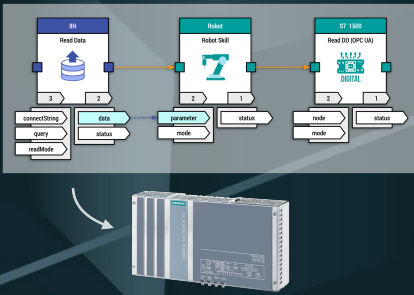




WORKFLOW CANVAS

Digitalization at your fingertips

SIEMENS



Workflow Canvas (WFC), a comprehensive development kit, empowers users to swiftly deploy flexible production lines and develop innovative industrial IOT applications. Central to its appeal, it propels enterprises towards a data-driven operational paradigm, ultimately optimizing efficiency and driving business growth.

Flexible Production Lines

By integrating digital technologies into modern manufacturing, today's factories are becoming more intelligent, flexible, and efficient, enabling manufacturers to better meet the demands of a rapidly changing market. Flexible production lines are essential to the achievement of that goal.

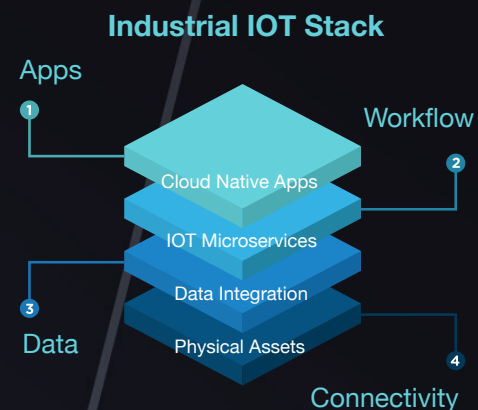
Workflow Canvas allows factory operators to program and reconfigure their flexible production lines or modules, using a low-code approach that improves worker's productivity, reduces production downtime and improves customer response time, while at the same time increasing asset re-use.



Industrial IOT Applications

Digital enterprises can achieve higher operation efficiency through the integration of IT and OT systems. Workflow Canvas allows for seamless integration and interoperability of IT and OT systems in heterogeneous environments. With its cloud-native technology, it enables rapid development and flexible deployment of Industrial IOT apps that are deployed in the cloud, on edge devices, or in a hybrid cloud-edge architecture.

With Workflow Canvas, you are on the fast track to creating highly scalable and configurable IIoT solutions that allow for seamless data flow, enhanced visibility, and improved decision-making across all levels of an organization.



Data Driven Operation

The ability to harness data effectively empowers industries to achieve higher levels of performance and resilience, transforming raw data into actionable insights that drive continuous improvement and strategic advantage. Providing seamless access to the massive amounts of data from various IT and OT sources, processing the data, and making informed decisions from the data, to achieve higher operation efficiency is a complex task that requires advanced technologies such as AI and IIoT applications.

Workflow Canvas integrates with Siemens's Industrial Information Hub, a data layer that accesses various data sources, and enables users to build data processing workflows using advanced data analytics algorithms and AI. Furthermore, the workflows not only generate data insight, but are also capable of providing commands to devices and machines, resulting in a closed-loop control of the business process based on IT/OT data.

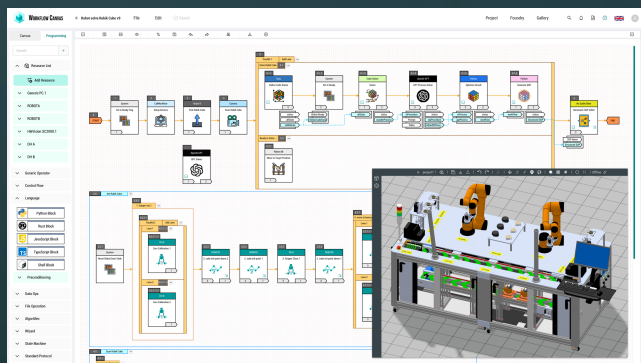


DEVELOPING APPS

Cloud-Native Engineering Tool



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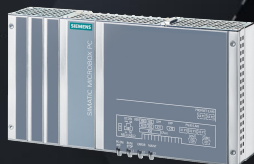


A cloud-native IT/OT integration toolkit that enables users to develop integrated digital solutions faster, with web-based graphical engineering tool, deployed on-premise or in the cloud.

Its drag-and-drop interface provides an intuitive developer experience, while both IT and OT engineers can collaborate on the integrated workflows of a plethora of OT devices, IT systems and algorithms.

APP DEPLOYMENT

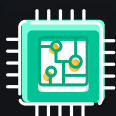
on SIEMENS Edge Devices



A Workflow Canvas App is comprised of one or multiple workflows. Use the web-based programming environment to deploy the App to a Siemens edge device. The Edge device needs to be pre-installed with the SPIDR runtime, which is either pre-installed on the Siemens Edge device or downloadable from the Edge App Store. Contact us regarding cloud deployment options or support for other devices.



HARDWARE REQUIREMENT



SIEMENS SIMATIC EDGE DEVICE

Supported:

Edge Type	427E	BX-39A	847E
CPU	i5	Xeon W	Xeon E
Memory (GB)	16	8/16/32	128
SSD Storage (GB)	240	256/512	960

Contact us for more edge types and configurations.

Contact us for other supporting systems Including:



• AUBO Robot Series



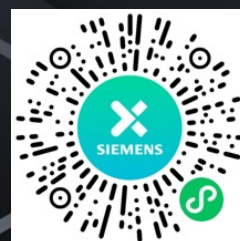
• Other Eco-partner Devices



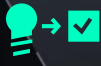
• On-Premise / Cloud Servers


MORE INFORMATION


For more details please scan the QR Code and learn more on Siemens Xcelerator website (<https://marketplace.siemens.com.cn/solution-details?id=130c2f55cb114412a1cf7a3d239806ef>). Register today on Siemens Xcelerator website!





FREQUENTLY ASKED QUESTIONS


 **How do I get started with Workflow Canvas (WFC)?**
WFC is quick to start and easy to learn. The basic version of engineering tool is free for all people to register online (<https://wfc.siemens.cloud>). Register now and you can develop your apps today. Besides in-app tutorials, we also provide comprehensive training materials and online sessions for beginners.


 **What are the required skills to use Workflow Canvas?**
Workflow Canvas provides drag-and-drop intuitive design, which allows users (from blue collar workers to engineers) to create complex workflows easily without extensive coding knowledge. However, prior knowledge in PLC programming or general programming languages such as Python, JavaScript, C/C++, Rust..., will allow the users to fully utilize the extensive programming features of Workflow Canvas.

 **What kind of OT devices do Workflow Canvas support?**
Workflow Canvas boasts a growing number of ecosystem partners that makes possible the quick implementation of complex scenarios in industrial environments. For industrial domain, WFC supports PLC / DCS Controllers, Robots, End Effectors (Grippers, Torque Wrenches, Tool Changers ...), AGVs, Cameras, Sensors, I/O devices, CNCs, Production Machines, etc. For energy / building domains, WFC supports Energy / Power / Building Controllers, Compressors, HVAC devices (Chillers), Meters, Boilers, Network devices, etc.

 **How does Workflow Canvas (WFC) ensure cybersecurity in the OT environment?**
Cybersecurity is essential for protecting industrial environments from a wide array of threats. Ensuring cybersecurity in OT is crucial to prevent disruptions, safeguard sensitive data, and protect physical assets. WFC recommends deploying the SPIDR runtime to offline edge devices or on-premise servers in LAN and enabling SSL for all network connections to ensure cybersecurity in the OT shop floor. Moreover, the architecture of WFC follows cybersecurity best practices.

 **What are the hardware & software requirements to develop apps on Workflow Canvas?**
For the web-based developer environment, WFC recommends the following specifications: CPU - 3.0GHz Quad Core (Intel i5 or above); Memory - 16GB+; Video Card - Nvidia GTX 1660 or above with 4GB VRAM+. For the runtime environment, WFC requires medium computing power. WFC is designed for cross-platform use; you can deploy it on Linux, Windows, or MacOS.

 **Can I extend Workflow Canvas with additional hardware devices?**
It is a typical hurdle in IIoT applications that up to 20% of the field devices are non-standard devices that do not come with native IoT features. WFC allows the user to add new types of hardware devices and define custom function blocks for new devices and device behaviors. Register for our training sessions to learn how.

 **How do I integrate existing code and algorithms into the Workflow Canvas?**
Many of our users already have existing code and AI algorithms that are being used and proven to work. WFC can integrate existing code. WFC integrates various algorithms as reusable function blocks, including sequential algorithms, machine learning, deep learning, and robotic vision preprocessing algorithms. Developers can easily add new algorithms in any programming language to the platform.

FREQUENTLY ASKED QUESTIONS



How does Workflow Canvas interface with version control tools, e.g. GitHub?

Connecting to the open-source community and leveraging version control-based team collaboration are critical for the research, development, and maintenance of industrial projects. WFC has a Git plugin to synchronize the source code with GitHub or GitLab, enabling version control, web IDE editing, and team cooperation. Additionally, WFC uses Git to connect to the VS.Code environment of SIMATIC AX.



How do I publish or share my App?

You can publish your app at any time in the WFC Gallery, where you can also easily find apps published by others. Additionally, you can use the project group management and project sharing features for online collaboration with multiple users. For offline sharing, you can utilize the project import and export functions.



How do I debug my App?

Once a workflow is programmed, it can be simulated in the built-in simulator before deployment. That's why debugging is an important phase. You can use built-in debug features (breakpoints and execution logs) to debug your app. You can either connect to physical devices on the shop floor for online debugging or connect to a 3D environment via the My Dojo plugin for virtual offline debugging.



How does Workflow Canvas support Generative AI (LLM)?

As GenAI technologies evolve in a rapid pace, our programming environment keeps up the pace. WFC provides an AI Chat Copilot plugin to connect to an AI Agent implemented by third-party LLMs (Large Language Models). It helps WFC developers understand and program workflows.



How do I join Xcelerator eco-system through Workflow Canvas?

The Xcelerator Ecosystem program is designed to connect companies, developers, and institutions to foster innovation and collaboration. It serves as a one-stop platform that thrives on making connections, offering flexible solutions for diverse needs. To join Siemens Siemens Xcelerator Ecosystem program, you can contribute to develop function blocks or digital solutions on WFC, please scan the QR code and get more information for joining us!