bytecluster0001

bytecluster0001 ist ein virtueller Server, der Kommunikationsdienste für den Verein bereitstellt. Der Server wurde von der Firma Hetzner Online GmbH dankenswerter Weise zur Verfügung gestellt.

Administratoren

- mape2k
- mkzero
- suicider

Benutzer

- Bernd (Webseiten)

IPs /DNS

- bytecluster0001.bytespeicher.org
  - 88.198.111.196
  - 2a01:4f8:c17:1214::2

Installation

- Debian 8.2 minimal

User / Gruppen

- mkzero → sudo
- marcel → sudo
- stephan → sudo
- bernd → sudo für www-data
- bytebot
- twitterstatus
- twitterstatus-ms
- spacestatus
- redmine
- ffapi
- synapse

Pakete

- zsh
- git
- screen
- mosh (SSH via UDP)
- python
- mc
- debian-goodies

Netzwerk

Skript für IPv6-Adressen (benötigt für Matrix-IRC-Bridge)

```
#!/bin/bash

ACTION=$1
BASEADDR=$2
```

```
NETMASK=$3
COUNT=$4
INTERFACE=$5

for i in $(seq 1 $COUNT); do
  ip -6 address $ACTION $(printf "%s:%04x/%s" $BASEADDR $i $NETMASK) dev $INTERFACE
done
```

- ***chmod +x /usr/local/bin/manage_ipv6_addresses.sh***

Konfiguration

```
# Loopback device:
auto lo
iface lo inet loopback

# device: eth0
auto  eth0
iface eth0 inet dhcp

iface eth0 inet6 static
  address 2a01:4f8:c17:1214::2
  netmask 64
  gateway fe80::1
  # 128 IPv6-Addressen mit Prefix "2a01:4f8:c17:1214::1:/64" anlegen
  post-up /usr/local/bin/manage_ipv6_addresses.sh add 2a01:4f8:c17:1214::1 64 128 eth0
  pre-down /usr/local/bin/manage_ipv6_addresses.sh delete 2a01:4f8:c17:1214::1 64 128 eth0
```

Konfiguration SSH

- HostKey DSA entfernt
- PermitRootLogin no
- PasswordAuthentication no

```
 _______  ________ ______ _____  ____  ______ ___ _____ _   _ _____ _____
| __ ) \ / /_   _| ____/ ___||  _ \| ____|_ _/ ___| | | | ____|  _ \
|  _ \\ V /  | | |  _| \___ \| |_) |  _|  | | |   | |_| |  _| | |_) |
| |_) || |   | | | |___ ___) |  __/| |___ | | |___|  _  | |___|  _ <
|____/ |_|   |_| |_____|____/|_|   |_____|___\____|_| |_|_____|_| \_\

    > BYTECLUSTER0001
```

SUDO

- Administrative Benutzer sind Mitglied der Gruppe „sudo“

IPTABLES

- iptables-persistent

```
*filter
:INPUT DROP [0:0]
:FORWARD DROP [0:0]
:OUTPUT ACCEPT [0:0]

# Already opened connections
-A INPUT -m state --state RELATED,ESTABLISHED -j ACCEPT

# Garbage
-A INPUT -m state --state INVALID -j DROP

# Ping
```

```
-A INPUT -p icmp -m icmp --icmp-type 8 -j ACCEPT

# Localhorst
-A INPUT -s 127.0.0.0/8 -j ACCEPT

# SSH / mosh
-A INPUT -p tcp -m tcp --dport 22 -j ACCEPT
-A INPUT -p udp -m udp --dport 60000:60008 -j ACCEPT

# Webserver
-A INPUT -p tcp -m tcp --dport 80 -j ACCEPT
-A INPUT -p tcp -m tcp --dport 443 -j ACCEPT

# Mail
-A INPUT -p tcp --dport 25 -j ACCEPT
-A INPUT -p tcp --dport 110 -j ACCEPT
-A INPUT -p tcp --dport 143 -j ACCEPT
-A INPUT -p tcp --dport 465 -j ACCEPT
-A INPUT -p tcp --dport 587 -j ACCEPT
-A INPUT -p tcp --dport 993 -j ACCEPT
-A INPUT -p tcp --dport 995 -j ACCEPT
-A INPUT -p tcp --dport 2000 -j ACCEPT
-A INPUT -p tcp --dport 4190 -j ACCEPT

COMMIT
```

```
*filter
:INPUT DROP [0:0]
:FORWARD DROP [0:0]
:OUTPUT ACCEPT [0:0]

# Localhorst
-A INPUT -i lo -j ACCEPT

# Piing
-A INPUT -p ipv6-icmp -j ACCEPT

# Already opened connections
-A INPUT -m state --state RELATED,ESTABLISHED -j ACCEPT

# Garbage
-A INPUT -m state --state INVALID -j DROP

# SSH / mosh
-A INPUT -p tcp -m tcp --dport 22 -j ACCEPT
-A INPUT -p udp -m udp --dport 60000:60008 -j ACCEPT

# Webserver
-A INPUT -p tcp -m tcp --dport 80 -j ACCEPT
-A INPUT -p tcp -m tcp --dport 443 -j ACCEPT

# Mail
-A INPUT -p tcp --dport 25 -j ACCEPT
-A INPUT -p tcp --dport 110 -j ACCEPT
-A INPUT -p tcp --dport 143 -j ACCEPT
-A INPUT -p tcp --dport 465 -j ACCEPT
-A INPUT -p tcp --dport 587 -j ACCEPT
-A INPUT -p tcp --dport 993 -j ACCEPT
-A INPUT -p tcp --dport 995 -j ACCEPT
-A INPUT -p tcp --dport 2000 -j ACCEPT
-A INPUT -p tcp --dport 4190 -j ACCEPT
```

```
COMMIT
```

MySQL/MariaDB

- mariadb-server

```
--- /etc/mysql/my.cnf.dist  2015-11-04 22:19:31.589007928 +0100
+++ /etc/mysql/my.cnf   2015-11-04 22:19:31.577007958 +0100
@@ -36,6 +36,9 @@
 skip-external-locking

 bind-address       = 127.0.0.1
+
+default_storage_engine = InnoDB
+
 #
 # * Fine Tuning
 #
@@ -68,6 +71,22 @@
 #long_query_time = 2
 #log_queries_not_using_indexes

+table_cache            = 500
+query_cache_limit  = 4M
+query_cache_size        = 128M
+
+# INNODB PERFORMANCE
+innodb_buffer_pool_size         = 256M
+innodb_log_buffer_size          = 8M
+innodb_log_file_size            = 128M
+
+innodb_log_files_in_group       = 2
+innodb_flush_log_at_trx_commit  = 2
+innodb_flush_method             = O_DIRECT
+innodb_file_per_table
+
+innodb_thread_concurrency       = 8
+
 [mysqldump]
 quick
 quote-names
```

NGINX

- nginx

```
diff -Naur /etc/nginx.dist/conf.d/ssl.conf /etc/nginx/conf.d/ssl.conf
--- /etc/nginx.dist/conf.d/ssl.conf 1970-01-01 01:00:00.000000000 +0100
+++ /etc/nginx/conf.d/ssl.conf  2015-11-04 22:41:34.269315957 +0100
@@ -0,0 +1,12 @@
+ssl_ciphers "EECDH+AESGCM:EDH+AESGCM:AES256+EECDH:AES256+EDH";
+ssl_protocols TLSv1 TLSv1.1 TLSv1.2;
+ssl_prefer_server_ciphers on;
+ssl_session_cache shared:SSL:10m;
+add_header Strict-Transport-Security "max-age=63072000; includeSubdomains; preload";
+add_header X-Frame-Options DENY;
+add_header X-Content-Type-Options nosniff;
+ssl_session_tickets off; # Requires nginx >= 1.5.9
+ssl_stapling on; # Requires nginx >= 1.3.7
+ssl_stapling_verify on; # Requires nginx => 1.3.7
```

```
+resolver 213.133.98.98 213.133.99.99 valid=300s;
+resolver_timeout 5s;
diff -Naur /etc/nginx.dist/nginx.conf /etc/nginx/nginx.conf
--- /etc/nginx.dist/nginx.conf  2014-12-01 12:12:00.000000000 +0100
+++ /etc/nginx/nginx.conf   2015-11-04 22:42:03.837950276 +0100
@@ -30,8 +30,8 @@
    # SSL Settings
    ##

-   ssl_protocols TLSv1 TLSv1.1 TLSv1.2; # Dropping SSLv3, ref: POODLE
-   ssl_prefer_server_ciphers on;
+   #ssl_protocols TLSv1 TLSv1.1 TLSv1.2; # Dropping SSLv3, ref: POODLE
+   #ssl_prefer_server_ciphers on;

    ##
    # Logging Settings
@@ -45,7 +45,7 @@
    ##

    gzip on;
-   gzip_disable "msie6";
+   #gzip_disable "msie6";

    # gzip_vary on;
    # gzip_proxied any;
```

Let's Encrypt (SSL-Zertifikate)

Installation

- ***useradd letsencrypt -m -G www-data***
- ***su - letsencrypt***
- ***git clone https://github.com/lukas2511/letsencrypt.sh.git***
- ***cd letsencrypt.sh***
- ***cp docs/examples/* ./***
- ***chmod ug+x hook.sh***
- ***mkdir /home/letsencrypt/letsencrypt.sh/.acme-challenges***

```
# Allow reload of NGINX
letsencrypt ALL=NOPASSWD: /bin/systemctl reload nginx.service
# Allow restart of Postfix/Dovecot
letsencrypt ALL=NOPASSWD: /bin/systemctl restart postfix.service
letsencrypt ALL=NOPASSWD: /bin/systemctl restart dovecot.service
```

Konfiguration Let's Encrypt-Client

```
CA="https://acme-v01.api.letsencrypt.org/directory"
...
CHALLENGETYPE="http-01"
...
KEYSIZE="4096"
...
HOOK=${SCRIPTDIR}/hook.sh
...
RENEW_DAYS="60"
...
PRIVATE_KEY_RENEW="yes"
...
KEY_ALGO=rsa
...
CONTACT_EMAIL=hostmaster@bytespeicher.org
```

```
function deploy_cert {
    # Reload NGINX
    sudo /bin/systemctl reload nginx.service

    # Restart Postfix/Dovecot
    [ ${DOMAIN} = "mail.bytespeicher.org" ] && (sudo /bin/systemctl restart postfix.service;
sudo /bin/systemctl restart dovecot.service)
}
```

Konfiguration NGINX

```
# Use acme-challenge directory from letsencrypt.sh
location ^~ /.well-known/acme-challenge/ {
    default_type "text/plain";
    alias /home/letsencrypt/letsencrypt.sh/.acme-challenges/;
}

# Hide using ACME-Client
location = /.well-known/acme-challenge/ {
    return 404;
}
```

```
# Let's Encrypt
23 4 * * *     letsencrypt  /home/letsencrypt/letsencrypt.sh/letsencrypt.sh -c >
/home/letsencrypt/letsencrypt.log 2>&1
```

Verwendung des Let'sEncrypt Client für eine neue Domain

Pro Zertifikat können mehrere Domains/Subdomains integriert werden. Diese müssen in der domains.txt in einer Zeile stehen.

1. Let's Encrypt ACME-Challenge-Verifikation im VHost aktivieren

   ```
   server {
     ...
     include snippets/letsencrypt.conf;
     ...
   }
   ```

2. Domain eintragen und Zertifikat erzeugen

   ```
   example.org www.example.org
   ```

   - ***su - letsencrypt***
   - ***cd letsencrypt.sh***
   - ***./letsencrypt.sh -c***

3. Verbindung als Nutzer beenden
   - ***exit***
4. DH-Parameter erstellen
   - ***mkdir /etc/ssl/example.org***
   - ***openssl dhparam -out /etc/ssl/example.org/dhparam.pem 4096***
5. SSL mit HSTS aktivieren und SSL-Zertifikate im NGINX einbinden

   ```
   server {
     ...
     ssl on;

     ssl_session_cache shared:SSL:10m;
     ssl_session_timeout 10m;

     ssl_prefer_server_ciphers on;
     ssl_protocols TLSv1 TLSv1.1 TLSv1.2;
   ```

```
  ssl_ciphers "ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:DHE-RSA-AES256-
GCM-SHA384:DHE-RSA-AES128-GCM-SHA256:ECDHE-RSA-AES256-SHA384:ECDHE-RSA-AES128-
SHA256:ECDHE-RSA-AES256-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES256-SHA256:DHE-RSA-AES128-
SHA256:DHE-RSA-AES256-SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-DES-CBC3-SHA:EDH-RSA-DES-CBC3-
SHA:AES256-GCM-SHA384:AES128-GCM-SHA256:AES256-SHA256:AES128-SHA256:AES256-SHA:AES128-
SHA:DES-CBC3-SHA:HIGH:!aNULL:!eNULL:!EXPORT:!DES:!MD5:!PSK:!RC4";

  add_header Strict-Transport-Security "max-age=31536000";
  add_header X-Frame-Options SAMEORIGIN;
  add_header X-Content-Type-Options nosniff;

  ssl_certificate /home/letsencrypt/letsencrypt.sh/certs/example.org/fullchain.pem;
  ssl_certificate_key /home/letsencrypt/letsencrypt.sh/certs/example.org/privkey.pem;
  ssl_dhparam /etc/ssl/example.org/dhparam.pem;

  ssl_stapling on;
  ssl_stapling_verify on;
  ssl_trusted_certificate
/home/letsencrypt/letsencrypt.sh/certs/example.org/fullchain.pem;
  ...
}
```

6. NGINX neuladen
    - ***systemctl reload nginx.service***

PHP

- php5-fpm
- php5-curl
- php5-imap
- php5-gd
- php5-intl
- php5-mcrypt
- php5-json
- php5-mysqlnd
- php5-memcached
- php5-xmlrpc

```
[Date]
date.timezone = "Europe/Berlin"

[PHP]
upload_max_filesize = 64M
post_max_size = 64M
```

Ruby

- ruby

Bytebot

Pakete:

- python-pip
- virtualenv
- python-dev (virtualenv build dep)
- libjpeg-dev (virtualenv build dep)
- zlib1g-dev (virtualenv build dep)
- libffi-dev (virtualenv build dep)
- libssl-dev (virtualenv build dep)

Installation:

```
[Unit]
Description=Bytespeicher IRC bot
After=network-online.target
After=syslog.service
Requires=network-online.target
Requires=syslog.service

[Service]
User=bytebot
Group=bytebot
Restart=always
RestartSec=30
ExecStart=/home/bytebot/Bytebot/env/bin/python /home/bytebot/Bytebot/bytebot.py
MemoryLimit=256M

[Install]
WantedBy=multi-user.target
```

- ***sudo -u bytebot /bin/bash***
- ***cd /home/bytebot***
- ***git clone https://github.com/Bytespeicher/Bytebot***
- ***cd Bytebot***
- ***virtualenv env***
- ***. env/bin/activate***
- ***pip install -r contrib/requirements.txt***
- ***systemctl enable bytebot.service***
- ***systemctl start bytebot.service***

Twitterstatus / Twitterstatus Makerspace

Die Anleitung ist für „twitterstatus“. Die Einrichtung von „twitterstatus-ms“ erfolgt

Pakete:

- python-pip
- virtualenv

Installation:

- ***useradd -m twitterstatus***
- ***sudo -u twitterstatus /bin/bash***
- ***cd /home/twitterstatus***
- ***mkdir tmp***
- ***git clone https://github.com/Bytespeicher/twitterstatus***
- ***cd twitterstatus***
- ***cp config.py{.example,}***
- ***nano config.py***

```
OAUTH_TOKEN     = '...'
OAUTH_SECRET    = '...'
CONSUMER_KEY    = '...'
CONSUMER_SECRET = '...'
ADMIN_NAME      = 'TWITTER_ACCOUNT_NAME_OF_ADMIN'
STATUS_FILE     = '/home/twitterstatus/tmp/twitter_old_status'
CURRENT_STATUS  = '/home/twitterstatus/tmp/status.json'
```

- ***virtualenv env***
- ***. env/bin/activate***
- ***pip install Twitter***
- ***exit***

```
[Unit]
```

```
Description=Bytespeicher Twitter status bot
After=network-online.target
After=syslog.service
Requires=network-online.target
Requires=syslog.service

[Service]
User=twitterstatus
Group=twitterstatus
Restart=always
RestartSec=60
ExecStart=/home/twitterstatus/twitterstatus/env/bin/python
/home/twitterstatus/twitterstatus/bytebot.py
MemoryLimit=64M

[Install]
WantedBy=multi-user.target
```

- ***systemctl enable twitterstatus.service***
- ***systemctl start twitterstatus.service***
- ***crontab -u twitterstatus -e***

-u twitterstatus -e

```
MAILTO=""
* * * * * /usr/bin/wget http://status.bytespeicher.org/status.json -O
/home/twitterstatus/tmp/status.json
```

Freifunk-API

Pakete

- python

Installation

- ***mkdir -p /var/www/api.erfurt.freifunk.net/public_html/***
- ***touch /var/www/api.erfurt.freifunk.net/public_html/freifunk-api.json***
- ***chown -R www-data:www-data /var/www/api.erfurt.freifunk.net/***
- ***chmod -R g+w /var/www/api.erfurt.freifunk.net/***
- ***useradd -m -G www-data ffapi***
- ***sudo -u ffapi /bin/bash***
- ***cd /home/ffapi***
- ***git clone https://github.com/FreifunkErfurt/ffapi***
- ***git clone https://github.com/FreifunkErfurt/scripts/ ffapi-update***
- ***cp ffapi-update/ffapi/config.py.example ffapi-update/ffapi/config.py***

Konfiguration

```
BASE_URL = 'http://map.erfurt.freifunk.net'
API_FILE_TEMPLATE = "/home/ffapi/ffapi/ff-erfurt.json"
API_FILE = "/var/www/api.erfurt.freifunk.net/public_html/freifunk-api.json"
```

Test

- ***ffapi-update/ffapi/ffapi-update.py***

```
Update of /var/www/api.erfurt.freifunk.net/public_html/freifunk-api.json successful.
We now have 146 Nodes
```

- ***logout***

Konfiguration Webserver

```
server {
  listen      80;
  listen [::]:80;
  listen      443 ssl;
  listen [::]:443 ssl;

  server_name api.erfurt.freifunk.net;

  include snippets/letsencrypt.conf;
  if ($scheme != "https") {
    rewrite ^ https://$host$uri permanent;
  }

  ssl on;

  ssl_session_cache shared:SSL:10m;
  ssl_session_timeout 10m;

  ssl_prefer_server_ciphers on;
  ssl_protocols TLSv1 TLSv1.1 TLSv1.2;
  ssl_ciphers "ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:DHE-RSA-AES256-GCM-
SHA384:DHE-RSA-AES128-GCM-SHA256:ECDHE-RSA-AES256-SHA384:ECDHE-RSA-AES128-SHA256:ECDHE-RSA-
AES256-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES256-SHA256:DHE-RSA-AES128-SHA256:DHE-RSA-AES256-
SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-DES-CBC3-SHA:EDH-RSA-DES-CBC3-SHA:AES256-GCM-SHA384:AES128-
GCM-SHA256:AES256-SHA256:AES128-SHA256:AES256-SHA:AES128-SHA:DES-CBC3-
SHA:HIGH:!aNULL:!eNULL:!EXPORT:!DES:!MD5:!PSK:!RC4";

  add_header Strict-Transport-Security "max-age=31536000";
  add_header X-Frame-Options SAMEORIGIN;
  add_header X-Content-Type-Options nosniff;

  ssl_certificate
/home/letsencrypt/letsencrypt.sh/certs/api.erfurt.freifunk.net/fullchain.pem;
  ssl_certificate_key
/home/letsencrypt/letsencrypt.sh/certs/api.erfurt.freifunk.net/privkey.pem;
  ssl_dhparam /etc/ssl/api.erfurt.freifunk.net/dhparam.pem;

  ssl_stapling on;
  ssl_stapling_verify on;
  ssl_trusted_certificate
/home/letsencrypt/letsencrypt.sh/certs/api.erfurt.freifunk.net/fullchain.pem;

  gzip on;
  gzip_disable "msie6";

  gzip_vary on;
  gzip_proxied any;
  gzip_comp_level 6;
  gzip_buffers 16 8k;
  gzip_http_version 1.1;
  gzip_types text/plain text/css application/json application/x-javascript text/xml
application/xml application/xml+rss text/javascript;

  client_max_body_size 16m;

  location / {
    root   /var/www/api.erfurt.freifunk.net/public_html/;
    index  index.php index.html index.htm;
    autoindex on;
```

```
  }

  access_log /var/log/nginx/api.erfurt.freifunk.net-access.log;
  error_log /var/log/nginx/api.erfurt.freifunk.net-error.log;
}
```

- ***cd /etc/nginx/sites-enabled/***
- ***ln -s ../sites-available/api.erfurt.freifunk.net api.erfurt.freifunk.net***

Aktivierung Webserver

- alle SSL-Direktiven in der Konfiguration müssen kommentiert werden
- ***systemctl reload nginx***
- nun muss das Let's Encrypt-Zertifikat nach Anleitung generiert werden
- alle SSL-Direktiven in der Konfiguration müssen wieder entkommentiert werden
- ***systemctl reload nginx***

paste.bytespeicher.org

- Datenbank: bs_paste
- Config: /var/www/paste.bytespeicher.org/classes/Config.php

```
server {
  listen      80;
  listen [::]:80;
  listen      443 ssl;
  listen [::]:443 ssl;

  include snippets/letsencrypt.conf;

  server_name paste.bytespeicher.org;

  if ($scheme != "https") {
    rewrite ^ https://$host$uri permanent;
  }

  ssl on;

  ssl_session_cache shared:SSL:10m;
  ssl_session_timeout 10m;

  ssl_prefer_server_ciphers on;
  ssl_protocols TLSv1 TLSv1.1 TLSv1.2;
  ssl_ciphers "ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:DHE-RSA-AES256-GCM-
SHA384:DHE-RSA-AES128-GCM-SHA256:ECDHE-RSA-AES256-SHA384:ECDHE-RSA-AES128-SHA256:ECDHE-RSA-
AES256-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES256-SHA256:DHE-RSA-AES128-SHA256:DHE-RSA-AES256-
SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-DES-CBC3-SHA:EDH-RSA-DES-CBC3-SHA:AES256-GCM-SHA384:AES128-
GCM-SHA256:AES256-SHA256:AES128-SHA256:AES256-SHA:AES128-SHA:DES-CBC3-
SHA:HIGH:!aNULL:!eNULL:!EXPORT:!DES:!MD5:!PSK:!RC4";

  add_header Strict-Transport-Security "max-age=31536000";

  ssl_certificate
/home/letsencrypt/letsencrypt.sh/certs/paste.bytespeicher.org/fullchain.pem;
  ssl_certificate_key
/home/letsencrypt/letsencrypt.sh/certs/paste.bytespeicher.org/privkey.pem;
  ssl_dhparam /etc/ssl/paste.bytespeicher.org/dhparam.pem;

  ssl_stapling on;
  ssl_stapling_verify on;
  ssl_trusted_certificate
/home/letsencrypt/letsencrypt.sh/certs/paste.bytespeicher.org/fullchain.pem;
```

```
  root /var/www/paste.bytespeicher.org/;

  index index.php;

  location / {
    try_files $uri $uri/ index.php;
    if ( !-e $request_filename ) {
        rewrite ^/(.*)$ /index.php;
    }
  }

  location ~ .php$ {
    fastcgi_pass   unix:/var/run/php5-fpm.sock;
    fastcgi_index   index.php;
    fastcgi_param   SCRIPT_FILENAME  /var/www/paste.bytespeicher.org/index.php;
    #fastcgi_param   QUERY_STRING $query_string;
    include         fastcgi_params;
  }

  location ~* ^.+\.(jpg|jpeg|gif|bmp|ico|png|css|js|swf)$ {
    expires 30d;
    access_log off;
  }
}
```

bytespeicher.org

- Datenbank: wp_bs
- Config: /var/www/bytespeicher.org/wp-config.php

```
server {
 listen 80;
 listen [::]:80;

 server_name www.bytespeicher.org staging.bytespeicher.org bytespeicher.org
radio.bytespeicher.org;

 include snippets/letsencrypt.conf;

 if ($host = "radio.bytespeicher.org") {
        rewrite ^ https://bytespeicher.org/category/radio-bytespeicher/ permanent;
 }

 location / {
        rewrite /lpd https://bytespeicher.org/2015/linux-presentation-day-2015/ permanent;
        rewrite ^(.*)$ https://bytespeicher.org$1 permanent;
 }
}

server {
 listen 443;
 listen [::]:443;

 server_name www.bytespeicher.org;

 ssl on;

 ssl_session_cache shared:SSL:10m;
 ssl_session_timeout 10m;
```

```
 ssl_prefer_server_ciphers on;
 ssl_protocols TLSv1 TLSv1.1 TLSv1.2;
 ssl_ciphers "ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:DHE-RSA-AES256-GCM-
SHA384:DHE-RSA-AES128-GCM-SHA256:ECDHE-RSA-AES256-SHA384:ECDHE-RSA-AES128-SHA256:ECDHE-RSA-
AES256-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES256-SHA256:DHE-RSA-AES128-SHA256:DHE-RSA-AES256-
SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-DES-CBC3-SHA:EDH-RSA-DES-CBC3-SHA:AES256-GCM-SHA384:AES128-
GCM-SHA256:AES256-SHA256:AES128-SHA256:AES256-SHA:AES128-SHA:DES-CBC3-
SHA:HIGH:!aNULL:!eNULL:!EXPORT:!DES:!MD5:!PSK:!RC4";

 add_header Strict-Transport-Security "max-age=31536000";
 add_header X-Frame-Options SAMEORIGIN;
 add_header X-Content-Type-Options nosniff;

 ssl_certificate /home/letsencrypt/letsencrypt.sh/certs/bytespeicher.org/fullchain.pem;
 ssl_certificate_key /home/letsencrypt/letsencrypt.sh/certs/bytespeicher.org/privkey.pem;
 ssl_dhparam /etc/ssl/bytespeicher.org/bytespeicher.org.pem;

 ssl_stapling on;
 ssl_stapling_verify on;
 ssl_trusted_certificate
/home/letsencrypt/letsencrypt.sh/certs/bytespeicher.org/fullchain.pem;

 location / {
        rewrite /lpd https://bytespeicher.org/2015/linux-presentation-day-2015/ permanent;
        rewrite ^(.*)$ https://bytespeicher.org$1 permanent;
 }
}

server {
 listen 443;
 listen [::]:443;

 server_name bytespeicher.org;

 ssl on;

 ssl_session_cache shared:SSL:10m;
 ssl_session_timeout 10m;

 ssl_prefer_server_ciphers on;
 ssl_protocols TLSv1 TLSv1.1 TLSv1.2;
 ssl_ciphers "ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:DHE-RSA-AES256-GCM-
SHA384:DHE-RSA-AES128-GCM-SHA256:ECDHE-RSA-AES256-SHA384:ECDHE-RSA-AES128-SHA256:ECDHE-RSA-
AES256-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES256-SHA256:DHE-RSA-AES128-SHA256:DHE-RSA-AES256-
SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-DES-CBC3-SHA:EDH-RSA-DES-CBC3-SHA:AES256-GCM-SHA384:AES128-
GCM-SHA256:AES256-SHA256:AES128-SHA256:AES256-SHA:AES128-SHA:DES-CBC3-
SHA:HIGH:!aNULL:!eNULL:!EXPORT:!DES:!MD5:!PSK:!RC4";

 add_header Strict-Transport-Security "max-age=31536000";
 add_header X-Frame-Options SAMEORIGIN;
 add_header X-Content-Type-Options nosniff;

 ssl_certificate /home/letsencrypt/letsencrypt.sh/certs/bytespeicher.org/fullchain.pem;
 ssl_certificate_key /home/letsencrypt/letsencrypt.sh/certs/bytespeicher.org/privkey.pem;
 ssl_dhparam /etc/ssl/bytespeicher.org/bytespeicher.org.pem;

 ssl_stapling on;
 ssl_stapling_verify on;
 ssl_trusted_certificate
/home/letsencrypt/letsencrypt.sh/certs/bytespeicher.org/fullchain.pem;
```

```
 gzip on;
 gzip_disable "msie6";

 gzip_vary on;
 gzip_proxied any;
 gzip_comp_level 6;
 gzip_buffers 16 8k;
 gzip_http_version 1.1;
 gzip_types text/plain text/css application/json application/x-javascript text/xml
application/xml application/xml+rss text/javascript;

 client_max_body_size 64m;

 location / {
        root   /var/www/bytespeicher.org;  # absolute path to your WordPress installation
        index  index.php index.html index.htm;

        rewrite /lpd https://bytespeicher.org/2015/linux-presentation-day-2015/ permanent;

        # this serves static files that exist without running other rewrite tests
        if (-f $request_filename) {
            expires 30d;
            break;
        }

        # this sends all non-existing file or directory requests to index.php
        if (!-e $request_filename) {
            rewrite ^(.+)$ /index.php?q=$1 last;
        }
    }

 location /piwik/ {
    proxy_pass http://stats.technikkultur-erfurt.de/;
    proxy_set_header X-Real-IP  $remote_addr;
    proxy_set_header X-Forwarded-For $remote_addr;
    proxy_set_header X-Forwarded-Host stats.technikkultur-erfurt.de;

 }

 location /status/ {
    proxy_pass http://status.bytespeicher.org/;
 }

 location ~ .php$ {
  root /var/www/bytespeicher.org;
  fastcgi_keep_conn off;
  fastcgi_pass   unix:/var/run/php5-fpm.sock;
  fastcgi_index  index.php;
  fastcgi_param  SCRIPT_FILENAME  /var/www/bytespeicher.org$fastcgi_script_name;
  include        fastcgi_params;
 }
}
```

status.bytespeicher.org

- ***useradd spacestatus -m -G www-data***
- ***sudo -u spacestatus /bin/bash***
- ***cd ~***
- ***git clone https:/ /github.com/Bytespeicher/space-status***
- ***mkdir www***
- ***virtualenv env***

- ***. env/bin/activate***
- ***pip install jinja2***
- ***crontab -e***

```
# Edit this file to introduce tasks to be run by cron.
#
# Each task to run has to be defined through a single line
# indicating with different fields when the task will be run
# and what command to run for the task
#
# To define the time you can provide concrete values for
# minute (m), hour (h), day of month (dom), month (mon),
# and day of week (dow) or use '*' in these fields (for 'any').#
# Notice that tasks will be started based on the cron's system
# daemon's notion of time and timezones.
#
# Output of the crontab jobs (including errors) is sent through
# email to the user the crontab file belongs to (unless redirected).
#
# For example, you can run a backup of all your user accounts
# at 5 a.m every week with:
# 0 5 * * 1 tar -zcf /var/backups/home.tgz /home/
#
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h  dom mon dow   command
* *    *   *   *     /home/spacestatus/space-status/generate_status 1>/dev/null 2>&1
* *    *   *   *     /home/spacestatus/space-status/generate_status_html 1>/dev/null 2>&1
```

```
server {
  listen 80;
  listen [::]:80;

  listen 443 ssl;
  listen [::]:443 ssl;

  include snippets/letsencrypt.conf;

  root /home/spacestatus/www;

  index index.html;

  server_name status.bytespeicher.org;

  if ($scheme != "https") {
    rewrite ^ https://$host$uri permanent;
  }

  location / {
    try_files $uri $uri/ =404;
  }

  ssl on;

  ssl_session_cache shared:SSL:10m;
  ssl_session_timeout 10m;

  ssl_prefer_server_ciphers on;
  ssl_protocols TLSv1 TLSv1.1 TLSv1.2;
  ssl_ciphers "ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:DHE-RSA-AES256-GCM-
SHA384:DHE-RSA-AES128-GCM-SHA256:ECDHE-RSA-AES256-SHA384:ECDHE-RSA-AES128-SHA256:ECDHE-RSA-
```

```
AES256-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES256-SHA256:DHE-RSA-AES128-SHA256:DHE-RSA-AES256-
SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-DES-CBC3-SHA:EDH-RSA-DES-CBC3-SHA:AES256-GCM-SHA384:AES128-
GCM-SHA256:AES256-SHA256:AES128-SHA256:AES256-SHA:AES128-SHA:DES-CBC3-
SHA:HIGH:!aNULL:!eNULL:!EXPORT:!DES:!MD5:!PSK:!RC4";

  add_header Strict-Transport-Security "max-age=31536000";
  add_header X-Frame-Options SAMEORIGIN;
  add_header X-Content-Type-Options nosniff;

  ssl_certificate
/home/letsencrypt/letsencrypt.sh/certs/status.bytespeicher.org/fullchain.pem;
  ssl_certificate_key
/home/letsencrypt/letsencrypt.sh/certs/status.bytespeicher.org/privkey.pem;
  ssl_dhparam /etc/ssl/status.bytespeicher.org/dhparam.pem;

  ssl_stapling on;
  ssl_stapling_verify on;
  ssl_trusted_certificate
/home/letsencrypt/letsencrypt.sh/certs/status.bytespeicher.org/fullchain.pem;
}
```

makerspace-erfurt.de / fablab-erfurt.de

- Datenbank: makerspace_wp
- Config: /var/www/makerspace-erfurt.de/public_html/wp-config.php

```
server {
 listen 80;
 listen [::]:80;
 listen 443;
 listen [::]:443;

 server_name makerspace-erfurt.de www.makerspace-erfurt.de fablab-erfurt.de
www.fablab-erfurt.de;

 include snippets/letsencrypt.conf;
 if ($host != "makerspace-erfurt.de") {
   rewrite ^ https://makerspace-erfurt.de$uri permanent;
 }
 if ($scheme != "https") {
   rewrite ^(.*)$ https://makerspace-erfurt.de$1 permanent;
 }

 ssl on;

 ssl_session_cache shared:SSL:10m;
 ssl_session_timeout 10m;

 ssl_prefer_server_ciphers on;
 ssl_protocols TLSv1 TLSv1.1 TLSv1.2;
 ssl_ciphers "ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:DHE-RSA-AES256-GCM-
SHA384:DHE-RSA-AES128-GCM-SHA256:ECDHE-RSA-AES256-SHA384:ECDHE-RSA-AES128-SHA256:ECDHE-RSA-
AES256-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES256-SHA256:DHE-RSA-AES128-SHA256:DHE-RSA-AES256-
SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-DES-CBC3-SHA:EDH-RSA-DES-CBC3-SHA:AES256-GCM-SHA384:AES128-
GCM-SHA256:AES256-SHA256:AES128-SHA256:AES256-SHA:AES128-SHA:DES-CBC3-
SHA:HIGH:!aNULL:!eNULL:!EXPORT:!DES:!MD5:!PSK:!RC4";

 add_header Strict-Transport-Security "max-age=31536000";
 add_header X-Frame-Options SAMEORIGIN;
 add_header X-Content-Type-Options nosniff;
```

```
 ssl_certificate /home/letsencrypt/letsencrypt.sh/certs/makerspace-erfurt.de/fullchain.pem;
 ssl_certificate_key /home/letsencrypt/letsencrypt.sh/certs/makerspace-erfurt.de/privkey.pem;
 ssl_dhparam /etc/ssl/makerspace-erfurt.de/dhparam.pem;

 ssl_stapling on;
 ssl_stapling_verify on;
 ssl_trusted_certificate /home/letsencrypt/letsencrypt.sh/certs/makerspace-
erfurt.de/fullchain.pem;

 gzip on;
 gzip_disable "msie6";

 gzip_vary on;
 gzip_proxied any;
 gzip_comp_level 6;
 gzip_buffers 16 8k;
 gzip_http_version 1.1;
 gzip_types text/plain text/css application/json application/x-javascript text/xml
application/xml application/xml+rss text/javascript;

 client_max_body_size 64m;

 location / {
        root   /var/www/makerspace-erfurt.de/public_html;  # absolute path to your WordPress
installation
        index  index.php index.html index.htm;

        # this serves static files that exist without running other rewrite tests
        if (-f $request_filename) {
            expires 30d;
            break;
        }

        # this sends all non-existing file or directory requests to index.php
        if (!-e $request_filename) {
            rewrite ^(.+)$ /index.php?q=$1 last;
        }
    }

 location ~ .php$ {
  root /var/www/makerspace-erfurt.de/public_html;
  fastcgi_keep_conn off;
  fastcgi_pass   unix:/var/run/php5-fpm.sock;
  fastcgi_index  index.php;
  fastcgi_param  SCRIPT_FILENAME  /var/www/makerspace-
erfurt.de/public_html/$fastcgi_script_name;
  include        fastcgi_params;
 }
```

cloud.technikkultur-erfurt.de (Owncloud)

- Datenbank: makerspace_oc
- Config: /var/www/oc.makerspace-erfurt.de/public_html/config/config.php

```
server {
 listen 80;
 listen [::]:80;
 listen 443 ssl;
 listen [::]:443 ssl;

 server_name cloud.technikkultur-erfurt.de oc.makerspace-erfurt.de;
```

```
 include snippets/letsencrypt.conf;

 if ($scheme != "https") {
    return 301 https://$host$request_uri;
 }

 ssl on;

 ssl_session_cache shared:SSL:10m;
 ssl_session_timeout 10m;

 ssl_prefer_server_ciphers on;
 ssl_protocols TLSv1 TLSv1.1 TLSv1.2;
 ssl_ciphers "ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:DHE-RSA-AES256-GCM-
SHA384:DHE-RSA-AES128-GCM-SHA256:ECDHE-RSA-AES256-SHA384:ECDHE-RSA-AES128-SHA256:ECDHE-RSA-
AES256-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES256-SHA256:DHE-RSA-AES128-SHA256:DHE-RSA-AES256-
SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-DES-CBC3-SHA:EDH-RSA-DES-CBC3-SHA:AES256-GCM-SHA384:AES128-
GCM-SHA256:AES256-SHA256:AES128-SHA256:AES256-SHA:AES128-SHA:DES-CBC3-
SHA:HIGH:!aNULL:!eNULL:!EXPORT:!DES:!MD5:!PSK:!RC4";

 ssl_certificate /home/letsencrypt/letsencrypt.sh/certs/cloud.technikkultur-
erfurt.de/fullchain.pem;
 ssl_certificate_key /home/letsencrypt/letsencrypt.sh/certs/cloud.technikkultur-
erfurt.de/privkey.pem;
 ssl_dhparam /etc/ssl/cloud.technikkultur-erfurt.de/dhparam.pem;

 ssl_stapling on;
 ssl_stapling_verify on;
 ssl_trusted_certificate /home/letsencrypt/letsencrypt.sh/certs/cloud.technikkultur-
erfurt.de/fullchain.pem;

 # Add headers to serve security related headers
 # Before enabling Strict-Transport-Security headers please read into this topic first.
 add_header Strict-Transport-Security "max-age=15552000; includeSubDomains";
 add_header X-Content-Type-Options nosniff;
 add_header X-Frame-Options "SAMEORIGIN";
 add_header X-XSS-Protection "1; mode=block";
 add_header X-Robots-Tag none;
 add_header X-Download-Options noopen;
 add_header X-Permitted-Cross-Domain-Policies none;

 # The following 2 rules are only needed for the user_webfinger app.
 # Uncomment it if you're planning to use this app.
 #rewrite ^/.well-known/host-meta /public.php?service=host-meta last;
 #rewrite ^/.well-known/host-meta.json /public.php?service=host-meta-json last;

 location = /.well-known/carddav {
  return 301 $scheme://$host/remote.php/dav;
 }
 location = /.well-known/caldav {
  return 301 $scheme://$host/remote.php/dav;
 }

 root   /var/www/oc.makerspace-erfurt.de/public_html/;
 index  index.php;

 # set max upload size
 client_max_body_size 512M;
 fastcgi_buffers 64 4K;
```

```
 # Disable gzip to avoid the removal of the ETag header
 gzip off;

 # Uncomment if your server is build with the ngx_pagespeed module
 # This module is currently not supported.
 #pagespeed off;

 error_page 403 /core/templates/403.php;
 error_page 404 /core/templates/404.php;

 location / {
  rewrite ^ /index.php$uri;
 }

 location ~ ^/(?:build|tests|config|lib|3rdparty|templates|data)/ {
  return 404;
 }
 location ~ ^/(?:\.|autotest|occ|issue|indie|db_|console) {
  return 404;
 }

 location ~ ^/(?:index|remote|public|cron|core/ajax/update|status|ocs/v[12]|updater/.+|ocs-
provider/.+|core/templates/40[34])\.php(?:$|/) {
  fastcgi_split_path_info ^(.+\.php)(/.*)$;
  include fastcgi_params;
  fastcgi_param SCRIPT_FILENAME $document_root$fastcgi_script_name;
  fastcgi_param PATH_INFO $fastcgi_path_info;
  fastcgi_param HTTPS on;
  fastcgi_param modHeadersAvailable true; #Avoid sending the security headers twice
  fastcgi_param front_controller_active true;
  fastcgi_pass unix:/var/run/php5-fpm.sock;
  fastcgi_index index.php;
  fastcgi_intercept_errors on;
  #fastcgi_request_buffering off;
  fastcgi_keep_conn off;
  include fastcgi_params;
 }

 location ~ ^/(?:updater|ocs-provider)(?:$|/) {
  try_files $uri $uri/ =404;
  index index.php;
 }

 # Adding the cache control header for js and css files
 # Make sure it is BELOW the PHP block
 location ~* \.(?:css|js)$ {
  try_files $uri /index.php$uri$is_args$args;
  add_header Cache-Control "public, max-age=7200";
  # Add headers to serve security related headers  (It is intended to have those duplicated
to the ones above)
  # Before enabling Strict-Transport-Security headers please read into this topic first.
  add_header Strict-Transport-Security "max-age=15552000; includeSubDomains";
  add_header X-Content-Type-Options nosniff;
  add_header X-Frame-Options "SAMEORIGIN";
  add_header X-XSS-Protection "1; mode=block";
  add_header X-Robots-Tag none;
  add_header X-Download-Options noopen;
  add_header X-Permitted-Cross-Domain-Policies none;
  # Optional: Don't log access to assets
  access_log off;
 }
```

```
  location ~* \.(?:svg|gif|png|html|ttf|woff|ico|jpg|jpeg)$ {
  try_files $uri /index.php$uri$is_args$args;
  # Optional: Don't log access to other assets
  access_log off;
 }

 location = /robots.txt {
  allow all;
  log_not_found off;
  access_log off;
 }

  #access_log /var/log/nginx/oc.makerspace-erfurt.de-access.log;
  # error_log /var/log/nginx/oc.makerspace-erfurt.de-error.log;
}
```

Redmine

- Datenbank: redmine

Pakete:

- thin
- ruby
- rake
- rubygems
- ruby-mysql2
- ruby-dev
- libmysqlclient-dev
- curl
- rails
- ruby-sass
- ruby-compass

Installation:

```
D /run/thin 0755 redmine redmine -
```

```
---
chdir: /home/redmine/redmine
environment: production
timeout: 30
log: /var/log/thin/redmine.log
pid: /var/run/thin/redmine.pid
max_conns: 1024
max_persistent_conns: 512
require: []
wait: 30
socket: /var/run/thin/redmine.sock
daemonize: true
user: redmine
group: redmine
servers: 1
prefix: /
```

```
[Unit]
Description=A fast and very simple Ruby web server
After=syslog.target network.target

[Service]
```

```
Type=forking
User=redmine
Group=redmine
Environment="GEM_HOME=~/redmine/vendor/bundle/"
WorkingDirectory=/home/redmine/redmine
ExecStart=/usr/bin/bundle exec thin start --config /etc/thin/redmine.yml
ExecReload=/usr/bin/bundle exec thin restart --config /etc/thin/redmine.yml
ExecStop=/usr/bin/bundle exec thin stop --config /etc/thin/redmine.yml

[Install]
WantedBy=multi-user.target
```

- ***mkdir ~/redmine***
- ***cd ~/redmine***
- Redmine-Archiv auspacken
- ***export GEM_HOME='~/redmine/vendor/bundle/'***
- ***cp ~/redmine/config/configuration.yml.example ~/redmine/config/configuration.yml***
- ***cp ~/redmine/config/database.yml.example ~/redmine/config/database.yml***

```
...
production:
  adapter: mysql2
  database: redmine
  host: localhost
  username: redmine
  password: "XXXX"
  encoding: utf8
...
```

```
...
production:
  email_delivery:
    delivery_method: :smtp
    smtp_settings:
      address: mail.bytespeicher.org
      port: 587
      authentication: :plain
      user_name: 'XXXX'
      password: 'XXXX'
...
```

- ***bundle install –without development test rmagick***
- ***bundle exec rake generate_secret_token***
- ***bundle exec rake db:migrate RAILS_ENV=„production“***
- ***RAILS_ENV=production REDMINE_LANG=de bundle exec rake redmine:load_default_data***
- ***mkdir /run/thin***
- ***chmod 755 /run/thin***
- ***chown redmine:redmine /run/thin***
- ***systemctl enable redmine.service***
- ***systemctl start redmine.service***

```
server {
  listen      80;
  listen [::]:80;
  listen      443 ssl;
  listen [::]:443 ssl;

  include snippets/letsencrypt.conf;

  server_name redmine.bytespeicher.org;

  if ($scheme != "https") {
```

```
    rewrite ^ https://$host$uri permanent;
  }

  ssl on;

  ssl_session_cache shared:SSL:10m;
  ssl_session_timeout 10m;

  ssl_prefer_server_ciphers on;
  ssl_protocols TLSv1 TLSv1.1 TLSv1.2;
  ssl_ciphers "ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:DHE-RSA-AES256-GCM-
SHA384:DHE-RSA-AES128-GCM-SHA256:ECDHE-RSA-AES256-SHA384:ECDHE-RSA-AES128-SHA256:ECDHE-RSA-
AES256-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES256-SHA256:DHE-RSA-AES128-SHA256:DHE-RSA-AES256-
SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-DES-CBC3-SHA:EDH-RSA-DES-CBC3-SHA:AES256-GCM-SHA384:AES128-
GCM-SHA256:AES256-SHA256:AES128-SHA256:AES256-SHA:AES128-SHA:DES-CBC3-
SHA:HIGH:!aNULL:!eNULL:!EXPORT:!DES:!MD5:!PSK:!RC4";

  add_header Strict-Transport-Security "max-age=31536000";

  ssl_certificate
/home/letsencrypt/letsencrypt.sh/certs/redmine.bytespeicher.org/fullchain.pem;
  ssl_certificate_key
/home/letsencrypt/letsencrypt.sh/certs/redmine.bytespeicher.org/privkey.pem;
  ssl_dhparam /etc/ssl/redmine.bytespeicher.org/dhparam.pem;

  ssl_stapling on;
  ssl_stapling_verify on;
  ssl_trusted_certificate
/home/letsencrypt/letsencrypt.sh/certs/redmine.bytespeicher.org/fullchain.pem;

  root /home/redmine/redmine/public;

  client_max_body_size 20m;

  try_files $uri/index.html $uri.html $uri @app;
  location @app {
    include /etc/nginx/proxy_params;
    proxy_pass http://unix:/run/thin/redmine.0.sock;
    proxy_redirect off;
  }

  error_page 500 502 503 504 /500.html;
  error_page 404 /404.html;
}
```

Dokuwiki

- DocumentRoot: /var/www/technikkultur-erfurt.de/public_html
- Datenverzeichnis: /var/www/technikkultur-erfurt.de/data

```
server {

  listen      80;
  listen [::]:80;
  listen      443 ssl;
  listen [::]:443 ssl;

  include snippets/letsencrypt.conf;

  server_name technikkultur-erfurt.de www.technikkultur-erfurt.de;
```

```
  if ($host = "www.technikkultur-erfurt.de") {
    rewrite ^ https://technikkultur-erfurt.de$uri permanent;
  }

  if ($scheme != "https") {
    rewrite ^ https://$host$uri permanent;
  }

  ssl on;

  ssl_session_cache shared:SSL:10m;
  ssl_session_timeout 10m;

  ssl_prefer_server_ciphers on;
  ssl_protocols TLSv1 TLSv1.1 TLSv1.2;
  ssl_ciphers "ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:DHE-RSA-AES256-GCM-
SHA384:DHE-RSA-AES128-GCM-SHA256:ECDHE-RSA-AES256-SHA384:ECDHE-RSA-AES128-SHA256:ECDHE-RSA-
AES256-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES256-SHA256:DHE-RSA-AES128-SHA256:DHE-RSA-AES256-
SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-DES-CBC3-SHA:EDH-RSA-DES-CBC3-SHA:AES256-GCM-SHA384:AES128-
GCM-SHA256:AES256-SHA256:AES128-SHA256:AES256-SHA:AES128-SHA:DES-CBC3-
SHA:HIGH:!aNULL:!eNULL:!EXPORT:!DES:!MD5:!PSK:!RC4";

  add_header Strict-Transport-Security "max-age=31536000";

  ssl_certificate /home/letsencrypt/letsencrypt.sh/certs/example.org/fullchain.pem;
  ssl_certificate_key /home/letsencrypt/letsencrypt.sh/certs/example.org/privkey.pem;
  ssl_dhparam /etc/ssl/example.org/dhparam.pem;

  ssl_stapling on;
  ssl_stapling_verify on;
  ssl_trusted_certificate /home/letsencrypt/letsencrypt.sh/certs/example.org/fullchain.pem;

  # Maximum file upload size is 4MB - change accordingly if needed
  client_max_body_size 4M;
  client_body_buffer_size 128k;

  root /var/www/technikkultur-erfurt.de/public_html;
  index doku.php;

  #Remember to comment the below out when you're installing, and uncomment it when done.
  location ~ /(data/|conf/|bin/|inc/|install.php) {
    deny all;
  }

  location / {
    try_files $uri $uri/ @dokuwiki;
  }

  location @dokuwiki {
    rewrite ^/_media/(.*) /lib/exe/fetch.php?media=$1 last;
    rewrite ^/_detail/(.*) /lib/exe/detail.php?media=$1 last;
    rewrite ^/_export/([^/]+)/(.*) /doku.php?do=export_$1&id=$2 last;
    rewrite ^/(.*) /doku.php?id=$1&$args last;
  }

  location ~ \.php$ {
    fastcgi_pass   unix:/var/run/php5-fpm.sock;
    include         fastcgi_params;
    fastcgi_param SCRIPT_FILENAME $document_root$fastcgi_script_name;
    fastcgi_param REDIRECT_STATUS 200;
  }
```

```
}
```

Pad

- Software: Etherpad-lite
- Datenbank: etherpad-lite

Pakete:

- nodejs
- npm

Plugins:

- ep_pad-lister

Installation:

```
[Unit]
Description=etherpad-lite (real-time collaborative document editing)
After=syslog.target network.target

[Service]
Type=simple
User=etherpad
Group=etherpad
ExecStart=/home/etherpad/etherpad/bin/run.sh

[Install]
WantedBy=multi-user.target
```

```
server {

  listen      80;
  listen [::]:80;
  listen      443 ssl;
  listen [::]:443 ssl;

  server_name pad.technikkultur-erfurt.de;

  if ($scheme != "https") {
    rewrite ^ https://$host$uri permanent;
  }

  ssl on;

  ssl_session_cache shared:SSL:10m;
  ssl_session_timeout 10m;

  ssl_prefer_server_ciphers on;
  ssl_protocols TLSv1 TLSv1.1 TLSv1.2;
  ssl_ciphers "ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:DHE-RSA-AES256-GCM-
SHA384:DHE-RSA-AES128-GCM-SHA256:ECDHE-RSA-AES256-SHA384:ECDHE-RSA-AES128-SHA256:ECDHE-RSA-
AES256-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES256-SHA256:DHE-RSA-AES128-SHA256:DHE-RSA-AES256-
SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-DES-CBC3-SHA:EDH-RSA-DES-CBC3-SHA:AES256-GCM-SHA384:AES128-
GCM-SHA256:AES256-SHA256:AES128-SHA256:AES256-SHA:AES128-SHA:DES-CBC3-
SHA:HIGH:!aNULL:!eNULL:!EXPORT:!DES:!MD5:!PSK:!RC4";

  add_header Strict-Transport-Security "max-age=31536000";

  ssl_certificate /etc/ssl/pad.technikkultur-erfurt.de/pad.technikkultur-erfurt.de.pem;
  ssl_certificate_key /etc/ssl/pad.technikkultur-erfurt.de/pad.technikkultur-erfurt.de.key;
```

```
  ssl_dhparam /etc/ssl/pad.technikkultur-erfurt.de/dhparam.pem;

  ssl_stapling on;
  ssl_stapling_verify on;
  ssl_trusted_certificate /etc/ssl/pad.technikkultur-erfurt.de/pad.technikkultur-
erfurt.de.pem;

  location / {
    include /etc/nginx/proxy_params;
    proxy_pass http://localhost:13378/;
    proxy_set_header Host $host;
    proxy_pass_header Server;

    # be carefull, this line doesn't override any proxy_buffering on set in a
conf.d/file.conf
    proxy_buffering off;

    proxy_http_version 1.1;  # recommended with keepalive connections

    # WebSocket proxying - from http://nginx.org/en/docs/http/websocket.html
    proxy_set_header Upgrade $http_upgrade;
    proxy_set_header Connection $connection_upgrade;
  }
}

map $http_upgrade $connection_upgrade {
  default upgrade;
  ''      close;
}
```

Das Start-Skript für etherpad-lite sucht nach „node“ als nodejs-Server-Binary. Unter Debian lautet es nodejs:

- ***cd /usr/bin/***
- ***ln -s nodejs node***

Plugin-Installation

- ***sudo -u etherpad /bin/bash***
- ***cd ~/etherpad/***
- ***npm install ep_pad-lister***

Konfiguration

```
{
...
  //IP and port which etherpad should bind at
  "ip": "127.0.0.1",
  "port" : 13378,
...
...
  "dbType" : "mysql",
  "dbSettings" : {
                   "user"    : "etherpad-lite",
                   "host"    : "localhost",
                   "password": "XXX",
                   "database": "etherpad-lite"
                 },
...
}
```

- ***systemctl enable etherpad-lite.service***
- ***systemctl start etherpad-lite.service***

Migration dirty.db zu MySQL:

- https://github.com/ether/etherpad-lite/wiki/Manipulating-the-database

wall.technikkultur-erfurt.de

- Config: /var/www/wall.technikkultur-erfurt.de/config.php

```
server {
  listen      80;
  listen [::]:80;
  server_name wall.technikkultur-erfurt.de;

  root /var/www/wall.technikkultur-erfurt.de/;

  index index.php;

  location ~ .php$ {
    fastcgi_pass   unix:/var/run/php5-fpm.sock;
    include         fastcgi_params;
    fastcgi_param SCRIPT_FILENAME $document_root$fastcgi_script_name;
    fastcgi_param REDIRECT_STATUS 200;
  }
}
```

Piwik

- Datenbank: bs_piwik
- Config: /var/www/stats.technikkultur-erfurt.de/config/config.ini.php

```
server {
  listen      80;
  listen [::]:80;
  server_name stats.technikkultur-erfurt.de;

  root /var/www/stats.technikkultur-erfurt.de/;

  index index.php;

  location ~ .php$ {
    fastcgi_pass   unix:/var/run/php5-fpm.sock;
    include         fastcgi_params;
    fastcgi_param SCRIPT_FILENAME $document_root$fastcgi_script_name;
    fastcgi_param REDIRECT_STATUS 200;
  }
}
```

Roundcube

- Datenbank: roundcubemail
- Config: /var/www/mail.bytespeicher.org/config/config.inc.php

- ***mkdir /var/www/mail.bytespeicher.org/***
- ***cd /var/www/mail.bytespeicher.org/***
- ***wget -O /tmp/roundcube.tar.gz https://downloads.sourceforge.net/project/roundcubemail/roundcubemail/1.1.3/roundcubemail-1.1.3-complete.tar.gz***
- ***tar -C /var/www/mail.bytespeicher.org/ –strip 1 -tf /tmp/roundcubemail-1.1.3-complete.tar.gz***
- ***curl -sS https://getcomposer.org/installer | php***
- ***mv composer.json{-dist,}***
- ***php composer.phar install –no-dev***
- ***chown www-data.www-data -R /var/www/mail.bytespeicher.org***

- mysql $> ***CREATE DATABASE roundcubemail;***
- mysql $> ***GRANT ALL PRIVILEGES ON roundcubemail.* TO roundcubemail@localhost IDENTIFIED BY '$$password$$';***
- mysql $> ***FLUSH PRIVILEGES;***

```
[...]

$config['db_dsnw'] = 'mysql://roundcubemail:$$password$$/roundcubemail';
$config['default_host'] = array('bytespeicher.org', 'technikkultur-erfurt.de');
$config['product_name'] = 'Bytespeicher Webmail';
$config['des_key'] = '$$random-24-char-des-key$$";
$config['plugins'] = array(
    'archive',
    'zipdownload',
    'managesieve',
    'additional_message_headers',
    'attachment_reminder',
    'emoticons',
    'hide_blockquote',
    'jqueryui',
    'markasjunk',
    'newmail_notifier',
    'show_additional_headers',
    'subscriptions_option',
    'userinfo'
);
```

```
server {
  listen       80;
  listen  [::]:80;
  listen      443 ssl;
  listen [::]:443 ssl;

  include snippets/letsencrypt.conf;

  server_name mail.bytespeicher.org;

  if ($scheme != "https") {
    rewrite ^ https://$host$uri permanent;
  }

  ssl on;

  ssl_session_cache shared:SSL:10m;
  ssl_session_timeout 10m;

  ssl_prefer_server_ciphers on;
  ssl_protocols TLSv1 TLSv1.1 TLSv1.2;
  ssl_ciphers "ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:DHE-RSA-AES256-GCM-
SHA384:DHE-RSA-AES128-GCM-SHA256:ECDHE-RSA-AES256-SHA384:ECDHE-RSA-AES128-SHA256:ECDHE-RSA-
AES256-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES256-SHA256:DHE-RSA-AES128-SHA256:DHE-RSA-AES256-
SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-DES-CBC3-SHA:EDH-RSA-DES-CBC3-SHA:AES256-GCM-SHA384:AES128-
GCM-SHA256:AES256-SHA256:AES128-SHA256:AES256-SHA:AES128-SHA:DES-CBC3-
SHA:HIGH:!aNULL:!eNULL:!EXPORT:!DES:!MD5:!PSK:!RC4";

  add_header Strict-Transport-Security "max-age=31536000";
  add_header X-Frame-Options SAMEORIGIN;
  add_header X-Content-Type-Options nosniff;

  ssl_certificate /home/letsencrypt/letsencrypt.sh/certs/mail.bytespeicher.org/fullchain.pem;
  ssl_certificate_key
```

```
/home/letsencrypt/letsencrypt.sh/certs/mail.bytespeicher.org/privkey.pem;
  ssl_dhparam /etc/ssl/mail.bytespeicher.org/dhparam.pem;

  ssl_stapling on;
  ssl_stapling_verify on;
  ssl_trusted_certificate
/home/letsencrypt/letsencrypt.sh/certs/mail.bytespeicher.org/fullchain.pem;

  root /var/www/mail.bytespeicher.org/;

  index index.php index.html;
  location ~ ^/favicon.ico$ {
    root /var/www/mail.bytespeicher.org/skins/default/images;
    log_not_found off;
    access_log off;
    expires max;
  }

  location = /robots.txt {
    allow all;
    log_not_found off;
    access_log off;
  }

  location ~ ^/(README|INSTALL|LICENSE|CHANGELOG|UPGRADING)$ {
    deny all;
  }
  location ~ ^/(bin|SQL)/ {
    deny all;
  }

  location ~ /\. {
    deny all;
    access_log off;
    log_not_found off;
  }

  location ~ \.php$ {
    try_files $uri =404;
    include /etc/nginx/fastcgi_params;
    fastcgi_pass   unix:/var/run/php5-fpm.sock;
    fastcgi_param SCRIPT_FILENAME $document_root$fastcgi_script_name;
    fastcgi_index index.php;
  }

  location ~* ^.+\.(jpg|jpeg|gif|bmp|ico|png|css|js|swf)$ {
    expires 30d;
    access_log off;
  }
}
```

- → Browser → https://mail.bytespeicher.org/install
- ***rm -rf /var/www/mail.bytespeicher.org/installer/***

Matrix/Synapse

- useradd -m synapse
- apt-get install build-essential python2.7-dev libffi-dev python-pip python-setuptools sqlite3 libssl-dev python-virtualenv libjpeg-dev libxslt1-dev coturn

```
TURNSERVER_ENABLED=1
```

```
external-ip=88.198.111.196
lt-cred-mech
use-auth-secret
static-auth-secret=[your secret key here]
realm=erfurt.chat
no-tcp-relay
denied-peer-ip=10.0.0.0-10.255.255.255
denied-peer-ip=192.168.0.0-192.168.255.255
denied-peer-ip=172.16.0.0-172.31.255.255
allowed-peer-ip=172.31.1.100
syslog
no-sslv2
no-sslv3
```

- service coturn restart
- sudo -u synapse /bin/bash
- cd
- virtualenv -p python2.7 ~/.synapse
- source ~/.synapse/bin/activate
- pip install –upgrade pip
- pip install –upgrade setuptools
- pip install lxml
- pip install https://github.com/matrix-org/synapse/tarball/master
- cd ~/.synapse
- python -m synapse.app.homeserver –server-name erfurt.chat –config-path homeserver.yaml –generate-config –report-stats=no

```
--- homeserver.yaml.orig    2017-06-05 12:56:46.729514635 +0200
+++ homeserver.yaml 2017-06-05 14:00:36.981444634 +0200
@@ -120,7 +120,7 @@
   # For when matrix traffic passes through loadbalancer that unwraps TLS.
   - port: 8008
     tls: false
-    bind_addresses: ['0.0.0.0']
+    bind_addresses: ['127.0.0.1']
     type: http

     x_forwarded: false
@@ -231,7 +231,7 @@
 # Is the preview URL API enabled?  If enabled, you *must* specify
 # an explicit url_preview_ip_range_blacklist of IPs that the spider is
 # denied from accessing.
-url_preview_enabled: False
+url_preview_enabled: True

 # List of IP address CIDR ranges that the URL preview spider is denied
 # from accessing.  There are no defaults: you must explicitly
@@ -241,14 +241,14 @@
 # synapse to issue arbitrary GET requests to your internal services,
 # causing serious security issues.
 #
-# url_preview_ip_range_blacklist:
-# - '127.0.0.0/8'
-# - '10.0.0.0/8'
-# - '172.16.0.0/12'
-# - '192.168.0.0/16'
-# - '100.64.0.0/10'
-# - '169.254.0.0/16'
-#
+url_preview_ip_range_blacklist:
+ - '127.0.0.0/8'
```

```
+ - '10.0.0.0/8'
+ - '172.16.0.0/12'
+ - '192.168.0.0/16'
+ - '100.64.0.0/10'
+ - '169.254.0.0/16'
+
 # List of IP address CIDR ranges that the URL preview spider is allowed
 # to access even if they are specified in url_preview_ip_range_blacklist.
 # This is useful for specifying exceptions to wide-ranging blacklisted
@@ -322,10 +322,10 @@
 ## Turn ##

 # The public URIs of the TURN server to give to clients
-turn_uris: []
+turn_uris: [ "turn:erfurt.chat:3478?transport=udp", "turn:erfurt.chat:3478?transport=tcp" ]

 # The shared secret used to compute passwords for the TURN server
-turn_shared_secret: "YOUR_SHARED_SECRET"
+turn_shared_secret: "$$$$SECRET$$$$"

 # The Username and password if the TURN server needs them and
 # does not use a token
@@ -346,7 +346,7 @@
 ## Registration ##

 # Enable registration for new users.
-enable_registration: False
+enable_registration: True

 # If set, allows registration by anyone who also has the shared
 # secret, even if registration is otherwise disabled.
@@ -360,7 +360,7 @@
 # Allows users to register as guests without a password/email/etc, and
 # participate in rooms hosted on this server which have been made
 # accessible to anonymous users.
-allow_guest_access: False
+allow_guest_access: True

 # The list of identity servers trusted to verify third party
 # identifiers by this server.
@@ -461,7 +461,8 @@
     enabled: true
     # Uncomment and change to a secret random string for extra security.
     # DO NOT CHANGE THIS AFTER INITIAL SETUP!
-    #pepper: ""
+    pepper: "$$$$SECRET$$$$"



@@ -473,20 +474,20 @@
 # If your SMTP server requires authentication, the optional smtp_user &
 # smtp_pass variables should be used
 #
-#email:
-#   enable_notifs: false
-#   smtp_host: "localhost"
-#   smtp_port: 25
-#   smtp_user: "exampleusername"
-#   smtp_pass: "examplepassword"
-#   require_transport_security: False
-#   notif_from: "Your Friendly %(app)s Home Server <noreply@example.com>"
```

```
-#   app_name: Matrix
-#   template_dir: res/templates
-#   notif_template_html: notif_mail.html
-#   notif_template_text: notif_mail.txt
-#   notif_for_new_users: True
-#   riot_base_url: "http://localhost/riot"
+email:
+   enable_notifs: True
+   smtp_host: "localhost"
+   smtp_port: 587
+   smtp_user: "synapse@erfurt.chat"
+   smtp_pass: "$$$$SECRET$$$$"
+   require_transport_security: True
+   notif_from: "Your Friendly %(app)s Home Server <noreply@erfurt.chat>"
+   app_name: Matrix
+   template_dir: res/templates
+   notif_template_html: notif_mail.html
+   notif_template_text: notif_mail.txt
+   notif_for_new_users: True
+   riot_base_url: "https://erfurt.chat/riot"
```

- synctl start
- wget -O /usr/src/vector-im-v0.10.1.tar.gz https://github.com/vector-im/riot-web/releases/download/v0.10.1/riot-v0.10.1.tar.gz
- mkdir /var/www/erfurt.chat/
- tar –strip-components=1 -xf /usr/src/vector-im-v0.10.1.tar.gz -C /var/www/erfurt.chat/

```
{
    "default_hs_url": "https://erfurt.chat",
    "default_is_url": "https://vector.im",
    "brand": "erfurt.chat",
    "integrations_ui_url": "https://scalar.vector.im/",
    "integrations_rest_url": "https://scalar.vector.im/api",
    "bug_report_endpoint_url": "https://riot.im/bugreports/submit",
    "enableLabs": true,
    "roomDirectory": {
        "servers": [
            "erfurt.chat",
            "matrix.org"
        ]
    },
}
```

Externe Synapse Dokumentation

- https://github.com/matrix-org/synapse/blob/master/README.rst#synapse-installation
- https://github.com/matrix-org/synapse/blob/master/README.rst#setting-up-federation
- https://github.com/matrix-org/synapse/blob/master/docs/turn-howto.rst

users.bytespeicher.org

```
server {
  listen 80;
  listen [::]:80;

  index index.html;

  server_name users.bytespeicher.org;

  location / {
    try_files $uri $uri/ =404;
```

```
  }

  location ~ ^/~(.+?)(/.*)?$ {
    alias /home/$1/public_html$2;
    index  index.html index.htm;
    autoindex on;
  }
}
```

Datensicherung

Die Datensicherung erfolgt verschlüsselt auf einen Server von mape2k und einen Server von mkzero:

- 1 Full-Backup je Woche
- Inkrementelle Backups täglich
- Vorhaltezeit: 4 Wochen

Pakete:

- duply
- duplicity
- lftp

Installation nach folgender Anleitung: https://wiki.fem.tu-ilmenau.de/public/technik/howto/duply

- MySQL-Dump-Skript unter /usr/local/bin/mysql-dump einrichten
- duply mape2k-backup create

Konfiguration:

```
# GPG_KEY='_KEY_ID_'
GPG_PW=''

GPG_KEY_SIGN='58252DC6'
GPG_KEYS_ENC='DD379EDC'
GPG_PW_SIGN='XXXXXXXXXXXXXXX'

TARGET='ftps://XXXXX.YYY.ZZ/'
TARGET_USER='bytecluster0001.bytespeicher.org'
TARGET_PASS='XXXXXX'

# base directory to backup
SOURCE='/'

MAX_AGE=4W
MAX_FULL_BACKUPS=4
MAX_FULLBKP_AGE=1W
DUPL_PARAMS="$DUPL_PARAMS --full-if-older-than $MAX_FULLBKP_AGE "

VOLSIZE=250
DUPL_PARAMS="$DUPL_PARAMS --volsize $VOLSIZE "

#VERBOSITY=5
```

```
# GPG_KEY='_KEY_ID_'
GPG_PW=''

GPG_KEY_SIGN='58252DC6'
GPG_KEYS_ENC='DD379EDC'
GPG_PW_SIGN='XXXXXXXXXXXXXXX'
```

```
TARGET='sftp://XXXXX.YYY.ZZ/'
TARGET_USER='bytespeicher'
TARGET_PASS='XXXXXX'

# base directory to backup
SOURCE='/'

MAX_AGE=4W
MAX_FULL_BACKUPS=4
MAX_FULLBKP_AGE=1W
DUPL_PARAMS="$DUPL_PARAMS --full-if-older-than $MAX_FULLBKP_AGE "

VOLSIZE=250
DUPL_PARAMS="$DUPL_PARAMS --volsize $VOLSIZE "

#VERBOSITY=5
```

Verzeichnisausnahmen:

```
+ /tmp/mysqldump
- /dev
- /sys
- /proc
- /run
- /tmp
- /var/tmp
- /root/.cache
- /root/backup
```

Benutzer für Sicherung der Datenbank einrichten:

für Datensicherung

```
CREATE USER 'backup'@'localhost' IDENTIFIED BY 'PASSWORT';
GRANT USAGE ON * . * TO 'backup'@'localhost' IDENTIFIED BY 'PASSWORT' WITH
MAX_QUERIES_PER_HOUR 0 MAX_CONNECTIONS_PER_HOUR 0 MAX_UPDATES_PER_HOUR 0
MAX_USER_CONNECTIONS 0 ;

REVOKE ALL PRIVILEGES ON * . * FROM 'backup'@'localhost';
REVOKE GRANT OPTION ON * . * FROM 'backup'@'localhost';

GRANT SELECT, SHOW DATABASES, LOCK TABLES, SHOW VIEW ON * . * TO 'backup'@'localhost'
WITH MAX_QUERIES_PER_HOUR 0 MAX_CONNECTIONS_PER_HOUR 0 MAX_UPDATES_PER_HOUR 0
MAX_USER_CONNECTIONS 0;
FLUSH PRIVILEGES;
```

Zusätzliche Sicherung der Datenbanken _vor_ der Datensicherung:

```
mkdir -p /tmp/mysqldump
/usr/local/bin/mysql-dump
```

```
/bin/rm -rf /tmp/mysqldump
```

```
[client]
user=backup
password="PASSWORT"
host=localhost
```

Sicherung per Cronjob:

```
# Backup (mape2k)
0 4    * * 1   root    HOME=/root && duply mape2k-backup cleanup_purge_purge-full --extra-
clean --force
30 4   * * *   root    HOME=/root && duply mape2k-backup backup

# Backup (mkzero)
0 2    * * 1   root    HOME=/root && duply mkzero-backup cleanup_purge_purge-full --extra-
clean --force
30 2   * * *   root    HOME=/root && duply mkzero-backup backup
```

Dauerhafter Link zu diesem Dokument:
https://wiki.technikkultur-erfurt.de/dienste:bytecluster0001?rev=1496667937

Dokument zuletzt bearbeitet am: **05.06.2017 13:05**

Verein zur Förderung von Technikkultur in Erfurt e.V
https://wiki.technikkultur-erfurt.de/