BigBlueButton Dokumentation

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1 Installationsanleitung

1.1 Voraussetzungen

Server mit Betriebssystem Ubuntu 12.04 LTS

1.2 Betriebssystem vorbereiten

- cd /tmp/

- wget http://security.ubuntu.com/ubuntu/pool/main/libf/libffi/libffi5_3.0.9-1_amd64.deb

- sudo dpkg -i libffi5_3.0.9-1_amd64.deb

- sudo apt-get install zlib1g-dev libssl-dev libssl0.9.8 libreadline-dev libyaml-dev build-essential bison checkinstall libffi5 gcc checkinstall libreadline5 libyaml-0-2

- sudo apt-get install libgmp3c2

- wget http://free.nchc.org.tw/ubuntu//pool/main/m/mpfr/ libmpfr1ldbl_2.4.2-3ubuntu1_amd64.deb

- sudo dpkg -i ./libmpfr1ldbl_2.4.2-3ubuntu1_amd64.deb

- sudo apt-get install gem

- sudo apt-get install rubygems

- sudo mkdir /var/www

- sudo mkdir /var/www/nginx-default

- sudo vi /var/www/nginx-default/50x.html

Code in gerade erstelltes Dokument einfügen:

```
<!DOCTYPE html>
<html>
<head>
<title>Error</title>


<style>
body {
width: 35em;


margin: 0 auto;
font-family: Tahoma, Verdana, Arial, sans-serif;



}
</style>
</head>


<body>
<h1>An error occurred.</h1>
<p>Sorry, the page you are looking for is currently
    unavailable.<br/>


Please try again later.</p>
```

```
27  <p>If you are the system administrator of this resource
        then you should check

28

29

30  the <a href="http://nginx.org/r/error_log">error log</a>
        for details.</p>

31

32

33  <p><em>Faithfully yours, nginx.</em></p>
34  </body>

35

36

37  </html>
```

1.3 BBB Installation

1.3.1 Serverupdate

- sudo apt-get install language-pack-en

- sudo update-locale LANG=en_US.UTF-8

- sudo apt-get autoremove ruby

- wget http://ubuntu.bigbluebutton.org/bigbluebutton.asc -O- | sudo apt-key add -

- echo "deb http://ubuntu.bigbluebutton.org/lucid_dev_081/ bigbluebutton-lucid main" | sudo tee /etc/apt/sources.list.d/bigbluebutton.list

- echo "deb http://us.archive.ubuntu.com/ubuntu/ lucid multiverse" | sudo tee -a /etc/apt/sources.list

- sudo apt-get update

- sudo apt-get dist-upgrade

1.3.2 LibreOffice

- wget http://bigbluebutton.googlecode.com/files/openoffice.org_1.0.4_all.deb

- sudo dpkg -i openoffice.org_1.0.4_all.deb

- sudo apt-get install python-software-properties

- sudo apt-add-repository ppa:libreoffice/libreoffice-4-0

- sudo apt-get update

- sudo apt-get install libreoffice-common

- sudo apt-get install libreoffice

- bei Proxy: export https_proxy=https://[proxy]:[port]

1.3.3 Ruby

- dpkg -l | grep ruby

- ruby -v

- sudo apt-get autoremove ruby1.8

- wget https://bigbluebutton.googlecode.com/files/ruby1.9.2_1.9.2-p290-1_amd64.deb

- sudo dpkg -i ruby1.9.2_1.9.2-p290-1_amd64.deb

- sudo apt-get install -f

- sudo update-alternatives --install /usr/bin/ruby ruby /usr/bin/ruby1.9.2 500 --slave /usr/bin/ri ri /usr/bin/ri1.9.2 --slave /usr/bin/irb irb /usr/bin/irb1.9.2 --slave /usr/bin/erb erb /usr/bin/erb1.9.2 --slave /usr/bin/rdoc rdoc /usr/bin/rdoc1.9.2

- sudo update-alternatives --install /usr/bin/gem gem /usr/bin/gem1.9.2 500

- sudo gem install gherkin -v '2.2.9'-- --with-cflags=-w

- sudo gem install cucumber -v '0.9.2'-- --with-cflags=-w

1.3.4 FFmpeg

- touch install-ffmpeg.sh

- sudo vi install-ffmpeg.sh

Code in gerade erstelltes Dokument einfügen:

```
sudo apt-get install build-essential git-core checkinstall
    yasm texi2html libvorbis-dev libx11-dev libxfixes-dev
    zlib1g-dev pkg-config

LIBVPX_VERSION=1.2.0
FFMPEG_VERSION=2.0.1

if      [ ! -d "/usr/local/src/libvpx-${LIBVPX_VERSION}"
    ]; then
        cd /usr/local/src
        sudo git clone http://git.chromium.org/webm/libvpx
            .git "libvpx-${LIBVPX_VERSION}"
        cd "libvpx-${LIBVPX_VERSION}"
        sudo git checkout "v${LIBVPX_VERSION}"
        sudo ./configure
        sudo make
        sudo checkinstall --pkgname=libvpx --pkgversion="$
            {LIBVPX_VERSION}" --backup=no --deldoc=yes --
            default
```

```
14  fi
15
16  if      [ ! -d "/usr/local/src/ffmpeg-${FFMPEG_VERSION}"
        ]; then
17          cd /usr/local/src
18          sudo wget "http://ffmpeg.org/releases/ffmpeg-${
            FFMPEG_VERSION}.tar.bz2"
19          sudo tar -xjf "ffmpeg-${FFMPEG_VERSION}.tar.bz2"
20          cd "ffmpeg-${FFMPEG_VERSION}"
21          sudo ./configure --enable-version3 --enable-
            postproc --enable-libvorbis --enable-libvpx
22          sudo make
23          sudo checkinstall --pkgname=ffmpeg --pkgversion
            ="5:${FFMPEG_VERSION}" --backup=no --deldoc=yes
            --default
24  fi
```

- chmod +x install-ffmpeg.sh

- ./install-ffmpeg.sh

1.3.5   BBB Software

- sudo apt-get install bigbluebutton

1.4   API Demo

Server muss aus dem Netz auf den TCP/UDP Ports 80, 1935, 09123 zugänglich sein!

1.4.1   Installieren

- sudo apt-get install bbb-demo

1.4.2   Deinstallieren

- sudo apt-get purge bbb-demo

1.5   Clean Restart

- sudo bbb-conf --clean

- sudo bbb-conf -check

2 ILIAS Integration

Nach
verfahren.

Secret Salt ist gespeichert unter:

- vi /var/lib/tomcat6/webapps/bigbluebutton/WEB-INF/classes/bigbluebutton.properties

3 Lasttests

3.1 BBB Sitzung in Firefox öffnen

- sudo bbb-conf -check

Neues Script "bbb-test" anlegen:

```bash
#!/bin/bash
#
# Copyright (c) 2008-2011 by BigBlueButton Inc.
#
# Documentation:
#    http://code.google.com/p/bigbluebutton/wiki/Testing
#
# This file is part of BigBlueButton - http://www.
    bigbluebutton.org
#
# BigBlueButton is free software; you can redistribute it
    and/or modify it under the
# terms of the GNU Lesser General Public License as
    published by the Free Software
# Foundation; either version 2 of the License, or (at your
    option) any later
# version.
#
# BigBlueButton is distributed in the hope that it will be
    useful, but WITHOUT ANY
# WARRANTY; without even the implied warranty of
    MERCHANTABILITY or FITNESS FOR A
# PARTICULAR PURPOSE. See the GNU Lesser General Public
    License for more details.
#
# You should have received a copy of the GNU Lesser
    General Public License along
# with BigBlueButton; if not, see <http://www.gnu.org/
    licenses/>.
#
```

```
22  # Author(s):
23  #       Fred Dixon <ffdixon@bigbluebutton.org>
24  #
25  # Changelog:
26  #   2011-01-22 FFD  Inital Version
27
28  VERSION=0.1
29  IP=$(ifconfig | grep -v '127.0.0.1' | grep -E
        "[0-9]*\.[0-9]*\.[0-9]*\.[0-9]*" | head -1 | cut -d: -f2
        | awk '{ print $1}')
30
31
32  while [ $# -gt 0 ]; do
33  case $1 in
34  --h|-h)           HOST=$2;                  shift 2 ;;
35  --n|-n)           NUMBER=$2;                shift 2 ;;
36  *)                echo "$0: Unrecognized option: $1" >&2;
        exit 1;
37  esac
38  done
39
40  if [ -z "$HOST" ] || [ -z "$NUMBER" ]; then
41  echo "BigBlueButton Testing Utility - Version $VERSION"
42  echo
43  echo "$0 [options]"
44  echo
45  echo "To launch BigBlueButton clients that connect to
        remote server:"
46  echo "   -h remote_bigbluebutton_host"
47  echo "   -n number_of_clients"
48  echo
49  echo "Example:"
50  echo "   $0 -h 192.168.0.104 -n 10"
51  exit 1
52  fi
53  #
54  # We'll use a get request to demo1.jsp to create clients
55  #
56  # http://192.168.0.104/bigbluebutton/demo/demo1.jsp?
        username=Fred2&action=create
57
58  # HOST="http://$HOST/bigbluebutton/demo/demo1.jsp?action=
        create&username=user"
59  HOST="http://$HOST"
60
```

```
61  if ! wget $HOST/bigbluebutton/api -O - --quiet | grep -q
        SUCCESS; then
62  echo "Startup unsuccessful: could not connect to $HOST/api
        "
63  exit 1
64  fi
65
66  if ! which firefox >/dev/null 2>&1; then
67  echo "Unable to locate firefox"
68  exit 1
69  fi
70
71  firefox &
72  sleep 3
73
74  i=0
75  while [ $i != "$NUMBER" ]; do
76  echo "Connecting user $IP-$i"
77  firefox -a firefox -remote "openURL($HOST/demo/demo1.jsp?
        action=create&username=$IP-$i,new-tab)" &
78
79  # We'll give BigBlueButton a moment to process the
        incoming request from this IP.
80  # If we try to open 10 clients at the same time, the
        session IDs for each client will
81  # likely not go to the specific tab (as thay all share the
        same IP address)
82  sleep 5
83
84  i=$[$i+1]
85  done
86  echo
```

- chmod +x bbb-test

- sudo vi /var/www/bigbluebutton/client/conf/config.xml

Attributwerte ändern auf:

```
47  <module name="PhoneModule" url="http://[IP-Adresse]/client
        /PhoneModule.swf?v=4359"
48  uri="rtmp://[IP-Adresse]/sip"
49  autoJoin="true"
50  skipCheck="false"
51  showButton="true"
52  enabledEchoCancel="true"
53  dependsOn="UsersModule"
```

```
54  />
```

- bbb-test -h [IP-Adresse Server] -n [Anzahl der Sessions]

Flashplayer Anpassungen: Dialog muss ausgeblendet werden → Peter Tempel

3.2 Logging

3.2.1 Scripte

- Neues Script "logging.sh" anlegen:

```
1   #logging.sh v1.2
2   #!/bin/bash
3
4   NOW=$(date +"%F"_"%H"-"%M"-"%S")
5   LOGFILE="log-$NOW.log"
6   sar 1 > "$LOGFILE".cpu &
7   bwm-ng -o csv -F "$LOGFILE".net &
8   ./cpustat 5020 4859 5143 > "$LOGFILE".cpustat &
9   echo "$LOGFILE"
10
11  while true
12  do
13  date +%d/%m/%y\ %H:%M:%S >> "$LOGFILE"
14  #       free | grep -v + >> "$LOGFILE"
15  #   netstat -a | grep ESTABLISHED | grep 1935 >
        temp_connections
16  date +%d/%m/%y\ %H:%M:%S >> "$LOGFILE".con
17  #   verb=$(cat temp_connections | wc -l)
18  #   verb=$(($verb/5))
19  #   echo $verb >> "$LOGFILE".con
20  wget -O temp_connections "http://[IP-Adresse]/
        bigbluebutton/api/[API call]?meetingID=[Name des
        Meetings]&password=mp&checksum=[output von: echo -n "[
        API call]meetingID=[Name des Meetings]&password=mp[Secret
        Salt]" | sha1sum]
21  CON=`cat temp_connections |sed -e "s/></>\n</g"
        temp_connections | grep "<participantCount>" | sed -e "s
        /<participantCount>/""/g" | cut -d"<" -f1`
22  echo $CON >>"$LOGFILE".con
23  sleep 1
24
25
26  done
```

10

- Neues Script "cpustat" anlegen:

```bash
#!/bin/bash

pids=()
while [ $# != 0 ]; do
pids=("${pids[@]}" "$1")
shift
done

if [ -z "${pids[0]}" ]; then
echo "Usage: $0 <pid1> [pid2] ..."
exit 1
fi

for pid in "${pids[@]}"; do
if [ ! -e /proc/$pid ]; then
echo "Error: pid $pid doesn't exist"
exit 1
fi
done

while [ true ]; do
date +%d/%m/%y\ %H:%M:%S
for pid in "${pids[@]}"; do
ps -p $pid -L -o pid,tid,psr,pcpu,comm=
done
sleep 1
done
```

- chmod +x logging.sh

- chmod +x cpustat

3.2.2 Auswertung

logging.sh Script ausführen

- ./logging.sh

Script beenden

- [Strg] + [C]

- sudo killall sar

.con Dateien in Notepad++ bearbeiten :[0-9][0-9]\K\n gegen [Space] ersetzen
.cpu Dateien in Notepad++ bearbeiten: 12 Stunden Format in 24 Stunden Format ändern
beide Dateien (.con und .cpu) mit Origin 9.1 auswerten

4 Eigene Änderungen

4.1 Freeswitch auslagern

Auf 2 Servern BBB Installationen vornehmen.
Auf BBB-Server (ohne Freeswitch) folgende Änderungen vornehmen:

- sudo vi /usr/share/red5/webapps/bigbluebutton/WEB-INF/bigbluebutton.properties

```
22  freeswitch.esl.host=[IP-Adresse FS]
23  freeswitch.esl.port=8021
24  freeswitch.esl.password=[neues PW_1 setzen]
```

- sudo vi /usr/share/red5/webapps/sip/WEB-INF/bigbluebutton-sip.properties

```
1   # The ip and port the BBB SIP app is going to use
2   bbb.sip.app.ip=[IP-Adresse BBB]
3   bbb.sip.app.port=5070
4
5   # The username and password the BBB SIP app to use to
6   # register with FreeSWITCH
7   sip.server.username=bbbuser
8   sip.server.password=[neues PW_2 setzen]
9
10
11  # The ip and port of the FreeSWITCH server
12  freeswitch.ip=[IP-Adresse FS]
13  freeswitch.port=5060
```

Auf freeswitch Server folgende Änderungen vornehmen:

- sudo vi /opt/freeswitch/conf/autoload_configs/event_socket.conf.xml

```
1   <configuration name="event_socket.conf" description="
      Socket Client">
2   <settings>
3   <param name="nat-map" value="false"/>
4   <param name="listen-ip"{} value="[IP-Adresse FS]"/>
5   <param name="listen-port" value="8021"/>
6   <param name="password"{} value="[neues PW_1]"/>
7   <!--<param name="apply-inbound-acl" value="lan"/>-->
8   </settings>
9   </configuration>
```

- sudo vi /opt/freeswitch/conf/directory/default/bbbuser.xml

```
9  param name="password" value="[neues PW_2]"
```

- sudo vi /opt/freeswitch/conf/vars.xml

```
28  <X-PRE-PROCESS cmd="set" data="local_ip_v4=[IP-Adresse FS]"/>
```

3 Config-Dateien der BBB Installation entnehmen und auf selbst kompiliertem Freeswitch austauschen - https://code.google.com/p/bigbluebutton/wiki/ConfigurationFiles#FreeSWITCH

1. /opt/freeswitch/conf/vars.xml

2. bbb-voice-conference/config/freeswitch/conf/autoload_configs/conference.conf.xml

3. bbb-voice-conference/config/freeswitch/conf/dialplan/public.xml

4.2   Aufzeichnungen im Internet Explorer abspielen

WebM für Internet Explorer 9+ installieren

4.3   Individuelle Anpassungen am Flash Client

Benutzer anlegen, der sudo Befehle ausführen darf

- sudo adduser [Benutzer] sudo

GitHub Account anlegen

4.3.1   Entwicklungsumgebung einrichten

- sudo apt-get install git-core ant openjdk-6-jdk

- mkdir -p ~/dev/tools

- cd ~/dev/tools

- wget http://bigbluebutton.googlecode.com/files/gradle-0.8.tar.gz

- tar xvfz gradle-0.8.tar.gz

- wget http://bigbluebutton.googlecode.com/files/groovy-1.6.5.tar.gz

- tar xvfz groovy-1.6.5.tar.gz

- wget https://bigbluebutton.googlecode.com/files/grails-1.3.9.tar.gz

- tar xvfz grails-1.3.9.tar.gz

- wget http://fpdownload.adobe.com/pub/flex/sdk/builds/flex4.5/flex_sdk_4.5.0.20967_mpl.zip

13

- mkdir -p ~/dev/tools/flex-4.5.0.20967

- unzip flex_sdk_4.5.0.20967_mpl.zip -d flex-4.5.0.20967

- sudo find ~/dev/tools/flex-4.5.0.20967 -type d -exec chmod o+rx '{}'\;

- chmod 755 ~/dev/tools/flex-4.5.0.20967/bin/*

- sudo chmod -R +r ~/dev/tools/flex-4.5.0.20967

- ln -s ~/dev/tools/flex-4.5.0.20967 ~/dev/tools/flex

- mkdir -p flex-4.5.0.20967/frameworks/libs/player/11.2

- cd flex-4.5.0.20967/frameworks/libs/player/11.2

- wget http://download.macromedia.com/get/flashplayer/updaters/11/playerglobal11_2.swc

- mv -f playerglobal11_2.swc playerglobal.swc

- vi ~/.profile

An das Ende der Datei anfügen:

```
24  export  GROOVY_HOME=$HOME/dev/tools/groovy -1.6.5
25  export  PATH=$PATH:$GROOVY_HOME/bin
26
27  export  GRAILS_HOME=$HOME/dev/tools/grails -1.3.9
28  export  PATH=$PATH:$GRAILS_HOME/bin
29
30  export  FLEX_HOME=$HOME/dev/tools/flex
31  export  PATH=$PATH:$FLEX_HOME/bin
32
33  export  GRADLE_HOME=$HOME/dev/tools/gradle -0.8
34  export  PATH=$PATH:$GRADLE_HOME/bin
35
36  export  JAVA_HOME=/usr/lib/jvm/java -6- openjdk
37  export  ANT_OPTS="-Xmx512m  -XX:MaxPermSize=512m"
```

- source ~/.profile

Git Umgebung einrichten

4.3.2 Einrichten der Umgebung/nginx

- cd ~/dev/bigbluebutton/

- cp bigbluebutton-client/resources/config.xml.template bigbluebutton-client/src/conf/config.xml

- sed -i s/HOST/[IP Adresse BBB]/g bigbluebutton-client/src/conf/config.xml

14

- echo "
location /client/BigBlueButton.html {
root /home/[angelegter BBB-Benutzer]/dev/bigbluebutton/bigbluebutton-client;
index index.html index.htm;
expires 1m;
}

\# BigBlueButton Flash client.
location /client {
root /home/[angelegter BBB-Benutzer]/dev/bigbluebutton/bigbluebutton-client;
index index.html index.htm;
}
" | sudo tee /etc/bigbluebutton/nginx/client_dev

- sudo ln -f -s /etc/bigbluebutton/nginx/client_dev /etc/bigbluebutton/nginx/client.nginx

- sudo service nginx restart

4.3.3 Client kompilieren

- cd ~/dev/bigbluebutton/bigbluebutton-client

- source ~/.profile

- ant locales

- ant

- sudo bbb-conf --clean

4.3.4 Änderungen vornehmen

Backup erstellen, Änderungen am Dateisystem vornehmen und abspeichern

- cd ~/dev/bigbluebutton/bigbluebutton-client

- ant

- sudo bbb-conf --clean

4.3.5 Zwischen Clients wechseln

Zum selbst kompiliertem Client wechseln:

- sudo ln -s -f /etc/bigbluebutton/nginx/client_dev /etc/bigbluebutton/nginx/client.nginx

- sudo bbb-conf --clean

Zum Standard Client wechseln:

- sudo ln -s -f /etc/bigbluebutton/nginx/client /etc/bigbluebutton/nginx/client.nginx

- sudo bbb-conf --clean

4.3.6 Whiteboard Toolbar immer sichtbar

Commit-ID: **74cb3bb** a80cb39cfee7e0c3de4425be03346891d

- sudo vi ~/dev/bigbluebutton/bigbluebutton-client/src/conf/config.xml

```
90  <module name="WhiteboardModule" url="http://[IP BBB]/
       client/WhiteboardModule.swf?v=4105"
91  uri="rtmp://[IP BBB]/bigbluebutton"
92  dependsOn="PresentModule"
93  baseTabIndex="601"
94  whiteboardAccess="Presenter"
95  keepToolbarVisible="true"
96  />
```

- vim src/org/bigbluebutton/modules/whiteboard/views/WhiteboardToolbar.mxml

```
263  if (toolbarAllowed() && slideLoaded && (wbOptions.
        keepToolbarVisible || mousedOver)) {
```

4.3.7 Whiteboard für alle beschreibbar

Standard Client:

- sudo vi /var/www/bigbluebutton/client/conf/config.xml

Selbst kompilierter Client:

- sudo vi ~/dev/bigbluebutton/bigbluebutton-client/src/conf/config.xml

```
90  <module name="WhiteboardModule" url="http://[IP BBB]/
       client/WhiteboardModule.swf?v=4105"
91  uri="rtmp://[IP BBB]/bigbluebutton"
92  dependsOn="PresentModule"
93  baseTabIndex="601"
94  whiteboardAccess="all"
95  keepToolbarVisible="false"
96          />
```

Problem: Benutzung des Whiteboards ist fehlerbehaftet → Lösung

4.3.8 Whiteboard Toolbar Buttons für Nicht-Presenter ausblenden

- vi src/org/bigbluebutton/modules/whiteboard/views/WhiteboardToolbar.mxml

Bei [Button] jeweils [rectangle], [circle], [triangle], [line], [text], [clear], [undo] einsetzen.

```
140  private function onCreationComplete():void {
141  [Button]Btn.visible = [Button]Btn.includeInLayout = isPresenter;
142  setToolType(WhiteboardConstants.TYPE_ZOOM, null);
143  }
```

```
207  private function presenterMode(e:MadePresenterEvent):void
        {
208  if (canvas == null) return;
209  canvas.makeTextObjectsEditable(e);
210  [Button]Btn.visible = [Button]Btn.includeInLayout = true;
211  setToolType(WhiteboardConstants.TYPE_ZOOM, null);
212  }
```

```
213  private function viewerMode(e:MadePresenterEvent):void {
214  [Button]Btn.visible = [Button]Btn.includeInLayout = false;
```

```
355  <wbBtns:[Button]Button id="[Button]Btn"
356  tabIndex="{baseIndex+[tabIndex nicht verändern]}"
357  visible="{isPresenter}"/>
```

4.3.9 Farbauswahl Whiteboardwerkzeuge ändern

- vi src/org/bigbluebutton/modules/whiteboard/views/WhiteboardToolbar.mxml

Markierte Farben gegen gewünschte Farbcodes (Hexadezimalschreibweise) austauschen:

```
131  [Bindable] private var colorPickerColours:Array = ['0x
        000000', '0xFFFFFF' , '0xFF0000', '0xFF8800',
132  '0xCCFF00', '0x00FF00', '0x00FF88', '0x00FFFF', '0x0088FF', '0x
        0000FF', '0x8800FF', '0xFF00FF', '0xC0C0C0'];
```

4.3.10 Mute Button obere Leiste ausblenden - Version 0.9

- vi src/org/bigbluebutton/main/views/MuteMeButton.mxml

```
120  private function updateMuteMeBtn(placeholder:Boolean =
        false):void {
121  if (!allowMuteUnmute()) {
122  this.visible = this.includeInLayout = false;
123  } else {
124  this.visible = this.includeInLayout = false;
```

4.3.11 Anfangspräsentation ändern

- /var/www/bigbluebutton-default/default.pdf

4.3.12 "Hand heben"-Symbol ändern

- ~/dev/bigbluebutton/bigbluebutton-client/src/org/
  bigbluebutton/common/assets/images/hand_new.png

4.3.13 Freitextfeld erlaubt Zeilenumbruch

Commit-ID: **bc0c27f** 683a0bb275c650540cad77b938802748d

- vim bigbluebutton-client/src/org/bigbluebutton/modules/whiteboard/
  WhiteboardCanvasDisplayModel.as

Zeilen entfernen:

```
470  // if the enter key is pressed , commit the text
471  if ( event . keyCode   == Keyboard . ENTER ) {
472  wbCanvas . stage . focus = null ;
473  tobj . stage . focus = null ;
474
475  // The ENTER / RETURN key has been pressed . Publish the text .
476  sendStatus = TextObject . TEXT_PUBLISHED ;
477  }
```

4.4 Individuelle Anpassungen am ILIAS-Plugin

4.4.1 BugFix: Client Ansicht ILIAS-Plugin (behoben)

ILIAS-Plugin ändern:

- /.SAN/webhosts/ilias/srv/www/htdocs/ilias/ilias/Customizing/global/plugins/Services/
  Repository/RepositoryObject/BigBlueButton/templates/tpl.BigBlueButtonClient.html

```
5  ilAddOnLoad
```
, in
```
5  il . Util . addOnLoad
```
ändern

Ist im aktuellen Plugin behoben.

4.4.2 Kurstitel als BBB-Sitzungstitel

- vi /srv/www/htdocs/ilias/ilias/Customizing/global/plugins/Services/
  Repository/RepositoryObject/BigBlueButton/classes/class.ilObjBigBlueButton.php

```
296  function getBBBId (){
297  return $this->getTitle();
298  }
```

4.4.3 Sitzungsaufzeichnung für Studenten verfügbar, keine Löschen Funktion für Studenten

In der [BigBlueButton]/classes/class.ilObjBigBlueButtonGUI.php beginnt in Zeile 275 eine „if($isModerator)"-Logik. Der else-Zweig wird von der Logik des then-Zweigs adaptiert, sodass folgender else-Zweig entsteht:

```
332  }else{
333  $my_tpl = new ilTemplate("./Customizing/global/plugins/
         Services/Repository/RepositoryObject/BigBlueButton/
         templates/tpl.BigBlueButtonClient.html", true, true);
334
335  $my_tpl->setVariable("classNotStartedText", $this->txt("
         class_not_started_yet"));
336
337  $table_template = new ilTemplate("tpl.
         BigBlueButtonRecordTable.html",
338  true,
339  true,
340  "Customizing/global/plugins/Services/Repository/
         RepositoryObject/BigBlueButton");
341
342  $table_content ="";
343  $recordcount=0;
344  foreach($BBBHelper->getRecordings($this->object)->
         recordings->recording as $recording){
345  $table_row_template = new ilTemplate("tpl.
         BigBlueButtonRecordTableRow.html",
346  true,
347  true,
348  "Customizing/global/plugins/Services/Repository/
         RepositoryObject/BigBlueButton");
349  $table_row_template->setVariable("Date",date("d.m.Y H:i",
          substr($recording->startTime,0,10)));
350  $table_row_template->setVariable("Length",$recording->
         playback->format->length);
351  $table_row_template->setVariable("Link",$recording->
         playback->format->url);
352
353  $table_row_template->setVariable("Link_Title", $this->txt
         ("link_title"));
354
355  $table_content .= $table_row_template->get();
356  $recordcount++;
357  }
358
359  $table_template->setVariable("BBB_RECORD_CONTENT",
```

```
              $table_content );
360 $table_template ->setVariable ("Date_Title", $this ->txt ("
              Date_Title"));
361 $table_template ->setVariable ("Length_Title", $this ->txt ("
              Length_Title"));
362 $table_template ->setVariable ("Link_Title", $this ->txt ("
              Link_Title"));
363 $my_tpl ->setVariable ("recordings", $table_template ->get ())
              ;
364 $my_tpl ->setVariable ("Headline_Recordings", $this ->txt ("
              Headline_Recordings"));
365 $my_tpl ->setVariable ("hasMeetingRecordings", $recordcount
              > 0?"true":"false");
366
367
368 $bbbURL =$BBBHelper ->joinURL ($this ->object );
369 }
```

Der then-Zweig wird nicht verändert.

Anschließend muss noch die [BigBlueButton]/templates/tpl.BigBlueButtonClient.html angepasst werden. Dabei bezieht sich die Logik auf die tpl.BigBlueButtonModertorClient.html:

```
1  {VAL_1}
2
3
4
5  <script type="text/javascript">
6  il.Util.addOnLoad (
7  function ()
8  {
9
10 var isMeetingRunning={isMeetingRunning};
11 if(isMeetingRunning){
12 $('#openClassLink').show ();
13 $('#classNotStarted').hide ();
14 }else{
15 $('#openClassLink').hide ();
16 $('#classNotStarted').show ();
17 }
18
19 var hasMeetingRecordings = {hasMeetingRecordings};
20 if(hasMeetingRecordings){
21 $('#recordings').show ();
22 }
23 else{
24 $('#recordings').hide ();
25 }
```

```
26  var isMeetingRecorded ={ isMeetingRecorded };
27
28  if ( isMeetingRecorded ){
29  $('#isMeetingRecorded ').show ();
30  } else {
31  $('#isMeetingRecorded ').hide ();
32  }
33
34  });
35  </ script >
36
37  <a id=" openClassLink " style =" color :#E20074 " href ="{ bbbURL
        }" target =" _blank ">
38  <b >{ clickToOpenClass } </b >
39  </a>
40
41
42  <div id=" classNotStarted ">
43  { classNotStartedText }
44  </div >
45  <div id=" isMeetingRecorded ">{ meetingRecordedMessage } </div >
46
47  <div id=" recordings ">
48  <h1 ><span >{ Headline_Recordings } </span ></ h1 >
49  <div >{ recordings } </div >
50  </div >
```

4.4.4 Links weiter auseinander platzieren

- vi /srv/www/htdocs/ilias/ilias/Customizing/global/plugins/Services/Repository/
  RepositoryObject/BigBlueButton/templates/tpl.BigBlueButtonModeratorClient.html

```
67  <div id=" startClassDiv ">
68  { noClassRunning } <a id=" startClassLink " href ="#">{
        startClass } </a ><br ><br >
69  </div >
70  <input type =" checkbox " id=" recordmeeting_visible " /> <span
        id=" recordmeeting_label ">{ checkbox_record_meeting } </span
        >
71
72  <div id=" endClassDiv ">
73  <br ><br ><br >{ classRunning } <a id=" endClassLink " href ="#">{
        endClass } </a ><br >{ endClassComment }
74  </div >
```

- vi /srv/www/htdocs/ilias/ilias/Customizing/global/plugins/Services/Repository/
RepositoryObject/BigBlueButton/templates/tpl.BigBlueButtonModeratorMeetingCreated.html

```
16  <br><br>
17  <a id="openClassLink" href="{bbbURL}" target="_blank">{
       newClassCreatedJoinManual}</a>
```

4.4.5   Sprachpakete ändern

Die Sprachpakete sind unter [BigBlueButton]/lang zu finden.

- Sprachpaket anpassen

- Sprachpaket auf dem Server speichern

- im ILIAS Plugin-Administrationsmenü die Sprachpakete aktualisieren

4.5   Audiospuren ersetzen

4.5.1   mute Benachrichtigung

- /opt/freeswitch/sounds/en/us/callie/conference/16000/conf-muted.wav

4.5.2   unmute Benachrichtigung

- /opt/freeswitch/sounds/en/us/callie/conference/16000/conf-unmuted.wav

4.5.3   Information einzige Person in der Konferenz

- /opt/freeswitch/sounds/en/us/callie/conference/16000/conf-alone.wav

4.5.4   Testmelodie Audiobrücke

- ~/dev/bigbluebutton/bigbluebutton-client/src/org/bigbluebutton/main/views/
assets/audio-test.mp3

4.5.5   Chat Ton deaktivieren

- ~/dev/bigbluebutton/bigbluebutton-client/src/org/bigbluebutton/
modules/chat/sounds/notice.mp3

Datei gegen leere, selbst erstellte mp3 Datei austauchen (mittels Encoder & LAME).

4.6   Begrüßungstext Chat ändern

- sudo vi /var/lib/tomcat6/webapps/bigbluebutton/WEB-INF/classes/bigbluebutton.properties

```
79  defaultWelcomeMessage=[neue Begrüßungsnachricht]
80  defaultWelcomeMessageFooter=[neue Nachrichtenunterschrift]
```

4.7 FQDN setzen

- sudo bbb-conf --setip [FQDN]

- vi /etc/nginx/nginx.conf

```
23  server_names_hash_bucket_size 128;
```

4.8 Sprachqualität erhöhen und Aufzeichnungserstellung sicherstellen

- vim /opt/freeswitch/conf/autoload_configs/conference.conf.xml

Abtastrate verdoppeln:

```
129  <profile name="wideband">
130  <param name="domain" value="$${domain}"/>
131  <param name="rate" value="32000"/>
```

- vi /usr/local/bigbluebutton/core/lib/recordandplayback/edl/audio.rb

Abtastrate bei Sitzungsaufzeichnung anpassen:

```
20  module BigBlueButton
21  module EDL
22  module Audio
23  SOX = ['sox', '-q']
24  SOX_WF_AUDIO_ARGS = ['-b', '16', '-c', '1', '-e', 'signed',
       '-r', '32000', '-L']
25  SOX_WF_ARGS = [*SOX_WF_AUDIO_ARGS, '-t', 'wav']
26  WF_EXT = 'wav'
```

5 Arbeit mit Git

5.1 Alias, die den Umgang erleichtern

- alias gg='git log --oneline --abbrev-commit --all --graph --decorate --color'

- alias gst='git status'

- git config --global user.name "[Name des Autors]"

- git config --global user.email [E-Mail Adresse des Autors]

5.2 Remote Repository der Entwickler hinzufügen

- cd ~/dev

- git clone https://github.com/bigbluebutton/bigbluebutton.git

- git branch --list

- git branch -a

- git checkout v0.81-release

5.3 Eigene Änderungen committen

- git checkout -b [lokaler Branch Name]

- vim [Änderungsdatei]
  #Änderungen im Dateisystem vornehmen

- gst
  #Änderungen anzeigen (git status)

- git add [Änderungsdatei]
  #Änderungen in die Staging Area packen und auf commit vorbereiten

- git commit -m "[Beschreibung Versionsänderung]"
  #Commit Paket schnüren und Beschreibung geben

5.4 Remote Änderungen in eigenen Branch (pull=fetch & merge)

- (git checkout v0.81-release)

- (git fetch #Änderungen holen und anzeigen lassen)

- (git pull)

- git checkout [eigener lokaler Branch]

- git pull origin v0.81-release #entfernter BBB Branch

5.5 Einzelne Commits installieren

- git cherry-pick [kurze Commit-ID]

5.6 Commit Änderungen rückgängig machen

- git reset --hard [kurze Commit-ID]

6 Nagios3 und pnp4Nagios

6.1 Nagios Installation und Konfiguration

Installationsanleitung:
https://help.ubuntu.com/12.04/serverguide/nagios.html

Apache auf anderen Port legen:
http://askubuntu.com/questions/253903/start-nagios-web-interface-on-a-different-port

Services aus- und abwählen:
http://askubuntu.com/questions/19320/how-to-enable-or-disable-services

- apt-get install nagios3

- vi /etc/apache2/ports.conf

Ports anpassen:

```
8  NameVirtualHost *:[neuer Port http]
9  Listen [neuer Port http]
10
11 <IfModule mod_ssl.c>
12 # If you add NameVirtualHost *:443 here, you will also
      have to change
13 # the VirtualHost statement in /etc/apache2/sites-
      available/default-ssl
14 # to <VirtualHost *:443>
15 # Server Name Indication for SSL named virtual hosts is
      currently not
16 # supported by MSIE on Windows XP.
17 Listen [neuer Port https]
18 </IfModule>
19
20 <IfModule mod_gnutls.c>
21 Listen [neuer Port https]
22 </IfModule>
```

- vi /etc/apache2/sites-enabled/000-default

Port anpassen:

```
1 <VirtualHost *:[neuer Port http]>
```

Firewallanpassungen vornehmen, z.B.:

- ufw allow proto tcp from 212.184.75.0/24 to any port [neuer Port http]

Aufruf mit: http://[IP-AdresseBBB]:[http-Port]/nagios3/

6.2 pnp4Nagios Installation und Konfiguration

Installationsprüfung:
http://docs.pnp4nagios.org/de/pnp-0.6/verify

Konfiguration:
http://docs.pnp4nagios.org/de/pnp-0.6/config

Konfigurationsprüfung:
http://docs.pnp4nagios.org/pnp-0.6/verify_pnp_config

pnp4Nagios FAQ:
http://docs.pnp4nagios.org/de/faq

- apt-get install pnp4nagios

- vi /etc/nagios3/nagios.cfg

Check Intervall auf 1 Minute setzen (Faktor 5):

```
722  interval_length=12
```

```
835  process_performance_data=1
```

```
847  host_perfdata_command=process-host-perfdata
848  service_perfdata_command=process-service-perfdata
```

- vi /etc/nagios3/commands.cfg

```
39  # 'process-host-perfdata' command definition
40  define command{
41  command_name     process-host-perfdata
42  command_line     /usr/bin/printf "%b" "$LASTHOSTCHECK$\
       t$HOSTNAME$\t$HOSTSTATE$\t$HOSTATTEMPT$\t$HOSTSTATETYPE$
       \t$HOSTEXECUTIONTIME$\t$HOSTOUTPUT$\t$HOSTPERFDATA$\n"
       >> /var/lib/nagios3/host-perfdata.out
43  command_line /usr/bin/perl
       /usr/lib/pnp4nagios/libexec/process_perfdata.pl
44  }
45
46
47  # 'process-service-perfdata' command definition
48  define command{
49  command_name     process-service-perfdata
```

```
50  command_line    /usr/bin/printf "%b" "$LASTSERVICECHECK$\
        t$HOSTNAME$\t$SERVICEDESC$\t$SERVICESTATE$\
        t$SERVICEATTEMPT$\t$SERVICESTATETYPE$\
        t$SERVICEEXECUTIONTIME$\t$SERVICELATENCY$\
        t$SERVICEOUTPUT$\t$SERVICEPERFDATA$\n" >> /var/lib/
        nagios3/service-perfdata.out
51  command_line /usr/bin/perl
        /usr/lib/pnp4nagios/libexec/process_perfdata.pl -d "$HOSTPERFDATA"
52  }
```

- vi /etc/nagios3/conf.d/generic-service_nagios2.cfg

Service hinzufügen:

```
28  define service {
29  name         srv-pnp
30  action_url /pnp4nagios/index.php/graph?host=$HOSTNAME$&srv
        =$SERVICEDESC$
31  register     0
32  }
```

- vi /etc/nagios3/conf.d/generic-host_nagios2.cfg

Host hinzufügen:

```
21  define host {
22  name         host-pnp
23  action_url /pnp4nagios/index.php/graph?host=$HOSTNAME$&srv
        =_HOST_
24  register     0
25  }
```

- vi /etc/nagios3/conf.d/localhost_nagios2.cfg

Dienste, bei denen Performancedaten visualisiert werden sollen:

```
54  define service{
55  use              generic-service,srv-pnp
```

6.3   Zusätzliche Scripte einbinden

check_bandwith_linux.sh:
http://exchange.nagios.org/directory/Plugins/Network-Connections,-Stats-and-Bandwidth/k0rdi/details

check_bbb_user.pl

In Nagios einbinden unter:

- /usr/lib/nagios/plugins/

Neue Konfigurationsdateien aus vorhandenen Dateien erstellen unter:

- /etc/nagios-plugins/config/

/etc/nagios-plugins/config/check_bandwidth.cfg:

```
1  # 'check_bandwidth' command definition
2  define command{
3  command_name     check_bandwidth
4  command_line     /usr/lib/nagios/plugins/check_bandwidth.sh
      localhost linux eth1 55 10 20 100
5  }
```

/etc/nagios-plugins/config/check_bbb_user.cfg:

```
1  # 'check_bbb_user' command definition
2  define command{
3  command_name     check_bbb_users
4  command_line     /usr/bin/perl /usr/lib/nagios/plugins/
      check_bbb_user.pl [IP-Adresse BBB] [Secret Salt
      BBB] [WARNING] [CRITICAL]
5  }
```

Neue Scripte in die Liste der Service Checks einbinden:

- vi /etc/nagios3/conf.d/localhost_nagios2.cfg

```
61  # Define a service to check the bandwidth on the local
      machine.
62
63  define service{
64  use                             generic-service,srv-pnp
            ; Name of service template to use
65  host_name                       localhost
66  service_description             Current bandwidth
67  check_command                   check_bandwidth
68  }
69
70  # Define a service check to check the currently logged in
      BBB User
71
72  define service{
73  use                             generic-service,srv-pnp
            ; Name of service template to use
74  host_name                       localhost
75  service_description             aktuelle BBB Users
76  check_command                   check_bbb_users
77  }
```

Template zur Ausgabe besserer Grafiken bzgl. des check_bandwidth Scripts kopieren unter:

- /etc/pnp4nagios/templates/check_bandwidth.php

```php
<?php
$ds_name[1] = "Traffic Mbps";
$opt[1] = " --vertical-label \"Mbps\" -b 1000 --title \"
    Interface Traffic for $hostname / $servicedesc\" ";
$def[1] = "DEF:var1=$RRDFILE[2]:$DS[6]:AVERAGE " ;
$def[1] .= "DEF:var2=$RRDFILE[1]:$DS[5]:AVERAGE " ;
$def[1] .= "AREA:var1#0000ff:\"out  \" " ;
$def[1] .= "GPRINT:var1:LAST:\"%7.2lf %Sb/s last\" " ;
$def[1] .= "GPRINT:var1:AVERAGE:\"%7.2lf %Sb/s avg\" " ;
$def[1] .= "GPRINT:var1:MAX:\"%7.2lf %Sb/s max\\n\" " ;
$def[1] .= "AREA:var2#00ff00:\"in \" " ;
$def[1] .= "GPRINT:var2:LAST:\"%7.2lf %Sb/s last\" " ;
$def[1] .= "GPRINT:var2:AVERAGE:\"%7.2lf %Sb/s avg\" " ;
$def[1] .= "GPRINT:var2:MAX:\"%7.2lf %Sb/s max\\n\" ";
if ($WARN[1] != "") {
$def[1] .= "HRULE:$WARN[6]#FFFF00:\"Warning ($WARN[6]bit/s
    )\" " ;
}
if ($CRIT[1] != "") {
$def[1] .= "HRULE:$CRIT[6]#FF0000:\"Critical ($CRIT[6]bit/
    s)\\n\" " ;
}
if ($WARN[1] != "") {
$def[1] .= "HRULE:$WARN[5]#FFFF00:\"Warning ($WARN[5]bit/s
    )\" " ;
}
if ($CRIT[1] != "") {
$def[1] .= "HRULE:$CRIT[5]#FF0000:\"Critical ($CRIT[5]bit/
    s)\\n\" " ;
}
?>
```