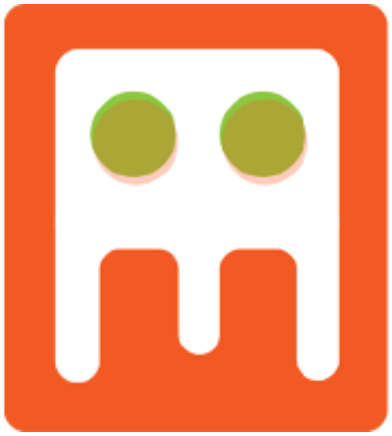
EMENDER

TEST YOUR DOCS LIKE A PRO



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TEST AUTOMATION

WHY TEST DOCUMENTATION

WHAT CAN BE TESTED

- Broken links
- Invalid packages
- Missing manual pages
- Completeness
- Release readiness
- Style guide violations
- …

EXAMPLE IMPLEMENTATION

```
#!/bin/bash

for link in `sed -ne 's/.*ulink url="\([^"]\+".*/\1/p' "$1"`; do
  curl -4ILfks "$link"
done
```

```
$ ./testLinks.sh Managing_Services_with_systemd.xml
sed: -e expression #1, char 32: Unmatched ( or \(
```

2 MINUTES LATER

```
#!/bin/bash

for link in `sed -ne 's/.*ulink url="\([^"]\+\)".*/\1/p' "$1"`; do
  curl -4ILfks "$link"
done
```

```
$ ./testLinks.sh Managing_Services_with_systemd.xml
HTTP/1.1 200 OK
Server: Apache
Last-Modified: Tue, 01 Sep 2015 07:53:09 GMT
ETag: "70b4f4-1a550-51eaad74d6340"
X-Cnection: close
Content-Type: text/html; charset=UTF-8
Date: Sun, 08 Nov 2015 02:52:44 GMT
Connection: keep-alive
```

5 MINUTES LATER

```
#!/bin/bash

for link in `sed -ne 's/.*ulink url="\([^"]\+\)".*/\1/p' "$1"`; do
  echo -n "$link  "
  curl -4ILfks "$link" &&gt;/dev/null \
    && echo '[ OK ]' \
    || echo '[ FAIL ]'
done
```

```
$ ./testLinks.sh Managing_Services_with_systemd.xml
https://access.redhat.com/  [ OK ]
https://acces.redhat.com/ [ FAIL ]
https://access.redhat.com/  [ OK ]
https://access.redhat.com/  [ OK ]
https://docs.fedoraproject.org/  [ OK ]
```

10 MINUTES LATER

```
#!/bin/bash

for link in `xmlstarlet sel -t -v '//ulink/@url' 2>/dev/null "$1"`; do
  echo -n "$link  "
  curl -4ILfks "$link" &&gt;/dev/null \
    && echo '[ OK ]' \
    || echo '[ FAIL ]'
done
```

```
$ ./testLinks.sh Managing_Services_with_systemd.xml
https://access.redhat.com/  [ OK ]
https://acces.redhat.com/ [ FAIL ]
https://access.redhat.com/  [ OK ]
https://access.redhat.com/  [ OK ]
```

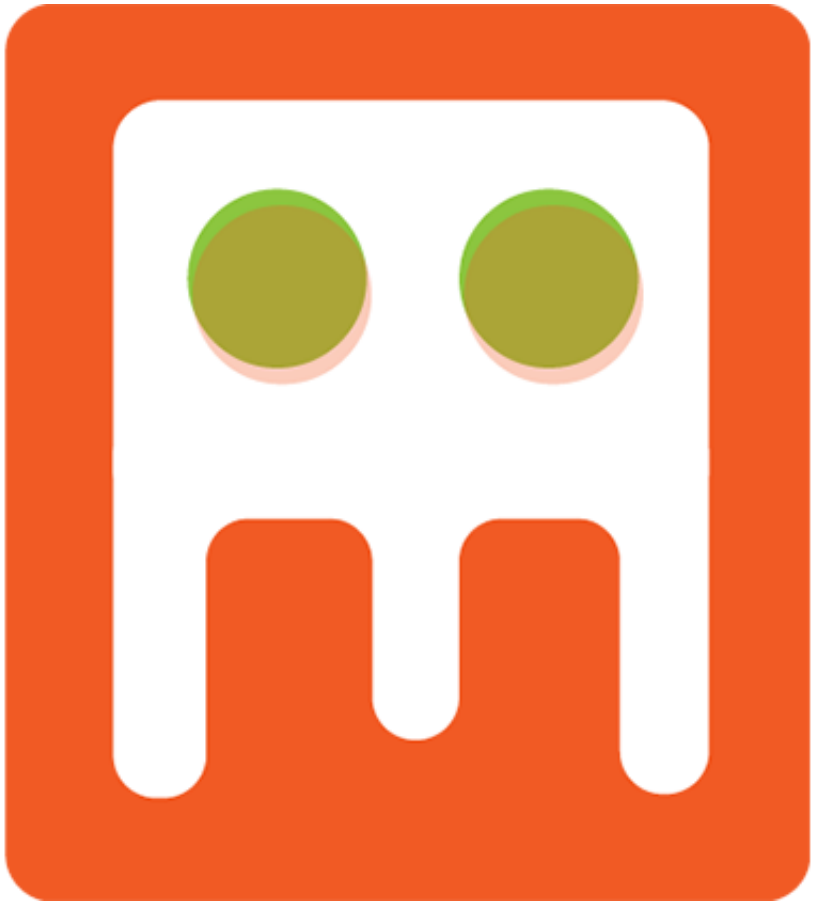
15 MINUTES LATER

```
#!/bin/bash

function print_links {
  xmlstarlet sel -t -v '//ulink/@url' 2>/dev/null "$1" | \
  sort -u | sed '/^$/d'
}

function check_link {
  curl --connect-timeout 5 --retry 3 \
       -4ILfks "$1" &>/dev/null
}

function print_status {
  if check_link "$1"; then
    echo "[ PASS ]  $1"
  else
    echo "[ FAIL ]  $1"
  fi
}

export -f print_status check_link
print_links "$1" | \
  xargs -n 1 -P 0 bash -c 'print_status "$@"' --
```

FEW HOURS LATER...

```
$ check-links -h
Usage: check-links [-acips] FILE
       check-links [-i] -l FILE

  -a           print the status of all links
  -c           enable colored output
  -i           perform XInclude processing
  -l           list all links without checking their status
  -p           check links in parallel
  -s           do not look for documents on the internal website
  -h           display this help and exit
$ check-links -acpi Managing_Services_with_systemd.xml
[ PASS ]  https://access.redhat.com/
[ FAIL ]  https://acces.redhat.com/
$
```

```
$ wc -l check-links
387 check-links
```



WHAT IS EMENDER?

EMEND (VERB)

- to revise and correct a piece of writing before it is printed

EMENDER (NOUN)

- one who emends

test automation framework designed specifically for product documentation

WHAT'S IN IT FOR ME?

All you need to do is to write a test and Emender does the rest:

- parses the source code
- handles return values
- handles the output (HTML, XML, or plain text)
- and makes the implematation much easier

HOW TO USE IT?

COMMAND-LINE INTERFACE

```
$ emend [options] [-o output_file] [test_file]
```

```
--Xparam=value
```

TIME FOR PRACTICAL EXAMPLES!

USEFUL OPTIONS

Option	Description
-c, --color	enables colored output
-l, --list	lists available tests and exit
-D, --debug	enables debugging information
-h, --help	prints help

For more, see the **emend**(1) manual page.

WRITING A TEST

GETTING STARTED

- Tests are written in Lua
- Tests are implemented as Lua classes
- Tests are typically stored in the "test" directory

A TYPICAL TEST CONSISTS OF

- A class definition
  - Metadata (description, authors, tags)
  - List of dependencies
- A setup method
- A clean-up method
- One or more test methods
- Any other methods

A CLASS DEFINITION

```
TestLinks = {
  metadata = {
    description = "Verify that external links work.",
    authors = "Jaromir Hradilek",
    emails = "jhradilek@gmail.com",
    changed = "2015-11-07",
    tags = {"DocBook", "Sanity"},
  },
  requires = {"curl", "xmlstarlet"}
}
```

A SETUP METHOD

```
function TestLinks.setUp()
    local file = "en-US/Managing_Services_with_systemd.xml"
    local command = "xmlstarlet sel -t -v '//ulink/@url' 2>/dev/null " ..
                    file .. " | sort -u | sed '/^$/d'"

    TestLinks.links = execCaptureOutputAsTable(command)
end
```

A CLEAN-UP METHOD

```
function TestLinks.tearDown()
  -- Nothing to do here
end
```

A TEST METHOD

```
function TestLinks.testExternalLinks()
  for _, link in ipairs(TestLinks.links) do
    is_true(TestLinks.isWorking(link), link)
  end
end
```

OTHER METHODS

```
function TestLinks.isWorking(link)
  local command = "curl --connect-timeout 5 --retry 3 " ..
                  "-4ILfks " .. link .. " &>/dev/null;" ..
                  "echo $?"
  local result = execCaptureOutputAsString(command)

  if result == "0" then
    return true
  else
    return false
  end
end
```

EXAMPLE OUTPUT

```
Checking existence of command 'curl': OK
Checking existence of command 'xmllint': OK
------------------------------------------------------------------------------
                              :: TestLinks ::
------------------------------------------------------------------------------

  Description:     Verify that external links work.
  Authors:         Jaromir Hradilek
  Emails:          jhradilek@gmail.com
  Last Modified:   2015-11-07
  Tags:            DocBook, Sanity
  Required tools:  curl, xmllint

  Test setup


  Test Case: testExternalLinks

    [ FAIL ]  https://acces.redhat.com/
    [ PASS ]  https://access.redhat.com/

  Test tearDown


  Test Summary

    Executed Test Cases: 1
    Passed Test Cases:   0
    Failed Test Cases:   1
    Encountered Errors:  0
    Overall Result:      FAIL

------------------------------------------------------------------------------
                              :: Summary ::
------------------------------------------------------------------------------

  Executed Tests: 1
  Passed Tests:   0
  Failed Tests:   1
  Overall Result: FAIL
```

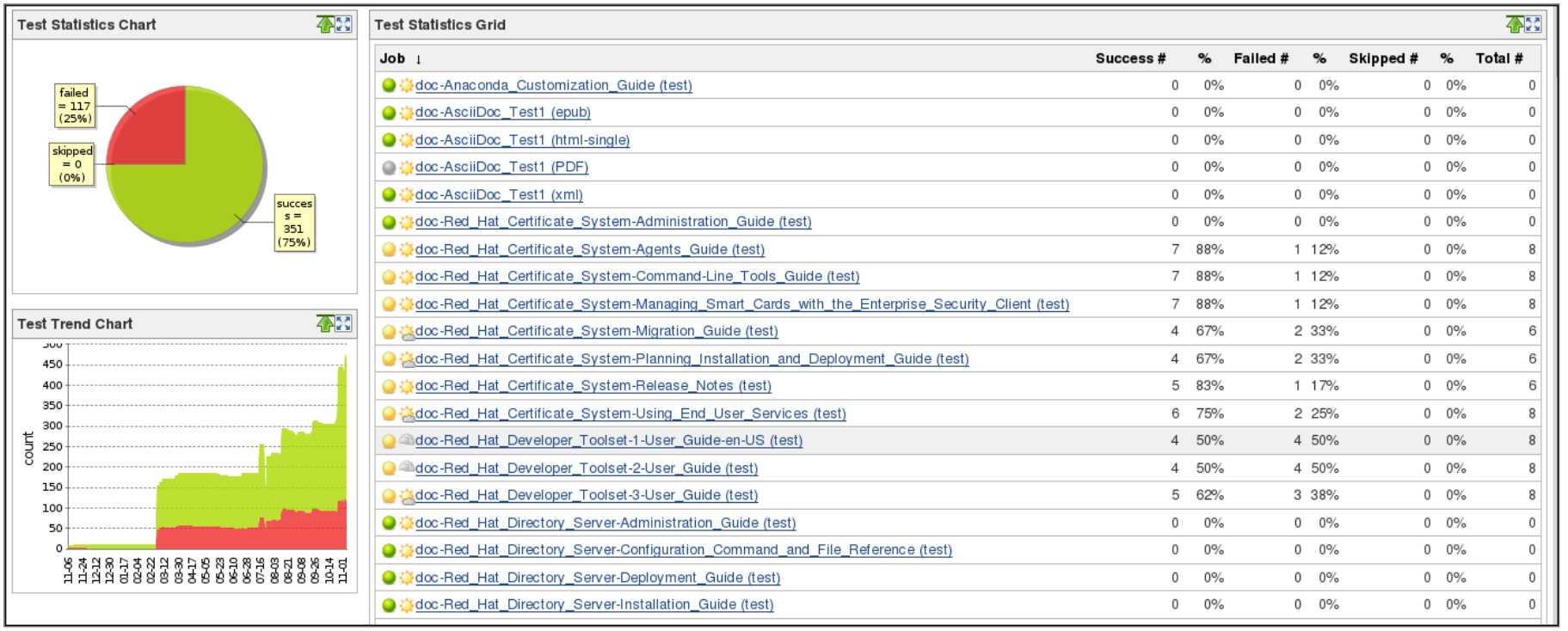
CONTINUOUS INTEGRATION WITH JENKINS

CONTINUOUS INTEGRATION

*"Continuous integration (CI) is the practice, in software engineering, of merging all developer working copies to a shared mainline several times a day." (**Wikipedia**)*

*"Later elaborations of the concept introduced build servers, which automatically ran the unit tests periodically or even after every commit and report the results to the developers." (**Wikipedia**)*

JENKINS — INTEGRATION SERVER



Job ↓	Success #	%	Failed #	%	Skipped #	%	Total #
doc-Anaconda_Customization_Guide (test)	0	0%	0	0%	0	0%	0
doc-AsciiDoc_Test1 (epub)	0	0%	0	0%	0	0%	0
doc-AsciiDoc_Test1 (html-single)	0	0%	0	0%	0	0%	0
doc-AsciiDoc_Test1 (PDF)	0	0%	0	0%	0	0%	0
doc-AsciiDoc_Test1 (xml)	0	0%	0	0%	0	0%	0
doc-Red_Hat_Certificate_System-Administration_Guide (test)	0	0%	0	0%	0	0%	0
doc-Red_Hat_Certificate_System-Agents_Guide (test)	7	88%	1	12%	0	0%	8
doc-Red_Hat_Certificate_System-Command-Line_Tools_Guide (test)	7	88%	1	12%	0	0%	8
doc-Red_Hat_Certificate_System-Managing_Smart_Cards_with_the_Enterprise_Security_Client (test)	7	88%	1	12%	0	0%	8
doc-Red_Hat_Certificate_System-Migration_Guide (test)	4	67%	2	33%	0	0%	6
doc-Red_Hat_Certificate_System-Planning_Installation_and_Deployment_Guide (test)	4	67%	2	33%	0	0%	6
doc-Red_Hat_Certificate_System-Release_Notes (test)	5	83%	1	17%	0	0%	6
doc-Red_Hat_Certificate_System-Using_End_User_Services (test)	6	75%	2	25%	0	0%	8
doc-Red_Hat_Developer_Toolset-1-User_Guide-en-US (test)	4	50%	4	50%	0	0%	8
doc-Red_Hat_Developer_Toolset-2-User_Guide (test)	4	50%	4	50%	0	0%	8
doc-Red_Hat_Developer_Toolset-3-User_Guide (test)	5	62%	3	38%	0	0%	8
doc-Red_Hat_Directory_Server-Administration_Guide (test)	0	0%	0	0%	0	0%	0
doc-Red_Hat_Directory_Server-Configuration_Command_and_File_Reference (test)	0	0%	0	0%	0	0%	0
doc-Red_Hat_Directory_Server-Deployment_Guide (test)	0	0%	0	0%	0	0%	0
doc-Red_Hat_Directory_Server-Installation_Guide (test)	0	0%	0	0%	0	0%	0

WHAT DID WE LEARN?


YOUR ATTENTION
I THANK YOU
FOR
memegenerator.net

GET IN TOUCH:

Join the **Emender** project on GitHub

Contact us: **bara@redhat.com** or **jaromir@redhat.com**