

SD500016

Bimbeats: Real-Time Data Analysis for Revit, Dynamo, BIM360, AutoCAD and More

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Learning Objectives

- Proactively **develop training plans** through your company's data insights
- Discover if **modeling standards** are being followed
- **Measure** the **time** teams take to complete tasks to better **plan future projects**
- See how your **digital strategy** is **tracking** with real-time dashboards
- Get tips for **improving productivity** and **reduce downtime** across every project

Description

Many organizations are undergoing **digital transformation** to prepare for a data-driven future. A **measurement** of the **success of your strategy** can be captured **through data analysis**. This talk will discuss the **challenges and opportunities** of analyzing company-wide BIM metrics to develop **actionable insights** for **reducing downtime** and **increasing productivity**

Speaker



- 25 years of experience in the AEC industry
- Structural Engineer / Technician (Arup - 20 years)
- Architectural Design Technology Specialist (BVN - 4 years)
- Principal Digital Consultant (Autonomation - 7 Months)
- Loves a good craft beer – (Anywhere - 25 years)

Acknowledgments

Many thanks to ADG Consulting Engineers for allowing unobfuscated Bimbeats data for this handout

Proactively develop training plans through your company's data insights

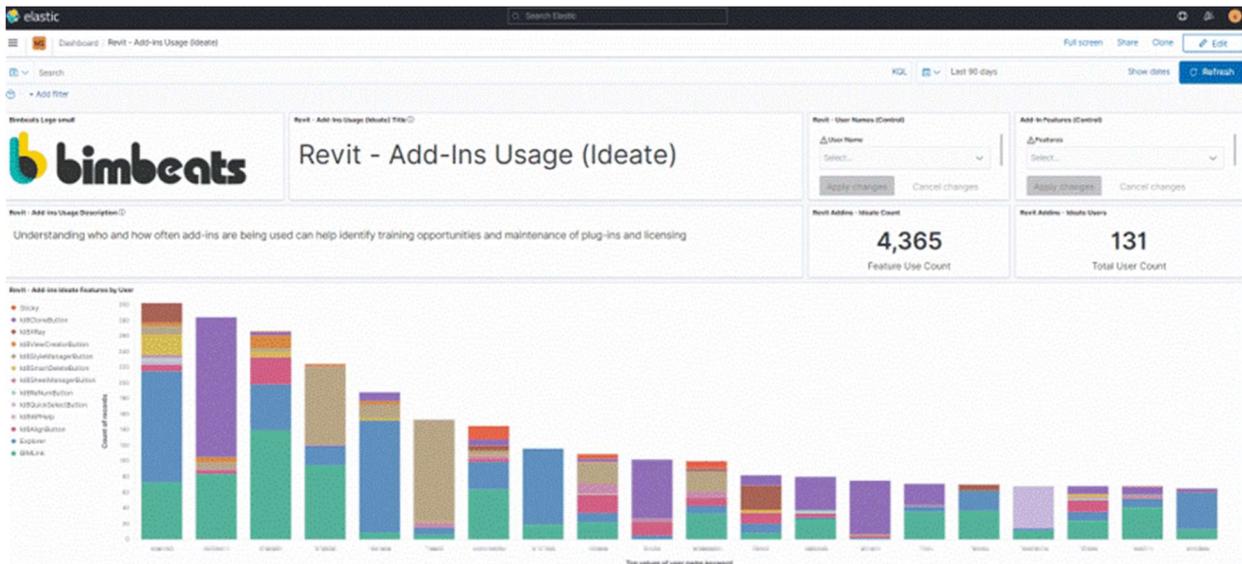
Most organisations have an appraisal system that attempts to capture an employee's competency across various skills. Without objective metrics that clearly outline the expectations of an individual, it can be difficult to quantify a level of expertise.

Plug-in Use

By capturing each plug-in's feature use and the use of company Dynamo scripts, training plans can be tracked for their effectiveness.

A real-world example of this was the use of the Ideate plug-in. BVN Architects captured the use of each feature by the user before undertaking virtual lunch and learn lessons. The data indicated a small number of power users for some of the features that the Design Technology team believed would benefit most Revit users. Ideate were asked to tailor the training to focus on the key features that appeared to be under-utilised.

Following the sessions, Bimbeats showed that a significant uptake in the use of these features. Because Bimbeats captures the data in real-time every time a feature is used, these metrics can be monitored in the future. If the numbers drop or new members join BVN, the lunch and learn session can be promoted again.



Revit Add-in Usage (Ideate) - Understanding who and how often add-ins are being used can help identify training opportunities and maintenance of plug-ins and licensing

Superusers of plug-ins that provide the most significant productivity gains can be encouraged to run training sessions with their teams. A measure of the success of the training will be recorded in the feature use by user.

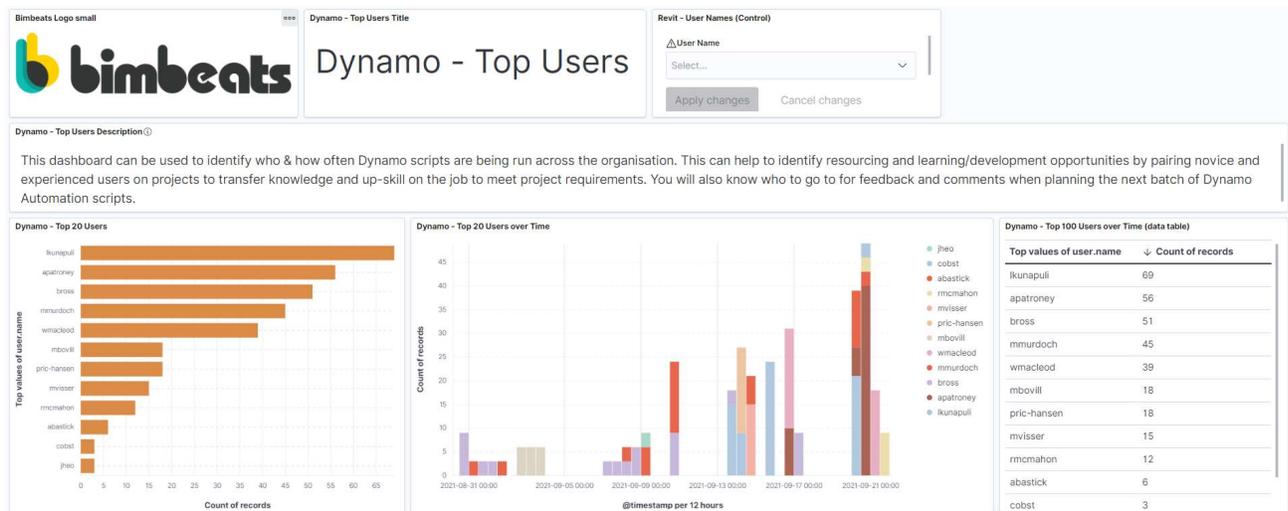
Dynamo Script Uptake

Automating repetitive manual tasks has been the focus of many companies over recent years. The challenge is to ensure users are aware of these new workflows and be able to track which projects and which users are making running them. The effectiveness of the way the scripts are built with or without custom UI's such as Data Shapes, using Dynamo Player or with tools such as Orkestra or Nonica can all be measured with Bimbeats to determine the best strategy for training different user groups.

Bimbeats data capture can be filtered to break down different user groups and develop a plan for training and time allocation for three groups; the script builders, those who want to be able to modify the scripts, and those who just want to run them with the most friendly user experience.

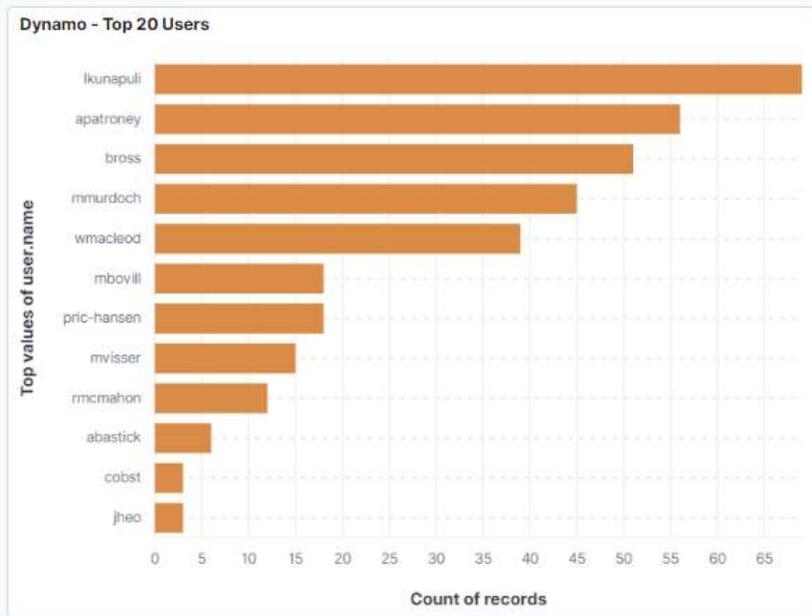
Key Metrics captured to assist in the above:

- Usage -Which scripts have been run on which files by which users?
- Duration - The time taken for the scripts to run. Min. Average and Maximum durations
- Stability – Failed to execute or run successfully?
- Custom/Core Node Use – which nodes are the most popular and from which package?
- How long has a task taken to complete?



Dynamo Top Users Dashboard – This dashboard can identify who and how often Dynamo scripts are being run across the organisation. It can help to identify resourcing and learning and development opportunities by pairing novice and experienced users on projects to transfer knowledge and up-skill on the job to meet project requirements. You will also know who to go to for feedback and comments when planning the next batch of Dynamo automation scripts.

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Dynamo – Top “x” Users

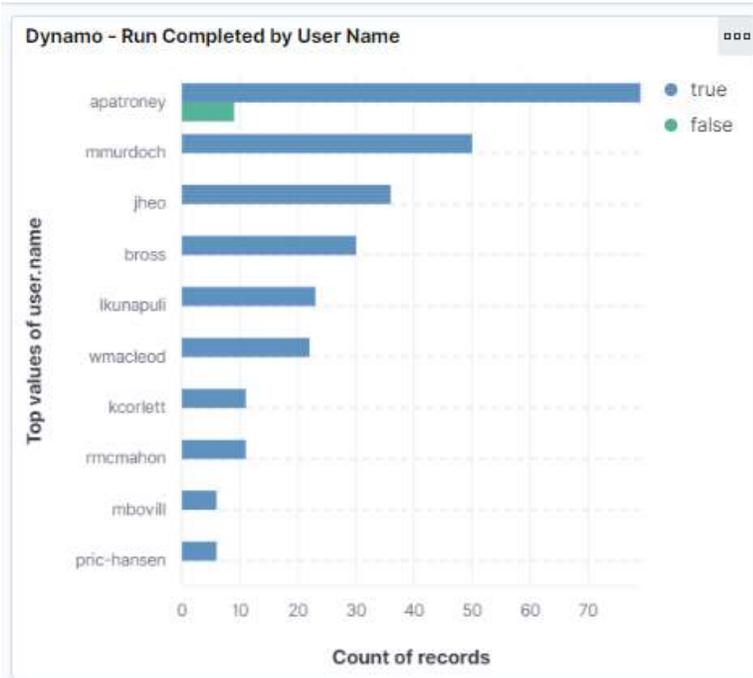
A screenshot of a data table titled "Dynamo - Top 100 Users over Time (data table)". The table has two columns: "Top values of user.name" and "Count of records". The data is sorted in descending order of record count.

Top values of user.name	Count of records
lkunapuli	69
apatronej	56
bross	51
mmurdoch	45
wmacleod	39
mbovill	18
pric-hansen	18
mvisser	15
rmcmahon	12
abastick	6
cobst	3

Dynamo – Top “x” Users Data Table

These visualizations show that almost all of the Revit Technicians within the team are actively using Dynamo.

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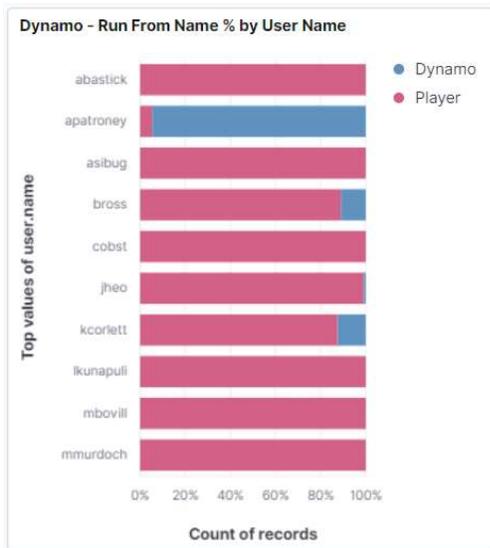
Dynamo - Run Completed by User Name

Dynamo - Scripts Most Frequently Failing		
File Name	User Name	Count of reco...
WORKING - RCB FOOTING LOAD IMPORT	apatrone	9

Dynamo - Scripts Most Frequently Failing

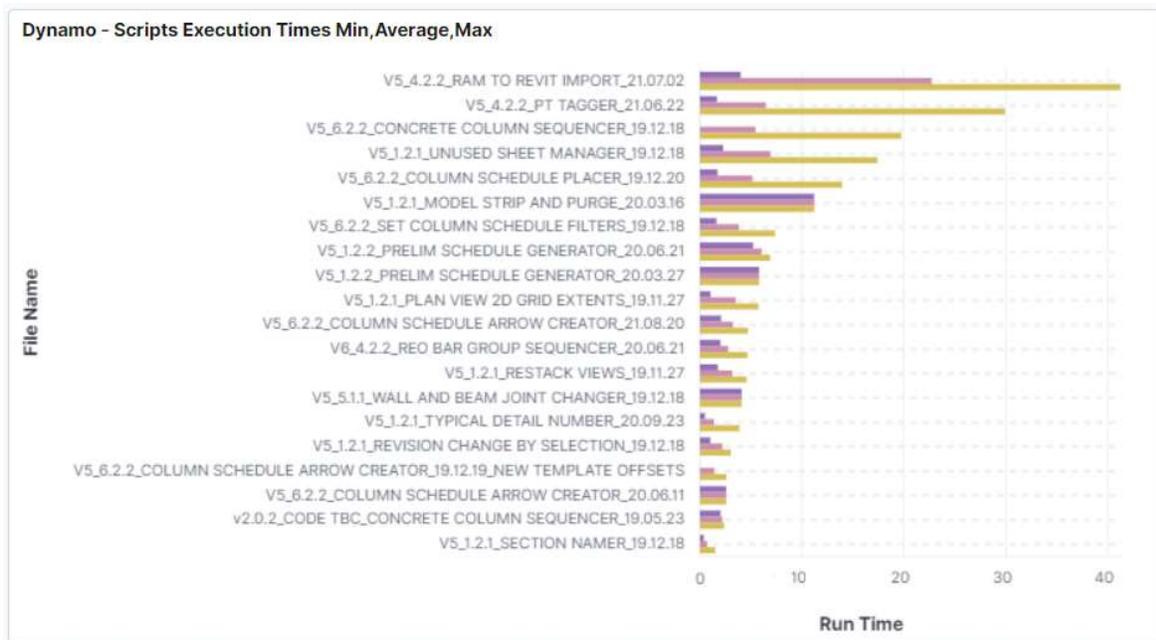
APatroney develops most of the scripts, so it is testimony to his competency that it appears his scripts typically fail to execute on working versions.

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Dynamo - Run From Name % by User Name

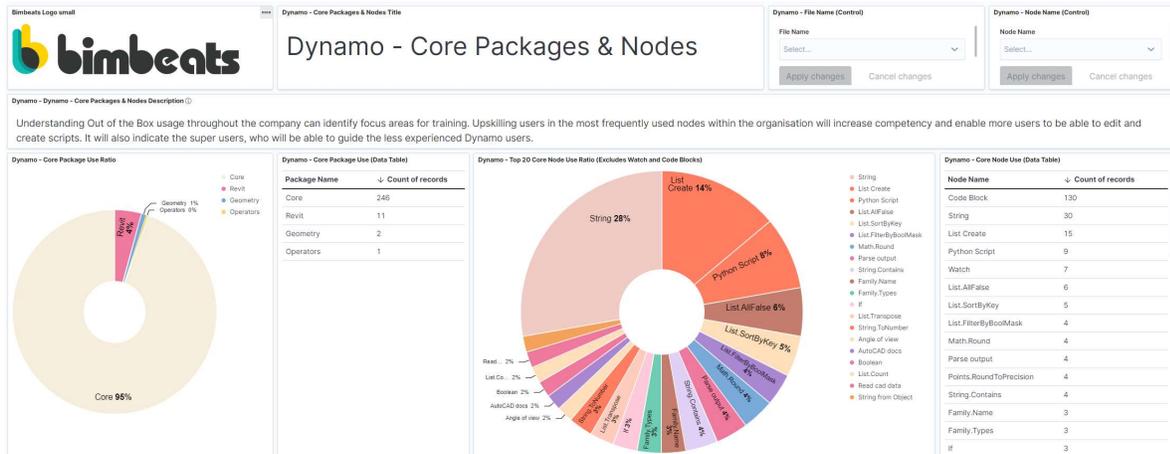
ADG Consulting Engineers deliver all production scripts in Dynamo Player format. This visualisation shows the users who typically just run the script and those in Dynamo modifying scripts.



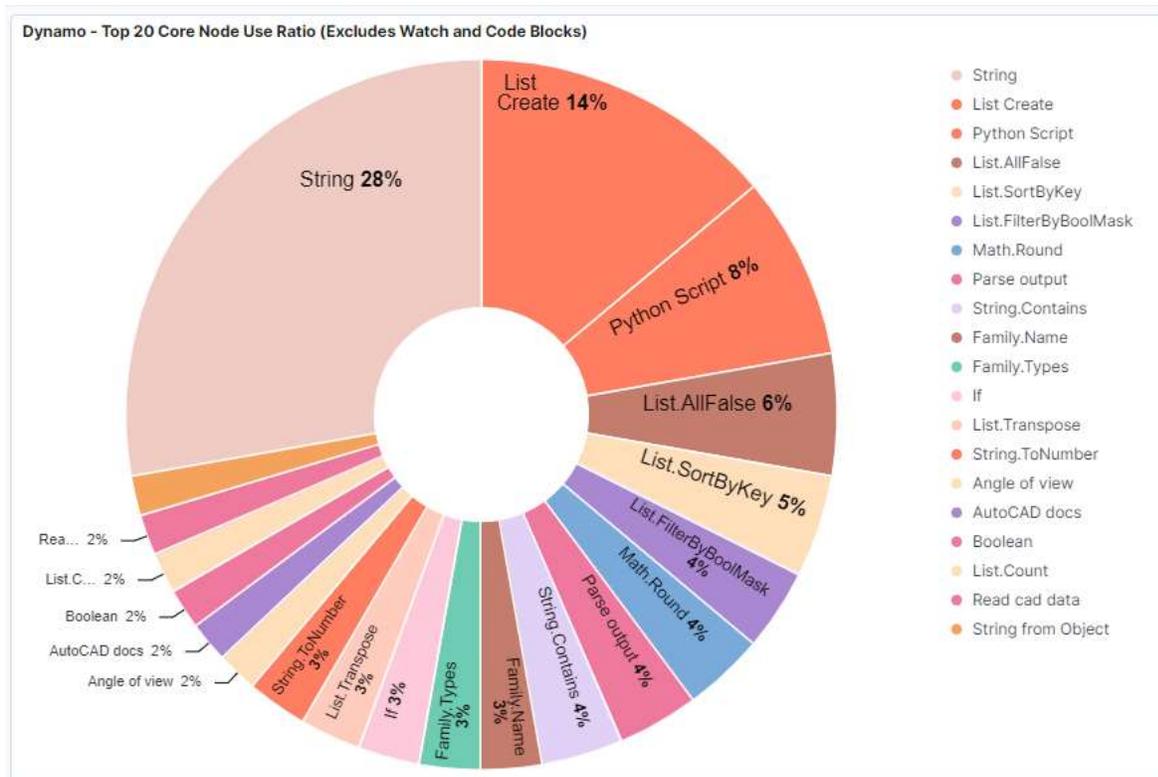
Dynamo - Scripts Execution Times Min, Average, Max

Time savings can be estimated with actual metrics of script use. This can help to gain leadership buy-in to continue to invest in upskilling in the areas of automation and computational design

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Dynamo – Core Packages & Nodes Dashboard Understanding out of the Box usage throughout the company can identify focus areas for training. Upskilling users in the most frequently used nodes within the organisation will increase competency and enable more users to edit and create nodes. It will also indicate the superusers who will be able to guide the less experienced Dynamo users.



Dynamo - Top 20 Core Node Use Ratio (Excludes Watch Nodes and Code Blocks)

Discover if modeling standards are being followed

Bimbeats captures both model health metrics and user activity. Therefore company modelling standards can be checked to identify which projects and users are adhering to them.

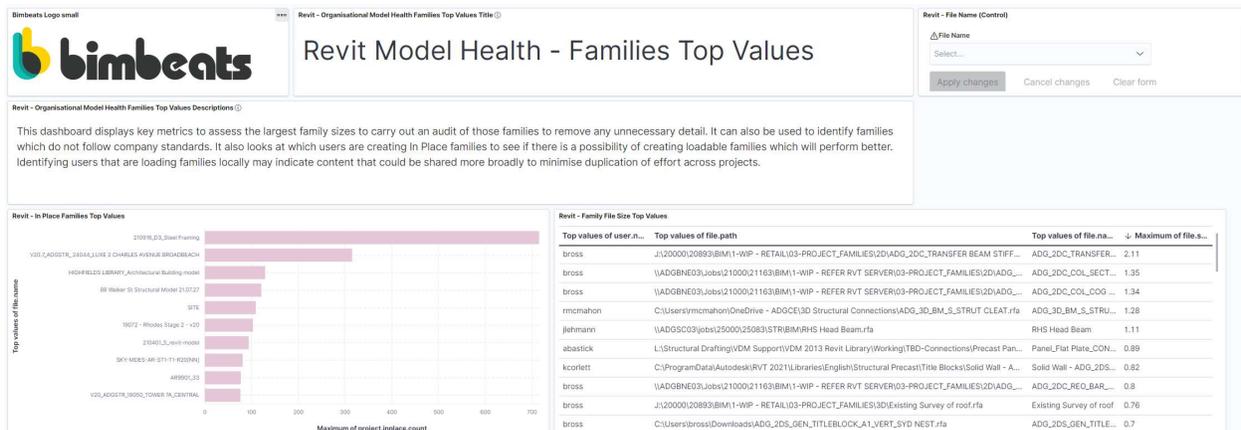
Using this data, company best practice modelling guides or tutorials can be provided to those who may not be aware they exist.

As part of a regular performance appraisal, any areas for improvement can be discussed between the individual and manager to agree time and resources for continuous improvement.

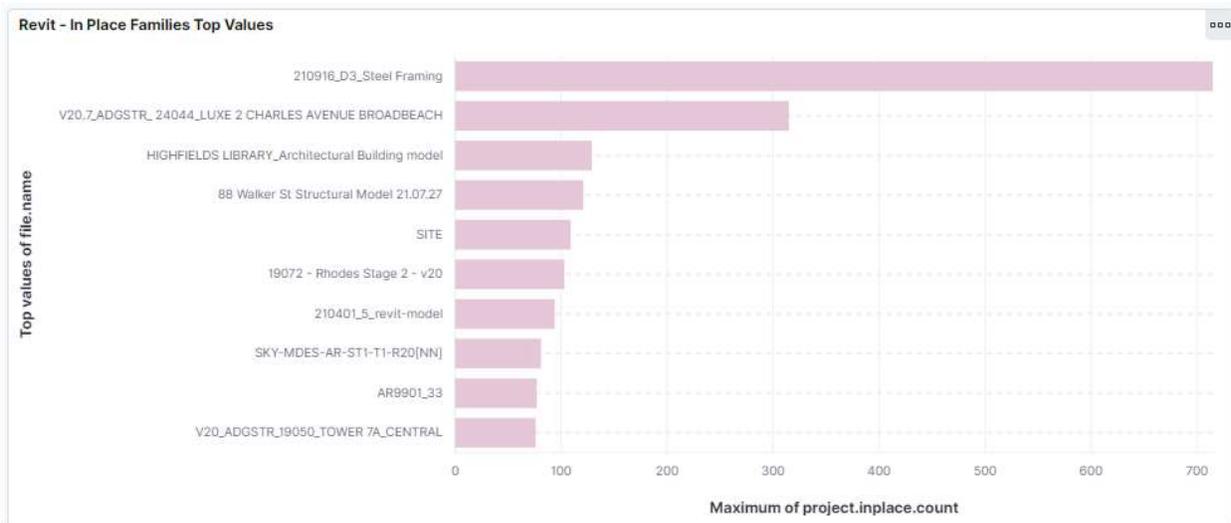
Bimbeats can be used to measure the success of the improvement strategy and record the frequency of both good and bad practices.

Key Metrics captured to assist in the above:

- 2D Content – Detail lines, filled regions, masking regions
- Best Practice – Purge, Sync Count, Close Inactive Views
- Naming Convention – Project Files and Family Names
- Alerting Capability – webhooks can be sent to MS Teams, Trello, Slack, Zendesk etc., when thresholds are exceeded. These are fully customisable. Almost every user or data metric can be captured.
- Journal File Analysis – Bimbeats processes the journal file into human-readable data



Revit Model Health – Families This dashboard displays key metrics to assess the largest family sizes to audit those families to remove any unnecessary detail. It can also be used to identify families that do not follow company standards. It also records which users are creating In-Place families to determine if there is a possibility of creating loadable families which will perform better. Identifying users loading families locally may indicate content that could be shared more broadly to minimise duplication of effort across projects.



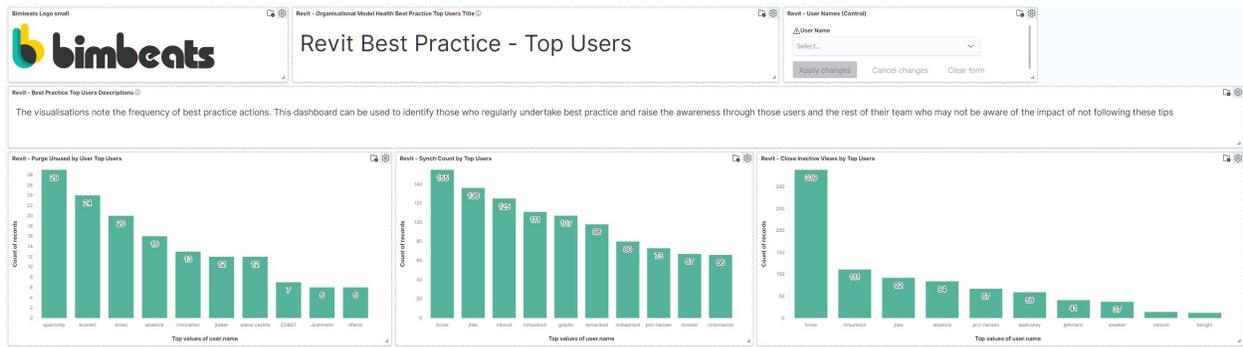
Revit – In-Place Families Top Values

Thresholds can be set up to alert BIM Managers when an acceptable value has been exceeded. In the case of In-Place families above, there may be an opportunity above to limit projects to 200, reducing the possible downtime caused by the top file in the visualization above before it reached over 700 In-Place families.

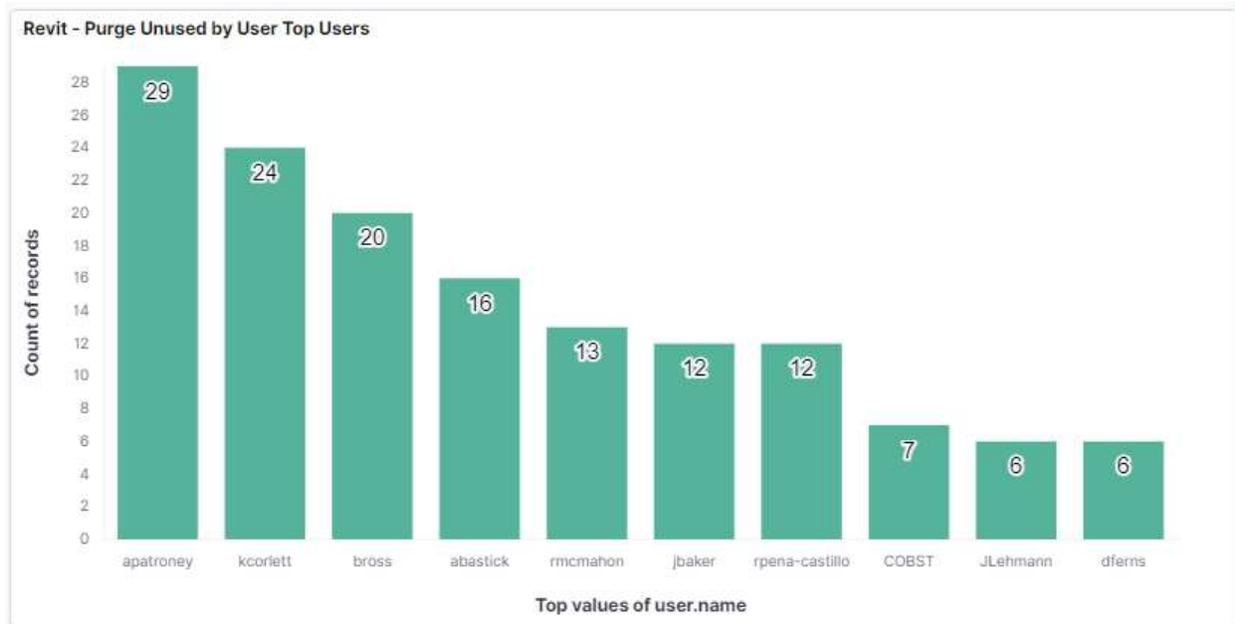
Top values of user...	Top values of file.path	Top values of file.name	↓ Maximum of file...
bross	J:\20000\20893\BIM\1-WIP - RETAIL\03-PROJECT_FAMILIES\2D\ADG_2DC_TRANSFER BEAM STIFF...	ADG_2DC_TRANSFER B...	2.11
bross	\\ADGBNE03\Jobs\21000\21163\BIM\1-WIP - REFER RVT SERVER\03-PROJECT_FAMILIES\2D\ADG_...	ADG_2DC_COL_SECTIO...	1.35
bross	\\ADGBNE03\Jobs\21000\21163\BIM\1-WIP - REFER RVT SERVER\03-PROJECT_FAMILIES\2D\ADG_...	ADG_2DC_COL_COG P...	1.34
rmcmahon	C:\Users\rmcmahon\OneDrive - ADGCE\3D Structural Connections\ADG_3D_BM_S_STRUT CLEAT.rfa	ADG_3D_BM_S_STRUT ...	1.28
jlehmman	\\ADGSC03\jobs\25000\25083\STR\BIM\RHS Head Beam.rfa	RHS Head Beam	1.11
abastick	L:\Structural Drafting\VDM Support\VDM 2013 Revit Library\Working\TBD-Connections\Precast Pan...	Panel_Flat Plate_CON...	0.89
kcorlett	C:\ProgramData\Autodesk\RVT 2021\Libraries\English\Structural Precast\Title Blocks\Solid Wall - A...	Solid Wall - ADG_2DS...	0.82
bross	\\ADGBNE03\Jobs\21000\21163\BIM\1-WIP - REFER RVT SERVER\03-PROJECT_FAMILIES\2D\ADG_...	ADG_2DC_REO_BAR_FL...	0.8
bross	J:\20000\20893\BIM\1-WIP - RETAIL\03-PROJECT_FAMILIES\3D\Existing Survey of roof.rfa	Existing Survey of roof	0.76
bross	C:\Users\bross\Downloads\ADG_2DS_GEN_TITLEBLOCK_A1_VERT_SYD NEST.rfa	ADG_2DS_GEN_TITLEB...	0.7

Revit - Family File Size Top Values

A simple data table can be used to capture which projects have the families with the largest family size and where those families reside. It is excellent to see ADG Engineers do not have any families over 2 Mb in the above example. It may indicate that users are storing families locally, which should be saved on a shared drive.

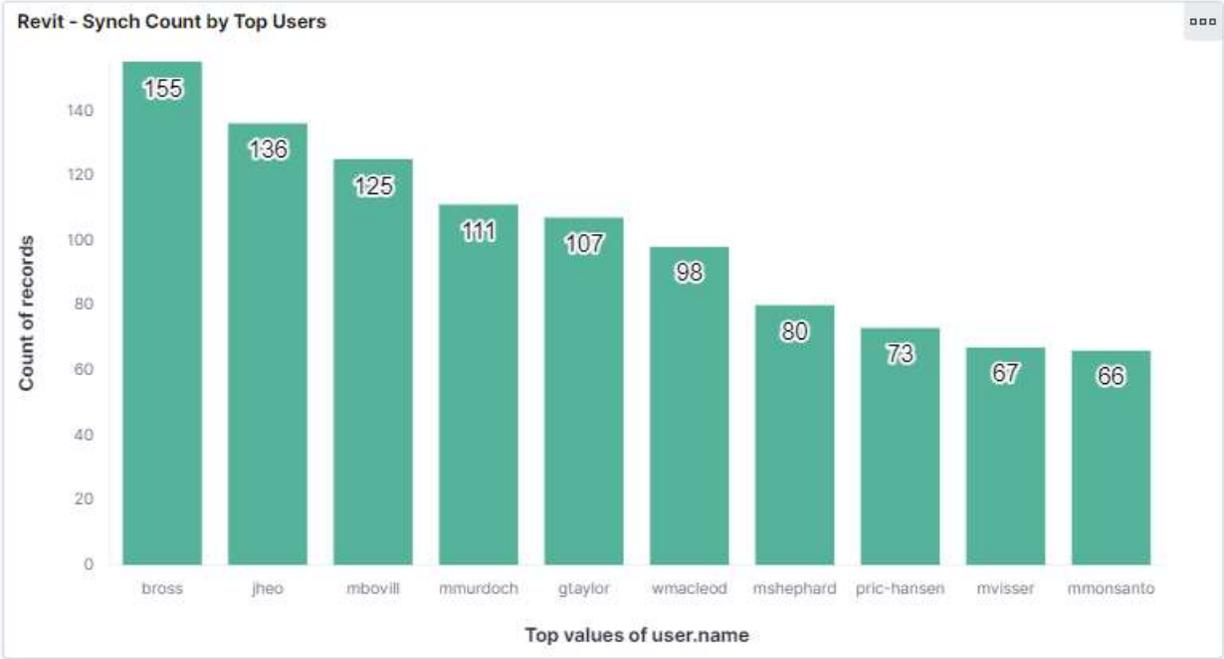


Revit Best Practice Dashboard - The visualisations note the frequency of best practice actions. This dashboard can identify those who regularly undertake best practice and raise awareness through those users and the rest of their team who may not be aware of the impact of not following these tips. A user control filter provides the opportunity to check the frequency of these habits and combine them with fatal errors, unrecoverable errors or synchronisation times.

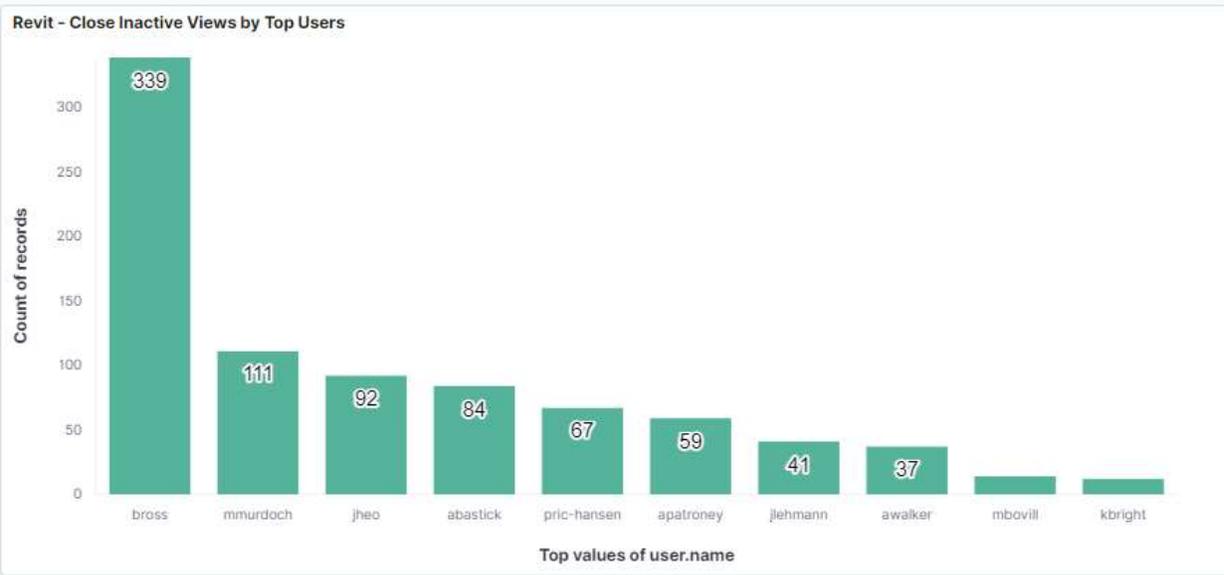


Revit - Purge Unused by User Top Users

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Revit - Synch Count by Top Users



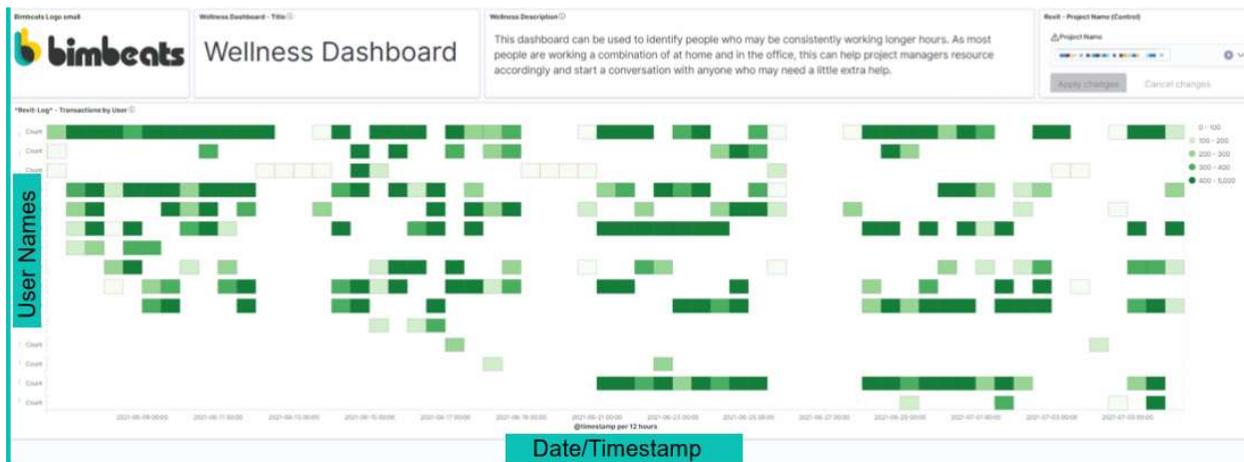
Revit - Close Inactive Views by Top Users

Measure the time teams take to complete tasks to better plan future projects

Bimbeats can capture a variety of duration metrics, including the time each user spends in a view, as well as the time taken to open and synchronise project files. This data can be incredibly valuable when bidding for new projects or billing for time-based variations.

Bimbeats can connect to existing timesheet management tools such as Deltek Vision. By linking project ids between Revit and Deltek, a comparison can be made between the times that has been estimated by the user for the timesheet data with that of the time spent in each view. While this is more relevant to team members who are primarily in Revit to do their work, it can be a good indication of actual time spent, rather than relying on a user to estimate the time they have spent on a project, particularly in the role of a BIM manager, where they may be required to bill their time to multiple projects.

Another aspect of tracking time taken to complete tasks is the well-being of employees. Project Managers who assign tasks and negotiate fees for projects may not be aware of their team's actual time to meet agreed deadlines.



Wellness Dashboard - This dashboard can identify people who may be consistently working longer hours. As most people work a combination of at home and in the office, this can help project managers resource accordingly and start a conversation with anyone who may need a little extra help.

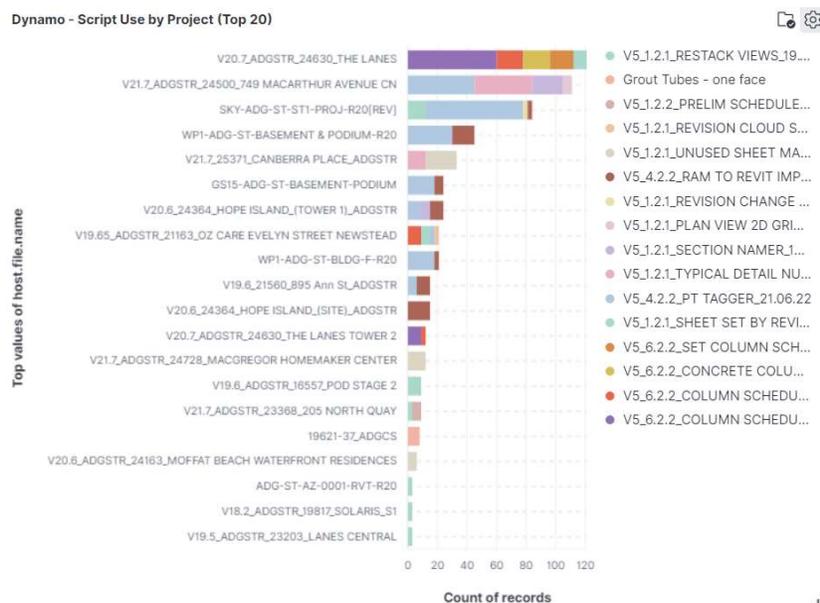
See how your digital strategy is tracking with real-time dashboards

Measuring the success of any digital strategy can be difficult without calculating quantifiable gains or losses. An indication of the success of a digital transformation strategy could be assumed by the number of projects won/lost or the profitability of projects before, during and after the transformation. However, there are many independent factors with each of these metrics that may not be a fair reflection of the effectiveness of a range of changes proposed to the way projects are delivered. Leadership teams may decide to bid low on a project in a market sector where they want to increase their presence or have a repeat client who is happy to pay a premium for service because relationships are already established. It could be that the project that has a low fee is operating more effectively than one which has greater resources available to them.

Bimbeats provides an entirely objective view to quantify a wide range of digital initiatives a company may have developed as part of its overall digital strategy.

Investment in Computational Design Development

BIM Managers are likely to have been describing to leadership groups the potential benefits of increasing computational design tools to automate manual processes. Using Bimbeats, an actual value in terms of time and money can be apportioned to scripts that have been developed.



Dynamo - Script Use by Project

Dynamo - Script Use by Project Data Table

Top values of host.file.name	Top values of file.name	Top values ...	↓ Count
SKY-ADG-ST-ST1-PROJ-R20[REV]	V5_4.2.2_PT_TAGGER_21.06.22	Ikunapuli	66
V20.7_ADGSTR_24630_THE LANES	V5_6.2.2_COLUMN SCHEDULE PL...	jheo	60
V21.7_ADGSTR_24500_749 MACARTHUR...	V5_4.2.2_PT_TAGGER_21.06.22	mmurdoch	45
V21.7_ADGSTR_24500_749 MACARTHUR...	V5_1.2.1_TYPICAL DETAIL NUMBE...	mmurdoch	39
WP1-ADG-ST-BASEMENT & PODIUM-R20	V5_4.2.2_PT_TAGGER_21.06.22	wmacleod	30
V21.7_ADGSTR_24500_749 MACARTHUR...	V5_1.2.1_SECTION NAMER_19.12....	mmurdoch	21
V21.7_25371_CANBERRA PLACE_ADGSTR	V5_1.2.1_UNUSED SHEET MANAG...	rmmcMahon	21
V20.7_ADGSTR_24630_THE LANES	V5_6.2.2_COLUMN SCHEDULE AR...	jheo	18
V20.7_ADGSTR_24630_THE LANES	V5_6.2.2_CONCRETE COLUMN SE...	pric-hansen	18
WP1-ADG-ST-BLDG-F-R20	V5_4.2.2_PT_TAGGER_21.06.22	wmacleod	18
V20.7_ADGSTR_24630_THE LANES	V5_6.2.2_SET COLUMN SCHEDUL...	jheo	16
WP1-ADG-ST-BASEMENT & PODIUM-R20	V5_4.2.2_RAM TO REVIT IMPORT...	wmacleod	15
V20.6_24364_HOPE ISLAND(SITE)_ADG...	V5_4.2.2_RAM TO REVIT IMPORT...	mmurdoch	15

Dynamo - Script Use by Project Data Table

Organisational Application Usage

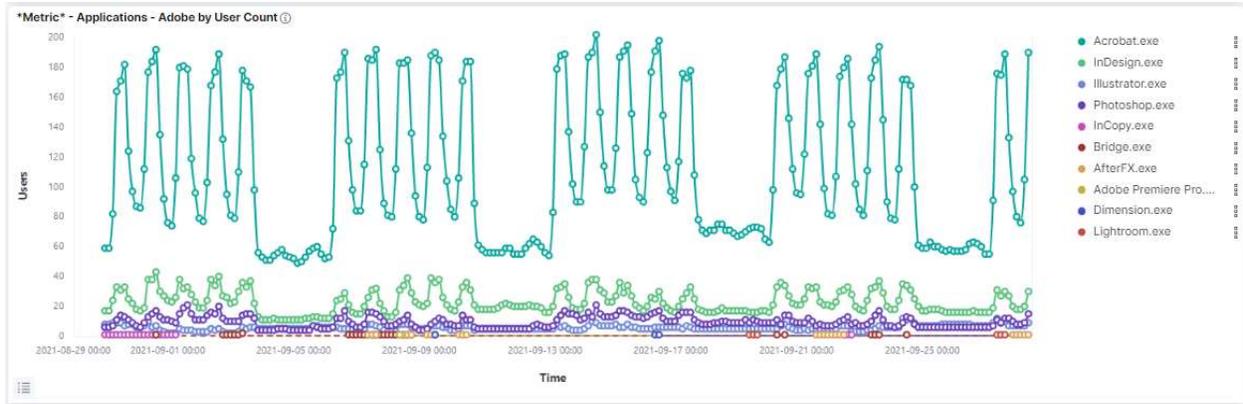
Decisions to maintain existing licensing agreements are typical scenarios for most organisations. Monitoring the use of products can identify opportunities to reduce licenses or track where users cannot obtain a license for a particular software when all available licenses have been used.

Bimbeats can track the use of any process running on the pc and capture the active window of cloud based applications.

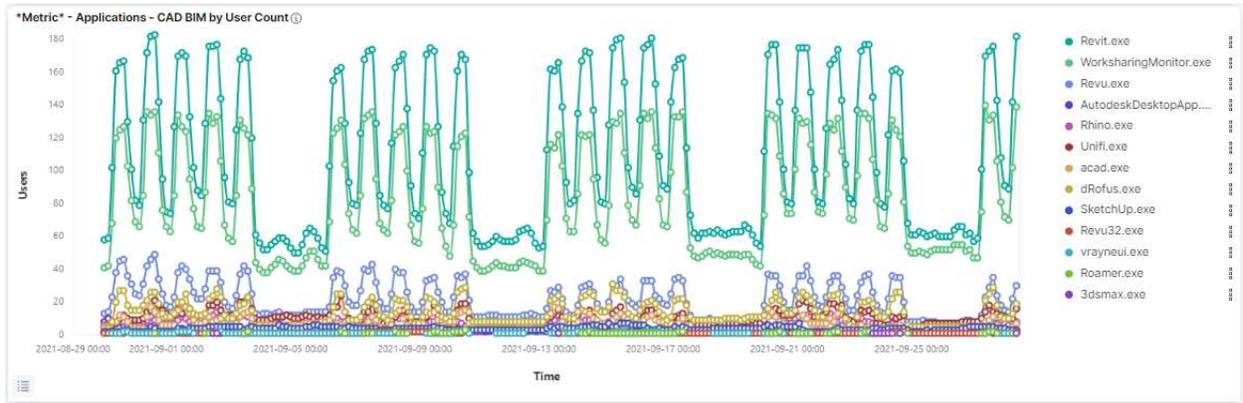


Organisational App Use Dashboard - A count of users who use various software applications over time to understand usage and plan for license renewals. Also, monitor preferred software. i.e. MS Paint 'v' Photoshop

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Adobe Suite Usage



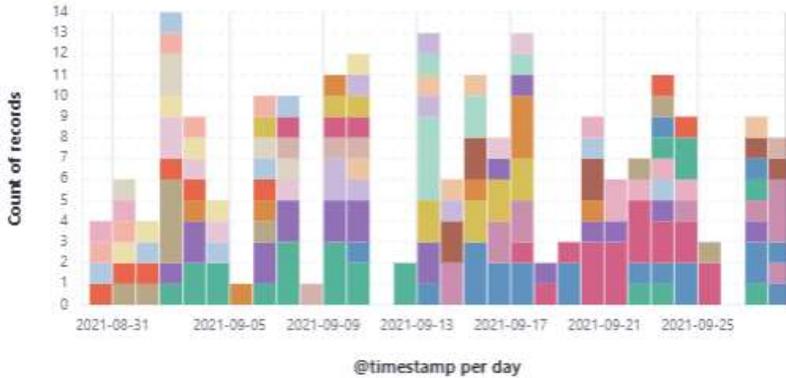
CAD/BIM Tools Usage

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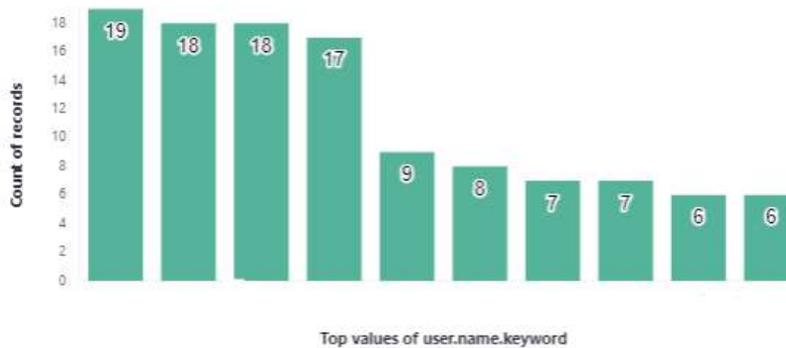
Hardware/Infrastructure Expenditure Strategy

Capturing the frequency of fatal or unrecoverable errors can be combined with PC metrics to determine which users may need additional RAM or hardware upgrades. A threshold can be set when users reach a % utilisation of a critical pc metric such as CPU or RAM.

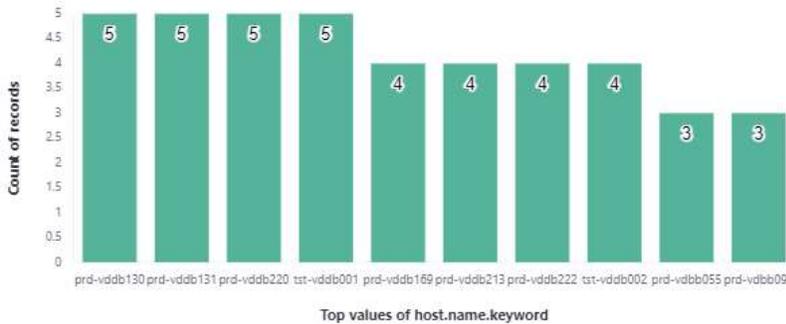
Revit - Fatal Errors Over Time



Revit - Fatal Error by User



Revit - Fatal Error by PC Name



Tracking fatal errors in real-time by user and PC name

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Integration of Bimbeats Data into Existing Processes

Bimbeats can connect to existing processes that may already be established within your organisation. Using a Rest API call to the Elastic database, information can be parsed into BI platforms such as Tableau or Power BI.



Existing BVN Workflow

The screenshot shows the 'Revit Model Health - Overview' dashboard. It includes a menu bar at the top, a search bar, and several data cards with gauges and charts. The metrics are as follows:

Metric	Value
Total Warnings	9
File Size (MB)	98.5
In-Place Families	5
Links	79
Imports	5
2D Elements	97898
Worksets & Design Options	9

Connection to Power BI from Elastic database

Get tips for improving productivity and reduce downtime across every project

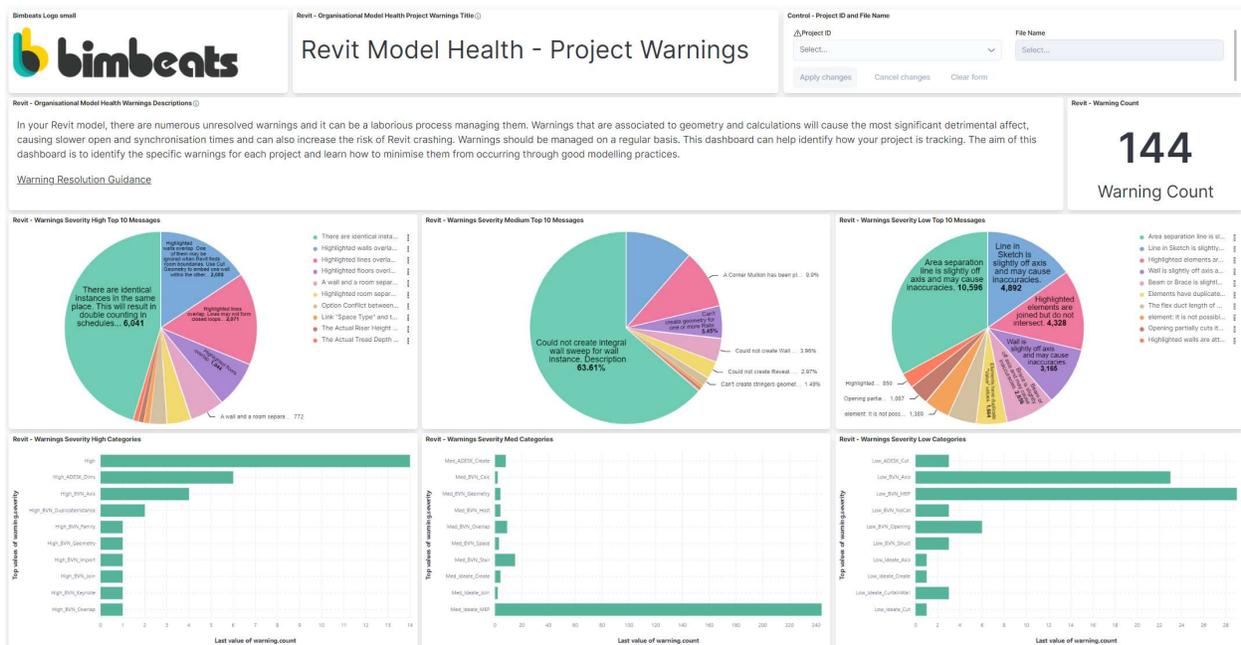
Measuring productivity and downtime is often a subjective measure based on anecdotal evidence. Typical scenarios include users complaining that their models are taking forever to open or synchronise, or that their pc crashes “all the time”.

Some users may be reluctant to change the way they have always worked, claiming their way is faster, so why should they do it a different way.

Whilst it can be argued there are often a number of ways to achieve the same outcome with software such as Revit and Dynamo, you don't know what you don't measure.

There are numerous unresolved warnings in your Revit model, and it can be a laborious process managing them. Warnings associated to geometry and calculations will cause the most significant detrimental effect, resulting in slower open and synchronisation times and an increase in the risk of Revit crashing. Warnings should be managed on a regular basis.

Bimbeats allows organisations to categorise every Revit warning based on a chosen severity level. Project teams may not be able to resolve all warnings, but they can focus on the ones that have the most significant effect on productivity and downtime.



Revit Model Health Dashboard – Warnings for every project categorized by High, Medium, and Low Severity. Links to guides for users to learn how to minimise them from occurring are provided.



Warnings categorised as Severity "High"



Warning Count Over Time – This visualisation can be used in combination with open and sync times and fatal/unrecoverable errors to quantify the effect on the downtime of not managing warnings

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Real-Time Alerts

The ability to create instant alerts when any condition is met is one of the most powerful features of Bimbeats. It offers the opportunity to act as and when there is a possibility of significant downtime and loss of productivity. Below are a few examples of rules that have been set up to monitor when company standards are being modified or where user actions may have detrimental effects on all project team members.

Bimbeats users can create their own rules based on individual project requirements or company-wide protocols.

Any of the metrics captured in Appendix A can be used to create a rule and almost every action recorded in a user's journal file that has been processed by Bimbeats.

Automated summarised reports can be generated from the rules to inform BIM or Project Managers and organisational leaders in combination with or separate the instant webbook alerts in MS Team, Slack, or Trello etc.

Rules and Connectors

Detect conditions using rules, and take actions using connectors.

Rules Connectors

Create rule Search

Showing: 10 of 14 rules. ● Active: 0 ● Error: 0 ● Ok: 0 ● Pending: 14

- Name ↑
- CAD - Numerical Data Out of Range
- CAD - extents greater than 20 miles
- RTV Tools TaskDialog
- Revit - BVN View Template Visibility Override
- Revit - Dimension Type Modified
- Revit - Explode (Partial or Full)
- Revit - Fatal Error
- Revit - File Size
- Revit - Import CAD File
- Revit - Text Type Modified

Example Rules that generate instant webhook alerts

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Appendix A: Bimbeats Schema

The following is a list of all the fields that Bimbeats captures.

revit index

"Open", "Saved", "SavedAs", "Synch"
@timestamp
action.name
action.duration
user.name
computer.name
file.name
file.path
software.version
autodesk.user.name
file.type
project.id
project.name
bim360.model
bim360.project
file.size(mb)
group.detail.placed.once.count
group.detail.unused.count
group.placed.once.count
group.unused.count
links.all.have.location
links.not.shared.count
local.file.path
project.analytical.count
project.annotations.count
project.area
project.array.count
project.drafting.count
project.filter.view.count
project.filter.selection.count
project.geolocation
project.global.parameter.count

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"Open", "Saved", "SavedAs", "Synch"
project.height
project.import.cad.count
project.inplace.count
project.instances.count
project.instances.hosted.count
project.line.patterns.count
project.line.patterns.imported.count
project.line.styles.count
project.lines.count
project.link.cad.instances.count
project.link.cad.type.count
project.link.rvt.instances.count
project.link.rvt.type.count
project.links
project.location.count
project.phases.count
project.plan.count
project.project.parameter.count
project.purge.count
project.referenceplane.count
project.referenceplane.unused.count
project.rotate.north
project.section.count
project.types.count
project.workset.count
project.workset.name
project.workset.open.count
warning.count
warning.element.count
warning.type.count
parameters.ParameterName...*
types.Category...**
instances.Category...**
OST_Lines gets broken down into:
instances.Invalid
instances.ModelCurve
instances.DetailCurve

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"Open", "Saved", "SavedAs", "Synch"
instances.SymbolicCurve
instances.ReferenceLine
instances.SpaceSeparation
instances.RoomSeparation
instances.AreaSeparation
instances.CurveByPoints
instances.RepeatingDetail
instances.Insulation
instances.Cloud
OST_Rooms gets broken down into:
instances.rooms.working.count
instances.rooms.not.enclosed.count
instances.rooms.not.placed.count
instances.rooms.total.count

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"Family", "New Family", "Existing Family", "Closing Family"	"Sheet", "View"	"Warning"
@timestamp	@timestamp	@timestamp
action.name	action.name	action.name
action.duration	action.duration	action.duration
user.name	user.name	user.name
computer.name	computer.name	computer.name
file.name	file.name	file.name
file.path	file.path	file.path
software.version	software.version	software.version
autodesk.user.name	autodesk.user.name	autodesk.user.name
file.type	file.type	file.type
project.id	project.id	project.id
project.name	project.name	project.name
category	view.detail	warning.id
family.dimension.count	view.filters.count	warning.severity
family.file.name	view.grid.guide	warning.message
family.file.path	view.has.analyticalcategories	warning.resolutions
family.inplace	view.has.annotationcathidden	warning.count
	view.has.coordinationmodelhidden	warning.element.count
family.nested.count	view.has.importcategorieshidden	
family.nested.name	view.has.modelcategorieshidden	parameters.ParameterName...*
family.parametric	view.has.pointcloudshidden	
family.reference.planes.count	view.hastemplate	
family.reference.point.count	view.instances.count	
family.region.count	view.is.assembly	
family.show.spatial.point	view.is.clipped	
family.type.count	view.level.name	
family.type.name	view.name	
family.user.created	view.opening.duration	
material.count	view.plan.type	
material.name	view.scale	
"Family", "New Family", "Existing Family", "Closing Family"	"Sheet", "View"	"Warning"
parameters.associative.count	view.type.name	
parameters.formula.count		
parameters.instance.count	parameters.ParameterName...*	

AUTODESK UNIVERSITY

"Family", "New Family", "Existing Family", "Closing Family"	"Sheet", "View"	"Warning"
parameters.reporting.count	instances.Category...**	
parameters.shared.count		
parameters.type.count	Sheets event will also contain additional data:	
placement.type		
view.opening.duration		
	sheet.name	
	sheet.view.name	
	sheet.number	
	sheet.revision	
	sheet.titleblock	
	sheet.viewpoint.count	

AUTODESK UNIVERSITY

"Closing Project"	"Failure"	"BasicFileInfo"
@timestamp	@timestamp	@timestamp
action.name	action.name	action.name
action.duration	action.duration	action.duration
user.name	user.name	user.name
computer.name	computer.name	computer.name
file.name	file.name	file.name
file.path	file.path	file.path
software.version	software.version	software.version
autodesk.user.name	autodesk.user.name	N/A
file.type	N/A	N/A
project.id	project.id	N/A
project.name	project.name	N/A
parameters.ParameterName...*	resolution.count	central.path
	transaction	saves.count
		file.is.central
		file.is.created.local
		file.all.local.saved
		project.language
		file.version
		latest.central.version

AUTODESK UNIVERSITY

"Timer Close", "Timer Save", "Timer Start"	"Timer Session"	"TaskDialog"
@timestamp	@timestamp	@timestamp
action.name	action.name	action.name
action.duration	action.duration	action.duration
user.name	user.name	user.name
computer.name	computer.name	computer.name
file.name	file.name	file.name
file.path	file.path	file.path
software.version	software.version	software.version
autodesk.user.name	N/A	N/A
N/A	N/A	N/A
project.id	N/A	N/A
project.name	N/A	N/A
document.active.time	session.active.time	dialog.id
document.compute.time	session.compute.time	message
document.save.time	session.open.documents	
document.save.interval	session.total.time	
document.total.count		
document.total.time		
parameters.ParameterName...*		

AUTODESK UNIVERSITY

"Linked File Open", "File Imported"	"Delete"	*ParameterName
@timestamp	@timestamp	Parameter name values come from a CSV file that can be customized by each company. Default values are:
action.name	action.name	
action.duration	action.duration	
user.name	user.name	Project Name
computer.name	computer.name	Project Number
file.name	file.name	Project Status
file.path	file.path	
software.version	software.version	These values are pulled only from ProjectInformation object in Revit.
autodesk.user.name	autodesk.user.name	
N/A	N/A	
project.id	project.id	
project.name	project.name	
file.size(mb)	element.selected.categories	
file.status	element.selected.count	
imported.id	element.selected.family.names	
linked.file.name	element.selected.family.types	
linked.file.path	element.selected.ids	
linked.file.type	element.selected.levels	
	element.selected.owner.views	
parameters.ParameterName...*	element.selected.phases	
	element.selected.worksets	
	parameters.ParameterName...*	
	instances.Category...**	

AUTODESK UNIVERSITY

**Categories
BuiltInCategory.OST_Revisions
BuiltInCategory.OST_RevisionClouds
BuiltInCategory.OST_RvtLinks
BuiltInCategory.OST_Sheets
BuiltInCategory.OST_Views
BuiltInCategory.OST_Viewports
BuiltInCategory.OST_Schedules
BuiltInCategory.OST_IOSModelGroups
BuiltInCategory.OST_IOSDetailGroups
BuiltInCategory.OST_Grids
BuiltInCategory.OST_Levels
BuiltInCategory.OST_CableTray
BuiltInCategory.OST_CableTrayFitting
BuiltInCategory.OST_Casework
BuiltInCategory.OST_Ceilings
BuiltInCategory.OST_Columns
BuiltInCategory.OST_CommunicationDevices
BuiltInCategory.OST_ConduitFitting
BuiltInCategory.OST_Conduit
BuiltInCategory.OST_Curtain_Systems
BuiltInCategory.OST_CurtainWallPanels
BuiltInCategory.OST_CurtainWallMullions
BuiltInCategory.OST_DataDevices
BuiltInCategory.OST_Doors
BuiltInCategory.OST_DuctCurves
BuiltInCategory.OST_DuctAccessory
BuiltInCategory.OST_DuctFitting
BuiltInCategory.OST_DuctInsulations
BuiltInCategory.OST_DuctLinings
BuiltInCategory.OST_DuctTerminal
BuiltInCategory.OST_ElectricalEquipment
BuiltInCategory.OST_ElectricalFixtures
BuiltInCategory.OST_Entourage
BuiltInCategory.OST_FireAlarmDevices
BuiltInCategory.OST_FlexDuctCurves
BuiltInCategory.OST_FlexPipeCurves
BuiltInCategory.OST_Floors
BuiltInCategory.OST_Furniture
BuiltInCategory.OST_FurnitureSystems
BuiltInCategory.OST_GenericModel

AUTODESK UNIVERSITY

**Categories
BuiltInCategory.OST_LightingDevices
BuiltInCategory.OST_LightingFixtures
BuiltInCategory.OST_MechanicalEquipment
BuiltInCategory.OST_FabricationDuctwork
BuiltInCategory.OST_FabricationContainment
BuiltInCategory.OST_FabricationHangers
BuiltInCategory.OST_FabricationPipework
BuiltInCategory.OST_NurseCallDevices
BuiltInCategory.OST_Parts
BuiltInCategory.OST_Parking
BuiltInCategory.OST_PipeAccessory
BuiltInCategory.OST_PipeFitting
BuiltInCategory.OST_PipeCurves
BuiltInCategory.OST_Planting
BuiltInCategory.OST_PlumbingFixtures
BuiltInCategory.OST_Railings
BuiltInCategory.OST_Ramps
BuiltInCategory.OST_Rebar
BuiltInCategory.OST_Roads
BuiltInCategory.OST_Roofs
BuiltInCategory.OST_Rooms
BuiltInCategory.OST_SecurityDevices
BuiltInCategory.OST_Site
BuiltInCategory.OST_MEPSpaces
BuiltInCategory.OST_SpecialityEquipment
BuiltInCategory.OST_Sprinklers
BuiltInCategory.OST_Stairs
BuiltInCategory.OST_StructConnectionAnchors
BuiltInCategory.OST_StructConnectionBolts
BuiltInCategory.OST_StructConnectionPlates
BuiltInCategory.OST_StructConnections
BuiltInCategory.OST_StructuralColumns
BuiltInCategory.OST_StructuralFoundation
BuiltInCategory.OST_StructuralFraming
BuiltInCategory.OST_StructuralFramingSystem
BuiltInCategory.OST_StructuralStiffener
BuiltInCategory.OST_StructuralTruss
BuiltInCategory.OST_TrussChord
BuiltInCategory.OST_TrussWeb
BuiltInCategory.OST_TrussBottomChordCurve

AUTODESK UNIVERSITY

**Categories
BuiltInCategory.OST_TrussTopChordCurve
BuiltInCategory.OST_TrussVertWebCurve
BuiltInCategory.OST_TrussDiagWebCurve
BuiltInCategory.OST_TelephoneDevices
BuiltInCategory.OST_Topography
BuiltInCategory.OST_Walls
BuiltInCategory.OST_Windows
BuiltInCategory.OST_Wire
BuiltInCategory.OST_PlaceHolderPipes
BuiltInCategory.OST_PlaceHolderDucts
BuiltInCategory.OST_FabricReinforcement
BuiltInCategory.OST_FabricReinforcementWire
BuiltInCategory.OST_Coupler
BuiltInCategory.OST_CableTrayTags
BuiltInCategory.OST_CableTrayFittingTags
BuiltInCategory.OST_CaseworkTags
BuiltInCategory.OST_CeilingTags
BuiltInCategory.OST_CommunicationDeviceTags
BuiltInCategory.OST_ConduitFittingTags
BuiltInCategory.OST_ConduitTags
BuiltInCategory.OST_CurtainWallPanelTags
BuiltInCategory.OST_DataDeviceTags
BuiltInCategory.OST_DoorTags
BuiltInCategory.OST_DuctTags
BuiltInCategory.OST_DuctAccessoryTags
BuiltInCategory.OST_DuctFittingTags
BuiltInCategory.OST_DuctInsulationsTags
BuiltInCategory.OST_DuctLiningsTags
BuiltInCategory.OST_DuctTerminalTags
BuiltInCategory.OST_ElectricalEquipmentTags
BuiltInCategory.OST_ElectricalFixtureTags
BuiltInCategory.OST_FireAlarmDeviceTags
BuiltInCategory.OST_FlexDuctTags
BuiltInCategory.OST_FlexPipeTags
BuiltInCategory.OST_FloorTags
BuiltInCategory.OST_FurnitureTags
BuiltInCategory.OST_FurnitureSystemTags
BuiltInCategory.OST_GenericModelTags
BuiltInCategory.OST_LightingDeviceTags
BuiltInCategory.OST_LightingFixtureTags

AUTODESK UNIVERSITY

**Categories
BuiltInCategory.OST_MechanicalEquipmentTags
BuiltInCategory.OST_FabricationDuctworkTags
BuiltInCategory.OST_FabricationContainmentTags
BuiltInCategory.OST_FabricationHangerTags
BuiltInCategory.OST_FabricationPipeworkTags
BuiltInCategory.OST_NurseCallDeviceTags
BuiltInCategory.OST_PartTags
BuiltInCategory.OST_ParkingTags
BuiltInCategory.OST_PipeAccessoryTags
BuiltInCategory.OST_PipeFittingTags
BuiltInCategory.OST_PipeTags
BuiltInCategory.OST_PlantingTags
BuiltInCategory.OST_PlumbingFixtureTags
BuiltInCategory.OST_RevisionCloudTags
BuiltInCategory.OST_RoofTags
BuiltInCategory.OST_RoomTags
BuiltInCategory.OST_SecurityDeviceTags
BuiltInCategory.OST_SiteTags
BuiltInCategory.OST_MEPSpaceTags
BuiltInCategory.OST_SpecialityEquipmentTags
BuiltInCategory.OST_SprinklerTags
BuiltInCategory.OST_StairsRunTags
BuiltInCategory.OST_StructConnectionTags
BuiltInCategory.OST_StructuralColumnTags
BuiltInCategory.OST_StructuralFoundationTags
BuiltInCategory.OST_TelephoneDeviceTags
BuiltInCategory.OST_WallTags
BuiltInCategory.OST_WindowTags
BuiltInCategory.OST_WireTags
BuiltInCategory.OST_Dimensions
BuiltInCategory.OST_TextNotes
BuiltInCategory.OST_SpotElevations
BuiltInCategory.OST_MaterialTags
BuiltInCategory.OST_MultiCategoryTags
BuiltInCategory.OST_KeynoteTags
BuiltInCategory.OST_SpotSlopesSymbols
BuiltInCategory.OST_SpotCoordinateSymbols
BuiltInCategory.OST_SpotElevSymbols
BuiltInCategory.OST_DetailComponentTags
BuiltInCategory.OST_DetailComponents

AUTODESK UNIVERSITY

**Categories
BuiltInCategory.OST_RepeatingDetailLines
BuiltInCategory.OST_FilledRegion
BuiltInCategory.OST_MaskingRegion
BuiltInCategory.OST_Lines
BuiltInCategory.OST_DesignOptionSets
BuiltInCategory.OST_DesignOptions
BuiltInCategory.OST_DuctSystem
BuiltInCategory.OST_PipingSystem
BuiltInCategory.OST_ElectricalCircuit

AUTODESK UNIVERSITY

revit-check

This index is used to process the Revit Model Checker reports

"Check"	"Check Summary"
@timestamp	@timestamp
action.name	action.name
action.duration	action.duration
user.name	user.name
computer.name	computer.name
file.name	file.name
file.path	file.path
software.version	software.version
check.set.path	check.set.path
check.set.title	check.set.title
check.set.author	check.set.author
check.set.description	check.set.description
result.overall	result.overall
check.id.name	result.pass.percentage
check.name	result.pass.count
check.description	result.fail.count
check.result.type	result.report.count
check.failure.message	result.error.count
check.result.message	result.not.run.count
check.error.message	
check.result.count	

AUTODESK UNIVERSITY

dynamo Index

"Opened", "Saved"	"Start"	"Added", "Removed"	"Connector Added"	"Complete"
@timestamp	@timestamp	@timestamp	@timestamp	@timestamp
action.name	action.name	action.name	action.name	action.name
action.duration	action.duration	action.duration	action.duration	action.duration
user.name	user.name	user.name	user.name	user.name
computer.name	computer.name	computer.name	computer.name	computer.name
file.name	file.name	file.name	file.name	file.name
file.path	file.path	file.path	file.path	file.path
software.version	software.version	software.version	software.version	software.version
host.file.path	host.file.path	host.file.path	host.file.path	host.file.path
host.file.name	host.file.name	host.file.name	host.file.name	host.file.name
host.software.name	host.software.name	host.software.name	host.software.name	host.software.name
host.software.version	host.software.version	host.software.version	host.software.version	host.software.version
host.project.id	host.project.id	host.project.id	host.project.id	host.project.id
host.project.name	host.project.name	host.project.name	host.project.name	host.project.name
autodesk.user.name	autodesk.user.name	autodesk.user.name	autodesk.user.name	autodesk.user.name
graph.user.name	run.from.name	node.name	conn.start.name	run.from.name
run.count		node.description	conn.start.description	run.success
run.type		node.category	conn.start.category	run.completed
run.crash		node.tags	conn.start.tags	eval.errors
node.count		node.is.custom	conn.start.is.custom	eval.error.messages
conn.count		node.creation.name	conn.start.creation.name	eval.warnings
note.count		node.type	conn.start.node.type	eval.warning.messages
group.count		node.state	conn.start.state	
node.nogroup.count		node.package.name	conn.end.name	
node.custom.count			conn.end.description	
run.periodic			conn.end.category	
node.convertable			conn.end.tags	
node.frozen.count			conn.end.is.custom	
node.error.count			conn.end.creation.name	
node.visible.count			conn.end.node.type	
node.input.count			conn.end.state	
node.output.count				
node.modified.count				
node.force.count				

AUTODESK UNIVERSITY

BIM360

"Project Updated", "Project Info"	"User Updated", "User Info"
@timestamp	@timestamp
action.name	action.name
user.name	user.name
computer.name	computer.name
id	user.id
project.name	user.full_name
project.start	user.uid
project.end	user.company
project.type	user.status
project.value	user.created
project.currency	user.updated
project.number	user.signin
project.address1	user.email
project.address2	user.company_id
project.city	user.nickname
project.state	user.firstname
project.postcode	user.lastname
project.country	user.role
project.timezone	user.url
project.language	user.address1
project.construction_type	user.address2
project.contract_type	user.city
project.status	user.postcode
project.signin	user.state
project.created	user.country
project.updated	user.title
project.folders.count	user.industry
project.folders.empty	user.about
project.folders.depth	user.default_role
project.files.count	user.default_role_id
project.most.version.count	user.access_level
project.files.revit	
project.files.dwg	
project.files.pdf	
project.files.bim360	
project.files.c4r	

AUTODESK UNIVERSITY

navis Index

"Project"	"Site"	"Building"	"Storey"
@timestamp	@timestamp	@timestamp	@timestamp
action.name	action.name	action.name	action.name
action.duration	action.duration	action.duration	action.duration
user.name	user.name	user.name	user.name
computer.name	computer.name	computer.name	computer.name
file.name	file.name	file.name	file.name
file.path	file.path	file.path	file.path
software.version	software.version	software.version	software.version
ifc.model.view.name	ifc.model.view.name	ifc.model.view.name	ifc.model.view.name
ifc.version.name	ifc.version.name	ifc.version.name	ifc.version.name
ifc.format.name	ifc.format.name	ifc.format.name	ifc.format.name
ifc.owner.user.name	ifc.owner.user.name	ifc.owner.user.name	ifc.owner.user.name
ifc.owner.application.name	ifc.owner.application.name	ifc.owner.application.name	ifc.owner.application.name
ifc.creation.time	ifc.creation.time	ifc.creation.time	ifc.creation.time
instances.level.count	total.geometry.count	total.geometry.count	total.geometry.count
instances.grid.count	ifc.object.step.name	ifc.object.step.name	ifc.object.step.name
instances.site.count	ifc.object.global.id	ifc.object.global.id	ifc.object.global.id
instances.building.count	ifc.object.guid	ifc.object.guid	ifc.object.guid
instances.room.count			
external.information.count	project.geolocation	building.name	storey.name
presentation.information.count	site.name	building.address.name	storey.description
presentation.layer.count	site.land.title.name	building.elevation	storey.elevation
file.size(mb)	site.elevation	building.terrain.elevation	storey.geometry.count
ifc.project.global.id	site.building.count	building.storey.count	storey.instance.count
ifc.project.guid	ifc.site.global.id	building.geometry.count	storey.nested.instance.count
	ifc.site.guid	ifc.building.global.id	storey.type.count
types.TypeName...*		ifc.building.guid	
instances.TypeName...*			storeyTypes.TypeName...*
geometries.TypeName...*		buildingGeometries.TypeName...*	storeyInstances.TypeName...*
			storeyNestedInstances.TypeName...*
			storeyGeometries.TypeName...*

AUTODESK UNIVERSITY

cad index

"Open", "Saved"	"Xref File"
@timestamp	@timestamp
action.name	action.name
action.duration	action.duration
user.name	user.name
computer.name	computer.name
file.name	file.name
file.path	file.path
software.version	software.version
autodesk.saved.dwg	xref.parent.name
autodesk.reg.apps	xref.status.name
anno.all.visible	xref.is.explodable
is.anno.dwg	xref.is.unloaded
anno.scale.name	xref.is.dependent
block.count	xref.is.nested
block.dynamic.count	xref.is.resolved
data.link.count	xref.file.path
dgn.count	xref.version.name
dwf.count	xref.units.name
dwg.format.version	xref.notification.status
dwg.maintenance.version	xref.name
dwg.saved.disk	xref.object.count
dwg.geolocation	
file.size(mb)	
layers.count	
layers.hidden.count	
layers.overrides.count	
layers.locked.count	
layers.used.count	
layers.reconciled.count	
layers.plottable.count	
layers.off.count	
layers.0.used	
pdf.count	
saves.count	
total.object.count	
type.dim.count	
type.line.count	
view.count	
viewport.count	
ucs.count	
xref.count	
xref.unresolved.count	
xclip.count	

AUTODESK UNIVERSITY

rhino index

"Opened", "Saved"	"Added", "Removed"	"Complete"
@timestamp	@timestamp	@timestamp
action.name	action.name	action.name
action.duration	action.duration	action.duration
user.name	user.name	user.name
computer.name	computer.name	computer.name
file.name	file.name	file.name
file.path	file.path	file.path
software.version	software.version	software.version
host.software.name	host.software.name	host.software.name
host.software.version	host.software.version	host.software.version
file.size(mb)	obj.type	command.id
model.tolerance	obj.visible	command.englishname
project.units	obj.shortdescription	command.localname
project.template.filepath	obj.name	command.plugin.name
project.plugins.names	obj.nameislocked	command.result
project.plugins.count	obj.component.status	command.plugin.description
model.namedviews.count	obj.component.type	command.plugin.version
model.namedpositions.count	obj.group.count	command.plugin.loadtime
model.namedlayers.count	obj.is.deletable	
model.namedconstructionplanes.count	obj.is.hidden	
model.standardviews.count	obj.is.locked	
model.pageviews.count	obj.is.normal	
model.snapshots.count	obj.is.instancedefinitiongeometry	
model.strings.count	obj.is.systemcomponent	
model.notes.count	obj.has.userdata	
model.groups.count	obj.mesh.count	

AUTODESK UNIVERSITY

"Opened", "Saved"	"Added", "Removed"
model.hatchpatterns.count	obj.memoryestimate
model.dimstyles.count	obj.has.texturemapping
model.blocks.count	
model.layers.count	
model.lights.count	
model.linetypes.count	
model.objects.count	
model.points.count	
model.curves.count	
model-surfaces.count	
model.breps.count	
model.meshes.count	
model.annotations.count	
model.clipplanes.count	
model.extrusions.count	

AUTODESK UNIVERSITY

grasshopper index

"Created", "Closed"	"Complete", "Start"	"Added", "Removed"
@timestamp	@timestamp	@timestamp
action.name	action.name	action.name
action.duration	action.duration	action.duration
user.name	user.name	user.name
computer.name	computer.name	computer.name
file.name	file.name	file.name
file.path	file.path	file.path
software.version	software.version	software.version
host.file.name	host.file.name	host.file.name
host.file.path	host.file.path	host.file.path
host.software.name	host.software.name	host.software.name
host.software.version	host.software.version	host.software.version
doc.packages	eval.errors	comp.name
doc.author	eval.warnings	comp.nickname
doc.is.cluster	eval.error.messages	comp.description
doc.preview.mode		comp.category
doc.preview.quality		comp.subcategory
doc.loading.exceptions.count		comp.is.obsolete
doc.is.modified		comp.is.preview.off
doc.profiler		comp.is.disabled
doc.solution.depth		comp.is.cluster
doc.object.count		comp.is.custom
doc.cluster.count		comp.package
doc.scribble.count		
doc.panel.count		
doc.markup.count		
comp.disabled.count		
comp.enabled.count		
comp.ignored.count		
comp.preview.off.count		
comp.preview.on.count		

AUTODESK UNIVERSITY

log index

Revit Journal Files only:	Revit only:	All Log Events:	Bimbeats overhead events:	Active window only:
"Jrn..."	"Failure"	"Event"	"bb ..."	"ActiveWindow"
@timestamp	@timestamp	@timestamp	@timestamp	@timestamp
N/A	action.name	action.name	action.name	action.name
N/A	action.duration	action.duration	action.duration	action.duration
user.name	user.name	user.name	user.name	user.name
N/A	computer.name	computer.name	computer.name	computer.name
N/A	file.name	file.name	file.name	file.name
N/A	file.path	file.path	file.path	file.path
N/A	software.version	software.version	software.version	software.version
Action	autodesk.user.name			process
Command	file.type			product
agent.ephemeral_id	project.id			title
agent.hostname	project.name			
agent.id				
agent.type	transaction			
agent.version	severity			
ecs.version	failing.ids			
host.name	connected.ids			
input.type	message			
jrn	definition.id			
log.file.path	resolution.count			
log.flags	resolution.text			
log.offset				
logdate				
message				
tags				

AUTODESK UNIVERSITY

log index

All beats:		
"App Session Time"		
Navis:	CAD:	Revit:
"File Changed Name"	"Document Created"	"bb Event Loading Time"
"File Property Changed"	"Document Closed"	"bb LargeParserStart"
"File Material Changed"	"Lisp Started"	"bb LargeCategories+"
"Model Collection Updated"	"Lisp Ended"	"bb LargeParserComplete"
"Selection Set Added"	"Open"	"bb Warnings"
"Selection Set Edited"	"Command Failure"	"bb WarningsTest"
"Selection Set Moved"	"Layout Changed"	"bb SmallFileCollection"
"Selection Set Deleted"	"Command Unknown"	"bb TotalFileOpen"
"Selection Set Replaced"	"View Created"	"bb FileSize"
"Selection Set Error"	"Xref Restored"	"bb Basic Data"
"Saved Viewpoint Added"	"Write Block Ended"	"bb Room Time"
"Saved Viewpoint Edited"	"Xref Attached"	"bb Worksets"
"Saved Viewpoint Moved"	"Saved"	"bb View"
"Saved Viewpoint Removed"	"Object Deleted"	"bb Parameters & Filters"
"Saved Viewpoint Replaced"		"bb Links"
"Clash Test Added"		"bb Detail Elements"
"Clash Test Edited"		"bb Analytical Elements"
"Clash Test Moved"		"bb Group Elements"
"Clash Test Removed"		"bb Types and Instances"
"Clash Test Replaced"		"bb CountExceeds 100000"
"Clash Test Reset"		"bb External Event"
"Progress"		"bb Delete"
"Error"		
"Report"		
"ChangeTable"		
"ChangeTypes"		
"File Saved"		

AUTODESK UNIVERSITY

bluebeam

"Transaction"
@timestamp
action.name
user.name
computer.name
software.version
agent.hostname
agent.id
agent.version
input.type
tags
agent.ephemeral_id
log.offset
ecs.version
host.name
log.file.path
message
time

AUTODESK UNIVERSITY

ifc

"Project"	"Site"	"Building"	"Storey"
@timestamp	@timestamp	@timestamp	@timestamp
action.name	action.name	action.name	action.name
action.duration	action.duration	action.duration	action.duration
user.name	user.name	user.name	user.name
computer.name	computer.name	computer.name	computer.name
file.name	file.name	file.name	file.name
file.path	file.path	file.path	file.path
software.version	software.version	software.version	software.version
ifc.model.view.name	ifc.model.view.name	ifc.model.view.name	ifc.model.view.name
ifc.version.name	ifc.version.name	ifc.version.name	ifc.version.name
ifc.format.name	ifc.format.name	ifc.format.name	ifc.format.name
ifc.owner.user.name	ifc.owner.user.name	ifc.owner.user.name	ifc.owner.user.name
ifc.owner.application.name	ifc.owner.application.name	ifc.owner.application.name	ifc.owner.application.name
ifc.creation.time	ifc.creation.time	ifc.creation.time	ifc.creation.time
instances.level.count	total.geometry.count	total.geometry.count	total.geometry.count
instances.grid.count	ifc.object.step.name	ifc.object.step.name	ifc.object.step.name
instances.site.count	ifc.object.global.id	ifc.object.global.id	ifc.object.global.id
instances.building.count	ifc.object.guid	ifc.object.guid	ifc.object.guid
instances.room.count			
external.information.count	project.geolocation	building.name	storey.name
presentation.information.count	site.name	building.address.name	storey.description
presentation.layer.count	site.land.title.name	building.elevation	storey.elevation
file.size(mb)	site.elevation	building.terrain.elevation	storey.geometry.count
ifc.project.global.id	site.building.count	building.storey.count	storey.instance.count
ifc.project.guid	ifc.site.global.id	building.geometry.count	storey.nested.instance.count
	ifc.site.guid	ifc.building.global.id	storey.type.count

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"Project"	"Building"	"Storey"
types.TypeName...*	ifc.building.guid	storeyTypes.TypeName...*
instances.TypeName...*		storeyInstances.TypeName...*
geometries.TypeName...*	buildingGeometries.TypeName...*	storeyNestedInstances.Type.Name...*
	totalGeometries..TypeName...*	storeyGeometries.TypeName...*

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bcf

"BCF Comment"	"BCF Topic"
@timestamp	@timestamp
action.name	action.name
user.name	user.name
computer.name	computer.name
file.name	file.name
file.id	file.id
model.project.id	model.project.id
model.spatial.id	model.spatial.id
model.file.name	model.file.name
issue.topic.id	issue.topic.id
issue.topic.type	issue.topic.type
issue.topic.status	issue.topic.status
issue.topic.title	issue.topic.title
issue.topic.priority	issue.topic.priority
comment.guid	bcf.topic.index
comment.date	issue.topic.labels
comment.author	issue.creation.date
comment.value	issue.modified.date
comment.viewpoint.id	issue.creation.author
comment.modified.date	issue.modified.author
comment.modified.author	issue.date.due
	issue.assigned.author
	issue.description
	issue.stage
	issue.comments.count
	issue.viewpoint.view
	issue.viewpoint.direction
	issue.viewpoint.hasMarkup
	issue.viewpoint.hasClipping
	issue.viewpoint.hasBitmap
	issue.viewpoint.count
	bcf.component.ids
	bcf.component.systems
	bcf.component.tool
	bcf.component.count

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metricbeat index

Metricbeat captures pc metrics to help when troubleshooting crashes and unusually high duration metrics

"System"	"Windows"
@timestamp	@timestamp
@version	@version
agent.ephemeral_id	agent.ephemeral_id
agent.hostname	agent.hostname
agent.id	agent.id
agent.type	agent.type
agent.version	agent.version
ecs.version	ecs.version
event.dataset	event.dataset
event.module	event.module
host.name	host.name
metricset.name	metricset.name
metricset.period	metricset.period
service.type	service.type
tags	tags
process.args	windows.perfmon.physicaldisk.read
process.name	windows.perfmon.physicaldisk.time.total.pct
process.pgid	windows.perfmon.memory.name
process.pid	windows.perfmon.memory.time.total.mbytes
process.ppid	windows.perfmon.pagingfile.name
system.process.cmdline	windows.perfmon.pagingfile.time.total.pct
system.process.cpu.start_time	windows.perfmon.physicaldisk.time.total.pct
system.process.cpu.total.norm.pct	windows.perfmon.physicaldisk.write
system.process.cpu.total.pct	windows.perfmon.processor.name
system.process.cpu.total.value	windows.perfmon.processor.time.total.pct
system.process.memory.rss.bytes	
system.process.memory.rss.pct	
system.process.memory.share	
system.process.memory.size	
system.process.state	
user.name	
event.duration	

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flexlm

"IN", "OUT"
@timestamp
action.name
agent.hostname
agent.id
agent.version
input.type
tags
agent.ephemeral_id
log.offset
ecs.version
host.name
computer.name
log.file.path
message
product.id
time
user.name

Appendix B: Further Reading and Documentation

If you want to dive into the detail of how Bimbeats is set up and deployed, please reach out to us as our knowledge-based solutions platform contains a suite of technical documents that will explain every step of the process:

Articles include the following:

- Deploy Elasticsearch - in 3 minutes or less!
- Creating Index Lifecycle Policies, Index Patterns, Roles, and Users
- Import Dashboards and Visualizations
- Deploy Bimbeats to end-users.
- Power BI integration with Kibana - Administrator Set Up