[boot] subcommand to install/update dev and runtime dependencies

01/22/2020 04:45 PM - Tom Clegg

Status: In Progress
Priority: Normal
Assigned To: Tom Clegg
Category: 
Target version: 2020-04-08 Sprint

Description
The dev/test mode should cover everything at Hacking prerequisites
The non-dev/test mode should omit things like Go and phantomjs
By default, if anything needs to be done as root, complain and exit; if "root" command-line option is given,
Dev mode should install symlinks in /usr/local/bin so the developer can run phantomjs, passenger, keepstore, etc. easily. Conflicting contents of /usr/local/bin (which aren't symlinks to /var/lib/arvados) should be reported as an error.
All modes should install dependencies in /var/lib/arvados, and arvados-server boot should prefer to run binaries from there. For example, presence of an old version of ruby in /usr/local shouldn't break (or be broken by) anything in Arvados.
Before downloading anything (like ruby 2.5.5 source code), check /var/lib/arvados/archives first. This allows a workaround for packages that aren't available from the usual source, and allows testing without repetitive downloading.

References
arvbox dependency install:
the jenkins worker image install:
git@git.arvados.org:packer.git/jenkins/run_jenkins-slave-image-run-tests.sh

Subtasks:
Task # 16099: Review New

Related issues:
Related to Arvados Epics - Story #15941: arvados-boot In Progress 01/15/2020 04/15/2020
Related to Arvados - Story #16264: Handle R SDK dependencies better New
Blocks Arvados - Bug #16267: arvbox and jenkins images updated to use arvados... New

History
#1 - 01/22/2020 05:53 PM - Tom Clegg
- Related to Story #15941: arvados-boot added

#2 - 01/22/2020 06:22 PM - Tom Clegg
- Description updated

#3 - 01/22/2020 07:34 PM - Tom Clegg
- Story points set to 4.0
- Assigned To set to Tom Clegg

#4 - 01/22/2020 07:35 PM - Tom Clegg
- Target version set to 2020-02-12 Sprint

#5 - 01/22/2020 08:34 PM - Tom Clegg
This version should take care of dev/test dependencies mentioned at Hacking prerequisites. For example:

- Build arvados-server binary ("go build -o /tmp ./cmd/arvados-server")
- Bind mount it into a docker container ("docker run -it -v /tmp/arvados-server:/bin/arvados-server:ro debian:10")
- Run the install subcommand ("arvados-server install -type test")
- Commit the docker container
- The resulting image can check out (or bind-mount) an arvados source tree, and run ("arvados-server boot -type test -own-temporary-database -source /path/to/arvados -config /path/to/arvados/doc/examples/config/zzzzz.yml")

There's a test along these lines, but it's disabled by default. You can run it with:

```
go test -tags docker ./lib/install
```

The test downloads a lot, so it's good to use a proxy. If you set http_proxy and https_proxy env vars, they will be propagated to the docker container.

Once merged, this should reduce the "Hacking prerequisites" page to:

```
# (start with debian buster)
apt-get install --no-install-recommends build-essential ca-certificates git golang
go run git.arvados.org/arvados.git/cmd/arvados-server install -type test
```

...but for now, you need to insert extra steps to checkout this branch.

```
apt-get install --no-install-recommends build-essential ca-certificates git golang
go get -d -v git.arvados.org/arvados.git
{
    export GO111MODULE=on
    cd ~/go/src/git.arvados.org/arvados.git/cmd/arvados-server
    git checkout origin/16053-install-deps
go mod download
go install
}
~/go/bin/arvados-server install -type test
```

You can also build the arvados-server binary elsewhere, copy it to the target machine, and run:

```
/path/to/arvados-server install -type test
```

There's also a script that nearly makes it practical to use run-tests.sh in a docker container, without having to install stuff on your dev machine at all. Currently it operates on a copy of your working tree instead of a read-only mount, though, so it's not quite conducive to edit-and-test cycles. Next we need to clean up the remaining things in run-tests.sh (and test suites) that write files/dirs in the source tree.

```
# create a docker image with build deps:
./lib/install/arvadostest_docker_build.sh
```
# update the docker image with latest deps:
./lib/install/arvadostest_docker_build.sh --update

# run tests:
./lib/install/arvadostest_docker_run.sh --interactive

#13 - 03/20/2020 02:50 PM - Peter Amstutz
- Blocks Bug #16267: arvbox and jenkins images updated to use arvados-server install added

#14 - 03/20/2020 02:52 PM - Peter Amstutz
- Related to Story #16264: Handle R SDK dependencies better added

#15 - 03/25/2020 01:42 PM - Peter Amstutz
- Target version changed from 2020-03-25 Sprint to 2020-04-08 Sprint