



TWO-PART WEBINAR

PART 2

Implement a Cost Reduction Strategy for your MathWorks Toolboxes



27 July 2022, Wednesday



Malou Albendia

Solutions Architect

About the Speaker

- 10+ years of experience in the software industry
- Highly experienced in software development, business intelligence development, data analysis, and software asset management and optimization
- Help companies achieve their software optimization goals in various industry verticals such as Engineering, Energy, Automotive, Manufacturing, Aerospace, and more.
- Enjoys traveling and recently visited the wonders of Spain



Malou Albendia

Solutions Architect, Open iT Norge AS

Agenda

- Recap MathWorks Licensing
- Cost Reduction Strategy
- Q&A



PART 1 RECORDING

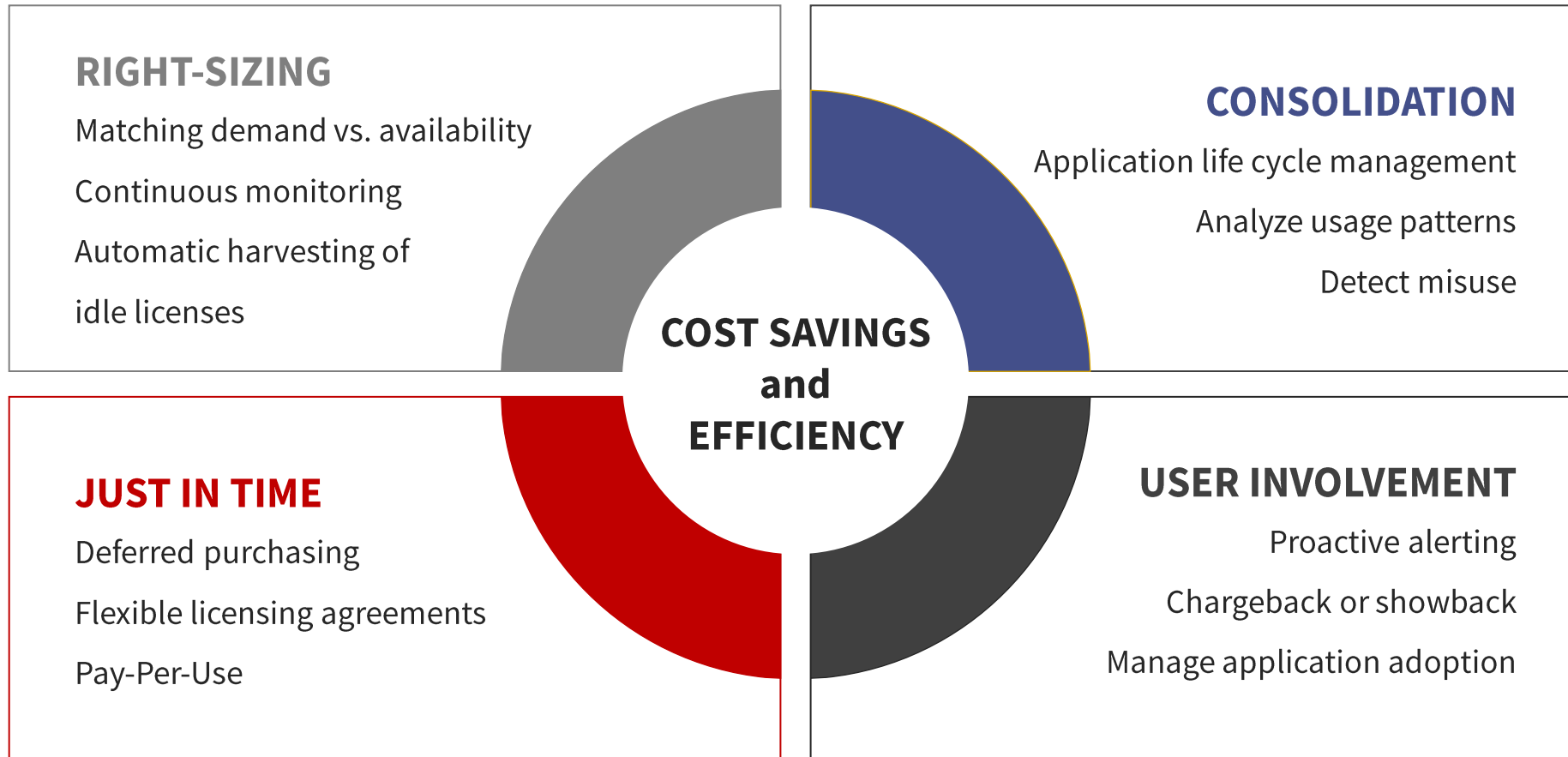
<https://bit.ly/3oxXfaX>

License Types

- Individual
- Designated Computer
- Network Named-User
- Concurrent User
- Prorated User



Where are savings coming from?





Home



LM Portal



Dashboard



Analysis



Reporting



Administration



Resources

License Monitor Portal

Real-time license utilization view.

License Usage

Product

Search...

Sort by

Name



Reset

Current Users: 84

Collection Time: 2020-12-14 13:05

Reload

MathWorks [licserv001]



84



MathWorks [licserv002]



1



MathWorks_Combined



84



Feature

Usage

MATLAB (20000)



19902 98

User Name	Host	Usage Time	In Use
Aaron Gordon	oit-0009	2020-12-14 13:04:01 2 minutes ago	1
Bruce Howard	oit-0943	2020-12-14 13:04:01 2 minutes ago	1
Amy Wheeler	oit-0170	2020-12-14 12:56:01 10 minutes ago	1
Amanda Harper	oit-0140	2020-12-14 12:55:01 11 minutes ago	1
Catherine Powell	ip-10-223-13-170	2020-12-14 12:54:01 12 minutes ago	1
Adam Frazier	oit-0154	2020-12-14 12:54:01 12 minutes ago	1
Angela West	oit-0271	2020-12-14 12:54:01 12 minutes ago	1
Andrea Lawrence	oit-0186	2020-12-14 12:54:01 12 minutes ago	1
Adam Greene	oit-0156	2020-12-14 12:54:01 12 minutes ago	1
Catherine Powell	ip-10-223-13-170	2020-12-14 12:54:01 12 minutes ago	1

Go to page: 1 Show rows: 10 1-10 of 98

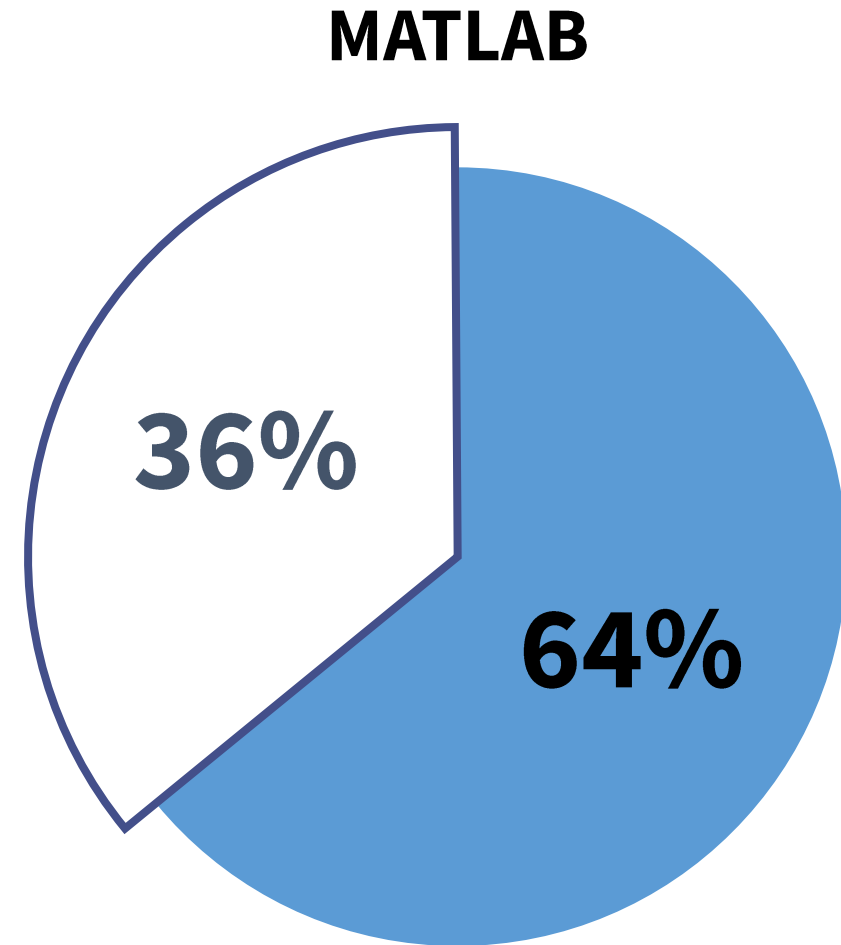
Visibility



	MathWorks Designated Computer	MathWorks Individual	MathWorks Concurrent
Row Labels			
Control Systems Toolbox	0.00 h	0.00 h	314.50 h
Curve Fitting Toolbox	0.50 h	0.00 h	614.66 h
Deep Learning Toolbox	0.00 h		444.66 h
Embedded Coder	0.00 h	0.00 h	444.66 h
Fixed-Point Designer	0.00 h	0.00 h	444.66 h
Global Optimization Toolbox	0.00 h	0.00 h	444.66 h
MATLAB	441.50 h	0.50 h	20,906.34 h
MATLAB Coder	0.00 h	0.00 h	2,105.34 h
MATLAB Compiler	0.00 h	0.00 h	444.66 h
MATLAB Compiler SDK	0.00 h	0.00 h	444.66 h
MATLAB Report Generator	0.00 h	0.00 h	444.66 h
Model-Based Calibration Toolbox	0.00 h	0.00 h	444.66 h
Optimization Toolbox	0.00 h	0.00 h	476.66 h
Powertrain Blockset	1.50 h		
Signal Processing Toolbox	109.50 h	0.00 h	526.34 h
Simscape	0.00 h	0.00 h	22.50 h
Simulink	217.50 h	0.00 h	7,856.00 h

Low-hanging Fruit: Licenses that are never used

	Available	Distinct User	Utilized
Partial Differential Equation Toolbox	2	0	0.0%
Parallel Computing Toolbox	6	0	0.0%
Data Acquisition Toolbox	6	0	0.0%
System Identification Toolbox	8	0	0.0%
DSP System Toolbox	4	0	0.0%
Simulink Coverage	22	0	0.0%
Simulink Requirements	22	0	0.0%
Simulink Report Generator	6	0	0.0%
Curve Fitting Toolbox	24	0	0.0%
Simulink Check	24	3	12.5%
Fixed-Point Designer	24	3	12.5%
Signal Processing Toolbox	38	6	15.8%
Optimization Toolbox	36	6	16.7%
Embedded Coder	14	3	21.4%
Symbolic Math Toolbox	14	3	21.4%
Statistics and Machine Learning Toolbox	22	6	27.3%
Vehicle Network Toolbox	10	3	30.0%
Model-Based Calibration Toolbox	10	3	30.0%
Deep Learning Toolbox	8	3	37.5%
Global Optimization Toolbox	8	3	37.5%
MATLAB Report Generator	8	3	37.5%
Simulink Design Optimization	8	3	37.5%
Control System Toolbox	20	10	50.0%
MATLAB Compiler SDK	6	3	50.0%
Simulink Coder	36	18	50.0%
Simulink Real-Time	6	3	50.0%
MATLAB Compiler	6	3	50.0%
MATLAB Coder	36	18	50.0%
Stateflow	92	46	50.0%
Simulink	146	73	50.0%
Simscape	4	2	50.0%
MATLAB	222	142	64.0%
Simulink Control Design	2	2	100.0%



36% of licenses were not used

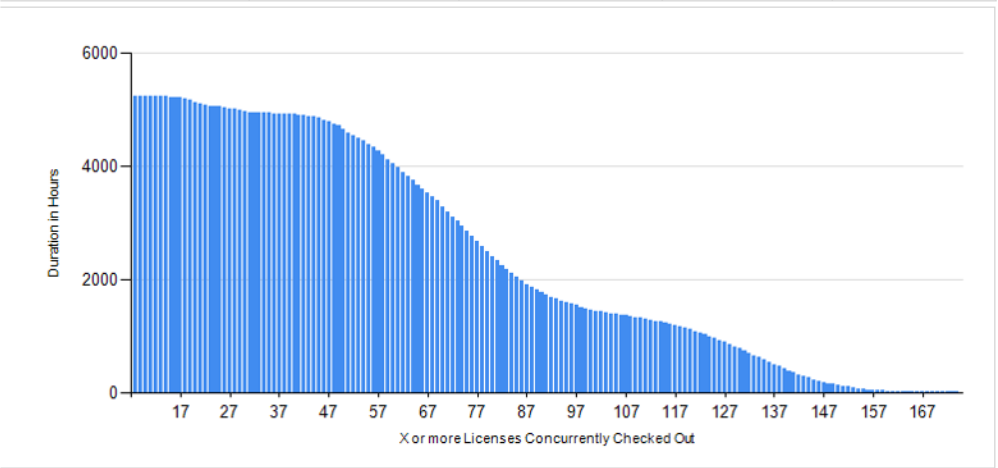
Optimization: Remix

	2021																														Total	
	Apr																															
	Thu 1	Fri 2	Sat 3	Sun 4	Mon 5	Tue 6	Wed 7	Thu 8	Fri 9	Sat 10	Sun 11	Mon 12	Tue 13	Wed 14	Thu 15	Fri 16	Sat 17	Sun 18	Mon 19	Tue 20	Wed 21	Thu 22	Fri 23	Sat 24	Sun 25	Mon 26	Tue 27	Wed 28	Thu 29	Fri 30		
User Id																																
User_4018												0.2																			0.2	
User_809										0.4																						0.4
User_1788																							0.45									0.45
User_3426																						0.5										0.5
User_1299																0.6																0.6
User_988																												0.6				0.6
User_3545				0.6																												0.6
User_4189															0.6																	0.6
User_2311																														0.6		0.6
User_746			0.6																													0.6
User_4308																							0.6									0.6
User_1009						0.6																										0.6
User_1782																													0.6			0.6
User_3109												0.6																				0.6
User_922																						0.6										0.6
User_1872												0.75																				0.75
User_2045										0.75																						0.75
User_1672	0.8																															0.8
User_3419															0.85																	0.85
User_2303																											0.85					0.85
User_933									0.6			0.6																				1.2
User_4402											0.6																			0.6		1.2
User_3902															0.6					0.7												1.3
User_1408							0.6							0.6					0.25													1.45
User_2935				0.55								0.95																				1.5
User_1933																						1.75										1.75
User_2649					0.6															0.6		0.6										1.8
User_892							0.6		0.6		0.6																					1.8
User_2882	0.6	1.2																														1.8
User_1630												1.75		0.6																		2.35
User_3192										0.6			0.6											0.6					0.6			2.4
User_2003							2.5																									2.5
User_1778												3																				3
User_4420																1	2	0.6														3.6
User_3402																									1	2	0.6					3.6
User_1190						3															1.75					1	2	0.6				4.75
User_2204		2							0.75												3.5											6.25

Query Period: 2021-01-18 00:00 to 2021-08-24 00:00

License Efficiency Chart: MathWorks_Combined

Application Name	Max Available	Max In Use	Within 99% use ¹	Within 95% use ¹
MATLAB	200	176	155	143



	Minimum # of Licenses ²	Duration in Hours	Duration in % of Total
	176	0.08	0.00 %
	173	0.25	0.00 %
	172	0.92	0.02 %
	171	1.33	0.03 %
	170	1.83	0.04 %
	169	2.75	0.05 %
	168	3.75	0.07 %
	167	4.33	0.08 %
	166	5.33	0.10 %
	165	7.58	0.15 %
	164	9.67	0.18 %
	163	12.33	0.24 %
	162	16.92	0.32 %
	161	21.33	0.41 %
	160	24.83	0.47 %
	159	31.25	0.60 %
	158	37.08	0.71 %
	157	44.17	0.84 %
	156	51.75	0.99 %
	155	60.50	1.16 %
	154	70.17	1.34 %
	153	84.83	1.62 %
	152	100.00	1.91 %
	151	116.08	2.22 %
	150	133.58	2.55 %
	149	150.75	2.88 %
	148	165.67	3.17 %
	147	186.92	3.57 %

License Efficiency and Impact Analysis

Query Period: 2021-01-18 00:00 to 2021-08-24 00:00

Product: MathWorks_Combined
Feature: MATLAB

Year: 2021
Month: Mar

Max available: 200
Max in use: 176

Within 99% use*: 155
Within 95% use*: 146

Max in	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Day\Hour	70	69	69	66	67	67	67	70	76	95	117	123	133	139	140	139	145	141	136	121	90	84	78	72
1	71	71	72	71	69	69	69	69	72	89	116	125	124	131	128	119	118	119	116	99	78	73	69	67
2	67	67	69	67	66	65	65	65	65	67	67	68	68	66	66	66	66	65	66	66	67	64	64	64
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25	69	67	70	70	68	69	68	69	75	94	113	129	135	138	136	135								
26	94	93	93	93	93	91	92	91	98	107	132	144	141	143	138	133								
27	84	86	85	83	83	81	81	80	84	103	128	129	134	138	135									
28	88	85	87	84	84	83	83	83	88	102	131	132	127	134	135									
29	76	75	77	75	76	75	75	75	76	81	84	87	88	87	90									
30																								



Continuous Monitoring



SVG\malbendia

Home

LM Portal

Dashboard

Analysis

Reporting

Administration

Resources

License Monitor Portal

Real-time license utilization view.

License Usage

Product ▼

Sort by Name ▼ 🔍 🔄 📄 Reset Current Users: 84 Collection Time: 2020-12-14 13:05 Reload

MathWorks [licserv001] 84 ▼

MathWorks [licserv002] 1 ▼

MathWorks_Combined 84 ▲

Feature	Usage
MATLAB (20000) 📄 🔍 🔄 📄	19902 98

User Name	Host	Usage Time	In Use
👤 Aaron Gordon	oit-0009	2020-12-14 13:04:01 2 minutes ago	1
👤 Bruce Howard	oit-0943	2020-12-14 13:04:01 2 minutes ago	1
👤 Amy Wheeler	oit-0170	2020-12-14 12:56:01 10 minutes ago	1
👤 Amanda Harper	oit-0140	2020-12-14 12:55:01 11 minutes ago	1
👤 Catherine Powell	ip-10-223-13-170	2020-12-14 12:54:01 12 minutes ago	1
👤 Adam Frazier	oit-0154	2020-12-14 12:54:01 12 minutes ago	1
👤 Angela West	oit-0271	2020-12-14 12:54:01 12 minutes ago	1
👤 Andrea Lawrence	oit-0186	2020-12-14 12:54:01 12 minutes ago	1
👤 Adam Greene	oit-0156	2020-12-14 12:54:01 12 minutes ago	1
👤 Catherine Powell	ip-10-223-13-170	2020-12-14 12:54:01 12 minutes ago	1

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Go to page: Show rows: 10 ▼ 1-10 of 98 < >

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Proactive Alerting

License Hogs: Checkout >= 2 Licenses

Vendor License	Package	Feature Name	User Name	Full Name	Mail	Used...
licserv001;mlm		MATLAB	alan.and...	Alan Anderson	alan.anderson@openi...	4
licserv001;mlm		Distrib_Computing_Toolbox	alan.webb	Alan Webb	alan.webb@openit.com	2
licserv001;mlm		Distrib_Computing_Toolbox	amy.bell	Amy Bell	amy.bell@openit.com	2
licserv001;mlm		MATLAB	aaron.sim...	Aaron Simpson	aaron.simpson@open...	2
licserv001;mlm		MATLAB	alan.webb	Alan Webb	alan.webb@openit.com	2
licserv001;mlm		MATLAB	alan.whee...	Alan Wheeler	alan.wheeler@openit....	2
licserv001;mlm		MATLAB	albert.mc...	Albert Mcdonald	albert.mcdonald@on...	2
licserv001;mlm		MATLAB	amy.bell	Amy Bell	amy.bell	2
licserv001;mlm		MATLAB	amy.ellis	Amy Ellis	amy.ellis	2
licserv001;mlm		MATLAB	bobby.ed...	Bobby Edwards	bobby.ed...	2
licserv001;mlm		MATLAB	carlos.mat...	Carlos Matthews	carlos.m...	2
licserv001;mlm		MATLAB	catherine....	Catherine Powell	catherin...	2
licserv001;mlm		MATLAB	diana.joh...	Diana Johnston	diana.jo...	2

Go to page: 1 Show rows: 20

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alert@openit.com
To: Malou Albendia

Reply Reply All Forward

Mon 7/25/2022 11:35 AM

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We could not verify the identity of the sender. Click here to learn more.

Open IT Usage Alert

Source: Open IT Analysis Server - OSL349WIN(192.168.4.208)

License Hogs

There are Users with more than 2 licenses used concurrently at one point in time. (see details below for more information)

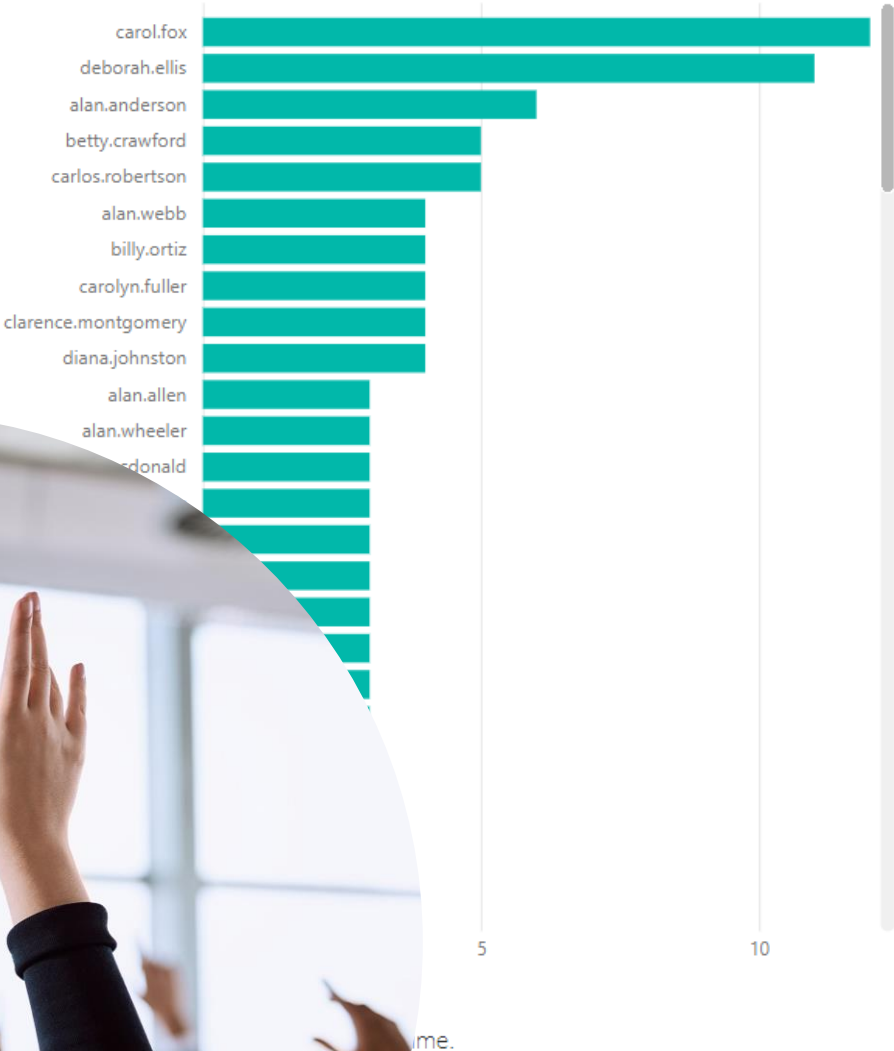
Product	Package	Feature Name	User Name	Full Name	Mail	Used licenses
licserv001;mlm		MATLAB	alan.anderson	Alan Anderson	alan.anderson@openit.com	4
licserv001;mlm		Distrib_Computing_Toolbox	alan.webb	Alan Webb	alan.webb@openit.com	2
licserv001;mlm		Distrib_Computing_Toolbox	amy.bell	Amy Bell	amy.bell@openit.com	2
licserv001;mlm		MATLAB	aaron.simpson	Aaron Simpson	aaron.simpson@openit.com	2
licserv001;mlm		MATLAB	alan.webb	Alan Webb	alan.webb@openit.com	2
licserv001;mlm		MATLAB	alan.wheeler	Alan Wheeler	alan.wheeler@openit.com	2
licserv001;mlm		MATLAB	albert.mcdonald	Albert Mcdonald	albert.mcdonald@openit.com	2
licserv001;mlm		MATLAB	amy.bell	Amy Bell	amy.bell@openit.com	2
licserv001;mlm		MATLAB	amy.ellis	Amy Ellis	amy.ellis@openit.com	2
licserv001;mlm		MATLAB	bobby.edwards	Bobby Edwards	bobby.edwards@openit.com	2
licserv001;mlm		MATLAB	carlos.matthews	Carlos Matthews	carlos.matthews@openit.com	2
licserv001;mlm		MATLAB	catherine.powell	Catherine Powell	catherine.powell@openit.com	2
licserv001;mlm		MATLAB	diana.johnston	Diana Johnston	diana.johnston@openit.com	2

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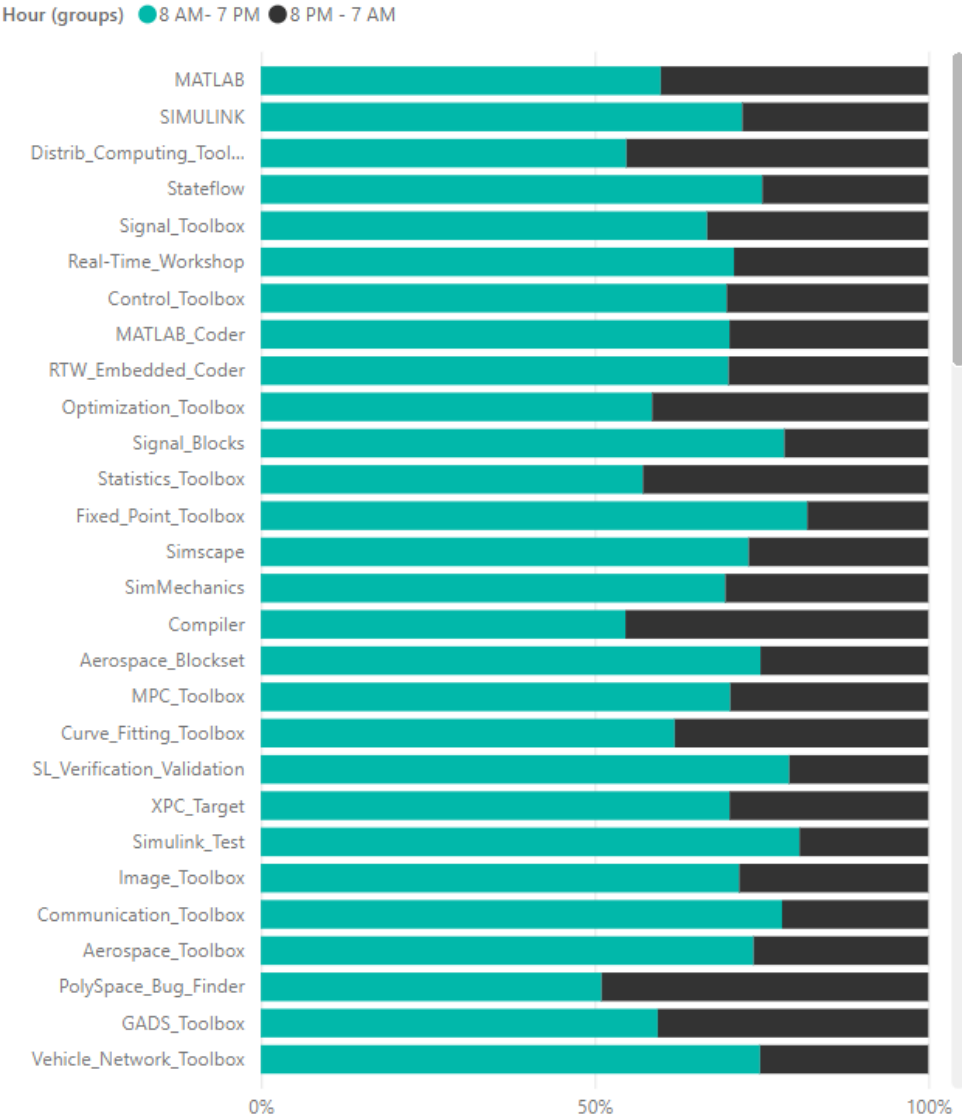
User Involvement

MathWorks Usage Dashboard

Users with > 1 Instance of Application



Application Elapsed Time by Work Hours



Cost Distribution (Chargeback)



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Account Information:

Attention to:
Cost Center: CostCenterA
Description:

Billing Summary:

Period: 2018-01-17 00:00 to 2018-08-24 00:00
Fixed Charges: \$1,000.00
Usage Charges: \$10,518.00
Total Amount: **\$11,518.00**

Charges Detail

Fixed Charges: \$1,000.00

Type	Vendor License	Name	Unit	Units Included	Amount
Feature	MathWorks_Combined	MATLAB	MC-UG 1M	2.00	1,000.00

Usage Charges: \$10,518.00

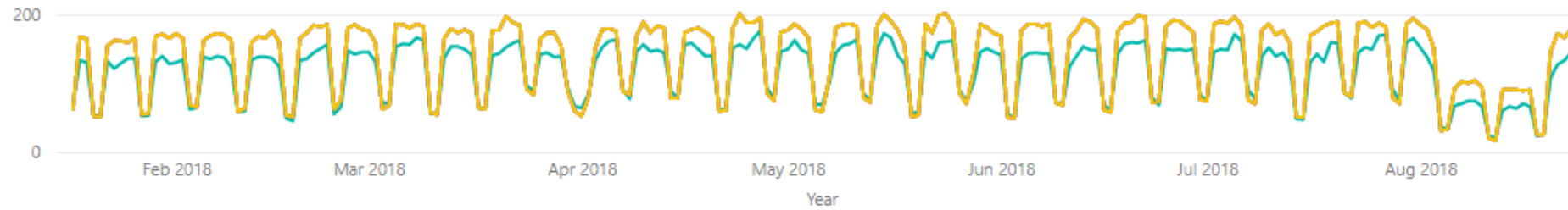
Type	Vendor License	Name	Unit	Total Usage	Exceeding Usage	Unit Cost	Amount
Feature	MathWorks_Combined	Aerospace_Blockset	DU 1D	8.00	8.00	9.00	72.00
Feature	MathWorks_Combined	Distrib_Computing_Toolbo x	MC-UG 1M	128.00	128.00	8.00	1024.00
Feature	MathWorks_Combined	MATLAB	MC-UG 1M	565.00	563.00	10.00	5630.00
Feature	MathWorks_Combined	SIMULINK	DU 1M	316.00	316.00	12.00	3792.00



MathWorks Usage Dashboard

Usage by Date and License Type

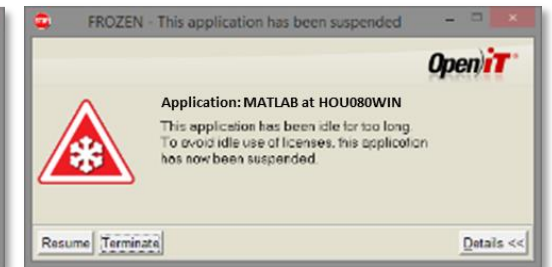
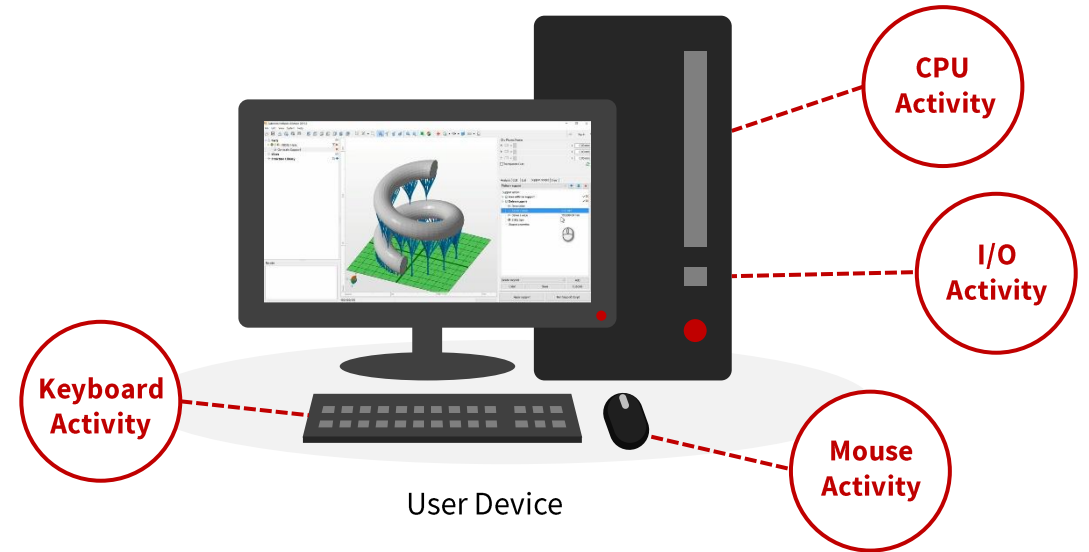
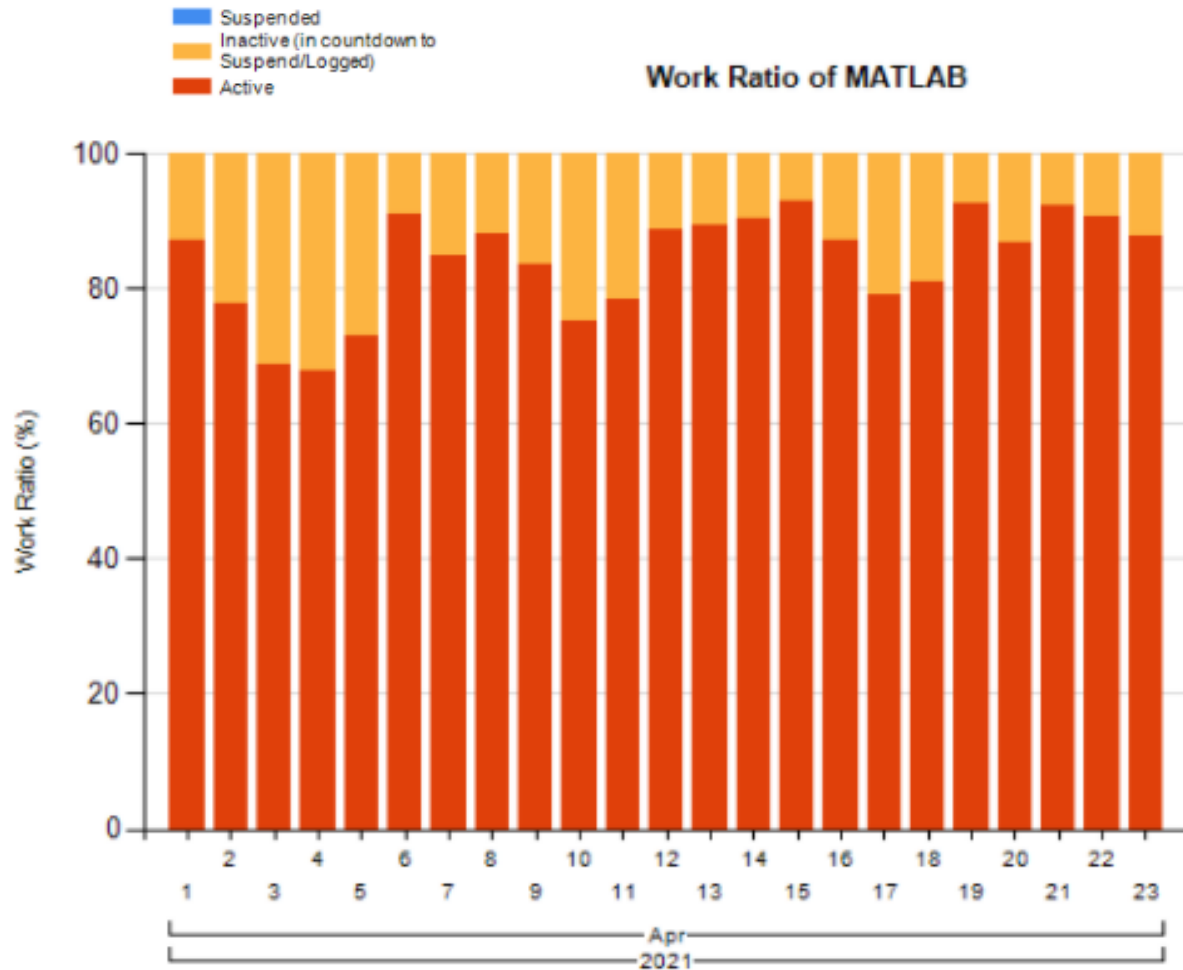
LicenseTypes ● Concurrent User ● Individual Annual ● Individual Perpetual ● Network Named User



Cost by License Type

LicenseTypes	Concurrent User		Individual Annual		Individual Perpetual		Network Named User		Prorated User	
Feature	Usage	Cost	Usage	Cost	Usage	Cost	Usage	Cost	Usage	Cost
Aerospace_Blockset	10	\$50,000.00	52		52		52	\$65,000.00	21	\$6,993.00
Aerospace_Toolbox	6	\$27,600.00	26		26		26	\$29,900.00	12	\$3,456.00
Antenna_Toolbox	2		6		6		6		2	\$776.25
Audio_System_Toolbox	2	\$10,000.00	8		8		8	\$10,000.00	1	\$504.90
Automated_Driving_Toolbox	2	\$24,000.00	11		11		11	\$33,000.00	2	\$1,512.00
Bioinformatics_Toolbox	1	\$4,000.00	7		7		7	\$7,000.00	1	\$162.00
Cert_Kit_JEC	3	\$36,000.00	20		20		20	\$60,000.00	4	\$3,510.00
Communication_Blocks	1		1		1		1			
Communication_Toolbox	7		54		54		54		16	\$5,898.15
Compiler	11		36		36		36		16	
Control_Toolbox	21		121		121		121		67	\$19,170.00
Curve_Fitting_Toolbox	7	\$7,000.00	64		64		64	\$256,000.00	20	\$5,634.00
Data_Acq_Toolbox	2		7		7		7		3	\$972.00
Database_Toolbox	3	\$12,000.00	10		10		10	\$10,000.00	4	\$1,062.00
Datafeed_Toolbox	2	\$9,200.00	6		6		6	\$6,900.00	1	\$462.00
Distrib_Computing_Toolbox	32		131		131		131		93	\$26,658.00
Econometrics_Toolbox	2	\$13,600.00	16		16		16	\$27,200.00	2	\$651.00
EDA_Simulator_Link	1		3		3		3		2	\$1,890.00
Excel_Link	1		3		3		3		1	\$68.40
Filter_Design_HDL_Coder	2		4		4		4		2	\$1,368.00

Automatic License Harvesting





TWO-PART WEBINAR

PART 2

Implement a Cost Reduction Strategy for your MathWorks Toolboxes

Questions?

Next Steps



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