

# New Traffic Server CI

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**yahoo!**

# Agenda

1. New CI Team Members
2. Viewing PR CI job details.
3. Accessing build artifacts
  - AuTest Sandboxes
  - Rendered Sphinx docs
  - Code coverage
4. Using CI Docker Images
5. Branch builds

# The New CI Team

**yahoo!**

# New CI Team

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- Brian Neradt
- Brian Olsen
- Bryan Call
- Evan Zelkowitz
- Leif Hedstrom

# Viewing PR CI Job Details

# PR View

- PR Jobs are built in two stages:
  - Docs, RAT, clang-format
  - OS builds, autest, clang-analyzer
- The Details link takes you to the PR master job which runs the various jobs for the PR.

## Workflow:

- PR triggers pipeline job via a webhook.
- Pipeline job runs groovy script which triggers the individual jobs.
- Jobs post results back to github.

**Review required**  
At least 1 approving review is required by reviewers with write access. [Learn more.](#) [Show all reviewers](#)

**2 pending reviewers** [Hide all checks](#)

**Some checks haven't completed yet**  
2 pending and 7 successful checks

Job Name	Status	URL	Required	Details
AuTest	Pending — Building		Required	Details
Clang-Analyzer	Pending — Building		Required	Details
CentOS	Success	<a href="https://ci.trafficserver.apache.org/job/Github_Builds/job/centos/277/">https://ci.trafficserver.apache.org/job/Github_Builds/job/centos/277/</a>	Required	Details
Clang-Format	Success	<a href="https://ci.trafficserver.apache.org/job/Github_Builds/job/clang-format/...">https://ci.trafficserver.apache.org/job/Github_Builds/job/clang-format/...</a>	Required	Details
Debian	Success	<a href="https://ci.trafficserver.apache.org/job/Github_Builds/job/debian/268/">https://ci.trafficserver.apache.org/job/Github_Builds/job/debian/268/</a>	Required	Details
Docs	Success	<a href="https://ci.trafficserver.apache.org/job/Github_Builds/job/docs/309/">https://ci.trafficserver.apache.org/job/Github_Builds/job/docs/309/</a>	Required	Details

**Merging is blocked**  
Merging can be performed automatically with 1 approving review.

Squash and merge [You can also open this in GitHub Desktop or view command line instructions.](#)

Groovy scripts: <https://github.com/apache/trafficserver-ci/tree/main/jenkins/github>

**yahoo!**

# Details View

To view individual CI jobs:

1. Follow Details link.
2. Completed jobs with links are displayed in the description.
3. Running jobs can be accessed from the Console Output.

Build PR: #8520 - Build: #669 (Nov 16, 2021, 4:27:29 PM)

Builds:

- Github\_Builds/docs - [https://ci.trafficserver.apache.org/job/Github\\_Builds/job/docs/309/](https://ci.trafficserver.apache.org/job/Github_Builds/job/docs/309/)
- Github\_Builds/rat - [https://ci.trafficserver.apache.org/job/Github\\_Builds/job/rat/376/](https://ci.trafficserver.apache.org/job/Github_Builds/job/rat/376/)
- Github\_Builds/clang-format - [https://ci.trafficserver.apache.org/job/Github\\_Builds/job/clang-format/403/](https://ci.trafficserver.apache.org/job/Github_Builds/job/clang-format/403/)
- Github\_Builds/debian - [https://ci.trafficserver.apache.org/job/Github\\_Builds/job/debian/268/](https://ci.trafficserver.apache.org/job/Github_Builds/job/debian/268/)
- Github\_Builds/fedora - [https://ci.trafficserver.apache.org/job/Github\\_Builds/job/fedora/310/](https://ci.trafficserver.apache.org/job/Github_Builds/job/fedora/310/)
- Github\_Builds/centos - [https://ci.trafficserver.apache.org/job/Github\\_Builds/job/centos/277/](https://ci.trafficserver.apache.org/job/Github_Builds/job/centos/277/)
- Github\_Builds/ubuntu - [https://ci.trafficserver.apache.org/job/Github\\_Builds/job/ubuntu/353/](https://ci.trafficserver.apache.org/job/Github_Builds/job/ubuntu/353/)
- Github\_Builds/clang-analyzer - [https://ci.trafficserver.apache.org/job/Github\\_Builds/job/clang-analyzer/282/](https://ci.trafficserver.apache.org/job/Github_Builds/job/clang-analyzer/282/)
- Github\_Builds/autest - [https://ci.trafficserver.apache.org/job/Github\\_Builds/job/autest/349/](https://ci.trafficserver.apache.org/job/Github_Builds/job/autest/349/)

GitHub PR #8520: PR opened

```
Dashboard > Github_Builds > Github_PR_Checks > PR: #8520 - Build: #669
[Pipeline] build (Building Github_Builds » Clang-analyzer)
[Scheduling project: Github_Builds » clang-analyzer]
[Pipeline] build (Building Github_Builds » ubuntu)
[Ubuntu Build] Scheduling project: Github_Builds » ubuntu
[Debian Build] Setting pull request status Debian to PENDING with message: Building
[Pipeline] build (Building Github_Builds » centos)
[CentOS Build] Scheduling project: Github_Builds » centos
[Fedora Build] Setting pull request status Fedora to PENDING with message: Building
[Pipeline] build (Building Github_Builds » debian)
[Debian Build] Scheduling project: Github_Builds » debian
[Pipeline] build (Building Github_Builds » fedora)
[Fedora Build] Scheduling project: Github_Builds » fedora
[C]Starting building: Github_Builds » clang-analyzer #282Starting building: Github_Builds » debian #268
[Clang-Analyzer]
[CentOS Build] Starting building: Github_Builds » centos #277
[Ubuntu Build] Starting building: Github_Builds » ubuntu #353
[FedorStarting building: Github_Builds » fedora #310Starting building: Github_Builds » autest #349
[Fedora Build]
[Pipeline] echo
```



# Accessing Build Artifacts



# Access AuTest Sandbox

- Jenkins will export the AuTest sandbox for failed AuTest runs.
- Access it via the “Build Artifacts” link in the failed job.

**Jenkins**

Dashboard > Github > Github\_Builds > autest > #347

Build #347 (Nov 11, 2021, 3:52:31 PM)

Build Artifacts

To access the AuTest sandbox

Started by upstream project [Github\\_Builds > Github\\_PR\\_Checks](#) build number [665](#) originally caused by:

- [Github PR #7478](#): Comment matches to criteria.

**git** Revision: 43c616a8e01fcd28177dba307fdabc60e505f5b  
Repository: <https://github.com/apache/trafficserver-ci>

- refs/remotes/origin/main

**git** Revision: a881676f472e38ac2b49b3b590b2e9ed18cae0ab  
Repository: <git://github.com/apache/trafficserver.git>

- origin/10-Dev

**Jenkins**

Dashboard > Github > Github\_Builds > autest > #347

Artifacts of autest #347

output/7478/sandbox

(all files in zip)

# clang-analyzer

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Failed clang-analyzer PR runs will also have an archive. It can be accessed in a similar way a failed AuTest's sandbox is accessed.

# Access Rendered Docs

The rendered docs for a PR are now exported as a build artifact.

The Jenkins interface shows build #308 for the 'docs' project. A red arrow points from the 'Build Artifacts' link to a callout box: 'To access the rendered Sphinx Docs'. Another red arrow points from the 'Build Artifacts' link to a zoomed-in view of the artifacts. In this view, a red arrow points from the 'output/8518/docbuild/html' folder to another callout box: 'Follow the html link.'. A third red arrow points from the 'index.html' file in the file list to a callout box: 'Follow index.html to the rendered docs.'. The file list includes:

File Name	Size	View
output / 8518 / docbuild / html /		
._images		
._plantuml		
._sources		
._static		
admin-guide		
appendices		
developer-guide		
getting-started		
preface		
release-notes		
buildinfo	Nov 15, 2021, 9:34:11 PM	230 B <a href="#">view</a>
genindex.html	Nov 15, 2021, 9:34:11 PM	518.75 KB <a href="#">view</a>
index.html	Nov 15, 2021, 9:34:11 PM	13.29 KB <a href="#">view</a>
objects.inv	Nov 15, 2021, 9:34:11 PM	54.63 KB <a href="#">view</a>
search.html	Nov 15, 2021, 9:34:11 PM	5.56 KB <a href="#">view</a>
searchindex.js	Nov 15, 2021, 9:34:11 PM	675.79 KB <a href="#">view</a>

The Apache Traffic Server Manual website shows the navigation menu on the left and the main content area on the right. The navigation menu includes:

- Preface
- Getting Started
- Release Notes
- Administrator's Guide
- Developer's Guide
- Appendices

The main content area displays the 'Apache Traffic Server Manual' title and a list of sections:

- Preface
  - What is Apache Traffic Server?
  - Typographic Conventions
  - Other Resources
- Getting Started
  - Introduction
  - Installation
  - Configuration
  - Logging and Monitoring
  - Further Steps
- Release Notes
  - What's New in ATS v10.x
  - Upgrading to ATS v10.x
  - ATS Release Roadmap
- Administrator's Guide
  - Introduction
  - Installing Traffic Server
  - Proxy Cache Configuration
  - Interacting with Traffic Server
  - Security
  - Cache Storage



# Local Builds with CI Docker Images

# Using CI's Docker Images

The Docker images CI uses are publicly available. Using it for local builds and autest runs is easy:

```
# Install docker
docker pull controller.trafficserver.org/ats/centos:8
docker run -it -u 1200:1200 --init --cap-add=SYS_PTRACE --network=host \
    controller.trafficserver.org/ats/centos:8 /bin/bash
cd
git clone https://github.com/apache/trafficserver.git
cd trafficserver
autoreconf -fi && ./configure --with-openssl=/opt/openssl-quic
--enable-experimental-plugins --enable-example-plugins --prefix=/tmp/ats
--enable-werror --enable-debug --enable-wccp --enable-luajit && make -j4
install

cd tests
./autest.sh --ats-bin /tmp/ats/bin/ --sandbox /tmp/sandbox -f <some_test>
```

**yahoo!**

# Using CI's Docker Images

## Sample docker-compose.yml (docker-compose run builder)

```
version: "2.2"
services:
  builder:
    image: controller.trafficserver.org/ats/centos:8
    cap_add: [ SYS_PTRACE ]
    volumes:
      - ./:/home/jenkins/workspace/:Z
    environment:
      - TYPE=debug
      - GITHUB_BRANCH=master
      - COMPILER=gcc
      - WORKSPACE=/home/jenkins/workspace
      - FEATURES=asan
    network_mode: host
    working_dir: /home/jenkins/workspace
    command: bash
```



# Branch Builds



# Branch Builds

Branch builds more thoroughly check the status and health of ATS.

Build phases:

1. Build in tree, out of tree, RAT, clang-format
2. Multiple OS and compiler combinations (ie: debian 9 clang debug)
  - a. Currently up to 36 of these builds per branch
3. clang analyzer, autests, docs, cache tests, coverage

## Stage View

	Initialization	Validation	In Tree	Out Of Tree	RAT	clang format	Snapshot	OS Builds	9.1.x/os-centos_7	9.1.x/os-centos_8	9.1.x/os-debian_10	9.1.x/os-debian_9	9.1.x/os-fedora_32	9.1.x/os-fedora_33	9.1.x/os-ubuntu_18.04	9.1.x/os-ubuntu_20.04	9.1.x/os-ubuntu_21.04	Verification	clang analyzer	autests	docs	cache_tests	coverage
Average stage times: (Average full run time: ~1h 59min)	1s	81ms	5min 46s	5min 44s	1min 27s	1min 52s	123ms	531ms	58min 9s	48min 54s	1h 13min	1h 15min	1h 18min	1h 11min	1h 20min	53min 3s	1h 10min	113ms	3min 3s	5min 54s	1min 10s	1min 1s	9min 5s
Nov 05 18:53 No Changes	1s	70ms	5min 29s	5min 31s	1min 16s	1min 16s	118ms	550ms	54min 29s	48min 6s	36min 5s	56min 8s	1h 8min	1h 3min	1h 5min	23min 26s	39min 22s	89ms	15min 17s	29min 29s	5min 51s	5min 6s	45min 29s
Nov 05 12:53 1 commit	1s	83ms	5min 36s	5min 43s	1min 14s	1min 42s	106ms	586ms	1h 46min failed	20min 24s failed	1h 59min failed	1h 42min failed	1h 41min failed	1h 57min failed	2h 1min	28min 30s	2h 3min	95ms	156ms failed	163ms failed	175ms failed	187ms failed	203ms failed
Nov 04 No Changes		70ms	5min 34s	5min 42s	1min 14s	1min 48s	147ms	573ms	37min 40s	45min 44s	39min 32s	46min 38s	2min 5s	18min 40s	33min 44s	31min 32s	50min 6s	108ms	162ms	174ms	186ms	199ms	211ms



# Branch Builds

Quick status and dive

The screenshot displays the Jenkins web interface for the Apache Traffic Server CI system. The page title is "Branch Builds Info". The main content area shows a "Jenkins jobs list" table with columns for status (S), warning (W), name, last success, last failure, and last duration. The table lists builds for branches 8.1.x, 9.0.x, 9.1.x, 9.2.x, and master. The 9.1.x build is highlighted with a red box, and a red arrow points to it from the "Branch Builds Info" button in the top navigation. Below the table, there are sections for "Agent statistics" and "Build statistics".

Welcome to the **Apache Traffic Server** CI system. This system is made possible with the generous donation from [GoDaddy](#) and [GoDaddy](#)!

Page to play with the views plugin that can show all sorts of stuffs

10.x-master 8.1.x 9.0.x 9.1.x 9.2.x All **Branch Builds Info** Github aggregator

**Jenkins jobs list**

S	W	Name ↓	Last Success	Last Failure	Last Duration
⊗	🚨	<a href="#">8.1.x » branch_build</a>	N/A	16 hr - <a href="#">#21 8.1.x</a>	33 min
✅	🚨	<a href="#">9.0.x » branch_build</a>	2 mo 18 days - <a href="#">#13 9.0.x</a>	3 mo 2 days - <a href="#">#11 9.0.x</a>	1 hr 48 min
✅	🚨	<b><a href="#">9.1.x » branch_build</a></b>	7 days 13 hr - <a href="#">#54 9.1.x</a>	8 days 19 hr - <a href="#">#53 9.1.x</a>	1 hr 59 min
⊗	🚨	<a href="#">9.2.x » branch_build</a>	1 mo 3 days - <a href="#">#11 9.2.x</a>	2 days 2 hr - <a href="#">#18 9.2.x</a>	1 hr 53 min
⊗	🚨	<a href="#">master » branch_build</a>	12 days - <a href="#">#121 master</a>	2 days 1 hr - <a href="#">#132 master</a>	2 hr 12 min

Icon: S M L Legend Atom feed for all Atom feed for failures Atom feed for just latest builds

**Agent statistics**

Agents	Online agents	Offline agents	Disconnected agents	Tasks in queue	Running jobs
22	22	0	0	0	7

**Build statistics**

Status of the build	Description	Number of builds	Percentage of total builds
---------------------	-------------	------------------	----------------------------



# Branch Builds

- Each branch is checked twice daily for new PRs.
  - Potentially up to 344 OS builds daily.
- Default image used is centos 8.
- Each OS build just needs an appropriate docker image.

## Stage View

Average stage times:  
(Average full run time: ~34min 14s)

	Initialization	Builds	ubuntu:21.04 gcc release	ubuntu:21.04 clang release
master ubuntu:21.04 Nov 15 06:41 1 commit	1s	117ms	18min 47s	19min 35s
master ubuntu:21.04 Nov 11 01:01 No Changes	1s	129ms	7min 24s	18min 44s
master ubuntu:21.04 Nov 11 01:01 No Changes	1s	117ms	18min 40s	11min 58s
master ubuntu:21.04 Nov 10 13:00 No Changes	1s	113ms	47min 12s	39min 0s
master ubuntu:21.04 Nov 10 01:00 No Changes	1s	89ms	18min 10s	14min 39s
master ubuntu:21.04 Nov 09 13:00 No Changes	1s	138ms	2min 27s failed	13min 34s



### master

Welcome to the Apache Traffic Server CI system. This system is made possible with the generous donation from [GoDaddy](#) and [GoDaddy!](#)  
Build of ats master

[add descrip](#)

All +

S	W	Name ↑	Last Success	Last Failure	Last Duration	Built On	Fav	Num
✓	⚙️	rat	2 days 1 hr - #132 master	N/A	48 sec	📅	☆	51
✓	⚙️	out_of_tree	2 days 1 hr - #134 master	N/A	5 min 45 sec	📅	☆	51
✓	⚙️	os_build	2 days 1 hr - #3727 master fedora:33 clang debug	2 days 1 hr - #3701 master centos:7 gcc debug	29 min	📅	☆	86
✓	☁️	os-ubuntu_21.04	2 days 1 hr - master ubuntu:21.04	6 days 18 hr - master ubuntu:21.04	19 min	📅	☆	31
✓	🔔	os-ubuntu_20.04	2 days 1 hr - master ubuntu:20.04	6 days 6 hr - master ubuntu:20.04	31 min	📅	☆	41
✓	⚙️	os-ubuntu_18.04	2 days 1 hr - master ubuntu:18.04	N/A	29 min	📅	☆	51
✓	☁️	os-fedora_33	2 days 1 hr - master fedora:33	6 days 6 hr - master fedora:33	42 min	📅	☆	21
✓	☁️	os-fedora_32	2 days 1 hr - master fedora:32	6 days 6 hr - master fedora:32	39 min	📅	☆	31

45min 14s 45min 32s

23min 35s 29min 13s

# Questions?

**yahoo!**

# Thank You

**yahoo!**