BEXIS 2.11.3
Installation Manual

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1 BEXIS 2 Package
- First download the application package from: http://bexis2.uni-jena.de/releases/2-11-3/
- Unzip BEXIS2113_full.zip.
  Please note that changing the name and place of that folder is not possible after installing.
  Usage of contained files and folders is described in section 4.

2 Additional Software / Prerequisites
The following software is needed to run the BEXIS 2 web application. If they are installed on your computer already please jump to section 3. If not, please download BEXIS2113_Prerequisites.zip from: http://bexis2.uni-jena.de/releases/2-11-3/ and unzip the file.

2.1 .NET Framework 4.5.2
- Open folder Prerequisites\NET 4.5.2 and start “NDP452-KB2901907-x86-x64-AllOS-ENU.exe” as admin
- Or download it here: Download .net Framework 4.5.2
- follow the steps in the installation window

2.2 Database System
BEXIS 2 needs a database management system to be available on your server. You are free to choose between PostgreSQL and IBM DB2 Express-C. If not available already please follow one of the installation instructions below.

2.2.1. PostgreSQL
From the following link http://www.enterprisedb.com/downloads/postgres-postgresql-downloads select either the 32bit or 64bit version of PostgreSQL depending on your hardware and your installed operating system and install it. The Postgres version 9 is recommended.

The installation of PostgreSQL is easy. It is enough to run the Installer and follow the steps. During installation, when asked, please

- As user enter "postgres"
- As password enter “1”
- As port number enter “5432”.
Launch Stack Builder that is asked in the last step is not recommended.

When the installation is finished, run PgAdmin and add a connection to the server that you want to work on it.

2.2.2. DB2 Express-C

Depending on your hardware and your installed OS select either the 32bit or 64bit Db2 Express-C from the following link: Download Db2 Express-C

Log in with the IBM user account. If you have no IBM user account, you need to create one.

Install Db2 Express-C by execute the downloaded installer file (*.exe).
Choose the installation type – “typical” is appropriate in most cases

Select Installation or response file or both

Select the installation folder (use the default path)
Use default

Define the db2admin password

Please make sure you recall the password later on!
After the installation you should see this screen

Install IBM Data Studio

Select “Download IBM Data Studio”

- Select the first one: Data Studio client and 3rd-party product extensions* Red Hat Linux***, SUSE Linux**, Windows™
OR

- Start the installer shipped with the Prerequisites.zip file.
  - Open folder "Prerequisites\IBM Data Studio",
  - Start IBMIM_win32.exe as admin
- Password from the IBM Account is required
- The IBM Installation Manager
- Select all packages and click next

- Accept the license agreements

- Specify directories for (default is ok)
  - Shared Resources
  - Installation Manager
- Specify the directory for the IBM Data Studio (default is ok)
- Select a language
- Choose configuration of the help system       (Access help from the Web)
Start to install

After the installation of DB2 and IBM Data Studio you need to check if the database groups (DB2ADMNS and DB2USERS) are registered:

- Control Panel/Administrative Tools/Computer Management / Local Users and Groups

![Image of Computer Management window showing groups]

**Db2 Groups**

You need two groups “DB2ADMNS” and “DB2Users”. If you don’t see them, you need to create them.

- Right click on groups and select new group
- Name the group
- Select create

![Image of Create new group window]
3 Setup Internet Information Service (IIS)

IIS is needed to host a website on the server. If your IIS is already activated and .NET framework is registered move on to section 4. If you don’t know if your IIS is activated or if .NET is registered, please follow the steps below.

3.1 Active IIS7

- Open Control Panel > Programs and Features,
- On the left side click the “Turn Windows features on/off” link.
- First select “Internet Information Service”(IIS) and open this node
- Open “Web Management Tools” and select/tick:
  - IIS Management Console
  - IIS Management Scripts and Tools
  - IIS Management Service
- Below IIS (Internet Information services) open “World Wide Web Services” > “Application Development Features” and select/tick all versions of:
  - .Net Extensibility
  - Asp
  - Asp .NET
- Below IIS open “World Wide Web Services” / “Common HTTP Features” and select/tick:
  - Static Content
- Click “OK” Button

3.2 Register .Net Framework 4.0 in IIS

First find “Windows” folder in your computer. It is probably in “c:\” and marked as “%windir%” in following steps.

Register .Net Framework 4.0:

- Find one of the following paths in your computer direct in folders or through cmd as administrator
  - %windir%\Microsoft.NET\Framework64\v4.0.30319\ or
  - %windir%\Microsoft.NET\Framework\v4.0.30319\ or
- Run aspnet_regiis.exe by double clicking or type as command.
4 Deploy BEXIS 2 web application

4.1 Configure server components
Perhaps some of the following configuration settings are already in place. But please check them out.

4.1.1 Create application user
If you want to use DB2 Express-C, you need to have an application user.

- Open Control Panel > Administrative Tools > Computer Management
- Select Local Users and Groups
- Select Users and right click it
- Open “New User…”
  - Add a user called “standard”
  - Specify a password for your user
  - Click “Create”

- The user must be a member of the group DB2ADMNS:
  - Right click on standard user and open properties
  - Select the “Member Of” tab
  - Click “Add…”, Click “Advanced…”, Click “Find Now”
  - Select “DB2ADMNS” Group and click “OK”

4.1.2 Create Website
- Open IIS (Control Panel / Administrative Tools)
- Stop Default Website (Click it and choose “stop” on the right side)
- Create a new Website (right click on sites and choose Add Web Site)
- Enter your preferred Site name
- Select Application pool ASP .NET v4.0 (not Classic)
- Select physical path of your website. It is inside the unzipped BEXIS 2 Package.
- Confirm your selections by pressing the ok button
- Stop your website (Click it and choose “stop” on the right side)
4.1.3 Configure IIS
- Configure application pool:
  - Open IIS (Control Panel/Administrative Tools)
  - Select Application Pools and right click in “ASP.NET v4.0” and select “Set Application Pool Defaults…”
  - Change “General-Enable 32-Bit Applications” to “True”
  - Change “Process Model – Identity” to “NetworkService”

4.1.4 Create empty database
Depending on which database system is installed on your computer and you prefer to use, PostgreSQL or IBM DB2, you need to create an empty database before you are able to restore one of the two databases provided with the BESIS 2 installation package.

4.1.4.1 Create empty database on PostgreSQL
Open pgAdmin. Double click on the “PostgreSQL…”. A popup window will open where you need to enter the password for user ‘postgres’. Please enter the password you defined when you installed PostgreSQL.
Then in the Object browser section, Right click on “Databases” node and create a new database. Enter “BEXIS” as a database name.

4.1.4.1.1 Configure postgres
Bexis 2 works with a DateTime format “mdy”. So Postgres need to setup with the same format.

- Open postgres config file
- Search for datestyle

- Change it to “mdy”
4.1.4.2. Create empty database on DB2

If you already have a database from a previous release you can skip this step.

- Open IBM Data Studio as admin
- On first startup IBM Data Studio will ask for a workspace, use the selected one

- On the left side you find all databases
- Click the dropdown button “New” in the Administration Explorer panel
- Select “New Database”

- Now connect to your instance
- Default Values
  - Host Name: localhost
  - Port: 50000
  - Instance: DB2
- Choose Version 10.1
- Add db2admin with password and test connection
- Choose a database name (e.g. BEXIS) and select “Run”
- Enter your db2admin password again
- After successful creation you will see the new database under your Instance in the left side
4.2 Install BEXIS 2 package

To install BEXIS 2 successfully, you need first unzip the BEXIS 2 package. Depends on it is a new or patch installation, follow steps bellow.

4.2.1 Deploy Website (new installation)

- Create a new folder and call it “Data” (in the BEXIS 2 unzipped package is recommended)
- The IIS_IUSRS user needs full control permissions to the following folders:
  - Workspace folder
  - Data folder
- Open configuration file (web.config) from the folder of your website inside unzipped BEXIS 2 package with a text editor. You mentioned it in section 4.1.2 when you was selecting physical path of your website:
  - enter (or adapt) database name in section connection strings
  - set “CreateDatabase” to “true” in section appSettings

  **ATTENTION!! Define “true” value for “CreateDatabase” clears the database.**
  - update “DataPath” in section appSettings
  - update “SystemEmail” in section appSettings (some system activities will reported to this Email address)

4.2.2 Deploy Website (patch existing installation)

- Copy inside the “Website” folder from the BEXIS 2 unzipped package to the folder of Your_Websitename and overwrite existing files.
- If there are changes in the web.config, you will find in patch directory a web_update.config. From this file, the changes have to be taken.
- If there are changes in the Workspace, you will find a “Workspace” folder in the directory. The contents of the folder must be copied into the current Workspace folder.
4.2.3 SMTP server configuration

SMTP server configuration is needed from the BEXIS2.11. You need to configure an SMTP server for the “SystemEmail”, which you defined in the web.config.

To find and set up SMTP parameters, open Credentials.config from Workspace > General > Configurations.

4.2.4 SSL Setup

Nowadays, the demand of security in the internet is increasing tremendously. An important step to achieve that requirement is using SSL (Secure Sockets Layer). With SSL it is possible to establish an encrypted connection between server (e.g. web server that is hosting the website) and client (typically a browser). That connection allows sensitive information (e.g. login credentials) to be transmitted securely through the web. Otherwise, that data would be sent as plain text between browsers and web servers – leaving you vulnerable to eavesdropping. If an attacker is able to intercept all data being sent between a browser and a web server they can see and use that information.

You are free to enable or even enforce SSL for your website inside IIS (Internet Information Service). Just use the following steps:

- Open IIS
- Select proper website (left panel)
- Select “Bindings...” (right panel)

- Select „Add...“
4.2.5 Start Website

- Open the IIS and select your Website
- Start your website (Click it and choose “Start” on the right side)
- Open Browser and enter localhost
- Open configuration file C:\inetpub\wwwroot\Your_Websitename\Web.config with a text editor
  - Set “CreateDatabase” to “false” in section appSettings

- Select “https” as Type
- Check Port! (by default this is “443”, but maybe you have to change it)
- Select SSL certificate
- Confirm settings by clicking “OK”

- Check SSL settings in “Browse Web Site” by clicking on “Browse *:443 (https)” (right panel)
- Web Browser should bring up the website in https (if everything is set up in the right way)

- It’s possible to run the website in https ONLY!
- Select proper website (left panel)
- Select “SSL settings”
- Tick “Require SSL”
- Click “Apply” (right panel)
Note: From the version BEXIS211 the application doesn’t need a default “Administrator” user. “Manage Features” is accessible via Gear button on the right side in menu bar. First user is able to set permissions. If you need an administrator user or a group administrators, you can create a new user or group and get it all permissions.

5 Errors

5.1 ERROR [08004][IBM] SQL30061
- Check if database exist. If not create this database
- If you run more than one instances of db2, you need to add another port number to the server name in the connection string
  o Localhost:50001

5.2 ERROR [08001][IBM] SQL30081
- Please check if the Database Instance is running.
- If not, start the instance

5.3 ERROR HTTP-ERROR 403.14
- .Net is not registered for IIS 7
- Open the BEXIS 2.11.3 folder and start aspnet_regiis.exe as admin

5.4 ERROR HTTP-ERROR 404.2
- change apppool in IIS to integrated (asp.net 4)

5.5 ERROR SQL1159
- Initialization error with DB2 .NET Data Provider, reason code 10...
  for user 'IIS APPPOOL\ASP.NET v4.0'
- Has something to do with App pool identity. Set the app pool identity as "Network service", this group has already read access to C:\Program Files\IBM\SQLLIB\BIN
- Open IIS
  Select Application Pools and right click in “ASP.NET v4.0” and select “Set Application Pool Defaults…”
  - Process Model – Identity change to “NetworkService”

6 Setting up multiple tenants in a single BEXIS 2 instance

In BEXIS 2 system administrators are able to set up individual tenants with project specific characteristics on a single instance of BEXIS 2 (one application on IIS, different appearances on different domains). For example, a system administrator may want to have three different appearances for three different projects, each with its own name, logo, privacy policy, contact information and imprint.

Two locations in the application folder need to be edited to specify a tenant:

- the Tenants.Catalog.xml
- tenants Folder in the Workspace.
6.1 Tenants.Catalog.xml

In the Tenants.Catalog.xml file each tenant must have an entry to be recognized in the system. Tenant.Catalog.xml has the following pattern:

```xml
<?xml version="1.0" encoding="utf-8" ?>
<Tenants>
    <Tenant id="bexis" default="true" status="active"/>
    <Tenant id="idiv" default="false" status="active"/>
</Tenants>
```

Each tenant should have the following elements:

- **Id**: this is the internal name of the tenant used in the system. A folder with the same name should be available in Workspace > Tenants.

- **Default**: one tenant must be specified as the default (default="true"). In case other tenants are not fully specified or fail, information from the default tenant are used as a fallback.

- **Status**: specify status="active" to make this tenant available in the system.

6.2 Manage Tenants Folder

Each tenant should have a specific folder in Workspace > Tenants. The name of this folder should match the id-attribute in the Tenant.Catalog.xml (e.g. bexis).

A Tenant folder includes:

- A folder called “contents” includes html views (e.g. imprint)
- A folder called “images” includes images like Logos
- A folder called “themes” includes themes
- The manifest.xml

The manifest.xml includes all specification that a tenant needs. Following is the manifest of bexis tenant.

```xml
<?xml version="1.0" encoding="utf-8" ?>
<Tenant id="bexis" useFallback="false">
    <ShortName>BEXIS2.10</ShortName>
    <Title>Research Data Management System</Title>
    <Description>BExIS is a general purpose research data management system...
    </Description>
    <Logo>Bildmarke_BEXIS_cmyk.svg</Logo>
    <FavIcon>favicon.ico</FavIcon>
    <Theme>Default</Theme>
    <Layout>_Layout</Layout>
    <LandingPage>/</LandingPage> <!-- a relative path to an action inside the app-->
The definition of the most of elements are understandable by their names. However, there is more descriptions:

Logos could be appears in three different places. The may have different sizes and should be placed in the images folder.

**Logo:** This is the logo, which appears in the menu bar.

**Favicon:** This is the little logo icon in the browser tab.

**Biglogo:** This is the big logo on the first page, before loge in.

A list of file formats, which are used only for unstructured datasets are defined by **AllowedFileExtensions** element. A file format should follow the same pattern like “.csv”. Comma is needed between file formats.