data.microsoft.com/health/keepalive.</p> <p>If there is an error verifying connectivity, this will prevent the collected data from being sent to Upgrade Readiness. To resolve this issue, verify that the required endpoints are correctly whitelisted. For more information, see Enrolling devices in Windows Analytics</p>
13 - Can't connect to Microsoft - setting.	<p>An error occurred connecting to https://settings.data.microsoft.com/qos. This error will prevent the collected data from being sent to Upgrade Readiness. To resolve this issue, verify that the required endpoints are correctly whitelisted. For more information, see Enrolling devices in Windows Analytics. Verify that the required endpoints are whitelisted correctly. See Whitelist select endpoints for more details. 14</p>
14 - Can't connect to Microsoft - compatexchange.	<p>An error occurred connecting to CompatibilityExchangeService.svc. This error will prevent the collected data from being sent to Upgrade Readiness. To resolve this issue, verify that the required endpoints are correctly whitelisted. For more information, see Enrolling devices in Windows Analytics.</p>
15 - Function CheckVortexConnectivity failed with an unexpected exception.	<p>This error will prevent the collected data from being sent to Upgrade Readiness. To resolve this issue, verify that the required endpoints are correctly whitelisted. For more information, see Enrolling devices in Windows Analytics. Check the logs for the exception message and the HRESULT.</p>

16 - The computer requires a reboot before running the script.	A reboot is required to complete the installation of the compatibility update and related KBs. Reboot the computer before running the Upgrade Readiness deployment script.
17 - Function CheckRebootRequired failed with an unexpected exception.	A reboot is required to complete installation of the compatibility update and related KBs. Check the logs for the exception message and the HRESULT.
18 - Appraiser KBs not installed or appraiser.dll not found.	Either the Appraiser KBs are not installed, or the appraiser.dll file was not found. For more information, see appraiser diagnostic data events and fields information in the Data collection and privacy topic.
19 - Function CheckAppraiserKB , which checks the compatibility update KBs, failed with unexpected exception.	Check the logs for the Exception message and HRESULT. The script will not run further if this error is not fixed.
20 - An error occurred when creating or updating the registry key RequestAllAppraiserVersions at HKLM:\SOFTWARE\Microsoft\WindowsNT\CurrentVersion\AppCompatFlags\Appraiser	The registry key is required for data collection to work correctly. Verify that the script is running in a context that has access to the registry key.
21 - Function SetRequestAllAppraiserVersions failed with an unexpected exception.	Check the logs for the exception message and HRESULT.
22 - RunAppraiser failed with unexpected exception.	Check the logs for the exception message and HRESULT. Check the %windir%\System32 directory for the file CompatTelRunner.exe . If the file does not exist, reinstall the required compatibility updates which include this file, and check your organization's Group Policy to verify it does not remove this file.
23 - Error finding system variable %WINDIR% .	Verify that this environment variable is configured on the computer.

<p>24 - The script failed when writing IEDataOptIn to the registry. An error occurred when creating registry key IEOptInLevel at HKLM:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\DataCollection</p>	<p>This is a required registry key for IE data collection to work correctly. Verify that the deployment script is running in a context that has access to the registry key. Check the logs for the exception message and HRESULT.</p>
<p>25 - The function SetIEDataOptIn failed with unexpected exception.</p>	<p>Check the logs for the exception message and HRESULT.</p>
<p>27 - The script is not running under System account.</p>	<p>The Upgrade Readiness configuration script must be run as System.</p>
<p>28 - Could not create log file at the specified logPath.</p>	<p>Make sure the deployment script has access to the location specified in the logPath parameter.</p>
<p>29 - Connectivity check failed for proxy authentication.</p>	<p>Install cumulative updates on the computer and enable the DisableEnterpriseAuthProxy authentication proxy setting. The DisableEnterpriseAuthProxy setting is enabled by default for Windows 7.</p> <p>For Windows 8.1 computers, set the DisableEnterpriseAuthProxy setting to 0 (not disabled). For more information on authentication proxy support, see Authentication proxy support added in new version (12.28.16) of the Upgrade Readiness deployment script.</p>
<p>30 - Connectivity check failed. Registry key property DisableEnterpriseAuthProxy is not enabled.</p>	<p>The DisableEnterpriseAuthProxy setting is enabled by default for Windows 7.</p> <p>For Windows 8.1 computers, set the DisableEnterpriseAuthProxy setting to 0 (not disabled). For more information on authentication proxy support, see this blog post.</p>
<p>31 - There is more than one instance of the Upgrade</p>	<p>Use the Windows Task Manager to check if CompatTelRunner.exe is running, and wait until it has</p>

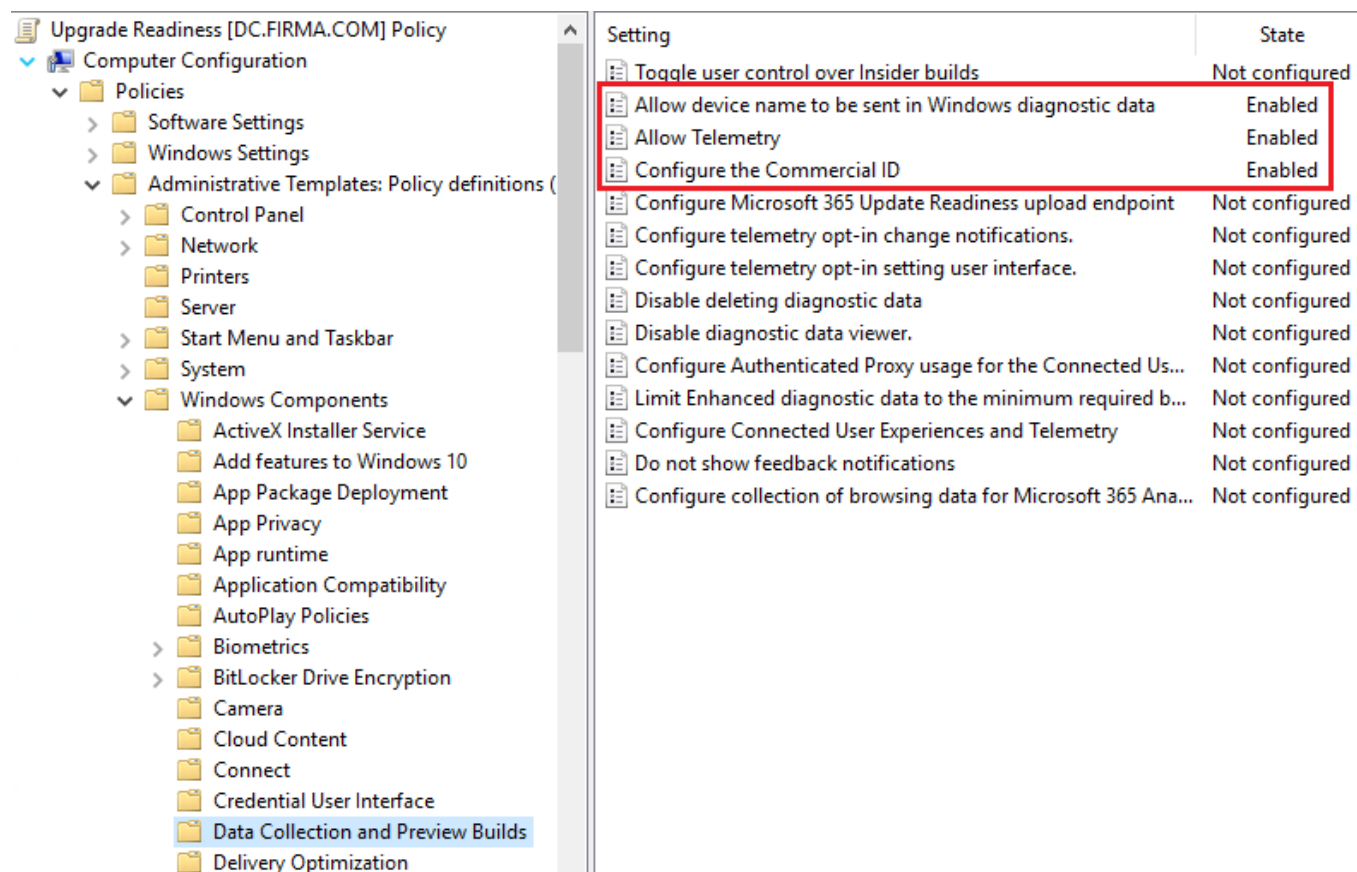
Readiness data collector running at the same time on this computer.	completed to rerun the script. The Upgrade Readiness task is scheduled to run daily at 3 a.m.
32 - Appraiser version on the machine is outdated.	The configuration script detected a version of the compatibility update module that is older than the minimum required to correctly collect the data required by Upgrade Readiness solution. Use the latest version of the <u>compatibility update</u> for Windows 7 SP1/Windows 8.1.
33 - CompatTelRunner.exe exited with an exit code	CompatTelRunner.exe runs the appraise task on the machine. If it fails, it will provide a specific exit code. The script will return exit code 33 when CompatTelRunner.exe itself exits with an exit code. Check the logs for more details. Also see the Note following this table for additional steps to follow.
34 - Function CheckProxySettings failed with an unexpected exception.	Check the logs for the exception message and HRESULT.>
35 - Function CheckAuthProxy failed with an unexpected exception.	Check the logs for the exception message and HRESULT.
36 - Function CheckAppraiserEndPointsConnectivity failed with an unexpected exception.	Check the logs for the exception message and HRESULT.
37 - Diagnose_internal.cmd failed with an unexpected exception.	Check the logs for the exception message and HRESULT.
38 - Function Get-SqmID failed with an unexpected exception.	Check the logs for the exception message and HRESULT.

39 - For Windows 10: AllowTelemetry property is not set to 1 or higher at registry key path HKLM:\SOFTWARE\Policies\Microsoft\Windows\DataCollection or HKLM:\SOFTWARE\Microsoft\Windows\CurrentVersion\Policies\DataCollection	For Windows 10 machines, the AllowTelemetry property should be set to 1 or greater to enable data collection. The script will throw an error if this is not true. For more information, see Configure Windows diagnostic data in your organization .
40 - Function CheckTelemetryOptIn failed with an unexpected exception.	Check the logs for the exception message and HRESULT.
41 - The script failed to impersonate the currently logged on user.	The script mimics the UTC client to collect upgrade readiness data. When auth proxy is set, the UTC client impersonates the logged on user. The script also tries to mimic this, but the process failed.
42 - Function StartImpersonatingLoggedOnUser failed with an unexpected exception.	Check the logs for the exception message and HRESULT.
43 - Function EndImpersonatingLoggedOnUser failed with an unexpected exception.	Check the logs for the exception message and HRESULT.
44 - Diagtrack.dll version is old, so Auth Proxy will not work.	Update the PC using Windows Update/Windows Server Update Services.
45 - Diagtrack.dll was not found.	Update the PC using Windows Update/Windows Server Update Services.
46 - DisableEnterpriseAuthProxy property should be set to 1 for ClientProxy=Telemetry to work.	Set the DisableEnterpriseAuthProxy registry property to 1 at key path HKLM:\SOFTWARE\Policies\Microsoft\Windows\DataCollection .

<p>47</p> <p>- TelemetryProxyServer is not present in key path HKLM:\SOFTWARE\Policies\Microsoft\Windows\DataCollection.</p>	<p>ClientProxy selected is Telemetry, but you need to add TelemetryProxyServer in key path HKLM:\SOFTWARE\Policies\Microsoft\Windows\DataCollection.</p>
<p>48</p> <p>- CommercialID mentioned in RunConfig.bat should be a GUID.</p>	<p>CommercialID is mentioned in RunConfig.bat, but it is not a GUID. Copy the commercialID from your workspace. To find the commercialID, in the OMS portal click Upgrade Readiness > Settings.</p>
<p>50 - Diagtrack Service is not running.</p>	<p>Diagtrack Service is required to send data to Microsoft. Enable and run the 'Connected User Experiences and Telemetry' service.</p>
<p>51 - RunCensus failed with an unexpected exception.</p>	<p>RunCensus explicitly runs the process used to collect device information. The method failed with an unexpected exception. Check the ExceptionHResult and ExceptionMessage for more details.</p>
<p>52 - DeviceCensus.exe not found on a Windows 10 machine.</p>	<p>On computers running Windows 10, the process devicecensus.exe should be present in the \system32 folder. Error code 52 is returned if the process was not found. Ensure that it exists at the specified location.</p>
<p>53 - There is a different CommercialID present at the GPO path:HKLM:\SOFTWARE\Policies\Microsoft\Windows\DataCollection. This will take precedence over the CommercialID provided in the script.</p>	<p>Provide the correct CommercialID at the GPO location.</p>

6.5.4 Deploying the Commercial ID with GPO

If you don't use SCCM you can deploy the Commercial ID with group policies. First, you need to import the latest administrative templates for Windows 10. Then you need to enable settings in **Windows Components – Data Collection and Preview Builds** and deploy this GPO on Organization Unit with computers required to send the telemetry:



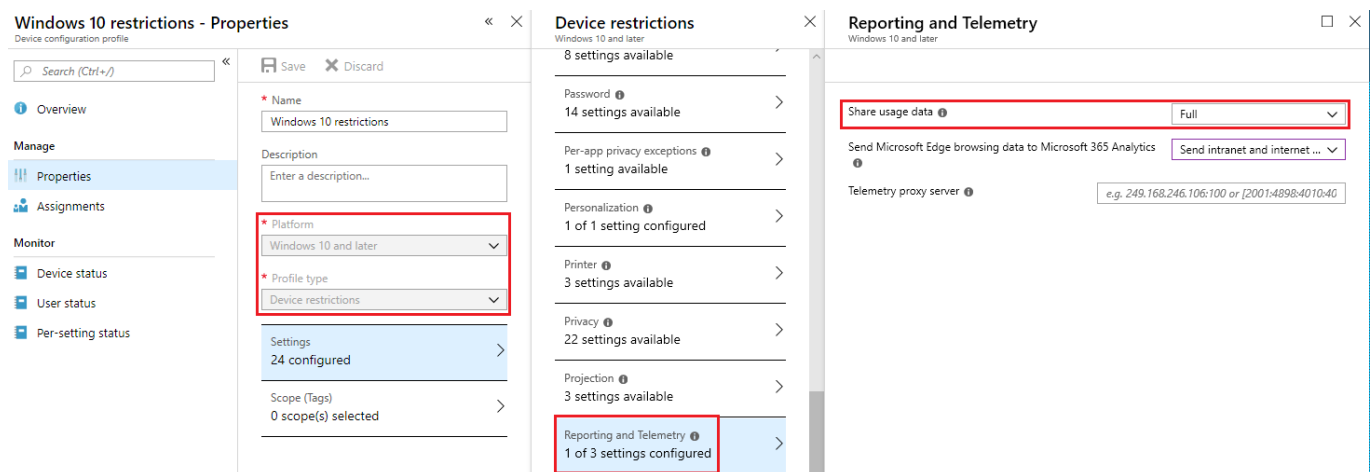
Allow device name to be send – This policy allows the device name to be sent to Microsoft as part of Windows diagnostic data.

Allow Telemetry – This policy setting determines the highest level of Windows diagnostic data sent to Microsoft (Security, Basic, Enhanced, Full).

Configure the Commercial ID – This policy setting defines the identifier used to uniquely associate this device's telemetry data as belonging to a given organization.

6.5.5 Deploying the Commercial ID with Intune

If you don't use SCCM or GPO you can deploy the Commercial ID with Intune Windows 10 configuration policies. First, you need to create and assign a **Device configuration profile** that enables sending the telemetry:

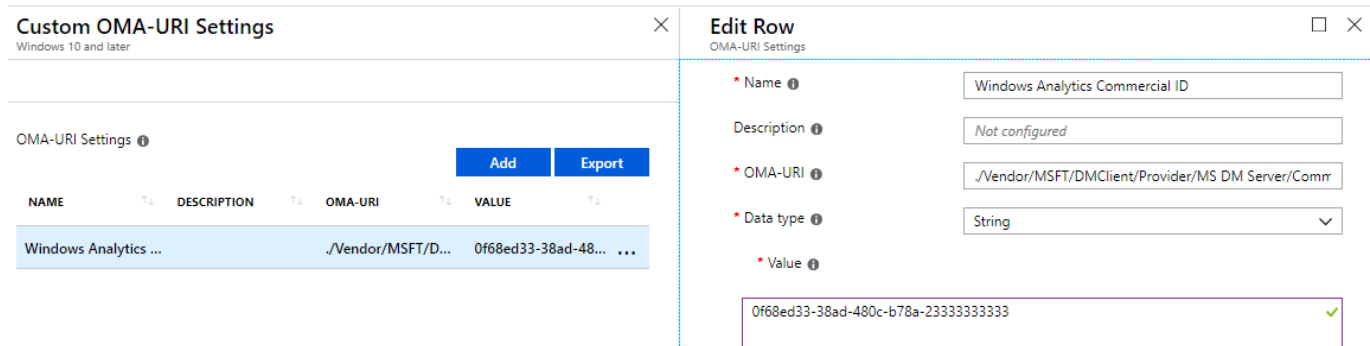


Then you need to create and assign a **Custom profile** for Windows 10 to deploy the Commercial ID with next parameters:

OMA-URI: ./Vendor/MSFT/DMClient/Provider/MS DM Server/CommercialID

Data type: String

Value: Your Commercial ID



Then check if computers successfully downloaded and applied a new settings:

Windows Analytics Commercial ID

Device configuration profile

Overview

Manage

Properties

Assignments

Monitor

Device status

User status

Per-setting status

Delete

Profile type : Custom

Platform supported : Windows 10 and later

Groups excluded: : 0

Profile assignment status — Windows 10 and later devices

6
DEVICES

Succeeded

6

Error

0

Conflict

0

Not Applicable

0

6.6 Deploying Windows Analytics at scale

When you have completed a pilot deployment, you are ready to automate data collection and distribute the deployment script to the remaining devices in your organization.

6.6.1 Automate data collection

To ensure that user computers are receiving the most up-to-date data from Microsoft, we recommend that you establish the following data sharing and analysis processes:

- Enable automatic updates for the compatibility update and related updates. These updates include the latest application and driver issue information as we discover it during testing.
- Schedule the Upgrade Readiness deployment script to automatically run monthly. Scheduling the script ensures that full inventory is sent monthly even if devices were not connected or had low battery power at the time the system normally sends inventory. Make sure to run the production version of the script, which is lighter weight and non-interactive. The script also has a number of built-in error checks, so you can monitor the results. If you can't run the deployment script at scale, another option is to configure things centrally via Group Policy or Mobile Device Management (MDM). Although we recommend using the deployment script, both options are discussed in the sections below.

When you run the deployment script, it initiates a full scan. The daily scheduled task to capture the changes is created when the update package is installed. For Windows 10 devices, this task is already included in the operating system. A full scan averages about 2 MB, but the scans for changes are very small. The scheduled task is named "Windows Compatibility Appraiser" and can be found in the Task Scheduler Library under Microsoft > Windows > Application Experience. Changes

are invoked via the nightly scheduled task. It attempts to run around 3:00AM every day. If the system is powered off at that time, the task will run when the system is turned on.

6.6.2 Distribute the deployment script at scale

Use a software distribution system such as System Center Configuration Manager to distribute the Upgrade Readiness deployment script at scale.

After editing RunConfig.bat you can create a package and deploy it on collections with computers you want to enable and collect the telemetry:

Create Package and Program Wizard

Standard Program

Package
Program Type
Standard Program
Requirements
Summary
Progress
Completion

Specify information about this standard program

Name: run upgrade readiness script

Command line: RunConfig.bat Browse...

Startup folder:

Run: Normal

Program can run: Whether or not a user is logged on

Run mode: Run with administrative rights


☐ Allow users to view and interact with the program installation

Drive mode: Runs with UNC name

☐ Reconnect to distribution point at log on

6.6.3 Checking the deployment status

You can check the deployment status in a Monitoring workplace and compare the results with error codes table that provided above:



Deployment Status

Program: Upgrade Readiness Pilot script (RunConfig)
Collection: All Desktop and Server Clients


Success
In Progress
Error
Requirements Not Met
Unknown

Deployment ID	Assets	Message ID	Status Type
BFG2000C	2	10008	Success

Asset Details

Filter

Device	User	Message ID	Status Type	Description
WIN10	NT AUTHORITY\SYSTEM	10008	Success	Program completed with success
WIN12	NT AUTHORITY\SYSTEM	10008	Success	Program completed with success



Deployment Status

Program: Upgrade Readiness Pilot script (RunConfig)
Collection: All Desktop and Server Clients

Success
In Progress
Error
Requirements Not Met
Unknown

Deployment ID	Assets	Message ID	Status Type
BFG2000C	1	10006	Error

Asset Details

Filter

Device	User	Message ID	Status Type	Description
WIN7	NT AUTHORITY\SYSTEM	10006	Error	16

7. Checking collecting telemetry information

7.1 Checking collecting telemetry in Azure console

Open Log Analytics in your Azure Subscription, choose created OMS workspace and click Workspace summary:

Home > Log Analytics > OMSSCCM

Log Analytics

(Default Directory)

+ Add Edit columns More

Filter by name...

NAME ↑↓

OMSSCCM

OMSSCCM

Log Analytics

Search (Ctrl+ /)

- Overview
- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems

Settings

- Locks
- Automation script
- Advanced settings

General

- Quick Start
- Workspace summary
- View Designer
- Logs

On the **Overview** pane click on a summary dashboard **Upgrade Readiness**:

CompatibilityAssessment(omssccm)

omssccm

[Refresh](#) [Solution Settings](#) [Analytics](#) [Solution Settings](#)

Last 30 days

New endpoints needed to enable data sharing. Update your proxy config to avoid

UPGRADE OVERVIEW

5K

Total computers

4K

Computers upgraded

Last updated 22.10.2018 at 12:00 PM



OVERVIEW	COUNT
Total computers	5K
Computers upgraded	4K
Total applications	16K
Computers with incomplete data	40 (4%)
Computers with outdated KB	142 (14%)
User changes	Up to date
Target version	Windows 10 Version 1809

Expecting more computers? [Click here](#) to see computers that are currently being processed.



Overview

Microsoft is aware of known as "Spectre" & Windows are potentially have released several [Click here](#) to learn more vulnerabilities.

Vulnerability S

Before installing the make sure your antivirus Failure to do so can Use this Vulnerability your devices and take users safer and prod

In Spectre and Meltdown section you can check:

- Anti-virus status by computer
- Windows security update status by computer
- Firmware security update status by computer

ANTI-VIRUS STATUS BY COMPUTER

Total number of Windows 7 SP1, Windows 8.1 and Windows 10 computers

12

TARGET WIN SE...	AVSTATE	COUNT
February 13,...	No known iss...	7
February 13,...	Unknown	5

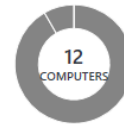
WINDOWS SECURITY UPDATE STATUS BY COMPUTER



Unknown - action may be required
1
Not Installed
10
Installed, but mitigation status un...
1

WIN SEC UPDATE FIX STATUS	COUNT
Not Installed	10
Unknown - action may be requ...	1
Installed, but mitigation status...	1

FIRMWARE SECURITY UPDATE STATUS BY COMPUTER



Unknown
11
Installed, but mitigation status un...
1

FIRMWARE SEC UPDATE STATUS	COUNT
Unknown	11
Installed, but mitigation status...	1

7.1.1 Identify important apps

Go to **STEP 1: Identify important apps** section and click on numbers. Then you can apply different filters to get more reliable information:

IMPORTANCE (2)		^
<input type="checkbox"/> Low install count	15K	
<input type="checkbox"/> Not reviewed	867	

ISSUE (6)		×
<input type="checkbox"/> No known issues	16K	
<input type="checkbox"/> Application is removed during upgrade	19	
<input type="checkbox"/> Does not work with new OS, but won't block upgrade	4	
<input type="checkbox"/> Evaluate application on new OS	2	
<input type="checkbox"/> Reinstall application after upgrading	1	
<input type="checkbox"/> Does not work with new OS, and will block upgrade	1	

[-] Less

UPGRADEDECISION (2)		×
<input type="checkbox"/> Ready to upgrade	15K	
<input type="checkbox"/> Not reviewed	867	

PERCENTACTIVECOMPUTERS (7)		×
<input type="checkbox"/> 0 %	14K	
<input type="checkbox"/> 0 - 2 %	2K	
<input type="checkbox"/> 2 - 5 %	20	
<input type="checkbox"/> 10 - 20 %	11	
<input type="checkbox"/> 5 - 10 %	5	
<input type="checkbox"/> 20 - 30 %	1	
<input type="checkbox"/> 30 - 50 %	1	

[-] Less

UPGRADEASSESSMENT (3) ×	
<input type="checkbox"/> No known issues	16K
<input type="checkbox"/> Attention needed	26
<input type="checkbox"/> Fix available	1

READYFORWINDOWS (6) ×	
<input type="checkbox"/> Unknown	11K
<input type="checkbox"/> Adopted	2K
<input type="checkbox"/> Highly adopted	1K
<input type="checkbox"/> Insufficient data	1K
<input type="checkbox"/> Supported version available	694
<input type="checkbox"/> Contact software provider	192

[−] Less

For example, you want to check all reviewed apps with issues. To do this enable filters and click **Apply**:

ISSUE (6) ×	
<input type="checkbox"/> No known issues	16K
<input checked="" type="checkbox"/> Application is removed during upgrade	19
<input checked="" type="checkbox"/> Does not work with new OS, but won't block upgrade	4
<input checked="" type="checkbox"/> Evaluate application on new OS	2
<input checked="" type="checkbox"/> Reinstall application after upgrading	1
<input checked="" type="checkbox"/> Does not work with new OS, and will block upgrade	1

[−] Less

Apply **Cancel**

Then click on numbers under APPCOUNT:

1 Results Chart **Table**

IMPORTANCE	APPCOUNT
Not reviewed	27

And change results view from **List** to **Table**:

Drag a column header and drop it here to group by that column

	TimeGenerated	Computer	AppVendor	AppName	AppVersion	AppLanguage	TotallInstalls
▶	10/22/2018 12:00:00.000...		Broadcom Corporation	Broadcom 2070 Bluetooth 3.0	6.3.0.6300	Unknown	1
▶	10/22/2018 12:00:00.000...		MagiciSO, Inc.	MagicDisc 2.7.106		Unknown	1
▶	10/22/2018 12:00:00.000...		Intel Corporation	Intel(R) USB 3.0 eXtensible Host Controller Driver	3.0.0.20	Unknown	1
▶	10/22/2018 12:00:00.000...		Microsoft Corporation	Microsoft Visual Studio 2010 Ultimate - ENU	10.0.40219	English (United States)	1
▶	10/22/2018 12:00:00.000...		CPUID	CPUID CPU-Z 1.57.1		Unknown	1
▶	10/22/2018 12:00:00.000...		Check Point Software Technologies Ltd.	Check Point VPN	98.60.1031	English (United States)	1
▶	10/22/2018 12:00:00.000...		Cisco Systems, Inc.	Cisco Systems VPN Client 5.0.07.0290	5.0.7	English (United States)	4
▶	10/22/2018 12:00:00.000...		Microsoft Corporation	Windows Phone Emulator x64 - ENU	10.0.30319	English (United States)	1
▶	10/22/2018 12:00:00.000...		DisplayLink Corp.	DisplayLink Core Software	7.4.51572.0	English (United States)	78

You can scroll right and check a summary for all apps with problems like **Issues** and **Guidance**:

Issue	UpgradeAssessment	Guidance
Application is removed during upgrade	Attention needed	Application is removed during upgrade due to compatibility issues. No action is...
Application is removed during upgrade	Attention needed	Application is removed during upgrade due to compatibility issues. No action is...
Application is removed during upgrade	Attention needed	Application is removed during upgrade due to compatibility issues. No action is...
Does not work with new OS, but won't block upgrade	Attention needed	Application will not work on new OS. No action is required for upgrade to proc...
Does not work with new OS, but won't block upgrade	Attention needed	Application will not work on new OS. No action is required for upgrade to proc...
Evaluate application on new OS	Attention needed	Application may have issues on new OS. No action is required for upgrade to pr...
Application is removed during upgrade	Attention needed	Application is removed during upgrade due to compatibility issues. No action is...
Does not work with new OS, but won't block upgrade	Attention needed	Application will not work on new OS. No action is required for upgrade to proc...
Application is removed during upgrade	Attention needed	Application is removed during upgrade due to compatibility issues. No action is...
Does not work with new OS, but won't block upgrade	Attention needed	Application will not work on new OS. No action is required for upgrade to proc...
Application is removed during upgrade	Attention needed	Application is removed during upgrade due to compatibility issues. No action is...
Reinstall application after upgrading	Fix available	No action is required for upgrade to proceed. Application will work on new OS,...
Application is removed during upgrade	Attention needed	Application is removed during upgrade due to compatibility issues. No action is...

Or you can expand a line of the report and check an information about specific app:

27 Results [List](#) [Table](#) [User changes](#)

Drag a column header and drop it here to group by that column				
	TimeGenerated	Computer	AppVendor	AppName
▶	10/22/2018 12:00:00.000...		Microsoft Corporation	Microsoft Visual Studio 2010 Ultimate - ENU
▲	10/22/2018 12:00:00.000...		CPUID	CPUID CPU-Z 1.57.1
TenantId		e0b25a7b-c073-495d-b9c6-eaf991c19177		
SourceSystem		AzureStorage		
TimeGenerated		2018-10-22T10:00:00Z		
ComputerId		1c06efc7-eba8-44f7-8277-70b3cc68a6f4		
AppVendor		CPUID		
AppName		CPUID CPU-Z 1.57.1		
AppLanguage		Unknown		
TotalInstalls		1		
ComputersWithIssues		1		
MonthlyActiveComputers		0		
PercentActiveComputers		0 %		
Issue		Does not work with new OS, but won't block upgrade		
UpgradeAssessment		Attention needed		
Guidance		Application will not work on new OS. No action is required for upgrade to proceed.		
Importance		Not reviewed		

You can click on **User Changes**, select app and click **Bulk Edit**:

27 Results [List](#) [Table](#) [User changes](#)

Bulk Edit		
<input type="checkbox"/>	AppName	AppVendor
<input type="checkbox"/>	System Center Endpoint Protection	Microsoft Corporation
<input type="checkbox"/>	Broadcom 2070 Bluetooth 3.0	Broadcom Corporation
<input type="checkbox"/>	MagicDisc 2.7.106	MagicISO, Inc.
<input type="checkbox"/>	Intel(R) USB 3.0 eXtensible Host Controller Driver	Intel Corporation
<input type="checkbox"/>	Microsoft Visual Studio 2010 Ultimate - ENU	Microsoft Corporation
<input checked="" type="checkbox"/>	CPUID CPU-Z 1.57.1	CPUID
<input type="checkbox"/>	Check Point VPN	Check Point Software Technologies Ltd.

Then you can customize some important info about analyzed app:

Importance

Select importance level

Not reviewed

Mission critical

Business critical

Important

Best effort

Ignore

Review in progress

Upgrade decision

Select upgrade decision

Not reviewed

Review in progress

Ready to upgrade

Won't upgrade

Test plan

Select test plan

Regression test

Smoke test

Automated test

Test in pilot

Reactive response

Unspecified

Test result

Select test result

Passed

Pending

Failed

Inconclusive

Blocked

Not started

Then click **Save**:

1 rows selected



Importance

Mission critical



Upgrade decision

Review in progress



Test plan

Test in pilot



Test result

Failed



App owner

Liashov


Reset

Save


7.1.2 Resolve issues

Come back to Compatibility Assessment dashboard and go to **STEP 2: Resolve issues**:

REVIEW APPLICATIONS WITH KNOWN ISSUES



STEP 2: Resolve issues

[More info](#) 

27

Applications with known issues

27

Applications with known issues in need of review

Review applications with known issues

We've identified applications with issues known to Microsoft and suggest ways to resolve these issues when possible.

UPGRADE ASSESSMENT	APPLICATION COUNT
Attention needed	26 <div></div>
Fix available	1 <div></div>

Click on numbers, then click on **Attention needed**:

2 Results  Chart  Table

UPGRADEASSESSMENT	AGGREGATEDVALUE↓
Attention needed	26
Fix available	1

Switch to **Table** mode and check summary details. They will be the same as in previous **STEP 1** if you didn't make some changes:

26 Results  List  Table  User changes

Drag a column header and drop it here to group by that column

AppVendor	AppName	AppVersion
Microsoft Corporation	System Center Endpoint Protection	4.10.209.0
Broadcom Corporation	Broadcom 2070 Bluetooth 3.0	6.3.0.6300
MagicISO, Inc.	MagicDisc 2.7.106	
Intel Corporation	Intel(R) USB 3.0 eXtensible Host Controller Driver	3.0.0.20
Microsoft Corporation	Microsoft Visual Studio 2010 Ultimate - ENU	10.0.40219
CPUID	CPUID CPU-Z 1.57.1	
Check Point Software Technologies Ltd.	Check Point VPN	98.60.1031
Cisco Systems, Inc.	Cisco Systems VPN Client 5.0.07.0290	5.0.7
Microsoft Corporation	Windows Phone Emulator x64 - ENU	10.0.30319
DisplayLink Corp.	DisplayLink Core Software	7.4.51572.0
Microsoft Corporation	Microsoft Windows SDK for Windows 7 (7.1)	7.1.7600.0.30514
Microsoft Corporation	Bing Bar	7.0.601.0

Drag a column header and drop it here to group by that column

Issue	UpgradeAssessment	Guidance	Importance	UpgradeDecision
Application is removed during upgrade	Attention needed	Application is removed during upgrade due to compatibility issues. No...	Not reviewed	Not reviewed
Application is removed during upgrade	Attention needed	Application is removed during upgrade due to compatibility issues. No...	Not reviewed	Not reviewed
Application is removed during upgrade	Attention needed	Application is removed during upgrade due to compatibility issues. No...	Not reviewed	Not reviewed
Application is removed during upgrade	Attention needed	Application is removed during upgrade due to compatibility issues. No...	Not reviewed	Not reviewed
Does not work with new OS, but won't block upgrade	Attention needed	Application will not work on new OS. No action is required for upgrade...	Not reviewed	Not reviewed
Does not work with new OS, but won't block upgrade	Attention needed	Application will not work on new OS. No action is required for upgrade...	Not reviewed	Not reviewed
Evaluate application on new OS	Attention needed	Application may have issues on new OS. No action is required for upgr...	Not reviewed	Not reviewed
Application is removed during upgrade	Attention needed	Application is removed during upgrade due to compatibility issues. No...	Not reviewed	Not reviewed
Does not work with new OS, but won't block upgrade	Attention needed	Application will not work on new OS. No action is required for upgrade...	Not reviewed	Not reviewed
Application is removed during upgrade	Attention needed	Application is removed during upgrade due to compatibility issues. No...	Not reviewed	Not reviewed
Does not work with new OS, but won't block upgrade	Attention needed	Application will not work on new OS. No action is required for upgrade...	Not reviewed	Not reviewed

On the same dashboard you can review driver issues:

REVIEW KNOWN DRIVER ISSUES

242

Drivers with known issues

242

Drivers in need of review

DRIVER AVAILABILITY	DRIVER COUNT
Available in-box and from Win...	197
Import from Windows Update	27
Available inbox	11
Check with vendor	7

Decide upgrade readiness

REVIEW LOW-RISK APPS AND DRIVERS

273

Low-risk applications in need of review

235

Low-risk drivers in need of review

Learn how to use this blade effectively on [our blog](#).

CRITERIA	ITEM COUNT
Apps with an ISV support statement	71
Apps that are "Highly adopted"	167
Apps that are "Adopted"	35
Apps you have marked "Ignore"	0
Drivers available on Windows Update	224
Drivers available in-box	11

OTHER APPS AND DRIVERS IN NEED OF REVIEW

CRITERIA	ITEM COUNT
Mission and Business critical apps	0
All apps that are not yet reviewed	563
All drivers that are not yet reviewed	242

PRIORITIZE APP AND DRIVER TESTING

101

Apps and Drivers to test to unblock 10% of computers

465


Apps and Drivers to test to unblock 80% of computers

ITEMNAME	ITEMVERSION	RANK
Microsoft .N...	4.7.03062	1
System Cent...	4.10.209.0	1
Microsoft Vis...	12.0.40660.0	2
iwdbus.sys	5.5.55.0	2
igdkmd64.sys	10.18.14.4156	3
Windows Fir...	1.2.3412.0	3
Microsoft Off...	15.0.4569.1506	4
Microsoft .N...	4.7.03062	4
Microsoft Vis...	12.0.21005.1	5
atikmpag.sys	13.251.9001.1...	5


See the list of items to test in order

7.1.3 Deploy Eligible Computers

Come back to Compatibility Assessment dashboard and go to **STEP 3: Deploy**:



STEP 3: Deploy

[More info](#) 

Deploy Eligible Computers


Now that you've resolved application and driver issues, you're ready to start upgrading computers to Microsoft Windows.

Select the list of computers that are ready to upgrade and export it to your software distribution solution.

Computer Groups

Use the OMS Computer Groups feature to organize your computers according to business area, geographic location, discipline, or any other factors you find relevant.

DEPLOY ELIGIBLE COMPUTERS



Review in progress

1k

Won't upgrade

6

Ready to upgrade

2

UPGRADE DECISION	COMPUTER COUNT
Review in progress	1K <div></div>
Won't upgrade	6 <div></div>
Ready to upgrade	2 <div></div>

[Export computers](#)

Click on **Ready to upgrade**, then switch to **Table** view mode:

search in (UAComputer) UpgradeDecision == "Ready to upgrade"
| sort by TimeGenerated desc

2 Results

List

Table

Drag a column header and drop it here to group by that column

	\$table	TimeGenerated	Computer	Manufacturer	Model	OSVersion	OSEdition	OSArchitecture
▶	UAComputer	10/22/2018 12:00:00.000...	MaryCh-Terminal.Contoso	Lenovo	4518PG1	Windows 8.1	Enterprise	amd64
▶	UAComputer	10/22/2018 12:00:00.000...	DonnaGe-Book.Contoso	HP	HP Z400 Workstation	Windows 8.1	Enterprise	amd64

Then you can click on **Export** and exported list of computers are ready for upgrade to your OSD solution:

✓ Exporting results to Excel
Results are exported.

1:34 PM

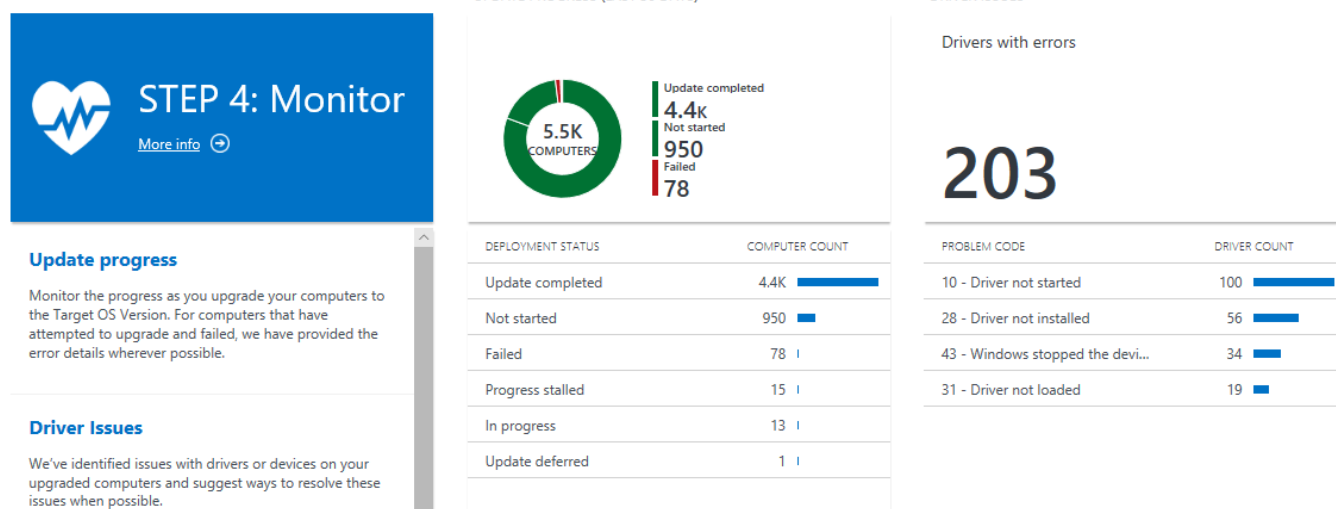
ert Rule [Export](#) [PowerBI](#)

search in (UAComputer) UpgradeDecision == "Ready to upgrade"
| sort by TimeGenerated desc

▶ RUN

7.1.4 Update progress

Come back to Compatibility Assessment dashboard and go to **STEP 4: Monitor:**



You can check the update process with different statuses, for example, **Failed:**

Computer	Manufacturer	Model	OSVersion	OSEdition	OSArchitecture
DanaAr-Showroom.Contoso	HP	HP EliteBook 840 G4	Windows 10	Enterprise	amd64
LorinaHo-Office.Contoso	Microsoft	Surface Pro 4	Windows 10	Enterprise	amd64
StBook-Dsk.Contoso	HP	HP EliteBook 840 G4	Windows 10	Enterprise	amd64
BrianPa-Work.Contoso	Microsoft	Surface Pro 4	Windows 10	Enterprise	amd64
KimberlyBr-Demo.Contoso	Lenovo	X1 Yoga (1st Gen)	Windows 10	Enterprise	amd64
WaMichael-Terminal.Contoso	Microsoft	Surface Pro 3	Windows 10	Enterprise	amd64
ClKenneth-Office.Contoso	Microsoft	Surface Book	Windows 10	Enterprise	amd64

In a **Table** mode you can see a summarized information about upgrade process:

Computer	Manufacturer	Model	OSVersion	OSEdition	OSArchitecture
DanaAr-Showroom.Contoso	HP	HP EliteBook 840 G4	Windows 10	Enterprise	amd64
LorinaHo-Office.Contoso	Microsoft	Surface Pro 4	Windows 10	Enterprise	amd64
StBook-Dsk.Contoso	HP	HP EliteBook 840 G4	Windows 10	Enterprise	amd64
BrianPa-Work.Contoso	Microsoft	Surface Pro 4	Windows 10	Enterprise	amd64
KimberlyBr-Demo.Contoso	Lenovo	X1 Yoga (1st Gen)	Windows 10	Enterprise	amd64
WaMichael-Terminal.Contoso	Microsoft	Surface Pro 3	Windows 10	Enterprise	amd64
ClKenneth-Office.Contoso	Microsoft	Surface Book	Windows 10	Enterprise	amd64

In a **List** mode you can check computers one by one to get detailed information about the update status:

```

... TimeGenerated      : 10/22/2018 12:00:00.000 PM
... Computer          : DanaAr-Showroom.Contoso
... Manufacturer      : HP
... Model             : HP EliteBook 840 G4
... OSVersion         : Windows 10
... OSEdition         : Enterprise
... OSArchitecture    : amd64
... ConfigMgrClientID : 80adc461-4cb0-450a-bca1-d9d54a0fb4b9
... DeploymentStatus  : Failed
... OriginBuild       : 16299
... OriginOSVersion   : 1709
... TargetBuild       : 17134
... TargetOSVersion   : 1803
... HoursToUninstall  : -1
... TotalIssues       : 2
... SysReqIssues      : 0
... ApplIssues        : 0
... DriverIssues      : 2 \[Query\]
... UpgradeAssessment : OK to pilot with new driver from Windows Update
... UpgradeDecision   : Review in progress
... ItemRank          : 0
... SourceSystem      : AzureStorage
... ComputerID        : 0731810f-745a-4ab9-8232-2bcd0299c68e

```

... TimeGenerated : 10/22/2018 12:00:00.000 PM
... Computer : DanaAr-Showroom.Contoso
... HardwareName : HP Wireless Button Driver
... HardwareType : hidclass
... HardwareID : acpi\ven_hpq&dev_6001
... DriverVendor : HP
... DriverName : wirelessbuttondriver64.sys
... DriverVersion : 2.1.3.1
... TotalComputers : 1
... DriverAvailability : Import from Windows Update
... Issue : Driver will not migrate to new OS
... UpgradeAssessment : OK to pilot with new driver from Windows Update
... Guidance : If the computer automatically receives updates from Windows Update, no action is required. Otherwise, import a new driver from Windows Update after upgrading.
... UpgradeDecision : Not reviewed

7.2 Checking collecting telemetry in SCCM console

After the configuration is completed you can view the numbers in **Monitoring / Upgrade Readiness**.

