InterSystems® Ensemble

Ensemble Release Notes

Version 2017.2
2020-06-26

For Support questions about any InterSystems products, contact:

InterSystems Worldwide Response Center (WRC)

Tel:	+1-617-621-0700
Tel:	+44 (0) 844 854 2917
Email:	support@InterSystems.com

Table of Contents

About This Book

Welcome and thank you for using Ensemble 2017.2.

This book describes the contents of this release of Ensemble including compatibility issues with previous releases. It contains the following chapters:

- New Features and Enhancements
- Known Issues
- Upgrade Compatibility Issues

There is also a detailed table of contents. For releases *before* the current release, see the *Ensemble Release Note Archive*.

InterSystems Ensemble shares many underlying core technologies with InterSystems Caché. This book refers you to books in both documentation sets. The Caché books are particularly important as you first set up the system. After initial configuration, the Ensemble books become your primary source of information. The following books are the best places to start if you are new to Ensemble:

- *Preparing to Use Ensemble* provides a road map for installing, upgrading, and getting started with Ensemble.
- *Introducing Ensemble* provides an overview of product features.
- *Ensemble Best Practices* describes best practices for designing, developing, and maintaining Ensemble productions.

For general information, see *Using InterSystems Documentation*.

1

New Features and Enhancements

This chapter describes the following new features and enhancements:

- Improved XML Performance
- DICOM Enhancements
- XSLT2 Activity in BPL
- Ensemble is now compatible with Disabling Caché Global Kill
- Minor Enhancements
- Caché 2017.2Features

1.1 Improved XML Performance

If you are creating XML Virtual Documents where most of the contents of the XML document are included in the virtual document, you can often obtain substantial performance improvements by converting the XML Virtual Document to an XML-enabled persistent object. This release includes the EnsLib.XML.Object package, which provides utility routines to convert an XML document to an XML-enabled persistent object and to convert this object back to an XML document. For details, see "XML-Enabled Objects Compared to XML Virtual Documents" in the *Ensemble XML Virtual Document Development Guide*.

1.2 DICOM Enhancements

In this release Ensemble has the following DICOM enhancements:

- New AsyncRouter DICOM sample production. This production demonstrates how to asynchronously route DICOM documents through Ensemble. This production provides a template to build custom productions that asynchronously route DICOM messages. The production is define in the class Demo.DICOM.Production.AsyncRouter in the ENSDEMO namespace.

- The DICOM dictionary now conforms with the DICOM Standard 2016E. No existing tags were removed. The changes include new tags, tags with new enumerated values, and two new Value Representations, UC (Unlimited Characters) and OL (Other Long).

1.3 XSLT2 Activity in BPL

In this release, you can include an XSLT2 activity in BPL. Set the activity attribute to 2.0 to allow use of XSLT2. You must configure the XSLT2 Gateway in the Ensemble Management Portal.

1.4 Ensemble is now compatible with Disabling Caché Global Kill

In some environments, you need to disable Caché top-level global kills for security reasons. In previous releases, this change was not compatible with installing and running Ensemble. In this release, you can install and run Ensemble with top-level Caché global kill disabled.

1.5 Minor Enhancements

This release also includes the following minor enhancements:

- When you deploy a production, Ensemble automatically includes generated classes for Record Map and Complex Record Maps. In previous releases, you had to manually add these classes.

- Delimited Record Maps have a new option to output records where all fields are quoted with the quoting character whether or not they contain separator characters.

- The HTTP outbound adapter now has the capability to use a tunnel to connect through a proxy. In previous releases, this feature was available in the SOAP outbound adapter, but not the HTTP outbound adapter.

- The HL7 HTTP business service can now use the CSP port or a special port. In previous releases, it could only use a special port.

1.6 Caché 2017.2 Features

Ensemble 2017.2 runs on top of Caché 2017.2. This means that, in addition to changes in Ensemble between 2017.1 and 2017.2, the new Ensemble release includes a large number of updates in the underlying Caché technologies.

Caché 2017.2 has the following important new features described in the *Caché Release Notes and Upgrade Checklist*:

- Parallel dejournaling for mirroring and journal restore

- DeepSee Folder Manager and improvements to dashboard filters

- iKnow coocurrence search improvements and iKnow performance improvements

- SQL improvements: query auditing, POSIX timestamp, query optimization, optional ANSI SQL operator precedence, and frozen plan evolution

To learn about these and other Caché changes that may relate to your Ensemble environment, begin with the InterSystems online documentation set called *Getting Started with Caché*. See "New and Enhanced Features for Caché 2017.2" in the *Caché Release Notes and Upgrade Checklist*.

2

Known Issues

Review the following issues carefully to determine if they affect your system:

- "Upgrade Compatibility Issues" described in the next chapter.

- Browser Pop-up Blocker Interferes with Portal Functions

- EnsLib.HL7.Segment GetValueAt() 32-KB Limitation

- Internet Explorer 9 Restriction

- Enterprise Message Viewer Display Issue with Older Versions of Internet Explorer

- Failure to Add Imported Rules Exported from Prior Versions to a Studio Project

- Message Browser Search With TimeCreated Property

- Business Rule Export and Import

- HL7 Schema Errors

- BPL Scope within Loop Restriction

- Access to DeepSee Not Enabled by Default

- Inbound Ports May Conflict with Operating System Ephemeral Ports

- Cannot Do Recursive Copies If Source and Target Have Different Types

- Error Saving Credentials is Not Reported to Users

- Productions and Namespaces

- Order of Compiling Custom Function Used in Rules

- Cannot Use Some %CSP.REST Features in EnsLib.REST.Service

Important: For an updated list of known problems in this release, contact the InterSystems Worldwide Response Center (WRC).

2.1 Browser Pop-up Blocker Interferes with Portal Functions

Your web browser pop-up blocker may interfere with a number of dialog boxes in the Management Portal, such as source control configuration. Ensemble users have seen this in particular with Safari, which has pop-ups blocked by default. This issue will be resolved in future versions of Ensemble.

2.2 EnsLib.HL7.Segment GetValueAt() 32-KB Limitation

The **GetValueAt()** method of the EnsLib.HL7.Segment class truncates values larger than 32 KB. This limitation exists even if you have long strings enabled.

As a workaround, use one of the following methods:

- **GetFieldStreamRaw()**
- **GetFieldStreamUnescaped()**
- **GetFieldStreamBase64()**

See the entry for EnsLib.HL7.Segment in the *Class Reference* for details.

2.3 Internet Explorer 9 Restriction

If you are running Ensemble in Internet Explorer 9, do *not* use the *Compatibility View*.

2.4 Enterprise Message Viewer Display Issue with Older Versions of Internet Explorer

If you are using Internet Explorer Version 7 or 8 and the browser window is not wide enough, the Enterprise Message Viewer does not display some columns. This problem does not exist on more recent versions of the supported browsers. See "Supported Web Browsers" in the online *InterSystems Supported Platforms* document for this release for a list of the web browsers supported by the Caché Server Pages (CSP) technology.

2.5 Failure to Add Imported Rules Exported from Prior Versions to a Studio Project

If you import an XML export containing a business rule or routing rule that you exported from a version prior to 2012.1, the import does not add that rule definition to a project in Studio. You receive an error message indicating that the rules

does not exist on the server. This occurs because the process attempts to add the old .RUL form of name to the project, but the business rule has been converted to a class. The class containing the rule is created and you can add the class to your project manually.

2.6 Message Browser Search With TimeCreated Property

When you use the message browser after an upgrade and you specify a **Start Time**, exact matches against the start time are not shown in some circumstances. If the time you enter ends in one or more trailing zeroes when the seconds are expressed to three decimal places and there is a message created before upgrading at that exact time, that message is not included in the search result.

For example, Ensemble creates a message prior to the upgrade at `2009-12-02 15:16:44.710`. After the upgrade, if you enter `2009-12-02 15:16:44.710` or `2009-12-02 15:16:44.71` as the **Start Time** in your search criteria, the message is not found. To work around this issue, widen the search time slightly to `2009-12-02 15:16:44.709`.

You could resolve the problem by rebuilding the TimeCreated index of the Ens.MessageHeader class, but InterSystems does not recommend this for most customers. It requires the system to be idle during the rebuild, which can take several hours for message warehouses with 100 million messages. Since most searches are for recent messages, this is expected to only present a problem for a short period after upgrading. Similar behavior exists when using SQL searches against the Ens.MessageHeader class. This issue also exists in Ensemble release 2009.1.

2.7 Business Rule Export and Import

InterSystems has identified a known problem with the Xerces parser version used in the current and past releases for Ensemble. The symptom related to Ensemble business rules is that Ensemble wrongly reports errors when importing a previously exported production from an XML file. The symptom occurs only when the XML file contains definitions of general business rules that define "assign" actions in addition to simply returning a result.

There are two techniques for working around this problem. One makes import simple and places the burden on the person exporting the production. The other makes export simple and places the burden on the person importing the production. You only need to use one of the following equally effective techniques:

Import

Use the following approach to facilitate the import task:

1. Find each general business rule that defines "assign" actions in addition to returning a result.

2. Export each of these rules to a separate file. Make sure you are exporting one rule per file.

3. Export everything else in the production, including other rules, to a different file.

4. Import (and compile) each of the exported files individually.

Export

Use the following approach to facilitate the export task:

1. Export everything to one file.

2. Upon import, do not use Studio. Instead, start Terminal, change to the namespace where you need to import, and enter one of the following commands (either works):

```
do $system.OBJ.Load("C:\MyDir\MyFile.xml","-i")
```

```
do $system.OBJ.Load("C:\MyDir\MyFile.xml","/checkschema=0")
```

2.8 HL7 Schema Errors

The HL7 schema definitions loaded into Ensemble were generated directly from the respective standards (HL7 2.1, 2.2, 2.3, 2.3.1, 2.4, 2.5, 2.5.1, 2.6, 2.7, and 2.7.1). With only a few exceptions, they replicate any errors, omissions, or discrepancies that exist in these standards as published by the Health Level Seven organization.

2.9 BPL Scope within Loop Restriction

Under certain conditions, loops that contain scopes and have a large number of repetitions can cause an error. If possible, define the scope so that it includes the loop rather than being defined inside of the loop.

2.10 Access to DeepSee Dashboard Pages Not Enabled by Default

Application access to arbitrary %CSP pages, including DeepSee, is controlled by a security global. By default, only the SAMPLES and ENSDEMO namespaces can access DeepSee pages, including dashboards. To enable DeepSee access in another Ensemble namespace and its associated web application, select **System Administration**, **Security**, **Applications**, and **Web Applications** and then select the namespace that requires DeepSee access, check the **DeepSee** checkbox on the **General** tab and click **Save**.

You should set this checkbox for any namespace that uses DeepSee dashboards or other DeepSee pages. Note that for HealthShare installations, the web application names start with /csp/healthshare/.

Alternatively, you can enable DeepSee access for all namespaces and web applications by entering the following command in an Ensemble terminal window:

```
Do EnableDeepSee^%SYS.cspServer(0)
```

For a detailed description of this issue, see Application Access To %CSP Pages Now Controlled in the *Caché Release Notes and Upgrade Checklist Archive*.

2.11 Inbound Ports May Conflict with Operating System Ephemeral Ports

When Ensemble or any other application opens an outbound port for a TCP connection, it specifies the listening port number on the target server, but the operating system creates a temporary, or ephemeral, outbound local port in the port range that it uses for ephemeral ports. Typically, the operating system does not reuse a port until it has reached the end of the port range. If a service specifies a listening port that is within the range that the operating system uses for ephemeral ports, that port may not be available when the service starts, which causes an error.

To avoid potential port conflicts, you can do a web search on "ephemeral port" to find the ephemeral port range used by your operating system. You should avoid having a service listen on any port within that range. Some users have encountered this error when they have stopped and then immediately restarted a production that uses many TCP connections.

2.12 Cannot Do Recursive Copies If Source and Target Have Different Types

Ensemble provides a data transformation mechanism to recursively copy structured and repeating parts of virtual documents. This mechanism works only if the source and target have the same types and the same structures. For example, you can use this feature to copy from an EnsLib.HL7.Message to another EnsLib.HL7.Message even if the versions of HL7 are different. But you cannot use this feature to copy from an EnsLib.HL7.Message to an EnsLib.EDI.XML.Document. For details on copying all values in structured and repeating types, see "Copying Values of All Sub-properties" in the *Developing DTL Transformations*.

2.13 Error Saving Credentials is Not Reported to User

If there is an error saving credentials, this error is not reported to users. If your code is creating and saving credentials by creating an instance of Ens.Config.Credentials, you should do the following:

1. Call the **Ens.Config.Credentials.PasswordSet**() method.

2. Check the status return value.

3. If there is an error, notify the user and take appropriate error recovery.

2.14 Productions and Namespaces

In most cases, productions are defined and run in the same namespace, but you can use Caché package mapping to make a production class visible in a namespace other than the one it is defined in. If you use package mapping and a production is visible in more than one namespace, you should designate only one of these namespaces to compile and run the production, You should not compile, modify, or run the production in any other namespace. If you run or modify the same production in more than one namespace it can cause failures that are hard to diagnose. Under no circumstances should you do this. If you do not use package mapping to map a database to a namespace you do not need to be concerned about this issue.

2.15 Order of Compiling Custom Function Used in Rules

If you are using a custom function in a rule, it must have been compiled before the rule is compiled. If the custom function is being imported at the same time as the rule, you cannot explicitly control the order of compilation. To avoid this situation, you can compile any custom functions used in rules before you compile the remainder of the production. Typically, you could encounter this situation when you are deploying a production to a new namespace or system.

If the custom function is already defined in the namespace and has been compiled before, the order or compilation does not matter even if the custom function has been changed. But, if the custom function has not previously been defined in

the namespace, Ensemble encounters an error and fails to compile the rule even if the function would be compiled later in the same import.

2.16 Cannot Use Some %CSP.REST Features in EnsLib.REST.Service

Although the EnsLib.REST.Service class is a subclass of %CSP.REST, you cannot use some of the features added to %CSP.REST after Ensemble Version 2015.1. Specifically, you cannot use the following new Caché 2015.2, %CSP.REST features:

- UrlMap Routes contain Map elements that forward to another subclass of %CSP.REST. This feature cannot be used in EnsLib.REST.Service.

- %CSP.REST support of cross-origin resource sharing (CORS), which provides a framework to allow some resources from external domains to be used in the REST service. This feature cannot be used in EnsLib.REST.Service.

If you need to use these new features, you should subclass %CSP.REST directly and use the **Ens.Director.CreateBusinessService()** method to instantiate the class as a business service.

3

Compatibility Issues for Upgrades to Ensemble 2017.2 (This Release)

Before upgrading Ensemble, first review the product changes in this release that could affect the operation of your existing system. The following sections list the compatibility issues for this and previous releases of Ensemble. In addition to the issues in this release, be sure to also review the issues for each intervening release since you last installed Ensemble:

The following changes in this release may affect the operation of your existing system. Review these following issues before upgrading a previous instance of Ensemble.

- Do not use JMS Gateway as Message Listener

- Custom RecordMap Batch Classes may need to be Modified to get Fix

- BPL xslt Activity Provides More Information in Error Messages

- Business Service Time to Wait Changes

- Ensemble Include File Includes Definitions from %sySystem

- Changes may be Required in PassthroughService Subclass

3.1 Do not use JMS Gateway as Message Listener

In this release the JMSGateway class has been deleted from the Java Gateway. This class was intended as an example on how to use the JMS listener in Ensemble. If you have used this class to implement a JMS listener, you should replace this with the mechanism demonstrated in the EnsLib.JavaGateway.JMSTest class.

3.2 Custom RecordMap Batch Classes may need to be Modified to get Fix

This release fixes a problem where Ensemble would not remove temporary files under certain failure conditions. If you have a custom subclass of EnsLib.RecordMap.Batcher or EnsLib.RecordMap.Operation.BatchStandard and have implemented the OnFailureTimeout() method, you can add a call to ##super() in that method to get this fix.

3.3 BPL xslt Activity Provides More Information in Error Messages

The BPL activity can now handle XSLT 2.0 transformations. If using XSLT 1.0 there may be more information in any error messages.

3.4 Business Service Time to Wait Changes

Ensemble Business Services calculation of time to wait for next call interval now discounts any fractional part that is 1/10th second or less. This has been done since a positive wait for next call interval time is rounded up to the next second. For example 0.000001 will not lead to a wait of 1 second.

3.5 Ensemble Include File Includes Definitions from %sySystem

The include file Ensemble.inc now includes %sySystem. If you define any macros custom code, you should check for macro name collisions.

3.6 Changes may be Required in PassthroughService Subclass

If you have a custom subclass of EnsLib.File.PassthroughService with an override of CONTAINERCLASS or with an override of the adapter you may need to override the new removeStreamFromInput() method within the subclass.