

MATLAB EXPO 2021

Share MATLAB apps and Simulink Simulations as
interactive web apps

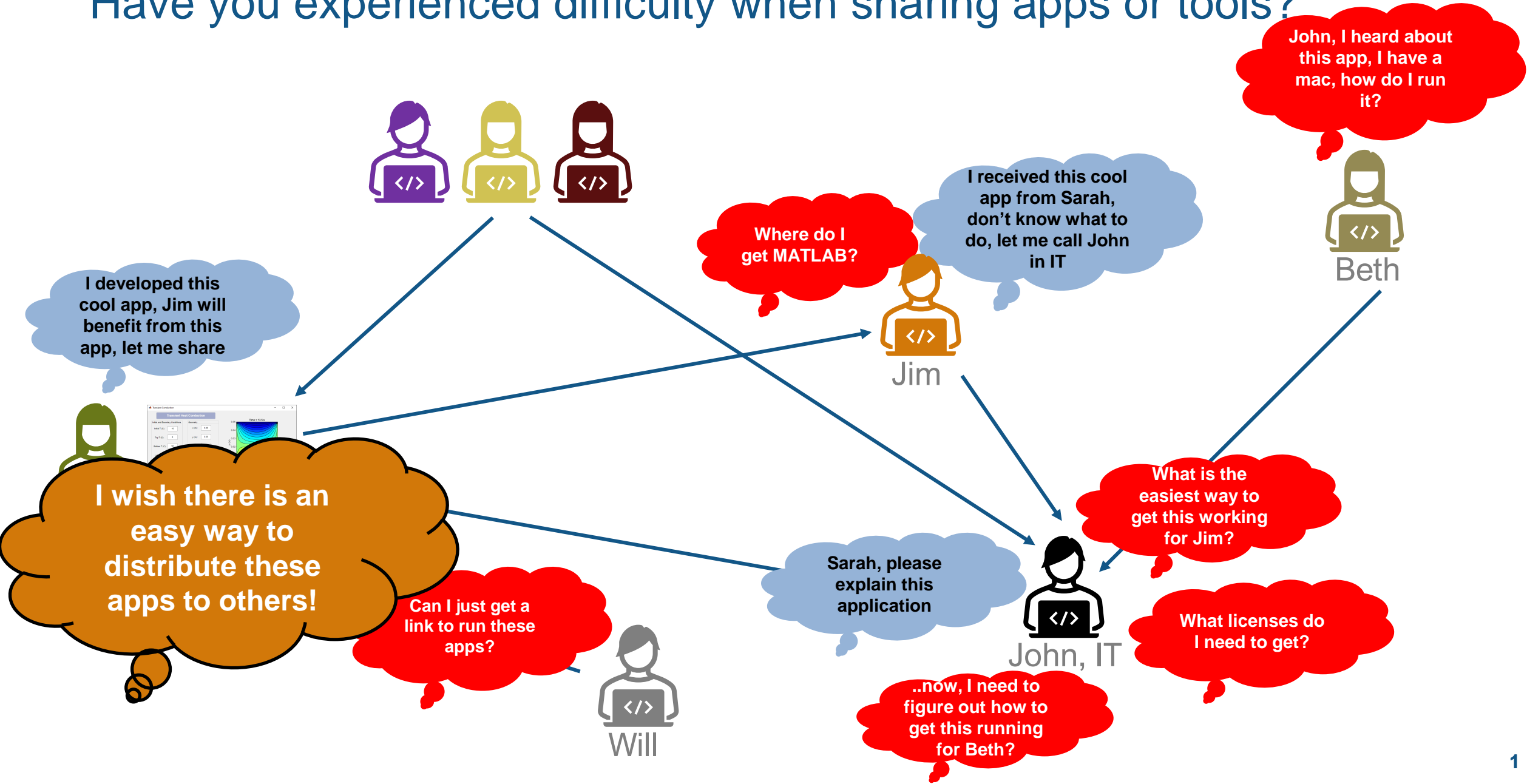
Suresh Balakrishnama



Will Wilson



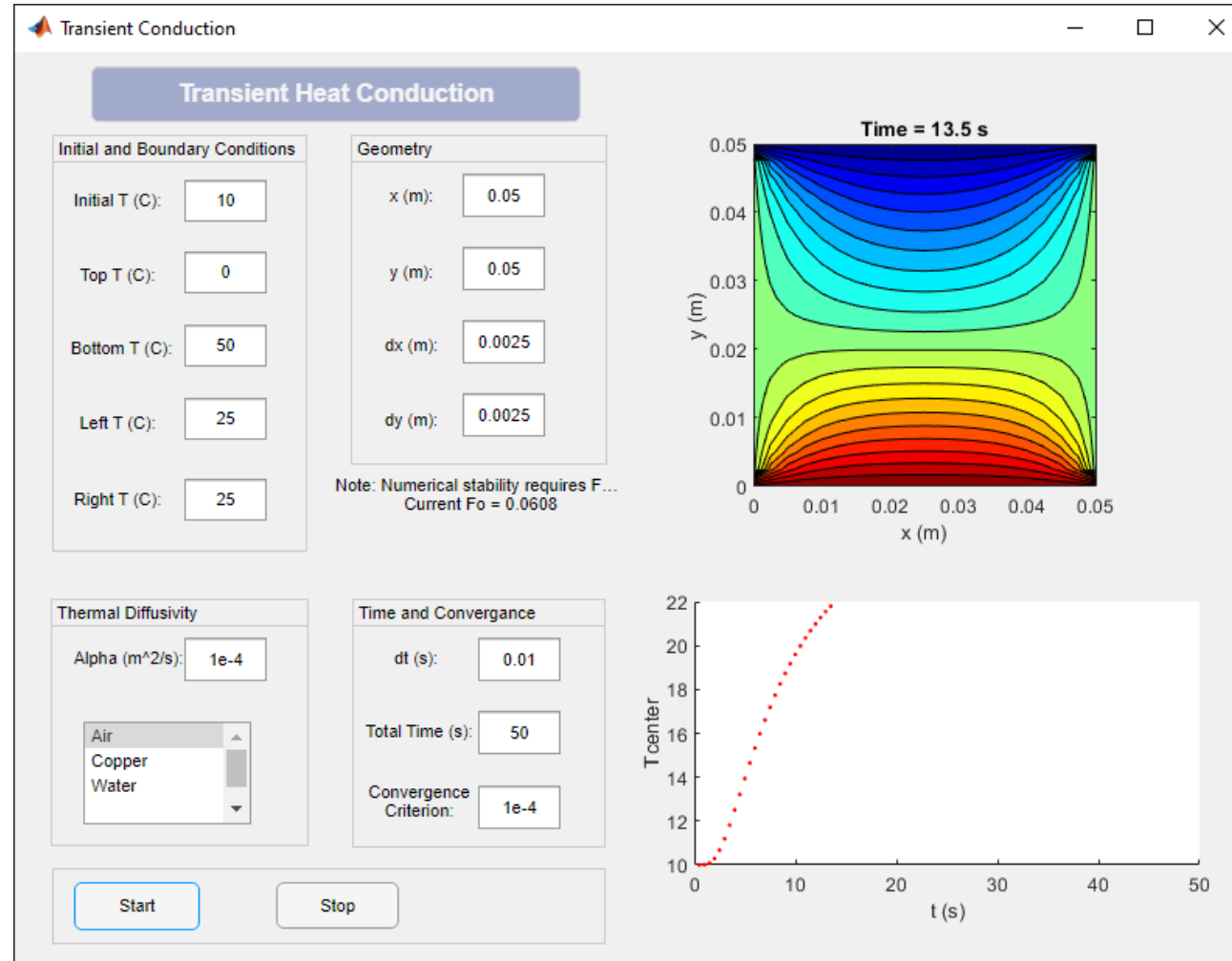
Have you experienced difficulty when sharing apps or tools?



Building and Sharing Tools is a powerful way to share your work

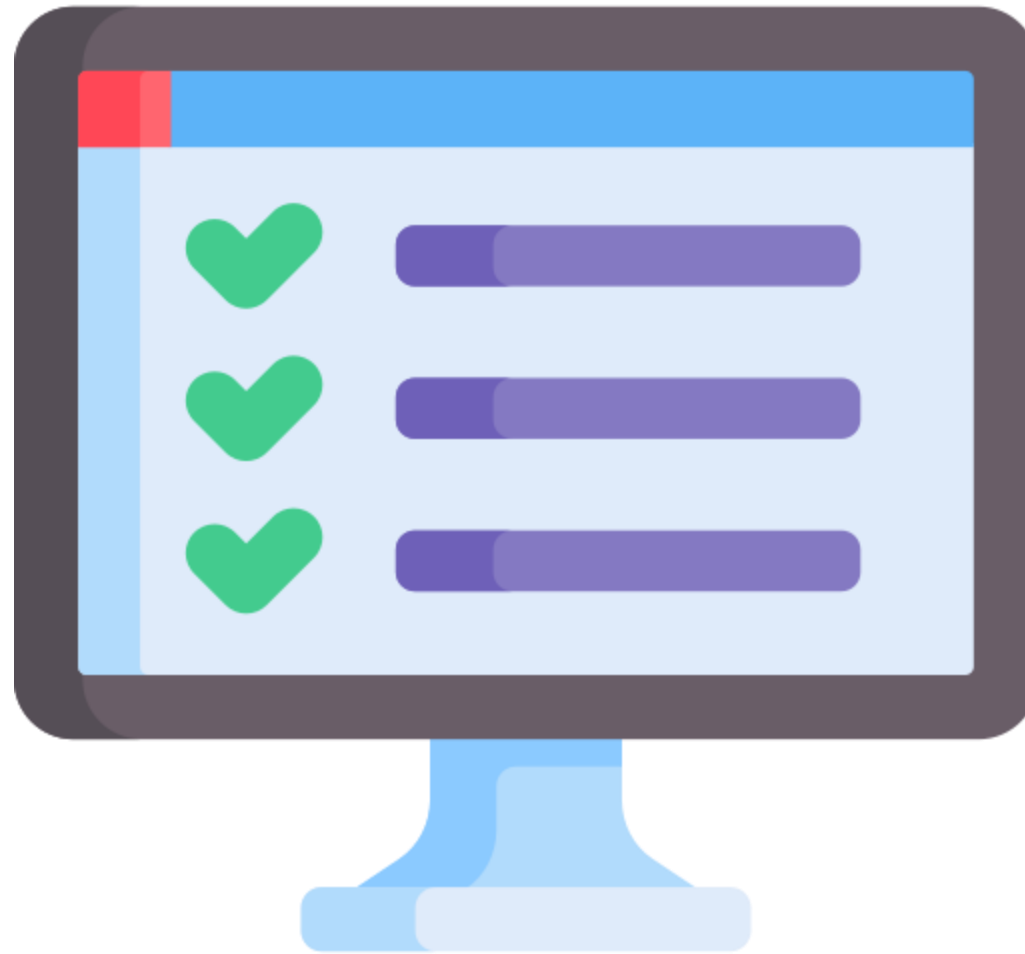
Distribute MATLAB apps and Simulink simulations

Increase workflow efficiency by sharing tools



Save time and increase productivity

Royalty-free distribution



Common challenges

Customers recognize these items as barriers to enabling efficient sharing workflows



Simple, easy to use centralized distribution solution



Mechanism to secure and control access to applications



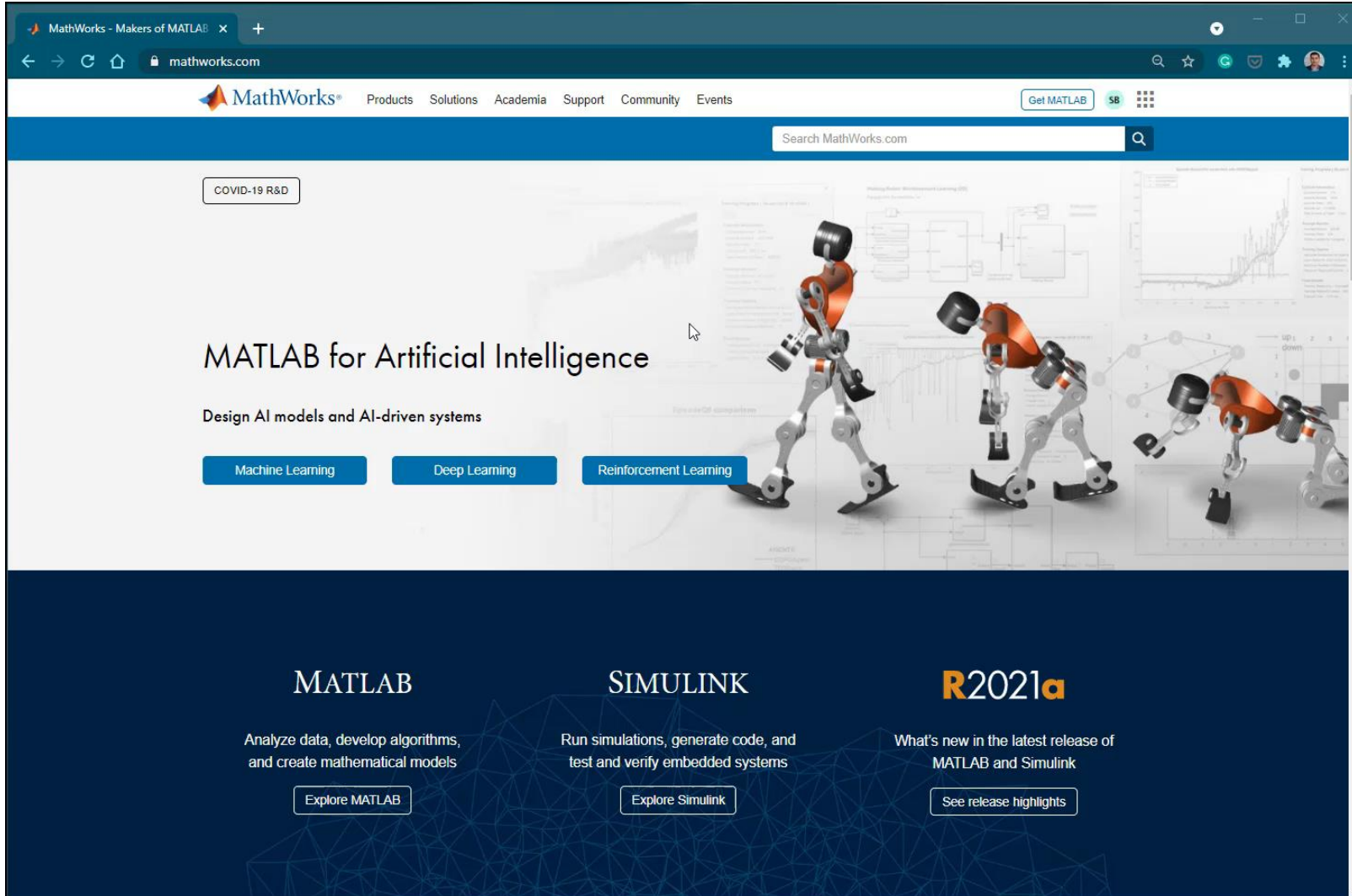
Manage and provide access to Runtime libraries



Simple process to deploy new application features

MathWorks offers solutions to help you share your work

Find out more about our portfolio of application deployment products



End User

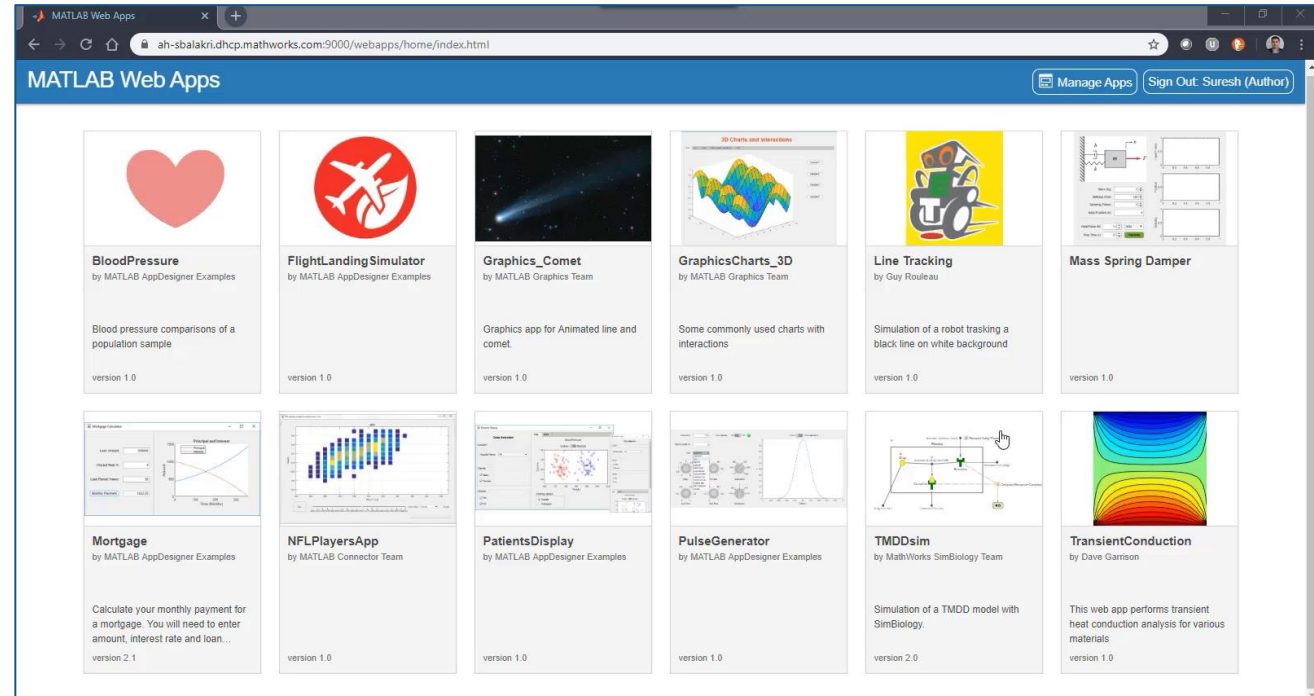


MATLAB Web App Server

New product, introduced in **R2020a**

- What is it?
 - MATLAB Web App Server is a **server software** that **enables you to host and share** your custom MATLAB apps and Simulink simulations as **browser-based web apps**.

- Who does it help?
 - MATLAB and Simulink users
 - IT Administrator
 - End user needing access to MATLAB based apps



Waterlabs

Developed MATLAB Web Apps to monitor and measure water level and quality in reservoirs



Igor Mendizabal
CEO

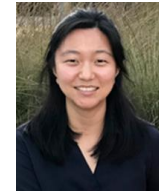
Caltech Neuroscience

Leveraged MATLAB Web Apps as a browser-based interactive tool to run simulations

Use Case: Generate simulations for neuroscientists to examine the relationship of **acute**, **repeated** and **chronic** exposure to Nicotine



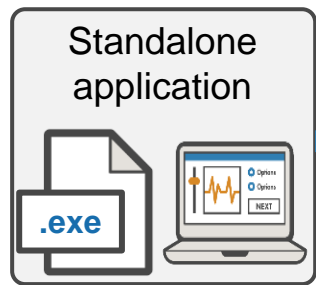
Dr Henry Lester



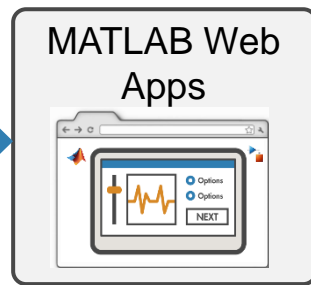
Janice Jeon



Alex Wang

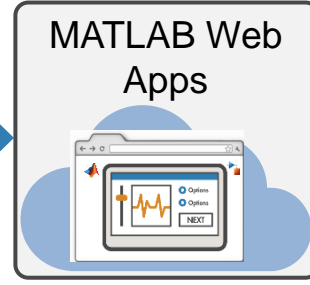


MATLAB Compiler



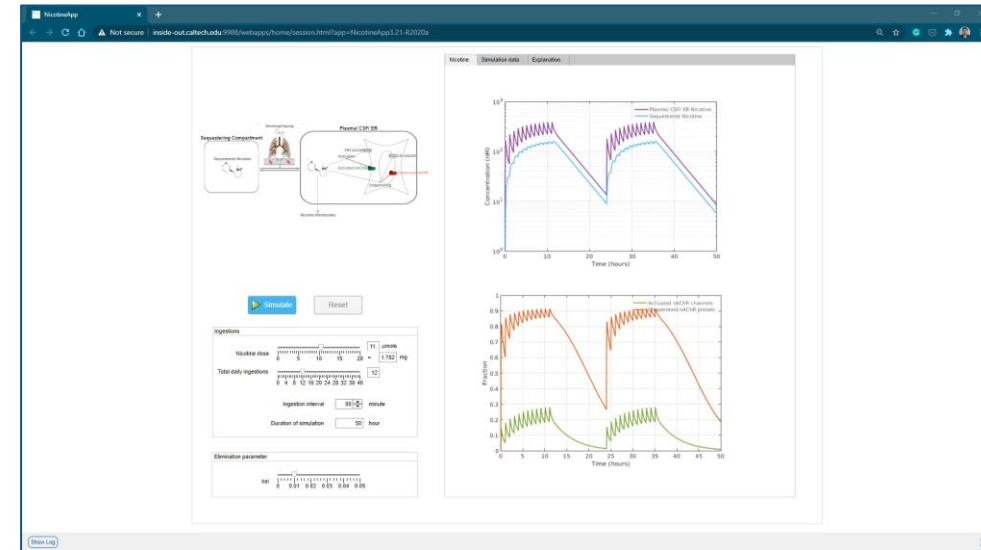
MATLAB Web App Server

SimBiology Toolbox



Cloud: MATLAB Web App Server

SimBiology Toolbox



Recall our common challenges

How does MATLAB WebApp Server address these challenges?



Simple, easy to use centralized distribution solution



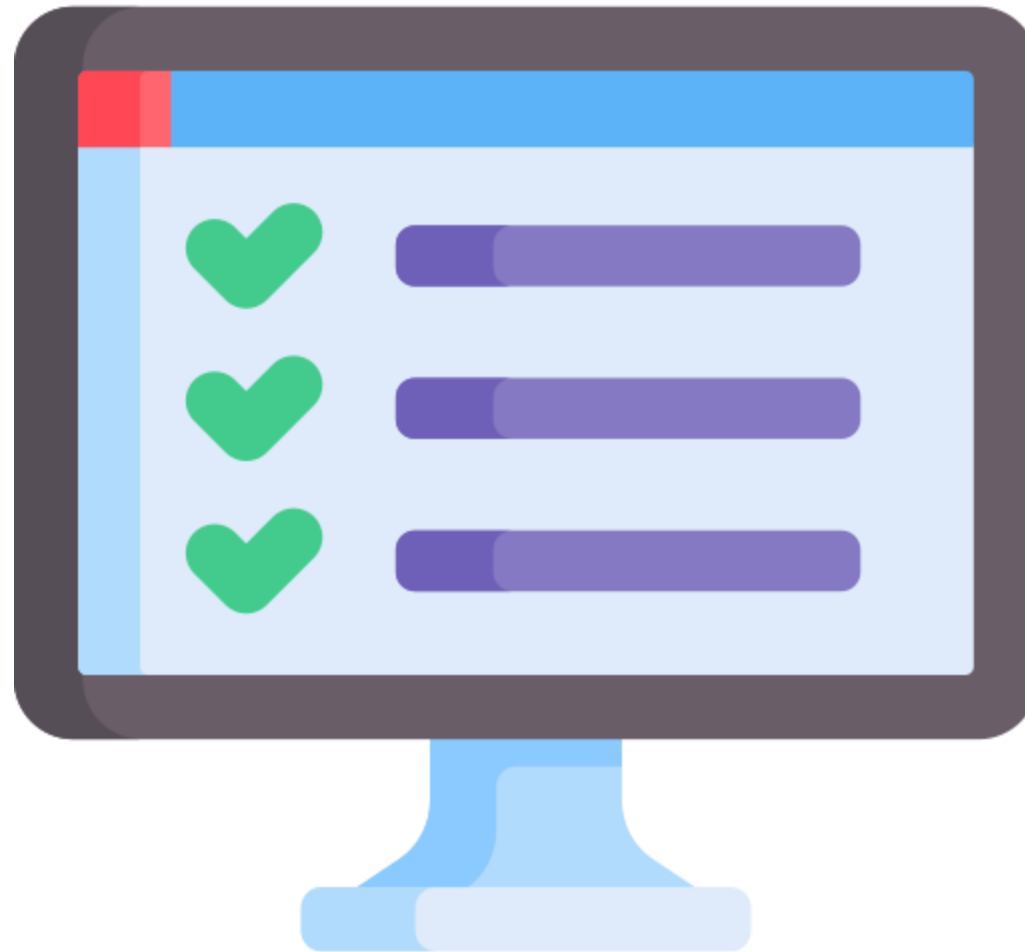
Mechanism to secure and control access to applications



Manage and provide access to Runtime libraries



Simple process to deploy new application features



Challenge 1/4

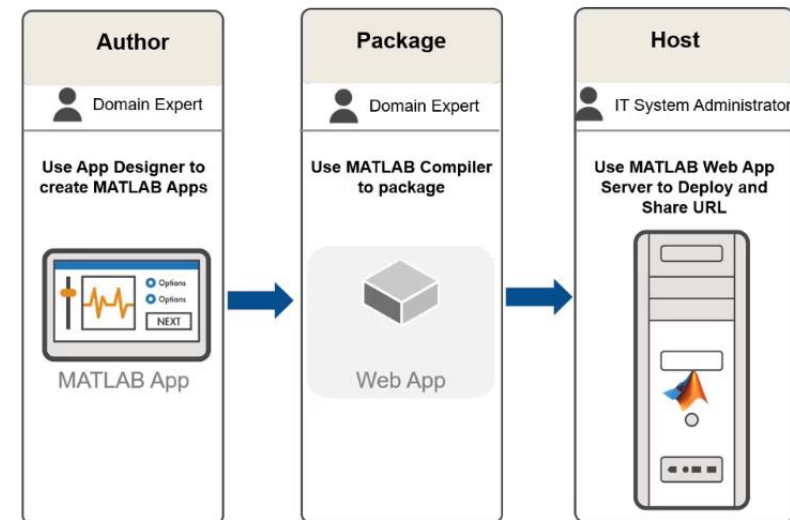
Simple, easy to use centralized distribution solution

Benefits:

- One centralized server solution to host and share all web apps
- Meets corporate IT policies
- Author role provides self-serve tool to upload and manage the web apps



MATLAB Web Apps Workflow



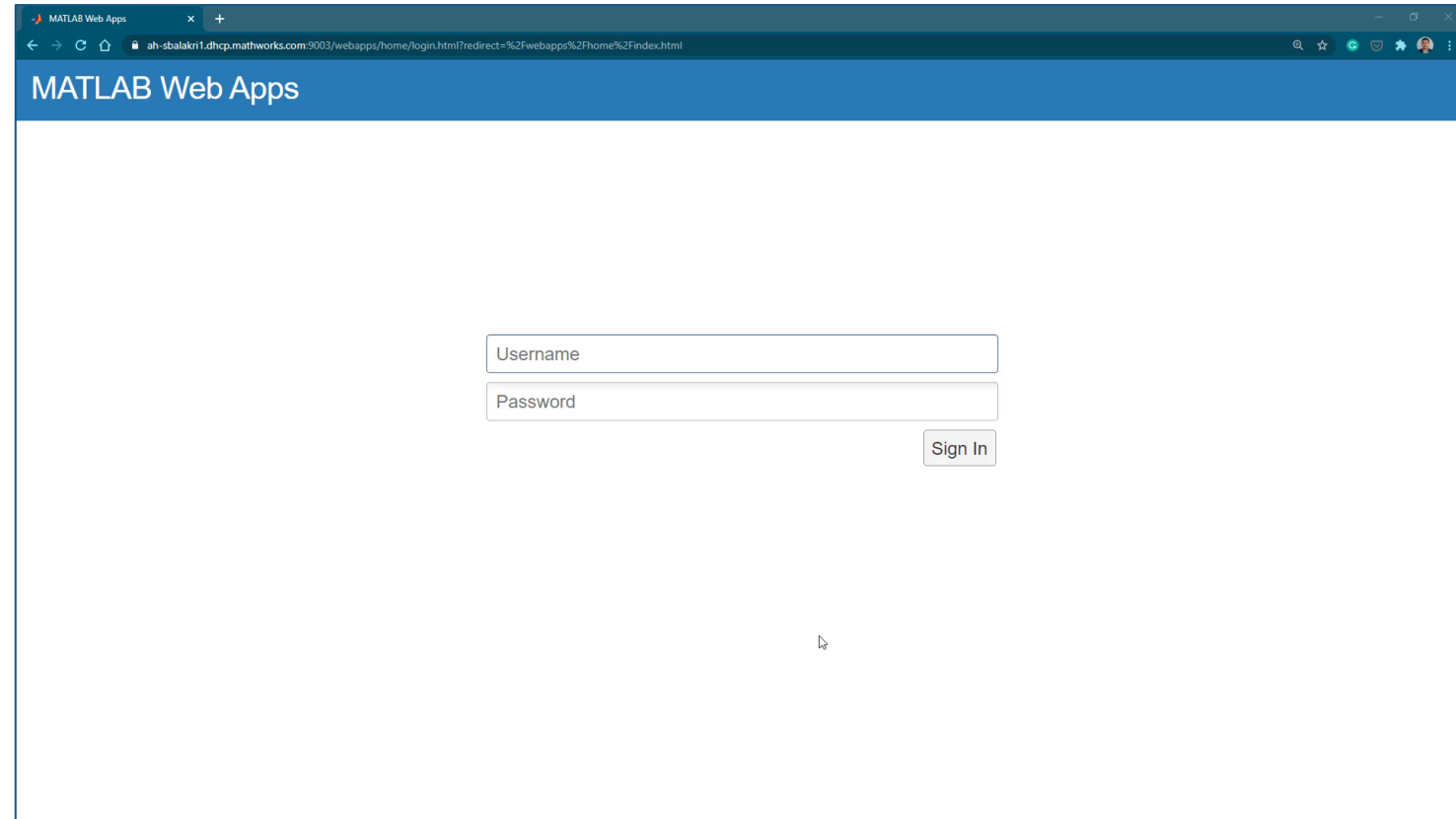
R2020a

Challenge 2/4

Mechanism to secure and control access to applications

Benefits:

- Integrate with your existing authentication servers (LDAP, OIDC)
- Allows to assign roles
 - **Author** can upload, delete and run the apps
 - **User** can run the apps



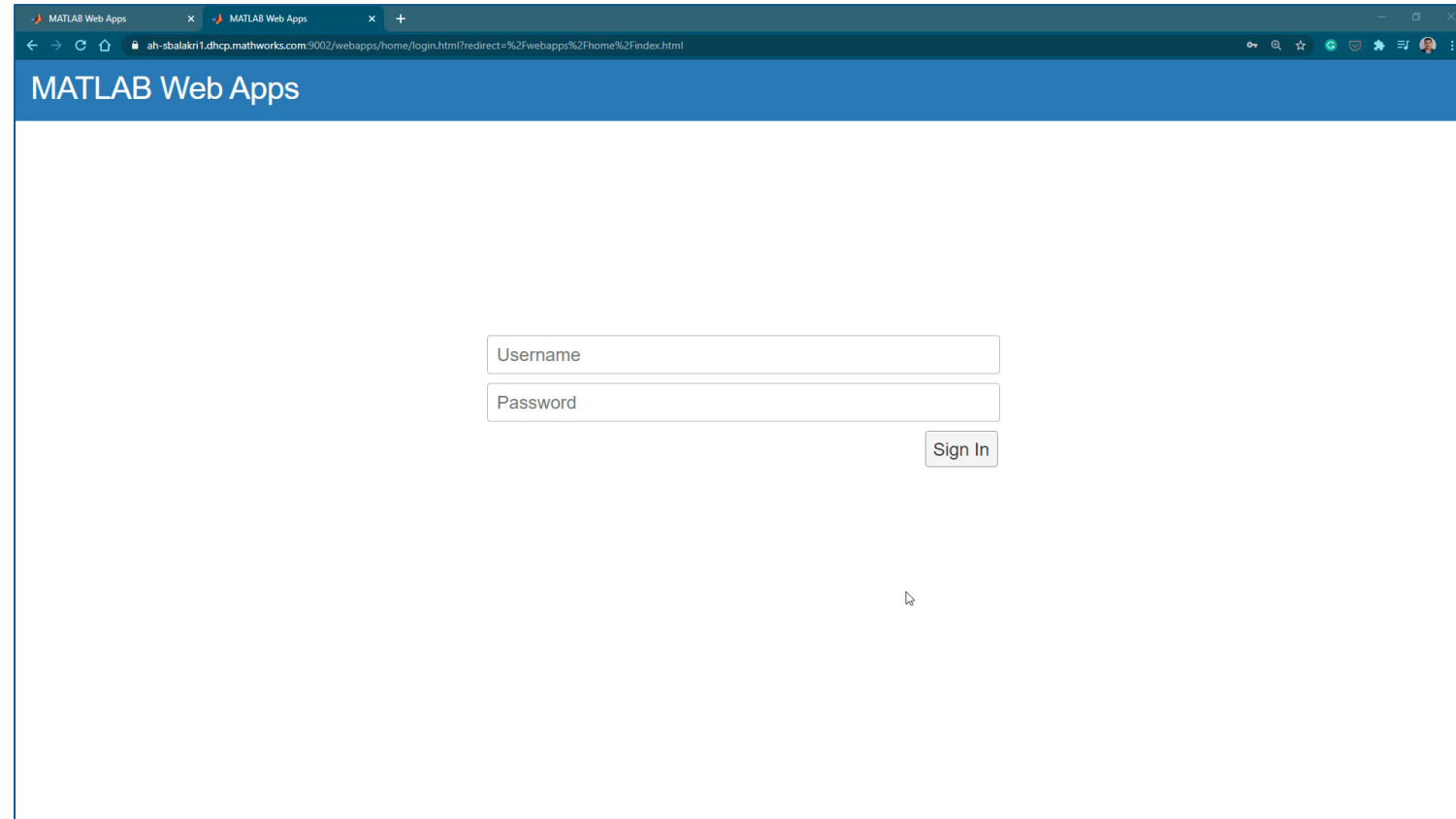
R2020a

Challenge 2/4 (continued)

Mechanism to secure and control access to applications

Benefits:

- Starting in R2021a, apply app level policies to access control individual app
- Organize and group apps into folder per team
- Configure user access per folder or individual app
- Users can only see and run the specific authorized apps



Challenge 3/4

Manage and provide access to MATLAB Runtime libraries

Benefits:

- App developers using multiple versions of MATLAB and Simulink supported with single server
- Easy migration of apps after an upgrade
- Apps developed in 5 prior versions of MATLAB
 - Starting from R2019b

TLAB Web Apps > Manage Apps Upload App Sign Out

Name	Version	Author	MATLAB Runtime	Status Message	
Mass Spring Damper	1.0	-	R2020a	✓ OK	
MassSpringDamperAppForLinux	-	-	-	✗ Expired CTF	
Mortgage	2.1	MATLAB AppDesigner Examples	R2020a	✓ OK	
NFLPlayersApp	1.0	MATLAB Connector Team	R2020a	✓ OK	
PatientsDisplay	1.0	MATLAB AppDesigner Examples	R2020a	✓ OK	
PatientsTreeAppExample	1.0	MATLAB AppDesigner Examples	R2020a	✓ OK	
PlotSelector	1.0	MATLAB Graphics Team	R2020a	✓ OK	
PulseGenerator	1.0	MATLAB AppDesigner Examples	R2020a	✓ OK	
RoadSuspensionInteractionIn3DOF_SLSimApp	-	-	-	✗ Expired CTF	
TMDDsim	2.0	MathWorks SimBiology Team	R2019b	✓ OK	
TransientConduction	1.0	Dave Garrison	R2020a	✓ OK	

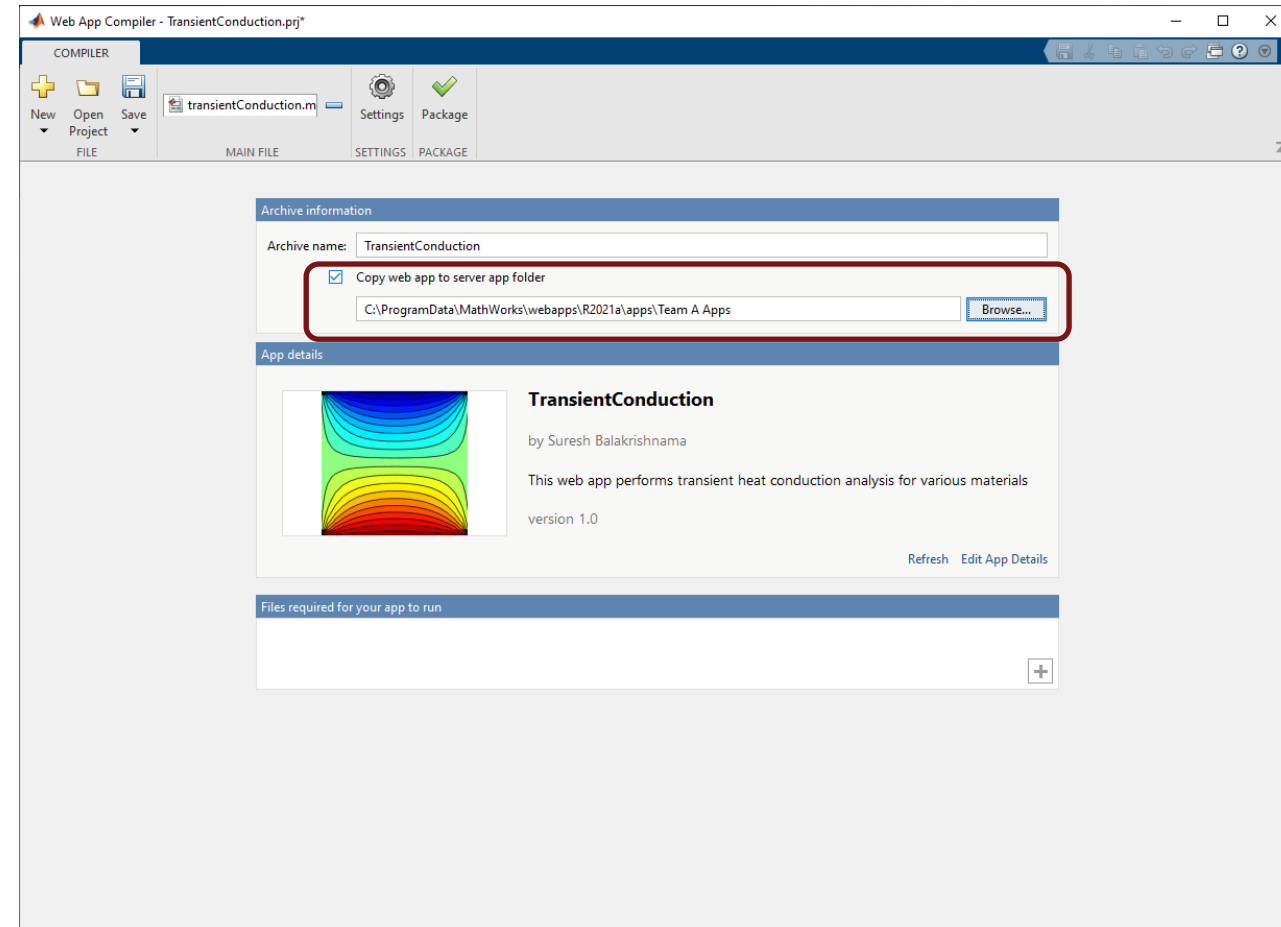
R2020a

Challenge 4/4

Simple process to deploy new application features

Benefits:

- Authoring environment allows you to develop and deploy
- No additional manual steps required to package the app data and dependent files



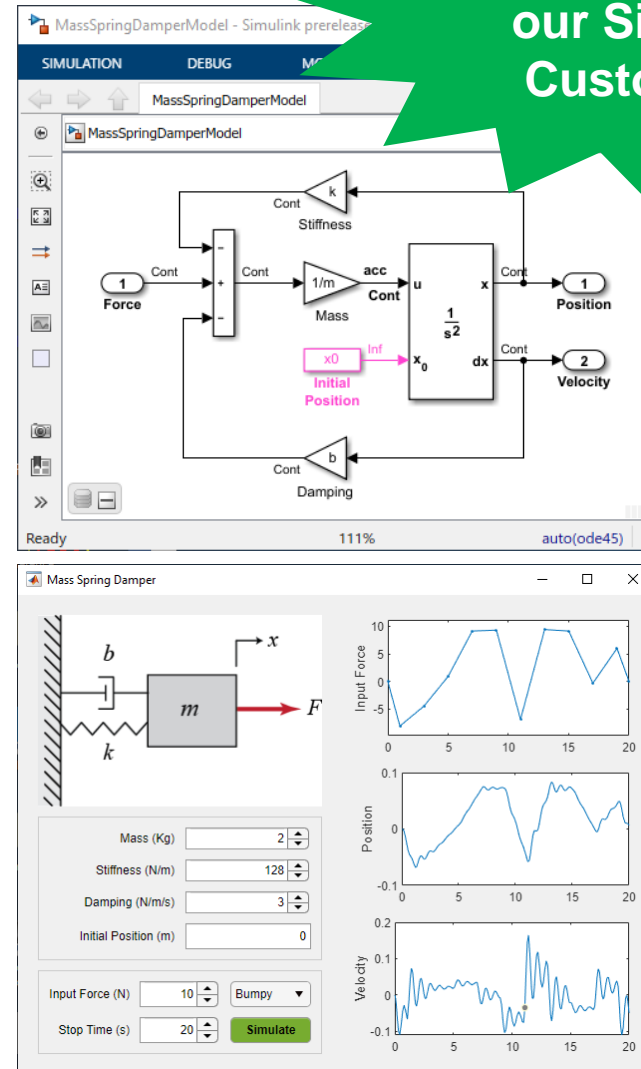
Share Simulink simulations

MATLAB WebApp Server supports Simulink

Benefits:

- End users do not require a Simulink license
- End users can use a web app to choose tunable parameters and run the simulation from a browser
 - MATLAB Apps that call `sim()` can be deployed as web apps
- Simulink Compiler can generate a “Starter” app to get you started

A long-standing
request from
our Simulink
Customers!



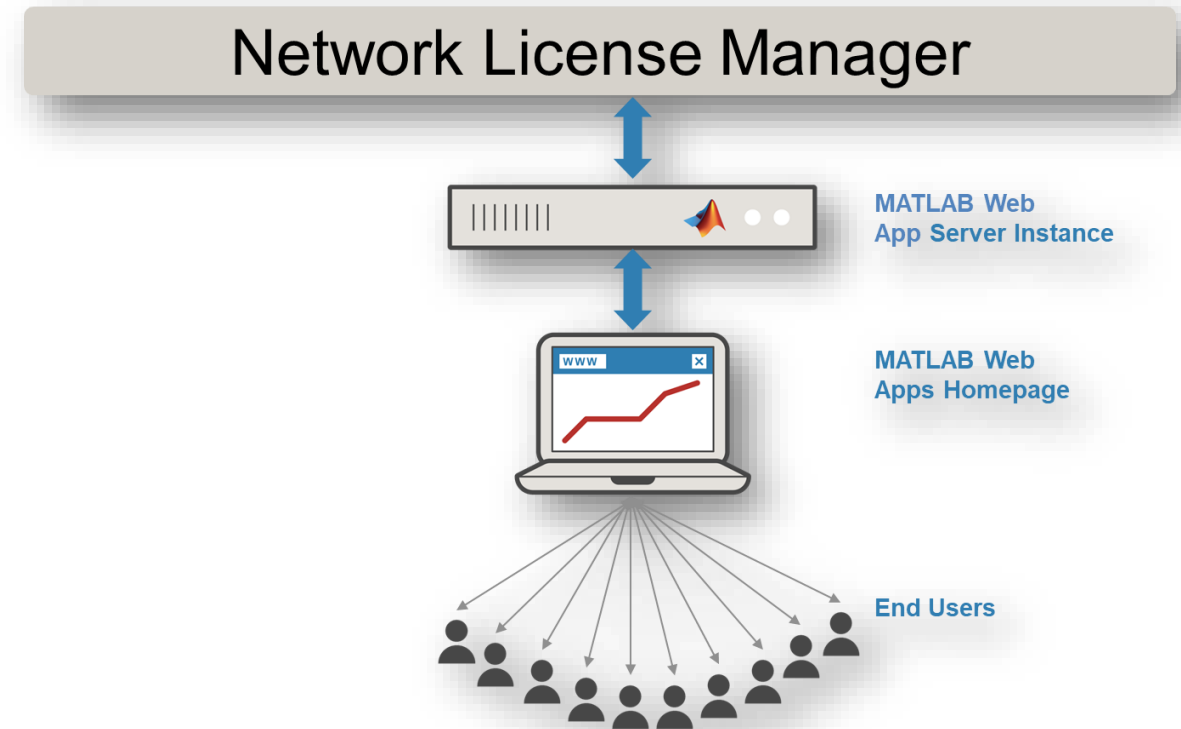
R2020a

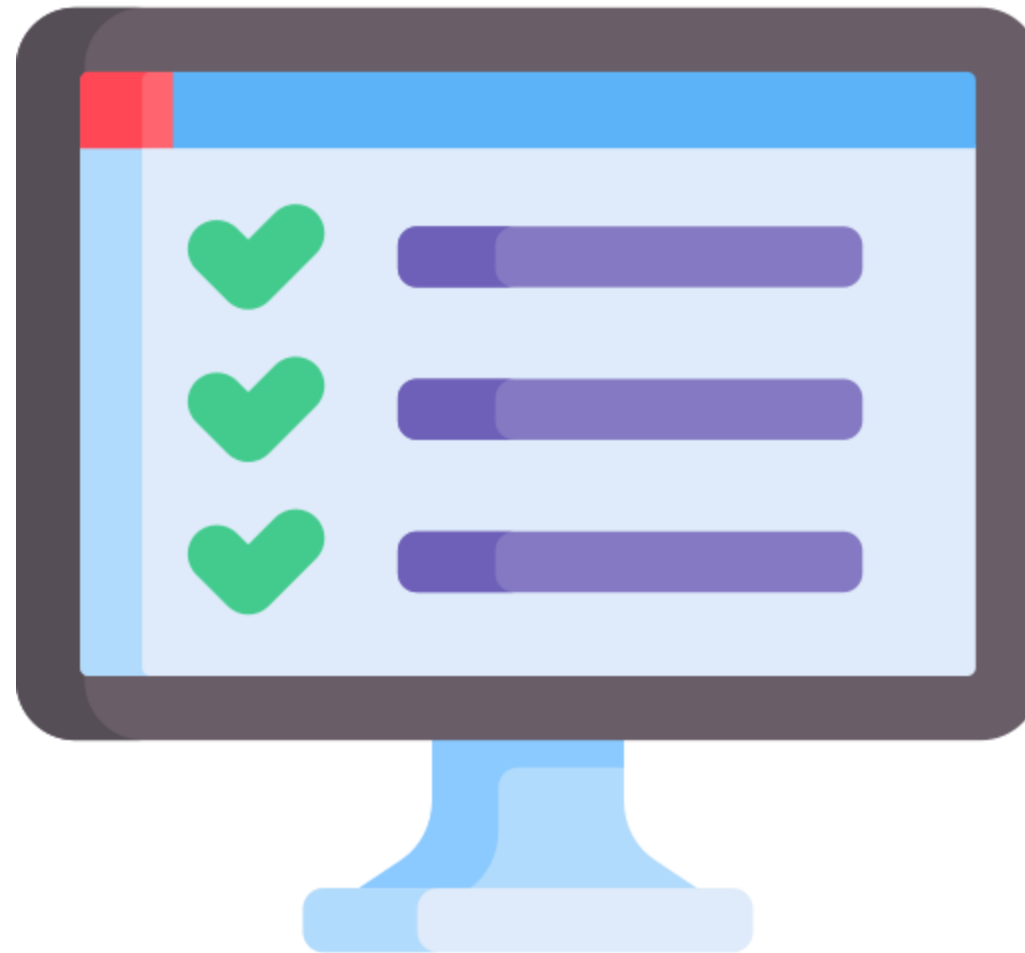
Flexible license model

Designed to support both user and business needs

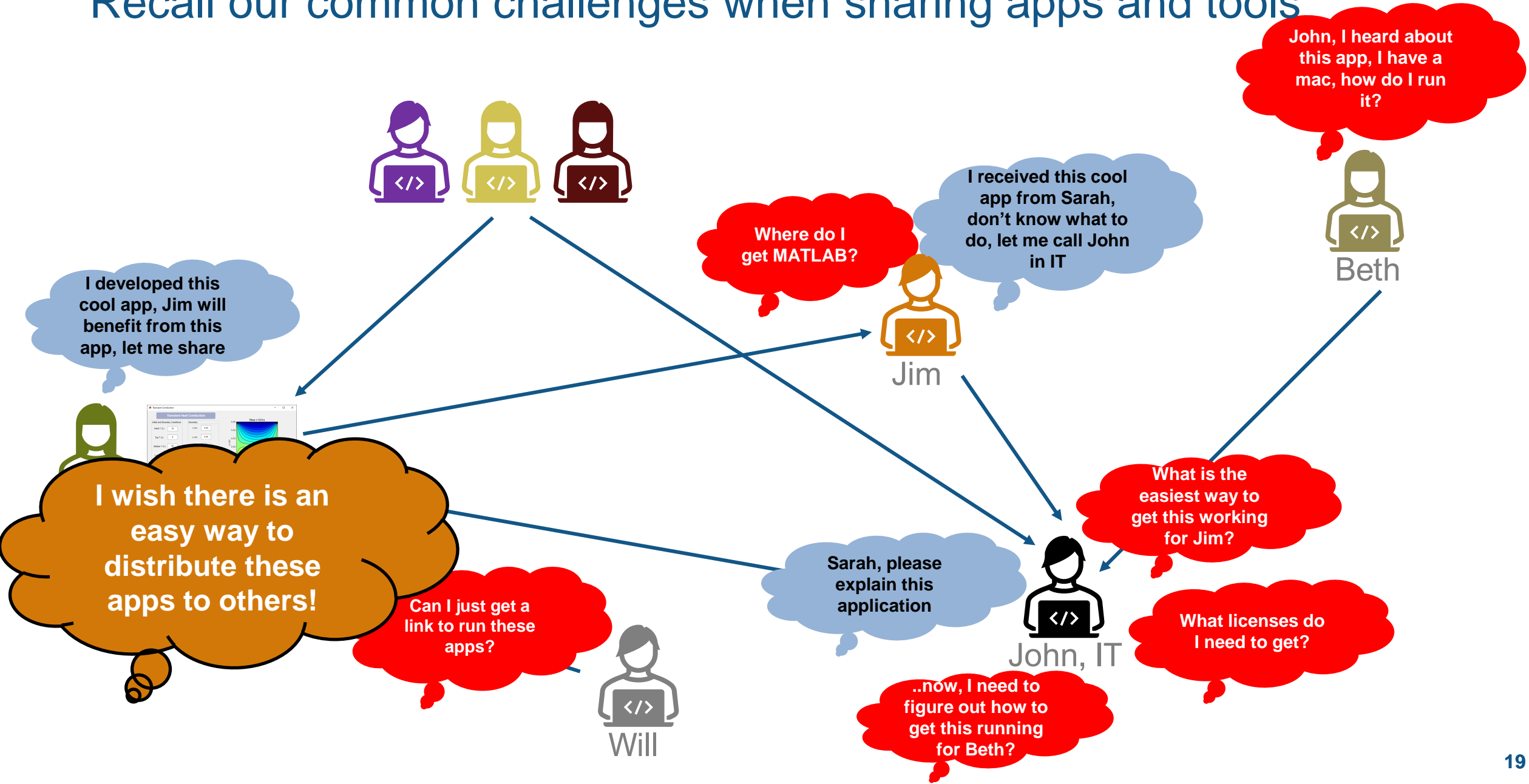
Benefits:

- End user do not need MATLAB or Simulink license
- License model does not count number of apps deployed or users accessing the apps
- Full control to IT administrators to add users per need

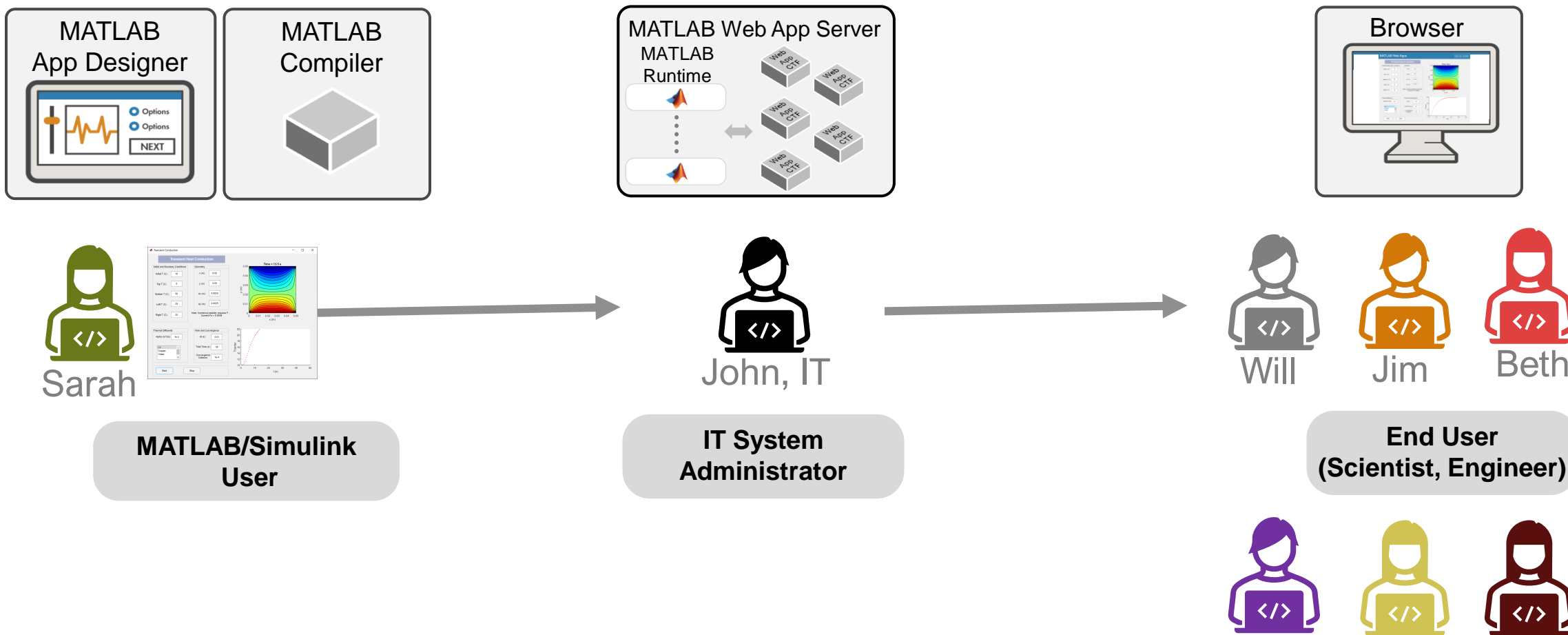


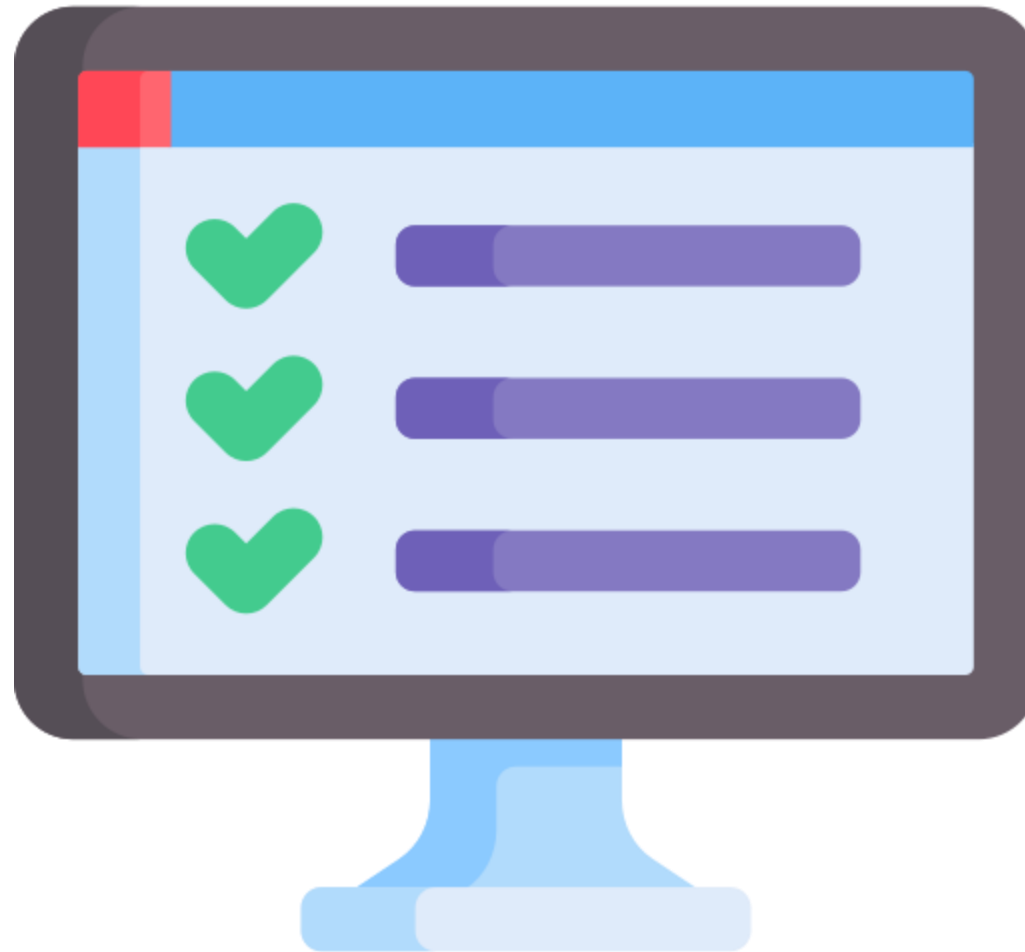


Recall our common challenges when sharing apps and tools



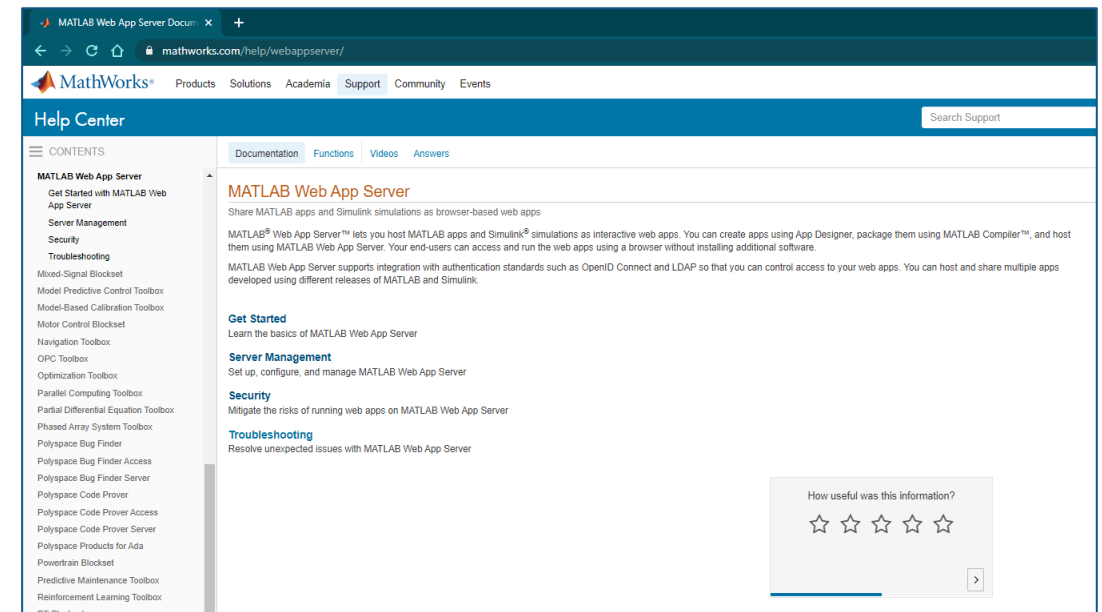
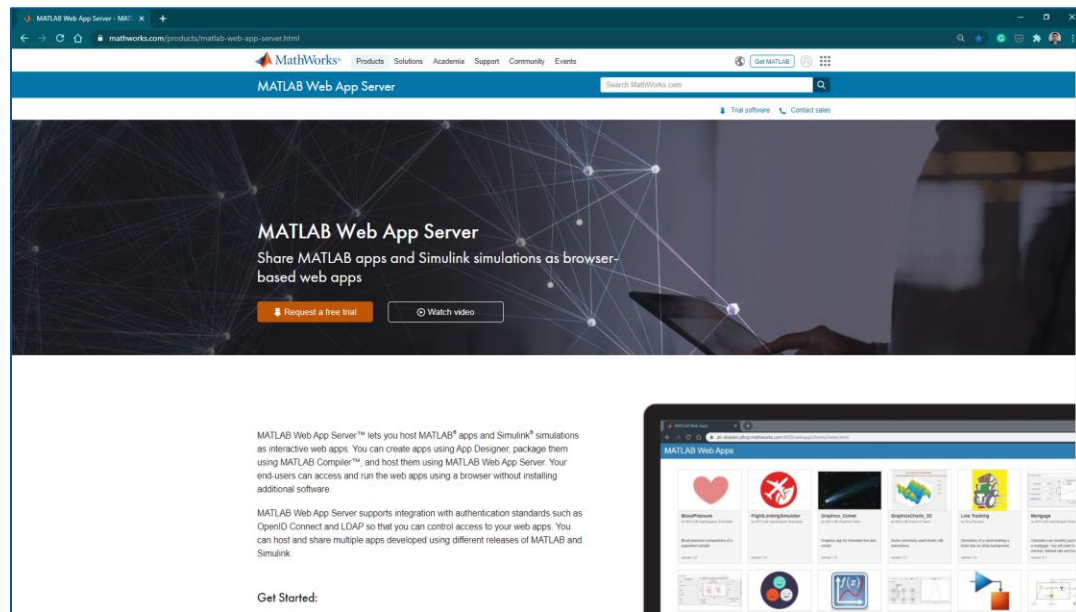
MATLAB Web App Server *helps you enable sharing workflows*





Learn more about MATLAB Web Apps

Search: *MATLAB Web Apps*



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- MATLAB Programming Techniques ([link](#))
- Building Interactive Applications in MATLAB ([link](#))
- Object-Oriented Programming with MATLAB ([link](#))
- Advanced MATLAB Application Development
 - New course, contact us for scheduling details

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Thank you

