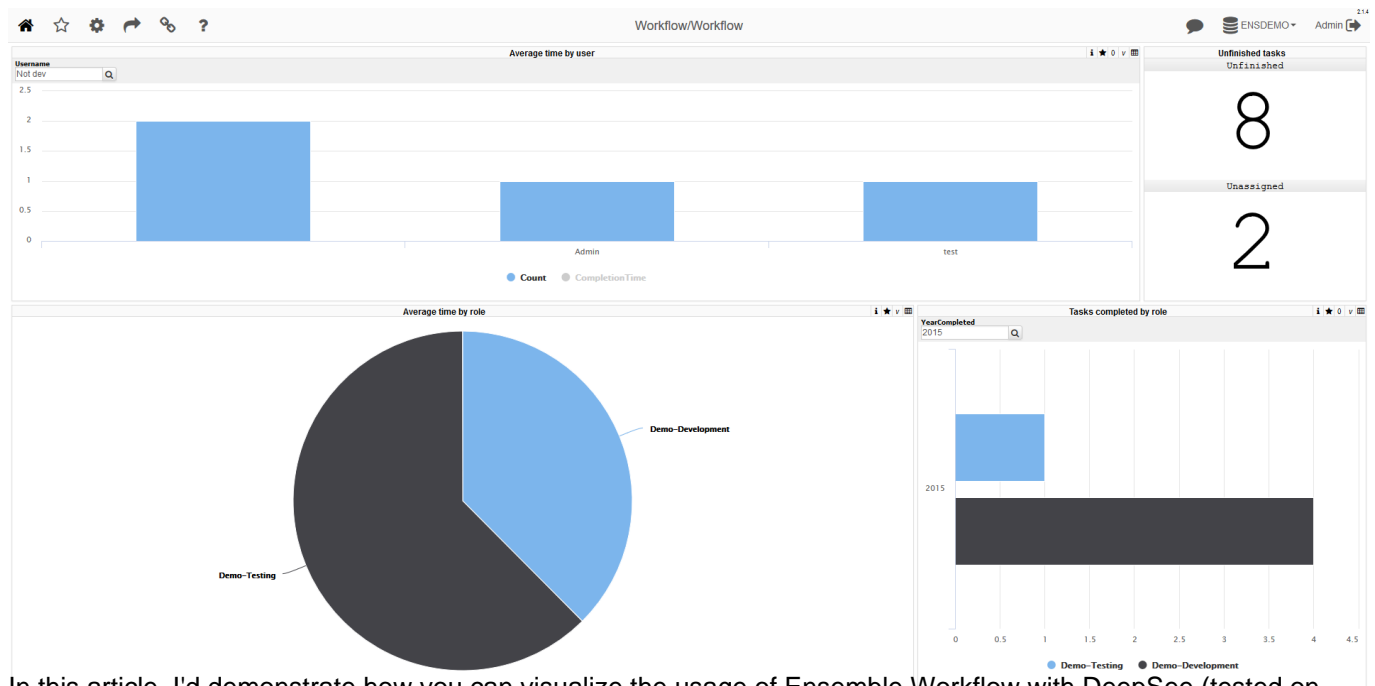


Article

[Eduard Lebedyuk](#) · Jul 12, 2017 4m read

Visualizing Ensemble Workflow task execution



In this article, I'd demonstrate how you can visualize the usage of Ensemble Workflow with DeepSee (tested on 2015.1 and later).

Everyone familiar with InterSystems Ensemble, an integration and application development platform, knows what the Ensemble Workflow subsystem is and how useful it can be for automating human interaction. According to the definition by Workflow Management Coalition (www.WfMC.org), “workflows” are fully or partially automated business processes, where documents, information or tasks are passed from one participant to another according to established rules and procedures.”

Key aspects of a Workflow:

- The purpose of a Workflow is to cover a “fragment” of work
- A workflow is a set of procedural task execution rules
- A Workflow user is someone working on tasks in the workflow management system
- A role in a Workflow is a group of users working on a particular type of tasks.





The workflow management subsystem in Ensemble enables you to do the following:

- Automate workflow management using Ensemble business processes
- Flexibly configure the task assignment process
- Work with a workflow management system via a special Workflow portal supplied with Ensemble
- Organize the interaction of the workflow management subsystem with Ensemble's integration business processes
- Use the business activity monitoring subsystem, Ensemble's management, and monitoring tools
- Easily configure and extend the functionality of the Workflow subsystem

Ensemble Workflow allows seamless integration between human-performed manual parts of your business process

and automated parts. For more information on Ensemble workflow please refer to the [documentation](#) and [this community article](#) (Workflow introduction is quoted from there).

Analytics

By default Ensemble provides [business metrics](#) and Workflow Task List portal page (SMP  Ensemble  Manage  Workflow  Workflow Tasks) for higher level task management:

Assign Task

Hide Details

Search:

Workflow Task List

Task ID	Role Name	Status	Priority	Source	Assigned To	Subject	Time Created	Time Completed	Duration
347	Demo-Testing	Unassigned	3	HelpDesk		Test this problem from Eduard Lebedyuk	2017-07-11 21:18:49.845		
345	Demo-Development	Assigned	3	HelpDesk	dev	Problem reported by TestUser	2015-03-04 13:27:39.917		
343	Demo-Testing	Completed	3	HelpDesk	dev	Test this problem from TestUser	2015-03-04 06:36:36.342	2015-03-04 13:27:39.905	24663.563
341	Demo-Development	Assigned	3	HelpDesk	dev	Problem reported by TestUser	2015-03-03 15:25:28.502		
339	Demo-Testing	Completed	3	HelpDesk	test	Test this problem from TestUser	2015-03-03 12:29:01.067	2017-07-11 21:19:52.872	74422251.605
337	Demo-Testing	Completed	3	HelpDesk	dev	Test this problem from TestUser	2015-03-03 11:30:12.382	2015-03-04 13:27:44.035	93452.253
335	Demo-Testing	Completed	3	HelpDesk	dev	Test this problem from TestUser	2015-03-03 07:31:53.739	2015-03-03 16:25:28.491	28414.752
332	Demo-Development	Completed	3	HelpDesk	dev	Problem reported by TestUser	2015-03-03 06:29:08.375	2015-03-03 11:30:12.378	18084.003
327	Demo-Development	Completed	3	HelpDesk	dev	Problem reported by TestUser	2015-03-03 06:28:57.680	2015-03-04 13:28:00.824	111543.144
322	Demo-Development	Completed	3	HelpDesk	dev	Problem reported by TestUser	2015-03-03 06:28:45.768	2015-03-03 07:31:53.727	3787.959
317	Demo-Development	Assigned	3	HelpDesk	dev	Problem reported by TestUser	2015-03-03 06:28:32.728		
312	Demo-Development	Completed	3	HelpDesk	dev	Problem reported by TestUser	2015-03-03 06:28:23.127	2015-03-03 12:29:01.063	21637.936
307	Demo-Development	Assigned	3	HelpDesk	dev	Problem reported by TestUser	2015-03-03 06:28:07.023		
302	Demo-Development	Completed	3	HelpDesk	dev	Problem reported by TestUser	2015-03-03 06:27:50.127	2015-03-04 06:36:36.324	86926.197
297	Demo-Development	Unassigned	3	HelpDesk		Problem reported by TestUser	2015-03-03 06:27:34.185		

Expand All

NOTE: XML namespace information not available in your browser. XML namespace declarations will not be displayed in output.

<?xml version="1.0" ?>
<!-- type: EnsLib.Workflow.TaskResponse -->
<TaskResponse>
 <Action></Action>
 <Priority>3</Priority>
 <UserName></UserName>
 <UserTitle></UserTitle>
 <RoleName>Demo-Testing</RoleName>
 <Subject>Test this problem from Eduard Lebedyuk</Subject>
 <Message>Description of the problem</Message>
</TaskResponse>

And doesn't it look good as a fact table for DeepSee Cube? It sure does, so I've decided to build a DeepSee cube based on a [EnsLib.Workflow.TaskResponse](#) class:

View:		New		Open		Save		Compile		Build		Documentation	
Source Class	Model Elements	Add Element	Undo	Expand All	Collapse All	Reorder							
EnsLib.Workflow.TaskResponse	WORKFLOW												
<input type="checkbox"/> %ID	Measures												
<input type="checkbox"/> %Action	CompletionTime	integer measure					AVG (expression)						
<input type="checkbox"/> %Actions	Dimensions												
<input type="checkbox"/> %FormFields	Role	data dimension											
<input type="checkbox"/> %FormTemplate	H1	hierarchy											
<input type="checkbox"/> %FormValues	Role	level 1					%RoleName						
<input type="checkbox"/> %Message	Username	data dimension											
<input type="checkbox"/> %Priority	H1	hierarchy											
<input type="checkbox"/> %RoleName	Username	level 1					%TaskStatus.AssignedTo						
<input type="checkbox"/> %Status	Status	data dimension											
<input type="checkbox"/> %Subject	H1	hierarchy											
<input checked="" type="checkbox"/> %TaskStatus	Status	level 1					%Status						
<input type="checkbox"/> AssignedTo	IsComplete	data dimension											
<input type="checkbox"/> IsComplete	H1	hierarchy											
<input type="checkbox"/> Request	IsComplete	level 1					%TaskStatus.IsComplete						
<input type="checkbox"/> ResponseToken	TimeCompleted	time dimension											
<input type="checkbox"/> Role	TimeCompleted	hierarchy											
<input type="checkbox"/> SessionId	YearCompleted	level 1					Year						
<input type="checkbox"/> Source	MonthCompleted	level 2					MonthYear						
<input type="checkbox"/> TimeCompleted	DayCompleted	level 3					DayMonthYear						
<input type="checkbox"/> TimeCreated	TimeCreated	time dimension											
<input type="checkbox"/> %UserName	TimeCreated	hierarchy											
<input type="checkbox"/> %UserRanking	YearCreated	level 1					Year						
<input type="checkbox"/> %UserTitle	MonthCreated	level 2					MonthYear						
	DayCreated	level 3					DayMonthYear						
	Priority	data dimension											
	Priority	hierarchy											
	Priority	level 1					%Priority						
	Listings												
	Listing	listing					SELECT TaskStatus_RoleName As "Role", T...						

In this cube I store information about each task, namely:

- User who completed the task
- Task role
- When it was created and when completed
- Priority
- Current Status
- Is task completed?
- Time spent to complete the task

Most of it is just straightforward cube building, but some here's some interesting tidbits:

CompletionTime is an expression measure calculated in minutes using this syntax:

```
$System.SQL.DATEDIFF("minute",%source.%TaskStatus.TimeCreated,%source.%TaskStatus.TimeCompleted)
```

And SQL Listing is defined like this (\$\$\$\$SOURCE is a fact table and \$\$\$RESTRICT is a runtime DeepSee filter):

```
SELECT
    TaskStatus_RoleName                                AS "Role",
    TaskStatus_IsComplete                              AS IsCompleted
,
    %Status                                             AS "Status",
    TaskStatus_Source                                  AS BusinessProcess,
    TaskStatus_AssignedTo                              AS "User",
    %Subject                                            AS "Subject",
    %Message                                            AS "Message",
    TaskStatus_TimeCreated                             AS "TimeCreated",
    TaskStatus_TimeCompleted                           AS "TimeCompleted",
    DATEDIFF('minute', TaskStatus_TimeCreated, TaskStatus_TimeCompleted) AS "CompletionTime"
FROM $$$SOURCE
WHERE $$$RESTRICT
```

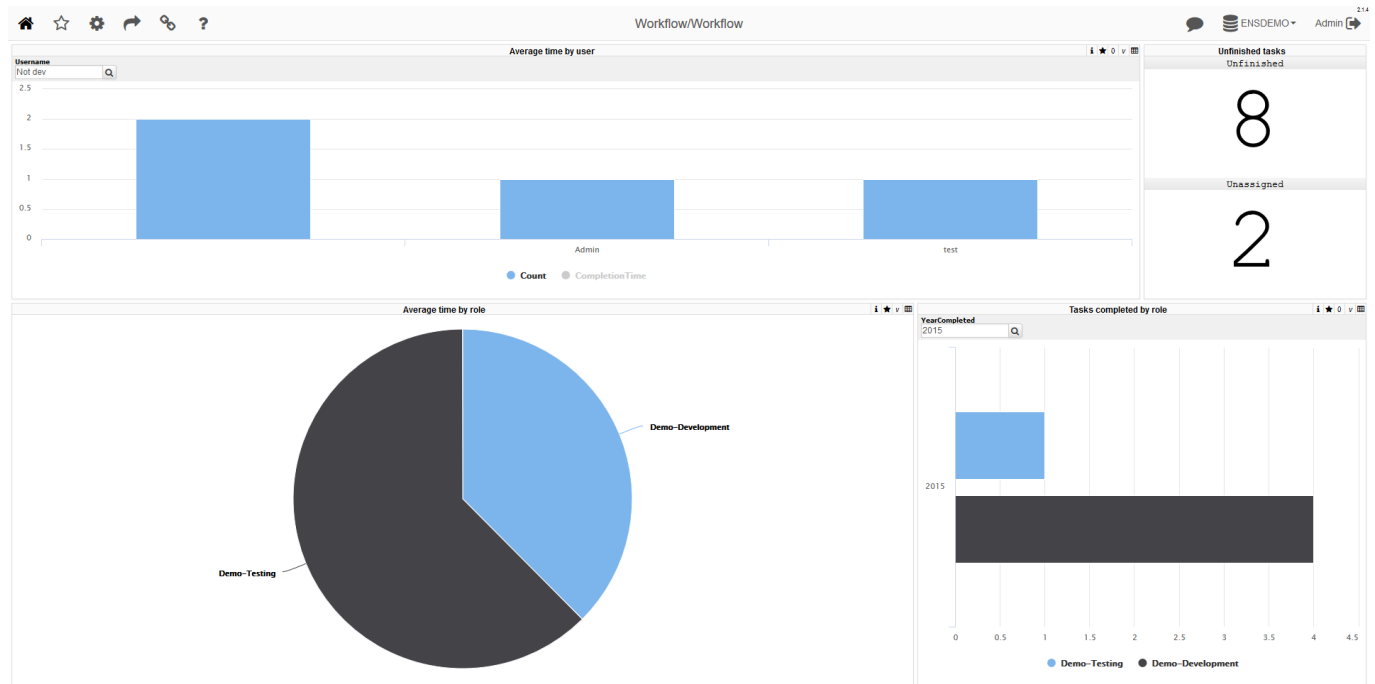
That said, let us build the cube and build some widgets. I decided to build one dashboard showcasing main figures:

- Average time taken by user and by role to complete the task
- Number of tasks currently not in work or not completed
- Number of tasks completed in a period

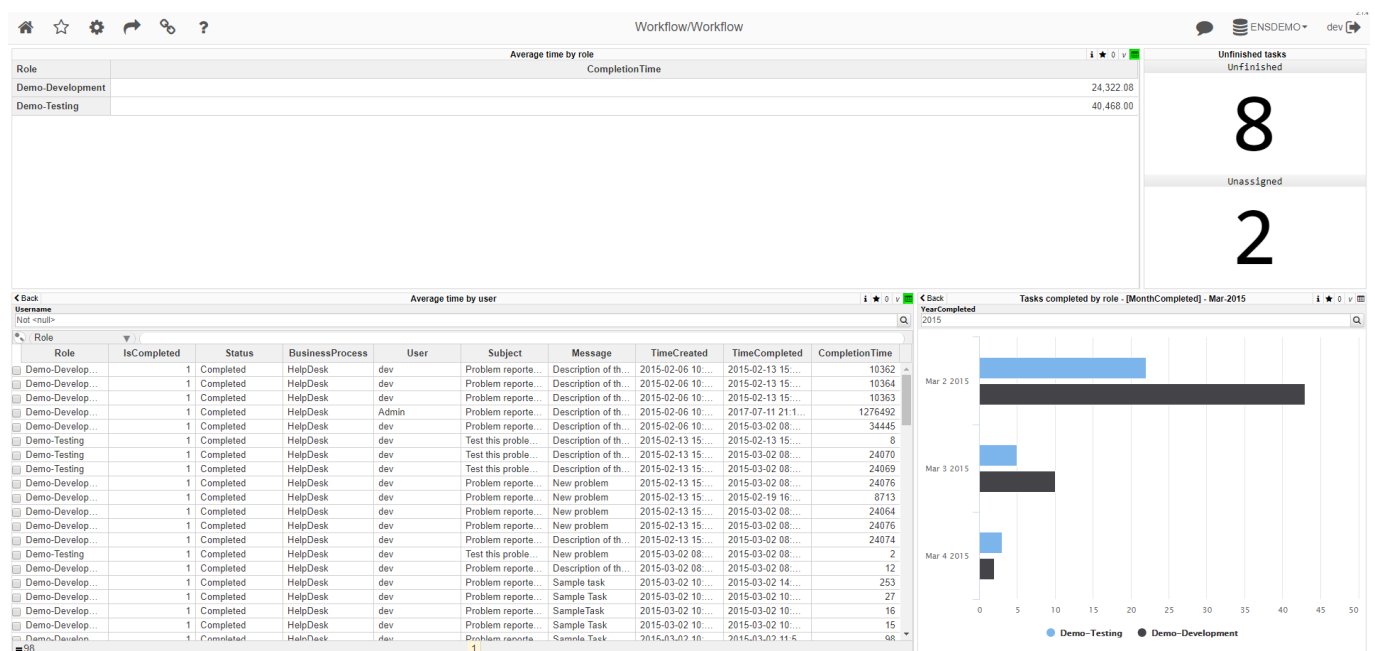
[Here's a demo dashboard](#) (Login: dev / Pass: 123) visualized using [DeepSeeWeb](#) (renderer for DeepSee Dashboards in Browser with [MDX2JSON](#) as a Serverside and JS web-client):

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Published on InterSystems Developer Community (<https://community.intersystems.com>)



Drilldown and drillthrough are also available:



You can complete workflow tasks on [our test server](#) with the HelpDesk application running on it. Login: dev / Pass: 123 and see changes on the dashboard (cube is built once an hour)

Here's how Ensemble Workflow looks like [using EnsembleWorkflowUI](#):

Ensemble Workflow

Refresh Worklist

Search

Logout, [HelpDesk1](#)

#	Priority	Subject	Message	Role	Assigned To	Time Created	Age	Action
1	3	Problem reported by 062	062	Demo-Development	HelpDesk1	2015-02-20 17:24:22.120	00w 3d 02h 06m 57s	Q E
2	3	Problem reported by 059	059	Demo-Development		2015-02-20 14:49:08.309	00w 3d 04h 42m 11s	E
3	3	Problem reported by 061	061	Demo-Development	HelpDesk1	2015-02-19 17:49:24.799	00w 4d 01h 41m 55s	Q E
4	3	Problem reported by 058	058	Demo-Development		2015-02-19 17:49:02.485	00w 4d 01h 42m 17s	E
5	3	Problem reported by 057	057	Demo-Development	HelpDesk1	2015-02-19 17:48:55.230	00w 4d 01h 42m 24s	Q E
6	3	Problem reported by 056	056	Demo-Development	HelpDesk1	2015-02-19 17:48:46.900	00w 4d 01h 42m 32s	Q E
7	3	Problem reported by 055	055	Demo-Development	HelpDesk1	2015-02-19 17:48:39.761	00w 4d 01h 42m 40s	Q E
8	3	Problem reported by 054	054	Demo-Development		2015-02-19 17:48:32.992	00w 4d 01h 42m 46s	E
9	3	Problem reported by 053	053	Demo-Development	HelpDesk1	2015-02-19 17:48:26.351	00w 4d 01h 42m 53s	Q E
10	3	Problem reported by 052	052	Demo-Development		2015-02-19 17:48:19.703	00w 4d 01h 43m 00s	E
11	3	Problem reported by 051	051	Demo-Development		2015-02-19 17:48:12.523	00w 4d 01h 43m 07s	E
12	3	Problem reported by 050	050	Demo-Development		2015-02-19 17:48:05.107	00w 4d 01h 43m 14s	E
13	3	Problem reported by 049	049	Demo-Development		2015-02-19 17:47:56.652	00w 4d 01h 43m 23s	E
14	3	Problem reported by 048	048	Demo-Development		2015-02-19 17:47:48.632	00w 4d 01h 43m 31s	E
15	3	Problem reported by 047	047	Demo-Development		2015-02-19 17:47:41.706	00w 4d 01h 43m 38s	E

Ensemble Workflow

Refresh Worklist

Search

Logout, [HelpDesk1](#)

Task description

Subject

Problem reported by 057

Time created

2015-02-19 14:48:55.229

Message

057

Role

Demo-Development

Assigned to

HelpDesk1

Priority

3

Comments

Test comment

Corrected

Ignored

Save

Cancel

Conclusion

DeepSee can be used to visualize usage of Ensemble Workflow data.

This is a basic project that can be used for quick demonstration of both Ensemble Workflow and DeepSee capabilities and be easily extended as required.

Links

- [GitHub repo](#)
- [Documentation](#)
- [Community article](#)
- [EnsLib.Workflow.TaskResponse](#)

[#InterSystems IRIS BI \(DeepSee\)](#) [#Ensemble](#) [#Business Operation](#)

Source URL: <https://community.intersystems.com/post/visualizing-ensemble-workflow-task-execution>