

UKRI CDT IN BIOMEDICAL AI

Computing resources and support

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1.Accounts

a) Your University Login

Formerly known as EASE (you may still see it referred to this in some documentation). This is the University's authentication service that allows access to their central facilities - e.g MyED, and email (Office 365). It acts as the reduced-sign-on service, providing access to various restricted resources across the University. More information is available here: <https://www.ed.ac.uk/information-services/computing/computing-infrastructure/authentication-authorisation/ease>

For your EASE account, you should have received an e-mail to your personal account with instructions to set a password. If not, please visit

<https://www.ed.ac.uk/information-services/computing/computing-infrastructure/authentication-authorisation/your-university-login>

and

<https://www.ed.ac.uk/information-services/computing/computing-infrastructure/authentication-authorisation/ease/reset-tools>

to reset.

b) Informatics Account (DICE).

This account is only for logging into School of Informatics services. The username is the same as your University Login.

*** You must choose different passwords for Your University Login and DICE accounts.**

For more information go to <http://computing.help.inf.ed.ac.uk/accounts>

c) WiFi (eduroam)

This account lets you access the University wireless network available across all campuses - eduroam. To activate this account and configure your device visit <http://www.ed.ac.uk/is/wifi>

If you want to use a wired connection to self-manage your desktop/laptop or bring in a personal device, use a red or blue ethernet cable. It should be on DHCP VLAN. If not please raise this with the Computing Support Team.

2. MyEd

MyEd is the University of Edinburgh's web portal. It is a gateway to web-based services within and beyond the University.

When you login to MyEd, the content that you see depends on who you are. Students, staff, applicants and alumni all get different views of MyEd. You'll also see content which is specific to you, such as your contact information, or previews of your emails.

Everyone has a homepage, which displays frequently used information. This is displayed in blocks of content called portlets. Menus allow you to access other content, either portlets in MyEd, or links to content or services outside of MyEd.

You may also receive Notifications, alerts about tasks you have to complete or important information.

To access MyEd please visit: <https://www.myed.ed.ac.uk/myed-progressive/>

3. Learn

Learn is the biggest Virtual Learning Environment at the University of Edinburgh, supporting more than 5000 courses annually. Learn provides access to course materials, assignments, grades, feedback, lecture recordings, resource lists and much more. It is used to support face to face teaching, blended learning, and fully online courses.

You can access your courses directly from the Learn channel in MyEd, or login at www.learn.ed.ac.uk

You can also download the Blackboard app to access your courses from a phone or tablet device when you are on the move.

4. Office 365 and Teams

Office 365 is provided to the University by Microsoft. It includes mail, calendars, conferencing, cloud-based file storage, and various document editing and sharing facilities. All staff and students use it. The Teams collaboration software is part of Office 365.

Office 365 refers to subscription plans that include access to Office applications plus other 'productivity' services that are enabled over the internet (cloud services). The University subscribes to Office 365 to allow all staff and students to benefit from the extensive range of features included at no additional cost. Some of these benefits include 1Tb to store documents, 50Gb email and access to download the latest Microsoft Office on up to 5 devices.

The product includes communication and collaboration tools like email & calendar, instant chat, discussion groups, conferencing and more. With a single University account, users can access document management features including real-time co-authoring with familiar Office online apps like Word, Excel, PowerPoint, easy storage and retrieval with intelligent search capability and sharing options for both internal and external collaborators.

a. Login system

Office 365 uses Microsoft's login system, which is distinct from the University's own "Your University Login" system (which used to be called EASE). You will have separate accounts for each of these login systems. However, you may well find that they have the same password.

Your Microsoft account might be referred to in several ways - for instance your "Active Directory account", your "Office 365 account" or even your "University account".

In the Microsoft login system, your username has the form UUN@ed.ac.uk (your UUN is your DICE or University standard username). For instance, if your normal username was s1234567 then you would login to Office 365 as s1234567@ed.ac.uk.

To activate your Office 365 account, visit ⇒ <https://www.office365.ed.ac.uk/> then click "Activate". You only need to do this once.

b. Email and Calendar

Feature-rich web browser access to university email, calendar and contacts, which includes:

- 50 Gigabytes (GB) of mailbox storage
- Ability to schedule meetings quickly and easily
- Ability to share your availability with others
- Access to staff/student contacts across campus

c. OneDrive for Business

Microsoft's file-hosting service that allows users to sync files from their local devices to their OneDrive cloud-based storage and later access them from a web browser or mobile device. It includes:

- 1 Terabyte (TB) of file storage for every user.
- The ability to share documents for collaboration with others, including non-University members, either by generating a link to send out to them or granting them access to view and/or edit files in a shared space.
- Use of the OneDrive for Business sync client, installed locally on your desktop or mobile device, to provide consistent file access from multiple locations and platforms.
- Automatic backups of your files either saved directly or synched up into the OneDrive cloud.

d. OneNote and Office Online

Within the Office 365 suite there are web-browser-based versions of a number of Microsoft's regular Office applications. This Office Online includes:

- Web app versions of the OneNote notebook creation and sharing software and the standard Word, Excel and PowerPoint applications, allowing users to edit Microsoft Office documents in their web browser from anywhere.
- Integration with the logged-in user's OneDrive for Business so that files are automatically saved and backed up in the cloud when created.
- All documents, like every Office 365 service, are encrypted so that, if a transmission is intercepted by someone without authorization, they won't be able to read it.
- Document compatibility is no longer an issue as the web apps in Office 365 are compatible with Office filetypes back to Windows XP and Mac OS 10.5.

e. Teams

Teams is a collaboration hub for 1:1, group or team conversation, allows file authoring & sharing, online meetings and webinars:

- Immediately see colleagues' availability status.
- Instant message with friends and colleagues across campus and beyond.
- Share a whiteboard for brainstorming with your colleagues in real-time.
- Co-author office documents in-situ whilst in conversation or meeting.
- Share an application, desktop, or document on-screen.
- Initiate audio video meetings, host or attend webinars.

f. Microsoft Office software and mobile apps

As part of the University's Office 365 subscription, all staff and students are entitled to download, install and activate up to 5 copies of Microsoft's traditional Office software on personal computers or mobile devices for as long as they remain members of the University. These locally installed versions differ from the web-based versions inasmuch as they afford users much more control over the appearance, options and other abilities of the software. They allow users to:

- Create Microsoft documents while either offline or online, on a desktop or mobile device.
- Keep in touch with colleagues via the Skype for Business desktop or mobile client.
- Retrieve and send University emails, contacts, and meeting appointments via Outlook.
- Get a variety of Office 365 further apps for Surface, Windows Phone, iPhone, iPad and Android.

g. Mail tip - Name ordering

By default, the University sets the names of Office 365 users to the form SURNAME Firstname. If you would like your name to be in some other form, for instance the more conventional Firstname SURNAME, ask the University to change your Office 365 "display name", saying what you would like it to be changed to. <https://www.ed.ac.uk/is/helpline>

Choice of mail address

By default, the Office 365 suite assumes an @ed.ac.uk email address. If you prefer using an @inf.ed.ac.uk address, ask for your @inf.ed.ac.uk mail address to be the official address for you. You should contact IS Helpline. <https://www.ed.ac.uk/is/helpline>

5. Datastore

The University of Edinburgh (UoE) Research DataStore is one element of the implementation of the University's Research Data Management Policy. IS provides Windows, MacOS and self-managed Linux instructions on accessing the centrally provided DataStore filespace. You can access DataStore from a linux machine by either using the CIFS Windows share method (the preferred method, apparently), NFS or samba. NFS is restricted by a firewall, the machine needs to be registered with ECDF and must have a static ip and is not the recommended way to connect. Samba is a recognised and well-tested means of connecting if not rather out-dated. For MacOS, samba is recommended. In all cases, the machine must be connected to the University network either directly or via VPN.

All researchers and PGR students in the University are automatically granted a personal allocation of 500 GB on the DataStore service, and half of this can be reallocated to a shared group or project space.

Further info: <https://www.wiki.ed.ac.uk/display/ResearchServices/DataStore>

CDT BMAI has purchased extra Datastore storage. Please raise your request for extra storage at:

cdt-it-support@inf.ed.ac.uk

6. School of Informatics Services

DICE stands for Distributed Informatics Computing Environment.

The term DICE encompasses all those computing services developed, maintained and supported by the School's computing staff.

The term DICE desktop is used to refer to the Linux desktop PCs managed by the School. These can be found in the public spaces and meeting rooms of the Informatics Forum and in the Appleton Tower teaching labs. Many staff and research postgraduates also choose to have a DICE desktop.

You will need a DICE account to login to a DICE desktop or use any of the DICE services.

a. AFS

In Informatics we use AFS for most file storage. It's authenticated (via kerberos) with load balancing, local caching, and global access.

You are entitled to 10GB of home directory AFS filespace. This can be increased if needed.

You can access AFS from your own device:

AFS for Windows: <https://computing.help.inf.ed.ac.uk/afs-windows>

AFS for Mac: <https://computing.help.inf.ed.ac.uk/afs-mac-os-x>

AFS for Linux: <https://computing.help.inf.ed.ac.uk/afs-linux>

AFS can also be accessed on the web using ifile, and you can serve web pages from AFS using sweb.

ifile: <https://computing.help.inf.ed.ac.uk/ifile>

sweb: <https://computing.help.inf.ed.ac.uk/sweb>

b. External login (ssh) servers

SSH gateway into the School of Informatics:

- i) `student.ssh.inf.ed.ac.uk` is for all users.
- ii) `staff.ssh.inf.ed.ac.uk` is for staff is for research postgraduates and visitors.

How to use an SSH gateway

For platform-specific advice, follow the links below:

Using ssh from Linux: <https://computing.help.inf.ed.ac.uk/using-ssh-linux>

Using ssh from Mac: <https://computing.help.inf.ed.ac.uk/using-ssh-macos>

Using ssh from Windows: <https://computing.help.inf.ed.ac.uk/using-ssh-windows>

Using ssh from iOS and iPadOS: <https://computing.help.inf.ed.ac.uk/using-ssh-ios>

Using ssh from Android: <https://computing.help.inf.ed.ac.uk/ssh-android>

c. General purpose servers (computing servers)

To run software that takes hours, days or weeks to finish, use a compute server.

```
ssh staff.compute.inf.ed.ac.uk
```

More details at: <https://computing.help.inf.ed.ac.uk/general-purpose-servers>

d. OpenVPN

There are a couple of problems which a VPN (Virtual Private Network) can help solve. The first is where you're working at a remote site but you need to appear as though you are a local network user in order to access some resources. The second is where there are restrictions on your network access, often for audit-trail reasons. A "VPN tunnel" is, essentially, a way to make your machine appear as though it's attached to the network somewhere other than where it really is. An additional benefit is that the tunnel is encrypted end-to-end, thus protecting the traffic going over it.

The system we have adopted is OpenVPN. We have it configured in "road-warrior" mode, suitable for users who would like to tunnel to inside Informatics from outside sites.

Using the Informatics OpenVPN service means that you appear inside the Informatics network. This is in contrast with the central University VPN service, which will tunnel you to inside EdLAN but outside Informatics. This distinction may be important when accessing internal Informatics resources.

VPNs: <https://computing.help.inf.ed.ac.uk/vpn>

e. Remote Desktop Service

The Informatics Remote Desktop service gives you a DICE Linux graphical login. You can use it from anywhere, on any device which has RDP client software.

You MUST use either the University's or the School's VPN service. If you don't, you won't get access to the Remote Desktop service - unless your computer is already on the University of Edinburgh network (for example in an office or a computing lab).

How to get started with remote desktop

Remote Desktop on a Mac: <https://computing.help.inf.ed.ac.uk/RDPonMac>

Remote Desktop on Windows: <https://computing.help.inf.ed.ac.uk/RDPonWindows>

Remote Desktop on Linux: <https://computing.help.inf.ed.ac.uk/RDPonLinux>

Remote Desktop on iOS: <https://computing.help.inf.ed.ac.uk/RDPonIOS>

Remote Desktop on Android: <https://computing.help.inf.ed.ac.uk/RDPonAndroid>

7. High Performance Computing

a. ECDF Linux Compute Cluster (Eddie)

Eddie Mark 3 is the third iteration of the University's compute cluster and is available to all University of Edinburgh researchers. It consists of over 7000 Intel® Xeon® cores with up to 3 TB of memory available on a single compute node. Research groups can take advantage of priority compute and guaranteed throughput for their projects by requesting an allocation in the priority compute tier.

More info: <https://www.wiki.ed.ac.uk/display/ResearchServices/Eddie>

b. CSD3

CDT BMAI students have access to Cambridge Service for Data-Driven Discovery (CSD3) HPC Cluster. Specifically, the Wilkes2 GPGPU partition which consists of 360 Nvidia P100s. (due to be upgraded to A100)

More info available on at <https://docs.hpc.cam.ac.uk/hpc/>

c. Cirrus

CDT BMAI students have also access to Cirrus.

Cirrus is a HPC and data science service hosted and run by EPCC at The University of Edinburgh. It is one of the EPSRC Tier-2 National HPC Services.

Cirrus is available to industry and academic researchers. For information on how to get access to the system please see the Cirrus website.

The Cirrus facility is based around an SGI ICE XA system. There are 280 standard compute nodes and 38 GPU compute nodes. Each standard compute node has 256 GiB of memory and contains two 2.1 GHz, 18-core Intel Xeon (Broadwell) processors. Each GPU compute node has 384 GiB of memory, contains two 2.4 GHz, 20-core Intel Xeon (Cascade Lake) processors and four NVIDIA Tesla V100-SXM2-16GB (Volta) GPU accelerators connected to the host processors and each other via PCIe. All nodes are connected using a single Infiniband fabric and access the shared, 406 TiB Lustre file system.

More information at: <https://cirrus.readthedocs.io/en/master/>

To request access please e-mail: cdt-it-support@inf.ed.ac.uk

d. School of Informatics HPC Clusters

The School has several HPC resources. Please check with your supervisor what you are entitled to use. More info: <https://auth.computing.help.inf.ed.ac.uk/cluster-computing>

8. Printing

Printing, copying and scanning in the School of Informatics we use the centrally managed EdPrint service.

<https://www.ed.ac.uk/information-services/computing/desktop-personal/edprint>

10. Wired Networking

a. General usage guidance

In addition to our overall computing Policies and guidelines:

Users should never interfere with network ports which are in use. Specifically, please don't unplug a network cable from a network port so that you can use that port for some other purpose: doing so is contrary to the Computing Regulations.

Since it's important that an appropriate subnet is used for any particular machine, please don't arbitrarily connect a PC, laptop or similar device to any 'random' port not currently in use. If this document doesn't make clear the intended use of the port in question, or you're otherwise not clear about its intended use, please contact the Computing Support team.

Please do not connect any networking equipment to any network port without asking for, and obtaining, prior approval. Doing so can disrupt the service for other users.

Service-discovery protocols, such as mDNS (Avahi, Bonjour) will not work through our routers. If this is important to you, please ask Support to ensure that all your self-managed machines are on the same subnet.

If you need clarification of network usage, or if you would like a network port reconfigured in some way, please contact the Computing Support team: they will be happy to help.

b. Subnets, VLANs and network ports

The School of Informatics has some 40 or so different IP subnets in use, each of which serves a particular purpose, and each of which is carried on a particular VLAN (i.e. a logical 'piece of ethernet'). In turn, each of the network ports you see around the building will - if active at all - have been configured to be on a particular VLAN.

It is important that an appropriate subnet is used for any particular machine. For example, in the Forum, laptops and similar devices which don't require a fixed IP address generally belong on the 129.215.90.0/23 subnet, which is carried on VLAN 'DHCP' - so any such device must be connected to a network port which has been configured to be on VLAN 'DHCP'.

Machines on the 'wrong' subnet might just not work at all and, even if they do, they probably won't acquire their expected IP configuration.

Normally, end users don't have to worry about the configuration of network ports to VLANs: the Computing Support team takes care of that. But knowing the subnet-to-VLAN mapping is useful, and helps to make sense of the information returned by the search facility on our Informatics Forum network monitoring page.

c. Further information

<https://computing.help.inf.ed.ac.uk/FAQ/how-do-i-connect-my-laptop-wired-network-forum>

<https://computing.help.inf.ed.ac.uk/forum-subnets-and-vlans>

<https://computing.help.inf.ed.ac.uk/forum-network-ports>

<https://computing.help.inf.ed.ac.uk/forum-self-managed-machines>

10. Distinction Between University-wide and School-wide Support

There are two IT departments:

- i) University-wide Information Services (<https://www.ed.ac.uk/information-services>)
- ii) Informatics-specific Computing Support (<http://computing.help.inf.ed.ac.uk>)

CDT BMAI students can also contact cdt-it-support@inf.ed.ac.uk for CDT-specific computing support. A summary of services provided by each team is provided below.

University Information Services IS Helpline details here: https://www.ed.ac.uk/information-services/help-consultancy/contact-helpline	SoI Computing Support Services Help desk location: Informatics Forum 2.07 Online Computing Support Form: https://www.inf.ed.ac.uk/systems/support/form/
EASE account	DICE account
Office365 including e-mail. To activate your O365 e-mail: https://www.ease.ed.ac.uk/emailactivation	Network storage for your home directory on the Andrew File System (AFS)
EUCLID for course registration and managing your personal information. https://www.ed.ac.uk/student-systems	Software support for DICE desktops and servers.
MyEd dashboard https://www.myed.ed.ac.uk/myed-progressive/	Wired networking http://computing.help.inf.ed.ac.uk/forum-network-ports
Learn for accessing course content https://www.ed.ac.uk/information-services/learning-technology/virtual-environments/learn	Remote desktop connection (XRDP) https://computing.help.inf.ed.ac.uk/remote-desktop
Wireless including eduroam that works at many other universities: https://www.ed.ac.uk/information-services/computing/desktop-personal/wifi-networking/configure-device	CDT Computing Support cdt-it-support@inf.ed.ac.uk
The Edinburgh Compute and Data Facility https://www.ed.ac.uk/information-services/research-support/research-computing/ecdf/	Software and hardware support for your desktop and/or laptop
Poster printing (library) https://www.ed.ac.uk/information-services/help-consultancy/ucare/facilities/printing/printing-prices	Most of the computing clusters. http://computing.help.inf.ed.ac.uk/cluster-computing
	CSD3 HPC cluster

a) The IS Helpline provides a first point of contact for inquiries relating to library, university computing services and online learning. More details of the IS Helpline service are available on the IS website: <https://www.ed.ac.uk/information-services/help-consultancy/contact-helpline>

The IS helpline may be contacted in the following ways:

Phone: +44 (0)131 651 5151

Email: IS.Helpline@ed.ac.uk

If you are contacting the helpline by email, please use your University of Edinburgh email account. This will ensure your enquiry is prioritized.

b) The School of Informatics is supported by the School's Computing Support Team: <http://computing.help.inf.ed.ac.uk/>

The Support desk is in the Informatics Forum, IF-2.07. Open Monday–Friday, 9.00am–5pm. If you experience an Informatics computing problem, you must submit a computing support form: <http://www.inf.ed.ac.uk/systems/support/form/>

As a CDT student, you are supported by the Informatics Computing Support team even if your principal supervisor is outside Informatics.

c) CDT-specific computing support

For CDT-specific computing support (e.g. software/hardware issues, cluster computing etc.) please raise your issue to cdt-it-support@inf.ed.ac.uk

If unsure which service to use for support, please contact cdt-it-support@inf.ed.ac.uk for advice.