2021x Version News

Magic Collaboration Studio 2021x takes a huge leap towards its enterprise readiness. It comes with major improvements in the ability to better handle and manage large amounts of data. Efficient collaboration is now ensured even under extremely high server load while keeping the disk footprint at a very minimum.

Enhancements to Teamwork Cloud RBAC mechanism now allows managing access rights in bulk via category-level permissions or at a fine-grained level via branch-level permissions.

A brand new Resource Usage Map web application can help you quickly analyze large amounts of inter-linked server projects and investigate potentially problematic usage areas.

Cameo Collaborator web application brings not only a number of new functionalities but also multiple improvements to the features that you already know. With a new version of the product, you can save Cameo Collaborator comments as UML elements in your project, export documents to PDF and HTML formats, add new values to a project right from a Cameo Collaborator document, and more.

Performance Improvements in TWC Core

Resource Usage Map

Category-Level Permissions

Branch-Level Permissions

LDAP Server Configuration Changes

REST API Change Log
Saving Comments as Model Elements

Exporting Documents to PDF and HTML

New Model Editing Capabilities in Cameo Collaborator

Disk Space Usage Improvements

Improved Publishing Performance

Other
Other Enhancements

Key Issues Fixed

Performance Improvements in TWC Core

TWC Disk Footprint Improvements

Major TWC disk footprint-related changes are presented in this release. TWC 2021x requires twice as less disk space for the same amount of projects with no history and up to 7 times less memory for projects with existing history compared to TWC 19.0 SP4. In addition to this achievement, the disk size growth is cut nearly 5 times in TWC 2021x compared to TWC 19.0 SP4 for those projects users work actively on.

Teamwork Cloud disk footprint improvements

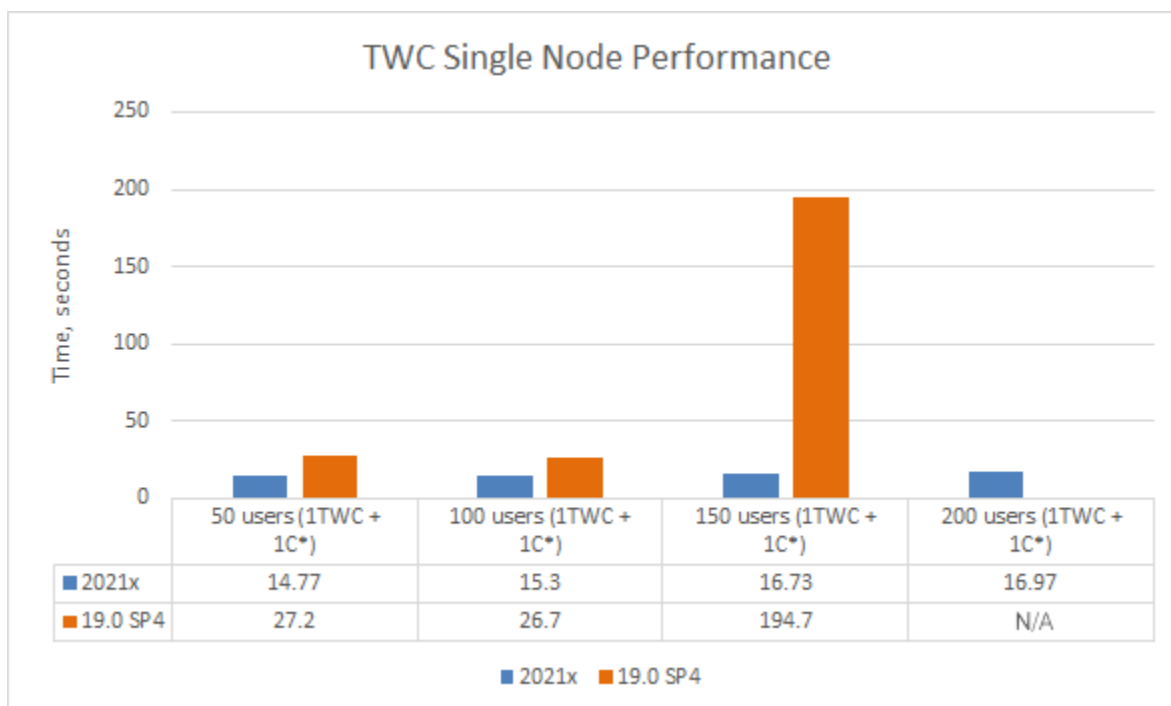|	DB with no history	DB with history (10k commits)
■ 19.0 SP4	30	168
■ 2021x	14	25
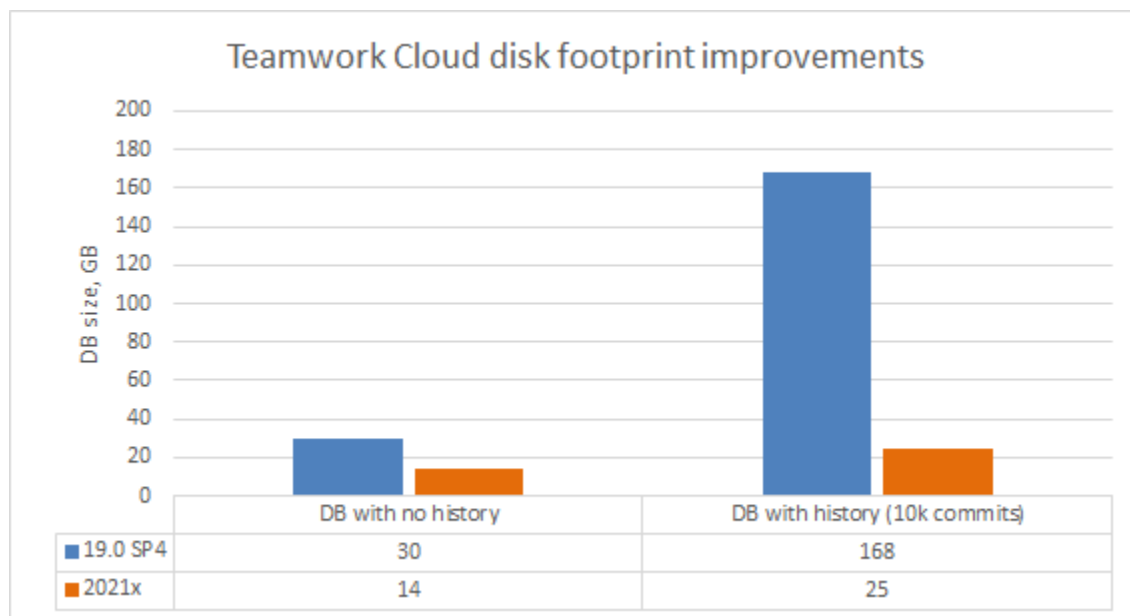
A chart comparing TWC disk footprint between different modeling tool versions.

- A database of 50 projects with 200 commits each was used to run the tests.
- Project sizes ranged between 400k and 2.2M elements (average project size being 700k elements).
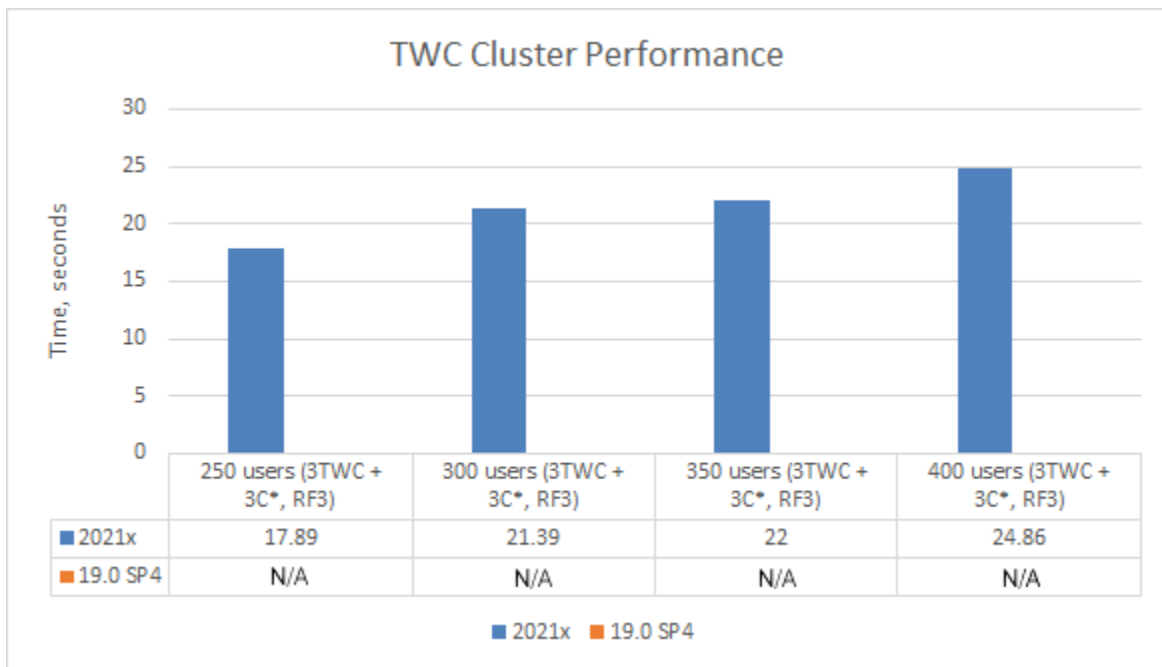
TWC Scalability Improvements

TWC 2021x delivers significant improvements in scalability when handling a large amount of concurrent users actively working with server projects. In particular, project commit and update operation performance under high load remains stable even with 200 simultaneous users on a single node setup. The following charts depict combined commit and update times from a single user's perspective going up to 200 concurrent users repository-wise.

TWC Single Node Performance

	50 users (1TWC + 1C*)	100 users (1TWC + 1C*)	150 users (1TWC + 1C*)	200 users (1TWC + 1C*)
■ 2021x	14.77	15.3	16.73	16.97
■ 19.0 SP4	27.2	26.7	194.7	N/A

■ 2021x ■ 19.0 SP4

Combined commit and update times on a single node setup.

Additionally, TWC's internal load balancer has been tweaked to achieve higher effectiveness when under extremely large loads of up to 400 concurrent users.

TWC Cluster Performance

	250 users (3TWC + 3C*, RF3)	300 users (3TWC + 3C*, RF3)	350 users (3TWC + 3C*, RF3)	400 users (3TWC + 3C*, RF3)
2021x	17.89	21.39	22	24.86
19.0 SP4	N/A	N/A	N/A	N/A

Combined commit and update times on a 3 node TWC and Cassandra cluster.

Resource Usage Map

We are proud to present Resource Usage Map - a new web application that comes with Teamwork Cloud 2021x. Resource Usage Map allows you to create graphical representations of Teamwork Cloud project usages, analyze dependencies among projects in the Teamwork Cloud repository, and identify potentially problematic usage areas.

In Resource Usage Map you can:

- Create usage maps for one or multiple resources.
- Quickly access the resource usage map of an open project right from a modeling tool.
- Identify three types of suspicious usages: inconsistent version usages, cyclic usages, and unused resources.
- Use filters to choose what types of usages you want to see in a usage map.
- Search for resources in a large usage map and view their details in the Resource pane.

The Resource Usage Map application displaying the usage map of five selected resources.

Learn more about configuring Resource Usage Map URL>>

Category-Level Permissions

Now you can manage Teamwork Cloud access rights more effectively by using category-level permissions. When role scope is category-specific, the role permissions apply to all resources stored in the selected category. **This means that new resources added to the category automatically inherit the role with all its assignments. This can save a lot of your time because you no longer have to assign new resources inside the category manually.**

You can assign a category to a specific role the same way you assign resources.

Branch-Level Permissions

Teamwork Cloud 2021x allows you to limit the scope of a role assigned to a user or user group not only to specific resources but to specific branches of a resource as well. For example, you can allow an engineer to work only on a specific branch while prohibiting access to any other resource branches he is not supposed to edit. This enables a strict branch-per-feature methodology resulting in better work discipline among different team members.
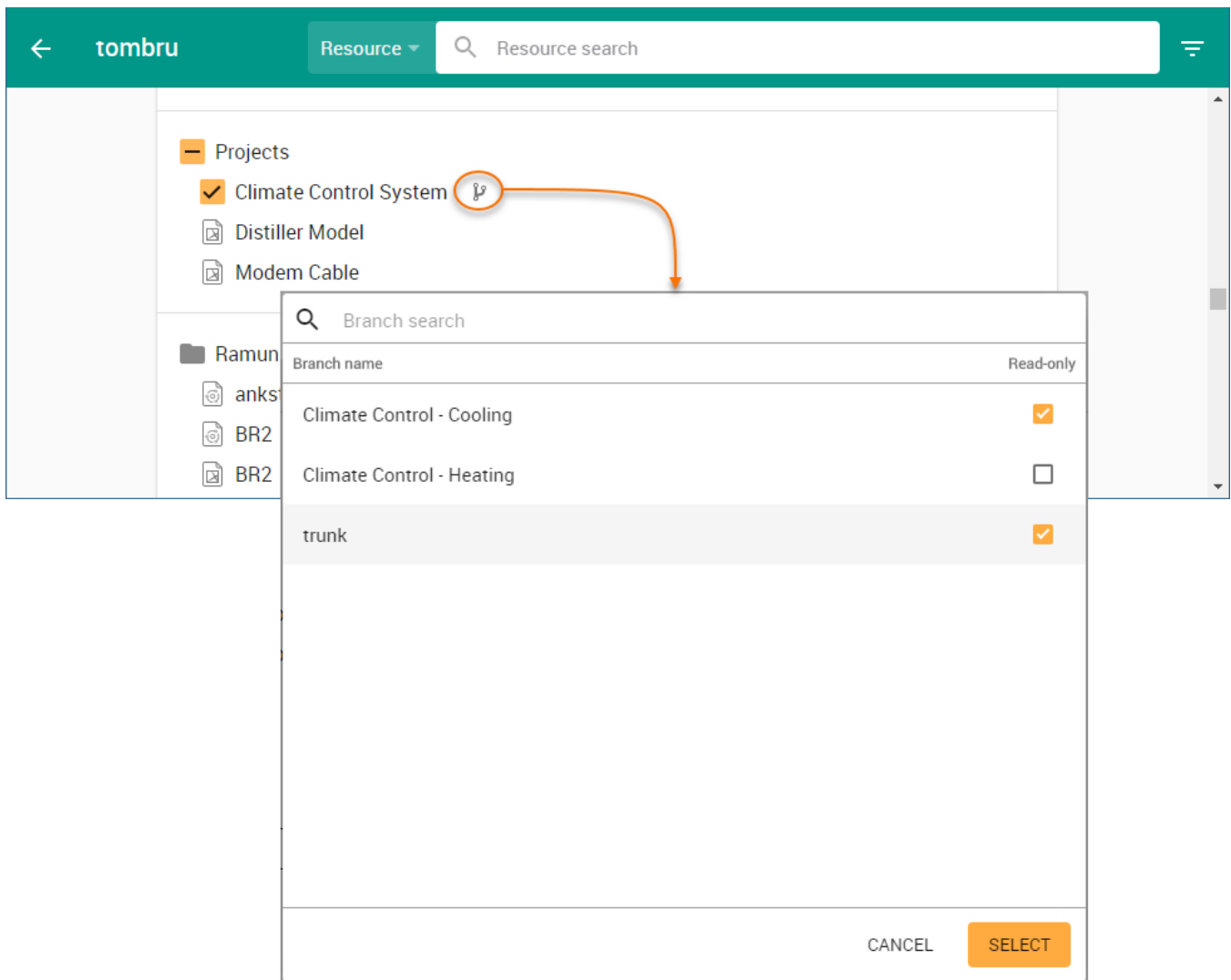
Specifying branch-level permissions.

LDAP Server Configuration Changes

An LDAP server query for searching, retrieving, and importing users has been split into Users query and User groups query for more accurate search results when querying an LDAP server. It is important that you update User and User groups queries after upgrading your Teamwork Cloud instance to version 20.0.

An example of the LDAP server configuration page.

REST API Change Log

The REST API change log concerns the following areas:

- Changes in data types.
- URLs relocated.
- New URLs.
- API documentation (for more clarified information).

Collaborator

Saving Comments as Model Elements

In the previous version of Cameo Collaborator for Teamwork Cloud, you could work with Collaborator comments in a modeling tool by using the comments panel. However, comments were stored in a Cameo Collaborator document, so you could not use all the benefits of your modeling tool capabilities. In this version of the product, it is possible to save Cameo Collaborator comments as model elements in a project and work with them as you would with any other UML elements. In addition, comments are automatically synchronized between your project and a Cameo Collaborator document every time you commit changes to the server or update the project.
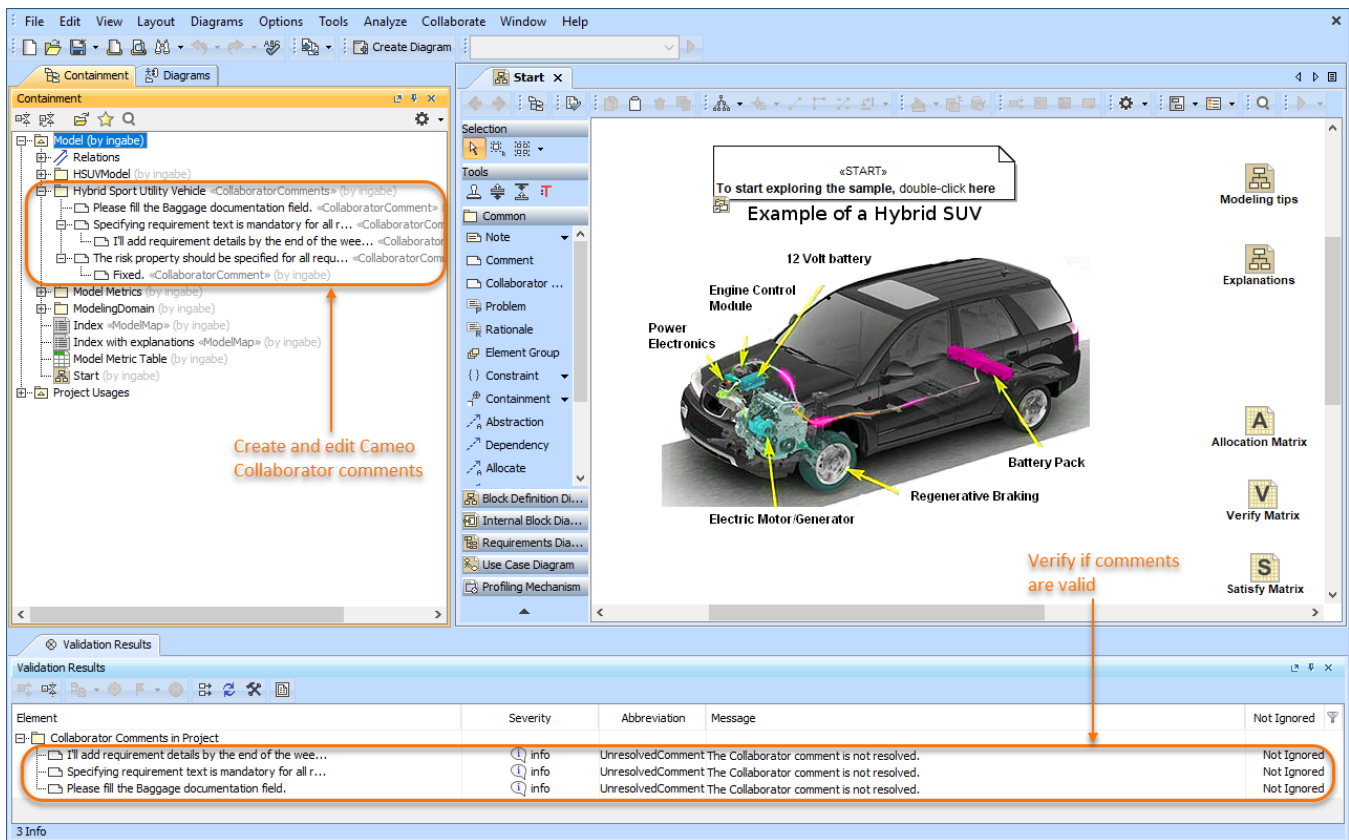
This example shows how you can create comments as model elements and work with them in a modeling tool.

This new functionality opens endless possibilities allowing you to:

- Create new textual Cameo Collaborator comments and reply to existing ones right in a modeling tool.
- Modify comments, e.g., change comment status, priority, and even the commented element in the comment Specification window.
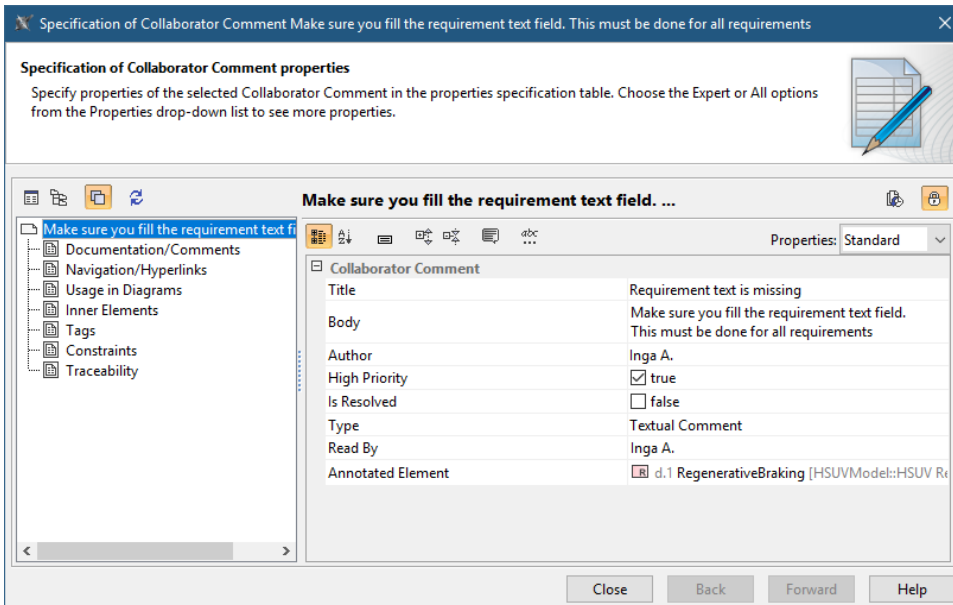
- Validate if all comments have been created correctly and have all the required metadata by using the *Collaborator Comments in Project* validation suite.
- Create comment reports displaying Cameo Collaborator comments and their detailed information, such as an author, status, priority, etc.

- Calculate metrics allowing you to see how many comments are created and resolved or create your own metrics.

Exporting Documents to PDF and HTML

In this release of Cameo Collaborator for Teamwork Cloud, we are happy to present a new functionality allowing you to export documents to PDF and HTML formats. This makes information exchange a lot easier because you can save a Cameo Collaborator document as a file and share it via email or any file sharing system. Also, customize a document file by adding a cover page and the table of contents, or choosing what information should be exported. You can export the whole document or just a part of it, such as selected tables, paragraphs, or a specific view.

1.1.1.2 EconomyContext

Characteristics

Name	EconomyContext
Documentation	
Open in Model Editor	▦ EconomyContext

Fig. Characteristics

Value Properties

#	Name	Type	Multiplicity	Default Value	Documentation
1	delta-t	☑ Time	1		

Fig. Value Properties

Figure B.29 Establishing Mathematical Relatioships for Fuel Economy Calculations

Fig. Figure B.29 Establishing Mathematical Relatioships for Fuel Economy Calculations

Navigation

Open in Model Editor	▦ Figure B.29 Establishing Mathematical Relatioships for Fuel Economy Calculations

Fig. Navigation

This example shows a Cameo Collaborator document exported to the PDF format. Only an active document section has been exported.

New Model Editing Capabilities in Cameo Collaborator

The model editing in Cameo Collaborator functionality has been extended even further. Now you can create values for stereotype tags, the Documentation property, and other textual properties (except for slot values) right in a Cameo Collaborator document. This will simplify your workflow because you will no longer need a modeling tool to add new values to your model.
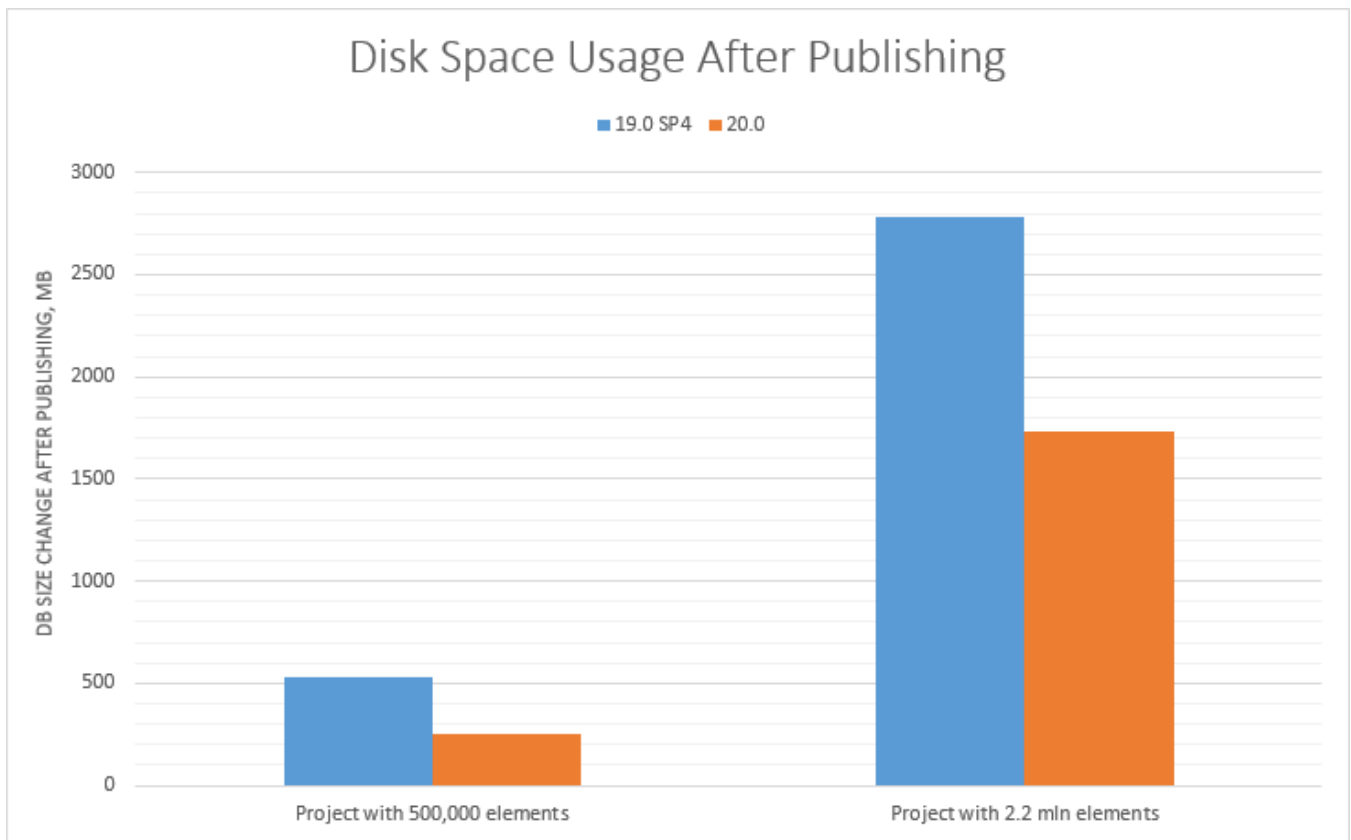
This example shows how to create a new stereotype tag value right in a Cameo Collaborator document.

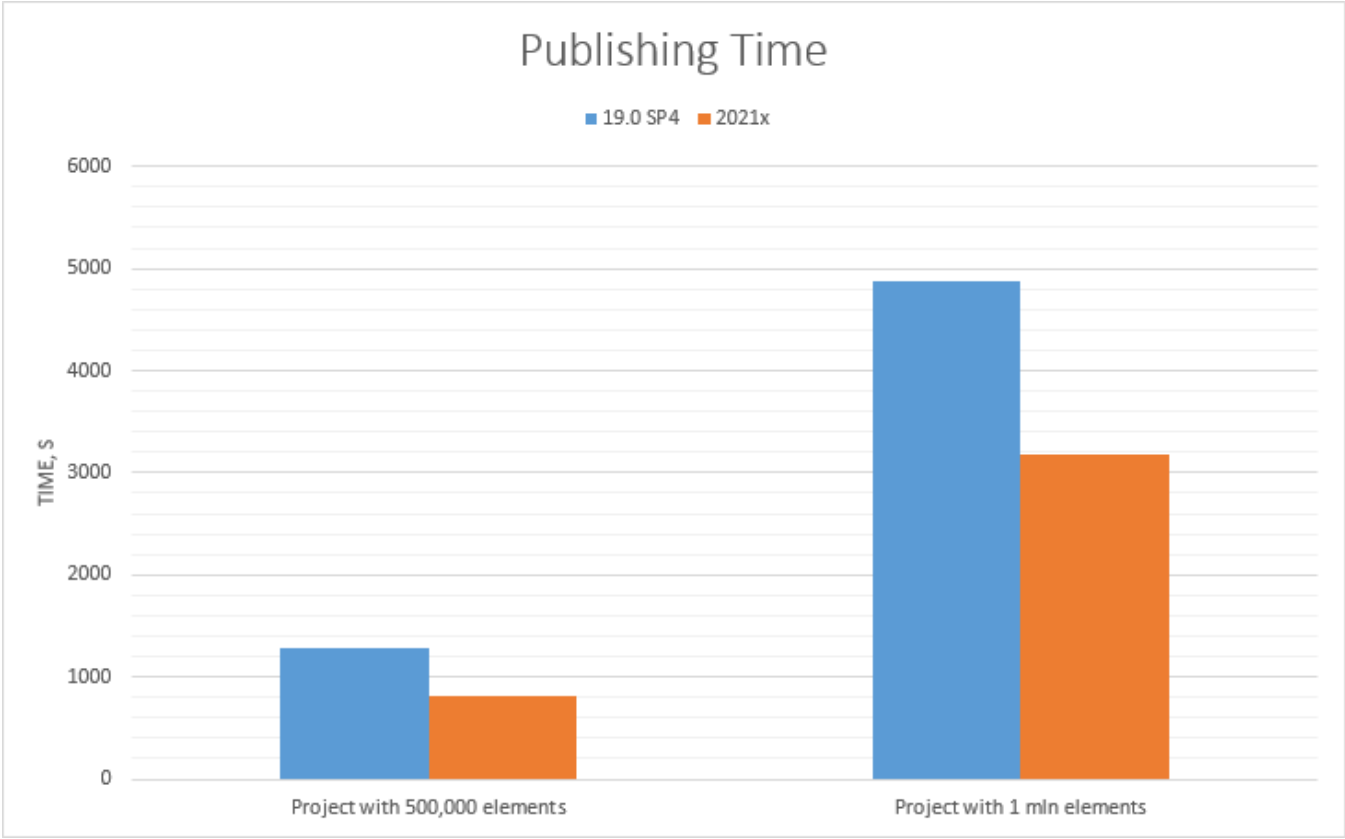## Disk Space Usage Improvements

In this release of Cameo Collaborator for Teamwork Cloud, the number of elements in documents has been significantly reduced and now Cameo Collaborator documents take 40-50% less space in the Teamwork Cloud server.
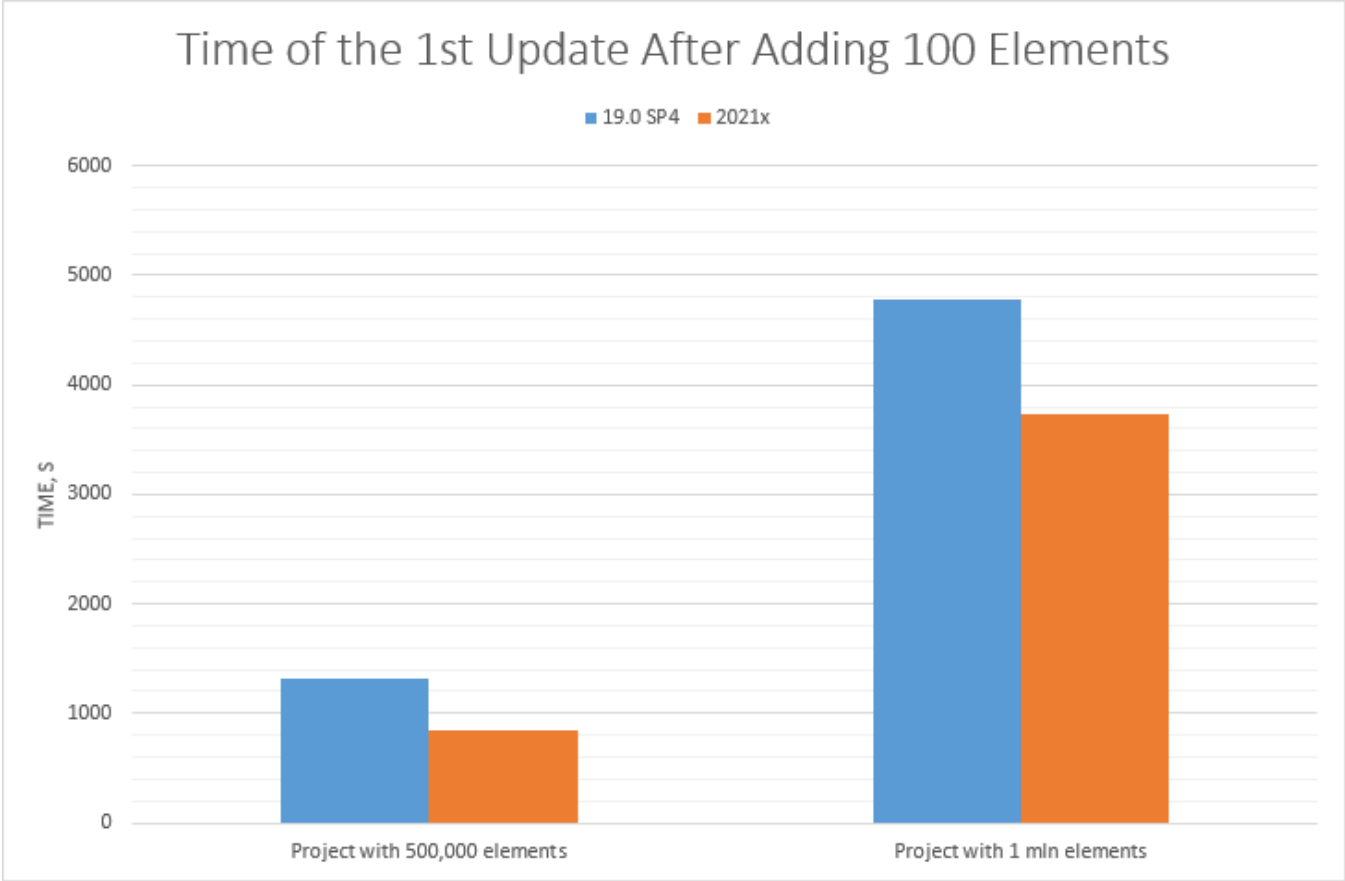
This chart demonstrates significantly decreased disk space usage in Cameo Collaborator for Teamwork Cloud 20.0 after publishing projects of different sizes.

Improved Publishing Performance

In Cameo Collaborator for Teamwork Cloud 2021x, the publishing performance has been significantly improved and now takes less time as shown in the charts below. In addition, the amount of memory you need to allocate to your modeling tool for publishing has decreased.

Publishing Time

19.0 SP4 — 2021x

(TIME, s)

Project with 500,000 elements · Project with 1 mln elements

This chart compares the publishing time between product versions 19.0 SP4 and 2021x.

Time of the 1st Update After Adding 100 Elements

19.0 SP4 — 2021x

(TIME, s)

Project with 500,000 elements · Project with 1 mln elements

Other

- Email notification templates have been redesigned and now have a completely new modern look. In addition, you can edit these templates to customize email notification appearance.

Navigate to the commented item in the document
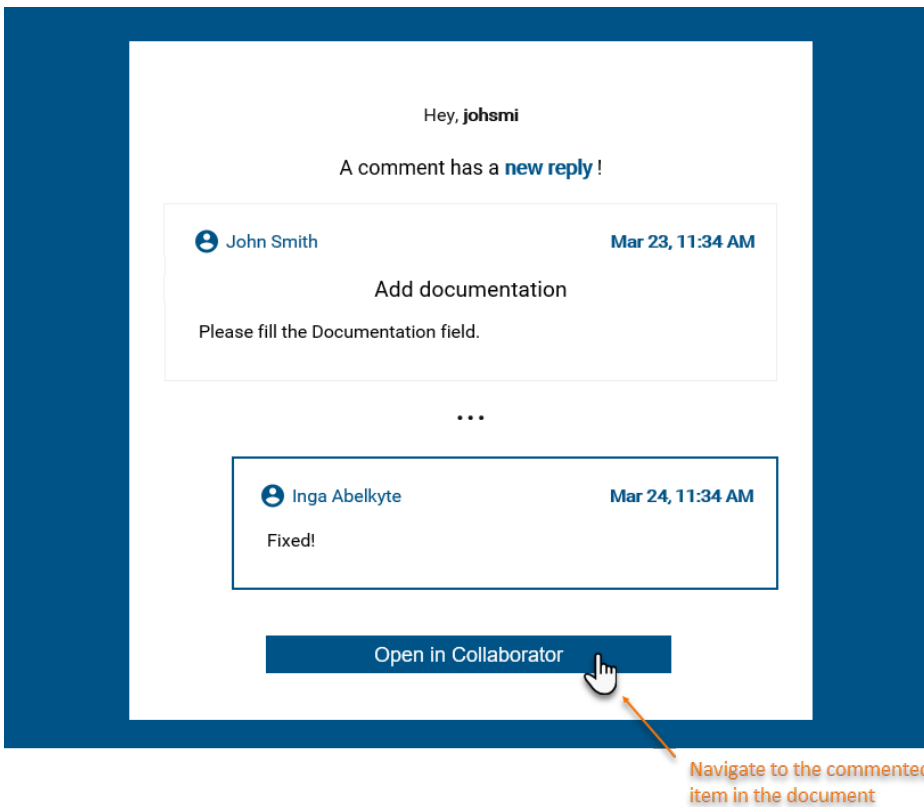
- If you are new to working with custom document templates, check our new *Cameo Collaborator Template Samples* project wich you can find in your modeling tool installation directory. It provides different document template samples and gives step by step instructions on how to create them.
- Now subscribing to email notifications is more convenient because you can do it right from the Resources application.
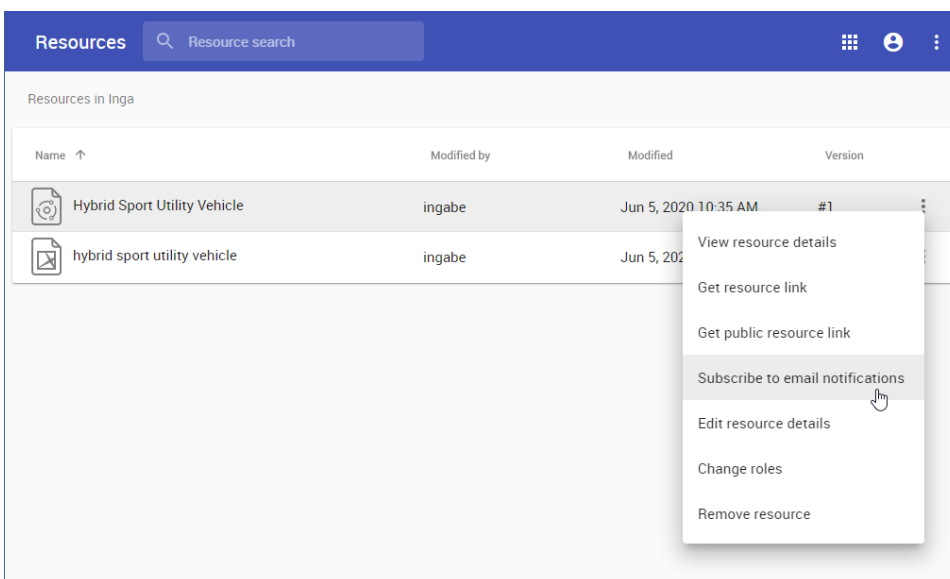
Other Enhancements

- Secure SSL communication can now be set up between Teamwork Cloud and Cassandra. Learn how to configure secure SSL communication >>

- The search capability in the Resources application has been improved and now works much faster.
- Empty categories are no longer displayed in the user interface.

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Documentation

- Magic Collaboration Studio 2021x

News of earlier versions

- Magic Collaboration Studio 19.0 SP4
- Magic Collaboration Studio 19.0 SP3