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|  | **2020** |
|  | Otago Polytechnic  Rob Broadley  Draft – version 2.1 |

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| **ICT Processes** |
| A description of the processes needed to administer ICT services within the Information Technology Programmes at Otago Polytechnic. This document outlines the steps required to ensure a staff member or student has full access to the ICT services required for the courses they are connected to. |

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# Introduction

## Useful Terms

The following terms will be used throughout this document and are defined here for convenience

***OP*** – Otago Polytechnic

***ISS*** – Information Systems and Support: the OP IT service department

***Occurrence­*** – The instance of a class. This is denoted as a combination of the year and semester that the class will take place. This is represented as either *YearSemester* or *Year\_Semester*, where year is the current year and the semester is either *S1* or *S2*

***Username*** – This is the ID that the user will need to access the system. Typically it will be matched to the AD username issued by OP

***PersonID*** – the AD username of the student or staff member

***PersonCode*** – The students’ official ID number

***ClassCode*** – The official code for the course

***EBS*** – The student records management system in use at OP

***VDC*** – Virtual datacentre; a repository for hosting virtual machines required for a course

***VM*** – a virtual machine

***vApp*** – A virtual application containing at least 1 VM

***vCloud*** – The virtual cloud infrastructure that runs the vApps

***PO number*** – A purchase order number as used to track purchases made on behalf of the department

Intended contents

New Lecturer Induction

* User account process (request, creation, ISS vs HR vs EAD IT)

Student ICT access by paper

* What steps need to be taken to enable a student to be able to participate fully in the course?

Classroom computers

* Printer installation
* Virtualisation support (Bios > Security)
* Replacement process
* Relocation process

Staff computers

* Ordering
* Replacement process (steps)
* Data migration

General Equipment Management

* Replacement policy
* Disposal policy

Service Requests

* Inform and Service@OP

Classroom updates

* Images
* Software packages

# Lecturer Induction

What needs to happen for a lecturer to start within the College?

When a lecturer is employed by the College they need to be set up with an OP username, EBS user account and password, EBS course access, inducted, and put through the Computer Health and Safety, Induction and Treaty of Waitangi courses. They will receive basic instruction on the use of the phone system (Lync) and the EBS system (Note: for non-academics, this may not reflect the needs of the staff member)

Within the College, the staff will need to be given access to the servers and services that they will be teaching with. They will typically need logins to the vCloud service, Linux MySQL server (kate), and possibly the Windows SQL and Web servers.

Workstation setup and initial induction should be carried out as soon as practical, with physical equipment being readied prior to start date (computer reimaged and installed to desk; Lync headset in office space; etc) and any virtual environments prepared to agreed specifications before arrival.

OP/ISS setups – AD account, EBS account, HR/Payroll (Me@OP) accounts

Note 1: This is mostly automated now. Once the contract is signed off through HR, the user accounts should be created automatically.

Note 2: Equipment is not automatically assigned by ISS. This needs requested at the time the request is being put into the HR forms.

EAD ICT – access to Kate and SQL servers; wiki; assist with workstation setup and personal configuration (eg running Outlook/Lync/browsers for the first time)

### Passwords

There is no policy on password expiration just lock out. Passwords are set to default Windows Security Policy length and complexity is (probably) not being enforced. However, it is recommended that staff change their passwords on a regular basis.

### Wireless connections

In order to access the wireless, there are several options available depending on the organisational status of the person attempting to connect.

* OP Staff can connect to eduroam, OP-Secure or OP-Mobile using their username and password
* OP Students can connect to eduroam using their student username (username@op.ac.nz) and password
* Details can be found on the Service Portal

# Service Desks and Service Requests

There are several active service desks at OP, including Campus Services, ISS, ITP, Human Resources, and Health and Safety.

Anything to do with a physical room – furniture, air conditioning, lights, cleanliness, etc – needs logged to CSD.

All IT support requests need to be logged through to ISS via Service@OP. The forms are not immediately obvious, with the actual “Start a Request” button in the upper right quadrant of the page. However they are fairly straightforward to use and submit. It is worth noting that there are different forms and requirements depending on whether you are submitting an incident (something broken, missing, etc) or a general request (something new)

## Health and Safety

There is a dedicated system for logging and monitoring health and safety issues. This service, known as Vault, is open to all staff to log incidents. This service is intended to track potential risks and ensure they are mitigated or eliminated. Any incidents will be progressed through this to an appropriate resolution.

This is also where H&S reps can track and monitor training statuses and incidents that require further investigation.

### Chemical Registers

The Polytechnic requires each department to keep a register of the potentially hazardous chemicals and items within the building. This includes things like etching chemicals, cleaning products, solders, and air duster cans. The EAD register is held in:

### Health and Safety Audits

~~These are done every month, looking at all of the rooms in the building (halls are excluded). Any issues are to be noted in the central register (here: ) and appropriate jobs logged through to Campus Services to correct issues. Full audits should be done after the end of each semester ensuring that everything is safe and in proper working order.~~

**This process is changing**

## After Hours Access

Some students require after-hours access to the classrooms in D Block. This is automatically resolved during the first week of the semester, when class lists are sent to CSD to load into the appropriate access groups

..(EOP)

# Timetabling

This is one of the biggest – and hardest – jobs in the role. It involves getting the list of courses and teachers and putting them into the available rooms. The initial tool that is use if FET, a free timetable scheduling tool that generates scenarios for the timetable and permits the timetable to be locked down incrementally.

Timetables are due by November for the following Academic Year, both Semesters/all Blocks.

### Requisite Information

The following information is required to complete a timetable:

1. Course codes and titles
   1. If a course is taught across several qualifications and/or years then this needs noticed and handled
2. Assigned lecturer(s)
   1. For some papers there may be several lecturers and this may cause issues so identify the Primary Lecturer
3. Teaching period for the lectures (Semester 1 or Semester 2, Block 1 or Block 2)
4. Class size
5. Stream names and alignments (if any)
6. Lecturer availability: days and times
7. Class time preferences
8. Computer lab requirements

### Process

1. Gather the requisite information in the defined format
2. Sort into appropriate segments (S1 B1, S1 B2, etc) and create CSV files
3. Import into FET and validate the data
   1. Check that the staff imported
   2. Check that the courses imported
   3. Check that the rooms and student groups are in
4. Generate an initial timetable to confirm that it is possible to generate
5. Create Staff availability and Student Group availability constraints
6. Apply constraints according to Staff availability
7. Apply constraints according to Student availability
8. Apply constraints according to room preferences

**Note**: This information should be saved into a file that takes the following filename format:

EAD-<*AcademicYear*>-<*Semester#*>-<*Block#*>.fet

and this will create a timetable folder and HTML pages that follows the same convention.

The timetable needs to be handled as 4 pieces and kept as distinct paired entities: S1 B1 and S1 B2 go together, as do S2 B1 and S2 B2. Do the primary scheduling for each semester with the Block 1 (B1) portion, and then replace the B1 courses with their B2 counterparts. Each timetable segment should be published to the academic staff for review (*how long should a review period be?*) before being entered into EBS.

### Using FET

FET is a scenario-generator for timetabling. It is used to create the draft timetables which are then published, verified, and finalised.

**Note:** Much of the information – course names, lecturer names, etc – can be retained across multiple timetables.

**Note:** This program should be replaced by Syllabus+ in 2021, depending on how well the project goes in 2020

**Notes:**

The program, FET, is rubbish. It doesn’t recognise where windows are, remaining at the same relative location all the time. When creating an activity, you need to ensure that it is set up properly at the beginning; adjusting activities post-constraints is a nightmare.

Things to do:

1. Activities *typically* take 2 hours (IT Tutorials are 1 hr each, held in the lunch breaks)
2. Get the meeting times (BIT, IT Cert) in early and lock them in as constraints
3. Always space activities so that there is at least one clear day between them
4. Work is Mon-Fri, 8-5 so there are 5 days and 4 blocks per day (20 total), less either 8-10 (CIT) or 10-12 (BIT) Monday mornings for meeting time
5. There is a break from 12-1 every day
6. Get the availability for staff as soon as possible
7. Determine how many streams a paper needs or may need, and get them into the list of activities early
8. Work through times for the certificates and then do the degree programs. Sort rooms once times are stable
9. Set up the years, streams and block using sensible naming schemes
10. Need to ensure that there is a Networks 2 stream that doesn’t clash with BITY1 Programming 1, Maths for IT, and PP1; Networks 2 can clash with PC Maintenance quite happily. Prog 2 can clash w/ Prog 1; prerequisites across years can clash; Networks 1 and PC Maintenance can clash.
    1. Semester 1 – ensure Software Engineering and BITY3 don’t clash
11. Staff do have room preferences (Dale prefers D202; Krissi prefers D207)
12. Avoid having 8 hour lecturing blocks if possible, especially for Year 1 students; create streams/overlaps
    1. Try to schedule Dale and Krissi at the same time for streams in the same year
13. If a lecturer is teaching back-to-back, try to have either the same room, the same student group, or the same topic, and preferably all three. This makes it easier for the lecturer to cope with the teaching.
14. FET cannot handle more than one block of teaching time, so you need to treat each Semester separately (2 timetables for an academic year). Roll the Semester 1 CIT timetable to Semester 2
15. You can’t get external rooms until the internal rooms are all heavily booked; advise Campus Services timetable staff where the timetable is at
16. Get drafts out fast. It’s easier to change things before the rooms and times are locked down
17. Check with programme managers about requirements and get them to review drafts
18. Look to roll over programmes that repeat from Semester 1 to Semester 2; it’ll save a lot of work

## UsIng Syllabus Plus

Due to the amount of conent, this has been moved to its own document [here](https://otagopoly-my.sharepoint.com/personal/rbroadley_op_ac_nz/Documents/Documentation/Using%20SyllabusPlus.docx)

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# Student ICT Set-up by Paper

This provides documentation of the processes needed to set up user accounts and services the students need to access within their individual courses.

## All Papers

All IT students – Degree and Certificate included – need to be in the grp\_Student\_Authorised\_Software\_ICT\_Users AD group. This is done as follows:

1. Export the latest Class List (with emails) from EBS to CSV and open in Excel
   1. Class Lists are needed for CR431 and CR432, all IN500/600/700 level papers, and the IB courses
2. Extract the AD usernames from the email address into a new column
   1. Excel: LEFT(<email cell>,SEARCH(“@”,<email cell>)-1) will extract the AD username
3. Create the users full name from the supplied details
   1. Excel: CONCATENATE(<First Name cell>,” “,<Surname cell>)
4. Convert the created cells into their values (Copy > Past Special: Values), overwriting the creation cells
5. Remove all duplicates from the list
6. Sort the list by AD username
7. Open Active Directory Users and Groups
8. Navigate to op.ac.nz > Prod > Security
9. Open the “grp\_Student\_Authorised\_Software\_ICT\_Users” group
10. Adjust the description to reflect the *Occurrence*
11. Remove all1 student users from the group and save
    1. Keep the Project 2 students from the previous year in this AD group
12. Enter the current group of students into the group using their AD usernames
13. Sort the Excel list by Fullname and check that all users have been added

## IN605 – Databases 2

Services affected: Kate, Maria and MariaDB

Process

1. Export the latest Class List (with emails) from EBS to CSV and open in Excel
2. Manipulate the data to get the following format:

PersonID, PersonCode, IN605 Databases2, Full Name

Notes:

a) PersonID MUST be in lower case.

1. Copy the contents to a text file

Notes:

1. Ensure that the text file uses Unix line endings so that it is read correctly by the server
2. Check that there are no blank/incomplete lines
3. Upload to kate via WinSCP saving into the *scripts* directory within the administrators home directory
4. SSH to kate and change to the *scripts* directory. Elevate access to root (sudo su) and run the kateUsersImport.sh script using the uploaded text file as input
5. Check for any errors or alerts and confirm the users are created (cat /etc/passwd | grep *Occurrence*)

Note: sampling the users will be sufficient if the import completes without errors

1. Upload to Maria via WinSCP saving into the *scripts* directory within the administrators home directory
2. SSH to Maria and change to the *scripts* directory. Elevate access to root (sudo su) and run the MariaUsersImport.sh script using the uploaded text file as input
3. Run the PasswordExpire.sh to expire the user passwords
4. PublicHTMLAccess.sh script to ensure web access to the user folder
5. Check for any errors or alerts and confirm the users are created (cat /etc/passwd | grep *Occurrence*)

Note: sampling the users will be sufficient if the import completes without errors. Log in as up to 5 student users

1. Copy the scripting cells from the “IN605 Scripting” spreadsheet to the top row of the class list file
   1. Copy these down to create the DB user creation and access commands
2. Log into phpMyAdmin on Maria
3. Change to the SQL tab
4. Copy and the user creation and access commands to the SQL tab
   1. Note: make sure that you wrap these with a USE <database>; and FLUSH PRIVILIGES; commands
   2. If all is good, the script will run and the box will clear out. Any errors are typically due to user duplication.
5. Log into the database server using a small sample (4-5) of user accounts, including a test user or two
6. *Optional: Run the Password Reset script against the mysql user list*

### IN605 Security Class

There is a single class that requires the students have full control over the databases so that they can play with permissions and GRANT access to other students. These are the instructions to set that up:

1. Create a new Ubuntu server in vCloud
2. Correct the networking so that the server can connect to the internet
3. Install MySQL (apt-get install mysql-server [?])
   1. There is a template that gets this far
4. Update the server (apt-get update && apt-get install [?])
5. Extract a class list from EBS and copy the student details into the IN605 Scripting spreadsheet.
6. Copy the data under the <username>,<password>,<course occurrence>,<fullname> headings in columns I-L into a new workbook and save as a CSV file named IN605\_*occurrence*.csv.
7. Copy the *values* in column M into a text file called DB2newusers.txt (MySQL user account creation script)
8. Copy the *values* in column O into a text file called DB2privileges.txt (MySQL database permissions script)

Alternately: copy the *values* from column P

NOTE: This should be able to be done with an SQL script that reads in a text file

1. Upload all files to the server, along with the UserImport.sh file, to the *scripts* folder
   1. Ensure that Others has RX permissions to these files
2. Log into the Ubuntu Server and change to the *scripts* folder
3. Elevate privileges to root (sudo su)
4. Run the UserImport.sh script using the IN605\_*occurrence*.csv file to create the local user accounts
5. Exit elevated privileges
6. Log into MySQL (“mysql –u root –p”)
7. Run the MYSQL user creation and privileges scripts
8. Check that the users are created (select \* from mysql.users;) and have the proper privileges (SHOW GRANTS FOR '<user>'@'localhost';)

**Note:** With all text files, ensure that the line endings are converted to UNIX/OSX format

## IN612 – Web 2 (S2)

Services affected: Kate, Maria and MariaDB

Process

1. Export the latest Class List (with emails) from EBS to CSV and open in Excel
2. Manipulate the data to get the following format:

PersonID, PersonCode, IN612 Web2 *Occurrence*, Full Name

Notes:

a) PersonID MUST be in lower case.

1. Copy the manipulated data to a new Excel file and save as *IN612Occurrence.CSV*
2. Open this CSV in Notepad++ and convert to a txt file

Notes:

a) Ensure that the text file uses Unix line endings so that it is read correctly by the server

1. Upload to kate via WinSCP saving into the *scripts* directory within the administrators home directory
2. SSH to kate and change to the *scripts* directory. Elevate access to root (sudo su) and run the kateUsersImport.sh script using the uploaded text file as input
3. Check for any errors or alerts and confirm the users are created (cat /etc/passwd | grep *Occurrence*)

Note: sampling the users will be sufficient if the import completes without errors

1. Connect to kate via WinSCP and browse to the public\_html\MySQL\createUsers\_web2 folder
2. Open the mysqlusers.txt file and update it with the current list of students
   1. Users must be listed in *lower case* and in this order: ***personID,PersonCode***, no spaces
   2. **FTP this file to MariaDB**
3. Open a web browser and go to kate.ict.op.ac.nz/~*username* and browse to MySQL\createUsers\_web2. If the script is correct, you’ll see a response that says **Great job!** 
   1. In the folder on kate an output file (date and time named) will have been created containing the SQL code to create the users
4. Go to phpMyAdmin on kate (http://kate.ict.op.ac.nz/phpmyadmin) and login with your standard kate credentials
5. Switch to the SQL tab and copy the contents of the script output file to the “Run SQL query/queries…” box. Check and then click Go.
   1. If all is good, the script will run and the box will clear out. Any errors are typically due to user duplication.
6. *Log into MariaDB and run the user import script against the class list*
7. *Run the Password Reset script against the mysql user list*

## IN607 – Introductory Application Development (Dev3)

Services affected: Kate, Maria and MariaDB

Process

1. Export the latest Class List (with emails) from EBS to CSV and open in Excel
2. Manipulate the data to get the following format:

PersonID, PersonCode, IN605 Databases2, Full Name

Notes:

a) PersonID MUST be in lower case.

1. Copy the contents to a text file

Notes:

1. Ensure that the text file uses Unix line endings so that it is read correctly by the server
2. Check that there are no blank/incomplete lines
3. Upload to kate via WinSCP saving into the *scripts* directory within the administrators home directory
4. SSH to kate and change to the *scripts* directory. Elevate access to root (sudo su) and run the kateUsersImport.sh script using the uploaded text file as input
5. Check for any errors or alerts and confirm the users are created (cat /etc/passwd | grep *Occurrence*)

Note: sampling the users will be sufficient if the import completes without errors

1. Upload to Maria via WinSCP saving into the *scripts* directory within the administrators home directory
2. SSH to Maria and change to the *scripts* directory. Elevate access to root (sudo su) and run the MariaUsersImport.sh script using the uploaded text file as input
3. Run the PasswordExpire.sh to expire the user passwords
4. PublicHTMLAccess.sh script to ensure web access to the user folder
5. Check for any errors or alerts and confirm the users are created (cat /etc/passwd | grep *Occurrence*)

Note: sampling the users will be sufficient if the import completes without errors. Log in as up to 5 student users

1. Copy the scripting cells from the “IN605 Scripting” spreadsheet, excluding access to Sakila, Weather, and World, to the top row of the class list file
   1. Copy these down to create the DB user creation and access commands
2. Log into phpMyAdmin on Maria
3. Change to the SQL tab
4. Copy and the user creation and access commands to the SQL tab
   1. Note: make sure that you wrap these with a USE <database>; and FLUSH PRIVILIGES; commands
   2. If all is good, the script will run and the box will clear out. Any errors are typically due to user duplication.
5. Log into the database server using a small sample (4-5) of user accounts, including a test user or two
6. *Optional: Run the Password Reset script against the mysql user list*

## IN705 – Databases 3

1. Create the users on fthictsql04 as per OOSD instructions
2. Ensure ownership of individual databases belongs to the appropriate student
3. Create and execute commands to add each student to the dbcreator role

EXEC sp\_addsrvrolemember [<username>], dbcreator;

Note: sp\_addsrvrolemember *does not* accept a list of users

1. Grant all users SHOWPLAN permissions on requisite databases (eg AdventureWorks2016, Northwind)

USE AdventureWorks2016 GO  
 GRANT SHOWPLAN TO commaSeperatedListOfStudents GO

1. Detach older databases

### Troubleshooting

1. User can’t log in: error connecting to default database (SQL error 4064)

This will happen to students that have previously done OOSD or DB3 and are either repeating or doing the other paper.

Cause: The cleanup process removes the default database entry from the login

Fix: Open the properties of the user account. Go to the General page. Set the Default database to the users’ assigned database

## IN710 – OOSD

1. Export the latest Class List (with emails) from EBS to CSV and open in Excel
2. Extract the AD usernames from the email address into a new column
3. Create the users full name from the supplied details
4. Sort the list by AD username
5. Create Enrolment.csv, ImportStage.csv, and NewUser.csv
6. Log into SSMS
7. Connect to fthictsql04
8. Navigate to the BITStudent database
9. Open the Semester table and ensure that the semesters for the current year are in the table
   1. If not, add them using the approximate start and end dates
   2. Format is *year+semesterindex* eg 201601, 201502
   3. Date takes the following form: YYYY-MM-DD (start and end). Ignore Time as that is auto-appended.
10. Open the PaperInstance table and add an entry for IN710 with the appropriate semesterID
11. Start the SQL Server Import Wizard
    1. Select Flat File Source
    2. Browse for the Import ImportStage.csv
    3. Check to see if the first row is identified as the headers; if not, then check the “skip first row” option
    4. Choose bitdev.ict.op.ac.nz as the destination
    5. Choose BITStudent for the database
    6. Click Next etc to complete the import
    7. Repeat this process with the NewUsers.csv and then Enrolment.csv files
12. Open SSMS and Synchronise the users as follows:
    1. Open BITStudent > Programmability > Stored Procedures
       1. Run dbo.synchroniseImportStage
       2. Run dbo.addMissingPerson
       3. Run dbo.updatePersonDetails

NB: None of the procedures requires parameters

* 1. Log into the Admin Wiki in Github and open the page for fthictsql04
  2. Copy the bitdev\_student\_setup procedure from the page to a new query on fthictsql01
  3. Modify the script to reflect the users that are being created using current semesterID and courseID

1. Extract usernames and logins from the database by:
   1. Copy the SQL script from the admin wiki
   2. Modify to the appropriate course and semester
2. Copy the results to a text file and then email details to the appropriate lecturer

Notes:

* 1. If there are issues with the Enrolment table, then rename it to something else and the script will recreate the table. This happened in 2017, and has been formalised in 2018 with the old table now permanently rename.
  2. In order to detach databases, ensure that the correct Enrolments table is in place before running the detach script

## IN720 – Administering a Virtual Infrastructure

1. Export the latest Class List (with emails) from EBS to CSV and open in Excel
2. Extract the AD usernames from the email address into a new column
3. Create the users full name from the supplied details
4. Sort the list by AD username
5. Open Active Directory Users and Groups and navigate to op.ac.nz > Prod > Security
6. Open the grp\_ict\_vcloud\_class\_7 group and adjust the description to reflect the *Occurrence*
7. Remove all users from the group and replace them with the current group of students

## IN617 – Linux Operating Systems

1. Export the latest Class List (with emails) from EBS to CSV and open in Excel
2. Extract the AD usernames from the email address into a new column
3. Create the users full name from the supplied details
4. Sort the list by AD username
5. Open Active Directory Users and Groups and navigate to op.ac.nz > Prod > Security
6. Open the grp\_ict\_vcloud\_class\_5 group and adjust the description to reflect the *Occurrence*
7. Remove all users from the group and replace them with the current group of students

## All Papers

~~All students are added to the GitLab environment and will get a repository created for them. For this to happen, the BIT Platform group needs to be supplied with a set of CSV files for each paper with all of the students in that paper. These CSV files are created as follows:~~

1. ~~Export the Class List with Emails from EBS and as a CSV~~ 
   1. ~~When prompted by the web browser, open the file in Excel rather than saving it~~
2. ~~Check that each student has all of their details listed~~
   1. ~~If any are missing, search for the student in EBS and fill in the gaps~~
3. ~~From Excel, save the file as INXXX\_YYYY\_SZ.csv, where XXX is the course code, YYYY is the year and Z is the semester number (1 or 2), into Course Setups\YYYYSZ~~
4. ~~Remove the NSN column~~
5. ~~Remove the personal email addresses column~~
6. ~~Remove the Person Code column~~
7. ~~Extract the AD usernames from the email address into a new column~~
   1. ~~Force the usernames into lower case~~
   2. ~~Convert the OP email address to lower case if necessary~~
8. ~~Tidy the CSV file to just be Forename, Surname, username, OP email address~~
9. ~~Copy these to the IN700001 folder on the I: drive~~

## ~~IB 310 - Utilising Software Applications~~

1. ~~Export the latest Class List (with emails) from EBS to CSV and open in Excel~~
2. ~~Extract the AD usernames from the email address into a new column~~
3. ~~Create the users full name from the supplied details~~
4. ~~Sort the list by AD username~~
5. ~~Open Active Directory Users and Groups and navigate to op.ac.nz > Prod > Security~~
6. ~~Open the grp\_Student\_Authorised\_Software\_ICT\_Users group and add all students in the class list~~

## IN512 – Web 1

~~Requires access to SQL/IIS?~~

1. ~~Export the latest Class List (with emails) from EBS to CSV and open in Excel~~
2. ~~Extract the PERSONID, in lower case, into a new CSV file named fthweb03-~~*~~year~~*~~—~~*~~occurrence~~*~~.csv~~
3. ~~Put “IN512” and “no”, without quotes, into the next two columns and save the file~~
4. ~~Log into fthictweb03 and run an elevated PowerShell instance~~
5. ~~Run the fthweb03Import.ps1 PowerShell script, using the saved csv file as a parameter, to import the users~~
6. ~~Log into kate and edit the index.php file in ~\public\_html\MySQL\createUsers\_web1~~
   1. ~~Update the $yearcode, to reflect the current year and semester, and $accountnumber, the number of students, variables and save~~
7. ~~Browse to ~/MySQL/createUsers\_web1 to run the script~~
8. ~~Download the resulting output file to the local machine~~
9. ~~Log into mysql.ict.op.ac.nz/phpmyadmin (details in the Admin Wiki)~~
10. ~~Run the user import/creation SQL.~~
11. ~~Extract the usernames and create a “@blackhole.io” email address from each username. Extract these pairs to a text file ensuring each pair is separated by a comma and a space~~
12. ~~Log into the Project Wiki (project.ict.op.ac.nz)~~
13. ~~Create new pages for the Year and Semester~~
14. ~~Open the Control Panel~~
15. ~~Go into Groups and Create a new Class Group for the instance (Year+Semester+~~*~~WebOne~~*~~)~~
16. ~~Go into Users and switch to the Add Multiple Users tab~~
17. ~~Copy the username and email address into the Users box~~
18. ~~Ensure the role is set to Contributor~~
19. ~~Set Authentication to External (Microsoft Active Directory; use own credentials excluding Domain)~~
20. ~~Select the newly created Group~~
21. ~~Click Add Multiple Users~~
22. ~~Check any errors (typically due to attempting to recreate an existing account or AD authentication error)~~
    1. ~~Users that already exist will need to be manually added to the Class Group~~
23. ~~Notify the lecturer that all steps are completed~~

### ~~Admin accounts~~

~~Sometimes another lecturer will be involved in this course. They will need to be notified that the Course Setup is complete, and will need set up as an Admin for the Wiki and for phpMyAdmin~~

~~Wiki Admin~~

1. ~~Log in as an admin account~~
2. ~~Locate the user’s account~~
3. ~~Edit the role to be WikiAdmin and save~~

~~phpMyAdmin Admin~~

1. ~~Log into~~ [~~https://project.ict.op.ac.nz/phpmyadmin~~](https://project.ict.op.ac.nz/phpmyadmin) ~~(user root; password in the Admin wiki)~~
2. ~~Locate an existing Web 1 (IN512) admin user account~~
3. ~~Select the user and click on EDIT PRIVILEGES~~
4. ~~Scroll down to the Login Information~~
5. ~~Change the User Name to the new staff member~~
6. ~~Set the password to a secure, randomly generated password (change Password to “Use text field:” and add and confirm)~~
7. ~~Ensure that “… keep the old one.” is checked and click Go.~~

~~This will copy the existing admin user’s access and privileges to the new user~~

## ~~IN712 – Web 3~~

1. ~~Export the latest Class List (with emails) from EBS to CSV and open in Excel~~
2. ~~Extract the PERSONID, in lower case, into a new CSV file named fthweb03-~~*~~year~~*~~—~~*~~occurrence~~*~~.csv~~
3. ~~Put “IN712” and “yes”, without quotes, into the next two columns and save the file~~
4. ~~Log into fthictweb03 and run an elevated PowerShell instance~~
5. ~~Run the fthweb03Import.ps1 PowerShell script, using the saved csv file as a parameter, to import the users~~

~~Connecting: connect to the server as follows:~~

~~ftp (client or command prompt) webthree.ict.op.ac.nz~~

~~username: webthree.ict.op.ac.nz|<opnet username>~~

~~password: <opnet password>~~

## ~~IN614 – Multimedia (S2)~~

1. ~~Export the latest Class List (with emails) from EBS to CSV and open in Excel~~
2. ~~Manipulate the data to get the following format:~~

~~PersonID, PersonCode, IN612 Web2~~ *~~Occurrence~~*~~, Full Name~~

~~Notes:~~

~~a) PersonID MUST be in lower case.~~

1. ~~Copy the contents to a text file~~

~~Notes:~~

~~a) Ensure that the text file uses Unix line endings so that it is read correctly by the server~~

1. ~~Upload to kate via WinSCP saving into the~~ *~~scripts~~* ~~directory within the administrators home directory~~
2. ~~SSH to kate and change to the~~ *~~scripts~~* ~~directory. Elevate access to root (sudo su) and run the kateUsersImport.sh script using the uploaded text file as input~~
3. ~~Check for any errors or alerts and confirm the users are created (cat /etc/passwd | grep~~ *~~Occurrence~~*~~)~~

~~Note: sampling the users will be sufficient if the import completes without errors~~

## ~~IN602 – Software Engineering~~

1. ~~Export the latest Class List (with emails) from EBS to CSV and open in Excel~~
2. ~~Extract the AD usernames from the email address into a new column~~
3. ~~Create the users full name from the supplied details~~
4. ~~Sort the list by AD username~~
5. ~~Use this to create users on the project wiki and add all of them to the~~ *~~Occurrence~~* ~~group there~~
6. ~~Grant the group Contributor permissions to the~~ *~~Occurrence~~* ~~Software Engineering page~~

## IN715 – Network Administration

1. ~~Export the latest Class List (with emails) from EBS to CSV and open in Excel~~
2. ~~Extract the AD usernames from the email address into a new column~~
3. ~~Create the users full name from the supplied details~~
4. ~~Sort the list by AD username~~
5. ~~Open Active Directory Users and Groups and navigate to op.ac.nz > Prod > Security~~
6. ~~Open the grp\_ict\_vcloud\_class\_4 group and adjust the description to reflect the~~ *~~Occurrence~~*
7. ~~Remove all users from the group and replace them with the current group of students~~

## View Access (ICT Desktop)

~~This is controlled by group membership and driven via FIM. However, if a student is not in the appropriate groups, they can be added via the grp\_View\_STU\_NP\_ICT AD group (View container)~~

# Classroom Configuration

## Classroom Hardware

When machines are replaced in a classroom, ensure that they have been set up so that the BIOs is locked and support for Intel Virtualisation (VT-x) is enabled

VT-x: BIOS > Security

To allow USB boot: look for the security option to allow it to happen

## Workstation Images

All student workstations are configured with Deep Freeze managed images deployed by ISS. If a machine has issues, restart and try again.

Questions:

1. How are the images managed?
2. Is there a central standard image?
3. Is there a process to get the images updated?

Note: When reimaging the labs, remember to go into D312 and D313 and reinstall AB Tutor onto the Projector machines. The software is in \\fthsccm02\apps\ABTutor\L-block and the license key is held online within the registered account (username and password on the admin wiki, along with the password to connect to the student machines).

## AB Tutor Control

AB Tutor is built into the standard image. AB Control, the program that manages the student machines, needs to be installed onto the Projector machines in D312 and D313 after they have been reimaged.

1. Log into the AB Tutor account (details in the Admin Wiki)
2. Deactivate the existing licenses for D312 and D313

NB: Do not touch the licence for L Block!

1. Log into the projector machines and unfreeze them (1 reboot should suffice)
2. Install AB Control from \\fthsccm02\apps\ABTutor\L-block using the ABTutor6.MSI file
   1. Install Process…
3. Configure AB Control using the standard password in the Admin Wiki
4. In the Help Menu, register the installation using the licence code on the AB Tutor website

..(EOP)

# Purchasing

## Purchase Orders

1. Obtain quotes from recognised suppliers and decide who to purchase from.
2. Forward the selected quote to Departmental/Systems Administrator, including the following items in the body of the email:

Supplier, Item, Quantity, Unit and Total Prices (see table for possible format)

Example:

*Supplier*

|  |  |  |  |
| --- | --- | --- | --- |
| **Item Name and Description** | **Quantity** | **Unit Price (excl GST)** | **Total Price (excl GST)** |
|  |  |  |  |

1. Send the purchase request, including PO number to the supplier
2. On receipt of the goods, advise the Departmental/Systems Administrator to get the invoice/payment into the OP financial system

Notes

* 1. What about supplies that need paid before they will ship?
  2. If you can create your own PO’s then they need released and received

## ITP Credit Card

ITP have been issued a credit card with a $NZ5000 limit. This is to be used to make departmental purchases only, and is stored in the safe in Administration. It can be used like any other credit card but ALL purchases require a GST receipt. Record the transaction in the Credit Card Spreadsheet in Teams

### ~~Reconciliation Process~~

1. ~~Log into the Mastercard portal (smartdata.mastercard.com)~~
   1. ~~Self-register using FirstnameSurname format (eg BenSmith) as the user id~~
   2. ~~Company number is 461236, account number is the credit card number~~
2. ~~Go into Account Activity -> Transaction Summary~~
3. ~~Select Reporting Cycle and click Search~~
   1. ~~Cycle is 28~~~~th~~ ~~to 27~~~~th~~
   2. ~~A reminder email is sent on the 27~~~~th~~
   3. ~~All transactions to be reviewed within 5 working days of the end of the Reporting Cycle~~
4. ~~Expand the Detail Arrow to show all coding information~~
5. ~~Code transactions using the normal account details (same as for creating a PO number)~~ 
   1. ~~Be careful of GST amount, esp. when working in NZ dollars (system estimates).~~
   2. ~~A GST receipt is needed in order to be able to claim back GST~~
6. ~~Include a reasonably detail description of the transaction (eg for a conference registration: conference name/title, attending staff member, conference dates)~~
7. ~~Once all details are in, click the reviewed checkbox and save the item.~~
8. ~~Once all transactions are reviewed, notify Lesley that they are ready to be authorised.~~

### ~~Reviewing split transactions~~

~~1) Do all the coding for the first split in the transaction and save that (this will produce errors for the others, but that is expected)~~

~~2) Copy the details to the other splits~~

~~3) Modify to the correct account codes~~

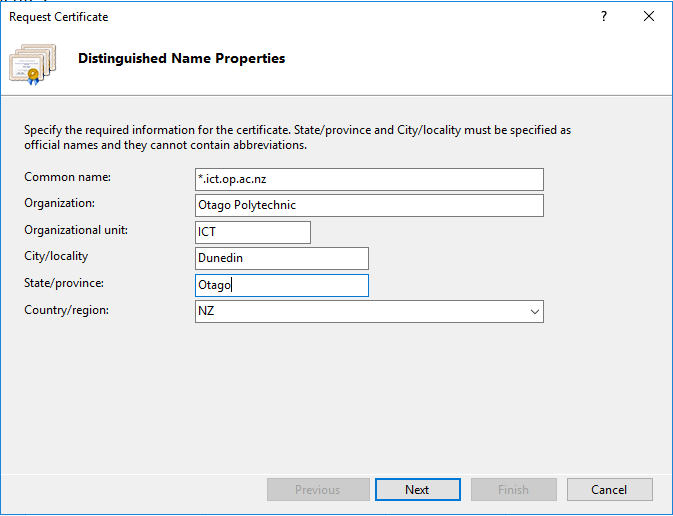
~~4) Check all of the split coding boxes and click save~~

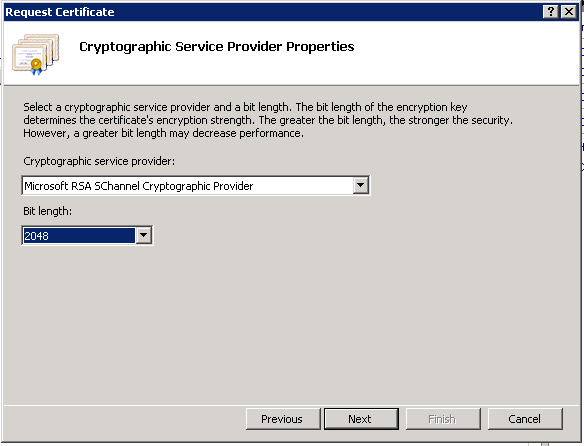
~~5) Click the Reviewed checkbox and save~~

## SSL Certificate Renewals

The certificate behind \*.ict.op.ac.nz is renewed annually. The renewal is done through Namecheap and is a reasonably straightforward process. This process is started by receiving a notification by the registrar to the eadsysadmin.op.ac.nz email address.

1. Log into Namecheap (account details on the adminwiki)
2. Purchase the renewal via credit card
3. Once purchased, log into fthictweb06
4. Start IIS manager and go to the server
5. Open the Server Certificates panel
6. Right click on \*.ict.op.ac.nz and select Create Certificate Request
7. Set the details and cryptographic properties as shown in the screen captures below
8. Save this to D:\SSLRequests\ict\_csr.txt overwriting any existing file
9. Return to Namecheap’s website and go to Dashboard > Domain List
10. Change to All Products
11. Change the entry for \*.ict.op.ac.nz to Manage
12. Renew the certificate following the prompted steps (use [postmaster@op.ac.nz](mailto:postmaster@op.ac.nz) for Email verification or use DNS Verification).
    1. Note: To use **Email Verification**, the certificate confirmations need to be sent to an email account accessible by the Service Desk (in Infotrack) as the equivalent accounts in the ict.op.ac.nz domain do not exist. Further, Service Desk need to be asked to look out for the certificate renewals and forward them to [eadsysadmin@op.ac.nz](mailto:eadsysadmin@op.ac.nz)
    2. **DNS Verification** entails creating a DNS entry in ict.op.ac.nz with the details supplied by the issuer. This includes setting the listed Target as the Alias for the entry. Entries can be deleted once validation is complete. Set the TTL to 30 minutes.





### Installing the SSL Certificate

Once the new certificate has been issued, it can be installed as follows:

1. Download the certificate from the Namecheap site as a zip file.
2. Save this to the web server (D:\Temp is fine)
3. Extract to an appropriate folder.
   1. Optional: Rename all files to be ict.op.ac.nz.<existing file extension>

eg \_\_ict\_op\_ac\_nz.crt becomes ict.op.ac.nz.crt

1. Make a copy of the .crt file and rename it to be a .cer file.
2. Open IIS Manager and select the webserver.
3. Open Server Certificates.
4. Right click on a blank space and select Complete Certificate Request.
5. Locate the .cer file and give the new certificate the following Friendly name: \*.ict.op.ac.nz.<expiration year>. Click OK
   1. This should add the certificate. If there are any errors, reissue the certificate and try again
6. Right-click on https-secure and select Edit Bindings…
7. Select https and click on Edit…
8. Select the SSL certificate from the dropdown list and click OK

### Transferring the Wildcard Certificate (Linux)

1. Export from webserver hosting \*.ict.op.ac.nz (or \*.op-bit.nz) saving as ict.op.ac.nz.pfx (\*.op-bit.nz.pfx)
   1. https://www.sslsupportdesk.com/export-ssl-certificate-private-key-pfx-using-mmc-windows/
   2. Password: BITWildc4rdC3rt
   3. Password for OP-BIT is OPBITWildC4rd
2. Copy pfx and ca-bundle to a safe, central location (OneDrive, I: or J: drive, or Teams)
3. Upload the pfx and ca-bundle to Maria
4. Log into Maria and extract the key and cert from the pfx

openssl pkcs12 -nocerts -in ict.op.ac.nz.pfx -nodes -out ict.op.ac.nz.pem

openssl pkcs12 -nokeys -in ict.op.ac.nz.pfx -out ict.op.ac.nz.crt

openssl rsa -in ict.op.ac.nz.pem -out ict.op.ac.nz.key

1. Copy the key, cert, and ca-bundle to /etc/apache2/ssl
2. Download key, pem, and cert from Maria and put them in the same central location as the .pfx file
3. Upload to other Linux/Ubuntu servers in turn and copy to /etc/apache2/ssl
4. Restart Apache (optional)

### Transferring the Wildcard Certificate (Windows)

1. Copy the .pfx file to the local server (typically C:\Temp\SSLCert)
2. Open IIS
3. Open Server Certificates
4. Click on Import…
5. Locate the .pfx file; set the friendly name to \*.ict.op.ac.nz:XXXX, where XXXX is the current year
6. Click OK
7. Update bindings for all HTTPS sites on the server to use the current SSL Certificate

## Supplier Notes

There are several suppliers to Otago Polytech. Identifying them can be quite tricky so either enquire directly or hunt through the financial system (if access has been granted). In the case of the following suppliers, Otago Polytechnic either has an account with the supplier or the supplier is happy to accept a PO number to further an order.

### Nice Gear

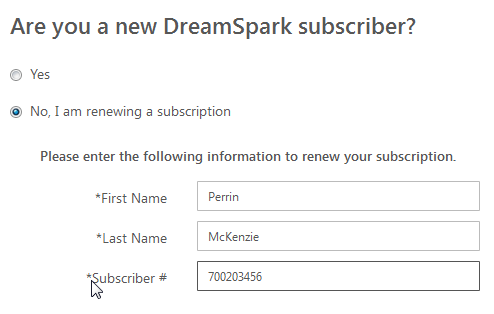
All ordering is done online, you can just add the products to your cart to get a total price. When you go through the checkout you can enter a PO number in the customer reference field and it will show up on the automatically generated invoice. You can choose either direct credit or credit card payment when you checkout, do note though that we require payment before shipping.

When shopping with this supplier, get a PO number and place the order. Forward the invoice to Departmental Admin to get pushed through the Finance system to get paid immediately. Nice Gear ships on payment.

### DreamSpark

DreamSpark, the MSDNAA subscription that allows access to MS software for staff and students, needs renewed every year, and needs to be started in **November** each year due to the time it can take to process through the bureaucracies involved (MS subscription renewals and OP Finance). This is done through the DreamSpark portal at [www.dreamspark.com](http://www.dreamspark.com).

1. Go to [www.dreamspark.com](http://www.dreamspark.com)
2. Go into the “Academic Institutions” page
3. Click renew in the header bar
4. Swap to the Renew tab and click “Renew Now”
5. Follow the steps as required using the following information:



Credit card purchases – screenshot the pages – amount and payment type. To get the credit card number fill in the request form, get it signed off by HoS and email to Philip Tait. You will have to ring Philip for the security verification code (each time; forget immediately after use).

Need physical address for new suppliers. Form on Insite. Have to ask if a particular supplier is already in the system. Can self-purchase and seek reimbursement but check first.

# Virtual Machine Management

## Student Project VM’s

This process is for creating virtual machines to support 3rd year BIT projects. There should only be a few of these each year so currently all are in oVCD\_ICT1, the main organisational VDC for ICT. It is possible to make a dedicated VDC for the project VM’s and if demand rises this will be considered.

### Creating Ubuntu Servers

Due to an issue with the DNS configuration on the Ubuntu template (see <http://unix.stackexchange.com/questions/128220/how-do-i-set-my-dns-on-ubuntu-14-04>) you need to complete the following at the console before releasing the server to the students:

1. Login as user and elevate to root (sudo su)
2. Edit (with vi/nano/editor of choice) /etc/resolveconf/resolve.conf.d/base and add these lines:

nameserver 10.50.1.82

nameserver 10.50.1.80

1. Update the resolver (resolvconf –u) and restart the network interface (ifdown eth0 && ifup eth0)
2. Run apt-get update on the server to ensure that it has the latest information on the repositories

### Creating Windows Servers

Clone off the Server2012R2 template. Set the various names – VM, server, etc – to match up with the name of the project.

### Web access

Student project servers all need to be visible from the internet. This can be done in a couple of ways

1. If the VM is hosted on vCloud then it is not directly accessible from the internet so needs a [reverse proxy](#_Reverse_Proxy)
2. If the server is hosted externally then register a [domain](#_Domain_Registrations)

## Course Template VM’s

This process is for setting up template virtual machine environments for those papers that require them. This is a reasonably intricate process that should not need done too often and these machines should be added to a paper-specific VDC. Appropriate Template machines should be added to the main template store.

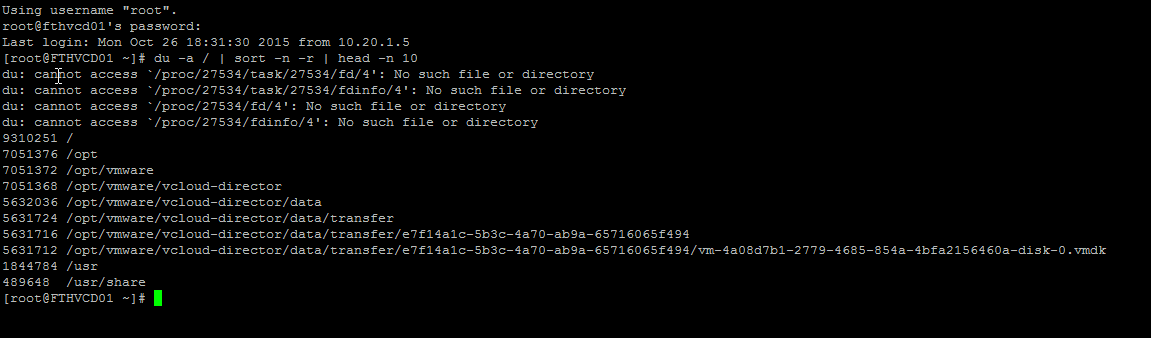
## Removing VM’s

Always check with the appropriate Lecturer and/or Project Advisor(s) before removing VM’s.

Virtual machines need to be powered off before they can be removed. Do all deletions from vCloud.

## Uploading and Downloading

This is a process fraught with danger. Uploads and downloads via vCloud WILL drop the machines. Do all uploads and downloads through the vSphere client. What happens is the VM is streamed to a cell rather than going directly to the datastore. This fills the cell and stops it dead.



If a transfer crashes a cell, follow this process:

1. SSH onto fthvcd01 (details on the Admin Wiki)
2. Run “du -a / | sort -n -r | head -n 10”. This finds the 10 largest files. The streamed disk is put into /opt/vmware/vcloud-director/data/transfer.
3. Delete the subfolder that the vdmk is in then shutdown the cell (see https://wiki.ict.op.ac.nz/adminwiki/Servers.fthvcd01.ashx)
4. Restart fthvcd01. It will take maybe 15 minutes for the cell to spin back up.

**Note**: fthictf01 is also fthictf02, and runs as fthictf02.

## Moving VM’s around the Datastores

Sometimes a datastore, particularly TN03, will get full. The solution is to delete unnecessary VMs but is some need kept then they can be moved to another datastore. This is the process:

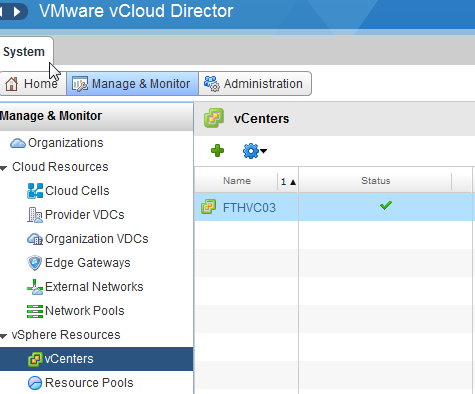
1. Open the vSphere Client
2. Go into Datastores and Datastore Clusters
3. Select the datastore and locate the virtual machine
4. Right click on it and select Migrate.
5. Click OK then click Change Datastore
6. Select the datastore you want to move to and then click Next and then Finish
7. Wait.

Notes:

1. This works for any VM, however it is much faster if the VM is stopped before you move it.
2. This process can be used to move multiple VM’s

## Dodgy VM Statuses

Sometimes there will be communication issues between vCloud and vSphere even though all services appear to be running correctly. If you see a message like “Inconsistent State” or an alarm such as “Can’t stop” on a VM/vApp, check the state of the VM in vSphere. If the states differ then the two services are not communicating correctly. The standard way to fix this is to go to the vCenters link in the vSphere Resources section of the Manage and Monitor page in Director (see below) and reconnect to the vCenter *regardless of listed status* (right click on the vCenter and select Reconnect).

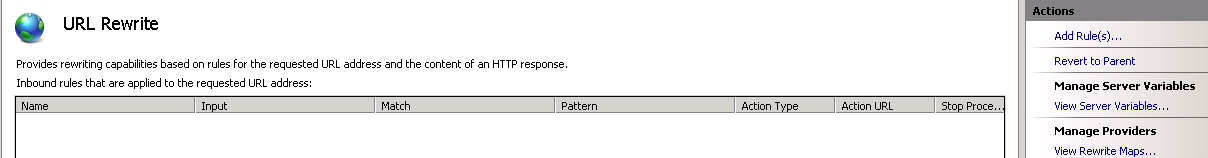


# Application Processes

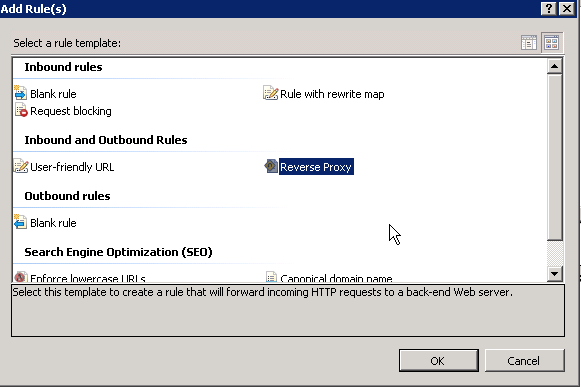
## Reverse Proxy

Whenever a student sets up a project web server, their client will need access to the service. As the VMs are not directly visible from the internet, a reverse proxy needs to be set up. This is done as follows:

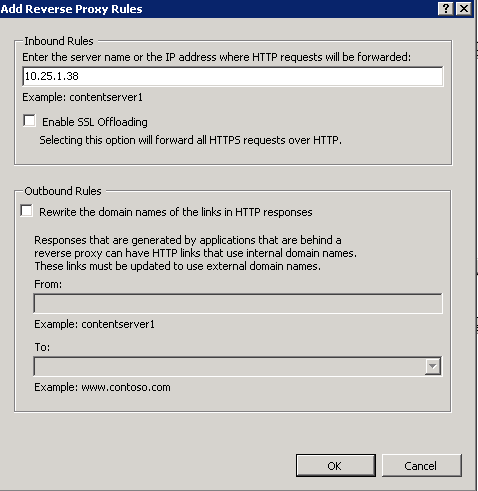
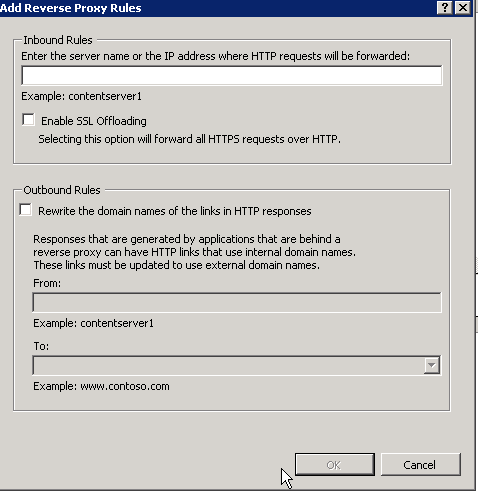
1. Connect to fthictweb03.ict.local and open IIS Manager
2. Create a new web site using the Default AppPool
3. Set the path to the web site to be D:\inetpub\reverseproxy\<sitename> (folder will need to be created)
4. Grant access to the site using IIS\_Iuser/Webaccess1 and test that access works
5. Set the binding to the URL that you’re planning to use
6. Open the web site and go into the URL Rewrite settings and click on Add Rule(s)



1. Select Reverse Proxy



1. Set the Inbound Rules to connect to the student project server



1. Set up a DNS A record on fthictdc01.ict.local using the server address entry for the student server
2. Set up a DNS CNAME record using webdev.ict.op.ac.nz [browse to avoid typos] entry on ns1.ict.op.ac.nz (password is in the Admin Wiki server page).

## Webdeploy

Web Deploy has been installed to fthictweb03 to support work on the webthree and webdev sites.

Installation is via the Web Platform Installer tool. To get the service to work, the firewall needs configured to accept traffic on port 8172 (should be automatically configured during installation). To get non-administrator access, user accounts were created for the appropriate sites and web deploy was configured for those sites with those accounts.

**Web Deploy Accounts**

webthree: WDeployWebthree/WebDeploy3; bitdev: WDeployBitdev/WebDeploy4

Using Web Deploy

1. Launch Publish… from Visual Studio to open the Publishing Wizard
2. Select Import
3. Browse to the fthictweb03 import files (M:\ICT Staff\Shared\Technician) and import the version that’s wanted (webthree or webdev) and click Open
4. Modify the details, replacing “(username)” with the users login account and “(folder)” with the destination folder
5. Complete the wizard process and publish the app
   1. Note: this is not available off campus as of 10/5/2017?

## Domain Registrations

If a student project demands it, a web domain can be purchased by purchasing it from one of the registered providers (see the Admin Wiki page). Create an account and purchase the domain. You can either arrange access to the OP credit card number OR pay using your own credit card and seek reimbursement. After this, set up the reverse proxy and DNS entries as above.

* If you use 1stDomains, then consider configuring the URL redirection options, either to simply redirect or to redirect and mask

## Class Lists

1. Log into EBS Reports (<https://ebs4reporting-live.op.ac.nz/Login/Login.aspx?ReturnUrl=%2f>) using your OP user account
2. Select the Class List with Email Addresses report
3. Enter the course number (eg INXXX, CRXXX, etc) and hit Tab
4. Click on the Occurrence dropdown and select the current year and semester.
5. Ensure that Active Learners Only and Current Year Only are set to Yes and then click View Report
6. Export the report to CSV (comma delimited) file and open with Excel
7. Insert a new A column and clear the NSN column. Rename the NSN column FULLNAME and name the new A column PERSONID
8. Create the PERSONID, in **lower case**, from the email address
9. Create the person’s FULLNAME, in **proper case**, from the given names
10. Save the file to a Class Lists folder using the following naming scheme: **CourseCode\_Year\_Semester** Class List w-Emails.csv
11. ?

# User Accounts

## Account Creation

### Kate

The process to create user accounts on Kate goes as follows

1. Manipulate the class list data to get the following format:

PersonID, PersonCode, IN612 Web2 *Occurrence*, Full Name

1. Copy the contents to a text file

- Ensure that the text file uses UNIX line endings so that the server reads it correctly

1. Upload to kate via WinSCP saving into the *scripts* directory within the administrators home directory
2. SSH to kate and change to the *scripts* directory. Elevate access to root (sudo su) and run the kateUsersImport.sh script using the uploaded text file as input
3. Check for any errors or alerts and confirm the users are created (cat /etc/passwd | grep *Occurrence*)

### MySQL

1. Connect to kate via WinSCP and browse to the public\_html\MySQL\createUsers\_web2 folder
2. Open the mysqlusers.txt file and update it with the current list of students
   1. Users must be listed in *lower case* and in this order: ***personID,PersonCode***, no spaces
3. Open a web browser, go to kate.ict.op.ac.nz/~username, and browse to MySQL\createUsers\_web2. If the script is correct, you’ll see a response that says **Great job!** 
   1. In the folder on kate an output file (date and time named) will have been created containing the SQL code to create the users
4. Go to phpMyAdmin on kate (http://kate.ict.op.ac.nz/phpmyadmin) and login with your standard kate credentials
5. Switch to the SQL tab and copy the contents of the script output file to the “Run SQL query/queries…” box. Check and then click Go.
   1. If all is good, the script will run and the box will clear out. Any errors are typically due to user duplication.

### SQL Server

To create users on the SQL server do the following:

1. Manipulate the class list data to get the following format:

PersonID, PersonCode, IN612 Web2 *Occurrence*, Full Name

Notes: PersonID MUST be in lower case.

### Project Wiki

This is done as follows:

1. Create the list
2. Import to the wiki page
3. Create the project page
4. Give contributor access
5. Edit the appropriate Project Start page to add the group and a link to the project page

**Setting up a new Project year**

1. Create a new page called *Year Projects*
2. Create new *February Start* and *July Start* pages
3. Copy the table from a previous *February Start* page and paste to the new *Start* pages
4. Clear the table contents and create new entries as projects are added

## User Password Resets

### MySQL/SQL

1. Log into phpMyAdmin on kate and switch to the SQL tab
2. Enter “SET PASSWORD FOR 'username'@'localhost' = PASSWORD('*PersonCode*');”, substituting in the username and student ID and hit go
   1. The process is very similar in Mariadb: go to mariadb.ict.op.ac.nz/phpmyadmin, log in, switch to the SQL tab and run

SET PASSWORD FOR 'username'@'%' = PASSWORD('*PersonCode*');

In mysql.ict.op.ac.nz/fthictmysql01.ict.op.ac.nz, using phpmyadmin:

1. Check which user account is affected – the account to access the database OR an account created within the database
2. If the former, reset as above (password should be the username for IN512 [db\_512\_\* db’s])
3. If the latter, open the appropriate database
4. Look for the user in the wp\_users table
   1. Use db\_512\_????\_??; select \* from wp\_users; (go)
5. Edit the user line, replacing the password with the standard default password (user can reset as needed)

### Linux (kate)

1. SSH to the server and login as a user with sudo access
2. Type sudo passwd *username* at the prompt

### Linux Group Changes

To add a user to a group, use usermod –a –G *group* *username*

For example, to add user test1 to the sudo group run

usermod –a –G sudo test1

Note: group and user modifications require elevated privileges.

### Active Directory

To reset a computer password, Open *AD Users and Groups*, locate the user (search *op.ac.nz*), and reset the password or refer the user to the IT Support team or to the IT Service Desk web page.

## Quota Changes

The Debian server kate runs quotas to limit the impact of students on the server. These are set at user creation and can be changed by running

setquota –u username softlimit hardlimit soft inode hard inode grace

eg setquota –u smaiwl1 409600 512000 0 0 0

Only superusers can set and change user quotas.

## After Hours Access

### After Hours Access Administration

After hours access is now granted automatically.

After hours access is granted as follows:

1. Download the class lists for the various CIT and BIT courses
2. Extract Full Names and Student Usernames into a new spreadsheet
3. Deduplicate based on Student Username
4. Email request to Campus Services requesting Standard Access for IT students

**Note:** Project/Studio 5 & 6 students are a separate request due to expanded access (BIT Project Rooms)

1. ~~Go to~~ [~~http://afterhours.ict.op.ac.nz/admin~~](http://afterhours.ict.op.ac.nz/admin)
2. ~~Edit the current batch and review the student names~~
3. ~~Approve the tickets (?)~~
4. ~~Update the batch (?)~~
5. ~~Save the batch as a PDF~~
6. ~~Email PDF to Campus Services (Sharee Smart) who will configure the ID cards with the appropriate access~~

~~Changes to available rooms is done as follows:~~

1. ~~Go to~~ [~~http://afterhours.ict.op.ac.nz/admin~~](http://afterhours.ict.op.ac.nz/admin)
2. ~~Switch to the Rooms tab (along the top)~~
3. ~~Click on the Edit link for the room you wish to change~~
4. ~~Adjust the details you wish to change~~
   1. ~~IsActive box shows or hides a room in the After Hours submission form~~
5. ~~Click Save~~

# Maintenance Processes

## Backups

### Kate

The Linux server kate backs up each night via automated script. This creates a TGZ file on the server that can be used to recover missing or lost files. In order to further protect the server, a monthly Full backup is run and saved on the machine. This full backup needs to be copied to the Backup share manually each month (before the 4th of the month). You do this as follows:

1. Connect to kate via SFTP, typically using WinSCP
2. Switch to the remote directory to the backup directory /srv/backups on kate
3. Switch the local directory to the *kate* directory on backup server (F:; [\\fthict02\Backup\kate](file:///\\fthict02\Backup\kate))
4. Drag the backup dated for the 1st of the month from kate to the backup server
5. Verify that the copy completes and then restore the WinSCP session to its default home directories
6. Exit the WinSCP session
7. Log into kate via SSH (PuTTY)
8. Elevate to superuser (sudo su)
9. Change to /srv/backups
10. Delete the oldest monthly backup
11. The backup created on 1 January should be retained as an annual backup and deleted after (no more than) 7 years

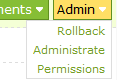
# Troubleshooting

## ~~Admin Wiki Authentication Failure~~

~~IF the admin wiki starts rejecting user accounts, then the Provider for AD/LDAP authentication is no longer working. This can be fixed by editing the SQL (See Perrin McKenzies IM below) or by breaking into the site using the master account and password (held in D:\inetpub\BIT\Wiki2\adminwiki\Web.config on fthictmysql01).~~

~~If you use the password, then:~~

1. ~~Click on the Admin button/drop-down and select Administrate~~



1. ~~Switch to the Providers Tab and select Users Providers in the Display line~~
2. ~~Click Select on the Active Directory Provider line~~
3. ~~Click Enable to reactivate AD authentication~~

~~PM - in the sql database for the admin wiki there is a table refering to plugins, there is an ad or ldap record in that table with an enabled field that randomly gets changed~~

~~flip that and it will re-enable it~~

~~or alternatively just dig through the sql to get the details~~

## ~~vCloud Connection Errors~~

~~Due to the enhanced patching regimen this server is being patched and rebooted every Thursday night. This can play havoc with the access to vCloud as the server doesn’t necessarily restart its services correctly.~~

~~IF there are issues with vCloud, then the vCentre service or the SQL service needs attention:~~

1. ~~Log into the server and check that the vCentre service is started~~
   1. ~~If not, manually start the service; check vCloud~~
2. ~~Reboot the server and recheck vCloud services~~

## ~~NS1 Time error~~

~~Log into the Admin Wiki and get the user password for ns1.ict.op.ac.nz. Log into the server and restart the Windows Time service (regularly fails after rebooting [updates, whatever])~~

## Fthictmysql01 Space

Log into fthictmysql01: C:\Program Files (x86)\PuTTY>putty.exe user@fthictmysql01.ict.local -pw (copy from Admin wiki page); note that you may need to TYPE this password into the terminal window to elevate privileges. Check the tmp folder to see if the backup is stalling in there.

* **PM**: looked like it was just leaving the backup in tmp, check in a few hours to see if it is backing up to the backup share again

## Kate not responding via wireless

Following an outage or restart, kate may not be available on the student and/or guest wireless networks. If this happens do the following:

1. Log into the machine from the main network
2. Elevate to root (sudo su)
3. Check the interface statuses (/sbin/ifconfig)
4. Check if eth0 is up and if not start it (ifup eth0)

## MongoDB not running

1. Kill the process/stop the service
2. Run export LC\_ALL="en\_US.UTF-8"
3. Run mongod --dbpath /var/lib/mongodb/ &

## SQL User account not working

Try to log in as the user. If this fails, delete the user account and recreate it within MySQL.

To delete the user on kate, log into the server and run the following commands:

1. mysql –u <your username> -p (starts mysql from the command line)
2. USE <your username> ;
3. DROP USER <inaccessible user account>;
4. Exit quits the MySQL shell

## ASP Websites not running

This is caused by the server not treating the website as an application. The solution is to open IIS Manager on fthictweb03 and converting the folder to an Application (IIS\_IUSER/Webaccess1)

# Network Notes

## Open Ports

The following ports are open through the various firewalls across the networks at OP

3000 – except op-guest, 5938, 7331, 7343, 902, 903, 2048, 9443

## Server Build Notes

### FTHICTHOME01

Replacement Kate Server

Applications: Apache, PHP, MariaDB, Composer/Laravel, OpenSSH.

Build Notes

**Specs**

OS: Ubuntu 18.04.01

HDD: 120GB

RAM: 4GB

CPUs/Cores: 2

User: user

Password: Seb0curium

**Base install**

Use all disk with LVM

Configured networking via netplan as follows:

IPv4 address: 202.49.5.179

Broadcast: 202.49.5.0/24

Subnet mask: 255.255.255.0

Gateway: 202.49.5.5

DNS: 8.8.8.8, 10.75.1.2, 10.50.1.80, 10.50.1.82

Search: op.ac.nz, ict.op.ac.nz

Set timezone to Pacific/Auckland; enabled ntp time sync

Installed Apache2

Installed MariaDB (root password: Seb0curium; created admin user (admin/554OdinThor))

Ran secure\_mysql\_installation script (using listed root password)

Installed PHP (Config password: 554OdinThor)

Installed phpmyadmin – phpmyadmin user account (554OdinThor). Set up phpmyadmin db and tables.

Installed Composer and Laravel

Disabled CloudInit – service not required as this is not a cloud-based server

sudo systemctl show -p WantedBy network-online.target

sudo touch /etc/cloud/cloud-init.disabled

Installed .ict.op.ac.nz wildcard SSL certificate

Set up default users to have public\_html folders

Set up Apache to use https and user directories

Change SSL to port 46815

**Installing SSL cert**

Acquire SSL certificate

Extract from source server (typically Windows; comes as a .zip)

Upload to server

Extract zip file

Extract keys, certs, etc

sudo openssl rsa -in ict.op.ac.nz.pem -out ict.op.ac.nz.key

sudo openssl pkcs12 -in ict\_op\_ac\_nz.pfx -nokeys -out ict.op.ac.nz.crt

sudo openssl pkcs12 -in ict\_op\_ac\_nz.pfx -nocerts -out ict.op.ac.nz.pem -nodes

Copy to /usr/share/ssl-cert

**PHP**

sudo apt install php7.3 libapache2-mod-php7.3 php7.3-cli php7.3-mysql php7.3-gd php7.3-imagick php7.3-recode php7.3-tidy php7.3-xmlrpc

sudo apt install php-pear php7.3-curl php7.3-dev php7.3-gd php7.3-mbstring php7.3-zip php7.3-mysql php7.3-xml php7.3-fpm libapache2-mod-php7.3 php7.3-imagick php7.3-recode php7.3-tidy php7.3-xmlrpc php7.3-intl

### DB\_DOCKER

Ubuntu Docker server for DB3

DNS: db3docker.ict.op.ac.nz

IP: 10.25.1.150/16

Location: vRealize system

OS: Ubuntu 18.04LTS

User: user

Password: QCHd[E}2?-5Ge"zW

Sudo Access: Rob Broadley, Krissi Wood, Hymie Latif, itintern

**Base install**

Use all disk with LVM

Configured networking via netplan as follows:

IPv4 address: 10.50.1.150/16

Subnet mask: 255.255.0.0

Gateway: 10.50.1.1

DNS: 8.8.8.8, 10.50.1.80, 10.50.1.82, 8.8.4.4

Search: op.ac.nz, ict.op.ac.nz

**Applications**

Docker, Open SSH

### DB2\_SECURITY

Updated to Ubuntu 18.04 LTS from Ubuntu 16.04 LTS.

* Once update is complete, ensure that the PHP repos are added and update PHP (see: <https://tecadmin.net/install-php-7-on-ubuntu/>.
* If installing a new version of php, ensure that all requisite modules are installed [see [fthicthome01](#_FTHICTHOME01) for details]).
* Enable php7.x in Apache (sudo a2enmod php7.x) and then restart the service (sudo systemctl apache2 restart)

Sudo access: Rob Broadley, ITIntern, Krissi Wood, Hymie Latif

User: user

Password: WCHd[E}2?-5Ge"zQ

# AWS

## DNS in AWS

1. Sign into the AWS Console
2. Scroll down to **Networking and Content Delivery**,
3. Select Route 53,
4. Click on Hosted Zones,
5. Click on op-bit.nz,
6. Work out the server/ip address,
7. Click Create Record Set and save when done.

### Code Signing Certificate

Password: B1Tc3rt\_Project

### Prototyping Lab Notes

Maria/MariaDB account

User = protolab; Password = EnderX3D45