

**WHAT DO I DO WITH MY  
HANDS  
AND WHY IS MY  
POSTURE SO BAD  
BY JAMIE WINSOR**

# 3.0 RELEASED APRIL 13TH 2014



# BERKSHelf

Chef Cookbook manager and dependency resolver

- » Retrieve a cookbooks dependencies
- » Package cookbooks and their dependencies
- » Author new cookbooks

# EHMAGERD



# BERKSHelf

memegenerator.net

# Chef Development Kit

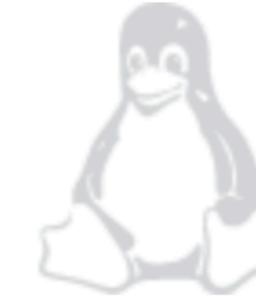
## Accelerate Your Chef Workflow

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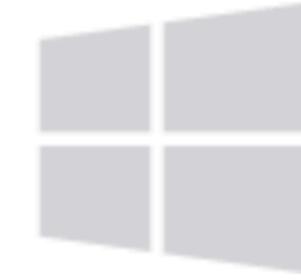
The Chef Development Kit contains everything you need to start using Chef along with the tools essential to managing the code that runs your business.



Mac



Linux



Windows

Version 0.0.1

Mac OS X 10.9

Download



# BERKSHELF CORE TEAM



- » Jamie Winsor <[jamie@vialstudios.com](mailto:jamie@vialstudios.com)>
- » Seth Vargo <[sethvargo@gmail.com](mailto:sethvargo@gmail.com)>
- » Michael Ivey <[michael.ivey@riotgames.com](mailto:michael.ivey@riotgames.com)>



**UND** **D**ead  
**LABS**



# STATE OF DECAY



# THE BERKSHELF WAY

- » Introduction to Chef Cookbooks
- » Introduction to Cookbook Patterns
- » Best practices in
  - » Cookbook development
  - » Cookbook management
- » Avoiding pitfalls
- » How to iterate quickly

Last year I gave a talk at ChefConf called The

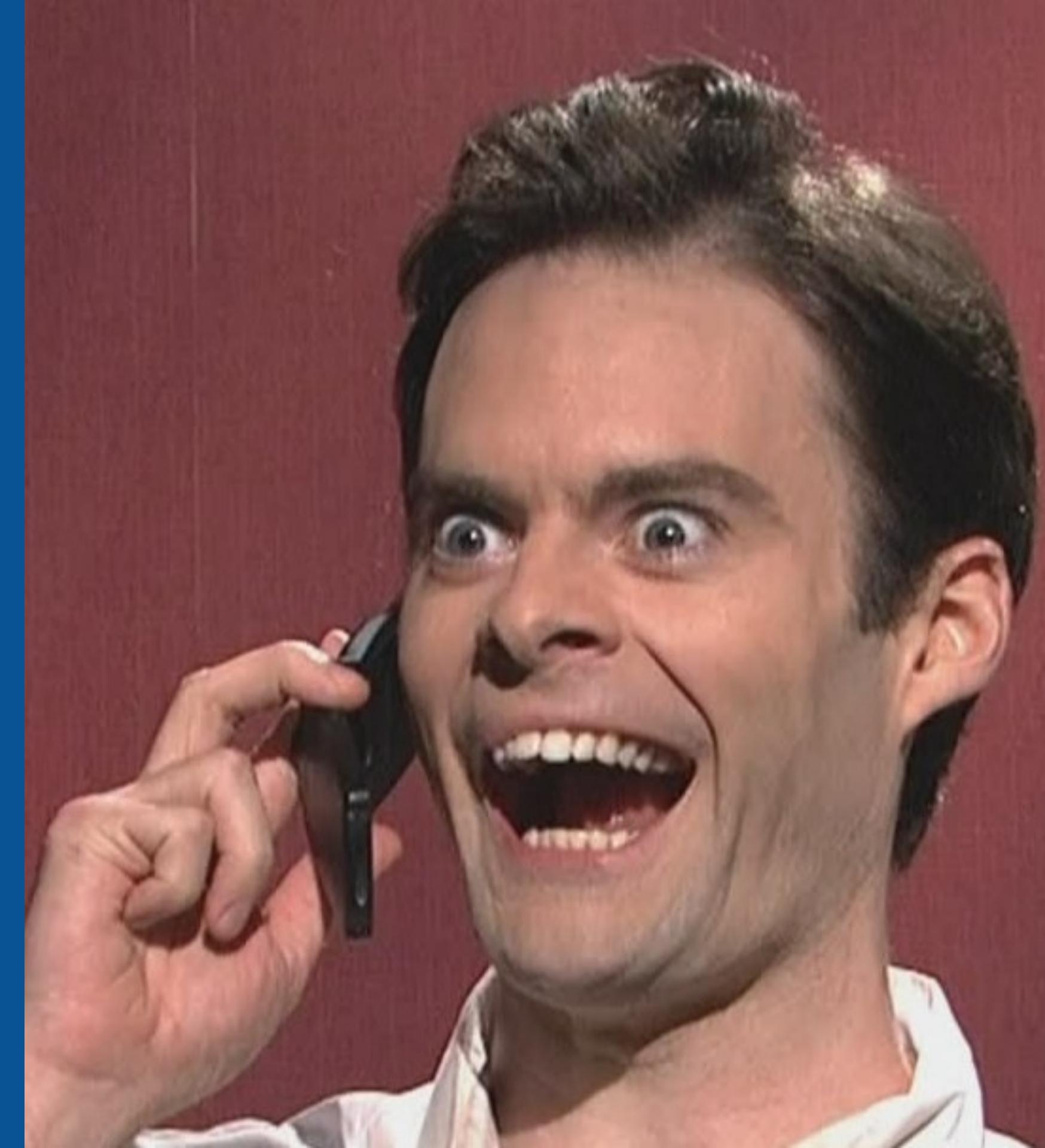


**“BERKSHELF  
DOESN'T WORK  
FOR MY  
WORKFLOW”**

A lot of smart people

**“UH... YEAH IT  
DOES”**

Me



# AUTOMATION IS DANGEROUS UNLESS

- » It is portable
- » It is repeatable
- » It is predictable

**IF IT'S NOT THE TOOL  
WHAT IS IT?**



**SOFTWARE DOESN'T  
SOLVE PROBLEMS.  
PEOPLE DO.**

**“IF YOU PUT THE RIGHT  
PEOPLE IN THE RIGHT  
ROOM THEY’LL SOLVE  
THE PROBLEM THE  
RIGHT WAY”**

Jeff Hackert

# YOUR WORKFLOW MIGHT NEED TO CHANGE

A dynamic illustration of a superhero, possibly Superman, flying through a crowd of people. The superhero is in the foreground, wearing a blue suit with a yellow 'S' emblem on the chest. He is flying towards the right, with his arms outstretched. Behind him, many people are running in various directions, some looking up at him. The background is filled with motion lines, suggesting speed and movement. The overall theme is one of disruption or change.

# DEVOPS IS A SOFTWARE DEVELOPMENT PATTERN



# DEVOPS IS NOT

- » A position
- » A team
- » A department
- » Or an organization

**“DISRUPTIVE STARTUP  
IS HIRING DEVOPS  
NINJAS”**

LinkedIn Spammer

**NOPE NOPE NOPE NOPE**



Schreiben Sie ein Top-Programm

# COMING TOGETHER

## Reviews

Panic

Jumpin Jack

Astroblast

u.a.

## Software

Wieder neun interessante Programme

Programmideen für Computer-



# THE BERKSHIRE VISION



**HOW DO WE CREATE A  
SELF CONTAINED  
RELEASE?**

# THE 3 REQUIREMENTS FOR SELF CONTAINED RELEASES

1. Software Artifact (`berkshelf-api.tar.gz`)
2. Cookbook Artifact (`berkshelf-api-cookbooks.tar.gz`)
3. Installation | Upgrade | Configuration Docs

# IF YOU'RE A DEVELOPER

Give these three things to your Operators for every release.

# IF YOU'RE AN OPERATOR

You should be receiving these three things for every release.



**IF YOU'RE BOTH,**

Throw a fucking pizza party



# WITH THOSE 3 THINGS YOU CAN

- » Build a new environment with a specific version
- » Upgrade pre-existing environments
- » Promote through logical environments  
(Dev, Stage, Production)

# AUTOMATION IS DANGEROUS UNLESS

- » It is portable
- » It is repeatable
- » It is predictable

**PUT THOSE 3 THINGS IN  
AN ARTIFACT SERVER**



# ARTIFACT SERVERS

- » Github | Github Enterprise
- » Sonatype's Nexus
- » Artifactory
- » Basic Auth HTTP Server (sadface)  
(<https://artifacts.myorg.com/myapp/1.2.3/>  
myapp.tar.gz)

# GITHUB RELEASES AND RELEASE ASSETS

Releases / tags

[Draft a new release](#)[Latest release](#) v1.2.1

-o de9a5f7

## v1.2.1: Version 1.2.1



reset released this 4 days ago · 2 commits to master since this release

[!\[\]\(49cbb2e1632523e5a49275e7246f5bb4\_img.jpg\) berkshelf-api.tar.gz](#)[!\[\]\(0aaf6c5af8ff35ff5b0de02b5677ab5d\_img.jpg\) cookbooks.tar.gz](#)[!\[\]\(18e1df0c276e9f4cd314213298ee2803\_img.jpg\) Source code \(zip\)](#)[!\[\]\(b72c7c325fc5c69eec18ae9d575d2a77\_img.jpg\) Source code \(tar.gz\)](#)[Edit](#) v1.2.0

-o 8ce6507

## v1.2.0: Version 1.2.0



reset released this 4 days ago · 6 commits to master since this release

[!\[\]\(bf9aa65835026b9434a2b7f40ea72276\_img.jpg\) berkshelf-api.tar.gz](#)[!\[\]\(43bfc027bf20b4a2ca689f83ca564697\_img.jpg\) cookbooks.tar.gz](#)[!\[\]\(2e80c97219f253f925f29663a9fa1ef2\_img.jpg\) Source code \(zip\)](#)[!\[\]\(90095e72e8c5bc6fa7bb35577bd4c01f\_img.jpg\) Source code \(tar.gz\)](#)[Edit](#)

## Releases / Tags

[Draft a new release](#)**Latest release** v1.2.1

-o de9a5f7

## v1.2.1: Version 1.2.1

**reset** released this 4 days ago · 2 commits to master since this release[!\[\]\(e863c85f1ef7035f8b603ed476f0520a\_img.jpg\) berkshelf-api.tar.gz](#)[!\[\]\(4ff7b6dc3492a48f1ce0c1b2da3e3d40\_img.jpg\) cookbooks.tar.gz](#)[!\[\]\(ab59d0598235e1fff2f06022b7b6963a\_img.jpg\) Source code \(zip\)](#)[!\[\]\(20a96ba917bd866241213e67496750ee\_img.jpg\) Source code \(tar.gz\)](#)[Edit](#) v1.2.0

-o 8ce6507

## v1.2.0: Version 1.2.0

**reset** released this 4 days ago · 6 commits to master since this release[!\[\]\(6999345ca83307ddaded2f49e803d024\_img.jpg\) berkshelf-api.tar.gz](#)[!\[\]\(19cded3c04027337f6be4447559b14ec\_img.jpg\) cookbooks.tar.gz](#)[!\[\]\(1800e30c06172d23269a2fef4d173091\_img.jpg\) Source code \(zip\)](#)[!\[\]\(7978977bda332d9fa1db754f017171f5\_img.jpg\) Source code \(tar.gz\)](#)[Edit](#)

# Berkshelf dependency API server <http://berkshelf.com> — Edit

301 commits

1 branch

9 releases

12 contributors



tag: v1.2.1 ▾

**berkshelf-api** / [+](#)

version bump 1.2.1



**reset** authored 4 days ago

latest commit [de9a5f707a](#)



improve boot speed of SrvCtl by waiting to load 'berks/api' at the

10 months ago



add build-essential to cookbook

4 days ago



version bump 1.2.1

4 days ago



fix load path in tests

5 days ago



add back gem building and releasing tasks

4 days ago



update README with cookbook installation instructions

4 days ago



target dev version to the same ruby as provided by chef

5 days ago

# GENERATING YOUR RELEASE ARTIFACTS



# THE SOFTWARE ARTIFACT

1. Bump version
2. Compile w/ dependencies
3. Test
4. Package  
(`myapp.tar.gz`)

# THE COOKBOOK ARTIFACT

## Pre-requisites

- » Resides in the same repository as your software
- » Shares the same version number as your compiled software
- » Deploys an archive of the software matching the cookbook's version (by default)
- » Follows the Environment Cookbook pattern

# ENVIRONMENT COOKBOOK

- » Nearly identical to an Application Cookbook
- » Has it's Berksfile.lock committed into version control

Generate an environment cookbook with:

```
$ berks cookbook {myapp} --pattern environment
```

# HOW DOES IT WORK?

The Berksfile.lock is distributed with the cookbook so it can be "applied" to a Chef Environment

```
$ berks apply berks-api-dev -b ~/Downloads/berkshelf-api/Berksfile.lock
```

This sets an equality lock in the Chef Environment (berks-api-dev) for each cookbook in the lockfile

# BERKSHELF-API SERVER EXAMPLE

- » Code in lib/
- » Binaries in bin/
- » Cookbook in cookbook/
- » cookbook/Berksfile.lock present in version control

```
$ cat cookbook/metadata.rb
```

```
lib = File.expand_path('../..../lib', __FILE__)
$LOAD_PATH.unshift(lib) unless $LOAD_PATH.include?(lib)
require 'berkshelf/api/version'

name          "berkshelf-api"
maintainer    "Jamie Winsor"
maintainer_email "jamie@vialstudios.com"
license        "Apache 2.0"
description    "Installs/Configures a berkshelf-api server"
long_description "Installs/Configures a berkshelf-api server"
version        Berkshelf::API::VERSION
```

Or with a VERSION file at the root of your application

```
$ cat cookbook/metadata.rb
```

```
name          "some-app"
maintainer    "Jamie Winsor"
maintainer_email "jamie@vialstudios.com"
version       File.read(File.expand_path("../../.VERSION", __FILE__))

# ...other metadata...
```

```
$ cat cookbook/attributes/default.rb
```

```
#  
# Cookbook Name:: berkshelf-api  
# Attribute:: default  
  
#  
  
default[:berkshelf_api][:release] =  
  "v#{Berkshelf::API::Chef.cookbook_version(run_context)}"
```

```
$ cat cookbook/libraries/berkshelf_api.rb
```

```
#  
# Cookbook Name:: berkshelf-api  
# Libraries:: berkshelf_api  
#  
  
module Berkshelf  
  module API  
    module Chef  
      class << self  
        # Returns the version of the loaded berkshelf-api cookbook  
        #  
        # @param [Chef::RunContext] context  
        #  
        # @return [String]  
        def cookbook_version(context)  
          context.cookbook_collection["berkshelf-api"].version  
        end  
      end  
    end  
  end  
end
```

# GENERATING THE COOKBOOK ARTIFACT

```
$ cd cookbook/  
$ berks package  
Cookbook(s) packaged to cookbooks-1397345842.tar.gz
```

## THE ARCHIVE CONTAINS

- » The Berksfile.lock from resolution
- » A cookbooks directory containing each cookbook found in the Berksfile.lock

# HOW DO I GET THE ARTIFACTS INTO A GITHUB RELEASE?

- » Octokit & Rake/Thor
- » Create a release manually and attach the asset  
(boo.)





# HOW DO I GET THE ARTIFACTS OUT?

# GITHUB COOKBOOK

Provides an LWRP for downloading

- » An asset from a Github release
- » An archive containing source code from a tag, branch, or revision

# LIBARCHIVE COOKBOOK

Provides an LWRP for idempotently extracting archives

```
$ cat cookbook/metadata.rb

name          "berkshelf-api"
maintainer    "Jamie Winsor"
maintainer_email "jamie@vialstudios.com"

# ... other metadata ...

depends "github"
depends "libarchive"
depends "build-essential", "~> 2.0"
```

```
$ cat cookbook/recipes/app.rb
```

```
node.set[:'build-essential'][:compile_time] = true
include_recipe "build-essential::default"

asset = github_asset "berkshelf-api.tar.gz" do
  repo "berkshelf/berkshelf-api"
  release "v1.2.1"
end

libarchive_file "berkshelf-api.tar.gz" do
  path asset.asset_path
  extract_to "/opt/berkshelf-api/v1.2.1"
  owner "berkshelf"
  group "berkshelf"

  action :extract
  notifies :restart, "runit_service[berks-api]"
  only_if { ::File.exist?(asset.asset_path) }
end
```

# THE STORY SO FAR

- » We have an encapsulated release containing
  - » A software artifact
  - » A cookbook artifact
- » And you wrote and committed a README containing installation/configuration instructions
- » It's located on an artifact server
- » Bonus round: The release is also tied to the version control ref it was built from

# SOLVING DISTRIBUTION

A man wearing sunglasses and a grey t-shirt is riding a motorcycle at night. He is looking back over his shoulder. The background is dark and out of focus.

When this baby hits 88 miles per hour, you're  
gonna see some serious shit.

# BERKFLOW

## A COOKBOOK-CENTRIC DEPLOYMENT WORKFLOW TOOL

# INSTALL BERKFLOW WITH CHEF-DK

```
$ sudo chef gem install berkflow  
$ export PATH=/opt/chefdk/embedded/bin:$PATH
```

```
$ which blo  
/opt/chefdk/embedded/bin/blo
```

Install with sudo for now:  
<https://github.com/opscode/chef-dk/issues/11>

# **"INSTALL" THE COOKBOOK ARTIFACT INTO YOUR CHEF SERVER**

```
$ blo install https://github.com/berkshelf/berkshelf-api/releases/download/v1.2.1/cookbooks.tar.gz
```

# "UPGRADING" A CHEF ENVIRONMENT

```
$ blo upgrade berks-api-dev berkshelf-api 1.2.1
```

Or upgrade to latest

```
$ blo upgrade berks-api-dev berkshelf-api latest
```

# ONE BUTTON UPGRADE

A man in a military-style uniform stands in front of a wall of computer monitors. He is wearing a camouflage jacket over a dark shirt and has a serious expression. The monitors are arranged in a grid pattern, showing various images and data. The background is a blurred indoor setting.

# WANNA MAKE GAMES?

<http://undeadlabs.com/jobs/>

- » Game Programmer
- » Game Producer
- » Game Animator
- » Game Designer

# EXTERNAL RESOURCES

- » <http://berkshelf.com>
- » <http://getchef.com/downloads/chef-dk>
- » <https://github.com/berkshelf/berkshelf>
- » <https://github.com/berkshelf/berkshelf-api>
- » <https://github.com/reset/berkflow>
- » <https://github.com/reset/libarchive-cookbook>
- » <https://github.com/reset/github-cookbook>



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