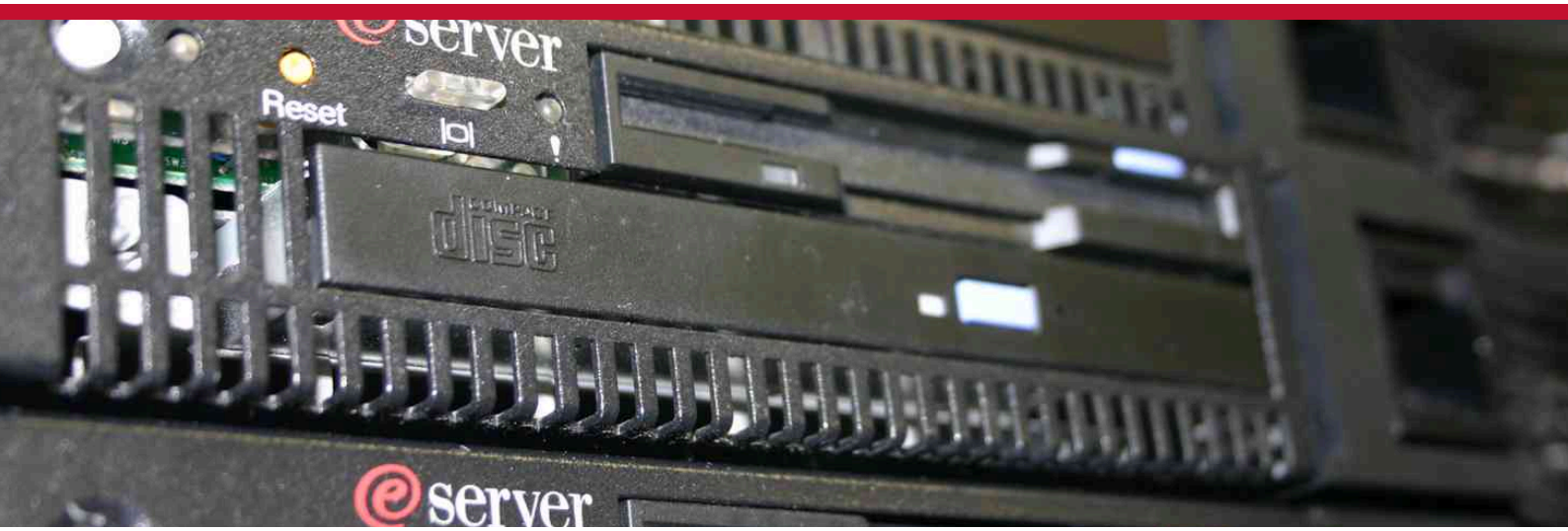
VivaDesigner Server:
Technical Documentation



Technical documentation for steering a VivaDesigner Server
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INTRODUCTION 1
What is VivaDesigner? 1
What is the VivaDesigner Server? 1
For whom is the technology suited and in which way? 1
What benefits are offered by the technology? 1
EXAMPLE WORKFLOWS FOR A WEB-TO-PRINT SHOP 3
Starting point (Box 1): 4
Creating templates (Box 2) 4
Editing the template (Box 3) 5
Saving the document (Box 4) 5
Shopping basket (Box 5) 5
Control data (Box 6) 5
Approval and print (Box 7) 6
SERVER REQUIREMENTS AND CONFIGURATION 7
Accessibility 7
Creating a master instance 7
Coice of browser 7
STEERING A VIVADESIGNER SERVER 7
REQUEST ACCESS KEY 8
HAND OVER DOCUMENT 9
Viva Web drive protocol 9
Open document 9
Conflicting access rights 10
Save document 11

Production Notes
This document was created electronically using VivaDesigner.

INTRODUCTION

This document describes the integration of the VivaDesigner 7 Server into individual Web applications. It is not only intended for software developers, but also for agencies, printers, media service providers, corporations, Internet providers and IT departments who want to extend their application with a browser-based page layout application.

What is VivaDesigner?

VivaDesigner is the only professional typesetting and layout program world-wide that is available both as a desktop application on Mac, Windows and Linux and also for Internet browsers as a Web application. For the user it no longer makes any difference whether the documents are edited on the desktop or in the Web. As far as the file format and the functions are concerned, there is no difference between desktop and Web. With the VivaDesigner Server, the usual functional limitations of Web applications are a thing of the past.

What is the VivaDesigner Server?

The »VivaDesigner Server« (VDS) is a server technology with which the typesetting and layout program VivaDesigner can be used in a browser, while neither JAVA nor Flash nor any Plug-in is needed. Only an HTML5 compatible browser is required. Since for further communication with the »VivaDesigner Server« just the standard ports (Port 80) are used, the software can in almost all cases be used from every computer, even from corporate computers with corresponding restrictions.

With the »VivaDesigner Server«, suppliers of Internet shops, CMS, PIM, CRM, ERP systems or Asset Management software can offer their customers tailor-made solutions that go far beyond the well-known layout and typographical function ranges hitherto offered by HTML, Flash and JAVA applications. Through the combination of desktop and/or Web, completely new processes of communication with customers may be created.

For whom is the technology suited and in which way?

- For Agencies and media service providers, the possibility of developing completely new and much slimmer processes in creation, layout, editing and proofing of documents as well as improving communication with customers.
- For End users and corporations world-wide, the possibility of editing documents with complex layouts very simply in every functionality, in every typographic quality and in every language as well as simultaneous editing and exchange.
- For solution suppliers and software developers, the possibility of developing programs or websites or of extending them simply, with which users create layouts directly or edit existing layout documents. Thus software developers can extend or increase the value of their product portfolio.
- For Internet providers and IT departments, the possibility of offering public or private Cloud services related to publishing, graphic design/layout and editing.

What benefits are offered by the technology?

1. **Every operating system**
   With the "VivaDesigner Web Edition" it makes no difference if a user works on a Mac, Windows or Linux computer. The result is always the same.
2. **Every browser**
   Many "Web-To-Print" applications appear differently in different browsers. This has fatal consequences for the display of fonts and text breaks. The "VivaDesigner Web Edition", ALWAYS delivers the same result and ALWAYS the same quality, whichever browser is used!
3. **No installations**
   To use VivaDesigner in the Web, just one current browser is needed. NO installation, no PlugIns, no Java, no Flash, nothing other than the naked browser.
4. **No updates or virus problems**
   Since nothing needs to be installed, and "Flash" or "Java" are not required, there will never be a virus problem. It's not even necessary to install any software for new versions.
5. **No more font problems**
   If VivaDesigner is used in the Web, there is no longer a font problem. The times have gone in which the corporate font had to be installed on every computer, or it was necessary to work with photobook software, which only allowed a limited usage of fonts. All the fonts required may be fully embedded in the document, so that no installation is necessary.
6. **No language problems**
   With the VIVA technology, text can be edited in every language in the world, including Asian and Middle-Eastern languages. Furthermore, all VIVA programs have a multilingual user interface in many languages, which may be changed at will.
7. **Support for Mobile Publishing**
   The VivaDesigner Web Edition can even be used in a rudimentary way on mobile devices such as tablets or Smartphones. This functionality will be extended by VIVA in the future.
8. **No redundancy**
   Many users of "Web-to-Print" solutions must build their documents twice: Once in the layout program and once in a special template editor. With the VIVA technology, this is no longer necessary.
9. **Open Standard**
   With VivaDesigner, it's unnecessary to rebuild any designs. Documents can just be imported from other programs such as "Adobe InDesign" and, if necessary, passed back again. With the open XML format, the VIVA technology is accessible to everyone. VIVA documents can be created, stored, managed and edited in any third party application.
10. **One solution for pros and beginners**
    With VivaDesigner, the creator of the documents can block the access rights for single areas of a document. It may be defined exactly which layout and editing rights colleagues or customers may have in a VIVA document. Thus in just one software the user has on request the functions of a layout program, a word processing application or photobook software.
11. **Protect documents**
    Graphic designers or a printers can protect the documents and even individual layers from third-party access with a personalized password. In this way, the user can only make changes according to the wishes of the document creator. Without the personal password, no-one can edit or print the document.
12. **Working in the Cloud**
    With VivaDesigner it may be defined if a user can use the documents locally or just open them in a network or the Internet. Furthermore, documents can be returned to a third party fully automatically or saved in a network or the Internet.
13. **No training**
    Due to the compatibility with comparable layout programs, pros will soon find their way without any major training. If the functionality of the program with the use of access rights, beginners too will not need to learn any new software. In this case, general knowledge of word processing will be suffi-

cient, even for complex layouts.

14. Optional editing system

If the possibilities provided by access rights are not sufficient and several users are to work on a document simultaneously, VivaDesigner' functionalities can be extended to a complete editing system.

15. Optional Database Publishing

If the possibilities provided in the manual creation of documents are not sufficient, VivaDesigner can be extended into a "Database Publishing" application and automatically or semi-automatically produce catalogs or price lists based on a database.

16. Optional Publishing Server

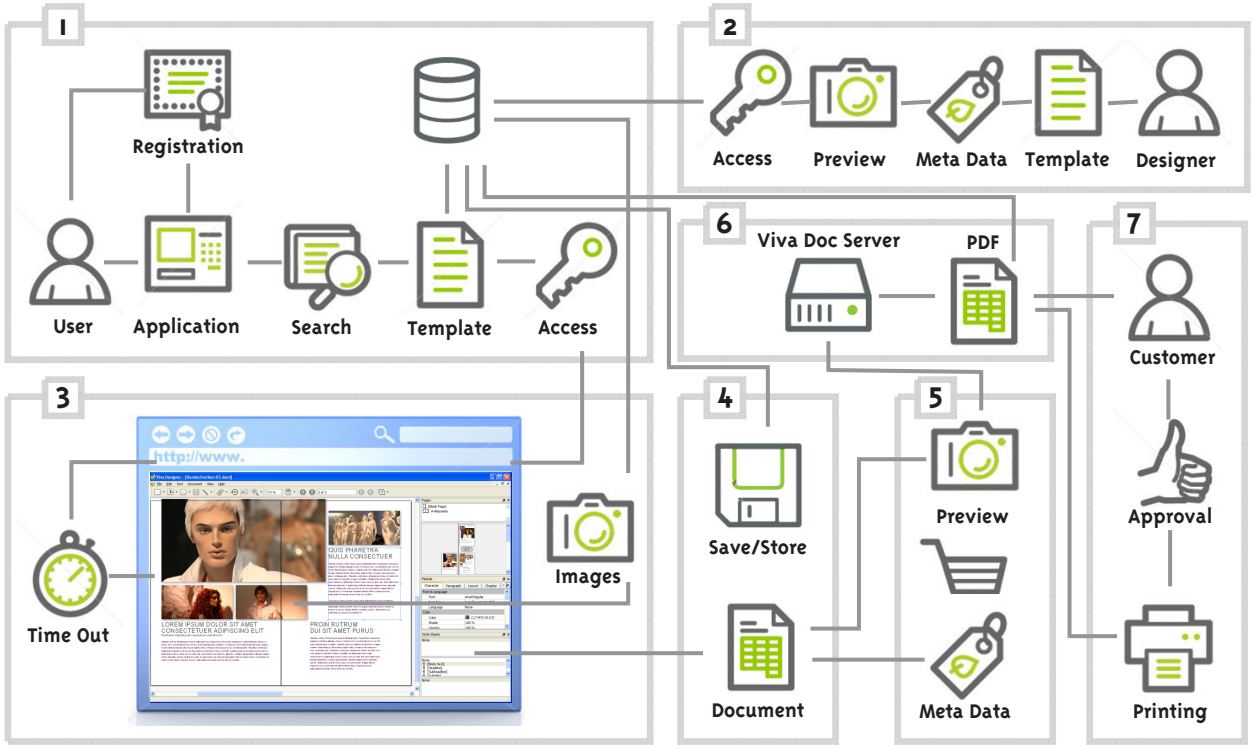
If the possibilities provided by Database Publishing are also not sufficient, VivaDesigner may be used in a Server variation to produce catalogs, packaging, posters or price lists fully automatically from SAP, a database or a Website with a keystroke.

17. Easy integration

VIVA is the perfect tool for software developers, who want to extend their application with publishing functions.

EXAMPLE WORKFLOWS FOR A WEB-TO-PRINT SHOP

The following scenario describes a potential workflow for the implementation of the VivaDesigner Web Version in a Web shop.



Starting point (Box 1)

1. With B2B shops, a user registers his details in the shop application. With B2C applications, a user enters the shop without registering.
2. In the shop, the user searches for a suitable template. These templates are stored in the shop database.

Creating templates (Box 2)

1. An administrator or designer creates the templates for the user.
2. These templates are created in VivaDesigner, either on the desktop or on the Web. Documents from other programs such as InDesign can be imported and then edited accordingly.
3. The templates can be enriched by the creator using Meta data in XMP format. The data are entered in the Preferences dialog of VivaDesigner. The Meta data content is a free choice, as long as the format is adhered to. From the shop point of view, the creator could define calculation data for this customer, such as binding type, minimum number of pages, approval information or any other information. With this information, for example, navigation through the shop could be simplified, as the user would not have to provide other important information such as paper type, etc. These details are already defined in the template. The shop application just needs to read and interpret them. All information is appended to the end of the document in XMP format and can be interpreted with the available tools.
4. The templates can be enriched with page previews in XMP format. It is just necessary to define in the VivaDesigner Preferences dialog whether large and/or small page previews, how many pages should be saved as previews and in which quality. The shop application only needs to read and interpret these preview images. All information is appended to the end of the document in XMP format and can be interpreted with the available tools.
5. The templates may have static access rights applied to them. For this purpose the additional module

»Distributed Publishing« is required. Here it may be defined individually which editing rights a user should possess.

Editing the template (Box 3)

1. For template editing, the shop application starts VivaDesigner and defines the document to be edited. Starting VivaDesigner and defining the document is described in developer data.
2. A shop application may be able to apply dynamic access rights. This is particularly helpful if different user groups are to edit the documents. These groups can receive different access rights each time they open the document. Existing access rights defined by the designer are extended accordingly.
3. The user can access virtual drives such as Web Drives, MySQL or ODBC databases. The definition of these drives is made in the VivaDesigner Preferences dialog. With connections of this nature, the user may import images into the document.
4. In the Web Version of VivaDesigner, a Time Out may be defined, where the program will quit automatically if the user carries out no further actions. It may also be defined what should happen to documents when the program quits. With these settings a user may be prevented from keeping a session open unnecessarily. As opposed to classical Web-to-Print applications, VivaDesigner users may use the software for several hours at a time (e.g. for the creation/editing of a magazine, newspaper, etc.). The definition of these options is made in the VivaDesigner Preferences dialog.

Saving the document (Box 4)

1. The user saves a document in the same way he is accustomed to in other applications. The shop application can define if the document should be saved under the same name or another name.
2. The user completes his editing with the option »Quit« in the VivaDesigner »File« menu. In the Web Version of VivaDesigner, the menu option »Quit« is replaced by the option »Quit Session«. The user may also close the browser tab/window.

Shopping basket (Box 5)

1. The user then places the document in the shopping basket. How far the application can do this automatically depends on the shop application.
2. Since the shop application can read the Meta data and page previews from the document, the document may also be displayed with a preview in the shopping basket.

Control data (Box 6)

1. Most shop systems include an approval process that is based on a PDF file. In order for a service provider does not have to create these PDFs manually from the customer document with VivaDesigner, the VivaDocServer may be applied. This server creates PDFs fully automatically from the documents in low resolution for proofing purposes and/or high quality for printing.
2. The PDFs created may be accessed by the shop application and saved in the database.
3. Within the Web Version of VivaDesigner, the user has no possibility of outputting his work locally. The shop application could allow him to create a PDF which is then stored in the database of the shop application. This PDF could then be downloaded and printed locally by the user.

Approval and print (Box 7)

1. The PDFs created may be accessed by the shop application and forwarded for example to the same user or a customer.
2. The customer then gives his approval, so that the order may be printed.

SERVER REQUIREMENTS AND CONFIGURATION

A VivaDesigner Server (VDS) consists of a number of VivaDesigner Web Edition (WE) instances that are steered by a VivaDesigner Dispatcher (VDD). Both products are only available for Windows and can be installed on the same computer. If several computers are needed to run the VivaDesigner Web Edition instances, the VivaDesigner Dispatcher (VDD) can also run on its own computer.

If different versions of the VivaDesigner Web Edition (WE) are to be used, these may be grouped together in a Cluster. This procedure is for example useful if specific versions of the VivaDesigner Web Edition should be addressed. With this technology it would for example be possible to allow specific customer/user groups access to a Cluster with the »Basic-Edition«,other customer/user groups access to a Cluster with the »Advanced-Edition«.

Organisation of the Instances

For the organisation of the instances there are two possibilities: You can set up a computer with ONE VivaDesigner Web-Edition (recommended), which depending on the number of instances may be started several times (Data center variation). Alternatively you can set up an individual physical or virtual computer for EVERY instance (Virtualising variation).

1. Data center variation
When you want to set up a computer, you need a »Windows Server Data Center Edition 2008 R2« or newer., with »Licensing mode: Per User« and »License type: RDS CALs «, whereby the CALs for ONE »User« is sufficient. You also need a valid SSL certificate. To differentiate between instances, in this variation a new user will be created for each instance. The advantage of this solution lies in the configuration and the accessibility via ONE external IP address.

2. Virtualising variation
If you use a virtual machine software for single instances, we recommend that you make a master installation for one instance of the VivaDesigner Web Edition. The advantage of this solution lies in the low licensing costs for the operating system, as you just need a standard Windows system. On the other hand, an external IP address will be needed for every instance of the VivaDesigner Web Edition (WE).

Hardware requirements

To work out the hardware requirements for the instances, we may assume that one instance, depending on its complexity, will need on average 0.5-1.0 processor cores as well as 0.5-1.5 GB working memory (RAM). It may still be necessary to consider that jobs with intensive calculation such as spelling correction or grammar are carried out as a separate task, which may require performance from an additional core if available.

Accessibility

All VivaDesigner Web Edition (WE) Instances must be accessible via the user's browser (Client). At the same time, the VivaDesigner Dispatcher (VDD) and the instances of the VivaDesigner Web Edition (WE) must be able to access each other.

Typically, the VivaDesigner Web versions (WE) are accessible through a Firewall and therefore have internal IP addresses. To enable the accessibility of the VivaDesigner Web Edition (WE) instances, either the Firewall or the VivaDesigner Dispatcher (VDD) may be optionally configured, to map the external IP address with corresponding ports to the internal address.

Creating a master instance

To create a VivaDesigner Web Edition (WE) instance, you must carry out the following steps:
1. Installation of the Windows operating system

Please check the system requirements of VivaDesigner, particularly with regard to the operating systems supported, Bit support, Service Packs and memory requirements (RAM/ROM).
2. Install the appropriate version of VivaDesigner and license VivaDesigner with the license key file. Please note that VivaDesigner may only be used in the browser with a suitable license. A Web Edition may be recognized by the fact that the program cannot be shut down (Quit).
3. Configure VivaDesigner in the menu Edit -› Preferences, and choose the option »Program«. Click the tab »Web Edition«. All the options are already set correctly as default (e.g. the url »localhost/status«). You can read the meanings of the individual options in a separate section.
4. Install JAVA, which is generally not installed as standard on Windows computers.
5. Install the Viva-Adapter, which organizes the communication between VivaDesigner and the Dispatcher. This is a Windows service that can be configured individually.

Choice of browser

To use VivaDesigner in the Web you just need a current Internet browser. The current versions of Google Chrome, Firefox and Safari are all compatible. The Microsoft Internet Explorer may be used with Version 6, but only if the free of charge PlugIn »Google Chrome Frame« is installed. This PlugIn extends Microsoft Internet Explorer 6-9 by the corresponding functions that most other current browsers already possess.

STEERING A VIVADESIGNER SERVER

A VivaDesigner Server (VDS) consists of a number of VivaDesigner Web Edition (WE) instances that are steered by a VivaDesigner Dispatcher (VDD). The VDD manages the availability of the availability of the WE instances. Customers integrate the VivaDesigner Server into their Web applications (shop, etc.) via an iframe. The parameter "src" of the iframe consists of the basis URL of the VDD, an access key and optionally a document URL:

<http://my.viva.web.cluster.com/index.html/?key=43D029760BCACFC48BB40737757F8D6B&url=web-drive%3A%2F%2Fvivadocs%2Fauth%2FLU1buFELgLPRdSPczVvG%2FGroup%2Fsimple%20test.desd>

The following alternative scenario may be created with the VivaDesigner Web Edition (WE):
For the case that Viva documents have been stored locally on the VivaDesigner Server (VDS) itself, this can be adressed via the parameter "url" of the iframe URL. The local path to the documents must be known. It must also be ensured that the documents are also accessible under the user name of the server process. As default, VIVA sets up a user called "viva" on the VivaDesigner Server (VDS). As the "url", just the local path "URL encoded" will be entered. To open the VIVA document "Sample 01.desd" in the folder "C:\Program Files (x86)\VivaDesigner\Examples\" the URL should look like this:

<http://my.viva.web.cluster.com/index.html?key=43D029760BCACFC48BB40737757F8D6B&url=C%3A%5CProgram+Files+%28x86%29%5CVivaDesigner%5CExamples%5CSample+01.desd>

REQUEST ACCESS KEY

The access key is requested just before from the VDD and thus reserved. The URL to request the access key is: <http://my.viva.web.cluster.com/reservation>

The reservation key is returned in the Response Body and is valid for 5 seconds. A WE is reserved for this period and access must be made within this period with the command key=.... If not, the WE will be released again.

If no WE instance is free, the VDD will reply with the error 503 (»Service unavailable«) and the text »No free servers found.«

Since a latency may occur between the approval of a WE instance and the delivery of the altered status to the VDD, it is recommended that within an application the initial reaction to the error code »503« is a repeated request for a key, and then only if the error code »503« occurs once again should an error warning actually be displayed. Between the first and second requests there should ideally be a delay of around 1 to 2 seconds.

Opening a document

To open a document in the WE Instance, a document URL is defined with the parameter url=..., which corresponds to the VIVA Web drive specifications. All document formats that can be read by VivaDesigner with the »Open«-Dialog count as valid documents. This includes for example VivaDesigner documents with the file suffix ».desd« and ».nwpd« as well as the VivaXML format(».xml«) and files from Adobe InDesign. The WE instance then opens the document referenced in the URL. The Web drive must be configured in the program preferences of the WE instance!

If access rights are necessary to access the document, these can be defined in the Web drive configuration. Alternatively, the URL may contain an authentication token through which access is enabled. The application of an authentication token is transparent for the WE instance, i.e. it doesn't interpret the URL.

Viva Web drive protocol

A document stored on a web drive is described with a URL in the form <webdrive://drivename/some/folder/My%20Document.desd>. The keyword is therefore »webdrive«, the first node »drivename« refers to the configuration of this name as defined in the program preferences, where the actual host name, base path and access name are defined. The nodes »some/folder« define a virtual path on the Web drive and »My Document.desd« is the name of the file to be opened.

Open document

If VivaDesigner wants to open such a URL, it sends a GET request by HTTP for the folder, e.g. <http://my.real.server.com/docs/some/folder> and waits for the response in XML format, as in the example below:

```
<file_system_items>
    <folder create="true" update="true" delete="true">
        <name>Another Folder</name>
        <created-at>2011-11-11 15:19:22 +0100</created-at>
        <updated-at>2011-11-11 15:19:22 +0100</updated-at>
    </folder>
    <document update="true" delete="true">
        <name>My Document.desd</name>
        <size>65424</size>
        <canonical-url>http://my.real.server.com/docs/some/folder/My%20Document.desd</canonical-
        url>
        <data-url>http://my.real.server.com/docs/uploads/document/
        12d7148c-616d-45f8-80bf-8fa37b2d67a6/My%20Document.desd</data-url>
        <preview-url>http://my.real.server.com/docs/uploads/document/
        12d7148c-616d-45f8-80bf-8fa37b2d67a6/preview_My%20Document.jpg</preview-url>
        <icon-url>http://my.real.server.com/docs/uploads/document/
        12d7148c-616d-45f8-80bf-8fa37b2d67a6/preview_icon_My%20Document.jpg</icon-url>
        <access-url>http://my.real.server.com/docs/de/groups/8/group_roles/11/viva_document_per-
        missions.xml</access-url>
        <created-at>2011-11-24 15:30:56 +0100</created-at>
        <updated-at>2011-11-24 15:30:56 +0100</updated-at>
    </document>
</file_system_items>
```

In the folder content returned, VivaDesigner looks for the appropriate document and sends a further GET request for the **<data url>** of the document. This URL refers to the actual VivaDesigner document.

The other entries serve to display the document in the »Open« dialog. The attributes **"create"**, **"update"** and **"delete"** describe which operations are possible with the appropriate entry. The **<icon-url>** and **<preview-url>** refer to the preview images of the document.

The optional **<access-url>** refers to an XML document that defines access rights for VivaDesigner. These access rights overwrite those that were already defined in the file.

Diverging access rights

With the additional module »Distributed Publishing«, you can as the document creator optionally define access rights for individual sections of documents (see point 10 above). These settings are saved in the document.

In some cases it may make sense to extend these settings, particularly if different user types are to work on the same document. In such a case, a third party application can change the access rights dynamically on the fly according to the user role.
The additional access rights, which are referenced with the command **<access-url>**, take the format shown below. Every **<option>** references one access privilege, and the value may be **"true"** or **"false"**. If an **<option>** is missing, the corresponding access privilege will be taken unchanged from the VivaDesigner document.

```
<vivaDocAccess xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="Access.xsd">
        <option name="save">true</option>
        <option name="save-as">true</option>
        <option name="edit-document-settings">true</option>
        <option name="edit-preferences">true</option>
        <option name="edit-colors">true</option>
        <option name="edit-style-sheets">true</option>
        <option name="printing">true</option>
        <option name="pdf-export">true</option>
        <option name="eps-export">true</option>
        <option name="ps-export">true</option>
        <option name="image-export">true</option>
        <option name="hires-output">true</option>
        <option name="move-objects">true</option>
        <option name="stretch-objects">true</option>
        <option name="modify-objects">true</option>
        <option name="create-objects">true</option>
        <option name="delete-objects">true</option>
        <option name="manage-pages">true</option>
        <option name="edit-text">true</option>
        <option name="edit-pictures">true</option>
        <option name="edit-tables">true</option>
        <option name="tools-toolbar">false</option>
        <option name="navigation-toolbar">false</option>
        <option name="module-palette">true</option>
        <option name="picture-palette">true</option>
        <option name="layer-palette">true</option>
        <option name="page-palette">true</option>
        <option name="color-palette">true</option>
        <option name="style-sheets-palette">true</option>
        <option name="search-replace-palette">true</option>
        <option name="spell-check-palette">true</option>
        <option name="character-inspector-palette">true</option>
        <option name="change-tracking-palette">true</option>
        <option name="trapping-palette">true</option>
</vivaDocAccess>
```

Save document

To save the document, VivaDesigner sends a POST request back to the folder part of the URL. Example: <http://my.real.server.com/docs/some/folder>.
The parameters are sent in the format "multipart/form-data". Here the terms "item[name]" for the file name and "item[data]" for the (binary) file content are used.