

KEYSIGHT
TECHNOLOGIES

“Unlocking measurement insights for 75 years”



Desktop App Automation

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Aland Copeland	Evan Metcalf
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Bhawandeep Singh	

Who is Keysight?



Manufactures electronic design and test solution for various industries

- Commercial
- Defense
- Industrial Markets

Main focus is making electronics test and measurement equipment and software

Keysight Products



Oscilloscope

Test and display voltage signals as waveforms, visual representations of the variation of voltage over time



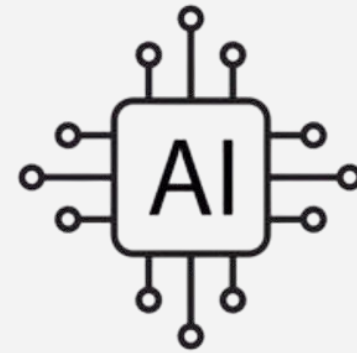
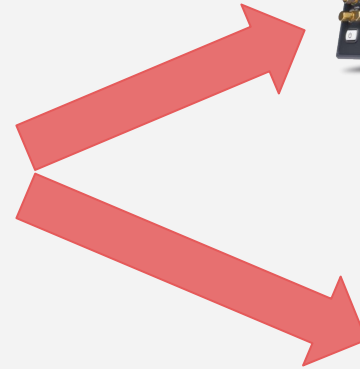
Signal Generator

An electronic device that creates electrical signals to test and evaluate electronic systems

Pathwave Signal Generation Software



Signal Generator
Generates Waveform Files
for Signal Generator and
the AI Team



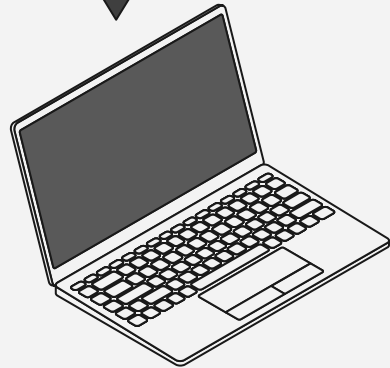
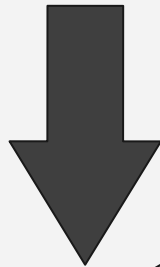
Problem Statement

Purpose: Scale up and automate data generation from the desktop applications for the Keysight AI team

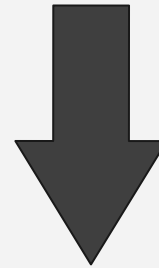


Without the workflow automation, the workflow looks like this...

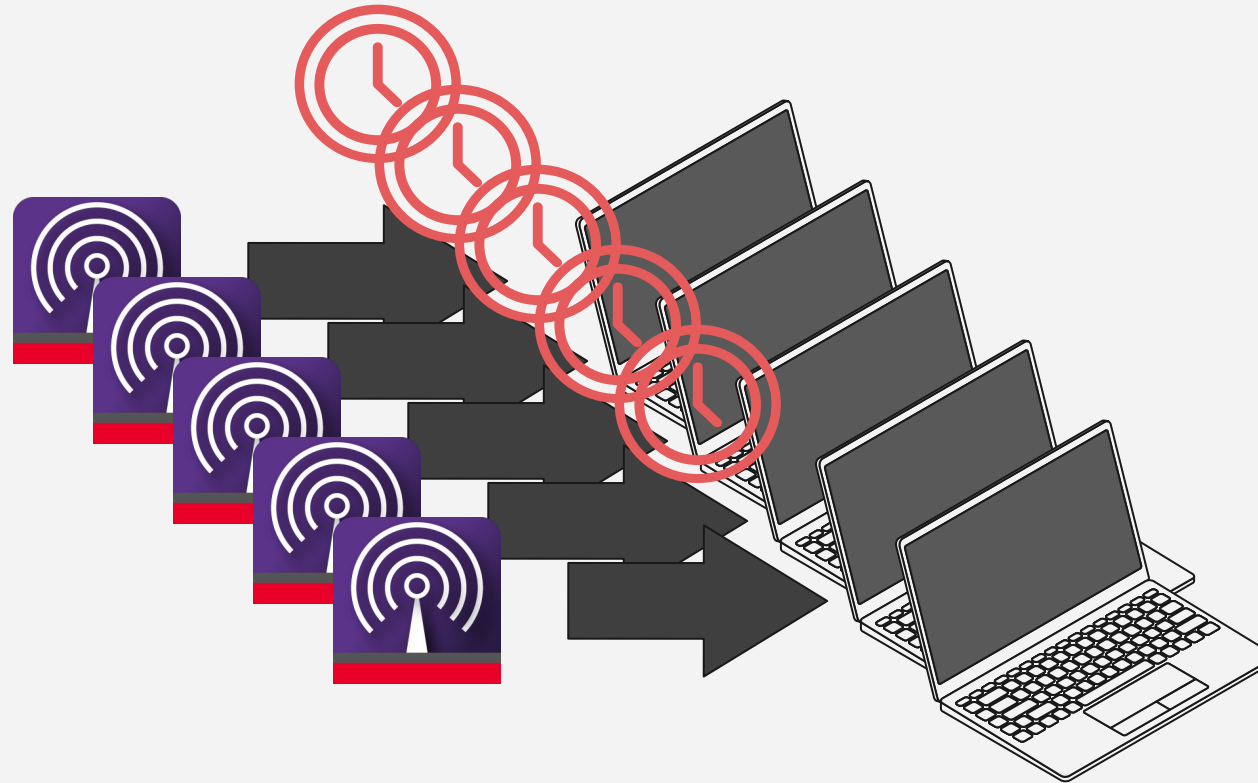
Desktop App



Desktop App

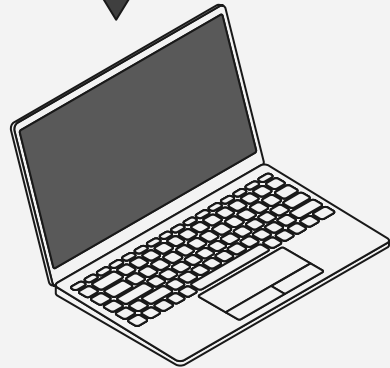
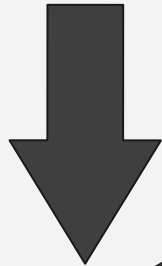


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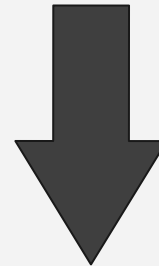


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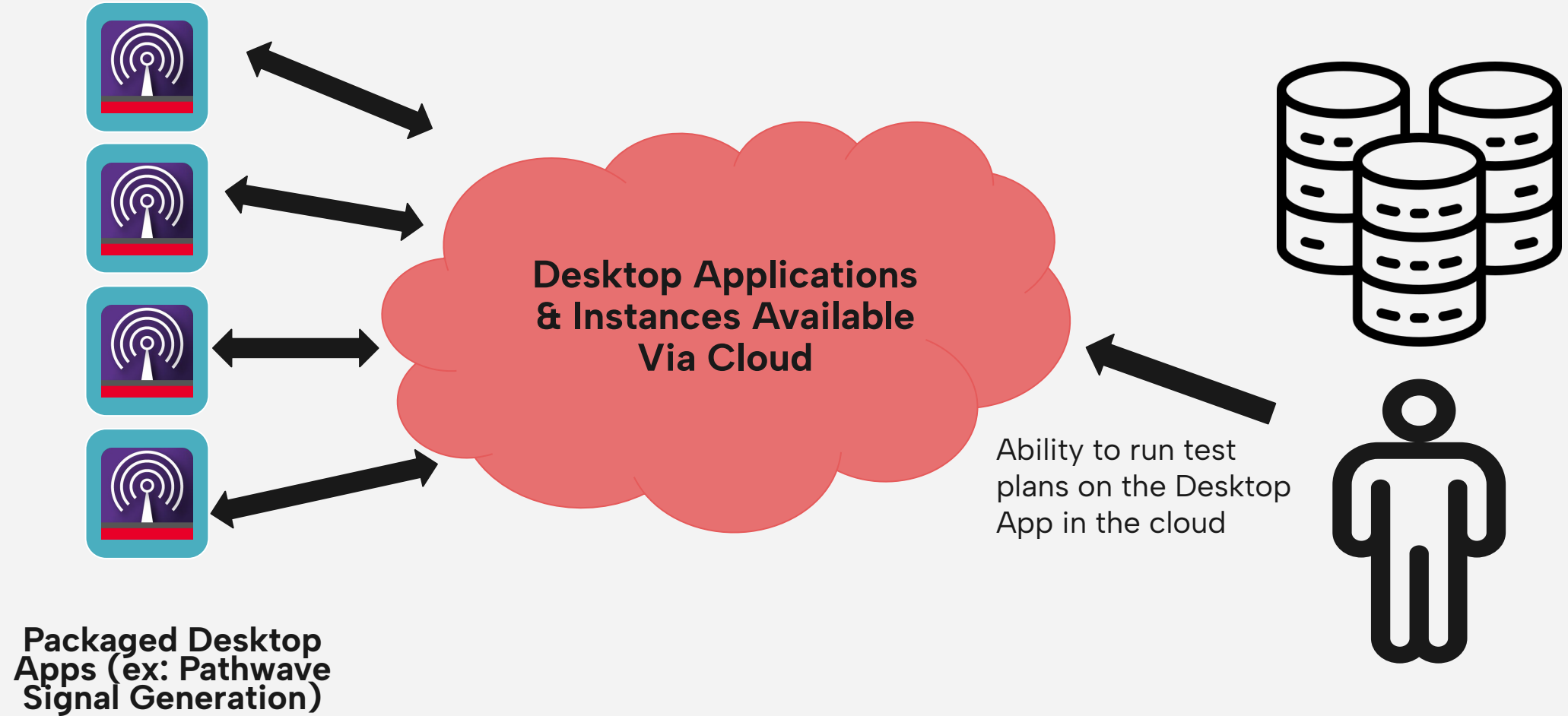
Desktop App



Desktop App



Problem Solution



Project Goals



CAMPAIGN/TEST PLAN

Create a campaign and test plan to provide parameters for Waveform data

CONNECT TO CLOUD

Register and connect VM to the cloud as a Keysight Runner

PLUGIN

Create a plugin for the Pathwave Signal Generation Desktop Application

PACKAGE

Package the Desktop App into VMS and Containers

OTHER APPS

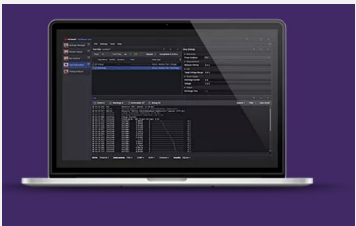
Apply the same process to other Desktop Applications

Technologies Used

01

Pathwave Signal Generation

A desktop application that produces a waveform file



03

OpenTAP

Extendable and cross-platform architecture, built on .NET



05

Chocolatey

Package manager and installer for Windows



02

KS8400B/KS8500B Pathwave Test Automation

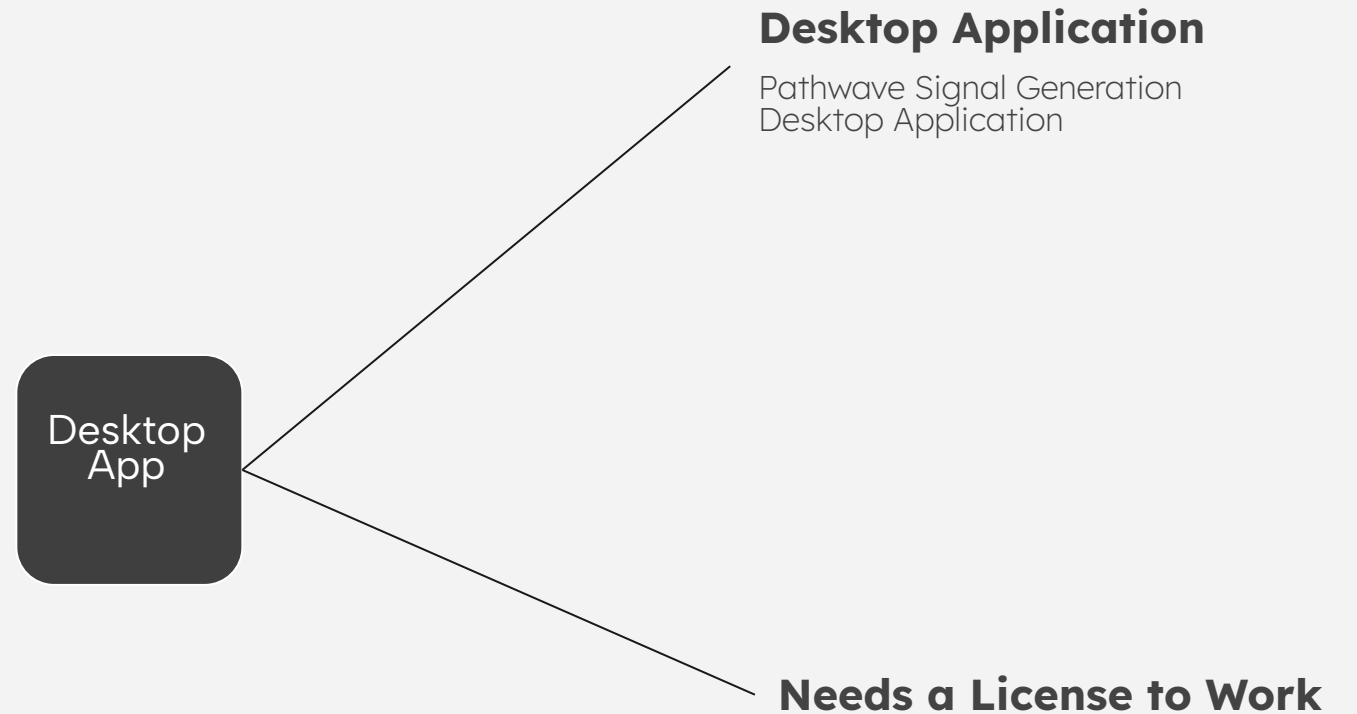
04

Boxstarter

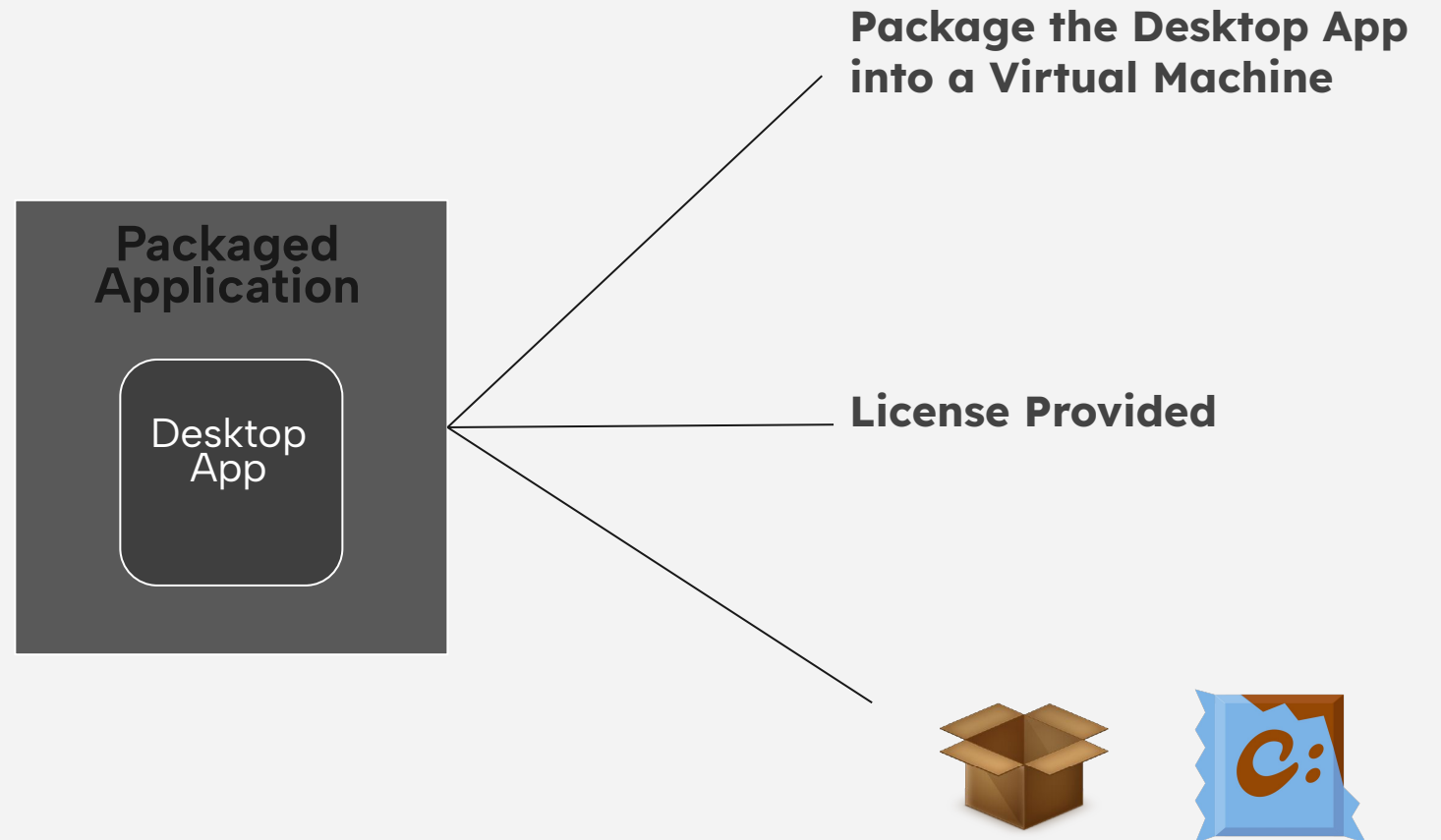
Automates the installation of software and configuration for Windows environments



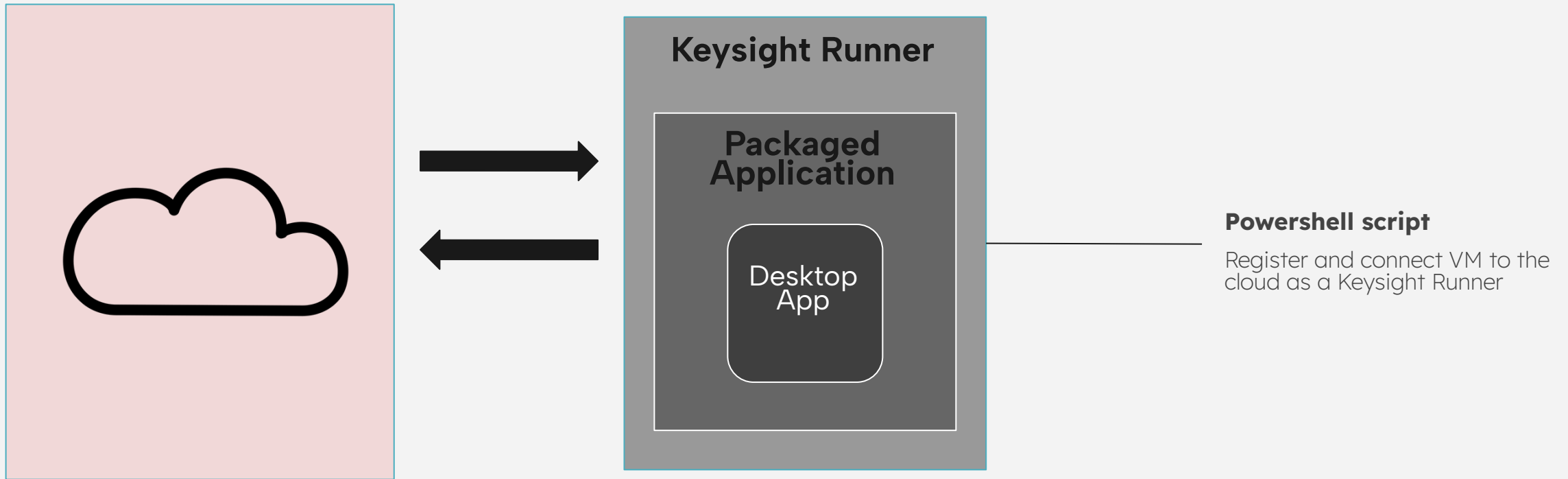
System Illustration



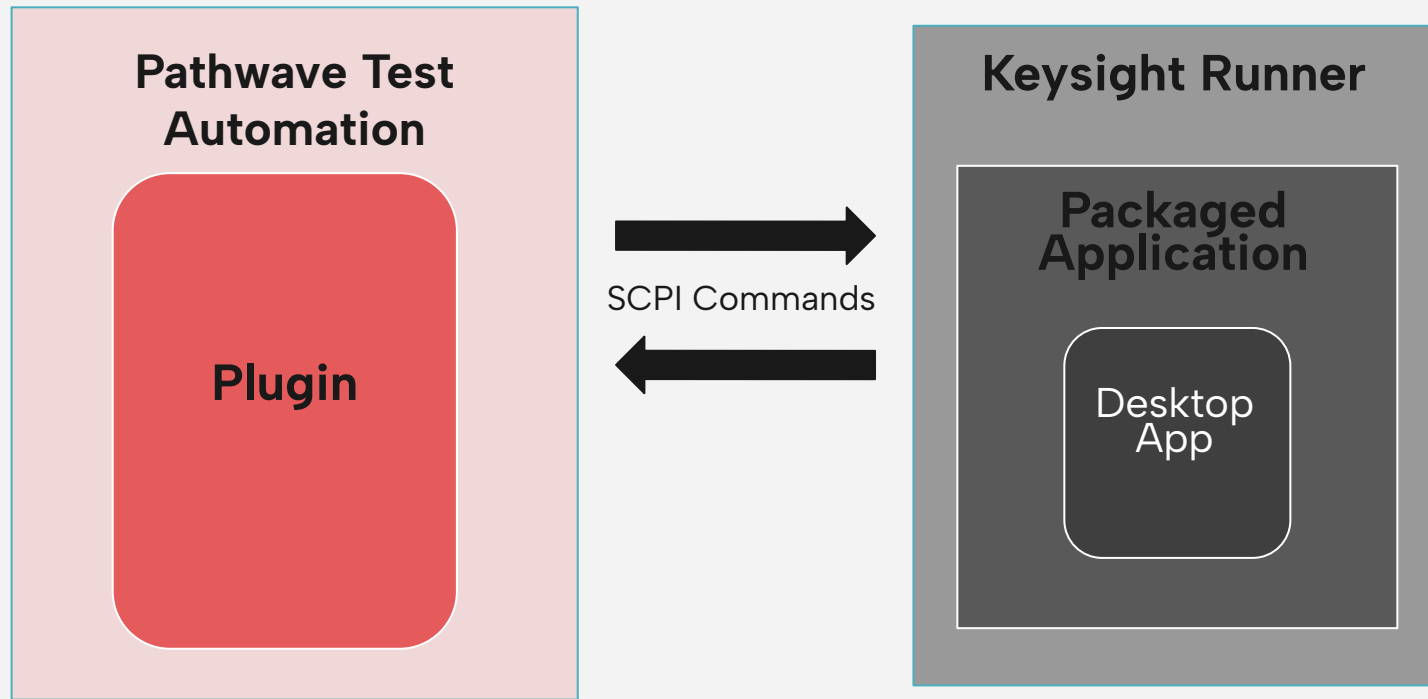
System Illustration



System Illustration



System Illustration

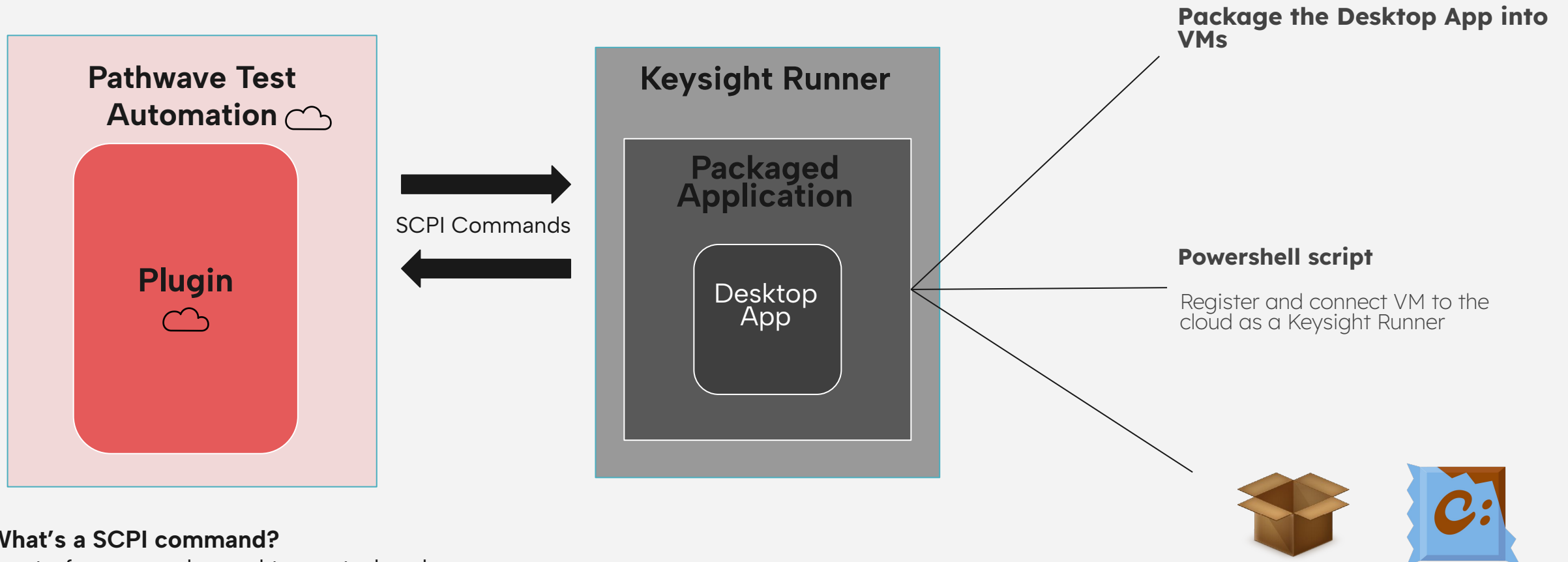


- **Plugin controls the Desktop App**
- **Communicates through SCPI commands**
- **Files are read and stored on the cloud**

What's a SCPI command?

A set of commands used to control and program test and measurement instruments

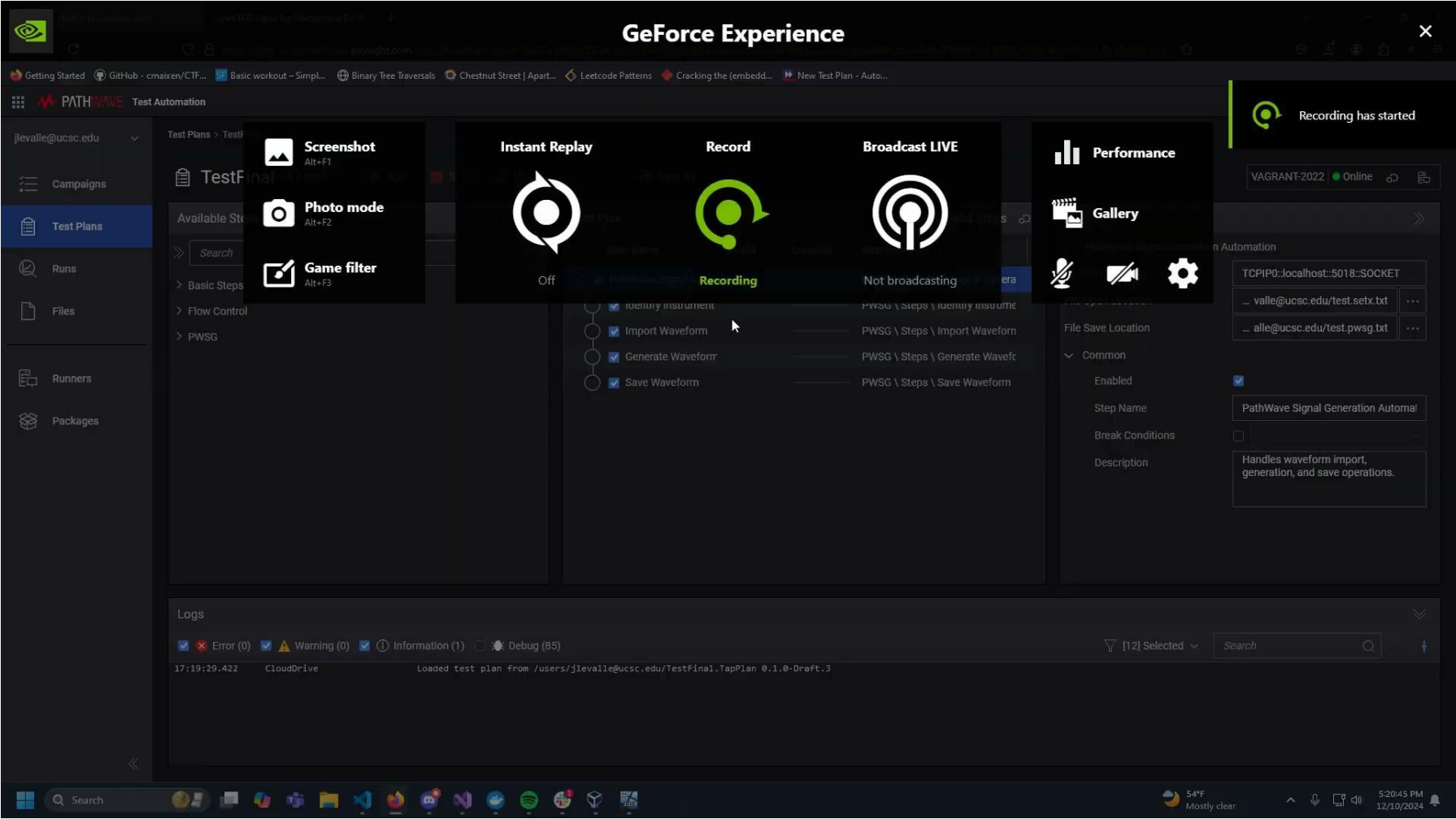
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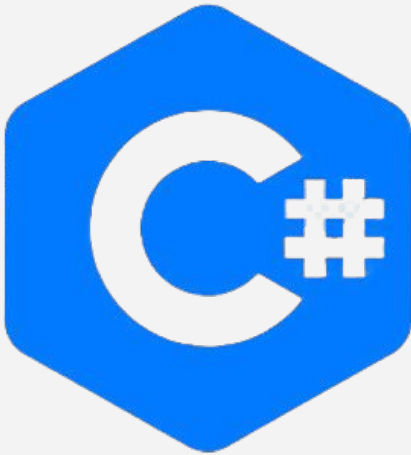
Demo



Project Constraints

C#

Plugin is coded in C#

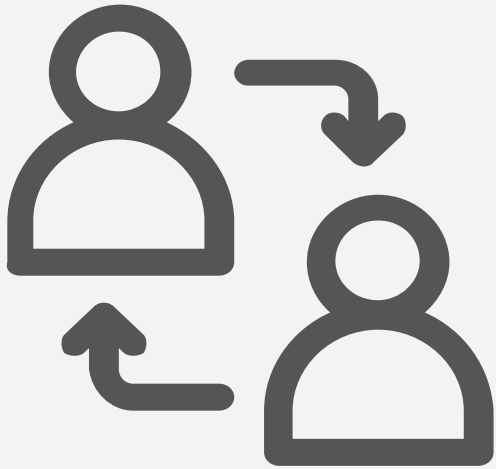


OpenTAP

Extendable and cross-platform architecture, built on .NET



Challenges



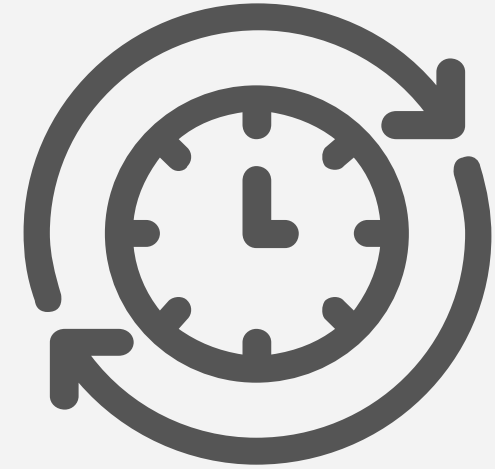
#1 Project Scope

Understanding the larger scope of the project



#2 Software

Unfamiliar software and tech stack



#3 Scheduling

Difficulty scheduling with other teammates

Results

- **Developed** a plugin for the Pathwave Signal Generation Desktop App
- **Packaged** the Pathwave Signal Generation Desktop App
- **Remote access and test** automation for the Pathwave Signal Generation Desktop App

Next Steps

Expand



Expands the Number of Desktop Applications

Integrating more desktop applications
for remote access and test automation

Standardize



Standardizing Automation For Applications

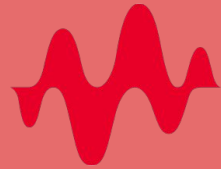
Creating standardized methods for
integrating other desktop applications

Thank you to our Keysight Sponsors!

Maxim Pletner
Alan Copeland

Lukas Dopcke
Thomas Pollicino
Evan Metcalf





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Thank you!

Any questions?