

YBH Hwb Intune Migration Case Study



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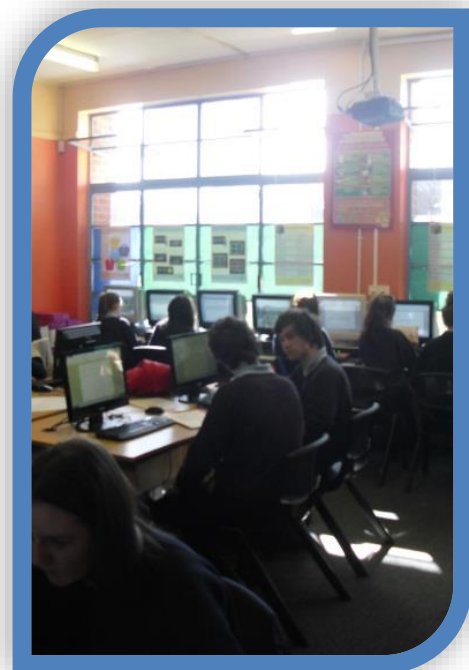


Executive Summary

The aim of this report is to document the journey that YBH undertook to be the first school in Powys & Ceredigion to enrol to Hwb's intune.

Throughout this journey there were challenges and using this report we hope we can share our solutions with both Powys and Ceredigion as they now use our test case and enrol intune to other schools in the LEA.

This reports aims to outline the cost savings and the other benefits to schools such as GDPR & data security compliance but also makes their school system more standardised with the rest of Wales which allows the Hwb team to manage it centrally and school teaching and Technical support staff have more time to focus on the learners.



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Background

Ysgol Bro Hyddgen is situated in the town of Machynlleth within Powys local authority. The school admits pupils to the primary department from four years old and admits pupils from other partner primary schools both within and beyond the local authority to the secondary department. There are 488 pupils on roll, 199 of whom are in the primary department and 289 in the secondary department. Ysgol Bro Hyddgen is a combination of two former schools, namely Ysgol Gynradd Machynlleth and Ysgol Bro Ddyfi. It was opened in September 2014. Sixty-two per cent (62%) of pupils come from non-Welsh speaking homes. Forty-four per cent (44%) of pupils speak Welsh fluently. Pupils are streamed linguistically, and one class in each year receives education through the medium of English. The leadership team includes the head teacher, deputy head teacher and assistant head teacher. Currently we are preparing to move the school onto one campus with a state of the art new build with the primary and secondary sector joining in September 2024.

We are as a school trying to line up our development plans with Ceredigion's ready for the SLA switchover from Powys to Ceredigion once they are ready to take on more schools.

With the delivering of the Hwb Wave 4 equipment in March 2-21 and having the intune provision will mean we can support our staff and learners with the ability to remotely manage their devices and become more efficient with our maintenance program while getting the most out of the devices with minimal contact (white glove service of intune). It also means our front line technical staff have move time to focus on end user support and providing training for new devices and services that the WG have provided via Hwb.

Using Microsoft Intune we can also remotely ensure that all devices are compliant with the latest module updates with eset the Powys CC Schools Antivirus solution as currently we can only push out updates locally on the Powys network. We also use other applications to monitor pupil devices in line with safeguarding and PREVENT guidance which intune ensures its always up to date and running on each device.

Mobile devices such as iOS devices can also be enrolled into Microsoft InTune and authenticate against Hwb's Azure tenancy which will make it easier for our pupils – in particular our foundation phase pupils to access Hwb and all its resources. It will also save our school £1500/ year on MDM licences as hwb provide these for free!

Our aim is to reduce our overheads with annual costs of renewing onsite infrastructure and line with the WG EDETech standards. By doing this we become more stringent with cyber security by having no physical data onsite as this is held in the Azure Cloud which is overseen by Hwb.

Also by doing this pupils and staff become very agile in their working with any device in any location e.g. working from home or in school with any device allows all users to access their documents or cloud based services.

A cloud first strategy is needed and this is why the school looked at ClassCharts for staff to be able to register and monitor pupils behaviour and progress. During the COVID-19



lockdown this enabled staff to register who was attending lessons as if they were in schools and this allowed the school support team to target support to learners who were not accessing learning. This also allowed staff to access key data from home rather being constraint to the physical Local Network which SIMS is located. With any solution that we reviewed we make sure that all data is written back to SIMS to ensure we are still inline with the SIMS roadmap of a cloud based solution in the future and we can easily move across as all our data is written back to SIMS live.

End Users & Devices:

Users

- Primary Campus Staff: 22
- Primary Campus Pupils: 167
- Secondary Campus Staff: 42
- Secondary Campus Pupils: 348
- No 6th form on roll: 67

Devices:

- Primary Campus Pupil iPads: 35
- Primary Campus Staff iPads: 11
- Primary Campus Pupil Chromebooks: 64
- Primary Campus Pupil Windows Laptops: 16
- Primary Campus Staff Laptops: 9
- Primary Campus Pupil Desktops: 36
- Primary Campus Office Desktops: 2
- Primary Campus Staff Desktops: 14
- Secondary Campus Pupil iPads: 32
- Secondary Campus Staff iPads: 11
- Secondary Campus Pupil Chromebooks: 32
- Secondary Campus Pupil Windows Laptops: 64
- Secondary Campus Staff Laptops: 28
- Secondary Campus Pupil Desktops: 132
- Secondary Campus Staff Desktops: 47
- Secondary Campus Office Desktops: 4



Why Microsoft intune?! – take a leap of faith!

Hwb's Microsoft intune located on the Azure Cloud Platform allows school to become virtual schools. Schools are all on the same domain which allows school staff to focus on supporting staff and less about worrying about infrastructure issues such as hardware renewal of servers or technical or cyber security issues as this is all done centrally.

As the Welsh Government pays the licencing for office 365 and device licences for staff and pupils there are substantial cost savings to be made but also a higher level of redundancy in the system in the event of a disaster recovery scenario in terms of technical knowledge and standardization of the system which means the LEA and WG staff will be able to support the school in the event of a disaster or long term staff illness.

Disaster recovery, GDPR, FOI, Subject access request and Cyber Security

Cyber Security

In terms of compliance and legislative issues the Hwb platform standardises schools but also provides a industry and sector leading standard in ensuring that schools are compliant with data security and provides a level playing field for school staff to focus on supporting their learners and teachers while the hwb team are able to apply changes to the Hwb Azure network globally to ensure consistently.

More information

- [Network and Data Security - Hwb \(gov.wales\)](#)

GDPR, FOI & Subject access request

Hwb have a dedicated team which deals with GDPR, FOI and Subject access requests which will relieve a lot of pressure on the LEA and schools to deal with these. As Hwb is a consistent All-Wales Platform this makes it easier to process these requests centrally and consistently.

More information:

- [Data Governance - Hwb](#)
- [Data protection - Hwb \(gov.wales\)](#)

Disaster Recover

Hwb is developing a more rigorous disaster recovery system but currently they use the Azure & Office 365 Standard Features

Hwb has a number of security enhancements in place to protect against malicious cyber activity. Hwb services provided by our partners, like the Hwb site and the User Management Portal routinely go through an IT health check by infrastructure and Web applications security experts. This process searches for any vulnerabilities and recommends remediation based on the severity of the findings. This is an annual process and ensures the security of our platforms. The cloud services, Office 365 and Google Workspace for Education, are also configured with security in mind and the configuration reviewed by security consultants.



Hwb accounts are also protected by Azure AD Identity protection and cloud app security policies, these have a number of defined policies that flag and block users that appear to be at risk or undertaking suspicious activity.

The Hwb e-mail service provided by Exchange Online and Office 365 is also configured with a number of enhanced security measures. Safe Links and Safe attachments is configured on mailboxes to protect against malware and malicious links. We also have anti phishing and anti-spam policies configured in line with guidance from our security consultants. The trust centre does document some of the other security enhancements available on Hwb mailboxes. <https://hwb.gov.wales/support-centre/trust-centre/security-controls/#e-mail-security>

Backups

As the service is provided by Microsoft and Google cloud infrastructure there is no backup mechanism. Data held in cloud services are replicated across many servers across different data centres thus ensuring that any data on a failed server can be retrieved from another server. This is a seamless process to the end user ensuring continued access to files and data.

Deleted Work

Work that is deleted will be available for recovery from the recycle bin for 30 days and for a total of 93 days from the secondary recycle bin. This is described in the following O365 support document <https://support.microsoft.com/en-us/office/restore-deleted-files-or-folders-in-onedrive-949ada80-0026-4db3-a953-c99083e6a84f>

Emails can be recovered from the Deleted Items folder indefinitely but if they're deleted from the deleted items folder they will be recoverable for 14 days from the recovery folder. Users can apply retention policies to Emails that need to be kept for longer.

Hwb roadmap has more options for protecting data, this work is currently being scoped by the Security sub working group and will introduce data loss prevention policies, sensitivity labels and retention labels to further protect user files and data against accidental loss and oversharing. This is planned to be available for September 2021.

2FA (2 Factor Authentication)

Hwb User Management system allows granular or global controls to 2FA to schools. This ensures that all data held by the school on hwb when access outside of the PSBA network will need 2 factor authentication.

More information

- [Multi Factor Authentication- Hwb \(gov.wales\)](#)

General information about security controls:

- [Security Controls - Hwb \(gov.wales\)](#)

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Cost savings for schools who adopt the full Hwb system

The savings for a 3-18 school like Bro Hyddgen were the following:

Item	Before Hwb Migration	After Hwb Migration	Notes
Server Licensing and CAL's e.g. SQL, REMOTE DESKTOP etc	£1400	£700	By reducing the amount of physical hyper-visors in the school this reflected in the licencing agreement renewal as the school did have a fail over cluster over 2 nodes. As the school now only has a domain controller, print server, SQL server for sync systems and SIMS and 1 RDS server to access our MIS from home this is now reflected in the new licencing EES agreement as only physical 2 Hyper-V hosts are needed which were provided as part of the Hwb wave project.
Office 365 CALS	£3650	£252	Office 365 CALS are only provided to teaching staff not admin staff or SLA therefor we needed to retain some staff on the EES to have their specific computers licenced manually using a MAK key from the EES.
iPads MDM + Support	£2200	£0.00	The school previously used JAMF but now moving across to Hwb Intune as its MDM for iOS devices. Hwb does not currently support shared iPads but this is in the pipeline.
Hardware renewal (Once every 7 years)	£64,000 (£9,142 Per Year over 7 years)	£12,000 (£1,714 Per Year over 7 years)	By not having a cluster hyper-v 2 node fail over cluster system and a SAN or a NAS means we saved also on the backup NAS (2 locations). The 2 Dell Servers we had from Dell are sufficient to run a domain controller, SQL server, RDS server and a print server. Our hope is once SIMS is developed to be a cloud system along with the development in PaperCut to be a fully hosted cloud system we will no longer need any server hardware at all.
Total	£16,392 AVG per year over 7 Years.	£2,666 AVG per year over 7 years.	Total Savings per year over 7 years: £13,726



Staff Time and standardization benefits

It's not only the cost savings that are a benefit; it's also allowing primary schools staff time to focus on teaching and not have to worry about data security, backups and major ICT issues as everything is standardized to make it easier for the WG team and LEA's to support schools with their ICT support and not reliant on 1 member of staff in the school for technical assistance).

How to enrol devices (autopilot VS manual)

It is possible to enrol devices (join your Windows devices to the hwb domain) using 2 methods: autopilot and manual enrolment.

AutoPilot enrolment

Autopilot allows you to setup a Out of the Box experience with zero intervention required – this would be very useful if you had new devices from a reseller and by gaining access to the HASH CSV of each device on bootup your end users settings and applications would automatically install.

For large organisations or a new school this would be very beneficial to streamline the install process. The only disadvantage to this method would be the devices would be enrolled to a single OU e.g. one school at a time. Other options would be to setup a AutoPilot enrolment group which would go into a holding group at LEA level and then these can be transferred by the LEA in Intune for Education to the school's OU Provisioning group. This way a single autopilot provisioning script can be used which can be collected by inserting a USB into the device and the HASH collected in CSV format and then uploaded to Intune device management to enrol.

- A overview of autopilot can be found here: [Overview of Windows Autopilot | Microsoft Docs](#)
- Autopilot script and instructions can be found here: [Get a New Computer's Auto Pilot Hash Without Going Through the Out of Box Experience \(OOBE\) – The Lazy Administrator](#)



Manual Enrolment

Using the Microsoft Schools App available from the windows app store or the Windows enrolment designer app which is also available in the windows app store you can setup an enrolment USB which once a device is imaged or out of the box – you can enrol the device with the USB which will be configured with key information e.g. wifi SSID, if the device is a 1:1 device or a shared locked down device and change the background image and lockdown the “guest” access mode.

The screenshot shows the Windows Enrolment Designer app interface. On the left, under the 'Steps' section, there is a list of tasks: 'Set up device' (checked), 'Set up network' (checked), 'Account Management' (checked), 'Add applications' (checked), 'Add certificates' (checked), and a 'Finish' button. The main area is titled 'Summary' and contains the following information:

- Set up device**
 - Share devices: No
 - Remove pre-installed software: No
 - Enter device name: Contoso-%SERIAL%
- Network settings**
 - Network: Wired
- Account Management**
 - Bulk Token Expiry Date: "2021-05-23T02:20:27.944Z"
- Add applications**
- Add certificates**
- Protect your package**
 - Protect the contents of your package by specifying a password. The password length must be 8-16 characters.
 - ☐ No

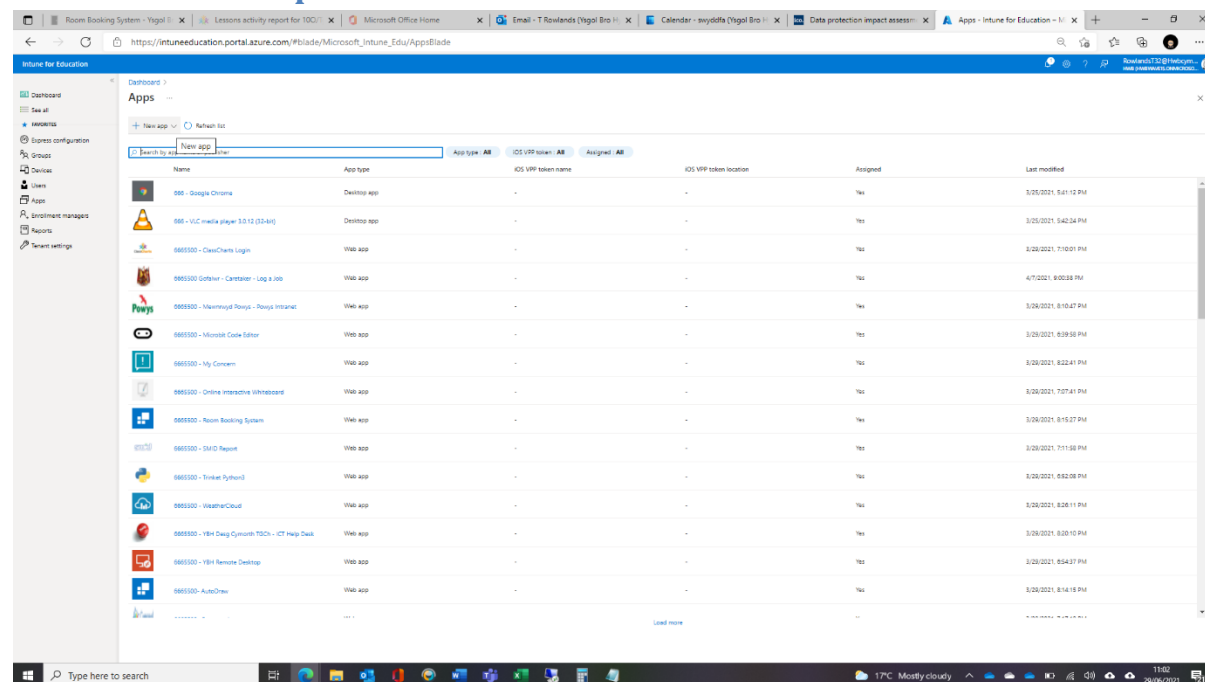
At the bottom, it says 'You are ready to create the package!' with a 'Create' button.

- For more information about manual enrolment - [Bulk enrollment for Windows 10 - Microsoft Intune | Microsoft Docs](#)
- Top tip – we found as a school with around 330 windows devices that the USB method allowed us to enrol the devices room by room and then made sure we bulk transferred those devices based on their timestamp to the correct group which would give them the correct apps.
- When using this method you can also set a “local admin” account as a backup account to install apps urgently. This might be useful if you need a exe installed on a specific device. “local admin” is not available on a shared device provisioning device.
- Other help video’s- Training Video’s: www.aka.ms/i4eworkshopvideos

Intune education VS device management

Hwb provide 2 methods of assigning apps and configuring windows settings similar to group policy. This can be done at a Wales Wide level or a LEA level with inheritance or the school is able to isolate itself and set its own permissions based on its individual needs or can set more relaxed policy's on a specific group of devices e.g. if those devices need a particular app or a powershell script to map in a network drive e.g. SIMS.

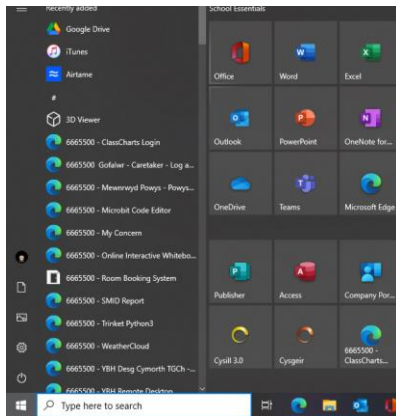
Intune Education portal:



The intune education portal allows users to lock down device group with specific settings e.g. lock screen, hide specific apps. The intune education portal is great for school level staff or school level technicians to lock down or amend the settings inherited from the LEA policies with a low risk of causing large problems as intune for education allows UI enhancements and only the settings Microsoft think that schools need at school level. Intune for education also allow schools to deploy MSI or intune Packages to group of devices. Again – as MSI's already contain the install and uninstall script this it very straight forward and no issues for school level staff to deploy these. Apps can also be deployed from the windows app store on request from hwb e.g. office 365 or Greenfoot etc..

Web Apps in intune for education are also very useful to deploy shortcuts to devices (ios and windows) for web based apps e.g. scratch, tinkercad etc.





Intune Device Management

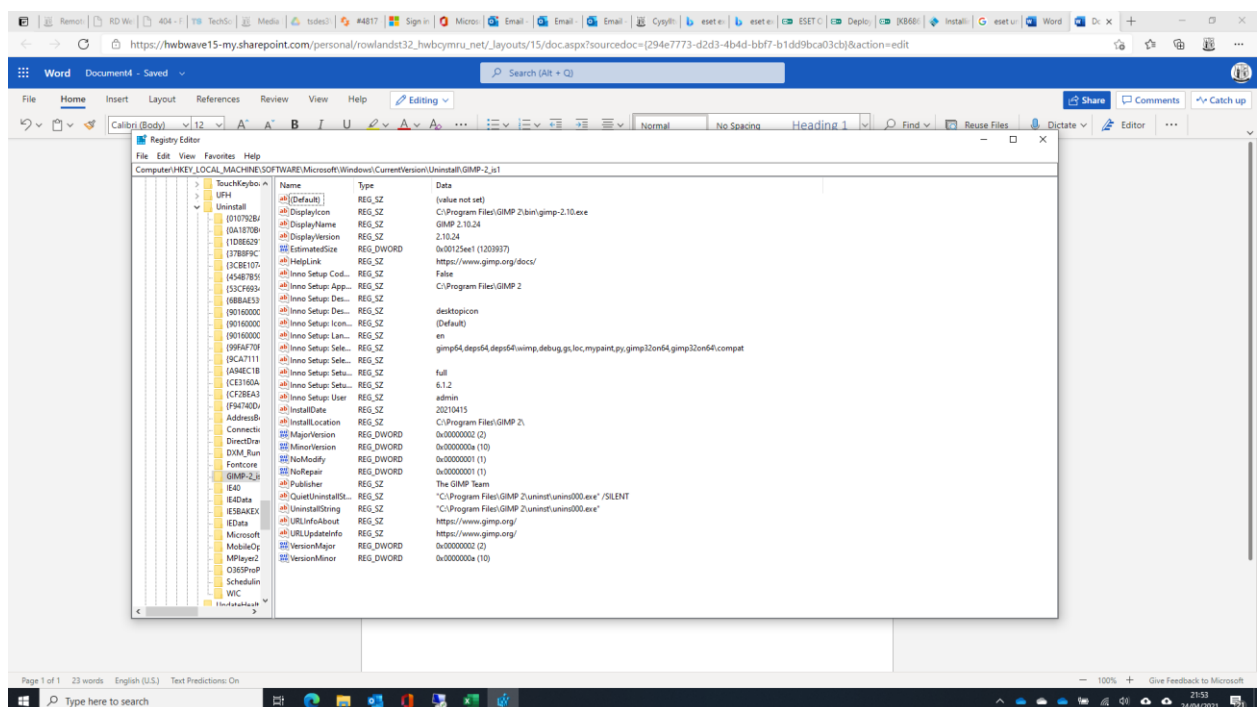
If schools wanted to deploy EXE then a win32 package would need to be created by the Intune prep tool (available in github) and then uploaded in device manager along with technical knowledge with understanding the package of what the install and uninstall script will be - this can be found in the REG EDIT on a device which has the application already installed.

How to find the INSTALL / uninstall command of any program WIN32 package

Go to REG EDIT:

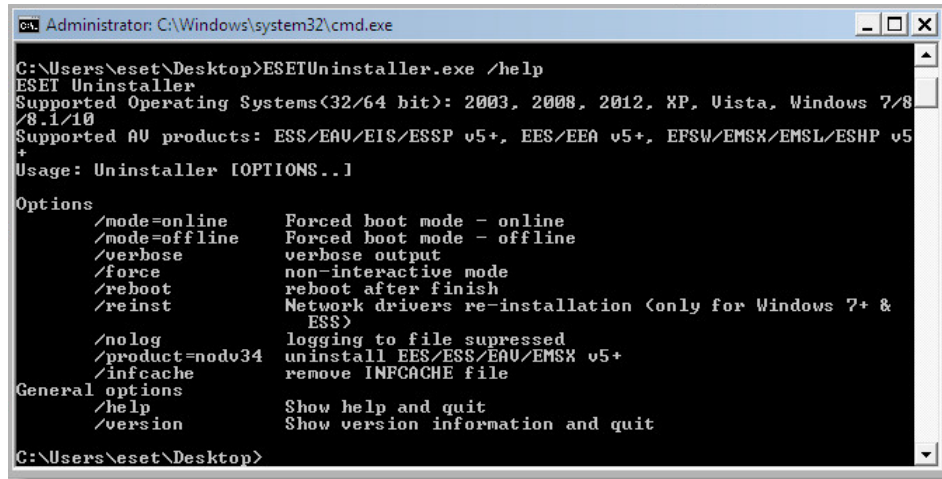
HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Uninstall

Browse until you find the program:



Or run CMD on the setup.exe file and get the commands that way:





```

Administrator: C:\Windows\system32\cmd.exe

C:\Users\eset\Desktop>ESETUninstaller.exe /help
ESET Uninstaller
Supported Operating Systems(32/64 bit): 2003, 2008, 2012, XP, Vista, Windows 7/8
/8.1/10
Supported AV products: ESS/EAU/EIS/ESSP v5+, EES/EEA v5+, EFSW/EMSX/EMSL/ESHP v5
+
Usage: Uninstaller [OPTIONS...]

Options
  /mode=online      Forced boot mode - online
  /mode=offline    Forced boot mode - offline
  /verbose         verbose output
  /force           non-interactive mode
  /reboot          reboot after finish
  /reinst          Network drivers re-installation (only for Windows 7+ &
                  ESS)
  /nolog          logging to file suppressed
  /product=nodv34  uninstall EES/ESS/EAU/EMSX v5+
  /infcache       remove INFCACHE file

General options
  /help           Show help and quit
  /version        Show version information and quit

C:\Users\eset\Desktop>

```

For more information about install and uninstall scripts

- <https://docs.microsoft.com/en-us/intune/apps/apps-win32-app-management>
- <https://github.com/microsoft/Intune-Win32-App-Packaging-Tool/archive/v1.4.zip>

Top tip – limit the amount of apps you have to a minimal and check if there are alternatives available via Hwb or cloud based solutions. This will make it easier for you to manage and update but also standardise as much of your applications as you can with your LEA and WG hwb services.

Best practice for school device deployment

With a staff device we would recommend a 1:1 configuration (not shared device provisioning) which will allow the user to sync their onedrive and sharepoint fileshares to the device. This will also allow the local school administrators to install applications locally if a urgent app was needed on a staff device as shared devices can only be deployed via a intune deployment package or package or a MSI/ WIN32 package.

With a pupil device we would recommend a “shared enrolment” profile which would basically lock out the C:\ and ensure that pupils are forced to save their work to their onedrive. The setup does allow access to the Downloads folder only to the user which ensures the device does not get too “bloated”. With a shared enrolment setup only apps via the intune store or INTUNE packages can be deployed – local accounts are not possible which means if there was a urgent need for a app then the end user would need to ask their LEA or ICT support to prepare the app so it can be distributed to the device.

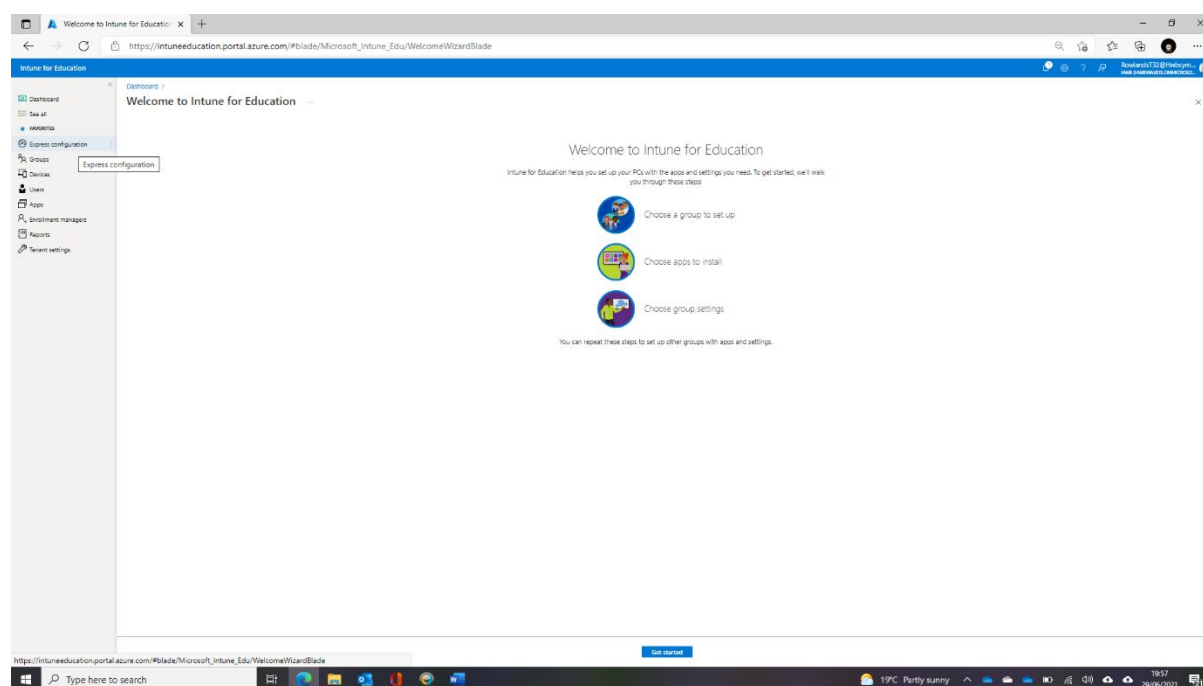
If the device is a classroom device then a shared enrolment would be recommended but if they are doing more multimedia based applications then users would need a 1:1 device so they can login to their onedrive sync tool to access multiple files at the same time.

One way we managed this was to make sure that devices which are 1:1 devices authenticate with hwb as a multiple login device has a large hard drive and is “del prof” (application which clears out the Users local files) each term once a project is finished to ensure the C:\ does not get too full.

Good practice for site wide enrolment

We found that enrolling devices room by room was the best approach and then you can transfer them in intune for education. It is important to recognise and plan which devices are going to be shared devices and 1:1 devices. Even with 1:1 devices you can set this with the enrolment package so it logs in with their hwb credentials but they will be able to save things locally on the machine. The advantage of shared devices is that it locks down the ability of the user to accidentally save documents locally on the device as the shared device enrolment profile with automatically open a onedrive browsing app which allows the user to drag and drop files into their personal onedrive.

If you need to uninstall a app it can get quite confusing to add a exclude or remove in a group which you need to then update once the app has been removed. Intune for education has a wizard based system which will ensure that you setup the install or uninstall it correctly or you can amend your settings in it per group similar to group policy. This method is highly recommended for educators or school level staff to ensure that the amendments they make are implemented correctly.



Top Tip: image and then enrol each room or laptop cabinet and then move them from the provisioning group to the student devices group. At this stage you can re-name them in intune for education to your school's naming convention to inline with your tag numbers or device location. Use the device serial number to identify each device and then you can select the device in intune and "rename".

Device name	Primary user	Serial number	Manufacturer	Model	Operating system	OS version
DPC-AE-2014		858C031	Dell Inc.	OptiFlex 755	Windows	10.0.19042.928
DPC-AE30-1079		C2C31282P	Hewlett-Packard	HP Compaq dc7700 Small Form Factor	Windows	10.0.19043.885
DPC-AJ-10781		C2C312785E1	Hewlett-Packard	HP Compaq dc7700 Small Form Factor	Windows	10.0.19043.1052
DPC-AJ-1584		8708153	Dell Inc.	OptiFlex 7010	Windows	10.0.19043.1052
DPC-AJ32-1555		48C0C31	Dell Inc.	OptiFlex 755	Windows	10.0.19043.1052
DPC-AJ32-2032			Unknown		Windows	10.0.19043.1052
DPC-AJ32-1535		158C031	Dell Inc.	OptiFlex 755	Windows	10.0.19043.1052
DPC-AJ32-1558		458C031	Dell Inc.	OptiFlex 755	Windows	10.0.19043.1052
DPC-AJ32-1558		191V05M	Dell Inc.	OptiFlex 960	Windows	10.0.19043.1052
DPC-AJ32-7551		348C031	Dell Inc.	OptiFlex 755	Windows	10.0.19043.1052
DPC-SE32-1087		C2C31832D	Hewlett-Packard	HP Compaq dc7700 Small Form Factor	Windows	10.0.19043.885
DPC-SE32-1085		C2C31287M	Hewlett-Packard	HP Compaq dc7700 Small Form Factor	Windows	10.0.19042.928
DPC-GP-1038		C2C49628P	Hewlett-Packard	HP ProDesk 400 G1 SFF	Windows	10.0.19043.1052
DPC-GP-1039			Unknown		Windows	10.0.19043.1052
DPC-GP-4839		C2C31910V	Hewlett-Packard	HP Compaq dc7700 Small Form Factor	Windows	10.0.19043.885
DPC-GR12-2018		C2C312785E1	Hewlett-Packard	HP Compaq dc7700 Small Form Factor	Windows	10.0.19043.1052
DPC-HAL-1056		C2C33803E	HP	HP ProDesk 400 G2 S SFF	Windows	10.0.19043.1052
DPC-IT-1531		598C031	Dell Inc.	OptiFlex 755	Windows	10.0.19043.1052
DPC-IT-1587		C2C31271YQ	Hewlett-Packard	HP Compaq dc7700 Small Form Factor	Windows	10.0.19043.1052
DPC-IT-2007		C2C31282R1	Hewlett-Packard	HP Compaq dc7700 Small Form Factor	Windows	10.0.19043.1052
DPC-IT-2008		C2C312785E1	Hewlett-Packard	HP Compaq dc7700 Small Form Factor	Windows	10.0.19043.1052
DPC-IT-2282		0L40302	Dell Inc.	OptiFlex 7010	Windows	10.0.19043.1052
DPC-IT-4071		3159402	Dell Inc.	OptiFlex 3020	Windows	10.0.19043.1052
DPC-IT-4072		7VQ2Y11	Dell Inc.	OptiFlex 7010	Windows	10.0.19043.1052
DPC-IT-4073		2408862	Dell Inc.	OptiFlex 9020	Windows	10.0.19043.1052

Best practice with implementing SIMS.

As the SIMS SQL server sits on your local servers not the hwb network there are many ways to ensure SIMS is installed on your staff devices.

One option is to package up the SIMS exe package and deploy it that way. The only disadvantage of this method is without solus some key updates will have slight delays with deploying patches to SIMS until you are able to install these and then package it with intune.

Another option is to simply install the ISO on each device manually which is a very time consuming task if you are a large school.

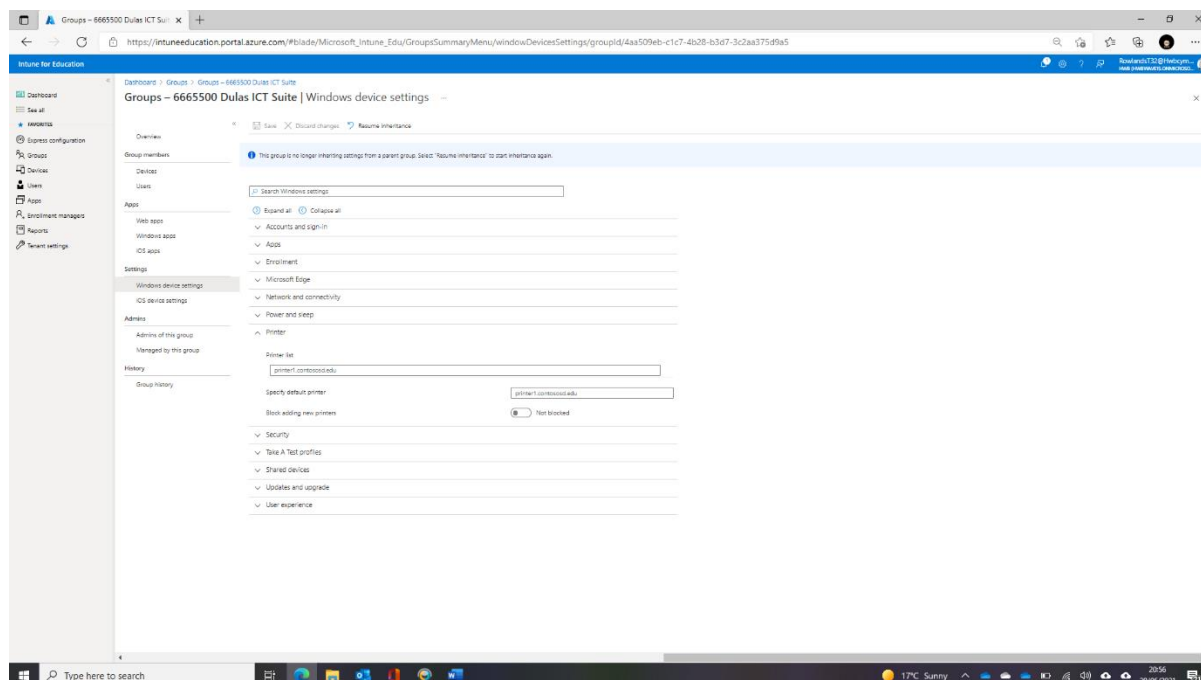
Other options that have been suggested is to deploy and map in sims application and fileshare using a PowerShell script but again a high level of technical knowledge will be needed for this to be successful.

Our school uses ClassCharts – a 3rd Party behaviour and attendance system for staff to use and parents to view the progress of their child's which is completely cloud based. Due to this all teaching staff uses this application and has no need to use SIMS. Only the admin staff and SLT (timetabling etc) need access to SIMS and this is where we utilised our RDS system on our local domain for these key staff to remote in with their school credentials to use sims. This allowed us to only need to install sims on 5 devices and 2 RDS host servers which made it very easier to manage and keep up to date with SOLUS. This method also allowed staff to continue to use SIMS offsite using the RDS server. Our long term aim here is to go on to SIMS 8 once its available which will mean our MIS will be completely cloud based and no need for a local SQL server in the future.



Printing (PaperCut VS Manual deployment directly to devices)

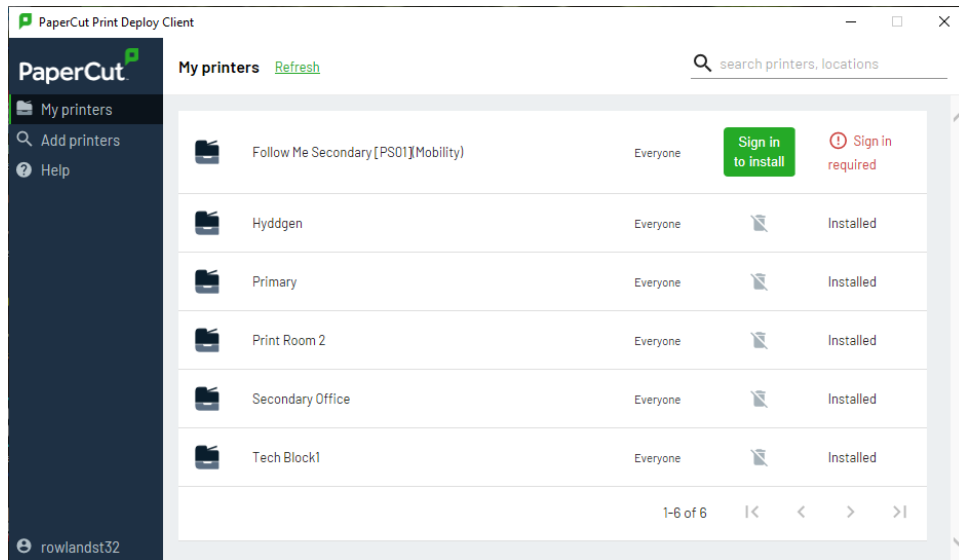
For a small school it is possible to map in the IP of the printer directly via intune with Hwb soon launching universal printing once Microsoft have finished their implementation of it. Until then the drivers will need to be pushed out via a intune package but direct printing can be mapped in via the settings section of intune as this example shows –



Other methods of deploying printers would be using a using a print management system e.g. PaperCut or PCounter. Our school already had PaperCut and found their cloud printing solutions very flexible for our needs.

Our photocopiers sit on our domain print server which authenticate against the domain users. We have direct printing setup for pupils to print to specific printers based on their location e.g. one corridor will map in that corridor's photocopier for direct unauthenticated printing. The school also has a follow me queue which was a bit more difficult but well documented from papercut.





Using print deploy it was possible to clone a device with the print drivers installed but before that mobility print had to be setup which allowed non-domain devices to communicate with the print server and the ability to authenticate their school domain credentials so when the end user enter their credentials on the photocopier they are able to release their print job. The only requirement is to setup mobility print first on a domain device and then using print deploy clone this follow me print queue which will then be available on all devices based on IP Ranges or subnets.

Once this is done the print deploy app (MSI) can be packaged using intune and deployed to devices. The advantage of the app is that the configuration file sits on the print server and any new printers you clone and deploy will automatically update with no need to re-deploy the app unless you change your print server.

More information: [Deploy print queues using Microsoft Intune and Print Deploy \(papercut.com\)](https://papercut.com/Deploy-print-queues-using-Microsoft-Intune-and-Print-Deploy)

Top tips for supporting end users

Having a support page and a overview of what the new system will do is essential for any handover to the end users. The Hwb support page also provides excellent support for end users.

When we did the migration we in preparation setup a overview video of what to expect and made sure that the easy to answer documentation for any questions. This really put the end users as ease of what to expect and reduce the pressure of the ICT support team.

Here are some examples of what we did:

- [ICT Support Page | Ysgol Bro Hyddgen](#)
- [Dod i arfer â'r system newydd yr ysgol / Getting used to the new school system \(adobe.com\)](#)



How to migrate data (using SharePoint migration tool & Exchange online)

Migrating users data was the most difficult process of the migration project. Sadly Hwb do not currently support a migration tool to map in users office 365 or network homedrive to their hwb account using a migration solution due to the high risk of schools or LEA's mapping in the incorrect data into incorrect users hwb accounts. Other obstacles include the high level of staff time that this would take up with the hwb team. This is something they are currently looking into developing but will not be available anytime soon.

Hwb recommends to migrate users data manually but we found for a smoother adoption of hwb and to reduce the need for end users to access the old system we arranged for 4 staff over a period of 10 days to login to 4 different computer rooms and then login to pupils accounts (once passwords had been reset) and then transfer the files from the file server to the pupil's onedrive. We then reset the account and issues that student with the new credentials.

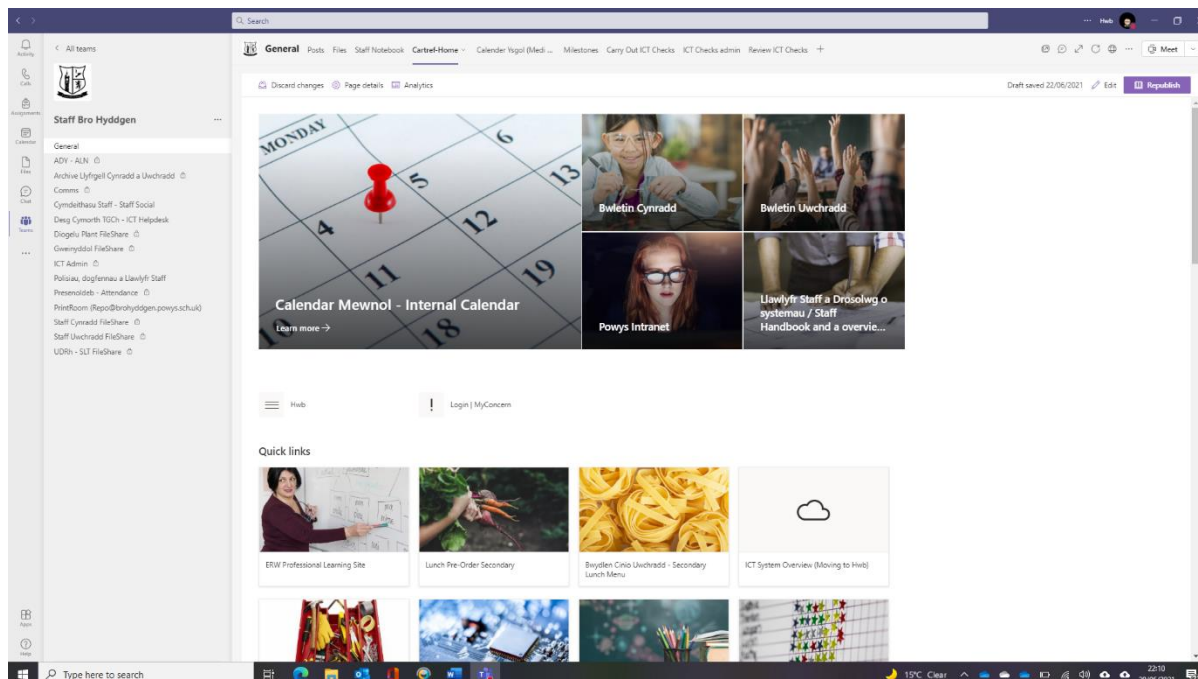
With staff – we created a training video to show them how to do this before making their homedrive “read-only” access after a set date to ensure no further data can be added to it.

Once this was done the domain devices were then enrolled to the hwb domain which provided end users a seamless experience to access their work via their hwb onedrive. Doing this for the pupils really did make the transition process a easier one but a large ICT staff will be needed to do this.

Similar setup was carried out with the users Microsoft Exchange mailboxes – we centrally extracted the PST file for all mailboxes and then bulked reset all staff users accounts and imported the PST files into their hwb accounts via outlook app and then once this process was done their credentials were reset and re-issued. We felt there was no need to migrate the pupils inboxes but archived their PST files just incase.

The file shared were much more straight forward. We created corresponding fileshares in Sharepoint and then sync the school's local files shares off the network using the Microsoft Migration tool – with 800gb of data this did take a total of 5 days to sync a total of 8 fileshares but it did this with a very high level of accuracy with some issues which had to be refined due to invalid characters or the file path/name was longer than 255 characters.

Once the migration was created we added the specific users in groups into teams which corresponding system linked to the sharepoint which allowed us to have a single communication and file retention system. We made sure we had each channel “locked” so only specific users can see specific file shares e.g. child protection, secondary file server, primary file server but all staff could access the general area.



As the above example shows this allowed us to mimic the same style of file management and retention we had with a fileserver using teams.

More information on migration from hwb - [Getting started - Hwb \(gov.wales\)](#)

Domain alias, distribution lists and shared mailboxes

Hwb support domain aliases e.g. The user jonesh232@hwbcymru.net would be jonesh232@brohyddgen.powys.sch.uk – they would use their hwb address to login but if a external user would email jonesh232@brohyddgen.powys.sch.uk the email would be re-directed. Also – as part of the initial setup of hwb if H Jones email on the previous tenancy was HJones@brohyddgen.powys.sch.uk Hwb is able to map these in manually too but only once as part of the initial setup.

By implementing this method schools which would normally have a shared mailbox of 6665500_office@hwbcymru.net would become office@brohydden.powys.sch.uk.

Hwb also supports shared mailboxes (max 20) and specific generic mailboxes.

Our school found that we needed a primary campus mailbox and a secondary campus mailbox. One way around this was to create a teams group and then copy out the tenant group email address e.g. staffuwchraddYBH@hwbwave15@onmicrosoft.com and point a shared mailbox to automatically forward emails to the above group which allowed any user within the hwb network to send emails to users contained in the teams.

More information can be found here: [Getting started - Hwb \(gov.wales\)](#)

Chromebook (Hwb)

Chromebooks are a great benefit to schools which are enrolled to the hwb network allows a seamless access to the hwb resources. Inherited settings from the HWB global settings or the LEA will be sufficient for any school to use the chromebooks which have been enrolled in Hwb already straight out of the box.

Web based applications can be quickly deployed but what to remember is they need to be applied as a user based deployment not device or your apps will not work.

More information on chromebooks - [Chromebook Management - Hwb \(gov.wales\)](https://gov.wales/government/technology/chromebook-management)

Installing Play Store Apps e.g. Minecraft

Caution must be taken when allowing end users the ability to install apps. By enabling this feature you will push out the PlayStore to your devices which will then allow you to install apps on your devices with a user based deployment package in the intune GSuite portal but also allow end users to instal their own apps and add their own payment methods to install apps to their user profile.

Other issues we found was older iPads e.g. HP G1,2,3,4, chromebooks no longer support the PlayStore – more information can be found on these links:

- <https://sites.google.com/a/chromium.org/dev/chromium-os/chrome-os-systems-supporting-android-apps>
- <https://support.google.com/chromebook/answer/7021273?hl=en>

Smoothwall Extension for Edge (Windows)+ Chromebooks (GSuite).

To push out the smoothwall extension to chromebooks and the Microsoft Edge it will allow the smoothwall reporting tool to point to the “unauthenticated users” group and track their hwb email addresses against their internet activity. There are plans in process of opening up the PSBA to Hwb via BT to ensure that the full functionality of cloud filters are applied e.g. year 3 pupils get the year 3 filter policy.

More information - [Installing the Smoothwall Cloud Filter on Chromebooks using Google Admin – Knowledge Base](#)

iPads

As part of the hwb roadmap iOS Devices will soon be supported on the intune platform by hwb.

A basic version is currently available to push out apps and manage devices settings but Hwb have not yet finalised the system for ASM accounts for all users (linked to their hwb account credentials) so they can login and store their work on the Apple icloud platform too. This will be a massive benefit to schools to transfer apps from one school to another or the LEA can buy the apps for professional development or training and move the apps around the schools per term to save money.

By having the ASM sync with School Data Sync to the hwb azure network will provide schools, LEA's and WG with a consistent and secure authentication method which will mean data will be safe and we ensure all apps and devices are compliant with relevant legislation.

Currently iPads can be setup as a 1:1 device but a manual apple account (icloud etc..) would be needed to sync work back via photo's or imovie. If schools wanted to use these devices and just use office 365 tools which sync back to the azure network and no data is saved on the devices – this would work well currently.

As a school we aim to wait until hwb finalises plans to activate all users in Wales with Apple Account which would be linked to their hwb credentials which would then allow us to setup bulk "shared iPads" where pupils can login to any device and their work will load up and once they log out the work would sync back to the apple cloud. This is more cost efficient for schools and more secure to ensure that multiple users who would use the same device don't login to each other J2e or Office 365 accounts.

Top tip – by having a Mac Mini onsite and turning on the cache server really does help with the bandwidth issues. This is highly recommended for schools with a shared iPad environment.

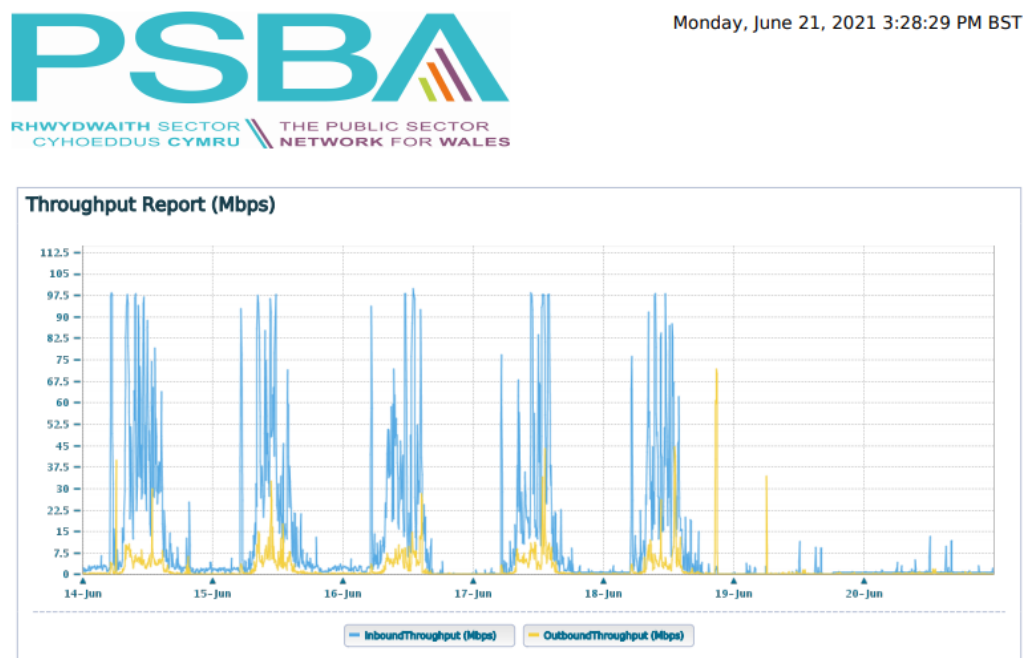
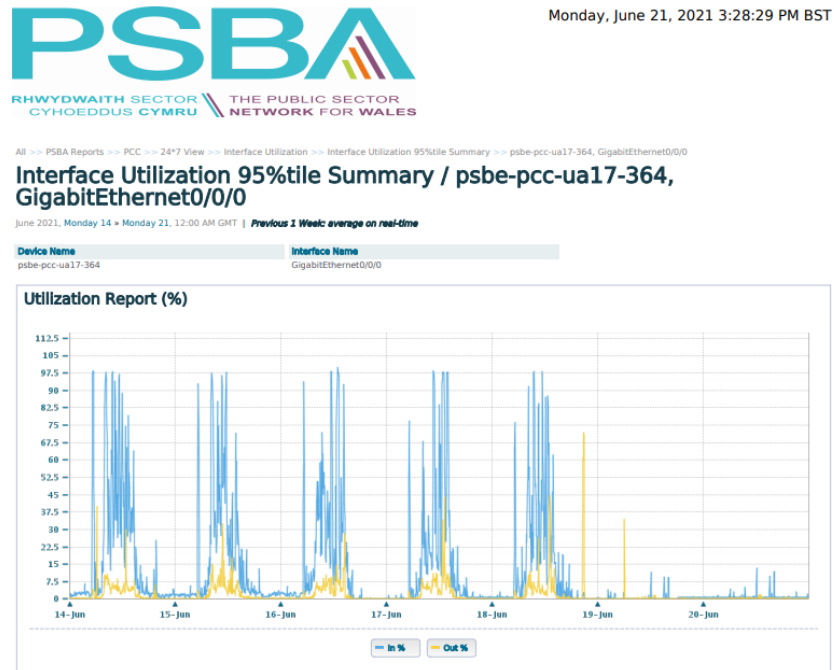
- More information- [Set up content caching on Mac - Apple Support](#)
- Setup Cache Server for devices on multiple IP ranges : [What is content caching on Mac? - Apple Support](#)



Bandwidth issues

In particular when windows updates preform bandwidth issues can happen. In our site for example a 100mb PSBA link exists. Here are some snapshots of bandwidth we took over a period of time –

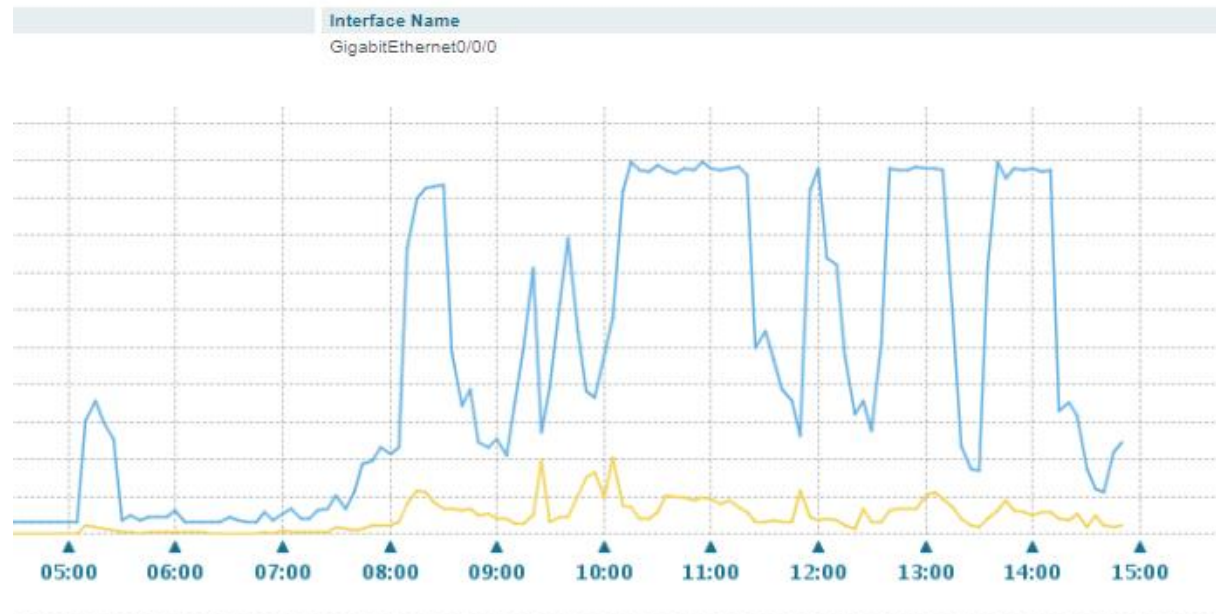
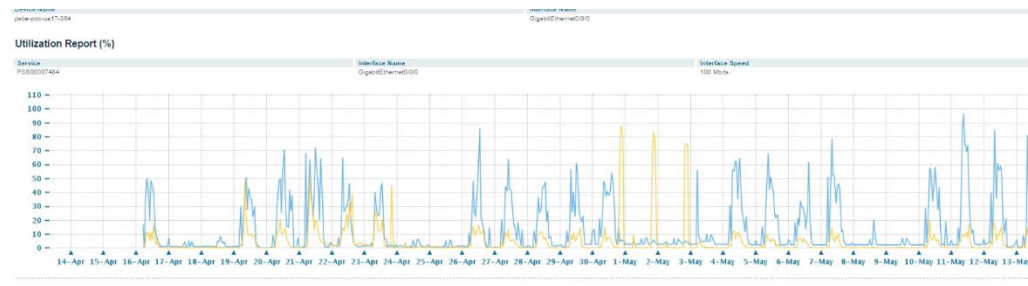
Example 1 - Normal operating day:



Galluogi Breuddwydion
Empowering Dreams



Example 2- Windows Updates being released



Methods to relieve the pressure:

Mac Mini Cache server

By implementing a Mac Mini Cache server it will allow all the iPads to cache their content and when a app or content has been downloaded once on a device it will access the cache content rather than re-download the content.

- More information- [Set up content caching on Mac - Apple Support](#)
- Setup Cache Server for devices on multiple IP ranges : [What is content caching on Mac? - Apple Support](#)

Cache Server (Windows Devices)

A local server can be setup and a configuration can be set via intune to ensure all content that is accessed and pulled from the internet is cached and this will allow content on a another device to pull the content from the cache server rather than the internet and reducing bandwidth.

Wake on Lan

One easy way we found to resolve a lot of issues was to setup a wake on Lan at 7am on a weekday with the Impero Solutions application which allowed the devices to download the windows updates before high level of user traffic.

Recommendations – any primary schools running on intune fully would need a minimum of a 100mb PSBA connection and secondary or all-though schools would need a minimum of 300mb.

Conclusion

Firstly I would like to thank Eurig Towns & Diane Reynolds who trusted the school to take on this “first” of being the first school in Ceredigion and Powys to fully onboard with the Hwb network.

Secondary, Leon Griffiths from Powys ICT, Iwan Davies from Ceredigion with their support as the school did the training, implementation and testing of the hwb system and from the regular “catchup’s meetings” we had we could share best practice on migration, setup, settings and troubleshooting ready to onboard more schools.

I would strongly recommend all schools in Wales takes up this opportunity to join the Hwb domain. The cost savings and reducing staff pressures alone should be a decision for senior management in schools to make this choice. From my experience sometimes technicians in schools are reluctant to “give up control” of their network to external providers but sometimes school management teams need to step in to make these choices and listen to the senior technical staff in the LEA and WG to ensure all schools have the technology and are on the same road map as each other to support the digital learning journey in Wales. This project is not to make technical staff in schools less important – in fact it gives them more of a role and time to support learners and staff to use the platform to its full potential.

This report outlines the challenges but also the solutions our school implemented as part of our journey to be on the Hwb network and I would like to thank Matthew Lock from the Hwb team who convinced our school to take the “leap of faith” as we called it back in March 2020 – its one leap we are glad we took.

The hwb support Team – Dafydd, Matthew, Claire, Tom and Zoe have been amazing with all their support for our journey, and I can praise their professionalism or work ethic enough. Thank you!

