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Posted in: Development (/spaces/127/sandpiper/forums/5366/development)

## **Database Migrations**

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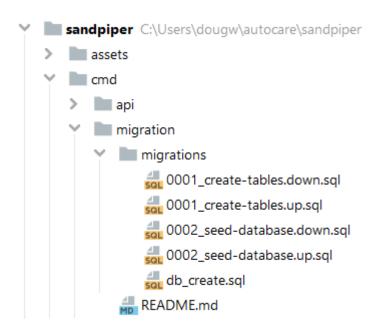
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Doug Winsby (https://autocare.communifire.com/people/dougwinsby) ===== 12/5/2019

On server start, the "database-version" is checked and any required SQL updates are applied.

After initial "release", new migrations are added to the "migrations" directory and then applied automatically when a program update is put into production.



We created this early in development because it takes a new database and adds initial tables and defaults (i.e. "seeding").

```
db (/spaces/127/sandpiper/searchresults?keyword=%22db%22&searchtags=1)
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seeding (/spaces/127/sandpiper/searchresults?keyword=%22seeding%22&searchtags=1)
```

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Doug Winsby (https://autocare.communifire.com/people/dougwinsby) 12/5/2019

We've decided to only create forward ("up") migrations. Here is one discussion that speaks to problems with providing rollback ("down") migrations:

https://flywaydb.org/documentation/command/undo#important-notes (https://flywaydb.org/documentation/command/undo#important-notes)

If for some reason the developers need to rollback database changes, they can do it in a separate "up" migration.

no-down-migrations (/spaces/127/sandpiper/searchresults?keyword=%22no-down-migrations%22&searchtags=1)

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Krister Kittelson (https://autocare.communifire.com/people/krister-kittelson)

:

12/9/2019

I definitely agree on the forward-only migration.

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Doug Winsby (https://autocare.communifire.com/people/dougwinsby) 1/4/2020

In order to make deployment easier, we're now embedding the migrations directly in the executable. There's a simple command to do this before a build, and it is all automated in the taskfile.yml (which is similar to a makefile) as shown below.

```
go-bindata:
 desc: Add go-bindata dependency and install it if necessary

    go get -u github.com/go-bindata/go-bindata/...

  silent: true
bindata-server:
  desc: Use go-bindata to encode file migrations in a go source file
 dir: pkg/api/migrations
 deps: [go-bindata]
  cmds:
    - go-bindata -ignore ".*md$|.*go$" -pkg migrations .
build-server:
  desc: Build sandpiper server
 dir: cmd/api
 deps: [bindata-server]
   - go build -v -o {{.EXE}} -ldflags="-X autocare.org/sandpiper/pkg/api/version.Version={{.VER}}"
 vars:
    EXE: api{{exeExt}}
    VER: {sh: git describe --always --long --dirty}
```

This means the actual migration files are no longer shipped with the client or server executable. Of course, they're still available with the source downloads.

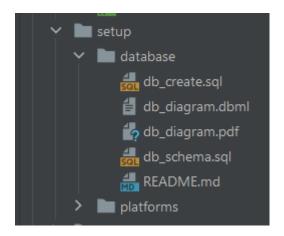
```
go-bindata (/spaces/127/sandpiper/searchresults?keyword=%22go-bindata%22&searchtags=1)
```

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8/6/2020

**UPDATE**: We no longer embed external migration files in the executable. We now define the migrations directly in the code using <a href="https://github.com/GuiaBolso/darwin">https://github.com/GuiaBolso/darwin</a> (<a href="https://github.com/GuiaBolso/darwin">https://github.com/GuiaBolso/darwin</a>).

We do maintain an external db\_schema.sql file for documentation purposes, though.



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