MATLAB Web App Server를 이용한 클라우드 서비스 구축

장규환 차장







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

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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

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Blood pressure comparisons of a population sample		Graphics app for Animated line and comet.	Some commonly used charts with interactions	Simulation of a robot trasking a black line on white background	
version 1.0	version 1.0	version 1.0	version 1.0	version 1.0	version 1.0
Mortgage by MATLAB AppDesigner Examples	NFLPlayersApp by MATLAB Connector Team	PatientsDisplay by MATLAB AppDesigner Examples	PulseGenerator by MATLAB AppDesigner Examples	TMDDsim by MathWorks SimBiology Team	TransientConduction by Dave Garrison
Calculate your monthly payment for a mortgage. You will need to enter amount, interest rate and loan				Simulation of a TMDD model with SimBiology.	This web app performs transient heat conduction analysis for various materials

Konkuk University Forecasts COVID-19 trend and effects of social distancing for KCDC

Professor Eun ok Jung has developed a SEIR model using MATLAB. She predicts infection rate in South Korea and provides scientific background for KCDC.

The model is published using MATLAB Web App Server, and freely accessible from browser.

For her profound contribution, she received the honor of a President's Commendation from President award on April 21, 2020.



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





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Dr Henry Lester Alex Wang



NicotineApp × +

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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

A MathWorks

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

- 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

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Challenge 2/4 (continued)

Mechanism to secure and control access to applications

- 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

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Challenge 3/4 Manage and provide access to MATLAB Runtime libraries

- 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

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	TransientConduction	1.0	Dave Garrison	R2020a	✓ ок	Ē



Challenge 4/4 Simple process to deploy new application features

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

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Share Simulink simulations MATLAB WebApp Server supports Simulink

- 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



Flexible license model

Designed to support both user and business needs

- 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





Summary Demo: Share MATLAB programs as MATLAB Web Apps

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					Simulation of a TMDD model with SimBiology.	This web app performs transient heat conduction analysis for various materials
version 1.0	version 1.0	version 1.0	version 1.0	version 1.0	version 2.0	version 1.0



MATLAB Web App Server helps you enable sharing workflows



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Mixed-Signal Blockset Model Predictive Control Toolbox	MATLAB Web App Server supports integration with authentication standards such as OpenID Connect and LDAP so that you can control access to your web apps. developed using different releases of MATLAB and Simulink.	'ou can host and share multiple apps
Model-Based Calibration Toolbox Motor Control Blockset Navigation Toolbox	Get Started Learn the basics of MATLAB Web App Server	
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