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Blacknest Data System (BDS) Web Interface
User Manual – 2.1.7

Project	Blacknest
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Author	Dr Terry Barnaby

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1. Introduction

This document provides an overview of the Blacknest Data System (BDS) WEB interface.

2. Overview

The BdsWeb system provides WEB access to the BDS system. It consists of a PHP based web environment that accesses a BdsServer process via its BDS API across a network interface. The BdsWeb system can be installed on any suitable computer with the main BdsSystem running on a separate system if wanted.

It uses a MySql database of its own to keep information on the WEB environment including the WEB systems users.

3. Install and Setup

The BDS WEB system is available in the bds-web package. Installing this RPM will also install all of its requirements automatically as long as the appropriate repositories are configured. See the latest sections for platform specific installation information.

To allow the web systems icons to work comment out the "Alias /icons" directive in the web servers autoindex.conf file.

Start the systems httpd server.

- On Fedora: "systemctl enable httpd; systemctl start httpd"

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- On RHEL7: "systemctl enable httpd24-httpd; systemctl start httpd24-httpd"

The BDS WEB system uses a set of HTML files for general user information and help. These are likely to be updated by the system administrators during the operation of the system. The bds-web package provides a set of base files to start of with. In order to set up a bdsWeb system for the first time these base files needs to be copied into the bdsWeb's working files directory. To do this issue the following commands:

"mkdir -p /usr/bds/www/files; cp -a /usr/bds/www/files-base/* /usr/bds/www/files"

Once installed it will need a suitable MySQL database created. To create one on the local host do this:

1. cd /usr/bds/bdsWebSql
2. ./createDatabase

This will create the database, but the various tables that the web system needs now needs to be created. Todo do this:

1. Access the local host's Web server via a browser: "http://localhost". This will create the main tables.
2. Login to the website as the user "root" with the password "beam00". Select the "Admin/Management" menu item.
3. Click on the "Database create" link in the left hand menu. This will create the necessary database tables.
4. Modify the "root" users password using the "User Preferences" link in the left hand menu.

The default install sets the webserver to point to the /usr/bds/www location for the website files. This is done using the bdsWeb.conf HTTPD configuration file normally located in /etc/httpd/conf.d.

The PHP system is configured to use the bdslibphp.so extension file by the bdslibphp.ini PHP configuration file normally located in /etc/php.d.

4. Configuration

The BDS's WEB system is based on the BEAM WebSys system. This is a PHP web application environment. It is located in /usr/bds/www. There are a few configuration files for this:

- config.php: Most of the systems configuration is in here.
- .htaccess: Special file caching setup etc
- files/menu.conf: The web pages menu.

The core items that might want setting are in the config.php file. These are:

- bdsHost: The BDS servers hostname
- bdsUser: The BDS servers login user name
- bdsPassword: The BDS servers password.
- database*:   The local WEB servers database parameters

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5. Theme

The BDS web system has its theme setup with the files in the directory: /usr/bds/www/themes/bds. The core files in here include:

- page.template: This defines the page layout for the website.
- main.css: This is the main CSS style sheet for the website.

6. Modifying the website

The BdsWeb system uses the Beam Websys system as a content management and web application environment. The base location for its files is /usr/bds/web. Within this directory there are the following files directories:

.htaccess	Overrides HTTP settings for file caching etc
config.php	Overall BdsWeb system configuration
index.php	Overall website program entry
files/	This directory contains all of the HTML and other file content of the WEB system. The user will edit these files as needed either directly or via the web system itself.
files/menu.conf	This config file describes the main menu of the system
lib/	The main PHP code for the Beam Websys system
modules/	PHP modules for Website features/applications
themes/	Website theme information

As well as the content within the files directory the MySql database contains website configuration and content as well. So for a backup the MySql database and the "files" directory need to be saved.

Most of the user modifications to the website will be performed in the "files" directory and the MySql database. The files in the "files" directory can be edited, deleted and added to using conventional HTML file editing programs. They can also be modified by using the editing features that are part of the BdsWeb system by a WEB user with suitable authorisation.

7. BdsWeb user accounts

The BdsWeb system implements a user account system of its own with user information stored its its MySql database. The user informations can be accessed via the "/user" module of the bdsWeb system accessible from the "Admin" top menu of the system by authorised users. By default the user "root" can do this.

Each user can be assigned to different roles. The main roles include:

admin	Can generally admin the system and edit and add to files in the WEB system
adminContent	Can edit and add to files in the WEB system

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adminDelete	Can delete files in the web system.
adminUsers	Can add and modify user information
adminBds	Can modify BDS module configuration

8. RedHat7 PHP7 and HTTPD

The bdsWeb system is based on PHP7 and thus requires this to be installed on the system being used to run the bdsWeb system. For Fedora25 and later PHP7 is the default. For RedHat7 you will need to install an alternative PHP and HTTP server to the systems default PHP6.

To install PHP7 in Redhat7:

1. Add the Red Hat Software Collections repositories to the RedHat subscription (Either from Redhat or Centos).
2. yum install rh-php72 rh-php72-php httpd24 httpd24-mod_ssl rh-php72-php-gd
3. For development: "yum install rh-php72-php-devel"
4. systemctl disable httpd; systemctl stop httpd
5. systemctl enable httpd24-httpd; systemctl start httpd24-httpd

This has the HTTPD configuration in: /opt/rh/httpd24/root/etc/httpd

Default webfiles are in: /opt/rh/httpd24/root/var/www/html

Logs are in: /var/log/httpd24

9. Maintenance

During operation the system will generate temporary files in /usr/bds/www/files/tmp. The systems installs a cron job /etc/cron.d/bdsWeb.cron that cleans files older than a day old from this directory. This is run once per day.