# Go Working Group – 3/6/2018

Attendees:  Fede (Cavium), Piotr (independent), Trevor, Tingyu, & Jim (Dell), Tony (Canonical), Steve (IoTech)

Discussion and action items as a result of meeting in RED.

## Old business

*Mono Repo*

- o Archive old Go repos when?
    - ▪ **Action**:  Jim to get with Jeremy to archive the old Go repo.
- o Pending PRs are ok to merge, **Action**:  Jim ok to merge except the one from Drasko #24.
- o Docker builds (not working yet)
    - ▪ Dockerfiles in branch are working – Fede to submit PR to move to master.
    - ▪ CI build/tests working on ARM are needed to complete everything appropriately
    - ▪ Tony – Snap using mono repos almost there – some files changed location and need to be addressed.
- o Consul integration
    - ▪ We want to follow the Java model (try A, then B, then C for config) as close as possible but with some improvements
        - • YAML for properties if we can
        - • Location of file by bootstrap properties
    - ▪ Bootstrap properties required
        - • URL for Consul – which should indicate to use Consul when set or not use Consul when URL is not provided
        - • Consul Profile or property file to use (default – aka Go, Docker, Snap eventually)
        - • Location – folder location for properties files when using local files instead of Consul
        - • Dell will look at option to use command line instead of file (like it is in Java) for bootstrap properties
    - ▪ Properties files should be in a YAML file (to keep consistent with Device Profiles) unless Consul does not support YAML (if not, use JSON)
        - • Should be easily mapped to command line properties
        - •  Tony revamped settings in DS Requirements – take a look
- o Log the startup time?
    - ▪ Instrumentation will eventually be needed for more than just startup time
    - ▪ We should use a library or tool to do this.  Vendor this type of need – with calls to vendor package for instrumentation.
    - ▪ Keep this as a roadmap item.  Don't include as part of the refactor work yet, but something we should come back to and implement (with idea of putting more in place than just start up time).
- o READMe consistency

- Action: Jim to look at and try to improve once the services, Makefile, etc. are all a little more stable.
  - Glide lock (and .gitignore)
    - We should put versions in the Glide file so that new pull or CI build all get and use the expected version of a dependency.
    - The Glide Lock therefore can be added to .gitignore (and prevent someone from getting and using someone else's or getting one before a make install is done.

## 0MQ vs Nats, gRPC

There are issues with use of ZeroMQ – especially as it relates to cross compiling and Windows development. Drasko thinks some of this might be solved with dynamic compiling. Jim reports that the 0MQ client library used may not compile on Windows based on some info from the forums.

Would it be easier/better to solve the 0MQ compiling difficulties and issues or switch to another message bus? In general, it would be good to have a native Go lightweight, message infrastructure to use between core data and distro (and rules engine). There are many options to include Nats, gRPC, etc.

Agree on the need for something that native compiles (Go or Java or whatever and doesn't need C build)
Need something that allows Windows developers to be able to build (0MQ is prohibitive to this today)
Need something that is brokerless – as default message implementation
Action: Jim to layout options below and how they fit to these criteria for next meeting.
- Apache Thrift – Steve says it has language bindings for al languages – all native, abstraction for data encoding/transport, and brokerless
- Nats?? – is it native, need some research
- ~~gRPC – group was not keen on this option; "overly complex"; "its just RPC"~~
- nanoMsg – go native implementation; recommended by Mainflux

# New business

## Any Other Open Items??

- Can we move to latest Go version (1.10)? Steve tried it out and it worked without issue.
  - Formally to be determined at next core working group meeting.
- We need to come back and revisit Arm32 builds – and is there a MongoDB binary for Arm32? Steve needs for Raspberry Pi.
  - To be put on to-do list after Arm64 all working.
  - We may need to consider getting and building our own infrastructure for these (Mongo, Consul, etc.)