Site aware exception handling in Magnolia CMS

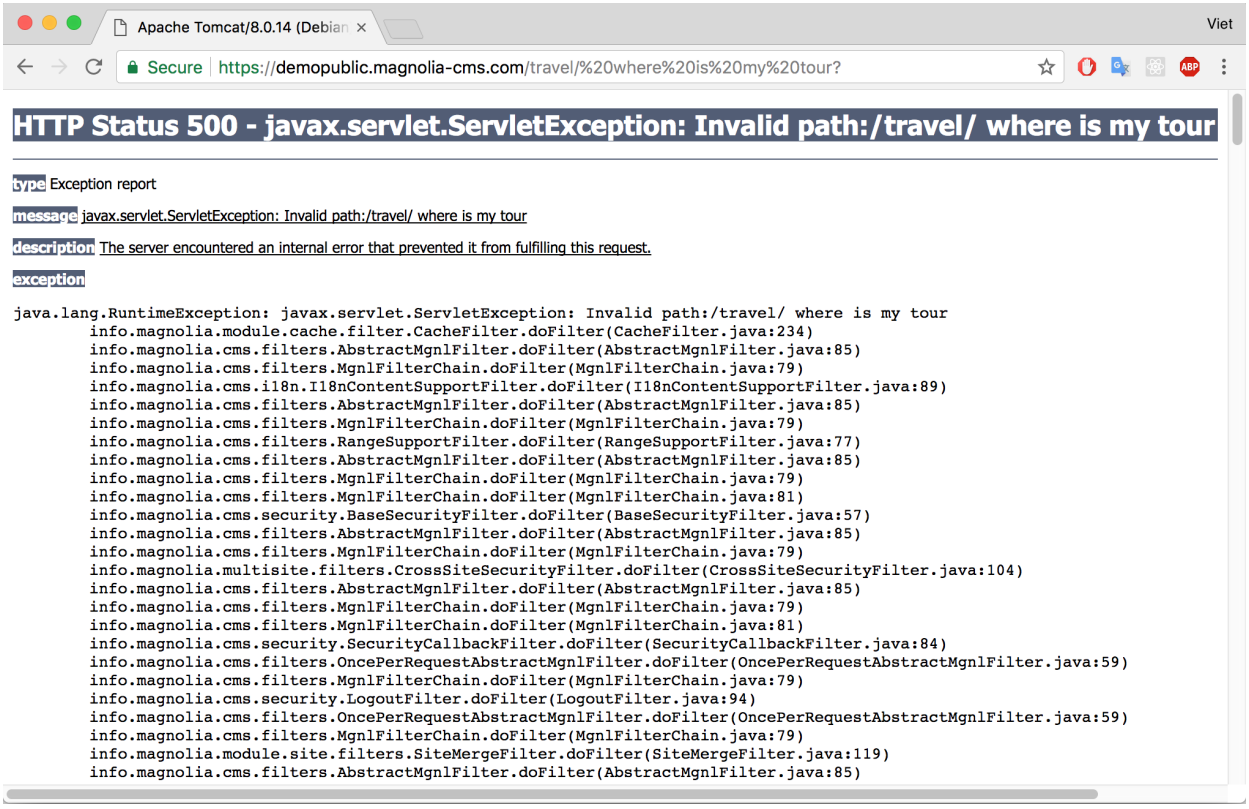
This page has been updated to comply with Magnolia 5.7.+ as of February 2019, previous version was written for Magnolia older versions.

Introduction

There have been more and more multi-site users of Magnolia CMS asking us for a customizable, multi-language enabled, site aware and out of the box solution from Magnolia CMS to support web container servlet exception handling. As a multi-site user of Magnolia CMS, you can have multiple sites configured and mapped by multiple URLs / Domains / Hosts. Whenever an issue happen such as Resource not found (HTTP 404 status code) or server error (500 internal server error), web container will redirect us to its default error report page. If we don't have corresponding configuration, we cannot have a nice error report to our valued customers.

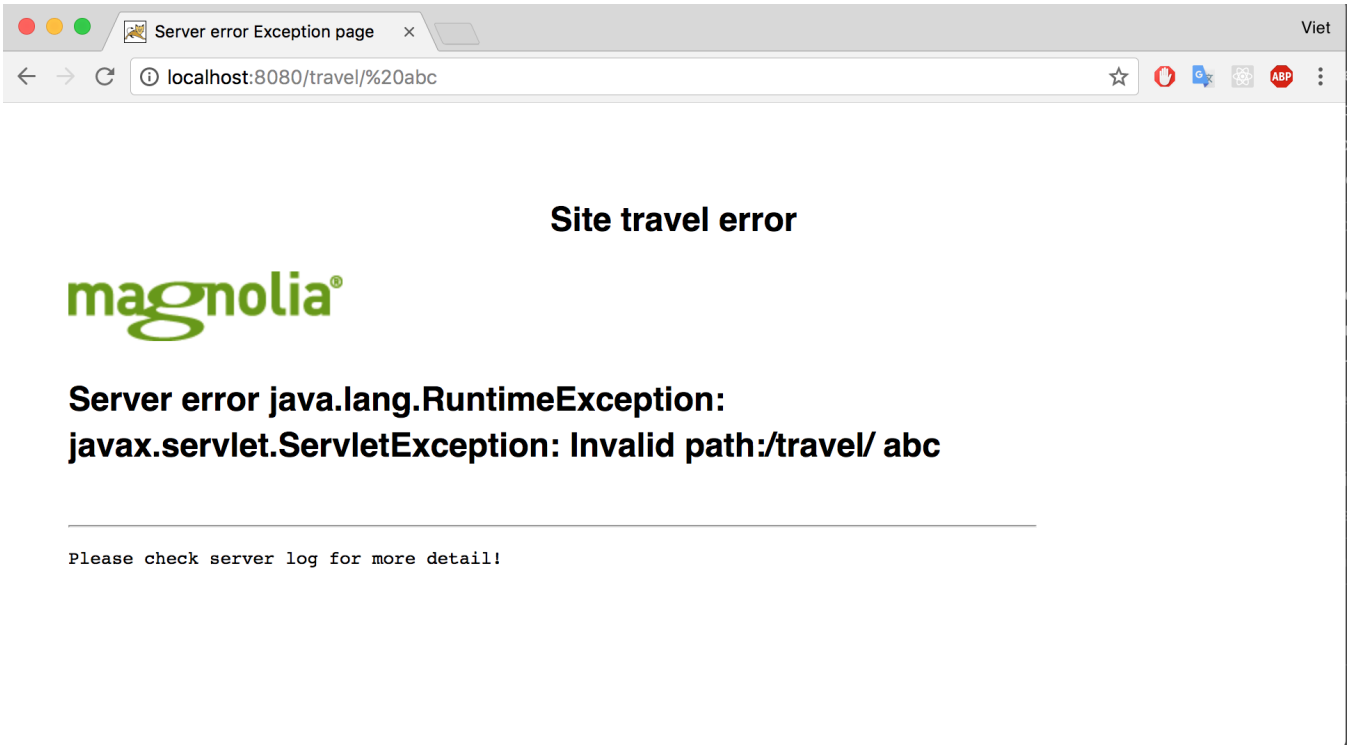
A typical example is when end user calling this link https://demopublic.magnolia-cms.com/travel/ where is my tour?

This is what we get from a non-configured site



This guideline provide you with how to have it and how it has been made so that you can easily use it and customize it based on your practical situation.

After successfully installed the module, when accessing a nonexistence page such as http://localhost:8080/travel/ abc, you will have this:



Set up steps

Setting Servlet Container exception handling page

First of all in order to make our web-container such as Apache Tomcat aware of our customization, we would have to put snipped of code this to our "*Tomcat*/webapps/*YOUR-MAGNOLIA-WEBAPP*/WEB-INF/web.xml' file just above the closing of 'web-app' tag (above this "</web-app>").

```
<error-page>
  <error-code>404</error-code>
  <location>/customException</location>
</error-page>
<error-page>
  <error-code>500</error-code>
  <location>/customException</location>
</error-page>
<error-page>
  <exception-type>java.lang.Throwable</exception-type>
  <location>/customException</location>
</error-page>
```

Please note that we are using a specific location "/customException" for all every "java.lang.Throwable' ones, you could also change it in case of conflict with any of your existing one. Later on we will show where the mapping is. So if you change it here, you would also have to change the corresponding one for direct mapping of exception handling page.

Deploy Java implementation of site aware exception handling

If you are developing a custom Magnolia Maven module, then just make below class available in your classpath.

Sample Java code

Class: *info.magnolia.virtualuri.mapping.SiteAwareExceptionMapping*

SiteAwareExceptionMapping

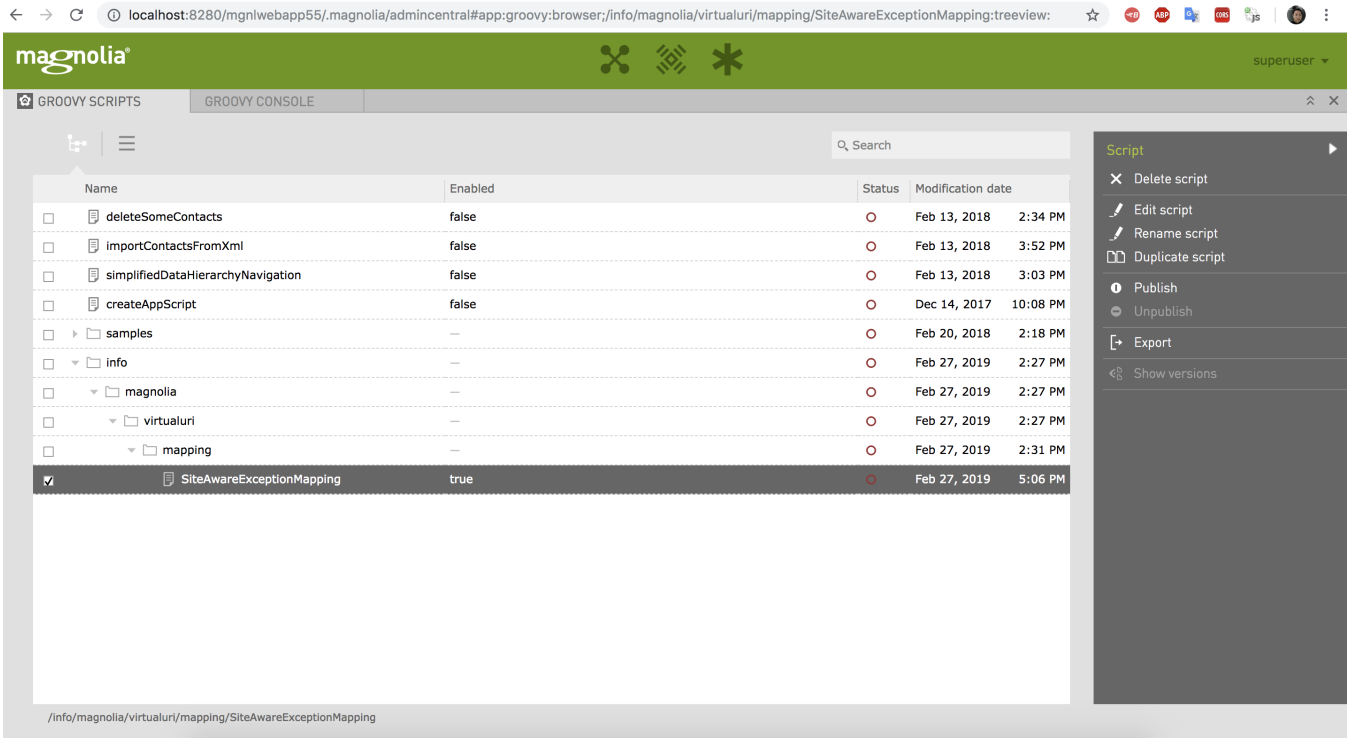
```
package info.magnolia.virtualuri.mapping;

import java.net.URI;
import java.util.Optional;

import javax.servlet.http.HttpServletRequest;

import info.magnolia.context.MgnlContext;
import info.magnolia.module.site.SiteManager;
import info.magnolia.objectfactory.Components;

public class SiteAwareExceptionMapping extends DefaultVirtualUriMapping {

    public static final String SERVLET_ERROR_REQUEST_URI_ATTRIBUTE_NAME = "javax.servlet.error.request_uri";

    private String siteName;

    @Override
    public Optional<Result> mapUri(URI uri) {

        HttpServletRequest request = MgnlContext.getWebContext().getRequest();
        Object errorRequestObject = request.getAttribute(SERVLET_ERROR_REQUEST_URI_ATTRIBUTE_NAME);
        if (errorRequestObject == null) {
            return Optional.empty();
        }

        String errorRequest = errorRequestObject.toString();
        String[] requestParts = errorRequest.split("/");

        if (requestParts.length >= 3) {
            errorRequest = "/" + requestParts[2] + "/"; // remove some parts due to Magnolia specific
implementation
        }

        String requestedSite = Components.getComponent(SiteManager.class).getAssignedSite(request.
getServerName(), errorRequest).getName();

        if (!siteName.equals(requestedSite)) {
            return Optional.empty();
        }

        return super.mapUri(uri);
    }

    public String getSiteName() {
        return siteName;
    }

    public void setSiteName(String siteName) {
        this.siteName = siteName;
    }

}
```

This source code SiteAwareExceptionMapping.java is provided without any guarantee as a community creative & publicly available one. Please use it with cares.

Deployment for light-dev and on Magnolia Cloud

Customers of Magnolia light-dev and Magnolia Cloud could also deploy a Java class into Magnolia using Groovy Classes follow similar to our guideline here Model Class

1._Create corresponding folder structure and a SiteAwareExceptionMapping file using Magnolia Groovy App as below image:



2._Edit the empty file and put above Java source code inside.

3._Be aware of this issue (and workaround) when registering new classes: MGNLGROOVY-148 - Creating a new "groovy class" always fails with compliation error OPEN

(work around: click the "Is a script?" checkbox when editing the file, save. This allows the node to be created for the script. Edit the script and uncheck the box.)

→ Above steps make the class available in your class path without custom module or additional deployment efforts.

Configure mappings for your error locations

After previous step, you already configured Servlet container to render your exception in your specified page / servlet called "/customException".

> Please be careful that within your exception page, if you also having the same kind of exception, a cyclic reference will happen which might lead to a "stack overflow" error while rendering the exception of the exception page 😂

Please use either YAML configuration or JCR configuration, do not use both of them to prevent duplication.

YAML configuration

Under your light module, create folder name 'virtualUriMappings' and put your configured mappings inside such as:

travel-exception-mapping.yaml

sportstation-exception-mapping.yaml

fallback-exception-mapping.yaml

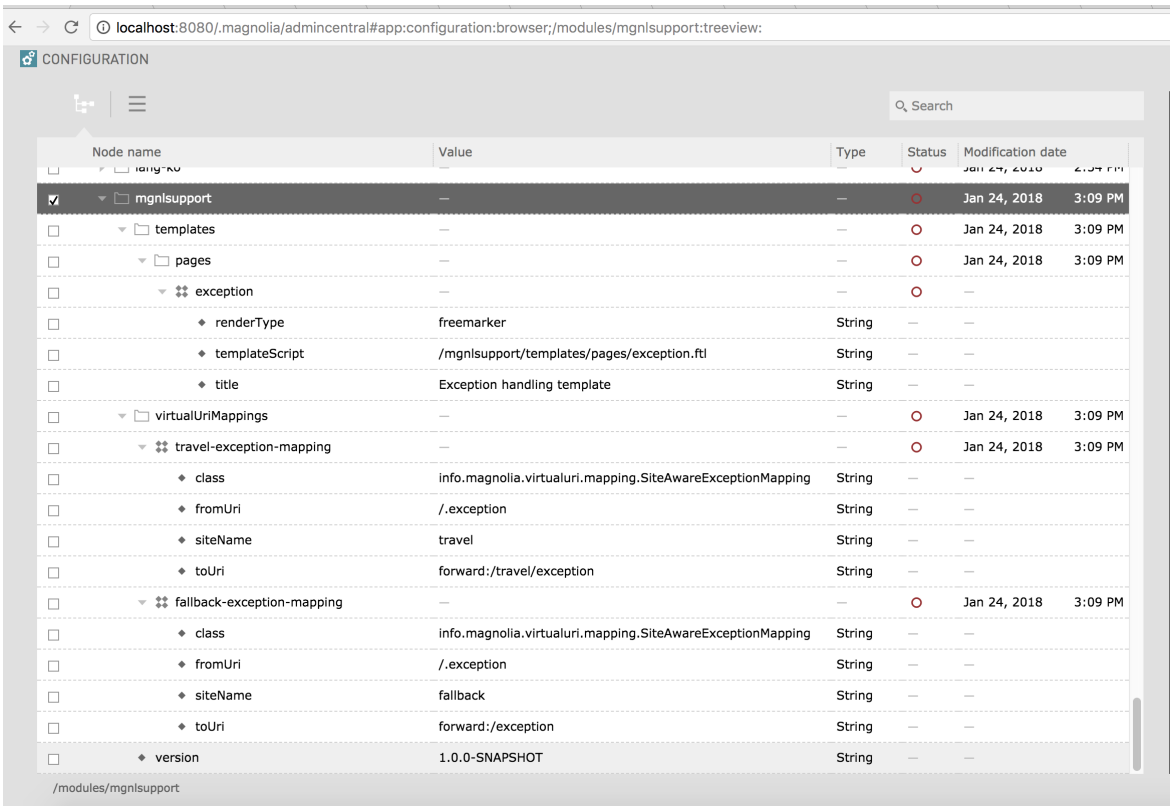
Sample content for your convenience, please change the mapping detail based on your needs:

travel-exception-mapping.yaml

```
class: "info.magnolia.virtualuri.mapping.SiteAwareExceptionMapping"
fromUri: "/customException"
toUri: "redirect:/travel/exception"
siteName: "travel"
```

JCR configuration

All the configuration points should be located under any of your module or light module such as 'mgnlsupport' module in this case:

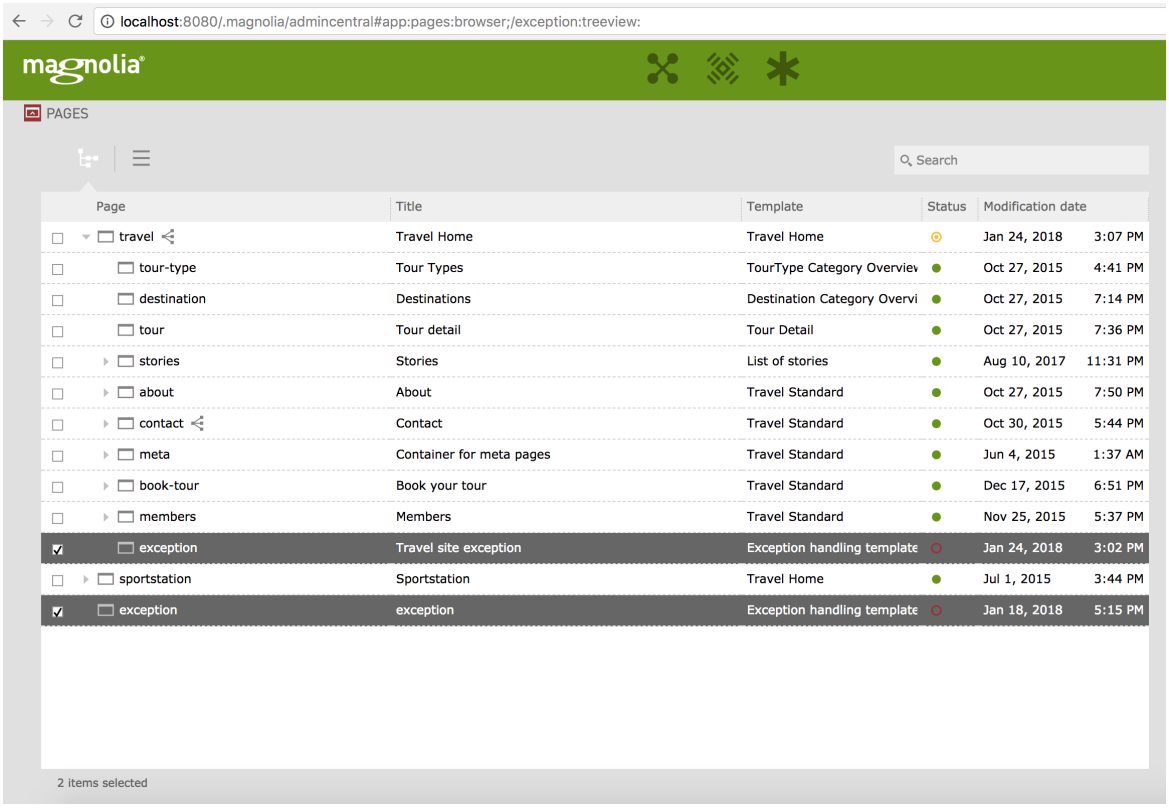


Basically we provided a default exception page template, its configuration is under our module 'templates/pages/exception' node as any other template configuration. You can reference to our official documentation for template configuration guidelines.

Creating different exception pages

Because we need to provide 2 site-aware exception mappings (in this example) which have been configured out of the box pointing to 2 default exception pages for our 'travel' demo site and the 'fallback' one.

So you should create 2 default exception pages under our pages app as below image and assign them using your configured template(s).



Your exception information follow Java Servlet Specification will be stored within current request attribute named "javax.servlet.error.exception".

Using Magnolia Freemarker renderer (FTL file) you can call ${ctx.request.getAttribute("javax.servlet.error.exception") to get it. Some other error fields that you can get from Servlet API:

ServletRequest	javax.servlet.error.status_code	Integer	for error pages only: HTTP status code
ServletRequest	javax.servlet.error.exception_type	Class	for error pages only: exception class
ServletRequest	javax.servlet.error.message	String	for error pages only: error message
ServletRequest	javax.servlet.error.exception	Throwable	for error pages only: exception
ServletRequest	javax.servlet.error.request_uri	String	for error pages only: original request URI
ServletRequest	javax.servlet.error.servlet_name	String	for error pages only: servlet name

Changing exception page location

As you can easily find that we have this configuration point '/modules/mgnlsupport/virtualUriMappings/travel-exception-mapping@toUri' which has the value as 'redirect:/travel/exception' then if you have another page somewhere for your site, you can easily change the page location from '/travel/exception' to your new one. The working mechanism is described in our official Virtual URI mapping function.

Changing exception page template

We already provided you with a sample (not very fancy) page template within our pre-built package under '/mgnlsupport/src/main/resources/mgnlsupport /templates/pages/exception.ftl' (in this case my module name is mgnlsupport, will change it later when I have time). Then we have a configuration point for it such as

'/modules/mgnlsupport/templates/pages/exception@templateScript=/mgnlsupport/templates/pages/exception.ftl'

Then just follow our light-dev guideline, provide your own template and point to to appropriate classpath folder then the new FTL file will be used for our configured template.

Sample FTL code

File exception.ftl

```
<!DOCTYPE html>
<html>

<head>
    <title>Server error Exception page</title>
    <meta http-equiv="Content-Type" content="text/html; charset=utf-8"/>
    <style type="text/css">
        div {
            font-family: sans-serif;
            line-height: 1.4;
        }
        #wrapper {
            width: 100%;
            text-align: center;
        }
        #boxer {
            display: inline-block;
            margin: 40px;
        }
    </style>
</head>

<body>
[#assign mySite=sitefn.site()]
<div id="wrapper">
    <div id="boxer">
        <h2>Site ${mySite.name} error</h2>
        <div style="width: 80%; text-align: left;">
            <div><img src='
/YOLsz3mmIOzy35a5UM/fr6nGcLzSj
////wAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAACH5BAEAABAALAAAAADFADIAAAAX
/ICSOZGmeaKqubOu+sArM9BnQcxDvfO
//wGALN7MRdcKkcslsrogAIw7prFqvWBlRSqP2CIHCjLHIms9Z6MkgaLcNwEPBMTAoCgm0fp9UYw0AAzMKAwoCfIiJMX5XbRAADwUBD1GKSgsDDQ
GbnJwNAwSWLIxWAg6PM58AnQFwBAYMbnQlDQ5upnkqCw+xtw4GoTELBggCUMc0BQKszJ2usG4IDS0JAbcMD8EnpCMDrAMn1b2ywCQMB48IAA2URA
IGYlAMoQkKyALaJATqyDMI+SkSOLDXr6BBKAIaxCNyIFc4Y8gcABTBTcSNKSUWQOwnUQQgNgkYOCjA7+CMA+36
/x0AmGBhQTwq2CA74OBTGQKZAhwwicwlFJgmABlcaaIihItdSLQ0SRSCOgQBRiogwLMqgEMkNh6cemLAzmMIHKLwWvABJ6sA0NHi2XSEUaQ5SBBk
OsLATgX/UKE9CGcEga8mH5iAi6MAOBclf+ba21cEAZ8FEZR4e0Qp5H6Nix5jEIBBwQOdITMo8XeGgAcDMiU+WWJ1MrEsCMyVR
/HYMs+0RxAGQFLnsTJutwyubNm0gdTEEKaAogA4hKVEDI9YALgG6QOSSwjFQcJBv8MwdnPX+3pEvehyGWoTRERw8PElCHsR0dI9iZTWtxEB7xFKZ
gjs4TDRRCLMFogIC/SDVf8MAR5TGw7
/NViEY1A4Z5E7JFCGkQkEkjehfjQowCEUExnI3wpaHegUZjw0UNCD+WUoHIAMmZAAESK+F6NuxLmQ4nI4LCgjfFntN1ZqSJKFw2HVEQGbC94hM5q
HlZTwowgSZjfZjFRyEdeRSSq545CmgTgmBCme2ABuBx1WUIcqPPYdjB8WCR9+q5hZp4ZJaddkP0DSIKSOdY6Qpl9smnRYikvu4FqfXZpw5VE9ktA
kmYVeuKFjjL6IAoaaEWmokSIkqmh/yGjpAp44qGrUpPKdYCCmVZIQ66hWBVpmqGceSiNa4HU6w38pEGBqMv+9OiOe89FZK59fQrBdVbpepWf
/rbjScNhqAliIJqkQ7NMPAt5mFEaq5SoLX5bX0uplnqUSQa6VXG4paLuSkpriRL6O0ICBOIB2HJIPOPDnDCSV6+wJk0qollI4ujvcprMVwHC9mA6
6cL6NfpuMrOB6dDBaeE2jhagiTEqVk
/GBunHLm7ossZ4aR0pvxynCNu0Mhy1wbjI1dSbAZQgLwFkDCuN7c4xNHuDczpCQ4NOJlFJMhLesVluzutqKsFoBAw
/w6AALuJbXFVzXuVsBIh1sYYpzbALcrRCYqkDYj2qttJ1dS7uXsGakXaucPJ1y35xVQwr1QXrzmqnHfUMA8F7+pIEx5IVKqBJAhENxGN2d89S4
/729ggtdT1Up8EDSQggeFNE0tEXC4irS/Su1nwa5d7Y8KzWyA+IZpMDRT/7guo3CSgJnIZ5rCil9k68y6WDO2MDKGqyU640bnJXhTSfCFmQI8J
/4wAz2nQQkdBsIlMPC95wAB/8mVEOgCferS3u9KDDsMjJPyoBKA4rHvwIa8AX/otw9agKnAzqQf9UInwLd4b4HWjARw2DAZWhiALGkxiwC+F8
/JHHBEp7hFcJiQAVZgIkHIECEAWugCWf4hZ
/haIU8IEADEAC7XdHwh0BQyDEKYJ8kgMEgBASiEldAOwUkEQing0KzlkhFFCQIGfVTQvAAQKwqevFwx8iRFVyEDHEZfnGJwbNYI5AxxTN+UXPPY8
KjAKAqN9qxbhwxI4NGVsQ72lFcPQkA614wjJGRwY+I9Ff0TlKTJ9rIAAbrybwSSUkRrMkkhlgGM2whgEXypn16rOQXdWiLCSJjeA9wpChFmQBNcN
KTIWoD+bK4yiaEAAA7'/></div>
            <h2>Server error ${ctx.request.getAttribute("javax.servlet.error.exception")!'No exception'}</h2>
            <div style="margin-top: 40px; ">
              <hr/>
              <pre>Please check server log for more detail!</pre>
            </div>
        </div>
    </div>
</div>
</body>
</html>
```

References

This is an upgraded version of How to setup a custom 404 handler as of January 2019 because the previous one has been out dated and did not maintained for such a long time. We're trying to bring values to customers who are using and contributing to Magnolia CMS.