



Storage service that fetches torrents

# put.io nedir?

- Storage servisi
  - “Cloud”da torrent clienti
  - Torrent linkini yapıştır, izlemeye başla
- 
- 100,000 kullanıcı
  - 3.7 milyon dosya
  - 300 TB data
  - 2.5 programcı

# Herşey nasıl başladı? 2009

- Hikayesi
- Teknolojiler:
  - Apache/modphp
    - ~10 senedir php kodu yazıyorduk
  - Symfony framework
    - Daha once kullanmistik
  - MySQL
    - Optimize etmeyi biliyorduk
  - MogileFS (Perl!)
    - HDFS kurmak cok karışık geldi.

# Neden değiştirdik

- Memory leaks, uzun süre çalışan processler problem çıkarttı
- Php'de spagetti yaratmak çok kolay
- Librarylerin çoğu sorunlu
- Apache/PHP pek sevmiyoruz

# Neden değiştirdik?

Problem: Apache error log:

- Error: [client 192....111] ALERT - canary mismatch on efree() - heap overflow detected (attacker '{some IP}', file 'somescript.php')  
uhh ?

Çözüm:

- The problem is in Suhosin-Patch. Some code structures causes such error. Either remove suhosin patch either try to figure out which part of the code causes such error.

Uhhhh ?

- It means that Suhosin detected a bug in PHP

<http://stackoverflow.com/questions/1642947/php-error-canary-mismatch-on-efree>

# Alternatifler

- Microsoft
  - İçini açamadığın şeyin sahibi değilsin
- Java
  - Biz enterprise değiliz
- Ruby
  - Çok dilimiz yandı
- Node.js
  - Stabil değildi, core libraryler yoktu.

# Python

- Rapid development
- Stabil kütüphaneler
- Daemon yazmak için şahane
- Kolay okunuyor, kolay yazılıyor
- Spagettiye çevirmek zor, okunaksız kod yazması daha zor

# Geçiş Süreci

- Python bilmiyoruz, bebek adımları gerekiyor
- Çalışan bir site var, maintenance problemi
- Önce küçük lokmalar

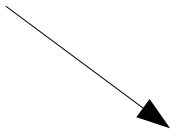


# Geçiş süreci

- (anahtar kelime) Loosely coupled
- RabbitMQ

# Geçiş süreci

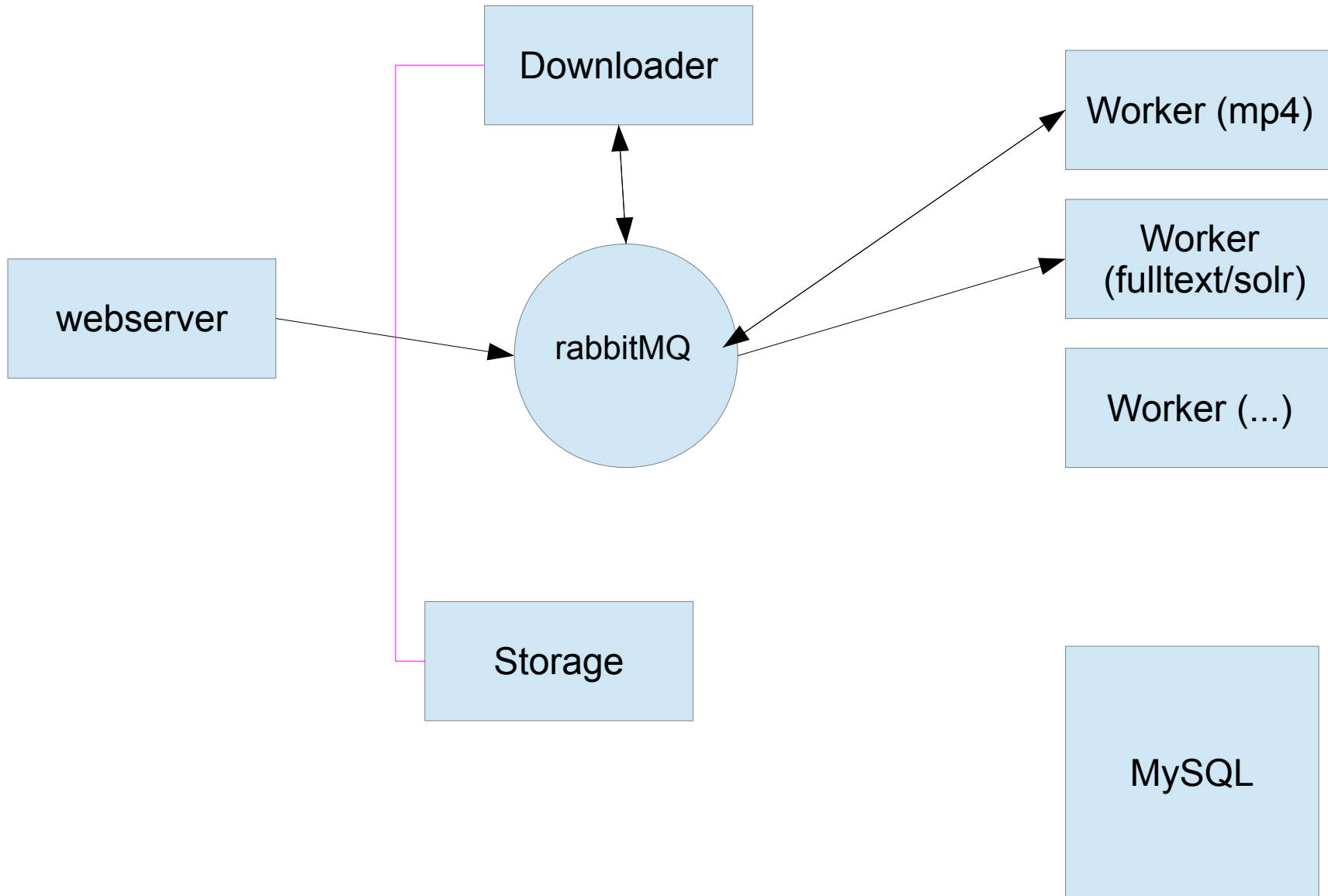
```
function extract($file){  
    $f = $storage->file($file->id)->download_to_('/....');  
    $f->extract();  
    Storage::save_to_storage($f->path);  
}
```

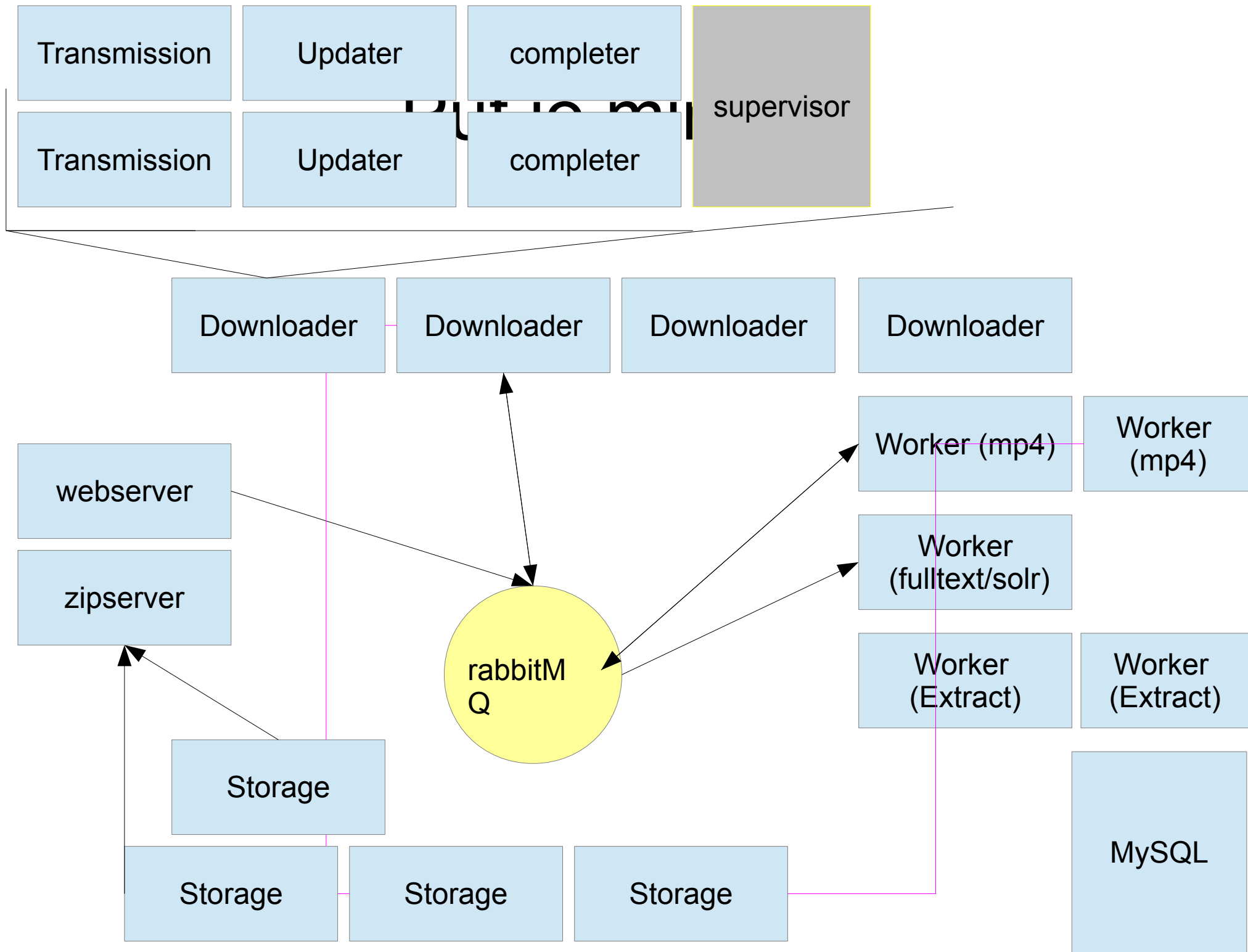


```
function extract($file){  
    RabbitMQ::extract($file->id);  
}
```

```
def extract(file_id):  
    path = storage.get(file_id)  
           .download_to('/...')  
    storage.save(path)  
  
RabbitWorker('extract', extract).run()
```

# Put.io mimari



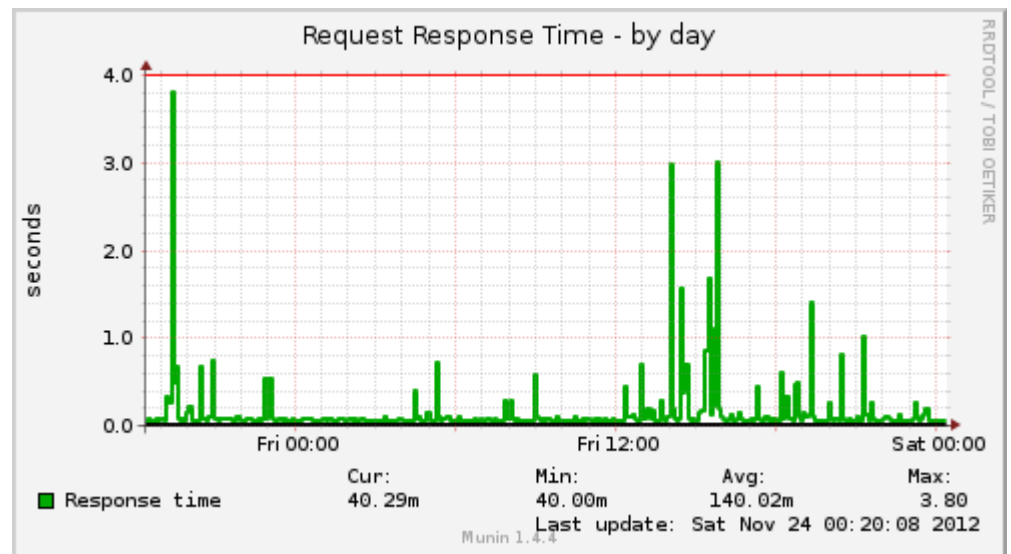


# Neler kullanıyoruz ?

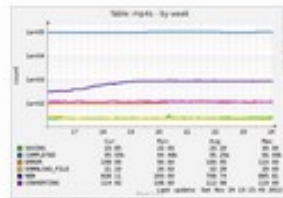
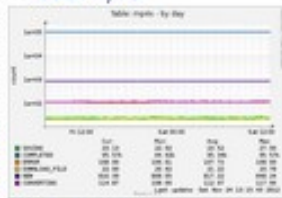
- Web framework: Flask
- Web server: Nginx, Gunicorn
- ORM: SQLAlchemy
- Process Controller: Supervisor
- RabbitMQ, Celery
- Fabric
- Solr (solrpy)
- FFMpeg, mencoder, imagemagick
- Transmission
- OS: Ubuntu
- Memcached: kullanmamaya çalışıyoruz

# Monitoring

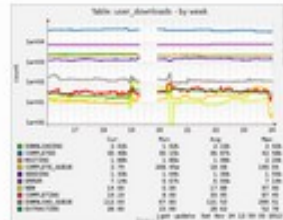
- Munin
- Munin custom plugins
- Munin → limits → pager duty → uyan !



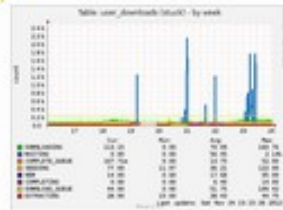
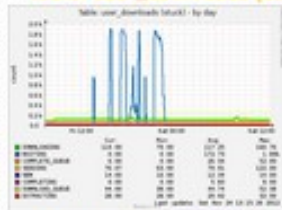
∴ Table: mp4s



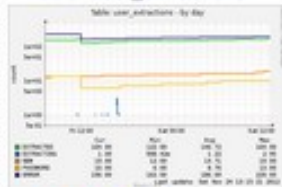
```
:: Table: user_downloads
```



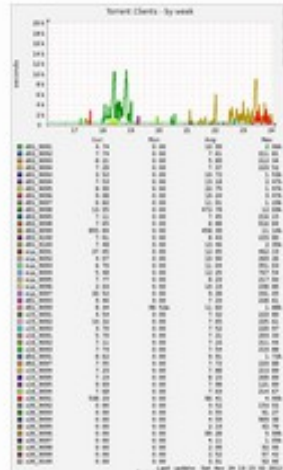
```
:: Table: user_downloads (stuck)
```



```
:: Table: user_extractions
```



## ∴ Torrent Clients

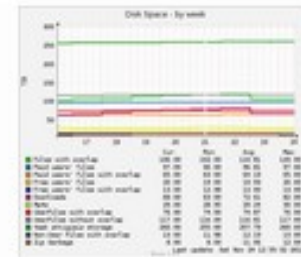
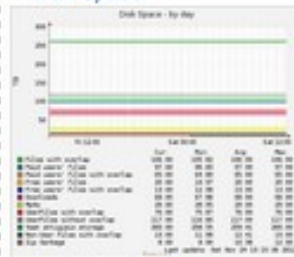


∴ **Torrents**

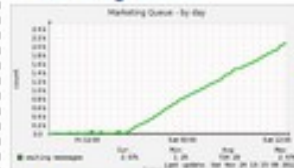


## putlo

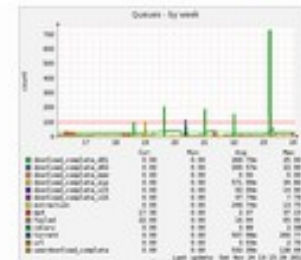
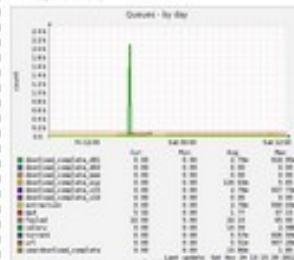
∴ Disk Space



∴ Marketing Queue



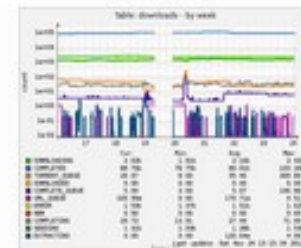
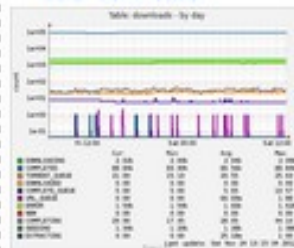
## :: Queues



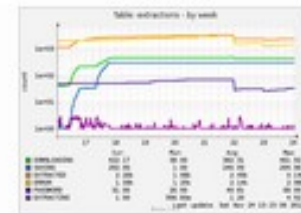
*:: Request Response Time*



∴ Table: downloads



```
:: Table: extractions
```



# Sentry

Sentry

search query or message id

StreamSettingsClient Configuration

Projects▼cenk▼

Dashboard / Putio

AllExceptionsMessages

Resolve FeedPause FeedSort by: Last Seen▼Since: Nov 21st▼

3	putio.storage._save_with_rsync	1 minute ago	✓
Completer exception		sentry	★
25	putio.storage._save_with_rsync	11 minutes ago	✓
Exception: couldnt copy file. rsync output: Warning: Permanently added '192.168.0.44' (RSA) to th...		root	★
397	putio.storage._save_with_rsync	15 minutes ago	✓
AssertionError		root	★
5	MySQLdb.connections.defaulterrorhandler	17 minutes ago	✓
OperationalError: (OperationalError) (2006, 'MySQL server has gone away') 'SELECT user_sessions.i...		root	★
22	putio.models.user.approve_friend_request	37 minutes ago	✓
Exception: no friend request from 114650 to 102392		root	★

BOOKMARKS

All Events

Only Bookmarks

STATUS

Unresolvedx▼

BROWSER

Search for a browser▼

LOGGER

Select a logger▼

OS

Select a os▼

SERVER NAME

Select a server name▼

URL

Search for a url▼



# Jenkins

Jenkins

New Job

People

Build History

Manage Jenkins

Build Queue

No builds in the queue.

Build Executor Status

#	Master
1	Idle
2	Idle
3	Idle
4	Idle

worker

1	Building Ultimate Clean Script #47
2	Idle
3	Idle
4	Idle

ENABLE AUTO REFRESH

add description

All

Fix

+

S	W	Job ↓	Last Success	Last Failure	Last Duration	
		<a href="#">Backup Jenkins Home</a>	7 hr 10 min (#175)	N/A	21 sec	
		<a href="#">Backup MySQL</a>	9 hr 19 min (#161)	N/A	48 min	
		<a href="#">Calculate Disk Space</a>	12 hr (#52)	N/A	9 min 10 sec	
		<a href="#">Calculate Monthly Bandwidth</a>	7 days 6 hr (#59)	N/A	51 min	
		<a href="#">Check Bandwidth Counter Status</a>	3 hr 19 min (#142)	N/A	1.3 sec	
		<a href="#">Check Fatal Processes</a>	4 min 38 sec (#2109)	N/A	54 sec	
		<a href="#">Check Jail</a>	10 hr (#163)	N/A	3.3 sec	
		<a href="#">Check Limbo</a>	10 hr (#162)	N/A	25 sec	
		<a href="#">Check MP4 Workers</a>	4 min 38 sec (#32740)	N/A	7 sec	
		<a href="#">Check MySQL Slave Status</a>	19 min (#1863)	8 hr 19 min (#1855)	2.4 sec	
		<a href="#">Cleanup RSS Items</a>	2 days 8 hr (#49)	N/A	5 min 46 sec	
		<a href="#">Clear Orphan RSSs</a>	9 hr 29 min (#162)	N/A	16 sec	
		<a href="#">Clear Orphan Sessions</a>	19 min (#3811)	21 hr (#3790)	5.7 sec	
		<a href="#">Copy MySQL Backup</a>	8 hr 31 min (#160)	N/A	1 hr 42 min	
		<a href="#">Delete Cancelled Users</a>	9 hr 9 min (#127)	N/A	0.82 sec	
		<a href="#">Deploy</a>	23 hr (#2093)	3 days 20 hr (#2081)	1 min 5 sec	
		<a href="#">Fix Quotas</a>	7 hr 9 min (#162)	N/A	3 min 3 sec	
		<a href="#">Fix Stuck in Completing</a>	3 hr 56 min (#1)	N/A	4.3 sec	
		<a href="#">Fix Stuck in Download Queue</a>	3 days 16 hr (#2)	N/A	40 sec	
		<a href="#">Fix Stuck in Downloading</a>	N/A	N/A	N/A	
		<a href="#">Orphan Cleaner</a>	1 day 5 hr (#58)	N/A	13 hr	
		<a href="#">Process Marketing Events</a>	20 hr (#8735)	4 min 38 sec (#8817)	15 sec	
		<a href="#">Remove Old MySQL Binlogs</a>	19 min (#50)	21 hr (#29)	1.7 sec	

# Development Süreci

- Git add, commit, push → jenkins → test → deploy
- Jenkins'i Seviyoruz. (Continuous Integration ı seviyoruz.)
- Exception loglamasi icin Sentry kullaniyoruz
- Sürüm çıkmak, deployment günleri, deadlinelar vs... sevmiyoruz.
- Commit etmek işbirliğini arttırır.
- Çok büyük işler olmadıkça, bütün geliştirme Master branchinde.
- Unit testi olmayan koddan emin olamayız.
- Single code base

# Deployment Süreci

- Github + Jenkins + Fabric

# Neler öğrendik?

- Bir dili iyi bilmek o dilde her problemi çözebilirsin anlamına gelmiyor.
- Cron kullanma Jenkins kullan
- Daemon yazma supervisor kullan
- Unit test yazmak hayat kurtarır, bırak patlasın
- Scale etmek sadece veritabanı, query/sec, request/sec değilmiş (yeni öğrendik)

# Teşekkürler.

- Tanışmak, görüşmek, konuşmak için:  
[info@put.io](mailto:info@put.io)
  - Python geliştirici ve sysadmin arıyoruz.