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Clarity Housekeeping and Maintenance

Your Guides:

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Agenda

- Introduction
- Keeping Clarity Healthy
 - Why is housekeeping required?
 - When to perform housekeeping?
 - What does housekeeping involve?
- Rego's Approach
 - Rego's Recommendations
 - Rego's Health Check Assets

Introduction



Introductions

- Take 5 Minutes
- Turn to a Person Near You
- Introduce Yourself
- Business Cards

Understanding Clarity and Housekeeping

- Clarity is flexible and customizable, both in their latest MUX and Clarity Studio. Admins can easily:
 - Manage Clarity's modules like: Custom Investments, Roadmaps, Demand/Project Management, Resources, Financials, etc; through:
 - Clarity Studio
 - Modern UX Administration
 - Implement automations and background processing of data through Jobs and Processes
- This same flexibility can cause a maintenance and housekeeping overhead
- In most cases Clarity will store the data indefinitely, its capabilities depend on the data being always available for analysis. Therefore, it's an “ever-growing” application

Understanding Clarity and Housekeeping

- This increase in data, customizations, changes in functionality and user activity can easily impact performance and/or the user experience.
- Like any other application, Clarity is limited in resources to handle concurrent activity between: User Activity, APIs, Processes and Jobs

Keeping Clarity Healthy



Why is Housekeeping Required?

- Software Maintenance is the process of modifying a system or component without modifying the software itself to:
 - Improve Performance
 - Adapt to latest usage and changes
 - Deliver the service without faults or issues
 - Retire unused functionality/customizations
- Housekeeping/Maintenance is key during the multiple stages of the maintenance process to ensure:
 - Latent risks and issues can be identified and avoided
 - Monitor the impact of releases and/or implementations
 - Ensure the best performance and service is provided

When to Perform Housekeeping?

- When to perform Maintenance/Housekeeping
 - As a Preventive Process:
 - On a scheduled basis
 - Monitoring key metrics and thresholds
 - As an Adaptive Process:
 - When the software is upgraded, or new functionality is released
 - After implementing changes or customizations
 - Decommissioning/Cleaning up previous functionality
 - As a Corrective Process:
 - When a fault is detected
 - When performance issues occur

Quick Round Table

- Does your organization perform any Clarity maintenance activities?
- Describe the activities performed in your organization
- How often are these activities performed?

What Does Housekeeping Involve?

- Processes
 - Processing Capacity:
 - Number of processes running and throughput
 - Number of processes in error state
 - Common failing processes
 - Historic papertrail
- Jobs
 - Review Job schedules
 - Monitor Job Failures
 - New jobs and changes (Specially with MUX, several jobs have been released)
 - Financial Processing
 - Jobs
 - Invalid Transactions
 - Timesheets without transactions
 - DWH Processing

Housekeeping - Processes

- Processes must be proactively maintained and monitor because:
 - Historic data generated a paper trail in the Processes, messages, action items and notifications
 - Performance overhead when too many instances are running, due to:
 - Error State
 - Long running processes
 - Old initiated instances
 - High throughput
- Must be monitored routinely and during implementations. Using the organizer helps identify and monitor process executions

The screenshot shows the 'Organizer - Initiated' interface. At the top, there are tabs for 'ACTION ITEMS', 'TASKS', 'PROCESSES', and 'NOTIFICATIONS'. The 'PROCESSES' tab is active, and a dropdown menu is open showing 'Available' and 'Initiated' options. Below the tabs, there are search filters for 'PROCESS NAME' (set to 'time'), 'PROCESS ID', and 'PRIMARY OBJECT'. On the right, there are filters for 'FROM START DATE', 'TO START DATE', 'STATUS' (set to 'All'), and 'INITIATED BY'. Below these filters are buttons for 'FILTER', 'SHOW ALL', and 'CLEAR'. The main area contains a table with the following data:

Process	ID	Primary Object	Object Name	Progress	Steps In Progress	Status	Messages	Initiated By	Start Date	Finish Date
Time Tracking Stalker - Resource v13	rego_time_stalking_v13			Progress bar (7 bars)		Running (green diamond)	Message icon (yellow flag)	Clarity Administrator	9/2/22 1:00 PM	9/2/22 1:00 PM
Timesheet Validations	pf_ts_validations			Progress bar (1 bar)	Start	Error (red diamond)	Message icon (red flag)	Clarity Administrator	9/2/22 1:18 PM	

At the bottom, there are buttons for 'CANCEL PROCESS' and 'DELETE'. A legend at the very bottom shows icons for Running (yellow diamond), Completed (green diamond), Error (red diamond), Aborting (orange diamond), and Aborted (red diamond).

Housekeeping - Processes

- When rolling out new processes is key to ensure best practices:
 - Do the math, sometimes a schedule or near live processing will be enough and guarantee throughput
 - When setting up conditions for automatic processes, avoid unnecessary executions
 - Be conscious of subprocesses and calling jobs
 - Keep processes simple and short lived
 - Avoid long running processes
 - Handle errors and logging to avoid leaving a significant paper trail or running instances behind
 - Avoid depending on user action or monitor outstanding instances requiring user action

Process: Timesheet Validations - *Initiated Process Messages*

MESSAGE TYPE: All

STEP NAME: _____

DESCRIPTION: _____

FROM ERROR DATE: _____

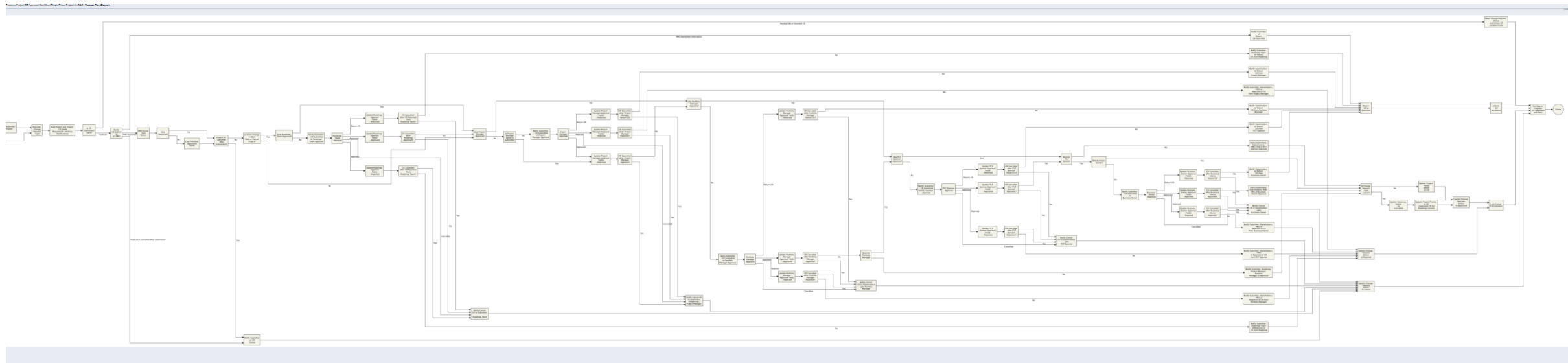
TO ERROR DATE: _____

STATUS: All

<input type="checkbox"/>	Step	Action	Description	Message	New Assignees	User Action	Date
<input type="checkbox"/>	Start	Validation Logic		Timesheet Data incomplete			9/2/22 1:18 PM
<input type="checkbox"/>	Start	Validation Logic		BPM-0545: An error occurred when executing custom action.			9/2/22 1:18 PM

Displaying 1 - 2 of 2

= System Errors
 = Application Errors
 = Warnings
 = Information
 = Processed Errors

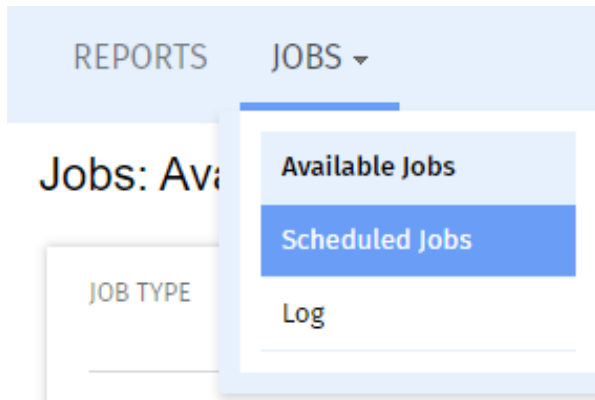


Housekeeping - Jobs

- Jobs in Clarity serve multiple purposes, providing background processing of automatic features and heavy data processing like:
 - Time Slicing
 - DWH Jobs
 - Financial Processing
 - Running Processes on a schedule
- Even though executions are logged, they normally don't represent a significant risk for volume. They can still be cleaned up via the job
- When it comes to housekeeping, it is key to monitor the schedules and ensure they run to best fit the organization without disrupting user traffic/activities

Housekeeping - Jobs

- All available jobs can be visualized under: Administration -> Reports and Jobs, in some cases some jobs are not active unless required
- Schedules and executions can be reviewed under: Home -> Reports and Jobs -> Jobs
- Easily visualize all scheduled jobs by filtering by “Recurring” jobs
- Quick Tips:
 - Its always best to schedule using CRON expressions, using the other options are sensitive to time zones depending on the logged in user.
 - Ensure related jobs are properly scheduled in the expected order and setup incompatibilities as needed
 - Ensure the job schedules are shared through an admin group
 - Ensure failure notifications are In place to identify potential issues



Clarity PPM CA Hi, Clarity Administrator

REPORTS **JOBS**

Jobs: Scheduled Jobs

JOB NAME: |

JOB TYPE: All

JOB ID: |

CATEGORY: All

JOB STATUS: All

FROM SCHEDULED DATE: |

TO SCHEDULED DATE: |

RECURRENCE: Recurring

FILTER SHOW ALL CLEAR

<input type="checkbox"/>	Job	Job Type	Job ID	Job Status	Scheduled
<input type="checkbox"/>	Import Financial Actuals	Import Financial Actuals	1002	Scheduled	9/3/22 2:30 PM
<input type="checkbox"/>	Remove Job Logs and Report Library entries	Remove Job Logs and Report Library entries	5226044	Scheduled	9/4/22 3:17 AM
<input type="checkbox"/>	Index contents and documents for searches	Index contents and documents for searches	50000	Scheduled	9/3/22 3:00 PM

Additional Housekeeping – Volatile Data

- There are some components in Clarity, that retain data for auditing or reporting purposes.
- This should be considered volatile data and only kept for day to day activities without dependency for governance or auditing purposes
- Its key to ensure their configuration and proper maintenance takes place to avoid an increase in load times for certain locations/queries within Clarity:
 - Audit Trail
 - Clarity mechanism to detect new, updated or deleted instances. Logging on a per attribute basis
 - Ensure retention is configured and “Purge Audit Trail” job is configured
 - Only audit fields required by governance, monitoring, etc. “Select All” approach is not recommended
 - Time Slices
 - Time Slices are flat structures within Clarity derived from Time scaled values. This structures are populated by the Time Slicing job. Which allow for queries, portlets and reports to be built against them.
 - Because of this flat structures, data can easily become high volume.
i.e. An environment with 500 resources, daily slices covering 5 years automatically becomes:
 $500 * 5 * 365 = 912,500$ records
 - Setup required to ensure the data is available based on the Org’s expectation
- Other volatile components:
 - Notifications
 - Job Instances
 - Process Instances
 - Action Items

Housekeeping – Access Rights

- Instance Rights play a key role in Clarity and they can be assigned via: Instance, OBS and Global rights; but not all rights are created equal.
- Security is vital for data governance, this must be reviewed both for compliance and housekeeping purposes
- Rights are validated on every action, as you load a screen, a record, through webservice, etc. Therefore, high volume can cause system slowness for most users.
- Rights can also impact your licensing given specific rights will increase the licensing level required.
- Recommendations:
 - Assign rights through Groups or OBS; instead of assigning directly to a user
 - Avoid duplicating rights i.e. Edit Rights super seed View Rights
 - Minimize the use of instance rights
 - When developing integrations or processes that rely on XOG, each insert will automatically assign instance rights. Use dedicated accounts and clean those up on a recurring basis or avoid this paper trail by leveraging the REST API.
 - Review your permission model at least once a year
- Potential Symptoms:
 - Slowness throughout the application except for admin users
 - Portlets with SECURITY clauses perform slower
 - Degradation happened over time without significant changes to the environment

Housekeeping – Volatile Data

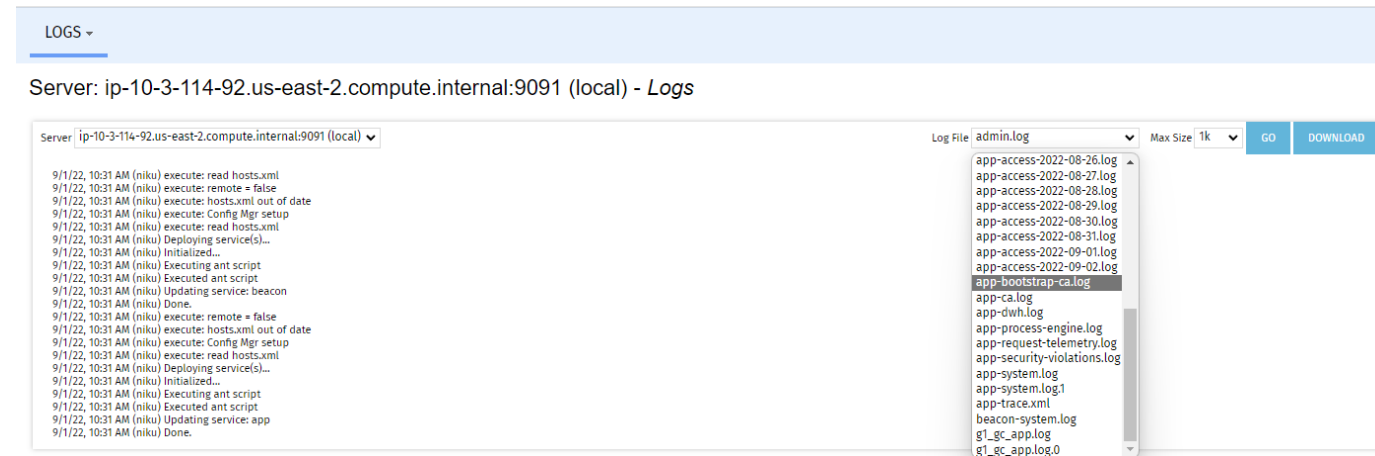
Job	Description
Clean User Session	This job removes expired session-based user data stored in the product for the resource logged in.
Purge Picklist Data	This job removes purged picklist data that may have accumulated over time for deleted pick lists and values.
Delete Process Instance	This job deletes process instances with a status of <i>Done</i> or <i>Aborted</i>
Purge Audit Trail	This job removes all audit trail records according to their retention period.
Purge Notifications	Deletes system notifications. Notifications are logged under certain conditions like Process/Job executions, action items, when an event triggers a system notification.
Purge Temporary Aggregated Data	This job cleans up the data that is created as a part of computing aggregated costs for generating chargeback invoices. The job is scheduled to run once a day automatically but can be run on demand too.
Remove Job Logs and Report Library Entries	This job removes old job log entries and report library entries after they have exceeded a specified number of days.
Purge Action Items	Introduced in 16.1.1 to allow organizations to keep Action Items when purging processes

Housekeeping – Additional Tips

- Review Clarity logs on a periodic basis, for recurring errors. Most portlets, jobs or processes will log messages on error. Logs can be viewed by admins by navigating to:

`/niku/nu#action:security.logs`

- Use OOTB Health Report to review misconfigurations (On Prem Environments)
- Use Performance Portlets and Log Analysis Job to identify slow running components
- Use Admin Pages to:
 - Monitor running jobs and time slices
 - DWH Volume and errors
- Setup notifications for:
 - Failed Jobs
 - Status on key components or processes



Rego's Approach

Rego's Recommendations

- Be aware of Clarity's capabilities, Clarity is highly customizable, but it is not an app builder
- When possible, revert to OOTB functionalities. MUX is being heavily invested and catching up to some work arounds and customizations out there
- When customizing:
 - Be mindful of the overhead when deploying a customization and how frequently/concurrently it will run i.e. dynamic lookups, portlets, processes
 - Standardize naming and API configuration to easily identify customizations
 - Be conscious and remove unused components (i.e. Objects, Attributes, Lookups, Processes, Job Schedules, DWH configuration)
 - Be aware of MUX configuration: Administration, Blueprints, FLS, Views, Rules, etc.
 - Monitor for faulty or slow Queries, Lookups, Portlets or Reports.
 - Document and backup customizations. Clarity has no backup capabilities and lower environments are not a backup mechanism
 - Refresh lower environments frequently
 - Properly identify, describe and name your customizations
- Perform and review your housekeeping configuration on each release and periodically

Rego's Assets

- Rego's Data Dictionary
 - Identifies and provides details on all attributes within your instance
- MUX Migrator
 - Easily move configuration between environments for MUX
- Technical HC
 - Provides a scheduled notification with key metrics of your environment
 - Can be customized to include additional validations and metrics to monitor key processes
- RegoXchange
 - Library of assets and resources to manage Clarity
 - Avoid re-inventing the wheel and implement customizations developed and reviewed by our consultants



Rego Technical HC

Daily Health Check - 23-08-2022 05:30:00

Status Summary

category	status
Processes	PROBLEM
Jobs - Failed	PROBLEM
Jobs - Still Running	OK
Jobs - Long Running	OK
Time Slices	OK
Process Engine	OK

Application Checks

category	status	details
Application Access	Validated	Ok
Fiscal Periods	Total Open: 221	
Time Periods	Total Open: 11	
DWH - Full Job	OK	Last Completed: 08-22-2022 23:21:05
DWH - Incremental Job	PROBLEM	Last Completed: 08-23-2022 05:29:22

Failed Processes

Instance ID	Process Name	Initiated By
252488	Idea Approval	Administrator, Process

Failed Jobs

Job Run ID	Job Name	Initiated By
25248885	Load Data Warehouse - Incremental	Administrator, Process

Long Running Jobs

Job/Report Name	Creator	Execution Time (min)
Load Data Warehouse - Incremental	Administrator, Process	180

Time Slice Details

Slice ID	Slice Name	Last Completion
78558558	Resource Availability	01/01/1990

Application Locks

Lock Type	Since	Owner
Project	06/01/2022	Doe, John

Housekeeping

Category	total	Since
Running Processes	1	08-23-2022
Aborted Processes	0	
Error Processes	49	05-10-2022
Job run instances	71092	07-06-2022
Completed Processes	508754	03-31-2022
Audit Trail Records	1753317	05-01-2020

Process Engine Throughput

yesterday	average
4849	3509

Questions?



Surveys

Please take a few moments to fill out the class survey.
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- Click on **Report PDU's**
- Click on **Course or Training**
- Class Provider = **Rego Consulting**
- Class Name = **regoUniversity**
- Course **Description**
- Date Started = **Today's Date**
- Date Completed = **Today's Date**
- Hours Completed = **1 PDU per hour of class time**
- Training classes = **Technical**
- Click on **I agree** and **Submit**



Let us know how we can improve!
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