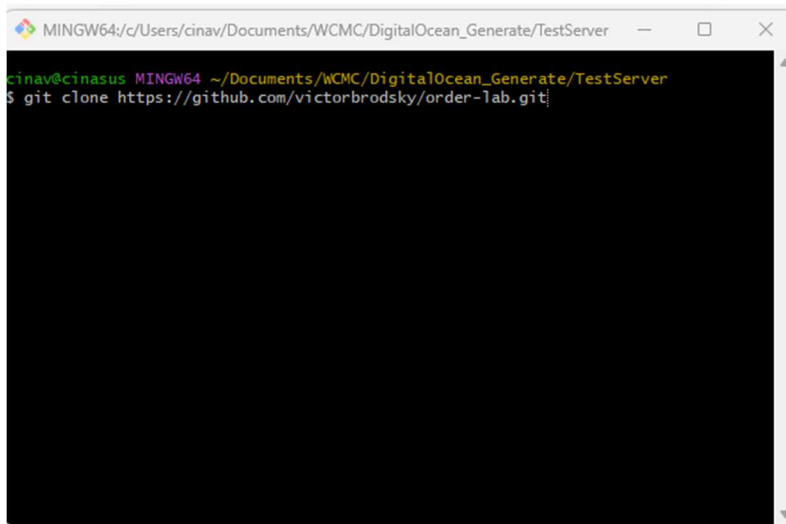


Installation Instructions

I. Digital Ocean via Packer

- create new folder "New Server" and open a command console from this folder (i.e. 'Git Bash Here')



```
MINGW64~/c/Users/cinav/Documents/WCMC/DigitalOcean_Generate/TestServer
cinav@cinav MINGW64 ~/Documents/WCMC/DigitalOcean_Generate/TestServer
$ git clone https://github.com/victorbrodsky/order-lab.git
```

- Clone ORDER repository from git:
`git clone https://github.com/victorbrodsky/order-lab.git`
- Go to packer directory:
`cd order-lab/packer/`
- Run packer installation script:
`bash deploy-order-digital-ocean.sh --token mytoken -os alma9 --protocol https`

Example to install Alma9 server with multi-tenancy for “https://view.online” domain:

```
bash deploy-order-digital-ocean.sh --token mytoken --os alma9 --protocol https --domainname
view.online --sslcertificate installcertbot --email oli2002@med.cornell.edu --sshfingerprint
1a:55:66:2b:11:3c:11:b4:33:d5:99:44:f6:33:22:11 --multitenant haproxy | tee deploypacker.log
```

Notes:

--sshfingerprint option is required for certbot and certificate installation.

To use ssh, ssh key should be added to DigitalOcean: Settings->Security->Add SSH Key

If certbot installation will fail during automated installation, certbot can be installed later manually via Droplet Console or by running `doctl`.

Via Droplet Console:

Go to DigitalOcean: Droplets -> click on newly generated droplet -> click Access -> Launch Droplet Console

The screenshot shows the DigitalOcean Droplet Console interface. At the top, the droplet name is **packer-1745532836**, with details: **in 2 Effort / 2 GB Memory / 40 GB Disk / NYC3 - AlmaLinux packer-1745532836**. There is an **Upsize Droplet** button and a toggle switch set to **ON**. Below this, network information is displayed: **ipv4: 68.183.51.53**, **ipv6: Enable now**, **Private IP: 10.132.0.9**, **Reserved IP: Enable now**, and a **Console** link. On the left, a sidebar lists various actions: **Graphs**, **Access** (highlighted), **Power**, **Volumes**, **Resize**, **Networking**, **Backups**, **Snapshots**, **Kernel**, **History**, **Destroy**, **Tags**, and **Recovery**. The main content area has two sections. The first is **Droplet Console**, with a description: "Use the Droplet Console for native-like terminal access to your Droplet from your browser. Here is [the list of supported OSes](#) for the new console." It includes a "Log in as..." dropdown set to **root** and a **Launch Droplet Console** button. The second section is **Recovery Console**, with a description: "Use the Recovery Console if you need to use the recovery ISO or you can't connect to your Droplet with the Droplet Console. To use the recovery console, you must enable password authentication. If necessary, you can reset your root password below." It has a **Launch Recovery Console** button.

In console, run these command:

```
cd /srv/order-lab-homepagemanager/packer/
```

```
bash /srv/order-lab-homepagemanager/packer/install-certbot.sh view.online installcerbot  
oli2002@med.cornell.edu haproxy
```

The screenshot shows a terminal window titled "packer-1745532836 - DigitalOcean Droplet Web Console — Mozilla Firefox". The URL bar shows https://cloud.digitalocean.com/droplets/491394663/terminal/ui?os_user=root. The terminal output is as follows:

```
Activate the web console with: systemctl enable --now cockpit.socket  
  
Last login: Fri Apr 25 13:56:23 2025 from 162.243.190.66  
[root@packer-1745532836 ~]# cd /srv/order-lab-homepagemanager/packer/  
[root@packer-1745532836 packer]#  
[root@packer-1745532836 packer]# bash /srv/order-lab-homepagemanager/packer/install-certbot.sh view.online installcerbot  
oli2002@med.cornell.edu haproxy
```

This script will install Certbot, set up the certificate, and configure haproxy.cfg to apply it.

By running doctl from local PC:

```
doctl compute ssh "packer-1745521900" --ssh-key-path ./sshkey --ssh-command 'bash /srv/order-lab-homepagemanager/packer/install-certbot.sh view.online installcertbot oli2002@med.cornell.edu haproxy'
```

It might be required to resize the droplet to 4 GB Memory (php-fpm is not working properly if the memory size is 2 GB):

The screenshot shows the DigitalOcean Droplet management interface. At the top, there is a navigation bar with a "Back to Droplets" link. Below this, the droplet's name "packer-1745532836" is displayed, along with its specifications: "in Effort / 4 GB Memory / 40 GB Disk / NYC3 - AlmaLinux packer-1745532836". A blue "Upsize Droplet" button and a toggle switch set to "OFF" are visible. Below the header, the droplet's IP addresses are listed: "ipv4: 68.183.51.53", "ipv6: Enable now", "Private IP: 10.132.0.9", "Reserved IP: Enable now", and "Console: [icon]". On the left side, there is a sidebar menu with options: "Graphs", "Access", "Power", "Volumes", "Resize", "Networking", "Backups", "Snapshots", "Kernel", "History", "Destroy", "Tags", and "Recovery". The main content area is divided into two sections. The top section, titled "Droplet Console", contains the text "Your Droplet must be powered on to access the Recovery Console." and a blue "Power On" button. The bottom section, titled "Recovery Console", also contains the text "Your Droplet must be powered on to access the Recovery Console." and a blue "Power On" button. A "Learn" link with a book icon is located in the top right corner of the "Droplet Console" section.

To initialize tenant run in browser:

<http://view.online/directory/admin/first-time-login-generation-init>

II. Installation ORDER on the provided server with already installed Alma9 or RHEL9

If the server is already provided with Alma9 or RHEL9, go to the server console and run:

```
sudo yum install -y git
cd /srv
git clone https://github.com/victorbrodsky/order-lab.git
cd order-lab/packer/
```

Run `alma9_install.sh` to install Apache, PostgreSQL, PHP, required utilities:
`bash alma9_install.sh dbusername dbpassword protocol domain sslcertificate email multitenant`

Run `install-multitenancy.sh` to install multi-tenant ORDER system with HaProxy for `view.online` domain, the installation log will be stored in `multitenancy.log` file:
`bash install-multitenancy.sh -u dbusername -t dbpassword -m haproxy -p /srv -s none -d none -e none -l none | tee multitenancy.log`

Example to install Apache, PostgreSQL, PHP, required utilities, multi-tenant ORDER system with HaProxy for `view.online` domain:

```
bash alma9_install.sh symfony symfony https view.online installcertbot oli2002@med.cornell.edu haproxy
bash install-multitenancy.sh -u symfony -t symfony -m haproxy -p /srv -s none -d none -e none -l none |
tee multitenancy.log
```

To initialize tenant run in browser:

`http://view.online/directory/admin/first-time-login-generation-init`

In all cases: if the web site is not opening, check haproxy and php-fpm status on the server:

```
sudo systemctl status haproxy
sudo systemctl status php-fpm
sudo systemctl status httpdhomepagemanager
sudo systemctl status httpdtenantmanager
sudo systemctl status httpdtenantapp1
sudo systemctl status httpdtenantapp2
sudo systemctl status httpdtenantappdemo
```

III. Initial Configuration

By default, '/' points to the home page manager tenant. First, initialize this tenant by this url:

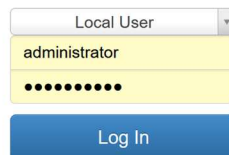
<https://view.online/directory/admin/first-time-login-generation-init/>

This will initialize the home page manager and create administrator user. Default password is '1234567890', and you will be redirected to the login page:

Employee Directory

Congratulations! You have successfully installed the system. Please select 'Local User' from the menu below and enter the user name 'administrator' and the password '1234567890' to log in. Then visit [/directory/settings/] and run the initialization scripts 1 through 7 in the listed order (skipping 4a and 4b) in the Miscellaneous section. After that, change the administrator password!

Deploy script run successfully: Cache cleared, Assets dumped



A login form with a dropdown menu set to 'Local User'. Below the dropdown, the username 'administrator' is entered in a yellow field, and the password is represented by ten dots in another yellow field. A blue 'Log In' button is at the bottom.

Please use your [CWID](#) to log in.
[Request a new account](#) if you can't log in.

Select 'Local User', enter the default username 'administrator' and password '1234567890' and click 'Log In'.

On the first login, you will be redirected to the initializing page.

Thank You for installing O R D

https://view.online/tenant-manager/directory/settings/initial-configuration

120%

Home List Current List Previous Add Employment dates Download Search Admin

Server Instance

Environment: dev

Internal Connection Channel (http or https; Clearing Cache is required): http

External Connection Channel (if using HaProxy, internal connection channel should be 'http' and external connection channel should be 'https'; http or https; Clearing Cache is required): http

Live Site Root URL (such as "http://my.server.com/order"):

Server Network Accessibility and Role: Intranet (Solo)

User Group: WCM Department of Pathology and Laboratory Medicine

Institution Settings

Institution Name (Copyright Link in Footer): Cornell University

Institution URL (Copyright Link in Footer): http://www.cornell.edu/

Institution Name (Instance Owner in Footer): Weill Cornell Medicine

Set all required initializing fields:

For multi-tenancy with HaProxy set the 'Internal Connection Channel' to 'https' and 'External Connection Channel' to 'https'.

Set the 'Environment' to 'live, If it is a live server.

Set 'E-Mail address for the Administrator account'.

It is also recommended to change administrator's password and in case of 'test' or 'dev' environment, set the 'Reroute all outgoing emails...' field to your email to prevent sending automatic emails to other users.

Click 'Update'.

You will be redirected to the home page. On the top 'Admin' menu, click 'Site Settings' and click 'Miscellaneous'. For homepage and tenant manager, pre-populate only lists 1), 2), 3).

Go to the cron jobs (Admin -> Cron Jobs) and review all cron jobs, for example, remove all cron jobs for homepage and tenant manager tenants, except 'Status cron'.

Cron Jobs Management

Email spooling settings

Parameter	Value	Action
Use email spooling (Instead of sending every email directly to the SMTP server individually, add outgoing emails to a queue and then periodically send the queued emails. This makes form submission appear faster.)	No	Edit
Frequency of sending emails in the queue (in minutes between eruptions). cron:swift cron job status: not found	15	Edit

Create cron jobs (Email spooling, Fellowship Import, Fellowship Verification, Unpaid Invoices, Project Expiration, Project Sync)

Parameter	Value	Action
Email spooling cron	cron:swift cron job status: not found	Remove
Fellowship Applications Import cron	cron:importfellapp cron job status: not found	Remove
Fellowship Applications Verification Import cron	cron:verifyimport cron job status: not found	Remove
Unpaid Invoices Reminder Email cron	cron:invoice-reminder-emails cron job status: not found	Remove
Project Expiration Reminder Email cron	cron:expiration-reminder-emails cron job status: not found	Remove
Project Sync with public server	cron:project-sync cron job status: not found	Remove

Create status cron job (check if the system in the maintenance mode)

Parameter	Value	Action
Status cron (check for Maintenance)	cron:status cron job status: */30 * * * * /bin/php /srv/order-lab-homepagemanager/orderflex/bin/console cron:status --env=prod	Remove

To apply the update, click on Admin -> Run deploy script deploy.sh.

Similarly, initialize the tenant manager:

<https://view.online/tenant-manager/directory/admin/first-time-login-generation-init/>

All tenants are already pre-installed on the server. Utility script `sync_tenants.sh` allows to synchronize the source code across all tenants and perform some other tasks. This script can be run from any tenant's orderflex folder.

For example, after installation, we need to add all versions to the symfony's database migration: go to `/srv/order-lab-tenantapp1/orderflex` and run: `bash sync_tenants.sh /srv addallversions`

Plus, we need to create db.config for backup/restore: `bash sync_tenants.sh /srv dbconfig`

Some other options:

basic - sync the source code, run deploy script, check migration status, install python requirements

full – all from basic, plus sync database, sync yarn for react js

yarn – only sync yarn for react js

sync – only sync the source code

dbstatus – only check database sync status

dbmigrate – only sync the database schemas. Symfony calls it 'migrate'

composer – only install all symphony updates

python – only install python requirements

dbconfig – only create db.config for postgres management by python (backup/restore)

addallversions – only add all versions to the symfony's database migration, so the command php bin/console doctrine:migrations:status will not show any new migrations

IV. Multi-Tenancy Configuration

Go to the 'Tenancy Configuration' page:

<https://view.online/tenant-manager/directory/settings/tenant-manager/configure/>

Click on 'Update DB Configuration from the server'. This will populate multi-tenant settings in Database from the server configurations: haproxy.cfg and tenant's httpd (httpdhomepagemanager, httpdtenantmanager, httpdtenantapp1 ...). You will be redirected to the Tenancy Configuration page with all tenant's settings:

The screenshot shows a web browser window with the address bar displaying <https://view.online/tenant-manager/directory/settings/tenant-manager/configure/>. The page title is "Tenancy Configuration".

At the top, there is a list of tenants with links to initialize them:

- <https://view.online/>
- [https://view.online/c/wcm/pathology/ \(Initialize Tenant \)](https://view.online/c/wcm/pathology/)
- [https://view.online/c/wcm/psychiatry/ \(Initialize Tenant \)](https://view.online/c/wcm/psychiatry/)
- [https://view.online/c/demo-institution/demo-department/ \(Initialize Tenant \)](https://view.online/c/demo-institution/demo-department/)
- [https://view.online/c/test-institution/test-department/ \(Initialize Tenant \)](https://view.online/c/test-institution/test-department/)
- <https://view.online/tenant-manager/>

Below the list, the configuration form for a selected tenant is displayed. The form includes the following fields:

- Tenant's data source:
- Tenant name (without spaces and special characters):
- Display Order:
- URL Slug:
- Tenant Port:
- Database Host:
- Database Name:
- Database User:
- Database Password:
- Platform Administrator Account User Name:
- Tenant Institution Title:
- Tenant Department Title:
- Billing Tenant Administrator Contact Name:
- Billing Tenant Administrator Contact Email:
- Operational Tenant Administrator Contact Name:
- Operational Tenant Administrator Contact Email:
- Show on Homepage: ☒
- Enabled: ☒
- Primary Tenant: ☐

On this page, click 'Initialize Tenant' to make initial initialization of the tenant.

The tenant's parameters can be edited on the edit page: click 'Edit'.

Tenants can be hidden on the main home page by checking 'Show on Homepage' checkbox.

Tenant title on the homepage can be shown as a url or as a name with a link. This can be done by setting the name to 'Tenant Institution Title'.

Additionally, if a tenant needs to use the pure URL without 'c/wcm/ pathology', it can be designated as a primary tenant. In this case the main homepage, for example view.online, will show only this tenant and list all other tenants in the separate section.

After making changes in Database, click 'Update Server Configuration from DB' button. This will update HaProxy configuration file to transfer the changes to the server configuration.

If the apache user does not have a permission to update haproxy.cfg file, then haproxy.cfg must be changed manually.

For example, to make a tenant as a primary tenant replace in haproxy.cfg:

```
'use_backend homepagemanager_backend if homepagemanager_url'
```

by

```
'use_backend tenantapp1_backend if homepagemanager_url'.
```

Run `systemctl restart haproxy`.

After that, both url / and <https://view.online/c/wcm/pathology/> will lead to tenantapp1, it is possible to verify that on 'about' page <https://view.online/directory/about>:

About Employee Directory

← → ↺

https://view.online/directory/about

Home

List Current ▾

List Previous ▾

Add ▾

Employment dates

Download ▾

Current Version for branch master: db840e33e8ee3eaab46adcaf26e489bb0f769192; April 24 2025 18:37

OS: Linux packer-1745532836 5.14.0-503.38.1.el9_5.x86_64 #1 SMP PREEMPT_DYNAMIC Fri Apr 18 08:52:10 EDT 2025 x86_64

Apache: Apache/2.4.62 (AlmaLinux) OpenSSL/3.2.2

PHP: 8.3.20

PHP_VERSION: 8.3.20

DB: PostgreSQL 17.4 on x86_64pclinuxgnu, compiled by gcc (GCC) 11.5.0 20240719 (Red Hat 11.5.05), 64bit

DB Name: tenantapp1

IP: 127.0.0.1 (68.183.51.53)

Tenant base url:

Note: If using HaProxy, internal connection channel should be 'http' and external connection channel should be 'https'

Internal connection channel: http

External connection channel if using HaProxy: https

Symfony

Version 6.4.20

Long-Term Support Yes

End of maintenance 11/2026 (in +581 days)

End of life 11/2027 (in +946 days)

Kernel

Type App\Kernel

Environment prod

Debug false

Charset UTF-8

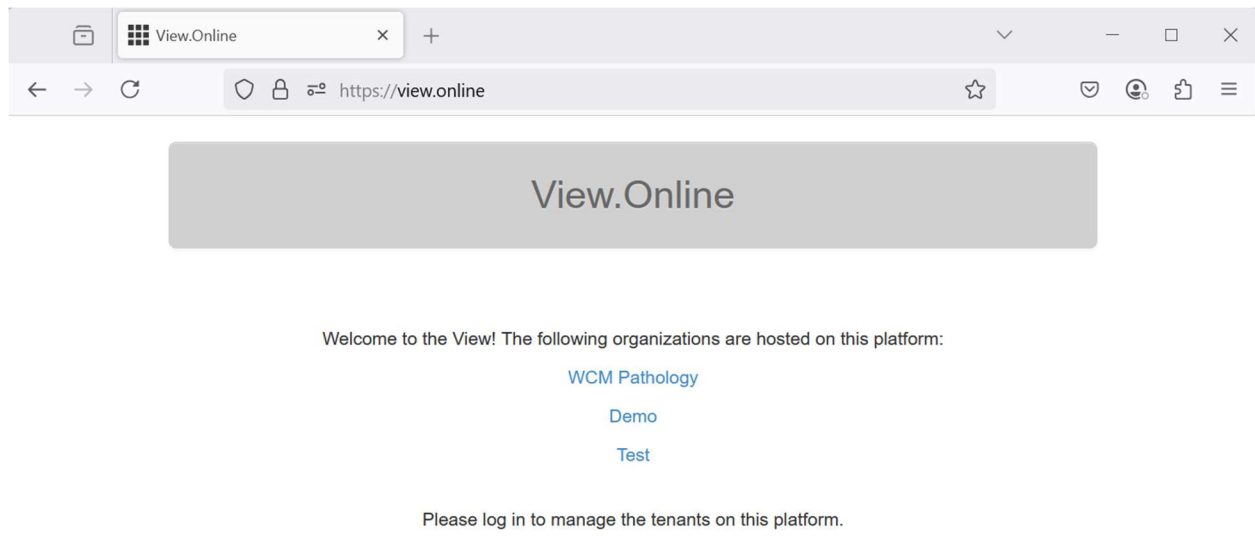
Cache directory ./var/cache/prod (37.0 MiB)

Build directory ./var/cache/prod (37.0 MiB)

Log directory ./var/log (1.4 MiB)

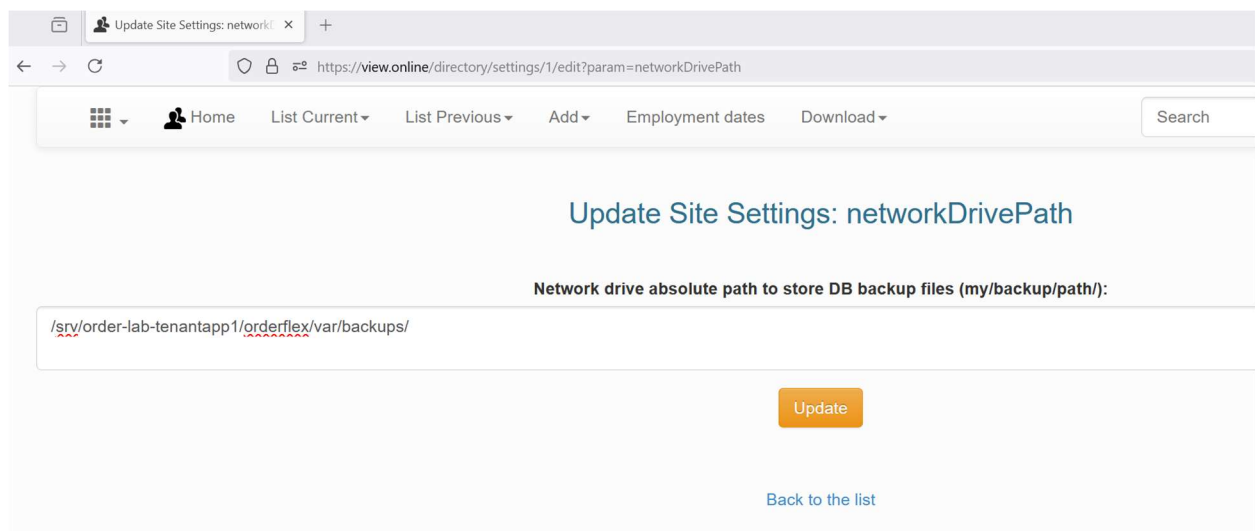
PHP

The main homepage <https://view.online/> will show the list of all tenants.



V. Restore Database and Uploaded files

First set the 'Network drive absolute path to store DB backup files' on the Site Settings page, for example to `/srv/order-lab-tenantapp1/orderflex/var/backups/`



Before, restoration in the Site Setting, set the environment to 'dev', to prevent pulling the fellowship applications from Google drive.

Then go to the 'Manual Backup/Restore' page <https://view.online/directory/manual-backup-restore/>.

Upload file upload archived file using 'Upload backup files' section. The database backup file should include 'backupdb' in its name, while uploaded files should contain 'backupfiles'.

In 'Restore from backup' section, choose upload backup file, confirm password and click 'Restore uploaded files...' button.

The image shows two web forms. The top form is titled 'Restore from backup'. It has a section 'Available backup files for restoration:' with a dropdown menu showing a file named 'f342e8e2-2f85-4d6b-b1cd-5738b96fef7_backupfiles-live_WCMEXT_2025-03-31-19-00-09.tar.gz (April 28 2025 20:06:44, 3... x'. To the right, there is a section 'After restoration from back up, set server environment of this server to:' with a dropdown menu labeled 'Select an option'. Below these are two red buttons: 'Restore database from the selected backup file' and 'Restore uploaded files from the selected backup file'. The bottom form is titled 'Reset Demo Environment' and has a single red button labeled 'Reset Demo Environment'.

Restore database backup: choose the backup, set environment to 'dev', confirm password and click 'Restore database ...'. After restoration, verification and testing, the environment should be changed to 'live' if it is a live server.

VI. Backup/Restore via PgAdmin

For large database size and live server, it is recommended to shut down haproxy service 'systemctl stop haproxy' and use pgAdmin.

To access database postgres config file /var/lib/pgsql/17/data/pg_hba.conf might need to be modified to have online access:

```
host all all 0.0.0.0/0 trust
listen_addresses='*'
```

It might require to stop temporary firewall:

```
sudo systemctl stop firewalld
```

To take effect changes run: systemctl restart postgresql-17

After PgAdmin use, comment out these two lines:

```
#host all all 0.0.0.0/0 trust
#listen_addresses='*'
```

And start firewall:

```
sudo systemctl start firewalld
```

To Backup a database using pgAdmin4 (To get a data dump using a pgAdmin4):

Open pgAdmin 4 and connect to your server.

Select the database you wish to back up from the left sidebar.

Right-click on the database and choose Backup.

Specify the file path and name (i.e. backupdb-live-12March2025.sql) for the backup file in the Filename field.

Choose the format you want (e.g., Custom, Tar, Plain, Directory) from the format dropdown.

Click Backup

To restore database backup:

"Create" > "Database..." > Save

Right-click on the 'recoverdb' database you just created and select "Restore."

In the dialog box that appears, navigate to the location of your backup file ('backup.sql') and select it.

Click "Restore" to initiate the restoration process.

After DB restore check (reference function restoreDBWrapper):

env

connectionChannel (set http for HaProxy)

urlConnectionChannel (set https for HaProxy if using ssl certificate)

networkDrivePath

monitorScript

mailerdeliveryaddresses

Optional:

to test the functionality set mailerDeliveryAddresses to oli2002

to avoid stealing fellapp, turn off imports

