

Greaseh

It's a bird... It's a plane... It's...

SDKMAN!



About Me

Marco Vermeulen

- Polyglot & JVM Enthusiast
- Using Kotlin, Java, Groovy, Scala and Go
- Consulting in London & Barcelona
- Working with [Codurance](#) at [Mango](#)
- Creator of [SDKMAN!](#)
- Twitter [@marc0der](#)

Codurance



About the Talk

- Problem and Solution
- What is an SDK?
- Architecture
- Infrastructure
- Vending
- Contribution
- Future

DEMO!!!

SDK WTF?



What is an SDK?

- archive: `.zip` or `.tar.gz`
- containing folder: `${name}-${version}/`
- unix folder sub-structure: `/bin, /lib, /etc` etc.
- self contained

What is an SDK?

```
$ unzip springboot-2.1.3.RELEASE.zip
```

```
Archive:  springboot-2.1.3.RELEASE.zip
```

```
  creating: spring-2.1.3.RELEASE/
```

```
  creating: spring-2.1.3.RELEASE/lib/
```

```
  creating: spring-2.1.3.RELEASE/bin/
```

```
  creating: spring-2.1.3.RELEASE/legal/
```

```
  creating: spring-2.1.3.RELEASE/shell-completion/
```

```
  creating: spring-2.1.3.RELEASE/shell-completion/bash/
```

```
  creating: spring-2.1.3.RELEASE/shell-completion/zsh/
```

```
...
```

```
$ tree spring-2.1.3.RELEASE
```

```
spring-2.1.3.RELEASE
```

```
├── bin
│   ├── spring
│   └── spring.bat
├── INSTALL.txt
├── legal
│   └── open_source_licenses.txt
├── lib
│   └── spring-boot-cli-2.1.3.RELEASE.jar
├── LICENCE.txt
└── shell-completion
    └── zsh
        └── _spring
```

```
6 directories, 8 files
```

What is a Package?

- artifact: .deb, .rpm, .dmg, .pkg, .msi, .exe
- complex folder structure
- internal descriptors, scripts
- custom for distro, platform
- external dependencies

Package or SDK Manager?

Itchy Scratchy



Itch

- Working with many SDKs
- Downloading SDKs
- Extracting SDKs
- Manage many `_HOME` variables
- Adding these to `PATH`
- Simlinks to switch versions
- A Mundane Task!

Scratch

- An SDK Manager
- Install multiple Candidates
- Multiple Versions per Candidate
- Performs Downloads
- Deals with Archives
- Handle `_HOME` and `PATH` variables
- Always up to date

Command Line Interface

```
~ $ curl -s "https://get.sdkman.io" | bash

      +syyyyyyys:
        /yho:`-yd.
          /yh/`+m.
            .oho. hy
              .sh/` :N`
                .yh:`M-
                  .sh:`N:
                    `od/`N-
                      :do`M.
                        .YY-`N`
                          `+d+`:/oo/`-/osyh/ossssssdNMM`
                            -dh-:ymNMMMy`-/shmNm-`N/-.`.sN
                              `oNs`-hysosmMMMMydmNmDs+-.:ohm
                                .hN+ /d: -MMMhs/-.`.MMh .ss+-
                                  :mN/`N/`o/-` :MMMo +MMMN-
                                    /NN/`N+....-:/+ooooo+:+sMMM: hMMMM:
                                      /NMo -+ooooo+/:-....`....:+hNMN. `NMMMd`
                                        -NMd` :mm -MMMm- .s/
                                          `mMM/ .- /MMh. -dMo
                                            +MMM. sNo`.sNMM+
                                              mMMM- /--ohmMMM+
                                                MMMMh. `--+yy/`yMMM/
                                                  dMMMMmo-.`~~~~`.-:/osyhdddho.
                                                    .dMMMMMMmdddddmmNMMNMMNMMNMMNMMMs
                                                      `/ymNNNNNNNmmdys+/::----/dMMm:
                                                        `.-+hh/`
                                                          /moyso//+ossso:.
                                                            /+m: `.-:::-`
                                                              +MN/
                                                                /MM+
                                                                  :NMo
                                                                    -NMs
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                                                                        `mMm`
                                                                          `dMMMMyo:-.````.-:oymNy:`
                                                                           +NMMMMMMMMMMMMMMMMMMMs:`
                                                                            -+shmNMMNMdy+:`

Now attempting installation...
```

Why in bash?

[%step]

- * Light weight
- * Fast startup (no Java)
- * Many platforms (OSX, Linux, Cygwin, Solaris, BSD)
- * No dependencies (only Curl, Zip)

Bash Client: Bootstrap

```
~/.bashrc
```

```
#THIS MUST BE AT THE END OF THE FILE FOR SDKMAN TO WORK!!!  
[[ -s "/home/muppet/.sdkman/bin/sdkman-init.sh" ]]  
    && source "/home/muppet/.sdkman/bin/sdkman-init.sh"
```

Bash Client: Bootstrap

```
. ~/.sdkman/bin/sdkman-init.sh
```

```
# Source sdkman module scripts.
for f in $(find "${SDKMAN_DIR}/src" -type f -name 'sdkman-*');
do
    source "${f}"
done
----

=== Bash Client: Bootstrap

. ~/.sdkman/src/sdkman-help.sh
[source,bash]
----
function __sdk_help {
    __sdkman_echo_no_colour ""
    __sdkman_echo_no_colour "Usage: sdk <command> [candidate] [version]"
    __sdkman_echo_no_colour "      sdk offline <enable|disable>"
    ...
}
```

Bash Client: Bootstrap

```
. ~/ .sdkman/src/sdkman-main.sh
```

```
function sdk {  
    COMMAND="$1"  
    QUALIFIER="$2"  
    CMD_FOUND=""  
    CMD_TARGET="${SDKMAN_DIR}/src/sdkman-${COMMAND}.sh"  
    if [[ -f "$CMD_TARGET" ]]; then  
        CMD_FOUND="$CMD_TARGET"  
    fi  
    CONVERTED_CMD_NAME=$(echo "$COMMAND" | tr '-' '_')  
    if [ -n "$CMD_FOUND" ]; then  
        # It's available as a shell function  
        __sdk_ "$CONVERTED_CMD_NAME" "$QUALIFIER" "$3" "$4"  
    fi  
}
```

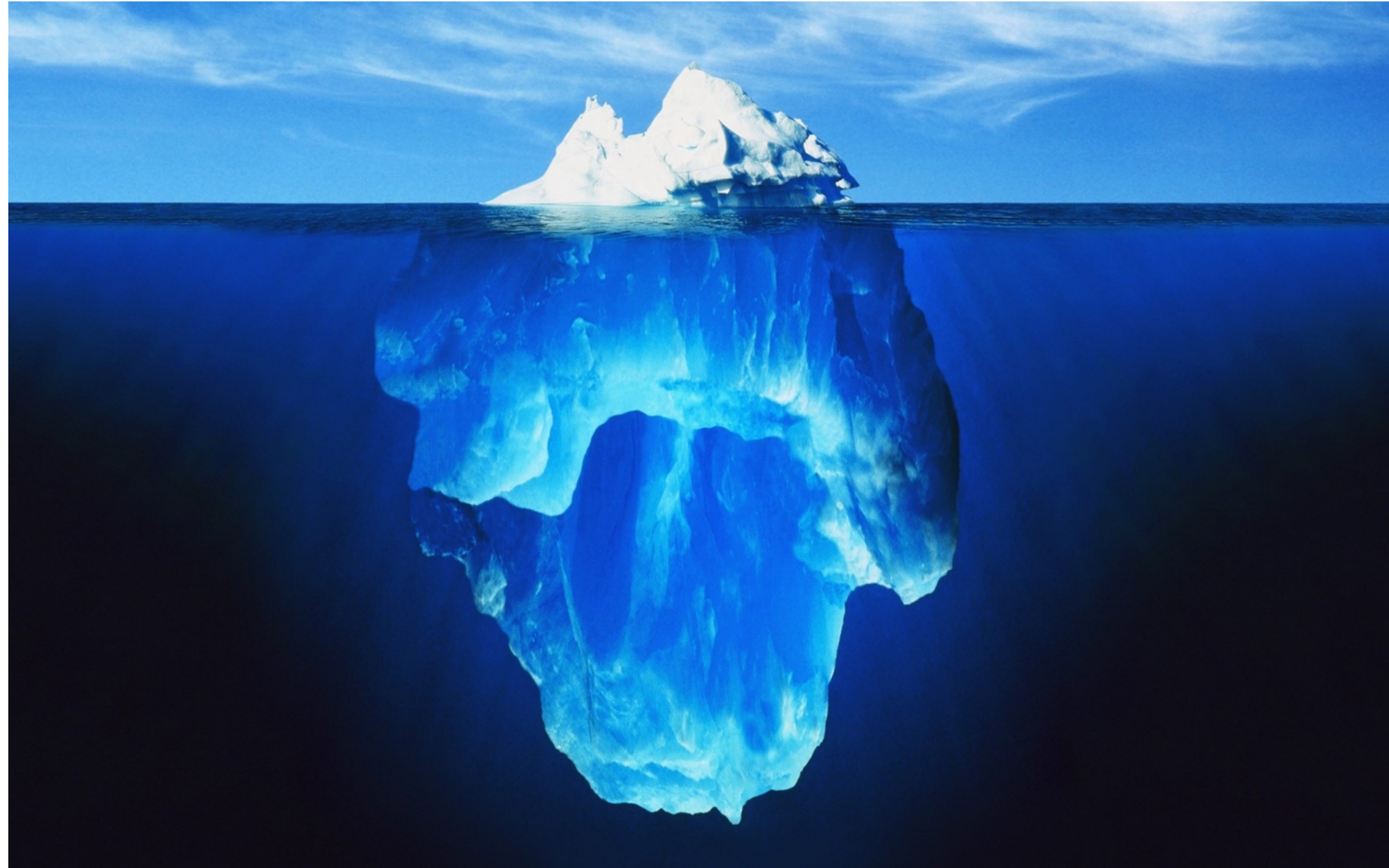

Looks good, but it's like building on
Quicksand!



Why use Native instead?

- Consistent behaviour
- Runs on LLVM
- Multi platform
- No dependencies *at all*
- Powerful standard libs

The Backend



Backend Architecture

- Microservices
- Docker
- NGINX
- MongoDB
- Postgres

API Services

- Proxy Service
- Candidate Service
- Hooks Service
- Broker Service
- Broadcast Service

Infrastructure

- Digital Ocean
- Docker Hub
- Terraform
- Ansible
- Kubernetes?

Vendoring

- Vendor APIs
- SDKMAN Vendor Gradle Plugin
- SDKMAN Vendor MVN Plugin
- Database Migrations

Contributing



Contributing

- [Trello Board](#)
- [Github Issues](#)
- [Contributor Guidelines](#)
- [Gitter user-issues](#)
- [Database Migrations](#)

What does the future hold?



Native Rewrite

- bash wrapper
- small iterations
- use cucumber features
- fully feature compliant
- Native CLI will speak JSON
- release v3 JSON API
- offline by default! (like apt or git)

Java Candidate

- custom list view
- JVM vendor namespace
- hooks backend migrate to Go CLI?

New Features

- Official Docker images [Issue #375](#)
- Major version alias [Issue #603](#)
- System installation fallback [Issue #673](#)
- Per project SDK configuration [Issue #683](#)
- Offer available version when version omitted [Issue #689](#)
- Clean up commands [Issue #688](#)

Thank You!

Q & A

Feedback



Please provide your Feedback!

<https://greach.contestia.es>