

ImageHost

Account Manager User Guide

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1. Introduction

The ImageHost Account Manager manages ImageHost users and their access to archives. Four kinds of entities are managed: companies, groups, users, archives. These entities are organized in a hierarchy, with companies at the highest level. A company consists of zero or more groups, and a group consists of zero or more users. Archives belong to companies, so a company has zero or more archives.

This document describes how to create, modify, display, and delete companies, groups, users, and archives.

2. Names of things

Here is an example of a set of accounts that might be managed by the Account Manager:

```
Company A
  Group G1
    User U1
    User N
  Group G2
    User N
  Group M
Company B
Company C
  Group G3
  Group M
    User N
```

Note that to uniquely specify a group requires the company the group belongs, e.g., group A/M and C/M are two different groups even though they both use the name M for the group. This convention allows two different companies to each have a group with the same name.

Likewise, a user is uniquely specified by a company, group, and user name, e.g., A/G1/U1 is user U1 in group G1 of company A. This allows two different groups to have users with the same name.

Some things to note about the above example:

- A company can be empty, i.e., contain no groups; see company B.
- A group can be empty, i.e., contain no users; see group A/M.
- A/M and C/M are two distinct groups, both named M.
- A/G1/N, A/G2/N, and C/M/N are three distinct users, all named N.

The naming conventions can be carried to extremes: A company, group, user, and archive can all have the same name. For example, a company named C can have a group named C; the group C can have a user named C; and there can be an archive named C which belongs to company C. Then

C is company C
C/C is group C or archive C (depending on the context)
C/C/C is user C

Such naming will typically not be used in practice.

Each entity actually has two names: the names we have been using in the above examples and full names. For example:

name	full name
crowley	The Crowley Company
rd	Research and Development
linus	Linus Torvalds

The kinds of names we have been using so far might be thought of as nicknames or short names. Full names can be as long and descriptive as desired, but short names should be chosen wisely because they will be typed many times when interacting with the Account Manager website. Recommendations for short names:

- only letters
- lowercase
- mnemonic
- short

Of course the recommendations above are only guidelines. It is possible to create "short" names which are long and contain digits, special characters and spaces. After typing such names over and over again, it will become clear why the recommendations above are given. If you find yourself in this situation, look at the Rename commands; they are used to change names.

One recommendation above is not actually a recommendation: All input letters are automatically reduced to lowercase. So if you define a company short name as ACME, it will be changed to acme. Thus, the case of letters cannot be used to distinguish names. All of ACME, Acme, acmE, and acme specify the same name: acme.

The alert reader will have noticed that some of the above examples use uppercase letters for short names. This is done for expository purposes. In fact, when interacting with the Account Manager, you are free to type uppercase letters in short names, but whenever short names are displayed back, they will be all lowercase.

3. User type

One of the parameters describing a user is the user type. A user has one of three types:

- super admin
- company admin
- ordinary user

Table 2 below shows which Account Manager commands are available to which types of users. The following sections give an overview.

3.1. Super admin

A super admin can execute all commands on all types of entities, i.e., a super admin can create, change, and delete companies, groups, users, and archives. Typically there are very few super admins. Only super admins can create other super admins or change an existing user's type to super admin.

3.2. Company admin

A company admin has all the power of a super admin, but restricted to one company. Thus a company admin for company C can create, change, and delete groups, users, and archives within company C. Such a company admin can create other company admins within company C. Effectively, the existence of companies other than C is unknown by a company C admin.

3.3. Ordinary user

An ordinary user can do very little with the Account Manager. An ordinary user cannot see any other users. Available actions are things like changing first and last name, email address, and password.

4. Command Overview

Table 1 below shows the types of commands available when using the Account Manager. Table 2 shows all commands, and which ones can be executed depending on user type. Each command is described in detail in following sections.

Table 1: Command types

Add	Create a new company, group, user, archive
Show	Display attributes of an entity
Edit	Change attributes of an entity
Rename	Assign another name to an entity
Move	Move an entity, e.g., move a user to another group
Delete	Remove an entity
Miscellaneous	Change password, etc.

Table 2: Commands available to user types

Command	super admin	company admin	ordinary user
Show users	Y	Y	Y
Show user description	Y	Y	Y
Show user archive access	Y	Y	
Show groups	Y	Y	
Show companies	Y		
Show archives	Y	Y	
Show archive description	Y	Y	
Show archive rolls	Y	Y	
Add user	Y	Y	
Add many users	Y	Y	
Add group	Y	Y	
Add company	Y		
Add archive	Y	Y	
Rename user	Y	Y	Y
Rename group	Y	Y	
Rename company	Y	Y	
Rename archive	Y	Y	
Edit user	Y	Y	Y
Edit group	Y	Y	
Edit company	Y	Y	
Edit archive	Y	Y	
Move user	Y	Y	
Move group	Y		
Move archive	Y		
Delete user	Y	Y	
Delete many users	Y	Y	

Command	super admin	company admin	ordinary user
Delete group	Y	Y	
Delete company	Y		
Delete archive	Y	Y	
User access to archive	Y	Y	
Change password	Y	Y	Y
Help	Y	Y	
Log out	Y	Y	Y

5. Login

When the Account Manager is launched, a login dialog appears, requesting a user name, password, company, and group. If the user exists within the specified group, and the group exists within the specified company, and the password is correct, then the user is logged in. A menu of commands is displayed, namely the commands available to the user as determined by the user type; see Table 2 above. Note that after the Log Out command is executed, the login dialog is displayed once again.

6. Add Commands

6.1. Add Company

A new company can only be created by a super admin. The super admin specifies the short name and full name for the new company. The short name must be different from all existing company names; the full name can be any text. For example, a new company named 'acme' might have full name 'Acme Software and Coal'.

When a new company C is created, a group named 'admin' is automatically created for company C, and a user named 'admin' (with user type 'company admin') is automatically created in group admin. The password for user admin is 'admin'. Clearly this state of things should not be allowed to last very long.

Typically as soon as company C is created by a super admin, a person within company C will log in as user admin in group admin in company C (using password admin), and immediately execute Change Password. It is also a good idea to execute Edit User and enter a first name, last name, and email address for the new user. In some cases Rename User might be executed to change the name of the new user from 'admin' to a real person's name. It is even possible for the new user to create a new group G within company C and execute Move User to move the new user from group admin to group G.

6.2. Add Group

Both company admins and super admins can create new groups. A company admin for company C can only create a group within company C, whereas a super admin can create a group within any company. The admin specifies the short name and full name for the new group. The short name must be different from all existing group names within the company; the full name can be any text. For example, a new group named 'rd' might have full name 'Research & Development'.

6.3. Add User

Both company admins and super admins can create new users. A company admin for company C can only create a user within a group in company C, whereas a super admin can create a user within any group in any company. The admin specifies the short name for the new user, which must be different from all existing user names within the group the new user belongs to. The admin also specifies the following attributes of a user:

- first name
- last name
- email address
- password
- user type

A super admin can create a user of any type, i.e., super admin, company admin, or ordinary user. A company admin can only create a company admin or an ordinary user. If admin A for company C creates a new company admin B, then B will be an admin for company C.

When a new user U is created, the real person P corresponding to U logs in and changes U's password. Although only P knows the new password, it should be pointed out that admins have the power to change an ordinary user's password, even when the admin does not know the password.

6.4. Add Many Users

The Add User command described just above can be used over and over again to create any number of users. However, in some circumstances it is desirable to create a large number of users from a file describing the users. This is the function of Add Many Users. When this command is invoked, the user is asked to enter the name of a file containing user descriptions. This file is read, and for each user described in the file an ImageHost user is added to the database. See Appendix B for all details of the syntax and semantics of a user description file.

6.5. Add Archive

Both company admins and super admins can create new archives. A company admin for company C can only create an archive within company C, whereas a super admin can create an archive within any company. The admin specifies the short name for the new archive, which must be different from all existing archive names within the company the new archive belongs to. The admin also specifies the following attributes of an archive:

full name
DB host
DB name
Roll info url

The various DB attributes listed above are of interest primarily to those administering the databases which back the ImageHost. The roll info url is used by the Show Archive Rolls command to show roll numbers and roll names, which is often helpful when the User Access to Archive command is used.

7. Show Commands

7.1. Show Companies

This command shows a list of all companies, both short names and full names. Only a super admin has access to this command.

7.2. Show Groups

This command shows groups and the companies they belong to; both the short and full names of the groups and companies are shown. Only admins can execute this command. A super admin can see all groups, whereas a company C admin can see only the groups within company C.

7.3. Show Users

This command shows the following information for user U:

user U: short name, first name, last name
group G user U belongs to: short name, full name
company C group G belongs to: short name, full name

In addition, a link is provided which goes to the Show User Description command with user U as parameter.

A super admin sees all users; a company C admin sees only users in company C; and an ordinary user U sees only user U.

7.4. Show User Description

This command shows all information for one user:

user short name, first name, last name
email address
group short name, full name
company short name, full name
user type

A super admin can see the complete description for any user; a company C admin can see the description only for users in company C; and an ordinary user U can see the description of user U only.

7.5. Show User Archive Access

This command shows all archives that a given user has access to. For each archive A that can be accessed this is shown:

```
archive A short name, full name
user access to archive A: 'all rolls' or 'some rolls'
```

In addition, a link is provided which goes to the User Access to Archive command with archive A as parameter.

Only admins can execute this command.

Note that if user U has no access to archive A, then A will not appear in the list of archives shown by this command.

7.6. Show Archives

This command shows archives and the companies they belong to; both the short and full names of the archives and companies are shown. Only admins can execute this command. A super admin can see all archives, whereas a company C admin can see only the archives within company C.

7.7. Show Archive Description

This command shows all information about one archive:

```
archive short name, full name
company short name, full name
DB host
DB name
Roll info url
```

Only admins can execute this command. A super admin can see any archive description, but a company C admin can only see descriptions of archives belonging to company C.

7.8. Show Archive Rolls

This command uses the roll info url of an archive to display this information about an archive:

```
roll number
roll name
```

The roll info can be shown either in roll number order or in roll name order. The roll name - roll number correspondence is most useful when the User Access to Archive command is performed.

Only admins can execute this command. A super admin can see any roll info, but a company C admin can only see roll info for archives belonging to company C.

8. Edit Commands

8.1. Edit Company

This command allows the full name of a company to be changed. A super admin can edit any company, but a company C admin can edit only company C. An ordinary user cannot execute this command.

8.2. Edit Group

This command allows the full name of a group to be changed. A super admin can edit any group, but a company C admin can edit only groups which belong to company C. An ordinary user cannot execute this command.

8.3. Edit User

This command allows the following user information to be changed:

- first name
- last name
- email address
- user type

A super admin can edit any user, but a company C admin can edit only users which belong to company C. An ordinary user U can only edit one user, namely U.

A super admin can change the type of any user to any type, with one exception: A super admin cannot change its own type. Note that a super admin can make any other user a super admin, and a super admin can make any other super admin an ordinary user.

A company admin cannot change the type of a super admin. However, a company C admin can change the type of any company admin or ordinary user in company C to any type other than super admin, with one exception: A company admin cannot change its own type. Note that a company C admin can make any other user in company C (except a super admin) a company admin. Also a company C admin can make any other company C admin an ordinary user.

An ordinary user cannot change its own user type to anything else, so an ordinary user remains an ordinary user unless changed by an admin.

8.4. Edit Archive

This command allows the following archive information to be changed:

- full name
- DB host
- DB name
- Roll info url

A super admin can edit any archive; a company C admin can edit only archives which belong to company C. An ordinary user cannot execute this command.

9. Rename Commands

9.1. Rename Company

This command allows the short name of a company to be changed. A super admin can rename any company, but a company C admin can rename only company C. An ordinary user cannot execute this command. The new name must differ from all existing company names.

9.2. Rename Group

This command allows the short name of a group to be changed. A super admin can rename any group, but a company C admin can rename only groups which belong to company C. An ordinary user cannot execute this command. The new name must differ from all existing group names within the same company.

9.3. Rename User

This command allows the short name of a user to be changed. A super admin can rename any user, but a company C admin can rename only users which belong to company C. An ordinary user can only rename itself. The new name must differ from all existing user names within the same group.

9.4. Rename Archive

This command allows the short name of an archive to be changed. A super admin can rename any archive, but a company C admin can rename only archives which belong to company C. An ordinary user cannot execute this command. The new name must differ from all existing archive names within the same company.

10. Move Commands

10.1. Move Group

This command allows a group to be moved from one company to another company. Only a super admin can move a group. The name of the group must differ from all existing group names in the destination company. If not, use Rename Group first and then Move Group.

10.2. Move User

This command allows a user to be moved from one group to another group. A super admin can move any user, but a company C admin can only move users who belong to company C. An ordinary user cannot execute this command. The name of the user must differ from all existing user names in the destination group. If not, use Rename User first and then Move User.

10.3. Move Archive

This command allows an archive to be moved from one company to another company. Only a super admin can move an archive. The name of the archive must differ from all existing archive names in the destination company. If not, use Rename Archive first and then Move Archive.

11. Delete Commands

11.1. Delete Company

This command deletes a company. Only a super admin can execute this command. Deleting a company should not be taken lightly:

All groups, archives, and users belonging to the company are also deleted.

The deletion is final, it cannot be undone. A super admin A cannot delete the company that A belongs to.

11.2. Delete Group

This command deletes a group. Only an admin can execute this command. A super admin can delete any group (except the one the super admin belongs to), and a company C admin can delete any group in company C (except the one the company admin belongs to). Deleting a group should not be taken lightly:

All users belonging to the group are also deleted.

The deletion is final, it cannot be undone.

11.3. Delete User

This command deletes a user. Only an admin can execute this command. A super admin can delete any user (except itself), and a company C admin can delete any user in company C (except itself). Deleting a user is final, it cannot be undone.

11.4. Delete Many Users

The Delete User command described just above can be used over and over again to delete any number of users. However, in some circumstances it is desirable to delete a large number of users specified in a file. This is the function of Delete Many Users. When this command is invoked, the user is asked to enter the name of a file specifying users. This file is read, and for each user specified in the file an ImageHost user is deleted from the database.

The file specifying users to delete is a CSV file whose records contain at least three fields, the first three of which are user name, group name, and company name. Any additional fields are ignored. Thus a user description file used by Add Many Users can also be used as an input file to Delete Many Users to delete the specified files. See Appendix B for all details of the syntax and semantics of a user description file.

11.5. Delete Archive

This command deletes an archive. Only an admin can execute this command. A super admin can delete any archive, and a company C admin can delete any archive in company C. All users with access to the deleted archive will lose that access. Deleting an archive is final, it cannot be undone.

12. Miscellaneous Commands

12.1. User Access to Archive

This command can only be executed by admins. A super admin can give any user access to any archive, whereas a company C admin can only give company C users access to company C archives. There are three kinds of access:

- none
- all
- partial

Partial access means a user has access to some rolls, but not to all of them. The rolls are specified by ranges of roll numbers, e.g.,

4, 18-33, 101-105, 200

As a practical matter, the Show Archive Rolls command is often used before the User Access to Archive command to see the roll number - roll name correspondence. Roll numbers are unique, unchanging identifiers for rolls; roll names can be changed by the Archive Database Manager. The Show Archive Rolls command allows the user to determine rolls by name, note their numbers, and then use these numbers for the User Access to Archive command. It should be noted that no checks are made on the roll numbers entered when this command is invoked, so it is quite possible to grant a user access to a roll which does not exist.

When the user and archive are specified, the current access to the archive by the user is shown. This can be edited to change the access. No changes are made until the Submit button is pressed. If the field is totally blank, then no changes are made.

For a company C admin, only users and archives within company C can be affected. However, for a super admin, the archive and the user may be in different companies, so there is an Archive Company field. If it is left blank, then the same company as specified in the Company field is assumed.

Consider the situation where user U in company C has been given access to archive A in company D. (Note that this access can only be given by a super admin because U and A are in different companies.) Let K be a company C admin. Then, if K executes User Access to Archive, there will be a problem: There is no way to specify that the archive of interest, A, is in another company than U. So it seems that K cannot make changes to U's access to A. This is somewhat disconcerting because a company admin usually has complete control over a user in the same company.

There is a work-around. If K executes Show User Archive Access, then archive D/A will be shown. If K then clicks on the link for D/A, the User Access to Archive command will be executed with D/A as the archive to operate on. A word of warning: If K removes user U's access to archive D/A, then K cannot later decide to grant U access to D/A. Because U and A are in different companies, only a super admin can grant such access.

12.2. Change Password

This command can be executed by all user types. For ordinary users the old password must be given, as well as the new password. For admins the old password is not needed. This allows a super admin to change the password of any user, and a company C admin to change the password of any user in company C.

12.3. Help

This command can be executed by all users. It brings up the document you are now reading in PDF form. Use the search command of the PDF reader to find information on specific commands.

12.4. Log out

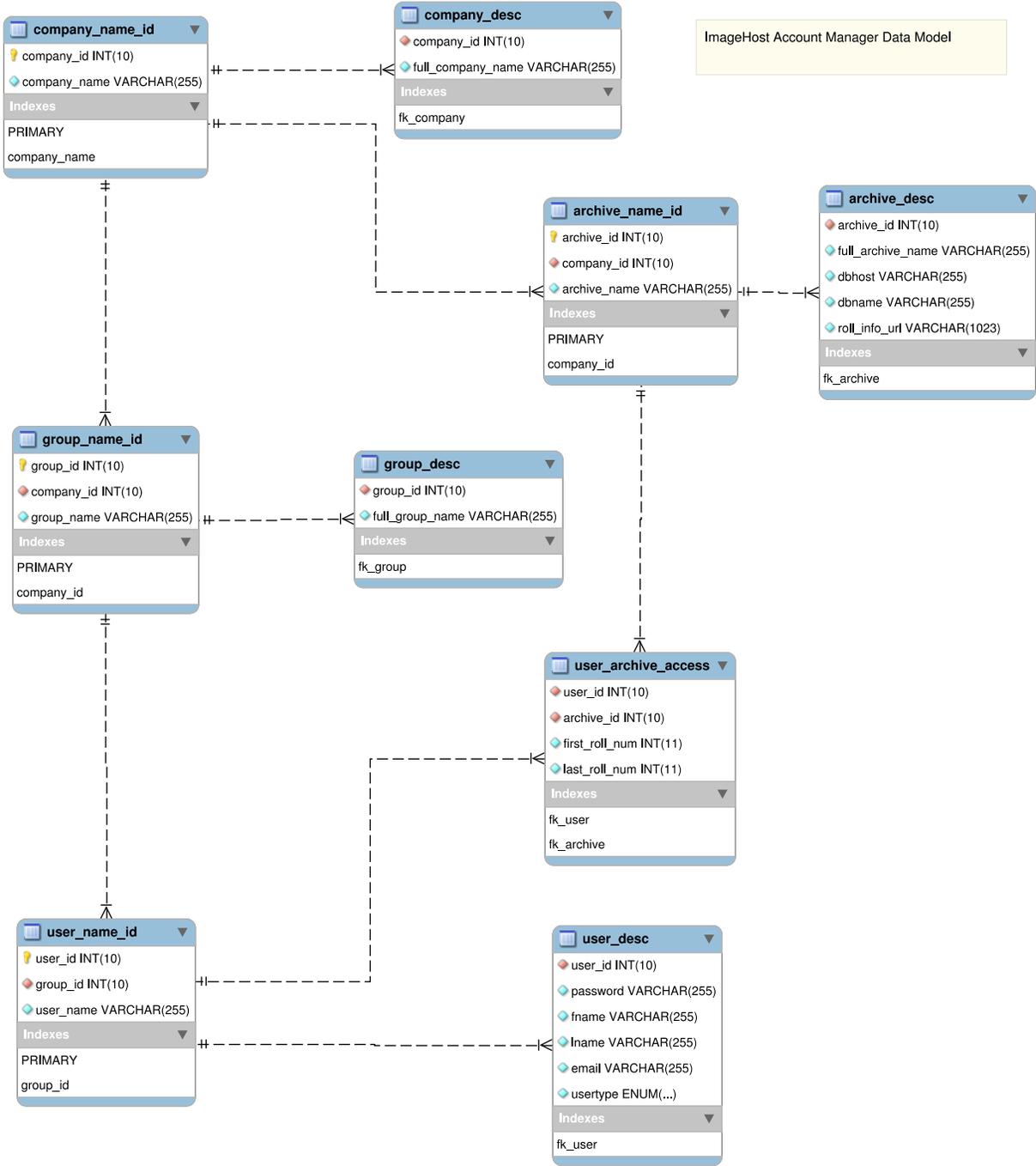
This command can be executed by any user type. The user is logged out and the login dialog is displayed.

13. Appendix A - The Account Manager Database

13.1. Diagram of database tables and connections

The following diagram shows the database tables and their connections.

ImageHost Account Manager Data Model



13.2. SQL for creating the tables

The Account Manager database consists of nine tables:

```
company_name_id
company_desc
group_name_id
group_desc
archive_name_id
archive_desc
user_name_id
user_desc
user_archive_access
```

Here is the SQL used to create the tables:

```
create table company_name_id
(
    company_id    int unsigned not null auto_increment,
    company_name varchar(255) not null,

    primary key (company_id),
    unique key (company_name)
) engine=InnoDB default charset=utf8 collate=utf8_unicode_ci
```

```
create table company_desc
(
    company_id          int unsigned not null,
    full_company_name  varchar(255) not null,

    foreign key fk_company_1(company_id)
        references company_name_id (company_id)
        on delete cascade
        on update cascade
) engine=InnoDB default charset=utf8 collate=utf8_unicode_ci
```

```
create table group_name_id
(
    group_id    int unsigned not null auto_increment,
    company_id int unsigned not null,
```

```

group_name varchar(255) not null,

primary key (group_id),
unique key (company_id, group_name),

foreign key fk_company_2(company_id)
    references company_name_id (company_id)
    on delete cascade
    on update cascade

) engine=InnoDB default charset=utf8 collate=utf8_unicode_ci

create table group_desc
(
    group_id int unsigned not null,
    full_group_name varchar(255) not null,

    foreign key fk_group_1(group_id)
        references group_name_id (group_id)
        on delete cascade
        on update cascade

) engine=InnoDB default charset=utf8 collate=utf8_unicode_ci

create table archive_name_id
(
    archive_id int unsigned not null auto_increment,
    company_id int unsigned not null,
    archive_name varchar(255) not null,

    primary key (archive_id),
    unique key (company_id, archive_name),

    foreign key fk_company_3(company_id)
        references company_name_id (company_id)
        on delete cascade
        on update cascade

) engine=InnoDB default charset=utf8 collate=utf8_unicode_ci

```

```

create table archive_desc
(
    archive_id    int unsigned not null,

    full_archive_name varchar(255) not null,
    dbhost varchar(255) not null,
    dbname varchar(255) not null,
    roll_info_url varchar(1023) not null,

    foreign key fk_archive_1(archive_id)
        references archive_name_id (archive_id)
        on delete cascade
        on update cascade

) engine=InnoDB default charset=utf8 collate=utf8_unicode_ci

```

```

create table user_name_id
(
    user_id    int unsigned not null auto_increment,
    group_id   int unsigned not null,
    user_name  varchar(255) not null,

    primary key (user_id),
    unique key (group_id, user_name),

    foreign key fk_group_2(group_id)
        references group_name_id (group_id)
        on delete cascade
        on update cascade

) engine=InnoDB default charset=utf8 collate=utf8_unicode_ci

```

```

create table user_desc
(
    user_id    int unsigned not null,
    password   varchar(255) not null,
    fname      varchar(255) not null,
    lname      varchar(255) not null,
    email      varchar(255) not null,

```

```

        usertype      enum
        (
            "ordinary-user",
            "company-admin",
            "super-admin"
        )
        not null
        default "ordinary-user",

        foreign key fk_user_1(user_id)
            references user_name_id (user_id)
            on delete cascade
            on update cascade

    ) engine=InnoDB default charset=utf8 collate=utf8_unicode_ci

create table user_archive_access
(
    user_id          int unsigned not null,
    archive_id       int unsigned not null,
    first_roll_num   int not null,
    last_roll_num    int not null,

    foreign key fk_user_2(user_id)
        references user_name_id (user_id)
        on delete cascade
        on update cascade,

    foreign key fk_archive_2(archive_id)
        references archive_name_id (archive_id)
        on delete cascade
        on update cascade
) engine=InnoDB default charset=utf8 collate=utf8_unicode_ci

```

13.3. Creating the tables

Before the Account Manager can be run, it is necessary to create the database and its tables. The database and database user must be created with MySQL:

```

create database occusers;
create user 'occapp'@'localhost' identified by 'password goes here';
grant all on occusers.* to 'occapp'@'localhost';

```

Then the Account Manager can be used to create the tables: Go to this URL with a browser:

occuserman/setup.php

Launch the Account Manager: Go to this URL with a browser:

occuserman

Note: On some systems the url is 'manage' instead of 'occuserman'.

IMPORTANT:

When the tables are created by setup.php, a couple of more items are created:

- a company named crowley
- a group named crowley/admin
- a user named crowley/admin/admin
 - password: admin
 - user type: super admin

As soon as setup.php is finished, it is important that a person who is to act as a super admin login as user crowley/admin/admin and change the password. In addition it might be useful to rename the user to something other than admin, and to edit the user to change the first name, last name, email address, etc.

14. Appendix B - User Description Files

14.1. Layout of a user description as a CSV record

The Add Many Users command takes as input a user description file in the form of a Comma-Separated Values (CSV) file with eight fields. Consider this example:

```
user name, group name, company name, password, first name, last name, email, user type
fred, diggers, gold corp, FCD, Fred, Dobbs, fdobbs@goldcorp.com, ordinary user
pablo, painters, art guild, PAP, Pablo, Picasso, pablo@gmail.com,
alfred, , , aen, Alfred, Neuman, aen@madmag.com, company admin
```

The first line is a header line naming the fields. The actual content of this line is not significant, but it must appear because the first line is skipped (so if it contains a user description, that user will not be defined). Each line after the header line describes a new user to be added to the database. Instead of creating a CSV file with a text editor, a person familiar with a spreadsheet program like Excel can create a spreadsheet with all the user data in it, and then export to a CSV file to be processed by the Account Manager.

14.2. Constraints on fields defining a user

Leading and trailing whitespace in each field is ignored, so a file can be formatted as shown above for convenience.

Let the symbols C, G, and U denote the company, group, and user being defined, and let the 'logged-in user' be the user executing the Add Many Users command. Then these constraints apply:

company name C

cannot be blank

all letters must be lowercase

name C must exist as a company in the database

the logged-in user must be a super admin or else a company admin for company C

group name G

cannot be blank

all letters must be lowercase

name G must exist as a group of company C

user name U

cannot be blank

all letters must be lowercase

name U must **not** exist as a user in group G

password

cannot be blank

no other checks are made

the new user should change his or her password as soon as possible

first name

anything allowed, including blank

last name

anything allowed, including blank

email

anything allowed, including blank

no checks are made that it is a valid email address

user type

must be one of these:

- super admin (or super-admin)

 - the logged-in user must be a super admin

- company admin (or company-admin)

 - the logged-in user must be a super admin or else a company admin for company C

- ordinary user (or ordinary-user or blank)
the logged-in user must be a super admin or else a company admin for company C
note that a blank user type is allowed, which is interpreted as an ordinary user