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# Vent Documentation

*Release 0.4.1*

**Cyber Reboot**

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# Api Functions

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Vent is a library that includes a CLI designed to serve as a general platform for analyzing network traffic. Built with some basic functionality, Vent serves as a user-friendly platform to build custom plugins on to perform user-defined processing on incoming network data. Vent supports any filetype, but only processes filetypes based on the types of plugins installed for that instance of vent.

Simply create your plugins, point Vent to them, install them, and drop a file in Vent to begin processing!



# CHAPTER 1

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## Dependencies

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```
docker >= 1.13.1
make (if building from source)
pip
python2.7.x
```



# CHAPTER 2

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## Getting Set Up

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There's two ways to get Vent up and running on your machine:

1. Pip:

```
$ pip install vent
```

2. Building from source (make is required):

```
$ git clone --recursive https://github.com/CyberReboot/vent.git
$ cd vent
$ make # (sudo may be required to install the vent command in the system bin path)
```

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**Note:** If you already have docker-py installed on your machine, you may need to pip uninstall docker-py first. vent will install docker-py as part of the installation process. However, there are known incompatibilities of docker-py with older versions.

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Once installed, it's simply:

```
$ vent
```



# CHAPTER 3

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## Contributing to Vent

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Want to contribute? Awesome! Issue a pull request or see more [details here](#).

See [this](#) for a crash course on npyscreen: the GUI used by Vent!

## vent.api package

### Submodules

#### vent.api.actions module

```
class vent.api.actions.Action(**kargs)
    Handle actions in menu

    add(repo, tools=None, overrides=None, version='HEAD', branch='master', build=True, user=None,
        pw=None, groups=None, version_alias=None, wild=None, remove_old=True, disable_old=True)
        Add a new set of tool(s)

    add_image(image, link_name, tag=None, registry=None, groups=None)
        Add a new image from a Docker registry

    static backup()
        Build a set of tools that match the parameters given

    build(repo=None, name=None, groups=None, enabled='yes', branch='master', version='HEAD')
        Build a set of tools that match the parameters given

    clean(repo=None, name=None, groups=None, enabled='yes', branch='master', version='HEAD')
        Clean (stop and remove) a set of tools that match the parameters given, if no parameters are given, clean
        all installed tools on the master branch at verison HEAD that are enabled

    static configure()
        get_configure(repo=None, name=None, groups=None, enabled='yes', branch='master', ver-
            sion='HEAD')
            Get the vent.template settings for a given tool by looking at the plugin_manifest
```

```
static help()
inventory (choices=None)
    Return a dictionary of the inventory items and status

logs (c_type=None, grep_list=None)
    Generically filter logs stored in log containers

prep_start (repo=None, name=None, groups=None, enabled='yes', branch='master', version='HEAD')
    Prep a bunch of containers to be started to they can be ordered

remove (repo=None, namespace=None, name=None, groups=None, enabled='yes', branch='master', version='HEAD', built='yes')
    Remove tools or a repo

reset ()
    Factory reset all of Vent's user data, containers, and images

static restore ()
save_configure (repo=None, name=None, groups=None, enabled='yes', branch='master', version='HEAD', config_val='', from_registry=False)
    Save changes made to vent.template through npyscreen to the template and to plugin_manifest

start (tool_d)
    Start a set of tools that match the parameters given, if no parameters are given, start all installed tools on the master branch at verison HEAD that are enabled

stop (repo=None, name=None, groups=None, enabled='yes', branch='master', version='HEAD')
    Stop a set of tools that match the parameters given, if no parameters are given, stop all installed tools on the master branch at verison HEAD that are enabled

update (repo=None, name=None, groups=None, enabled='yes', branch='master', version='HEAD')
    Update a set of tools that match the parameters given, if no parameters are given, updated all installed tools on the master branch at verison HEAD that are enabled

static upgrade ()
```

## vent.api.menu\_helpers module

```
class vent.api.menu_helpers.MenuHelper (**kargs)
    Handle helper functions in the API for the Menu

cores (action, branch='master', version='HEAD')
    Supply action (install, build, start, stop, clean) for core tools

repo_branches (repo)
    Get the branches of a repository

repo_commits (repo)
    Get the commit IDs for all of the branches of a repository

repo_tools (repo, branch, version)
    Get available tools for a repository branch at a version

tools_status (core, branch='master', version='HEAD', **kargs)
    Get tools that are currently installed/built/running and also the number of repos that those tools come from; can toggle whether looking for core tools or plugin tools
```

## vent.api.plugin\_helpers module

```
class vent.api.plugin_helpers.PluginHelper(**kargs)
    Handle helper functions for the Plugin class

    apply_path(repo)
        Set path to where the repo is and return original path

    available_tools(path, version='HEAD', groups=None)
        Return list of possible tools in repo for the given version and branch

    checkout(branch='master', version='HEAD')
        Checkout a specific version and branch of a repo

    clone(repo, user=None, pw=None)
        Clone the repository

    constraint_options(constraint_dict, options)
        Return result of constraints and options against a template

    get_path(repo, core=False)
        Return the path for the repo

    prep_start(repo=None, name=None, groups=None, enabled='yes', branch='master', version='HEAD')
        Start a set of tools that match the parameters given, if no parameters are given, start all installed tools on the master branch at verison HEAD that are enabled

    start_containers(container, tool_d, s_containers, f_containers)
        Start container that was passed in and return status

    start_priority_containers(groups, group_orders, tool_d)
        Select containers based on priorities to start

    start_remaining_containers(containers_remaining, tool_d)
        Select remaining containers that didn't have priorities to start

    start_sections(s, files, groups, enabled, branch, version)
        Run through sections for prep_start

    static tool_matches(tools=None, version='HEAD')
        Get the tools paths and versions that were specified
```

## vent.api.plugins module

```
class vent.api.plugins.Plugin(**kargs)
    Handle Plugins

    add(repo, tools=None, overrides=None, version='HEAD', branch='master', build=True, user=None, pw=None, groups=None, version_alias=None, wild=None, remove_old=True, disable_old=True, limit_groups=None, core=False)
        Adds a plugin of tool(s) tools is a list of tuples, where the pair is a tool name (path to Dockerfile) and version
            tools are for explicitly limiting which tools and versions (if version in tuple is '', then defaults to version)

        overrides is a list of tuples, where the pair is a tool name (path to Dockerfile) and a version
            overrides are for explicitly removing tools and overriding versions of tools (if version in tuple is '', then tool is removed, otherwise that tool is checked out at the specific version in the tuple)
```

**if tools and overrides are left as empty lists, then all tools in the** repo are pulled down at the version and branch specified or defaulted to

**version is globally set for all tools, unless overridden in tools or** overrides

branch is globally set for all tools build is a boolean of whether or not to build the tools now user is the username for a private repo if needed pw is the password to go along with the username for a private repo groups is globally set for all tools version\_alias is globally set for all tools and is a mapping from a

friendly version tag to the real version commit ID

**wild lets you specify individual overrides for additional values in the** tuple of tools or overrides. wild is a list containing one or more of the following: branch, build, groups, version\_alias the order of the items in the wild list will expect values to be tacked on in the same order to the tuple for tools and overrides in addition to the tool name and version

**remove\_old lets you specify whether or not to remove previously found** tools that match to ones being added currently (note does not stop currently running instances of the older version)

**disable\_old lets you specify whether or not to disable previously found** tools that match to ones being added currently (note does not stop currently running instances of the older version)

**limit\_groups is a list of groups to build tools for that match group** names in vent.template of each tool if exists

**Examples:**

**repo=fe** (get all tools from repo ‘fe’ at version ‘HEAD’ on branch ‘master’)

**repo=foo, version=”3d1f”, branch=”foo”** (get all tools from repo ‘foo’ at verion ‘3d1f’ on branch ‘foo’)

**repo=foo, tools=[(‘bar’, ‘’), (‘baz’, ‘1d32’)]** (get only ‘bar’ from repo ‘foo’ at version ‘HEAD’ on branch ‘master’ and ‘baz’ from repo ‘foo’ at version ‘1d32’ on branch ‘master’, ignore all other tools in repo ‘foo’)

**repo=foo overrides=[(‘baz/bar’, ‘’), (‘.’, ‘1c4e’)], version=‘4fad’** (get all tools from repo ‘foo’ at verion ‘4fad’ on branch ‘master’ except ‘baz/bar’ and for tool ‘.’ get version ‘1c4e’)

**repo=foo tools=[(‘bar’, ‘1a2d’)], overrides=[(‘baz’, ‘f2a1’)]** (not a particularly useful example, but get ‘bar’ from ‘foo’ at version ‘1a2d’ and get ‘baz’ from ‘foo’ at version ‘f2a1’ on branch ‘master’, ignore all other tools)

**add\_image (\*args, \*\*kwargs)**

**builder (\*args, \*\*kwargs)**

**current\_version (name, namespace=None, branch=’master’)**

Return current version for a given tool

**disable (name, namespace=None, branch=’master’, version=’HEAD’)**

Disable tool at a specific version, default to head

**enable (name, namespace=None, branch=’master’, version=’HEAD’)**

Enable tool at a specific version, default to head

**list\_tools ()**

Return list of tuples of all tools

**remove (name=None, repo=None, namespace=None, branch=’master’, groups=None, enabled=’yes’, version=’HEAD’, built=’yes’)**

Remove tool (name) or repository, repository is the url. If no arguments are specified, all tools will be removed for the defaults.

---

```
state (name, namespace=None, branch='master')
    Return state of a tool, disabled/enabled for each version

update (name=None, repo=None, namespace=None, branch=None, groups=None)
    Update tool (name) or repository, repository is the url. If no arguments are specified, all tools will be
    updated

versions (name, namespace=None, branch='master')
    Return available versions of a tool
```

## vent.api.templates module

```
class vent.api.templates.Template (template=None)
    Handle parsing templates

    add_option (*args, **kwargs)
    add_section (*args, **kwargs)
    constrained_sections (*args, **kwargs)
    del_option (*args, **kwargs)
    del_section (*args, **kwargs)
    option (*args, **kwargs)
    options (*args, **kwargs)
    section (*args, **kwargs)
    sections (*args, **kwargs)
    set_option (*args, **kwargs)
    write_config (*args, **kwargs)
```

## Module contents

## vent.core package

### Subpackages

[vent.core.file\\_drop package](#)

### Submodules

[vent.core.file\\_drop.file\\_drop module](#)

### Module contents

[vent.core.network\\_tap package](#)

### Subpackages

`vent.core.network_tap.ncontrol package`

**Subpackages**

`vent.core.network_tap.ncontrol.rest package`

**Submodules**

`vent.core.network_tap.ncontrol.rest.create module`

`vent.core.network_tap.ncontrol.rest.filters module`

`vent.core.network_tap.ncontrol.rest.start module`

`vent.core.network_tap.ncontrol.rest.stop module`

**Module contents**

**Submodules**

`vent.core.network_tap.ncontrol.ncontrol module`

**Module contents**

**Module contents**

`vent.core.rmq_es_connector package`

**Submodules**

`vent.core.rmq_es_connector.rmq_es_connector module`

**Module contents**

`vent.core.rq_worker package`

**Submodules**

`vent.core.rq_worker.file_watch module`

## Module contents

### Module contents

## vent.helpers package

### Submodules

#### vent.helpers.errors module

vent.helpers.errors.**ErrorHandler** (*function*)

#### vent.helpers.logs module

vent.helpers.logs.**Logger** (*name*, *\*\*kargs*)

Create and return logger

#### vent.helpers.meta module

vent.helpers.meta.**Containers** (*vent=True*, *running=True*)

Get containers that are created, by default limit to vent containers that are running

vent.helpers.meta.**Cpu**()

Get number of available CPUs

vent.helpers.meta.**Docker**()

Get Docker setup information

vent.helpers.meta.**Gpu** (*pull=False*)

Check for support of GPUs, and return what's available

vent.helpers.meta.**GpuUsage**()

Get the current GPU usage of available GPUs

vent.helpers.meta.**Images** (*vent=True*)

Get images that are build, by default limit to vent images

vent.helpers.meta.**Jobs**()

Get the number of jobs that are running and finished, and the number of total tools running and finished for those jobs

vent.helpers.meta.**Services** (*core*, *vent=True*, *\*\*kargs*)

Get services that have exposed ports, expects param core to be True or False based on which type of services to return, by default limit to vent containers, if not limited by vent containers, then core is ignored.

vent.helpers.meta.**System**()

Get system operating system

vent.helpers.meta.**Timestamp**()

Get the current datetime in UTC

vent.helpers.meta.**Tools** (*\*\*kargs*)

Get tools that exist in the manifest

vent.helpers.meta.**Uptime**()

Get the current uptime information

```
vent.helpers.meta.Version()
    Get Vent version
```

## vent.helpers.paths module

```
class vent.helpers.paths.PathDirs(base_dir='/home/docs/.vent/',
                                    meta_dir='/home/docs/.vent')
    Global path directories for vent

    static ensure_dir(path)
        Tries to create directory, if fails, checks if path already exists

    static ensure_file(path)
        Checks if file exists, if fails, tries to create file

    host_config()
        Ensure the host configuration file exists
```

## Module contents

## vent.menus package

### Submodules

#### vent.menus.add module

```
class vent.menus.add.AddForm(name=None, parentApp=None, framed=None, help=None,
                             color='FORMDEFAULT', widget_list=None, cycle_widgets=False,
                             *args, **keywords)
Bases: npyscreen.fmActionForm.ActionForm

For for adding a new repo

    create()
        Create widgets for AddForm

    default_repo = 'https://github.com/cyberreboot/vent-plugins'

    on_cancel()
        When user clicks cancel, will return to MAIN

    on_ok()
        Add the repository

    quit(*args, **kwargs)
        Overridden to switch back to MAIN form
```

#### vent.menus.add\_options module

```
class vent.menus.add_options.AddOptionsForm(name=None, parentApp=None, framed=None,
                                            help=None, color='FORMDEFAULT', wid-
                                            get_list=None, cycle_widgets=False, *args,
                                            **keywords)
Bases: npyscreen.fmActionForm.ActionForm
```

For specifying options when adding a repo

---

```

branch_cb = {}
branches = []
build_tc = {}
commit_tc = {}
commits = {}
create()
    Update with current branches and commits
error = None
on_cancel()
on_ok()
    Take the branch, commit, and build selection and add them as plugins
quit(*args, **kwargs)
repo_values()
    Set the appropriate repo dir and get the branches and commits of it

```

## vent.menus.choose\_tools module

```

class vent.menus.choose_tools.ChooseToolsForm(name=None, parentApp=None,
                                                framed=None, help=None,
                                                color='FORMDEFAULT', wid-
                                                get_list=None, cycle_widgets=False, *args,
                                                **keywords)

```

Bases: npyscreen.fmActionForm.ActionForm

For picking which tools to add

```

create()
    Update with current tools for each branch at the version chosen
on_cancel()
on_ok()
    Take the tool selections and add them as plugins
quit(*args, **kwargs)
repo_tools(branch)
    Set the appropriate repo dir and get the tools available of it
tools_tc = {}

```

## vent.menus.editor module

```

class vent.menus.editor.EditorForm(*args, **keywords)

```

Bases: npyscreen.fmActionForm.ActionForm

Form that can be used as a pseudo test editor in npyscreen

```

change_screens()
    Change to the next tool to edit or back to MAIN form

```

```
create()
    Create multi-line widget for editing

on_cancel()
    Don't save changes made to vent.template

on_ok()
    Save changes made to vent.template
```

## vent.menus.help module

```
class vent.menus.help.HelpForm(*args, **keywords)
Bases: npyscreen.fmFormWithMenus.ActionFormWithMenus

Help form for the Vent CLI

change_forms(*args, **keywords)
    Checks which form is currently displayed and toggles to the other one

create()
    Override method for creating FormBaseNew form

exit(*args, **keywords)

on_cancel()

on_ok()

static switch(page)
```

## vent.menus.inventory module

```
class vent.menus.inventory.InventoryForm(action=None, logger=None, *args, **keywords)
Bases: npyscreen.fmForm.FormBaseNew

Inventory form for the Vent CLI

create()
    Override method for creating FormBaseNew form

quit(*args, **kwargs)
    Overridden to switch back to MAIN form
```

## vent.menus.inventory\_forms module

```
class vent.menus.inventory_forms.BaseInventoryForm(action_dict=None,           ac-
                                                    tion_name=None,      *args,      **key-
                                                    words)
Bases: vent.menus.inventory.InventoryForm

Base form to inherit from

class vent.menus.inventory_forms.InventoryCoreToolsForm(*args, **keywords)
Bases: vent.menus.inventory_forms.BaseInventoryForm

Inventory Core Tools form for the Vent CLI
```

---

```
class vent.menus.inventory_forms.InventoryToolsForm(*args, **keywords)
    Bases: vent.menus.inventory_forms.BaseInventoryForm
    Inventory Tools form for the Vent CLI
```

## vent.menus.logs module

```
class vent.menus.logs.LogsForm(name=None, parentApp=None, framed=None, help=None,
                                color='FORMDEFAULT', widget_list=None, cycle_widgets=False,
                                *args, **keywords)
    Bases: npyscreen.fmForm.FormBaseNew
    Logs form for the Vent CLI

create()
    Override method for creating FormBaseNew form

quit(*args, **kwargs)
    Overridden to switch back to MAIN form
```

## vent.menus.main module

```
class vent.menus.main.MainForm(*args, **keywords)
    Bases: npyscreen.fmFormWithMenus.FormBaseNewWithMenus
    Main information landing form for the Vent CLI

add_form(form, form_name, form_args)
    Add new form and switch to it

static core_tools(action)
    Perform actions for core tools

create()
    Override method for creating FormBaseNewWithMenu form

static exit(*args, **kwargs)
help_form(*args, **keywords)
    Toggles to help

perform_action(action)
    Perform actions in the api from the CLI

remove_forms(form_names)
    Remove all forms supplied

switch_tutorial(action)
    Tutorial forms

system_commands(action)
    Perform system commands

static t_status(core)
    Get status of tools for either plugins or core

while_waiting()
    Update fields periodically if nothing is happening
```

## vent.menus.services module

```
class vent.menus.services.ServicesForm(*args, **keywords)
    Bases: npyscreen.fmForm.FormBaseNew

    Services form for the Vent CLI

    create()
        Override method for creating FormBaseNew form

    quit(*args, **kwargs)
        Overridden to switch back to MAIN form
```

## vent.menus.tools module

```
class vent.menus.tools.ToolForm(*args, **keywords)
    Bases: npyscreen.fmActionForm.ActionForm

    Tools form for the Vent CLI

    create()
        Update with current tools

    on_cancel()
        When user clicks cancel, will return to MAIN

    on_ok()
        Take the tool selections and perform the provided action on them

    quit(*args, **kwargs)
        Overridden to switch back to MAIN form
```

## vent.menus.tutorial\_forms module

```
class vent.menus.tutorial_forms.TutorialAddingFilesForm(*args, **keywords)
    Bases: vent.menus.tutorials.TutorialForm

    Tutorial Adding Files form for the Vent CLI

class vent.menus.tutorial_forms.TutorialAddingPluginsForm(*args, **keywords)
    Bases: vent.menus.tutorials.TutorialForm

    Tutorial Adding Plugins form for the Vent CLI

class vent.menus.tutorial_forms.TutorialBackgroundForm(*args, **keywords)
    Bases: vent.menus.tutorials.TutorialForm

    Tutorial Background form for the Vent CLI

class vent.menus.tutorial_forms.TutorialBuildingCoresForm(*args, **keywords)
    Bases: vent.menus.tutorials.TutorialForm

    Tutorial Building Cores form for the Vent CLI

class vent.menus.tutorial_forms.TutorialGettingSetupForm(*args, **keywords)
    Bases: vent.menus.tutorials.TutorialForm

    Tutorial Getting Setup form for the Vent CLI
```

---

```

class vent.menus.tutorial_forms.TutorialIntroForm (*args, **keywords)
    Bases: vent.menus.tutorials.TutorialForm
        Tutorial introduction landing form for the Vent CLI

class vent.menus.tutorial_forms.TutorialSettingUpServicesForm (*args, **keywords)
    Bases: vent.menus.tutorials.TutorialForm
        Tutorial Setting up Services form for the Vent CLI

class vent.menus.tutorial_forms.TutorialStartingCoresForm (*args, **keywords)
    Bases: vent.menus.tutorials.TutorialForm
        Tutorial Starting Cores form for the Vent CLI

class vent.menus.tutorial_forms.TutorialTerminologyForm (*args, **keywords)
    Bases: vent.menus.tutorials.TutorialForm
        Tutorial terminology form for the Vent CLI

```

## vent.menus.tutorials module

```

class vent.menus.tutorials.TutorialForm (title=' ', text=' ', next_tutorial=' ', *args, **keywords)
    Bases: npyscreen.fmFormWithMenus.ActionFormWithMenus
        Tutorial form for the Vent CLI

create()
    Overridden to add handlers and content

on_cancel()
    When user clicks cancel, will return to MAIN

on_ok()
    When user clicks ok, will proceed to next tutorial

quit (*args, **kwargs)
    Overridden to switch back to MAIN form

switch (name)
    Wrapper that switches to provided form

```

## Module contents



# CHAPTER 4

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## Indices and tables

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