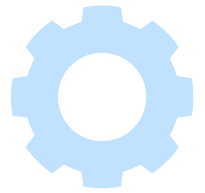# Go Beyond Traditional SAP Job Scheduling

Automate SAP and non-SAP Jobs in Hybrid IT Environments Spanning On-Premises, Cloud, and Containers

stonebranch

> By year-end 2025, 80% of organizations currently delivering workload automation will be using service orchestration and automation platforms to orchestrate cross-domain workloads.

Gartner *2023 Market Guide for Service Orchestration and Automation Platforms (SOAP)*

Enterprises rely on SAP to manage their entire suite of business processes, including finance, manufacturing, HR, and many others. These processes often cross multiple domains, involve several applications and data sources (both SAP and non-SAP), and maneuver between Windows-based or Unix/Linux servers and cloud service providers. Additionally, this data often needs to be transferred securely between enterprise headquarters, remote and virtual office locations, as well as business partners.

Achieving end-to-end visibility, accessibility, and observability requires integrating SAP with an enterprise service orchestration and automation platform (SOAP).

To schedule background jobs and process workflows within their SAP environments, many SAP customers use tools like SAP SM36/SM37, SAP Business Process Automation (BPA) by Redwood, SAP Central Process Scheduling (CPS) by Redwood, or the SAP Solution Manager — some of which are now end-of-life. They also lack event-based scheduling capabilities and focus mainly on SAP-related jobs, such as running an ABAP report. The workflow capabilities for more complex SAP processes are also very limited and hard to maintain if, for example, an ABAP step fails.
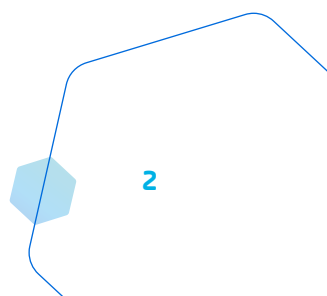
To enhance efficiency and free up IT resources to work on more strategic tasks, you need to look beyond yesterday's schedulers to activate real-time, event-based automation across all SAP and non-SAP tasks — whether on-prem or in the cloud — across the entire hybrid IT environment.

The Stonebranch Universal Automation Center (UAC) is a modern alternative to legacy SAP job scheduling approaches. As a full-featured service orchestration and automation platform, UAC helps manage and monitor workflows across SAP and third-party applications. It also works across a hybrid IT environment to manage jobs and workflows across on-prem, cloud, and containers (see illustration below). In addition, UAC offers the ability to centrally manage automation for all job processes, file transfers, and process chains.
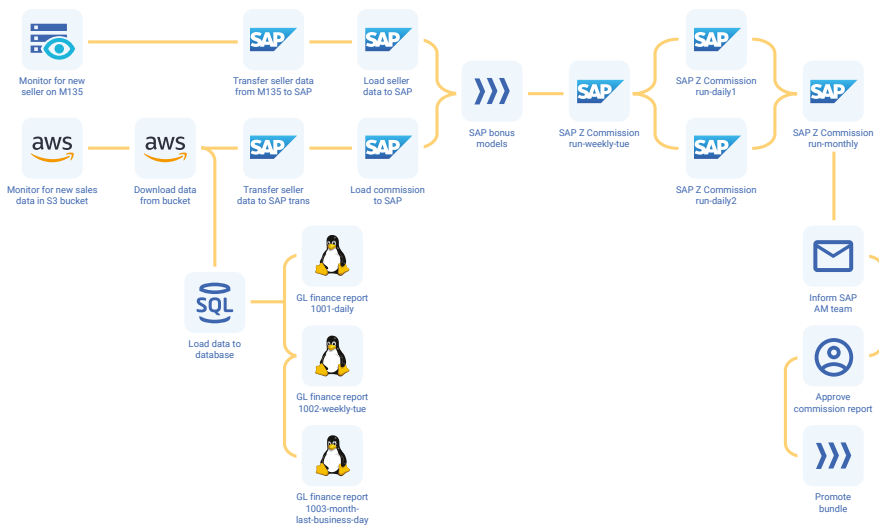
What is a **Service Orchestration and Automation Platform?**

Gartner

The service orchestration and automation platform (SOAP) category was coined by Gartner in 2020. At the time, they noted that SOAP was not a new category but rather an evolution of the traditional workload automation category, defined by six differentiating capabilities:

- Workflow orchestration
- Event-driven automation
- Self-service automation
- Scheduling, monitoring, visibility, and alerting
- Resource provisioning
- Data pipeline management

Since 2020, SOAPs have become the gold standard for IT automation in modern hybrid ecosystems that span on-premises, cloud, and container environments.

Why Use a SOAP?

Many leading businesses, including those shown below, use a service orchestration and automation platform alongside SAP to:

- Reduce administrative and infrastructure provisioning costs
- Improve error handling
- Orchestrate tasks across multiple IT environments
- Ensure compliance through process control and centralization

LENNOX
Home heating and cooling systems

BMW
Leading car manufacturer

coop
Supermarket retailer

1M+
SAP tasks

bp
Integrated energy company

IT ERGO
IT services and consulting

Rabobank
Financial services company

VORWERK
High-quality household appliances

achmea
Insurance company

Customer Spotlight
SaaS SAP Automation

S SaaS + SAP

When migrating their on-premises systems to the cloud, a Dubai conglomerate wanted a modern, SaaS-based automation solution that could:

- Single-handedly orchestrate jobs in both environments.
- Provide a single view of all job definitions.
- Send error alerts for task failures.
- Configure advanced workflows with dependencies and chains.
- Scale beyond their current 75,000 jobs per day across 15 SAP instances, while managing 2,000 SAP ABAP definitions and 700 freeware automation tool definitions.

Why did this customer choose Stonebranch UAC? Two reasons:

- Flexible, **active-active agent clusters** for on-premises and cloud SAP. When all systems are in the cloud, the clusters can act as a load balancer.
- **Easy integration with third-party applications**, today and in the future.

10 Benefits of Orchestrating Automation with UAC

10 Free-Up Time and Resources

Give your SAP and Ops teams time to focus on value-added tasks. UAC offers:

- An intuitive, web-based GUI with a drag-and-drop workflow designer.
- The ability to set-up and control processes that span SAP and beyond from one platform.
- Self-service automation through integrations with Teams, Slack, and ServiceNow.
- Enhanced error handling and alerts to address incidents before they become critical.

9 Faster Processing

Orchestrate and automate every step of each business process as it runs across SAP and non-SAP systems, resulting in overall faster processing. UAC:

- Controls the number of parallel processes executed by virtual resources.
- Fully leverages the existing SAP load-balancing cluster.

8 Security

Automate with confidence — UAC uses the latest security standards, including:

- PKI infrastructure using X.509 certificates to perform peer authentication.
- TLS 1.2 encryption for all communication data and control channels.
- Multi-tenant, role-based security concept supporting SAML, LDAP, and Active Directory.
- Individual security credentials for each SAP job in a workflow — all centrally managed.
- A secure connection to SAP Secure Network Communications (SNC) via native SAP and third-party security modules like CyberSafe.

The efficacy of the solution's security is regularly verified by external security companies.

7 Auditability

Gain fully automatic audit trails that reveal the nature, time, and source of each change made in UAC.

- No more IT audit violations or exceptions.
- All changes are logged with before-and-after images.
- Auditing supports compliance with Sarbanes-Oxley (SOX) requirements.
- All audit reports are automatically archived.

10 Benefits of Orchestrating Automation with UAC

6 Managed File Transfer (MFT) Capabilities

Treat file transfers like any other task in your workflows. UAC comes equipped with built-in MFT capabilities that allow you to move sensitive SAP input data between your SAP server and any other platform in a secure, fast, and reliable way. The UAC MFT solution:

- Is platform independent: transfer data from one platform to any other, including z/OS, i5 (AS/400), Unix, Linux, Windows, and the cloud (AWS, Azure, Google).
- Features an extensive script language for data transfer and a central script library for storing scripts.
- Integrates with any third-party schedulers.
- Offers re-start functionality and automatic failover.
- Supports they highest security standards in authentication, encryption, and compression — developed in collaboration with existing banking and healthcare customers.

5 Centralized Real-Time Control

Manage all your SAP and non-SAP tasks in real-time, using a drill-down menu to analyze job logs at the application and system levels — even while ABAP executes scripts. UAC offers a:

- Real-time dashboard for centralized setup, control, and monitoring of all business processes using a fully customizable web GUI.
- Drag-and-drop workflow designer that makes it easy to build workflow that includes SAP, non-SAP, and file-transfer tasks.
- Self-service-enabled configuration and operation — no SAP user login required.

4 Cloud-Based SaaS Solution with Zero Installation Required

Enable team members to schedule and manage SAP workflows from anywhere in the world. A SaaS UAC implementation unifies all services, users, and processes into one easy-to-manage solution with:

- High availability and geographic redundancy.
- TLS 1.2 encryption protocols and support for secure single sign-on via SAML or SAP SNC-supported products (e.g., CyberSafe).
- An easy-to-learn, intuitive GUI. The IT Ops team can be up and running in no time, and significantly less dependent on IT and SAP administrators.

10 Benefits of Orchestrating Automation with UAC

3 Decreased Batch Processing Time

Enjoy real-time resource control of event- and time-based processes and tasks, including critical path handling.

2 Supports all SAP Business Areas

Orchestrate workflows anywhere within SAP's extensive reach. UAC supports SAP ERP:

- ABAP jobs scheduling
- BW process chains
- SAP HCI, IBP
- SAP system copies
- SAP transport management
- Upload data to SAP (IDOC, BAPI, ALE, LDAP)

UAC also orchestrates data warehouse solutions like:

- SAP Data Services (ETL)
- SAP BusinessObjects (reporting)
- Third-party data software providers, such as QLIK, Informatica, and many more.

1 SAP Certified

Remove the risk of single points of failure and solution availability. UAC offers powerful integrations with multiple SAP systems that can be deployed in a high-availability, active-active configuration to:

- Run SAP BusinessObjects and SAP Data Integration services.
- Trigger any SAP ABAP job (or SAP business warehouse process chain) based on an event that takes place in SAP or a third-party tool, such as an AWS SQS message.
- Orchestrate across SAP NetWeaver and SAP S/4 HANA processes simultaneously, while maintaining ECC 6.0 functionalities in S/4 HANA.
- Schedule SAP Fiori applications.

SAP® Certified
Integration with SAP NetWeaver®

SAP® Certified
Integration with Applications on SAP S/4HANA®

![Stonebranch logo]

What is Universal Automation Center?

UAC is a modern, 100% web-based enterprise **service orchestration and automation platform** (SOAP) that helps manage complex IT processes across multiple platforms and business applications in real-time.

No thick client is needed for on-premises implementations.
No local installation is required for SaaS subscriptions.

For organizations that use SAP, UAC simplifies how operations staff, application developers, and end-users define and manage SAP-based business processes. The fully audit-proven GUI offers a single view across all processes, end-to-end, via dashboards equipped with advanced alerting and auditing capabilities. UAC's built-in actions allow you to:

- Initiate workloads on SAP systems.
- Directly connect predecessor/successor relationships with non-SAP workloads.
- Gain accessibility, visibility, and manageability of SAP and non-SAP workload tasks, including file transfers.
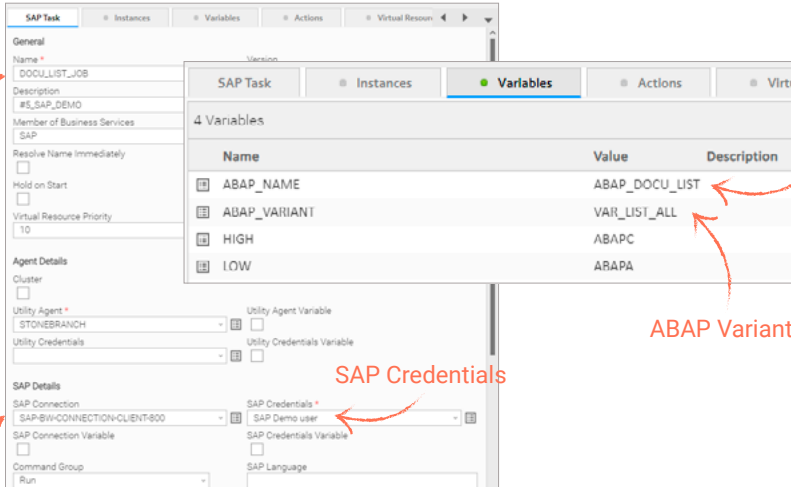
The UAC is user-friendly and intuitive. Completely customizable to each user's needs, your team members can easily create complex automation scenarios without in-depth knowledge. The proprietary SAP-certified **Universal Connector for SAP** offers a simple fill-in form that makes it easy for even first-time users to define SAP workloads. The screenshots below show an example SAP task that starts an ABAP with a variant that retrieves the ABAP documentation items from ABAPA to ABAPC.

Integration Spotlight
Universal Connector for SAP

![SAP logo]

Certified by SAP, this feature-rich direct integration connects UAC and SAP to:

- Improve control and visibility of end-to-end SAP processes.
- Connect SAP and non-SAP tasks within the same workflow
- Optimize error handling — restart a workflow at any point.
- Enable full audit trails and reporting to maintain compliance.

SAP Job Name

ABAP Name

ABAP Variant

SAP Credentials

SAP System

What Can Universal Automation Center Do?

Perform All Scheduling–Related Tasks from the Cloud

UAC is available on-premises or as a high-availability SaaS solution in AWS. All scheduling-related tasks — from the configuration of SAP and non-SAP jobs, to daily operations and auditing — can be performed in a single web GUI.

The UAC SaaS solution is immediately available; **no agent is required on your local SAP system**, as the connection to SAP is done in an agentless manner via SAP secure network. It also offers advanced TLS 1.2 encryption protocols and support for secure single sign-on via SAML or SAP SNC-supported products (e.g., CyberSafe).
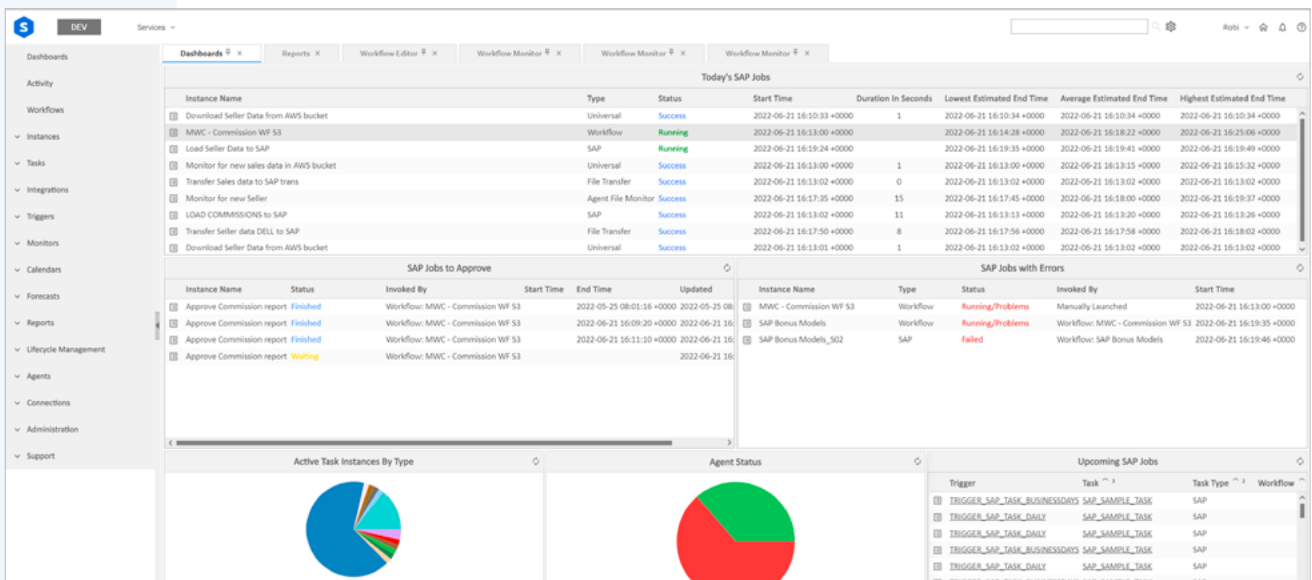

Create and Modify SAP Jobs

UAC allows you to define new SAP jobs or modify existing ones, either by using a job definition file or by copying an existing job, **without any need to log into an SAP GUI**. You can also use your existing SAP calendar for scheduling and automatically sync them with UAC; alternatively, you can define your own calendar. All jobs are under version and audit control, so you can always go back to an older version if required. Any changes made to a job definition are tracked in the audit log.

What Can Universal Automation Center Do?

Start and Control SAP Jobs

Of course you can start, query, and delete SAP jobs in UAC. You can also monitor and control those jobs in real-time using the dashboard or **color-coded workflow monitor** (shown below). Want to be alerted if something isn't going as planned? Configure notifications for any SAP or non-SAP job failure to receive an email or SNMP alert message when it happens... or doesn't. You might even want to automate what happens in case of a failure by configuring event-based actions, such as restarting a job automatically or applying a correction to a workflow before running it again.
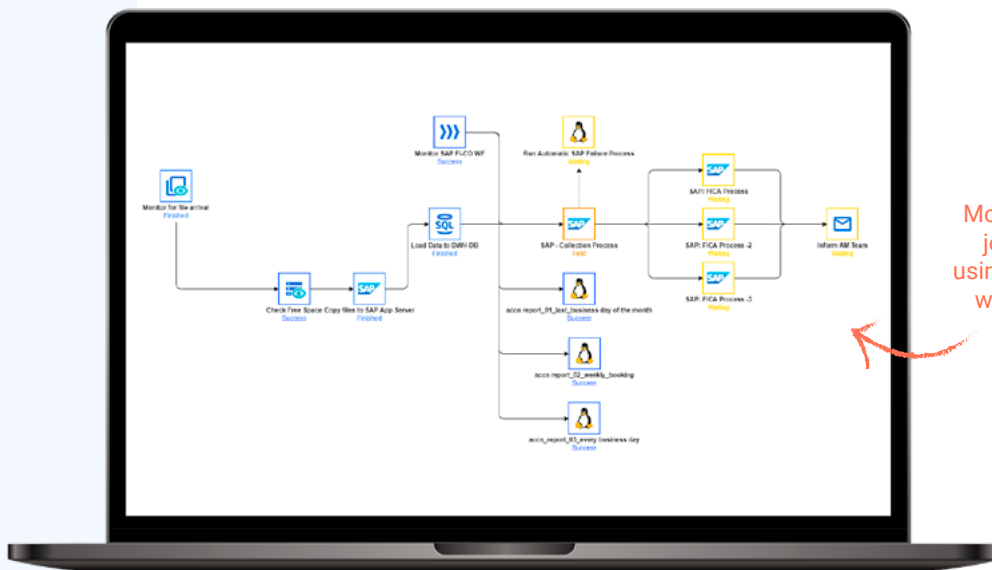
Monitor and control jobs in real-time using the color-coded workflow monitor

Restart or Reconnect Processes Without Losing Track

The Universal Connector for SAP offers fault tolerance in case of a crash. If the integration terminates unexpectedly, **it automatically reconnects to the SAP system** without losing track of any work that's in progress or already completed. Plus, it prevents any jobs from being unintentionally restarted.
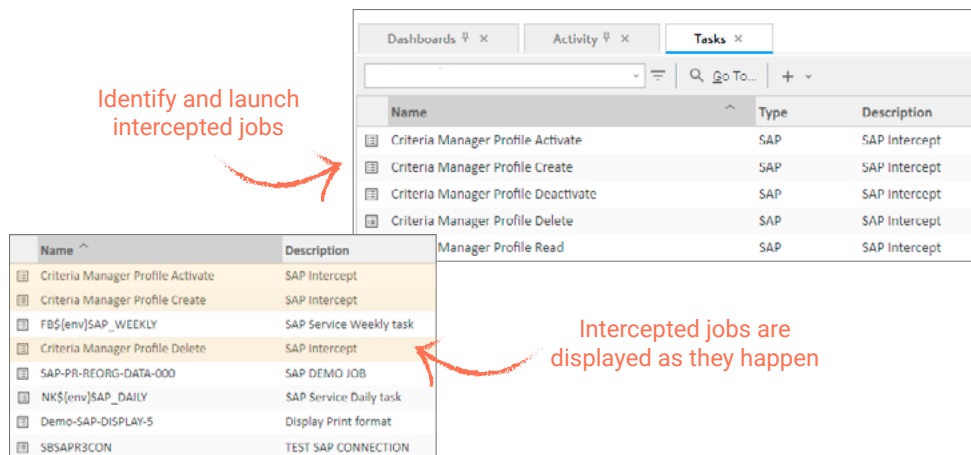
What Can Universal Automation Center Do?

Automatically Retrieve SAP System Logs for Failed Jobs

If an SAP command fails, the Universal Connector for SAP will **retrieve an excerpt of the SAP system log** during that period of time. This makes it easier to diagnose any problems without having to reach out to the SAP team or log in to the SAP GUI. Automatic log retrieval can also be turned off if not needed.

Monitor Parent and Child Job Activity

UAC identifies and monitors parent/child relationships between jobs. When configuring a task monitor, you can configure it to **take into account the activity of the parent job, as well as all its child jobs**. In addition, you can control the printing of job logs and spool lists, as well as the purging of child jobs.

Monitor SAP Events

The SAP: Event History Monitor integration **queries the SAP system's event history for a specific event and parameter**. If the monitor confirms an occurrence, it can launch any SAP or non-SAP task in UAC.

Create, Define, Modify, and Retrieve Variants

Create and modify SAP variants in UAC using a variant definition file — there's **no need to create the required variants in SAP** before running an ABAP script. It's also possible to retrieve existing variants defined for a specific job in SAP. When starting an SAP task from UAC, the variant parameters can be dynamically set using UAC variables.

Process and Monitor Batch Input Sessions

UAC processes and monitors batch input sessions. **Batch input errors are immediately shown** in the real-time dashboard or delivered as a notification (via e-mail or SNMP). Additional actions, such as restart after correction, can be initiated directly from the web GUI as needed.

What Can Universal Automation Center Do?

Identify and Launch Intercepted Jobs

When enabled, the SAP Intercept Monitor Trigger **automatically identifies and launches intercepted jobs**. It supports both XBP 2.0 and XBP 3.0 interfaces.

- XBP 2.0: UAC can create, modify, display, and delete the job interception table.
- XBP 3.0: UAC uses the criteria manager for job interception functionality.
  Note: this is the same criteria manager that's used to set SAP criteria for event history and raised event.

Whether XBP 2.0 or 3.0, intercepted jobs are displayed in the spool list. In addition, UAC allows you to create, activate, deactivate, list, and delete criteria profiles.

Identify and launch intercepted jobs

Intercepted jobs are displayed as they happen

Manage Process Chains and InfoPackage Groups

Universal Connector for SAP is certified to **manage SAP Business Warehouse process chains and InfoPackage Groups**, including:

- Process chain execution and monitoring
- Restart failed process chains
- Interrupt process chains
- Display a list of process chains matching specified criteria
- Display a list of InfoPackage groups matching specified criteria
- Run and monitor InfoPackage groups

What Can Universal Automation Center Do?

Schedule SAP BOBJ Reports and SAP DS Jobs

The SAP BusinessObjects (BOBJ) integration allows web-service-based scheduling of BusinessObjects entities like **Crystal reports** and SAP **Webi reports**. Likewise, the SAP Data Services (DS) integration allows users to execute SAP **Data Services ETL jobs**. Both SAP BOBJ and SAP DS jobs can be seamlessly integrated in an SAP business process containing SAP and non-SAP jobs, including file-transfer tasks.

Integrate with SAP and Third-Party Workload Automation Solutions

The Universal Connector for SAP integrates with SAP systems on z/OS, Windows, or Linux/Unix operating systems. As with other agent technology from Stonebranch, it also **integrates with non-Stonebranch workload automation solutions**. This includes, but isn't limited to: CA 7, CA AutoSys, UC4, Tivoli Workload Scheduler, BMC Control-M, and ASG Zeke.

Automate Your SAP System Copies

The SAP System Copy integration brings **Libelle SystemCopy (LSC) functionality** to your UAC and SAP systems. Supporting both NetWeaver and HANA, it thoroughly covers all aspects of:

- SAP pre-processing, such as exports.
- Complete database copy, like snapshots or backup/ restore.
- SAP post-processing, including imports, BDLS, and TemSe.

Your automation team can operate the SAP system copy workflow in UAC just like any other workflow.

Import Existing SAP Jobs

The Stonebranch Xpress Conversion Tool (XCT) is a self-service tool that allows you to **import and optimize all your existing SAP native scheduler-defined jobs**, including SAP calendars, into UAC. Once imported, all jobs can be run directly from UAC.

Note: XCT also has conversion modules for many major workload automation solutions. Learn more about XCT on the next page.
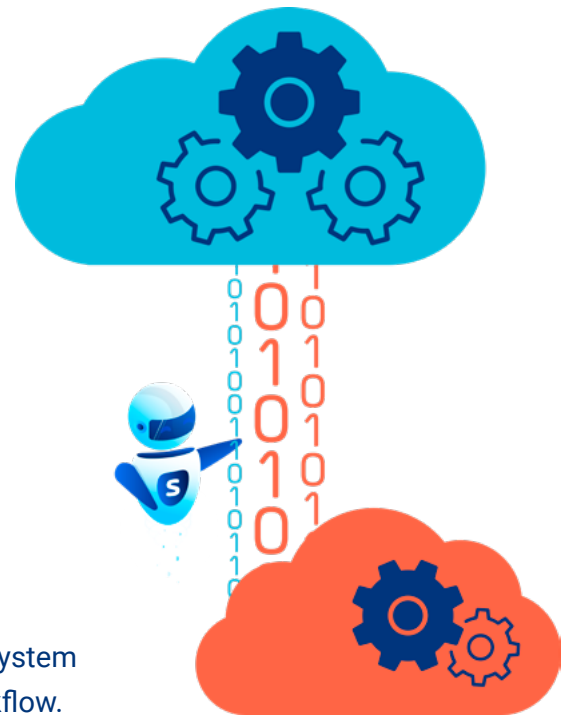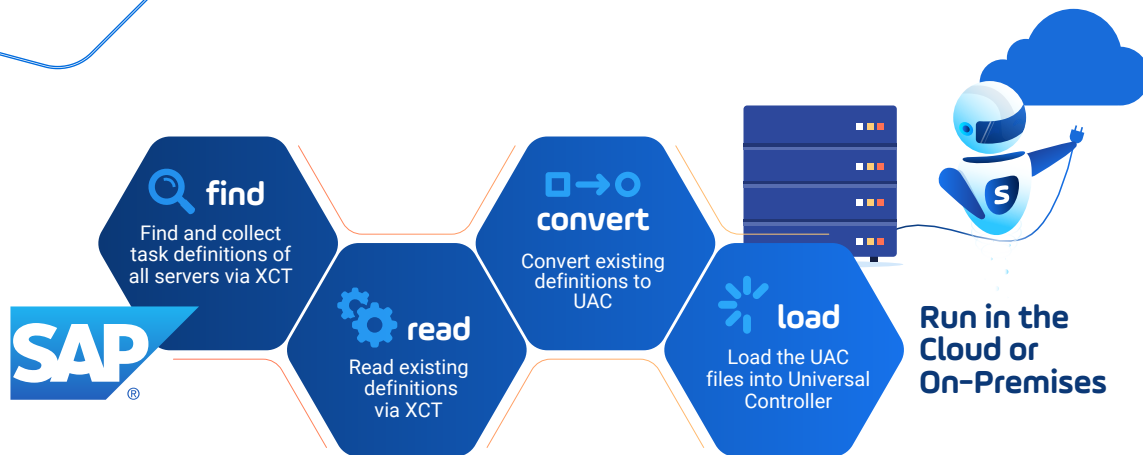
How Hard is it to Transfer Existing SM36 Workflows to Universal Automation Center?

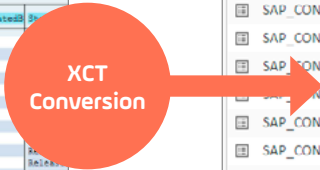Stonebranch XCT transitions all existing SM36 job definitions into UAC, including SAP calendar.

XCT reads the existing SAP job definitions from the selected SAP system and converts them into tasks, workflows, and triggers in Universal Controller for SAP. Multi-step ABAP jobs can be automatically transitioned to UAC workflows, allowing users to restart a failed ABAP step at any point in the workflow.

After conversion, all jobs in scope can be scheduled via UAC, enabling:

• Highly optimized error handling — restart jobs at any point in the workflow, including at any ABAP step
• 100% web-based scheduling of all transitioned SAP jobs: no SAP login required
• Workload lifecycle management (dev ⇒ test ⇒ prod)
• Audit log of all SAP task executions

Jobs Defined in SAP

XCT Conversion

Jobs Transitioned to UAC

What Does the Real-Time Dashboard Show?

UAC's real-time dashboard shows you the past, present, and future of your IT automations, including:

• System status

• Tasks with error

• Manual tasks (manual approval steps)

• Forecasting data, showing jobs running in the future

• Predictive analysis data, including critical path calculation, average run time and estimated end time

User permissions and visibility can be tailored by role, such as admin, operations team member, or reporting/auditing. Many free and configurable real-time widgets are available to customize the information required for each user's needs.
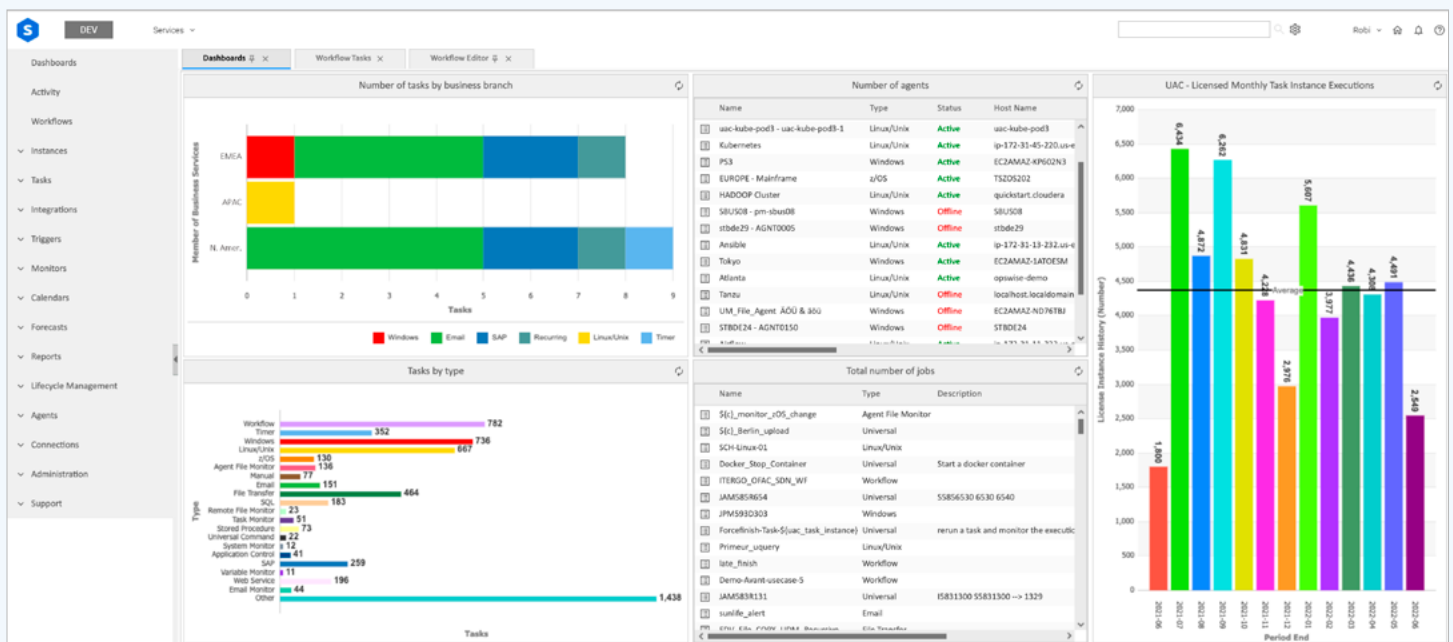
How Does Universal Automation Center Work?

Universal Automation Center's architecture is simple to implement and maintain, and it supports commodity hardware and infrastructure. Though simple, UAC has the power and scalability to support even the largest job scheduling environments. Our cutting-edge technology is built upon a highly portable architecture with built-in fault tolerance and failover capabilities. The Universal Controller itself runs in an Apache Tomcat web application container; therefore, it supports all operating systems with a Java runtime. It relies on a relational database. The Universal Agents are connected via a middleware message service called OMS, which provides fault-tolerant communication between the controller and agents. A diagram of the UAC architecture is shown on the next page.

How Does Universal Automation Center Securely Connect to SAP?

A key benefit of UAC is that you can configure and run your SAP jobs from the Universal Controller while it is deployed as a SaaS solution in an AWS virtual private cloud (VPC). This approach allows users to perform job scheduling independent of location.

In such a scenario, it's very important that the SAP RFC connection with the SAP system is highly secured. The following methods help ensure a secured connection:

- User authentication via SAML.
- TLS 1.2 encryption for all communications.
- Certificates to perform peer authentication between the Universal Connector agent and the UAC middleware OMS.
- RFC connection secured via SAP SNC, using third-party CyberSafe or native SAP encryption modules
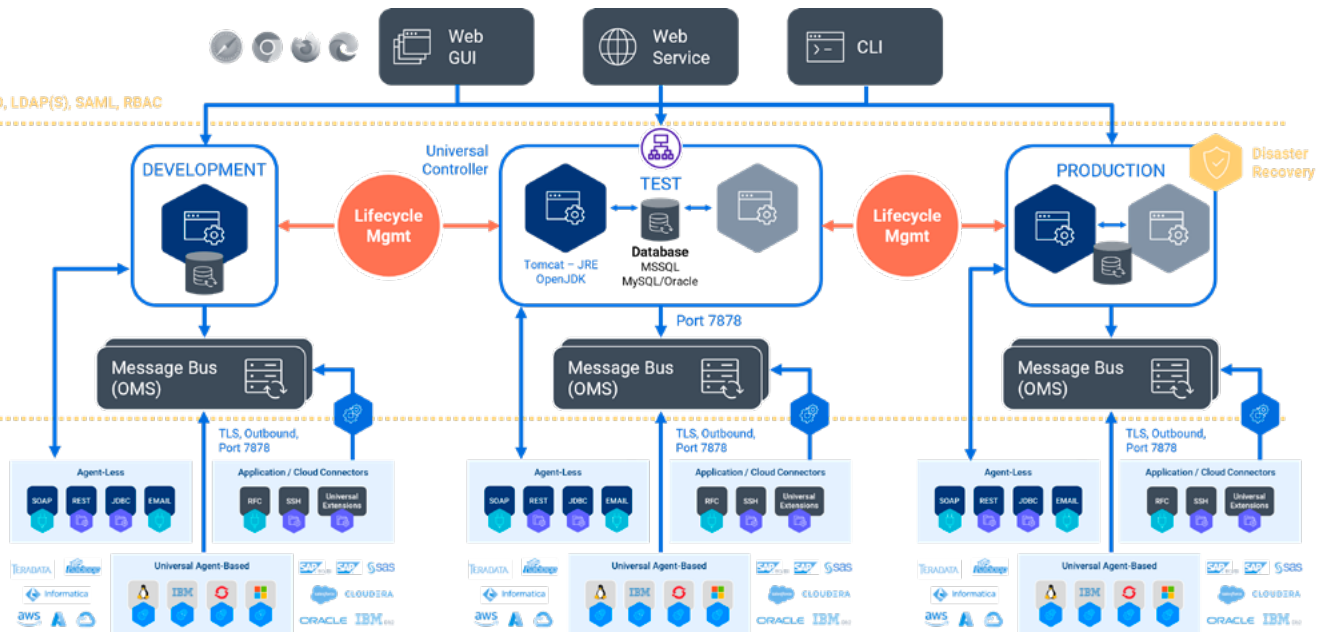- Only an outbound connection from the Universal Connector agent to the UAC middleware OMS in the cloud.
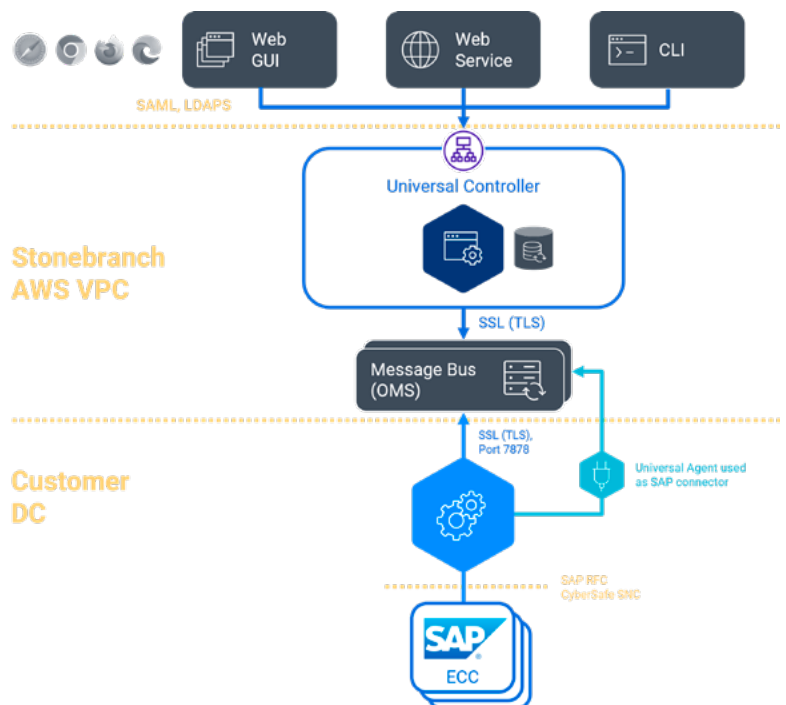
Universal Controller

- Web application with user and administration web GUI:
- Business logic to control workflows and processes
- Persist UAC system state
- Exposes RESTful APIs and CLI for head-less operation
- Agent-less integration to orchestrate web services and DBs

Message Bus (OMS)

- Messaging middleware
- Inbound connections from clients

Universal Agent-Based Scheduling

- Executes and monitors workload
- Performs managed file transfer functions
- Connects to Universal Controller via OMS
- Exposes CLI to execute workload from any scheduler
- Installed on wide variety of operating systems (mainframe, server, virtual server, container, etc.)
- Tight integration with SAP for full application automation

Agent-Less Scheduling

- Applications providing an API are scheduled without using an agent using the provided protocol (SOAP, REST, etc.)
- Open-source marketplace with many pre-integrated application connectors available in GitHub
- Dedicated certified connector is provided for SAP and PeopleSoft

Lifecycle Management

- Bundle and promote allows for the automatic moving of tested configurations from dev⇒test⇒prod.
- Supports any C:D DevOps scenario.

Stonebranch Universal Automation Center

UAC is designed for today's challenges and whatever comes next.

- Integrate and control any cloud service provider, SaaS application, or infrastructure management platform
- SaaS-based or on-prem deployment options
- Intuitive web-based drag-and-drop workflow creation
- Native managed file transfer
- DevOps lifecycle management with built-in dev, test, prod promotion
- Pre-built integrations for CSPs, infrastructure management tools, and SaaS applications
- Role-based access to support collaboration between cloud architects, developers, IT Ops, and more

To learn more, browse through our **customer success stories**, fill out a **contact form**, or reach out to the Stonebranch sales team for a **demonstration** of the platform.

About Stonebranch

Stonebranch builds IT orchestration and automation solutions that transform business IT environments from simple IT task automation into sophisticated, real-time business service automation. No matter the degree of automation, the Stonebranch platform is simple, modern, and secure. Using the Stonebranch Universal Automation Platform, enterprises can seamlessly orchestrate workloads and data across technology ecosystems and silos. Headquartered in Atlanta, Georgia, with points of contact and support throughout the Americas, Europe, and Asia, Stonebranch serves some of the world's largest financial, manufacturing, healthcare, travel, transportation, energy, and technology institutions. For more information about Stonebranch, visit **www.stonebranch.com**.

UAC works in hybrid IT environments across multiple platforms and business applications in real-time. Available on-premises or as a SaaS-based deployment, the UAC is a modern platform built to scale with your business.

To learn more about how an automation platform can drive your business forward, contact us today.

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