

GOSS

New Features

GOSS iCM 10.0.5.0

Version 1.0

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UNCLASSIFIED

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Amendment History

Version	Date	Name	Description	Reviewed By
1.0	10/01/2017	T Gulliver	Initial Release	

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Introduction

This document highlights significant new features in iCM 10.0.5.0. Details of other changes and bug fixes appear in the accompanying ChangeLog.txt file.

Browser Support

Browser support remains the same as that of version 10.0.4.0. However, there are certain areas of iCM that benefit from using a modern browser either for performance reasons or because they require capabilities only present in these browsers. Users of Microsoft Internet Explorer who wish to use the iCM Forms Designer and the Process Modeller must, therefore, use version 10 or later.

For the latest technical requirements, see www.gossinteractive.com/technical-requirements

Note: This is the last major version of iCM that will support Microsoft Internet Explorer version 8.

Database Support

Microsoft SQL Server 2005 is no longer supported. Otherwise, support remains the same as that of version 10.0.4.0.

The database schema includes additional tables used by the Book and Pay solution development. These tables are currently used by iCM.

Site Frameworks

All sites patched to version 10.0.5.0 will also need to be upgraded to use the latest version of their respective API.

Several of the new features described in this document will require updates to site frameworks (new or updated templates) so that they can be fully utilised. These updates are not part of the standard patch process.

API Server

NodeJS

Since its launch with iCM 10.0.0.0 in 2013, the API Server has grown into an increasingly powerful tool in the GOSS iCM solution. As new Worker Services have been written, and with the increasing use of the End Point functionality first delivered in GOSS iCM 10.0.3.0, the limitations of TeaJS, the server-side JavaScript used by the API Server, became apparent.

With the release of GOSS iCM 10.0.5.0 the decision has been made to move away from TeaJS and fully implement NodeJS as the JavaScript runtime used by the API Server.

The move to NodeJS has allowed the inclusion of a wide range of JavaScript libraries, accessible server-side in forms, End Points and Workflow Models.

The previous TeaJS modules have been rewritten in NodeJS, meaning that all existing End Points and forms will continue to work unchanged.

All server-side scripting also now supports ECMAScript 6 extensions. See <http://es6-features.org/> for details.

NodeJS Libraries

Several hundred NodeJS libraries are now shipped with the API Server. A selection of those included with the GOSS iCM 10.0.5.0 release are documented on the GOSS Documentation site <http://content.gossinteractive.com/javascriptlibraries>

Asynchronous Requests

It is now possible to make asynchronous requests to the API Server. When an asynchronous request is made an immediate response is returned. The asynchronous request continues to be processed and once complete its results can be passed to another worker.

Console Improvements

The API Server Console has been enhanced with improved request reporting and new load logging for workers.

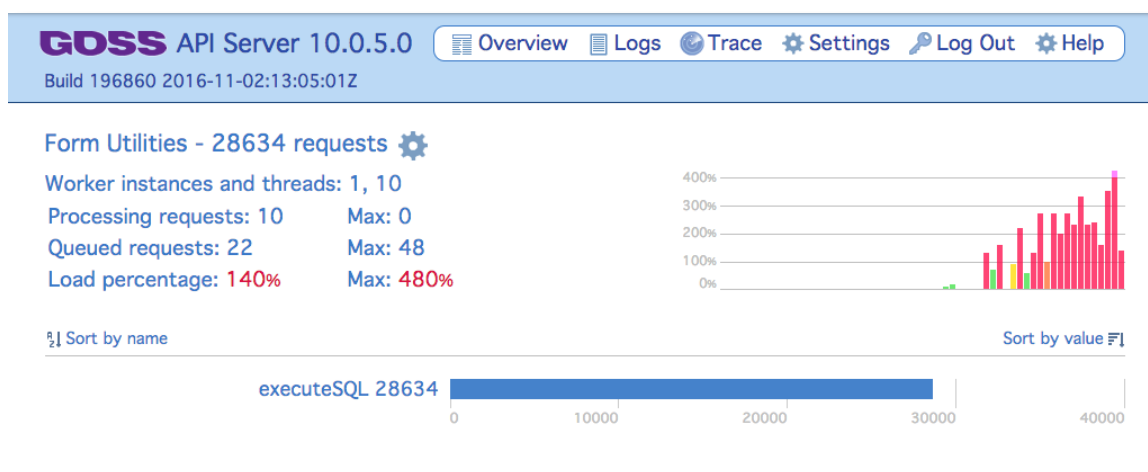


Figure 1 Worker Level Load Logging

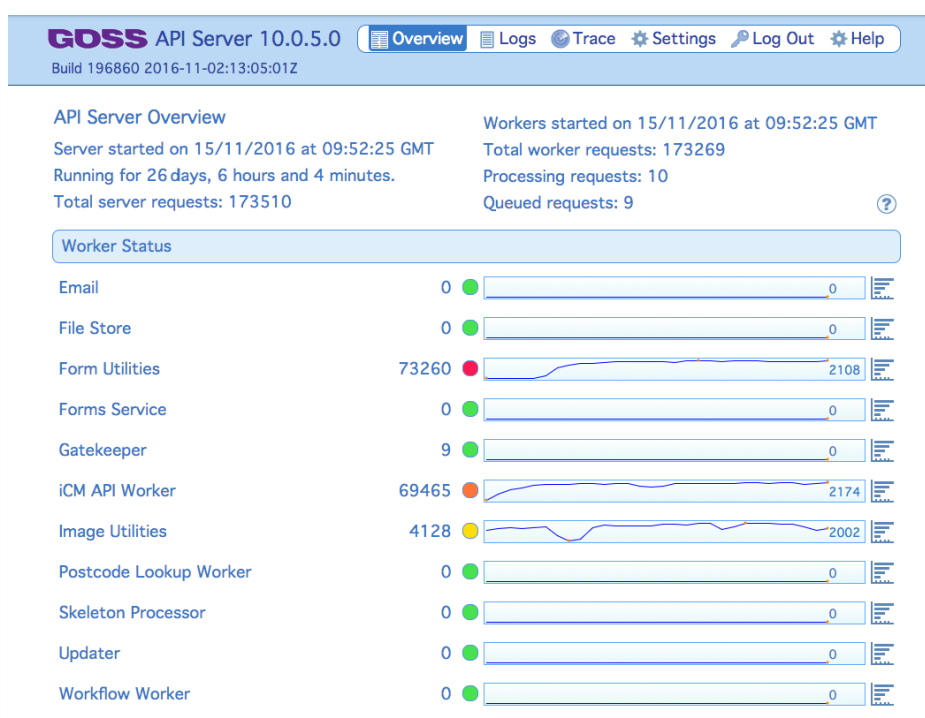


Figure 2 Worker Status Overview

Loading is the number of concurrent requests a worker is handling. Each worker displays a colour-coded button, which indicates load over the previous ten seconds. Green indicates a low load, yellow over 80%, amber 90% and red 100%.

For full details of the API Server Console, see <http://content.gossinteractive.com/apiserver/console>

Statistics Logging

The API Server Console also allows access to a new log of statistics accessible from the “Logs” tab. The stats log is saved as a csv. A snapshot of API Server activity is taken every minute and added as a new row to the csv file. The csv columns include total requests to the API Server, queued requests, errors, plus all of the request, error and load details for each worker.

PDF Generation

First introduced as a “hotfix” for GOSS iCM 10.0.4.0 the API Server’s PDF generation abilities have now been formally released in this patch level.

This functionality is most readily available in the Email Action field of the Forms Designer – see the Field Type section below.

Authentication Worker

The Authentication Worker allows site user authentication against various external providers as well as certain technologies.

Once a user has authenticated via an external service a local iCM site user is created with their user profile populated from details retrieved from that external service. The local iCM site user profile is updated from the external service each time the user logs in.

Current providers include:

- Facebook
- Google

- iCM
- LDAP
- LinkedIn
- MyGovScot
- PayPal
- SAML2

This allows site frameworks to make use of the new Authentication Template, replacing the previous login article with configurable login methods.

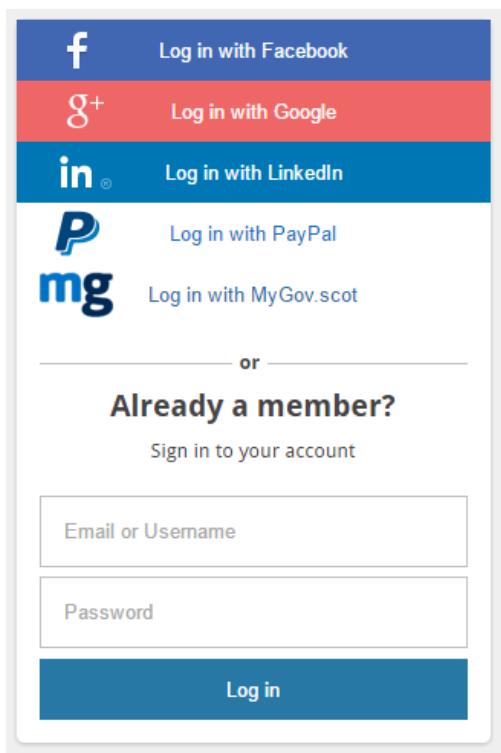


Figure 3 Example Providers on the Authentication Template

For technical details of the Authentication Worker see the Documentation site:
<http://content.gossinteractive.com/apiserver/workers/authentication>

Note that the Authentication Worker provides the underlying service used by the Authentication Template. Site frameworks will need to be upgraded to include this new template, a process that is not part of the iCM patch.

FormUtils FTP/SFTP Support

A new version of the FormUtils Worker is included. This version adds two new methods, ftpRequest and sftpRequest. Requests can take a list of one or more commands that will be executed sequentially against the server. The response contains a log of the commands and responses as they are performed and a list containing details of all files uploaded in the session.

For full details see <http://content.gossinteractive.com/apiserver/workers/formutils>

Handlebars Helpers

A set of Handlebars helper functions is now available for use in all of the current Handlebars templating areas. The helpers are available client and server side in the various HTML template field types plus in email and PDF generation.

The helpers assist with the manipulation of strings, numbers, arrays, dates and comparisons. See <http://content.gossinteractive.com/handlebarshelpers> for more information.

History Service Improvements

The History Service is now capable of storing form data in an event so that a read-only scope of the form can be re-rendered at a later date. It is expected that this will be used on the self-service template to allow a user to see previously submitted forms. A new action field type allows this type of event to be generated. This replaces the previous “History - Log Event” action, which is still available but marked as deprecated.

Java8

All Java based workers except workflow now run under Java 8. Workflow continues to run under Java 7.

End Points

Grid Editor

It is now possible to “bulk edit” End Points using the grid editor, in a similar manner to that already available for articles and media items.

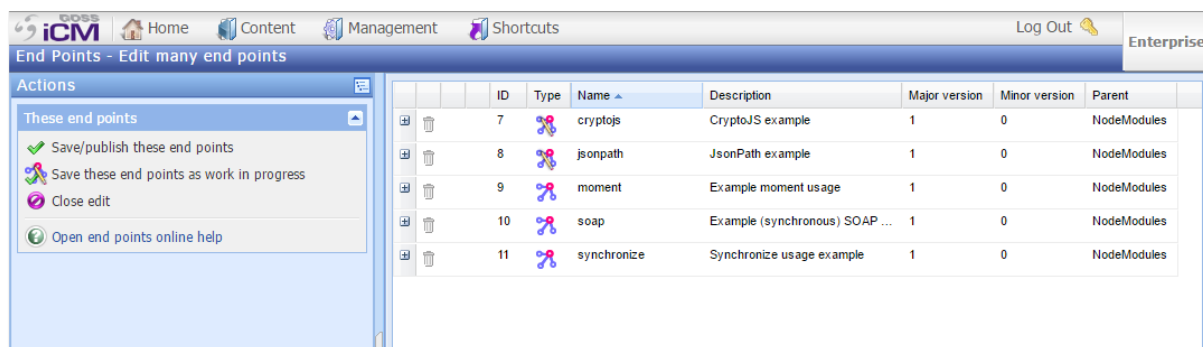


Figure 4 End Points loaded into the grid editor

This allows changes to be made to multiple End Points at the same time, including name, description, version numbers, as well as target workers and settings.

For full details see <http://content.gossinteractive.com/article/2688/Editing-in-Grid-View>

Version History

Version history for End Points in Development Mode can now be toggled on and off from the main Action Menu.

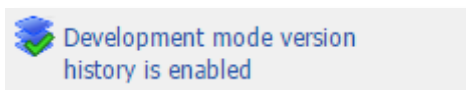


Figure 5 Version history

NodeJS and ECMAScript 6 Support

As already described, End Points now support ECMA 6 and a number of NodeJS libraries are now shipped with the API Server.

These libraries are accessed using the syntax:

```
var moment = require('moment');
```

See <http://content.gossinteractive.com/javascriptlibraries> for more information about the libraries available.

Form Designer

Code Overview

The Forms designer now includes the ability to load an overview of all JavaScript, HTML and Handlebars used in the form. There is also a dedicated code search.



Figure 6 Code Overview Menu

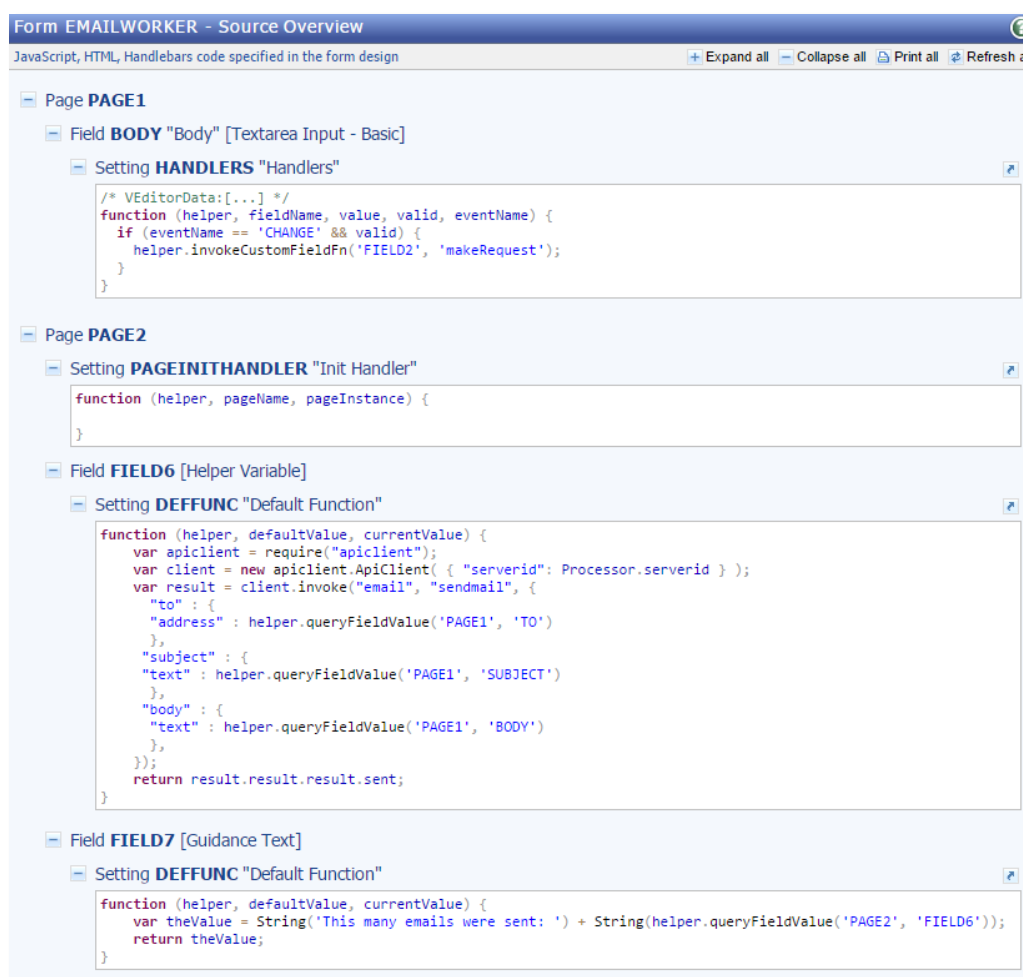


Figure 7 Code Overview

See <http://content.gossinteractive.com/article/2689/Code-Overview> for more information.

CSV Import in Grouped Options

The Grouped Options property of the Radio Group, Checkbox Group and List Box field types now allows csv data to be pasted into the field, populating the options. The csv values form the three

columns, Value, Display and Group. If only two values are provided, only the Value and Display elements will be set.

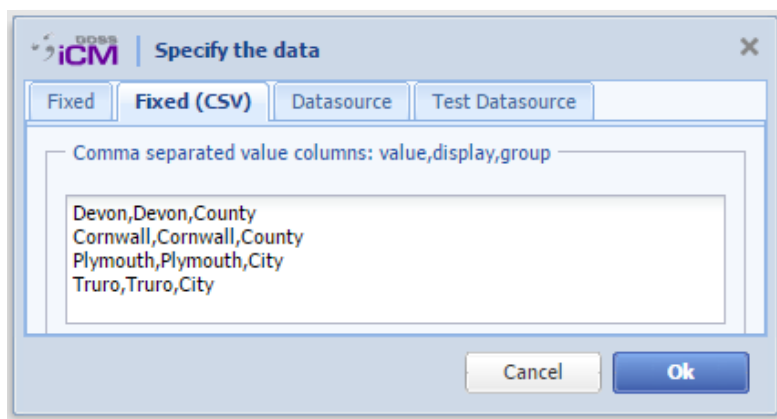


Figure 8 Grouped Options CSV Input

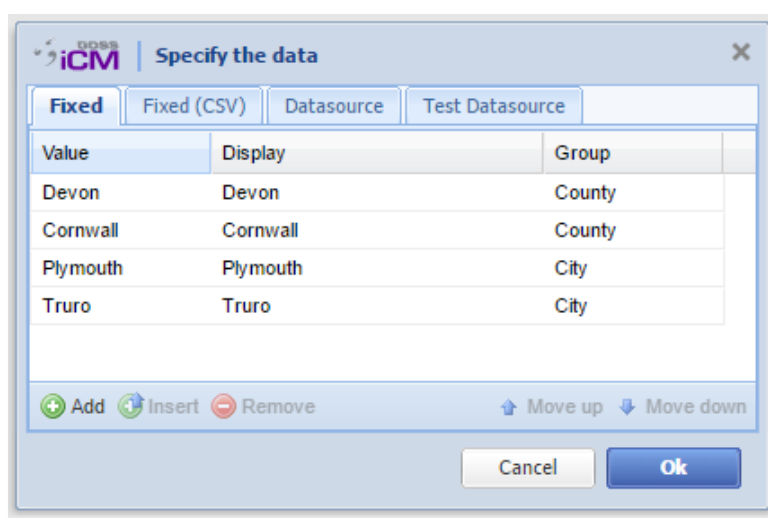


Figure 9 Grouped Options

Custom Default Values for Field Properties

Stored in the iCM Custom Folder, the override file can be used to set the default values of any property within the Form Family. It is also possible to hide properties, preventing users from editing them.

For example, overrides could be used to:

- Set the default widths of text fields
- Create a default "Hint" for password fields
- Specify the default location for the map of the Location picker field
- Standardise the alignment of all forms

See <http://content.gossinteractive.com/article/2690/Overriding-Default-Form-Properties>

Field Type Menu

With the growing number of types, the field type menu has been improved in the forms designer. Rather than a flat list, each category of field type is now held in a collapsible section. The ordering of categories has changed to reflect the order fields are likely to be added to a form. Controls to expand or collapse all categories have also been included.

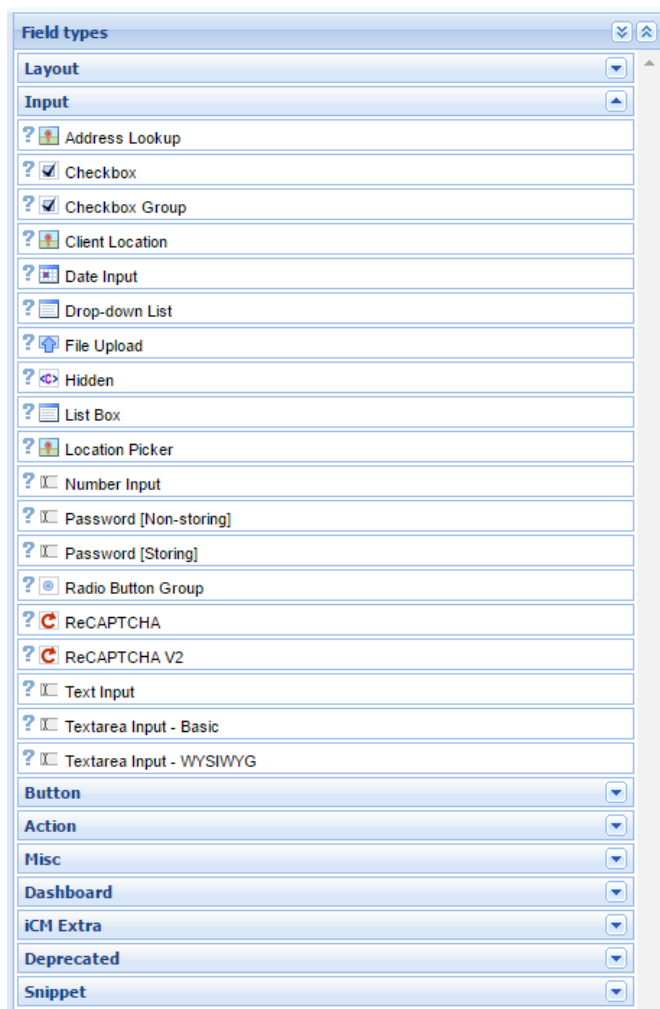


Figure 10 Field Type Menu

Field Type Placement

Field types have restrictions on where they can be placed. For example, the majority of types must be placed within a layout field. The 10.0.5.0 Forms Designer allows fields to be placed in an invalid location prompting you to move them before the form can be published.

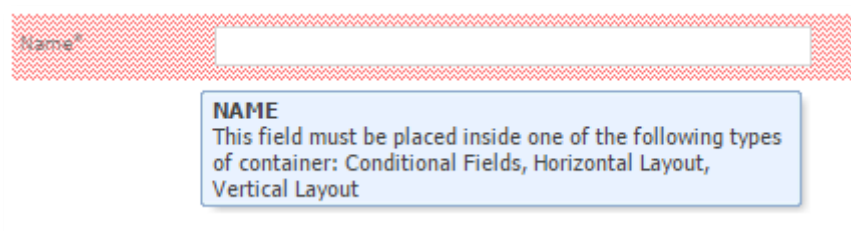


Figure 11 Invalid Position Warning

Field Type Selection

Once a field has been added to a form, previous patch levels have allowed its type to be changed (rather than deleting the field and adding the desired type). The type field now presents a filtered drop-down list as you type, whereas previously it only presented a drop-down list of possible fields.

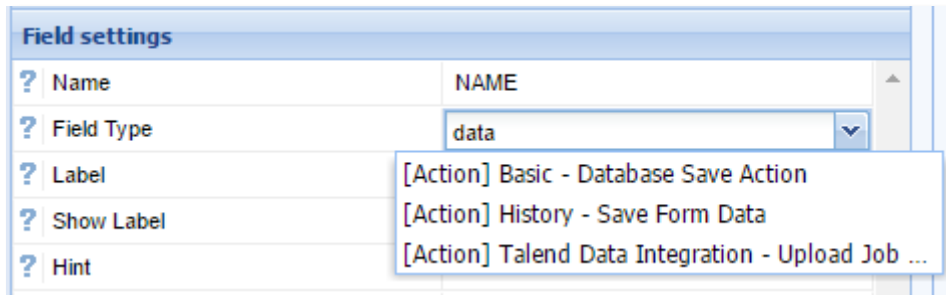


Figure 12 Changing a Field Type

Improved Handlebars Editor

The Handlebars Editor now has the ability to load pre-defined templates. Two examples are included with the 10.0.5.0 release. These examples can be loaded in any form field that uses the handlebars editor. They are designed to provide a starting point for further templating, but can be used “as is”.

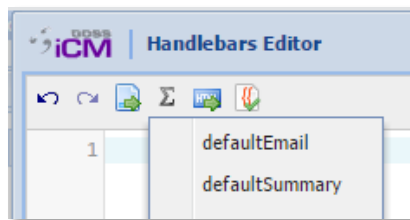


Figure 13 The Summary and Email Templates

The default summary could be added to the final page of a form to display inputted values prior to submission.

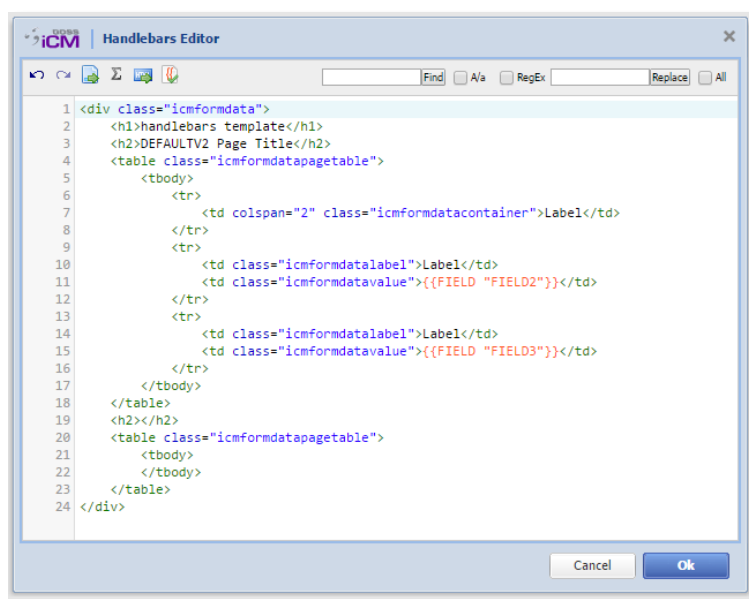


Figure 14 Pre-defined Summary Template Loaded into the Editor

With minor modification to the class names, the summary table can match the style used by the table styles of the site:

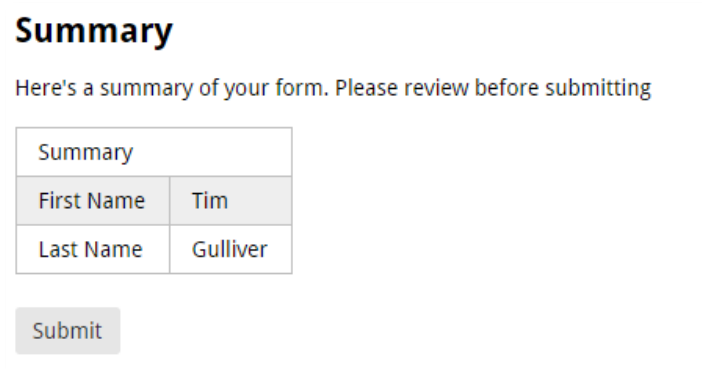


Figure 15 A Simple Summary

JavaScript Editor Function Signatures

When Form, Page and Field JavaScript properties are first edited they will be populated with the correct function, in a similar way to that of the Visual Script Editor. For example, the Handler property of the Text Field includes the function

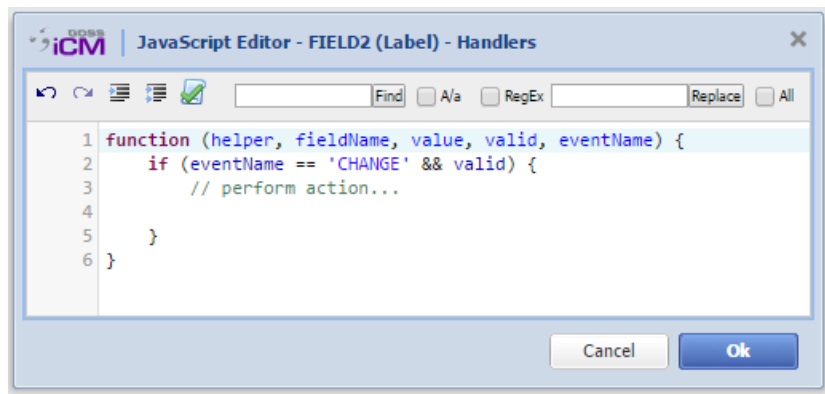


Figure 16 Text Field Handlers Function

Further information about the various properties can be found of the Documentation site: <http://content.gossinteractive.com/article/2250/Form-Page-and-Field-Properties>

Searching

When searching within a form the results now include a preview pane. This will highlight the searched for term.

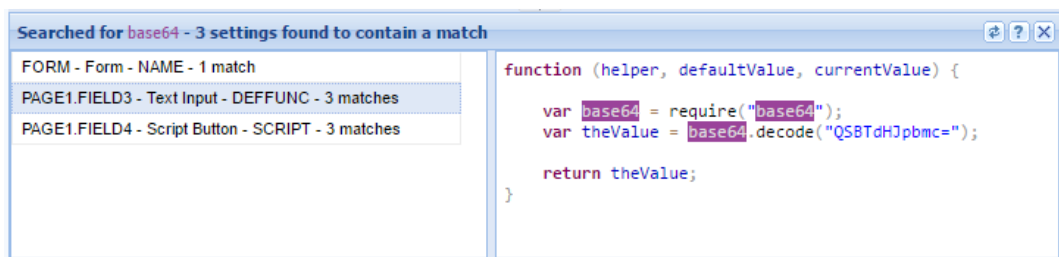


Figure 17 Search Preview

Un-named Field Search

Locates storing fields that still have their original names (ie fields named FIELD1). It is best practice to change field names to something meaningful.

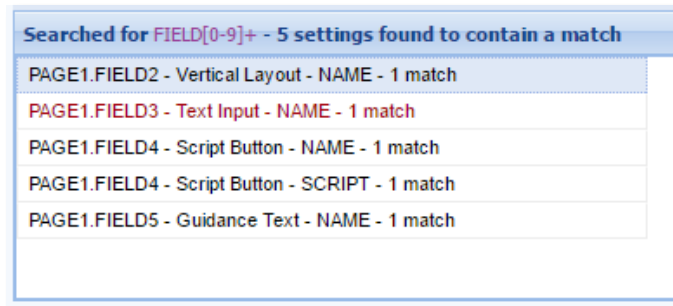


Figure 18 Unnamed Field Search

Visual Script Editor Blocks

Built on Google's Blockly Editor, the Visual Script Editor provides a simple interface to generate working JavaScript which is used by school children around the world.

With this release the number of blocks available in the Visual Script Editor has been expanded to over one hundred, encompassing much of the helper library. New categories of Notes and Maps (for creating JavaScript objects) have also been added.

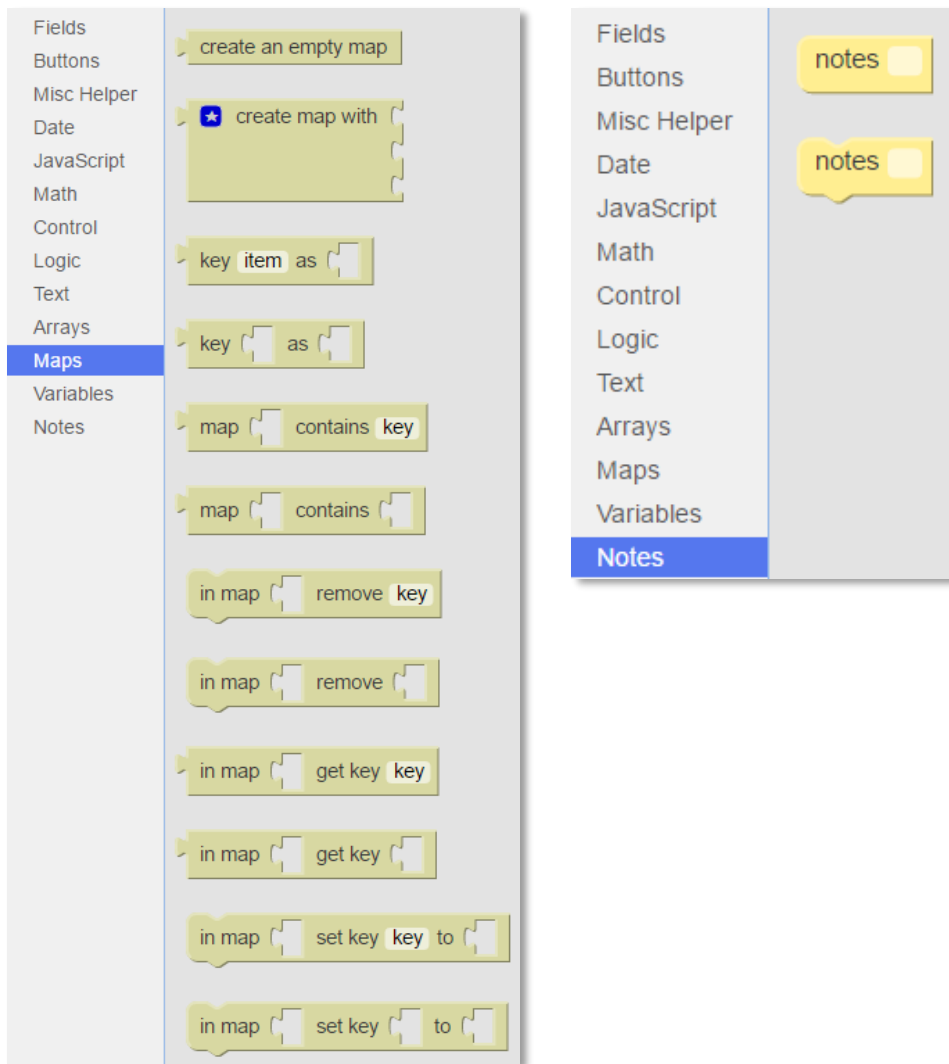


Figure 19 New Script Editor Blocks

Form Field Types

Email Action with PDF and Handlebars

This allows the customisation of email content using a Handlebars template. The field also includes settings which will generate a PDF version of the form and attach it to the email.

Field settings	
? Name	FIELD6
? Field Type	[Action] Basic - EMail Action
? From	
? Subject	Form Submitted
? To	
? Cc	
? Bcc	
? Body	
? Include uploaded files?	false
? Email Message Format	HTML
? Generate PDF	false
? PDF Name	form.pdf
? PDF Body	{{{RENDEREDFORM}}}

Figure 20 New Email Action Field

The PDF content can be customised in the same way as the body of the email. As well as the standard field value substitution, the #...# method, a full Handlebars Editor has also been provided. See <http://content.gossinteractive.com/article/2716/Email-and-PDF-Handlebars> for more information about using Handlebars templates in the emails generated by your forms.

Figure 21 PDF Body Handlebars Editor

Note that this functionality requires the site framework to be using the Forms Service template. Site frameworks will need to be upgraded to include this new template, a process that is not part of the iCM patch.

File Upload Size Validation

The File Upload field now includes a Maximum File Size property. This uses HTML 5 browser side validation to restrict the file size that can be uploaded.

? Required	true
? Maximum File Size	<input type="text"/>
? Error Message	524288
? Width	1048576
? Media Capture	2097152
? Accept Types	5242880
? Force Reload	10485760
? Validation Function	false
? Handlers	
? Read Only	false
? Download Link	true

Figure 22 Maximum File Size Options

Hint Support

Initially “hotfixed” into 10.0.4.0 the standard 10.0.5.0 form family now includes a “Hint” property for most field types. This can be used to display additional information about the field where guidance text may not be appropriate. Hints can be displayed or hidden as the form/page loads. New helpers have been included in the helper library to hide, show and update the hints dynamically.

See <http://content.gossinteractive.com/forms-helper-functions> for more information.

History Logging

A new field type, “History – Write Event” is included. This provides properties for various common subject and event values (and defaults most of these if left blank). It also supports saving a complete copy of the field values that can be re-loaded later to create a read only rendering of the form.

Field settings	
? Name	FIELD1
? Field Type	[Action] History - Save For...
? History Label A	
? History Label B	
? History Label C	
? History Label D	
? History Label E	
? Subject Description	
? Subject Site User Id	
? Subject Site Username	
? Subject Proxy User Id	
? Subject Proxy Username	
? Subject Additional Prop...	function(helper) { var additi...
? Event	
? Event Description	
? Event User Role	
? Event Site User Id	
? Event Site Username	
? Event Proxy User Id	
? Event Proxy Username	
? Event Additional Propert...	function(helper) { var additi...

Figure 23 The History - Save Form Data Field

Placeholder Support

Support has been added for the HTML 5 placeholder attribute on text, password and textarea fields. This pre-populates the field with the placeholder value. This disappears once the user starts typing. The placeholder value is never submitted.



Figure 24 Placeholder text in a text input field

Server-side HTML Template

This is a new version of the HTML Template that is executed server-side. When used with the new Handlebars Editor Templates it provides a simple way to generate a summary of a form.

Link Library Grid Editor

It is now possible to “bulk edit” Links using the grid view, in a similar manner to that already available for articles and media items.

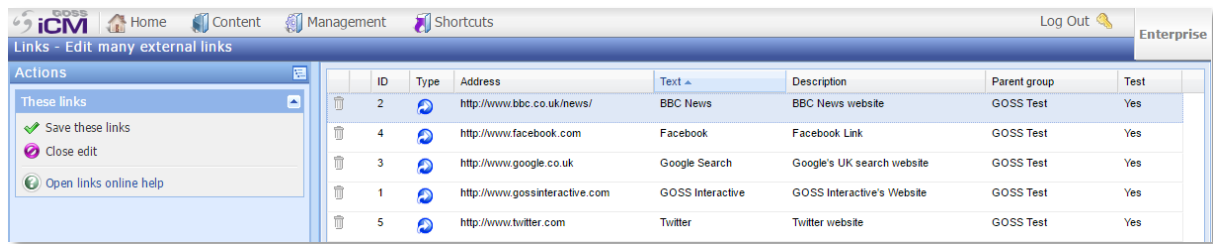


Figure 25 Editing Links in the Grid Editor

As well as being able to quickly change multiple links, for the first time it is now possible to bulk edit the parent group of links and toggle the “Test this link” option.

Links can also be loaded into the grid editor directly from search results.

See <http://content.gossinteractive.com/article/2691/Editing-in-Grid-View> for more information.

Object Type Definitions

All pre-v9 forms settings are removed in this patch of iCM. This includes the ability to view “read only” versions of the old-style forms. This has allowed the Object Type Definitions manager to be overhauled, removing many of the old pre-v9 property options.

Figure 26 10.0.5.0 Property Editor

Nested properties now appear “greyed-out” making it clear that they cannot be edited. A new context menu option “Locate referenced type” has been added.

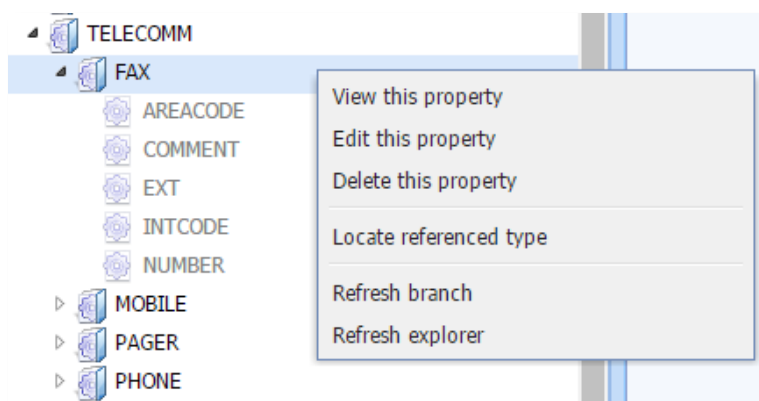


Figure 27 New Context Menu

Within the editor a new “Show content using” action has been included, matching the functionality available for other iCM content types.

For further information about Object Types and how to use the editor, see <http://content.gossinteractive.com/10-0-0-0/icm/objecttypes>

Subsite IP Restrictions

Additional properties have been added to subsite definitions. IP rules can now be defined to “allow”, “allow with HTTPS”, or “reject” the addresses that can access the subsite.



Figure 28 Subsite IP Rules

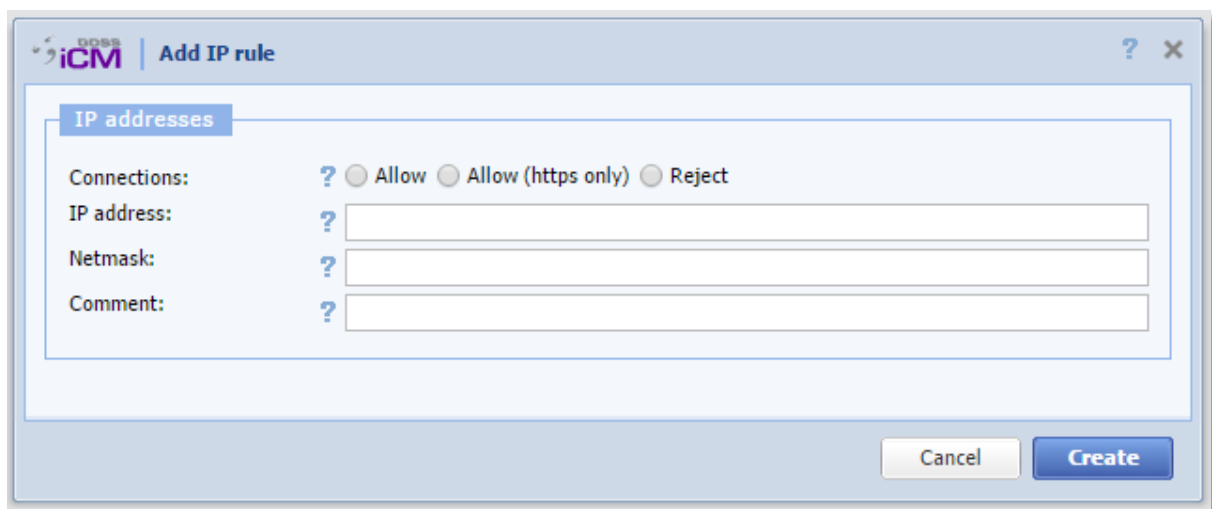


Figure 29 Adding an IP Rule

These rules apply to iCM and the site itself.

Note that this will require site framework updates for the restrictions to be enforced.

Workflow Modeller

Mail Task

The Mail Task in the Workflow Modeller now uses the API Server’s Email Worker. This brings all of the functionality available in the worker to the emails generated by your workflow processes, including PDF generation, attachments and Handlebars templating.

Problems (1)	Main	Advanced
? Id :	No value	? Name : No value
? Description :	No value	? Asynchronous : <input type="checkbox"/>
? To :	No value	? From : No value
? Subject :	No value	? Cc : No value
? Bcc :	No value	? Text : No value
? Html :	No value	? Use Handlebars : <input checked="" type="checkbox"/>
? PDF template :	No value	? PDF filename : No value
? Attachments :	[]	? Return Variable : APICALLRESULT
? Error Variable :	APICALLERROR	? Error Handling : ERROR_IGNORE

Figure 30 Mail Task Options

Process Inspector

Changes have been made to the workflow modeller, which improve the display of deployed processes and active process instances.

A collapsible menu now groups process instances by process type. Expanding a process type reveals a list of the deployed versions of that process.

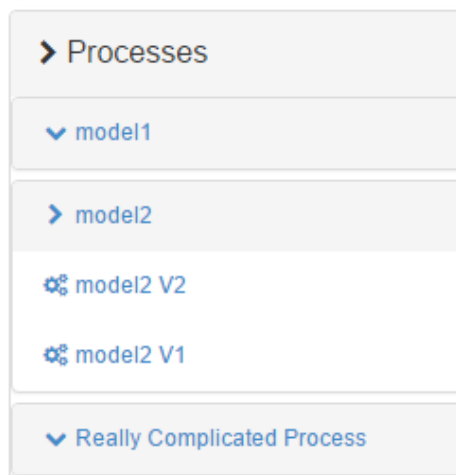


Figure 31 Processes Menu

The view of active process instances now includes an advanced filtering control. This allows you to filter by user, variables and date.

The screenshot shows a process management interface for 'model2 process model2:2:7525' with a 'State: Active' indicator. The interface is divided into four main sections: Instance, Starter, Tasks, and Actions. Below these sections are various filter controls:

- Instance:** A text input field containing 'Started by user'.
- Starter:** A text input field containing 'Involved user'.
- Tasks:** A 'Variable' dropdown menu and a 'Value' text input field.
- Actions:** A 'Started after' section with 'Date' and 'Time' inputs, and a 'Started before' section with '19/10/2016' and '00:00' inputs. There is also an 'Include ended' checkbox and two action buttons (a blue 'Y' button and an orange circular button).

Below the filter controls is a list of process instances:

Instance ID	Starter	Tasks
8231-1515-7300-0917 model2	anonymous (18/10/16 09:20)	[Delete] [Refresh] [Info]
4107-1210-6103-0692 model2	anonymous (18/10/16 09:19)	[Delete] [Refresh] [Info]
0668-1524-2376-8703 model2	anonymous (18/10/16 09:19)	[Delete] [Refresh] [Info]
4680-4742-9227-9327 model2	anonymous (18/10/16 09:19)	[Delete] [Refresh] [Info]

Figure 32 Process Filter Control

Timers

The various timers in the modeller have an improved interface for entering duration, time cycles and start/end dates. Timers still use the ISO-8601 format and support CRON expressions, but a new input dialogue input makes this much easier.

The 'Duration' dialog box allows users to construct an ISO-8601 duration value. It features the following fields:

- Years:** Input field with value '0'.
- Months:** Input field with value '0'.
- Days:** Input field with value '1'.
- Hours:** Input field with value '0'.
- Minutes:** Input field with value '10'.
- Seconds:** Input field with value '3' and a dropdown arrow.
- Duration:** A text input field showing the generated ISO-8601 value: 'P1DT10M3S'.

At the bottom of the dialog are three buttons: 'Cancel', 'Clear', and 'Save'.

Figure 33 Constructing the Duration ISO-8601 Value

iCM Miscellaneous

Article Editor

The article editor, based upon CK Editor, has been updated to the latest release. This minor update doesn't bring any new features.

Import from File Manager

During patch and "hotfix" releases, files are often shipped via the iCM Custom folder, accessed from the iCM File Manager. Without direct access to the iCM server deploying these files often involved exporting content from the File Manager and saving it locally, only to import it back into another section of iCM. This was most notable with new Form Families, but also affected End Point and Workflow examples.

A new context menu option allows content to be imported directly from the File Manager.

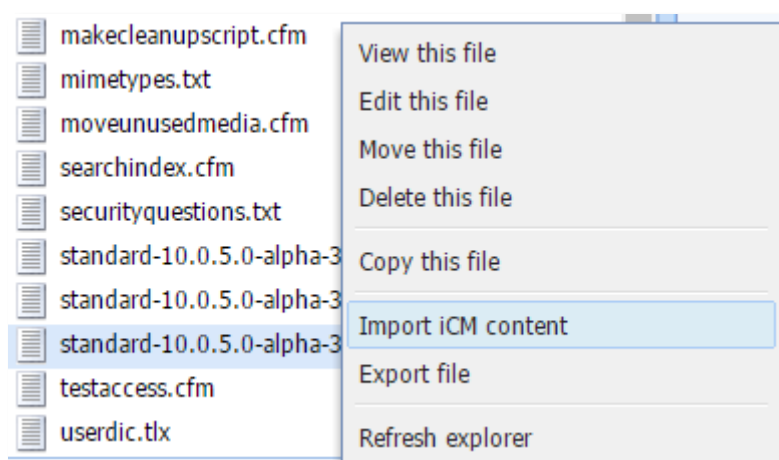


Figure 34 Import iCM Content

Once imported into the relevant library, content, such as forms, will still need to be republished to make use of the update.

Tab Titles

Version 10.0.4.0 brought in the ability to edit Forms and End Points in a new browser tab or window. The titles of those tabs now reflect the content being edited (previously each tab displayed the iCM version number).

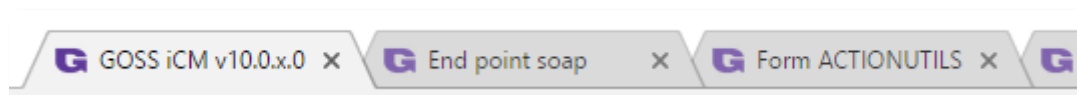


Figure 35 Tab Titles