FOM® User Manual

Scheduling / Billing / Reporting / Compliance

"Manage Everything Online, Any Where, Any Time."

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1 Introduction

The Facility Online Manager, FOM®, is a professional and customizable online application that provides a complete solution to shared facility management. It incorporates many features that are not seen in other scheduling systems. These unique features make FOM® a highly secure, versatile, reliable, and easy-to-use system for both the users and the facility administrators. FOM Networks works with every customer institution to customize the system. Common customization projects include institution-wide single sign on, special formatting of billing and reporting, or modification of graphical user interface. Any and all aspects of FOM® are customizable, from the color scheme to integration with any software you are currently using.

FOM® may be used to track the usage and payments per instrument time, per sample, per consumable, or per staff time. FOM® is ideal for:

- Small research groups (no billing involved, share among group members only)
- Core facilities (centralized management)
- Recharge centers (configurable billing and invoicing)
- Research service labs (work order and collaboration tracking)
- Central office for research (unified reports)

If you need more information about the Facility Online Manager system, please contact:

General questions about FOM® system:
General FOM Networks, Inc. email
info@fomnetworks.com

FOM® Technical Issues and System Troubleshooting:
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shuyou@fomnetworks.com

2 User Roles

2.1   System Administrator

System Admin is the highest-level administrator in the system. System Admin login is usually generic and not tied to any personal username or email, so that the System Admin login can be easily transferred at any time. Usually there is only one System Admin for a FOM license holder. For Standard and lower license holders System Admin is the same as Facility Admin because these levels of FOM license allow only one Facility in the system. System Admin's task include (1) add new facilities into the system and assign Facility Administrators, and (2) configure system-wide settings.

2.2   Facility Administrator

Facility Admin oversees managing of individual facility. In a FOM system with Enterprise license, there may be many facilities hosted on one server. A Facility Admin cannot see other facility's billing and reporting information. Facility Admin's tasks include (1) configure facility-wide settings, (2) add of new instruments and assign Instrument Managers, (3) define fee structures of an instrument, (4) download billing and reporting files. There are other things that a Facility Admin can do, such as (5) set up facility holiday schedule, (6) set up user survey, (7) manage the list of departments, and (8) manage the list of supervisors. One facility may have multiple Facility Admins.

2.3   Instrument Manager

Instrument Manager is the person who manages instrument use, does service experiments for a user, performs user training and grants user's access to the instrument. Instrument Manager's tasks include (1) configure instrument access rules, (2) modify instrument fee structure, (3) reserve instrument for various purposes, (4) perform training for new users, (5) charge training fee or service/assistance fee, (6) verify user information, (7) grant user's access to the instrument at various levels, and (8) collaborate with users and charge service fee. Other things that an Instrument Manager can do include (9) adjust a user's usage records, and (10) email various groups of users using FOM email list. One instrument may have multiple Instrument Managers.

2.4   User

User is the person who may apply and use any of the resources hosted on the FOM system. After registration in FOM system, User has no access to any resource by default. The User's access must be granted by Instrument Manager. User's tasks in the FOM system include (1) register username in the system, (2) maintain a list of valid financial account numbers, (3) search and apply instrument access, (4) attend training and be granted access by Instrument Manager, (5) reserve instrument ahead of time, (6) logon instrument before usage, (7) logoff instrument after

usage, (8) modify or cancel a reservation, (9) request service and collaboration with Instrument Manager, and (10) download usage history report.

2.5   Supervisor and Supervisor Assistants

Supervisor Assistant is a great helper in maintaining the group members' information. Any regular user may be assigned as a supervisor assistant to any supervisor in the system. Once granted Supervisor Assistant role, the user will see Supervisor Home page after logging in FOM. Supervisor Assistant's tasks include (1) maintain user's financial account numbers, (2) download group member's usage reports, and (3) report misuse of financial account numbers to Facility Admin or Instrument Manager for corrections.

2.6   Business Manager and Auditor

Business Manager and Auditor can do billing and download facility statistic reports on behalf of Facility Admin without access to other Facility Admin level functions. Facility Admin can define which report the Business Manager can view and download.

3 Installation and Setup of System Admin

FOM Networks staff will help you set up the FOM server. Once the server is up and running, you will be given a URL to access your FOM system. If your FOM system is hosted by FOM Networks, the URL is https://www.instrumentschedule.com/.

When you first time visit the FOM system, you will be prompted to initialize the installation and set up the System Admin user account. The System Admin username, password, and email must be generic so it may be transferred to another person when needed. *Do not use your personal username, password, and email as the System Admin user!*

a) In a web browser, type in FOM system URL. You should see a page like this.
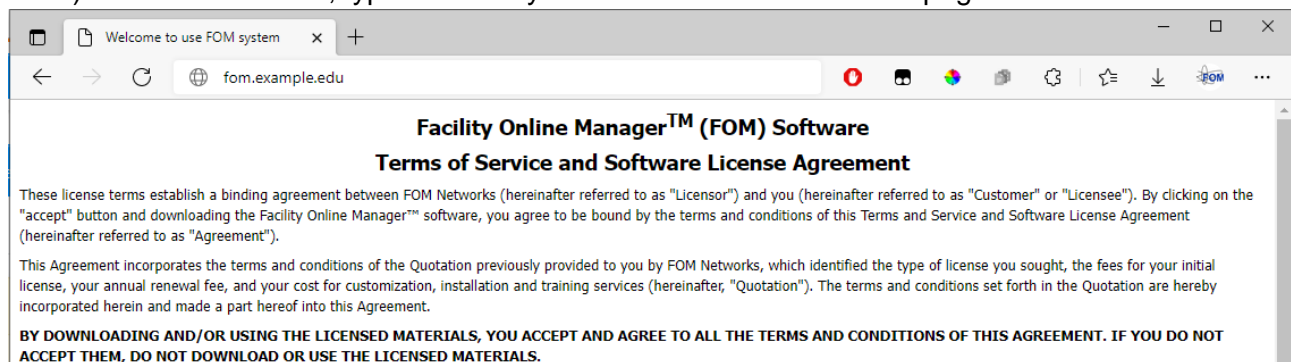
b) Read the End User License Agreement, scroll down, and then fill in the required information. Your FOM License ID and the installation passcode should have been given to you by email.

BY DOWNLOADING AND/OR USING THE LICENSED MATERIALS, YOU ACCEPT AND AGREE TO ALL THE TERMS AND CONDITIONS OF THIS AGREEMENT. IF YOU DO NOT ACCEPT THEM, DO NOT DOWNLOAD OR USE THE LICENSED MATERIALS.

☐ I HEREBY AGREE TO THE TERMS OF SERVICE AND SOFTWARE LICENSE AGREEMENT FOR FACILITY ONLINE MANAGER™ SOFTWARE AND LICENSED MATERIALS DESCRIBED HEREIN.

License Name: [   ] *This will be your abbreviated "brand name" and will show up on the front page your FOM system.*

License ID: [   ] *The License ID and and installation passcode below should have been sent to you by email.*

Passcode: [   ]

Server Time-zone: [(-5:00) EST5EDT   ▼]

System Admin Username: [SysAdmin] *This is the special system administrator username of your FOM system, which is non-editable.*

System Admin Email: [   ] *It is recommended to use a special service email address such as fom@example.edu instead of personal email, and you may set to forward all the emails to your personal address.*

System Admin Password: [   ]

Re-enter Password: [   ]

[OK]   [Cancel]

c) Submit the installation form, you will see this page.

d) Now you need to add departments and supervisors into the FOM system. Please refer to sections 7.18 and 7.19 for more details.
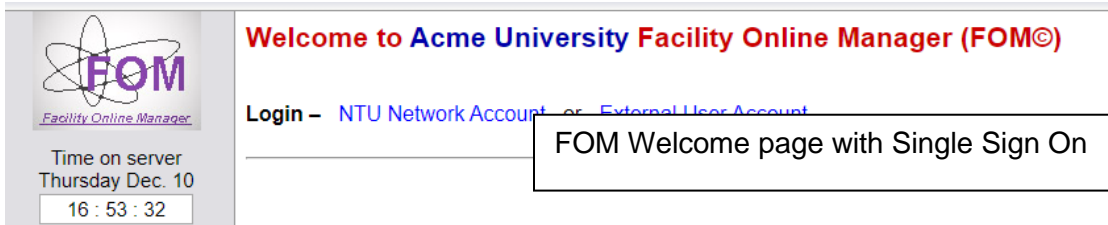
e) After adding at least one department and one supervisor, you can invite all your facility administrators and equipment managers (**including yourself!**) to register their own usernames in the system. Before setting up new instrument (or for enterprise licensees, new facility), you must have the corresponding facility administrators and instrument managers registered in the system.

4 User Registration

All users, no matter which user role a person holds in the FOM system, needs to register a login username to start. You will be given a URL to access your FOM system. If your FOM system is hosted by FOM Networks, the URL is https://www.instrumentschedule.com/. If you have your own server, please write down your FOM URL below before you distribute this manual to users.

FOM System URL: _____ https://fom.ph.ed.ac.uk _____

a) Visit FOM system welcome page. The login page may look like one of the following two screenshots, depends on whether your FOM has been configured with institutional single sign-on.
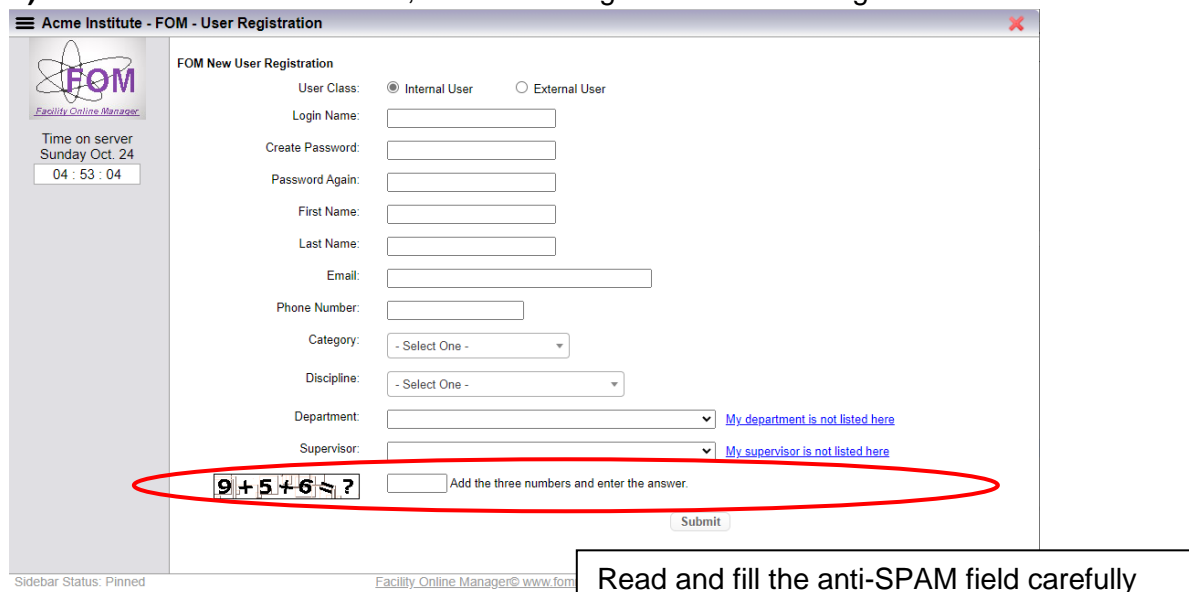
FOM Welcome page with Single Sign On

FOM Welcome page without Single Sign On

b) Click "I am a new user", then fill the registration form to register new username.

Read and fill the anti-SPAM field carefully

5 Add Financial Account Number

a) After registration you will see this warning window. You must add one account number to continue, unless you will become a manager (Facility Admin, Instrument Manager, or Supervisor Assistant).

> All non-manager users must have at least one valid financial Account Number before using FOM. Please click here to add a new Account Number.
>
> If you are a manager or supervisor/assistant, please close the window and inform your facility administrator to upgrade your user role.

b) This account number is typically your institution's internal financial account and may be validated with the rules set by the System Administrator. If you have questions regarding what to enter as the account number, please contact the facility manager.

6 System Administrator Tasks

6.1 Maintain safety certificate list

Safety training and certificate tracking are critical and common to every laboratory, especially the shared facilities with students coming from various departments and with different background.

Safety certificates can be maintained by System Admin or Facility Admin. Certification may be provided by the institution, a third-party system, or a Safety Training resource defined in FOM (see section 7.14 and 7.15 for more information).

6.2 Add new facility and assign facility administrators

Login with System Admin username and click on "Facility Config" link on the left-side navigation menu, and then click on the "Add a new facility" button.

a) **Facility Name.** This field is limited to 50 characters.

b) **Facility Description.** This field is limited to 1000 characters.

c) **Invoice Template.** Invoice template file is used to generate invoices for external user. The invoice template file usually needs to be customized by FOM Networks, Inc.

d) **User Agreement URL.** This is a facility-wide user agreement that shows up when a user applies to use the very first equipment of the facility. For the system-wide user agreement that shows up when a user registers a new username in the entire FOM system, please see the System Config part described in the next section.

e) **User Verification.** User verification is set in number of years. When a user's access needs to be re-verified, an email is automatically sent to the user.

f) **Facility Administrators.** Select one or more existing users as the Facility Administrators.

g) **Open or Private Facility.** A facility may be set to be open or private. The resources in a private facility are not visible to FOM users unless the users are granted access.

h) **Send email when user equipment level changes.** This facility-specific setting is for the convenience of managers when granting user's access on each instrument.

i) **Facility Status.** A facility may be marked as Inactive temporarily for troubleshooting purposes. Marking a facility as inactive will not affect the status of the resources of the facility but just make them invisible until the facility is marked back to active.

6.3   System-wide settings

Login as System Admin, in the same page of Facility Config, scroll to lower part of the screen, you can see the part of System Configuration. This part is not visible to Facility Administrators.

a) **Institution Name.** Limited to 100 characters.
b) **Verify email upon new user registration.** It is highly recommended to turn this on to ensure every user enters valid email address when they register username in the system.
c) **System-wide User Policy.** Unlike the facility-level user agreement URL, this one is for every user who is registering new usernames in the FOM system. The facility-level user agreement will show up only when the user applies to the very first equipment of that facility.
d) **Deactivate user with X days of inactivity.** A username may be automatically deactivated if the user has not used any equipment in FOM for X days.
e) **System Catch-All Email**. This field sets the email address that will be used to send/receive all automatic emails such as requests to add new departments or new supervisors.
f) **Show handy links.** Handy links (showed at the right side of the screen) may be edited for user's convenience, or completely hidden with this setting. Free License holders cannot disable the handy links.
g) **Note to all users.** This is the text that is shown up in the FOM welcome page below the User Logon form. You may use standard HTML tags such as <p>, <br>, <b>, <u>, etc.

7 Facility Admin Tasks

7.1 Admin Home page

Admin Home page provides various information and links that a Facility Admin or Instrument Manager use at daily basis.

7.2 Facility configurations

Login as Facility Admin and click Facility Config on the left side menu.

See Section 6.2 for more information.

7.3 Special resources - Consumables

Login as Facility Admin, go to Resources Admin page. At the top of the page, there are three drop down lists where you can maintain Regular Resources, Special Resources, and Add New Resource.

In the Special Resources drop-down, select Special Resources – Consumables to maintain the consumables of the facility. Consumables can be sold either standalone or as a part of instrument usage.

a) **Consumable Name.** Limited to 50 characters.
b) **Unit.** Enter applicable unit of the consumable.
c) **Price.** This is the sales price that will be charged to users when user purchases from the facility or checks out when logging off an instrument.
d) **Amount in stock.** This number is automatically deducted with user purchases. When this number is running below zero, Instrument Managers will see the consumable name at the top of the Admin Home to remind the managers for refill.
e) **QR Code.** Each consumable has a QR code and can be printed for users to check out consumables conveniently with their smart phones.
f) **Notes.** This note is visible only to the managers.
g) **Vendor Information.** These fields are used to keep the vendor information for easier re-ordering of the consumables.
h) Consumables may be associated with a regular instrument so that users may purchase when logging off on the calendar. See Instrument configuration part in section 7.8.

7.4   Special Resources - Accessories

Accessories may be defined when an instrument has multiple operation modes, attachments, or specimen holders that are rechargeable when applied.

a) **Accessory Name.** Limited to 50 characters.
b) **Accessory Charge Price.** You may charge an accessory per use or per hour. This is additional to the regular instrument usage charge.
c) **QR Code and More Info.** Same as consumables, managers may print QR code, notes, and Vendor information of any accessory.

7.5   Special Resource - Lending Items

Lending Items are small devices or tools that a user may borrow from the lab and keep for a relatively long time. Managers may define to charge the user per hour, per day, or per month.

7.6   Special Resource - Chemicals

Chemicals tracking module allows managers to keep track of chemical inventory and for users to easily find the location and stock amount of any chemicals, their MSDS sheets, and other

information quickly. Managers may maintain the vendor information for each chemical item for easier reordering.

7.7   Special Resource - Other Assets

Assets module allows tracking of all assets in the lab, their vendor information, tech support information.

7.8   Special Resource - Service

Collaborate and Service templates may be added in the Resources Admin page by selecting Special Resource – Service. Usually you create the service request forms with Word or Excel format, and FOM Networks helps to convert the form to the required HTML format. An example of the service request form can be found in section 8.10.

After adding new Service, you need to define a set of Service Items and the default charge rates. Service Items may or may not be associated with an instrument.

TEM Service   Add New Service

Service Name:	TEM Service
Template File Name:	TEM_Service_template.html
Project Name prefix:	TEM_
Default Service Contacts:	× Admin, Facility (facadmin@acme.edu)
Is Active:	☑

Save

Service Items

Item Name	Related Resource	Name of Unit	Int. Rate	Ext. Rate	Default Qty		
	Service ▾					+	
Image Processing and Analysis	Service ▾	Hrs	120	240	4	✓	✗
TEM Beam Time	TEM J2100F ▾	Hrs	100	200	2	✓	✗
Sample Preparation	Service ▾	Hrs	120	240	8	✓	✗

7.9   Add new resource and assign resource managers

Login as Facility Admin, go to Resources Admi. Click on "Add New Resource" drop-down.

There are three types of resources supported in FOM. Equipment is usually time-exclusive resource that a user may book time using a calendar. Lab Space or Cleanroom is a resource that may be booked and used by multiple users simultaneously. Safety Training or Seminar is a type of resource that users need to access only once. Safety Training may be associated with a Safety Certificate defined in Section 6.1.

a) **Resource Type**. In FOM, there are many different types of resources, such as Services that lab staff provides to users, consumables that users may check out when logging off instrument (or buy separately), accessories (or operation modes) that may be attached to an instrument, general instrument with scheduler, cleanroom or facility that is shared by multiple users, door lock controls, etc. Some special type of resources may not be available with your FOM installation. Please contact FOM Networks if you need FOM to host special type of resources.

b) **Resource Name.** This is easy to understand- the name of the resource. FOM accepts Letter and Numbers only in the name and be brief. FOM supports up to 100 characters in this field.

c) **Financial Account Number.** This is the revenue account of the resource. In FOM, each user may have multiple account numbers, from which the user can choose to pay for the usage fee. This Financial Account Number is where the money will go to.

d) **Resource Managers.** Select one or more users as the managers of this resource. All the managers must have usernames and emails registered as normal users before they can be assigned as resource managers.

e) **Description.** Users will see what you type here. Please explain what the resource can do in plain language so new users can easily understand. Up to 255 characters.

f) **Color Code**. This field defines a HEX code for the background color in the page header area of this instrument calendar. You may define your own color-coding for your users to easily recognize which instrument calendar they are looking at.

7.10 Instrument parameters configuration

There are many parameters that an instrument manager can set for each individual resource. If you require any feature but cannot find it in FOM, please contact FOM Networks, Inc. and we will be able to add the feature for you.

7.10.1　Calendar Settings

Calendar Settings

Schedule Increment: 30 minutes ⌄
Day Time Start: 09:00 ⌄
Day Time End: 17:00 ⌄
Consider Weekends as Nights: ☑
Default Available Days: Monday morning | ☑ ☑ | ☑ ☑ | ☑ ☑ | ☑ ☑ | ☑ ☑ | ☑ ☑ | ☑ ☑ | Sunday afternoon

[Save]

a) **Schedule Increment**. This field defines the minimum time slot in the resource calendar. Depends on the nature of the instrument, some you may define 2-hour increment, some you may define 15-minute increment. Please note that many other settings in this page are set with this increment as the counting unit. This number must be integer divisor of 24x60 minutes.

b) **Day Time Start and Day Time End**. These two fields define the start and the end of the official working hours. In FOM, a user, especially newly trained users, may be granted Daytime access only to the resource. Then this user can only book time between Day Time Start and Day time End, Monday to Friday. If you uncheck the box "Consider weekends as nights", Saturday and Sunday is considered as normal weekdays.

c) **Default Available Days.** This line defines when the resource is available for users to book time. For example, if you have regular maintenance every Friday afternoon, you uncheck the corresponding checkbox.

7.10.2　Access Control

Access Control

EasyLogon Reader ID: [   ] Leave blank if no EasyLogon ussed
Relay Communication Method: No Access Control ⌄

[Save]

    No Access Control
    FLOB-01
    NP Series
    FOMLock software client

New User Rules

a) **Easy Logon Reader ID.** The EasyLogon reader is a hardware device providing the capability for users to swipe their institutional ID card to logon/logoff FOM resources, so that users need not use a computer or mobile device to logon/logoff. EasyLogon can also be used with Door Locks to control the entry/exit of a lab space, and it supports all kinds of institutional ID card system, including cards with magnetic stripes, barcodes, RFID chips, and QR codes.

b) **Relay Communication Methods**. FOM supports many different types of access control relays, either hardware-based or software-based. If you have a hardware box but do not see the corresponding method listed, please contact FOM Networks and we will be able to add it to your FOM system. Once you selected a proper method, more options will show up corresponding to that type of access control modules.

7.10.3　　New User Rules

New User Rules

User agreement file URL:	[　　　　　　　　　　　　] This one is equipment specific. For facility-wide agreement, set in Facility Config page.
Number of trainings needed:	[1] Input 0 if no training is needed, and users will be granted any time access as soon as they apply to use.
Require Access To:	[Select equipment] Before applying this equipment, the user must already has access to these resources.
Suspend user access:	if continuously no use for [0] days.Input 0 for no limit.
Message to new users:	Please tell the equipment manager your preferred time(s) for training:

[Save]

a) **User Agreement URL**. This field allows you have a user agreement document to be displayed to every new user as soon as the user applies to get training. User must then click "I agree" to continue the application process.

b) **Number of Trainings Needed**. For some complicated instrument, you may want to set multiple trainings before a user can be granted access. When lab staff send out email notice in the Email List page, the staff can select a specific group of users to send email to. The number of trainings that a user has attended is shown at the top of the Admin Home page, following the name of the trainee.

c) **Require Access To**. An advanced and complicated instrument may require that the user must have access to another basic or easier instrument before this user can be trained on this instrument. The Require Access To can be chained up if there is a set of requirements needed for a user to apply access to this instrument.

d) **Suspend user access.** This setting allow FOM to automatically suspend a user's access to this resource if the user does not use the resource for the set days.

e) **Message to new users**. The message you enter here will be presented to every user who applies to get training on this instrument. For example, you may want to tell the new users if you have regular training sessions at the beginning of each month.

7.10.4　　Reservation Limits

Reservation Limits

No Sooner Than:	[0] minutes in advance that a user may book time.This is for the equipment that requires preparation and cannot be used immediately with Express Logon.
No Later Than:	[0] days in advance that a user may book time. This is for the busy resources that you don't want users to book many days in advance. Input 0 for no limit.
Maximum Time per Session:	[0] in unit of increment.Input 0 or large number for no limit. Also apply to ☐ Express Logon, ☐ Nights and weekends.
Maximum Time per Day:	[0] in unit of increment.Input 0 or large number for no limit.

[Save]

a) **No Sooner Than.** This field defines the earliest time a user may reserve. For example, if you have an instrument that users cannot reserve and use it right away (Express Logon) but requires some time to prepare. If you define no sooner than 1440 minutes, users will not be able to reserve any time within 24 hours.

b) **No Later Than.** For busy instruments you may not want your users to reserve time 6 months later and forget about the reservation. If you define no later than 21 days, the user will not be

able to reserve any time after 3 weeks. If you set this to non-zero, more settings will show up such as the maximum time within the set days and options when you want to open new reservation time to users.

c) **Max Reservation Time within days set above.** This field defines how many increments a user may reserve within the no-later-than days. For example, you may define a user can reserve up to 48 increments within 21 days.

d) **Open New Reservation Options.** This setting is related to the "No Later Than" setting. For example, if you define no later than 7 days and choose to open hour by hour, a user may reserve until the current hour of the 7th day. If you choose open day by day, a user may only reserve until midnight of the 7th day.

e) **Maximum Time Per Session**. This field defines how many increments a user may reserve in a single session. For busy instrument you may not want your user to block several hours in a single session.

f) **Maximum Time Per Day**. This is similar to the previous setting. This setting limits how many increments a user may reserve within one day, which may be multiple sessions.

7.10.5   Time-outs

Time-outs

Early Cancellation: `1440` minutes before reserved start time.Any cancellation after this time is subject to late cancellation fee. ☐ Email all users when late cancellation happens.

No Cancellation Within: `0` minutes before reserved start time.

Auto Logon: ☐ When turned on, reserved sessions will be automatically logged on at reserved start time.

Auto Logoff: `9999` minutes after reserved end time.Input large number for no auto-logoff.

No-Show Timeout: `0` minutes after reserved start time.Input 0 or large number for no detection of no-show.

Forgot Logoff Timeout: `480` minutes after reserved end time.Input large number for no detection of forgot-logoff. ☑ Email user when forgot-logoff happens   **Save**

a) **Early Cancellation**. This field set the number of minutes so that a user can cancel their reservations without late cancellation fee.

b) **No Cancellation Within**. This field defines a time of mintues so that a user cannot cancel or modify a reservation before the reserved start time.

c) **Auto Logon**. This is for the convenience of users. If you set to 1, FOM will automatically logon the instrument at the reserve start time, so the user who reserved the time does not need to logon before using the instrument. However, for some instrument you may not want to turn this on to avoid instrument being logged on even the user doesn't show up.

d) **Auto Logoff**. If this is set to a non-zero minutes, FOM will logoff for the user after the set minutes of the served end time. Please be cautious when turning this feature on. It might be dangerous to the instrument if the access control relay box is turned off automatically and the user is using the instrument.

e) **No-Show Timeout**. This field defines a timeout minutes so that a user's reservation is automatically removed from the instrument calendar if the user does not show up within the set minutes from the reserved start time. This setting enables other users to Express Logon in case a user does not show up at the reserved session.

f) **Forget Logoff Timeout**. This field is usually set with a fairly large number, for example 480 (8 hours). The main difference between Forget Logoff and Auto Logoff is the calculation of usage fee. Auto Logoff is treated the same as user manually logoff. Forget logoff may have different fee calculation, based on the Forget logoff charge rate listed at the Fee Structure section. Forget logoff fee calculation is the same as auto logoff when the option of "charge full elapsed time" is selected in forget logoff charge. There are minor differences such as email and comments in Usage Records. Forget logoff usually triggers an email to the corresponding user, but auto logoff does not.

7.10.6 Miscellaneous

Miscellaneous

Safety Requirements: Click here to edit safety requirements

Keep Maintenance Records: ☐ *When turned on, managers can view and edit maintenance records of this tool.*

Email before session starts: [0] minutes before reserved start time. *This email conatins a meeting invitation for users to add to their personal calendar.*

Email after session ends: [0] minutes after reserved end time. *This is to remind user to logoff in case the user forgot to. No email is sent if user already logged off.*

Charge Policy: [Earlier of reserved or actual start - later of reserved or actual end ▾]

Print QR Code: Click here to print QR *Use QR code for users to scan and logon instrument or enter room using a smart phone.*

Export User Permissions: click here to download

Import User Permissions: ☐ *To avoid messing up user permissions, it is recommended to download first, then modify and upload.*

[Save]

a) **Safety Requirements.** This link allows managers to define a set of Safety Certificates that users are required to fulfill before using this resource. The available Safety Certificates are defined by either System Admin or Facility Admin in Section 6.1.

b) **Keep Maintenance Records**. If you set this on, all the maintenance activities such as instrument under repair, maintenance, down time, etc are tracked and be visible to the managers in the left-side navigation menu - Maintenance Records page.

c) **Email before session starts**. This field sets X minutes before the reserved time to send reminder email to the user.

d) **Email after session ends**. This fields sets X minutes to send email reminder to the user if the user still has not logoff the instrument after X minutes of the reserved end time.

e) **Charge Policy.** By default, FOM supports three charge policies, charge per use, per actual time, or a combination of reserved or actual used time. The third policy is most widely used, which defines the usage fee being calculated by (the later of reserved or actual end time) – (the earlier of the reserved/actual start time). If you need more charge policies, please contact FOM Networks for a customization.

f) **Print QR Code.** This link allows managers to print a QR code that is specific to this resource, so that any authorized user may use their smart phone to scan the QR code and quickly access the resource calendar, check the current users in a lab space, and logon/logoff.

g) **Export User Permissions.** This link allows manager to export all the users of this resource and their permissions, such as not-enrolled, view-only, to-be-trained, daytime, anytime, and resource manager.

h) **Import User Permissions.** This setting allows manager to upload and import user permissions following the same format of Excel downloaded with item (g) above.

7.10.7 Fee Structures

Fee Structures

Screen Name	Min Charge	Day Rate	Night Rate	Training Rate	Service Rate	Cancellation Charge	Forgot Logoff Charge		
						⦿ Fixed ○ % Reserved	⦿ Fixed ○ % Elapsed	+	
Admin_Use	0	50	40	0	0	⦿ Fixed ○ % Reserved 0	⦿ Fixed ○ % Elapsed 0	✓	👁
Internal	0	50	40	0	0	⦿ Fixed ○ % Reserved 0	⦿ Fixed ○ % Elapsed 0	✓	👁
External For-profit	0	0	0	0	0	⦿ Fixed ○ % Reserved 0	⦿ Fixed ○ % Elapsed 0	✓	👁
External Non-profit	0	0	0	0	0	⦿ Fixed ○ % Reserved 0	⦿ Fixed ○ % Elapsed 0	✓	👁

FOM supports unlimited number of fee structures. Internal, External For-Profit, External Non-Profit, and Admin_Use are four default fee structures. You may add more discount structures for each individual resource as needed.

Fee Structure settings may also be updated by Instrument Manager of the resource.

a) **Screen Name.** This field defines the name of the fee structure so that later you will choose the applicable fee structure by the name.

b) **Minimum Charge.** This field defines the minimum charge for a session. If the calculated usage fee of a session is less than this amount, the user will be charged with this minimum charge value.

c) **Day Rate.** The daytime is defined in upper part of the page, Calendar Settings section.

d) **Night Rate.** In many facilities nighttime usage is encouraged with discounted rate. Nighttime is defined in the Calendar Settings section above.

e) **Training Rate.** This training rate is used for the calculation of training fees when a manager logs off "For training" session, select trainees, and provide the service time.

f) **Service Rate.** Similar to training rate, this service rate is used for the calculation of service fees when a manager logs off "For paid service research" session and select user for whom the service is done for, then provide the service time.

g) **Cancelation Charge.** Cancellation charge may be applied if a session is cancelled within the Early Cancellation timeout defined in the Time-outs section above.

h) **Forgot Logoff Charge.** Forgot logoff charge may be applied as a penalty in addition to the reserved time charge, if the charge policy is defined as the combined reserved time and the actual usage time, as defined in Time-outs section above.

7.10.8　Link accessories and consumables to an instrument

Accessories and consumables may be linked to an instrument, so that users will see these options when they reserve time or logoff a session on the instrument. The prices of the accessories and consumables are defined in Special Resources drop down in the same page.

Accessories, Operation Modes, or Instrument Setup

× Cryo stage attachment		Save

To add more accessories to this equipment, select Accessories in the Special Resources dropdown list above and add accessories there first.

Consumables, Charge Per Sample, or Coating Thickness

Consumable Name	Default Amount		
Select consumable ▼		**+**	
LN2 ▼	2	✓	✕
Au Deposition Thickness ▼	0	✓	✕

7.10.9　Logoff reminder items

This part defines one or more reminder items to remind the user when they are logging off the instrument, such as to close gas valves, lock the doors, etc.

Logoff Reminder Items

	+	
If you are the last user of the day, please remember to lock the door.	✓	✕
Reset to normal TEM MAG mode after use.	✓	✕
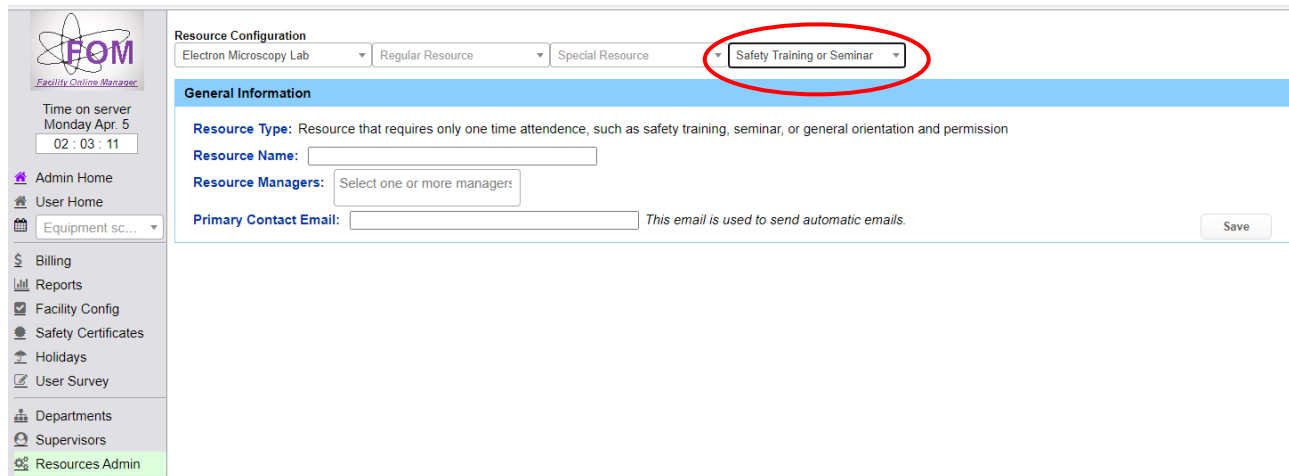
7.10.10　Documents and operation manuals of an instrument

This part allows a manager to upload or link related documents such as operation manuals for users to download in the Documents (left navigation menu) page.

Documents, Operation Manuals, or References

Document Name	Document URL		
	📁	**+**	
Operation Manual	http://localhost:8080/fomv2/downloadFile?fn=FOM_User_Manual.pdf 📁	✓	✕

7.11 Add new Safety Training/Seminar
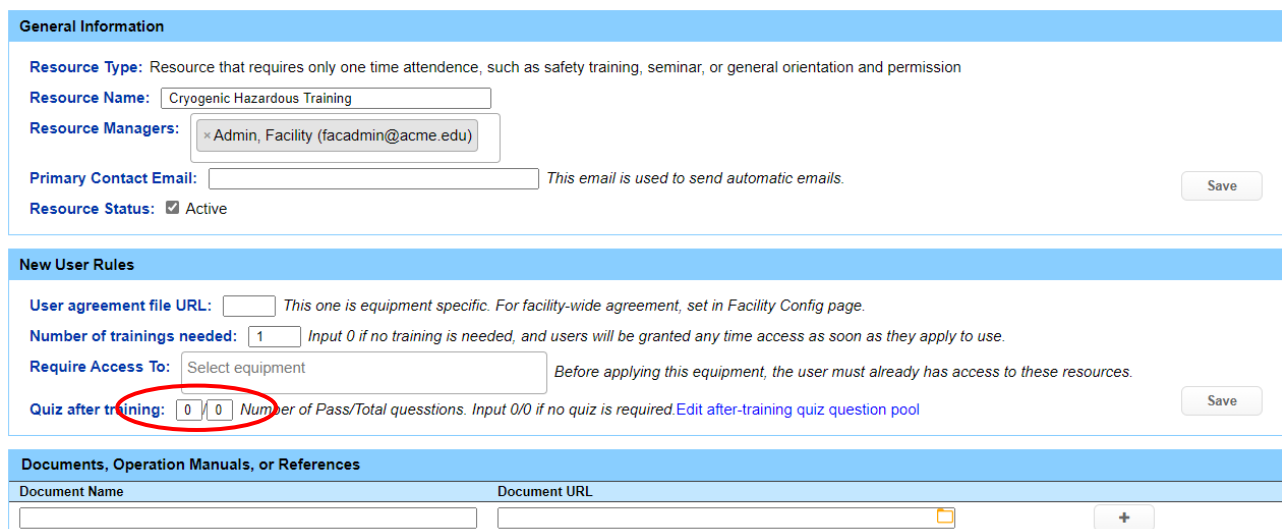
Addition of safety training or seminar is very similar to the addition of new equipment. Login as Facility Admin, go to Resources Admin page, click Add New Resource drop-down, and select "Safety Training or Seminar".

For this type of resource, users may only apply to take once. After granted access, the user will not be able to see calendar, book time or "use" this resource.

For this type of resources, New User Rules and Documents are the only two sections available besides the General Information section.

Each safety training resource may be assigned with a post-training quiz, and you can define how many correct answers are required to pass the exam. If the safety training has been linked to a safety certificate, the certificate will be automatically granted once the exam is passed.

7.12 Add new Lab Space or Cleanroom

Lab Space is a special feature of FOM to allow allocation of resources inside a lab space and the limitation of maximum concurrent users working simultaneously in a room. This is especially useful during the current pandemic of COVID-19.

The "Allow overbooking" setting allows a set number of users who can still book time beyond the maximum concurrent users setting. When overbooking is allowed, some users may not be able to logon when the maximum concurrent users is exceeded.

A Lab Space allows selection of resources in the space. Reservations on any of these resources are considered reservations of the lab space as well.

7.13 Billing and reporting

Login as Facility Admin, then click "Billing" link on the left side. Billing is separate for Internal users and External users. Internal users' billing report is usually an Excel spread sheet listing all usage of the month, which may be customized to meet your institution requirement. External users' billing is usually an invoice for each individual user of the period of service. External invoice usually needs an invoice template customized by FOM Networks (see section 6.2 for Facility Configurations).

7.14 Safety training and certificates tracking

Safety training and certificate tracking are critical and common to every laboratory, especially the shared facilities with students coming from various departments and with different background.

Safety certificates may be maintained by System Admin or Facility Admin. See section 6.1.

a) **Cert Code.** Cert Code is a short identifier for the certificate. Limited to 50 characters.
b) **Description.** This field defines more detailed description of the certificate. The note will be shown to users so that the users understands what the safety certificate covers. Limited to 255 characters.
c) **Certificates URL.** This field provides the URL where the users may follow the link to acquire the certificates. You may click the link icon if you are to link the certificate with a FOM-hosted safety training. See section 7.12 for details.
d) **Expiration Days.** The Expiration Days defines how many days a certificate holds valid once it is granted to a user. After these days the certificate will automatically expire and the user is required to re-take the safety training.
e) **Reminder Days.** The Reminder Days is the number of days that FOM will automatically send out email reminders at the days before the certificate expires.

7.15 Safety requirements of an instrument

Once Certificate List is defined, Facility Admin and Instrument Managers may select all the required safety certificates for each individual instrument. This can be done by clicking the link in the Resources Admin, Miscellaneous section, "Click here to edit safety requirements".

Once safety requirements are defined for an equipment, all the users on this equipment are subjected to the safety training certificates. These certificates are automatically tracked by FOM system. User cannot use related instrument if a safety certificate expires

Users' certificate status is maintained in Users Admin page, see section 8.7 for details.
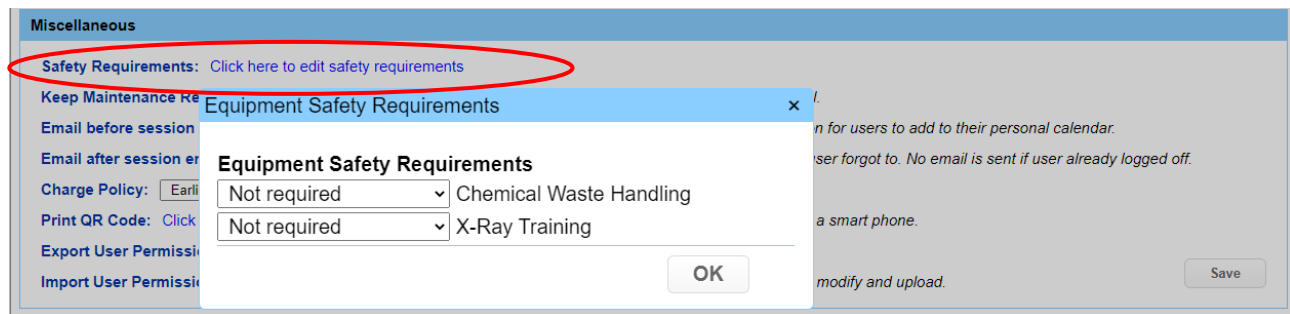
7.16 Define holidays

Login as Facility Admin, then click "Holidays" link of the left side. Holiday settings affect users with daytime only access. Any time users and managers are not limited by holidays. By default, FOM does not recognize any holiday. Holidays may be set differently for each individual facility.

7.17 Set up user survey

Login as Facility Admin, then click "User Survey" link on the left side. The survey form is created elsewhere. User survey can be set in FOM to target at specific user groups on selected instruments, or at facility level. With FOM user survey, only the selected users are offered with the survey link. Other users will not be bothered.

7.18 Maintain departments

Login as Facility Admin, then click "Departments" link on the left side. The department list may be maintained by either Facility Administrators or Instrument Managers. Normal users cannot modify this information. Each user needs to select from the pre-defined list of departments when the registration form is filled. If a department is not listed at registration, the user can email one of the managers to add the department.
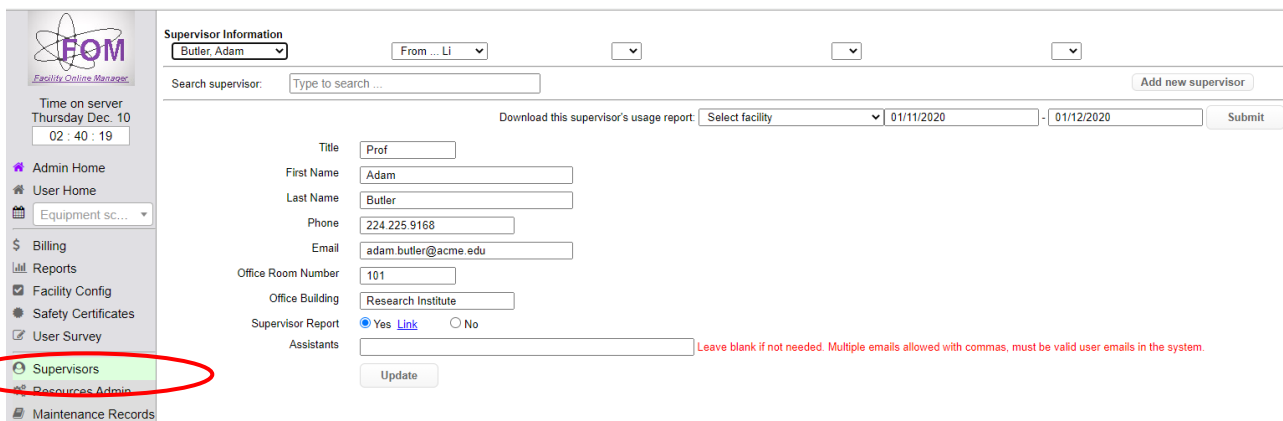
7.19 Maintain supervisors

Login as Facility Admin, then click "Supervisor" link on the left side. The supervisor list may be maintained by either Facility Administrators or Instrument Managers. Normal users cannot modify this information. Each user needs to select from the pre-defined list of supervisors when the registration form is filled. If a supervisor is not listed at registration, the user can email one of the managers to add the supervisor.

One or more Supervisor Assistants may be added to a supervisor. For more information about the Supervisor Assistant features see section 10.

7.20 Email List

Facility Admin or Instrument Manager may use FOM to send mass emails to difference group of users.
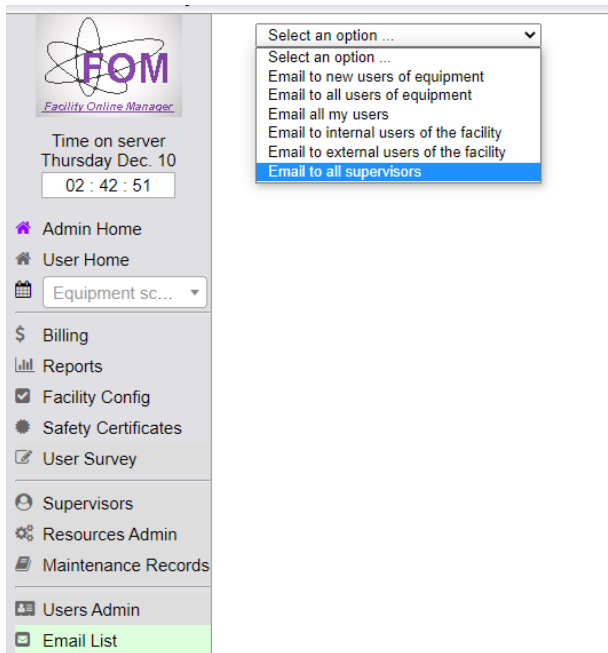
8 Instrument Manager Tasks

8.1   Configure instrument rules

Login as Instrument Manager and click on "Resources Admin" link on the left side, then select the instrument to be configured.

Note 1: Instrument Manager cannot add new instrument. If a new instrument needs to be added, the Facility Administrator login is required.

Note 2: Most of the parameters may be left as default unless you need that feature.

Note 3: Difference between Auto Logoff and Forget Logoff: The main difference is the calculation of usage fee. Auto Logoff is treated the same as user manually logoff. Forget logoff may have different fee calculation, based on the Forget logoff charge rate listed at the Fee Structure part of the Resources Admin page. Forget logoff fee calculation is the same as auto logoff when the option of "charge full elapsed time" is selected in forget logoff charge. There are minor differences such as email and comments in Usage Records. Forget logoff usually triggers an email to the corresponding user, but auto logoff does not.

Note 4: If a rule is required but not seen in this page, you may contact FOM Networks, Inc. for a customization to add the feature.

See section 7.10 for details.

8.2   Modify fee structure

In the same page of Resources Admin, scroll down to find the "Default Fee Structure" part.

Note 1: Internal, External, and Admin_Use are three default fee structures. You may add more discount structures for each individual resource as needed.

Note 2: Fee Structure settings may also be updated by Facility Administrator of the facility.

Note 3: In addition to the daytime and nighttime rates, manager should also define the Training Rates and the Service Rates, which will be used for the calculation of training and service fees.

See section 7.10.7 for details.

8.3   Other resource configuration items

At the lower part of the Resources Admin page after selecting a resource, manager may configure more items related to the resource.

See Section 7.10 for more information.

8.4   Change instrument status

Instrument Manager may change the instrument status at any time. In the Admin Home page, click the Equip Status to change. See section 7.1 for details.

Or by clicking the current time slot in the instrument calendar page.
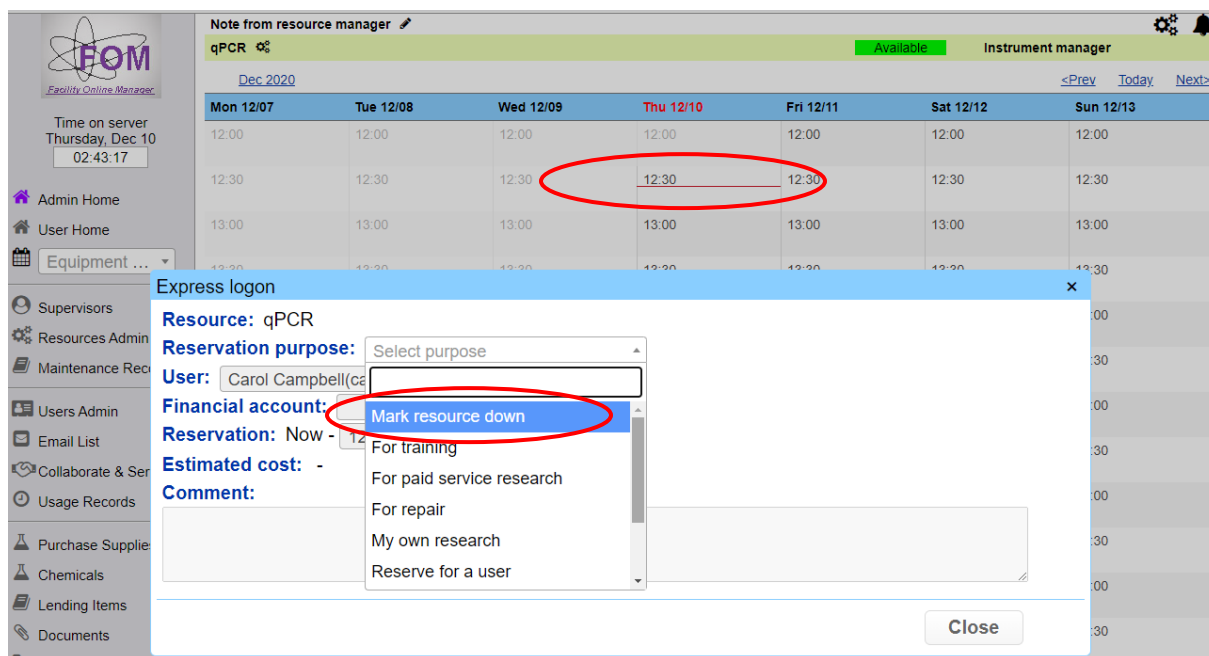
8.5 Note to users

A manager may add a quick note to the instrument users either in the Admin Home
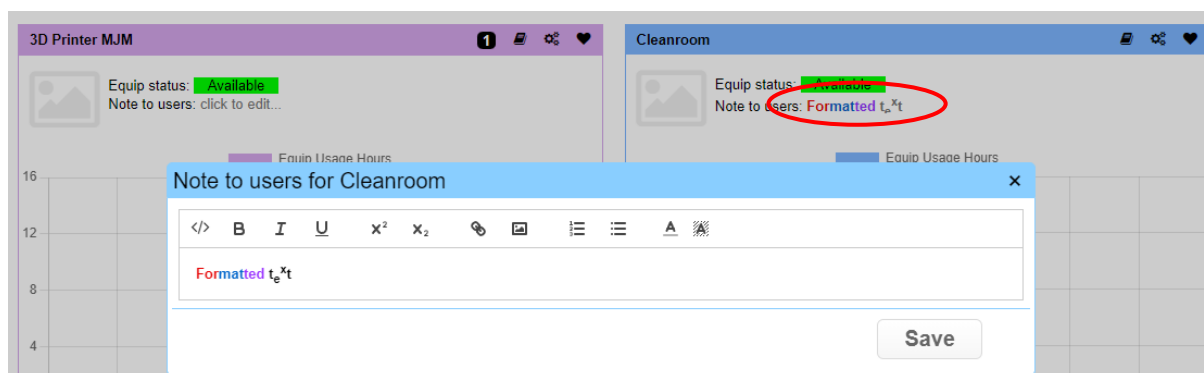
or by clicking the Pencil Icon at the top of the Calendar page.

8.6　Book instrument for different purposes
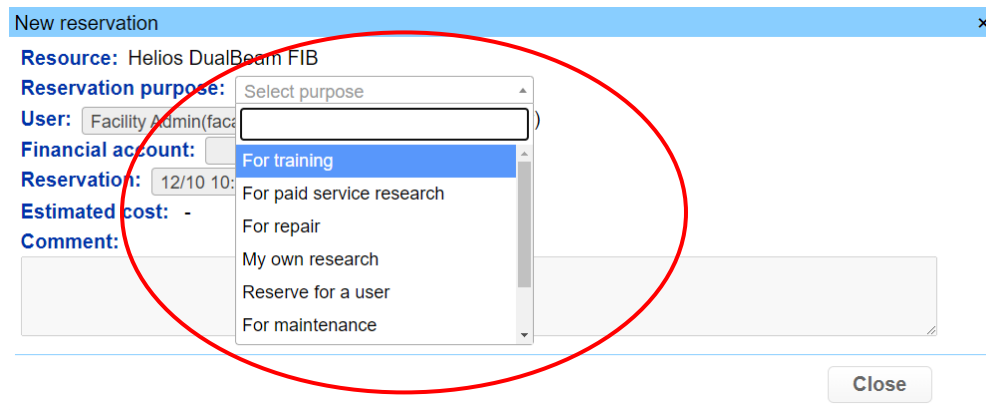
In Admin Home, User Home, or the drop-down menu on left side. Click on the instrument name to see the calendar of this instrument. Click on an available time slot to reserve the time.

As an Instrument Manager, you may reserve the instrument for different purposes, including for repair, for maintenance, for training, for paid service research, for your own research, or reserve for another user.

Note 1: If you reserve for another user, that user must have already granted access to the instrument.

Note 2: Some purpose selections will trigger automatic comment text, so that every user can see the purpose on the calendar.
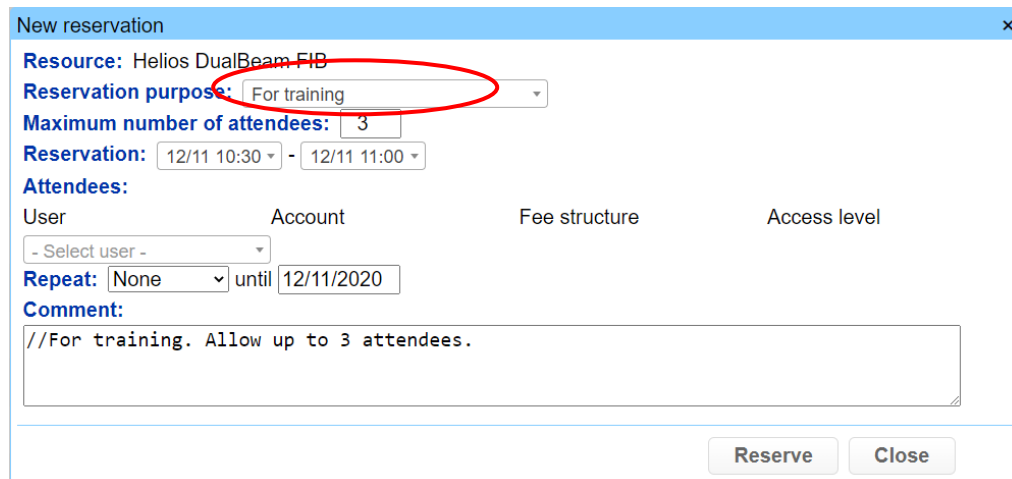
Note 3: Reservations may be synchronized with personal calendar (such as google calendar or outlook calendar). Such preferences are set in "My Profile" page.

8.6.1 User training

When booking an instrument and selected "For training" purpose, then a pop-up window shows the attendee list. Manager may set the maximum number of attendees for the training session and select one or more attendees.

After a training session is booked by the manager, any user may sign up to attend the training if the maximum number of attendees allows.

Future reservation

Resource: Helios DualBeam FIB
User: Facility Admin(facadmin)
User email: facadmin@acme.edu
Department/Company: IT Services
Reservation: 12/10 10:00 - 12/10 10:30
Comment:
//For training. Allow up to 3 attendees. //Bella Baker
Sign up to attend this training session

With one or more users signed up the training, the manager can click on the booked time and click to send email to all attendees.

Future reservation   ✕

Resource: Helios DualBeam FIB
Reservation purpose: For training ▾
Maximum number of attendees: 3
Reservation: 12/10 9:00 ▾ - 12/10 10:30 ▾
Attendees: Email all attendees

User	Account	Fee structure	Access level
Bella Baker ▾	6-218-5246-Bees-Ants - ▾	Internal ▾	Not enrolled ▾
Carol Campbell ▾	650-4735000-60012001 ▾	Internal ▾	Day time user ▾
- Select user - ▾			

Comment:
//For training. Allow up to 3 attendees.

Cancel without charge   Cancel with charge   Close

Record ID 43 at 2020-12-10 08:51:50

When logging off a training session, the manager may enter the Service Time and the training fee will be calculated based on the training rates defined in the Resources Admin page.

8.6.2 Book time for paid service research

When reserving a time on instrument, select "For paid service research" as the purpose. Similar to the "For training" sessions, the manager may select one or more users for whom the service is done for, and FOM will automatically charge the user for a service fee.

Note: Service fee may also be tracked in the Collaborate & Service module of FOM. The Collaborate & Service module provides more flexible tracking of all collaboration activities including customization of Service Request Form, document sharing, progress reports, and service charges.

8.6.3 Book time for manager's own research
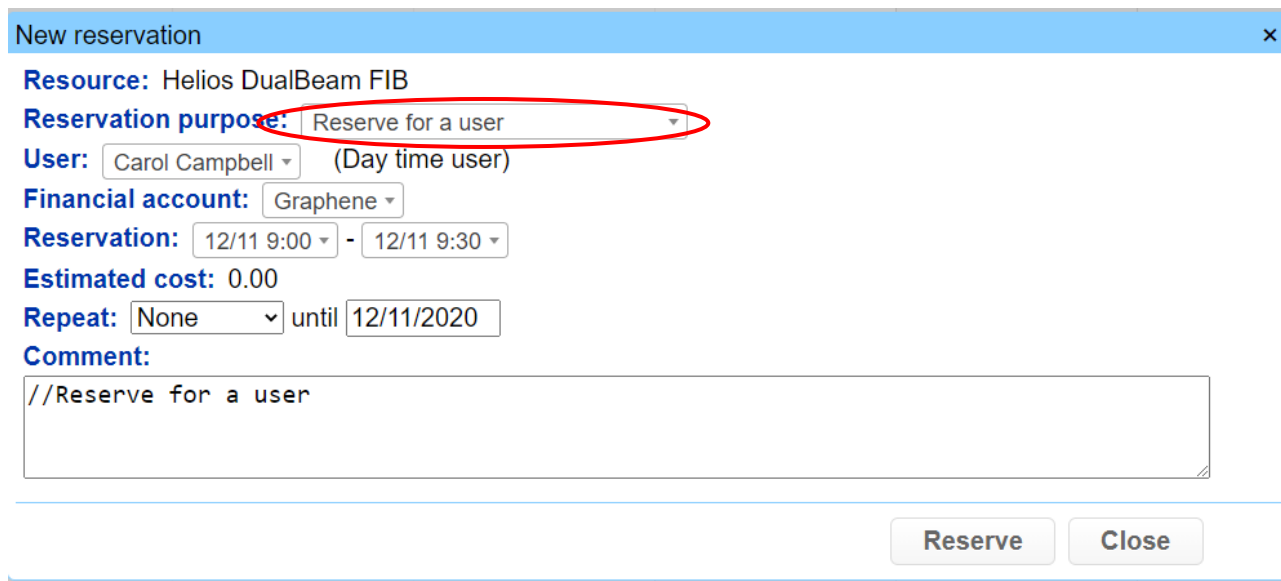
When the manager books time and select purpose "For my own research", the reservation is the same as a regular user booking. When booking time for administrative purposes, the manager is not required to select a financial account number and the default Admin_Use account is automatically assigned. However, when booking time For my own research, a valid financial account number is required.

8.6.4 Reserve for a user

A manager may also book time on behalf of a user. The result is the same as the user making reservation by themselves.

8.7 User Safety Certificate Status

Below the user's profile, Instrument Managers may update the Safety Certificate Status for this user. Managers may manually update the Date Certified and Expiration date if needed.

User Safety Certs

Cert Code	Description	Notes	Date Certified	Expiration Date	Is Active
BBP	Bloodborne Pathogens for Clinical or Research Lab Workers Certification				☐
BIOSAFE	Biological Safety Certification				☐
CHEMWAST	Hazardous Chemical Waste Management Certification				☐
COMPGAS	Compressed Gas Cylinders Certification		04/24/2016	03/28/2013	☑
CRYOCYL	Filling and Maintenance of Liquid Nitrogen Tanks Certification				☐
HFLUOR	Hydrofluoric Acid and Fluoride Ion Hazards				☐

8.8 User's Account Number

In this part, a manager may update user's account number for the user. User may add account number by themselves.

Chartstring

ID	Research description name	Chartstring	Account Status	Expense limit	Hour limit	Expiration date	
418	Electronics	650-4011400-60016371-01	Expired	18767/0	2360/0		Update
Add new			Active	0	0	04/24/2116	Add New

8.9 Grant user access

New users who just applied to use an instrument are listed at the top of Admin Home page. Click on the user's name will lead to Users Admin page.
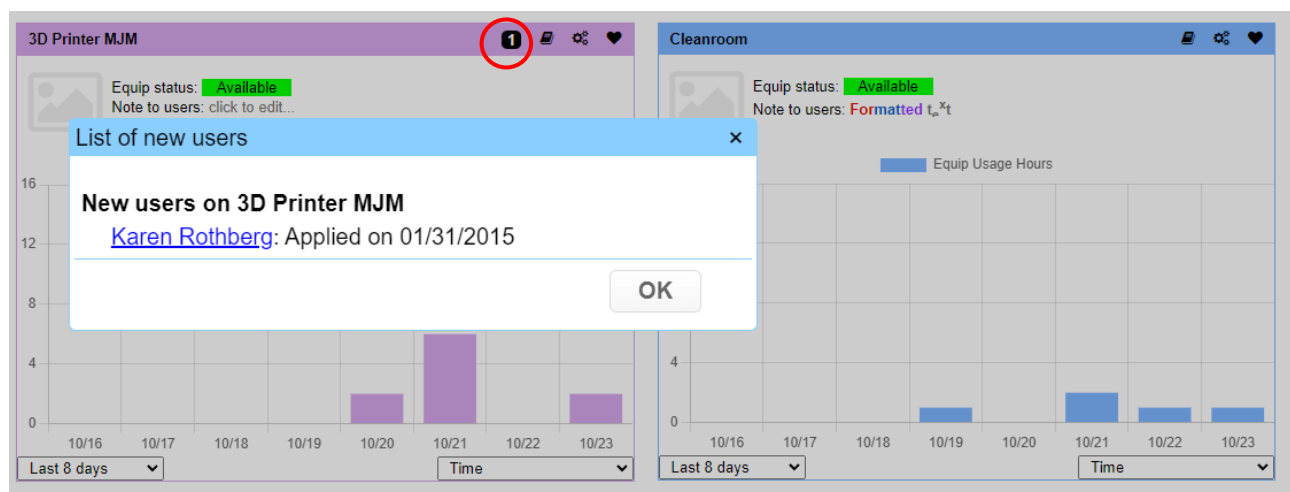
In Users Admin page, scroll down to see the list of all the instrument that you manage. You may grant multiple instruments with the same fee structure and access level by checking the check boxes on the left side.

Note: Fee structures are defined in Resources Admin page.

Instrument	Fee Structure	Daytime Rate (Per hour or per use)	Nighttime Rate (Per hour or per use)	User Level	Remaining and total hours	# of trainings
☐ Door 1114	Select One ▾	0	0	Not enrolled ▾	0	0
☐ Door 1149	Internal ▾	0.00	0.00	Any Time Access ▾	0	0
☐ Door 1154	Select One ▾	0	0	Not enrolled ▾	0	0
☐ Poster Printer	Select One ▾	0	0	Not enrolled ▾	0	0
☐ SPF FIB	Internal ▾	54.50	34.50	Not enrolled	0	0
☐ SPF IBT-right	Select One ▾	0	0	View Only	0	0
☐ SPF MultiPrep	Select One ▾	0	0	To Be Trained	0	0
☐ SPF NanoMill	Select One ▾	0	0	Day Time Access	0	0
☐ SPF Nikon OM	Select One ▾	0	0	Any Time Access	0	0
☐ SPF PIPS left	Select One ▾	0	0	Instrument Manager	0	0
				Not enrolled ▾		

8.10 Collaboration and service tracking

In order to use this feature, the system must be customized to present pre-defined Service Request Form. One example of the Service Request Form is shown below. Please contact FOM Networks if you plan to use this collaboration and service tracking feature of FOM.

In the Service Request form, there may be text fields, radio buttons, check boxes, etc to collect all the necessary informatin about the user who initiated the collaboration and the specimens submitted to the lab staff.

With a Service Request form, a lab staff may keep track of all the details of unlimited number of ongoing collaborations and services.

THE OHIO STATE UNIVERSITY
MASS SPECTROMETRY & PROTEOMICS FACILITY
SERVICE REQUEST FORM

To submit samples to out Facility, please do the following in this order:
    FILL OUT the online Service Request Form; click **SUBMIT**; click on **Collaborate & Service**;
    OPEN Service Request Form just created; **UPLOAD** additional informaton (if necessary); **PRINT** the Form.
OSU Faculty: Bring the sample(s) and a printed copy of the Service Request Form (only) to our Facility between 8am-5pm, Monday-Friday. Bring your BUCK ID for access to our Facility.
Non-OSU Faculty/Gov't Agency/Industry: Mail or bring sample(s) and a printed copy of the Service Request Form (only) to the address listed below between 8am-5pm, Monday-Friday.

Date Submitted: 06/22/2014

CONTACT INFORMATION

Student Name: Shuyou Li   Email: syli@northwestern.edu   Phone: 1-6723
Advisor Name: NUANCE Staff   Email: nuance@northwestern.edu   Phone: 7-2318
Dept: Center NUANCE   Univ/Company:

Small Molecule Sample Information (For small molecule service, upload a picture of your structure.)

Sample Name: _____   Sample Quantity: _____ mg   Concentration: _____

Soluable In (Check One or more): ☐ Methanol ☐ Acetonitrile ☐ Water ☐ THF ☐ Chloroform

Analysis (Check One):
○ Accurate Mass ○ GC-MS Injection ○ GC-MS Method Dev. ○ Nominal Mass (>1000 amu) ○ Nominal Mass(<1000 amu)
○ LC-MS Injection (1-15 Samples) ○ LC-MS Injection (Tray up to 40 Samples) ○ LC-MS Injection (Autosampler up to 120 Samples) ○ LC-MS Method Dev. ○ Self-Op Use (1/2 Hr Minimum) ○ Staff Time (Process Data, Training, Sample Prep)

Formula: _____   MW: _____
Additional Sample Comments:

The Ohio State University, Mass Spectrometry & Proteomics Facility
460 W 12th Ave, 250 Biomedical Resarch Tower, Columbus, OH 43210
Phone: 614-292-4821 Fax: 614-292-5955 www.ccic.ohio-state.edu/MS

SAMPLE ID #: _____
(Office User Only)

Submit Request

Once a customized Service Request Form is added into the FOM system, a user may initiate a collaboration request by submitting this form by clicking the "Collaborate & Service" link on the left side of FOM screen. All the ongoing collaboration projects are tracked in the same page.

For each collaboration, collaborators may share information and managers may apply service charges to the service requester. Collaborators can be dynamically added or removed at any time. Rather than charging a service fee on an instrument, staff time may also be included in the service charge. Collaborators may share experimental results and literature papers within this page.

8.11 Adjust usage records

Usage records may be adjusted in the "Usage Records" page after logging in as an Instrument Manager. Usage records may also be imported from other systems in this page.

Select an instrument to see the past or future records of the instrument. Any field in the page may be manually updated.

Tip: You may use the clock icon (🕐) to select time or use the copy icon (📋) to copy the actual start/end time to the record insertion line on top of the page.

Note 1: The lock icon in the right-most column can be used to prevent accidental change of a usage record. This lock is only for warning purposes and any manager may unlock and then change the usage record is they wish to do so.

Note 2: The "Usage" button is used to re-calculate the usage fee based on the revised start/end time. You may also manually type in any charge amount. Once updated, the system won't retroact usage fees even when the fee structure is updated.

Note 3: If a resource has usage log on the instrument computers, for example NMR computers, FOM Networks may help to create script to automatically import the usage records from these log files.

Note 4: If a usage record is modified, it is highly recommended that the manager should enter comment text to explain what has been changed and why, so that other managers and auditors understand why the record has been changed.

8.12 Email list

Login as Instrument Manager or Facility Admin, then click on "Email List" on the left side, and then select the group of users to send email message.
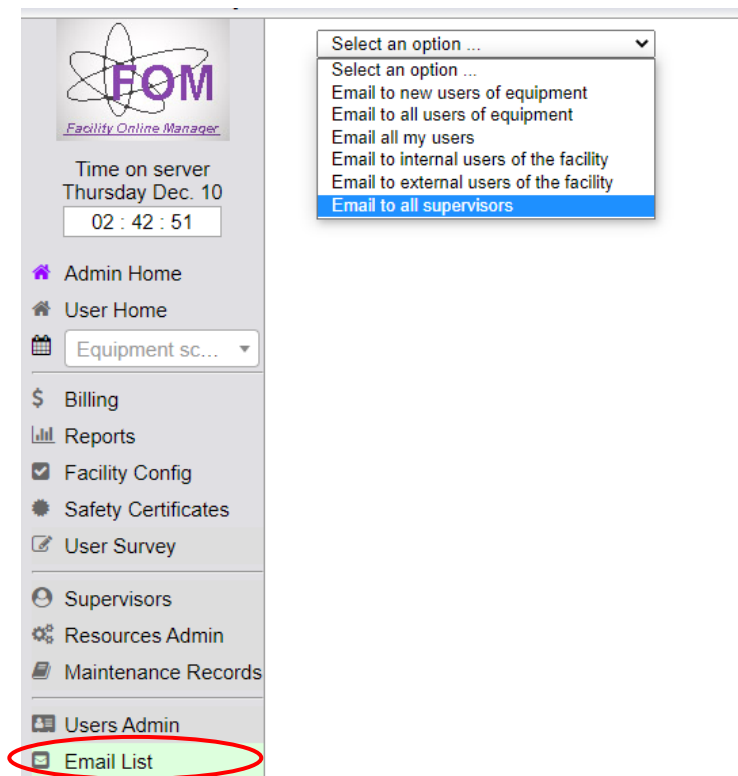
8.13 Instrument maintenance records

If an instrument maintenance tracking is turned on in the Resources Admin, you can see the maintenance history of the instrument by clicking the Maintenance Records link on the left menu.
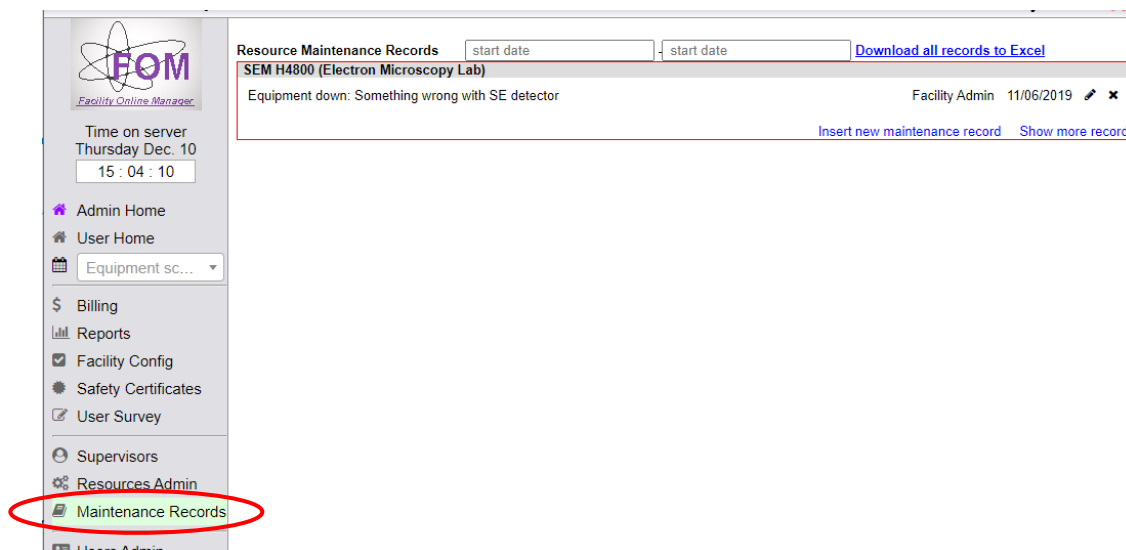
8.14 Add another instrument manager

Instrument Managers may be added in either the "Resources Admin" page or the "Users Admin" page. In Resources Admin page, select user in the "Instrument managers" field, or in the Users Admin page, grant user access level with Instrument Manager level.

In Resources Admin page

In Users Admin page

8.15 Modify user's reservations

As a manager, you can override user's reservations. Click on normal user's reserved time slot, you will see a pop-up window to modify or cancel user's reservation.

9 User Tasks

9.1 Register username

This part is the same as Section 4.

9.2 Maintain financial account number

This part is the same as Section 5.

9.3 Apply to use an instrument

a) In user home page, search for the instrument listed on right side to apply for this instrument.

b) After training and your account activated, you will see the instrument name listed on the left side of the user home page.

9.4   Sign up to attend a training session

As a to-be-trained user, you can view the instrument calendar. If you see a training session booked by a manager, you can click the time slot to sign up to attend the training.

You may withdraw the signup if necessary.

9.5 Safety requirements for instrument use

The required safety certificates are automatically summarized depends on which instruments that the user is to use. If any safety certificates are expired or invalid, the user will see a warning pop-up window as soon as the user logs into FOM system. Safety Certificate URL is presented to users to direct the user how to get the required certificates.
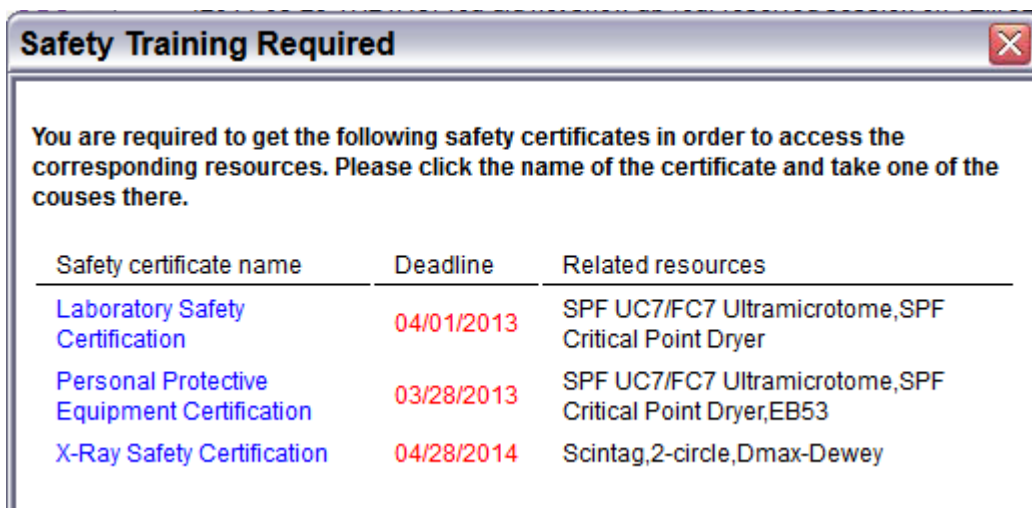
9.6 Reservation, cancellation, logon, and logoff

a) In user home page, the authorized instruments are listed on the left side, and all the available but unauthorized instruments are listed on the right side. In user home page, click the instrument name that you want to use, or you may click the drop-down selection of equipment on left side menu to see the calendar of the instrument.

b) To reserve a session, click on the time you want to start with. Then you will see the window like the one below. Choose a proper financial account and the planned start and end time to make the reservation.

c) A reserved time may be canceled if the planned start time is before the Late Cancellation timeout set by the instrument manager. To cancel or modify a reserved session, click on your own reserved time.

d) Many facilities configure their resources so that no cancellation can be done within X hours of the reserved start time. Some facilities also configure to charge cancellation fee for late cancellation. If such timeouts are set and you click on a reservation within this set hours, you may see the following window, with "Too late to modify". Some facilities may configure to disallow cancellation within X hours, then you will see "Too late to Cancel" message.

e) To logon a reserved session or do an express logon, click on the current time (red line).

f) When you are using the instrument your time slot is shown with pink background. Once you finish using the instrument, you need to click the current time slot to logoff.
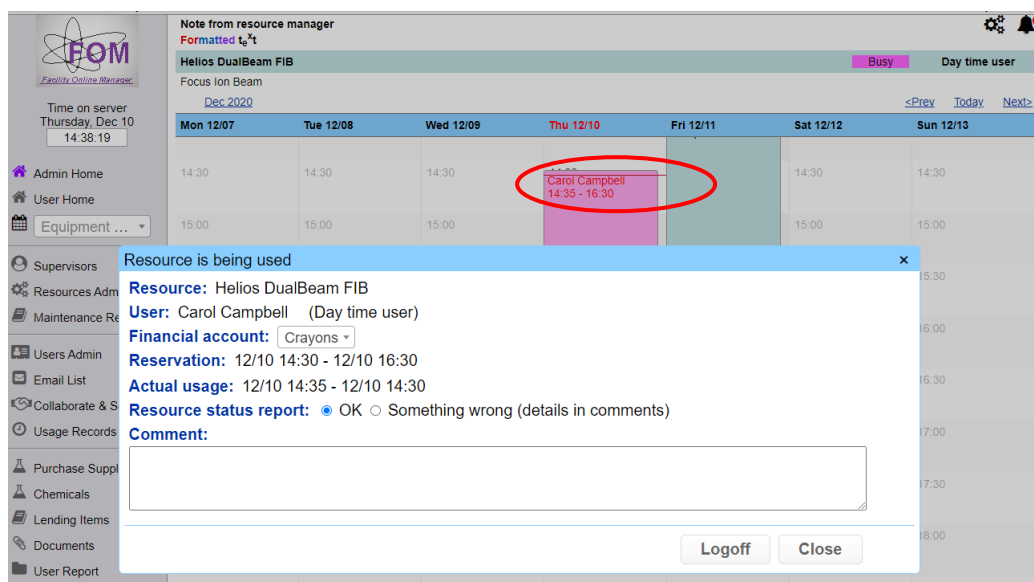
g) Fill in consumables if you have used. Choose "Something wrong" if you want to report problem of the instrument. Fill in comment, select account number to use, then click logoff.

9.7   Week view, day view and monthly view of calendars

In the resource calendar page, you may click the gears icon at the top-right corner, and then you can switch from week view to day view, month view, and agenda view of the instrument calendar.
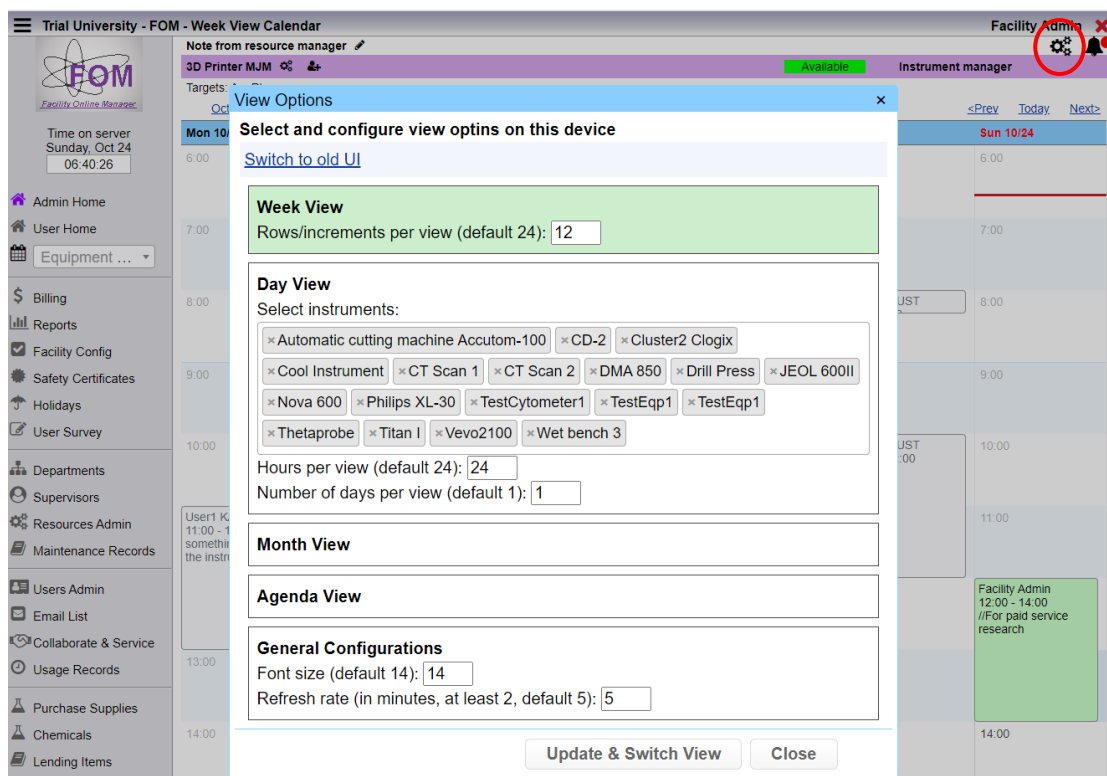
9.8   Forgot logoff sessions

If you forgot logoff your session, you would receive email reminder after the reserved ending time. Also, the next immediate user who reserved the instrument can log you off. You would receive email if another user forced you off an instrument.

9.9   Download instrument operation manual

Click on "Documents" link on the left side to download instrument documents.

9.10 User report

Click on "User Report" link to download report of your usage in the facility with given start time and end time.

9.11 Submit service request form

A user may submit a service request form if the service is provided by the facility lab staff. Click "Collaborate & Service" on the left side menu, then click the service link.

Once a service request is submitted, the project will be listed in this page and the corresponding manager will follow up with you about the progress of the collaborative project.

Click the Project ID link you will see the details of the collaboration history. You may share files, and comments in this page with all the involved collaborators.

MS_000004 Project Details

Comment	Document	Comment By	Comment Date	Status
Initial request	Initial Request HTML	Alan Anderson	05/14/2018 05:43	Initial Request
A recent paper published in Microscopy Today	Uploaded File	Alan Anderson	07/11/2019 04:33	Initial Request
Wonderful experimental results verifying our hypothesis!	Uploaded File	Facility Admin	07/11/2019 04:35	Initial Request

Current Collaborators: 👤 Facility Admin, 👤 Alan Anderson

Add Comment:

Attachment: 📁

Send Email to all collaborators: ☐

Update Project Status To: Ongoing ▾

Submit

9.12 Purchase supplies

If a laboratory provides consumables for sale, you may click the Purchase Supplies link on the left side menu to check out the consumables.

9.13 Borrow items from the lab

If a laboratory has set up small devices or tools for rent, you may click the Lending Items link on the left side menu to check out and return the items you are borrowing from the lab.

9.14 Keep track of chemicals in the lab

Click the Chemicals link on the left side menu to find whether a chemical is available in the facility, where it is located, and the current amount in stock.

9.15 User Preferences and Email opt-outs

Click on "My Profile" link to update your contact information and other user preference items.

9.16 Link FOM reservations with your Outlook or Google Calendar

In "My Profile" page, you can find a URL to "Show FOM reservations in your Outlook or Google calendar".
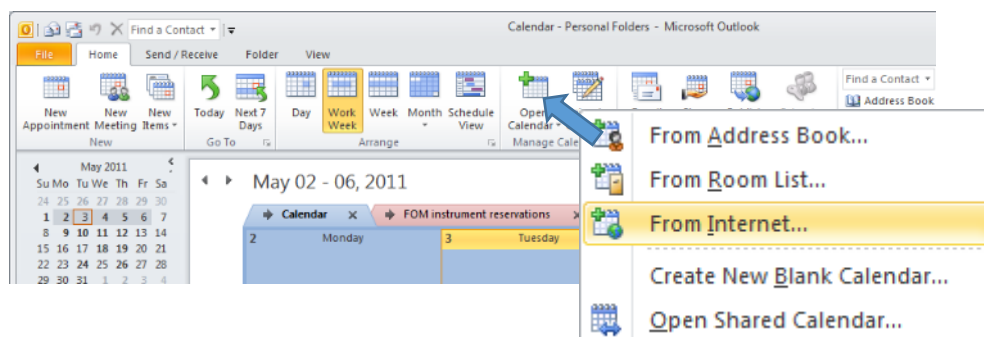

In Google Calendar, Click the "Add" link at the lower left corner, then select "Add by URL".
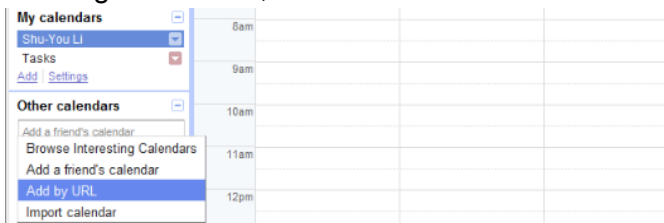
Paste the URL you have got from Step #1 in the URL field and click "Add Calendar".

In Outlook, go to Calendar view, click Open Calendar, and then select "From Internet".

Paste the URL that you have got from Step #1. If your FOM schedule URL starts with http://, change your link to start with webcal://; If your FOM schedule URL starts with https://, change your link to start with webcals://.

9.17 Update account number

Click on "My Accounts" to add your account number(s). For auditing purposes, you cannot modify an account number once it has been validated and added to the system, but you can make it inactive if you don't use an account number anymore.

9.18 Contact managers

Click on "Contact Manager" to write message to instrument manager(s).

10 Supervisor Assistant Tasks

Supervisor Assistant's access is granted to normal user in the Supervisors page. A supervisor may be the Assistant to themselves. Any Facility Administrator or Instrument Manager can add or remove Supervisor Assistants from Supervisor's profile

Once a user is granted Supervisor Assistant access, the user can login and go to Supervisor Home page. In the Supervisor Home page, a Supervisor Assistant can edit the Supervisor information and group member information, download group member usage records, billing records, set expense limit, and more.

11 Business Manager and Auditor Tasks

Business Manager and Auditor's access can be granted by Facility Administrator or System Administrator for each facility (see section 6.2).

Once granted Auditor access and given access to specific report types, the auditor may login to Auditor Home page, where the auditor can download various reports.

12 FOM® Hardware Access Control Interlocks

FLOB-01 rear view 3D

NP-02 series front view
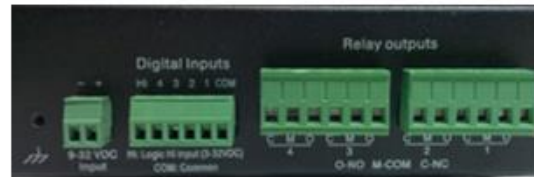
NP-04D rear view

NP-02 rear view

NP-02H rear view

NP-08 rear view

NP-08H rear view

System Specifications

Model	FLOB-01	NP-02	NP-02H	NP-04D	NP-08	NP-08H
Input Voltage	100-240VAC	120 VAC	220 VAC	9-32 VDC	120 VAC	220 VAC
No. of Ports	2	2	2	4	8	8
Output Type	1x NEMA15 1x Dry Contact	NEMA15	IEC320	Dry Contact	NEMA15	IEC320
Max. Output Voltage	AC or Relay	120 VAC	220 VAC	Relay AC or DC	120 VAC	220 VAC
Max. output Current	10 A	13 A	10 A	2 A	15 A	10 A

13 FOM® Software Access Control System
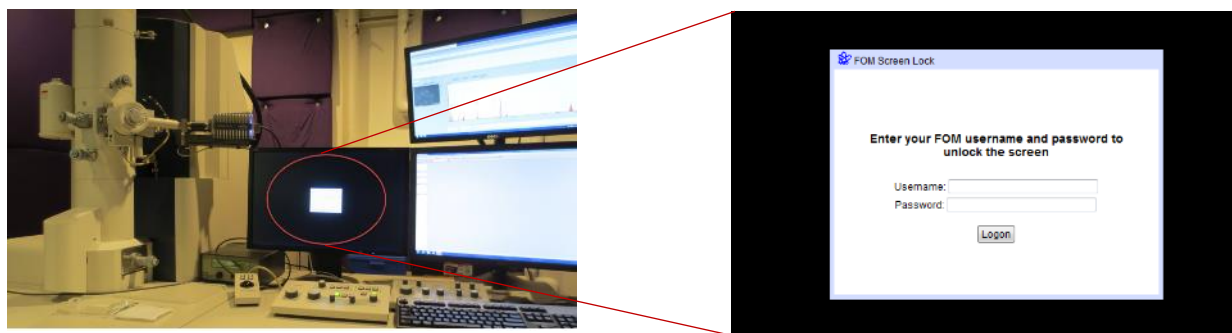
> *FOMLock Software Access Control provided an alternative cost-effective solution to the hardware access controls.*

System Requirements

- Support Operating System Windows XP SP4 or up
- .Net Framework 4.0 or up must be installed before using the FOMLock.exe
- The computer must be connected to the Ethernet
- Port 2011 must be set to be allowed on local and campus network firewall policies.

Price List of FOM Access Controls

Model	Description	Unit Price
FLOB-01	1-port power control and 1-port dry contact	$200/ea
NP-02	2-port power control with US type plugs	$200/ea
NP-04D	4-port signal control with dry contacts	$450/ea
NP-08	8-port power control with US type plugs	$450/ea
NP-02H	2-port power control with UK type plugs	$230/ea
NP-08H	8-port power control with UK type plugs	$520/ea
S&H	Shipping and handling is 5% of total order price, minimum charge $20. International shipping charge is 20% of total order price.	
FOMLock	Software access control. FOM Lock can be installed on unlimited number of instrument PCs once license is paid.	$800/license

Appendix 1. Set up and Connection of FLOB-01 Relay Boxes

Note: This manual is for the box that comes with a locker compartment so that you can hide the power plug or dry contacts from normal user's access. For the configuration of the other type of FOM boxes such as NP-02 or NP-08 series, please refer to Appendix 2.
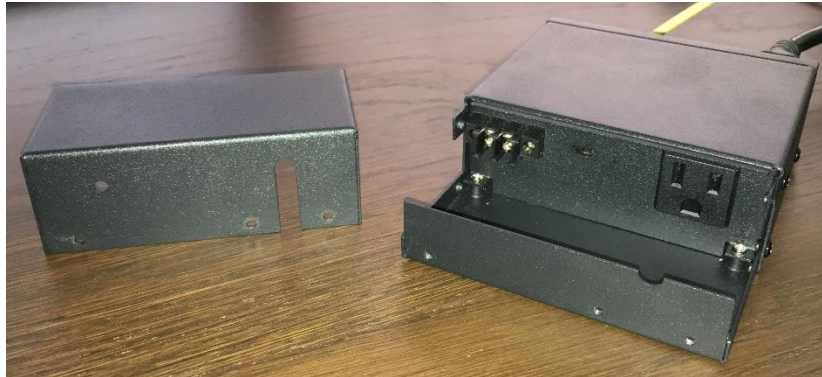
1. This box has a hardware switch to either use DHCP or static IP. If your network issues permanent IP address with a fixed MAC address, you just need to turn the switch to DHCP and don't need to set the IP address in the following steps. **You should always change the default access key for security reasons**.

2. Open a browser and type the IP address of the box in the browser address bar. The default static IP address of the box is **192.168.1.200**. If your network uses static IP. You need first change your computer's IP address to 192.168.1.1 in order to access the box configuration page.
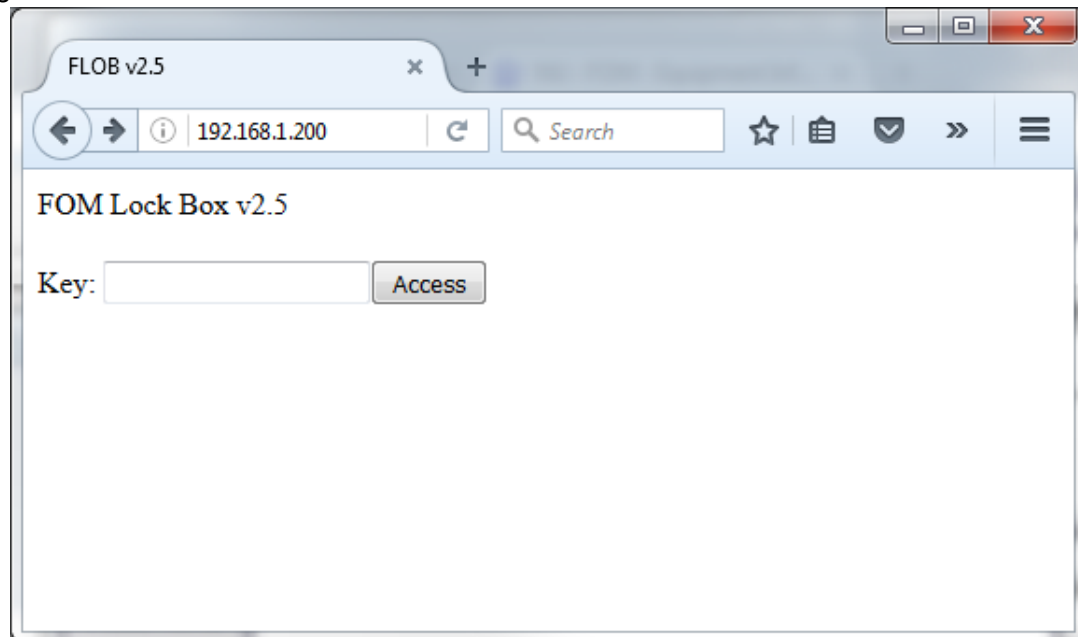
3. Enter the key to this box and click Access (keyboard Enter doesn't work here). The default key is **fomadmin**. You are recommended to change as soon as you first set up the box.

4. In the opened page, you can change the key to this box, update IP, SM (Subnet Mask), and GW (default Gateway). The Debug Mode field should be always set to 0. **You should always change the default access key for security reasons**.

5. Once the key is updated and the IP is configured, you need to go to FOM and update the corresponding resource admin page. *You need to update the key even you are using the default key of fomadmin.*
Note: If you are using NAT port mapping, you need to put the IP address with the NAT port number, such as 192.168.1.200:5080 and another one 192.168.1.200:5081

6. Now you can connect this box onto the corresponding instrument.

Note: To reset FLOB-01 to factory settings: Unplug the power, then while holding the RESET PIN, plug the power back on. Continue holding the reset pin for about 10 seconds and then release.

Appendix 2. Set up and Connection of NP series Relay Boxes
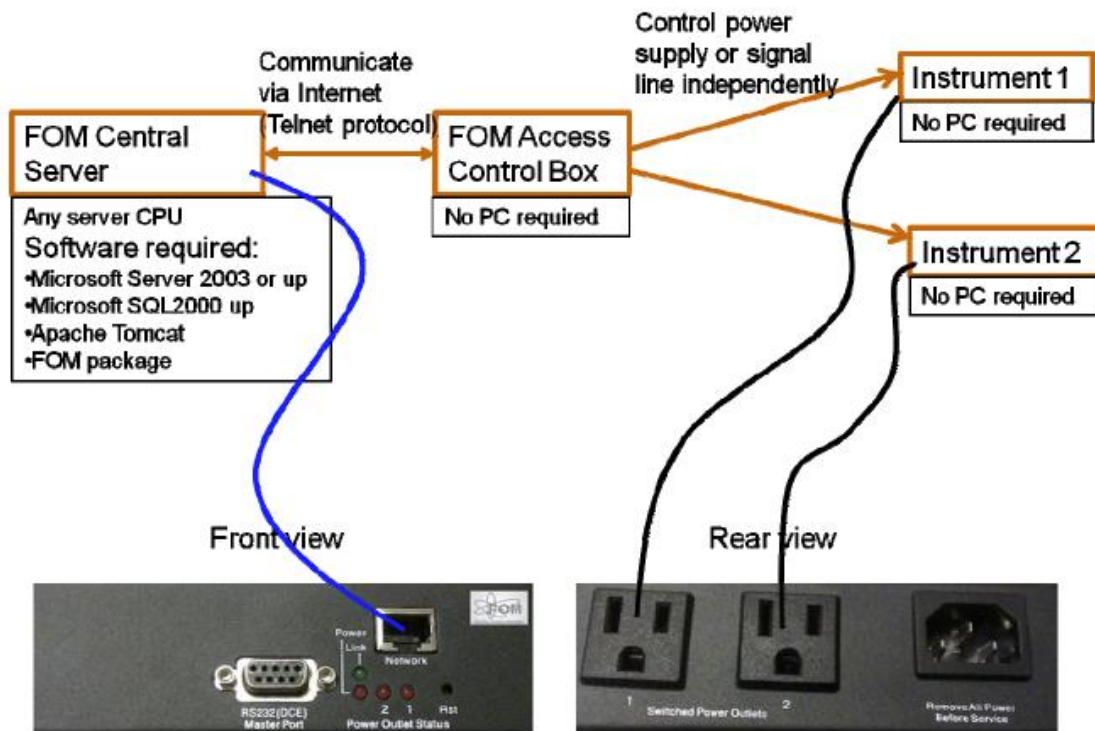
1. You will need the following to start with:
   a. For each relay box, you need to request a permanent IP address from your IT department. It might be standard internet IP address or local area network with Port Mapping. Your IT department should also give you the Subnet Mask and Default Gateway. In this manual we use the following as an example:

      IP Address: 10.1.1.201
      Subnet Mask: 255.255.0.0
      Default Gateway: 10.1.1.1

   b. Also notify your IT department that inbound PORT 80 (HTTP) communication must be allowed from the FOM server to each of the relay boxes.
      If you are using online FOM server, the IP address of the FOM server is 69.65.29.2 (www.instrumentschedule.com).

c. You will need two Ethernet cables and an internet hub or switch, as shown below (or a cross-over type cable to connect directly).
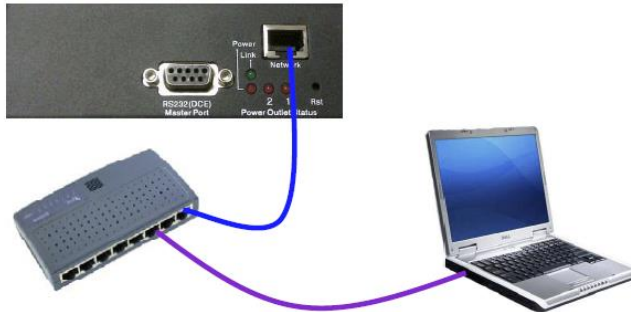
2. The default IP address of the box is 192.168.1.100. So you need to first set your computer IP to the same range. For example, you may configure your PC with IP 192.168.1.101, subnet mask 255.255.255.0, Default gateway may be left empty.
3. Connect both your PC and the box to one hub or switch.
4. Open a browser, type in address http://192.168.1.100. You will need username and password to access this website. The default username is admin and password is also admin. You may change the username/password after logging in (recommended).
5. After logging in, you see a window similar to this:

6. Click Network on left side, then change the following items:

- **Obtain IP using DHCP** = No
- **Static IP**: (the static IP you received from IT department)
- **Subnet Mask**: the subnet mask you received from IT department)
- **Gateway IP**: the gateway IP you received from your IT department)

7. Submit the form. You may see page loading error page, because the IP address of the box has been changed.

8. After IP is configured, you may disconnect the box and connect it to your instrument.
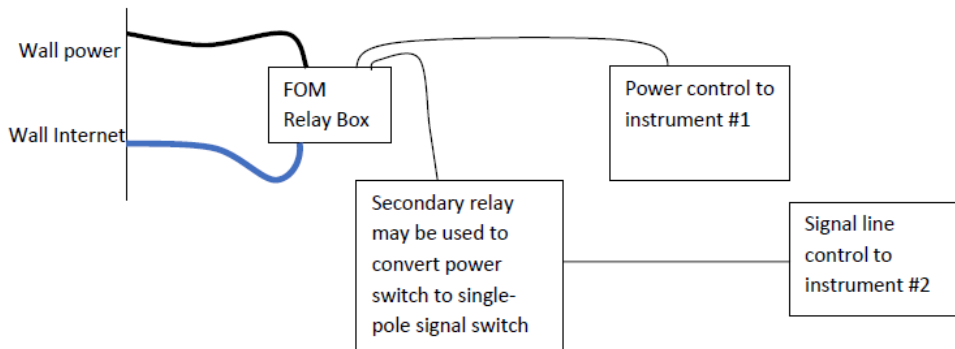
9. Once the hardware is connected, you may now log into FOM, go to the Resources Admin page, and select "NP Series" from the Relay Communication Method dropdown list.

10. Once the Relay Communication Method is selected, you will see more fields where you need update the **Relay Switch IP** address, the **Relay port number** , and the Relay username/password. Once these fields are updated, in the Relay Status line you should see the status of the relay. If you see the Relay Status returned ERROR, you need to find out whether there is firewall blocking the traffic from the FOM server to the relay box.

Note: If you are using NAT port mapping, you need to put the IP address with the NAT port number, such as 192.168.1.200:5080 and another one 192.168.1.200:5081

Access Control

EasyLogon Reader ID: [   ] *Leave blank if no EasyLogon ussed*

Relay Communication Method: [NP Series   ▾]

Relay Switch IP: [10.1.1.201   ] *Minimum 7 characters, or leave blank if no access control is used.*

Relay Outlet Number: [1] *Leave blank if no access control is used.*

Relay Username: [admin   ] *Alphanumeric, Up to 9 characters.*

Relay Password: [•••••] *Up to 31 characters.*

Relay Status: Checking relay status ...

Appendix 3. Set up and connection of software screen locks

The following steps assume that you already have the FOM standard or enterprise license installed and received the FOMLock client package from FOM Networks, Inc. If not, please contact Dr. Shuyou Li at shuyou@fomnetworks.com.

The computers on which you are to install the soft lock must have static IP address and have .Net framework version 4.0 installed. Please contact your IT support if you are not sure 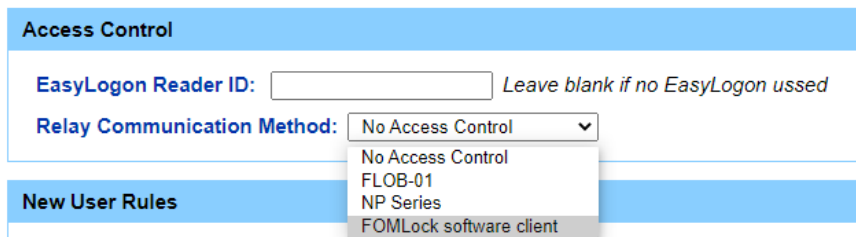the computer meets the requirements. In the following steps we use IP address 192.168.1.2 as an example. When you follow the procedures, replace 192.168.1.2 with the IP address of the to-be-controlled PC.
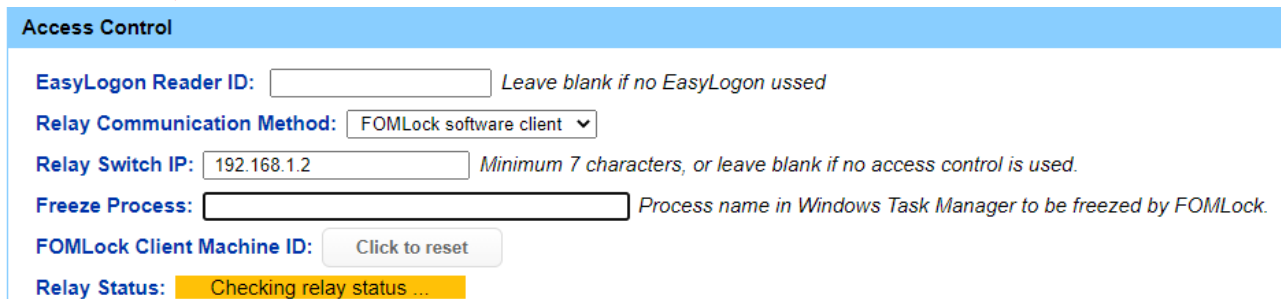
1. Login FOM as Facility Admin or Instrument Manager. Go to Resources Admin, and select the instrument where the soft lock will be installed.
2. In the Relay Communication Method field, select FOMLock software client.

3. After the Relay Communication Method is selected, you will see more fields where you can set the Relay switch IP, Freeze Process, and FOMLock Client Machine ID fields. Type in the IP address of the to-be-controlled computer. The Freeze Process field is optional if you want to freeze a program when the screen is locked.

   Note: If you are using NAT port mapping, you need to put the IP address with the NAT port number, such as 192.168.1.200:5080 and another one 192.168.1.200:5081

4. If the to-be-controlled PC is a replacement of an existing computer, you need to reset the FOMLock machine ID.

5. Open Schedule page of the instrument to be controlled. In the address bar, you can find the Equipment ID number. Please write it down. We will need this number in next steps.

6. On the to-be-controlled PC, unzip the FOMLock package to C:\FOMLock\ folder (All the following configurations refer to this folder. If you unzip to another drive or folder, you need check carefully all the configurations to make sure the reference is correct).

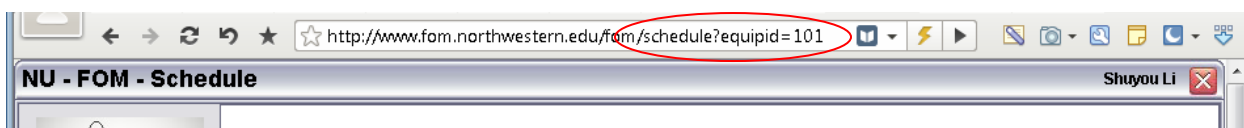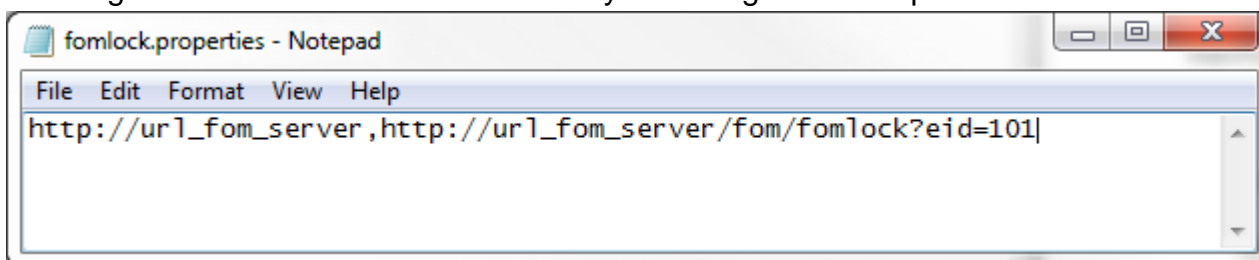7. Use Notepad.exe to open the file "fomlock.properties" in FOMLock folder. Update the line with the URL of your FOM home page, eg.
   https://www.instrumentschedule.com,https://www.instrumentschedule.com/fom/fomlock?eid=101
   Make sure the URL starts with either http or https depends on your FOM server setting. The eid must match the number you have got from step #3 above.

8. On the to-be-controlled PC, configure firewall so that FOMLock.exe is allowed for inbound TCP port 2011. To do this, right-click on the file SetupFirewall.bat and choose Run As Administrator.

9. You may test the firewall and other settings with the following command in DOS mode:
   Fomlock.exe testmode

10. When starting FOMLock with testmode parameter, if everything is working properly, you should see something like the following in the CMD window:

   [4/24/2021 03:42:08 PM] Starting in Debug Mode
   [4/24/2021 03:42:09 PM] PREFIX: http://127.0.0.1:8080
   [4/24/2021 03:42:09 PM] URL: http://127.0.0.1:8080/fomv2/fomlock?eid=32
   [4/24/2021 03:42:09 PM] HIDE: False
   [4/24/2021 03:42:09 PM] If it weren't debug mode, I would lock the screen.
   [4/24/2021 03:42:09 PM] Got page: about:blank
   [4/24/2021 03:42:09 PM] Ignoring about blank in prefix inject check
   [4/24/2021 03:42:10 PM] Received: GET /pset%201%200/4C4C4544-0030-4710-8037-C3C04F315432-C0G71T2-BFEBFBFF000506E3 HTTP/1.1
   [4/24/2021 03:42:10 PM] Got page: http://127.0.0.1:8080/fomv2/fomlock?eid=32

[4/24/2021 03:42:10 PM] Has prefix, injecting code.

In the log above, the circled line is critical, which indicates that the FOMLock client successfully received command from the FOM server. If you don't see this line, you need to troubleshoot and find what is blocking the traffic from the FOM server to the FOMLock client computer.

11. Run FOMLock.exe, you should see the computer is locked, with only the FOM welcome page shown up on screen. Like the screenshot below.


12. To unlock the screen, you need login FOM, and then logon this instrument as you normally do to start using the instrument. This may be done on the locked PC or another internet connected PC.

13. With successful logon, the FOM screen should be unlocked and you see normal desktop again. The FOM Lock window is now a normal window shown at the top-center of the computer screen, with a timer shown and a logoff button. You may minimize until the end of your session.
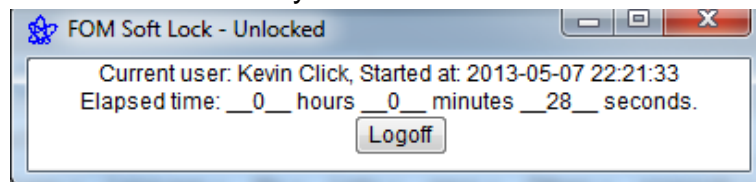
14. If steps above are successful, you may now configure Windows to auto start FOMLock when Windows reboot. Right-click Autologon.exe in the FOMLock folder and select "run as administrator". Enter username and password for the username that you want Windows to automatically logon with, then click Enable.
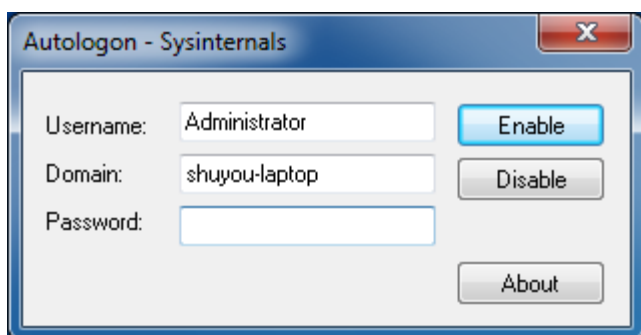
15. Double click the file "registry_fomlock.reg" to add auto-start FOMLock script to the registry. Click Yes to continue.
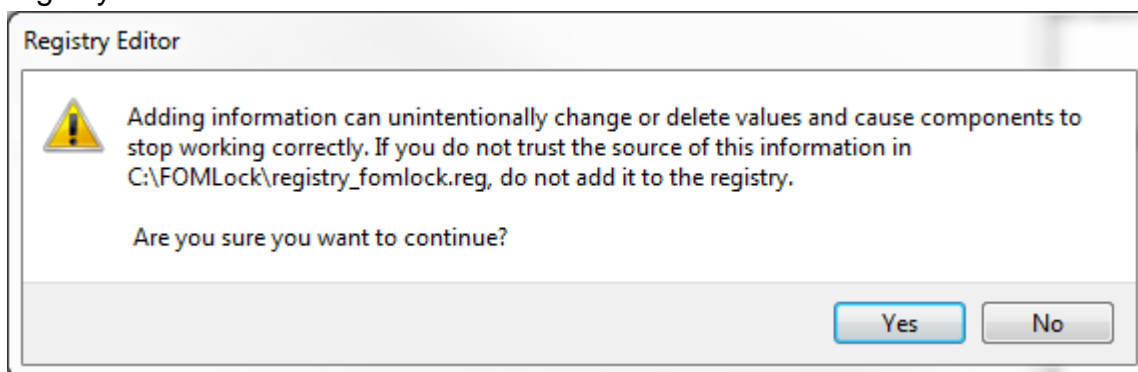
16. Reboot the computer to confirm that the FOMLock is started automatically.

Now, inform your users with the following instructions on how to use the soft lock of FOM.

1. Reserve instrument on FOM calendar with any internet-connected computer.
2. Before starting experiment on the instrument, you should see the computer screen locked with only the FOM welcome page shown.
3. Login FOM as normal, and the computer screen will be unlocked with a successful logon of this instrument.
4. After experiment, you must click "Logoff" in the FOM Lock window. This will log you off FOM session and lock the computer screen and be ready for the next user.

Appendix 4. Contact information and problem reports

FOM® Technical Issues and System Troubleshooting:

Shuyou Li, Ph.D.

shuyou@fomnetworks.com

Office Phone: (224) 225-9168

or   General FOM Networks, Inc. email

info@fomnetworks.com

Mailing Address:

FOM Networks, Inc.

1 Northfield Plaza, Suite 300

Northfield, IL 60093-1214