



OPENACS ON DOCKER

Managing multiple OpenACS Sites with Docker Compose

REQUIREMENTS/GOALS

- * **Have a fully off-line development environment**
 - ➔ **Code at the cabin**

- * **Minimize RAM and CPU usage for work on a laptop**
 - ➔ **Single (usually) database server**

- * **Development instances for Multiple OpenACS sites**
 - ➔ **Easily run only needed instances**
 - ➔ **Easily synchronize code with production and/or other developers**

SOLUTION

- * **Docker Compose projects/environments**
- * **Postgres (or Oracle) and NaviServer in separate containers**
 - ➔ **Use existing Postgres or PostGIS containers from Docker Hub**
 - ➔ **Build NaviServer container from Dockerfile or pull from Docker Hub**
- * **Tools to manage code checkout and synchronization of many**
 - ➔ **Developed git-sync.tcl and friends**
- * **Tools to manage database creation/load/modification**
 - ➔ **Created refresh-site-db.sh to manage the database for a site**
Can update parameter values in a cloned/restored database, before starting NS

DOCKER COMPOSE .YML

```
version: '3.2'
networks:
  default:
    name: lsw-network
    external: true
services:
  postgres15:
    image: postgis/postgis:15-3.3
    container_name: lsw-pgdb15
    restart: unless-stopped
    volumes:
      - ~/dev/docker/lsw/pg15data:/var/lib/postgresql/data
      - ~/dev/docker/lsw/pg15conf:/var/lib/postgresql/conf
      - ~/dev/docker/lsw/pg15log:/var/lib/postgresql/log
    ports:
      - 127.0.0.1:5433:5432
    environment:
      - POSTGRES_USER=nsadmin
      - PGUSER=nsadmin
      - POSTGRES_PASSWORD=df8auf48u48of3ChangeMe
      - POSTGRES_DB=nsadmin
```

DOCKER COMPOSE .YML

```
lswbase:
  # build:
  #   context: ./builds/naviserver
  #   dockerfile: Dockerfile
  #   target: nsbfinalo
  image: logansw/naviserver:v1.12
  container_name: lsw-lswbase
  restart: unless-stopped
  stdin_open: true
  tty: true
  entrypoint: /web/etc/nsd-container-start.sh
  command: "/usr/local/ns/bin/nsd -u nsadmin\
    -g web -i -t /web/etc/config.tcl\
    -b 0.0.0.0:80,0.0.0.0:443"
```

```
volumes:
  - ~/dev/docker/lsw/lswbase/etc:/web/etc
  - ~/dev/docker/lsw/lswbase/logs:/web/logs
  - ~/dev/docker/lsw/lswbase/files\
    :/web/files
  - ~/dev/docker/lsw/lswbase/openacs\
    :/web/site
  - ~/dev/docker/lsw/lswbase/etc/config.tcl\
    :/usr/local/ns/conf/config.tcl
  - ~/dev/docker/lsw/certs:/web/certs
ports:
  - 80:80
  - 443:443
depends_on:
  - postgres15
```

nsd-container-start.sh

```
#!/bin/bash
umask 002

counter=0
until psql -U nsadmin -h lsw-pgdb15 lswbase -c "select 1" &> /dev/null
do
    let "counter++"
    sleep 3
    if [ $counter -ge 20 ]; then
        echo "Failed to connect to database 'lswbase' on lsw-pgdb15"
        exit 1
    fi
done

echo "postgres database 'lswbase' is available. Starting naviserver."

exec "$@"
```

NOTABLE

- * **Set `COMPOSE_PROJECT_NAME` in a `.env` file in the directory with `docker-compose.yml`**
- * **`cd` to the directory with the `.env` file before running “`docker compose`” commands**
- * **The `depends_on` directive only waits until the `Postgres` container is started. `Postgres` may not be accepting connections when the `NS` container starts. Hence the `nsd-container-start.sh` script**
- * **The `build` directive, when uncommented, takes precedence over the `image` directive**
- * **`container_names` can be used as a hostname which resolves to the `Docker`-assigned `IP` address for the container**

TOOLS

* **Git info/compare/sync**

➔ **git-info.tcl**

Creates a git-info file containing git info for all repositories below the Current Working Directory (CWD)

➔ **git-diff.tcl**

Compares git repositories below the CWD to those in a git-info file

➔ **git-sync.tcl**

Clone or update git repositories under the CWD to match those in a git-info file

➔ **git-status.tcl**

Show results of “git status” for each repository under the CWD

WANT MORE?

- * **Full instructions to create an LSW stack are available on the “Docker Install” page at: <https://logansw.atlassian.net/wiki/spaces/LSWS>**
- * **git-sync and friends are available on our bitbucket server at: <https://bbs.logansw.com/projects/TOOLS/repos/git-sync>**
- * **Other Open Source tools and packages are available on the Bitbucket server**
 - ➔ **Some are just copies of OpenACS core packages with tags added for git-sync**
- * **ZFS—It’s where your data belongs
(No presentation by me is complete without a reference to ZFS)**

DISCLAIMERS

- * **There will be some differences from a stock NaviServer/OpenACS install**
- * **PostgreSQL driver mod to support bind variable dereferencing of array vars**
- * **Minor tweaks to OpenACS core - for backward compatibility with legacy packages**
- * **OS utilities you may not care about in the NaviServer container**
- * **LSW ecosystem packages support PostgreSQL only**
Mainly due to extensive use of tables with Range Types
- * **This is a work-in-progress. Feedback is welcome.**

QUESTIONS?