

自动化测试框架：JMeter + Ant + Jenkins 【linux 版】

前提条件：linux 安装了 jmeter、ant、jenkins

[安装方法参考汇总目录中对应的博文](#)

截图看不清的，可以调大浏览器倍数看

ant 调用 jmeter 脚本（通过 ant 命令）

linux 服务器上 创建好目录

uncleyong

--jmeter_script

--result

--html

--jtl

build.xml

build.xml 是 ant 的核心文件，（[点击这里获取](#)），build.xml 文件的配置，见里面说明

html 放 html 结果，jtl 放 jtl 结果

```
[root@uncleyong ~]# mkdir uncleyong
[root@uncleyong ~]# cd uncleyong/
[root@uncleyong uncleyong]# mkdir jmeter_script
[root@uncleyong uncleyong]# mkdir result
[root@uncleyong uncleyong]# cd result/
[root@uncleyong result]# mkdir html
[root@uncleyong result]# mkdir jtl
[root@uncleyong result]#
```

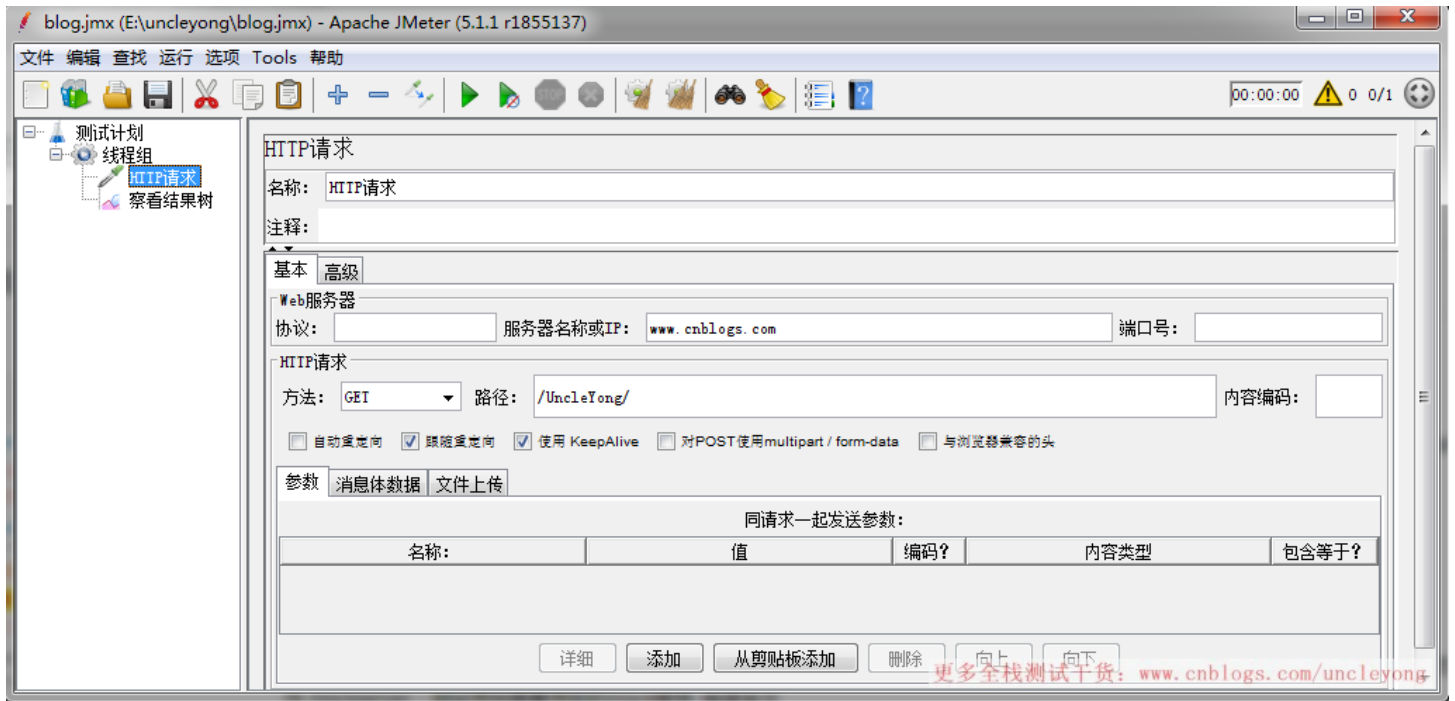
更多全栈测试干货：www.cnblogs.com/uncleyong

```
[root@uncleyong uncleyong]# ls
build.xml  jmeter_script  result
[root@uncleyong uncleyong]#
```

更多全栈测试干货：www.cnblogs.com/uncleyong

准备一个 jmeter 接口脚本

get 请求，访问：www.cnblogs.com/UncleYong/



将脚本上传到 linux 服务器的 jmeter_script 目录下

```
[root@uncleyong uncleyong]# cd jmeter_script/
[root@uncleyong jmeter_script]# ls
[root@uncleyong jmeter_script]# rz
□z waiting to receive.*□B0100000023be50
[root@uncleyong jmeter_script]# ls
blog.jmx
[root@uncleyong jmeter_script]#
[root@uncleyong jmeter_script]#
```

将 Jmeter 所在目录下 extras 子目录 (/usr/local/apache-jmeter-5.1.1/extras) 里的 ant-JMeter-1.1.1.jar 复制到 ant 的 lib 目录下 (/usr/local/apache-ant-1.9.14/lib/)，这样 ant 运行时才能找到

"org.programmerplanet.ant.taskdefs.jmeter.JMeterTask"这个类，从而成功触发 JMeter 脚本

```
[root@uncleyong extras]# pwd
/usr/local/apache-jmeter-5.1.1/extras
[root@uncleyong extras]# ls
addons.txt          execcode.bsh          printvars.bsh        schematic.sh
addons.xml          expand.png             proxycert.cmd        schematic.xml
ant-jmeter-1.1.1.jar GrafanaJMeterTemplate.json proxycert.sh         schematic.xml
build.xml           jmeter-results-detail-report_21.xsl remote.bsh           startup.bsh
collapse.png        jmeter-results-report_21.xsl    schematic.cmd        Test.jmx
[root@uncleyong extras]# cp ant-jmeter-1.1.1.jar /usr/local/apache-ant-1.9.14/lib/
[root@uncleyong extras]# cd /usr/local/apache-ant-1.9.14/lib/
[root@uncleyong lib]# ls
ant-antlr.jar      ant-apache-regexp.jar  ant-jai.jar          ant-jsch.jar          ant-parent.pom
ant-antlr.pom      ant-apache-regexp.pom  ant-jai.pom          ant-jsch.pom          ant.pom
ant-apache-bcel.jar ant-apache-resolver.jar ant-javamail.jar      ant-junit4.jar        ant-swing.jar
ant-apache-bcel.pom ant-apache-resolver.pom ant-javamail.pom      ant-junit4.pom        ant-swing.pom
ant-apache-bsf.jar  ant-apache-xalan2.jar  ant-javamail.pom      ant-junit.jar         ant-testutil.jar
ant-apache-bsf.pom  ant-apache-xalan2.pom  ant-jdepend.jar      ant-junit.pom         ant-testutil.pom
ant-apache-log4j.jar ant-commons-logging.jar ant-jdepend.pom       ant-launcher.jar      libraries.properties
ant-apache-log4j.pom ant-commons-logging.pom ant-jdepend.pom       ant-launcher.pom      README
ant-apache-oro.jar  ant-commons-net.jar    ant-jmf.jar          ant-netrexx.jar       ant-netrexx.pom
ant-apache-oro.pom  ant-commons-net.pom    ant-jmf.pom          ant-netrexx.pom
[root@uncleyong lib]#
```

将 jmeter.results.shanhe.me.xml ([点击这里获取](#)) 放到 jmeter 的 extras 目录下

```
[root@uncleyong extras]# rz
□z waiting to receive.**□B0100000023be50
[root@uncleyong extras]# ls
addons.txt          expand.png           proxycert.cmd      schematic.xml
addons.xml          GrafanaJMeterTemplate.json  proxycert.sh       startup.bsh
ant-jmeter-1.1.1.jar  jmeter-results-detail-report_21.xml  remote.bsh         Test.jmx
build.xml           jmeter-results-report_21.xml      schematic.cmd
collapse.png        jmeter.results.shanhe.me.xml      schematic.sh
execcode.bsh        printvars.bsh       schematic.xml
[root@uncleyong extras]#
```

更多全栈测试干货: www.cnblogs.com/uncleyong

修改 jmeter 目录(/usr/local/apache-jmeter-5.1.1/bin)下的 jmeter.properties, 去掉 jmeter.save.saveservice.output_format 前的注释并将值设置为 xml

```
# legitimate values: xml, csv, db. Only xml and csv are currently supported.
# jmeter.save.saveservice.output_format=csv
```

更多全栈测试干货: www.cnblogs.com/uncleyong

```
# legitimate values: xml, csv, db. Only xml and csv are currently supported.
jmeter.save.saveservice.output_format=xml
```

更多全栈测试干货: www.cnblogs.com/uncleyong

执行 ant

```
[root@uncleyong html]# ant
Buildfile: build.xml does not exist!
Build failed
[root@uncleyong html]#
```

更多全栈测试干货: www.cnblogs.com/uncleyong

在 build.xml 目录, 执行 ant 命令

```
[root@uncleyong uncleyong]# ls
build.xml  jmeter_script  result
[root@uncleyong uncleyong]# ant
Buildfile: /root/uncleyong/build.xml

BUILD FAILED
/root/uncleyong/build.xml:9: The processing instruction target matching "[xX][mM][lL]" is not allowed.

Total time: 0 seconds
```

更多全栈测试干货: www.cnblogs.com/uncleyong

<?xml version="1.0" encoding="UTF-8"?>前面不要有任何其他字符, 如空格、回车、换行, 否则就会报上面的异常。

Since you are using an XML declaration, you must start your file with:

<?xml version="1.0" ...

```

1 <!--
2 * @Author : uncleyong
3 * @Blog : http://www.cnblogs.com/UncleYong
4 * @Gitee : https://gitee.com/UncleYong
5 * @QQ交流群 : 66719336
6 -->
7
8
9 <?xml version="1.0" encoding="utf8"?>
10
11 <project name="ant-jmeter-test" default="run" basedir=". ">
12     <tstamp>

```

更多全栈测试干货: www.cnblogs.com/uncleyong

删除注释后

```

1 <?xml version="1.0" encoding="utf8"?>
2 <project name="ant-jmeter-test" default="run" basedir=". ">
3     <tstamp>
4         <format property="time" pattern="yyyyMMddhhmm" />
5     </tstamp>
6     <!-- 需要改成自己本地的jmeter目录-->

```

更多全栈测试干货: www.cnblogs.com/uncleyong

执行 ant, 执行成功

```

[root@uncleyong uncleyong]# ls
build.xml  jmeter_script  result
[root@uncleyong uncleyong]# ant
Buildfile: /root/uncleyong/build.xml

all:

test:
[jmeter] Executing test plan: /root/uncleyong/jmeter_script/blog.jmx ==> /root/uncleyong/result/jtl/result_20190424_0101.jtl
[jmeter] Creating summariser <summary>
[jmeter] Created the tree successfully using /root/uncleyong/jmeter_script/blog.jmx
[jmeter] Starting the test @ Wed Apr 24 13:01:11 CST 2019 (1556082071903)
[jmeter] Waiting for possible Shutdown/StopTestNow/HeapDump/ThreadDump message on port 4445
[jmeter] summary =      1 in 00:00:00 =      2.3/s Avg:      56 Min:      56 Max:      56 Err:      0 (0.00%)
[jmeter] Tidying up ...      @ Wed Apr 24 13:01:13 CST 2019 (1556082073021)
[jmeter] ... end of run

report:
[xslt] Processing /root/uncleyong/result/jtl/result_20190424_0101.jtl to /root/uncleyong/result/html/result_20190424_0101.html
[xslt] Loading stylesheet /usr/local/apache-jmeter-5.1.1/extras/jmeter-results-detail-report_21.xsl

BUILD SUCCESSFUL
Total time: 4 seconds

```

更多全栈测试干货: www.cnblogs.com/uncleyong

下载生成的 jtl 报告

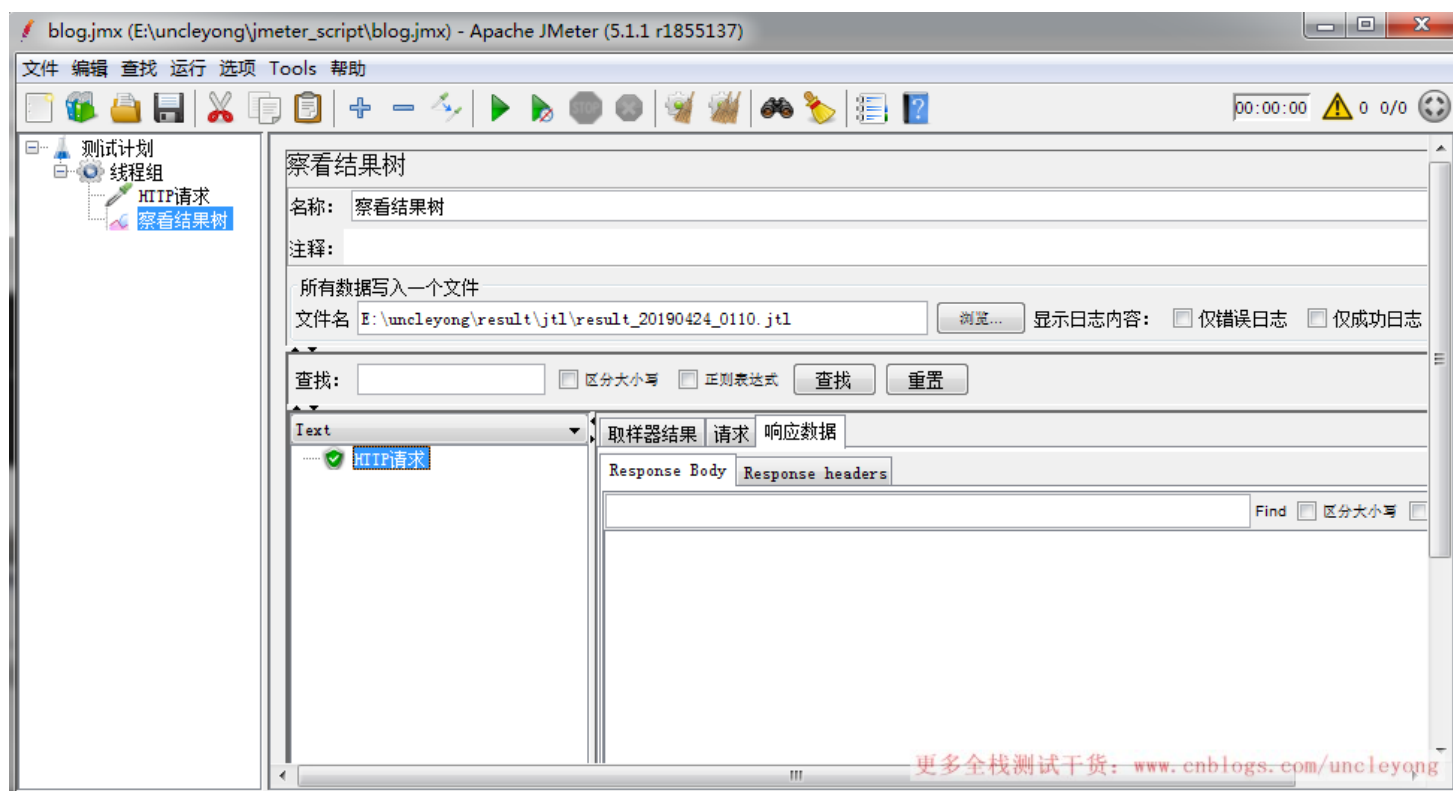
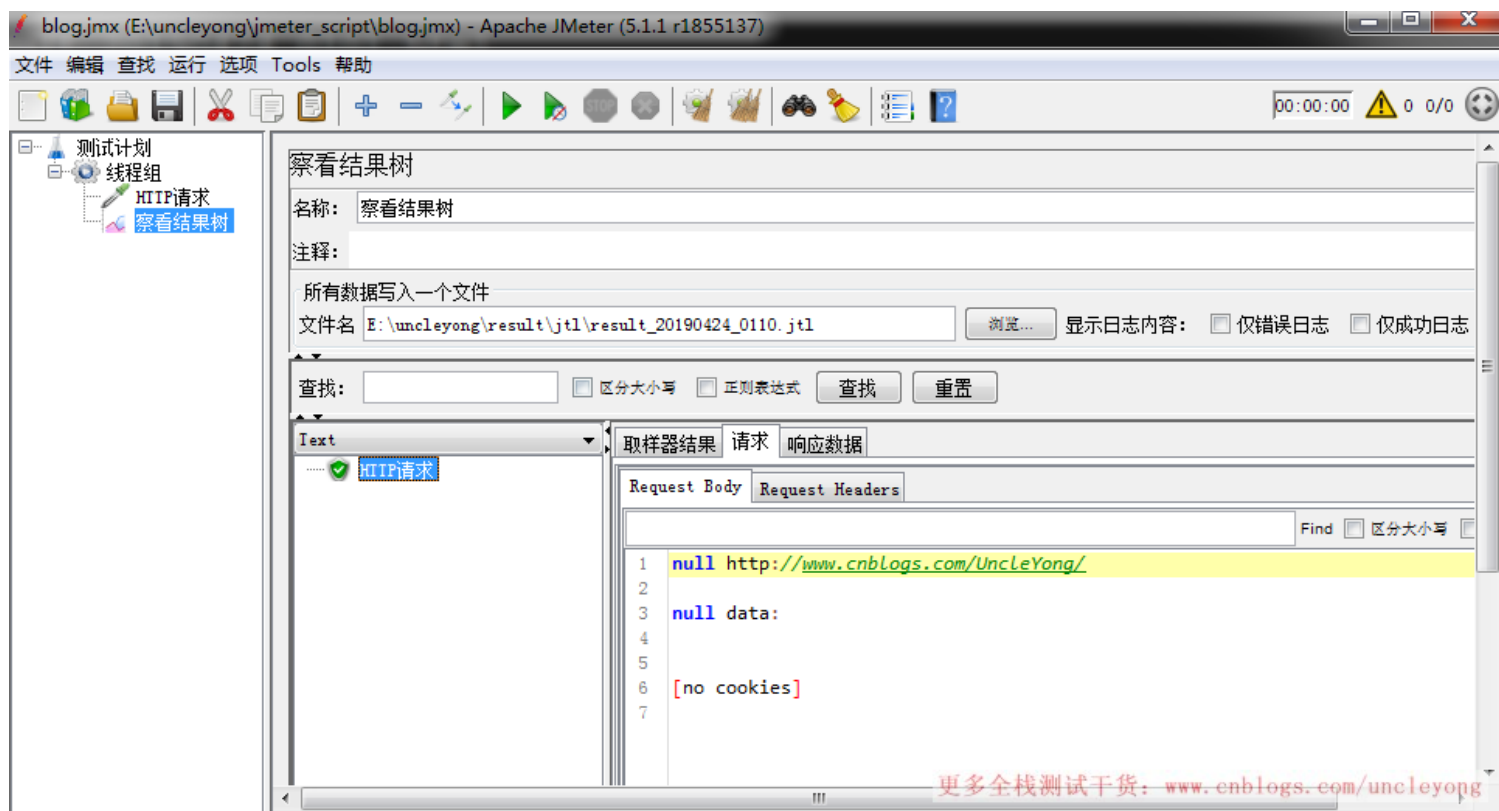
```

[root@uncleyong jtl]# ls
result_20190424_0101.jtl
[root@uncleyong jtl]# sz result_20190424_0101.jtl
[root@uncleyong jtl]#

```

更多全栈测试干货: www.cnblogs.com/uncleyong

打开 jtl 文件



生成的 html 报告

```
[root@uncleyong html]# ls
collapse.png  expand.png  result_20190424_0110.html
[root@uncleyong html]# sz result_20190424_0110.html
```

很多没有值

| | |
|--|--|
| JMeter Test Results | |
| 文件 C:/Users/my/Desktop/result_20190424_0110.html | |
| ▼ Thread: 线程组 1-1 | Sampler |
| HTTP请求 | Thread Name : 线程组 1-1 |
| | Timestamp : Wed Apr 24 2019 13:11:01 GMT+0800 (中国标准时间) |
| | Time : 79 ms |
| | Latency : 79 ms |
| | Bytes : 20029 |
| | Sample Count : |
| | Error Count : |
| | Response Code : 200 |
| | Response Message: OK |
| | Request |
| | Method/Url : http://www.cnblogs.com/UncleYong/ |
| | Query String : |
| | Cookies : |
| | Request Headers : |
| | Response |
| | Response Headers: |
| | Response Data : |
| | Response File : 更多全栈测试干货: www.cnblogs.com/uncleyong |

修改 jmeter 目录下的 jmeter.properties

```
[root@uncleyong bin]# pwd
/usr/local/apache-jmeter-5.1.1/bin
[root@uncleyong bin]# vim jmeter.properties
```

```
jmeter.save.saveservice.response_data=true
# Save ResponseData for failed samples
# jmeter.save.saveservice.response_data.on_error=false
# jmeter.save.saveservice.response_message=true
# jmeter.save.saveservice.successful=true
# jmeter.save.saveservice.thread_name=true
# jmeter.save.saveservice.time=true
# jmeter.save.saveservice.subresults=true
# jmeter.save.saveservice.assertions=true
# jmeter.save.saveservice.latency=true
# Only available with HttpClient4
# jmeter.save.saveservice.connect_time=true
jmeter.save.saveservice.samplerData=true
jmeter.save.saveservice.responseHeaders=true
jmeter.save.saveservice.requestHeaders=true
# jmeter.save.saveservice.encoding=false
```

重新执行 ant，报告相比之前增加很多内容

▼ Thread: 线程组 1-1

HTTP请求

Sampler

Thread Name : 线程组 1-1

Timestamp : Sun Apr 21 2019 GMT+0800 (中国标准时间)

Time : 239 ms

Latency : 194 ms

Bytes : 16948

Sample Count :

Error Count :

Response Code : 200

Response Message: OK

Request

Method/Url : GET http://www.cnblogs.com/UncleYong/

Query String :

Cookies :

Request Headers : Connection: keep-alive

Host: www.cnblogs.com

User-Agent: Apache-HttpClient/4.5.7 (Java/1.8.0_144)

Response

Response Headers: HTTP/1.1 200 OK

Date: Sun, 21 Apr 2019 14:34:40 GMT

Content-Type: text/html; charset=utf-8

Content-Length: 16607

Connection: keep-alive

Vary: Accept-Encoding

Cache-Control: private, max-age=10

Expires: Sun, 21 Apr 2019 14:34:50 GMT

Last-Modified: Sun, 21 Apr 2019 14:34:40 GMT

X-UA-Compatible: IE=10

X-Frame-Options: SAMEORIGIN

Response Data : <!DOCTYPE html>

<html lang="zh-cn">

<head>

<meta charset="utf-8" />

<meta name="viewport" content="width=device-width, initial-scale=1" />

<meta name="referrer" content="origin" />

<title>UncleYong - 博客园</title>

build.xml 文件替换为另外一个（来源于网络的），且新的 build.xml 中，报告模板文件改为这个（来源于网络）：
jmeter-results-detail-report_21__py.xsl

[点击这里获取](#)

执行 ant，生成报告

下载报告，打开生成的报告，内容更丰富了

← → ↻ 文件 | E:\uncleyong/result/html/SummaryReport.html

Load Test Results

Summary

| # Samples | Failures | Success Rate | Average Time | Min Time | Max Time | Median | 90% Line | 95% Line | 99% Line | QPS/TPS | Throughput KB/Sec |
|-----------|----------|--------------|--------------|----------|----------|--------|----------|----------|----------|---------|-------------------|
| 1 | 0 | 100.00% | 515 ms | 515 ms | 515 ms | 515 ms | 515 ms | 515 ms | 515 ms | 1.94 /s | 32.52 |

Pages

| URL | # Samples | Failures | Success Rate | Average Time | Min Time | Max Time | Median | 90% Line | 95% Line | 99% Line | QPS/TPS | Throughput KB/Sec |
|--------|-----------|----------|--------------|--------------|----------|----------|--------|----------|----------|----------|---------|-------------------|
| HTTP请求 | 1 | 0 | 100.00% | 515 ms | 515 ms | 515 ms | 515 ms | 515 ms | 515 ms | 515 ms | 1.94 /s | 32.52 |

Details for Page "HTTP请求"

| Thread | Iteration | Time | Bytes | Success |
|---------|-----------|--------|-------|---------|
| 线程组 1-1 | 1 | 515 ms | 17148 | true |

更多全栈测试干货：www.cnblogs.com/uncleyong

← → ↻ 文件 | E:\uncleyong/result/html/SummaryReport.html

Summary Report - JMeter

| Thread | Iteration | Time | Bytes | Success |
|---------|-----------|--------|-------|---------|
| 线程组 1-1 | 1 | 515 ms | 17148 | true |

Details

HTTP请求 # 线程组 1-1

| | |
|------------------|---|
| Time | 515 ms |
| Latency | 394 ms |
| Bytes | 17148 |
| Sample Count | |
| Error Count | |
| Response Code | 200 |
| Response Message | OK |
| Failure Message | |
| Method/Uri | GET http://www.cnblogs.com/UncleYong/ |
| Query String | |
| Cookies | |
| Request Headers | Connection: keep-alive
Host: www.cnblogs.com
User-Agent: Apache-HttpClient/4.5.7 (Java/1.8.0_144) |
| Response Headers | HTTP/1.1 200 OK
Date: Mon, 22 Apr 2019 13:49:34 GMT
Content-Type: text/html; charset=utf-8
Content-Length: 16807
Connection: keep-alive
Vary: Accept-Encoding
Cache-Control: private, max-age=10
Expires: Mon, 22 Apr 2019 13:49:44 GMT
Last-Modified: Mon, 22 Apr 2019 13:49:34 GMT
X-UA-Compatible: IE=10
X-Frame-Options: SAMEORIGIN |
| | <!DOCTYPE html>
<html lang="zh-cn">
<head> |

更多全栈测试干货: www.cnblogs.com/uncleyong

ant 调用 jmeter 脚本（通过 jenkins）

点击【系统管理】

-  New 任务
-  People
-  Build History
-  系统管理
-  我的视图
-  Credentials
-  新建视图

Welcome to Jenkins!

Please **create new jobs** to get started.

Build Queue

No builds in the queue.

Build Executor Status

| | |
|---|------|
| 1 | Idle |
| 2 | Idle |

更多全栈测试干货: www.cnblogs.com/uncleyong

插件管理中安装 ant 插件

☒ [Ant Plugin](#)

Adds Apache Ant support to Jenkins

点击【全局工具配置】



全局工具配置

工具配置, 包括它们的位置和自动安装器

更多全栈测试干货: www.cnblogs.com/uncleyong

添加 ant, Name 随便填写, ANT_HOME 填写自己的 ant 安装目录

Ant

Ant 安装

新增 Ant

Ant

Name

apache-ant-1.9.14

ANT_HOME

/usr/local/apache-ant-1.9.14

☐ 自动安装

删除 Ant

更多全栈测试干货: www.cnblogs.com/uncleyong

添加 jdk

JDK

JDK 安装

新增 JDK

JDK

别名

jdk1.8.0_211

JAVA_HOME

/usr/local/jdk1.8.0_211

☐ 自动安装

删除 JDK

更多全栈测试干货：www.cnblogs.com/uncleyong

保存

应用

新建 job

 **Jenkins**

Jenkins ▶

新建任务

用户列表

构建历史

系统管理

我的视图

凭据

Lockable Resources

新建视图

构建队列

队列中没有构建任务

构建执行状态

1 空闲

2 空闲

欢迎来到 Jenkins!

开始 **创建一个新任务。**

更多全栈测试干货：www.cnblogs.com/uncleyong

输入名称，选择类型

输入一个任务名称

ant-jmeter

» 必填项



构建一个自由风格的软件项目

这是Jenkins的主要功能.Jenkins将会结合任何SCM和任何构建系统来构建你的项目,甚至可以构建软件以外的系统.



构建一个maven项目

构建一个maven项目.Jenkins利用你的POM文件,这样可以大大减轻构建配置.



流水线

精心地组织一个可以长期运行在多个节点上的任务。适用于构建流水线（更加正式地应当称为工作流），增加或者组织难以采用自由风格的任务类型。



构建一个多配置项目

适用于多配置项目,例如多环境测试,平台指定构建,等等.



文件夹

创建一个可以嵌套存储的容器。利用它可以进行分组。视图仅仅是一个过滤器，而文件夹则是一个独立的命名空间，因此你可以有多个相同名称的内容，只要它们在不同的文件夹里即可。



GitHub 组织

扫描一个 GitHub 组织（或者个人账户）的所有仓库来匹配已定义的标记。



多分支流水线

根据一个SCM仓库中检测到的分支创建一系列流水线。

确定

更多全栈测试干货：www.cnblogs.com/uncleyong

Jenkins » ant-jmeter »

General 源码管理 构建触发器 构建环境 构建 构建后操作

- ☐ GitHub hook trigger for GITScm polling
- ☐ 轮询 SCM

构建环境

- ☐ Delete workspace before build starts
- ☐ Use secret text(s) or file(s)
- ☐ Abort the build if it's stuck
- ☐ Add timestamps to the Console Output
- ☐ Inspect build log for published Gradle build scans
- ☐ With Ant

构建

增加构建步骤

- Invoke Ant
- Invoke Gradle script
- Run with timeout
- Set build status to "pending" on GitHub commit
- 执行 Windows 批处理命令
- 执行 shell
- 调用顶层 Maven 目标

保存

应用

更多全栈测试干货：www.cnblogs.com/uncleyong

构建

Invoke Ant

Ant VersionDefault

Targets

高级...

增加构建步骤

更多全栈测试干货: www.cnblogs.com/uncleyong

填写 build.xml 的绝对路径

```
[root@uncleyong uncleyong]# ls
build_asbak.xml  build.xml  jmeter_script  result
[root@uncleyong uncleyong]# pwd
/root/uncleyong
[root@uncleyong uncleyong]# 更多全栈测试干货: www.cnblogs.com/uncleyong
```

构建

Invoke Ant

Ant Versionapache-ant-1.9.14

Targets

Build File/root/uncleyong

Properties

Java Options

增加构建步骤

更多全栈测试干货: www.cnblogs.com/uncleyong

保存

应用


立即构建

 [Back to Dashboard](#)

 [Status](#)

 [Changes](#)

 [Workspace](#)


 [立即构建](#)


 [Delete 工程](#)

 [Configure](#)



 [Rename](#)

工程 ant-jmeter

 [Workspace](#)

 [Recent Changes](#)

Permalinks

 **Build History** [trend](#) 



 [RSS for all](#)  [RSS for failures](#) 更多全栈测试干货: www.cnblogs.com/uncleyong

查看日志

控制台输出

```
Started by user admin
Building in workspace /root/.jenkins/workspace/ant-jmeter
[/root] $ /usr/local/apache-ant-1.9.14/bin/ant -file uncleyong
Buildfile: /root/uncleyong/build.xml

run:

test:
[jmeter] Executing test plan: /root/uncleyong/jmeter_script/blog.jmx ==> /root/uncleyong/result/jtl/TestReport_201904240607.jtl
[jmeter] Creating summariser <summary>
[jmeter] Created the tree successfully using /root/uncleyong/jmeter_script/blog.jmx
[jmeter] Starting the test @ Wed Apr 24 18:07:35 CST 2019 (1556100455854)
[jmeter] Waiting for possible Shutdown/StopTestNow/HeapDump/ThreadDump message on port 4445
[jmeter] summary =      1 in 00:00:01 =      1.5/s Avg:      94 Min:      94 Max:      94 Err:      0 (0.00%)
[jmeter] Tidying up ...      @ Wed Apr 24 18:07:37 CST 2019 (1556100457103)
[jmeter] ... end of run

report:
[xslt] Processing /root/uncleyong/result/jtl/TestReport_201904240607.jtl to /root/uncleyong/result/html/201904240607_DetailReport.html
[xslt] Loading stylesheet /usr/local/apache-jmeter-5.1.1/extras/jmeter.results.shanhe.me.xsl
[xslt] Processing /root/uncleyong/result/jtl/TestReport_201904240607.jtl to /root/uncleyong/result/html/201904240607_SummaryReport.html
[xslt] Loading stylesheet /usr/local/apache-jmeter-5.1.1/extras/jmeter-results-detail-report_21_py.xsl

BUILD SUCCESSFUL
Total time: 5 seconds
Finished: SUCCESS
```

更多全栈测试干货: www.cnblogs.com/uncleyong

/root/uncleyong/result 目录下也生成了 html 和 jtl 报告。

jenkins 配置发送邮件

[点击这里](#)

项目源码

其余自动化框架：

自动化测试框架：JMeter + Ant + Jenkins 【windows 版】：<https://www.cnblogs.com/UncleYong/p/10739519.html>

自动化测试框架：JMeter + Ant + Jenkins 【linux 版】：<https://www.cnblogs.com/UncleYong/p/10766480.html>

Python 版接口自动化测试框架：<https://www.cnblogs.com/UncleYong/p/10650552.html>

java 版接口自动化测试框架（更新中）

JMeter + Maven + Jenkins 版接口自动化测试框架 【linux 版】（更新中）