OpsDB Dev Startup Doc

OpsDB is the central automation system.

It is composed of 4 projects presently:

Required Repositories

- https://github.com/ghowland/web6.0/ - Web Server
- https://github.com/ghowland/yudien/ - Data-Oriented Pipe-Based Language
- https://github.com/ghowland/opsdb/ - Operational Automation logic
- https://github.com/ghowland/ddd - Data Definition Data - Guaranteed Data Correctness

Setting Up Go

In your user home directory, create a go directory:

```
mkdir ~/go
```

Install Go:

```
brew install go
```

Dependency management:

Make sure you have `dep`, which is what we use for our dependency management:

```
go get github.com/golang/dep
```

Install `virtualgo` which we use to ensure dependency isolation:

```
go get -u github.com/GetStream/vg
vg setup
```

```
source ~/.bashrc
```

Install PostgreSQL

Install Postgres (make sure you install Postgres 10):

```
brew install postgresql
```

Download the database data:

https://drive.google.com/open?id=1rmDqwSQg99EXMdcbLJsfMnWE2OOETIDg

Create an `opsdb` database and user.

Import the database:

```
psql -U opsdb opsdb < opsdb.sql
```

Running OpsDB

Starting from your Web6.0 workspace directory:

```
cd ~/go/src/github.com/
mkdir ghowland
git clone https://github.com/ghowland/web6.0/
cd ghowland/web6.0
vg init
vg ensure
```

Now, configure web6 with the information for your database and ldap server. Web6 will first look in /etc/web6/web6.json and then in ~/secure/web6.json. Let's put the configuration in ~/secure/web6.json:

```
mkdir -p ~/secure
```

Place the json below into a new file named ~/secure/web6.json:

```
{
  "ldap": {
    "host" : "master.ldap.company.com",
    "port" : 389,
    "login_dn": "cn=admin,dc=company,dc=com",
    "password": "SUPER_SECRET_PASSWORD",
    "user_search": "ou=employees,dc=company,dc=com",
    "group_search": "ou=teams,dc=company,dc=com"
  },
  "opsdb": {
    "connect_opts": "user=postgres dbname=opsdb password='password' host=localhost sslmode=disable",
    "database": "opsdb"
  }
}
```

Make sure you change SUPER_SECRET_PASSWORD to the “pi password”. Ask someone.

Run the command, after building it if it isn’t yield compiled or has changed:

```
make run
```

You will see this:

```
Initializing Yudien
Server :9000 listening...
```

If you are using an IDE, you will need to manually update your $GOPATH to include the virtualgo directory created for your project. For web6.0, that directory is ~/.virtualgo/web6.0, so your $GOPATH will look like this:

/home/yourname/.virtualgo/web6.0:/home/yourname/go/

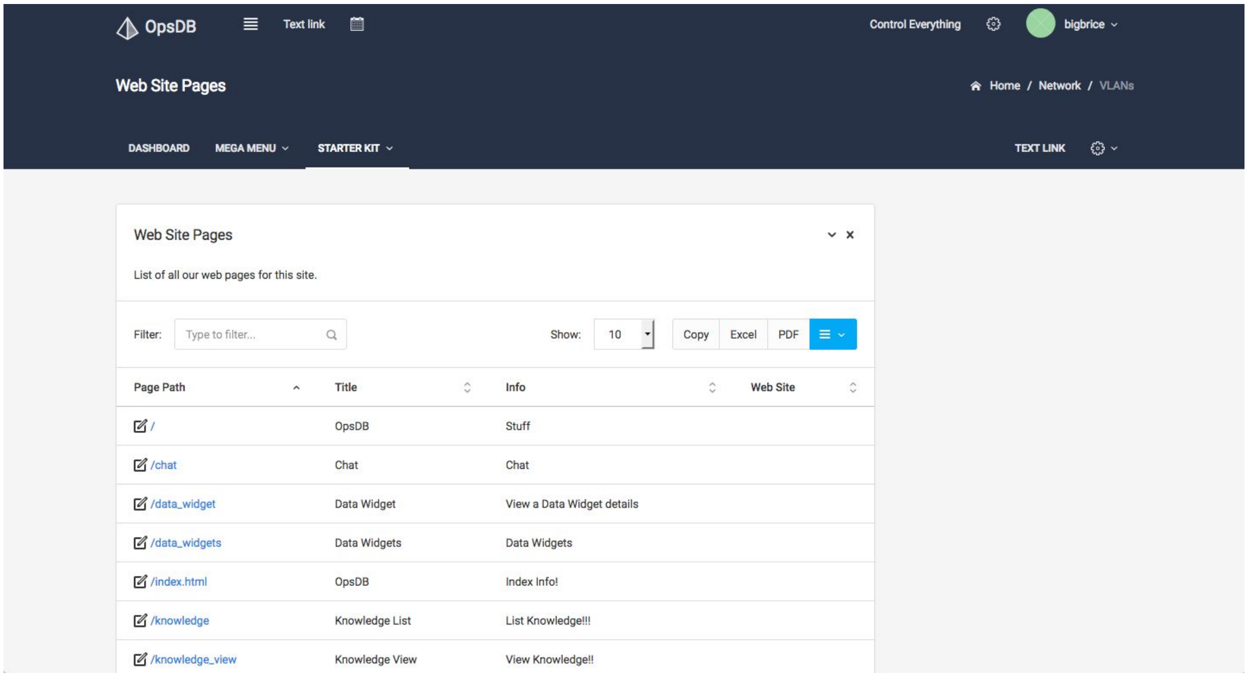
In Goland you will need to add both directories to your gopath seperately. Make sure you get the order correct.

Testing OpsDB

Once `web6` is running, then use a browser to look at a page:

http://localhost:9000/web_site_pages

It should look like this:



Web Site Pages

List of all our web pages for this site.

Filter: Type to filter...

Show: 10

Page Path	Title	Info	Web Site
/	OpsDB	Stuff	
/chat	Chat	Chat	
/data_widget	Data Widget	View a Data Widget details	
/data_widgets	Data Widgets	Data Widgets	
/index.html	OpsDB	Index Info!	
/knowledge	Knowledge List	List Knowledge!!!	
/knowledge_view	Knowledge View	View Knowledge!!	

Hacking on OpsDb

As your hacking on opsdb, many times you will need to change one of the dependencies and use that change from somewhere else. For example, you may need to change code in the yudien repository and make use of those changes in web6.

For example, let's say you are also working on Yudien and installed it in your GOPATH with the following commands:

```
cd ~/go/src/github.com/ghowland
git clone git@github.com:ghowland/yudien.git
cd yudien
vg init
vg ensure
```

You now want web6 to use this version of yudien:

```
cd ~/go/src/github.com/ghowland/web6.0
vg localInstall github.com/ghowland/yudien
```

Hack on yudien and web6. Submit a pull request for yudien. Once it’s been pulled into master, run:

```
vg ensure -- -update github.com/ghowland/yudien
```

This will update the Gopkg.lock file with the latest commit id of yudien. Submit this change and your other changes as a pull request. If you continue hacking on yudien, make sure to run localInstall again.

Coding Style

To avoid (most) arguments of style, like most other Go projects, we use gofmt to format our code automatically. Good editors can run the appropriate command for you each time the file is saved.

Neo/vim:

Install vim-go and add the following to your ~/.vimrc

```
let g:go_fmt_command = "goimports"
let g:go_metalinter_autosave_enabled = ['vet', 'golint']
```

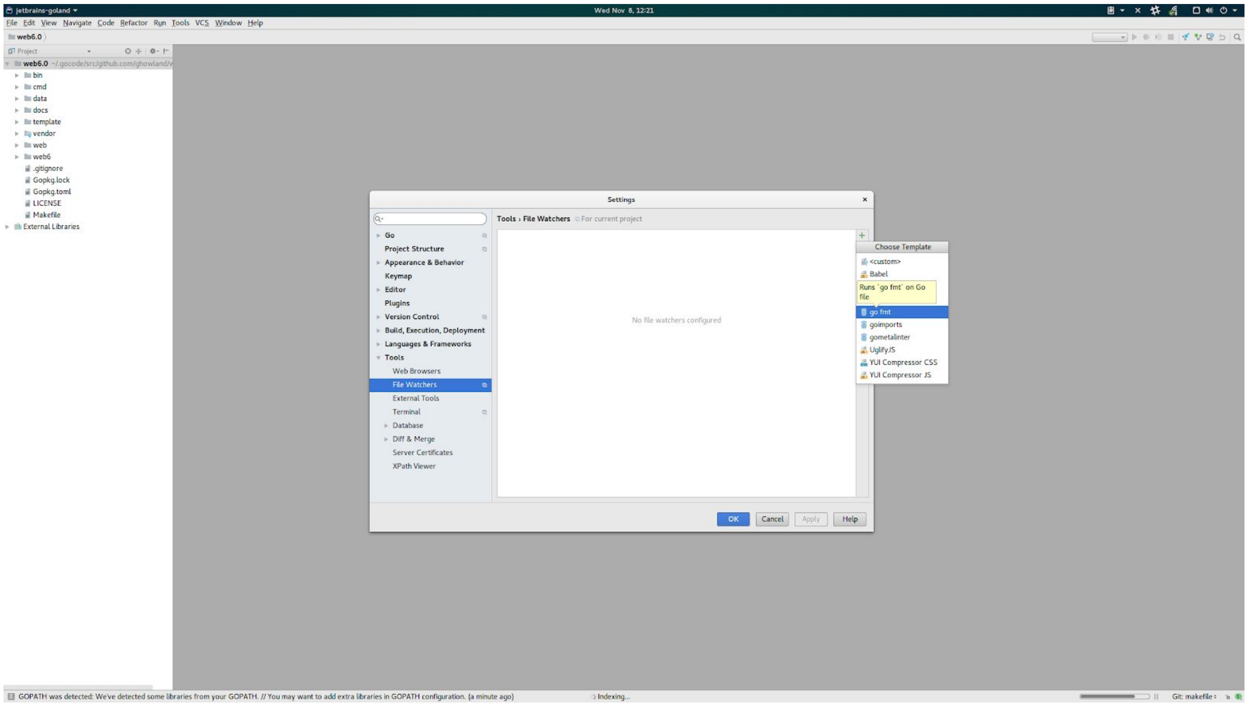
Gogland:

Go to File->Settings->Tools->File Watchers

(Older versions have this setting under File->Settings->Go->On Save)

Press + Add 'gofmt' and 'goimports' and 'gometalinters'

(Screenshot below of Goland 1.0 Preview)



No file watchers configured

Runs `go fmt` on Go file

GOPATH was detected: We've detected some libraries from your GOPATH. // You may want to add extra libraries in GOPATH configuration. (a minute ago)

Indexing...

How To

Run the schema exporter:

The schema exporter needs to be run any time the schema changes. Dataman uses this to make queries to the database, and will not know about any new or changed fields until this is done.

Edit the following file to match your Database configuration

```
vi ~/go/src/github.com/jacksontj/dataman/src/storage_node/storagenode/config.yaml
```

Run the schema exporter

```
./schemaexport --databases=<DATABASE_NAME> > schema.json
```

Copy the file in your web6.0/data directory

```
cp schema.json ~/go/src/github.com/ghowland/web6.0/data/
```