

DEPLOYMENT INSTRUCTIONS

GVC.SITEMAKER

VERSION 4.1.1

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GVC.SiteMaker Deployment Instructions

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Introduction

This section contains background information and instructions to prepare for the main installation process. If you have gone through ReadMeFirst.html and done everything indicated there, then you can skip down to Main Installation Procedure, although it is probably a good idea to review the Pre-Installation Tasks first, to be sure that they have been completed.

Note: All installation steps should be performed as root

QuickStart

The essential steps needed to get a new (Bootstrap) installation up and running are highlighted in yellow.

Here is a summary of what needs to be done:

- Run install script to unpack archives
- Configure Apache
- Install FrontBase plug-in for WebObjects (if using FrontBase as your database)
- Configure classpath files
- Configure application settings (plist files)
- Bootstrap database
- Test applications from command line
- Configure Java Monitor to run the applications automatically

Assumptions

This document assumes that the person doing the installation has at least a basic knowledge of UNIX administration, Apache administration, FrontBase administration, and WebObjects deployment. The installation is assumed to be done on a UNIX variant (Solaris, OS X, Linux etc.). GVC.SiteMaker can be installed on Windows 2000 / IIS, but some adjustments will need to be made.

Requirements

The following are required for the installation:

- Java 2 Runtime Environment v 1.4.2
- Functioning operating system installation
- Functioning Apache 1 installation of at least version 1.3.26 (earlier versions will work but this version is recommended due to resolution of some security issues)
- Functioning installations of mod_rewrite and mod_ssl for Apache.
- Installed SSL certificate for domain to be used by GVC.SiteMaker
- Functioning WebObjects 5.2.3 installation
- Functioning installation of a supported database (and at least version 3.6 if using FrontBase)
- JDBC drivers for database installed
- WebObjects JDBC PlugIn installed if required (e.g. with FrontBase)

Types of Installations

There are two types of installations:

- Bootstrap** this is only done for new GVC.SiteMaker installations. It is a regular install with some one time setup tasks such as the initial population of the database.
- Reinstall** a reinstall completely replaces any existing application files, including the configuration files, and the files in the web server's document root that are used by the application. It does not affect the contents of the database, uploaded files, nor files added to the web server's document root after the initial installation (e.g. images uploaded for site styles).

Note: If the WOInstall script is used to do the installation with the backup option, then all the configuration files, classpath files, and launch scripts will be preserved.

Single versus Multiple Installations

It is possible to run multiple installations of GVC.SiteMaker on a single machine. It is also possible for multiple organizations to share a single GVC.SiteMaker installation (using GVC.SiteMaker virtual hosts) but description of that is out of the scope of this document. The installation instructions below cover both single and multiple installations.

Having multiple installations on a single machine allows several organizations to share a single machine while keeping their GVC.SiteMaker installations fully separate. Note that this is different from running multiple instances of the application in JavaMonitor, which is done for performance and fault tolerance reasons.

Some additional co-ordination and customization is required to support multiple installations on a single machine. Each installation must be assigned a different name for the GVC.SiteMaker applications (e.g. for Organization A: GVCSiteMaker-OrgA and GVCSMAdmin-OrgA and for Organization B: GVCSiteMaker-OrgB, GVCSMAdmin-OrgB etc.). These names can only use letters, numbers, and hyphens. The following changes need to be made to support use of these non-standard application names:

- The installation specific names must be used for the applications in JavaMonitor and must launch the application using the launch scripts in the <app_dir> for that installation.
- The names of the .rules files holding the rewrite rules need to be made unique for each installation and the Include statements in the virtual hosts needs to be updated to reflect these names.
- Apache rewrite rules need to be modified on a per installation (Virtual Host) basis to use the application names for that installation.
- The configuration items *ApplicationName* and *AdministrationName* must be defined to be the application name for that installation. For example,
`ApplicationName = "GVCSiteMaker-OrgA";`
`AdministrationName = "GVCSMAdmin-OrgA";`

Note: The requirement to have different application names for each installation is a restriction of JavaMonitor not GVC.SiteMaker. JavaMonitor uses the application name in the URL, and does not consider the domain name (as opposed to host name), when matching an application instance to a request. This also applies if the applications are on different machines but run from one JavaMonitor as the same problem of matching application names on the URL and processes listening to a port exists.

Pre-Installation Tasks

FrontBase Setup (for OS X, other operating systems are similar) for GVC.SiteMaker

This document is meant as a quick-start guide for setting up a FrontBase database for use with GVC.SiteMaker, making the following assumptions:

- The operating system is MacOS X Server 10.3 or higher
- FrontBase is being installed for the first time
- The user is logged in as root on the OS X server

Download, Install and Register FrontBase

Beginning in April, 2006, FrontBase is available without charge in a full featured, wholly unlimited form. It is not Open Source, but it is free.

- Download the current version of FrontBase from:
<<http://www.frontbase.com>>
- Request a free FrontBase license:
<<http://www.frontbase.com/cgi-bin/WebObjects/FrontBaseLicense.woa/wa/purchase>>
- Install the FrontBase .dmg package

- Run FrontBaseManager.app, go to Tools -> License Management and click on Edit License. Paste in the License number and Check number and click Set License. You now have a registered, fully functional FrontBase installation.

Install FrontBase Plug-in for WebObjects

Download the WebObjects 5 Plugin from www.frontbase.com and use the installer provided. This should result in the creation of this framework (directory):

```
/Library/Frameworks/FrontBasePlugIn.framework
```

Pre-installation Directory Set Up - Bootstrap Installation Only

A deployment user needs to be created with its own home directory to hold the installation configuration, uploaded files, the cgi-bin directory, document root etc., for example `/Users/sitemaker`. This directory is referred to below as `<base>`.

Unpacking Main Install Package - All Installation Types

`<installation name>GVCSiteMakerInstall.tar.gz` is the main installation package for a GVC.SiteMaker installation. Move this file into `<base>` and unpack it:

```
guntar -xzf <installation name>GVCSiteMakerInstall.tar.gz
```

Installation Files Directory `<install_dir>`

The installation files directory is created or updated when `<installation name>GVCSiteMakerInstall.tar.gz` is unpacked. The `<install_dir>` path created is:

```
<base>/Install
```

Below is a map of the directories and files that will be created:

<base>

- **ReadMeFirst.html**
- **Install** directory:
 - **Archive** directory:
 - **GVCSiteMakerFrameworks.tar.gz** - the Open Source GVC Frameworks and GVCSMCore
 - **GVCSiteMakerCustomFrameworks.tar.gz** - usually contains only GVCSMCustom framework for a specific installation
 - **GVCKerberos.tar.gz** - this framework is needed only when Kerberos authentication is in use
 - **GVCSiteMakerApplications.tar.gz** - the GVCSiteMaker, GVCSMAdmin, GVCSMQueuedTasks, and GVCSMUtility applications
 - **GVCSiteMakerDocumentRoot.tar.gz** - the core document root resources to be installed for the web server
 - **GVCSiteMakerCustomDocumentRoot.tar.gz** - document root resources unique to this installation to be installed for the web server
 - **GVCSiteMakerMisc.tar.gz** - contains functionality to set up the database, repair data and assist in data conversions between versions
 - **ConfigurationExamples** directory:
 - **GVCSiteMakerBootstrap.plist** - bootstrap configuration file (must be edited and copied into the GVCSMCustom framework)
 - **GVCSiteMakerCustom.plist** - application configuration file (must be edited and copied into the GVCSMCustom framework)
 - **GVCSiteMaker.rules** - rewrite rules used for Apache configuration (can be edited, must be copied into the Apache config directory)
 - **GVCSiteMakerServerDown.rules** - rewrite rules used during application maintenance (can be edited, must be copied into the Apache config directory)
 - **index_ip.address_443_domain.conf** - domain configuration (must be edited and copied into the Apache config directory)
 - **index_ip.address_80_domain.conf** - domain configuration (must be edited and copied into the Apache config directory)
 - **FrontBaseSchema.sql** - SQL script used to set up your database, if using FrontBase
 - **Documentation** directory:
 - **DeploymentInstructions.pdf** - this is the main reference document for installation
 - **InstallationConfigurationWorksheet.pdf** - use this to organize the configuration parameters needed for your initial setup
 - **ConfigurationGuide.pdf** - contains more details about configuration parameters than are given in the worksheet
 - **FrontBaseSetup-OSX.pdf** - complete instructions to prepare FrontBase for GVCSiteMaker on OS X
 - **InternalAndExternalUsers.pdf** - after completing a basic installation, use this information to customize the authentication environment
 - **SiteMakerVirtualHosts.pdf** - instructions for allowing a GVCSiteMaker site to use its own domain name
 - **CustomizationGuide.pdf** - mainly used by WebObjects developers who want to extend GVCSiteMaker
 - **Script** directory:
 - **CreateDirectories.sh** - used during pre-installation (see below)
 - **CreateUploadFolders.sh** - used during pre-installation (see below)
 - **WOInstall.sh** - used during main installation
 - **archive.list** - used for advanced installations
 - **backup.list** - used for advanced installations
 - **mkwodirs.sh** - used for advanced installations

Creation of Installation Directories - Bootstrap Installation Only

GVC.SiteMaker requires that several other directories be created. If you want to use the default locations under `<base>` or another directory, run this script:

```
<base>/Install/Script/CreateDirectories.sh <base> (or other directory)
```

GVC.SiteMaker requires these directories:

Application Directory <app_dir>

This where the applications that make up GVC.SiteMaker are installed. The recommended path is:

```
<base>/Applications
```

Framework Directory <fw_dir>

This where the core frameworks (libraries) that make up GVC.SiteMaker are installed. This also where the framework that holds the installation specific configuration files, code, and the WedgeTail license (for Kerberos authentication) is installed. This directory can not be shared between installations as it contains installation specific information. The recommended path is:

```
<base>/Frameworks
```

Uploaded Files Directory <upload_dir>

This is where files uploaded to a GVC.SiteMaker website are stored. This must not be below the document root as these files should not have public access (access may require user authentication). The recommended path is:

```
<base>/UploadedFiles
```

The user that woservices is run under must have write access on this directory and the ability to create new files and sub-directories. In order to avoid permissions problems, run the CreateUploadFolders script to pre-create these directories and set the appropriate permissions:

```
<base>/Install/Script/CreateUploadFolders.sh <upload_dir>
```

CGI Scripts Directory <cgi_dir>

This where the cgi-bin WebObjects adapter (if used) is installed. This directory can be shared between installations. The recommended path is:

```
<base>/cgi-bin
```

DocumentRoot Directory <doc_root>

This where the applications that make up GVC.SiteMaker are installed. This contains installation specific files and can not be shared between installations. The recommended path is:

```
<base>/DocumentRoot
```


Main Installation Procedure

Installation of Main Install Package - All Installation Types

If you are installing parts of GVC.SiteMaker in non-standard locations you will need to edit one or both of these files:

```
<base>/Install/Script/archive.list  
<base>/Install/Script/WOInstall.sh
```

If this is **new** installation, run the WOInstall script with this command:

```
<base>/Install/Script/WOInstall.sh <base>
```

If this is **re-installation**, run the WOInstall script with this command:

```
<base>/Install/Script/WOInstall.sh <base> backup
```

NOTE: Failure to include the backup parameter will result in loss of changes to configuration files!

FrontBase Configuration

This procedure makes the following assumptions:

- A user account named "sitemaker" has been created on the OS X server
- The GVC.SiteMaker package has been unpacked with the Install directory under /Users/sitemaker/

The example below illustrates commands executed in Terminal to create a FrontBase user named "sitemaker" with the password "MyPassword" and a database named "sitemaker-db", and to then set up the schema used by GVC.SiteMaker:

```
#!/Library/FrontBase/bin/sql92  
sql92> create database sitemaker-db on localhost;  
sql92> connect to sitemaker-db on localhost user _system;  
sql92> create user sitemaker;  
sql92> set password MyPassword user sitemaker;  
sql92> disconnect all;  
sql92> autostart;  
Autostart@localhost#11> add sitemaker-db;  
Autostart@localhost#12> save;  
Autostart@localhost#13> quit;  
sql92> connect to sitemaker-db on localhost user sitemaker password MyPassword;  
sql92> script /Users/sitemaker/Install/ConfigurationExamples/FrontBaseSchema.sql;  
.  
(sql output is displayed as schema is created)  
.  
sql92> disconnect all;  
sql92> quit
```

#

Apache Configuration

1. Find ServerSignature In the global configuration part of the Apache configuration and ensure it is set to Off as the On setting causes problems with WebObjects:
ServerSignature Off

2. You must use either the cgi-bin WebObjects adaptor, or the mod_WebObjects supplied with WebObjects. Use of mod_WebObjects is recommended for performance reasons. If you are using mod_WebObjects, ensure that it is loaded or added **before** mod_rewrite:

```
LoadModule WebObjects_module  
/System/Library/WebObjects/Adaptors/Apache/mod_WebObjects.so
```

```
LoadModule rewrite_module      libexec/httpd/mod_rewrite.so
...
AddModule mod_WebObjects.c
AddModule mod_rewrite.c
```

Note: this shows only an excerpt of the configuration, not all loaded modules!

3. Add these includes to the end of the the global configuration if they are not already present:

```
# Including WebObjects Configs
Include /System/Library/WebObjects/Adaptors/Apache/apache.conf
Include "/etc/httpd/sites/*.conf"
```

4. Ensure that if mod_expires is getting loaded, that is it set to off by default. The virtual host configuration will re-enable it for the files in each Document Root.

```
ExpiresActive Off
```

5. Edit /System/Library/WebObjects/Adaptors/Apache/apache.conf to have apps instead of cgi-bin:

```
# You can change the 'cgi-bin' part of WebObjectsAlias to whatever you
# prefer (such as Apps), but the 'WebObjects' part is required.
WebObjectsAlias /apps/WebObjects
```

This is actually optional, if you prefer cgi-bin, but you will need to edit the rewrite rules and the GVCSiteMakerCUsom.plist file in the GVCSMCustom.framework (AdaptorPath) if you don't do this step.

6. Copy the index*.conf and *.rules files from <base>/Install/ConfigurationExamples/ to /etc/httpd/sites/. The index*.conf files will need to be renamed, for example from index_ip.address_80_domain.conf to 0001_123.45.67.89:80_www.mydomain.com.conf. The contents of these conf files also need to be customized for domain name, IP address, user name the installation is under, etc. The GVCSiteMaker.rules file may also need to be customized, it contains instructions for this.

Post Install Checks - All Installation Types

1. **OS X Caution:** on OS X, check in the prototypes for files ending in .pli, check:

```
<fw_dir>/GVCSMEOPrototypes.framework/Resources/GVCSMEOPrototypes.eomodeld
```

If you find such a file rename it to end in .plist. This is a defect in the untar code that only affects these files.

2. **OS X Caution:** on OS X, make sure to disable the webperfcache. Use the Server Admin tool or use the webperfcachectl command line tool. The latter will only disable the cache until the next restart.

About GVC.SiteMaker Classpath Files

There are three, platform specific, classpath files for each application. These files are different (in location and contents) for each application. These control which jar files and other resources are used for a particular installation. Using the GVCSiteMaker application as an example, the location of the classpath files are:

OS X: <app_dir>/GVCSiteMaker.woa/Contents/MacOS/MacOSClassPath.txt

UNIX: <app_dir>/GVCSiteMaker.woa/Contents/UNIX/UNIXClassPath.txt

Windows: <app_dir>\GVCSiteMaker.woa\Contents\Windows\CLSSPATH.TXT

There should be no need to alter these files if you are following these installation instructions.

Configure Application and Server - Bootstrap Installation Only

1. Use InstallationConfigurationWorksheet.pdf to compile the minimum set of parameters that you need to change, then make corresponding edits to
<base>/Install/ConfigurationExamples/GVCSiteMakerBootstrap.plist and
<base>/Install/ConfigurationExamples/GVCSiteMakerCustom.plist, and then copy these files into
<base>/Frameworks/GVCSMCustom.framework/Resources/
2. If desired, see ConfigurationGuide.pdf to determine if there are additional parameters that you would like to change.

Check Application Configuration - Re-installation Only

1. If new configuration settings have been introduced in this version and the default value will not be used, then edit
 <config_dir>/GVCSMCustom.framework/Resources/GVCSiteMakerCustom.plist
to have any missing items.

Bootstrap Database - Bootstrap Installation Only

1. Bootstrap the database by starting one of the applications from the command line:
cd <app_dir>/GVCSMAdmin.woa
./GVCSMAdmin

The application will run briefly, bootstrap the database, then quit. It produces a large amount of output while doing this! The end of the output from the program should look like this (important lines in bold):

```
Aug 20 14:52:37 GVCSMAdmin[916] - SMApplication.bootstrapDatabase - DB initialization
complete, shutting down...
Aug 20 14:52:37 GVCSMAdmin[916] - SMApplication.<init> -
*** SHUTDOWN *** Bootstrap completed. Application now shutting down.
[2002-08-20 14:52:37 PDT] <main> The URL for webserver connect is:
http://www.GVCSiteMaker.com/cgi-bin/WebObjects/GVCSMAdmin.woa
[2002-08-20 14:52:37 PDT] <main> Waiting for requests...
```

Even though it says 'Waiting for requests..' it will stop executing. This is normal. If the output is not extensive and does not say, 'DB initialization complete, shutting down..' then check it for error messages and make the corrections indicated. For example:

```
Aug 20 14:47:54 GVCSMAdmin[636] - SMApplication.<init> - Application Configuration
Initialized
Aug 20 14:47:54 GVCSMAdmin[636] - SMApplication.<init> - Checking database to see if
bootstrapping is needed...
Aug 20 14:47:55 GVCSMAdmin[636] - SMApplication.bootstrapDatabase - Database is empty,
proceeding with DB initialization...
Aug 20 14:47:55 GVCSMAdmin[636] - SMApplication.bootstrapDatabase - Loading bootstrap
information.
Aug 20 14:47:55 GVCSMAdmin[636] - SMPProperties.addPropertiesFromFile - Loading properties
from file: GVCSiteMakerBootstrap.plist
Aug 20 14:47:55 GVCSMAdmin[636] - SMPProperties.addPropertiesFromFile - Done loading
properties from file: GVCSiteMakerBootstrap.plist
Aug 20 14:47:55 GVCSMAdmin[636] - SMApplication.bootstrapDatabase - Can not load style
'StyleTemplates/SimpleBlueNarrow.html' for style named SimpleBlueNarrow
Aug 20 14:47:55 GVCSMAdmin[636] - SMApplication.<init> -
*** SHUTDOWN *** Bootstrap completed. Application now shutting down.
[2002-08-20 14:52:37 PDT] <main> The URL for webserver connect is:
http://www.GVCSiteMaker.com/cgi-bin/WebObjects/GVCSMAdmin.woa
[2002-08-20 14:52:37 PDT] <main> Waiting for requests...
```

Note that it incorrectly says that the bootstrap has completed (it did not) and that although it says 'Waiting for requests...' it will stop executing. The important thing is that it does not say, 'DB initialization complete, shutting down...'

Test Applications from Command Line - All Installation Types

Start each of the applications for each installation from the command line to check that the configuration is correct and that the application starts. e.g.

```
./GVCSMAdmin
```

The application should start and begin to wait to serve requests. The end of the output from the program should look like this:

```
Aug 20 14:59:08 GVCSMAdmin[505] - SMAApplication.<init> - Application Configuration
Initialized
Aug 20 14:59:08 GVCSMAdmin[505] - SMAApplication.<init> - Checking database to see if
bootstrapping is needed...
Aug 20 14:59:09 GVCSMAdmin[505] - SMAApplication.bootstrapDatabase - Database already
initialized
Aug 20 14:59:09 GVCSMAdmin[505] - SMAApplication.<init> - Installing EntityTranslator...
Aug 20 14:59:09 GVCSMAdmin[505] - SMAApplication.<init> - EntityTranslator installed,
performing database diagnostics...
Aug 20 14:59:09 GVCSMAdmin[505] - SMAApplication.<init> - Welcome to GVCSMAdmin!
[2002-08-20 14:59:09 PDT] <main> The URL for webserver connect is:
http://www.GVCSiteMaker.com/cgi-bin/WebObjects/GVCSMAdmin.woa
[2002-08-20 14:59:09 PDT] <main> Waiting for requests...
```

It should continue executing as it really is 'Waiting for requests...'. Press Ctrl-C to stop it.

Java Monitor Configuration

Set up GVCSMAdmin and GVCSiteMaker applications in JavaMonitor. Do not setup GVCSMUtility as this is to be used only in special circumstances and should not be left running. For each application (GVCSMAdmin and GVCSiteMaker) for each installation, follow these steps:

1. Add the application using the installation specific application name (see Single versus Multiple Installations above), e.g. GVCSiteMaker-OrgA.
2. Set the path to the application's launch script for the installation.
3. Set the Output Path as it is important to have the log file for application support purposes.
4. Add the host name from JavaMonitor and JVM memory settings to Additional Arguments, e.g.

```
-WOHost myserver -Xms64m -Xmx128m
```

The actual numbers for the JVM memory settings should be indicated in the Installation Configuration Worksheet and depends largely on the size of uploaded files that need to be handled.

5. Add a Statistics Page Password under Application Settings so the the WOStats page can be accessed.
6. For GVCSMAdmin only, under Adaptor Settings, set Receive Timeout and Connect Timeout to 120. This is a workaround for problems encountered when copying large sites and send e-mail to a large number of users.