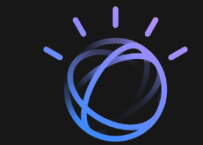
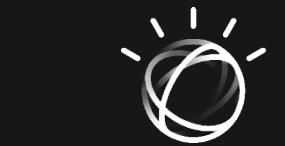
IBM Cúram Social Program Management V8.0.0

Deep Dive: Miscellaneous SPM Platform Technical Enhancements



Agenda

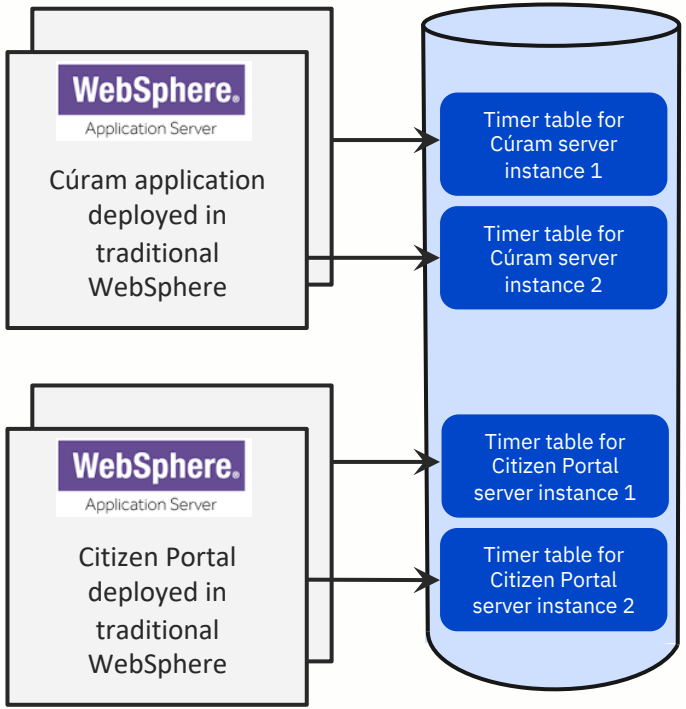
- SPM on Kubernetes
  - Enhanced EJB Timer Persistence for Kubernetes
  - Tuning for SPM on Kubernetes
- XML Server Security
- Milestone Batch Processing
- IEG Exception Logging
- CER Reassessment Processing
- Compliancy-Related Enhancements



SPM on Kubernetes

Enhanced EJB Timer Persistence for Kubernetes

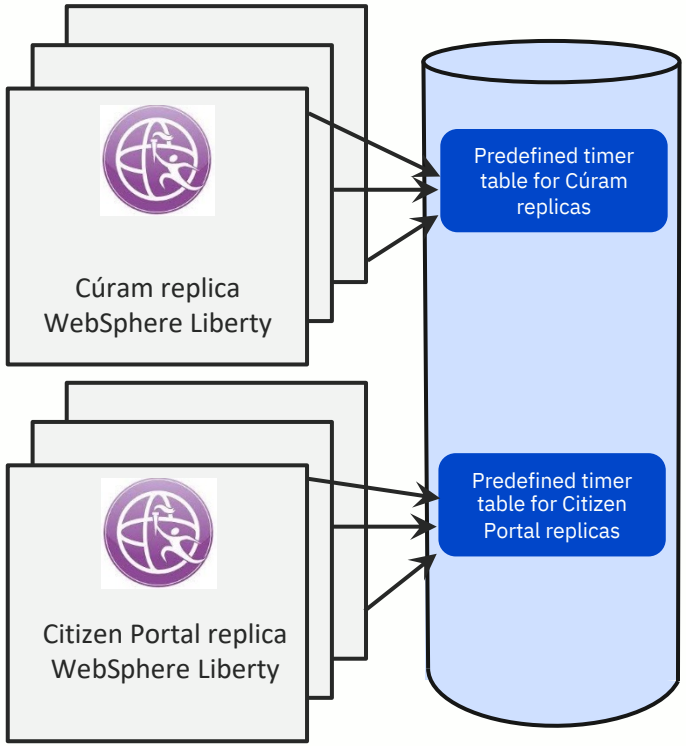
- EJB timers are used by Cúram SPM applications to execute tasks at a specific time.
- Before SPM V8.0.0, a timer table was created for each JVM, which reflected the static nature of a traditional deployment on virtual machines.
- However, when SPM is deployed on Kubernetes, timer tables are created for each server/pod, which leads to excess tables over time.



Enhanced EJB Timer Persistence for Kubernetes

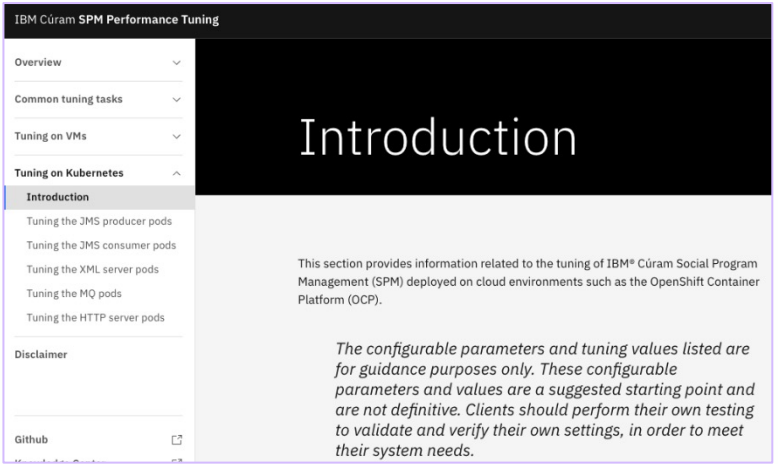
- In SPM V8.0.0, predefined timer tables that are shared by pods reduce the number of tables to a manageable amount.

- The following references provide more details:
  - What's New – *Introducing support for shared Enterprise Java Beans (EJB) persistent timer tables for WebSphere Liberty*
  - V8.0.0 Release Notes – Work Item 268106
  - SPM on Kubernetes Runbook – *Persistent Timers*
  - To configure timers, see SPM on Kubernetes runbook – *Monitoring JMX statistics*



Tuning for SPM on Kubernetes

- In V8.0.0, the IBM Curam SPM Performance Tuning Guide has been updated to include tuning guidance for SPM on Kubernetes.
- The guide covers tuning VMs and Kubernetes and common tuning tasks.
- The tuning runbook covers tuning for Citizen Engagement deployments. Additional SPM workloads will be added in the regular monthly updates.
- The runbook is available in GitHub: https://ibm.github.io/spm-performance-tuning



XML Server

Securing the XML Server

- The XML Server produces formatted documents for clients.
- In V8.0.0, the XML Server has been enhanced for distributed deployment.
- Communication between the SPM application and the XML Server has been updated to use a TCP/IP connection over TLS 1.2 (Transport Layer Security) socket.
- For more information, see the *Securing the XML Server* section in the Cúram documentation.

Milestone Batch Processing

Milestone Batch Processing

- Cúram V7 provided two batch processes that check whether milestones have been started and completed:
  - ScanMilestoneDeliveryStartDate
  - ScanMilestoneDeliveryEndDate

- These batch processes did not use the batch streaming infrastructure. Therefore, if an error occurred while running one of the batch processes, the entire process was rolled-back and no records were processed.

Milestone Batch Processing

- In SPM V8.0.0, two batch processes were deprecated and replaced with two new batch processes:
  - ScanMilestoneDeliveryStartDate**Batch**
  - ScanMilestoneDeliveryEndDate**Batch**

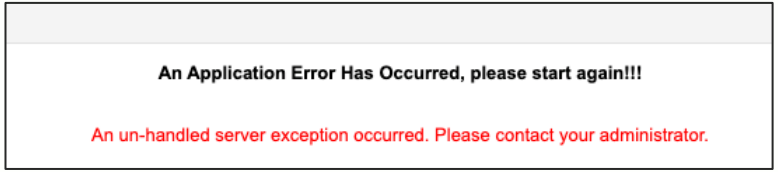
- These new batch processes provide the same functionality, but also utilize the batch streaming infrastructure.

- See the following references for more information:
  - *IBM Documentation – Cúram batch process reference*
  - Release Notes - Work item 262780

IEG Exception Logging

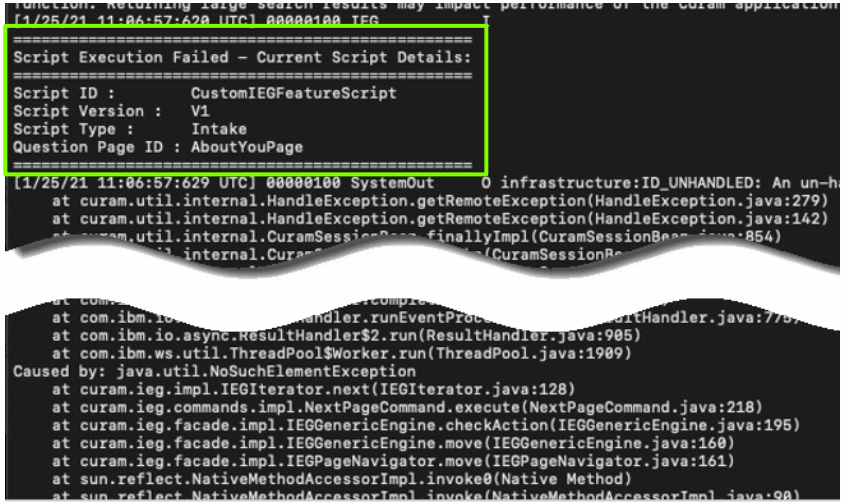
Before SPM V8.0.0

- NoSuchElementException generates an ”unhandled server exception” error message to the user.
- The server logs show a long stack trace pointing to java classes that are inaccessible to a caseworker or system administrator. In addition, little information points to the problem area, and most information is not useful for debugging in a deployed application.
- In large IEG scripts, it can be difficult to locate the source of the problem.



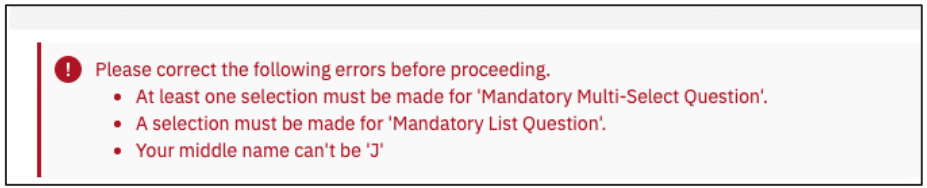
New in SPM V8.0.0

- In V8.0.0, information is shown at the top of the stack trace to indicate the script and the question page ID where the failure occurred.
- The stack trace shows the detailed logging information as it did before.
- The additional logging is provided by a new logging utility class, which is called when NoSuchElement exceptions are thrown. The utility class outputs the execution details to the server logs.
- See the Release Notes - work item 268100 for more information.



Remove “Locale Specific Bundle not Available” Error Traces

- The message "Locale Specific Bundle not Available: Locale: en" was written to the server logs whenever validation messages were displayed to the user.

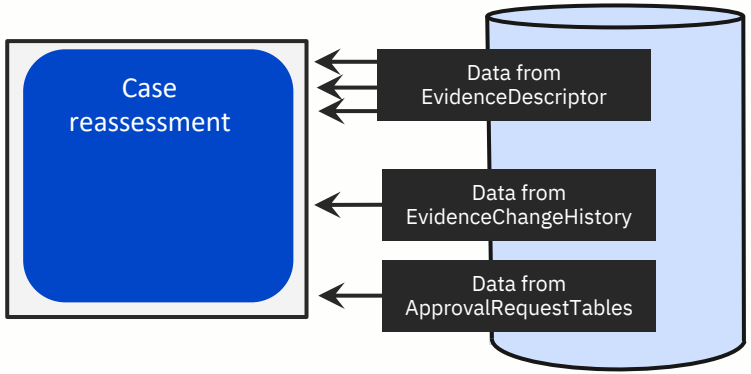


- The messages were written for each failed validation for every IEG script execution. This resulted in a lot of messages in the log, which makes it more difficult to locate the correct root cause of the failure.
- In SPM V8.0.0, these unnecessary error messages are not logged.
- See work item 270402 in the Release Notes for further information.

CER Reassessment Processing

CER Reassessment Processing

- Prior to SPM V8.0.0, during a case reassessment:
  - EvidenceDescriptor reads for Static evidence were performed as multiple single reads
  - Data from the EvidenceChangeHistory and ApprovalRequest tables not required to perform a reassessment was being read
- SPM V8.0.0 now introduces improvements to CER reassessment processing to:
  - Improve the efficiency of frequently accessed EvidenceDescriptor reads
  - Allow for the reads of unnecessary data to be suppressed



CER Reassessment Processing – Evidence Descriptor Reads

- The Evidence Descriptor Cache is activated at the start of a reassessment transaction.
- All EvidenceDescriptor records for the current case are read into a transaction-level cache.
  - Subsequent reads retrieve data from the cache.
  - EvidenceDescriptor data is contained across three individual transaction-level caches.
  - Performance of the caches can be viewed in JMX statistics.
  - Evidence cache is used only for reassessment transactions.
- The cache mechanism is enabled by default but can be disabled with this property

```
curam.evidence.evdescripcache.disabled
```

- See *Developing with Eligibility and Entitlement by using Cúram Express Rules Guide – Caching* for more information.

CER Reassessment Processing – Unnecessary Reads

- Standard evidence controller interface retrieves various pieces of information.
  - Approval Status
  - User who last updated the evidence
- The following entity reads are suppressed to improve case reassessment transactions.

```
EvidenceChangeHistory.readUserForLatestChange
EDApprovalRequest.readCurrentApprovalRequestDetails
```

- However, you can allow the reads to be performed if your customizations require this data for reassessment.
- Set the following system properties to allow the reads:

```
curam.evidence.disable.suppress.evidenceapprovalrequeststatus
curam.evidence.disable.suppress.userforlatestchange
```

- See *Developing with Eligibility and Entitlement by using Cúram Express Rules Guide – Environment Variables* for more information.

Compliancy-Related Enhancements

Access Restriction Updates to Facilitate Compliant Customizations

- To support compliant customizations, the access restrictions on the classes shown in the table were updated to @AccessLevel(EXTERNAL) and/or @implementable, where indicated.
- These classes can now be extended and called compliantly from custom implementations.

Class Names	External	Implementable
curam.hcr.verification.online.impl.ESIVerificationProcessor	✅	
curam.hcr.verification.online.impl.IncomeVerificationProcessor	✅	
curam.hcr.verification.online.impl.VerificationProcessor		✅
curam.hcr.verification.online.impl.IEGVerificationProcessor		✅
curam.planmanagement.adapter.impl.Employer		✅
curam.planmanagement.adapter.impl.EmployerCoverage		✅
curam.hcr.pdm.sl.impl.AbstractCompleteAnnualRenewal		✅
curam.hcr.verification.service.impl.LawfulPresenceVerificationResponseDetails	✅	✅
curam.hcr.verification.service.impl.LawfulPresenceVerificationRequestDetails	✅	✅
curam.hcr.verification.service.impl.SSACompositeBusinessServiceRequestDetails	✅	✅
curam.hcr.verification.service.impl.SSACompositeBusinessServiceResponseDetails	✅	✅
curam.hcr.verification.service.impl.AnnualIncomeRequestDetails	✅	✅
curam.hcr.verification.service.impl.AnnualIncomeResponseDetails	✅	✅
curam.hcr.verification.service.impl.MECRequestDetails	✅	✅
curam.hcr.verification.service.impl.MECResponseDetails	✅	✅
curam.hcr.verification.service.impl.CurrentIncomeRequestDetails	✅	✅
curam.hcr.verification.service.impl.CurrentIncomeResponseDetails	✅	✅
curam.hcr.verification.service.impl.CloseCaseRequestDetails	✅	✅
curam.hcr.verification.service.impl.CloseCaseResponseDetails	✅	✅
curam.hcr.verification.service.impl.ESIApplicantRequestDetails	✅	✅
curam.hcr.verification.service.impl.ESIResponseDetails	✅	✅
curam.core.sl.tab.impl.CaseHomeMenuLoader	✅	
curam.healthcare.intake.impl.AddressDataIntakeApplicationListener	✅	✅

See work items 246030, 246031, 246032, 271003, 246035, 271005 in the Release Notes for further information.

Update a Validation to Configurable to Facilitate Compliant Customization

- Before SPM V8.0.0, if a customer used their own motivation type as part of customizing Insurance Affordability, they got a validation error.

- In SPM V8.0.0, the following validation is configurable and enabled by default:
  - HCRMOTIVATIONBUILDER.ERR_INCORRECT_MOTIVATION_TYPE_FOR_BUILDING_ARTIFICIAL_MOTIVATION

- This can be disabled to allow customers to use their own motivation type, if required.

- Disable the validation in the System Administration Application or in the following DMX file: VALIDATIONCONFIGURATION.

- See work item 247942 in the Release Notes for further information.


train

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