



Content Management System



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1. Introduction

This document is the manual for the administrator of the **C-Gator: web-projects** software solution (hereinafter as "C-Gator" or "system"). C-Gator application, capabilities and operational procedures are the subject matters of this guide.

1.1. C-Gator application overview

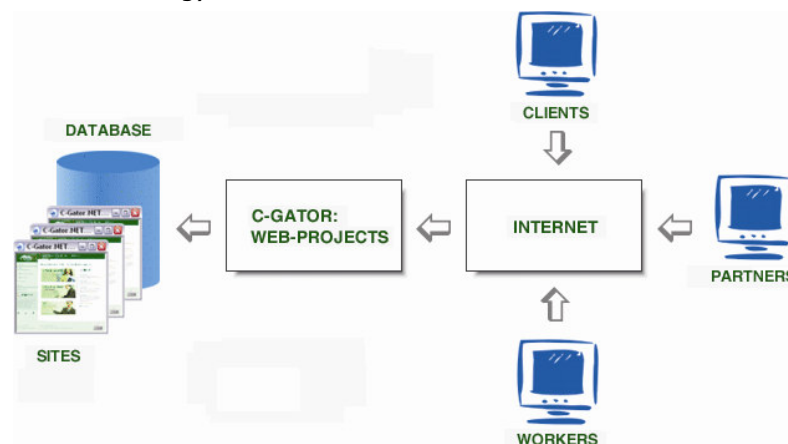
C-Gator was designed for the web-project management. Web-project is supposed to be either a simple site as a business card of 2-3 pages or a complex corporative internet/intranet-portal with many services for your clients and personnel of your company. Whatever challenges your web-project may send, C-Gator can help you to take them up.

Prompt update of web site information is one of the main targets of web-project management. C-Gator is referred to CMS-system class (Content Management System) and exists as a system for the content management by the user unskilled in programming.

C-Gator system enables us to solve the following problems:

- Work with your site via web interface from any PC connected to the Internet
- Assign and distribute user rights to access and edit the web site content
- Setting and publishing various information on the site (text, graphics, any other information)
- Web site information update by several users simultaneously with immediate changes reflection and protection against collisions
- Changing the site design without any information content change
- Setting up on-line services on the site: news lines, guest books, products catalogues and price lists, distribution lists, forums and internet shops
- Business-Business(B2B) and Business-Consumer (B2C) services: partners base management, product catalogue format adjustment for a certain partner, product catalogue scheduled auto-unload\download, price lists automatic generation, automatic order entry
- Multisided record of web-project statistics and its visual representation: site attendance, audience size, referenced sites, popular pages, paths to the site, lookup rate, time spent at the site
- Representing information from external systems (accounting, ERP).

C-Gator is able to support either one site or any number of sites using ASP approach (Application Service Providing) .



1.2. C-Gator User's Guide contents

Preparing a manual to the system, we issued from the different users qualification depending on activities he/she implements:

Qualification	Requirements
User	Basic background & skills in using a computer with Windows operational system, ability to use Microsoft Word or other text editor.
Designer / programmer	Knowledge of HTML mark up language, CSS style sheets language.
System administrator	Knowledge of users and rights management, experience with Windows administration.
Developer	Knowledge of technology.NET

Information for the users of a specified qualification is given in the certain guide:

Name of book	Content	Qualification
User's guide	How to start working with the system. User interface. Use of the main capabilities, step-by-step instructions for operations performance.	User
Designer's guide	Design implementation without reference to the information content, use of more complicated system capabilities	Designer / programmer
Administrator's guide	The whole system management: sites, users, rights	System manager
Developer's guide	System architecture, interfaces description	Developer

1.3. Terms and agreements

Symbol names used in the text:

Utilities	Function words chosen in the program are specified by the semi bold font
Menu ▶ Option	' ▶ ' symbol implies the choice of function words or menu options one after one
<i>Preview</i>	Headers you see anywhere in the program are specified by the italic font
<i>Administrator</i>	Technical terms are specified by the italic font when declaring or mentioning. (See Appendix, page 39, item 6.2)
Enter	Small caps mean the keyboard key.
Ctrl+Enter	Combination of keyboard keys are saved with '+'






This guide gives only Russian-language menu options and control tools. Thus, it is supposed that a user works with the Russian version of Windows and uses the Russian-language interface working with C-Gator.

1.4. Administrator






The administrator is one of the leading roles in the system. He is a solely authorized person within one or several domains supported by the system. He defines sore system settings,

registers users and assigns rights to perform various actions. The system administrator controls the following objects:

On the domain level (**Active domain** field in the menu on the green background):

	Users	System users accounts
	Groups	Sets of users with equal rights
	Roles	Set of users' rights to perform operations
	Sites	Specifies the main page for a certain URL
	Icons	List of icons used in the system

Within the entire system (**System configuration** field):

	System administrators	Accounts of administrators that control the entire system
	Domains	Main administration items of the system
	Names of the sites	Sites aliases supported by the system
	Errors	System errors log
	Cache	System dynamic Cache factors

2. System installation and setting

2.1. Requirements to the system

Server

Computer	PC
Operation system	Windows NT Server
Data base	MS SQL Server
Components and applications	MS Internet Information Server 5.0
Server SSL 3.0 certificate for data transmission security	

Client working with the administrative part of the system

Computer	PC
Operation system	Windows 98/Me/2000 or Windows XP
Browser	Internet Explorer 5.5 version or beyond

Client

Requirements depend only on the content of pages put into the system

2.2. .NET framework parameters setting

Proper work of C-Gator requires rights appointment of ASP.NET application's work process. The "username" attribute value should be changed from "machine" to the "SYSTEM" in the "machine.config" file, in the "processModel" node (for example, "C:\WINDOWS\Microsoft.NET\Framework\v1.0.3705\CONFIG\ machine.config").

Reset is required after you make the change.

2.3. Reconfiguration of Internet Explorer enhanced security option for Windows 2003 Server

If Windows 2003 Server operating system is installed on a server, it is recommended to uninstall the Internet Explorer Enhanced Security Configuration component. This component blocks operations performed by the C-Gator web-client on the server.

2.4. System installation. Steps sequence

1. Run the **setup.exe** file from the system distribution disk.
2. Select the catalog on the disk where an application should be created.
3. Select the program components:
 - if you need to install database and web application on one PC, put marks in **C-Gator application database** and in **C-Gator web application**
 - To install web application on different PCs, tick off fit marks only.
4. For database setup enter login and database administrative user's password (as a rule **sa**).

5. Select an option for web-application installation depending on the server operation system: a virtual catalog or a web-site:
 - **WinXP, Win2000**
These operation systems require to select the virtual catalog option
 - **Win2000 Server, Win2003 Server**
Two options are available. It is recommended to select the web-site option
6. For the " web-site" option:
 - enter the name of the site, for example mysite.ru
 - enter IP address for the web site
7. For the "virtual catalog" option, select the name of the site and enter a name of a virtual web-application catalog.
8. Appoint a file storage catalog. All documents and files uploaded on sites will be stored there.
9. Click the **browse** button on the **Directory Security** tab, the **Properties** dialog of a catalog or the site in IIS manager, in the **Anonymous access and authentication control** section. Choose a user with the administrator's rights instead of a standard IUSER_XXX user. Switch all ticks off in the **Authenticated access** section.
10. Run the site in case of the "web-site" option.

2.5. Application parameters setting

You need to make the following changes to the web.config file that is in the virtual application catalog:

1. Change the lines of database connection by setting the name of the database server, the name and the password of the database user.

```
<add key="MetaDBConnectionString"
value="server=(local);database=cgmeta;uid=work;pwd=sql" />
<publisher assembly="CGDBPublish" type="CGator.Log.CGDBExceptionPublisher"
connectionString="server=(local);database=cgmeta;uid=work;pwd=sql" />
```

Где
server – name of DB server
database – name of DB application
uid – logon before DB (for example, work)
Pwd – password (for example, sql)
2. Change the mail server SMTP access line to

```
<add key="CM.Mail.SMTPServer" value="mail.mysite.ru"/>
```
3. Change the parameters responsible for anonymous users' access to the system files. To do this, in the "< cgpats>" node of the configuration file you need to find a list of sub catalogs with the roles of users who are allowed to get an access to these sub catalogs. The role "*" means that an access to a relevant sub catalog is allowed to all users. In case when an application is installed as a virtual catalog, then it is required to register an anonymous users access restriction in view of <add key="/cgwebui/cgator.aspx" inside the "<cmlocation>" node.

2.6. Log-in

C-Gator is delivered with a preset user supervisor.

login: `_admin`

password: `start&l`

After you perform the above-described operations, C-Gator has been set up and the administrative part is accessible via URL `http://<ypr site on default>/<virtual catalog chosen under installation>/cgator.aspx`, for example <http://localhost/CGWebUI/cgator.aspx>

We strongly recommend creating a separate site for C-Gator in IIS. In this case the administrative interface of the system will be available with URL `http://<site created>/cgator.aspx`

2.7. Deleting

To delete a C-Gator application, it is required to start the `uninstall.exe` file from the catalog with the application installed.

3. Users and rights

Domain is the main control unit in C-Gator. The number of domains that C-Gator is able to support depends on the system configuration. There are 3 types of the system configuration:

- **C-Gator Partner Edition** – supports only one domain
- **C-Gator Standard Edition** – supports up to 10 domains
- **C-Gator Enterprise Edition** – supports unlimited number of domains.

Every domain has its own set of *users*, *groups* and *sites*. It means that several sites can exist within one domain, but the unified system of rights, roles and the unified users' list operates in every domain. All the operations described in this section are performed in the **Active domain** field of C-Gator.

3.1. Users



To work with the system, a person is issued to be the C-Gator's *user*. This means that an *account* (*logon*) must be registered for him/her in the system.

Having an account (logon and password), a person is able to get through authorization and start working in the system. It means that this person works under a certain user of the system. To enter the system, a user is required to specify his/her login and password to confirm his/her rights to work with the system. For the Standard Edition and Enterprise Edition configurations it is essential to specify the domain a user work with, whereas there is its own isolated system of rights, roles as well as the users list for every domain.


It is possible to work with the system under one user (i.e. using the same account) from some computers and/or several browsers windows.

It is undesirable to work using the same logon for some people simultaneously, though it is possible. Every person should use *his/her* own account. This allows rights distribution control and events authorship monitoring in the system.

No authorization is required for outside preview of the site, except sections and pages with the limited access intentionally appointed by the administrators.

3.1.1. User logging

To enter a new user in the system, perform the following actions:

1. Choose the **Active domain** area in the upper horizontal menu on the green background
2. Choose the Users item in the vertical menu of the left part of the screen. The registered users list is located in the right part of the screen.
3. Click the  icon (**Add a new user**)
4. In the open window specify the new user attributes (see below)
5. If you want a new user to enter the system at once, select the **Active** element.
6. Click the **OK** button
7. Choose the new user in the tree
8. Choose the **Groups** item in the vertical menu of the left part of the screen. In the right part of the screen a list of formed groups is located.
9. Click the **Users** link opposite the name of the group chosen in the list.
10. Tick off the registered user name.

Warning! It is impossible to enter the system under this user until the user is not listed in one of the *groups* at least.
System administrators are the exception. Initially they have an access to all the system –supplied domains and the rights even if they were not listed in a group.

3.1.2. User's attributes

Login	User account name used for authorization in the system
First name	Real full name of a person introduced by this account name
Last name	(optional)
E-mail	User's e-mail address (optional)
Password	A line used for user's authentication in the system. The password is required to be entered twice in user's profile edit window in order to avoid possible entry errors
Interface language	Can accept ru (Russian) and en (English) values
IP address mask	IP address – a set of unique codes attributed to the net or a working station for their identification. IP address template of 192.153.0.* specifies a set of IP-addresses available to access the system.

Warning!

For security, do not specify an empty password or a password that matches the user's name.

3.1.3. Rights setting


Setting the users' rights is performed by placing a user to one or several groups.


To change users' membership in groups, perform these actions:

1. Choose the **Groups** item in the vertical menu
2. Choose a group in the list where a user is placed and click the **Users** link
3. Deactivate the check mark opposite the user chosen, click the **OK** button
4. Choose the group from the list which a user should be moved to and click the **Users** link
5. Tick off the user chosen, click the **OK** button.

3.1.4. User lockout

Sometimes you need to temporarily disable a user to work with the system, meanwhile not deleting his account. For this purpose, C-Gator has a users' accounts lockout mechanism. To lock a user's account, the following actions should be performed:

1. Choose the **Users** item in the vertical menu
2. In the users' list check the account that is required to be locked
3. Click the  icon (**Lock**) at the toolbar above the users' list. Then the user's account will be locked and the flag in the line of the chosen user will change its color to the red (🔒).

To unlock the user's account, perform the same actions with clicking the  icon (**Unlock**).

3.1.5. Deleting a user from the system

To delete a user from the system, perform these actions:

1. Choose the **Users** item in the vertical menu
2. Find the appropriate user in the list and click the Delete link opposite it.

3.2. Groups and roles



Group – a set of users that have equal rights in the system.

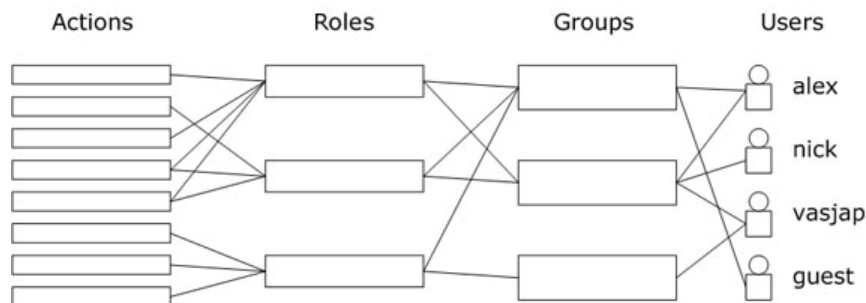


Role – the user's right to perform a particular action in the system.

Security system

Apart from the users, *groups* of users are specified in a domain. Every group has a set of roles.


A *role* appoints a set of rights, to be more precise – a set of permitted operations, elementary *actions* that system performs in response to user's commands. The set of actions is hardwired. The set of roles is specified by the administrator once at the system initial setup. All roles are available for all domains.



Every user must be placed at least to one group, and at least one role must be specified for every group – otherwise a user won't have any rights even to enter the system.

3.2.1. Creating a group

To create a new group in the domain, perform the actions:

1. Choose the **Groups** item in the vertical menu
2. Click the  icon (**Create a new group**)
3. Open the **New group** tab on the right
4. Specify properties of the new group
5. Specify group properties in the open window
6. Click the **OK** button.

3.2.2. Group properties

Name	Group name in the resource tree.
Description	Free notes, e.g. group function.

3.2.3. Rights assignment

Group rights change can be done by assignment of one or some roles.

To change a set of group roles, perform the actions:

1. Choose the **Groups** item in the vertical menu
2. Click the **Roles** link opposite the group chosen
3. In the open window tick off the roles required to be assigned to a group
4. Click the **OK** button.

3.2.4. Standard set of roles

In every specific case a set of available roles can be different. However, a standard set of roles allowing forming group rights can be identified.

ApplicationView	Allows a user to view C-Gator management application
ApprovedView *	Allows a user to view resources in "done" status
AuditTrailViewer	Allows a user to view the activity log
CurrentUserPasswordEdit	Allows a current user to edit his/her password
CurrentUserProfileEdit	Allows a current user to edit information in his/her profile
DomainConfigEdit	Allows a user to edit the application domain information (icons, sites, sites names)
DomainConfigView	Allows a current user to view domain configuration of the C-Gator administrative application
GroupsAndRolesEdit	Allows a user to edit groups and roles of an application
GroupsAndRolesView	Allows a user to view information about set of roles and application groups
LibraryEdit	Allows a user to edit properties and sets of fields of application library
LibraryView	Allows a user to view resources types, inquiry and properties of application library
PendingView *	Allows a user to preview resources in the "pending" status
PublishedView *	Allows a user to view resources in the "published" status
QueryEdit	Allows a user to edit application library query.
QueryFolderEdit	Allows a user to create and edit query folders of an application
QueryLinkEdit	Allows a user to create and edit linked query of an application
ResourceTypeEdit	Allows a user to edit application library resources types
StatisticsView	Allows a user to view statistic system reports
UserMainPageEdit	Allows a user to change main page configuration
UsersEdit	Allows a user to edit information and set of groups of application users
UsersView	Allows a user to view application users

* — roles of *everyone* group by default.

3.2.5. Group users

The group specifies a set of rights for a certain set of users. To change a set of users, perform the following actions:

1. Choose the **Groups** item in the vertical menu
2. Click the **Users** link opposite the group chosen
3. Edit the **Group Users** ticking off the users needed to be included in the group
4. Click the **OK** button to save changes

3.2.6. Deleting a group

To delete a group, perform the actions:

1. Choose the **Groups** item in the vertical menu
2. Click the **Delete** link opposite the group chosen.

When deleting a group, its users are excluded from this group and consequently lost all rights available by this group.

3.3. System administrator




A system administrator manages all system-supplied domains.

As a rule, an assigned system administrator gets a certain account right after the system installation. However, new system administrators may be registered while working with the system.

Список администраторов доступен в области **Конфигурация системы** — пункт **Администраторы системы**.

3.3.1. Registering a system administrator

To register a system administrator, perform these actions:

1. Choose the **Конфигурация системы** menu item in horizontal menu
2. Choose the **System administrators** menu item. In the right part of the screen there is a list of registered administrator.
3. Click the  icon (**New administrator**)
4. Specify the new administrator properties in the open window. System administrators have the same properties as users
5. Click the **OK** button.

Unlike ordinary users, no need to include system administrators in groups and specify their rights. They originally have an access to all system-supported domains and all the rights even if they are not in any group.

Warning: Differential sign of a system administrator in C-Gator is the underline character () before logon. If you try to register an administrator without this sign, the system will output an error message and registration will not be completed. Logging in the system, it is obvious to remember domain features of administrator's logon.

3.3.2. . Deleting a system administrator

To delete a system administrator from the system, perform these actions:

1. Choose the **System administrators** item in the vertical menu
2. Find an administrator you need in the list and click the **delete** link opposite him.

4. Domains and sites

Domains are the main control objects in C-Gator. Different web projects can be implemented within the frames of domains. Particularly, one or some sites can exist under one domain.

4.1. Domains



Domain is the main C-Gator administration unit. A set of users who have an access to a certain domain is specified for every domain. One domain can provide one or more sites.

It is important that every domain has its own *database*. Database is generated at the domain creation and deleted at domain deleting. Such architecture provides site portability: you can work with the site in off-line mode in C-Gator version installed on your internal network server, then transfer it easily to the system set on provider's server.

We need to notice that sites specified in a certain domain can use only the resources of the domain wherein they were specified.


4.1.1. Domains and sites

One or more sites can be assigned to a domain. Sites structures can not intersect within one domain and can be located in different system *libraries*. However, it is possible that some pages are related to several sites. But system users, rights and roles set is a single for the whole domain.

Only system administrators (supervisors) can control domains. **System configuration area** (the first item on the green bar) invisible for ordinary system users are available for them in C-Gator. Such items as administrators list and their profiles, system errors log, cache can be controlled in the same system area.

4.1.2. Creating a domain

To create a new domain, perform these actions:

1. Choose the **Domains** menu item
2. Click the  icon (**Create a new domain**)
3. In the open window specify the properties of a new domain
4. Click the **OK** button. Thereafter, database will be automatically generated and the new domain will appear in the general list of the system domains.

Then registration of domain users and their rights assignment as well as domain libraries creation and setup are required to be implemented.

Two ways can be used to switch to a new domain:

1. Point a mouse pointer on the **System configuration** item of the horizontal menu; click the dropdown item **Choose active domain**. Then, choose the domain you would like to go to in the open window.
2. Log out by clicking the **logout** link in the upper right corner of the screen and enter a new domain indicating its name in the authorization form line **domain**.

4.1.3. Domain properties

Name	Domain name
Database	Name of domain database. It is of "domain_bd" view. For example, if a domain is mysite, then its database will have the

Database connection parameters	mysite_bd name The line is as follows: server="servername";database=«DBname»;uid=work;pwd=sql For example: server=serv1;database=mysite_bd;uid=work;pwd=sql
Path to file storage	Path to the random folder that contains domain files. For example, d:\meta\mysite\ If this line is kept empty, the system will assign the path to catalog by default
Description	Free notes about a domain
Database quota	Domain database size limitation in MB
Disc space quota	Limitation for occupied disc space in MB
Locked	Domain status
Полнотекстовый поиск	При включенном флаге — регулярно выполняется полнотекстовая индексация базы данных домена

4.1.4. Deleting a domain

To delete a domain, perform these actions:

1. Choose the **Domains** menu item
2. Click the **Delete** link opposite the domain chosen.


4.2. Sites




A website is a collection of web pages interconnected by hyperlinks. One page of a website called the main page is connected with its external name (e.g. www.mysite.ru).

4.2.1. Creating a website

To create a new website in the system:

1. Choose the **Sites** menu item in the **Active domain** field. The list of created websites is in the right part of the screen
2. Click the  icon (**Add new site**) on the toolbar
3. In the open window specify the new site properties
4. Click the **OK** button.

4.2.2. Site properties

Name	Name of a website, for example www.mysite.ru
Description	Free notes about a website.
URI authentication pages	The page with the form for site visitors' login and password enter for closed resources access. If authentication is not used on a website, this field is optional. Authentication page can be chosen in the resource tree by clicking the  button.
Resource on default	Website main page that will be showed by request of your site address.
URI pages with an error message	Page is shown at the site operational error.
URI pages with 404	A page shown by non-existent resources request.


error message**To show errors in decorators**

Displays the red square with information about an error on the external site in place of decorator. It works only if error display template is not installed in decorator.

4.2.3. Sites names

To make a site accessible via Internet, the site has to have *domain name*. Domain name is unique, this is URL typed in the browser line when you need to open a certain site. But it often happens that one site can have several names. For example, www.mysite.com and mysite.com are the different names of the same site. It is convenient for visitors; they may request for different names and access the same site.

To create the name of a site, perform these actions:


1. Choose the **Sites** menu item
2. Click the **Change** link opposite the site you want to add a new name to
3. In the open window click the **Add site name** button
4. Enter the name of the site and choose resource in the tree by default, clicking the  icon
5. Click the **OK** button. Then a new name of the site will appear in the list in the **names of sites** tab
6. Close the window by clicking **OK**.

To delete the name of a site, open the same window, choose the names of sites tab and click the **delete** link opposite the name chosen.

4.2.4. Deactivating the site name

The list of all existent names of all the sites in system-supported domains is in the **Sites names** section of the **System configuration** bar. This section is available only for the system administrator. It does not allow creating new names or deleting existent ones. But it is possible to temporarily disable names of sites.

To temporarily disable the name of the site, perform the actions:

1. Choose the **Sites names** menu item
2. In the name list deactivate the tick opposite the site name required to be disabled
3. Click the  button (**Save**). The name of the site is disabled. Requiring this name via a browser, it will be impossible to access your site.

To enable the name of the site again, tick off the name in the list and save changes.

4.2.5. Deleting a site

To delete the site, perform the actions:

1. Choose the **Sites** menu item
2. Click the **delete** link opposite the site chosen.

4.3. List of icons



Icons are the graphic management elements in the system. Clicking every icon implicates a certain operation.

C-Gator is a flexible system that allows creating its own types of resources, roles, cumulative actions. This means that there is a capability to assign a graphic symbol or an icon to every action in the system.



All the icons used in the system are divided into 2 groups:

- **Toolbar icons** - icons of a bigger size designed for element notation on the toolbar
- **Resource tree icons** – icons of a smaller size designed for element notation in the resource tree that is in the left part of the screen.

The icon of these groups can be previewed by choosing the **Icon list** menu item and then choosing one from groups described in dropdown list in the upper part of the screen. For convenience, the icons of both lists are split into several pages.

4.3.1. Adding an icon

To add a new icon, you need to perform these actions:

1. Choose the **Icon list** menu item
2. Click the  icon (**Add icon**) on the toolbar
3. In the open window enter the icon identification code in the **icon** tab
4. In the same window in the **additionally** tab specify the path to the icon by clicking the  icon
5. Click the **OK** button. With that, the chosen icon is automatically downloaded to an appropriate folder of the system and exposed in the general icon list.

4.3.2. Icon properties

Identification number (id)	Free icon name.
Path	The “address” of an icon in the system. The information is technical; the field is filled in automatically when downloading an icon.

4.3.3. Deleting an icon

To delete an icon, perform these actions:

1. Choose the **Icon list** menu item
2. In the upper right part of the screen in the dropdown list choose the group you want to delete an icon from
3. Click the **delete** link opposite the icon chosen in the list.

Warning! Deleting an icon, make sure that it is not used in the system. Otherwise there will be an empty space instead of an icon on the toolbar or in the resource tree.

4.4. Errors



There are no systems completely protected from possible errors. The larger the system, the more it is complicated to provide its absolute validity and fault tolerance.

Whereas developers did their best in development of stable and robust software, operating errors are possible.

Errors can appear due internal causes, such as a module error as well as external causes — for example, hardware error, error or unexpected behavior of operational system, RAM or disc space deficiency, insufficient rights during an operation execution, problems with database connection, etc.


The list of possible errors is rather big. Therefore, there is a need to provide the system with a mechanism that allows prompt analysis of occurred problems and provides complete information about it.

System errors log is the mechanism, and a system administrator has an access to its work results.

4.4.1. Viewing the error log

The error log is the list of occurred problems, available for the system administrators only. To preview the list, go to the **System configuration** section and choose an error item in the tree — you will see the errors list in the main part of the window. The list is the chart with the fields:

Number	Sequence number of an error.
Date	Date and time of an error.
Type	Type of error- "error" usually.
Message	Short message about the cause of error.
Source	Module, in which an error is detected.

As any other list, the error log can be filtered and sorted by any field or set of fields. To do this, use the  icon (**Set query parameters**— see details in *User's Guide, Filter and sorting* section). The list shows all errors with date-sorted by default, so you see the latest errors at the top of the list.


4.4.2. Viewing a separate error

Only brief information about the problem is shown in the chart. A more detailed report about every error can be received. For this purpose, click the **Open** link in the line with an error you are interested in — a new window with a detailed report about an error appears. Particularly, this report contains:

General Information	General information about the external system environment.
Exception Information	Information about exception — type, message, source of exception.
StackTrace Information	Stack trace — detailed information about calls that led to an error.

4.4.3. Viewing several errors in details

Sometimes you need to get information about several errors at the same time (for example, in order to print the report). Tick off the needed errors in the first column of the chart and

click the  icon (**Show error list**).


4.4.4. Separate errors deleting

To delete an error (errors), tick off these errors in the first column of the chart and click the

 icon (**Delete errors**).

Warning! Deleted information can not be restored.

4.4.5. Complete deleting an error log

To delete all records from the error log, click the  icon (**Clear errors log**).

4.5. Cache



It happens that the same information is required for many times. There is a mechanism that minimizes the time for repeated acquisition of information. This mechanism is called *cache*.

For example, a user getting various site pages comes back to the main page several times. The main page can have a very complicated structure, and information collection and processing can take a certain time.

The idea is to keep prepared site pages in a temporarily storage (cache) — when a page is required time after time, and it is known that it is not changed — in this case it is taken directly from cache, page remake is not executed — computer power and processing time are reduced by means of that.


Cache size (number of objects in it) is automatically determined by the system depending on the free memory space. When storage space for cache is deficient, the most rarely used objects are unallocated from cache.

4.5.1. Viewing cache scope

Only administrators can work with this element of the system. To get the information about cache work, open the **cache** item in the section **System configuration**. You will see **number of items in cache** parameter in the tab — the number showing the current cache size.

4.5.2. Viewing the list of objects in cache

In some cases the information about the objects located in cache can be helpful. To get this

information, click the  icon (**get item list**) — the cache items field will be filled out with list of all objects *keys* being located in cache at the moment.

Objects keys are formed under the following rules: firstly, type prefix (for example, «*_d_*»), then type identification number (for example, « {208B9810-6EB5-4133-A500-1F2E71E20896} », then name or object identification number:

Domain	<code>_d_{208B9810-6EB5-4133-A500-1F2E71E20896}</code> <domain code>
MetaSite	<code>_ms_{EA892919-AE29-4543-A9EF-07CFF7707FAC}</code> <site name>
Site	<code>_s_{E4AB7AF8-A8A0-473d-AADE-232603B35C5B}</code> <domain code>!<site code>
SiteName	<code>_sn_{865FE42D-AEDF-4616-AB75-49E62B9DB541}</code> <domain code>!<site name>
Library	<code>_libr_{BE5314FA-DB22-4d62-8E72-7B97A63EAD82}</code> <domain code>!<library code>
Query	<code>_q_{4E66C074-6CE9-416b-83D7-447FE2AE6642}</code> <domain code>!<request code>
PrincipalData	<code>_pd_{37A782E3-3681-455e-99E2-F840944A9DBC}</code> <domain code>!<user code>
ResourceType	<code>_rt_{C86F1DCE-4294-4578-BEC8-65BC665D3621}</code> <domain code>!<library code>!<code of resource type>
Resource	<code>_r_{60994677-69DD-493b-8A27-3049850AA518}</code> <domain code>!<resource uri >
File	<code>_f_{E4A2F014-C455-40e5-914D-23F0AE0B6950}</code> <domain code>!<file code>

4.5.3. Cache flush

To completely clear cache content, click the  icon (**Clear cache**) — all objects will be deleted from the memory.

4.6. Audit trail

Every action of any user who works with domain resources (creating/deleting/resource/user/site change etc.) is recorded in a special log. The log keeps the resource support history and allows to find out who makes changes and when.

Audit trail logs any objects and types of C-Gator's resources: libraries, pages, folders, images, news lines any other resource types.

To view the audit trail for any object, chose an object in the resource tree and open the **Audit trail** tab on the right.

Events are shown in reverse chronologic order. This is what is set for every event:

Date	Date of an event, to within a second.
Code	Code means the performed action. It is technical information deciphered in the Message field.
Message	Event description.
User	Logon of a user performed an action.

The audit trail logs for every resource separately. For example, if you change a page in a folder, your actions will be reflected in the page audit only, but not in the folder.

4.7. Statistics

Any website owner is interested in the number of website visitors, their localization, their most popular pages, etc. It is obvious for further website development. There are special systems allowing information gathering, keeping and exposing it in a convenient form. It may be paid services (e.g., Spylog) or free services (e.g. Hotlog, Rambler). However, it is more convenient to operate these data in the website management system directly.

C-gator has a build-in analytical system that collects statistics and forms reports on user's demand. It is presented in the **Statistics** section. You can enter there by pointing at the **Active domain** item in horizontal menu and choosing the Statistics item in the dropdown list.

You will see the list of sites of the active domain in the left part of the screen in the resource tree place. If there is one site in your domain, then its name will be the only element in the list.

There is a statistic reports groups list under every site. There are several reports in every group consequently:

Attendance	
All visits	Site attendance quantity for a certain time interval.
Countries	Site attendance distribution by countries.
Traffic	
Incoming traffic by IP	Incoming traffic as a whole for a certain time interval.
Incoming traffic by URI	A certain site page incoming traffic for a certain time interval.
Outgoing traffic by IP	Outgoing traffic as a whole for a certain time interval.
Outgoing traffic by URI	A certain site page outgoing traffic for a certain time interval.
All traffic	General input and output site traffic report.
Pages	
Most popular pages	Site page rating by the browsing.

Page duration Average time spent by visitors on a page.

Paths

Pages navigation depth Number of pages browsed by visitors during one session.

Page navigation Site navigation paths.

Systems

Browsers Types of browsers users browse the site through.

OS Operational systems installed in the site visitors' PCs.

4.7.1. Creating a statistic report

To create a statistic report, perform the following actions:


1. Choose the site you would like to get a report from the list in the left part of the screen and click "+" near it
2. Choose the reports group and a report you need under the group. The window with the report parameters will appear in the right part of the screen:

Most popular pages
from Sunday, January 01, 2006 to Friday, January 06, 2006
Period: [yesterday](#) [last week](#) [last month](#)
table histogram diagram export
Period from 1/1/2006 to 1/6/2006
Web site All Top 10 OK
 No robots

3. Set parameters of the report:

Period:

One of the periods set can be chosen (yesterday, 7 days, 30 days), by clicking the appropriate link in the upper part of the report.

Free period can be specified. Assign the period using the calendar called by clicking the  icon.

Some reports display ratings. In this situation it is required to assign the number of rating positions by choosing the Top meaning 10/20/30/40/50 in the dropdown list.

4. Click the **OK** button. The report table appears under set parameters.

4.7.2. Statistic report form

Every statistic report can be presented in different forms. C-Gator supports the following report forms:

- table
- histogram
- diagram
- chart (not for all reports)

To switch from one form to another one, it is enough to choose an appropriate tab under the report parameters. No need to set the report parameters again, they are saved for all available forms of the generated report.

4.7.3. Exporting a statistic report

Statistic reports data can be previewed from the system interface and exported to work with them in external applications. To export report data, the following actions are required:

1. Choose the **Export** tab under the report area
2. Mark the format in which exported data will be saved (XML or CSV)
3. Click the **Export** button

4. Click the **Save** button in the open window
5. Choose a directory in which data will be saved
6. Specify the file's name and click **Save**.


4.8. Query catalog


C-Gator is a multifunctional system. An ordinary user needs a few functions, so he/she does not need to see many links, icons and tables. Moreover, users often work in a certain part of the site (for example, with the news line). To lighten these users' work, there are *query catalogs* in C-Gator.

Query catalogs allow resources relocating into a separate C-Gator area; these are the resources a user works directly with. Thanks to such device, the system structure becomes less complicated and more user-friendly.

4.8.1. Creating a query catalog


To create a request catalog, perform the actions:

1. Click the **Search** menu item on the green bar by the left mouse button; choose the dropdown **Create catalog** item
2. In the open window specify the catalog name; click the **OK** button. The created catalog appears in the tree in the left part of the screen
3. Choose the catalog created in the tree
4. Choose the **Rights** tab
5. Click the  (**Add groups**) icon
6. In the open window choose the groups required to get an access to the catalog. Choose one or several groups by the mouse; transfer them from the **All groups** area to the **Resource groups** area by the > button. Click the **OK** button.

Warning! Request catalog can contain both queries and other catalogs. To create a catalog in the existing catalog, choose it in the tree and click  icon (**Create query folder**).

4.8.2. Creating a query in a catalog

To create a query, perform these actions:

1. Choose a catalog in the tree where you want to create a query
2. Click the  icon (**Create query folder**) in the **Search** tab
3. In the open window choose a library where the resources will display a new query. Click the **OK** button
4. Specify properties of a new query (see below), click the **OK** button. The created query appears in the catalog. When choosing it, the right part of the screen displays the area with which the group users with the rights for a given query catalog will be able to work.

4.8.3. Query properties

It is required to specify the following properties when creating a query:

Library name	Library, which resources are displayed by query
Folder's name	Query name
Query	It is required to choose a library query from the dropdown list.

For example, a “details list” query is specified under output of a news line, a guest book or any other resource that consists of multiple properties list.

Queries currently available in the library can be viewed in the Work area by choosing the library in the tree and queries tab in the right part of the screen. You can develop a query by yourself, where the query will be used when creating query folder. See the details about library query in the section 5 “Libraries and types of resources”.

Query parameters

Link to the resource uri displayed with the query of @uri=/news/news/ view. Resource uri can be copied to the clipboard from the resource properties in the C-Gator Work area.


Display result with help of control


It is required to choose a control from the dropdown list; the requested resources will be displayed in the right part of the screen by means of the control. For example, at output of the news line, a guest book or any other resource that consists of multiple properties, the “multiproperties list” control is specified.

Query properties can be edited after the query creation. To perform this, choose a catalog in the tree and click the **change** link opposite the query.

4.8.4. Deleting catalogs and queries

To delete a query from the catalog, perform the actions:

1. Choose a catalog in the tree with a query to be deleted
2. Click on one or some query to be deleted
3. Click the  icon (**Delete query folder**).

Warning! To delete the queries root catalog, choose it in the tree, choose the Properties tab and click the  icon (**Delete catalog**).

5. Resource types and libraries

The main resource tree nodes of the C-Gator Work area are the *resource libraries* and every library contains its own *resources types* set. The resources types set may be assigned for every library; it denominates the resources to be created in a relevant library. Thus, the **Site structure** library contains such resources types as a folder, an image, a file, a page etc. (more detailed information about standard types is given in C-Gator Designer's Guide). These resources types are called *sample* types. They are standard and are included in the C-Gator distribution kit.

However, it is available to create libraries and resources types, thereby extending the kit. This is the most important option of the system extension.

5.1. Libraries



Library is a set of resources, queries and resources of stipulated types.

5.1.1. Creating a library

To create a new library, perform the actions:

1. Point a mouse pointer to the Work area menu item and choose the **create library** item in the dropdown list
2. In the open window enter the library name and root URI of /biblio/ view
3. Click the **OK** button. The created library appears in the resource tree
4. It is required to assign a set of resources types of the created library and a set of queries as well. This functionality is described below
5. Since the resources types and library queries are specified, assign the main library properties on the **Properties** tab.

5.1.2. Свойства библиотеки

Код библиотеки	Идентификатор данной библиотеки
Название	Имя библиотеки
Корневой URI	Часть веб-адреса, используемая при построении адреса для ресурсов, входящих в библиотеку
Имя сайта по умолчанию	Имя сайта, используемое при предварительном просмотре ресурсов (в частности, страниц), входящих в данную библиотеку

5.2. Resources types



Resource type is the matter that defines base properties of all resources of a certain type, allowable operations with this resource as well as the C-Gator interface features during work with a certain type resources.


Строго говоря, тип ресурса определяет:

- название и облик ресурса этого типа
- набор закладок, которые пользователь видит при просмотре/редактировании ресурса

- набор действий для каждой из закладок
- права на выполнение каждого из действий
- набор *полей* ресурса
- набор *множественных полей* ресурса
- поведение ресурса этого типа, которое задается *обработчиком типа*

5.2.1. Creating a resource type

To create a new resource type in the library, perform the actions:

1. Choose the library in which a new resource type is required to be created
2. Choose the **Resource types** tab
3. Click the  icon (**Add a new type of resource**)
4. In the open window set values of all the fields required
5. Click the **OK** button. A new resource type appears in the resources types' general list of this library.

To edit the resource, click the **change** link opposite the chosen resource type, make changes and click the **OK** button to save changes.

The properties accessible for creating and changing the resource type are described below.

5.2.2. Resource type properties

Name	Name of this resource type. Name is given once at the resource type assignment, and thereafter it can not be changed.
Description	Your free notes about this resource type.
Icon identification code on default	Assigns an icon that will be automatically assigned to every new resource of a given type. To choose an icon, click the button on the right from the field.
Type handler	Class that describes functionality of a given resource type. It is chosen by clicking the link where the page with the type handler appears.(see the "Type handler operation")
Show sub resources in resource tree	Flag showing if a given type resources are the end nodes of the resource tree or if they have sub nodes forming sub tree.
Resource status on default	Resource processing status that will be automatically assigned to every new resource of a given type.
Multiple properties on default	Multiple properties status that will be automatically assigned to every new resource of a given type.
Include resource type in web-statistics	Flag showing if the given type resources are counted at calculating and viewing site attendance statistics.

5.2.3. Type handler

The most important field among all the fields mentioned is the *type handler*. The type handler specifies the resource type realization, its functional content and behavior.

Clicking the link on the right from the **Type handler** tab, we switch to a page of the handler properties. Handlers' classes have their names beginning from Processor: "ProcessorFile", "ProcessorPage" etc. The list of all available handlers is generated automatically throughout the application modules.

Список стандартных обработчиков типа, присутствующих во всех конфигурациях:

ProcessorFile	Обработчик файла
ProcessorImage	Обработчик картинки

ProcessorTemplate	Обработчик шаблона
ProcessorCatalogNode	Обработчик каталога
ProcessorPage	Обработчик страницы
ProcessorMultiPropertyFile	Обработчик файла во множественном свойстве
ProcessorMultiPropertyImage	Обработчик картинки во множественном файле
ProcessorText	Обработчик текста

5.2.4. Resource type fields

Every resource has a set of properties attributable to resources of this type only. These properties values are saved in *fields*. Every field keeps a particular *value* of its *type*. For example, the "creation date" field of the DateTime type stores the value "29.08.2004".


The library fields list includes all the fields that can be used for defining all *type of resources* of this library. The entire fields list available in a given library is at the **Fields list** tab (in a resource type definition dialog).

Therefore, all resources types of one library share the same set of fields specified in the **Fields** tab of the library properties. At that, a set of fields of every resource type is the sub collection of the set of library fields. The flag on the left from the name of every field assigns if the field for a certain resource type is available.

Note: To store records of all library resources, an ordinary plain table is used. At that, every type of the resource uses a set of fields that is a sub collection of the set of library fields.

Adding a new field

To add a new field to the list, perform these actions:

1. Choose the library in which the resource type you are creating/changing is referred
2. Choose the **Fields** tab
3. Click the  icon (**Add new field**)
4. In the open window specify the field properties
5. Click the **OK** button. A new field appears in the general list of the given library fields.

Field properties

Name of field	Name of the field in database (for example, last name). Only symbols from A to Z are acceptable, numerals and underline "_". Name must be started from a letter. Field name length is not more then 100 symbols.
Header	A field name shown when mentioning or editing (for example, last name).
Type	Specifies data type in field storage and the field view when editing. See details below in "Types of fields".
Mandatory field	Indicates that the field is mandatory— i.e. it can not be empty.
For reading only	Indicates that field editing through the user interface is prohibited. Field value is shown, but it can not be changed.
Value on default	Value assigned under its creation. It is required to set the value for mandatory fields on default.

Field types

Type of field	Field description
Text	Text field is a text line in free format. The number of signs acceptable in the field is set by the additional parameter "max number of symbols".
Note	Text multi-line field; the number of symbols is unlimited.
Number	Real value of binary accuracy (64-bit IEEE).
Integer	Integral value with meanings from -2 147 483 648 to 2 147 483 647, real limits are set by additional parameters – "Minimal value" and "Maximal value".
DateTime	Date within the limits of January 1, 1753 – December 31, 9999; and time within the accuracy of 1/300 seconds.
Boolean	Logical field – "true" and "false" values.
Currency	Amount of money in rubles or in other currency.
Choice	Field value is taken from the fixed values list.
MultiChoice	Field value – one or several ones from the fixed values list.
Guid	Unique 128-bit value, used for identification.
RatingScale	Rating – it is use for polls and voting.
Status	Resource status in processing – e.g, " pending", " published", etc.
File	Field stores the content of a file chosen by a user.
Url	Pointer to another resource of the same site or out of it.
Calculated	Computable field. Field value is calculated within the formula (SQL-expression). The formula is substituted to data sample request; - resource property fields and multiple properties in the view: <fieldref name="position" /> - standard fields of resource tables - any SQL operations and functions are allowed to be used The field value formula is assigned to the additional parameters tab. Examples of the formulas: 1. <code>dbo.f_GetDay(rmp_property_id, @day,@month,@year)</code> 2. <code><fieldref name="position" /> + ' - ' + <fieldref name="bname" /></code>
Lookup	Field value is taken from the list derived from other resource.
User	System user, the value is taken from the all users list.

Some of the fields described above are required to set additional parameters. In this case the tab **Additional parameters** appear in the same window; the fields of this tab are required to be filled.

Additional field parameters

A set of additional parameters depends on the field type:

Parameters	Field parameters	Notes
Field size	Choice Text Lookup MultiChoice Guide Calculated	Field width when editing – either in pixels (for example, "50px"), or in percents from the width of the right part (for example, "70%")
Maximum of symbols	Text	Constraint for maximum of symbols that can be typed in a field— e.g, "100".

Editor format	Choice	Values list view: Dropdown — a dropdown list. RadioButtons — switches.
Values to be taken	Choice MultiChoice	List of values to be chosen: each line — one value.
To use visual editor	Note	To edit a text you need to use an editor allowing formatting.
Number of lines	Note	Number of lines in a multi-line editor.
“True” value	Boolean	Value shown under real value “true”.
“False” value	Boolean	Value displayed under real value “false”.
Minimum value	Integer Number Currency	Minimal permitted field value — an error message pops up after loading a smaller value.
Maximum value	Integer Number Currency	Maximum permitted field value — an error message pops up after loading a bigger value.
Display format	DateTime Number Currency	DateOnly — only a date DateTime — date and time Automatic NoDecimal — without signs after a point. TwoDecimals — two signs ThreeDecimals — three signs FourDecimals — four signs FiveDecimals — five signs
Currency	Currency Calculated	Currency symbol — e.g., “rub.”, “euro”.
Formula	Calculated	Formula used to calculate field value.
Result type	Calculated	Type resulted by calculating through the assigned formula.
Date display format	Calculated	Used for the Date Time result type.
Numerals display format	Calculated	Used for the Number or Currency result type.
Display percents	Number Calculated	Option to put the percent sign “%” after the value.
Resource URL with values	Lookup	Specifies data source at selection from the list
Field with values	Lookup	The field value is used as the selection result
Field with signature	Lookup	The field used as variants of selection for a user

Changing field properties

To change field properties, click the **change** link opposite the chosen field in the general list of the fields’ library. Set changes required and click the **OK** button.

Deleting a field

To delete a field from the list, click the **delete** link opposite the chosen field in the general list of the fields’ library.

5.2.5. Resource type multi fields

The same rules are for multi fields of the resource type, a complete set of such fields is assigned in library properties in the Multifields tab; and a set of fields for the resource type is assigned in the resource type properties dialog window in the **Multifields list** tab.

5.2.6. Tab list

The **tab list** tab in the creating/editing the resource type window determines what tabs will be displayed when creating and editing a resource. This list can be edited optionally; it is available to add new tabs, change and delete existent tabs. Tabs will be located ascending from left to right in the **No** column.

The option button above shows for which editor an appropriate set of fields is assigned— for the editor or for the multi fields' editor.

The following properties are specified for every tab:

Name	Full name of a tab.
Header	Short name that will be written on a tab. It is recommended to use only lower case characters and apply abridgements in a header.
Registered control	Specifies the tab standard content and behavior.
To show tab when creating a resource	Flag showing that a tab must be visible both for editing and creating a resource.

Fields list indicates what fields (from the list of fields of a certain resource type) are edited in this tab.

Actions list specifies a set of graphic buttons; each of them corresponds to a certain command. The following properties are set for every action:

Action	Is chosen from a set of possible operations.
Header	Name of an operation.
Signature	Line that will be shown by pointing a mouse pointer to an operation icon.
Icon identification code	Identification line that specifies an icon used to display a command. To choose an icon from the list, click the button on the right from the field.


An action icon will be shown only to a user who has at least one right marked on the **Roles list** tab. However, this icon can be unavailable if a user has no right to edit a given resource. The list of the tab roles specifies what users can see this tab.

5.2.7. Query

Practically everywhere in the system any list is a set of records (selected query) based on a *query*. The query describes a selected resource fields or multi fields in XML view.

Creating a new query

To create a new query, perform these actions:

1. Choose the library to which a new query will be referred
2. Choose the **Query** tab
3. Click the  icon (**Add new query**)
4. Specify the name of query and make XML-description for the query — see the *Query description* below
5. Click the **OK** button. The query is created and it will appear in the general requests list of the given library.

Creating a request, a *global unique identifier* is set to it automatically (GUID) — unique 128-bit code used for the reference to the query from the location where it is being used.

Query description

Text of query is a XML-document of the following view:

```
<?xml version="1.0" encoding="utf-16"?>
<View QuerySource="1">
  <ViewFields>
    <fieldref name="..." />
    ...
  </ViewFields>
  <OrderBy>...</OrderBy>
  <Query>
    ...
  </Query>
  <RowLimit>...</RowLimit>
</View>
```

The structure of the query in details

The first line indicates (**Note.** No signs before it!) this is a XML-document in UTF-16 coding. The beginning of the **View** tag is a root tag of a document; it is in the second line. The last line closes the **View** tag.

The XML format stipulates that all tags must be closed, i.e. recorded by one of two ways:

```
<tagname param1="">...</tagname>
<tagname param1="" />
```

The query source

The **View** tag has the only one attribute that is **QuerySource** and its value defines the source of records for the query:

QuerySource value	Data source
1	Library resource query
2	Library multiple properties query
3	Library related multiple properties query

Fields included in the query – the ViewFields tag

The **ViewFields** tag contains a set of **fieldref** tags that describe a set of fields included in the query. The **fieldref** tag has only one **name** attribute containing the name of the field. Names of library fields on the **Field** tab of the library properties are specified as the **name** attributes values.

Example:

```
<ViewFields>
  <fieldref name="first_name" />
  <fieldref name="last_name" />
  <fieldref name="middle_name" />
  <fieldref name="salary" />
</ViewFields>
```

Records sorting – the OrderBy tag

Usually the query result (a set of records) should be sorted under a criterion. This criterion can be set with the help of the **OrderBy** tag. E.g.:

```
<OrderBy>last_name asc, first_name asc, salary desc</OrderBy>
```

The fields used for sorting are mentioned here — **last_name**, **first_name**, **salary**; here is a direction for sorting for every field: **asc** — ascending, in preorder or **desc** — descending, in reverse order. At sorting a comparison in the first specified field is made first; if values are equal — in the second specified field, etc.

Records filtering — the Query tag

The **Query** tag allows setting a *test condition* that is a criterion for records sorting – only the records that meet a given condition come into the query result. A condition can contain both comparative operators and AND or OR connectives.

Atomic values are described by the **expr** tag:

constant	<expr value="1001" />
Field value	<expr fieldref="first_name" />
parameter	<expr param="@library_id" />

Two values are compared with the **cond** tag use. The **oper** attribute sets a comparison operator; tags that are operands of a certain operation are recorded inside the tag. **Expr**, **cond**, **and** and **or** tags can be operands.

Operation	Value	Number of operands; note
<code>eq</code>	equal	2 operands
<code>neq</code>	Not equal	2 operands
<code>geq</code>	More or equal	2 operands
<code>leq</code>	Less or equal	2 operands
<code>gt</code>	more	2 operands
<code>lt</code>	less	2 operands
<code>in</code>	One of values	2 operands; second operand specifies a set of values
<code>is null</code>	Empty value	1 operand
<code>is not null</code>	Not empty value	1 operand
<code>like</code>	Comparison in mask (for text values)	2 operands; second operand specifies a mask with use of “_” (any symbol) and “%” signs (any symbols sequence)
<code>contains</code>	проверка «содержит ли» (для текстовых значений)	2 операнда; проверяет вхождение подстроки по полнотекстовому индексу; работает, только если для домена включен полнотекстовый поиск

Therefore, only “is null” and “is not null” are unary operators (with one operand); two operands are used for other operators. If the number of operands required does not correspond to an actual one, the error message pops up during the query processing.

An example of comparison — condition “the salary field value is more then 10000»:

```
<cond oper="gt">
  <expr fieldref="salary" />
  <expr value="10000" />
</cond>
```

The **like** operator can be used for checking “starts from”, “ends in” and “contains”:

```
<cond oper="like"> <...> <expr value="Иванов%" /> </cond>
<cond oper="like"> <...> <expr value="%нов" /> </cond>
<cond oper="like"> <...> <expr value="%вано%" /> </cond>
```

The **And** tag is used to connect two expression statements by AND connective. The **or** tag is used to describe OR connective.

For example, the expression:

(last_name starts from “Smi”) AND (salary > 10000 OR salary < 1000)

can be written in this way:

```
<and>
```

```

<cond oper="like">
  <expr fieldref="last_name" />
  <expr value="Иванов%" />
</cond>
<or>
  <cond oper="gt">
    <expr fieldref="salary" />
    <expr value="10000" />
  </cond>
  <cond oper="gt">
    <expr fieldref="salary" />
    <expr value="10000" />
  </cond>
</or>
</and>

```

One more way to use the **expr** tag is to specify the **oper** attribute that leads to a recursive breakdown by the **expr** tag rule, and an operation specified with the **oper** attribute is performed with all daughter tags. For example:

```

<expr oper="+">
  <expr value="'%'">
  <expr fieldref="uri">
  <expr value="'%'">
</expr>

```

Build-in functions can be activated by the **expr** tag. For this, use the **type** attribute with the **func** value and at that the attribute name with the value-name of call-back function should appear. Every slave tag is a separate parameter of the function. For example, here is a **myFunc** function call with two parameters:

```

<expr type="func" name="myFunc">
  <expr fieldref="uri">
  <expr oper="+">
    <expr value="'%'">
    <expr fieldref="uri">
    <expr value="'%'">
  </expr>
</expr>

```

Additional (utility) fields of query

The library resources query (QuerySource="1") contains the following set of utility fields:

Resource table— prefix "r"

r.resource_id	Resource code (Guide)
r.parent_id	Parent code (Guide)
r.uri	url path to resource (line) — for example /shop/notebooks/sony.html
r.uri_name	url name of resource (line) — for example sony.html
r.r_level	Resource level in the resource tree
r.r_hierarchy	Field contains codes of all resource parents and a code of resource itself segregated by "."
r.icon_uid	Code of an icon
r.r_order	Number specifies the resource position in the list of resources of one level; it is used for changing order in hierarchical menus.
r.last_revision_id	Code of the last resource revision (numeral).
r.deleted_date	Date when resource was deleted
r.created_date	Date of resource creation

r.has_children	Sign that shows if a resource is has sub resources
r.checkout_user_id	Logon of a user who took resource for editing
r.has_ipmask	Sign that shows if a resource has access restriction by the IP address mask
r.library_id	Library code (Guide)
r.rt_id	Resource type (line)

R_Revision table—"v" prefix

v.v_revision_id	Revision code (numeral)
v.resource_id	Resource code (Guide)
v.v_modifydate	Date of modification
v_description	Description of a version
v_editor	Logon of a user who modified resource
v_status	Status of resource from the set: " Pending", " Approved" " Denied", " Published"

Table of upgradeable properties of resource—"p" prefix

The request to multiple properties of resources (QuerySource="2") contains the following set of service fields:

Resource table —"r" prefix

Table of extensible properties —"m" prefix

m.rmp_property_id	Code of multiple property
m.resource_id	Code of resource owing multiple property
m.status	Status of multiple property from the set: " Pending", " Approved" " Denied", " Published"

The query to bound multiple properties of resources (QuerySource="3") gathers the information from several tables as well. The bound multiple properties are used for products catalog implementation.

Example: There is a general plain products catalog. There is a tree-type category nodes of a category connected with a subset from general catalog of goods. Relation is implemented through an additional table and binds resources — nodes and multiple properties from the general resource.

Resource table —"r»" prefix

Table of upgradeable properties —"m" prefix

m.rmp_property_id	Code of multiple property
m.resource_id	Code of resource owing multiple property
m.status	Multiple property status from the set: "Pending", "Approved", "Denied", "Published".

Table of resource and multiple property link — "lm" prefix

lm.rml_id	Code of connection between multiple property and resource.
-----------	--

5.2.8. Examples of queries

Resource query by the library and the code of the parent-resource:

```
<?xml version="1.0" encoding="utf-16"?>
```

```

<View QuerySource="1">
  <ViewFields>
    <fieldref name="name" />
    <fieldref name="22" />
  </ViewFields>
  <OrderBy>uri</OrderBy>
  <Query>
    <and>
      <cond oper="eq">
        <expr fieldref="r.parent_id" />
        <expr param="@parent_id" />
      </cond>
      <cond oper="eq">
        <expr fieldref="r.library_id" />
        <expr param="@library_id" />
      </cond>
    </and>
  </Query>
  <RowLimit>100</RowLimit>
</View>

```

Resource query by the library and resource url:

```

<?xml version="1.0" encoding="utf-16"?>
<View QuerySource="1">
  <ViewFields>
  </ViewFields>
  <OrderBy>
  </OrderBy>
  <Query>
    <and>
      <cond oper="eq">
        <expr fieldref="r.uri" />
        <expr param="@uri" />
      </cond>
      <cond oper="eq">
        <expr fieldref="r.library_id" />
        <expr param="@library_id" />
      </cond>
    </and>
  </Query>
  <RowLimit>100</RowLimit>
</View>

```

6. Glossary

HTML (HyperText Markup Language)

A markup language used to structure text and multimedia documents and to set up hypertext links between documents.

With this language a browser is announced what text and other elements (images, tables, and forms) are displayed and in what way they should be displayed. HTML language is not for programming but for composing- to mark a text for publication on the Internet in a particular way.

HTML language allows interconnecting pages by links. Links availability is a fundamental property of web-pages. Not only can a part of a text be a link but an image or a part of an image.

URL (Universal Resource Locator)

Address of a page on the Internet. URL consists of the domain name, the path to a file at the site and the name of the page file. For example:
www.mycom.ru/pub/stories/13.htm.
Here www.mycom.ru – the domain name of the site, /pub/stories/ - the path and 13.htm – the name of the file.

WYSIWYG (What You See Is What You Get)

The style of editing a material (text or graphics), when what you see on the screen during editing, corresponds to what you will get finally (when viewing, on a printed copy etc.).

System administrator

A domain user, who manages a system setting, defines the rights and the roles of users.

Decorator

A special tag that allows to dynamically manage the page design. It is applied in templates.

Domain

The C-Gator organizational unit. Every domain has its own set of *users, groups and sites*. Every domain has its own *resource* storage as well. Initially there is only *administration management domain* in the system.

Group

Any number of *users* assembled under one name. Every group is assigned to a set of roles that specify the rights of group users. A group belongs to a certain *domain* and can involve users of a relevant domain only.

Image

Resource type. The resource of this type saves an image to be inserted on the site pages.

Products catalog

Resource type. Allows managing a list of products with set-up parameters on the site.

Cache

Prepared copies of already browsed resources (for example, pages or images). By cached resources request, they are fetched from the cache and not prepared over again. It decreases the load time.

News line

Resource type to prepare news for publication.

Internet is very highly convenient for news publication, therefore news appear not only on the Internet-mass media but on corporate sites. News most often is like a headers list and they look like an endless tape – recent news appears above, old ones go to an archive.

Login

A username used to get an access to a system. The process of identifying oneself to a computer usually performed by entering user's name and password. You can define a user's domain and his rights in the system. A username (login) is unique within the system.

Folder

Resource type. Designed to arrange resources to a tree-type structure; a catalog can unite resources of any types.

User

An account that contains information necessary to authorize a real user for logging in a system and defining user's rights in work with a system. Contains *login* and password, specifies user's membership to *groups*.

Priority

Status established in order of importance or urgency.

Resource

An element of the resource tree. A set of operations on the resource is specified with the *resource type*. The information about the resource is in the *domain resources* storage.

Role

The administration management system *unit* that specifies a set of allowed actions. A set of roles is assigned for every users group, and as a result the users of a certain group get the rights assigned by the group roles. As a rule, a set of roles and actions allowed to be performed are assigned by the administrator once at setting the system.

Site

Record that connects the name of Internet-domain and main *page* appropriate to a given Internet-domain. A name of the site is the name of the Internet domain (for example, www.mycompany.com). Every domain can contain several sites.

Mailing list

Resources type. Mail messages distribution to a certain group of users is managed by the mailing list.

Site statistics

The website owner usually wants to know how many visitors are on the site, what sections are the most popular etc. Such information is gathered when analyzing visit protocol (IIS Log files).

Page

Resource type. Contains the text information in HTML format.

Supervisor

The user who enters an administration management domain; a system administrator. Supervisor's accounts are used only to set up the system, routine operations are performed by users of other domains.

Resource Type

System record that defines a resource among other resources available to be created and changed. The type of the resource interconnects the class supporting resource storage and the control element, i.e. the way of resource introduction to a user. The type of resource specifies a set of *domains* as well, where it is possible to create, edit and use the resources of a given type.

Types of resources are assigned by a *supervisor* when installing \ setting up a system.

Template

The page used as an example to create other *pages*. *Decorators* are used in the template text for flexible page content management.

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