

# CSCS status report from CMS

## 25-01-2018 - 20-06-2018

**21 June 2018**

Thomas Klijnsma  
F2F meeting Zurich



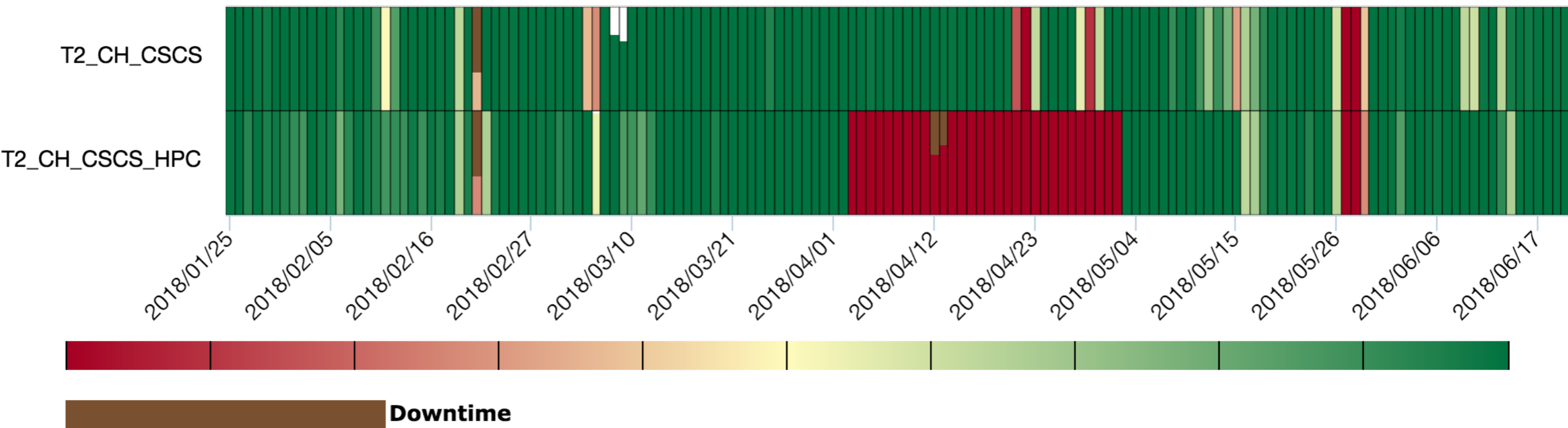
**ETH** zürich



# SAM Ranking: T2\_CH\_CSCS\_HPC

## Site Availability using CMS\_CRITICAL\_FULL

From 2018/01/25 to 2018/06/20

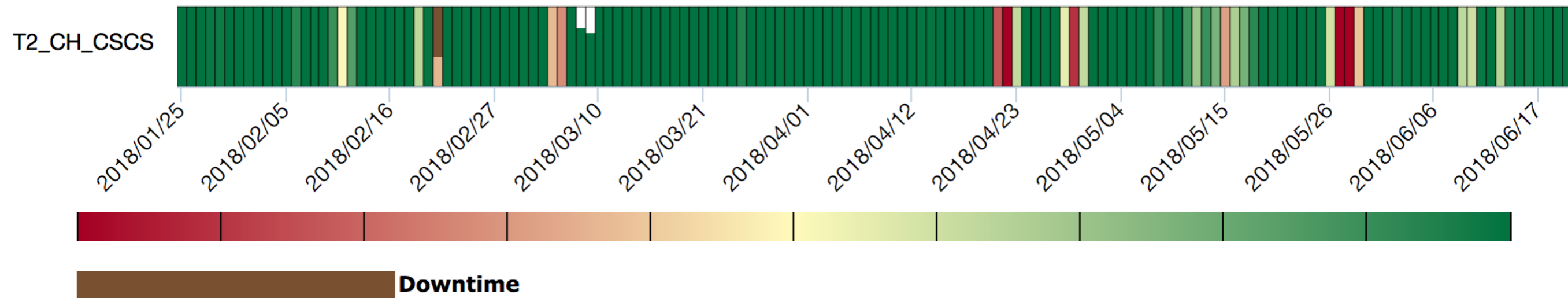


- Mostly the same reason for outage, except the long singularity problem for PizDaint

# SAM Ranking: T2\_CH\_CSCS

## Site Availability using CMS\_CRITICAL\_FULL

From 2018/01/25 to 2018/06/20

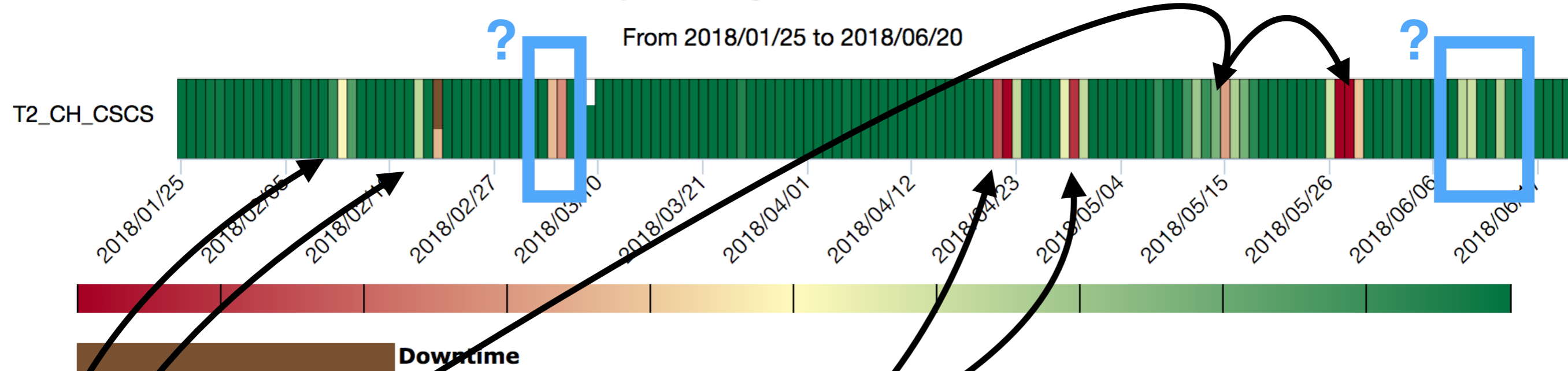


Ticket-ID	Creation	Subject	Comment
135130	15-05-18	Transfers failing to T2_CH_CSCS - All pools are full	First linkgroups, then broken dCache head node (~28 May)
134821	30-04-18	T2_CH_CSCS SAM SRM and stageout failures	Outdated certificates of Ses
134661	22-04-18	T2_CH_CSCS : SAM3 CE is critical	Required update of link groups
133578	19-02-18	Transfers failing from T2_CH_CSCS	Required update of link groups
133350	08-02-18	T2_CH_CSCS SAM JobSubmit failures	Outdated certificates of Ses

# SAM Ranking: T2\_CH\_CSCS

## Site Availability using CMS\_CRITICAL\_FULL

From 2018/01/25 to 2018/06/20

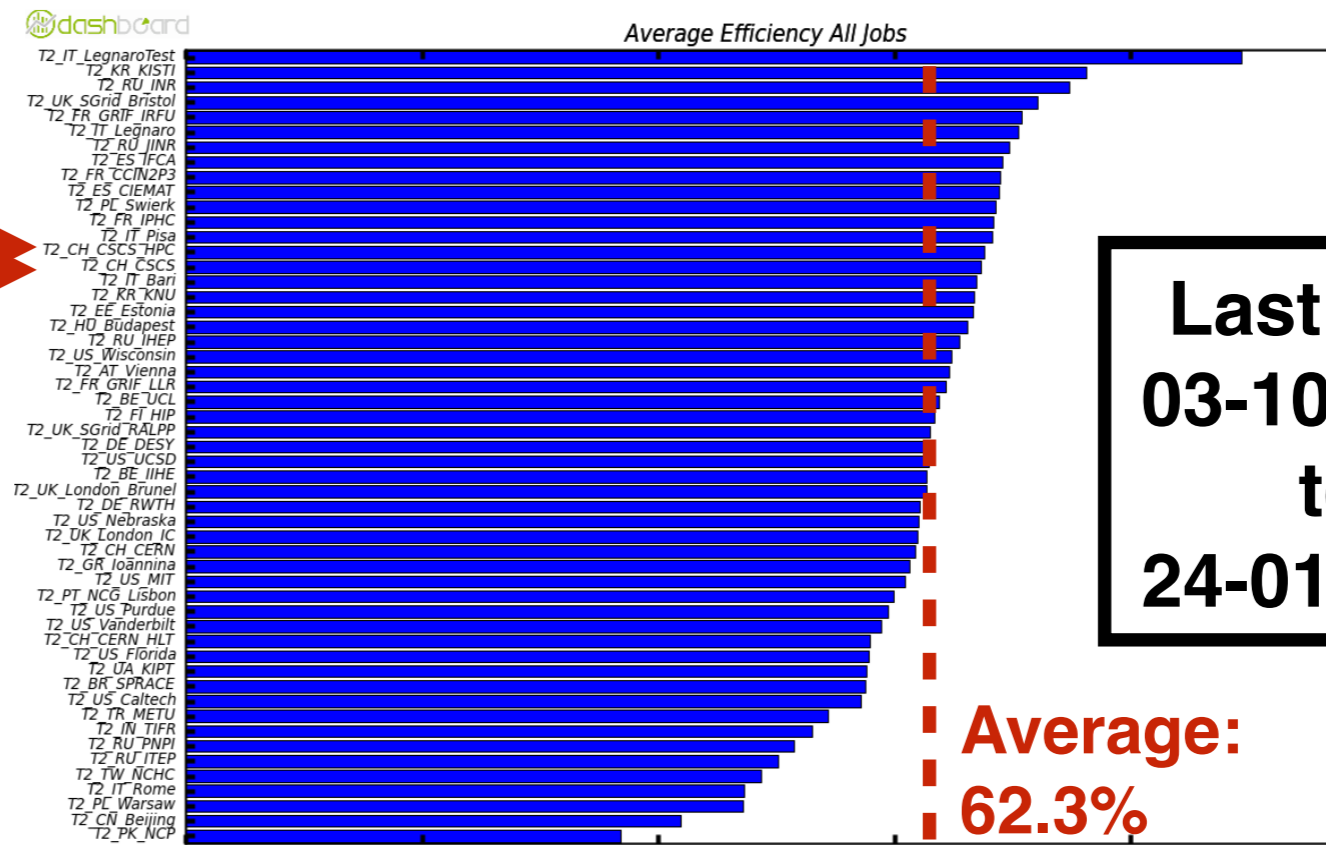


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# Average efficiency, all jobs

**CSCS\_HPC:**  
67.6% 14/53

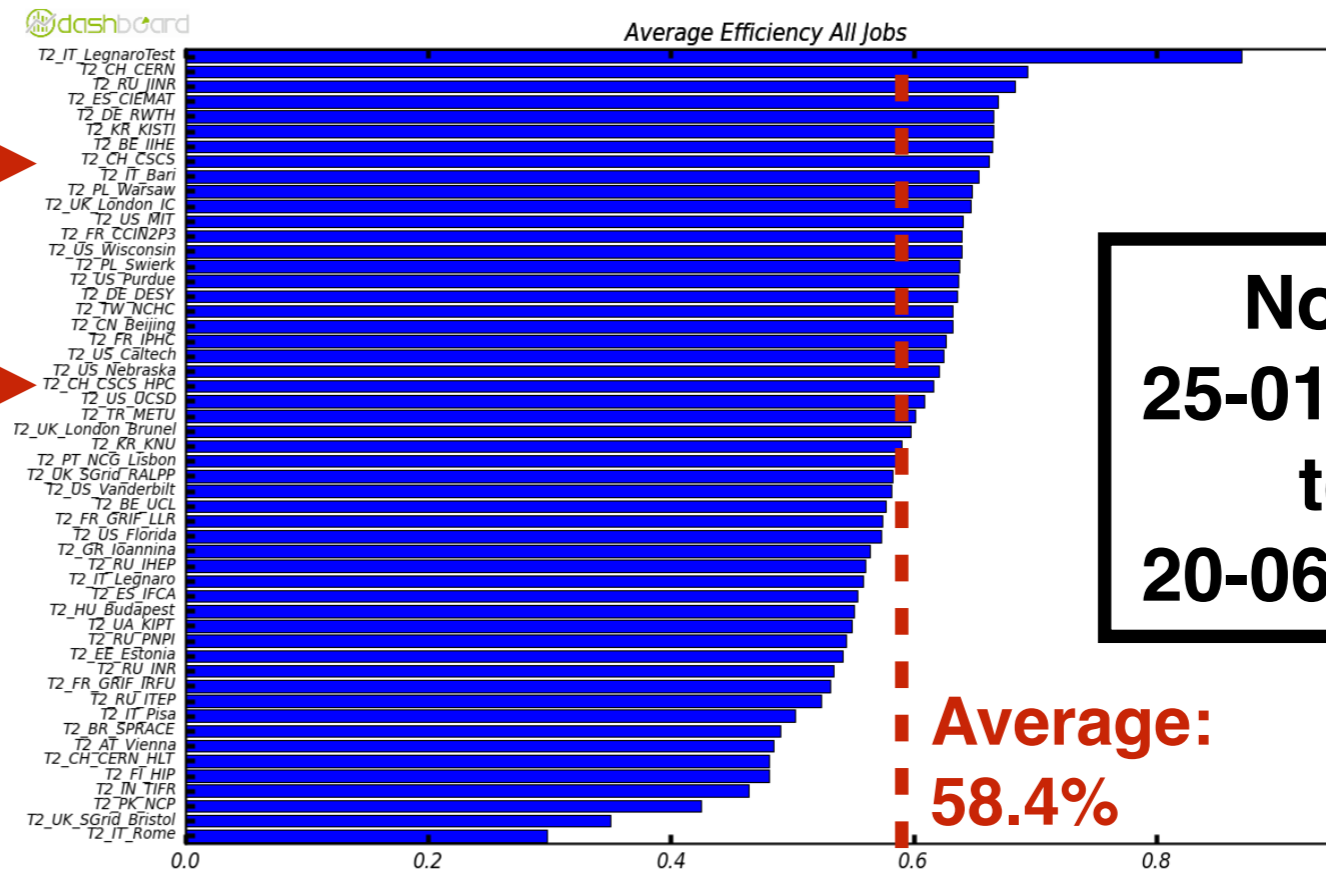
**CSCS:** →  
67.3% 15/53



**Last F2F:**  
03-10-2017  
to  
24-01-2018

**CSCS:** →  
66.2% 8/53

**CSCS\_HPC:** →  
61.6% 23/53

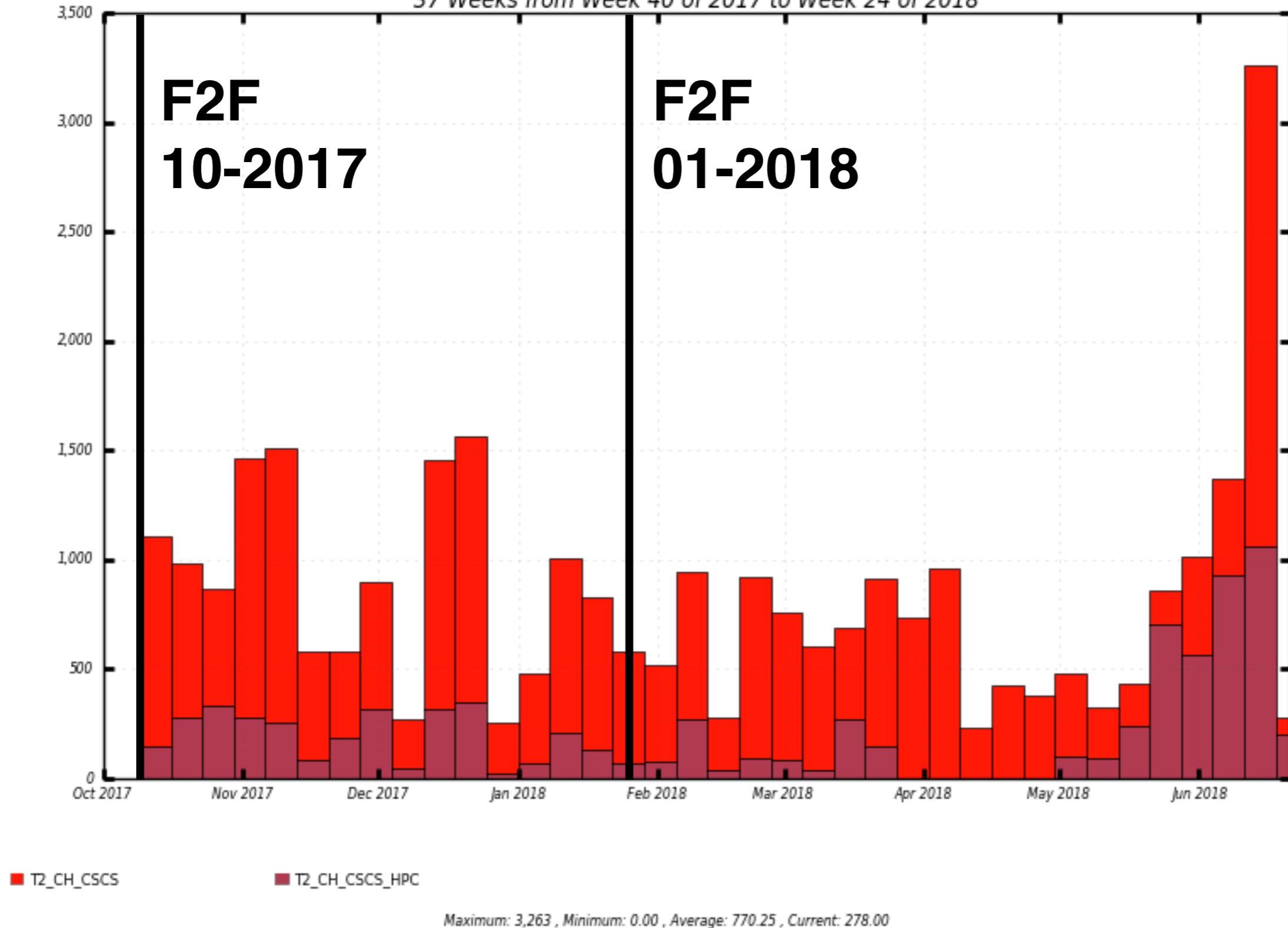


**Now:**  
25-01-2018  
to  
20-06-2018

# CPU Consumption Good jobs



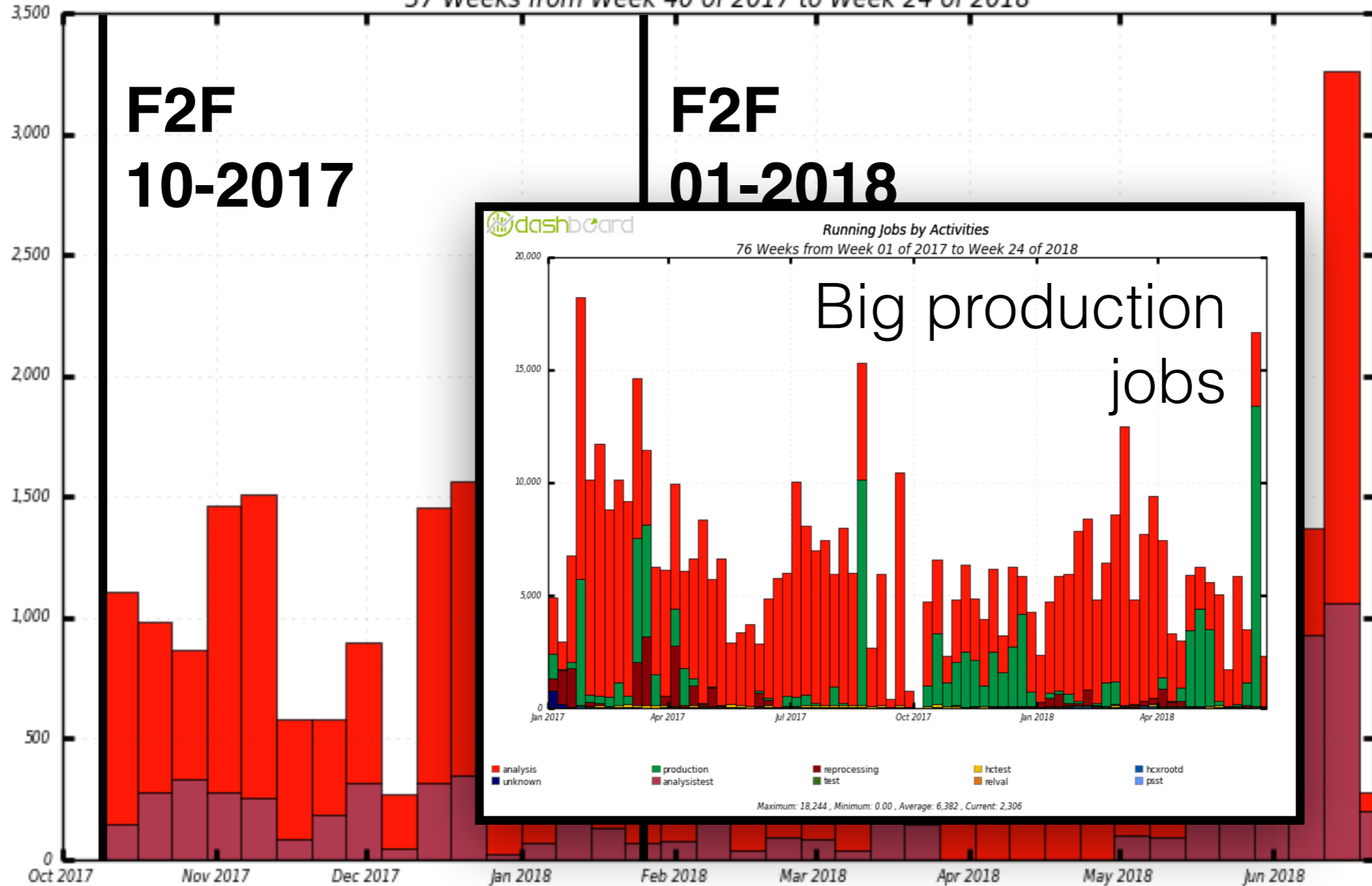
weeks/week: CPU consumption Good Jobs  
37 Weeks from Week 40 of 2017 to Week 24 of 2018



# CPU Consumption Good jobs



weeks/week: CPU consumption Good Jobs  
37 Weeks from Week 40 of 2017 to Week 24 of 2018



T2\_CH\_CSCS

T2\_CH\_CSCS\_HPC

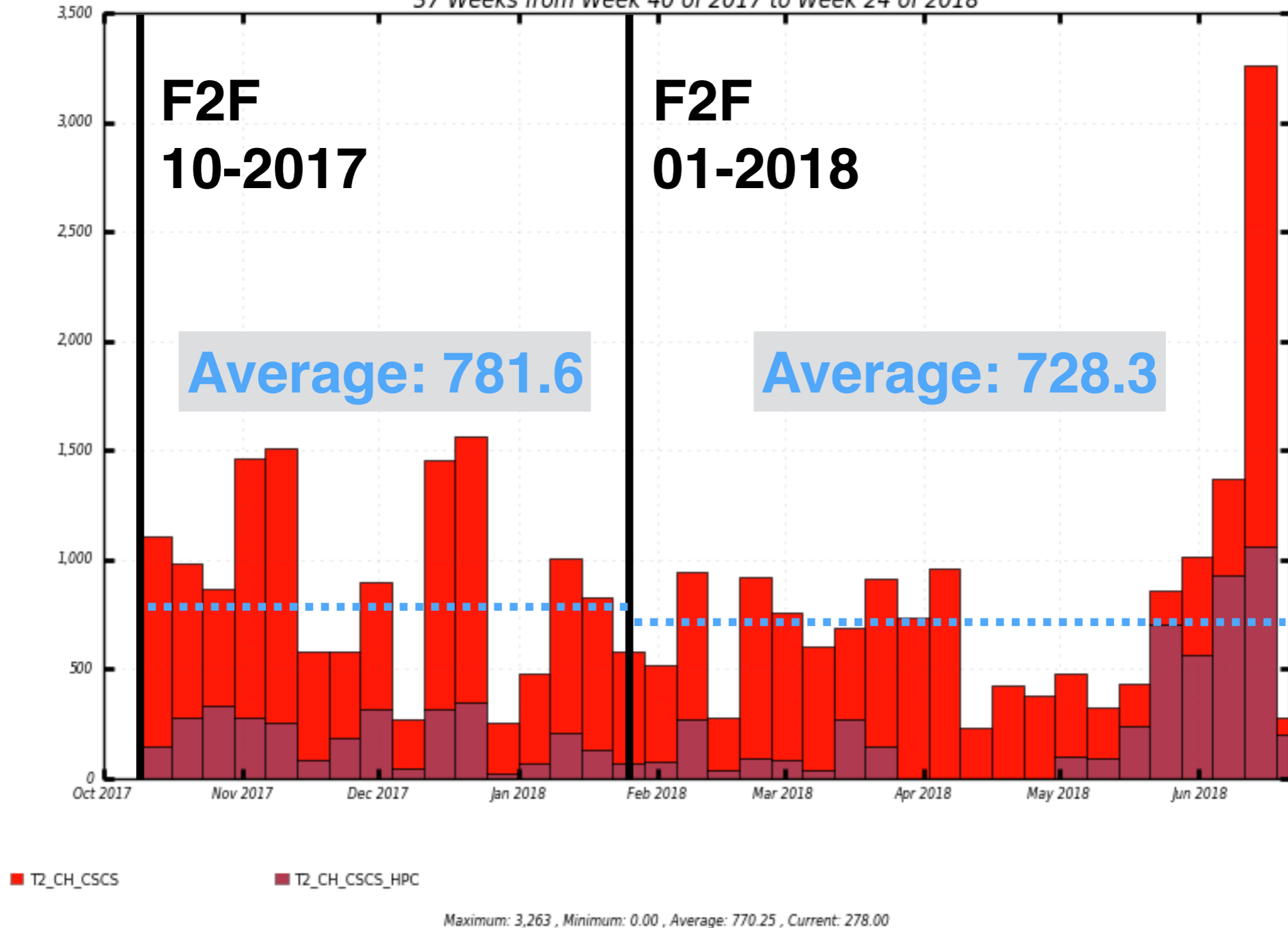
Maximum: 3,263 , Minimum: 0.00 , Average: 770.25 , Current: 278.00



# CPU Consumption Good jobs



weeks/week: CPU consumption Good Jobs  
37 Weeks from Week 40 of 2017 to Week 24 of 2018

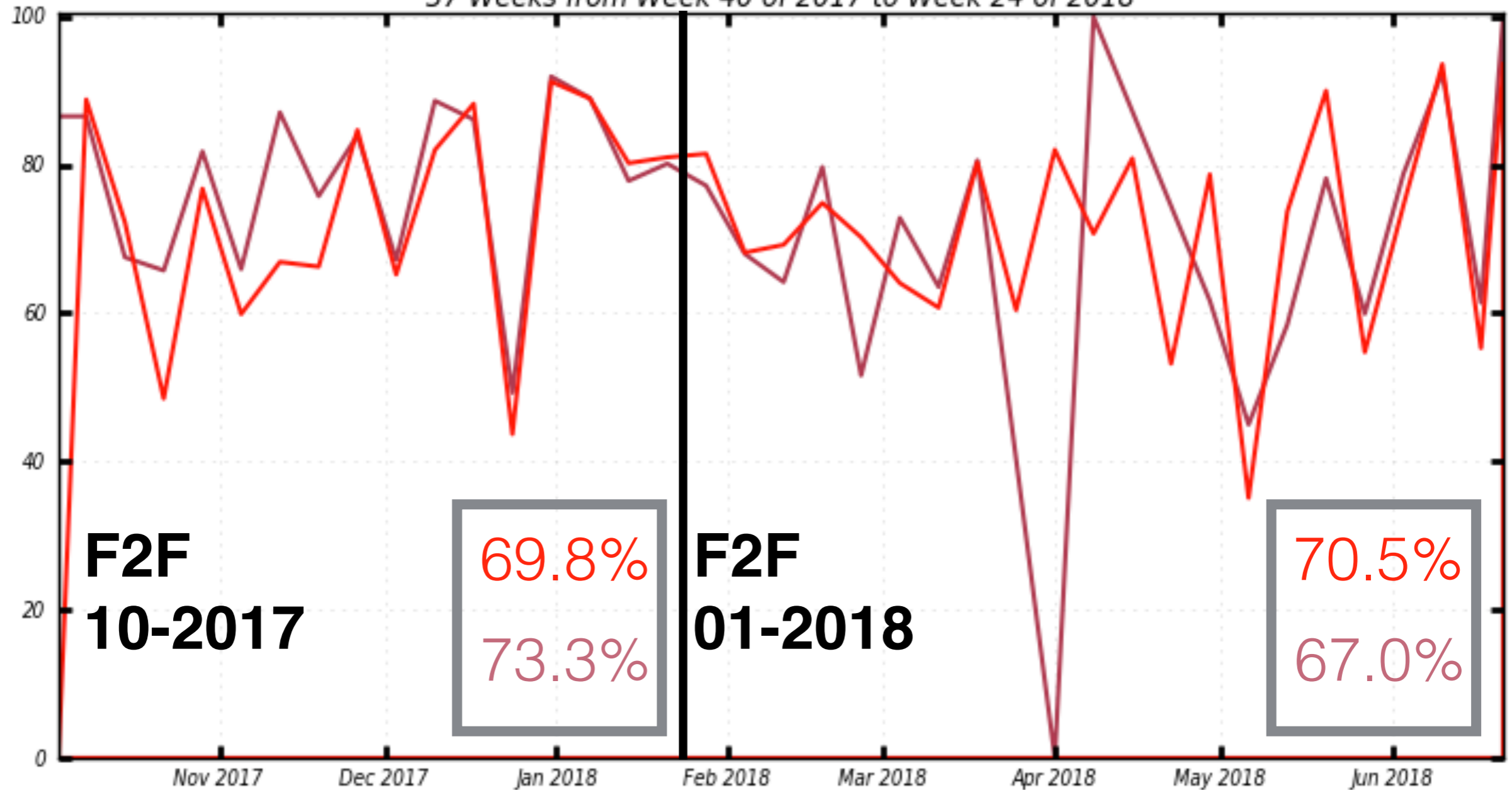


# # Successful jobs / # of all jobs



Efficiency over time based on success/all accomplished jobs

37 Weeks from Week 40 of 2017 to Week 24 of 2018



**F2F**  
**10-2017**

69.8%  
73.3%

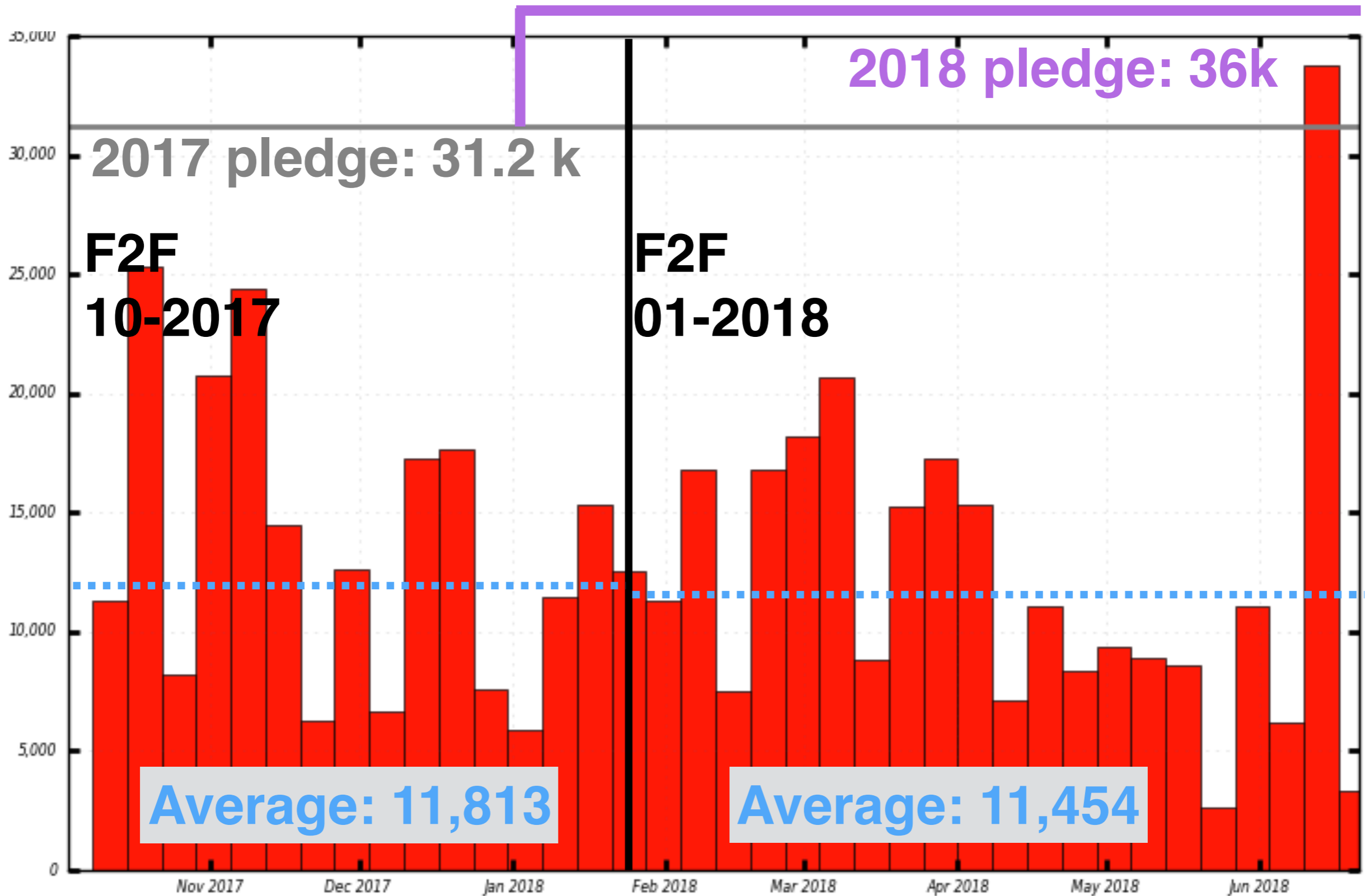
**F2F**  
**01-2018**

70.5%  
67.0%

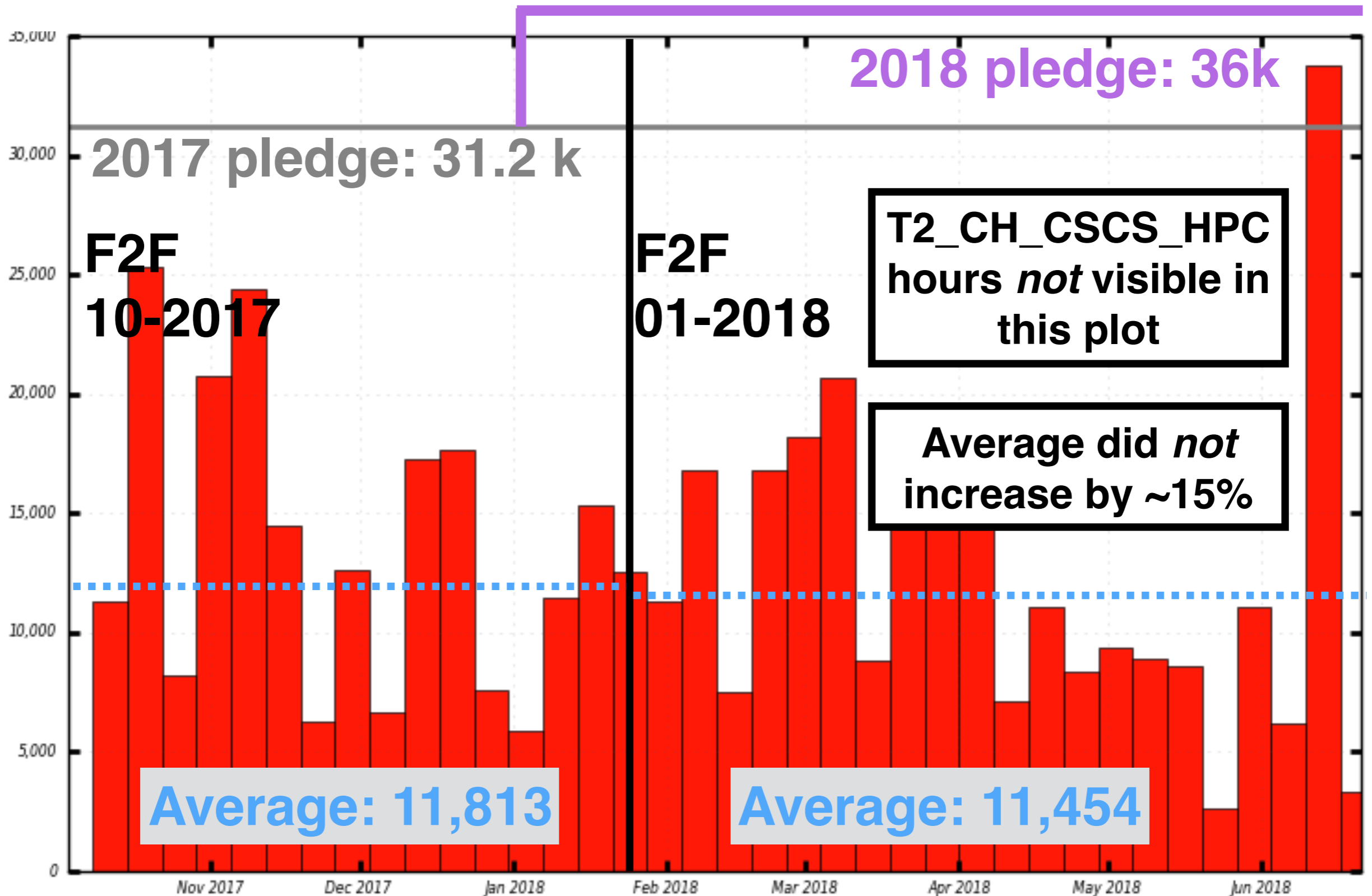
■ T2\_CH\_CSCS

■ T2\_CH\_CSCS\_HPC

# WC HEPSPEC06 Hours: pledged vs. delivered



# WC HEPSSPEC06 Hours: pledged vs. delivered



# Conclusion

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- SAM Ranking has decreased since last F2F
  - It looks to me like the tickets arrive to late; some unavailability has already happened by the time we are made aware
  - I will build some code that sense a warning email every time we go below a threshold
- When the system is not down, it works as stable as ever
- Overall delivery seems to have not increased yet, whereas the pledge has gone up from 31.2k to 36k

Back up

# CSCS status report from CMS 01-10-2017 - 24-01-2018

**CHIPP-CSCS F2F meeting in Lugano**

Thomas Klijnsma

25<sup>th</sup> of January 2018

***ETH*** zürich

# GGUS tickets since 01-10-2017

Ticket #	Date	Title	Comment
127100	17/01/18	Upgrade spacemon client	Ongoing multi-party issue. Not very urgent, but taking a long time now.
132927	24/01/18	Problem with APEL Accounting for all of ...	Accounting issue; beyond my knowledge
132201	10/12/17	T2_CH_CSCS SAM srm failures	Quickly solved after updating certificates on certain storage elements
132125	09/12/17	T2_CH_CSCS_HPC SAM xrootd ...	Some errors due to CVMFS slowness/lack of cache. Solved by itself.
132017	08/12/17	T2_CH_CSCS SAM failures	Was already fixed before we read the ticket
131999	02/12/17	apply for EOS space for T2_CH_CERN	Related to a CERN user asking for EOS space in the wrong place.
131352	19/01/18	need for info on a specific WN	Related to high Slurm workload
131315	10/11/17	Transfer failing to T2_CH_CSCS - ...	Phedex certificate renewal scripts needed updating
131309	18/11/17	T2_CH_CSCS SAM CONDOR-JobSubmit failures	Slurm issues, but resolved itself.
131111	26/10/17	T2_CH_CSCS_HPC SAM tests cancelled	Watchdog was reenabled. SAM tests recovered.
131067	02/11/17	T2_CH_CSCS SAM JobSubmit failures	a-rex was in bad state; Once reenabled, Slurm overload. Caused a short WR status.



# Summary of tickets

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- No automatic ticket notification for me; still checking manually
- Mostly minor issues that lead to short unavailability:
  - Phedex certificates, certificates on SEs, SLURM overload, an issue with a-rex being in a bad state

# Overview of important times in particle physics

- Follow-up to the previous F2F: Some important conferences of particle physics and their dates can be found at: <https://wiki.chipp.ch/twiki/bin/view/LCGTier2/BlogEphemeridesVOs>

## VO Calendar of events/conferences

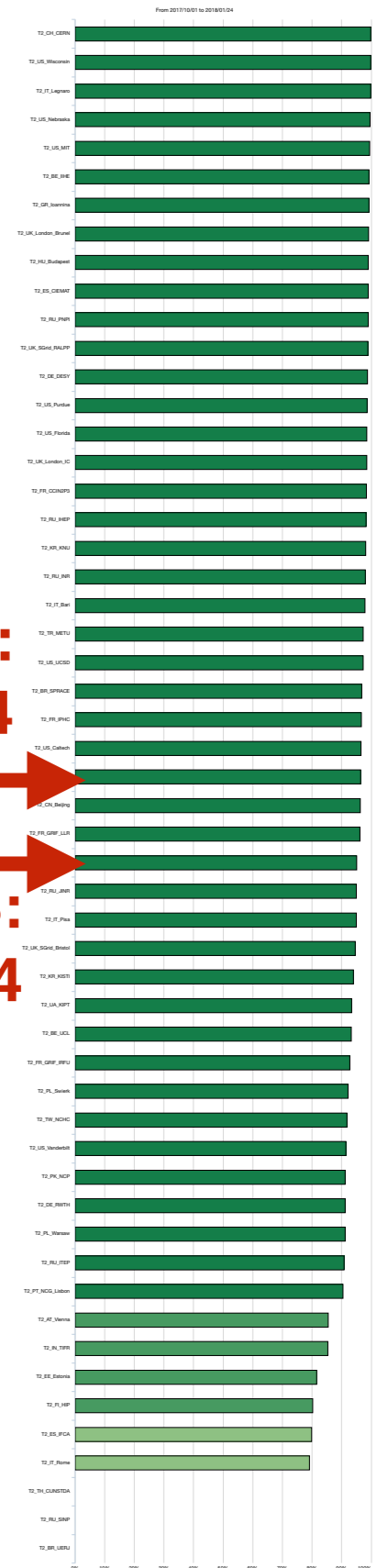
The idea is to maintain the following list of conferences/events where it may be important NOT to do scheduled maintenances, if possible.

### 2018

- **Moriond 2018**
  - Conference dates: 10-03 to 24-03
  - Avoid downtime between: 19-02 to 09-03
- **LHCP 2018**
  - Conference dates: 04-06 to 09-06
  - Avoid downtime between: 14-05 to 01-06
- **ICHEP 2018**
  - Conference dates: 04-07 to 11-07
  - Avoid downtime between: 18-06 to 02-07

# SAM ranking since 01-10-2017

- Apparently rather widely accepted as 'the' ranking at management level
- In the lowest quartile during the last F2F, but now around the average
- Very green for the last month

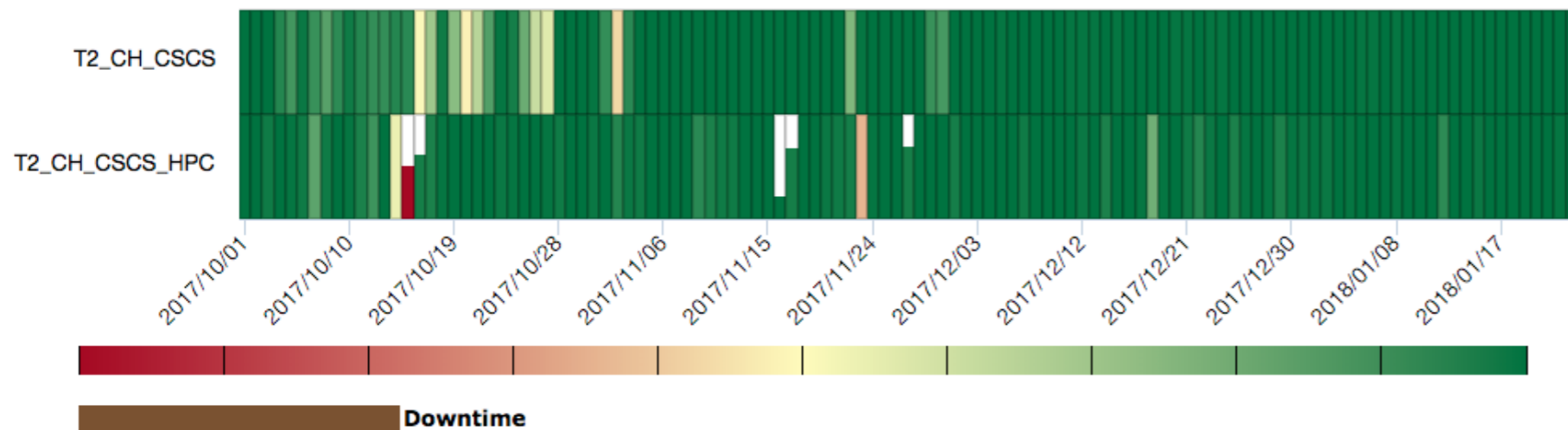


**CSCS\_HPC:**  
96.50% 26/54

**CSCS:**  
95.12% 29/54

Site Availability using CMS\_CRITICAL

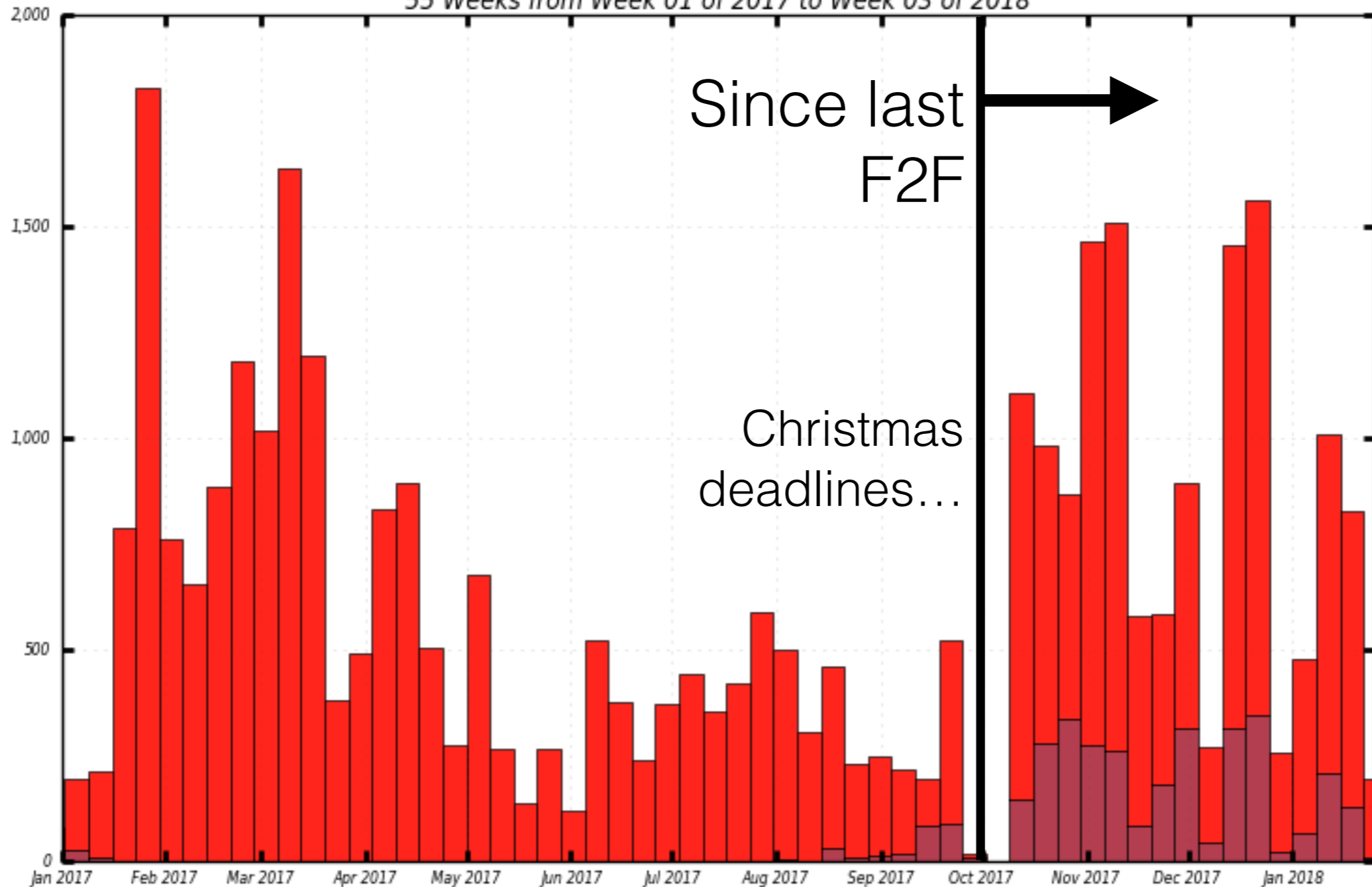
From 2017/10/01 to 2018/01/24



# CPU Consumption per week



weeks/week: CPU consumption Good Jobs  
55 Weeks from Week 01 of 2017 to Week 03 of 2018



T2\_CH\_CSCS

T2\_CH\_CSCS\_HPC

Maximum: 1,828 , Minimum: 0.00 , Average: 608.95 , Current: 195.00

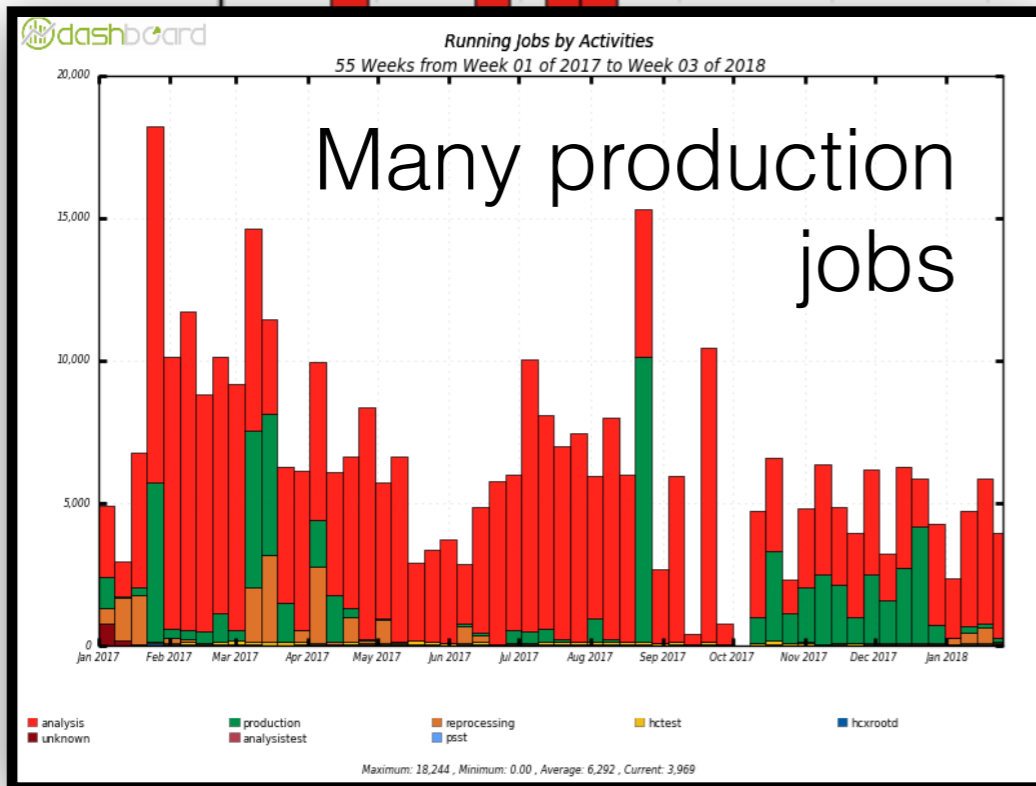
# CPU Consumption per week



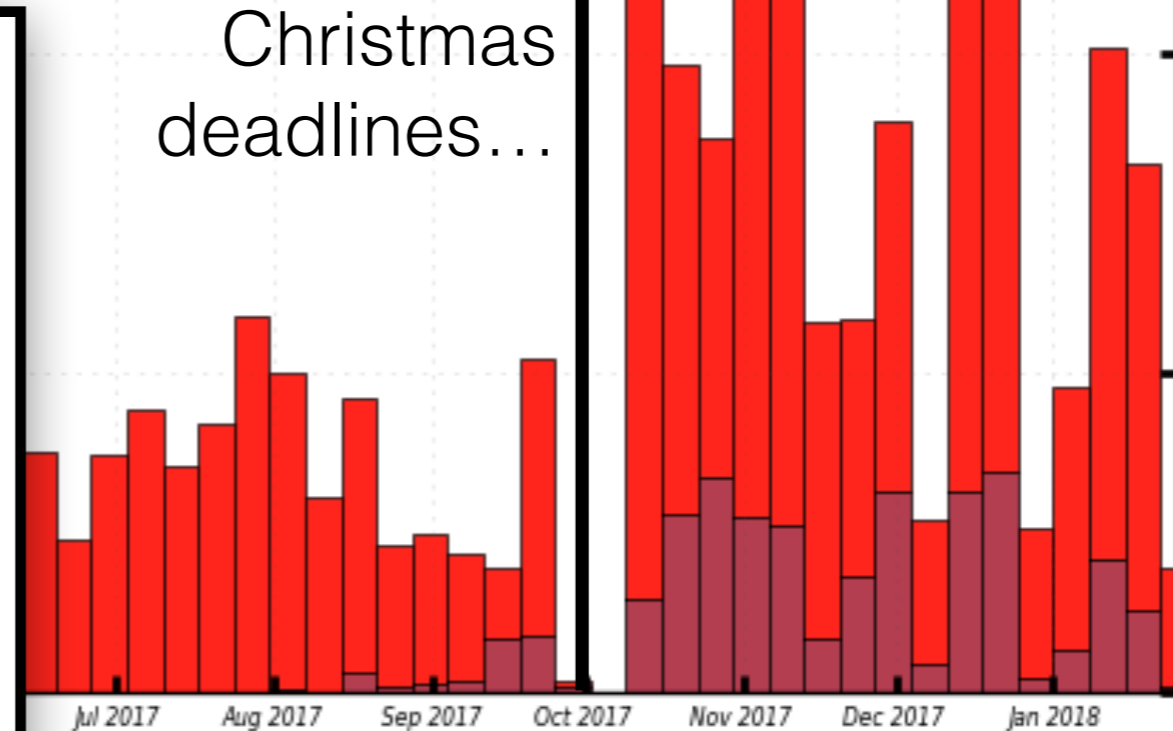
weeks/week: CPU consumption Good Jobs  
55 Weeks from Week 01 of 2017 to Week 03 of 2018



Since last F2F →



Many production jobs



Christmas deadlines...

T2\_CH\_CSCS

T2\_CH\_CSCS\_HPC

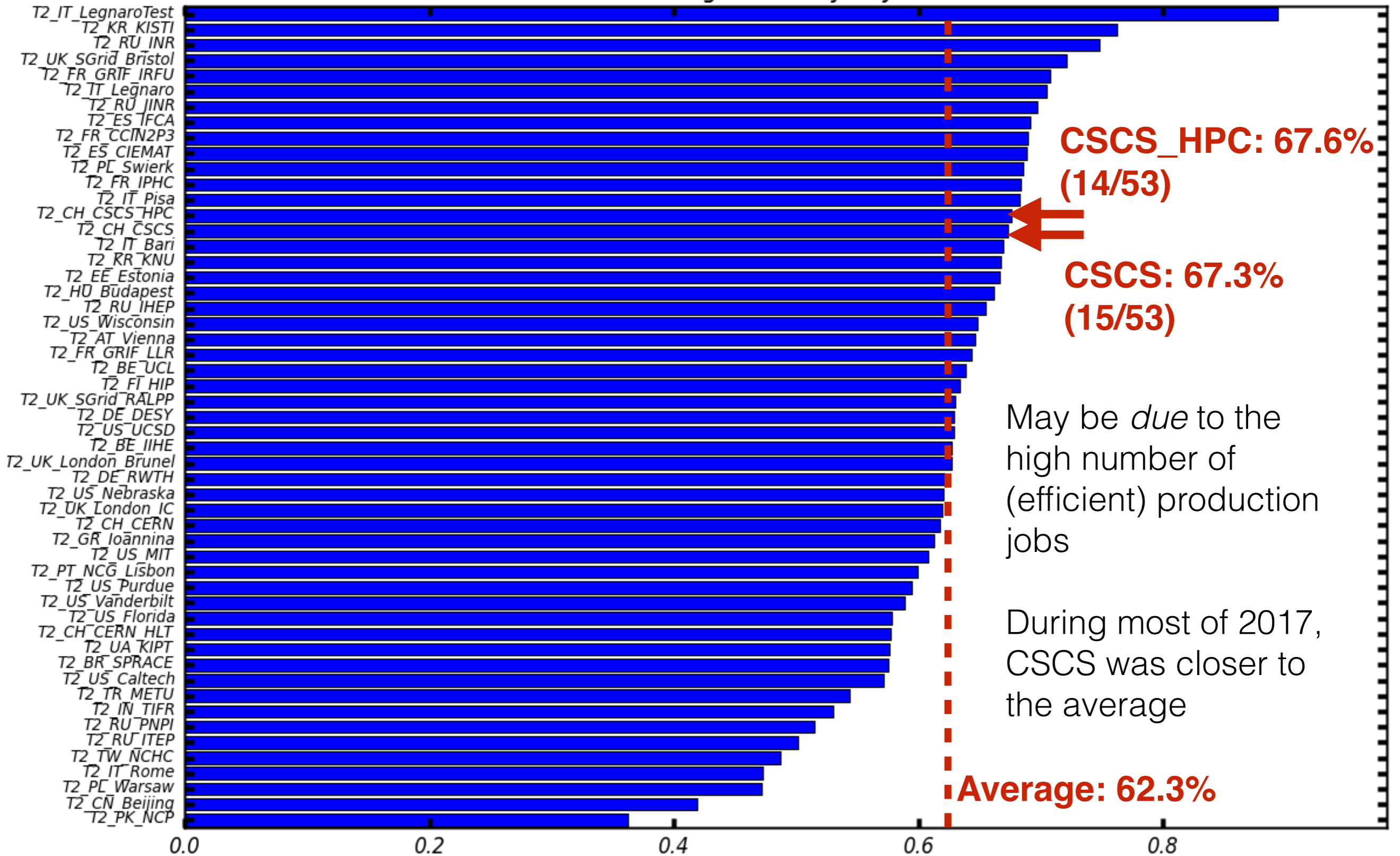
Maximum: 1,828 , Minimum: 0.00 , Average: 608.95 , Current: 195.00

# CPU Efficiency (all jobs)



Average Efficiency All Jobs

since 01-10-2017



**CSCS\_HPC: 67.6%**  
(14/53)

**CSCS: 67.3%**  
(15/53)

May be *due* to the high number of (efficient) production jobs

During most of 2017, CSCS was closer to the average

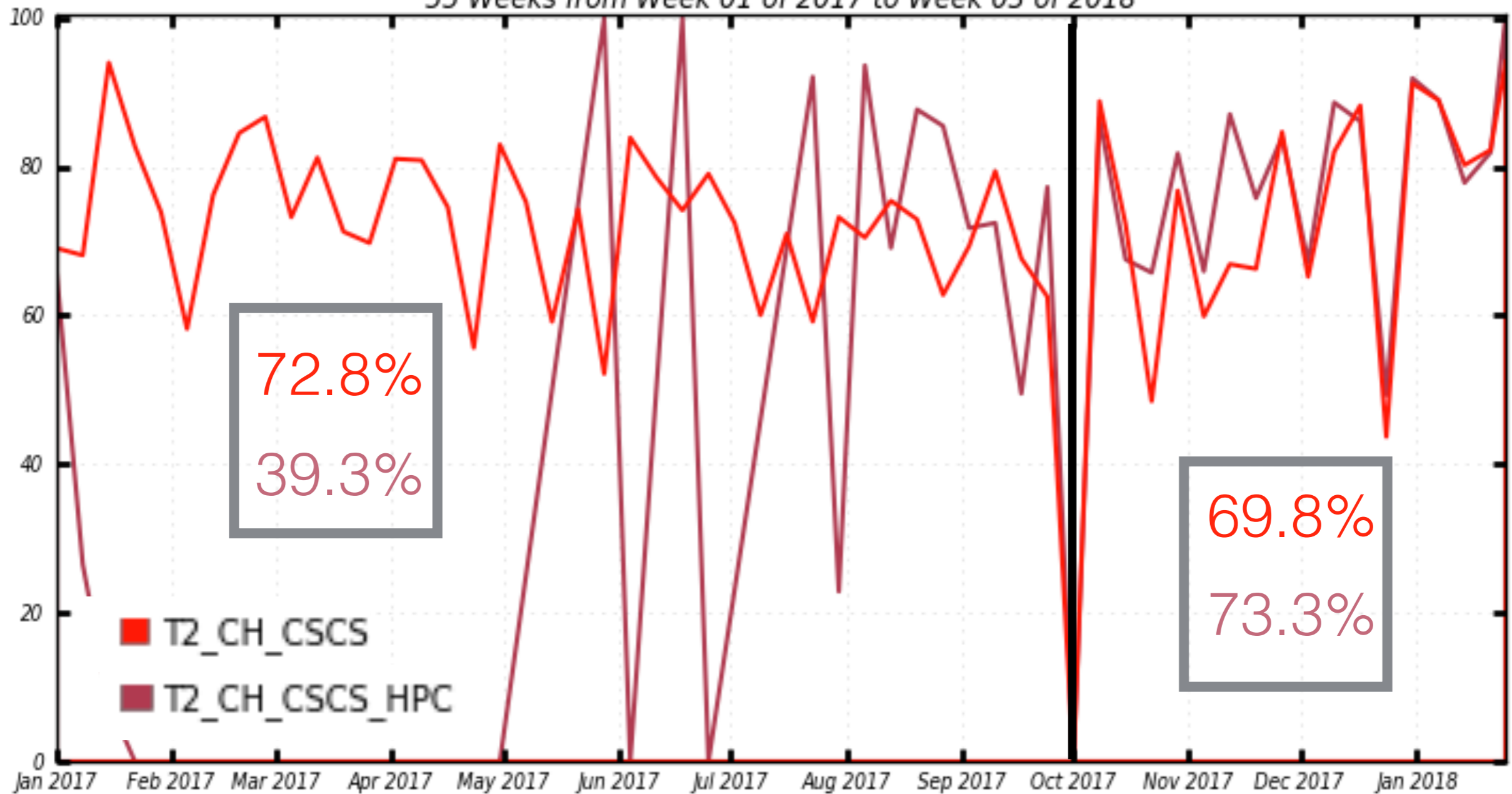
**Average: 62.3%**

# Success / total jobs



Efficiency over time based on success/all accomplished jobs

55 Weeks from Week 01 of 2017 to Week 03 of 2018



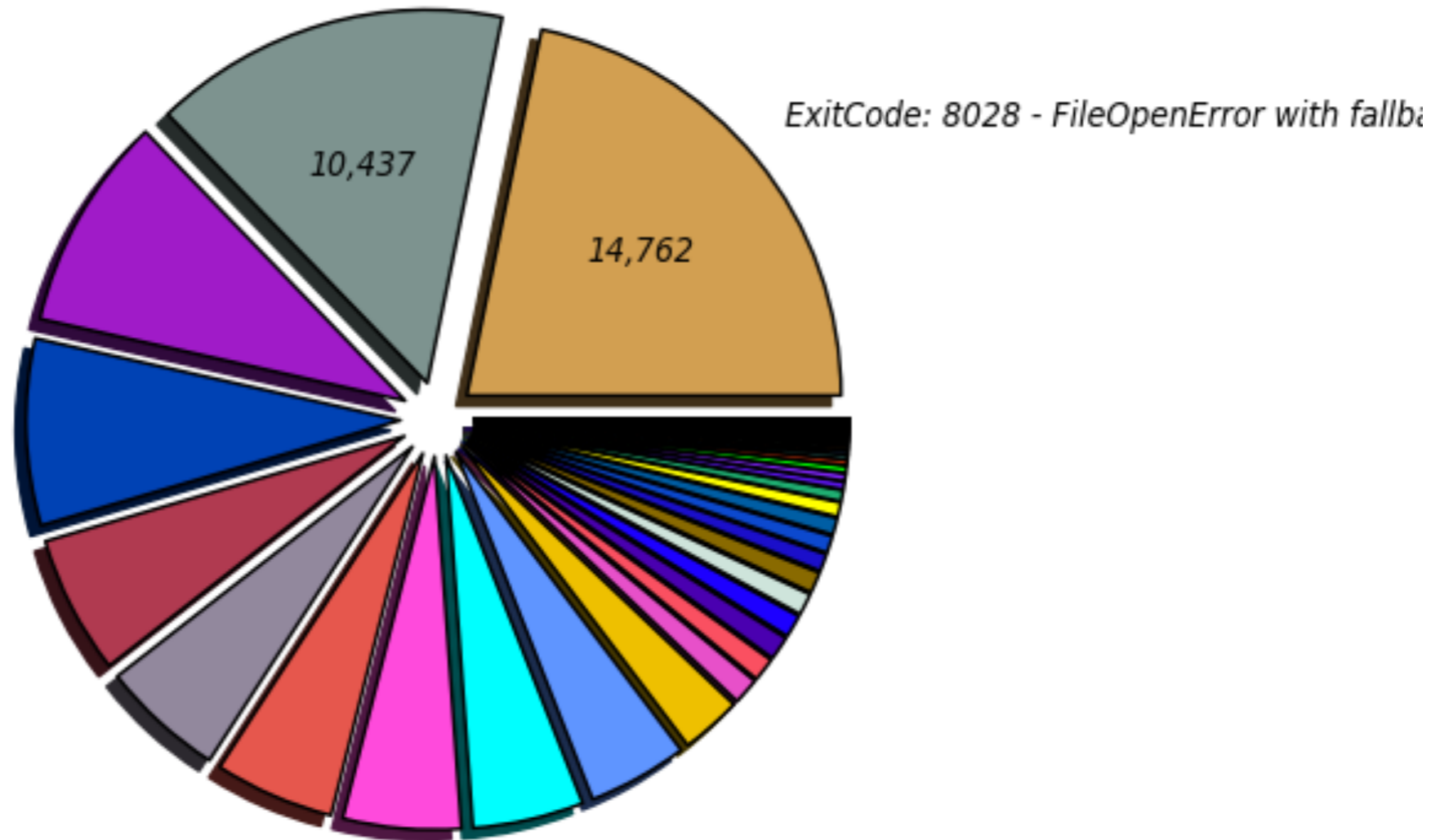
- Both systems stable since 10-2017, ~70% success/all
- Systems are strongly correlated

# Failed jobs exit codes



**Since 01-10-2017**

Application failure by exit code (Sum: 67,739)  
terminated by wrapper because using too much RAM (RSS)



- ExitCode: 8028 - FileNotFoundError with fallback (14,763)
- ExitCode: 7002 - Config File Read Error (6,284)
- ExitCode: 0 - Application finished properly (4,061)
- ExitCode: 8021 - FileReadError (3,513)
- ExitCode: 139 - Segmentation violation (ANSI) (3,254)
- ExitCode: 1 - Hangup (POSIX) (1,779)
- ExitCode: 8002 - StdLib? Exception (694.00)
- ExitCode: 8009 - ConfigurationProblem (668.00)
- ExitCode: 50669 - Application terminated by wrapper for not defined reason (615.00)
- ExitCode: 255 - nondefined (499.00)
- ExitCode: 50660 - Application terminated by wrapper because using too much RAM (RSS) (10,437)
- ExitCode: 8019 - FileInPathError (5,464)
- ExitCode: 50664 - Application terminated by wrapper because using too much Wall Clock ti
- ExitCode: 8001 - CMS exception (CMSSW) (3,447)
- ExitCode: 10040 - failed to generate cmsRun cfg file at runtime (2,927)
- ExitCode: 8020 - FileOpenError (777.00)
- ExitCode: 60302 - Output file(s) not found (694.00)
- ExitCode: 60311 - Stage Out Failure in ProdAgent job (642.00)
- ExitCode: 8006 - ProductNotFound (513.00)
- plus 69 more

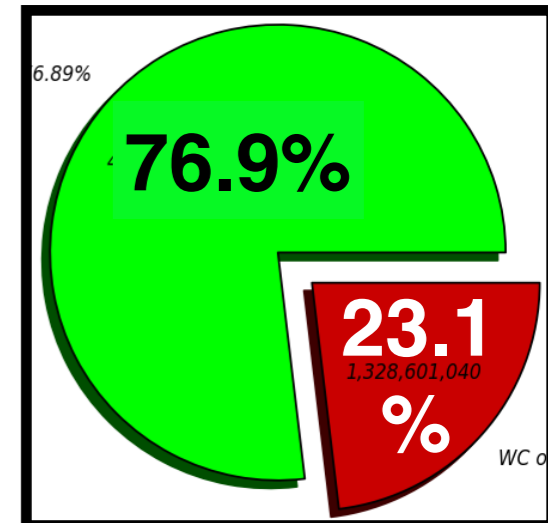
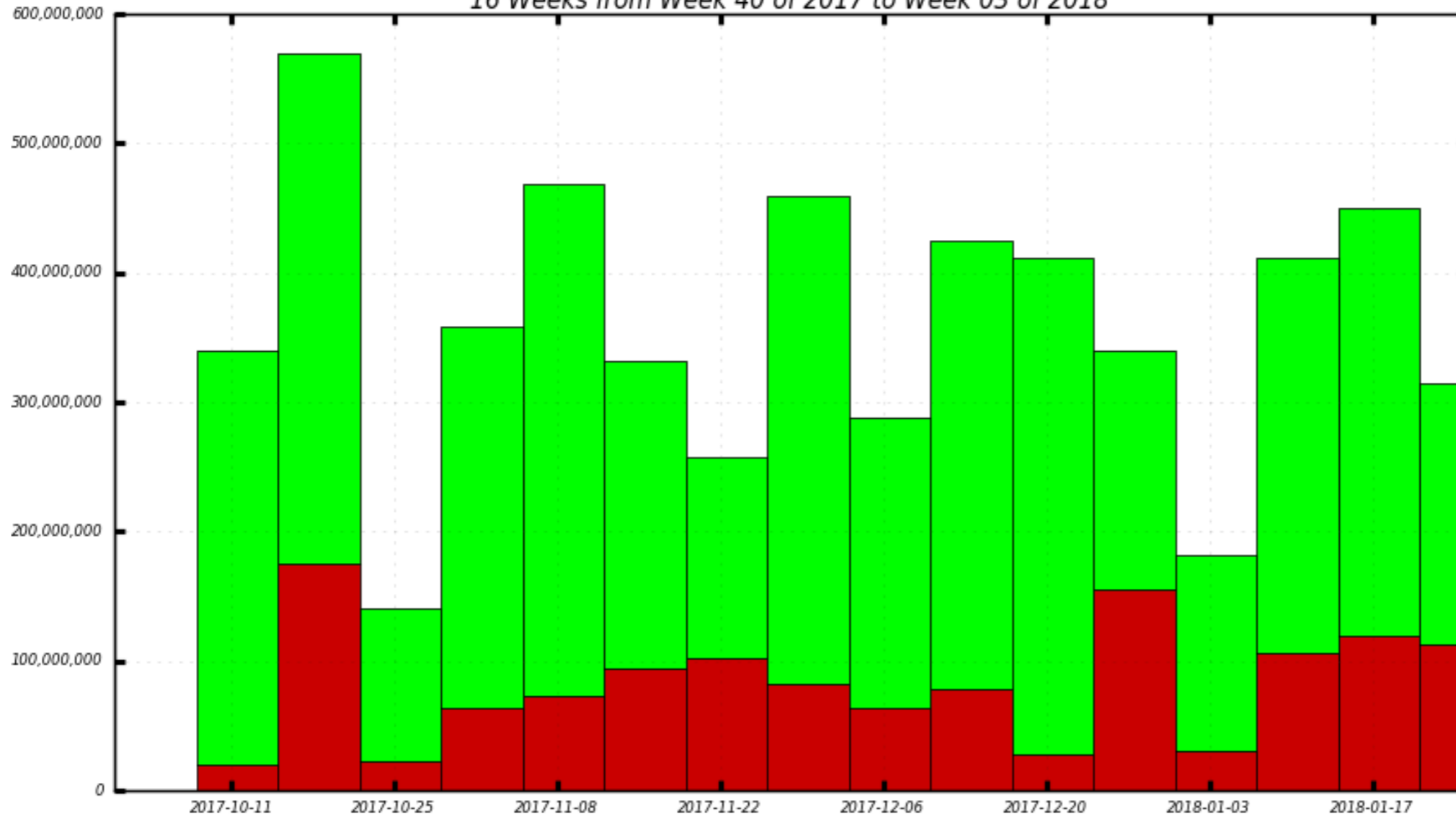


# WC Success/Failed

**Since 01-10-2017**



WallClock Consumption for Successful, Failed and/or Aborted Jobs  
16 Weeks from Week 40 of 2017 to Week 03 of 2018



WallClock Consumption of Successful Jobs

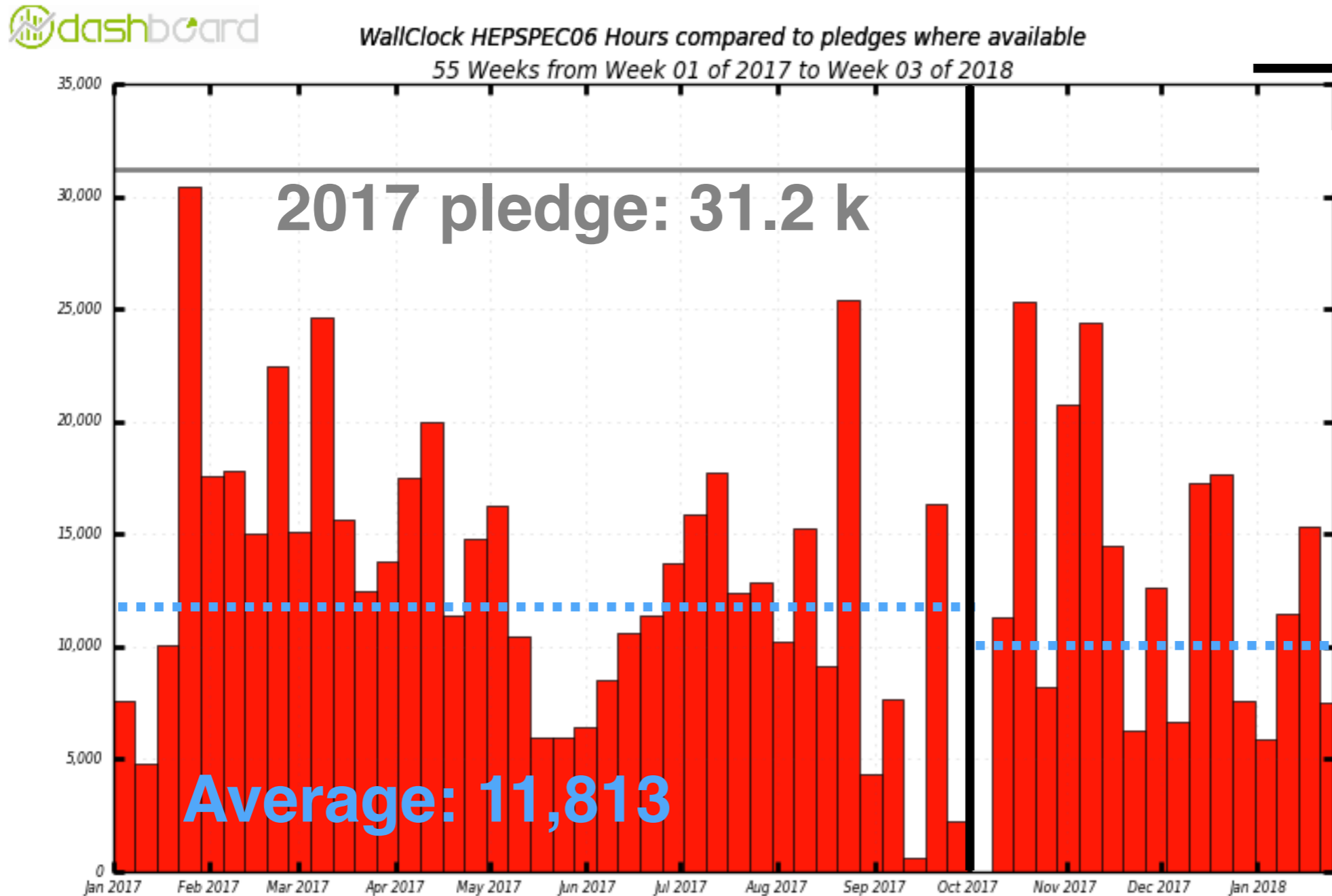
WallClock Consumption of Failed and/or Aborted Jobs

Maximum: 570,075,663 , Minimum: 0.00 , Average: 319,399,962 , Current: 314,878,965

# Resource pledge vs. delivered

- NB:** Due to accounting difficulties, take the info shown here with a grain of salt

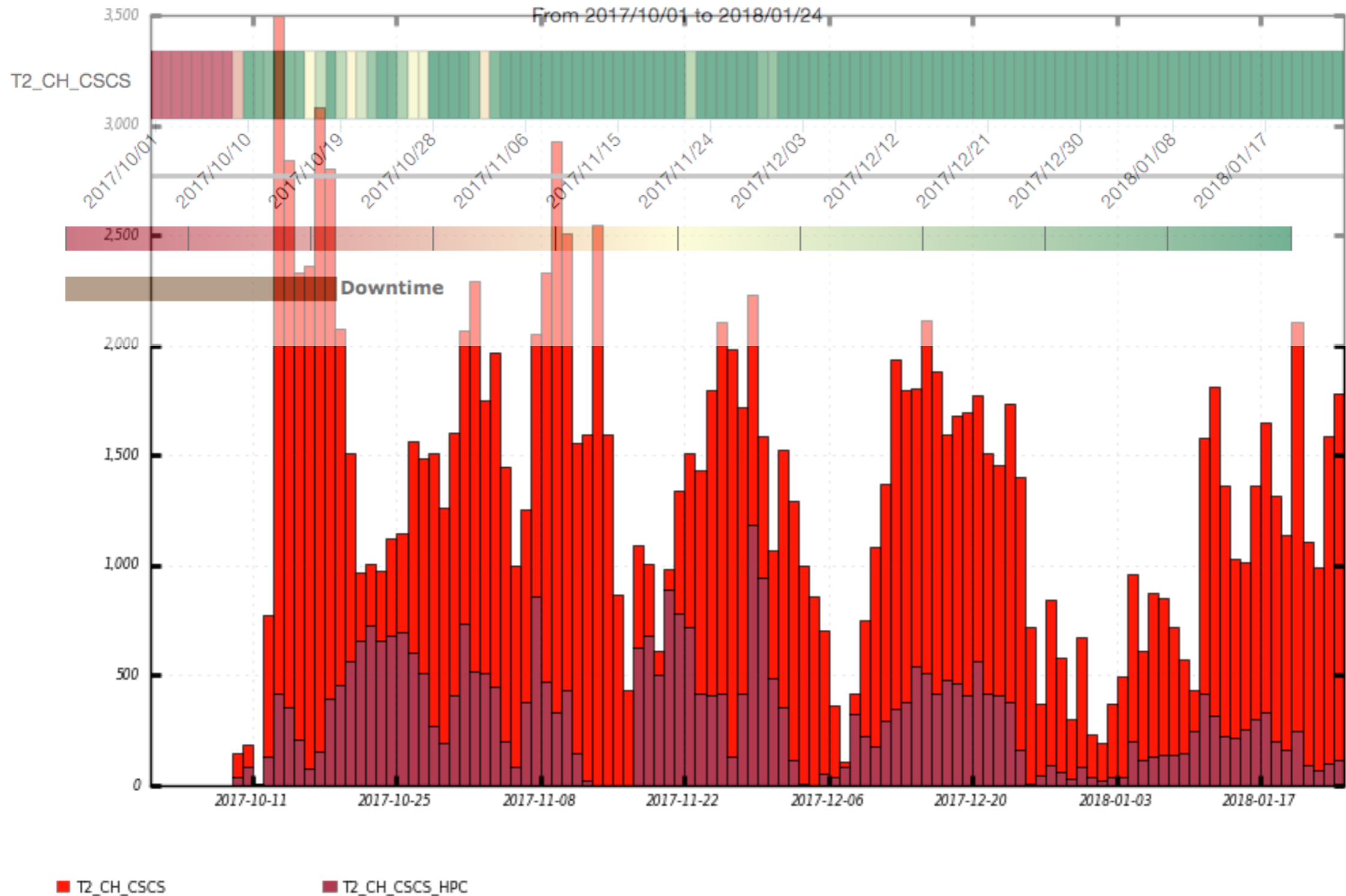
**2018  
pledge:  
36k**



# SAM Availability overlaid with # of jobs

[Link to data](#)

## Site Availability using CMS\_CRITICAL\_FULL



Maximum: 3,500 , Minimum: 0.00 , Average: 1,262 , Current: 1,780