

KEYSIGHT
TECHNOLOGIES

“Unlocking measurement insights for 75 years”

B-

Desktop App Automation

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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



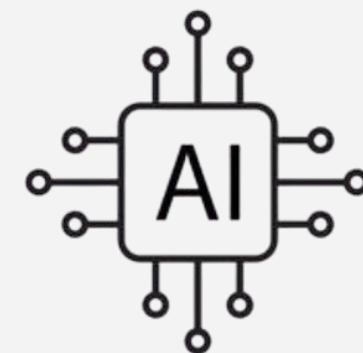
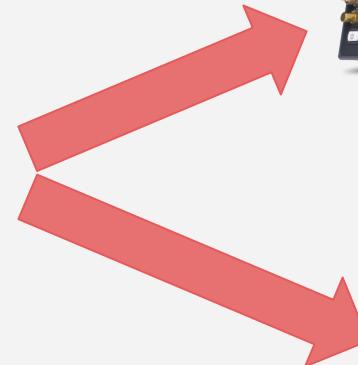
Signal Generator

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

Pathwave Signal Generation Software

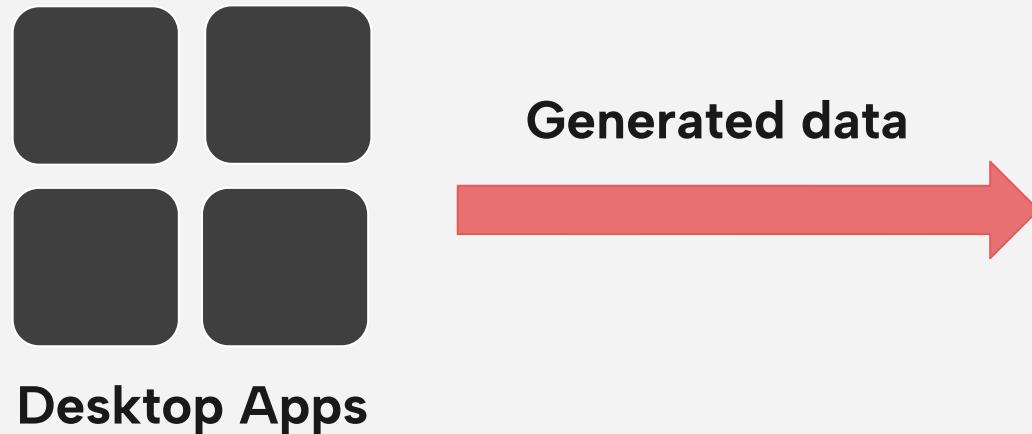


Signal Generator
Generates Waveform Files
for Signal Generator and
the AI Team



Problem Statement

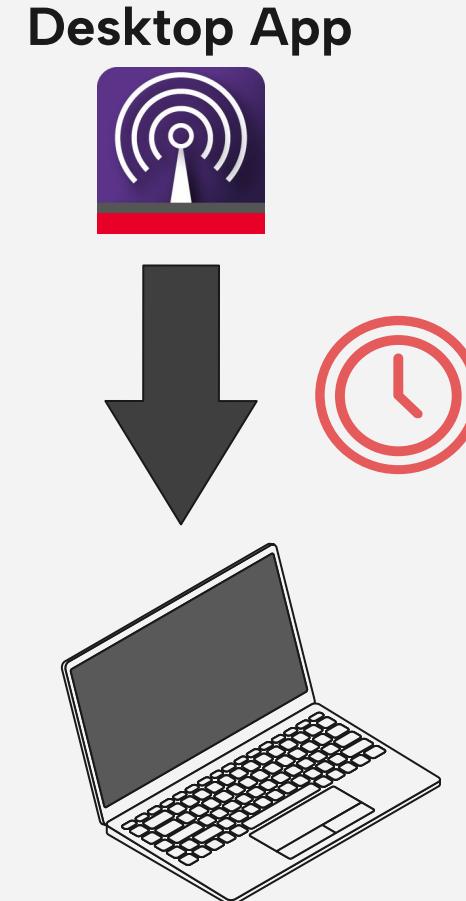
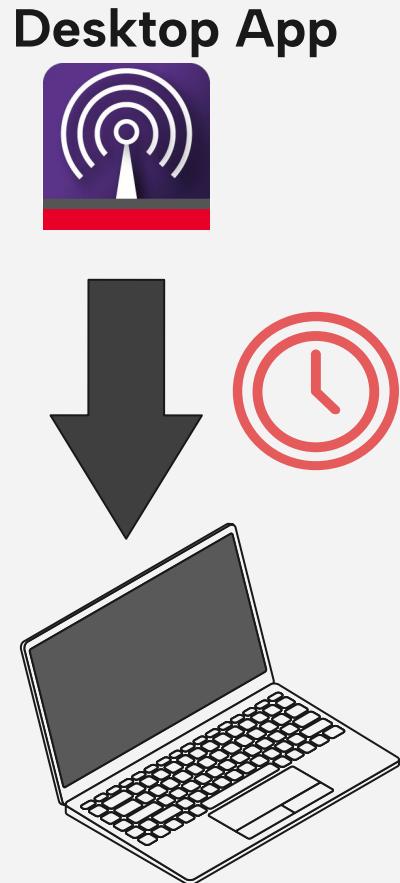
Purpose: Scale up and automate data generation from the desktop applications for the Keysight AI team



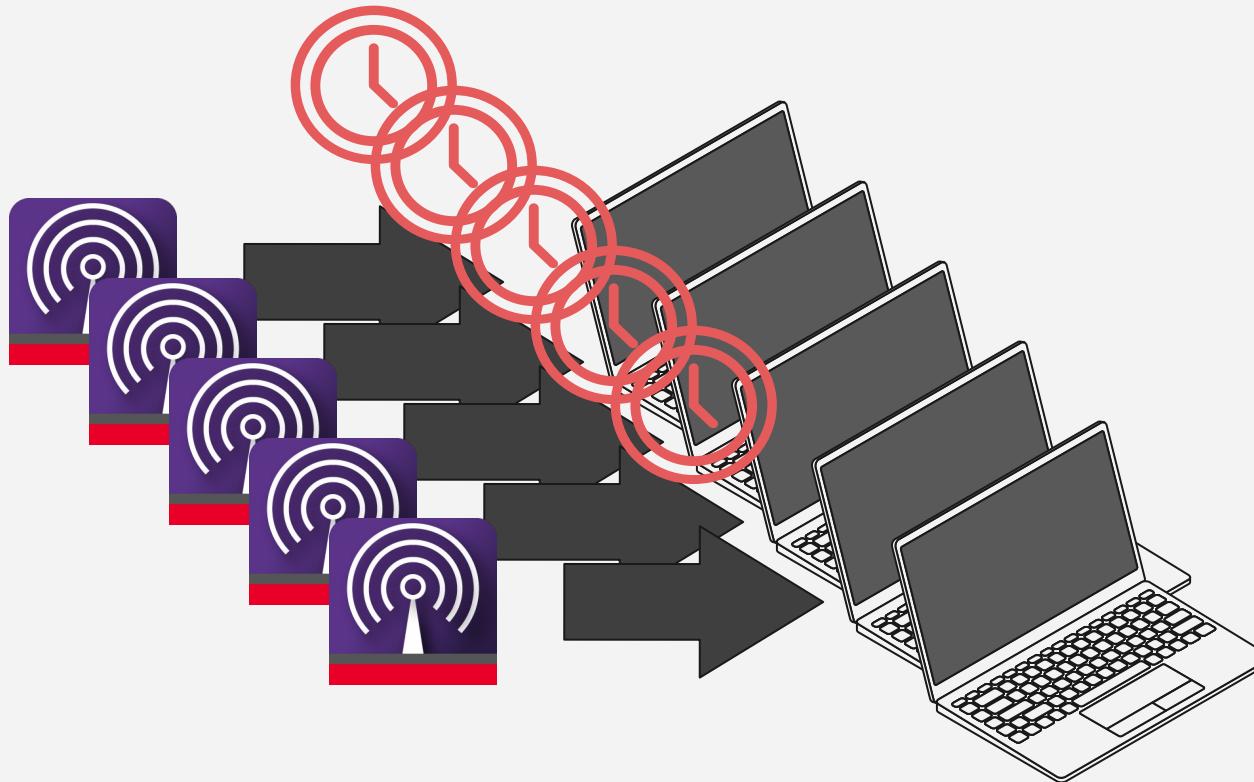
Cloud

- No remote access
- No Test Plan Automation

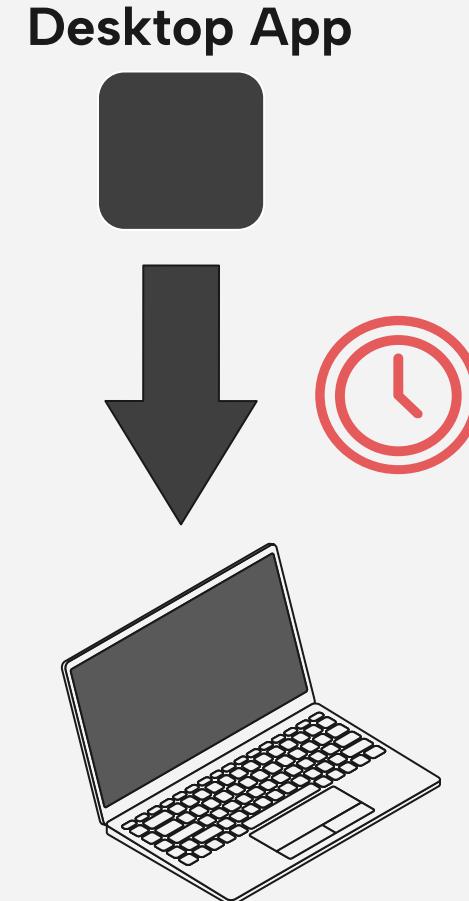
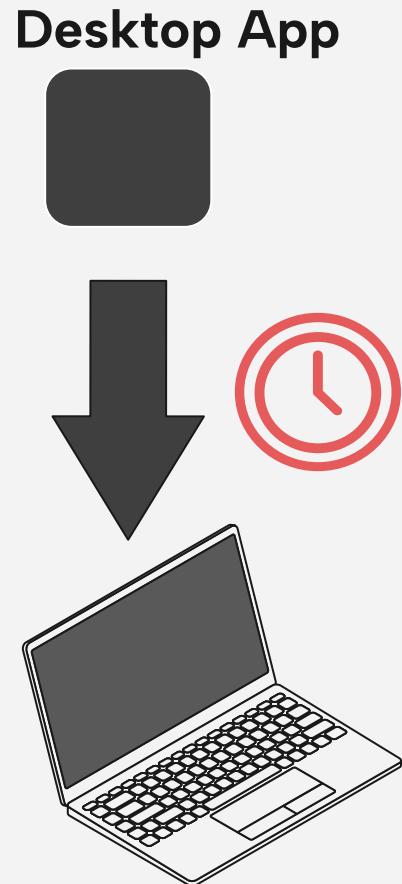
Without the workflow automation, the workflow looks like this...



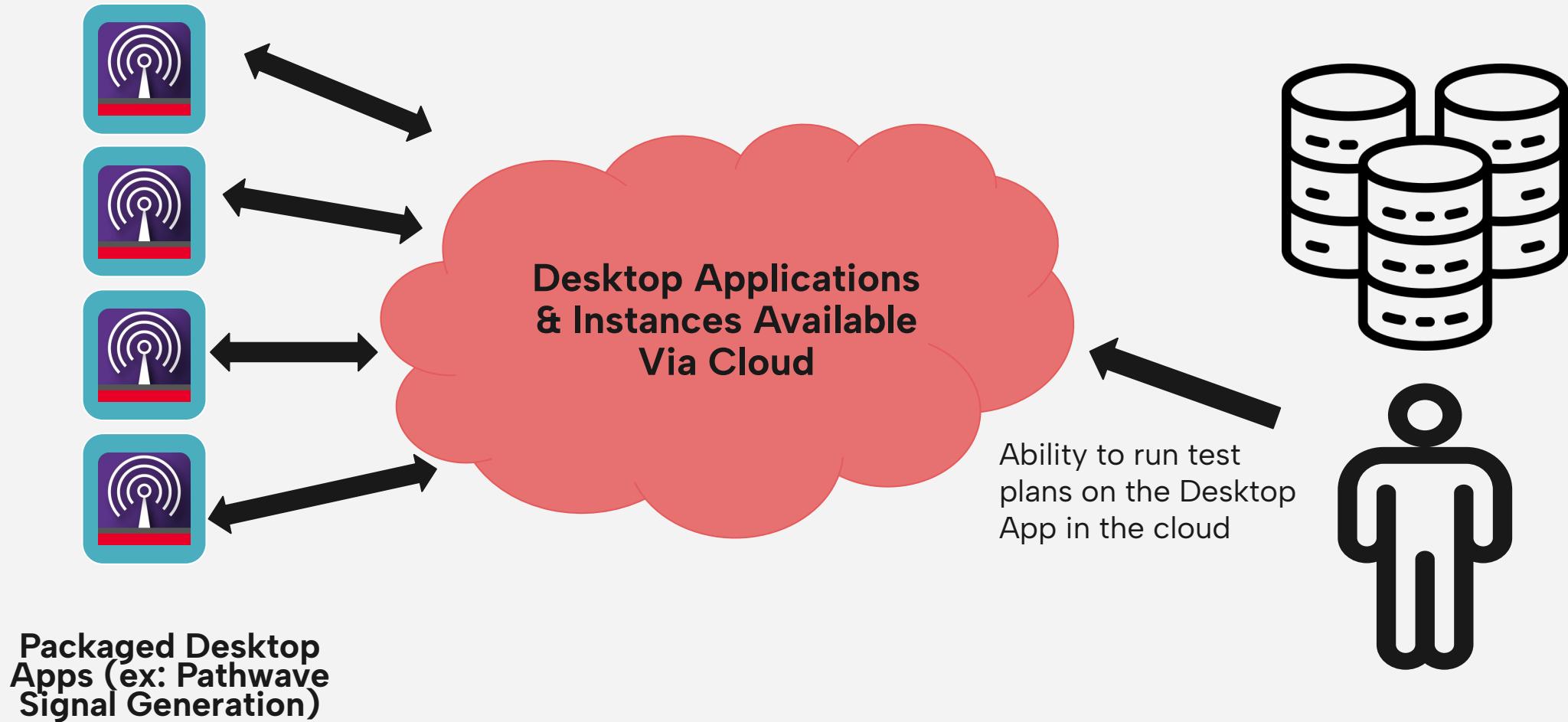
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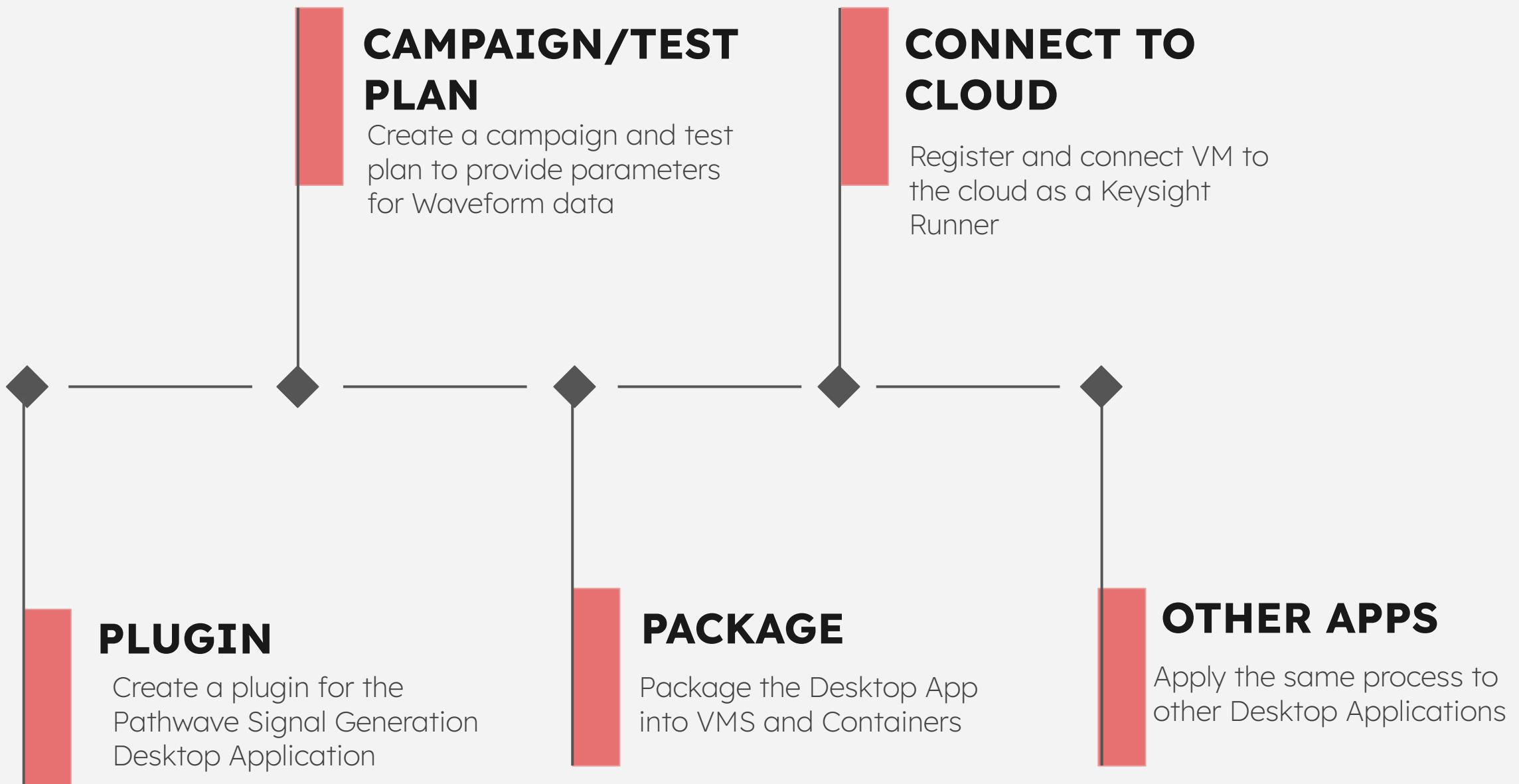
Without the workflow automation, the workflow looks like this...



Problem Solution



Project Goals

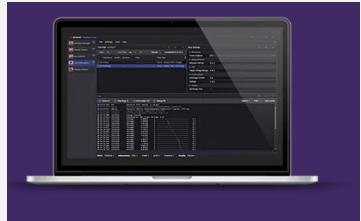


Technologies Used

01

Pathwave Signal Generation

A desktop application that produces a waveform file



02

KS8400B/KS8500B Pathwave Test Automation

03

OpenTAP

Extendable and cross-platform architecture, built on .NET



04

Boxstarter

Automates the installation of software and configuration for Windows environments



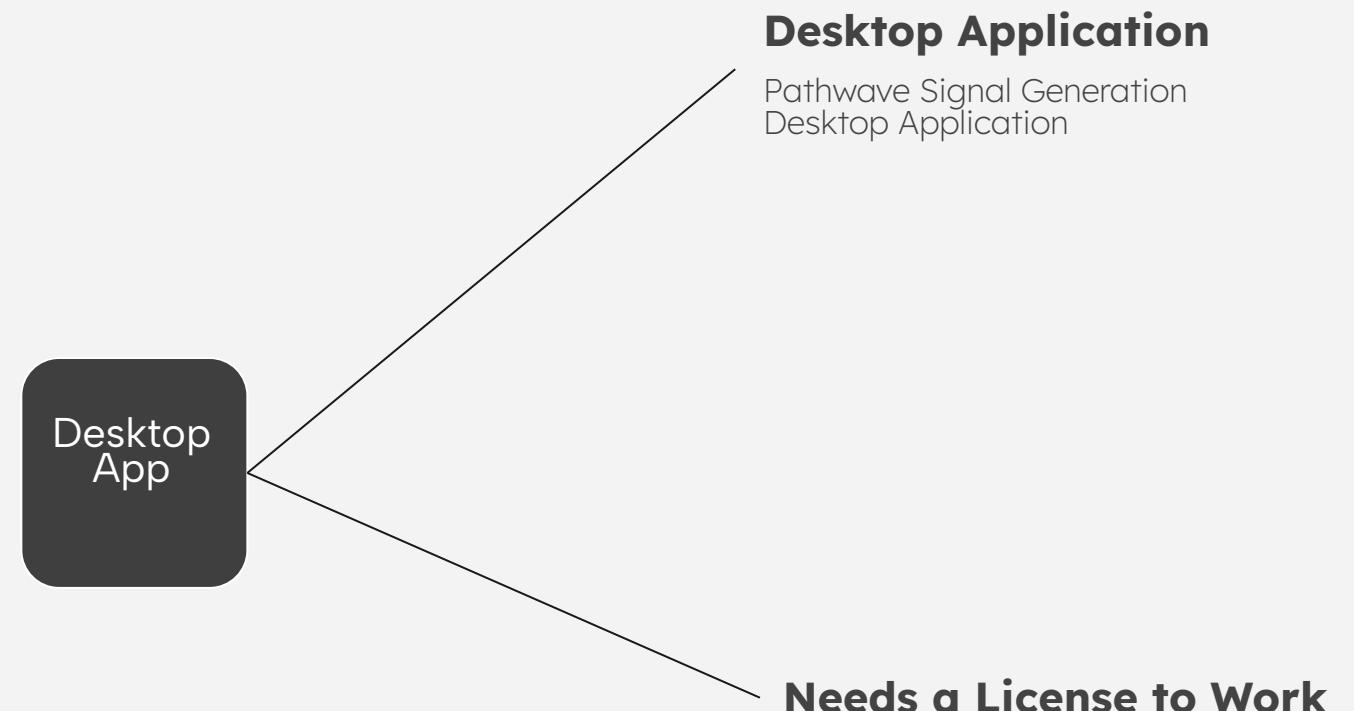
05

Chocolatey

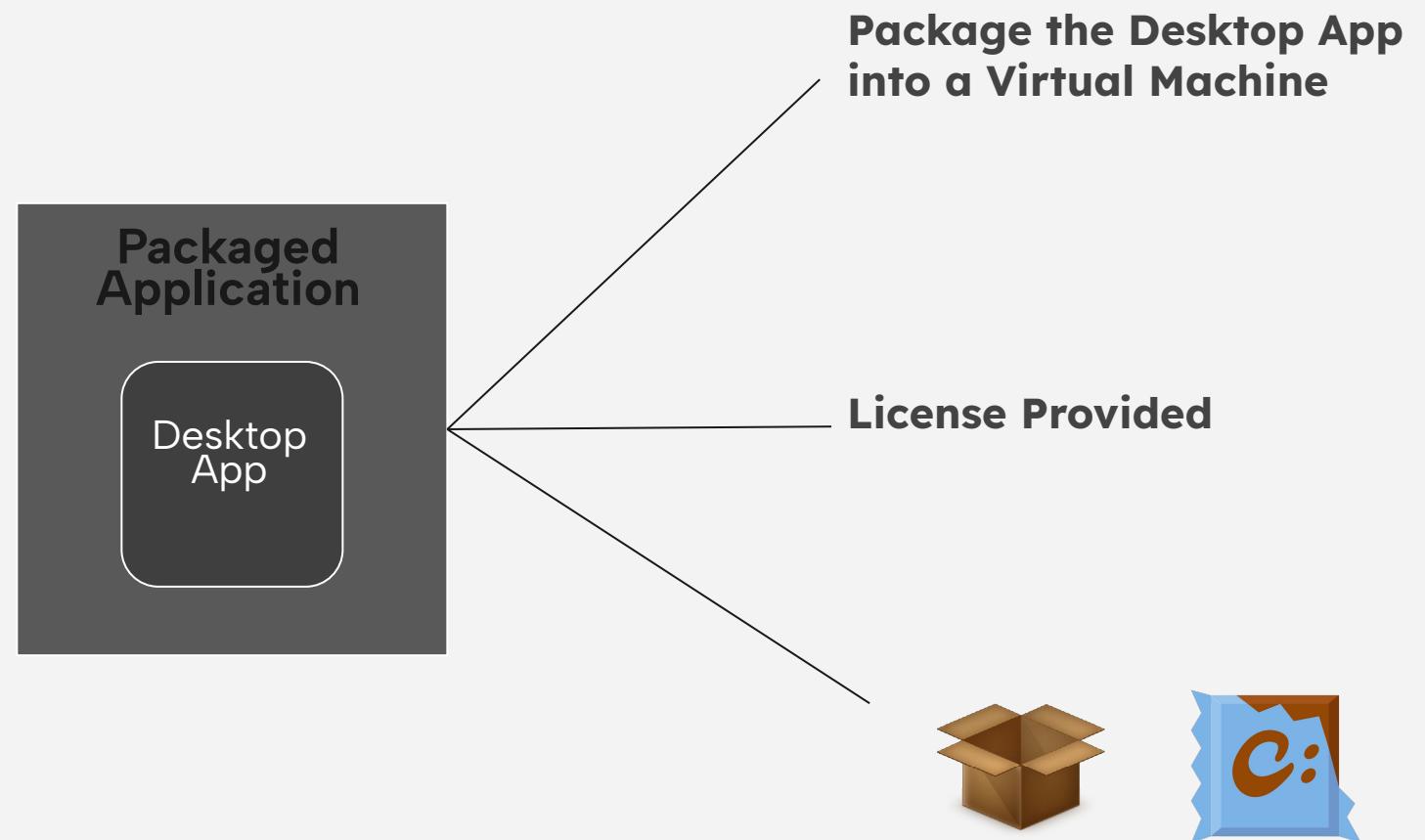
Package manager and installer for Windows



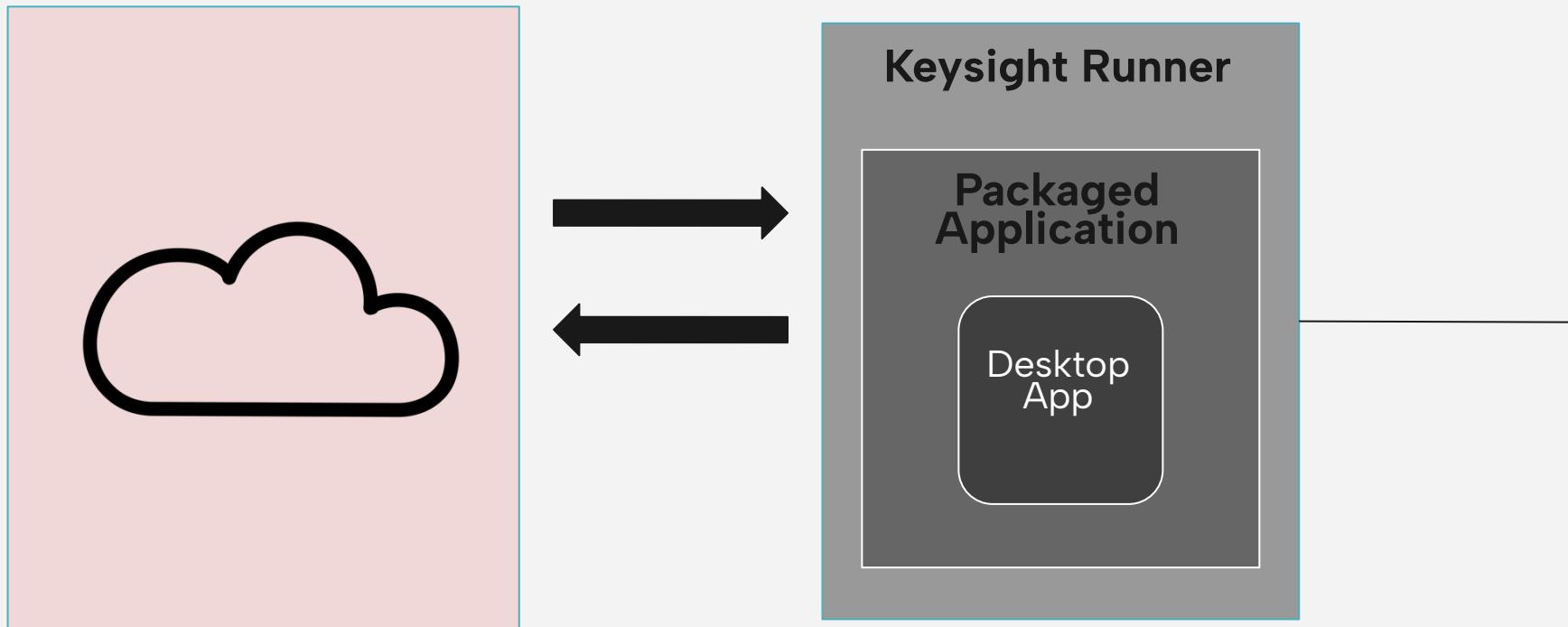
System Illustration



System Illustration



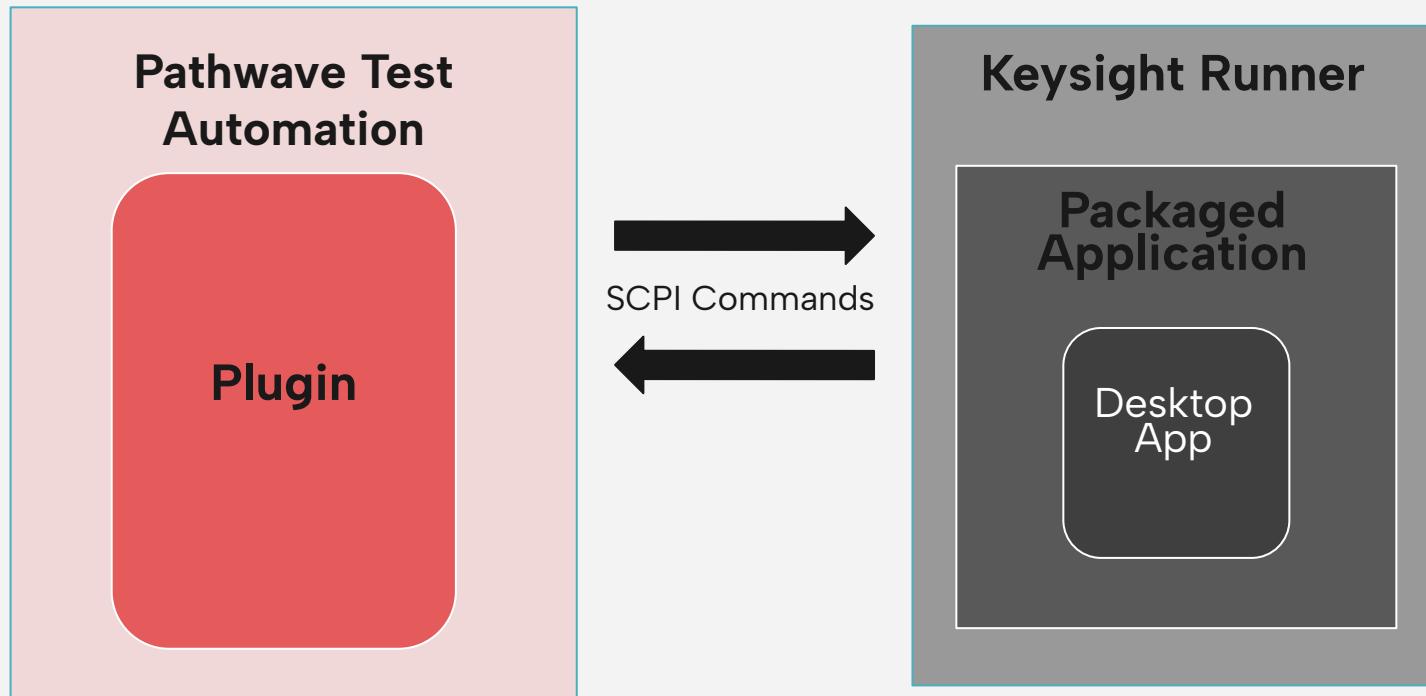
System Illustration



Powershell script

Register and connect VM to the cloud as a Keysight Runner

System Illustration

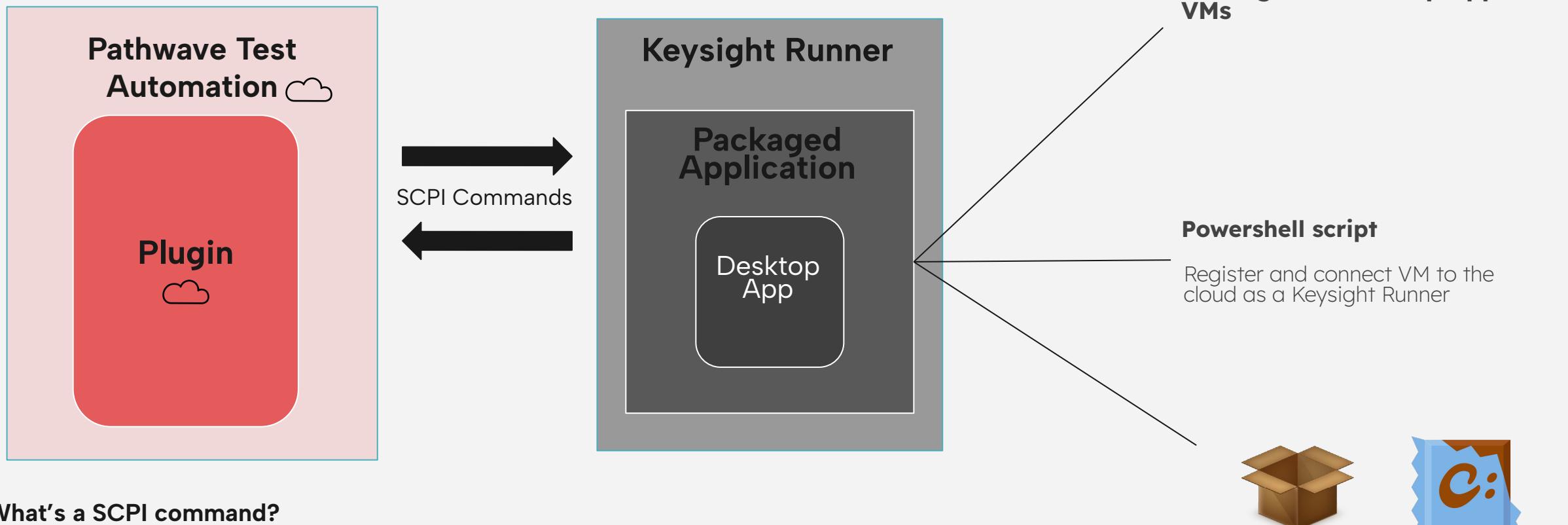


- **Plugin controls the Desktop App**
- **Communicates through SCPI commands**
- **Files are read and stored on the cloud**

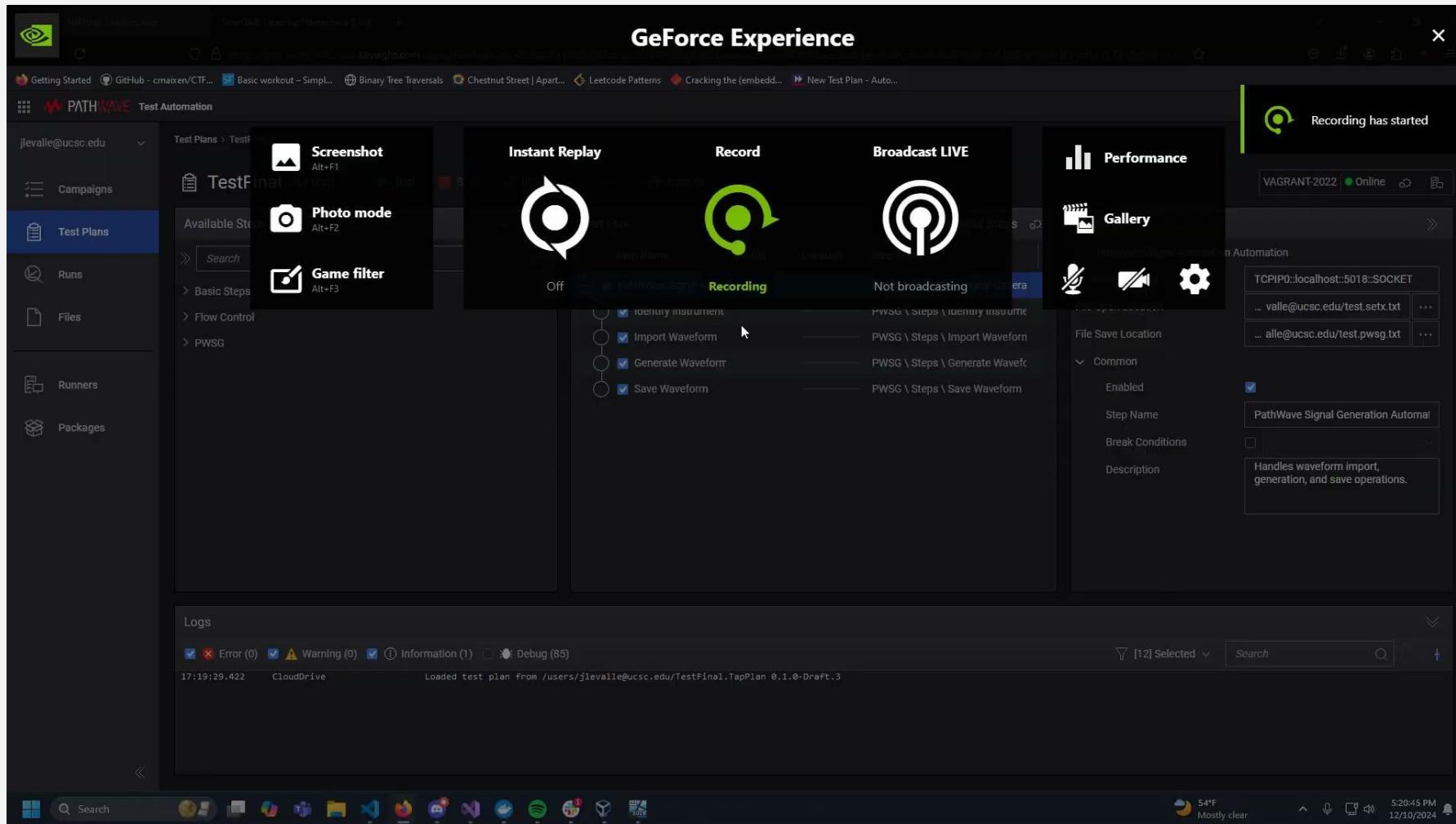
What's a SCPI command?

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

System Illustration



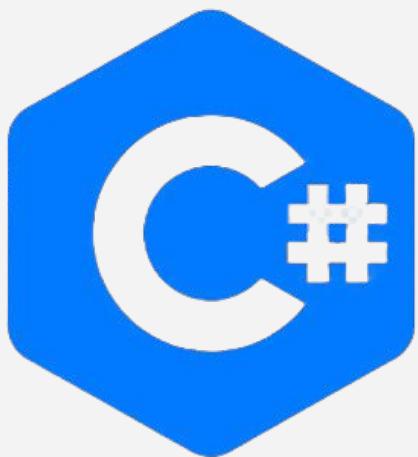
Demo



Project Constraints

C#

Plugin is coded in C#

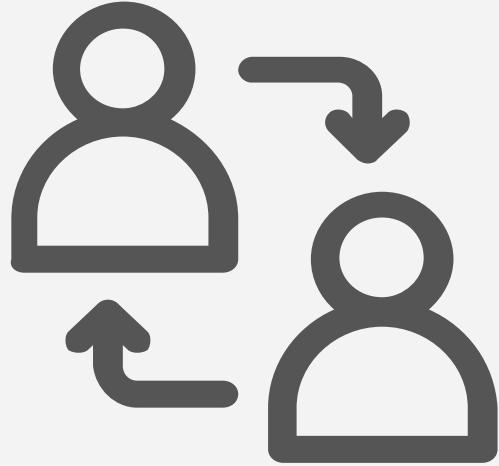


OpenTAP

Extendable and cross-platform
architecture, built on .NET

openTAP

Challenges



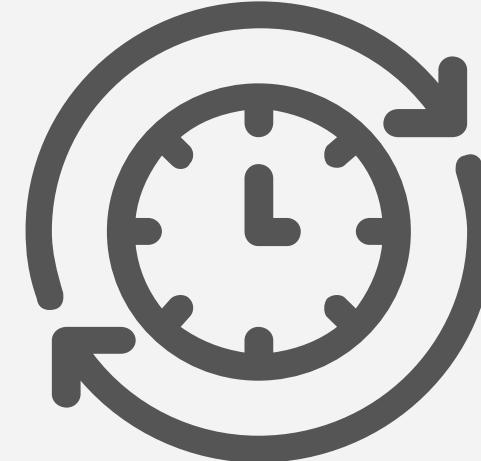
#1 Project Scope

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?