



# Intella Connect™ Release Notes



**Intella™**  
***evidence made visible***

Vound  
email investigation and eDiscovery software

Covering versions 1.7 to 2.7.2

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To become an Intella reseller, please contact us!

For user and technical support please visit our website:

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# Intella Connect 2.7.2

## Highlights

- **Intella Assist** improvements: **prompt optimizations**, support for **IBM WatsonX**.
- Improved searching for **emojis** and **acronyms**.
- Added full disk image support to **IntellaCmd**.
- Added a function to **export all words** from a set of items.

## Case Management

- Resolved an issue with cases sometimes staying listed as active in the Diagnostics Report, despite no user activity or background tasks taking place in the case anymore.

## Authorization

- Resolved an issue with the protection layer against CSRF (Cross Site Request Forgery) attacks inadvertently logging out users.

## Indexing – General

- Resolved an issue with missing Raw Data properties in the XMP section of a PDF document.

## Indexing – Disk images

- When validating and indexing AFF4 disk images, sub-folders will no longer be scanned. Only the current folder will now be scanned for disk image parts. This improves the time needed to validate disk images when there is a deep folder structure present in the local file system holding the disk image files.
- Improved stability when indexing ISO and DMG disk images.

## Indexing – Email

- Resolved an issue where emails inside OLK15 files were not identified as Top-Level Parents.

## Indexing – Chat messages

- Resolved an issue with indexing the SubstrateHolds folder in a MS Teams PST file.
- Resolved an issue with messages from RSMF archives not indexing properly when multiple messages in the archive have the exact same timestamp.
- Improved the performance of indexing messages from a Slack export, when that export contains a large amount of edited or deleted messages.

## Indexing – Cloud sources

- Updates to the Gmail and Microsoft 365 sources, reflecting server-side changes made by these vendors.
- Improved indexing and rendering of tables in iCloud Notes items.
- Resolved an issue with the selection of Google services not working properly.

## Indexing – Load files

- Resolved an issue where switching to the “Image preview” tab during load file source creation resulted in the user being redirected to the Cases list.

## IntellaCmd

- Added support for indexing disk images. These could already be indexed as files in a Folder source, but now the full set of disk image source options is supported. For example, disk image validation, volume shadow copy options, file carving, etc. can now be controlled on the command-line.
- Resolved an issue with the `-indexChatMessages (-icm)` option not working properly.
- Resolved an issue with a password list not being imported into the keystore.
- Resolved an issue with the case’s temp folder setting not being picked up.
- Resolved an issue with a case template’s optimization folder setting not being picked up.

## Intella Assist

- Added support for models shared on the IBM WatsonX platform. Currently supported models are:
  - `granite-13b-chat-v2`
  - `mixtral-8x7b-instruct-v01`
  - `llama-3-8b-instruct`
  - `llama-3-70b-instruct`

- llama-3-1-8b-instruct
  - llama-3-1-70b-instruct
- Prompts generated by Intella Assist in the Previewer will now only include and submit those item parts (text, headers and/or raw data) needed to answer the user's question. This reduces API costs due to less tokens being generated, and speeds up processing of the prompt. Furthermore, it reduces the chance of context limits to be reached, especially for smaller models.
- Added a (hidden) option to re-enable the Intella Assist facet when a model is used that is not part of OpenAI's family of gpt-4 models.

## Searching

- Added support for searching for emojis. Previously this was only possible via regular expression search. Now, emojis can be directly entered in the Search field too. For this type of search to work, re-indexing of existing cases made with 2.7.1 or older is required.
- Improved searching for acronyms, such as "U.S. Bank".
- Resolved an issue where Saved Searches involving Content Analysis facet categories produced no results. Existing Saved Searches for this type of query should be discarded and re-created; they cannot be automatically fixed.
- Improved the loading process of several facets after the case was awakened from Standby mode.
- Resolved an issue with the "OCR candidates" case task querying for JPEG files instead of PNG files, or vice versa, when only one of these options was selected.

## Results

- Resolved an issue with table sorting producing incorrect results when the table sort order is toggled repetitively and quickly.
- Resolved an issue where table cells showing email senders/recipients would only show the contact's name but not the email address.

## Previewer

- Improved HEIF image support.
- Resolved an issue where links to the previous and next conversation items in the Previewer could not be rendered for some items.
- Resolved an issue with previewing calendar items in compound cases.

## Batching & Coding

- Fixed a rare error preventing the coding UI from letting the reviewer advance to the next item in the queue.

## Exporting – PDF

- Improved rendering of the JPEG2000 (.jpx) image format.
- Resolved an issue with some emails with very wide inline pictures rendering incorrectly in the generated PDF.

## Exporting – PST

- Resolved a rare issue where exporting emails to a PST with the “Keep location structure” turned on would produce a “The folder with same name already exists” error.

## Exporting – Relativity

- Updates to the functionality for exporting to Relativity(One) instances, ensuring that it supports recent Relativity versions.
- Resolved a harmless “NotSerializableException” error when exporting to Relativity.

## Exporting – Words

- Added a background task for exporting all words used in a set of items to a text file, e.g. for use in a password cracking tool. For each word, the field name (corresponding with the options in the Search options panel) and document frequency are optionally listed.

## Retiring functionalities

**Intella Viewer** – In a future release, Intella Viewer’s ability to connect to a case shared by Intella Connect or Intella Investigator will be removed. Intella Connect and Intella Investigator will be able to deliver those functionalities entirely via the browser.

## Upgrade notes

Intella Connect versions can be installed side-by-side. There is no requirement to uninstall old versions when installing an Intella version.



**Case versions 2.6.x and 2.7** – Intella Connect 2.7.2 can open cases made with versions 2.6.x and 2.7.x. No case conversion is needed.

Due to a change in the underlying databases, results in the Image Categories and Detected Objects branches of the Image Analysis facet that were made with version 2.6 will not be visible when the case is opened with version 2.6.1 and later. This analysis will have to be repeated with a more recent version.

The 2.7.2 release resolves an issue for Saved Searches containing Content Analysis results. These searches would always yield no results. Existing Saved Searches containing Content Analysis queries should be discarded and re-created; they cannot be automatically fixed.

**Case versions 2.1.x to 2.5.x** – Intella Connect 2.7.2 can open cases made with versions 2.1.x to 2.5.x, but these cases first require conversion before they can be opened. Case conversion will create a copy of the case in which all item data is converted, and all tags, comments and flags are imported. The original case will not be altered in any way and can afterwards still be opened in the older Intella version. Access to the original evidence files is not required for case conversion.

Case conversion will require sufficient disk space. As a rule of thumb, please reserve twice the amount of the evidence size for your case folder.

**Other case versions** – Cases made with versions 2.0.x or older are not supported.

To open cases made with the 1.9.x and 2.0.x versions, please use Intella Connect 2.5.1. This is the last version to support the 1.9.x and 2.0.x versions.

Cases made with beta versions are not supported and should be recreated.

**Memory settings** – The 2.7 version changed how case memory settings are stored. Prior to version 2.7, these settings were stored in both the case.xml and case.prefs files, for historical reasons. This is now only stored in the case.prefs file. Consequently, if the 2.7(.x) version is used to alter the memory settings of a case made with an older version, the memory setting changes may not be picked up by older versions.

**Microsoft SharePoint** – Version 2.7.2 no longer supports local, on-premises SharePoint servers. Version 2.7 was the last version supporting this source type.

Cloud-based SharePoint instances are not affected by this change, as they can be retrieved using the M365 source type. Existing cases with local SharePoint sources can still be opened.

**Software versions** – Vound will provide technical support for one major past version. For this release that will mean the 2.6.x range of products. Vound always recommends that users upgrade to the latest version.

# Intella Connect 2.7.1

## Highlights

- Intella Assist enhancements: support for **GPT-4o**, **OpenAI API-compatible models**, **local models** and **search suggestions**.
- Added support for **file carving**; recovering deleted items from unallocated space in disk images.
- Improvements to the handling of **privileged items**.
- Added support for acquiring data from **Google Meet**.
- Added support for indexing **MS Visio VSDX** files.
- Added functionality for **repairing broken cases**.

## General

- Major updates to the user interface libraries and frameworks, bringing a faster, more responsive and future-proof user interface.
- Tested that the applications work correctly and efficiently when using the IPv6 protocol.
- Improved the name of the Desktop shortcut to the check-service.bat executable, which is placed when installing the application as a Windows service. The old shortcut name could result in users expecting this shortcut to start the service.

## Authentication

- Simplified the process of adding a standard Active Directory instance as an LDAP provider, where the user only needs to provide the user accounts location and a group membership.
- Performance improvements in the loading of user data from an LDAP server.

## Authorization

- Enhancements to the exporting and downloading of items that are subject to the “Cannot see items tagged with ...” permission. A common use case of this permission is to suppress privileged items from a review. It may happen that a reviewer tries to export or download items that have child items that are hidden by this permission. For example, a user may attempt to download an email that contains a hidden attachment. When this occurs, the export or download is now

blocked, as the native form of the parent item would reveal the restricted child item(s). The user gets to see a dialog explaining that the operation is blocked.

- Starting with this release, the default administrator account will now receive the “Can configure servers in Intella Grid” permission by default. This does not affect existing installations.

## Case Management

- Resolved an issue with the admin user not being able to remove cases in a very old case format.
- Resolved an “Error while loading activities” error message in a case details’ Activity tab when there was no previous user activity.

## Intella Assist

- The GPT-4o (“omni”) model is now the default OpenAI model.
- Added support for using any model that uses the OpenAI API. Besides alternative hosted LLMs, this also opens the door to using locally hosted LLMs.
- The Intella Assist facet has been extended with a Suggestions component, listing examples of searches that can be done with Intella Assist.

## Indexing – General

- Added support for indexing MS Visio VSDX files.
- Removed support for indexing local, on-prem SharePoint sources. Cloud-based SharePoint instances are not affected by this change, as they can be retrieved using the M365 source type.
- Added logging of the used indexing options.
- Resolved an issue with the “Enable unsupported version” option in Intella Node’s IBM/HCL Notes settings still not allowing for an unsupported version to be used.
- Resolved Intella Node failing to show an error when the geolocation database could not be validated.
- Resolved Intella Node failing to revalidate source and Node server settings when re-indexing a case.
- Resolved an issue with users not being able to use an entire drive as an evidence path in a source.
- Improved indexing performance when processing emails and chat conversations with very large numbers of recipients.

## Indexing – Disk images

- Added support for file carving: the process of recovering deleted items from the unallocated space in a disk image. This requires the PhotoRec utility, which can be downloaded automatically. Currently, E01 and DD images are supported. Carving runs in parallel with regular indexing, to optimize speed. File carving requires the use of the Disk Image source; disk images that are indexed as part of a “File or Folder” source will not be carved.
- Improved checksum validation of AFF4 images. For AFF4 physical images, checksum validation is an optional step during disk image validation when using the Disk Image source type. For AFF4-L logical images, failed checksums are reported as exceptions in the Features facet and in the Exceptions report.
- Resolved an issue with disk images containing NTFS file systems that were decrypted by AXIOM. Incorrect NTFS data structures would cause some folders to be regarded as corrupted and subsequently skipped.
- Resolved an issue with incorrect (garbled) partition names on ext4 and FAT16 file systems.

## Indexing – Cellphones

- Resolved an issue where chat messages with identical content could mistakenly be responsive to certain keyword queries.
- Resolved an issue with interrupted crawl processes when indexing very large (> 100 GB) UFDR files.
- Improved memory usage when indexing Cellebrite reports with a large number of chat messages.

## Indexing – Cloud sources

- Extended the Google source with support for Google Meet.
- Improved indexing and rendering of tables in iCloud Notes items.
- Resolved an issue with Find my Phone artifacts in iCloud sources.

## IntellaCmd

- Added an option to rebuild the indices in a case. This operation regenerates the secondary indices that are derived from the data gathered during crawling. This can be used to repair cases that fail to open or that show other forms of erratic behavior, especially in cases where no backup is available. As a precaution, users are still advised to run this operation on a copy of the broken case.

## Log Viewer

- Various minor usability improvements.

## Results

- Resolved an issue with the Mime Type column not rendering the item MIME types properly.
- Improved handling of items with alternative, less commonly used MIME types.

## Previewer

- Resolved an issue with the Previewer not showing an item when that item has no MIME type associated with it.

## Tagging

- Commas in tag names are no longer allowed, unless when properly escaped. This prevents issues in other subsystems that process tag data.

## OCR

- The default time-out of OCR workers of the embedded OCR engine has been changed from 30 minutes to 2 hours. The previous time-out value caused too many documents to fail unnecessarily.
- Added a cap on the number of OCR workers for stability reasons.

## Exporting – PDF

- Resolved an issue with certain calendar items failing to export.
- Resolved an issue with annotations such as comments in a PDF getting lost when exporting the item to a PDF.
- Resolved an issue with incorrect positioning of headers and footers in landscape-oriented PDF documents.
- Resolved an issue where Intella did not add a numbered suffix to a file name (e.g., “document(1).pdf”) when exporting multiple items with the same file name or subject to PDF.
- Resolved an issue with certain characters not rendering properly in the generated PDF, whereas they would render fine in the Previewer.

## Exporting – Load files

- The PDF-related improvements listed above also apply to the exporting of load files using the PDF or TIFF file formats.
- Resolved an issue where the "Also include PDF versions of images" setting was ignored when exporting to a load file. The default "Images" folder was used instead.

## Retiring functionalities

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**Microsoft SharePoint** – Version 2.7.1 no longer supports local, on-premises SharePoint servers. Version 2.7 was the last version supporting this source type.

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# Intella Connect 2.7

## Highlights

- Added **Intella Assist**, an AI-powered assistant based on OpenAI's ChatGPT that helps with formulating search queries and reviewing results.
- Redesigned **Source** and **Export** wizards.
- Added an **integrated log viewer**.
- Added the ability to directly export items to an on-premises **Relativity** or **RelativityOne** instance.
- Added exporting to the **AFF4-L logical image** format.
- A variety of indexing improvements related to **chat messages**, e.g. support for **Google Chat**.
- Added support for **EDRM MIH hashes**.
- Added **source filters**, letting one filter items based on file name or size.
- **2 to 5 times faster exporting** to PDF and load file formats.

## Intella Assist

- An AI-powered assistant called Intella Assist has been added. Based on ChatGPT, this assistant lets the user enter and refine queries using natural language, across a range of facets. Examples of searches:
  - “Give me all JPEG images larger than 1 MB”
  - “Search for invoices, using both English and Spanish words related to invoicing”
  - “Find all emails sent by john.doe@gmail.com between January 15, 2019 and September 1, 2019”
- Intella Assist is also integrated in the Previewer, where users can inspect and analyze items using natural language instructions. Examples of instructions:
  - “Summarize this document”
  - “Translate this document”
  - “Do the SMTP headers of this email show any signs of data tampering?”
  - “Who are the key persons named in this document?”
  - “What personally identifiable information does this document contain?”
  - “Where there any negative sentiments expressed in this conversation?”
- To use this functionality, the server admin needs to specify a provider and an API key for that provider. Currently supported providers are OpenAI and Azure

OpenAI. Furthermore, reviewers need a role with the “Can use Intella Assist” permission.

- Admins should take note of several critically important caveats.
  - Using Intella Assist involves submitting parts of evidence data (text and metadata) to external services. The sensitivity and confidentiality of the data may make this undesirable or even illegal.
  - All prompts sent to ChatGPT are logged and available for auditing.
  - This functionality is experimental. The provided results may be incorrect and incomplete. Asking the same query again may not yield the same results.
  - Processing of the data by these services is subject to billing. All processing costs are for the owner of the API key.
  - End users will be shown warning dialogs expressing these risks. Nevertheless, they need to be educated in the proper handling of sensitive evidence data and the assessment of ChatGPT-generated results.
- Integration of this functionality in the Intella desktop application is planned for a future release. Contact Vound Support to be notified when an early access version becomes available.

## General

- The memory requirements for all server-based products have been adjusted.
- Resolved an issue with the main branding logo (the Connect logo or the organization-specified logo) linking to the case dashboard rather than the user dashboard.

## Installer

- When installing a product as a Windows service, an explicit dependency of the product’s service on the Sentinel LDK License Manager service is now registered in Windows. This prevents the server application from launching before the license manager is running, which could cause licensing errors.
- Resolved blurry desktop and taskbar icons when using high-resolution screens and display scaling.
- Resolved an issue with applications not uninstalling when uninstalled from Windows’ Programs and Features / Apps and Features settings panel.
- Removed the “(x64)” suffix from all new firewall rules.

## Licensing

- Resolved an issue where Intella Node would no longer fall back on an Intella Professional license.

- The 10 active cases limit for Connect Plus is now enforced, rather than handled through the EULA only. Accordingly, the “Intella Connect Unrestricted Cases” product has been renamed to “Intella Connect 6 Cases Add-on”.

## Security

- Added prevention against click-jacking attacks.

## Authentication

- Added automatic forced logouts of inactive sessions.
- When 2FA is made mandatory on the server level, a QR code would immediately be shown upon login if the user did not have 2FA set up. This QR code is now shown on demand, for security reasons.
- Resolved an issue with some accounts unable to login when a lockout policy is defined.

## Admin UI

- An integrated log viewer has been added. This allows the admin to:
  - Get quick access to the logs from the Admin UI. Inspect and download them without needing file system-level access to the servers.
  - Search the logs.
  - Get educated about the existence and locations of the server, case and Node logs.
- Usability improvements to the Scan Logs functionality.
- The “Processing” permission group has been renamed to “Analysis”.

## Case management

- The Add Source user interface has been redesigned from scratch.
  - Improved overview of the overall process, remaining steps, and separation between mandatory and optional parameters.
  - Better usage of the available screen space.
  - Many subtle UI improvements.
- Compound cases can now be converted in an automated manner. It no longer requires manual editing of configuration files.
- Resolved an issue with importing compound cases not importing their sub-cases. This resulted in errors when attempting to share the compound case.
- Resolved an issue with cases being considered “active” for too long and counting towards the active cases limit, while users had already stopped working on those cases.

- Editing of a case's sources no longer requires the user to click "Finish source management".
- Resolved an issue with cases not being sorted properly on the Last Shared Date.
- Resolved an issue with a case failing to be shared due to the use of a large list of sources, each with a very long MD5 hash list in them.
- When importing a case to the cases list, a check is done to see if a case with that ID (listed inside the case.xml file) already exists. When such a case is present, the user is asked whether the imported case should replace the existing case with the same ID, or whether it should be imported with a newly generated case ID.
- Improved the default memory settings for new cases on machines with 512 GB or more RAM.

## Indexing – General

- Added support for generating EDRM Message Identification Hashes (MIH). This is a cross-platform and cross-vendor message hashing standard, making email hashes comparable and exchangeable between forensic and eDiscovery applications.
- Added a source option to skip storing the binary data of items larger than a specific size. This helps reduce the case folder size and the indexing time. By default, items larger than 250 MB are not stored in the case folder anymore.
- Add a source option for skipping items based on their file name. This can be used to suppress files based on a known file extension or on another fragment in their file name.
- Put a limit on the length of the stored and indexed raw data. This increases performance and improves stability, by reducing the risk of memory errors. An example is chat conversations spanning a long time range, where the bundled metadata of all included chat messages can result in very large data streams. When indexing metadata fields, only the first 1 MB of text will be indexed. Only the first 5 MB of raw data will be stored. Warnings are added to the case logs when data is truncated. Items that exceed a limit are marked as Exception items with the type "Truncated".
- Resolved an issue with the temporary folder failing to be cleared.
- Resolved an issue with Hangul HWPX documents showing an incorrect file name.
- Resolved an issue with incorrect creation dates extracted from an Adobe Photoshop PSD file.
- Stability improvements in the post-processing stage.
- Stability improvements when processing lots of small files over a network connection.

- Stability improvements when indexing damaged EDB files. This affects MS Exchange email databases, Windows Mail databases, and non-email EDB files.
- Harmless warnings stating “End of data reached” when processing PNG images and MP4 videos are now suppressed.
- Resolved an issue with incorrect crawler memory settings being reported in the case logs.

## Indexing – Disk images

- Resolved an issue with processing of VHDX images created by the Kroll Artifact Parser and Extractor (KAPE).
- Resolved an issue with missing folders when processing Apple DMG images.
- Resolved an issue with processing Japanese folder names in FAT32 images.
- Stability improvements when indexing Apple DMG images.

## Indexing – Email

- Improvements to the processing of PST containers:
  - The Conversation ID column is now populated for emails from PST containers.
  - Resolved an issue with missing emails due to incorrect MIME structures. These emails were not represented as an item, nor was anything logged.
- Improvements to the processing of Apple Mail containers:
  - Added support for recent Apple Mail versions.
  - Resolved several cases of missing attachments.
  - Stability improvements.
- Resolved an issue with the parsing of email headers with duplicate recipient headers, e.g. multiple CC headers, rather than a single header with a list of addresses.

## Indexing – Chat messages

- The Google source has been extended with support for Google Chat.
- Improvements to the processing of Cellebrite UFDR and UFED XML reports:
  - Resolved an issue with chat messages not being indexed.
  - Resolved an issue with a UFDR file being incorrectly classified and processed as a Slack data dump.
- Improvements to the processing of RSMF files:
  - Added full support for the RSMF 2.0 standard.

- Performance improvements. Next to the speed improvement, this also significantly reduces the chance of time-outs on very large RSMF containers.
- Improvements to the processing of MS Teams PST files:
  - Resolved an issue with conversations not being split properly by month or year.
  - Resolved an issue with inconsistent participant information between conversations and reply threads nested within that conversation.
  - Resolved an issue with start and end dates being reversed for some messages.
  - Stability improvements.
- Improvements to the processing of Slack data exports:
  - Improvements to the processing of the original and edited message timestamps.
  - Improvements to the processing of Slack participant usernames.
  - Stability improvements.

## Indexing – Load files

- Improved the load file integrity check that is performed when the user clicks on “Check for Errors”. Additional item type checks are being performed.

## Indexing – Cloud sources

- The Google source has been extended with support for Google Chat.
- When selecting an S3 bucket or Google Drive to acquire, one can now indicate which folder(s) need to be acquired.
- Resolved several authorization errors when accessing Google sources.
- Stability improvements for SharePoint acquisitions.
- Improved error logging when indexing Dropbox sources.

## Indexing – Crawler scripts

- Resolved an issue with crawler scripts failing to modify items that lack an MD5 hash.
- Resolved an issue with the Visited URL and Size fields not being accessible for crawler scripts.

## IntellaCmd

- Added support for the -keyID argument. This lets one specify the dongle or SL key to use.

- Added a `-replaceSourcePaths` argument. This lets one do a substring replace of all evidence paths of all sources in a case.
- Improved the lookup process for alternative licenses.
  - Intella Node licenses are now always preferred over Intella Professional licenses.
  - When the first applicable license already has all its seats consumed, it will switch to an alternative license with available seats, rather than giving up.
  - Removed a false but misleading “Product license not found” error message. This was a byproduct of `IntellaCmd` simply trying out several alternative licenses.
- Improved memory usage of the case conversion process.
- Resolved an issue with Notes ID files not validating properly.
- Resolved an issue with case creation, where the main process memory setting of the specified case template was ignored.
- Resolved an issue where the system’s temporary files folder was used, rather than the folder specified in the case settings. Also added some stability improvements related to the use of the temporary files folder.
- Resolved an issue with the `-exportSourcesList` operator failing to produce results when invoked on cases holding Slack data dumps.

## Full-text search

- Improvements to the searching of email addresses containing underscore characters.
- Improvements to the searching of acronyms.

## Facets

- The Item ID Lists facet’s import functionality has been extended to also support the importing of URI lists. This facilitates the exchange of item lists between one case and another case exported from that first case. The item IDs will differ between those cases, but the URIs are constant and can be relied upon to find those items in the other case.
- The Features > Exported category now also reflects items that were exported to a (portable) case.
- Resolved an issue with custodian information not appearing in a case converted from an earlier version. This affected the custodian information in the converted compound case itself, not the custodian information found in its converted sub-cases.

## Results

- UI improvements in the selection of multiple items.
- UI improvements in the rounding of values such as byte counts.
- Quality improvements in thumbnail generation.
- Resolved an issue with the Hide Non-inclusive button not hiding all non-inclusive items in a compound case.

## Previewer

- Made the old behavior of how email properties are rendered in the Contents and Previewer tabs available again, after user feedback. Both old and new behavior are available, controlled by a preference.
- The rotation data in an image's EXIF data, if present, is now applied to the rendering of the image. This ensures that the image is rendering with the intended rotation.
- Added support for rendering SVG images.
- Added a checkbox controlling whether videos should automatically start playback when opened in the Previewer.
- Usability improvements in the rendering of items with a lot of tags.
- Resolved an issue with email bodies in HTML format not rendering properly.
- Resolved an issue with certain email SMTP headers failing to render in the Headers tab.
- Resolved text alignment issues in the Contents tab.
- Improved error messaging when the native view of an item fails to be produced.
- Resolved an issue with the Download button not working on OCR-ed items.
- Resolved an issue with full-page redactions not working.
- Resolved an issue with the "Previous conversation" and "Next conversation" links not working on some chat conversations.
- Resolved an issue with the native preview of spreadsheets not occupying all available space.
- Resolved an issue with special characters in an item's location being rendered incorrectly in the breadcrumbs bar at the top of the Previewer.
- Resolved an issue with incorrect positioning of hit marks in the scrollbar's area.
- Resolved an issue with the scrollbar inside the Previewer not resetting properly when navigating from item to item.
- Resolved an issue with flagging inconsistencies between messages in conversations and the underlying, nested items, due to internal parsing errors.
- Resolved an issue with the Previewer failing to render chat message attachments in a converted case.



- Resolved an issue with Slack-internal links not being followed properly when clicked in the Previewer.

## Batching & Coding

- Usability improvements in the “Create batches” dialog.
- Resolved an issue with the rendering of the attachments list of the currently viewed item.

## Preferences

- Various usability improvements.

## Exporting – General

- The Export user interface has been redesigned from scratch.
  - Improved overview of the overall process, remaining steps, and separation between mandatory and optional parameters.
  - Better usage of the available screen space.
  - Many subtle UI improvements.
- Added exporting to the AFF4-L image format. This is a logical image format, similar to LO1.
- Exporting errors are now reported to an Errors.csv file, separate from the regular export report that covers the successfully exported items. Optionally, this file can be converted to PDF, RTF and/or HTML, depending on the chosen main report format.
- Improvements to the suggested name of a new export set.
- Resolved an issue with inline attachments in Notes rich text emails being reported twice when exporting to EML or PST format.

## Exporting – PDF

- Speed improvements through the increased use of multi-threading. The improvement in total duration typically ranges between 2 to 5 times faster than the 2.6.1 version.
- The “For every email include” header in the PDF rendering options screen has been renamed to “For every communication include”. This has been done because it applies to all communication types, not only emails.

## Exporting – Load files

- The PDF-related improvements listed above also apply to the exporting to load files.
- Resolved an issue with comments being exported from one case to another through load file overlays. All comments would be squashed together, rather than kept as separate comments.
- Resolved a memory issue when using the “Export native chat content as PDF” option in the load file options.

## Exporting – PST

- Resolved an issue with emails exported to a PST file lacking a Conversation Index field. This caused issues when attempting to perform email threading when the PST file was ingested in the Logikull platform.
- Resolved an issue with the automatic skipping of very large emails, done for stability and reliability reasons. An issue with the determination of the size of the email caused some emails to be skipped inadvertently.
- Resolved an issue with tasks with inconsistent timestamps failing to export to a PST.
- Resolved an issue with certain types of export errors not being reported in the export report.

## Exporting – Relativity

- Added the ability to directly export to an on-premises Relativity or RelativityOne instance.

## Exporting – Case

- Compound cases now also support exporting items to a separate case.
- Case exporting now supports exporting Image Analysis, Email Threading and Near-Duplicates item data.
- Resolved an issue with exporting decrypted items to a separate case. Decrypted items that could be opened in their native format in the original case, would fail to open in the case that it was exported to.
- Resolved an issue with Skin Tone Analysis results not carrying over to the target case.

## Intella Viewer

- Resolved items failing to render when opened in a Previewer, in a remote case shared by Intella Connect or Intella Investigator. In one case this affected MS Teams chat messages. In another case this affected tagged items in a compound case.

## Retiring functionalities

**Intella Viewer** – In a future release, Intella Viewer’s ability to connect to a case shared by Intella Connect or Intella Investigator will be removed. Intella Connect and Intella Investigator will be able to deliver those functionalities entirely via the browser.

**Microsoft SharePoint** – The 2.7 version will be the last version to support local, on-premises SharePoint instances. Cloud-based SharePoint instances are not affected by this change, as they can be retrieved using the M365 source type.

## Upgrade notes

Intella versions can be installed side-by-side. There is no requirement to uninstall old versions when installing an Intella version.

**Case version 2.6.x** – Intella 2.7 can open cases made with Intella 2.6.x. No case conversion is needed.

Due to a change in the underlying databases, results in the Image Categories and Detected Objects branches of the Image Analysis facet that were made with version 2.6 will not be visible when the case is opened with version 2.6.1 and later. This analysis will have to be repeated with the more recent version used.

**Case versions 2.1.x to 2.5.x** – Intella 2.7 can open cases made with Intella versions 2.1.x to 2.5.x, but these cases first require conversion before they can be opened. Case conversion will create a copy of the case in which all item data is converted, and all tags, comments and flags are imported. The original case will not be altered in any way and can afterwards still be opened in the older Intella version. Access to the original evidence files is not required for case conversion.

Case conversion will require sufficient disk space. As a rule of thumb, please reserve twice the amount of the evidence size for your case folder.

**Other case versions** – Cases made with Intella 2.0.x or older are not supported.

To open cases made with the 1.9.x and 2.0.x versions, please use Intella 2.5.1. This is the last version to support the 1.9.x and 2.0.x versions.

Cases made with beta versions are not supported and should be recreated.

**Memory settings** – The 2.7 version changes how case memory settings are stored. Prior to version 2.7, these settings were stored in both the case.xml and case.prefs files, for historical reasons. This is now only stored in the case.prefs file. Consequently, if the 2.7 version is used to alter the memory settings of a case made with an older version, the memory setting changes may not be picked up by older versions.

**Intella Node default port** – In version 2.6, the default port Intella Node runs on changed from 9999 to 10000. This was done to ensure that installing Node on the same server as Connect or Investigator will not result in port clashes. To change the port that Node runs on, one can specify the NodePort property. See the Administrator Manual for instructions.

**Software versions** – Vound will provide technical support for one major past version. For this release that will mean the 2.6.x range of products. Vound always recommends that users upgrade to the latest version.

# Intella Connect 2.6.1

## Highlights

- Added support for acquiring and indexing **S3 buckets**.
- Added support for acquiring and indexing various **Google** services.
- Improved the presentation of **contacts, meetings, invites** and **phone calls**.
- **Command-line support** has been extended with options for case conversion, custodians, type filters, various forms of exporting, and more.
- **Case conversion with IntellaCmd.exe no longer requires a license**, allowing the task of converting large amounts of cases to be spread across several machines.
- Added a **log management** page, for scanning and providing easy access to all logs on a server.
- **Predictive Coding** performance enhancements.
- **Authentication** enhancements for 2FA and SSO.

## General

- Added a log management page to the Admin environment. This functionality scans all logs present in a Connect/Investigator system: Connect server logs, case logs and/or Node logs. The logs are checked against a list of common errors. Examples are errors related to file system permissions, disk space use, memory settings, etc. The user can download the logs from this page, removing the need to have file system-level access to various servers to obtain these logs.
- Windows Server 2022 is now listed as a supported OS.
- Resolved an issue with character encoding handling, which resulted in characters being displayed incorrectly.
- Resolved an issue with the temp folder setting sometimes not being used for certain tasks.
- Resolved an issue with file sizes being rounded incorrectly in several places.
- Various styling improvements.

## Security

- Resolved a cross-site scripting vulnerability in the Tags facet.
- Resolved a redirection vulnerability in the Login page.
- Several library updates triggered by vulnerability analysis.

## Authentication

- Added the ability to enforce the use of 2FA upon all users.
- Added a validator and troubleshooter for SSO setups.

## Case management

- Suppressed a harmless error on case lock files when converting a case to the 2.6.x format.
- Resolved an error that occurred when importing certain case templates.
- Resolved several errors with case conversion failing to convert the geolocation database.

## Compound cases

- A compound case's Custodian facet now shows a unified list of all custodians present in its sub-cases.
- Compound cases can now be converted fully automatically. In the 2.6 version, several manual steps were required to convert the compound case and all its sub-cases.
- Several enhancements in command-line processing involving compound cases. See the "Command-line support" section for more information.
- Resolved an issue with saved searches containing tags not loading properly in a compound case.
- Resolved an issue with the duplicate counts and the results of the Show Duplicates operation being too high in compound cases, due to items not being deduplicated across sub-cases.

## Sources

- Resolved an issue where a source's type filter configuration defined in a Connect/Investigator source would show up inverted when viewed in the Intella desktop application.
- Added support for adding W4 cases made with W4 version 1.1.5.
- Resolved an issue with the "Analyze paragraphs" setting not allowing to be turned off.

## Indexing – General

- Resolved an issue with DestList entries in a jump list not being extracted properly.

- Resolved an issue with all sources being marked as having an error after re-indexing, when only a subset of sources failed to index.

## **Indexing – Disk images**

- The Select Folders sheet now shows volume labels when adding an APFS disk image. These were already extracted and shown in the Location facet; only the folder chooser was not showing them until now.
- Resolved an issue with missing volume labels when indexing ISO images.
- Resolved an issue with certain DMG images failing to process.
- Resolved an issue with certain APFS file systems failing to process.

## **Indexing – Email**

- Added detection of MS Outlook IRM-protected emails (.rpmsg files).
- Resolved stability issues when indexing EDB files.

## **Indexing – Chat messages**

- Resolved an issue with chat messages without a protocol that would fail to index.
- Resolved an issue with the chronological ordering of edited Slack messages.
- Resolved an issue with the Raw Data of certain chat messages lacking the full list of recipients.
- Resolved an issue with non-existing folders appearing in the Location facet when indexing a Slack Enterprise Grid export.

## **Indexing – Cloud**

- Added support for indexing Amazon AWS S3 buckets.
- Elevated the Gmail source to become a Google source. Currently supported Google (Workspace) services are Gmail, Drive, Calendar, Tasks and Contacts. Future versions will extend this to a broader set of Google services.
- Resolved an issue with iCloud sources producing cookie validation failures.
- The “Connect to iCloud” page now uses a masked password field, obscuring the entered password.

## **Indexing – Crawler scripts**

- Crawler scripts can now check whether an item passed to the script is a top-level item or a nested item. Examples of top-level items are the files in a file system folder and the emails in an Outlook PST file. Examples of nested items are images embedded in a document and files attached to an email. This family information

allows for more fine-grained filtering of items, where the parent role is often crucial. For more information, see the GitHub page on crawler scripting: <https://github.com/vound-software/intella-crawler-scripts>.

- Resolved an issue when multiple sources with a crawler script were re-indexed. Re-indexing could give a fatal error when the second source was re-indexed.

## Command-line support

- IntellaCmd.exe is now also installed when installing Intella Investigator/Connect. Previously, this was only installed with Intella and Intella Node.
- IntellaCmd.exe will now revert to looking for a Connect or Investigator license, when a Node or Professional license cannot be found.
- Added support for case conversion to IntellaCmd. Previously this could only be done by Intella.exe or interactively.
- No license is needed to run IntellaCmd.exe for case conversion.
- Added support for creating a compound case.
- Added support for specifying a case template when creating a new case.
- Added the ability to set a crawling script in a source configuration.
- Added the ability to set the custodian when adding evidence items to a case.
- Added the ability to include or exclude a list of item types during indexing. Depending on the filtering mode used, all items with a MIME type on, or not on the list are skipped.
- Added the ability to install a hash list through a command-line call, and to specify its use as part of a source definition.
- Added the ability to add various forms of data in bulk: source paths, BitLocker recovery files, password lists, email certificates and Notes ID files.
- The “-importText” option can now also be used on a compound case.
- Added the ability to export items using an export template. This change allows all export types to be automated through command-line arguments.
- The events.log file, containing a record of all actions taken place in a case, can now be exported to a CSV file through command-line arguments.
- Added a “-listAllTimezones” argument, which list all timezones that can be used in Intella(Cmd).exe invocations.
- Added options for exporting the exception report and a separate “fatal errors” file. These reports reduce the chance of critical errors being overlooked.
- Resolved an issue with the “-exportSourceList” command not exporting all chat-related settings of a source.
- Resolved an issue with paths failing to work due to the presence of a backslash character at the end of a quoted string, which resulted in the backslash being interpreted as the start of a character escape sequence.



## Searching

- Improved the Image Analysis facet user interface and underlying database. Thresholds for image and object categories can now be altered directly inside the Image Analysis facet, instead of via the Preferences window. Changing the threshold immediately alters the facet counts, without requiring lengthy database updates.
- Resolved an issue with Boolean queries involving single term phrase queries with leading and trailing wildcards not producing adequate results.

## Results

- Resolved an issue with the Select All and Invert Selection buttons in the table's right-click menu not working.
- Resolved an issue with the item counts in the facets and the Searches list not considering that certain items may be hidden due to the use of the "Cannot see items tagged with ..." permission. While those items were not uncovered, the item counts shown in those places were incorrect.
- Resolved an issue with the table column widths being restored to their default widths when the table is updated.

## Predictive Coding

- Several major performance improvements when running predictive coding. The time needed to load a typical model went from minutes to a few seconds. Disk space usage needed to store the model has been reduced.
- Added a mechanism that prohibits selected cases from going into IDLE state when they are not used for some time. This is useful for cases utilizing predictive coding, as model loading and initialization can take significant time.

## Batching & Coding

- Improved the loading time of large batches in the Review tab.

## Previewer

- Enhanced the presentation of items representing contacts, meetings, invites and phone calls. The Contents tab now shows the relevant properties of these items in an appropriately formatted list, making the information easier to review.
- Enhanced the rendering of images in the Previewer.
- Added a slider for the object detection threshold. This allows the user to control whether all detected objects are highlighted or only the highest scoring objects.

- Resolved an issue where hidden slides, speaker notes and comments of a PowerPoint file were not rendered, when viewed in the native rendering.

## **Exporting – General**

- Resolved an issue with export packages larger than 2 GB failing to download.

## **Exporting – PDF**

- The enhancements for rendering contacts, meetings, invites and phone calls listed in the Previewer section also apply to the PDF export of these items.
- Resolved an issue with some PDF items failing to export to PDF.
- Resolved an issue with some JPG images failing to export to PDF.
- Resolved an issue with chat messages and conversations failing to export when they include corrupt embedded images.
- Resolved an issue where hidden slides, speaker notes and comments of a PowerPoint were not rendered, when exported to native rendering.
- The “Prefer HTML over plain text” option for email exporting is now selected by default.

## **Exporting – PST**

- Resolved an issue with emails with LDAP-style addresses failing to export to PST.
- Resolved an issue with emails with tens of thousands of recipients failing to export.

## **Exporting – Load file**

- All PDF-related export changes apply to load files as well.

## **Exporting – Report**

- Resolved an issue with the Next button on the “Report – Title Page” sheet staying disabled.

## **Export – Case**

- Resolved an issue with tags that are not assigned to any items, but are present in the Tags facet, not being exported to the target case.

## Upgrade Notes

Intella Connect versions can be installed side-by-side. There is no requirement to uninstall old versions when installing an Intella Connect version.

**Case version 2.6** – Intella Connect 2.6.1 can open cases made with the 2.6 version of Intella, Intella Connect and Intella Investigator. No case conversion is needed.

Due to a change in the underlying databases, results in the Image Categories and Detected Objects branches of the Image Analysis facet that were made with version 2.6 will not be visible when the case is opened with version 2.6.1. This analysis will have to be repeated with version 2.6.1.

**Case versions 2.1.x to 2.5.x** – Intella Connect 2.6.1 can open cases made with versions 2.1.x to 2.5.x, but these cases first require conversion before they can be opened. Case conversion will create a copy of the case in which all item data is converted, and all tags, comments and flags are imported. The original case will not be altered in any way and can afterwards still be opened in the older Intella version. Access to the original evidence files is not required for case conversion.

Case conversion will require sufficient disk space. As a rule of thumb, please reserve twice the amount of the evidence size for your case folder.

**Other case versions** – Cases made with version 2.0.x or older are not supported.

To open cases made with the 1.9.x and 2.0.x versions, please use Intella Connect 2.5.1. This is the last version to support the 1.9.x and 2.0.x versions.

Cases made with beta versions are not supported and should be recreated.

**Software versions** – Vound will provide technical support for one major past version. For this release that will mean the 2.5.x range of products. Vound always recommends that users upgrade to the latest version.

# Intella Connect 2.6

## Highlights

- Enhance indexing through **crawler scripts**.
- **Compound case** improvements.
- Redesigned **Users view**.
- Added support for **W4 sources**.
- Added an **embedded video player**.
- Added support for **zooming** into a specific thumbnail and other **thumbnail usability** improvements.
- Added support for **video thumbnails**.

## General

- Resolved certain case crashes that could occur when a case was closed.
- Resolved an issue with the login and admin pages not showing after a Connect software version upgrade, due to resources being cached too long by the user's browser.
- Resolved an issue where running Intella Connect as a Windows service without access to an Intella Connect license would not result in an appropriate error message.

## Installer

- The Desktop and Start menu shortcuts created by the installer now reflect the installed product version in the shortcut name.
- Several additional executables bundled by the installer are now digitally signed. This reduces false positives with security software packages.
- Stability improvements when installing Intella Connect as a Windows service.

## Licensing

- Resolved several corner cases where a missing Connect or Node license was not displayed well on the Intella Connect or Intella Node front page, or in the Nodes section of the Connect Admin interface.

## Security

- Improvements to the logging of security-related events, such as account creation and modification, sessions, and changes to security objects.
- Performance improvements in the handling of CSRF tokens.
- Resolved an issue with OpenSSL private keys in PKCS#8 Base64 format being rejected by the SSL certificate validation process.

## Admin interface

- Revamped the Users view:
  - User accounts can now be locked and unlocked.
  - Added a unified list of all users in the system, depicting their type of origin (SSO, LDAP or Local), whether local accounts utilize two-factor authentication (2FA), and their locked status.
  - Added an editable matrix of permissions and roles, showing and controlling which permissions occur in which roles. Permissions are grouped thematically for better overview.
  - Added an editable table of all case assignments, showing and controlling which users have which role in which case.
  - Added an overview of active users, the cases those users are accessing, and the seats that they occupy. User sessions can be forcefully terminated in this view.
- The System tab now has a System Information section, showing the Windows user account under which Connect is running, as well as the locations of the Intella and Intella Connect application data folders.

## Case management

- Improvements to the management of compound cases:
  - When deleting a case, the Cases List now shows all compound cases in which the selected case is used. Before, it would only show at most one compound case that used the case.
  - Compound cases can refer to cases that are not in the global list of cases (i.e., the cases.xml file). When listing the sub-cases of a compound case, only sub-cases already present in that global list would be shown. Now, all sub-cases are shown, regardless of their presence in the global list.
  - It is now possible to create a compound case that contains only a single sub-case.
  - Resolved an issue with the case size of compound cases being calculated incorrectly.
- Improvements to uploading cases to a Connect server:

- The authentication mechanism now uses Connect accounts, rather than the Connect server's Windows OS account.
- Connect now has a checkbox controlling whether uploaded cases are automatically added to its Cases list.
- Stability improvements when accessing a case through a UNC path.
- Resolved an issue with cases failing to share properly, related to the timing of certain internal Connect events. The cases would alter between Idle and Active states and would never become accessible to the user.
- Resolved an issue with cases failing to open due to a corrupted Export Set database.
- Resolved an issue with the case logs not listing the chosen memory settings correctly.

## Compound cases

- Compound cases now fully support items that have been OCR'd in their sub-case. The OCR tab will show in the Previewer, and the "OCR'd" category in the Features facet reflects all OCR'd items.
- Compound cases now show the item comments present in sub-cases. These comments are read-only.
- Improved the contents of the "Has Imported Text" category in the Features facet. The resulting item set now contains items that have imported text in their sub-case.
- Resolved an issue with the attachment links in conversation items not working properly when using a compound case.

## Permissions

- Usability improvements for situations where a user action would normally trigger an automatic switch to a different tab, e.g. the Show Family action in the Preview tab switching to the Search tab, and where the user does not have permission to navigate to that tab.

## Crawler scripts

- Added the ability to define a crawl script in a source. A crawler script is code (Python, Groovy or Java) that can run during the indexing and processing of that source. A crawler script can collect, extract, or process data. It can also be used to enrich or reduce data sets by adding or removing data based on specific criteria. For example, a user might create a crawler script to exclude data that is not relevant to their needs, or to add additional data that they want to include in their dataset. Intella crawler scripts can be customized to meet the specific needs and

requirements of individual users. Documentation and sample scripts are available on our GitHub page: <https://github.com/vound-software/intella-crawler-scripts>

## Indexing – General

- Added support for W4 sources.
- Resolved an issue with indexing of an exported case bringing back items that were not part of the export. Cases or sources that were created by exporting items to a case can no longer be reindexed.
- Resolved an issue with incorrect progress percentages (e.g., “Processed 150% of 300 GB”) when indexing a File or Folder source.
- Resolved an issue with indexing failing due to fatal errors in the progress monitoring.
- Resolved an issue with the indexing progress interface staying in a constant “Initializing” state while indexing had already started.
- Resolved an issue with memory errors on embedded images in PDFs not being reported when the PDF originated from a container such as a disk image or email archive.
- Resolved a rare issue where the crawling retry mechanism would result in a broken case.

## Indexing – Disk images

- Added support for discontinuous AFF4 images.
- Several disk image processing improvements related to third party library upgrades.
- Resolved an issue with disk images failing to index when certain time zones were used in the source settings.
- The volume numbering in the Specify Volume Shadow Copies screen is now consistent with the numbering in the subsequent Select Folders screen.
- Resolved an issue with AFF4 images getting skipped when indexed as part of a File or Folder source.
- Resolved an issue with indexing AFF4-L disk images made with Axiom.
- Resolved an issue with indexing disk images that contain a pool of APFS file systems.
- Resolved an issue with indexing disk images that have file names containing non-Latin characters, including umlauts (e.g., ü).
- Resolved an issue with a BitLocker-encrypted image failing to decrypt, logging a “missing password volume master key” error in the log files.
- Resolved an issue with indexing failed to complete on Linux ext2 file systems.
- Resolved an issue with indexing AD1 disk images made from CDs or DVDs.

- Resolved an issue with Intella failing to distinguish a BitLocker To Go partition from a Windows 95 boot partition.
- Resolved several issues with DMG images that failed to validate.
- Resolved an InvalidCipherTextException error that would occur when indexing AFF4 images with multiple passwords present in the keystore.

## Indexing – Email

- Improved the time needed to perform PST/OST email recovery. Field tests often reported 25-50% time savings.
- Improvements related to indexing MS Exchange EDB databases. A new EDB processor has been integrated, based on Microsoft’s open-source Extensible Storage Engine (ESE) framework.
- Resolved an issue with images embedded in MSG emails not being classified as embedded images.

## Indexing – Chat

- Added a Conversation ID property. This lists the ID associated with the conversation as found in the evidence data. This property will not be present if the evidence data has no such value.
- Added an Intella Conversation ID property. This is a uniquely generated conversation ID that is present for all conversation items, regardless of origin. Beware that this ID will change when the source or case is re-indexed.
- Added a “Present chat messages as” source setting, which lets the user control whether chat messages are represented one-on-one as chat message items, are to be bundled into conversation items, or both.
- The “Split chat conversations” option already allowed one to split conversations by day, week, month, or year. This list has been extended with “per hour” and “per 12 hours” options.
- Instant Messages in a Cellebrite report are no longer mapped to Conversation items. Instead, they are now represented as chat items that are assigned an Intella Conversation ID property.
- One can now use a “numbers.txt” file to specify the sender of chat messages in an evidence source. Earlier, this mechanism would only apply to the phone calls and SMS/MMS messages found in that source.
- Stability improvements to the indexing of RSMF containers, based on encountered RSMF files that used date formats not listed by the RSMF standard.
- Resolved an issue with emoticons in RSMF files not being processed correctly.
- Resolved several issues with indexing Slack exports, including missing messages, incorrect message sequences, and broken message threading.



- Resolved several issues with indexing IBM Sametime messages.
- Resolved an issue with missing chat messages when indexing an iTunes backup.
- Resolved an issue with chat messages from an iTunes backup not being threaded properly.

## **Indexing – Cellphones**

- Improved the processing of the Social Media Activity category of Celebrite reports.

## **Indexing – Load files**

- Resolved an issue with a CSV escape character setting being ignored.

## **Indexing – Cloud**

- Rewritten the iCloud connector, resulting in reliability and performance improvements. This also resolved the problem that sometimes two different 2FA codes were sent to the phone.
- Adapted the Dropbox connector to work with Dropbox' latest API, involving the use of short-lived refresh tokens.
- Resolved an issue with access to OneDrive drives not working in certain access configurations.

## **Analysis**

- The Intella desktop application and the new Intella Investigator product now feature image analysis functionalities. While these functionalities are not present in Intella Connect, the outcomes are still visible in Intella Connect. This relates to:
  - The new Image Analysis facet.
  - The new Image Analyzed entry in the Features facet.

## **OCR**

- Upgraded the bundled OCR engine, bringing various quality improvements.

## **Tasks**

- Added the ability to terminate the following background tasks:
  - PDF pre-generation.
  - Thumbnails pre-generation.
  - All Redaction tasks.

- All OCR tasks.
- Resolved an issue with an indexing task losing its configuration on completion of the task construction.

## Searching

- Various improvements to keyword searching based on third party library upgrades.
- Improved searching on email addresses when using wildcards, and on complex terms that mix letters, numbers, and certain symbols.
- Improvements to the way the Content Analysis facet shows its various branches (Credit Cards, Location, ...).
- The Near Duplicates facet can now be grouped by the near-duplicate group size.
- Resolved an issue with the timeline at the bottom of the Search tab not respecting the Deduplicate by Custodian setting. Instead, it would always apply global deduplication.

## Results

- The Table, List and Thumbnails views have new implementations that bring a variety of usability improvements.
- Redesigned the right-click popup menu that is used in the Table, List and Thumbnails views. It now has the same structure as the popup menu in the Intella desktop application.
- The Table view now shows row numbers.
- Added a loading indicator to the Table view.
- Various improvements in the Thumbnails view:
  - Added support for video thumbnails. When hovering over the video thumbnails, selected frames of the video are shown, giving a quick impression of the video's contents.
  - A selected thumbnail can now be zoomed into from inside the Thumbnails view. This allows a user to quickly inspect visual details (recognize people, read scanned documents, etc.) without having to open the image in a separate Previewer.
  - Improved caching of thumbnails, speeding up the responsiveness of the Thumbnails view.
  - Smaller usability improvements to the Thumbnails view.

## Previewer

- Added an embedded video player to the Contents tab. This supports all video formats supported by HTML5.

- Added support for displaying WebP images.
- Improvements in displaying emojis.
- Improvements in displaying chat threads.
- Improved how encrypted items are indicated.
- Attachment titles of chat message attachments are now displayed in the Contents tab.
- Resolved an issue with the native preview tab showing an incorrect date for so-called “Fixed date” fields in MS PowerPoint slides.
- Resolved an issue with MSG emails failing to preview when they contain an embedded calendar.

## Batching & Coding

- Resolved an issue with batches that could not be archived.
- Resolved text cropping issues in the Coding panel.
- Resolved an issue with hit highlighting markers being rendered in the Preferences window when the underlying Contents tab also had active markers.
- Resolved an issue with hit highlighting appearing in the Contents tab, despite no keyword list being selected for hit highlighting.

## Exporting – General

- Unified the exporting of chat messages and conversations, so that individual messages have a uniform rendering in the export results.
- Improvements in exporting emojis.
- Resolved an issue with items failing to export when their file name contained forbidden device names, such as AUX, PRN, COM1, LPT1, etc. File name normalization was already in place but failed to capture certain corner cases.
- Suppressed the logging of unsupported export template properties.

## Exporting – CSV

- Resolved an issue with exporting to CSV failing when the items table was in a sorted state.

## Exporting – PDF

- Several improvements to PDF generation related to third party library upgrades.
- Resolved an issue with email bodies with inconsistent Content-Type headers failing to export.
- Resolved an issue with exporting running into file system issues when the original file had a very long file name or title.

## Exporting – PST

- Added support for exporting MS Teams messages to a PST file.

## Exporting – Load file

- See also the changes listed beneath Exporting – PDF.
- Added the ability to configure which components to include in the exported text of an item (email/document body, main properties, headers, raw data), and in what order. Earlier this option was only present in the Intella desktop application.

## Exporting – Item report

- Resolved an issue with the exporting of items having attachments, where the attachment would not be exported.

## Reports

- Resolved an issue with the Refresh button in the Reports > Activity tab not updating the events list.

## Upgrade Notes

**Case versions 2.1.x to 2.5.x** – Intella Connect 2.6 can open cases made with the 2.1.x to 2.5.x versions of Intella and Intella Connect, but these cases first require conversion before they can be opened. Case conversion will create a copy of the case in which all item data is converted, and all tags, comments and flags are imported. The original case will not be altered in any way and can afterwards still be opened in the older Intella version. Access to the original evidence files is not required for case conversion.

Case conversion will require sufficient disk space. As a rule of thumb, please reserve twice the amount of the evidence size for your case folder.

**Other case versions** – Cases made with Intella or Intella Connect 2.0.x or older are not supported.

To open cases made with the 1.9.x and 2.0.x versions, please use Intella or Intella Connect 2.5.1. This is the last version to support the 1.9.x and 2.0.x versions.

Cases made with beta versions are not supported and should be recreated.

**Software versions** – Vound will provide technical support for one major past version. For this release that will mean the 2.5.x range of products. Vound always recommends that users upgrade to the latest version.

# Intella Connect 2.5.1

Released: March 22, 2022.

## Highlights

- Added **compound case** support to **Intella Viewer**.
- Extended **IntellaCmd.exe** functionality.
- **Stability, security** and **performance** improvements.
- **IMPORTANT:** Deleted item recovery is now turned OFF by default.

## General

- Several tables in the user interface have been updated to support sorting, resizing, and reordering. Tables have also been restyled and their state has been made persistent across sessions and page refreshes.
- Resolved an issue with XPS documents, and PDF documents containing forms, showing an “Evaluation Only” message when previewed or when exported to PDF or TIFF format.

## Installer

- When installing Intella Connect as a Windows service, the desktop shortcut will now attempt to start that service, rather than attempting to launch a desktop process that is likely to fail. Information on the user rights policy is dumped to a “rights.txt” file and the account name used to start the service is dumped to “intellaservice.txt”. This information can be used for troubleshooting the installation.

## Security

- When SSL is enabled on the server, clients using HTTP links are now redirected to HTTPS.
- The user interface is now using a proper password field component in dialogs where passwords are entered. This improves both usability and security.
- Resolved an issue with input in the “Maximum password age” field not being interpreted correctly.
- Several enhancements to strengthen Intella Connect’s security, following a penetration test and other security assessments.

- The Dialog for setting up two-factor authentication (2FA) no longer shows the option to immediately disable 2FA after its setup has completed.

## Authentication

- Stability improvements to SSO integration.
- Extended support for using HTTP proxies, making Connect less susceptible when the proxy modifies the letter casing of various HTTP request headers. This resolves an issue with users not being able to log in when using an Azure Application Gateway.
- Fields used for entering time-restricted two-factor authentication codes (TOTP codes) no longer show a history of previously entered codes.
- Resolved an issue with the "Revoke access" button being disabled for SSO accounts.

## Case Management

- Added validation to the case memory settings, preventing the user from configuring the software to consume more than what the Intella Node system has to offer. Note that the total amount of memory that can be consumed by Intella equals “memory allocation + #crawlers \* service memory”.
- Extended case templates to also contain the case’s memory and crawler settings.
- Added a permission controlling whether a role can see widgets displaying activities of other users.
- Resolved an issue with the case failing to open due to corruption of some databases related to source error reporting.
- Improved messaging in the user interface when the cases list is still empty.

## Indexing – General

- The option to recover deleted and orphan items from email archives (PST, EDB, NSF) and disk images (NTFS Master File Table) is now turned off by default. Item recovery is often time-consuming, to the point that it can even lead to time-out issues during indexing. Furthermore, it typically requires expert knowledge to correctly interpret the results for what they are. It can be re-enabled by checking the “Recover deleted emails, files and Notes deletion stubs” option in the Add New Source wizard or Sources tab. Note that items present in the Windows Recycle Bin are still retrieved, as these do not suffer from these processing and interpretation issues.
- Resolved an issue with a fatal indexing error not being reported in the user interface.

- Resolved an issue with missing attachments in OST files.
- Resolved an issue with attachments not being linked to their parent email when indexing Apple Mail 6 mail stores (macOS Mojave).
- Resolved an issue with the owner's own phone number not being registered for certain item types in a Cellebrite report.
- Resolved several issues with Cellebrite reports failing to index.
- Resolved an issue with Intella failing to roll-back and recover from an indexing time-out, due to a slow file system.
- Resolved an issue with items being assigned a different item ID when re-indexing failed with a crash.
- Resolved an issue with some parts of the case potentially getting damaged when the user clicked the Stop button during indexing.

## **Indexing – Disk images**

- Significantly reduced the temporary disk space needed to index DMG images, by preventing entire partitions from being copied out to a separate file during indexing.
- The “Folder Selection” sheet is now also shown for DMG and AFF4-L images.
- Resolved an issue with certain Lx01 disk images failing to index.
- Resolved an issue with indexing NTFS file systems with incorrect headers produced by KAPE.
- Resolved an issue with validating VHDX images.
- Resolved an issue with registry items being reported even when the Windows folder was explicitly excluded from indexing.
- Resolved an issue with certain temporary files not being removed when the case is stored on a network drive.

## **Indexing – Chat data**

- Various improvements in processing Slack exports.
- Stability improvements in processing chat data from Cellebrite reports.
- Resolved an issue with certain emoji characters in chat messages in a Cellebrite report failing to display.
- Resolved an issue with items originating from an RSMF container missing an item type.
- Resolved an issue with certain dates in chat message and conversation items being displayed in the system time zone rather than the source time zone.



## Indexing – Cloud sources

- Several improvements in iCloud acquisitions, related to API changes made by Apple, and other stability improvements.

## IntellaCmd.exe

- The evidence option (-e) is no longer required. This makes it possible to use IntellaCmd.exe to create an empty case.
- The evidence option (-e) no longer triggers the immediate indexing of the specified evidence files. To trigger indexing, one of the following new options should be specified:
  - -indexAddedSource
  - -indexNewData
  - -reindexAll
- Command-line arguments have been added in this release for chat processing features that were added in the 2.5 release:
  - -indexChatMessages
  - -splitChatConversations
  - -maxMessagesPerConversationItem
- Resolved an issue with large cases failing to open due to time-out issues.
- Resolved an issue with incorrect progress indication, reporting progress > 100%.

## Near-duplicates

- Resolved an issue with items getting a 1.0 near-duplicate score, despite having small textual differences in their item texts. Consequently, the Near-Duplicate tab would also remain hidden for such items.
- Resolved a fatal error that could occur during near-duplicate analysis when the option to ignore excluded paragraphs was turned off.

## Searching

- Resolved an issue with single term prefix queries not working correctly when that query was wrapped in quotes (e.g., “foo\*” – including the quote characters).

## Results

- When searching for a tag from a sub-case in a compound case, the sub-case’s case name is now appended to the search result’s name.

## Keywords tab

- Resolved an issue with incorrect hit counts (not item counts) when using phrase or proximity queries with embedded Boolean queries. These queries would incorrectly report 0 hits, despite locating items that match these queries.
- Resolved an issue with incorrect hit counts (not item counts) when a proximity query found hits with the terms in the item text placed in a different order than the order used in the query.

## Previewer

- When previewing emails in HTML form, the URL of links embedded in the body is now revealed.
- Several improvements in displaying PDF documents, resolving issues with PDF documents that would not display properly.
- Added properties related to near-duplicate analysis to the Properties tab.
- Resolved an issue with the Headers and Raw Data tabs showing incorrect data on items in compound cases.
- Resolved an issue with the display of the location breadcrumbs.

## Predictive Coding

- Resolved an issue with the “Apply coding decision” dialog not loading properly.

## Exporting – PST

- Resolved an issue with calendar items failing to export to a PST file.
- Resolved an issue with the Export to PST option becoming disabled. A server restart was then required to re-enable this export option.

## Upgrade Notes

**Case versions 2.1.x to 2.5** – Intella Connect 2.5.1 can directly open cases made with the 2.5, 2.4.x, 2.3.x, 2.2.x and 2.1.x versions of Intella and Intella Connect.

Upon first startup, Intella Connect 2.5.1 will migrate all existing coding layouts made with 2.3.x or older to a new format. This process reads each coding layout XML file stored in C:\Users\[USERNAME]\AppData\Roaming\Intella\coding-layouts and creates a new XML file in its place, making sure that there will not be any naming conflicts. A copy of the original coding layout is preserved in the “migrated” subfolder.

When a case made with Intella or Intella Connect 2.3.0 or older is opened in Intella Connect 2.5.1, adding Custom ID tasks to the case in version 2.5.1 may render the case unopenable in that older version. Changes have been made in the 2.3.1 version to prevent such forward compatibility issues in future releases.

When a case made with Intella or Intella Connect 2.1 or older is opened, all Content Analysis results are automatically migrated to a new data storage format. This migration happens only once. The old store is retained and will still be used when using version 2.1 or older. New results will not be added to the old store though, and new results added to the old store will not be migrated. Cases made with 2.1.1 or later already use the new data store and are therefore not affected.

When items in cases made with a 2.1.x version are exported to a separate case, the registered case size of the target case will be incremented with the size of the original case. This may be problematic for users with licenses that have a case size limitation. To resolve the inflated case size, the source case needs to be re-indexed before exporting items from it.

In Intella Connect 2.2.2, a new method for calculating message hashes was introduced. While this change is transparent, please be aware that when a case that was made with version 2.2.1 or older is re-indexed in 2.2.2 or a later version, the message hashes will change.

**Case versions 1.9.x to 2.0.x** – Cases made with the 1.9.x and 2.0.x versions of Intella and Intella Connect can be opened, but these cases first require conversion. Case conversion will create a copy of the case in which all item data is converted, and all tags, comments and flags are imported. The existing case will not be altered in any way and can afterwards still be opened in the older Intella version. Access to the original evidence files is not required for case conversion.

Caveats concerning the case contents:

- Case conversion will not transfer the geolocation metadata extracted from emails when the "Determine geographic location of emails" option was used. Re-indexing of the converted case is required to restore such metadata.
- Multi-page TIFFs will be displayed in the converted case as if they were single-page TIFFs. Exporting and printing of the item report does reveal the other pages. Re-indexing of the converted case will make all pages displayable again.

Case conversion will require sufficient disk space. As a rule of thumb, please reserve twice the amount of the evidence size for your case folder.

**Other case versions** – Cases made with Intella 1.8.x or older are not supported. Cases made with beta versions are not supported and should be recreated.

**SSL** – Intella Connect/Node 2.4.2 switched to a new keystore implementation, used for storing its certificates. This keystore uses a different set of default root certificates. The new implementation effectively uses the same set of root certificates as the Firefox browser. Please check after upgrading Intella Connect/Node that your SSL certificate is still verified. If not, please check the “Advanced: Using Self Signed certificates” section in the Intella Connect Administrator Manual for instructions on how to install the certificate.

**Software versions** – Vound will provide technical support for one major past version. For this release that will mean the 2.4.x range of products. Vound will always recommend that users upgrade to the latest version.

# Intella Connect 2.5

Released: November 29, 2021.

## Highlights

- Added **compound cases**, for instantly bundling two or more cases into a single case.
- Added the ability to **upload Intella case (ICF) files**.
- Various improvements to **indexing stability**.
- Usability improvements in **chat message presentation**.
- Sources can **filter on file type**, reducing the indexing time and disk space used.
- Added indexing of **Volume Shadow Copies (VSS)** data.
- Added indexing of **AFF4-L** logical images.
- Added indexing of **Relativity RSMF files**.
- Added indexing of **HWPX documents**.
- Improved **near-duplicate processing** with faster and improved results.
- Added a **Near-Duplicate tab** in the Previewer.
- Improved rendering of **emojis**.
- Added **sentiment analysis**, for detecting very negatively or positively worded texts.
- Added a **GDPR** Insight info panel, listing privacy-sensitive data found in the case.
- Added support for **nesting phrase and proximity queries**.
- **Exporting to PST** no longer relies on MS Outlook.
- A range of **security enhancements** such as password and account lockout policies.

## General

- Intella Connect 2.5 has been tested for use on Windows 11.
- The Admin UI now shows the dongle ID.
- Resolved an issue with potential stale processes when the Intella Connect server was shut down.
- Resolved an issue with tags and other data missing under certain circumstances when opening a case that was made with 2.2.1 or older in version 2.3.1 or newer.
- Usability improvements in the Case Dashboard.

- Automatic password autocompletion by the web browser is now suppressed in certain places. This solves the issue that certain configuration pages would complain about unapplied changes even when the user had made no changes yet.
- Added documentation on troubleshooting Connect Grid setups.

## Installer

- The Intella Connect/Node installer is now digitally signed.
- Resolved an issue with the User Manual shortcut in the Windows start menu not working.

## Licensing

- Greatly reduced the amount of license sessions, as can be seen on the Sessions page of the Sentinel Admin Control Center. This change reduces the likelihood of license availability issue with dongles that are located remotely or in unsupported dongle servers.

## Security

- Improved SSL setup wizard and related SSL usability improvements.
- Improved handling of root and intermediate certificates. This eases the handling of SSL certificates issues by an internal Certificate Authority (CA) or an unrecognized root CA.
- Generated self-signed certificates now carry a Subject Alternative Name (SAN). This improves their usability in the Chrome and Edge browsers.
- Added the ability to specify password policies such as minimum password length, maximum age, and the mandatory use of certain classes of characters.
- Added the ability to specify an account lockout policy. This determines what happens after a user account has had a certain number of failed login attempts.
- Added an additional login check when a logged-in user chooses to disable two-factor authentication (2FA) on that user's account.
- Increased the default timeouts of SSO negotiation.
- Several enhancements to strengthen Intella Connect's security, following a penetration test and other security assessments.
- Resolved an issue with the SSO timeout incorrectly being reset when the SSO provider was edited through the Admin UI.
- The Set Password button is now disabled when the user has logged in with an SSO account.

## Case management

- Added support for compound cases. A compound case bundles multiple cases and allows for them to be used as if they were all merged into a single case. Search results from the sub-cases are combined into a single result set and can be sorted, deduplicated, reviewed and exported, just as you would in a regular case. Compound cases do not require the underlying case databases to be physically merged. This makes them quick to create and with low storage requirements. Compound cases supports several advanced workflows, such as:
  - Combine existing cases for cross-case investigations, without having to manually replicate all steps across all cases. Support for past cases goes back to version 1.9. Cases made with older versions will have to be converted to the 2.5 format first.
  - Efficiently distribute indexing across multiple machines, and merge the sub-cases produced on each machine into a single master case.
  - Bring new evidence data into a running case without having to take the case down for the combined duration of the indexing process, its post-processing steps and any quality assurance protocols.
- Added support for uploading cases, for easy migration of cases from the Intella desktop application to Intella Connect. Cases can be uploaded as an Intella case file (ICF file) or straight from Intella's Case Manager window.
- It is now possible to convert a case made with any of the 1.9.x to 2.4.x versions to the 2.5 format. Previously, case conversion was only enabled for cases made with 1.9.x or 2.0.x as they could not be opened directly. The benefit of converting the more recent case formats that can already be opened directly is to enable usage in a compound case. Furthermore, the 2.5 format uses further optimized database indices.
- Resolved an issue with cases failing to open when evidence files referenced in a Disk Image source were missing.
- Resolved an issue with cases failing to open when one of the image blob stores got corrupt.

## User management

- Improved handling of setups where there is an overlap between the set of local Connect usernames and the sets of usernames obtained from LDAP and/or SSO.

## Indexing – General

- Improved indexing stability in several ways, including but not limited to:
  - Crawler processes are now isolated from any case database operations, preventing a crashing crawler process from corrupting these databases.

- A new type of Exception Item has been introduced that keeps track of items that experienced a crawler crash.
- Time-out mechanisms have been inserted or improved, protecting against items that take an unreasonable, possibly infinite, amount of time to process.
- Retry mechanisms have been inserted or improved, improving the chance of a problematic item to be processed successfully.
- The crawler time-out value has been made configurable through the Case Details panel.
- Added the ability to filter items by file type upfront, preventing these items from being indexed at all. This reduces the time needed to index a set of evidence items, the item count in the resulting case, and the disk space needed to store the case.
- Added support for indexing HWPX documents, made by the Hangul word processor.
- Updates to the indexing of Cellebrite UFDR and XML reports.
- Updates to the indexing of Oxygen XML reports.
- Several improvements to the indexing of PDF documents.
- Several improvements to the indexing of Apple Mail data.
- Resolved an issue with file type filters not being applied for source types other than File or Folder and Disk Image.
- Resolved an issue with emails from Outlook for Mac OLM files missing certain email headers.
- Resolved an issue with emails embedded in other EML emails sometimes being classified as untyped items.
- Resolved an issue with Notes ID files that contain usernames using special characters.
- Resolved an issue with the calculation of Family Date values not taking the settings for the determination of the top-level parents into account.
- Resolved an issue with iTunes cookie databases being mistakenly reported as Chrome cookie databases.
- Resolved an issue with the Features facet incorrectly resetting data on the opened/previewed/exported items when a subset of the sources was being re-indexed.

## Indexing – Chat messages

- Added support for indexing Relativity RSMF files. This is a new e-discovery file format for capturing chat data.



- Chat messages are now represented both as individual items and as conversation items that bundle a range of chat messages into a document-like representation. Each conversation item serves as the parent item for the items representing its individual chat messages. One can navigate from a text in the conversation item to the chat message item and vice versa. Benefits of this change in data modeling:
  - Chat messages can now be individually tagged, flagged, and exported. Previously, one would have to annotate the conversation item and resort to workarounds in case that conversation item held excessive or privileged data.
  - Chat data events can be correlated with other events such as browser history items, Windows search actions, application launches, etc. See also the Text Snippet column in this regard.
  - Any chat message-specific metadata now has a logical place to be stored.
  - Conversation items allow for a user-friendly display of chat data in the Previewer, like how one would view it in a chat application.
  - Conversation items let AND/OR and proximity queries produce more effective results.
  - Conversation items can be used more effectively in predictive coding workflows.
- The criteria for bundling chat messages into conversation items have been made configurable:
  - One can now bundle chat messages per day, week, month, or year. This time range used to be hardcoded to a single day of messages. Future versions may expand these options.
  - One can now set a limit on the number of chat messages per conversation item. The default value is 100 messages per conversation item.
- Improvements in handling chat messages with a large volume of recipients or participants (e.g., large Slack channels).
- Various improvements to the presentation of chat participants, channel and conversation titles, reaction items, messages with unusual characters, etc.
- Several improvements to the indexing of PST files holding MS Teams chat data.
- Several improvements to the indexing of Skype database files.
- Several improvements to the indexing of Slack data exports.
- Resolved a reliability issue with indexing Slack data when the case is accessed via an UNC path during indexing.

## Indexing – Disk images

- Added support for indexing Windows Volume Shadow Copies (VSS) data. User interface components have been added for selecting which snapshot(s) to index,

and how differences between the snapshot and the final state of the disk need to be reflected in the case.

- Added support for indexing of AFF4-L files. This is a variant of the AFF4 format used for logical images.
- Reintroduced the folder selection sheet when adding a disk image. This allows for browsing and filtering of the folders in the image. For technical reasons, this sheet is not shown when adding a DMG or AFF4-L image. This may be added in a later release.
- The “File type and locations” sheet in the Disk image source has been removed from the wizard, as it has been replaced by the new type and location filtering options.
- Resolved an issue with indexing EO1 disk images larger than 1 TB.
- Improvements to the processing speed of ExO1 disk images.
- A warning is now shown for LxO1 files. Recent EnCase versions may produce LxO1 images with undocumented and unsupported variations. This is being investigated.
- Resolved an issue with indexing disk images that hold both APFS and BitLocker partitions.
- Improved logging of BitLocker decryption attempts.
- Several general stability improvements in the processing of disk images.

## Indexing – Load files

- Improved compatibility with load files created by Office 365 Advanced eDiscovery.
- Resolved an issue with the Attached column being cleared when a load file overlay was imported, for those items that are covered in the overlay.

## Indexing – Cloud sources

- Updates in the Microsoft 365 source type to stay current with the Microsoft 365 API.
- Updates in the Dropbox source type to stay current with the Dropbox API.
- Updates in the iCloud source type to address changes that Apple made to their two-factor authentication (2FA) protocol.

## IntellaCmd.exe

- Resolved an issue with the “Last opened” date of a case not being updated when the case was opened by IntellaCmd.exe.

- When no time zone is specified on the command-line, the default time zone is now assumed and applied. This resolves an issue with previewing of items in the generated case.

## Analytics

- Added sentiment analysis to the Content Analysis facet. This allows for detecting texts that are phrased in particularly positive or negative terms. For the time being, sentiment analysis is restricted to only English texts, results on other language are undefined. Sentiment analysis is to be considered an experimental feature that may change in future versions.
- When processing items for near-duplicates, one can now choose between two algorithms:
  - A new word-based algorithm that has better computational performance and produces more intuitive similarity scores.
  - The old character-based algorithm, which still is to be preferred when processing Chinese, Japanese, Korean, and Vietnamese texts.
- The shingle size thresholds used for near-duplicate processing can now be configured through the Preferences.
- Scalability improvements in email threading.
- Scalability improvements in OCR processing by preventing certain unnecessary document format conversions.
- The OCR and Content Analysis operations deduplicate items prior to processing, to optimize their processing times. This deduplication step used to make use of both MD5 hashes and message hashes, for maximum deduplication results. This has been changed to use only MD5 hashes, as the configurability of the message hashes could result in equal hashes for items with, from the perspective of these analytics operations, very different content.

## Insight

- Added a GDPR panel. This panel lists categories of information in the evidence data that are of interest from a GDPR compliancy point of view. Examples are person names, phone numbers, email addresses, etc. For each category, the number of values is listed, as well as the number of items holding one or more of these values, further split into Documents/Emails/Other categories. The values can be exported to a CSV file.
- Resolved a rendering issue when the Timeline chart was set to show Months.

## Searching

- Added support for combing phrase and proximity queries. This allows for searching for one phrase within a maximum distance of another phrase.
- Added support for selecting item text fields (text, headers, raw data, ...) in the Keyword List facet.
- Added support for using Paragraph Exclusion in the Keyword List facet.
- The Keywords tab now shows warnings when the Hits column is selected and one or more queries use a syntax for which hit counting is not supported.

## Results

- See the Indexing section for how chat messages are now represented differently.
- Added a Text Snippet column, showing the first part of the item text. Although this column was intended to improve the review of chat data, it will show the (initial) text of all items.
- Improved the sorting of textual values that contain digits, to make the sort order more natural.
  - The strict alphabetical order of [file-1, file-11, file-2, file-3] now becomes [file-1, file-2, file-3, file-11].
  - This affects several places in the user interface, e.g., the results table and the facets.
- When sorting the table by descending Family Date, the child items are now listed below their parent item instead of above their parent item.
- Added a Near-Duplicates column to the Details table, showing how many near-duplicates an item has.
- Resolved an issue with the Cluster Map and the Searches list not updating when the underlying facets are updated.
- Resolved an issue with the Cluster Map not switching back from an enforced Sets mode to Clusters mode, once the graph complexity was reduced to a level where a cluster graph could be rendered again.

## Previewer

- Several improvements in the display of chat data:
  - Support for threading in chat channels.
  - Improved display of attached files, e.g., images are now shown as thumbnails.
  - Added a Show Parent Conversation action.
  - Styling improvements.
  - Resolved an issue with displaying long Sametime chats.

- Added a Near-Duplicate tab, highlighting the textual differences between an item from a near-duplicate group and the master item of that group.
- Added support for displaying emojis.
- Improved usability of the Words tab.
- Resolved an issue with hit highlighting failing to highlight hits that use a certain mixture of hyphens and hexadecimal digits.
- Resolved an issue where the native Preview tab would trigger an error with certain forms of user permission setups.

## Tagging

- Resolved an issue with the quick tag buttons in the Previewer not applying their tag when clicked.
- Performance optimizations when using the tagging options “Also tag all attached/nested items” and/or “Also tag all other items nested in the same top-level item”.

## Redacting

- Resolved an issue with full page redactions not covering the entire page when applied on pages in landscape orientation.

## Exporting – PDF

- Several improvements to the exporting of chat messages:
  - Improved styling, resulting in a better readable and more efficient display of chat data.
  - Resolved an issue with a custom font placed in the “font” folder not being applied when exporting chat messages.
  - Resolved issues with the rendering of Chinese, Japanese, or Korean chat messages.
  - Resolved an issue with missing attachment data.
- Improved the rendering of emails with deep levels of quotations.
- The “OCRred text” option has been renamed to “OCRred text for images”.

## Exporting – PST

- Exporting to PST files no longer relies on MS Outlook being installed; all dependencies for creating PST files are now included with the software.
- Resolved an issue with the determination of an email’s top-level parent taking an unreasonable amount of time, slowing down the export considerably.

## Exporting – Load file

- See also the notes for the PDF exporting method, listed above.
- Added “Use current table sort order” as an option for controlling in which order items are to be exported.
- A warning is now shown when the Custom ID sort order is used with a numbering scheme that might not be compatible with it.
- Resolved an error that could occur when exporting to a load file with the “Add to existing set” option selected, when the items were already part of the selected export set.

## Exporting – Item report

- Several improvements to the Item Report configuration options to better facilitate the exporting of chat messages.

## Exporting – Case

- Resolved an issue with items failing to export/merge to another case due to large amounts of Content Analysis values associated with these items.
- Resolved an issue with case merging failing to accurately report on progress and completion when the originating case had items with custom metadata. This was purely a display issue; the actual case merging operation was not affected by this.

## Upgrade Notes

**Case versions 2.1.x to 2.4.x** – Intella Connect 2.5 can directly open cases made with the 2.4.x, 2.3.x, 2.2.x and 2.1.x versions of Intella and Intella Connect.

Upon first startup, Intella Connect 2.5 will migrate all existing coding layouts made with 2.3.x or older to a new format. This process reads each coding layout XML file stored in C:\Users\[USERNAME]\AppData\Roaming\Intella\coding-layouts and creates a new XML file in its place, making sure that there will not be any naming conflicts. A copy of the original coding layout is preserved in the “migrated” subfolder.

When a case made with Intella or Intella Connect 2.3.0 or older is opened in Intella Connect 2.5, adding Custom ID tasks to the case in version 2.5 may render the case unopenable in that older version. Changes have been made in the 2.3.1 version to prevent such forward compatibility issues in future releases.

When a case made with Intella or Intella Connect 2.1 or older is opened, all Content Analysis results are automatically migrated to a new data storage format. This migration

happens only once. The old store is retained and will still be used when using version 2.1 or older. New results will not be added to the old store though, and new results added to the old store will not be migrated. Cases made with 2.1.1 or later already use the new data store and are therefore not affected.

When items in cases made with a 2.1.x version are exported to a separate case, the registered case size of the target case will be incremented with the size of the original case. This may be problematic for users with licenses that have a case size limitation. To resolve the inflated case size, the source case needs to be re-indexed before exporting items from it.

In Intella Connect 2.2.2, a new method for calculating message hashes was introduced. While this change is transparent, please be aware that when a case that was made with version 2.2.1 or older is re-indexed in 2.2.2 or a later version, the message hashes will change.

**Case versions 1.9.x to 2.0.x** – Cases made with the 1.9.x and 2.0.x versions of Intella and Intella Connect can be opened, but these cases first require conversion. Case conversion will create a copy of the case in which all item data is converted, and all tags, comments and flags are imported. The existing case will not be altered in any way and can afterwards still be opened in the older Intella version. Access to the original evidence files is not required for case conversion.

Caveats concerning the case contents:

- Case conversion will not transfer the geolocation metadata extracted from emails when the "Determine geographic location of emails" option was used. Re-indexing of the converted case is required to restore such metadata.
- Multi-page TIFFs will be displayed in the converted case as if they were single-page TIFFs. Exporting and printing of the item report does reveal the other pages. Re-indexing of the converted case will make all pages displayable again.

Case conversion will require sufficient disk space. As a rule of thumb, please reserve twice the amount of the evidence size for your case folder.

**Other case versions** – Cases made with Intella 1.8.x or older are not supported. Cases made with beta versions are not supported and should be recreated.

**SSL** – Intella Connect/Node 2.4.2 switched to a new keystore implementation, used for storing its certificates. This keystore uses a different set of default root certificates. The new implementation effectively uses the same set of root certificates as the Firefox

browser. Please check after upgrading Intella Connect/Node that your SSL certificate is still verified. If not, please check the “Advanced: Using Self Signed certificates” section in the Intella Connect Administrator Manual for instructions on how to install the certificate.

**Software versions** – Vound will provide technical support for one major past version. For this release that will mean the 2.4.x range of products. Vound will always recommend that users upgrade to the latest version.



# Intella Connect 2.4.2

Released: May 19, 2021.

## Highlights

- Added **two-factor authentication** for local users.
- Added support for **X-Ways images** (CTR and EO1 files).
- Added **Sets mode** to the Cluster Map.
- **Predictive Coding** usability and scalability improvements.
- Improvements for handling **large coding layouts**.
- Added support for displaying **HEIC/HEIF images**.
- IntellaCmd.exe can now handle **keystore** information.

## Dongle Manager

- Various usability improvements.

## Case Management

- Case templates now carry across the tag colors.

## Security & Auditing

- Added two-factor authentication (2FA) for local users. Intella Connect's 2FA is based on Time-based One-Time Passwords (TOTP), such as generated by the Google Authenticator app. 2FA is setup for each account individually. It can be configured for a user account by the account holder or the Connect admin. At a later stage we plan to add two-factor authentication support for Intella Connect setups utilizing LDAP.
- Resolved an issue where search queries were not being added to the case's event log, making it impossible to audit them.
- The Print button in the Previewer and the "Export as PDF" button in the Redaction tab are now hidden when the current user lacks the "Can download original item" permission.

## Indexing - General

- Improvements to the processing of MS Teams data:
  - Enhanced the textual representation of chat messages.

- Populated the Recipient Count column.
  - Stability improvements.
- Improvements to the processing of Cellebrite reports:
  - Added support for social media activity entries.
  - Resolved an issue with processing chat conversations with mixed protocols (e.g., SMS and MMS).
- Resolved an issue with emails in PST, MSG or EDB files lacking sender metadata when the actual sender was stored in the PR\_CREATOR\_... properties.
- Resolved an issue with missing recipients in MSG emails.
- Resolved various issues with PDF files that would not process correctly.
- Resolved an issue with emails extracted from Outlook for Mac OLM files that were missing email headers, recipients, and OLM-specific email threading metadata.
- Resolved an issue with jump list items showing incorrect dates, due to NULL values or zeroes being interpreted as if they were valid dates.
- Resolved an issue with certain MS-DOS executables not being classified as such.
- Stability improvements to the processing of Slack exports.
- Stability improvements to the processing of Notes NSF files.
- Stability improvements to the processing of MS Visio documents.
- Relaxed the thresholds for detecting so-called ZIP bombs, as they could potentially flag certain MS Office documents as ZIP bombs.
- The value of the intella.itemTextMaxCharCount property is now capped at 2<sup>31</sup>.
- Resolved an issue with the Edit Source dialog not letting the user change the evidence path when that path pointed to a folder rather than a file.
- Resolved an issue with the indexing progress being reset to “1%” while running post-processing tasks (e.g., OCR).
- Resolved an issue with Notes NSF files failing to process when HCL/IBM Notes was not installed in the default location.

## Indexing – Disk images

- Added support for indexing X-Ways disk images (CTR and E01 with XWFS2 file system).
- Improvements for handling large (multi-TB) E01 and L01 disk images.
- Improvements for indexing BitLocker images that lack a volume system. This occurs when only one partition of the drive was imaged.
- General improvements to the processing of E01, Ex01, L01 and Lx01 disk images.
- Improved the indexing of system files like \$Boot, \$Header, etc., which occur in the root folder of a disk and which were incorrectly identified as being NTFS file systems on their own.

- Resolved an issue with a Linux disk image with Ext2 file system not processing correctly.
- Improved usability and stability of the disk image validation step.

## **Indexing – Cloud sources**

- The Office 365 source type has been renamed to Microsoft 365.
- Resolved an issue with iCloud sources, where accounts using two-factor authentication were not able to verify the account credentials.
- Resolved an issue with certain emails with attachments from iCloud accounts not processing correctly.

## **Indexing – Load files**

- Added support for importing BegAttach and EndAttach fields.
- To properly support the BegAttach field, the “Parent Document ID” column was renamed to “BegAttach / Parent ID”.
- Resolved an issue where an error occurring during file type identification would halt the entire importing of a load file.

## **IntellaCmd.exe**

- Added the ability to specify key store information such as passwords, BitLocker keys and certificates to IntellaCmd.exe.
- The IntellaCmd.exe user documentation is now included in the Intella Connect User Manual. Previously, it was only bundled with the Intella User Manual.

## **OCR**

- Added support for OCR-ing HEIC/HEIF images.

## **Analysis**

- Resolved an issue with Email Threading analysis terminating with an error.

## **Coding**

- Several improvements for handling large coding layouts:
  - A coding layout can now span multiple columns. This prevents or reduces the need for scrolling.
  - Added a “Multi select” coding field type. This is a drop-down interface element that lets the user select multiple options from its list. This

- facilitates coding fields with lots of options, where only a few are typically selected.
- Resolved an issue with the “Latest” button not working properly when a large coding layout forced the user to scroll to the button.
- Added a check for unsaved comments when users navigate away from the current item.

## Predictive Coding

- Added a function for exporting the predictive coding review queue to a CSV file.
- Added a “Show recent actions” button, giving the reviewer an overview of recent actions in the review queue. It allows the reviewer to jump back to previously reviewed items, even when they are no longer visible in the review queue.
- Improvements to let the predictive coding engine work with larger sets of data.
- Usability improvements in the Elusion Test module.
- Resolved an issue where the “Latest” button in the Review tab of a predictive coding queue would not show a preview of the values it would apply.

## Searching

- Resolved an issue with phrase searches not producing optimal results when using complex search terms such as email addresses inside the phrase query.
- Resolved an issue with path queries not producing optimal results when the query terms contain slashes or underscores.
- The “Microsoft Teams Conversation” is now located in the Type facet beneath “Chat Conversations”, rather than beneath “Chat Messages”.
- The “Parent Document ID” column has been renamed to “BegAttach / Parent ID”. This was necessary to properly support the BegAttach and EndAttach load file fields.
- Resolved an issue with MD5 search not returning items that were imported as part of a load file overlay.

## Cluster Map

- The Cluster Map can now toggle between Clusters and Sets modes. Sets mode shows each search result as a square whose size is related to the number of items in that result set. The sets are grouped by their order of magnitude, e.g. < 10 items, < 100 items, < 1000 items, etc. This mode can visually scale to larger groups of search results set than Clusters mode. When the graph shown in Clusters mode would be too complex to display in a reasonable amount of time, Intella will automatically switch to Sets mode. Clusters mode will then stay

disabled until the graph's potential complexity in that mode is feasible to be displayed again.

## Previewer

- Added support for displaying HEIC/HEIF images. These are commonly found on modern iOS devices.
- Various improvements to the native rendering of documents, presentations, and spreadsheets.
- Added a check for unsaved comments when users navigate away from the current item.

## Tagging

- Resolved a usability issue with tag removal when tags are added by multiple reviewers. When a reviewer now tries to delete tags applied by other reviewers, Connect will prevent that from happening, unless the reviewer explicitly selects a checkbox about removing taggings from other reviewers.

## Keywords tab

- Resolved an issue where queries for exclusive items would not work correctly when the current keyword list has any query errors in it.

## Export – PST

- Stability improvements for exporting to PST.

## Exporting – PDF

- Added “Page Number” as an option for Bates stamps. This allows for the pages to be numbered independent of the chosen file naming scheme.
- Resolved an issue with hidden sheets in MS Excel spreadsheets not being exported to PDF/TIFF format.

## Exporting – Load files

- See also the notes for the PDF exporting method, listed above.
- Renamed the RECORD\_ID\_GROUP\_BEGIN and RECORD\_ID\_GROUP\_END load file fields to BEGATTACH and ENDATTACH. This improves the ease with which the produced load files can be ingested by Relativity.

## Exporting – Report

- Improved the report contents when there are no items to report on, either for the entire report or for a specific section.
- Resolved a stability issue where the report export failed, when the original binary file was to be included but was not available in the case.

## Exporting – Case

- When exporting items to a second case, the exported data now includes the following columns: Custom ID, Custom Family ID, Duplicate Locations, Duplicate Custodians.

## Upgrade Notes

**Case versions 2.1.x to 2.4.x** – Intella Connect 2.4.2 can directly open cases made the 2.4(.1), 2.3.x, 2.2.x and 2.1.x versions of Intella and Intella Connect.

Due to changes in data storage, Intella Connect 2.4 is not able to open cases made with the 2.4.1 or 2.4.2 versions of Intella and Intella Connect.

Upon first startup, Intella Connect 2.4.2 will migrate all existing coding layouts made with 2.3.x or older to a new format. This process reads each coding layout XML file stored in C:\Users\[USERNAME]\AppData\Roaming\Intella\coding-layouts and creates a new XML file in its place, making sure that there will not be any naming conflicts. A copy of the original coding layout is preserved in the “migrated” subfolder.

When a case made with Intella or Intella Connect 2.3.0 or older is opened in Intella Connect 2.4.2, adding Custom ID tasks to the case in version 2.4.2 may render the case unopenable in that older version. Changes have been made in the 2.3.1 version to prevent such forward compatibility issues in future releases.

When a case made with Intella or Intella Connect 2.1 or older is opened, all Content Analysis results are automatically migrated to a new data storage format. This migration happens only once. The old store is retained and will still be used when using version 2.1 or older. New results will not be added to the old store though, and new results added to the old store will not be migrated. Cases made with 2.1.1 or later already use the new data store and are therefore not affected.

When items in cases made with a 2.1.x version are exported to a separate case, the registered case size of the target case will be incremented with the size of the original case.

This may be problematic for users with licenses that have a case size limitation. To resolve the inflated case size, the source case needs to be re-indexed before exporting items from it.

In Intella Connect 2.2.2, a new method for calculating message hashes was introduced. While this change is transparent, please be aware that message hashes will change when re-indexing a case that has been made with an older version.

**Case versions 1.9.x to 2.0.x** – Cases made with the 1.9.x and 2.0.x versions of Intella and Intella Connect can be opened, but these cases first require conversion. Case conversion will create a copy of the case in which all item data is converted, and all tags, comments and flags are imported. The existing case will not be altered in any way and can afterwards still be opened in the older Intella version. Access to the original evidence files is not required for case conversion.

Caveats concerning the case contents:

- Case conversion will not transfer the geolocation metadata extracted from emails when the "Determine geographic location of emails" option was used. Re-indexing of the converted case is required to restore such metadata.
- Multi-page TIFFs will be displayed in the converted case as if they were single-page TIFFs. Exporting and printing of the item report does reveal the other pages. Re-indexing of the converted case will make all pages displayable again.

Case conversion will require sufficient disk space. As a rule of thumb, please reserve twice the amount of the evidence size for your case folder.

**Other case versions** – Cases made with Intella 1.8.x or older are not supported. Cases made with beta versions are not supported and should be recreated.

**SSL** – Intella Connect/Node 2.4.2 has switched to a new keystore implementation, used for storing its certificates. This keystore uses a different set of default root certificates. The new implementation effectively uses the same set of root certificates as the Firefox browser. Please check after upgrading Intella Connect/Node that your SSL certificate is still verified. If not, please check the “Advanced: Using Self Signed certificates” section in the Intella Connect Administrator Manual for instructions on how to install the certificate.

**Software versions** – Vound will provide technical support for one major past version. For this release that will mean the 2.3.x range of products. Vound will always recommend that users upgrade to the latest version.

# Intella Connect 2.4.1

Released: February 02, 2021.

## Highlights

- Notable improvements in **Sources view**, adding the ability to **(re)index individual sources**.
- Added support for **Microsoft Teams**.
- Notable improvements for processing **BitLocker images** and **NSF files**.
- Indexing and case merging/exporting **performance improvements**.

## Licensing

- Starting with Intella Connect 2.4, to ensure compliance with Intella Connect's licensing agreement, a Connect license will not allow a second instance of an older version to run on a different machine. One older version instance may still be run concurrently, but only on the same server running the 2.4(.1) version, and only for the purpose of migrating to the newer version. Note that Upgrade Notes section on supported case versions: Intella Connect 2.4.1 can open cases made with versions 2.1.x, 2.2.x, 2.3.x and 2.4, so there should be no need to run past versions in parallel.

## Authentication

- Added instructions to the user manual for setting up Single Sign-On using Microsoft Azure.

## Connect Grid

- Resolved an issue with users not being redirected to the primary Connect server when logging out of Intella Connect.

## Sources

- The Sources view has been refurbished and received several usability improvements.
- It now allows certain operations to be performed on specific sources, whereas previously this could only be done on the case in its entirety:
  - The ability to index specific sources.



- The ability to re-index specific sources.
- The ability to scan specific sources for new evidence files.
- Other notable improvements:
  - Improved the speed of loading sources list.
  - Sources with critical issues, such as missing evidence files or major indexing errors, are emphasized.
  - Sources details panel now shows dates when source has been added, last indexed, as well as a result of the last crawling status.
- One can now remove multiple sources at once.

## Indexing

- Added several optimizations to the post-processing phases of the indexing operation. These relate to the steps taken immediately after crawling of the evidence files, when several databases are constructed from the crawl results. The optimizations improve the time needed for indexing evidence files. The optimizations also benefit case merging/exporting, as that operation predominately consists of the tasks performed in these phases.
- Added support for indexing Microsoft Teams data, in particular (but not limited to) chat messages. Teams data from PST files and Office 365 sources are both supported.
- Several improvements for the processing of BitLocker disk images:
  - Added support for BitLocker volumes with clear keys. These are keys stored in unencrypted and unprotected form in the BitLocker volume.
  - Added support for BitLocker volumes with multiple recovery keys. Earlier, only the first encountered recovery key was used to validate and index the disk.
  - Improved error reporting when the disk cannot be decrypted.
  - Resolved an issue with disk images of non-encrypted drives incorrectly being classified as an encrypted BitLocker disk.
- Several improvements for the processing of Notes NSF files:
  - Added support for HCL Notes 11.
  - Added support for decrypting individually encrypted emails in a non-encrypted NSF file.
  - Indexing stability improvements. Access to the NSF file through Notes now takes place in a dedicated process. This way, any Notes crashes can now be recovered from more reliably and cannot result in case corruptions anymore.
  - Resolved an issue with files in a folder being skipped when that folder also contains a Sametime dump.

- All references to “IBM Notes” in the user interface and documentation have been renamed to “HCL/IBM Notes”, to reflect the new owner of this product.
- Added recovery of deleted mails from MS Outlook 2013 OST files.
- Added file type detection for AppleSingle and AppleDouble files.
- Added support for loose instant messages and DeviceConnectivity items in Cellebrite dumps.
- Several extraction improvements as a result from software library upgrades.
- Resolved a stability issue when indexing EO1 disk images made with the Tableau TD3 Forensic Imager.
- Stability improvements for indexing APFS disk images contained in AFF4 containers.
- Resolved a memory usage issue introduced in the 2.4 release when indexing exceptionally large text files (e.g., log files in the hundreds of MBs).
- Resolved a concurrency issue with the processing of prefetch (.pf) files.
- Resolved a stability issue where data integrity issues within certain parts of a Slack archive caused other items to be omitted as well.
- Resolved “Path 'o' does not exist” errors that may appear when re-indexing a case.
- Resolved an issue with the file system browser not showing the evidence folders.
- Resolved an issue with truncated text errors being shown as source level errors rather than item level errors.

## Indexing – Cloud Sources

- Updated the Dropbox source so that it works with the new “Scoped access” API. Note that Dropbox is retiring the old Dropbox API and Dropbox Business API. It is no longer possible to define new apps on Dropbox with these APIs. The online documentation in the Vound knowledge base has been updated accordingly.
- Several stability and usability improvements for indexing iCloud accounts.

## Near-Duplicates

- Optimized the time needed to open a case containing near-duplicate detection results.
- Documents consisting only of paragraphs marked as excluded are now skipped during near-duplicate detection. Earlier, they were all placed into the same near-duplicate group.

## Searching

- Resolved a stability issue when evaluating Show Conversation queries.
- Resolved an issue with the MD5 and Message Hash facet failing to load completely when one of the hash lists could not be found on the server anymore.
- Resolved an issue with the item counts and menu icon in the Tags facet disappearing from view when a tag with a very long description was listed.

## Results

- Added a Table column and item property for the chat protocol of a message or conversation item. E.g. Skype, Slack, SMS, iMessage, ... The case needs to be (re)indexed with the 2.4.1 version for these values to appear.

## Previewer

- Resolved an issue with the Previewer not rendering properly when displaying certain types of emails with embedded images.

## Tagging

- Added safe-guards to prevent reviewers from creating circular parent-child references in the tag model. These could lead to system instability.

## Coding

- Resolved an issue with the coding form, including the Apply button, becoming enabled when a batch without assigned reviewers was opened for browsing.
- Resolved an issue with the “Batch review completed” dialog being displayed when reopening a batch that has already been reviewed completely, and not allowing the user to apply additional tags to these items.

## Redaction

- Resolved an issue with redactions being multiplied when the server is under heavy load.

## Exporting – PST

- Stability improvements for MS Outlook validation.

## Exporting – Report

- Resolved an issue with the export wizard not rendering certain components when selecting the type or tag that the report will be based on.

## Exporting – Load Files

- Resolved an issue with certain load file configurations resulting in the Subject being rendered twice and the Attachments line being omitted.
- Resolved an issue with the item fields not being shown in the Load File Fields Options tab when exporting to a load file in Ringtail format.

## Upgrade Notes

**Case versions 2.1.x to 2.4.x** – Intella Connect 2.4.1 can directly open cases made the 2.4, 2.3.x, 2.2.x and 2.1.x versions of Intella and Intella Connect.

Due to changes in data storage, Intella Connect 2.4 is not able to open cases made with the 2.4.1 versions of Intella and Intella Connect.

Upon first startup, Intella Connect 2.4.1 will migrate all existing coding layouts made with 2.3.x or older to a new format. This process reads each coding layout XML file stored in C:\Users\[USERNAME]\AppData\Roaming\Intella\coding-layouts and creates a new XML file in its place, making sure that there will not be any naming conflicts. A copy of the original coding layout is preserved in the “migrated” subfolder.

When a case made with Intella or Intella Connect 2.3.0 or older is opened in Intella Connect 2.4.1, adding Custom ID tasks to the case in version 2.4.1 may render the case unopenable in that older version. Changes have been made in the 2.3.1 version to prevent such forward compatibility issues in future releases.

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the inflated case size, the source case needs to be re-indexed before exporting items from it.

In Intella Connect 2.2.2, a new method for calculating message hashes was introduced. While this change is transparent, please be aware that message hashes will change when re-indexing a case that has been made with an older version.

**Case versions 1.9.x to 2.0.x** – Cases made with the 1.9.x and 2.0.x versions of Intella and Intella Connect can be opened, but these cases first require conversion. Case conversion will create a copy of the case in which all item data is converted, and all tags, comments and flags are imported. The existing case will not be altered in any way and can afterwards still be opened in the older Intella version. Access to the original evidence files is not required for case conversion.

Caveats concerning the case contents:

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Case conversion will require sufficient disk space. As a rule of thumb, please reserve twice the amount of the evidence size for your case folder.

**Other case versions** – Cases made with Intella 1.8.x or older are not supported. Cases made with beta versions are not supported and should be recreated.

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# Intella Connect 2.4

Released: October 28, 2020.

## Highlights

- Added **Predictive Coding**.
- Added detection of **near-duplicates**.
- Added support for **single sign-on (SSO)**.
- Added **hash-based filtering** of items during indexing, e.g. for **DeNISTing**.
- Extended the **custom columns** functionality.
- Added support for indexing **AFF4** and **VHDX** files.
- Added support for **Oxygen 12 and 13** reports.
- Added **custodian-based deduplication** and **family-based deduplication**.
- Added an improved **tagging dialog**.
- **Performance** and **scalability** improvements across the board.

## Predictive Coding

- Case managers can now create a review queue that is driven by our Predictive Coding engine. This engine uses artificial intelligence (AI) to learn from human coding decisions and prioritize a set of items to review. In typical eDiscovery cases with only a small fraction of responsive documents, this helps reviewers quickly identify the most pertinent data in the case, resulting in large time and cost savings.
- A case manager will typically first use the searching and filtering options available in Intella Connect to cull the data set (e.g. custodians, types, dates, keyword lists) and then launch a Predictive Coding-based review of the remaining items of interest.
- Reviewers working on such a review queue will be presented with documents selected by the engine and are asked to code them as Responsive or Non-Responsive. Initially, the engine will select diverse documents that make for good training samples while it tries to get an overview of the document space. When sufficient documents have been found for both categories, the engine starts looking for textual patterns that separate these categories. Once clear patterns start to emerge, the engine will use them to predict the responsiveness of the remaining documents, and the review queue will shift from showing training documents to presenting the most likely responsive documents to the reviewers.

The engine will keep learning from additional coded documents and fine-tune its classification model along the way.

- Multiple reviews can be launched and used in parallel in a case, e.g. to represent different aspects of the case.
- As human coding progresses, several statistics are available that show the ratio of responsive documents, indicating the success rate of the predictions made by the engine.
- The Predictive Coding-based review queue provides an alternative to traditional batching and coding. Responsive documents will be identified earlier, especially in cases that have a small percentage of responsive documents.
- Once the overall responsiveness rate in the queue starts to drop, i.e. reviewers are being presented more and more non-responsive documents, case managers can opt to run an elusion test. This is a dedicated review process that statistically determines the relevance rate of the non-coded documents, and thereby establishes the recall rate. Elusion tests help defensibly justify a review team to stop reviewing the remainder of the queue.
- After an elusion test has been completed and the prediction model has been verified and accepted, the review team can choose whether to apply the engine's predictions to all unseen items.
- Preparing and running a Predictive Coding queue is a hardware-intensive process, particularly in terms of RAM usage, and secondary in terms of the CPU load. When running it on an item set in the tens of thousands of items or more, please consider using a server that exceeds the amount of RAM listed in the system requirements. Please consult the user manual for guidance.
- Predictive Coding is available to all Connect licensees – **no additional license is needed** but this may change in future versions.

## General

- Various usability improvements.
- Various performance and memory usage optimizations aimed at large (multi-terabyte) cases.
- Resolved an issue with the server becoming unresponsive due to unexpected file locks on files that only need read access.
- Creation of minidump files (\*.mdmp) is now disabled, as these files can be very large and are of little use.
- Any Java hs\_err\_PID.log files are now always written to the case folder.

## Licensing

- Starting with Intella Connect 2.4, to ensure compliance with Intella Connect's licensing agreement, a Connect license will not allow a second instance of an older version to run on a different machine. One older version instance may still be run concurrently, but only on the same server running the 2.4 version, and only for the purpose of migrating to the newer version. Note that Upgrade Notes section on supported case versions: Intella Connect 2.4 can open cases made with versions 2.1.x, 2.2.x and 2.3.x, so there should be no need to run past versions in parallel.
- Updated the bundled haspupdate.exe, used for creating and applying C2V and V2C files. This resolves issues with the V2C files not applying successfully on some machines.
- Reliability improvements when checking for a valid license.
- When displaying network dongles, the Dongle Manager no longer recommends the user to generate a C2V file and send it to customer support, as that is no longer a necessity when activating or updating a network dongle.
- It is now possible to create a C2V file of any dongle (also non-network dongles) in the Dongle Manager, by right-clicking on the dongle.
- SL license keys were incorrectly displayed as "HASP Certificate dongle" keys in the License Chooser dialog. They are now displayed as "HASP software-based license" keys.

## Authentication

- Restyled the login page.
- Connect admins can now configure custom messages and links on the login page. This can be used for purposes such as linking to customer-specific help pages, listing support contact details, stating messages on planned server downtime, etc.
- Added support for Single Sign-on (SSO). This lets users log in to Intella Connect and several other services by logging in only once with an account shared across all these services. The authentication provider needs to be OpenID Connect (OIDC) compliant. Example setups are included for setting up Google G Suite and Okta as a provider.
- Added an alternative LDAP integration module (still turned off by default) that can help avoid time-outs and other connectivity issues with LDAP connections.
- Resolved an issue with local (non-LDAP) users not being able to change their password when the username they logged in with differed in casing from the exact registered name (e.g. "John" vs "john").
- Resolved an issue with the login form not showing properly in Internet Explorer 11.



## Security

- Resolved an issue where user-defined hosts were not applied when using SSL certificates with wildcard domains.

## Case Management

- A warning is now shown in the Admin UI when the amount of cases grows to an unsupported amount.
- Improved the error logging when the user tries to open a case located in a shared folder that has already been opened on a different machine.
- Resolved an issue with folder creation not working properly in the Create Case dialog.
- Resolved some corner cases where users could not add new sources to a case.
- Resolved an issue with failing case merges due to custom column types being configured incorrectly in the merge configuration.

## Indexing - General

- Added support for filtering files during indexing based on a repository of known hashes. This can be used for DeNISTing items, among other tasks.
- Added a Custom Columns Manager UI, for defining custom columns that are populated with data from selected email headers, raw data fields, and load file columns.
- Several improvements to the processing of MS Exchange databases:
  - Resolved decoding issues for encoded email body texts.
  - Decoding of properties stored in new Exchange property blob formats.
  - Resolved a performance issue that made processing of some EDB files very time consuming.
  - Improved extraction of email-attachment relations.
- Several improvements to the processing of PDF documents, EML files, plain text files, and Slack reports. The improvements address data completeness, the ability to process damaged files, and performance.
- Added support for Oxygen 12 and 13 reports.
- Indexing of Windows Event Log files has been made optional. By default, it is turned off.
- Added support for note attachments in Cellebrite reports.
- Added detection MSI installer packages, IE crash recovery stores and Acrobat Forms Data.

- The user interface for downloading the GeoLite2 database has been adjusted to incorporate the use of a license key. Due to changes in MaxMind's policies, one must now register for such a license key to be able to download this database.
- Resolved an issue with missing WeChat message participants in Cellebrite reports.
- Improved file type and character encoding detection for item data, resulting in more complete processing as well as a reduction of false-positive identifications of file types like NSF, MBOX, EXE, XML and more.
- Improved the speed of indexing Windows Event Log files.
- Resolved a reliability issue when validating Notes ID files.
- Resolved an issue where exceptionally large Windows Event Log files would cause the indexing process to run out of memory.
- Resolved a synchronization issue with the Key Store that caused reliability issues on encrypted items with duplicates.
- Resolved various email header and body decoding issues and font issues, particularly with emails in Asian languages.
- Resolved an issue with incorrect timestamp parsing of iTunes backups due to changes in this storage format.
- Resolved an issue with incorrect GeoLite2 databases (damaged files or incorrect database type) interfering with the correct indexing of certain items.
- Resolved a case database issue when the maximum item ID value in a case exceeded 165,191,047.
- Reduced disk space usage of temporary files.

## Indexing – Disk images

- Added support for indexing AFF4 files.
- Added support for indexing VHDX files.
- When adding a Disk Image source, the Find Parts button no longer adds the .log file to the list of image parts.
- Resolved an issue with structurally sound LO1 images being incorrectly marked as broken files.
- Resolved an issue where an EO1 and DMG image of the same physical disk resulted in different item counts when indexed.
- Resolved a memory leak when indexing BitLocker-encrypted disk images that caused the disk image verification process to fail.
- Resolved an issue with items representing folders in the Recycle Bin getting Size and MD5 Hash properties.

## Indexing – Load files

- Resolved an issue with load file overlays not importing custodian information properly.
- Resolved an issue with load file verification validating the text and native path fields even when the corresponding checkboxes were not checked.
- Resolved an issue with load files failing to import when they contain relative paths that start with a backslash character.
- Removed Custom ID and Custom Family ID columns from both the regular and overlay load file import, as it cannot be guaranteed that such imported data will produce a correct load file on a subsequent export.

## Indexing – Cloud sources

- The bundled instructions for adding cloud sources have been moved to the Knowledge Base section on the Vound Support portal. This has been done so that these instructions can be updated as soon as Microsoft, Google or Dropbox change their administrative interface for obtaining authentication tokens.
- When indexing Gmail sources, potentially security-sensitive information such as authentication tokens are no longer being logged.

## Indexing – Error reporting

- Resolved an issue where crawler crashes were not reported if a subsequent attempt to index the item took place. The second attempt may fail due to different reasons, thereby obfuscating the cause of the first crash. The second attempt may in fact succeed, in which case the fact that a crawler did crash could remain hidden.

## Indexing – Intella Node

- The Nodes overview screen in the Connect Admin UI has been redesigned to accommodate the addition of more configuration options.
- Added options for configuring the SSL settings of a Node server.
- Added options for letting a Node server validate the presence of a geolocation database and downloading the GeoLite2 database.
- Resolved an issue with Notes validation failing on the Node server due to incorrect handling of preference files.
- Resolved an issue with Notes validation failing on the Node server resulting in a non-informative error message.

- Resolved an issue where, when browsing the local disks of a Node server through the Connect Admin UI, the local Connect server's disks were also shown in the folder tree.

## OCR

- Updated the bundled ABBYY FineReader OCR library, addressing issues with several documents reported to us.
- Resolved an issue with paragraphs being reported in an incorrect order on some documents.

## Analysis

- Added support for detecting near-duplicates. This functionality groups documents with similar textual content, e.g. emails with similar bodies, or multiple revisions of the same conceptual document. Near-duplicates can be used to find related information that will not be found by looking for exact duplicates (binary copies) of items of interest, matching message hashes, or email threading. It can also be used to sort items in a large review job, by grouping similar items and focusing on their differences.
  - Users can invoke near-duplicate processing by selecting “Near-Duplicate Detection” in the Table’s right-click menu. Intella Connect will compare the selected items for similarity using a user-configurable similarity threshold.
  - The item in a near-duplicate set that has the longest text is assigned the status of “master item”. All items in a near-duplicate set will have a similarity with this item that is larger than or equal to the specified similarity threshold.
  - Additional table columns and Features facet categories have been added for listing the items that received near-duplicate processing, what near-duplicate group an item belongs to, and what its master item and similarity score are.
  - Near-duplicate sets can be queried via the new Near-Duplicates facet, or by clicking the Show Near-Duplicates link in the Previewer.
- Improved the accuracy of highlighting credit card numbers, social security numbers (SSNs) and phone numbers found by Content Analysis.
- Resolved an issue with paragraph hashing not storing correct results when over 2 million ( $2^{21}$ ) items contained the same paragraph text.
- Resolved an issue with values not being removed from the Content Analysis facet when the corresponding items were removed from the case.

## Searching

- Added a Unique Families search option. This search option performs family-based deduplication: it searches for all top-level parents of the selected items, deduplicates the parents, and then extends that deduplicated parent set with all their children. This can be used in eDiscovery workflows where unique families need to be produced. The deduplication step can optionally perform custodian-based deduplication (see the Results section).
- Added a Near-Duplicates facet, listing the group names of the detected near-duplicate sets, and allowing for them to be queried. See the Analysis section for a full description of near-duplicate processing.
- Added Has Near-Duplicates and Analyzed for Near-Duplicates categories to the Features facet. See the Analysis section for a full description of near-duplicate processing.
- Speed improvements in the initialization time of several facets.
- Resolved an issue with exceptionally large keyword lists that would fail to evaluate, by processing the keyword list in a streaming fashion.
- Resolved an issue with entire keyword lists failing to evaluate due to one or more invalid queries in the list.
- Phone numbers of SMS and MMS messages in the Chat Account facet are now normalized, like they already were in the Phone Number facet.
- Resolved an issue with wildcards being ignored when used in phrase queries holding only a single term.
- Resolved an issue with tag descriptions no longer being displayed in the Tags facet.
- The Geolocation map now shows a continuous map; one can keep panning in all directions. This resolves an issue with certain parts of the world map (especially Australia and New Zealand) being obscured by the Searches panel.
- Resolved an issue with the Sorting drop-down list in the Location facet not being fully visible.

## Results

- Added support for custodian-based deduplication. When the case has one or more custodians defined, the Deduplicate button in the results list will be extended with a drop-down button, enabling the user to toggle between case-wide deduplication and custodian-based deduplication. When the latter mode is used, each custodian set is deduplicated separately; duplicates that exist across those sets will be retained.

- Added columns for Near-Duplicate Group, Near-Duplicate Master Item and Near-Duplicate Score. See the Analysis section for a full description of near-duplicate processing.
- Added columns for Duplicate Custodians, All Custodians, Duplicate Locations, All Locations. By default, these columns are empty. A “Generate Duplicate Custodians and Locations” task for populating these fields has been added to the Desktop version. This task will also be added in a future Intella Connect version.
- Added a Shadow Copies column. This shows the number of shadow copies of the item. Indexing of Volume Shadow Copy (VSS) information is currently only available in the Desktop version. This will also be added in a future Intella Connect version.
- Resolved an issue with the date filter in the results list not resetting properly when it was cleared and the page was subsequently refreshed.
- Resolved an issue with the tag tooltip in the List view not displaying properly.
- Resolved an issue with the case preferences not persisting any custom columns that were selected for display in the Table.

## Previewer

- Added a Show Near-Duplicates link, for locating the near-duplicates of the displayed item.
- Improvements in the native rendering of MS Office documents.
- Improved the rendering of individual chat messages that are not part of a larger conversation.
- Improved the rendering of the tag tooltip that is shown when hovering over the Tags line in the Previewer.
- Resolved an issue with large lists of recipients not truncating properly.
- Resolved an issue with the native preview of HTML emails not displaying fully.
- Resolved an issue with HTML markup in IBM Sametime chat dumps interfering with their rendering, such as missing scrollbars and blocked mouse wheel scrolling.
- Resolved an issue with “Mark paragraph as unseen” not unsetting this state for duplicates of that paragraph.
- Resolved an issue with the “More” submenu on paragraphs collapsing before the user could choose an option in the menu.

## Tagging

- Added an improved tagging interface. The new interface is optimized for searching for existing tag names, defining new tags, and removing tags. It improves how tags present in the current item set are displayed and what their

respective volumes are. It is designed to better handle large tag hierarchies. The overall responsiveness of the dialog has been improved.

- The old tagging user interface is still available; see the toggle in the lower left corner to switch between the Simple View and Classic View.
- Added indentation to the tag tree in the Classic View, reflecting the tag hierarchy.
- Several improvements to the handling of tag colors throughout the user interface.
- Permissions have been added for adding and editing tags. Previously, only tag deletions were subject to permissions.

## Batching

- Resolved an issue with wrong items being added to a batch when the Timeline in the Search tab was used to select the appropriate items.

## Coding

- The items in the Review tab's item list now use color-coded swatches that indicate how that item has been coded. This makes it possible to, for example, easily spot the relevant items in the list of coded items.
- Improved the display of item families, by rendering dividers in the item list that separates the families, as well as indenting nested items. Custom IDs need to be generated on these items to make these features appear.
- The Review tab now allows for applying a coding decision to an entire family at once.
- Improved the handling of coding layouts that refer to deleted or moved tags.
- Resolved an issue with the Preview tab in the Review tab not loading properly on emails under certain circumstances.
- Resolved an issue with the coding form not clearing a "cannot advance" error message after the reviewer had fixed the reason for the error.
- Resolved an issue where the attachments of the current item were shown both at the top and bottom of the item view.

## Redacting

- The redaction editor and underlying services now prevent the creation of multiple redactions on the exact same spot (same coordinates and dimensions). This addresses issues with automatically made redactions, using mass-redaction or the Redact All button.
- Improved performance of applying full page redactions to multiple pages.
- Added a "Draw border around white redaction" option to redaction templates.

- The event log now makes a distinction between redaction additions, removals, and changes. In older versions these were all listed as generic redaction events.
- Resolved an issue with the “Process queued items” task not being able to launch until a tag color was selected.

## **Dashboard – Insight tab**

- Resolved an issue with case re-indexing not resetting the state of the Email Threading and Content Analysis checkboxes in the Workflow panel.
- Performance improvements in populating the “Top 10 Email Addresses” list. This used to be a potentially long and expensive operation.

## **Reporting – Keywords tab**

- One can now query for the exclusive items of a specific query row. The resulting items will then be shown in the Search tab.
- Performance optimizations when evaluating a keyword list.
- Resolved an issue with incorrect hit counts for certain types of queries.

## **Exporting – General**

- Improved the rendering of exported chat messages that are not part of a larger conversation.
- Performance improvements when exporting items using an export set.
- Resolved an issue with incorrect file names for items downloaded in original format, due to broken character encodings in certain HTTP headers.
- Resolved an issue with custom fields failing to export to a CSV.
- Resolved an issue with cases not going into IDLE mode after an export task completed and there was no other activity that should keep the case alive.
- Resolved an issue with exporting tasks not taking the selected export template into account.

## **Exporting – PDF**

- Improvements in the native rendering of MS Office documents.

## **Exporting – PST**

- Resolved an issue with calendar items failing to export to a PST file.
- Resolved an issue with calendar items lacking Sent and Received date attributes.



## Exporting – Load files

- The resolution unit of TIFF images has been changed from 3 (centimeters) to 2 (inches). This resolves an issue with loading these images into the Relativity platform.
- Resolved an issue with tag columns being exported using an incorrect value separator.
- Resolved an issue with file names sometimes getting double file extensions (e.g. “document.pdf.pdf”) in certain export configurations.

## Exporting – Report

- Resolved an issue with the “Include original format files” and “Include extracted text” options in the Sections sheet not being applied when generating the report.

## Printing

- Resolved an issue with printouts not looking well when using Microsoft Edge. This only affected the older, non-Chromium based Edge versions.

## Upgrade Notes

**Case versions 2.1.x to 2.3.x** – Intella Connect 2.4 can directly open cases made the 2.3.x, 2.2.x and 2.1.x versions of Intella and Intella Connect.

Upon first startup, Intella Connect 2.4 will migrate all existing coding layouts to a new format. This process reads each coding layout XML file stored in C:\Users\[USERNAME]\AppData\Roaming\Intella\coding-layouts and creates a new XML file in its place, making sure that there will not be any naming conflicts. A copy of the original coding layout is preserved in the “migrated” subfolder.

When a case made with Intella or Intella Connect 2.3.0 or older is opened in Intella Connect 2.4, adding Custom ID tasks to the case in version 2.4 may render the case unopenable in that older version. Changes have been made in the 2.3.1 version to prevent such forward compatibility issues in future releases.

When a case made with Intella or Intella Connect 2.1 or older is opened, all Content Analysis results are automatically migrated to a new data storage format. This migration happens only once. The old store is retained and will still be used when using version 2.1 or older. New results will not be added to the old store though, and new results added to

the old store will not be migrated. Cases made with 2.1.1 or later already use the new data store and are therefore not affected.

When items in cases made with a 2.1.x version are exported to a separate case, the registered case size of the target case will be incremented with the size of the original case. This may be problematic for users with licenses that have a case size limitation. To resolve the inflated case size, the source case needs to be re-indexed before exporting items from it.

In Intella Connect 2.2.2, a new method for calculating message hashes was introduced. While this change is transparent, please be aware that message hashes will change when re-indexing a case that has been made with an older version.

**Case versions 1.9.x to 2.0.x** – Cases made with the 1.9.x and 2.0.x versions of Intella and Intella Connect can be opened, but these cases first require conversion. Case conversion will create a copy of the case in which all item data is converted, and all tags, comments and flags are imported. The existing case will not be altered in any way and can afterwards still be opened in the older Intella version. Access to the original evidence files is not required for case conversion.

Caveats concerning the case contents:

- Case conversion will not transfer the geolocation metadata extracted from emails when the "Determine geographic location of emails" option was used. Re-indexing of the converted case is required to restore such metadata.
- Multi-page TIFFs will be displayed in the converted case as if they were single-page TIFFs. Exporting and printing of the item report does reveal the other pages. Re-indexing of the converted case will make all pages displayable again.

Case conversion will require sufficient disk space. As a rule of thumb, please reserve twice the amount of the evidence size for your case folder.

**Other case versions** – Cases made with Intella 1.8.x or older are not supported. Cases made with beta versions are not supported and should be recreated.

**Software versions** – Vound will provide technical support for one major past version. For this release that will mean the 2.3.x range of products. Vound will always recommend that users upgrade to the latest version.

# Intella Connect 2.3.1

Released: December 19, 2019.

## Highlights

- Index **BitLocker** disk images, **APFS** file systems and **Slack** exported content.
- Added **item reporting**.
- Added the **Volume visualization**.
- Added **facet highlighting**.
- Added **colored tags**.
- Improved **Includes** functionality.
- Several improvements to the **Keywords tab**, including new export options.
- Added **redaction templates** and **text overlays**.
- Added **Custom ID** and **Custom Family ID** columns.

## Installer

- Improved installer behavior when installing Intella Connect or Intella Node as a Windows service on machines that already have such an installation.

## General

- Resolved an issue with changes to the hostname setting failing to get stored.

## Case Management

- Resolved an issue with the memory allocation settings not updating correctly.
- Resolved an issue with the cases list not showing if the case.prefs file of one of the cases cannot be read, e.g. due to a permission problem.
- Resolved an issue with cases not being editable in a setup that used multiple Nodes, with at least one of the Nodes being unreachable.
- Usability improvements in the Create Case dialog.

## Indexing

- Added support for BitLocker-encrypted disk images.
- Added support for disk images containing APFS file systems. APFS-level file encryption is supported. Volume-level encryption, e.g. encrypted DMG images, are not supported.

- Added support for indexing exported Slack content.
- Added support for filtering files during indexing based on a repository of known hashes. This can be used for DeNISTing items, among other tasks.
- Added support for indexing Skype 14.x databases.
- Added type detection for HEIF/HEIC image files.
- Added metadata extraction for HEIF image files.
- Added detection of MacOS encrypted disk images.
- Added detection of AMR audio files. These are often used to record voice mails.
- Added support for extracting launched programs from the Background Activity Monitor (BAM) Cache in Windows 10 disk images.
- Added support for extracting launched programs and recently used files from the RecentApps registry key in Windows 10 disk images.
- Added support for extracting the Windows 10 build number and release ID.
- Added support for Volume serial numbers in LNK files and jump lists.
- Added support for extracting “Target ID List” properties from LNK files and jump lists.
- Improved performance of the post-crawling indexing phases. The optimizations are especially significant when using network shares.
- Improved indexing of MS Office and RTF documents.
- Improved indexing of MS Exchange databases.
- Improved indexing of Cellebrite UFDR reports.
- Improved indexing of Oxygen XML reports.
- Improved indexing of Skype 7.x databases.
- Improved indexing of Dropbox for Business accounts.
- Improved error reporting when indexing Windows 10 Mail containers.
- Improved extraction output and memory usage of PDF document processing.
- Improved processing of VCards.
- Improved processing of Outlook for Mac olk15\* files.
- Resolved an issue with certain disk images not being processed when they are contained in an archive.
- Resolved an issue with the list of users in a DropBox source not listing all users.
- Resolved network protocol errors when connecting to an iCloud account.
- Resolved an issue with the timestamps in EXIF metadata being interpreted incorrectly.
- Resolved an issue with the MD5 of contact and calendar items changing during re-indexing of a case.
- Resolved an issue with SMS messages in Oxygen XML reports not being decoded properly.

- Resolved an issue with documents whose language could not be determined being mistakenly classified as "Not applicable" rather than "Unidentified".
- Resolved an issue where the ffmpeg and exiftool commandline tools were inadvertently being launched during indexing.
- Resolved an issue with the indexing of Windows Event Log .etvx files not working correctly when the case folder was accessed via a UNC path.
- Resolved an issue with IBM Notes validation not working properly on Intella Node.
- Resolved an issue with very high memory usage when processing certain XML documents.
- Added support for IBM Notes 10 and verified that NSF files can successfully be indexed with an IBM Notes 10 installation. In our tests, the MD5's were different for a small amount of the items (< 1%), compared to when older Notes versions are used. Sampling these items showed that this is typically due to small changes in formatting that had no impact on the conceptual content of the item.
- The "Close Case" button that is shown when a Node completes the indexing of a case has been renamed to "Finish source management".
- Resolved an issue with Office 365 sources failing to get added to a case.
- Resolved an issue with Vound W4 sources not showing properly in the sources list.
- Added safeguards against noisy data ending up in the keyword index.
- Stability improvements and updates required for the Office 365 and SharePoint connectors.

## Indexing – Load Files

- Resolved an issue with the Conversation Index column getting filled with zeroes upon certain load file imports.

## Tasks

- Added the ability to define Custom IDs. These IDs reflect the item location/family structure and can be used to identify items within their families during review.
- Added the ability to define Custom Family IDs. These are either equal to the top-level parent's Custom ID or are derived from the range of Custom IDs that occur in an item family. Family IDs can be used for sorting purposes.
- Resolved an issue with OCR failing due to a lack of write permissions in certain locations.

## Insight

- Optimized calculation of the table holding the top 10 email addresses.

## Searching

- Adding facet highlighting to Connect's facets, similar to the functionality in the Desktop product. Facet highlighting will highlight those values in a facet that occur in the currently visible set of items.
- Added text-based filtering of facet values in the Tags, Type and Features facets.
- One can now also search for facet values by double-clicking on them, besides selecting them and clicking on the Search button.
- Made the visual styling of the facets more uniform and improved their usability.
- Made it possible to query for the individual terms in a keyword list in the Keyword Lists facet. Due to restructuring of the application, this possibility was not available in Intella Connect 2.3.
- The Includes functionality has been named to Required. When adding two or more item sets to the Required list, a drop-down will appear that lets the reviewer choose whether items passing this filter should be in any or all the item sets. Previously, the Includes functionality requires that an item was present in any of the item sets. This approach did not work for all use cases.
- The MD5 Lists, Keyword Lists and ID Lists facets now allow their lists to be exported.
- Performance optimizations targeting a specific case database that gave issues when the case contained more than approximately 107 million items.
- Added a "Downloaded from Internet" category in the Features facet.
- Improved the display of the divider between the results table and the Timeline at the bottom, hinting that it can be dragged to resize these components.
- Improved the name given to the results of an Item ID query.
- Resolved an issue with queries in the Export Sets facet not working for users that do not have the "Can manage exports" permission.
- Improved error reporting when invalid keyword queries are entered.

## Results

- Added Custom ID and Custom Family ID columns. See the Tasks section for more details.
- Added a Phone Call Type column, indicating the type or direction of a phone call.
- Added a Queued for Redaction column.
- Added a preference for disabling gradient rendering in the Cluster Map. This was giving connectivity issues with certain reverse proxy configurations.

- Improved the generated name of Email Thread queries.

## Previewer

- MSG emails can now be previewed in their native layout.
- Chat conversation items now show seconds in the timestamps of the individual messages.
- Resolved an issue with the native rendering of some specific spreadsheets.
- Resolved an issue with incorrect word frequencies in the Words tab.

## Analysis

- Added a Volume diagram. This new visualization lets one visualize how various culling and filtering operations can reduce, or extend, the volume of items to review.
- The Keywords tab has received several improvements:
  - A “Totals” line has been added at the bottom of the table.
  - An “Exclusive items” column has been added. For each query, this column shows the number of items that are returned by that query and by none of the other queries in the keyword list.
  - The entire table can now be filtered by one or more saved searches. This lets one evaluate a keyword list on a subset of the case, e.g. a specific custodian or date range. Previously, saved searches were added as additional columns in the table. While this would calculate the intersection of each query with that saved search, this would not calculate the deduplicated items and family items within the filtered set.
  - The table can now be exported to a report in PDF or DOCX format. Several charts are shown that provide additional insight into the keyword list’s results.
  - The table can now also be exported as an Excel XLSX spreadsheet. This has several benefits over the already existing export to CSV, e.g. in how it handles characters other than plain ASCII.
- Reduced memory consumption of the email threading calculations.

## Tagging

- Tags are now associated with a user-defined color. Reviewers can use tag colors to visually group tags. For example, one could make all topic-oriented tags green, all processing-related tags blue, and all confidentiality-related tags red. Tag colors are shown in the Tags facet, in the Previewer, and in the new Tag Colors table

column. This column gives a visual overview of an item's tags by displaying all associated tag colors.

- Usability improvements in the Delete Tag dialog.

## Redaction

- Added the ability to overlay a text on a redacted area, e.g. to indicate the reason for redacting that area.
- Added the ability to define redaction templates. Such templates bundle a set of visual redaction settings, such as color, overlay text, and overlay font, and give it a symbolic name, e.g. "privileged content". This lets one centrally manage the visual style for a specific type of redaction. The items redacted with a specific redaction template can be retrieved via the Features facet. Redaction templates can be carried over to other cases using the Case Template functionality.
- Added the ability to use a custom color for mass redactions.
- Added an option to draw a border around white redactions.
- Added an option to render all redactions in black upon export.
- Resolved an issue with redactions failing to store.

## Batching & Coding

- One can now define the order of second level tags in a coding layout. Previously, the tags would always be sorted alphabetically.
- The coding form now shows the tag colors, as defined in the Tags facet.
- Added a permission that controls whether a reviewer can apply coding decisions to an entire email thread at once. Note that this permission is not automatically granted to existing users.
- Resolved an issue with the attachments panel at the bottom of the document rendering showing an incorrect attachment count.
- Resolved an issue with the batch completion percentage not being reduced when item tags are removed.

## Reporting

- Added functionality for exporting a set of items to an item report. Such a report lists a configurable set of item properties as a table, list or thumbnail gallery. Item reports can be exported to PDF and DOCX format. Various options for sorting, styling, and other customization of the report are available.  
An item report should not be confused with an export report. The purpose of the latter is to log what items were exported to e.g. PDF, PST or native format, including any errors that occurred during that process.



## Exporting

- Resolved the exporting of the event log to an XLSX file failing due to cells that reach Excel's maximum cell text length limit.

## Exporting – PDF

- Improved exporting of MS Office files to PDF/TIFF.
- Improved exporting of chat messages to PDF/TIFF.

## Exporting – Load Files

- Added the ability to export time zone offsets and time zone names.
- Resolved an issue with PDFs containing certain types of form fields not exporting to TIFF correctly.

## Dongle Manager

- Resolved an issue with the Blink button no longer working.

## Upgrade Notes

Intella Connect 2.3.1 can directly open cases made the 2.3, 2.2.x and 2.1.x versions of Intella and Intella Connect.

When a case made with an older Intella version is opened in Intella 2.3.1, adding Custom ID tasks to the case in version 2.3.1 may render the case unopenable in that older version. Changes have been made to prevent such forward compatibility issues in future releases.

When a case made with Intella or Intella Connect 2.1 or older is opened, all Content Analysis results are automatically migrated to a new data storage format. This migration happens only once. The old store is retained and will still be used when using version 2.1 or older. New results will not be added to the old store though, and new results added to the old store will not be migrated. Cases made with 2.1.1 or later already use the new data store and are therefore not affected.

When items in cases made with a 2.1.x version are exported to a separate case, the registered case size of the target case will be incremented with the size of the original case. This may be problematic for users with licenses that have a case size limitation. To resolve the inflated case size, the source case needs to be re-indexed before exporting items from it.

In Intella Connect 2.2.2, a new method for calculating message hashes was introduced. While this change is transparent, please be aware that message hashes will change when re-indexing a case that has been made with an older version.

Cases made with the 1.9.x and 2.0.x versions of Intella and Intella Connect can be opened, but these cases first require conversion. Case conversion will create a copy of the case in which all item data is converted, and all tags, comments and flags are imported. The existing case will not be altered in any way and can afterwards still be opened in the older Intella version. Access to the original evidence files is not required for case conversion.

Caveats concerning the case contents:

- Case conversion will not transfer the geolocation metadata extracted from emails when the "Determine geographic location of emails" option was used. Re-indexing of the converted case is required to restore such metadata.
- Multi-page TIFFs will be displayed in the converted case as if they were single-page TIFFs. Exporting and printing of the item report does reveal the other pages. Re-indexing of the converted case will make all pages displayable again.

Case conversion will require sufficient disk space. As a rule of thumb, please reserve twice the amount of the evidence size for your case folder.

Cases made with Intella 1.8.x or older are not supported.

Cases made with beta versions are not supported and should be recreated.

# Intella Connect 2.3

Released: July 22, 2019.

## Highlights

- Greatly improved **faceted search** interface.
- Added **native rendering of spreadsheets** in the Previewer.
- Added support for **load file overlays**.
- Added support for MS Exchange **EDB 2013/2016** files.
- Added support for **Outlook for Mac** olk15\* files.
- Added a user interface for managing **memory and crawling settings**.

## General

- Many small usability fixes.

## Installer

- Resolved an issue with the Browse button in the installer not functioning properly.

## Authentication

- The LDAP names cache eviction policy can now be configured via the system preferences. The name cache defaults to containing maximally 400 names, which expire after 120 minutes.

## Licensing

- Improved handling of product licenses when multiple Connect dongles are present in the network:
  - One can now specify a list of preferred dongle IDs for a Connect installation to use. A Connect installation will first try to use any of the preferred dongles, in the listed order, before reverting to any other dongle that it can locate in the network.
  - When the currently used dongle becomes temporarily unavailable, e.g. due to unplugging or a network glitch, it will automatically switch to the next dongle on the list, or to any dongle that is available if none of the preferred dongles can be found.

- Additional licenses for the Branding and Unrestricted Cases functionalities are now always taken from the dongle providing the Connect license.

## Indexing

- The memory settings and maximum crawler count for the indexing engine can now be managed from within the user interface. Before, this was controlled via the l4j.ini files in the Connect and Node application folders. The settings are now case-specific rather than installation-specific.
- Added support for MS Exchange EDB 2013 and 2016 files.
- Added support for Outlook for Mac olk15\* files.
- Added support for Apple Disk Image (DMG) files. Please see the User Manual for which compression methods are supported.
- Added support for indexing installed and startup programs found in the Windows registry.
- Added support for indexing UserAssist entries, prefetch files and jump lists.
- Added support for LNK and URL files. Previously these could only be identified.
- Added support for Windows XML event log (.evtx) files, including logon and logoff events.
- Added support for extracting artifacts from Windows.old folders, which may be present after a major Windows update has been performed.
- Improved support for indexing the contents of Recycle Bins, including metadata such as time of deletion.
- Updated the Office 365 and SharePoint connectors in accordance with changes to these Microsoft services. Furthermore, these connectors have been made more robust against server errors.
- Updated the iCloud connector in accordance with changes to this Apple service.
- Preserved text styling when extracting the contents of an RTF-encoded PST/MSG/EDB email.
- Improved the extraction of non-Latin and/or long file names in MIME-formatted emails.
- Improved calculation of message hashes of items whose attachments are organized in a folder tree.
- Added an option in the Nodes configuration screen to configure and validate the location of the IBM Notes binaries. These are used for indexing NSF files.
- Added an option in the Keystore configuration screen to configure and validate the location of the IBM Notes binaries. These are used for validating NSF ID files.
- Resolved an issue with non-matching paragraph hashes due to the line breaks that are introduced by certain email clients.

- Resolved an issue with the parsing of LDAP email addresses that lack a domain.
- Resolved an issue with SMS messages in Cellebrite reports being incorrectly classified as “Unsent”.
- Made the parsing of Skype databases more robust.
- Resolved an issue with the incorrect modeling of the hierarchy of the root item in an LO1 image, which could trigger a variety of problems.
- Resolved an issue with certain PST calendar items missing a location property.
- Resolved issues with the indexing of MS Internet Explorer 10, 11 and Edge web history on Windows 10.
- Resolved an issue with items from MS Outlook for Mac OLM files missing a location property.

## Indexing - Load Files

- Added support for adding a load file overlay. This lets one extend or overwrite the metadata of previously imported load file items.
- Resolved an issue with load files in UTF-8 format that start with a Byte Order Mark (BOM). The BOM would become part of the first column name.
- Resolved an issue with tag columns with multiple values not being parsed correctly, resulting in the tags being reported as a single concatenated tag.

## OCR

- Updated the embedded OCR engine. This fixes several issues with problematic PDFs.
- Resolved an issue with an incorrect progress value being shown when OCRing items.
- Resolved an issue with the CSV file holding the OCR log not being written properly.

## Searching

- The Search tab has received a major overhaul. Multiple facets can now be shown simultaneously. Facets that are used often can be pinned, keeping them visible at all times. The facet panels can be resized and reordered, to better accommodate the user’s workflow.
- Added a separate keyword search field for file names, so that they can be searched independently from their folder names.
- The list of tags in the Tags facet can now be filtered on user-entered text.
- IBM Sametime chat dumps are now listed in the Type facet beneath Chat Conversations, rather than Forensic Containers.

- Resolved an issue with the keyword search options popup menu not being fully rendered.
- Resolved an issue with duplicate events showing in the Activities stream.
- Resolved the incorrect determination of top-level items in SharePoint and Office 365 sources.
- Resolved an issue with incorrect results for phrase queries with wildcards on items with reviewer comments.

## Keywords tab

- Resolved an issue where searching using keyword lists in the Keywords tab where imported texts (e.g. using the `-importText` command line argument) were not included.
- Resolved an issue with incorrect item counts for certain types of Boolean queries and with the “Hits” option selected in the Calculate section.
- Resolved an issue with incorrect hit counts on certain types of complex phrase queries.

## Tasks

- Added an option to select all items in a query task.

## Previewer

- Added native rendering of spreadsheets in the Preview tab.
- Improved the rendering of chat conversation items that lack sender information.
- The Words tab is now always shown; it is no longer tied to the presence of the Contents tab.
- Resolved an issue with the file name being shown instead of the subject for certain types of calendar items.

## Redaction

- Resolved an issue with keyword search in the Redaction tab not working properly due to the incorrect handling of whitespace characters between words in the item text.

## Batching & Coding

- Resolved an issue with the comment field scrolling out of view in the coding panel and becoming unreachable, when using a very large coding layout.

## Exporting - PDF

- Resolved an issue with PDFs being generated in A4 format when the format should have been US Letter.
- Optimized performance by reducing the number of child processes that is generated during the generation of the PDFs.

## Exporting – Load Files

- When an item has redactions applied to it, one can now suppress the exporting of the natives of all items in the item family. Before, only the natives of the redacted items themselves could be suppressed. This could lead to the redacted content still being exported in unredacted form when a family member was exported.
- Added an ATTACH\_RANGE field, which combines the RECORD\_ID\_GROUP\_BEGIN and RECORD\_ID\_GROUP\_END values in a single exportable field.
- Resolved an issue with the generated HTML structure of emails whose body was originally encapsulated in RTF format in a PST/MSG/EDB email. The generated HTML would render correctly in email clients but did not render well in Relativity.
- Resolved an issue with the exporting of chat conversation items to a load file. If the conversation item has attachments, the exported extracted text of the chat item would contain references to those attachments. These references are now suppressed.

## Upgrade Notes

A dongle update is needed to upgrade from earlier Intella Connect versions.

Intella Connect 2.3 can directly open cases made the 2.2.x and 2.1.x versions of Intella and Intella Connect.

When a case made with Intella or Intella Connect 2.1 or older is opened, all Content Analysis results are automatically migrated to a new data storage format. This migration happens only once. The old store is retained and will still be used when using version 2.1 or older. New results will not be added to the old store though, and new results added to the old store will not be migrated. Cases made with 2.1.1 or later already use the new data store and are therefore not affected.

When items in cases made with a 2.1.x version are exported to a separate case, the registered case size of the target case will be incremented with the size of the original case.

This may be problematic for users with licenses that have a case size limitation. To resolve the inflated case size, the source case needs to be re-indexed before exporting items from it.

In Intella Connect 2.2.2, a new method for calculating message hashes was introduced. While this change is transparent, please be aware that message hashes will change when re-indexing a case that has been made with an older version.

Cases made with the 1.9.x and 2.0.x versions of Intella and Intella Connect can be opened, but these cases first require conversion. Case conversion will create a copy of the case in which all item data is converted, and all tags, comments and flags are imported. The existing case will not be altered in any way and can afterwards still be opened in the older Intella version. Access to the original evidence files is not required for case conversion.

Caveats concerning the case contents:

- Case conversion will not transfer the geolocation metadata extracted from emails when the "Determine geographic location of emails" option was used. Re-indexing of the converted case is required to restore such metadata.
- Multi-page TIFFs will be displayed in the converted case as if they were single-page TIFFs. Exporting and printing of the item report does reveal the other pages. Re-indexing of the converted case will make all pages displayable again.

Case conversion will require sufficient disk space. As a rule of thumb, please reserve twice the amount of the evidence size for your case folder.

Cases made with Intella 1.8.x or older are not supported.

Cases made with beta versions are not supported and should be recreated.



# Intella Connect 2.2.2

Released: March 18, 2019.

## Highlights

- Added a **Timeline** visualization.
- **Batching and coding** improvements designed to better assist with the second pass review.
- **Indexing** improvements, including support for **Outlook for Mac OLM** files.
- Various **redaction** improvements, including setting the redaction rectangle's color.

## General

- Several stability improvements that protect against or recover from case corruptions.

## Case Management

- Various usability improvements in the cases list.
- One can now use an existing, empty folder as the case folder for a new case.

## User Management

- Added new default roles for “Case manager”, “Senior reviewer” and “Investigator”.
- Usability improvements in the login page.
- Fixed an issue with users being redirected to the wrong Connect server when logging out of a server that is part of a grid.

## Indexing – General

- Added support for indexing Outlook for Mac OLM files.
- Indexing performance improvements, especially when the case is located on a non-local drive.
- Tested indexing of files made with MS Office 2019.
- Improvements to the indexing of SQLite databases.
- Added extraction of the save history from PDF files made or edited with certain PDF editors, e.g. Nuance Power PDF.

- Resolved an issue with Intella Node running out of memory when indexing a small but corrupt .bplist file.
- Reduced memory usage of PDF processing, which were a common cause of Intella running out of memory.
- Resolved an issue with floating content in NSF files, i.e. minor differences in extracted white space in separate indexing runs, causing the MD5s of these items to be different.
- Resolved an issue with JPEG items embedded in PDF documents getting different MD5 hashes in separate indexing runs.
- Resolved an issue with the attachments of SMS/MMS messages in an iTunes backup being linked to all messages in that backup.
- Resolved an issue with indexing of Safari browser bookmarks.
- Resolved an issue with certain plain text files being incorrectly classified as emails.
- Reduced the potentially large amount of log messages that are produced when indexing corrupt PDF documents.

## Indexing – Load files

- Resolved an issue with page rotations when importing multi-page PDF images.
- Resolved an issue with importing dates that use a double-digit number for the year, e.g. 25-Feb-19.

## OCR

- Added support for ABBYY FineReader Server 14, the successor of ABBYY Recognition Server.

## Searching

- A Timeline view has been added, showing the timestamps of the items in the results list. By default, the family date will be used for this chart. A date range can be selected in the Timeline view, which further filters the items on that date range. The Timeline can be optionally hidden.
- The panels in the Search tab can now be resized, e.g. to give more space to the visualizations or to the results table.
- The Search tab has received some styling changes.

## Previewer

- Several fixes and improvements to the native rendering of MS Office and PDF documents.

- Resolved an issue with the Redaction shortcut (CTRL+Q) not working.
- Resolved an issue with a high server-side CPU load due to the redundant creation of PDFs for the Preview tab.
- Resolved an issue with PDFs generated for one of the Previewer tabs getting cached by the MS Edge browser.

## Tagging

- The “Delete taggings from other reviewers” option has been made sticky.

## Batching & Coding

- Added the ability to batch items based on any item attribute/column, rather than always using the Family Date.
- Improvements supporting the second pass review and quality control (subject to user permissions):
  - Reopen and close an already completed batch.
  - Forcefully mark a batch as completed.
  - Reassign a batch regardless of batch status, even completed batches.
  - Let a reviewer only see his/her own batches, rather than the complete list.
  - Allow for duplicate batches to be created, without the new batch automatically inheriting the status of the original batch.
  - Allow for the batch progress to be recalculated. This can be useful when the user has skipped initial batch progress calculations and later needs to check if the batch has been coded.
- Added the ability to flag items in the coding form.
- The Review tab now blocks the user from moving to the next item when there are unsaved redactions.

## Redaction

- One can now choose the color of each individual redaction rectangle, rather than all redaction rectangles always being black.
- Added buttons to jump from redaction to redaction.
- Improved the determination of duplicates suitable for redaction when using the “Auto-redact duplicates” option.
- Improved the user experience when using the “Auto-redact duplicates” option.
- Improved the user experience when queuing items for redaction.
- Resolved an issue with full page redactions not extending to the full height and width of the page automatically.

## Exporting - PDF

- Several fixes and improvements to the native rendering of MS Office and PDF documents.
- Improved the rendering of the metadata of phone calls and chat messages.

## Exporting – PST

- Tested exporting to a PST file with MS Office 2019.

## Upgrade Notes

Intella Connect 2.2.2 can directly open cases made the 2.2.x and 2.1.x versions of Intella and Intella Connect.

When a case made with Intella or Intella Connect 2.1 or older is opened, all Content Analysis results are automatically migrated to a new data storage format. This migration happens only once. The old store is retained and will still be used when using version 2.1 or older. New results will not be added to the old store though, and new results added to the old store will not be migrated. Cases made with 2.1.1 or later already use the new data store and are therefore not affected.

When items in cases made with a 2.1.x version are exported to a separate case, the registered case size of the target case will be incremented with the size of the original case. This may be problematic for users with licenses that have a case size limitation. To resolve the inflated case size, the source case needs to be re-indexed before exporting items from it.

Intella Connect 2.2.2 uses a new method for calculating message hashes for new cases. While this change is transparent, please be aware that message hashes will change when re-indexing a case that has been made with an older version.

Cases made with the 1.9.x and 2.0.x versions of Intella and Intella Connect can be opened, but these cases first require conversion. Case conversion will create a copy of the case in which all item data is converted, and all tags, comments and flags are imported. The existing case will not be altered in any way and can afterwards still be opened in the older Intella version. Access to the original evidence files is not required for case conversion.

Caveats concerning the case contents:

- Case conversion will not transfer the geolocation metadata extracted from emails when the "Determine geographic location of emails" option was used. Re-indexing of the converted case is required to restore such metadata.
- Multi-page TIFFs will be displayed in the converted case as if they were single-page TIFFs. Exporting and printing of the item report does reveal the other pages. Re-indexing of the converted case will make all pages displayable again.

Case conversion will require sufficient disk space. As a rule of thumb, please reserve twice the amount of the evidence size for your case folder.

Cases made with Intella 1.8.x or older are not supported.

Cases made with beta versions are not supported and should be recreated.

# Intella Connect 2.2.1

Released: December 3, 2018.

## Highlights

- **Case templates** enable quick initialization of a new case.
- Items can now be **exported to a new case** or **copied to another case**.
- Added a **key store** for password and other credentials, to be used when indexing encrypted evidence items.
- Added a **Geolocation** view, showing the geographic locations of search results, e.g. based on GPS data and IP addresses.
- Improvements supporting the **large-scale redaction** of items, such as **queuing** items for redaction based on their keyword hits, **pre-generating redaction PDFs** to speed up the Redaction tab's loading time, redacting entire **page ranges**, and the automatic **redaction of duplicates**.
- Several **facets load faster**.
- Added a **Show Family** search option.
- Many **indexing** and **OCR** improvements.

## Installer

- On supported systems, the entered user credentials are verified when installing Intella Connect or Intella Node as a Windows service.

## Licensing

- The requirement to have at least 100 days of remaining Maintenance Agreement coverage has been reduced to 60 days.

## General

- Various LDAP-related improvements, increasing general robustness and making connection reuse and pooling configurable.
- Various improvements to how the events.log file stores information and how the Restore Annotations functionality can use it to recover data when the case becomes corrupt, e.g. due to a power outage or disk failure.
- The About screen now shows the source code revision number.

- The Cases item in the systray’s right-click menu has been renamed to “Admin Dashboard”.
- Resolved an issue where clicking the Cases item in the systray icon’s menu produced an error due to the use of SSL with a multi-subdomain certificate.

## Case Management

- The settings of a case can now be stored in a case template. Such a template can be used to easily initialize the settings of a new case, e.g. to comply with organization policies or to optimize it for the nature of the investigation. Case templates can for example cover:
  - Settings in the Preferences window.
  - The default table column setup.
  - Saved Searches.
  - Task definitions.
  - Tags.
  - Keyword and MD5 hash lists.
  - Export templates.
  - Redaction profiles.
  - Coding layouts.
- One can now export items to a case. This can either be an existing case or a new case. Several configuration options are available for controlling what item information is included, e.g. tags, comments, custodians, OCR text, etc. Parents of exported items that are not in the export set themselves are represented as stubs in the destination case.
 

The new export functionality supports several use cases:

  - Merging of two or more cases, so that indexing can be spread across multiple machines.
  - Adding data to an ongoing case while minimizing downtime. The new evidence is indexed in a separate case first, rather than by adding a source to the current case.
  - Exporting of selected items to a new case, e.g. to filter out privileged information or irrelevant items, or to divide the work among reviewers in such a way that each reviewer only has access to their own assigned items.
- The name and description of a case can now be changed.
- Various usability improvements in this part of the user interface.
- Resolved several issues where a shared case would not show properly in its tab when it was restored from standby state after not being used for a while. The user would keep seeing the “The case is being prepared” message indefinitely.

- Resolved an issue with case conversion not functioning when Intella Node was running on an Intella TEAM Manager or Intella Professional license.

## Indexing – General

- A key store has been added for entering and managing passwords and other credentials. These credentials are used to decrypt any encrypted items encountered during indexing. Supported credentials are:
  - Passwords
  - IBM Notes ID files
  - X.509 certificates
  - PGP keys
- Updates for processing Apple Mail files and EMLX files.
- Added support for indexing loose S/MIME encrypted messages (usually .p7m files).
- Many improvements to the indexing of archives.
- Updates for indexing the most recent Cellebrite UFED XML exports and UFDR reports.
- Images in OpenOffice/OpenDocument files are now extracted.
- Improved parsing of email senders and receivers in cellphone extracts that contain both the contact name and the email address.
- Improved the extraction of email senders and receivers from PST/MSG/TNEF items. Instead of Active Directory addresses (X.500 Distinguished Names), regular contact names and email addresses will now be shown.
- Updates for indexing various browser artifacts such as downloaded files, typed URLs, and bookmarks.
- Improvements to the processing of date attributes:
  - Unrealistic dates are suppressed, e.g. dates before or at 1-1-1970 00:00:00 GMT, or at 1-1-1980.
  - Two-digit years in Date headers are corrected to a date in the range 1950 – 2049.
- Improved handling of emails with a non-standard MIME multipart hierarchy.
- Added the ability to index LO1 files that contain folders with illegal characters in their name.
- Resolved an issue with missing files when indexing a MacOS disk image.
- Resolved some indexing issues with MS Exchange EDB files.
- Resolved suppressed indexing errors when processing registry artifacts.
- Resolved unnecessary copying of disk images to a temporary file.
- Email items that lack a body and all header fields relevant for message hash calculation are no longer seen as duplicates.



- Various logging improvements.

## Indexing – Load Files

- Reintroduced the “Use the following column and value to identify emails” field. This was removed in an earlier version.
- Performance improvements when importing a large number of custodians.
- Added the ability to map data to the Conversation Index column.
- Added the ability to import hierarchical tags.
- Resolved an issue with rotated PDFs not importing correctly.

## OCR

- Imported OCR packages can now be larger than 2 GB.
- Resolved memory issues that could occur when OCR-ing very large files.
- Various improvements to OCR-ing problematic files due to an upgraded OCR library.
- When using ABBYY Recognition Server, version 4 is now the default version.

## Searching

- Added a Show Family search option. This new operation effectively combines the Show Parents and Show Children operations into a one-click operation, by determining for the selected item(s) the top-level parents and all their nested items. This also relates to the Family Date field.
- Performance improvements in loading the Email Address, Chat Account and Phone Number facets. In one test, loading and displaying a branch in the Email Address facet went from 4 minutes to 5 seconds.
- The Email Address and Chat Account facets are now case-insensitive. For example, two occurrences of the same address but with different casing will now be shown as a single entry in the Email Address facet.
- Added an Item Stubs category to the Features facet. Item stubs are inserted when items are exported to a new case, to represent parent items that are not in the export set.

## Results

- A Geolocation results view has been added, showing the geolocation of items on a zoomable world map. Items are grouped in clusters that break down into smaller clusters when zooming in. Map tiles for the first few zoom levels are bundled with Intella Connect. For deeper zoom levels a connection with a tile server is

required. Each cluster of items can be clicked, which lists the items in the Details view beneath the map. Geolocation data is obtained from:

- Geographic coordinates stored in the EXIF data of digital camera photos.
- Geographic coordinates stored in items extracted from cellphones.
- Email sender locations, using a geolocation lookup of the sender's IP address.
- The Location column that is populated through Content Analysis has been renamed to "Geographical Location". This prevents confusion with the Location column that represents the evidence location and prevents column name clashes in the CSV export.

## Previewer

- A geolocation tab has been added, showing the geolocation of the current item, if any. See above for a description of the information that this is based on.
- The output of the Print Report button has been simplified to only show the item's native rendering, the most critical item metadata, and (optionally) the native rendering of its attachments.
- Improvements to the native rendering of various document types.
- The "Redact" button has been removed. Instead, the Redaction tab is now always present.
- The "OCRed" tab has been renamed to "OCR".
- Various usability improvements.
- Resolved an error that occurred when previewing EMLX items.
- Resolved an issue with hit highlighting not clearing when switching to a different item.
- Resolved several issues with the rendering of email items that have many recipients.

## Redaction

- Added an option to queue the current item for redaction, together with its currently highlighted keyword hits. This queue can then be processed batch-wise later, which creates their redaction PDFs and applies the redactions to these keywords.
  - This functionality makes it possible to quickly review keyword hits in the Contents and Preview tabs and postpone the generation of the redaction PDF generation. That generation can then be run when Connect is not in use, e.g. run overnight.
  - It is recommended to review the redaction PDFs and the added redactions in the Redaction tab after processing the queue.

- Added a background task for pre-generating redaction PDFs for a set of items. This can be used to speed up the initialization time of the Redaction tab.
  - The benefit of this option over the queue option described above is that the user is reviewing the redaction PDF, which may differ from the presentation shown in the Contents and Preview tab.
  - The downside is that redaction PDFs are generated for items that ultimately turn out not to need any redactions.
- Added an option to let any redactions be applied to all duplicates automatically.
- Added a button to redact full pages. One can either redact the current page or a range of pages.
- Added a background task for removing all redactions of a set of items.
- Resolved an issue with export errors being added to the redaction PDF rather than the export report.
- Various usability fixes.

## Exporting – CSV

- Resolved an issue with the export to CSV not exporting Raw Data fields correctly.

## Exporting – PST

- Improvements related to exporting to PST on Windows 10 or when using MS Outlook 2019.

## Exporting – Load Files

- Added a checkbox titled “Opticon Page Count field contains number of pages of entire document”. This checkbox controls the meaning of the last field in an Opticon file. When switched off, the field is interpreted as the number of pages of the current image file. When switched on, it becomes the number of pages in the entire document. This number should then only be listed for the first page.
- Added ALL\_LOCATIONS and ALL\_CUSTODIANS as custom field types.
- Reduced the verbosity of the date notation when using the “date only” format for a custom field.

## Upgrade Notes

Intella Connect 2.2.1 can directly open cases made the 2.2 and 2.1.x versions of Intella and Intella Connect.

When a case made with Intella or Intella Connect 2.1 or older is opened, all Content Analysis results are automatically migrated to a new data storage format. This migration

happens only once. The old store is retained and will still be used when using version 2.1 or older. New results will not be added to the old store though, and new results added to the old store will not be migrated. Cases made with 2.1.1 or later already use the new data store and are therefore not affected.

When items in cases made with a 2.1.x version are exported to a separate case, the registered case size of the target case will be incremented with the size of the original case. This may be problematic for users with licenses that have a case size limitation. To resolve the inflated case size, the source case needs to be re-indexed before exporting items from it.

Cases made with the 1.9.x and 2.0.x versions of Intella and Intella Connect can be opened, but these cases first require conversion. Case conversion will create a copy of the case in which all item data is converted, and all tags, comments and flags are imported. The existing case will not be altered in any way and can afterwards still be opened in the older Intella version. Access to the original evidence files is not required for case conversion.

Caveats concerning the case contents:

- Case conversion will not transfer the geolocation metadata extracted from emails when the "Determine geographic location of emails" option was used. Re-indexing of the converted case is required to restore such metadata.
- Multi-page TIFFs will be displayed in the converted case as if they were single-page TIFFs. Exporting and printing of the item report does reveal the other pages. Re-indexing of the converted case will make all pages displayable again.

Case conversion will require sufficient disk space. As a rule of thumb, please reserve twice the amount of the evidence size for your case folder.

Cases made with Intella 1.8.x or older are not supported.

Cases made with beta versions are not supported and should be recreated.

# Intella Connect 2.2

Released: August 3, 2018.

## Highlights

- Added an **Event Log Browser**.
- Improved user interface for **HTTPS setup**.
- Added support for indexing **iCloud accounts**.
- Added support for indexing **Windows 10 Mail**.

## General

- A custom link can now be displayed on the login page. This can for example be used to show an organization-specific Privacy Policy or Terms and Conditions page.
- Several improvements to reduce the chance of information loss when processes terminate unexpectedly, e.g. due to a power outage.
- A meaningful error is now shown when one attempts to start Connect using the desktop shortcut while it is already running as a Windows service.
- Reorganized the Admin user interface, for a better user experience.
- Resolved an issue with cases failing to open due to incorrectly formatted memory settings in the IntellaConnect.l4j.ini or IntellaNode.l4j.ini files.
- The executables (IntellaConnect.exe, IntellaNode.exe and DongleManager.exe) now work properly when invoked on the command line from a different folder than where they are installed.
- Added “Imported Text” functionality in the Previewer, the Features facet, and the export screens. These are used when the command line option of the Intella desktop application has been used to import alternative item texts. This import functionality will be added to a future version of Intella Connect.

## Security

- This release contains a redesigned interface for managing Connect’s HTTPS setup. The new user interface does a better job in guiding the admin through the process and has improved validation and error messages. Multiple keystores are now supported.

## Case Management

- The maximum folder depth for case auto-discovery has been made configurable.
- System folders like “\$RECYCLE.BIN” and “System Volume Information” are now ignored by case auto-discovery.
- Unnamed cases can now be removed. These are cases that are mentioned in the cases.xml file but whose case folder is no longer present.
- Improved the functionality for adding cases when selecting a case whose case ID or case folder is already present in the cases list.
- Improvements to make the case shutdown procedure more robust.
- Resolved an issue with cases being shown as both Shared and Unshared at the same time.

## Auditing

- Added an Event Log Browser. This replaces the earlier Activity Stream. This browser allows for inspecting case activities, such as logins, indexing operations, searches, viewing and tagging operations, etc. Events can be filtered, sorted, and exported to CSV and XLSX format.
- The Actions tab is now showing the date and time of the events again. This was removed in an earlier version for technical reasons.
- The event log now also tracks changes to the set of authorized users.
- The Activities widget in the Case Dashboard is now showing timestamps.
- Comment events now show the comment text.
- Tagging events now show the full tag path, rather than only the tag name.

## Indexing - General

- Added support for indexing iCloud accounts. Accounts with two-factor authentication (2FA) are supported, but only when tied to an Apple device. 2FA using only a registered phone number is not yet supported.
- Added support for the local storage of Windows 10 Mail accounts. Only POP accounts are supported, not IMAP, because only POP accounts store emails locally.
- Updated Skype support to cover versions 7.x, 8.x, 11.x and 12.x. Support for versions 8.x, 11.x and 12.x is still experimental.
- Added support for extracting Chrome bookmarks, cookies, site logins, form history and keyword search history.
- Added support for extracting Mozilla Firefox bookmarks, cookies, and form history.

- Added support for extracting the volume serial numbers and (dis)connect timestamps of USB devices.
- One can now define multiple sources with the same folder path. This supports for example adding the same EDB file twice but with different mailboxes. Another use case is swapping evidence drives between the indexing of two sources that use that same drive path.
- Added detection of Windows Event Log files (EVT and EVTX files).
- Added detection of JSON files.
- Improved error reporting in the Intella Connect user interface when an Intella Node is encountering issues.
- Added support for extracting attachments from Notes NSF DXL content. Previously, only inline pictures were extracted.
- Added support for detecting individually encrypted emails in a Notes NSF file.
- Improved the tokenization of texts that contain IP addresses.
- Added detection and decryption of loose PGP encrypted files.
- Added detecting and decryption of inline PGP email. PGP mime mail was already supported.
- Improvements for processing Cellebrite UFDR files. Besides fixes for covering e.g. new item types, date formats, etc., a provision has been made so that unrecognized item types are still reflected in the case rather than skipped.
- Resolved case indexing errors due to the use of non-ASCII characters in the case folder name.
- Resolved failure to create a disk image processing profile.
- Several fixes and improvements related to the indexing of MS Exchange EDB files.
- Improvements to the indexing of iTunes archives.
- Improved handling of emails with an invalid character encoding specified in the MIME headers.
- Improved handling of CJK text files (Chinese, Japanese, Korean).
- Several improvements in the processing of shell bags.
- Resolved an issue with email body fragments from Mbox files ending up in the logs.

## Indexing – Load Files

- Improved importing speed of load files and overlays.
- Load file import no longer adds duplicates in the case when it sees that an item is a child of multiple other items. This change was made because duplicate filtering is typically already done by the application that produced the load file, so these should not be brought back into the data set.

- Cells with formatted numbers (like 1,345,345) can now be parsed.
- Resolved an issue with Intella 2.1.x always enforcing paragraph analysis on imported load files, regardless of the setting chosen by the user.
- Made the import process more robust against character encoding errors.
- Improved handling of empty cells in a load file.
- Improved the validation of load files that use a different encoding than their accompanying text files.
- Resolved an issue with custom date fields being parsed incorrectly.

## Analysis

- Added suppression of noisy values in some of the Content Analysis branches.
- Performance and stability improvements in skin tone analysis.
- Resolved the “Run email thread analysis” link in the Workflow section of the Insight tab not doing anything.

## OCR

- The number of cores used for embedded OCR was limited to 5. This has been increased to maximally 64 cores.
- Resolved a discrepancy between the amount of OCR candidates reported in the Insight tab’s Workflow section and the actual number of items that gets OCR’d. This is because the OCR output is applied to all duplicates. The count would differ when OCR’d images were embedded, as well as present as loose files or attachments elsewhere in the case.

## Searching

- The Search button is now always enabled and, when no text has been entered, will return all items in the case.
- The Date facet now has the Primary Date and Family Date checked as default date fields to search on. This used to be the Sent and Received dates.
- The functionality for determining the top-level items now takes databases into account, so that these will not be the top-level items anymore. The Load File and Cellphone items are now captured into a single Forensic Containers category.
- The settings for determining the top-level parents also used to be hard-coded. Now, they are obtained from the preferences, meaning that they can be edited with the desktop version. A future version of Intella Connect may make them editable in Intella Connect as well.
- Added a Features facet category that returns all top-level items.
- Improved the default naming of saved searches.



- Reduced the logging of invalid keyword queries to a reasonable level.

## Results

- File type icons are now shown in the Type column in the Table view, in the Type facet, and in the Tree tab.
- Added a column that indicates whether an item is a top-level item.

## Previewer

- Usability improvements in the Email Thread tab.
- Usability improvements in the Redaction tab.

## Tagging

- Resolved an issue with tags not allowing for their description to be changed if another tag existed with the same name elsewhere in the tag hierarchy.

## Batching & Coding

- Performance improvements in populating the Batch Items list.

## Exporting - General

- A warning is now shown in the Export wizard if some evidence paths are missing.
- Exported conversation items now have a file extension.
- Resolved export issues caused by file name length limitations in MS Windows.
- Resolved not being able to export specific item types such as calendar items, reminders, notes, and devices, extracted from iCloud accounts or iTunes backups.

## Exporting – CSV

- The hash character (#) can now be used as a delimiter.

## Exporting – PST

- Resolved an issue with items failing to export to a PST file due to a quote character in the PST file path.

## Exporting – Load Files

- Added “duplicate locations” and “duplicate custodians” fields. These report the locations and custodians of all duplicate items in the case, excluding the item itself.

- The encoding of a Relativity or Concordance load file is now configurable.

## Upgrade Notes

**Backwards compatibility** – Intella Connect 2.2 can directly open cases made with Intella 2.1.x and Intella Connect 2.1.x.

Cases made with the 1.9.x and 2.0.x versions of Intella and Intella Connect can be opened, but these cases first require conversion.

Case conversion will create a copy of the case in which all item data is converted, and all tags, comments and flags are imported. The existing case will not be altered in any way and can afterwards still be opened in the older Intella version. Access to the original evidence files is not required for case conversion.

Caveats concerning the case contents:

- Case conversion will not transfer the geolocation metadata extracted from emails when the "Determine geographic location of emails" option was used. Re-indexing of the converted case is required to restore such metadata.
- Multi-page TIFFs will be displayed in the converted case as if they were single-page TIFFs. Exporting and printing of the item report does reveal the other pages. Re-indexing of the converted case will make all pages displayable again.

Case conversion will require sufficient disk space. As a rule of thumb, please reserve twice the amount of the evidence size for your case folder.

Cases made with Intella 1.8.x or older are not supported.

Cases made with beta versions are not supported and should be recreated.

# Intella Connect 2.1.1

Released: February 14, 2018.

## Highlights

- Added support for indexing **XPS** documents and **XLSB** spreadsheets.
- Improved **handling of decrypted items**.
- Added a **Keywords tab**, for extended keyword list statistics.
- Added **Content Analysis columns**, showing information such as credit card numbers, locations, and the outcome of regular expressions.
- Various **performance, stability, and accuracy** improvements.

## General

- It is no longer necessary to manually install the “JCE Unlimited Strength Policy Files” to get support for strong cryptography. This is now included by default.
- Reduced the amount of communication between the browser and the Connect server, resulting in a more responsive application.
- Reduced the chance of case corruptions when Intella is not shut down in a proper manner.
- Resolved an issue with certain logs ending up in an incorrect folder when Intella Connect was installed using a different user account than the one used to run it.
- Improvements in how the dongle license is checked when Intella Connect or Intella Node run as a Windows service, or when Intella Connect and Intella Node run on the same machine. This solves several corner cases where the usage of the product could be blocked.
- The communication between Intella Connect and Intella Node can now be SSL-encrypted. For Node this still requires manually editing of system preference files.
- The User Manual is now in PDF format rather than HTML format.
- The Intella Connect/Node systray icon now indicates whether the application is still initializing. While this is the case, double-clicking the systray icon will not have any effect.
- Resolved a case conversion issue caused by a network file system giving incorrect responses on readability and writability checks.

## Connect Grid

- When a user logged out of a case, he or she would be redirected to the User Dashboard on the Connect server that hosted the case. Now, the user is being redirected to the central server.

## Case Management

- The administrator dashboard has been restyled and reorganized to match the styling and organization of the Reviewer application.
- The case conversion functionality no longer requires the original evidence files to be present. Although these files are not required for performing the case conversion, they may be needed for other operations when working with the case.
- Added a permission to make someone an admin of a specific case. Before, one could only be made an admin of all cases or of their own cases.
- Improved Connect's shutdown performance by shutting down shared cases in parallel.
- When the case sharing limit is reached, the notification in the admin application will now show the Case IDs of the currently active cases.
- Resolved an issue with Connect attempting to share unavailable cases that had their Auto-start flag set.
- Resolved an issue where users with a case management permission couldn't see cases in which they were reviewers only. This affected the cases list in the administrator's dashboard.
- Resolved an issue with obsolete roles being cached in some cases, resulting in users being redirected to the User Dashboard instead of the Admin Dashboard after logging out.
- Connect's diagnostics report has been extended with a column indicating the number of active cases and the IDs of the currently active cases.
- Improved the determination of what constitutes an active case, so that idle users do not contribute to this count.

## Indexing - General

- Added support for indexing XPS documents.
- Added support for indexing Excel binary spreadsheets (XLSB files).
- Many improvements in indexing MS Office and PDF documents.
- When items are decrypted during indexing, the decrypted variant is now stored inside the case, rather than being discarded once the content has been processed. This makes it available for exporting, downloading, previewing in native layout, OCR-ing, etc.

- Various performance improvements.
- Improved indexing of non-email items in PST files.
- Improved support for cellphone reports made with XRY versions 6.x and 7.x.
- Added support for decrypting PowerPoint 1997-2003 presentations.
- Improved support for detecting and indexing UTF-7 files and Japanese UTF-16 files.
- Added support for extracting visited pages and visit dates from browser history entries in cellphone reports.
- Resolved several cases of indexing errors not being reported to the end user.
- Resolved an issue with certain SQLite files that were very slow to process.
- Improved processing of EDB files containing broken data.
- Resolved an issue with temporary files not being deleted during or at the end of indexing.
- Resolved an issue with long texts in Notes NSF files getting truncated.
- Resolved an issue with certain HTML files being typed as emails.
- MS Graph Chart files are no longer incorrectly classified as MS Excel spreadsheets.
- Improved the extraction and indexing of XMP metadata in image files.

## Indexing – Disk Images

- Various stability and performance improvements when reading disk images.
- Resolved an issue with the Find Parts button not finding disk image parts beyond \*.ezz.

## Indexing – Load File

- Resolved an issue with certain date fields disappearing in the load file import wizard after one date field had been mapped.
- Resolved an issue where searching for a DocumentID (originating from a load file) would return not only that item but also all its duplicates (same MD5 but different DocumentID).
- Resolved an issue where items without natives but with extracted text were classified as “Empty Documents” in the Features facet.
- Improved the processing of load files where text is both extracted from the natives and is included in the load file itself. This resolves potential inconsistencies between what text is displayed and how keyword queries are evaluated.

- Resolved an issue where tags that were deleted in an older case (2.0 format or earlier) reappeared when the case was converted to the 2.1 format. This only happened when the tags were imported via a load file.
- Various stability improvements.

## OCR

- Individual items can now be OCR'd from within the Previewer.
- The item text obtained from OCR-ing items is now subjected to standard content analysis (Credit Cards, Social Security Numbers, Phone Numbers).
- Resolved an issue with loss of OCR data due to the case not being shut down properly.
- Resolved an issue with the OCR task showing an incorrect progress percentage when the set of items to OCR contained duplicates.
- OCR indexing tasks now run on the Intella Node instead of on the Connect server.
- Added an option to specify the number of workers when using ABBYY Recognition Server.

## Content Analysis

- When defining a new Content Analysis category, one can now indicate whether the search should be case-insensitive and whether multi-line matches should be allowed.
- Various accuracy and performance improvements in email threading.
- Resolved an issue with multiple entities being concatenated into a single entity depending on the presence of specific white space sequences separating them in the document text.

## Searching

- Added a “Check / uncheck all” option in the Date facet, for (de)selecting all field attributes at once.
- The nodes in the Location facet tree that correspond with sources can now be sorted alphabetically or by date added. See the “Facets” tab in the Preferences.
- Resolved an issue with Saved Searches containing date queries not working properly.
- Resolved an issue with the Email Thread facet showing the deduplicated item counts.
- Made sure that very long keyword queries cannot bring the application in an unstable state.

## Keywords tab

- A Keywords tab has been added to the reviewer application. This allows for gathering statistics such as item counts, hit counts, case coverage and overlaps with saved searches for each query in the keyword list.

## Results

- The results of Content Analysis can now be shown as table columns. This makes it possible to populate the Details table with entities such as Credit Cards, Person names, Location names, etc. Custom categories, for example a regular expression search revealing IBAN numbers in the document text, can also be published this way. This functionality is only available when Content Analysis has been performed in version 2.1.1 or later.
- Resolved not all table rows being loaded when using an ultra-high-resolution screen (e.g. a 4K monitor).
- Added a Message Count column. This applies to items that combine multiple messages into a single item, e.g. Skype Conversation items.

## Previewer

- Added support for showing the text extracted from load file images.
- Resolved an issue with the “Mark below/above as Seen” options not marking all the corresponding paragraphs.
- Resolved an issue with the “Show conversation” link not responding.

## Redaction

- Resolved an issue with redactions becoming corrupt due to the case being shutdown abruptly.

## Coding

- Added an “Apply to all emails in this email’s thread” option in the coding panel. This lets all emails in an email thread inherit the coding decisions made on the current email.
- Added an Image tab to the embedded Previewer in the Review tab. This shows the image provided by an imported load file, if there is one.

## Tasks

- When removing a background task, the recorded user was always “admin”. This field now accurately reflects the user responsible for removing the task.

## Exporting – General

- A new wizard sheet has been added to all export variants, except for exporting to PDF. This new wizard sheet lets the user control in what order it should pick variants of the item: the original binary item, the decrypted variant, the OCR-ed content, or an image imported from a load file.

## Exporting – CSV

- The control characters used to delimit values, escape characters, and quote entire values are now configurable.
- The time zone-related settings are now stored in the template, rather than being used case-wide.

## Exporting – PDF

- Added a Source Path property in the Properties listing.
- Added an option to include the extracted text for images.
- Removed the "Prefer image imported from load file over Original view" option. It is replaced with a new "Configure Original view" dialog that allows the user to control in what order Intella should pick variants of the item when generating the original view: the original binary item, the decrypted variant, the OCR-ed content, or an image imported from a load file.
- Added an option to control whether the image from a load file should be preferred over the original view, when exporting to a PDF or another load file. This option was already present in the desktop product.
- Improved rendering of conversation items (e.g. Skype conversations). The visual styling shown in the Previewer is now also shown in the PDF.

## Exporting – PST

- Stability improvements when exporting to PST.
- Resolved a regression that caused slow exports to PST files in some cases.

## Exporting – Load File

- All improvements related to PDF exporting also apply to load file exporting.
- Resolved an issue where images imported via a load file would not export to PDF properly when the option to concatenate all items into a single PDF was used.
- Resolved an issue with Bates Stamps not storing properly, resulting in them getting lost when a case was unshared and then shared again.



## Upgrade Notes

**Backwards compatibility** – Intella Connect 2.1.1 can directly open cases made with Intella 2.1(.1) and Intella Connect 2.1(.1).

Cases made with the 1.9.x and 2.0.x versions of Intella and Intella Connect can be opened, but these cases first require conversion.

Case conversion will create a copy of the case in which all item data is converted, and all tags, comments and flags are imported. The existing case will not be altered in any way and can afterwards still be opened in the older Intella version. Access to the original evidence files is not required for case conversion.

Caveats concerning the case contents:

- Case conversion will not transfer the geolocation metadata extracted from emails when the "Determine geographic location of emails" option was used. Re-indexing of the converted case is required to restore such metadata.
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Case conversion will require sufficient disk space. As a rule of thumb, please reserve twice the amount of the evidence size for your case folder.

Cases made with Intella 1.8.x or older are not supported.

Cases made with beta versions are not supported and should be recreated.

# Intella Connect 2.1

Released: October 4, 2017.

## Highlights

- Added new cloud sources: **Dropbox, Office 365 (incl. OneDrive), SharePoint, Gmail.**
- **Email threads** are now detected and visualized. This includes the determination of the **inclusive emails**: together these cover all the content in the thread. This can reduce review time and effort. **Missing emails** are highlighted in the thread.
- Added an **integrated OCR** option. All Intella users can now OCR documents and images without requiring additional software, licenses, or systems.
- Items can also be OCR-ed by a connection to an **ABBYY Recognition Server** or by using a manual import and export method.
- Completely redesigned **user interface for importing load files.**
- **Custom columns** let one extend Intella's data model with new columns, populated by load file columns.
- A **Connect Grid** allows for a single point of access when multiple Connect servers are used.
- Added **regular expression**-based detection of text patterns, e.g. bank account numbers. A **Regular Expression Assistant** is included for constructing the expressions, together with a library of example expressions.
- Improved the **presentation of instant messages** by bundling them in day-to-day conversation items.
- Added **recovery of deleted files** in NTFS disk images using the MFT.
- Added support for the **Ext4** file system.
- Added functionality for **removing sources** from a case.
- Added support for indexing non-encrypted **iTunes backups.**

## General

- Added a mechanism for dumping server diagnostics and usage information to a file. This can aid technical support as it reduces the need for submitting entire log files.
- The dongle ID, dongle type and related licensing information is now logged.
- Several performance and stability improvements in reading and writing case files, for both local and network file systems.

- Resolved an issue with browser connections closing prematurely due to unnecessarily strict time-outs.
- Resolved an issue with users logging out and not being redirected to the login page.
- Improved temp folder management when indexing.
- Changed the log file names to clarify the distinction between the logs produced by Intella, Intella Connect and Intella Node, as well as the distinction between case logs and server logs.

## Connect Grid

- Connect servers can now be organized in a grid. In this setup, when a user logs in on the Connect dashboard, both the local Connect server and the other Connect servers in the grid will be queried for the cases that the user is authorized to access. This allows for a single point of access for all reviewers in an organization, regardless of where the cases are stored; reviewers do not need to be aware which Connect server is hosting the case. For this to work, all Connect servers involved need to use the same LDAP instance.

## Authentication and Authorization

- Made the availability of instant messaging in the Connect UI controlled by a permission.
- Made the LDAP connector more forgiving towards incorrect LDAP setups, e.g. an LDAP group that has missing entries.
- Resolved an issue with passwords containing non-Latin characters not being processed correctly.
- The size of the LDAP cache has been made configurable through a system preference.
- Resolved an issue with the permissions of a role remaining visible after the role was deleted.

## Case Management

- The Add Existing Case page now lets the case admin browse the Connect server's local file system to locate the case.xml file.
- Cases that can only be opened in “review only” mode are now labeled as such in the Cases list.
- Improved the source configuration view to cover all details of the configuration.
- Improved folder validation when creating a new case and assigning a case folder to it.

- Resolved an issue with accounts with a case creation permission not being able to retrieve the list of connected Intella Nodes.
- Resolved an issue with the Cases page getting frozen when the sources of multiple cases were being edited simultaneously.
- Resolved an issue with reviewers getting HTTP 404 errors when accessing a shared case that had not been used for a long time.

## Indexing – General

- Sources can now be removed from a case.
- Added support for indexing non-encrypted iTunes backups. This was tested on iTunes 12 with a variety of iOS versions. Other iTunes versions are being tested.
- Item IDs now stay the same when re-indexing a case.
- Many stability and performance improvements for indexing PDF documents. This results in more and better extracted text and images, faster extraction times and improved resilience to broken data.
- Improved indexing speed on large SQLite files.
- Improved the processing of TNEF attachments (winmail.dat files).
- Added detection of Apple icon (.icns), Radiance High Dynamic Range RGBE Format (.hdr) and DjVu (.djvu, .dvi) images.
- One can now edit the set of mailboxes that is extracted from an EDB file.
- Geolocation references embedded in Google Maps URLs are now extracted.
- Improved paragraph hashing, resulting in better detection of duplicate paragraphs. Several search features benefit from this.
- Improved modeling and normalization of the sender and receiver information of instant messages and phone calls.
- Resolved a concurrency issue that could occur when indexing PST files.
- Improved type identification of Bloomberg plain text documents.
- Improved processing of hierarchical generic Notes documents.
- Improved determination of the Source IP address of emails.
- The NSF document UID is now logged before processing that NSF item. This can help diagnose NSF items that fail to index.
- Improved resilience for NSF files containing items on which Notes crashes.
- Resolved an issue with MBOX and EML files originating from MacOS platforms not indexing correctly due to their end of line encodings.
- Resolved an issue with the longitude and latitude properties of items in an XRY phone dump not being extracted.
- Resolved an issue with the sorting on primary or family dates that could produce an incorrect sort order when the primary date preferences were changed and the user canceled the subsequent recalculation of these dates.

- Resolved an issue with incorrectly processed MMS messages in XRY phone reports.

## Indexing – Disk Images

- Intella can now extract deleted items from disk images. File recovery is currently restricted to NTFS file systems and is based on traces of the deleted files found in the Master File Table (MFT). Intella tries to recover as much as possible of the file content and metadata. Whether a full or even partial recovery is possible depends on how the disk was used after the file deletion. Note that this functionality does not scan the unallocated space or slack space.
- Added support for the Ext4 file system.
- Added support for MacQuisition disk images (IMG format).
- Added disk image validation. When adding a disk image source, this verifies that the files of a multi-part image are in fact belonging to the same image, whether the file system found in the disk image is supported, etc.
- Cellphone reports and IBM Sametime dumps can now also be indexed when they are contained in a disk image. Previously, they had to be present in the local file system.
- Resolved an issue with indexing file system roots in AD1 disk images.
- Resolved an issue with the indexing of disk images mounted as a virtual drive with EnCase.
- Various stability improvements for indexing disk images containing an NTFS file systems.
- Resolved an issue with DD disk images consisting of more than 99 parts that would not index properly.
- Resolved an issue with the Find Parts function producing duplicate entries.

## Indexing – Load Files

- This release offers a completely redesigned user interface for importing load files and load file overlays, bringing it in line with the Desktop edition. The new user interface offers more control options on how the load file is imported, shows a live preview of how the data is parsed, and gives better validation and error messages.
- When importing a load file, it is now possible to define custom columns. This allows one to extend the data model of an Intella case with new columns. The new columns are populated with selected columns from the load file, allowing any type of load file to be imported fully into an Intella case. Custom columns are typed, e.g. as a string, number, or date. This ensures a proper sort order when sorting on that column. The data in custom columns is

generally searchable using keyword search. Custom columns that use the date type can be found and queried in the Date facet.

- The unit of the Size column can now be bytes, kilobytes, megabytes or gigabytes.
- Improved importing speed through better utilization of CPU cores.
- Improved the importing speed of load files containing custodian columns.
- When processing the content of binary items bundled with a load file, one can now specify the same configuration options as when adding a source, e.g. whether item recovery should be used, whether archives should be expanded, etc.
- The import configuration is now logged when importing a load file.
- Items with empty content (zero byte files) no longer get a message hash.
- Resolved an issue with documents getting typed incorrectly when they had an incorrect file extension and the binaries were available for proper file type detection.
- Resolved an issue with load files containing MSG files getting incorrect message hashes.

## Indexing – Cloud Sources

- Added support for indexing Dropbox accounts. Both personal Dropbox accounts and Dropbox for Business accounts can be indexed. File versions can be extracted and are presented chronologically.
- Added support for indexing Office 365 accounts. Retrieved information includes users, user groups, emails, attachments, folders, instant messages and files stored in the associated OneDrive. Intella can also connect to the cloud SharePoint instance associated with the Office 365 account.
- Added support for indexing SharePoint instances. Retrieved information includes basic site and owner information, users, hierarchically nested sites, conversations, posts, attachments, document libraries, and files and folders from the document libraries. Both standalone and on-premise instances can be indexed, as well as instances hosted in the cloud as Office 365 SharePoint services. The following authentication protocols are supported: OAuth2 (for cloud instances), Kerberos, NTLM and basic authentication.
- Added support for indexing Gmail mail accounts. The retrieved information can optionally be restricted to a specific date range. Benefits of using the Gmail connector over the generic IMAP connector are: better performance, more accurate data representation (e.g. folders vs. Gmail's Labels, threads), and a read-only data connection ensuring that no data is altered.
- All cloud connectors support multi-threaded access to the cloud source to make use of the provided bandwidth as best as possible. All cloud connectors feature

automatic retry logic, in case retrievals fail due to intermittent network problems or when exceeding the service's throttling policy limits.

- Improved error messages when connecting to an IMAP source fails.

## Content Analysis

- Added regular expression-based detection of text patterns, such as bank account numbers, monetary values, shipment tracking numbers, patent numbers, etc. This functionality comes with a Regular Expression Assistant for constructing and testing regular expressions on sample text. This Assistant also offers a library of example regular expressions.
- The item field(s) on which content analysis is applied can now be specified. Before, this could only be done on the document text.
- Improved content analysis speed. Typically, computations can be up to twice as fast depending on the CPU type, except for skin tone analysis.
- Content analysis is now performed as a background task, meaning that it no longer blocks the Search UI.
- When launching content analysis, the user can now choose which categories are to be calculated.
- Added support for various image types in skin tone analysis.
- Put the three skin tone analysis categories in a proper order: Weak, Medium, Strong.
- Resolved an issue with the skin tone categories not updating after the content analysis task completed.
- Resolved an issue with the "Content Analyzed" flag not being cleared when running content analysis with the clear option switched on.

## Email Threading

- Added functionality for threading a set of emails. This process determines the "reply", "reply all" and "forward" relationships between emails, based on metadata found in the email headers, the email container or embedded in the email body.
- The resulting sequence or tree of emails is displayed in the Email thread tab in the Previewer, with an indicator of where the current email is located within its thread.
- Mails that are referenced in the email metadata but that could not be found in the evidence data are marked as "missing emails". An example is a mail with an In-Reply-To header that refers to another mail that is not present in the current evidence set.

- The “inclusive” mails are determined and highlighted in the Email Thread tab. These are the mails that *together* contain all content present in the thread. Having read all inclusive mails implies having read the entire thread. This can be used to improve the time needed to review a large collection of emails.
- The determined threads are listed in the new Email Thread facet and can be used as queries.

## Case Tasks

- Increased power of the Case Tasks framework:
  - Each task can now have multiple conditions and actions.
  - Each task can have a set of filters that is applied on the items that match the conditions, for example deduplication, finding top-level parents, etc.
  - The date filter can now be applied independently, rather than it being applied on the set of items produced by another filter.
- A user interface for editing, importing/exporting and executing case tasks has been added to the Search tab. Previously, such case tasks could only be entered when defining a source.
- A task condition called “OCR Candidates” has been added. This can be used to gather e.g. all documents and non-embedded images. This way they can be conveniently OCR-ed, tagged or exported. The condition can be configured to focus on specific types of documents and images, whether it should be limited to empty documents (not containing any text), etc.
- Resolved an issue with date conditions not using the correct time zone.
- Tags placed by a case task used to have “admin” as their creator. This is now the creator of the task. This lets this user delete the tag afterwards, rename it, etc.

## Background Tasks

- Improved error reporting.

## OCR

- Added functionality for OCR-ing items. This can be done in three ways:
  - Using an internal, fully integrated OCR engine (ABBYY FineReader). This lets users OCR items directly from within Intella Connect, without requiring any additional software, systems, or licenses.
  - Using an external ABBYY Recognition Server, to scale up to larger data sets.
  - Using a manual export and import method, letting users apply the OCR tool of their choosing to produce the OCR output.



- The OCR text is now shown in a separate tab in the Previewer; it is no longer part of the Contents tab. It is still subject to full-text search, this is only to make it clear where the text originates from.

## Searching

- The divider in between the facets and the results table can now be dragged horizontally, letting the user control how much screen space is given to the facet area.
- One can now configure whether the Location facet's trees need to be collapsed or expanded by default when opening this facet.
- Added an "Has Attachments" category to the Features facet.
- Resolved an issue with saved searches referring to items that no longer exist after a re-index.
- Resolved an issue with keyword lists, hash lists and other types of search lists not displaying properly in their respective facet when the file name of the list contains non-Latin characters.
- Resolved an issue with reviewers not being able to search using the selected item ID list.

## Results

- Added a Geolocation column, reporting the longitude and latitude of items such as photos.
- An "Analysis" table column group has been added, containing columns that indicate items whose content has been processed by content analysis, email threading and OCR.
- The CSV export option can now export arbitrary fields from the Raw Data section of an item. An example use case is exporting of the PR\_... MAPI properties of the selected items.

## Previewer

- Instant message types such as SMS, MMS, iMessage and the various chat clients supported by the cellphone extraction tools are now processed similar to how Skype messages are processed and displayed: all messages between two people or in a group chat are combined into items that cover the messages of a single day, with the option to navigate to the previous and next day in the conversation. This improves the ease of review of such instant message types.
- Many improvements in rendering PDFs. This also affects the Preview tab for other item types, such as MS Office documents.

- Added support for rendering all pages of a multi-page TIFF. These images were already correctly imported and exported, but the Previewer would only show the first page.
- Added support for natively previewing OpenDocument documents.
- CSV and XLS files now render with auto-fitting of columns in the Preview tab (optional for XLS).
- For XLS files, text is no longer truncated using scientific notation in the Preview tab, unless the cell in the original file is set to use scientific notation.
- The Headers tab now preserves the indentation in the header text.
- The PR\_MESSAGE\_FLAGS value in the Raw Data tab now shows a human-readable value.
- Resolved an issue with the Previewer not showing the Attachments tab when viewing calendar items.
- Resolved an issue with tags in the Previewer being truncated and not revealing the full text in a tooltip.

## Insight

- Added an info box that shows basic case information such as the case folder, case size, creation date, etc.

## Batching

- The batch algorithm now sorts the items by Family Date before dividing them into batches. This ensures that item families are always put in the same batch in their entirety and that all items in the family are presented consecutively.
- Column improvements in the All Batches list:
  - The set of columns that are shown is now configurable.
  - Added “Created” and “Completed” date columns.
  - The list can now be sorted on any column.
  - The list can be filtered on user-entered text and can optionally hide the archived batches.
- Resolved an issue with case managers not being able to assign batches to LDAP accounts.
- Resolved an issue with certain batches becoming too large when the “Keep families together” option was selected.

## Coding

- The item list now shows the index numbers that the items have in the current batch.

- The buttons in the Coding user interface now show the keyboard shortcuts for those actions in the button tooltips.
- The widths of the main panels in the Review page (item list, item content and coding panel) can now be resized.
- When a batch that is actively being coded is removed by the batch manager, the coding UI will now immediately show that the batch no longer exist and go into read-only mode. Before, one could continue coding and get an error at the end when the batch was updated.
- Various other minor usability improvements.

## Redaction

- Changed the settings in the default redaction profile so that only limited metadata is contained in exported redacted items.
- Resolved an issue with redaction rectangles not being painted correctly on rotated PDF documents.

## Exporting – Original Format

- File names are no longer truncated to 120 characters when exporting on Windows 10, as the limits for file name lengths have been increased on that platform.
- Resolved an export error that would occur when exporting items typed as “Email Headers”.

## Exporting – PDF

- Added the ability for custom designations, e.g. texts like “Confidential” and “For attorneys’ eyes only”, to be placed in one of the corners of the produced PDF. The designations that are added to a specific item are controlled using tags.
- It is now possible to have headers and footers centered at the top and bottom of a page, in addition to the four page corners.
- The pages can now be numbered automatically.
- Added support for Open Type font (OTF) files.
- Added support for exporting various image file types: Windows icons (ICO files), HDR, Apple icons (ICNS), IFF, PCX, Photoshop (PSD), SVG, WMF/EMF (partial).
- Various fixes and improvements for exporting MS Office files to their native rendering.
- Resolved an issue with redacted attachments and embedded items being exported incorrectly.

- Resolved an issue with (partially) transparent pixels in PNG files being rendered incorrectly.

## Exporting – PST

- One can now export directly to the PST root folder.
- Resolved an issue with MSG files contained in a ZIP file that could not be exported to a PST file.
- Resolved several issues where specific types of calendar files could corrupt the PST file they were being exported to.

## Exporting – Load Files

- All PDF exporting improvements apply to the exporting of load files as well.
- Added “first Bates number” and “Last Bates number” columns to the Exports table, showing the Bates range used for a specific export.
- Added an “Has extracted or OCRred text” field.
- When exporting items as images in a non-PDF format (e.g. TIFF or PNG), PDFs can now optionally be generated as well.
- Added support for exporting to Multi-page TIFFs.
- One can now export arbitrary fields from the Raw Data section of an item. An example use case is exporting of the PR\_... MAPI properties of the selected items.
- When skipping items, the document type can now optionally be mentioned in the placeholder text.
- The unit of the Size column can now be bytes, kilobytes, megabytes or gigabytes.
- Added the Page Count field to Opticon (OPT) files.
- Resolved an issue with an incorrect load file being created when export errors occurred.

## Upgrade Notes

**Case compatibility** – Intella Connect 2.1 can directly open cases made with Intella 2.1 and Intella Connect 2.1.

Cases made with the 1.9.x and 2.0.x versions of Intella and Intella Connect can be opened, but these cases first require conversion.

Case conversion will create a copy of the case in which all evidence is re-indexed and all tags, comments and flags are imported. The existing case will not be altered in any way and can afterwards still be opened in the older Intella version.

Caveats concerning the case contents:

- Case conversion will not transfer the geolocation metadata extracted from emails when the "Determine geographic location of emails" option was used. Re-indexing of the converted case is required to restore such metadata.
- Multi-page TIFFs will be displayed in the converted case as if they were single-page TIFFs. Exporting and printing of the item report does reveal the other pages. Re-indexing of the converted case will make all pages displayable again.

Case conversion takes considerable time, comparable to what it took to index the original case.

Case conversion will also require sufficient disk space. As a rule of thumb, please reserve twice the amount of the evidence size for your case folder.

Cases made with Intella 1.8.x or older are not supported.

Cases made with beta versions are not supported and should be recreated.

**Coding layouts** – When a coding layout has been previously imported in another case, Intella Connect 2.1 will apply a one-time conversion of the underlying XML model stored in INTELLA\_HOME/coding-layouts/conversion/file-mappings.xml. This will happen upon startup. A backup of the mentioned file with a \*.bak extension will be created in that same folder. If for any reason you wish to roll-back the Connect version migration, this file will have to be recreated manually from the backup file.

**Case sharing limitations** – The supported number of concurrently active cases that Intella Connect can share is four cases at any given time. Previously this has been managed via a fair usage policy. The definition of an active case is one that is shared with a reviewer logged in or reviewing that case. A case that is shared but does not have any active reviewers logged in does not count towards the four case limit. Connect administrators needing to have more than four active cases at any one time will need to purchase a second Intella Connect license and set up another dedicated server for it. Optionally, administrators can take advantage of the “Intella Connect Grid” feature to supply their reviewers with unified access to all cases shared by the servers forming the grid.

# Intella Connect 2.0.1

Released: January 24, 2017.

## Highlights

- Added support for **multi-page TIFFs** (redaction and exporting only).
- Redesigned **Exports** user interface.
- Various **performance and stability** improvements.

## General

- Resolved an issue with the dongle driver causing a BSOD during installation.
- Resolved an issue with the presence of environment variables from other applications causing problems when opening cases.
- Improved browser caching of Connect's resources. This will particularly improve the loading speed on slower connections.
- Resolved an issue with the event log of cases made with Intella (Connect) 1.9.1 or older failing to export.

## Case Management

- The "See authorized cases" option is now also available for LDAP accounts.

## Indexing – General

- The maximum text length of a document is now set to 50M (52,428,800). Any text beyond that point is ignored. This prevents memory issues when indexing very large textual files, such as log files and CSV files. The limit can be adjusted on a case-specific basis via the case.prefs file or globally via the Intella.l4j.ini file. A future Intella version will also make this configurable via the user interface.
- Improved error reporting, both in the indexing progress user interface and the log files.
- Added support for certain date formats found in Cellebrite UFED reports that could not be parsed before.
- Added support for the deleted\_state property in Cellebrite UFED reports.
- Resolved an issue with geolocation coordinates in XRY reports not being processed.
- Geolocation coordinates are now validated before being processed.

- Improved memory usage and stability when indexing MS Exchange EDB files.
- Resolved an issue with encrypted emails attached to PST emails not indexing properly.

## Indexing – Load Files

- Resolved an issue with incorrect handling of separator chars inside multi-value cells.
- Resolved an issue with Location and MIME Type columns that failed to import.
- Improved performance when importing tags via a load file.
- Added a usage warning in the load file import wizard.

## Content Analysis

- Resolved an issue with two users starting content analysis concurrently, which could lead to the first request being discarded.
- Resolved an issue with skin tone analysis producing errors on certain types of images.

## Insight Tab

- Resolved page loading issues on cases with a large amount of registry items.

## Search Tab

- Usability improvements in the “Export table as CSV” dialog.
- Resolved an issue with the dragging of a value from the Custodian facet to an instant messaging component resulting in an error.
- Folders extracted from an archive no longer show a size of 0 bytes.
- Resolved missing facet icons in the Searches list for certain facets.

## Review Tab

- Performance improvements when applying coding to a document. In previous versions, a delay in the display of the next document could be observed in certain cases.

## Preview Tab

- Resolved an issue with certain JPEG files not displaying nor exporting properly.
- Resolved an issue with the Attachments tab not being shown when opening a case made with Intella 1.8.x.

- Resolved an issue with items in a case made with an older Intella version that could not be redacted.

## Tagging

- Resolved an issue with the deletion of a hierarchy of tags in the Tags facet resulting in other, non-related tag groups no longer showing their tags in the Details table.
- Resolved an issue with taggings made by others not getting deleted when the user attempted to delete the tagging via the Preview tab, even when the user had the permission to delete such taggings.

## Exporting - General

- Multi-page TIFFs are now exported in a way that reveals all pages. Redaction now also supports multi-page TIFFs.
- Several presentation and usability improvements in the Exports page, e.g. improved reporting of the progress and possibly failure of export packages, the ability to query for the set of items represented in the export package, and several others.
- Resolved an issue with problematic items being reported twice in the export report: once with “Exported: False” and once with “Exported: True”.

## Exporting – PST

- Improved error handling when exporting to a PST fails.

## Exporting – Load Files

- Performance improvements in image creation through the increased use of multithreading and smarter gray-scaling algorithms.
- “-1” values that represent unknown values in various columns are now suppressed in the export.
- Added a usage warning in the load file export wizard.

## Upgrade Notes

**Authorization** – Upon starting Intella Connect 2.0(.1) for the first time, an automatic conversion of the RBAC model will take place. This conversion process will grant the “Can download original item” permission introduced in Intella Connect 2.0.0 to all users that have the “Can manage exports” permission. Furthermore, it will grant the “Can manage coding layouts” permission introduced in that same version to all users with the “Can



create review batches” permission. This is to account for the reduced scope of the older permissions.

In case an Intella Connect version older than 2.0.0 (e.g., version 1.9.1) is started again, these new permissions might prevent that version from starting properly. A manual modification of the auth.xml file is then required.

**Batching and Coding** – Due to the introduction of the sharing attribute in coding layouts, new coding layouts will now by default only be visible in the case where they are made. To use them in other cases, they explicitly need to have their sharing attribute switched on. Installations with existing coding layouts will have those layouts shared across all cases, as was the case in previous releases.

**Tasks** – The storage format of indexing tasks (e.g. for the automated running of keyword lists, applying tags, etc.) has changed in Intella Connect 2.0.0. Tasks in cases made with Intella Connect 1.9.1 and older need to be recreated from scratch.

**Backwards compatibility** – Intella Connect 2.0.1 can open cases made with the Intella 1.8.x, 1.9.x, 2.0.0 versions and the Intella Connect 1.9.x and 2.0.0 versions. Cases made with beta versions are not supported and should be recreated.

Cases made with the 1.8.x and 1.9.x versions do not require any case conversion or re-indexing. However, some functionalities and improvements may not be available for such cases.

Cases made with Intella 1.7.x or older are not supported.

While we aim to ensure full backwards compatibility with older cases and older Intella Connect versions where we reasonably can, opening a case made with an older version in a newer version may result in that case no longer opening properly in the older version. We strongly recommend to always create a backup of the case before upgrading.

**Internet Explorer 9** – Note that MS Internet Explorer 9 is no longer supported. When using Internet Explorer, we recommend using version 11 or newer.

# Intella Connect 2.0

Released: November 3, 2016.

## Highlights

- Added an **Insight** view to the case dashboard.
- Added indexing of **virtual machine** images (VMDK and VHD formats).
- Added detection of **Bitcoin** cryptocurrency files.
- **Indexing performance** improvements, both raw indexing time and when adding additional data to a case.
- Added several **table columns**, e.g. covering the number of recipients of emails and other communications, passwords and certificates of decrypted items, page count, and others.
- Refined the classification of **embedded items**, and consequently improved the suppression of **irrelevant items** using the new definition.
- Added **skin tone analysis** of images.
- Added a **Recipient Count** facet.
- Various **batching & coding** refinements.
- Added **PDF and Thumbnail pre-generation** tasks.
- Improved the **Previewer speed**.

## General

- The “Intella Processor” product has been renamed to “Intella Node”. This was done to eliminate confusion with the “Intella Professional” product, often referred to as “Intella Pro”, and the “HASP Pro” dongles.
- Changed the styling of the Admin Dashboard and main Connect user interface.
- Several improvements related to the rendering of labels, e.g. when windows are resized, texts such as case names are unusually long, etc.
- Wizards now must be closed explicitly using the Cancel button or Escape key. They can no longer be closed inadvertently by clicking outside of the wizard’s area.
- The Dashboard and Review tabs now restore the last selected sub-tab when returning to them.
- MS Internet Explorer 9 is no longer supported.
- Reduced the likelihood of long-running operations timing out.
- Various minor user interface improvements.

## Case Management

- The “User accounts” list can now show the list of all cases to which a specific user is authorized.
- Improved the handling of corrupt cases, increasing the chance of being able to open them. While corrupt cases can no longer be relied upon for future use, this might let the user salvage any work product from the corrupt case.

## Authentication & Authorization

- Improved the error message shown to a user trying to open a case without being authorized to do so.

## Indexing - General

- Added support for virtual machine images in VMDK (VMware) and VHD (Hyper-V, VirtualBox, XenSource, ...) format. See the User Manual for restrictions on file formats.
- Added detection of Bitcoin wallets and blockchain files. Supported Bitcoin applications are: Bitcoin, Dogecoin, Litecoin, Multibit Classic and Multibit HD.
- Added support for ZIPX files.
- Added support for ISO images in UDF format.
- Indexing performance improvements:
  - Improved parallelization inside and between crawler processes and smarter file usage improves the overall indexing time for new and re-indexing cases. Speed improvements up to twice as fast have been reported.
  - Other improvements specifically targeted the time needed for the “Index new data” operation. Adding a few files to a large case is now a lot faster. Speed improvements up to four times as fast have been reported.
  - The cost of the “Analyze paragraphs” indexing option has been greatly reduced. The option now typically imposes a cost of < 10% of the total indexing time.
- The “Index content embedded in documents” option has been replaced by the “Index images embedded in emails and documents” option. Differences:
  - The new option affects the processing of child items found in documents (Word, PDF, etc.) and emails. Previously it would only apply to documents.
  - The notion of “embedded” and “attachment” has changed. Previously, all direct child items of documents would always be classified as “embedded item”, and all direct child items of emails would become “attachments”.

Now it depends on whether the item is an image and how that image is handled when its parent item is displayed. When the image is visible as part of its parent's native rendering (commonly referred to as an "inlined image"), it is now classified as "Embedded image". All other child items, including any non-inlined images, are classified as "Attachment".

- Where necessary, Intella will stay on the safe side. For item types where the native application typically supports the inline display of images but Intella does not, all child items are classified as "Attachment". Examples are images that are part of a Contact in a PST file. This matters as the "Embedded image" category is now also part of the suppressed set of items when the "Hide Irrelevant" option is turned on, see below.
  - As the new option now also applies to inlined images found in emails, the performance gain obtained by turning this indexing option off will typically be larger than before.
- Added support for indexing virtual files in disk images, such as the Master Boot Record.
  - Several improvements to the processing of MS Office files.
  - Several improvements to the processing of cellphone dumps.
  - Improved the body selection algorithm for emails in PST, MSG and EDB files that have their body stored in multiple formats (plain text, HTML and/or RTF).
  - Missing items in a PST file are now recorded in the Exception Items category in the Features facet.
  - Extended the metadata extracted from JPEG images and improved the processing of JPEG metadata containing non-ASCII characters.
  - Added extraction of metadata from PNG, GIF, BMP, TIFF, WebP, PSD, ICO and PCX image files.
  - Improved the accuracy of IBM Notes NSF file type identification, reducing the number of false positives.
  - Added support for detecting Adobe FrameMaker files.
  - Added support for detecting PCF and ICO image files.
  - Improved error reporting when indexing a folder source and part of the folder cannot be read due to lack of access rights.
  - Improved the default name given to disk image sources.
  - Resolved an issue with indexing email metadata in PST and MSG files, where the contents of the Sender header would be reported as the value of the From header.
  - Resolved an issue with indexing getting stuck on processing certain MS OneNote files.
  - Resolved an issue with certain types of virtual folders in AD1 disk images not being recognized as such, which had consequences for indexing performance.

- Resolved an issue with disk image indexing failures not resulting in the disk image being registered as an exception item.
- Resolved an issue with PowerPoint documents failing to index properly due to missing embedded images.
- Resolved an issue with the indexing of broken SQLite files resulting in certain temporary files not getting deleted.
- Resolved an issue with images in PDF documents failing to extract.
- Resolved an issue with certain types of dates in PDFs failing to have their time zone parsed correctly.
- Resolved an issue with an index profile in a Disk Image source not being applied, resulting in all files in the disk image getting indexed.
- SQLite 2 files are now properly reported as Extraction Unsupported in the Features facet.
- Resolved an issue with very large “paragraphs” blocking indexing when “Analyze paragraphs” was turned on. This could occur when indexing certain types of log files.
- Resolved an issue with Intella moving evidence files out of the evidence folder into the case folder during indexing of a load file or Lotus Sametime chat dump.
- Resolved the “There is an incompatible JNA native library installed on this system” error message.
- Resolved an issue with timestamps in “Zulu time” notation not parsing correctly.
- Due to differences in how the Optimization folder is now used, its recommended free space is now 1 x the evidence size rather than 2 x the evidence size.

## Indexing - Load Files

- Intella now bundles Relativity export and import templates that are designed to be compatible with each other, so one can export items out of one Intella case and into another case using these templates.
- Resolved an issue with load file import incorrectly deduplicating images and/or texts when the associated items in the load file are also duplicates.

## Background Tasks

- One can now start background tasks for pre-generating PDFs (used for the Preview and Redaction tabs) and thumbnails (used in the Thumbnails tab and results list).  
To add, monitor and manage background tasks, click on the Preferences button and go to the “Background Tasks” tab. This shows the list of running and completed background tasks and offers the user to add a new task. The selection of what items to process in a PDF or Thumbnail pre-generation task is based on

tags.

This user interface is only shown to users that have the “Can manage background tasks” permission.

- In the future, other long-running tasks such as exporting may also become part of this framework.

## Content Analysis

- Added skin tone analysis. This analyzes selected image files for the presence of human skin colors. The images are categorized in Strong, Medium and Weak categories. Supported file formats include JPEG, PNG, GIF and TIFF. Note that the methods used for skin tone analysis are highly heuristic and will typically produce false positives and false negatives.
- The new Money category finds potential monetary amounts mentioned in document texts.
- The new Time category finds potential time-based references like hours, weekdays, dates, references like “after 7 p.m.”, etc.
- All items on which Content Analysis is run are now registered in the “Content Analyzed” category in the Features facet. Previously, only items that had at least one extracted entity were put in this category.
- Resolved an issue with the default content analysis categories (Credit Cards, SSNs, Phone Numbers) not being applied on texts obtained through OCR.

## Insight

- The Insight tab, introduced in the 1.9.1 version of the desktop product, has been added to Intella Connect as part of the Dashboard.
- The boxes in the Insight section and the Case section can now be reordered and resized to accommodate a user’s needs and display.

## Searching

- Added a Recipient Count facet, letting the user query for the number of recipients of communications. The primary use case for this is filtering out all emails, chat messages etc. that are between two parties and no one else.
- When the “Hide Irrelevant” filter is switched on, it now also filters out embedded images. See the Indexing section for how this category is established. This may result in more items being filtered out, which reduces review time when items are typically reviewed in their native rendering.
- Intella Connect now allows users to perform content analysis (extracting person names, organization names, etc. from the item text) on a selected set of items.

While the content analysis results could be navigated in Intella Connect, the analysis procedure previously had to be done in the Intella desktop application.

- Added and changed categories in the Features facet:
  - Has Geolocation – indicates whether a geolocation has been associated with the item, either as part of the original metadata or through an IP geolocation lookup.
  - Text Fragments Extracted – indicates whether heuristic string extraction has been applied on a (typically unrecognized or unsupported) binary item.
  - “Embedded” has become “Embedded images”. The definition of this category and the “Attached” category has been refined. See the Indexing section for details.
  - “Empty document” has become “Empty documents”.
  - “Unsupported” has become “Extraction Unsupported”.
- The Type facet now shows type-specific icons.
- Resolves various issues with phrase search corner cases.

## Results

- Added columns showing the number of recipients of communications such as emails, chat messages and phone calls:
  - Recipient Count – counts all recipients.
  - Visible Recipient Count – excludes email Bcc recipients.
  - Bcc Count.
- Added Password and Certificate columns, showing the credentials that have been used to decrypt an encrypted item. The values shown here are subject to full-text search, as part of the Summary field.
- Added a Parent ID column.
- Added a Source IP column.
- Added a Has Geolocation column.
- Added a File Extension column.
- Added a Page Count column.
- The “Embedded Item” column has become “Embedded Image”.
- The columns list in the Table preferences is now sorted alphabetically.
- Resolved an issue with values in the Table view disappearing after the item in that row had been previewed. This did not affect exporting of the metadata and sorting.

## Previewer

- Improved general performance of the Previewer. Several performance improvements are responsible for this, e.g. automatic fetching of the next and previous item, optional pre-generation of native renderings in PDF format, timely cancelling of loading requests when traversing to other items, etc.
- The Properties tab now shows the longitude and latitude coordinates found in EXIF metadata.
- The Previewer now renders the best matching title of an item in the Contents tab, along with an icon that represents the item's type.
- Added support for rendering EMLX files in their native layout.
- Improved navigation of keyword search hits, scrolling the text in such a way that the context of the hit is properly revealed.
- Improved the hit highlighting algorithm for phrase searches.
- Improved support for multi-line comments in the Comments tab.
- Resolved an issue with decrypted documents not showing their native rendering.
- Resolved an issue with missing hit highlighting in the Save History in the Properties tab.
- Resolved an issue with the text in OpenOffice documents being rendered in tiny fonts in the Preview tab.
- Resolved missing file type icons for certain file types in the location bar.

## Tagging

- Several usability improvements in the tag-related dialogs.

## Redaction

- Added the ability to clear all redactions of an item.
- Removed duplicate information in the default redaction profile.

## Batching & Coding

- The item view now shows the list of attachments of the current item and allows for opening them.
- Resolved an issue with the automatic restoration of batching and coding information during re-indexing of a case.
- Improved the positioning of UI elements surrounding the document content.
- Added a permission for the ability to modify coding layouts.
- One can now add comments to the items in the Review tab.



- Coding layouts can now be shared between cases. By default, sharing of a specific layout is switched off.
- The item ID of the currently displayed item is now shown.
- Batches can no longer be assigned to users that have been revoked or that have no access to the case.
- Improved the warnings shown when an item is already tagged before coding of the item takes place and the existing tags do not meet the coding layout's restrictions, e.g. regarding mutually exclusive tags.
- Improved some cryptic error messages like "Error response code: 500" that were caused by users lacking certain permissions.
- Various minor usability improvements.

## Instant Messaging

- Numbers that are preceded by the hash character (#) are now interpreted as item ID references and turned into hyperlinks. Clicking on them opens the item in a Previewer tab.
- Resolved an issue with the instant messaging storage not functioning correctly when the case folder name contained a single quote (') character.

## Exporting – General

- Added a wizard sheet for controlling what happens with redacted items during export: Use the redacted images when available, suppress natives, suppress text export.
- Added a permission for the ability to download an item in its original format when viewed in a Review or Preview tab. This is now separate from the permission to export a collection of items.

## Exporting – PDF

- Resolved an issue with decrypted documents not exporting to PDF in their native rendering.
- Resolved an issue with EML emails attached to other emails that would not render properly in PDF.
- Resolved an issue with the text in OpenOffice documents being rendered in tiny fonts when exporting in original view mode.
- Resolved an issue with certain PDFs having an incorrect document orientation.
- Resolved an issue with export errors related to the creation of the item's original view not being reported.

## Exporting – PST

- Improved support for MS Outlook 2016.
- Several stability improvements.

## Exporting – Load Files

- Added an attachment count field.
- When exporting the extracted text, the order of the text components (headers, contents, raw data, ...) can now be changed by dragging the checkboxes in the desired order.

## Miscellaneous

- Changes to the logging configuration are now effective immediately; it is no longer required to reopen or reshare the case.

## Upgrade Notes

**Authorization** – Upon starting Intella Connect 2.0 for the first time, an automatic conversion of the RBAC model will take place. This conversion process will grant the newly introduced “Can download original item” permission to all users that have the “Can manage exports” permission. Furthermore, it will grant the new “Can manage coding layouts” permission to all users with the “Can create review batches” permission. This is to account for the reduced scope of the older permissions.

In case an older Intella Connect version (e.g., version 1.9.1) is started again, these new permissions might prevent it from starting properly. A manual modification of the auth.xml file is then required.

**Batching and Coding** – Due to the introduction of the sharing attribute in coding layouts, new coding layouts will now by default only be visible in the case where they are made. To use them in other cases, they explicitly need to have their sharing attribute switched on. Installations with existing coding layouts will have those layouts shared across all cases, as was the case in previous releases.

**Tasks** – The storage format of indexing tasks (e.g. for the automated running of keyword lists, applying tags, etc.) has changed. Tasks in existing cases need to be recreated from scratch.

**Backwards compatibility** – Intella Connect 2.0 can open cases made with the Intella 1.8.x, 1.9.x and Intella Connect 1.9.x versions (i.e. Intella Processor 1.9.x). Cases made with beta versions are not supported and should be recreated.

Cases made with the 1.8.x and 1.9.x versions do not require any case conversion or re-indexing. However, some functionalities and improvements may not be available for such cases.

Cases made with Intella 1.7.x or older are not supported.

While we aim to ensure full backwards compatibility with older cases and older Intella Connect versions where we reasonably can, opening a case made with an older version in a newer version may result in that case no longer opening properly in the older version. We strongly recommend to always create a backup of the case before upgrading.

**Internet Explorer 9** – Note that MS Internet Explorer 9 is no longer supported. When using Internet Explorer, we recommend using version 11 or newer.

# Intella Connect 1.9.1

Released: April 13, 2016.

## Highlights

- Improved e-discovery processing with the new **Batching and Coding** functionality, realized by the new **Review UI** specifically designed for the linear review by a team of reviewers.
- Added **instant messaging** functionality, facilitating communication between reviewers working on the same case.
- Added support for FTK's **AD1** disk image format.
- Added indexing of the **Windows registry**.
- Added indexing of **browser histories**.
- Added support for **MS OneNote** files.
- Added **text extraction** from unsupported binary files.
- Improved **Type facet** tree structure.
- Greatly improved **tagging speed**, often 1-2 orders of magnitude.
- **Indexing speed** improvements.
- **Load file overlay** functionality, for extending the metadata of existing items in a case.

## General

- Added Batching and Coding functionality.  
Batching refers to the process of dividing up a collection of items into batches for the purpose of managing the linear (i.e., one by one) review of these items by a team of reviewers.  
A new Review UI has been introduced in this release that reduces the number of steps and mental effort needed for linear review, letting the reviewer focus instead on their primary coding responsibilities such as determining the responsiveness and subject matter of the item under review.  
Other new UIs have been created for setting up batches, assigning batches to reviewers and monitoring review progress, giving case admins a solid overview and grip on the entire review process.
- Added instant messaging functionality to the case interface.  
After logging in on a case, a reviewer can see which other reviewers are currently logged in or have access to the case and can directly exchange instant messages

with them.

Queries can be shared using drag-and-drop, e.g. by dragging a location, email address, etc. from the respective facet to the message view.

Instant messages are relayed by the Connect server. No separate service needs to be installed and managed for this. Instant messages follow the same secure route as all other client-server communication between Intella Connect and the browser and are stored on the server for auditing purposes.

End users need not install an instant messaging client, all is provided by the web-based front-end.

- Added an Activities sidebar panel. This replaces the Activity page found in earlier Intella Connect versions.
- Notifications displayed at the top of the user interface have been reduced to a minimum.
- Reorganized management of reviewer preferences in the user interface.
- Many other (minor) user interface improvements, improving appearance and usability.
- Resolved an issue with login failures when using Internet Explorer 11.
- Improved notifications when a valid Intella Connect license cannot be found.
- Resolved an issue with incorrect caching of HTML resources in the browser.
- Resolved an issue with Intella Connect 1.9 becoming unresponsive when opening a case made with Intella (Connect) 1.7.x or 1.8.x.
- Dropped support for Internet Explorer 8.
- Settings of the Intella Processor application such as the memory configuration can now be adjusted via the IntellaProcessor.l4j.ini file.

## User and Permission Management

- Extended the set of permissions. This includes permissions to turn off the regular search UI completely for certain reviewers in order to expose only the new Review UI, or vice versa.
- Improved support for user names containing non-ASCII characters, for both local and LDAP accounts.
- Improved stability when using an LDAP service holding malformed records.
- User names are now treated in a case-insensitive manner.
- User names are now sorted alphabetically in the Authorization dialog.
- Leading and trailing whitespace in user names is now ignored.
- Added default avatars, derived from the user name.

## Indexing

- Added optional indexing of all keys and values in the Windows registry. When turned off, extraction of particular artifacts necessary for the Insights tab (see the desktop release notes) will still take place.
- Added optional indexing of browser histories. Supported browsers are Internet Explorer/Edge, Chrome, Firefox and Safari.
- Added optional extraction of human-readable text from binary files whose file type is not recognized or supported by Intella. By default this option is turned off due to the impact it has on indexing speed and case size and because the outcome may be noisy and require forensic insight to interpret correctly.
- Added the ability to import a load file as an “overlay”, letting it extend the metadata of existing items in a case.
- The Items sheet in the Source wizard has been extended with additional options, giving greater control of the types of items that Intella will index. Previously this sheet would let the user toggle the processing of mail archives, file archives, embedded content in documents and deleted emails. New options are:
  - Chat messages – controls the processing of Skype and Pidgin databases, Bloomberg XML dumps, WhatsApp messages in cellphone reports, etc.
  - Databases – controls the processing of non-Skype SQLite databases.
  - Windows registry – see above.
  - Browser history – see above.
  - The deleted emails option has been extended to cover Notes deletion stubs as well.
  - Text fragments from unsupported and unrecognized file types – see above.
- Added support for MS OneNote Notebooks. Supported versions are OneNote 2010, 2013 and 2016.
- Added support for indexing Mac OS property lists (.plist files). The ASCII, XML and binary variants are all supported.
- Improved detection of MS Office formats, relying less on known file extensions.
- Added support for AD1 (v3 and v4) disk images.
- Added support for ExFat file systems.
- Added support for the LZMA2 and PPMd compression methods.
- Added support for XZ archives.
- Improved support for broken ISO archives.
- Added support for indexing Pidgin chat logs and accounts.
- Various indexing speed improvements, e.g. better multi-threading on disk image indexing, reduced overhead on large sets of loose files, reduced indexing time of

very large archives, removed multi-threading bottlenecks on NSF files, cellphone report and Sametime dumps.

- Several refinements to EDB file processing.
- Several refinements for rendering and text extraction of MS PowerPoint files.
- Several refinements to the indexing of SQLite databases.
- Improved processing of generic Notes documents.
- When defining a File or Folder source, one can now indicate whether subfolders and hidden folders and files should be indexed.
- Verified that files made with MS Office 2016 will index properly.
- Resolved an issue with indexing tasks defined during source definition not being stored correctly. This affected cases where multiple sources were defined in sequence and indexed all at once using the “Re-index” button.
- Resolved an issue with the “Include subfolders” and “Include hidden folders and files” options in a File or Folder source being ignored.
- Resolved an issue with certain HTML and XML files not being classified as such.
- Resolved an issue with HTML files using UTF-16 encoding failing to index.
- Resolved an issue with UTF-16 text files containing non-ASCII characters not being classified properly.
- Resolved an issue with indexing becoming unstable when encountering IBM Notes deletion stubs.
- Resolved an issue with crawling terminating immediately when a single file or folder in the evidence folder is being denied access to.
- Resolved an issue with the associated phone number file not being taken into account when indexing an UFDR cellphone report.
- Resolved an issue with the importing of load files containing images in PDF format.
- Resolved an issue with the importing of load files causing existing tag group columns to disappear.
- Resolved an issue with importing load files that contain hierarchical tags.
- Resolved an issue with certain PDF metadata fields not being full-text indexed.
- Resolved an issue with the port configuration of an IMAP source not being used.
- Resolved an issue with certain encrypted NSFs not being detected as encrypted, causing the decryption step to be skipped.
- Resolved an issue with encrypted (and possibly decrypted) NSF files not being marked as such in the results list and item properties.
- Resolved an issue with the importing of OCR-ed items replacing rather than extending the existing stored text for those items.
- Resolved an issue with Window directory junction file system links being followed during crawling.

- EDB sources are no longer labeled as “experimental”.

## Searching

- The tree structure of the Type facet has been reorganized to make it easier to oversee and to better suit investigator needs.
- Added an “All Items” branch to the Features facet.
- Improved the loading speed of the Location facet.
- One can now search for a specific facet value by dragging the value to the Searches panel.
- The Saved Searches facet now has a separate branch for the default saved searches, keeping them separated from the user-defined saved searches. The “Default searches” node is the first in the list, followed by the user branches in alphabetical order.
- The accounts in the Chat Account facet now have a suffix indicating the chat client, e.g. Skype, ICQ, Jabber, ...
- Resolved an issue with duplicate entries in the Saved Searches facet.
- Improved portability of saved searches that originate from a different case and that refer to tags defined in that case.
- Improved handling of unusual quote characters in keyword queries.
- Resolved an issue with the Show Parents search option not functioning correctly on items originating from DD disk images.

## Results

- All item views now support selecting all items using Ctrl+A. Previously this was only supported by the Table view.
- Added a Native ID column. Currently this shows the IBM Notes UNID (Universal Notes ID) values from an NSF file. In the future this column may show the “native” IDs from other formats as well. A “Show Native ID Duplicates” search function has also been added, which in case of Notes UNIDs can be used to locate Notes deletion stubs.
- Added Recovered, Attached and Content Analyzed columns.
- Improved the speed of sorting on Family Date.
- Renamed the “Parent ID” column to “Direct Parent ID” and renamed “Child IDs” to “Direct Child IDs”.
- Improved the display of hierarchical tags in the List view.
- Resolved an issue with the Table and List views not clearing the set of selected items when the sort order is changed.
- Resolved an issue with incorrect counts being shown in the Duplicates column.



- Resolved an issue with excluded paragraphs not being taken into account with keyword searches containing wildcards.
- Resolved an issue with the Language column always showing “Unidentified”.
- All child items of a cellphone report now inherit the IMEI and IMSI properties.
- Custom table column widths are no longer reset when switching views or when toggling deduplication or irrelevant items filtering.
- Removed the Export ID column, which is no longer functional.

## Tagging

- Greatly improved tagging speed, typically with two orders of magnitude or more.
- The Quick Tag buttons in the Previewer and the tag names shown in the Searches list now take the tag hierarchy into account.
- The Remove Tags dialog now shows the tree structure of the tags.

## Previewer

- Resolved an issue with the Next and Previous buttons becoming ineffective when the Previewer has not been used for two hours.
- The Actions tab now also displays information on tagging, flagging, commenting, redaction and OCR actions that have taken place on the item. The timestamp is no longer displayed. To obtain this information, one can use the new event export functionality.
- Resolved various hit highlighting issues, e.g. queries involving phrase or proximity queries containing nested Boolean expressions, queries involving escaped wildcard characters, text fragments including HTML markup symbols, phrases lacking hit-highlighting in the Redaction tab.
- Several item loading and hit highlighting performance improvements.
- Resolved an issue with the Thumbnails and Entries tabs becoming empty when the entire webpage is reloaded by the user.
- Resolved an issue with redaction not working in the MS Edge browser.
- Resolved an issue with redaction rectangles not appearing in the correct location when the page format of a native PDF document differs from the format set in the user preferences.
- Improved the embedded PDF viewer’s ability to handle broken or incomplete PDF documents.

## Exporting – General

- A “Redacted items” sheet has been added to the Export wizard. The available options in this sheet depend on the chosen export format:

- For Original Format export:
  - “Use redacted images when available” checkbox.
  - “Suppress redacted items” checkbox.
- For PDF export:
  - “Use redacted images when available” checkbox.
- For PST and i2 iBase/ANB exports:
  - “Suppress redacted items” checkbox.
- For Load File export:
  - “Use redacted images when available” checkbox.
  - “Suppress natives for redacted items” checkbox.
  - “Suppress text for redacted items” checkbox, with a sub-option for specifying a placeholder text.
- Export packages are now sorted by creation date.
- Resolved an issue with the normalization procedure on exported file names inadvertently dropping the file extension on very long file names.
- Resolved an issue with incorrect file extensions being added to the names of exported files.
- Resolved an issue with certain load file export templates not loading completely.

## Exporting – PDF

- Added an option for controlling whether OCR-produced text for images is exported.
- Resolved an issue with pages being scaled incorrectly when the evidence page format and export page format do not match.
- Several improvements for displaying MS Office documents.

## Exporting – PST

- Improved exporting of emails containing a broken plain body and a correct RTF body.
- Added support for exporting to PST with MS Office 2016 installed.

## Exporting – Load Files

- All changes related to PDF exporting.
- Added three new custom field types:
  - EXTRACTED\_TEXT
  - BEG\_ATTACH
  - END\_ATTACH
- Resolved an issue with exporting failing to start when the “Use current table row order” option is used and the table is still in its default order.

## Upgrade Notes

**Internet Explorer 8** – Internet Explorer 8 is no longer supported. Intella Connect will still appear to open but certain functionalities may no longer work as expected or even at all. Users are strongly urged not to use Internet Explorer 8 anymore in conjunction with Intella Connect 1.9.1 and future releases. When using Internet Explorer, we recommend using version 11 or newer.

**User names** – Leading and trailing whitespace in user names is now ignored. Prior to the migration to Intella Connect 1.9.1 we advise users who are seeing duplicated user names in their user interface to backup their existing case and resolve this issue manually (e.g. tag items tagged by "John " as "John" and delete the former taggings), as after the upgrade one cannot use logins with spaces anymore.

Undoable annotations (for instance “Previewed” actions) cannot be fixed this way.

**Action timestamps** – To realize the much-desired tagging speed improvements, it was necessary to remove the timestamps column in the Previewer’s Actions tab. This functionality may be reinstated in a future release. As a workaround, exporting of the event log to CSV format may provide this information.

**Backwards compatibility** – Intella Connect 1.9.1 can open cases made with the Intella 1.7.x, 1.8.x and previous Intella Connect 1.9.x versions (i.e. Intella Processor 1.9.x). Cases made with beta versions are not supported and should be recreated.

Cases made with Intella 1.7.x or 1.8.x do not require any case conversion or re-indexing. However, some functionalities and improvements may not be available for such cases.

Cases made with Intella 1.7.x cannot be re-indexed or extended with additional sources. These restrictions do not hold for cases made with Intella 1.8.x, i.e. they can be re-indexed and have new sources added to them.

Cases made with Intella 1.6 or older are not supported. One can however use Intella 1.7.3 to convert these cases to the 1.7 format and then open them in Intella Connect 1.9.1.

While we aim to ensure full backwards compatibility with older cases and older Intella Connect versions where we reasonably can, opening a case made with an older version in a newer version may result in that case no longer opening properly in the older version. We strongly recommend to always create a backup of the case before upgrading.

# Intella Connect 1.9

Released: October 9, 2015.

## Highlights

- Connect can now **index cases** by delegating indexing to a separate server running the new **Intella Processor** product.
- Authentication can now use **LDAP** providers.
- Added **custodian** support.
- Added an **Irrelevant Items** classification, for suppressing items that have no intrinsic value to the case.
- Added **Primary Date** and **Family Date** attributes.
- Added **Export Sets** functionality.
- Added **tag group columns**.
- Added support for the **Microsoft Edge** browser.

## General

- A copy of the Connect online help files is now included in the installer. Users are still recommended to use the online help as it may receive updates after the release.
- Improvements to automatic memory management on systems with 32 GB RAM or more.
- Added support for the Microsoft Edge browser that is a part of Windows 10.
- Several minor UI improvements.
- When running Connect with a custom branding license, a separate logo image can now be uploaded for use in the login page. This image can be larger than the logo used in all other places, up to 400 x 400 pixels.
- Resolved an issue with the user.prefs file being reset to its default settings.

## License Management

- The Dongle Manager can now show the maintenance agreement expiration dates for the products on the dongle.
- For customers who cannot use the Dongle Manager (e.g. because their dongle cannot be plugged into an Internet-connected PC), a web page is now available through which they can upload the .c2v file of their dongle and retrieve .v2c files with license updates. See <https://www.vound-software.com/dongle-update>.

## Security

- Connect can now use an LDAP provider for authenticating users accessing a shared case, their user dashboard or the admin dashboard.
- The following special characters are now allowed in a Connect username: \_ @ . -
- Added the ability to disable specific cipher suites and protocols via the user.prefs file. This lets IT admins immediately disable such technologies when a security vulnerability arises.
- Resolved an issue with the admin window not opening when double-clicking on the systray icon, due to the use of an SSL certificate containing wildcards in a subdomain.
- Resolved an issue with roles with the “Cannot see items tagged with ...” permission that would not show up in the case authorizations screen.

## Case Management

- The case sharing list has been extended with various tools for filtering and sorting the list. Cases can now be sorted alphabetically, by creation date or last shared date. Moreover the list can be filtered down to only show cases that are shared or that contain a specific text in their name.

## Indexing

- Intella Connect is now able to create and index cases. Indexing is delegated to a separate server running the new Intella Processor product. Intella Connect can use an arbitrary number of Processors, though a case can only be indexed by a single Processor instance.  
All indexing features present in the desktop edition are also supported by Intella Connect and Intella Processor, including creating new cases, adding sources, defining post-processing tasks, indexing of load files, cellphone reports, MS Exchange EDB files, re-indexing and updating a case, etc.  
Intella Processor runs on its own dedicated license, but can also use an Intella Professional or Intella TEAM Manager license.  
The Intella Connect 1.9 installer is a dual installer; it offers to install Intella Connect or Intella Processor.

## Searching

- Added a Custodian facet. This represents all custodians defined during indexing or that are set manually.

- Added a Primary Date attribute. This date is determined using a configurable set of rules that select one of the extracted dates, based on item type and a preferential order of the extracted dates. This makes it possible to e.g. present the most important dates in a single Primary Date column and sort items chronologically, while still using different date types when mixing emails and documents.
- Added a Family Date attribute. Family dates build on primary dates and also take the item hierarchy into account. The family date of an item is defined as the primary date of its top-level parent, i.e. all items in an item family have the same family date. Sorting on Family Date sorts by this date, but also enforces that attachments and nested items are placed right behind their parent. This makes it possible to review items in chronological order while maintaining a sense of their context.
- Added tag group columns: when using hierarchical tags, the top-level tags can now be used as table columns in the Details view. For example, when defining a tag “Priority” with subtags “High”, “Medium” and “Low”, the table column chooser will let you add a Priority column showing High, Medium or Low. Any other tags that the items may have will not appear in this column. All tags still appear in the Tags column.
- Added an Irrelevant Items feature. An Irrelevant Items category has been added to the Features facet and holds all items that during indexing were deemed to be of little value to the case. Currently this set contains all folders, email container files (e.g. PSTs), disk images, cellphone reports (e.g. UFDR files), archives, executables, load files (e.g. DII files) and empty (zero byte) files. This set may be extended and made configurable in a future release.  
Irrelevant items can be filtered from the Details view using a toggle button. Also they can be filtered from the set of items to export.  
The Irrelevant Items classification is not inherited by child items, i.e. a PST file will be classified as Irrelevant but the emails it contains will not.
- The Phone Number and Chat Account facets can now associate contact names with a phone number/chat account, if that information is present in the evidence data.
- Added a Native ID column. Currently this shows the IBM Notes UNID (Universal Notes ID) values from an NSF file. In the future this column may show the “native” IDs from other formats as well.
- Added the following branches to the Features facet:
  - *Recovered*: identifies all emails that were deleted from a PST, NSF file or EDB file but that Intella could still (partially) recover. These are the items that appear in the artificial “<RECOVERED>” and “<ORPHAN ITEMS>”

folders of these files. The Recovered branch has four sub-branches, based on the recovery type and the container type:

- *Recovered from PST.*
  - *Orphan from EDB.*
  - *Orphan from NSF.*
  - *Orphan from PST.*
  - *Attached:* indicates all items that are attached to an email. Only the direct attachments are reported; any items nested in these attachments are not classified as Attachment.
  - *Embedded:* indicates all items that have been extracted from a document.
  - *Unsupported:* all items that are larger than zero bytes, could be identified by Intella, are not encrypted, but for which Intella does not support content extraction.
  - *Redacted:* indicates all items that have been redacted. Items on which the Redact button has been used but in which no parts have been marked as redacted are not included in this count.
  - *Content Analyzed:* all items on which the Content Analysis procedure has been applied.
- Added buttons in the Previewer for navigating between the keyword search hits in a document text. The hits can also be navigated using Ctrl+Up/Down keys.
  - Extended the available set of columns in the Table view to match those available in the desktop edition.
  - Improved multi-column sorting to work consistently with the desktop edition. Most importantly, the Ctrl key can now be used to obtain a multi-column sorting.
  - The Keyword List facet now obeys the “paragraph exclusion” setting in the search options. Previously it searched all text, including paragraphs marked for exclusion.
  - Resolved an issue with the Cluster Map becoming unresponsive to mouse clicks.
  - Resolved differences in the sorting of facet values between Intella and Intella Connect.
  - Resolved an issue with garbled text being shown in the Paragraphs Editor window. This issue had an impact on presentation only and it did not affect search results.
  - Resolved an issue with the lack of hit highlighting in excluded paragraphs when paragraphs exclusion was switched off.

## Results

- Added a Parent ID column and Child IDs column.
- Improved the heuristics used for the Show Conversation search.

- Improved the locations of items in a case where multiple sources have the same folder structure, resolving the fact that it was impossible to distinguish them in the Location column.
- Added a column for each individual export set, showing the export IDs within that set.
- Resolved an issue with keyword search hits being highlighted in excluded paragraphs. This issue only affected hit highlighting in the Previewer, not the correctness of the result set.
- Resolved an issue with a date search displaying an incorrect start or end date in the Cluster Map, due to the selected time zone not being used. This issue did not affect the correctness of the result set.

## Previewer

- Added an interactive breadcrumb bar at the top of the Previewer, showing the location of the previewed item. Each part of the bar represents one parent in the item hierarchy, with the evidence root always being the first element. Icons representing the item types are placed next to the item names. The parent items can be clicked and opened from the bar. Each parent has a drop-down menu showing its first 100 child items. The location bar improves on and therefore replaces the “Show parent” and “Show parent email” actions.
- Resolved an issue with the Case Dashboard being shown rather than Searches view when queries were evaluated from inside the Previewer.
- Resolved an issue with the Attachments tab not initializing properly when the page was reloaded.
- UI improvements for showing large document titles above the tabs.

## Tagging

- Slashes are no longer allowed in tag names, due to their use in representing hierarchical tags.
- Resolved an issue with the quick tags panel showing tags that were deleted from the case.
- The “Go to next item after tagging” setting now only applies to taggings made with the quick tag buttons and no longer to taggings made with the tagging dialog.
- The Pin Tag menu did not take the configured maximum number of quick tags of the case into account.



## Exporting - General

- Added Export Sets functionality to Connect: when exporting, items can now be added to a named export set. This set will be shown in the new Export Sets facet, which lets the user quickly locate all exported items. A column can be added for a specific export set, showing the export ID that an item has within that set. The Export IDs of an item are also shown in the Properties tab in the Previewer.
- The metadata of the items in the Details view (Table, List or Thumbnail view) can now be exported to a CSV file.
- Added several export options previously only available in the Desktop version.
- Added a “Suppress irrelevant items” checkbox, which lets all items classified as “Irrelevant” be skipped during exporting. This checkbox is disabled when the current set of items to export does not contain any such items.
- Speed improvements when registering the items as an export set.

## Exporting – PDF

- Improved the native rendering of various document types, in particular Notes documents and Excel spreadsheets.
- Redesigned and extended the configuration options controlling which headers are shown above the body of an email, in what order, and what rendering properties they have, e.g. which of them should be bold, whether to draw a line between the subject and the email’s properties.
- When exporting to PDF or load file using the option to skip the original view for some file formats, the user can now choose to:
  - Export the item in its original format (load file export only).
  - Also skip the extracted text.
- Added an option controlling whether lines separating the header and/or footer from the body of the PDF are to be drawn.
- Resolved an issue with the Contents and Preview tabs showing broken images.
- Resolved an issue with the PDF “split into chunks” export option producing chunks that were larger than the specified size.
- Resolved an issue with dynamic date and file name fields in Word headers and footers and PowerPoint presentations being evaluated during export.
- Improved handling of the EXPORTED\_FILE\_NAME field in the header/footer when exporting to a single concatenated PDF.
- Resolved an issue with items failing to be added to an export set when exporting to a load file with the “Include images” option turned off or the image format set to PDF.

- The “PDF rendering options” sheet showed some disabled options that were only meant for exporting to load files. These options are now no longer visible when exporting to PDF.
- Depending on the chosen settings, the PDF document could sometimes get some extra, empty pages. This has been fixed.

## Exporting – PST

- Improved the speed and stability of exporting to PST files.
- Resolved an issue with contacts not exporting to a PST file.
- Removed an unnecessary “\_files” suffix that was given to folders that correspond with container files in the evidence files.
- Resolved an issue with emails with a particular content transfer encoding setup showing garbage content when exported to a PST file.

## Exporting – Load Files

- Improvements beneath “Exporting – PDF” typically also apply to the PDF and TIFF generation as part of load file generation.
- An “Exclude content” option has been added that lets one suppress exporting the content of items tagged with a user-defined tag. This can e.g. be used to suppress Privileged items. Any item that has the specified tag will still be represented in the load file, but its content will be replaced with a configurable placeholder text.
- Added an option for embedding the item text in the load file itself rather than having it exported to a separate file.
- Added an option to sort the items in the created load file by Family Date.
- Resolved errors that occurred when non-ASCII data was being exported to a load file using ASCII encoding.

## Upgrade Notes

Intella Connect 1.9 can open cases made with the Intella 1.7.x and 1.8.x versions. Cases made with beta versions are not supported and should be recreated.

Cases made with Intella 1.7.x or Intella 1.8.x do not require any case conversion or re-indexing. However, some functionalities and improvements may not be available for such cases.

Cases made with Intella 1.7.x cannot be re-indexed or extended with additional sources. These restrictions do not hold for cases made with Intella 1.8.x, i.e. they can be re-indexed and have new sources added to them.

Cases made with Intella 1.6 or older are not supported. One can however use Intella 1.7.3 to convert these cases to the 1.7 format and then open them in Intella Connect 1.9.

While we aim to ensure full backwards compatibility with older cases and older Intella Connect versions where we reasonably can, opening a case made with an older version in a newer version may result in that case no longer opening properly in the older version. We strongly recommend to always create a backup of the case before upgrading.

# Intella Connect 1.8.4

Released: April 13, 2015.

## Highlights

- Tags can now be ordered in a **tag hierarchy**.
- Improved **tagging speed** with a factor 2-3.
- Improved **PDF and load file exporting speed**, up to two times faster.
- Various **stability fixes**.

## General

- Case and server admins can now change their own password.
- Resolved an issue with authorization changes not being picked up by shared cases immediately.
- Resolved a Windows “Error 1067” error that occurred when no license could be found and Intella Connect’s application data folder did not yet exist.
- Resolved an issue with cases failing to open when the PATH environment variable contains paths wrapped in quotes.
- Resolved an issue with some case events not triggering an automatic user interface update.
- SSL 3.0 is no longer supported, to protect against the POODLE attack.

## Searching

- Added “Addresses in Text”, “All Senders and Receivers” and “All Addresses” branches to the Email Address facet. Previously these branches were only available in the desktop edition.
- Resolved an issue with keyword lists containing commas not evaluating properly.

## Results

- Resolved an issue with the flagging checkboxes in the Thumbnails view failing to (un)flag an item properly.

## Tagging

- Tags can now be ordered in a tag hierarchy. This lets one group tags into meaningful, user-defined collections, e.g. custodians, locations, priorities or

assigned reviewers. The tag hierarchy can be made arbitrarily deep and wide. Parent tags can be used as any other tag: they can be applied to items and queried for. When querying for a tag with subtags, all items are returned that have been assigned that tag or any of its subtags. Deleting a parent tag deletes the entire subtree.

- Improved tagging performance with a factor 2-3.

## Previewer

- Improved the loading indicator when moving from item to item.
- Resolved an issue with redactions not being stored when the user navigated away from the item before the storage procedure completed.
- Resolved an issue with the Redaction tab failing to re-initialize, keeping the redactions of an item on screen rather than clearing them when the user moved to the next or previous item. This was purely a display problem; it did not lead to the next or previous item inheriting those redactions.
- Resolved an issue with the “Redact all” button applying several redactions to the same area; all but one were redundant.
- Resolved an issue with the Comments tab showing the logged in user’s own avatar instead of the avatar of the comment’s creator.
- Resolved an issue with the Size property showing “-1” for items with unknown or invalid sizes. “Unknown” is now shown in such cases.

## Exporting – PST

- Resolved an issue with emails exported to a PST file having an incorrect character encoding specified.

## Exporting – PDF and Load files

- Improved PDF and load file exporting speed, up to two times faster.
- A “Prefer HTML over plain text content” checkbox has been added that lets one specify whether to use the HTML or plain text version of an email body for the PDF. This option is disabled when “Content as” is set to “Extracted text”.
- The “Suppress cover page” checkbox in the file section has been turned into a “Cover page” checkbox with the inverse semantics, to maintain consistency with the other exporting options. Cover pages can now also be suppressed for emails, using a separate checkbox in the email section.
- The “Skip original view for” option did not work correctly when the “Content as” setting was set to “Both”. This has been fixed.

- Items without content can now be exported, even when exporting of metadata is turned off as well. A proper PDF or TIFF with header and footer will be created. In earlier Intella 1.8.x versions such items resulted in an error.

## Upgrade Notes

Intella Connect 1.8.4 can open cases made with the Intella desktop edition, versions 1.7.x and all 1.8.x versions up to 1.8.4. The rules for upgrading these cases are the same as for Intella Connect 1.8.

While we aim to ensure full backwards compatibility with older cases and older Intella versions, opening a case made with an older version may result in that case no longer opening properly in that older Intella version. We strongly recommend always creating a backup of a case before upgrading.

Note that SSL 3.0 is no longer supported.

The use of hierarchical tags has an impact on the “Cannot see items tagged with X” permission defined in the role-based access control model. This permission is still relying on tag names, which can now occur in several places in the tag hierarchy. If multiple tags with that name occur, then this permission will affect all of those tags. Moreover, if a tag is targeted by this permission, then all of its child tags (and items tagged by it) are also affected.

# Intella Connect 1.8.3

Released: February 12, 2015.

## Highlights

- One can now **export HTML emails to PDF** with preservation of their layout.
- Improved **performance of concurrent access** on the same case.
- Added several **admin permissions**.
- Added a **Chat Account** facet.

## General

- Improved performance of a shared case serving multiple, concurrently active reviewers.
- The server admin can now assign admin and case management permissions to specific users. Users can now share the ability to perform admin tasks without the need for sharing the single admin account, improving accountability. Server management and case management permissions can be assigned independently of each other.
- Various fixes for supporting Internet Explorer 8 and certain Google Chrome versions.
- Minor UI improvements.

## Case Management

- Changed passwords are now effective immediately; they no longer require a case restart.
- Added the ability to delete a case from the cases list.

## Searching

- Optimized the performance of saved searches involving location and parent/child searches.
- Reorganized the Type facet to better support items from cellphone reports. For example, branches have been added for Accounts, Browser Artifacts, Databases, System files and User Activities.
- Added a Chat Account facet, containing the senders and receivers of chat messages from instant messaging applications such as Skype, ICQ, WhatsApp,

etc. Previously these were covered by the Phone Number facet, Email Address facet or not at all. SMS and MMS messages are covered by both the Phone Number and Chat Account facets.

- Added a checkbox in the keyword search options for searching the Export ID.
- Resolved an issue with the results of queries with leading wildcards not being hit-highlighted.
- Resolved an issue with the Searches list dropping search result sets after a page refresh.
- Resolved an issue with an incomplete Location facet when Intella Connect 1.8.x was used to share a case indexed with Intella 1.7.x.
- Resolved an issue with the Language facet not making the distinction between “unidentified” and “not applicable” items.

## Previewer

- The Previewer no longer reloads the entire page when moving from item to item. This significantly reduces page load time and is easier on the eyes.
- Optimized the rendering speed of very large documents.
- Improved contents and interaction of the Attachments tab.
- Improved the rendering of the names of tabs with keyword search hits.
- Resolved issues with the Previewer iterating over an item list when the Table or List view from which it was launched was deduplicating its items.

## Results

- Resolved an issue with tagging not working in the List view when the checkbox for selecting all items was selected.

## Exporting

- The HTML view of emails, shown in the Preview tab, can now be printed and exported to PDF.
- Resolved an issue with the text body of large items getting truncated during export.
- Resolved an issue with the CSV export report getting the column structure mixed up after a number of rows.
- Made sure that export and load file templates are always stored using valid file names.



## Upgrade Notes

Intella Connect 1.8.3 can open cases made with the Intella desktop edition, versions 1.7.x and all previous 1.8.x versions. The rules for upgrading these cases are the same as for Intella Connect 1.8.

# Intella Connect 1.8.2

Released: December 19, 2014.

## Highlights

- This release focuses on fixing reported **performance and stability** issues.

## Searching

- Resolved an issue with keyword lists failing to evaluate.

## Results

- Resolved an issue with the List view becoming slow to respond when listing large items. The Table view had no such issues.
- Resolved an issue with the Data Sources pie chart in the Case Dashboard not showing any data.

## Previewer

- Improved hit highlighting performance on very large documents.
- Resolved an issue with keyword search hit counts being visible in print output when the Contents tab was printed.
- Resolved an issue with tag addition or removal failing to propagate to the Previewer tab.
- Resolved an issue with the Preview tab failing to render the PDFs downloaded from the server, resulting in a “PDF.js” error message. This problem only occurred when using the Chrome browser.
- When printing an email with lots of recipients, the list of recipients is no longer truncated to a single line in the print output.
- Resolved an issue with some items not being marked as “Previewed” when opening the item in the Previewer.

## Upgrade Notes

Intella Connect 1.8.2 can open cases made with the desktop edition, versions 1.7.x, 1.8, 1.8.1 and 1.8.1.1.

The rules for upgrading these cases are the same as for Intella Connect 1.8.

# Intella Connect 1.8.1

Released: November 25, 2014.

## Highlights

- A reviewer can now **exclude specific paragraphs** from keyword search.
- Reduced the dependency on **MS Office** for printing items or exporting them to PDF.
- Enhanced user experience while **tagging**. Most notably, the tags will now be sorted in the "Add/Remove tags" dialogs. Various smaller issues related to tagging have also been resolved.
- **Font rendering** of various items in Contents and Native Preview tabs has been improved.

## Installer

- Fixed an issue with the installer sometimes not unpacking the "jre" subfolders properly.

## General

- Added an option to the Add/Remove Tags dialogs for deleting tags made by other reviewers.
- Reviewers can now add paragraphs to the list of excluded paragraphs from within the Previewer's Contents tab. This list can be managed from the Search tab. To enable filtering of excluded paragraphs during keyword search, select the "Enable paragraph exclusion" option from the keyword search options drop-down.
- Resolved an issue with user notifications being rendered behind other user interface elements.
- Tags will now appear in alphabetical order in the Add/Remove Tags dialogs.

## User Management

- Resolved an issue with a newly added account not being immediately appended to the users list.

## Case Management

- Resolved an issue with Case Auto-discovery not starting properly after the Connect server is restarted.

## Results

- Added the "Show Top-level Parents" action to the Details panel's right-click menu.
- Improved the application's responsiveness when assigning tags to a large set of items. This enhancement will also help to resolve the issue with some web browsers reporting an unresponsive script running indefinitely.
- Improved the performance of applying the same tag again to a set of items.

## Previewer

- Improved the quality of font rendering in the Contents tab.
- The Contents tab will now trim the text to 30,000 characters when loading it for the first time. After clicking on the designated button, more text (up to 10 MB of textual data) can be loaded on demand. This enhancement helps to reduce the workload on the server, shortens the amount of time needed to start reviewing an item and makes the tab operate consistently with the Intella desktop products.
- Resolved an issue with the font size not adjusting properly in some paragraphs when making use of the font size buttons.
- Resolved an issue with the "Previewed" action occasionally not being recorded when opening an item in the Previewer.
- Resolved an issue with certain fonts not rendering properly in the Preview tab.
- Resolved an issue with newly assigned tag occasionally not showing up properly in the "My tags" list.

## Exporting

- Since Intella 1.8, MS Office is no longer needed for viewing MS Word documents (and several other document formats) in their native view or exporting the native view to PDF. Starting with Intella 1.8.1, MS Office is also no longer needed for spreadsheets and presentations. MS Office is still necessary for exporting to PST.

## Upgrade Notes

Intella Connect 1.8.1 can open cases made with the desktop edition, versions 1.7.x, 1.8 and 1.8.1.

The rules for upgrading these cases are the same as for Intella Connect 1.8.

# Intella Connect 1.8

Released: October 20, 2014.

## Highlights

- Improved general user interface **design and layout**.
- Several system maintenance improvements:
  - Connect can now be installed as a **Windows service**.
  - Connect now runs on a **single port**.
  - Added support for **single sign-on**.
- Added a **case dashboard**, showing key case statistics.
- Several features for searching and displaying paragraphs:
  - Search for **all items containing a specific paragraph**, regardless of item type and small variances such as white spaces.
  - **Ignore commonly occurring paragraphs** such as email signatures and legal disclaimers. Currently the desktop edition of Intella is still necessary to mark such paragraphs as to be excluded from keyword search. A future Connect version will address that.
  - Mark paragraphs as “**seen**”, causing them to be displayed in a lighter color whenever they are shown.
  - **Collapse and expand** paragraphs.
- Added **case auto-discovery**: all cases stored in a folder configured in Connect are automatically made available for sharing in the admin page.
- The Contents tab now captures the **original layout** of the item text better, e.g. tables, font styles and lists are shown.
- Added a **Content Analysis** facet.

## General

- Improved the look and feel of the application based on customer feedback.
- Added a case dashboard. This page is the new landing page when a reviewer logs in on a shared case. It offers instant insight into case characteristics such as the most common item types and volumes, key email accounts, which other reviewers are working on the case and what their progress is.
- Improved print output.
- Fixed an incorrect Connect application version number in the “About Intella Connect” dialog.

## Installation and Deployment

- Upon installation the admin can opt for installing Connect as a Windows service. This lets the admin configure the OS in a way that lets Connect start automatically when the system boots and without requiring a user to log in and start the application, among other things.
- Connect now runs on a single port. Previously the admin page and each shared case all required their own dedicated port.
- Single sign-on lets reviewers access all their cases without having to re-enter their credentials for each case.
- Relaxed the syntax rules for legal user names. User names can now contain \_ and @ characters.
- User names are now considered to be case-insensitive. Admins cannot enter a user name that is equal to an already existing user name when compared case-insensitively.
- Various fixes to improve Connect's appearance and interaction in Internet Explorer 8 and 9.
- Resolved an issue with the SSL settings not clearing the "Please restart Connect to apply the changes" message after a restart.

## Case Management

- Added the ability to manually add a case to the server's case list by specifying the case folder or the case.xml file in it via the admin page. Previously this had to be done using the Case Manager of the desktop product.
- Intella Connect can now be configured to watch a folder for new cases. This way the admin can add a case to Connect simply by copying the case folder into the watched folder. The watched folder is being checked for case.xml files that are nested maximally three folders deep inside the watched folder. Any found cases are only added to the list, they are not automatically shared.
- Extended the permissions model with permissions controlling the following functionalities:
  - Printing items.
  - Deleting tags made by other reviewers.
- Users can now change their own password in their user dashboard.
- Resolved an issue with the system tray icon becoming unresponsive when one or more cases had the "auto-start" checkbox selected.

## Searching

- When the “Analyze paragraphs” option has been selected during source definition, Intella will change the color of the paragraph background when the mouse is above it. Furthermore it will show buttons in the top-right corner of the paragraph, providing the following functionalities:
  - Collapse and expand the current paragraph.
  - Mark the paragraph as Seen, or back to Unseen. This grays out all occurrences of this paragraph in all items, facilitating the review of large amounts of long and overlapping documents such as email threads with lots of quoted paragraphs. Also all paragraphs above or below the current paragraph can be marked with a single click.
  - Search for all items in which this paragraph occurs.
  - The desktop edition of Intella can be used to mark commonly occurring paragraphs such as email signatures, legal disclaimers, etc. as ignorable text. This will result in these paragraphs being ignored during keyword search in both the desktop edition and Connect. A future version of Connect will allow reviewers to mark paragraphs for exclusion inside the Connect interface.
- The Content Analysis facet introduced in Intella 1.7.2 is now also present in Intella Connect.
- Tags in the Tags facet are now alphabetically sorted.
- Resolved an issue with the Location facet choking on expanding nodes with lots of subnodes.

## Results

- Several table columns previously only available in the Desktop edition have been added to Connect’s results table.
- Improved the font sizing and automatically chosen zoom level in the Cluster Map.
- Added support for viewing image formats that typically are not natively supported by web browsers, such as BMP and TIFF. These formats are now converted on the server to PNG format. The converted image is only used for display purposes within Connect; when exporting to Original Format, the original file format is still used.
- Improved the result set name of keyword list results.

## Previewer

- The Preview tab now uses all available horizontal and vertical screen space for rendering the document.



- One can now have more than three quick tag buttons in the Previewer.

## Upgrade Notes

Intella Connect 1.8 is able to open cases made with the desktop edition, versions 1.7.x and 1.8.

Cases in 1.7.x format do not require any case conversion or re-indexing. However, some functionalities and improvements may not be available for such cases. Cases made with 1.7.x cannot be re-indexed or extended with additional sources.

Cases made with 1.6.x or older are not supported. One can still use Intella 1.7.3 to convert these cases to the 1.7.x format, after which they can be opened in Intella Connect 1.8.

Cases made with Intella 1.8 beta 1 or beta 2 are not supported and should be recreated.

# Intella Connect 1.7.3

Released: April 7, 2014.

## Highlights

- Intella Connect now supports **redaction of items**. This feature lets a reviewer mark legally privileged or otherwise sensitive information in an item's text, metadata or graphical content. When the item is subsequently exported to a PDF or load file, the sensitive information will be blacked out. This feature will not work with Internet Explorer 8.
- A new **authorization engine** has been introduced, making it possible to create flexible authorization rules based on **user roles and permissions**. Each user can be assigned a set of roles for any given case, making the mechanism easily adaptable to both small and large organizations. The current set of available permissions allow for controlling:
  - Access to the case.
  - Ability to export items.
  - Visibility of and access to items tagged with specific tags, e.g. all items tagged as Privileged.
- Intella Connect now has a fully featured **export wizard**, which allows for the creation of highly customizable export packages directly from within the web browser.

Apart from the new Export Sets functionality, which has just been introduced in Intella 1.7.3, the supported file formats and exporting options of Intella Connect are now equal to the Intella's desktop version. Export sets will be added in a future version of Intella Connect.
- Cases can now be configured to **start automatically** when Intella Connect is started: simply check the "Auto-start" checkbox in the Cases panel.
- Intella Connect can now be partially or fully **branded** with logos specified by the admin. The logos are displayed in various places throughout the application (dashboard, main search interface, previewer, etc.). The branding ability requires a separate product license; please contact your sales representative or reseller for more information.

## General

- Improved the caching policy for HTML resources to eliminate browser cache issues when upgrading to a newer version of Intella Connect.
- Improved the speed of retrieving and rendering search results in the Table and List views.
- Resolved an issue with using spaces in usernames. Such usernames are now accepted and will no longer cause any issues when logging into the application.

## Dashboard

- Resolved an issue with cases failing to share when the SSL configuration is incorrect.
- Resolved issues with the uploading of an avatar image failing to update the old image (in Internet Explorer) and hiding the modal dialog (in Firefox).
- Resolved an issue with avatars being assigned to users based on their usernames, rather than their unique IDs.
- Resolved an issue with broken case links when SSL is configured.

## Searching

- The Email Address facet is now showing both the email address and contact name for each contact listed in the tree.
- The Thumbnails view will now allow for selecting multiple items at once when the Shift key is held down while clicking.
- Added an “OCRed” column to the Table view.
- Resolved an issue with items appearing in a wrong order in the Previewer when the Table view was sorted using the “Previewed” column.
- Resolved an issue with Saved Searches producing server errors when they contained ID List searches.
- Resolved an issue with the Date facet accepting incorrect queries when neither the “From” nor “To” parameters were specified.

## Previewer

- The Previewer now indicates whether the displayed item has already been previewed by the current user: see the “Previewed” label underneath the “Flagged” checkbox.

- Improved the loading speed of the Words tab.
- Resolved an issue with the Preview tab not working correctly when using Internet Explorer 11.
- Resolved an issue with the Previewer showing a server error when items were opened directly via their URL.
- Resolved an issue with broken handling of BMP images in the Contents tab. Opening such items will now show a proper message about unsupported image formats.
- Resolved an issue with the “Preview parent” feature failing with a server error.
- Resolved an issue with the listing of email headers when their values are blank.

## Upgrade notes

- Intella Connect 1.7.3 can open cases made with all Intella 1.7.x versions.
- Upon first run Intella Connect 1.7.3 will convert an existing authorizations model (a file called auth.xml) into a newer format. Users are advised to backup previous models to prevent any accidental information loss. This file is by default located in *INTELLA\_DIR/auth/auth.xml*.

## Browser compatibility issues

- Despite our efforts in fixing this issue, Internet Explorer 8 still has problems with displaying the native view of some documents (PDFs, MS Office files). Since the newly introduced redaction feature relies on this functionality, it will also not work properly when using this browser. We recommend Intella Connect users to upgrade to a more recent browser.

# Intella Connect 1.7.2

Released: November 28, 2013.

## Highlights

- The Preview tab in the Previewer can now render a **native preview of emails** containing HTML markup. It also shows the most important headers to mimic common email clients.
- The new **List View** has been added to the search user interface, giving reviewers a quick overview of the contents and tags of given item. This view also responds to keyword search queries, showing the **textual context of search hits**. The List View is now the default view for search results.
- The **Previewer has been redesigned**, making better use of the available screen space. The top action bar has been removed and replaced by a vertical side bar on the left. The tabs now fill the entire vertical space.
- Added a **User Dashboard**, giving reviewers a standard entry point to Intella Connect. It allows them to see a list of cases that they have access to.
- Users can now have **profile pictures**. These pictures are displayed in the Activity Streams, Comments and User Management pages.
- **Thumbnails can now be pre-generated** on the server, resulting in much faster Thumbnails views.
- The Activity Stream is now grouping events by days.

## General

- Resolved an issue with the Location Facet showing a maximum of 10 root nodes.
- Intella Connect will now track users signing in and out of the application. Those events are added to the Activity Streams and also contain IP addresses from which the request originated.
- Intella Connect will now remember the last view used by a user, even across logins.

## Intella Connect Dashboard

- Improved security of the admin page.

- The Case Detail panel shows the last time a user was active.
- Information about usernames being case sensitive will be shown after a new user account has been added.

## Searching

- A warning icon will be shown next to the search button when not all search options are turned on.
- Saved Searches can now be combined and evaluated as a single query.
- Resolved an issue with deduplication not working for embedded items in the Thumbnails View.
- Resolved an issue with remembering the deduplication setting when switching between views.

## Previewing

- The Contents tab is now using a high quality font which greatly improves readability.
- The Thumbnails tab title is now showing the thumbnails count.
- The Thumbnails tab will now be hidden if a given item does not have any thumbnails in its attachments or embedded items.
- Keyword search hits will now be rendered with a vivid yellow background color.
- Resolved an issue with the loading overlay positioning.
- The Print Report action has been added to the Previewer. It opens a new browser tab containing the detailed PDF report of a given item.
- The Previewer contents will now print better when using the default Print dialog built into a browser.
- Resolved an issue with the Previewer lacking navigation buttons when an item has been opened with the “Preview” button from the Items Table view.
- It is now possible to change the default font size for the Previewer.

## Exporting

- Export package creation can now be cancelled and restarted.
- Using Intella Connect, reviewers may now export selected items with an export template created with the Intella desktop product. That makes it possible to export data from Intella Connect in any format supported by the Intella desktop software.

## Upgrade notes

- Intella Connect 1.7.2 can open cases made with Intella 1.7.0, 1.7.1 and 1.7.2.

# Intella Connect 1.7.1

Released: September 26, 2013.

## Highlights

- The two case sharing restriction has been removed. The admin can now share as many cases as he wishes.
- A notion of Access Control Lists (ACLs) has been introduced. The admin can now choose which user has access to any given case. This action is available directly from the Cases list in the Admin Dashboard.
- Improved overall styling of the application, giving it a more consistent and vivid look and feel.
- Intella Connect now supports Internet Explorer 8.0 and 9.0. However, we strongly encourage using the latest version (IE 10) if possible.
- Intella Connect will refuse to run on IE 7.0 and older. It will show a warning screen advising to use a different web browser.
- Intella Connect will refuse to run on machines that do not meet the minimal hardware requirements. In such cases an appropriate warning will be displayed to the admin.
- The Intella Connect Dashboard now includes a System Notifications section, containing a diagnosis of any system issues found (both hardware and software) and advising the admin on how to proceed for each encountered problem.

## General

- Notifications about added comments will now contain a sample of the comment text.
- Resolved an issue with a flickering loading indicator.
- From this version onward only a 64-bit installer will be provided.
- Redesigned Intella Connect icon.
- The Activity Stream will now group the events by day.

## Intella Connect Dashboard

- Improved the message shown when Intella Connect fails to start.
- The Activity Stream contains a drop-down that allows choosing the case for which to show activities.



- The case port is now edited in the Case Details panel rather than a popup.
- The Case Details panel now renders the path to the case logs folder.
- Information about supported browsers are now added to the “About Intella Connect” dialog, accessible from the system tray.
- Resolved an issue with the User Management section not refreshing the users list properly in IE 9.0.
- Resolved an issue with some cases failing to start when being shared for the first time.

## Searching

- Added an Item ID facet, which enables reviewers to:
  - find an item with a given ID,
  - preview an item with a given ID,
  - upload lists of IDs and query for all matching items.
- The Thumbnails view now supports deduplication of images.
- The Items Table will now select all items when typing CTRL+A.
- Added the ability to query for multiple facet values by selecting values while holding down the CTRL button.
- The Cluster Map can now be panned by dragging anywhere in the map.
- The Features Facet is now reporting Exception items (i.e. items that generated errors during exporting).
- Improved the rendering speed of the Tags facet.
- Resolved an issue with tagging of attached/nested items producing errors.
- Resolved an issue with the Cluster Map being evaluated twice in a row without any reason (no changes to underlying queries).
- Resolved an issue with Intella Connect hanging when removing some queries from the Results panel (under certain conditions).
- Resolved an issue with the Items Table reporting incorrect item counts when the Results panel contains included/excluded queries.
- Resolved an issue with the Cluster Map reporting wrong cluster sizes when the Results panel contained included/excluded queries.
- Resolved an issue with the Results panel not updating properly when it contained two or more queries reflecting activities by other reviewers.
- Resolved an issue with clicks in the Cluster Map not updating the rest of the display.
- Resolved an issue with the Email Address facet not evaluating properly when the queries contained HTML entities.

- Resolved an issue with the file upload modal window not working properly in some versions of Internet Explorer.

## Previewing

- Added an overlay notifying the user about other tagging or flagging operations taking place in the background, when the reviewer tries to tag or flag an item.
- The Previewer will now fill all available width on screens with resolutions less than 1024 pixels wide.
- The quick tags list was replaced with a flat list in the top menu bar.
- Resolved an issue with the Previewer not loading when the Results panel contained a large number of queries.
- Resolved an issue with hit highlighting markers missing in IE 8.0.
- Resolved an issue with occasional errors while tagging an item from the Previewer.
- Resolved an issue with the Native Preview not working when Intella Connect is configured to use HTTPS.
- Resolved an issue with the scrollbar knob's surface in the Contents tab not being clickable everywhere.
- Resolved an issue with long content not wrapping correctly in the Properties tab.

## Exporting

- Exporting now also supports packaging as a flat ZIP file, containing all items in a single folder.
- Creation of export packages now survives a server restart.
- When creating exports with more than 10,000 items, a modal window with an appropriate message will be shown.
- Fixed an issue with missing "loading..." label when changing the active export.
- Fixed an issue with adding superfluous .pdf file extensions to files that already are PDFs.

## Upgrade Notes

- Intella Connect 1.7.1 can open cases made with Intella 1.7.0 and 1.7.1.
- **By default, the new ACLs mechanism will disable access to all of the cases for any user.** This behavior is deliberate, prohibiting reviewers from accessing cases they should not have access to.  
Therefore, after installing Intella Connect 1.7.1, administrator should make use of

the *Cases list > Authorizations* window in the Intella Connect Dashboard to enable access for the intended reviewers.

# Intella Connect 1.7.0

Released: July 25, 2013.

First publicly available release.