For the most recent version of this document, visit our documentation website.
Table of Contents

1 Agents ......................................................................................................................... 4
  1.1 Agent installation requirements ............................................................................. 4
  1.2 List of agents .......................................................................................................... 4
    1.2.1 Single agent per environment ........................................................................... 5
    1.2.2 Definitive number of agents per resource pool .................................................. 9
    1.2.3 Scalable agents .................................................................................................. 12
    1.2.4 Web agents ....................................................................................................... 15
    1.2.5 Isolated scalable agents .................................................................................... 15
2 Installing to agent servers .......................................................................................... 18
  2.1 Primary agent server ................................................................................................ 18
  2.2 Secondary agent server .......................................................................................... 18
  2.3 Installing agent servers in a workgroup .................................................................. 19
  2.4 Adding an agent server to a resource pool .............................................................. 19
3 Adding and editing agents .......................................................................................... 20
  3.1 Adding agents .......................................................................................................... 20
  3.2 Fields ....................................................................................................................... 20
  3.3 Editing or disabling agents ..................................................................................... 21
  3.4 Restarting disabled agents ...................................................................................... 21
4 Managing agents in Relativity .................................................................................... 22
  4.1 Agent Manager service ............................................................................................ 22
    4.1.1 Agent edits ........................................................................................................ 22
    4.1.2 Agent deletes .................................................................................................... 23
    4.1.3 Pending updates ............................................................................................... 23
  4.2 Mass agent operations ............................................................................................. 23
    4.2.1 Mass copy .......................................................................................................... 23
    4.2.2 Mass edit ........................................................................................................... 23
    4.2.3 Mass delete ....................................................................................................... 24
  4.3 Uploading an assembly containing agent types ......................................................... 24
  4.4 Viewing logged agent events ................................................................................... 24
5 Managing and setting Relativity agent quantity limitations .................................................. 26
  5.1 Analytics considerations ........................................................................................................ 26
  5.2 AgentType table column definitions ....................................................................................... 26
  5.3 Editing the AgentType table ................................................................................................... 27
  5.4 Editing the Agent table ........................................................................................................... 27
1 Agents

Agents are process managers and workers that run in the background of Relativity to complete jobs that you or another user scheduled in your environment. Different agents exist for each type of job. To run a job, you must have the agent for that job type installed in the resource pool to which your workspace is assigned. For example, you must have at least one Branding Manager agent and one Production Manager agent to run a production in Relativity.

Relativity agents are installed to your agent server during the Relativity installation process. You can have multiple agent servers in your Relativity environment, but one server generally functions as your primary agent server, which stores a full set of agents, and possibly an additional agents that support multiple installation. Depending on the agent type, you may add multiple instances of it to a secondary agent server.

In the Agents tab, you can manually add an agent type to a server to enable and/or improve the performance of a number of Relativity features.

**Note:** Relativity developers can also build custom agents to handle scheduled jobs. See the Relativity Developers site for more information.

1.1 Agent installation requirements

The installation requirements for Relativity agents include:

- **Installation drive** - Relativity installs agents in the following directory by default: [Installation drive]\Program Files\kCura Corporation\Relativity\Agents\Processing.

- **Total agents per server** - a default Relativity installation includes a set of core feature agents. You can install additional agents on a Relativity server but the total number of additional agents shouldn’t exceed the number of processor cores available on the server.

  **Note:** You need to ensure that each server has the required minimum number of processor cores. For minimum hardware requirements, see the System Requirements guide.

- **Agent instances** - the recommended number of instances of each Relativity agent vary per feature and per environment setup. You should run at least one agent of each type in your environment. For a description of each agent and the recommended number of instances, see List of agents below.

  **Note:** If you’re working in a large environment and need agent use recommendations to manage a large database, contact support@relativity.com.

1.2 List of agents

Relativity supports multiple agents to execute a variety of different processes. These agents can be divided into different categories based on the number of an agent type allowed per environment, the location where the agents run, and the number of type of resources that they require. The different categories of Relativity agents include:
1.2.1 Single agent per environment

For specific Relativity agent types, you are required to add one agent per environment. These agents execute during the off-hours that you configure for them to run. In addition, they require minimal resources so you run these agents on a virtual server that has four CPUs and four GB of RAM. If you don’t meet these minimal requirements, your Relativity environment may experience a performance impact. These agents aren’t specific to a resource pool and are available across your Relativity environment.

**Note:** If you add more than one of the agents in the following list, your Relativity application may not work properly or key components may not function properly. If you delete any of these agents, Relativity displays warning messages.

For the following agent types, Relativity requires a single agent per environment:

**Assisted Review Manager Agent**

<table>
<thead>
<tr>
<th><strong>Description</strong></th>
<th>Oversees the Assisted Review master job and project deletion. For more information, see the Assisted Review guide.</th>
</tr>
</thead>
</table>

**AutoBatchManager**

<table>
<thead>
<tr>
<th><strong>Description</strong></th>
<th>Runs existing batch jobs marked as auto-batch in pre-configured intervals. Add only one agent per environment. This agent runs within a resource pool. Your Relativity application may not function properly if you add more than one of these agents.</th>
</tr>
</thead>
</table>
**Description**
Marks files as Dirty and adds the entries to a deletion queue, regardless of the cache clean up logic used. Deleted files include outdated temporary native, image, and production files used by the viewer from the ConvertedCacheFile table. The Dirty flag indicates that a cache entry isn’t valid.

**Note**: The Cache Manager agent logic looks at the document’s last accessed date time rather than the creation date time.

The Cache Manager uses this workflow to clear the cache:

1. Starts running on all cache locations in your environment during off hours, and continues until complete.

   **Note**: Off hours refers to time not during the standard working day. We recommend setting certain agents to run during off hours due to performance considerations. See the AgentOffHourStartTime and AgentOffHourEndTime in the Agents guide.

2. Deletes the files with the oldest last used date from the cache if the disk space usage on the cache location exceeds the Cache LocationUpperThreshold instance setting. See Instance setting descriptions in the Relativity 9.3 Documentation site.

3. Deletes as many files as required to reduce the disk space usage on cache location to less than or equal to the lower limit defined in the CacheLocationLowerThreshold instance setting. (Additional instance settings that influence agent behavior include FileDeletionManagerBatchAmount and CacheManagerFileDeletionRetry.) See Instance setting descriptions in the Relativity 9.3 Documentation site.

4. When files can't be deleted from the cache reducing the disk space usage to the lower threshold, the agent logs an error and triggers the display of an alert in the Relativity UI.

5. Sends an email notification to a specified recipient for each cache location that it failed to delete.

**CaseManager**

**Description**
Responsible for cleaning up all files in the repository, as well as the actual workspace database, when you delete an entire workspace. Also deletes AuthenticationToken entries older than three (3) days. This agent runs during off-hours and doesn’t use the DeleteFile queue.

**Case Statistics Manager**
| Description | Collects usage metrics, as well as creates and send reports. The CaseStatisticsManager requires that the Case Manager has successfully completed processing.  
**Note:** If the Case Statistics Manager is disabled for seven consecutive days, Relativity access becomes restricted.  
For more information, see the Case Statistics Manager in the Relativity 9.3 Documentation Site. |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster Upgrade Worker</td>
</tr>
<tr>
<td>File Deletion Manager</td>
</tr>
</tbody>
</table>
| Performance Dashboard - Trust Worker | Runs in the background during off hours. Only required for Best in Service partners. Requires a Trust ID from Relativity to be configured in the Performance Dashboard application. Will send Quality of Service scores to Relativity for automated quarterly audits. If the client is participating in the Trust website, it will send Quality of Service scores to be displayed on https://trust.relativity.com.  
**Note:** Off hours refers to time not during the standard working day. We recommend setting certain agents to run during off hours due to performance considerations. See the AgentOffHourStartTime and AgentOffHourEndTime in the Agents guide. |
| Performance Dashboard - Trust Manager | Sends the PDB data to the trust.relativity.com environment. If you are a Best in Service partner, then you need to send your PDB data to the trust.relativity.com environment. |
| Relativity Collection - Auto Processing Agent | Creates a processing set using the profile the collection admin specified as well as any override settings. The agent then kicks off the Discovery process. For more information, see Relativity Collection on the Relativity 9.3 Documentation site. |
| Relativity Collection - Collector Agent | Processes targeted collection results that have been uploaded to the server. For more information, see Relativity Collection on the Relativity 9.3 Documentation site. |
| Relativity Collection - Email Agent | Sends collection requests to custodians for scouting, collecting, and imaging by email, as well as sends collaboration requests. In addition, it sends notifications to the Relativity user when a request is completed. For more information, see Relativity Collection on the Relativity 9.3 Documentation site. |
| Relativity Collection - Imager Agent |  |
Description | Processes forensic image collection results that have been uploaded to the server. For more information, see Relativity Collection on the Relativity 9.3 Documentation site.
---|---
Relativity Collection - Manager Agent

Description | Oversees all jobs added to the agent queue for Collection and assigns the corresponding agent type to accomplish the task. For more information, see Relativity Collection on the Relativity 9.3 Documentation site.
---|---
Relativity Collection - RCC Agent

Description | Handles files uploaded to the server by Relativity Collector and is responsible for validating and copying files, then sending a notification to a specified audience once the files are available. For more information, see Relativity Collection on the Relativity 9.3 Documentation site.
---|---
Relativity Collection - Reporting Agent

Description | Emails a report used for billing purposes similar to the Case Statistics Manager. For more information, see Relativity Collection on the Relativity 9.3 Documentation site.
---|---
Relativity Collection - Scout Agent

Description | Processes the scout results uploaded to the server so that the user can make an informed decision before collecting data. For more information, see Relativity Collection on the Relativity 9.3 Documentation site.
---|---
Review Manager - AuditParserAgent

Description | Collects data for the Reviewers Overturn and Document Overturn reports.
---|---
Review Manager - Review Manager - RefreshDataAgent

Description | Pulls data for the Review Manager reports.
---|---
Server Manager

Description | Updates Relativity with version and job status information from Analytics servers and worker manager servers.
---|---
Telemetry Host Agent

Description | Receives metric data from Relativity and Relativity applications. It logs the data to the EDDSMetrics.Metrics table.
---|---
Telemetry Metrics Transmission Agent

Description | Transmits metric data from the EDDSMetrics.Metrics table to Relativity. Maintains the Metrics table after transmitting the data.
---|---
Text Extraction Manager

Description | Extracts the text from files associated with dynamic objects, and adds it to text fields on the file fields of the dynamic objects. When you create a File field for a custom object, an accompanying Long Text field is also created. When you upload a file to that file field, the Text Extraction Manager reads the text from that file’s name and writes it into the long text field. Add only one agent per environment. This agent runs within a resource pool.
---|---
Transcript Manager

Description | Updates or adds headers and footers to a valid transcript. Add only one agent per environment. This agent runs within a resource pool.
---|---
Transform Set Manager

**Description**
Runs transform jobs for domain parsing and conversation indexes by parsing regular expressions, and outputs these results to a Dynamic Object that has a destination field with a relation on the document object type. Add only one agent per environment.

Workspace Upgrade Manager

**Description**
Tracks the status of workspace upgrades and adds jobs to the queue for worker agents to run.

### 1.2.2 Definitive number of agents per resource pool

For specific Relativity agent types, you are required to add one agent per resource pool. These agent types are grouped into the following categories:

- **Job coordinators** - These agent coordinate work that other processes perform. You can add multiple worker agents to a resource pool but usually only one job coordinator agent.

- **Worker-managers** - These agents manage the worker agents. You only add one manager agent to each resource pool on a server. Your server doesn't require any dedicated resources for them, since manager and worker agents don't run in performance-intensive operations at the same time.

**Note:** You must include one of agents in the following table per resource pool. If a resource pool doesn't include one of these agents, key Relativity components may not function properly. You may not receive an error message if the resource pool doesn't include each of these agents.

For the following agent types, Relativity requires one of these agents per resource pool:

#### Analytics Categorization Manager

<table>
<thead>
<tr>
<th>Maximum number</th>
<th>Agent type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Add up to two</td>
<td>Job coordinator</td>
<td>Clears any previous job results from the population table, and then it categorizes the specific group of documents in the categorization set.</td>
</tr>
</tbody>
</table>

#### Analytics Index Progress Manager

<table>
<thead>
<tr>
<th>Maximum number</th>
<th>Agent type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>One agent per</td>
<td>Job coordinator</td>
<td>Enables and facilitates automation of the Analytics index building process from population to activation.</td>
</tr>
</tbody>
</table>

#### Binder Manager

<table>
<thead>
<tr>
<th>Maximum number</th>
<th>Agent type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>One agent per</td>
<td>Worker-manager</td>
<td>Handles the scheduling of the binder jobs that the worker agent processes.</td>
</tr>
</tbody>
</table>

Content Analyst Cluster Manager
<table>
<thead>
<tr>
<th>Maximum number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>One agent per resource pool.</td>
<td>Clusters documents based on the Analytics index settings.</td>
</tr>
</tbody>
</table>

**Content Analyst Index Manager**

<table>
<thead>
<tr>
<th>Maximum number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>One agent per Analytics server per resource pool.</td>
<td></td>
</tr>
</tbody>
</table>

**Note:** If your environment includes more than one Analytics server, then you would need additional Content Analyst Index Manager agents.

<table>
<thead>
<tr>
<th>Agent</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job coordinator</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Grid Audit Deleter</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum number</td>
<td>Any number of agents per resource pool.</td>
</tr>
<tr>
<td>Agent type</td>
<td>Worker-manager</td>
</tr>
<tr>
<td>Description</td>
<td>An off-hour agent that deletes all audits from SQL that have been successfully migrated to Data Grid. Along with un-migrated agents, it will leave other existing audits in SQL for a configurable number of days for billing purposes.</td>
</tr>
</tbody>
</table>

Don’t run the Data Grid Audit Deleter agent at the same time as the Data Grid Audit Migrator agent as migration and deletion can conflict.

**Note:** If you have Data Grid for Audit installed with an active Data Grid Audit Deleter agent, and you attempt to View Audits for any record, you can only retrieve audits for the last 90 days, because the agent deletes all audit records older than 90 days by default. If you want to be able to view audit records older than 90 days, you can adjust the PostMigrationPersistencePeriod instance setting value.

<table>
<thead>
<tr>
<th>Data Grid Audit Migrator</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum number</td>
<td>Any number of agents per resource pool. For optimal performance, we recommend one agent per CPU of the server.</td>
</tr>
<tr>
<td>Agent type</td>
<td>Job coordinator</td>
</tr>
<tr>
<td>Description</td>
<td>Migrates audit data from SQL to the Data Grid data store for any workspace that has Data Grid for Audit installed. The frequency with which this agent checks for migrations and runs the migrations is controlled with the agent run interval value. Do not run the Data Grid Audit Deleter agent at the same time as the Data Grid Audit Migrator agent, as migration and deletion can conflict.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Data Grid Manager</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum number</td>
<td>One agent per resource pool.</td>
</tr>
<tr>
<td>Agent type</td>
<td>Job coordinator</td>
</tr>
<tr>
<td>Description</td>
<td>A Data Grid Manager agent is an off-hours agent responsible for Data Grid enabled workspace management, including delete outdated search results cache tables and monitoring Data Grid index conditions.</td>
</tr>
</tbody>
</table>
### dtSearch Index Job Manager

<table>
<thead>
<tr>
<th>Maximum number</th>
<th>Only one agent per resource pool.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent type</td>
<td>Worker-manager</td>
</tr>
<tr>
<td>Description</td>
<td>Creates population tables and manages the indexing queue (i.e., it checks to see if workers have completed their work). During incremental build, it also does the work to balance the population tables and manages the status updates on sub-index tables.</td>
</tr>
</tbody>
</table>

### OCR Set Manager

<table>
<thead>
<tr>
<th>Maximum number</th>
<th>Only one agent per resource pool.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent type</td>
<td>Worker-manager</td>
</tr>
<tr>
<td>Description</td>
<td>Converts the options configured in an OCR set into individual jobs (by building tables, inserting records, and handling SQL queries), and then compiles output from the OCR Worker into a single result set for the user.</td>
</tr>
</tbody>
</table>

### Processing Set Manager

<table>
<thead>
<tr>
<th>Maximum number</th>
<th>One agent per resource pool.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent type</td>
<td>Job coordinator</td>
</tr>
<tr>
<td>Description</td>
<td>Manages the running of processing sets by handling the SQL queries involved in the job; retrieves errors encountered while sets are running; picks up processing set deletion jobs and submits them to the worker manager server. For more information, see the Processing user guide.</td>
</tr>
</tbody>
</table>

### Production Manager

<table>
<thead>
<tr>
<th>Maximum number</th>
<th>We recommend at least one agent per resource pool.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent type</td>
<td>Worker-manager</td>
</tr>
<tr>
<td>Description</td>
<td>Creates production numbers and applies them to productions. This is also responsible for creating branding jobs and populating the branding queue. The Branding Manager agent is the corresponding worker.</td>
</tr>
</tbody>
</table>

### Search Terms Report Manager

<table>
<thead>
<tr>
<th>Maximum number</th>
<th>One agent per resource pool.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent type</td>
<td>Job coordinator</td>
</tr>
<tr>
<td>Description</td>
<td>Runs a search against an existing dtSearch index, and returns a count of matching terms found in this index.</td>
</tr>
</tbody>
</table>

### Structured Analytics Manager

<table>
<thead>
<tr>
<th>Maximum number</th>
<th>One agent per resource pool.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agent type</td>
<td>Job coordinator</td>
</tr>
<tr>
<td>Description</td>
<td>Oversees the Structured Analytics Worker agents by keeping the structured data analytics master job up-to-date and creating worker jobs. For more information, see the Relativity Admin guide.</td>
</tr>
</tbody>
</table>
1.2.3 Scalable agents

Relativity includes agents that you can scale to the appropriate number for your environment needs. You can add any number of these agents, but you must include at least one per resource pool. Depending on your environment, you may need more than one agent. For example, you may need several worker agents to handle very large documents or Data Grid jobs. You can run these agents on a server with one CPU core per agent, and 1 GB of RAM. You may want to double these memory requirements to accommodate heavy workloads in your Relativity environment.

For the following agent types, Relativity requires at least one of these agents per resource pool, but you also have the option of adding multiple agents depending on your current needs:

**Application Installation Manager**

- **Minimum number**: Requires at least 1 agent
- **Description**: Detects applications that need to be installed or upgraded in a workspace. For more information, see Upgrading workspaces in the Relativity Upgrade Guide.

**Assisted Review Worker Agent**

- **Minimum number**: Requires at least 1 agent
- **Description**: Facilitates Assisted Review project creation, sample set creation, document review, over-turns, saving project results, report generation, and error recovery. For more information, see the Assisted Review guide.

**Binder Worker**

- **Minimum number**: Requires at least 1 agent
- **Description**: Calls into the Invariant server to process the binder jobs, such as converting documents to PDFs.

**Branding Manager**

- **Minimum number**: May require more than 1 agent
- **Description**: Creates production images and applies endorsements.

**Data Grid Process Queue Manager**

- **Minimum number**: Requires at least 1 agent. However, you can also scale this agent as follows for performance gains:
  - Tier 1 environments can support a maximum of 8 agents.
  - Tier 2 environments can support a maximum of 16 agents.
- **Description**: Moves records from Data Grid Queue to Data Grid. This agent creates bulk requests from the queue and reports any errors that were generated. On successful writes, the agent then moves to the verification queue, where Data Grid Verification Queue manager processes them.

**Data Grid Verify Queue Manager**
| Minimum number | Requires at least 1 agent. However, you can also scale this agent as follows for performance gains:  
- Tier 1 environments can support a maximum of 2 agents.  
- Tier 2 environments can support a maximum of 4 agents. |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
</tr>
</tbody>
</table>

**Data Grid Status Queue Manager**

| Minimum number | Requires at least 1 agent. However, you can also scale this agent as follows for performance gains:  
- Tier 1 environments can support a maximum of 1 agent.  
- Tier 2 environments can support a maximum of 2 agents. |
<table>
<thead>
<tr>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
</tr>
</tbody>
</table>

**Data Grid Error Queue Manager**

| Minimum number | Requires at least 1 agent. You can add multiple agents as necessary. We recommend using 1 core and 2 GB of RAM for each additional agent. |
|-----------------------------------------------|
| Description | Performs the indexing operation for each sub-index. Additionally, workers are responsible for compression and copying steps at the end of the indexing. During incremental build, the workers are responsible for removing documents that are no longer in the saved search. |

**OCR Worker**

<p>| Minimum number | Multiple agents per environment. We recommend starting with 4 QoS Workers and adding more agents as needed. A large environment with 500 or more databases benefits from having 6-12 QoS Worker agents. |
|-----------------------------------------------|
| Description | Takes an OCR job created by the OCR Set Manager, and translates the images into text. |</p>
<table>
<thead>
<tr>
<th>Description</th>
<th>Runs in the background, executing the QoS_WorkspaceAnalysis procedure within each workspace, collecting and analyzing search and audit data. It saves the collected data to the EDDSPerformance Database.</th>
</tr>
</thead>
</table>

**Performance Dashboard - WMI Worker**

<table>
<thead>
<tr>
<th>Minimum number</th>
<th>Multiple agents per environment. We recommend starting with 2 WMI Workers and adding more agents as needed. A large environment with 20 or more Relativity servers benefits from having 4 or more WMI Worker agents.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Note:</strong></td>
<td>If there are servers in the DMZ (perimeter network), you must place an additional Performance Dashboard agent on a server in the DMZ.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th>Runs in the background, collecting WMI counters and SQL server statistics for use in scoring. It saves the collected data to the EDDSPerformance Database.</th>
</tr>
</thead>
</table>

**Relativity Integration Points Agent**

<table>
<thead>
<tr>
<th>Minimum number</th>
<th>Requires at least 1 agent. However, you can also scale this agent as necessary.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Responsible for batching up data from the source provider and pulling it into Relativity fields.</td>
</tr>
</tbody>
</table>

**Relativity Legal Hold Agent**

<table>
<thead>
<tr>
<th>Minimum number</th>
<th>Requires at least 1 agent. However, you can also scale this agent as necessary.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Sends emails (including reminder and escalation), pulls emails in from custodian responses, and purges custodians from a project.</td>
</tr>
</tbody>
</table>

**Structured Analytics Worker**

<table>
<thead>
<tr>
<th>Minimum number</th>
<th>May require more than 1 agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Performs all structured data analytics tasks, including setting up staging, exporting document information from Relativity, monitoring Content Analyst, importing document information into Relativity, and creating reports. For more information, see the Relativity Admin guide.</td>
</tr>
</tbody>
</table>

**Workspace Upgrade Worker**

<table>
<thead>
<tr>
<th>Minimum number</th>
<th>Requires at least 1 agent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Runs the a script required to update the workspace databases. On an SQL server profile, you can edit the <strong>Workspace Upgrade Limit</strong> field, which controls the number of agents accessing the server during an upgrade. The setting entered in this field can’t exceed the setting in the <strong>GlobalWorkspaceUpgradeLimit</strong> instance setting value. If you enter a number that exceeds this instance setting value, an error occurs that cancels your update. For more information, see Instance setting values and Upgrading workspaces.</td>
</tr>
</tbody>
</table>
1.2.4 Web agents
For specific Relativity agent types, you are required to add one agent per web server. If you add more than one of the agents in the following list, your Relativity application may not work properly.

If you experience the following issues, verify that these agents are running in your installation:

- **Custom pages aren't working properly** - verify that the Custom Page Deployment Manager is running.
- **Poor application performance** - verify that the AppPool Warmup and Platform Status agents are running.

For the agent types in the following table, Relativity requires one of these agents per web server:

**AppPool Warmup Agent**

| Description | Keeps the AppPool "warm" so that users don’t see large pauses when custom pages are used in the application. The REST API can take a few seconds to start up after a reboot or Relativity upgrade, or after a period of inactivity. The agent checks the REST API once per minute so that the IIS App Pool stays alive. It is automatically installed with the Web Processing agent service. |

**Custom Page Deployment Manager**

| Description | Polls the LibraryApplication and ApplicationServer tables in the EDDS database according to a configurable time interval to check for new versions of any application installed in the ApplicationLibrary table. If a new version is discovered, the Custom Page Deployment Manager runs and installs the updated version of the application's custom pages on that web server. The Application Server table in the EDDS database is then updated to reflect the new version number. This agent is installed on the kCura Web Processing Windows Service, which runs on each web server in your Relativity installation. |

**Platform Status**

| Description | Enables the diagnostics of the Relativity Services API. The results of the diagnostic tests run by the agent are displayed on the Platform Status tab. |

1.2.5 Isolated scalable agents
Relativity includes isolated scalable agents which you can customize for your environment needs. This type of agent needs to be on its own agent server with no other Relativity agents on the server. These agents are multi-threaded and will use all resources on the server when needed. Depending on your environment, you may wish to scale the server up for better performance. Monitor both CPU and RAM during normal usage as well as during jobs. If needed, add more CPU and RAM to the server. You may also add another server with another agent by itself. You can add any number of these agents, but you must include at least one per resource pool.

**Data Grid Kepler Host**
### Data Grid Kepler Host Agent

**Description**

Hosts the service responsible for processing requests to Data Grid. This agent is used only for processing to Data Grid. These instance settings that control the service endpoint and port: `ServiceHttpEndpoint` and `ServiceHttpEndpointPort`. Follow these guidelines for this agent:

- Make sure that this is the only agent running on the server.

**Note:** In environments that process less than a few hundred thousand documentations per job, you can also run the Data Grid Install Queue Manager agent on the same server as the Data Grid Kepler Host agent.

- Monitor the CPU to observe its usage. The CPU usage is either greater than 80% or 0% under a normal workload.
- Add more resources if you notice the *Write to Grid* phase of processing is slow. You can only scale this agent vertically.
- Notice that this agent runs at an environment level rather than at the resource pool level.

### Data Grid Install Queue Manager

**Description**

Installs the Data Grid queue service. By adding and enabling this agent on an agent server, all required prerequisites for Data Grid Queue are installed. It also monitors the up time of the Data Grid Queue when successfully installed. You need to update instance setting called `QueueManagerSettings` with the login credentials and machine where the Data Grid Queue is installed. Follow these guidelines for this agent:

- Causes the machine where it is added to become a RabbitMQ server. The Rabbit service performs any work on the server, not the agent itself.
- Don't use the machine that you install this agent for any other purpose except running the Data Grid Kepler Host, even if you delete the Data Grid Install Queue Manager agent.
- Used only during the *Process to Grid* phase.
- Add more resources if you notice the *Write to Grid* phase of processing is slow. You can only scale this agent vertically.
- Notice that this agent runs at an environment level rather than at the resource pool level. It is also I/O intensive.

### dtSearch Search

---

Relativity | Agents Guide - 16
| Minimum number description | Requires at least 1 agent per resource pool. The agent must be on its own server with no other Relativity agents. The server should not be used for any other role (i.e. Web, Analytics, etc.).

Hosts the search service and executes search requests that users submit. This agent is multi-threaded and will use all resources on the server when needed. Follow these guidelines for this agent:

- Monitor CPU, RAM, and disk I/O during normal usage and during Search Terms Report jobs.
- Disk I/O on the dtSearch Index Share may also become a bottleneck – monitor and configure as needed.
- If performance issues occur, add more server resources.
- You may also add another agent server with only the dtSearch Search agent. However, it is often preferred to scale up rather than out. |
2 Installing to agent servers

Every agent server runs on the kCura.EDDS.AgentManager Windows Service. This service launches all Relativity agents and runs the agent framework.

During Relativity installation, you can select whether to install the Agent Service on your server. The server running the Agent Service functions as the primary agent server because it runs all of the single-installation agents. See Primary agent server below.

When you edit the RelativityResponse.txt file set the DEFAULTAGENTS setting in the Agent Properties section to 1 to install the full set of default Relativity agents to your server. See Secondary agent server below for more information.

Note: The DEFAULTAGENTS setting only works during initial installation. This field is ignored on upgrade.

Using the Relativity user interface, you can add, modify, or delete Relativity agents from the server. See Managing agents in Relativity on page 22 for more information.

To run a job in a workspace, you must have that particular agent running on the agent server assigned to the resource pool where your workspace resides. For example, if the Transform Set Manager agent is not present on any of the agent servers in the resource pool that houses your workspace, you won't be able to run a Transform Set job.

Note: This applies to all agents except the Case Manager, Case Statistics Manager, and File Deletion Manager. These three agents will run across the environment regardless of their assigned server and resource pool. See Agents on page 4 for more information.

2.1 Primary agent server

The primary agent server in a Relativity environment is intended to run one full set of agents, including both single-installation and multiple-installation agents. In addition to hosting a full set of agents, you can optionally configure your primary agent server to host secondary instances of the multiple-installation agents.

We recommend installing only one additional instance of each Branding Manager or Production Manager agent on your primary agent server. See List of agents on page 4 for details.

2.2 Secondary agent server

If you select the Include default agents check box during installation, the Relativity installation package installs the full set of agents on a secondary agent server. You can then manually remove the single-installation agents and add additional multiple-installation agents. You can add the Workspace Upgrade Manager agent to a secondary server, but you should install only a single agent of this type per environment.

You can add several of the following multiple-installation agents to each secondary agent server:

- Application Installation Manager
- AssistedReviewWorkerAgent
- Branding Manager
- dtSearch Index Worker
- OCR Worker
- Production Manager
- Content Analyst Index Manager
- Workspace Upgrade Worker

Secondary agent servers are commonly configured to run 2x quad-core processors. This configuration supports any combination of eight agents, such as four Branding Manager agents and four Production Manager agents.

**Note:** In this example, the combined count of Branding and Production Managers can't exceed the total number of individual processor cores present on the server.

### 2.3 Installing agent servers in a workgroup

After installing the Relativity agent server on a machine that is a part of a workgroup, start the kCura.EDDS.AgentManager service under a Windows account that is a member of the Administrators group.

**Note:** If your environment contains workspaces with Data Grid enabled fields, agent servers must have access to the endpoint URL on the Elasticsearch client node for dtSearch functionality.

### 2.4 Adding an agent server to a resource pool

You need to add your agent server to a resource pool after you configure it. This step ensures that the agents on the server are available to run jobs.

1. From **Home**, select the **Resource Pools** tab.
2. Select the resource pool to which you want to add the workgroup server.
3. In the Resource Pool information screen, go to the Agent Servers section and click **Add**.
4. Select the **NewAgentServerMachineName** workgroup server, and then click **OK**.
3 Adding and editing agents

You can add new agents to accommodate a large number of jobs in the workspace. For instance, if you need to complete multiple large OCR jobs, you may need to add additional OCR worker agents to your environment.

3.1 Adding agents

Before adding agents, be sure to read the agent instances guidelines. See Agents on page 4.

To add an agent, perform the following steps:

1. From Home, select the Agents tab.
2. Click New Agent. The Agent Information screen displays.
3. Complete all of the fields in the Agent Information section. See Fields below for details.
4. From the Enabled field, select Yes to enable the agent or No to create the agent without enabling it on the server.
5. Click Save. If the agents were successfully added to the environment, you'll see a green check box and message at the top of the page.

Verify that the new agents appear on the Agents tab in Relativity. Each agent appears by agent type in the Name column, and the agent type is followed by the number of the agent type. For example, if you create two Analytics Categorization Manager agents, the first appears as Analytics Categorization Manager (1) and the second appears as Analytics Categorization Manager (2).

3.2 Fields

The agent object fields are as follows:

- **Agent Type** - displays the Select Agent Type dialog, allowing you to select the appropriate agent type. Once the agent type is saved, it can't be changed.

- **Number of Agents** - contains the number of instances of this agent type that will be created. If you enter a number that would cause the agent to exceed its maximum agents per server value, you receive an error message and the new agent(s) won't be created.

  **Note:** When you create multiple instances of an agent type, each instance is named with a number following in parentheses. For example, the first instance of an OCR Manager agent is named OCR Manager (1). The second instance is named OCR Manager (2), and so on. Not all types of agents can have multiple instances.

- **Agent Server** - displays the Select Resource Server dialog, allowing you to select the server on which the agent will reside and click OK to return to the Agent Information screen.

  **Note:** After you select the agent type, only servers with a processing type that is compatible with the agent type appear in the Resource Server dialog. If you select the server first and then select an agent type that is not compatible, you receive an error message.
- **Run Interval** - The interval, in seconds, at which the agent should check the database for available jobs. It populates with a default value based on the agent type.

- **Logging level of event details** - specifies the types of events logged for the agent. It populates with a default selection based on the agent type. You can modify this setting by choosing from the following options:
  - Log critical errors only - logs messages about critical system failures
  - Log warnings and errors - logs messages about critical and non-critical service errors and disruptions in activity
  - Log all messages - logs detailed messages about all errors and life cycle events

**Note:** When the Log all messages option is selected, the Event Log is rapidly filled to capacity with detailed messages, which causes previous messages to be purged from the log. This option could result in error messages being purged before you have a chance to view the errors.

- **Enabled** - designates the agent instance as disabled or enabled.

### 3.3 Editing or disabling agents

To improve performance, you can disable agents that aren't being used or restart them if you begin using a certain feature. For example, you can disable agents on a retired server or enable OCR worker agents for new OCR jobs.

To edit or disable an existing agent, perform the following steps:

1. From the **Agents** tab at **Home**, click the name of the agent you want to modify.
2. From the Agent Information screen, click **Edit**. See Managing agents in Relativity on the next page for details on how agent actions are handled by the Agent Manager service.
3. To edit an agent, change the information under Agent Information as necessary. See **Fields on the previous page** for details.
4. To disable an agent, go to the Status section and change the Enabled value to **No**.
5. Click **Save**.

**Note:** If you edit or disable an agent while another job is being processed, the change won't apply until after the that job completes.

### 3.4 Restarting disabled agents

If an agent has been disabled for any reason, you can restart it in the Agents tab.

1. From **Home**, select the **Agents** tab.
2. Select the check box for each disabled agent that you want to restart.
3. Click the **Restart Disabled Agents** button at the top of the Agents view.

This re-enables the agent and changes its value in the **Enabled** field to **Yes**.
4 Managing agents in Relativity

You may need to monitor, edit, or disable agents for troubleshooting or to meet your environment's changing needs. Use the following best practices when working with agents:

- Perform agent modifications while agents are idle to minimize any potential issues.
- Only one person should be building, modifying, or interacting with any particular agent at a time.
- Understand how agent actions are handled by the Agent Manager Windows Service. See Agent Manager service below.

Note: If you're working with agents in a very large Relativity workspace, contact support@relativity.com.

4.1 Agent Manager service

When you add a new agent from the Relativity interface, the agent is immediately created on the server. Agent information is stored in the EDDS database, and the Agent Manager Windows Service manages the agents on your server.

When you modify agents from the Agents tab in the Relativity interface, values are updated in the database. The Agent Manager service reads this information from the database every five seconds. If agents have been created, updated, or deleted during the previous five seconds, the Agent Manager Windows Service retrieves this information from the database and makes the changes to the agents on your server.

The following sections describe how agent actions are handled by the Agent Manager Windows Service.

4.1.1 Agent edits

Agent edits are as follows:

- **Agent Server** - if an agent is moved to another server in the database, the agent will finish the job that it's currently working on before the change takes effect.
  
  - For example, if you move the agent from Server A to Server B, the Agent Manager service running on Server A checks to see whether the agent is executing any jobs. If the agent is currently executing a job, then it's not moved from Server A. The Agent Manager service will continue to check the agent at five-second intervals, and if the agent is finished executing its job, then it's removed from Server A and placed on Server B.

- **Run interval** - when you modify an agent's interval, the interval is updated immediately on the server. Any time elapsed from the previous interval is applied toward the new interval. For example, if four minutes have elapsed on a five-minute interval, and you increase the interval to 10 minutes, then the agent will run again in six minutes.

- **Logging level** - when you change an agent's logging level, it's updated immediately on the server.

- **Enabled status** - if an agent's Enabled status is changed to No, the agent will finish the job that it's currently working on before it is disabled.
4.1.2 Agent deletes
When the Agent Manager Windows Service runs, any agents marked for deletion are checked to see if they’re executing a job. If an agent marked for deletion is executing a job, then it’s not deleted. The Agent Manager service will continue to check the agent at five-second intervals, and when the agent is finished executing its job, it is deleted.

4.1.3 Pending updates
The Pending Action field on the agent item list indicates whether an agent is pending a change. The available statuses for this column include the following:

- **Deleting** - the agent will be deleted once the current job completes.
- **Disabling** - the agent will be disabled once the current job completes.
- **Moving** - the agent will be moved to the new server once the current job completes.
- **Updating** - the agent has been modified, but the change won’t be made until the Agent Manager Windows Service runs again.

4.2 Mass agent operations
Using the mass operations menu, you can copy, edit, or delete multiple agents at once. See also Adding and editing agents on page 20.

4.2.1 Mass copy
To mass copy agents, complete the following steps:

1. From **Home**, select the **Agents** tab.
2. Select the agents you want to copy and select **Copy** from the drop-down menu.
3. Click **Go**. The new agent instances display in the Agents list, numbered incrementally. For example, if you copy the Branding Manager agent, **Branding Manager (1)** and **Branding Manager (2)** will display in your agents list.

**Note**: If completing the mass copy operation would cause one or more agents to exceed their maximum agents per server value, then none of the selected agents will be copied and you’ll receive an error message.

4.2.2 Mass edit
Using the Edit mass operation, you can make the same change(s) to multiple agents at once. The following settings can be edited using this operation:

- **Run interval**
- **Logging level of event details**
- **Status**
To edit multiple agents at once using the mass operation menu, complete the following steps.

1. From Home, select the Agents tab.
2. Select the agents to edit and choose Edit from the drop-down menu.
3. Click Go. The Edit Agents dialog displays.
4. Select the check box to the left of the component to be edited, and enter or select the corresponding new value. See Fields on page 20 for details.
5. Click Save to apply the change and return to the Agents list.

### 4.2.3 Mass delete

To delete one or more agents using the mass operation menu, complete the following steps.

1. From Home, select the Agents tab.
2. Select the agents you want to delete and select Delete from the drop-down menu.
3. Click Go to flag the agents for delete from your environment.

### 4.3 Uploading an assembly containing agent types

You can upload an assembly that contains agent types to Relativity. See the Admin Guide for steps to upload an assembly to Relativity.

When you upload an assembly that contains agent types, those agent types become available for selection when you create a new agent. When you click ![Select Agent Type](select-agent-type.png) from the Agent Type field, any agent types contained in an assembly uploaded to Relativity will be accessible from the Select Agent Type dialog.

Consider the following when working with assemblies that contains agent types:

- The details view for each assembly displays the agent types (if any) associated with that assembly.
- If an agent type is contained in an assembly, and you deploy agents using that agent type in your environment, you must delete all agents of that type before you can delete the assembly.
- If you remove an agent type from an assembly and then re-upload that assembly to Relativity, the agent type will be deleted from your environment.

### 4.4 Viewing logged agent events

You can view logging information about Relativity agents in the Event Viewer on your primary or secondary agent server.

1. To open the Event Viewer in Windows, click the Start > Programs > Administrative Tools > Event Viewer.
2. In the Event Viewer, open **Windows Logs > Application**.
5 Managing and setting Relativity agent quantity limitations

The purpose of the following information is to enable you to successfully make changes to the Agent table using SQL. This will allow you to enforce restrictions of many types of agents so that you don’t find yourself in a situation where too many agents have been created.

In the EDDS database of Relativity, there is a table called AgentType. In each line listed in SQL, the table has a number of columns and a row for each agent. The following image shows only a few columns.

![AgentType Table](image)

Each column allows you some additional control over the number of agents that can be deployed in an environment. Columns are described in AgentType table column definitions below. For columns that describe a quantity limitation, a value of 0 means that the agent will be untracked/unenforced. Min x columns that are not mentioned in AgentType table column definitions below are not mentioned because they are not enforced.

**Note:** The only time that this check is made is when the agent is first deployed. Anything that happens afterward, such as a server moving to a different resource pool, or a change to these rules, will not affect existing agent counts. Changes are not applied retroactively.

5.1 Analytics considerations

Analytics server agents, while present in this table, follow some slightly different rules for scaling that you should consider when deploying them. The Relativity Analytics Cluster Manager and Content Analyst Index Manager agents are scalable at 1 agent each per Analytics server in the environment. The Relativity Analytics Categorization Manager is scalable at 2 agents per Analytics server in the environment.

5.2 AgentType table column definitions

- **ArtifactID** - The agent's unique ArtifactID
- **Name** - The name of the agent, which reflects its type
- **Full namespace** - The full name of the agent, such as kCura.EDDS.Agents.FileDeletionManager. This should never be changed.
- **MaxInstancePerServer** - Allows you to set a limit on a per server basis. By default, all 0s except for dtSearchSearch.

- **MaxInstancePerResourcePool** - Allows you to set the maximum number of agents per resource pool to prevent users from deploying multiple instances of agents when there should be only one. Be aware, however, that if a server is moved from one resource pool to another, there will be no correction or warning that you have violated the resource pool limit. Only the Server Manager agent has a default limit here.

- **MinInstanceEnvironment** - Every agent has a default MinInstanceEnvironment requirement of 1. However, you're not required to have all of the agents, and this value is used only once during initial installation, so it can be changed. Relativity gives warnings when minimum recommendations are not met, but minimums are not enforced.

- **DefaultInterval** - How often the agent checks in, in seconds. The default interval on agents “checking in” to their queues for more work is 5 seconds. In an environment with many agents, this may be too often and may result in thousands of queries per minute when much longer intervals would suffice. For example, using a 30 second interval, it would take you at least that long to navigate to the Agents tab to see if the agent is running. If you apply this across the board, it would reduce agent queries to the database by a considerable amount.

- **Description** - The description of the agent

- **Guid** - The agent’s unique identifier

- **LoggingLevel** - There are three levels of logging: 1 is for **Errors only**, 5 is for **Warnings and errors**, and 10 is for **Log all messages**.

### 5.3 Editing the AgentType table

Following these guidelines, you can set the default settings for each agent. You can only set the defaults by running SQL queries against the table itself.

For example, the following query changes the maximum number of OCR workers in an environment to 10.

```sql
UPDATE [EDDS].[eddsdbo].[AgentType] SET [MaxInstanceResourcePool] = 10
WHERE [Name] = 'OCR Worker'
```

**Note:** If you have 12 agents already in any resource pool, this will do nothing to remove them or even warn you. If you move a server to a different resource pool, there will be no check to prevent it from moving if the move causes it to exceed the predefined limit.

### 5.4 Editing the Agent table

The Agent table inherits several of the columns in the AgentType table when the agent is deployed. The logging level and interval are all written to this table. The Name column gets appended with some number (n). If you want to change the values for existing agents for either of these values, you can change them through the UI. If you have many changes to make, it will be faster to change them in the Agent table.

The following sample SQL statement updates the run interval to 10, and sets the logging level to **Log warnings and errors** for all dtSearch Index Workers.
UPDATE [EDDS].[eddsdbo].[Agent] SET [Interval] = 10, [LoggingLevel] = 5
WHERE [Name] LIKE 'dtSearch Index Worker%'

Executing this SQL in Sql Server Management Studio updates the dtSearch index worker default maximum of agents to 10.
Proprietary Rights

This documentation ("Documentation") and the software to which it relates ("Software") belongs to Relativity ODA LLC and/or Relativity’s third party software vendors. Relativity grants written license agreements which contain restrictions. All parties accessing the Documentation or Software must: respect proprietary rights of Relativity and third parties; comply with your organization’s license agreement, including but not limited to license restrictions on use, copying, modifications, reverse engineering, and derivative products; and refrain from any misuse or misappropriation of this Documentation or Software in whole or in part. The Software and Documentation is protected by the Copyright Act of 1976, as amended, and the Software code is protected by the Illinois Trade Secrets Act. Violations can involve substantial civil liabilities, exemplary damages, and criminal penalties, including fines and possible imprisonment.

©2019. Relativity ODA LLC. All rights reserved. Relativity® are registered trademarks of Relativity ODA LLC.