

Integrated Operations Management

Job management

Introducing JP1/Automatic Job Management System 3

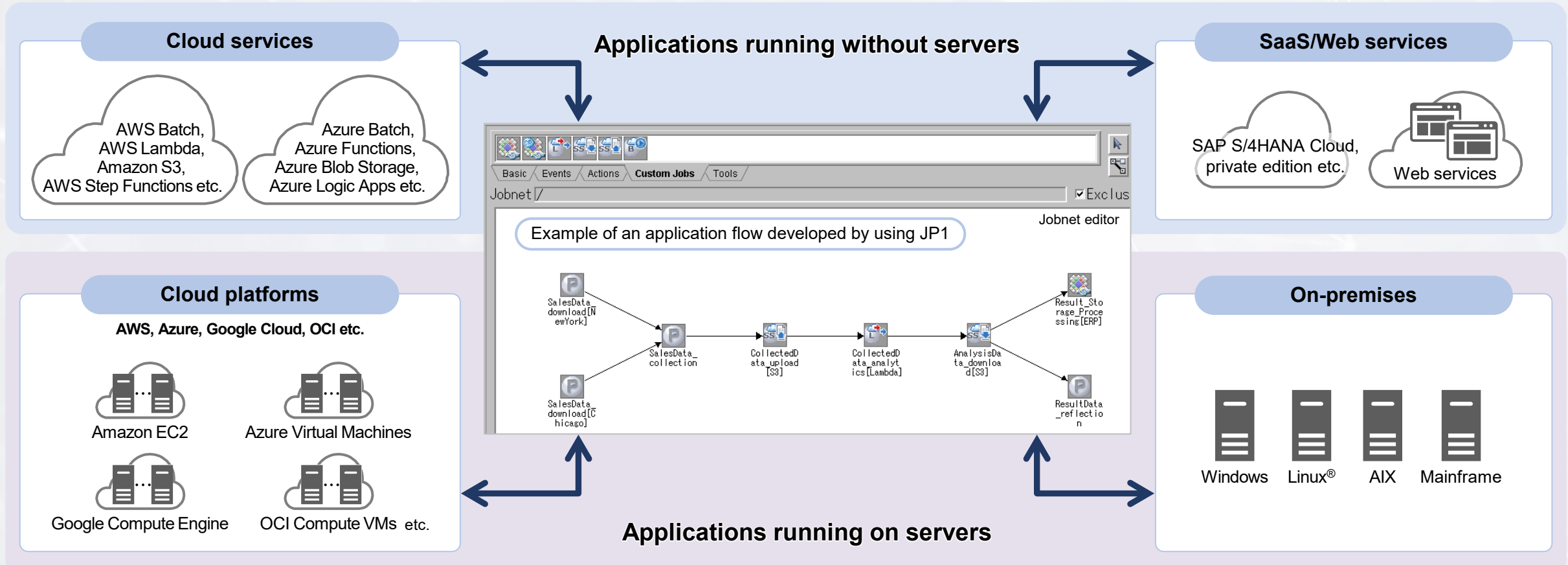
- Achieving automatic and stable operation of business systems -

Hitachi, Ltd.

Contents

- **Overview of JP1/Automatic Job Management System 3**
- **What you can do**
- **Example of a system configuration**
- **Support for safe use**

Improve efficiency and save labor in the development and execution of an application flow, and achieve automatic and stable operation of business systems in various environments



Amazon S3: Amazon Simple Storage Service AWS: Amazon Web Services Azure: Microsoft Azure OCI: Oracle Cloud Infrastructure Amazon EC2: Amazon Elastic Compute Cloud OCI Compute VMs: Oracle Cloud Infrastructure Compute VMs

What you can do

- **What you can do with JP1/Automatic Job Management System 3**
- **Easily develop complex application flows**
- **Enable detailed scheduling according to operations**
- **Connect applications that run in different environments**
- **Intuitively understand the status of operations**
- **Visualize operation schedules and results**
- **Address operation failures in a variety of ways**
- **Visualize the health of your job management system**
- **Automate switching of application flows**

Develop and execute application flows

- Easily develop complex application flows
- Enable detailed scheduling according to operations
- Connect applications that run in different environments

Increased efficiency

Labor savings

Stable operation

Monitor operations

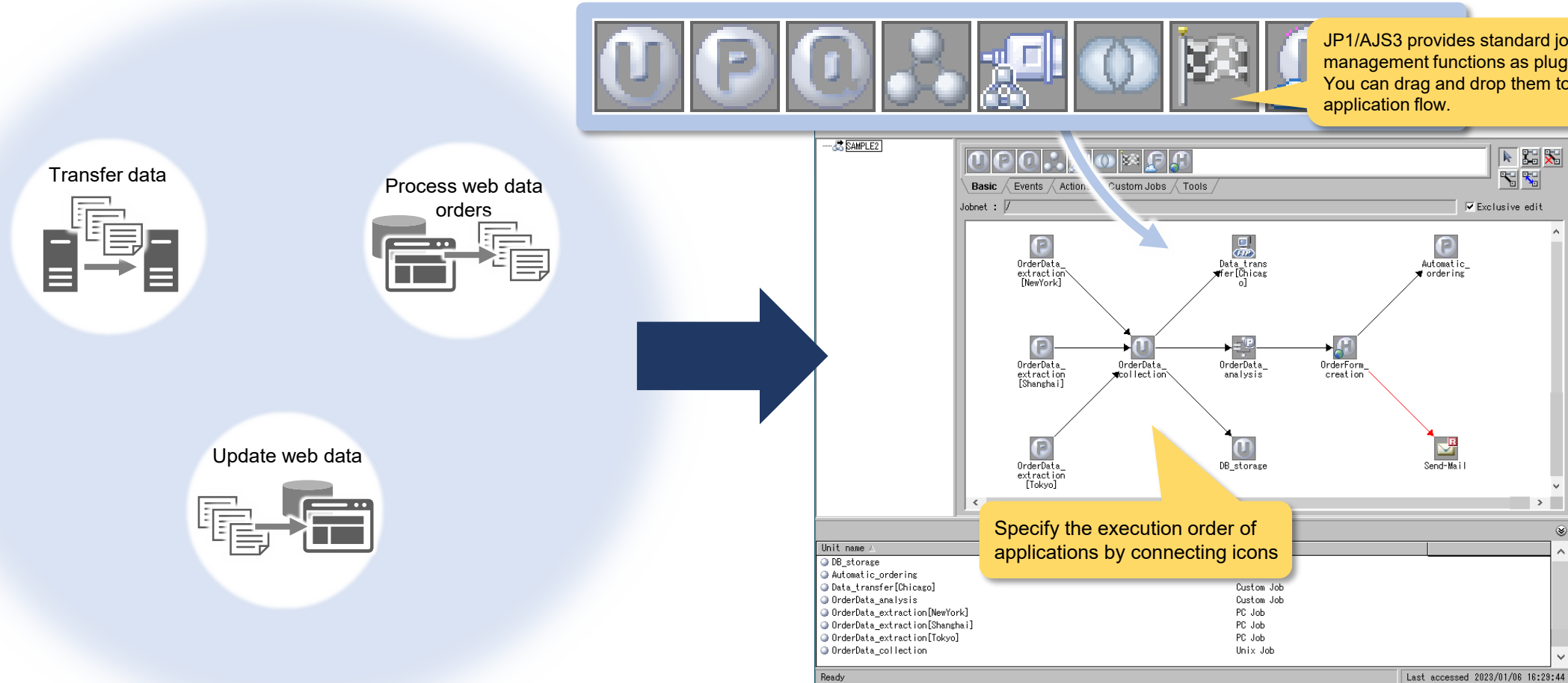
- Intuitively understand the status of operations
- Visualize operation schedules and results
- Address operation failures in a variety of ways

Operate tasks

- Visualize the health of your job management system
- Automate switching of application flows

Develop an application flow to be automated by low-code development

You can use a GUI to define the series of tasks in a complex application flow that you want to automate, and achieve low-code development of the application flow.

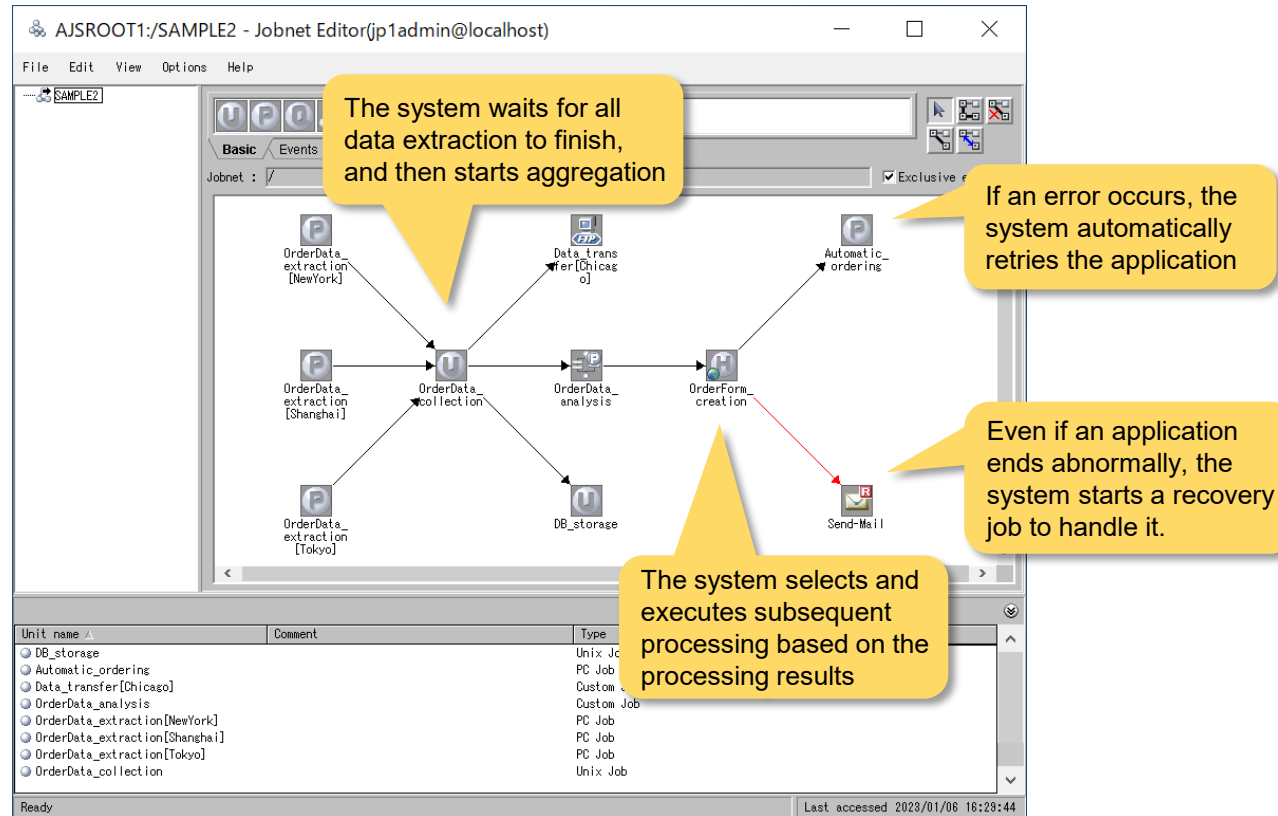


Jobnet editor

Control application flows that have complex execution conditions

You can easily develop application flows that have complex execution conditions. For example, you can specify that the system must wait for multiple processes to finish before it starts the next process, or the system can switch the next process to be executed depending on the processing results.

Automatically execute processing based on execution conditions such as waiting, branching, normal/error sorting, etc.



Jobnet editor

Improve the efficiency of making changes to a complex application flow

After you use a GUI to develop an application flow, you can export it into an Excel file, edit it, and import it. By adding, modifying, and batch replacing Excel files, you can streamline the work required to modify an application flow.

The screenshot shows the Jobnet GUI interface. The main window displays a complex flowchart with various data collection and processing steps. Below the flowchart is a table with the following columns: Unit name, Comment, Type, Status, and Delay status. The table lists several units such as Data_Collectic, Data_Collectic, Data_collecti, Data_compilati, Data_compilati, Data_compilati, Data_evacuati, Data_receptior, and Data_receptior, along with their respective statuses and delay statuses.

Job definition information

Unit name	Comment	Type	Status	Delay status
Data_Collectic		Jobnet	Ended normally	None
Data_Collectic		Jobnet	Now running	None
Data_collecti		Jobnet	Not sched. to exe.	None
Data_compilati		Jobnet	Wait for prev. to end	None
Data_compilati		Jobnet	Not sched. to exe.	None
Data_compilati		Jobnet	Wait for prev. to end	None
Data_compilati		Jobnet	Not sched. to exe.	None
Data_evacuati		Jobnet	Wait for prev. to end	None
Data_receptior		Jobnet	Bypassed	None
Data_receptior		Jobnet	Ended normally	None

Export the developed application flow

The screenshot shows an Excel spreadsheet titled "Definition information management template". The spreadsheet contains a table with columns for Unit name, Complete name of upper unit, Unit type, Custom type, Position, Rows, Columns, Size, Comment, Previous, Relation type, Exec-agent, Exec. order control, Jobnet connector, Exec. order method, Connection range, Connection host, Connection service, Hold, Type, Owner, and resource. The table lists various units and their relationships, including DayMndscr, CONENTION, Headquarters, MonitorEnd, RecoverJob, ReportError, ServerA, ServerB, and ServerC.

Using Excel, change the information in the application flow

Import the changed application flow

Definition information management template

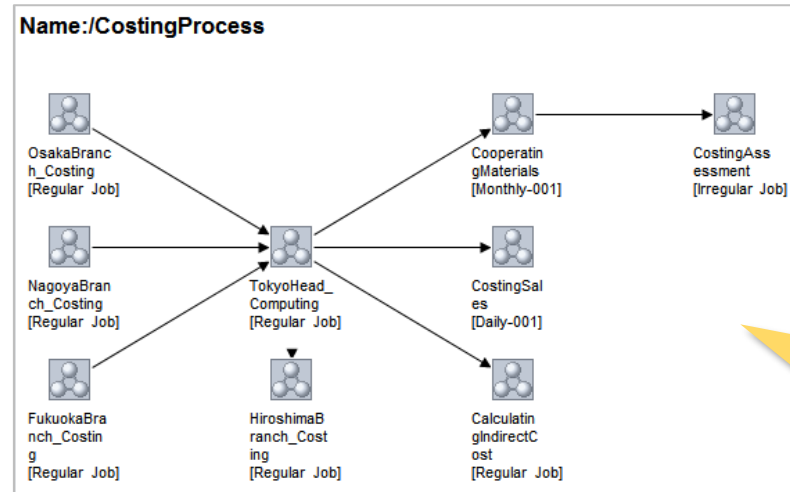
You can automatically generate design documents from an application flow that you defined by using a GUI.
This saves labor when creating development histories and maintenance materials.

Output definition information in list and map formats

Unit name	Unit type	Script file name	Type of end judgment
(1) /Costing_Process	Jobnet	-	-
(2) Factory_Calculation_processing	Jobnet	-	-
(3) Consignment_Management	Jobnet	-	-
(4) Consignment_Inventory	PC job	C:\mogiH_I TAKUJH.SPT	-
(2) Overhead_Calculation_Process	Jobnet	-	-
(3) Post-processing_Overhead_Cal	PC job	C:\mogiK_KANSEF.SPT	-
(3) Preprocessing_Overhead_Cal	PC job	C:\mogiK_KANSEA.SPT	-
(2) Sales_Calculation_Process	Jobnet	-	-
(3) Post-processing_of_Sales_cal	PC job	C:\mogiE_EIGYOU.SPT	cod

You can check the details of definitions for each unit in a list.

Output example of a document in jobnet list format



You can document and check the application flow diagram defined with the GUI.

Output example of a document in map format

Output definitions in flow format

Unit name	Unit type	Processing cycle	Schedule by days from start	Hold status	PC job	Type of end judgment	JP1 user who executes the job	Service of the execution destination
Legend:								
Unit name	Unit type	Processing cycle	Schedule by days from start	Hold status	PC job	Type of end judgment	JP1 user who executes the job	Service of the execution destination
Name: /CostingProcess								
OsakaBranch_Costing	Jobnet	1, 1, weeks	20:33:42	Does not hold jobnet execution.				CooperatingMaterials
		2, 1, weeks						Jobnet
		3, 1, weeks						[Monthly-001]
		4, 1, weeks						Does not hold jobnet execution.
		5, 1, weeks						
NagoyaBranch_Costing								
		1, 1, weeks	20:33:43	Does not hold jobnet execution.				TokyoHead_Computing
		2, 1, weeks						Jobnet
		3, 1, weeks						[Regular Job]
		4, 1, weeks						Does not hold jobnet execution.
		5, 1, weeks						
FukuokaBranch_Costing								
		1, 1, weeks	20:33:43	Does not hold jobnet execution.				HiroshimaBranch_Costing
		2, 1, weeks						Jobnet
		3, 1, weeks						[Regular Job]
		4, 1, weeks						Does not hold jobnet execution.
		5, 1, weeks						
HiroshimaBranch_Costing								
		1, 1, weeks	20:33:42	Does not hold jobnet execution.				CalculatingIndirectCost
		2, 1, weeks						Jobnet
		3, 1, weeks						[Regular Job]
		4, 1, weeks						Does not hold jobnet execution.
		5, 1, weeks						

You can check the application flow and the definitions together.

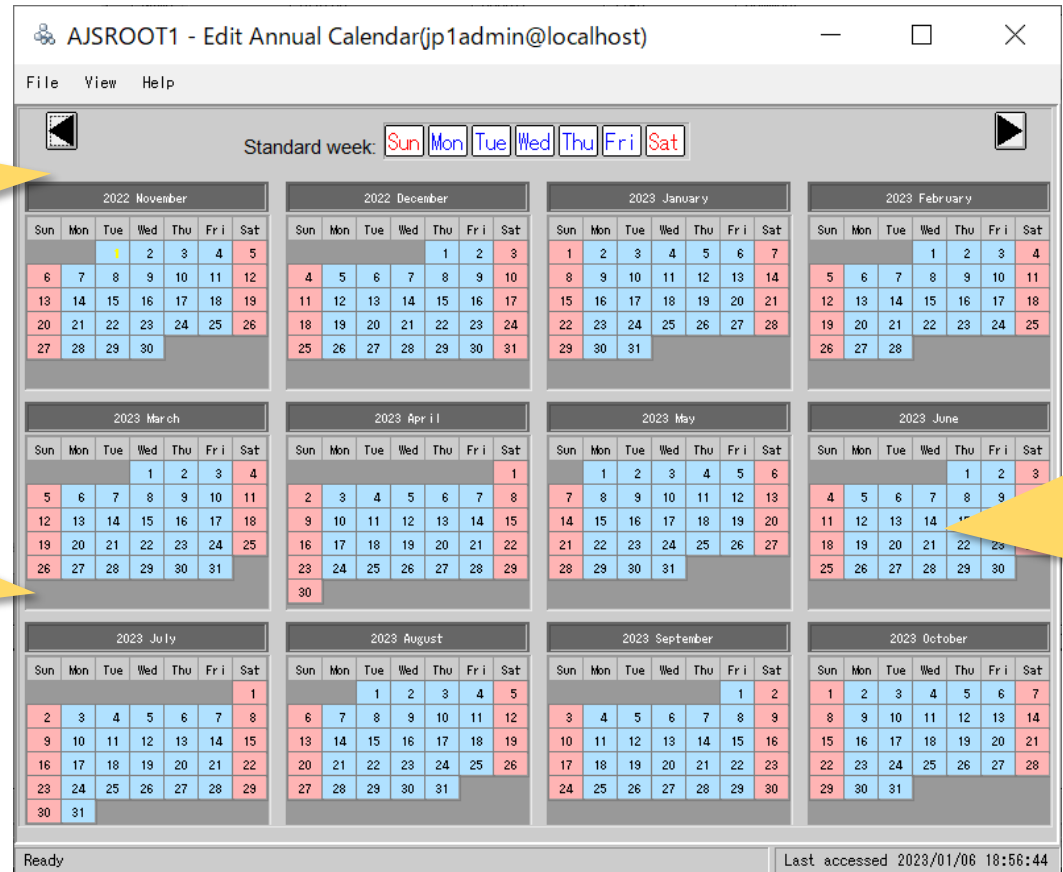
Output example of a document in jobnet flow format

Execute applications according to company calendars and work schedules

Control the execution of applications based on a calendar with business days and non-business days set according to the calendar and work schedule for each site. These include monthly, weekly, or specific day schedules and rescheduling of non-business day schedules.

You can define business days and non-business days to match your particular operations.

You can perform operations using different calendars for different sites.



Edit Annual Calendar

Example of scheduling the execution date

Execute a job every Wednesday (reschedule for non-business days)

Sun	Mon	Tue	Wed	Thu	Fri	Sat
			○			
			○			
			○			
			○			
			○			

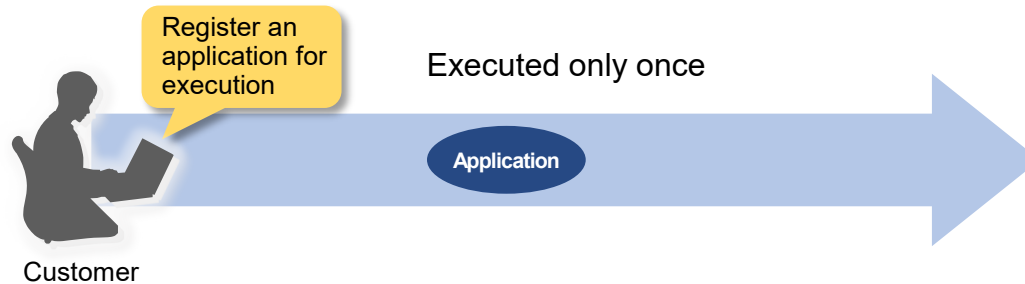
(○ : Execution date □ : Business day ■ : Non-business day)

Reschedule for non-business days

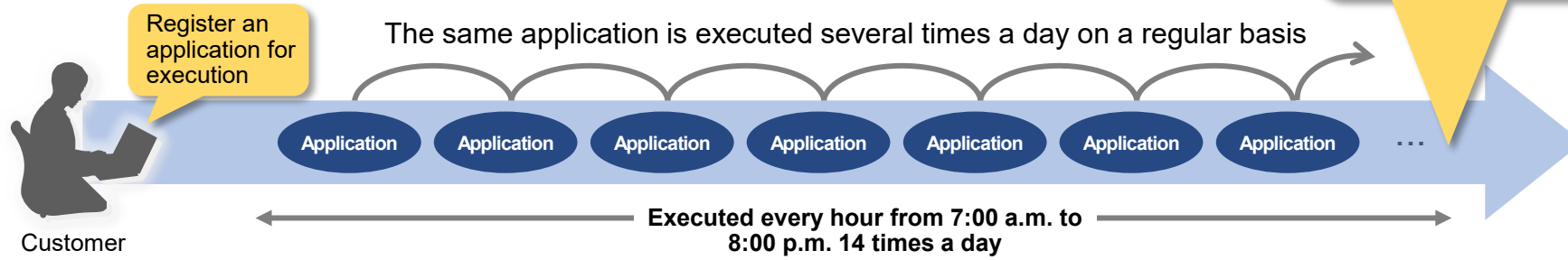
Automatically execute applications according to various triggers

There are many patterns of execution triggers, and applications can be executed automatically when a specified trigger occurs.

Executed immediately

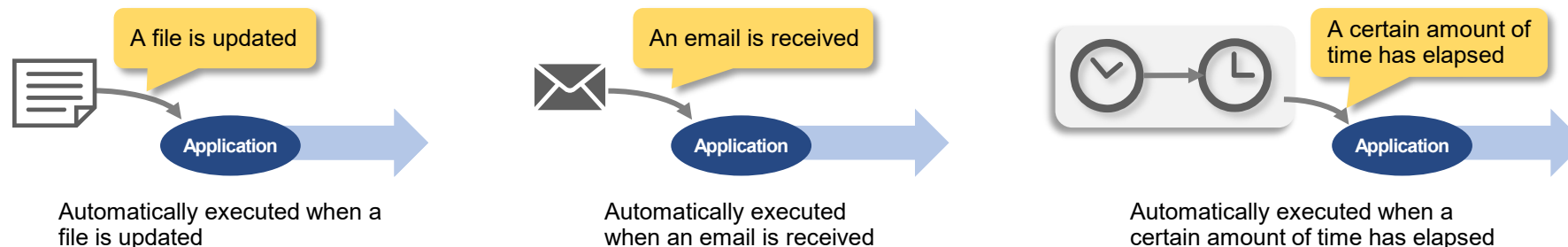


Executed repeatedly



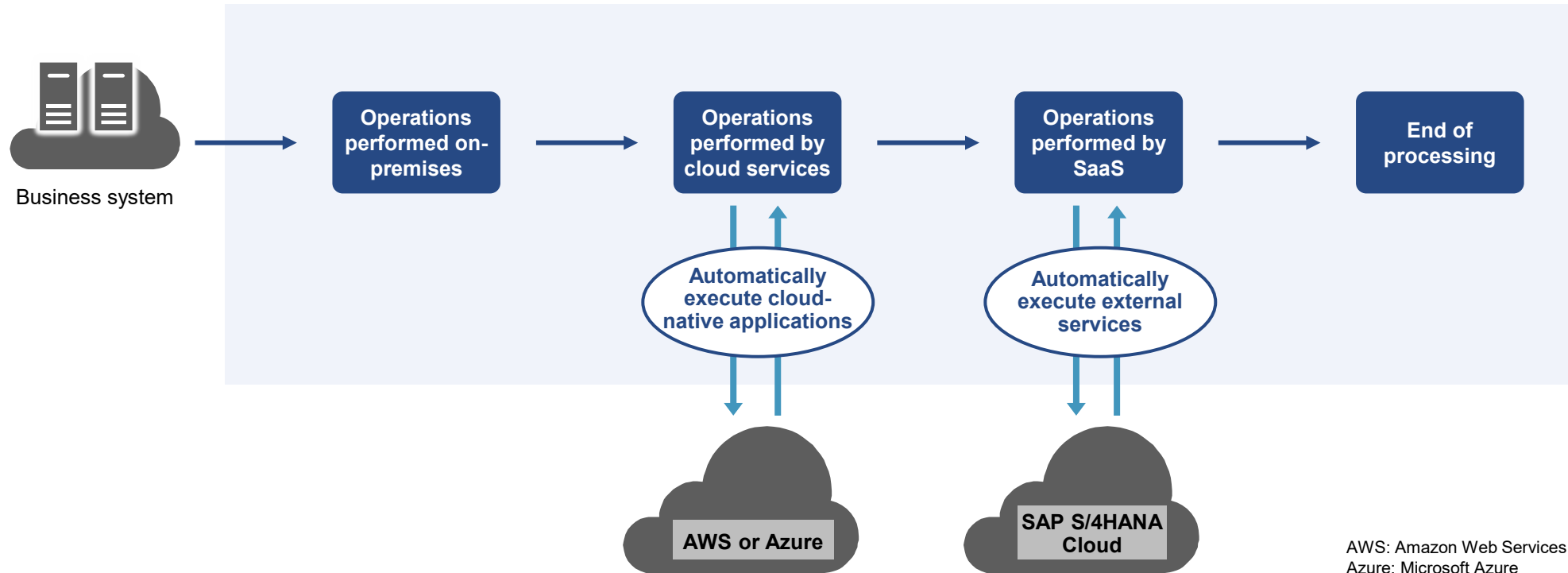
You can combine your company's calendar and execution cycles to execute applications, such as repeating an application every other Wednesday.

Executed when certain events occur



You can automatically execute applications that are executed on-premises, or you can link with and automatically operate serverless applications executed by cloud services or SaaS.

Centrally manage applications executed in various environments

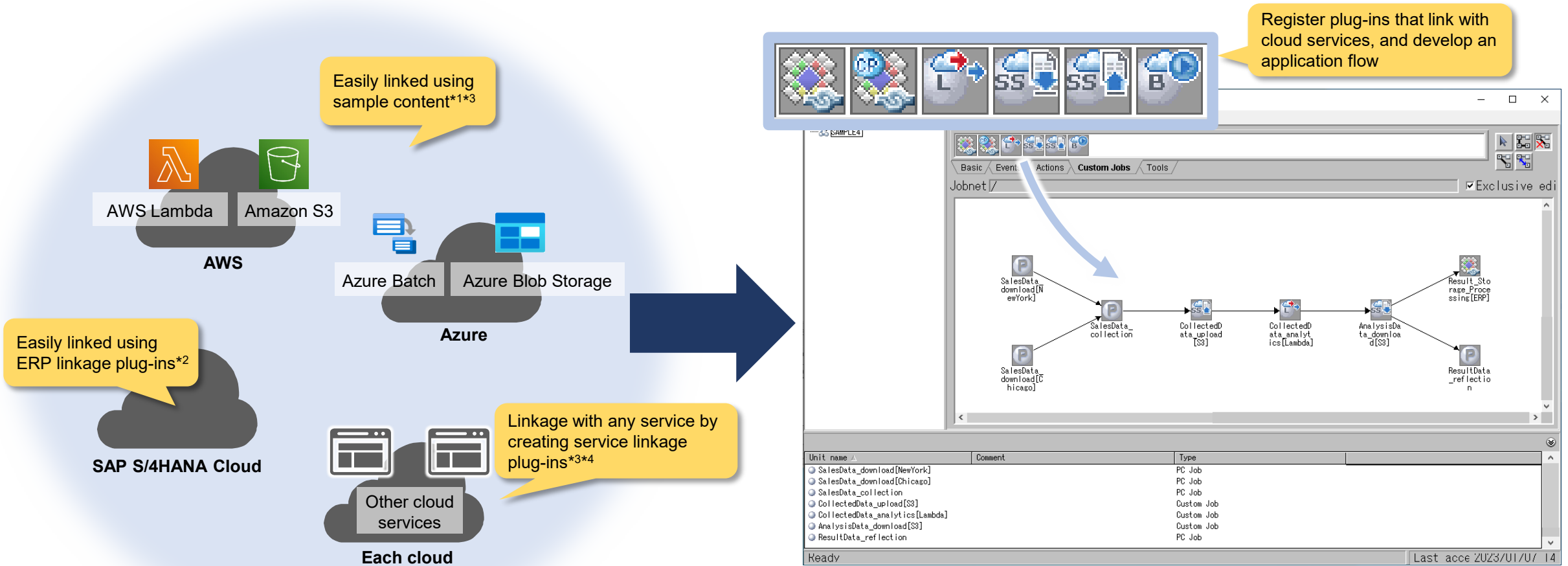


AWS: Amazon Web Services
Azure: Microsoft Azure

Connect applications that run in different environments

Easily link applications with various cloud services

You can use a GUI to define applications to be executed by cloud services such as AWS and Azure, and easily link applications executed by multiple cloud services.



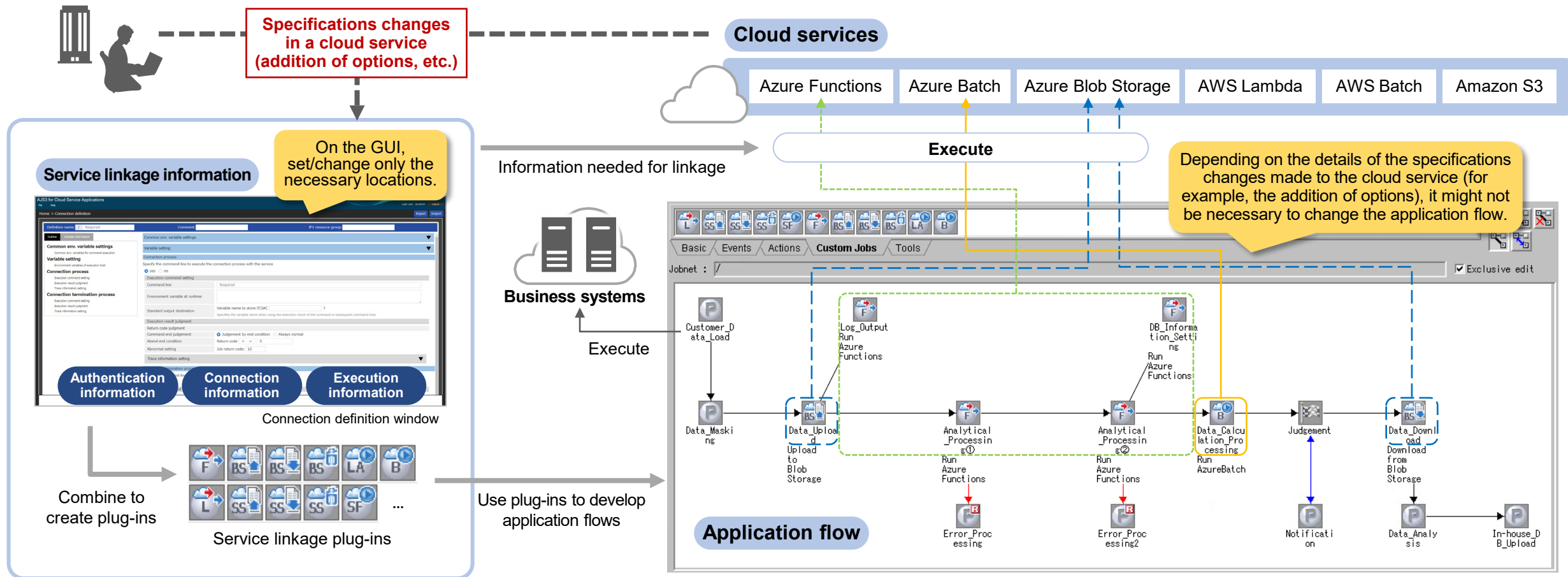
AWS: Amazon Web Services
Amazon S3: Amazon Simple Storage Service
Azure: Microsoft Azure

- *1 For support service subscribers, we provide service linkage plug-ins as sample content for linking with cloud services.
- *2 Requires JP1/Automatic Job Management System 3 for Enterprise Applications.
- *3 Requires JP1/Automatic Job Management System 3 for Cloud Service Applications.
- *4 When linking with any cloud service using service linkage plug-ins, the customer must verify the linkages.

Connect applications that run in different environments

Swiftly respond to specifications changes in cloud services

Separately manage application flows and service linkage information (authentication information, connection information, and execution information). Even if the specifications of a cloud service change, you can still link to that cloud service after implementing the minimum necessary changes.

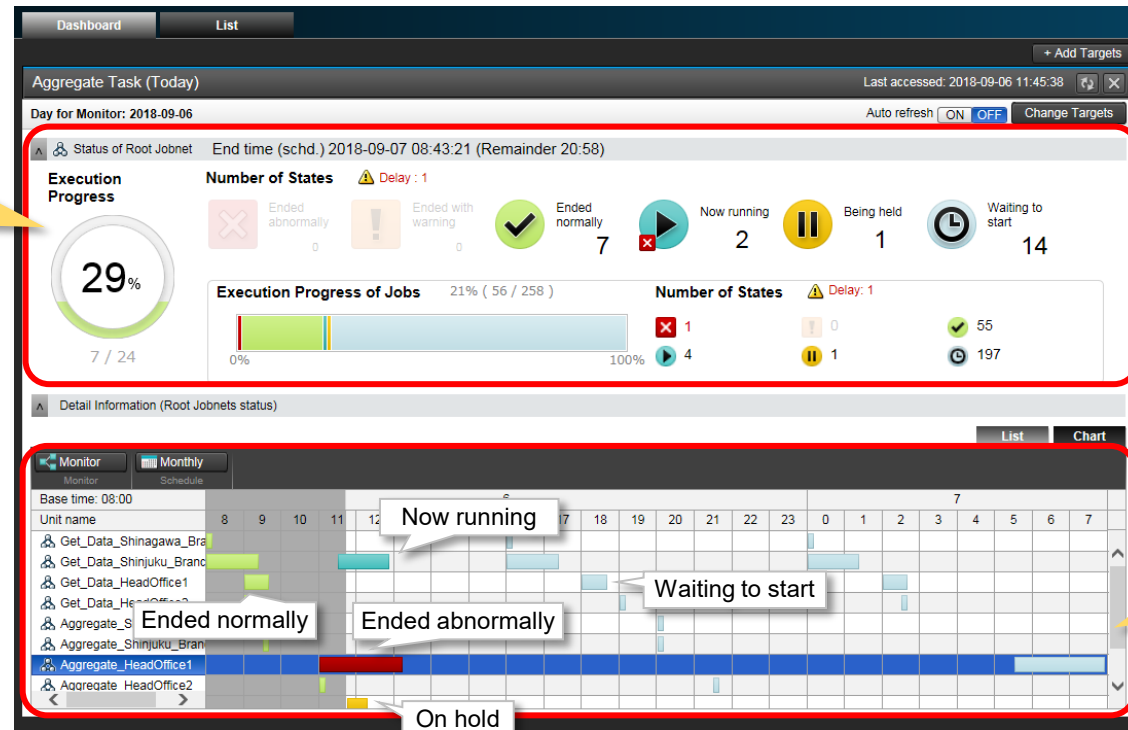


Understand the progress and execution status of your applications

You can check the progress of all applications, the number of executions by status (such as normal ends, abnormal ends, and delays), and the execution status of each application.

Display the status of applications in a single window

Display an overview of all the applications, including their progress, scheduled completion time, and any abnormalities.



Legend

- ✖: Ended abnormally
- ⚠: Ended with warning
- ✔: Ended normally
- ▶: Now running
- ⏸: On hold
- ⌚: Waiting to start

Display the execution status of each application using colors

Dashboard

You can check the execution results and schedule of applications on a monthly basis in the monthly schedule and on a daily basis in the daily schedule.

Monthly schedule:
Check the schedules and actual results on a monthly basis

You can check the execution results and execution schedules of all applications in a list. With one glance, you can check whether the previous day's applications have finished normally and whether there are any errors in the future schedules, together with past results.

Legend: Icons showing the execution schedule

- Wait for start time
- Running + Warning
- Ended normally

Check the monthly execution plans and results for each application.

Future schedules

Past results

Job execution schedules can be verified, added, edited, and deleted.

Customer Monthly Schedule

Daily schedule: Check the execution status of applications for the current day in real time

You can check the status of operations in real time in Gantt chart format. You can check the execution status of applications.

Display the execution results of the application you clicked

Understand job execution statuses at a glance.

- Ended normally
- In progress
- Waiting for start time

Only jobs that were executed on the current day are highlighted.

Customer Daily schedule window Jobnet Monitor

Quickly troubleshoot problems

You can easily identify where a problem is occurring, and smoothly take action such as suspending the target application or putting it on hold.

After resolving the problem, you can resume the application from where it was suspended or put on hold.

Check the status and suspend, hold, or resume the target applications on the same window

The screenshot displays the Job Portal Monitor interface. At the top, a control bar contains buttons for 'Hold-On', 'Hold-Off', 'Interrupt', 'Kill', and 'Rerun'. Below this, a workflow diagram for 'Domestic_Arregate_Task' is shown, with a red box highlighting the 'Data_Co mpilate_ Linux' node. A callout bubble points to the 'Rerun' button, stating: 'After the problem is resolved, re-execute the application from where it stopped.' Another callout bubble points to the workflow diagram, stating: 'Easily identify the error locations'. A third callout bubble on the left states: 'You can deal with problems that occur by re-executing, putting on hold, or cancelling an application.' The interface also shows a 'Jobnet' tree on the left and a 'Customer' icon at the bottom left. The title bar of the window reads 'AJSROOT1:画面キャプチャ用/Group2_E/Domestic_Arregate_Task'.

On a single window, you can centrally monitor the status of the job management system, such as the scheduler service that controls the execution of applications and the database of the job management system. You can check at a glance whether the job management system is working without any problems.

Check the status of the JP1/AJS3 - Manager host service

Check the status of the JP1/AJS3 - Manager agent service

Check for problems based on the status of the scheduler service and factors that hinder job execution

Check the status of the scheduler service (running or stopped) on the GUI

System administrator

Management portal - Dashboard

Management portal - Scheduler Service

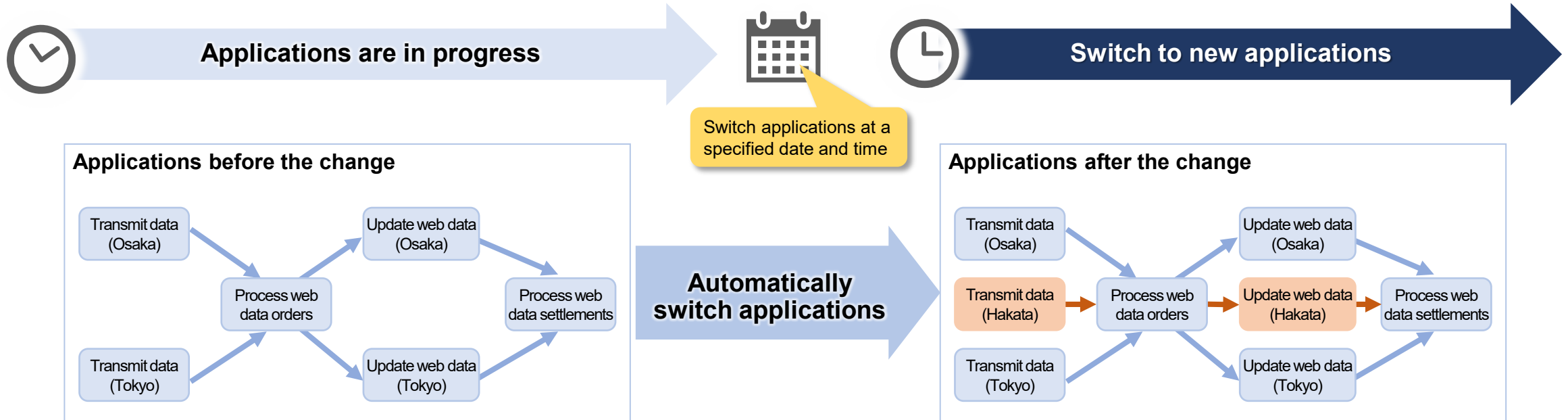
JP1/AJS3 - Manager: JP1/Automatic Job Management System 3 - Manager

Management portal - Scheduler Service

Automatically switch applications at a specified date and time

When changing an application flow, you can switch it to a new application flow at a pre-specified switching date and time without stopping currently running applications.

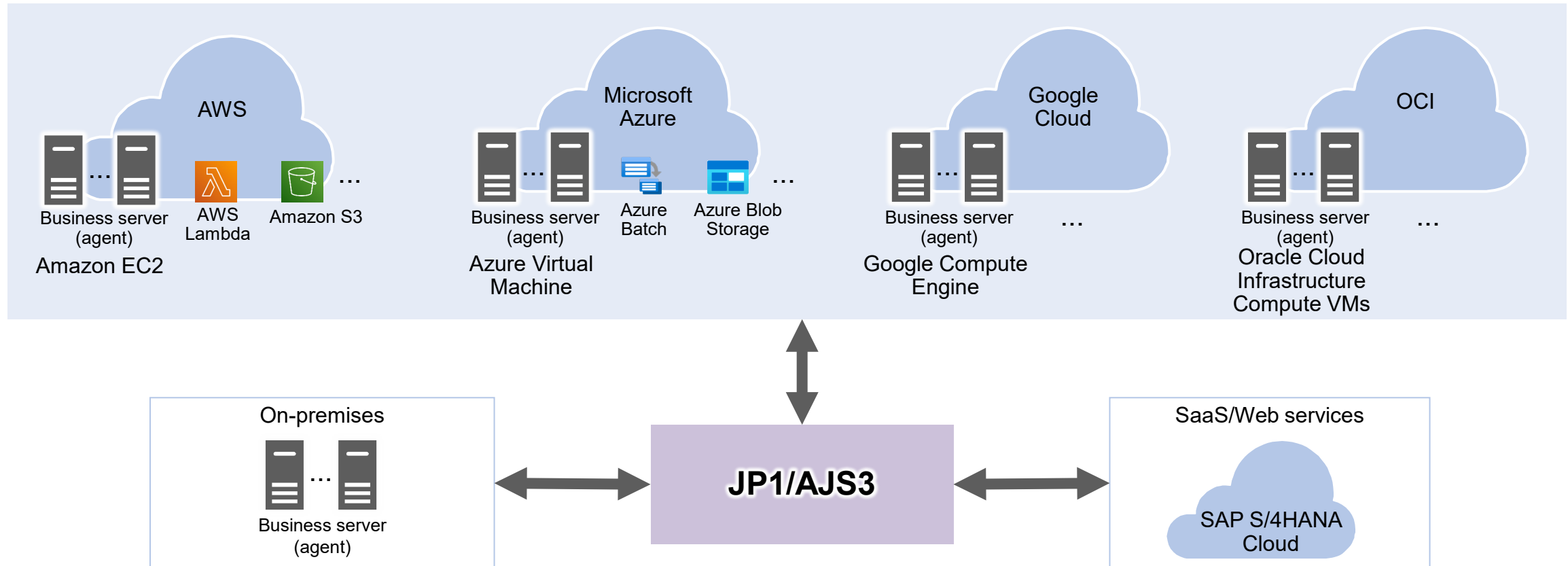
Automatically switch the application flow at a specified date and time while continuing business operations



Example of a system configuration

- **Example of a system configuration**

The system configuration for managing and controlling the execution of an application flow in JP1/AJS3 is as follows.



AWS: Amazon Web Services
Amazon S3: Amazon Simple Storage Service
Amazon EC2: Amazon Elastic Compute Cloud
OCI: Oracle Cloud Infrastructure
JP1/AJS3: JP1/Automatic Job Management System 3





When linking with any cloud service using service linkage plug-ins, the customer must verify the linkages.

Support for safe use

- **Support for evolving and diversifying system environments**
- **JP1 professionals assist customers**
- **One-stop problem resolution at an early stage**
- **Long-term use with peace of mind and guaranteed compatibility with preceding versions**
- **Global use with peace of mind**
- **Reliable quality for customers**

You can introduce JP1/AJS3 according to your system environment, such as on-premises or cloud.

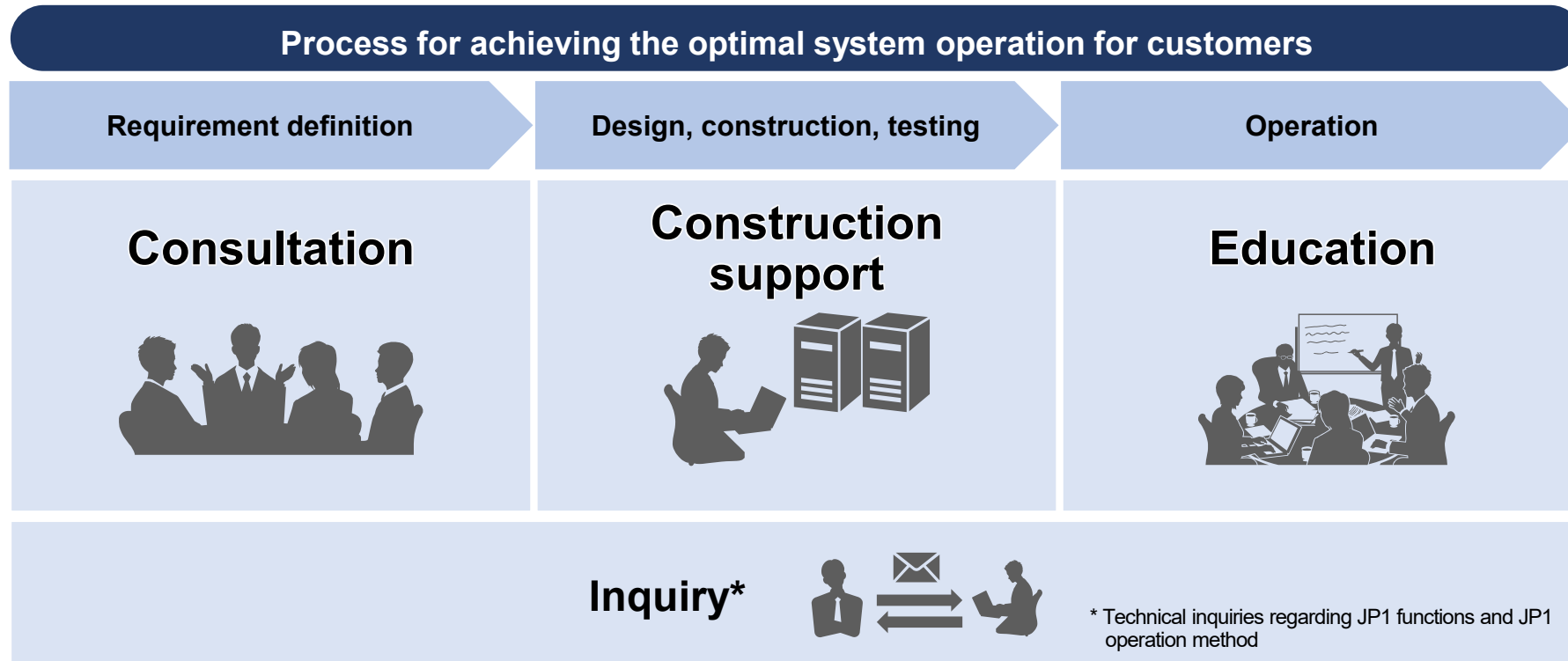
We respond flexibly and quickly to evolving and diversifying environments and your needs.

 OS	Windows Linux AIX
 Cloud	Amazon Web Services Microsoft Azure Oracle Cloud Infrastructure Google Cloud Other clouds are also supported
 Virtualization environment	VMware ESXi Hyper-V Kernel-based Virtual Machine (KVM) Container Docker Podman etc.
 Cluster environment	Windows Server Failover Cluster (WSFC) CLUSTERPRO X Lifekeeper HA monitor etc.

JP1/AJS3 runs on Japanese, English, and Chinese operating systems.

We can achieve the optimal system operation for our customers.

JP1 professionals can derive a system operation method suitable for the customer's requirements, system scale, and environment, and help achieve a network management system.



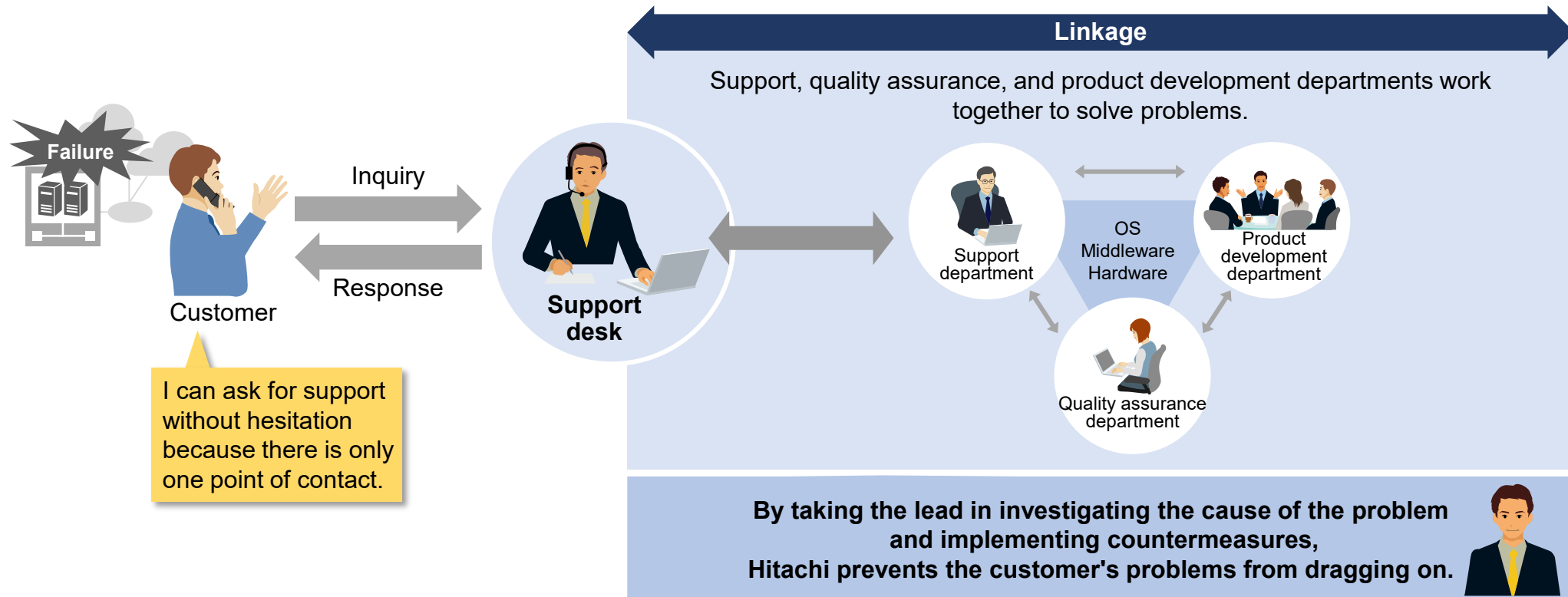
By involving JP1 professionals, you can clarify system operation requirements, shorten the examination and implementation period, and smoothly hand over to the operation team.

JP1 professionals are engineers who have a specified level of JP1 skills and have been certified based on the JP1 Engineer Qualification System.

**We provide one-stop support to solve problems quickly.
This reduces the burden on customers of a problem occurs.**

We provide support for early stage resolution of complex problems, which can involve multiple elements such as operating systems and middleware.

One-stop support resolves problems quickly, prevents recurrence, and ensures stable operation of customer systems



You can use JP1 for a long time and expand your business systems without worry.

We provide continuous support even when the customer's system has a long life cycle.
JP1 ensures compatibility between versions, allowing for gradual system expansion.

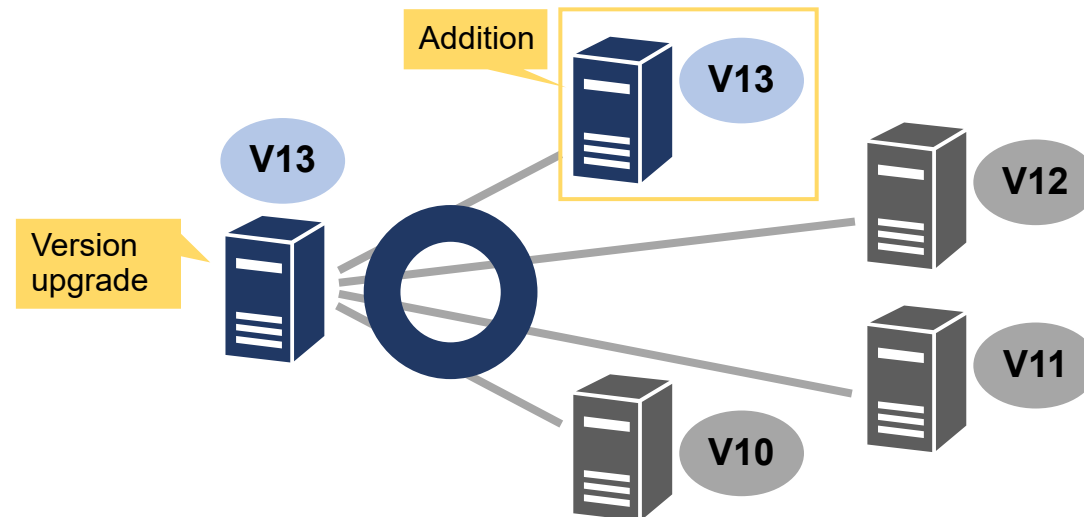
Long-term support for the life cycle of customer systems



At least 10 years of support is guaranteed

with the same version

Flexible support for business system expansion



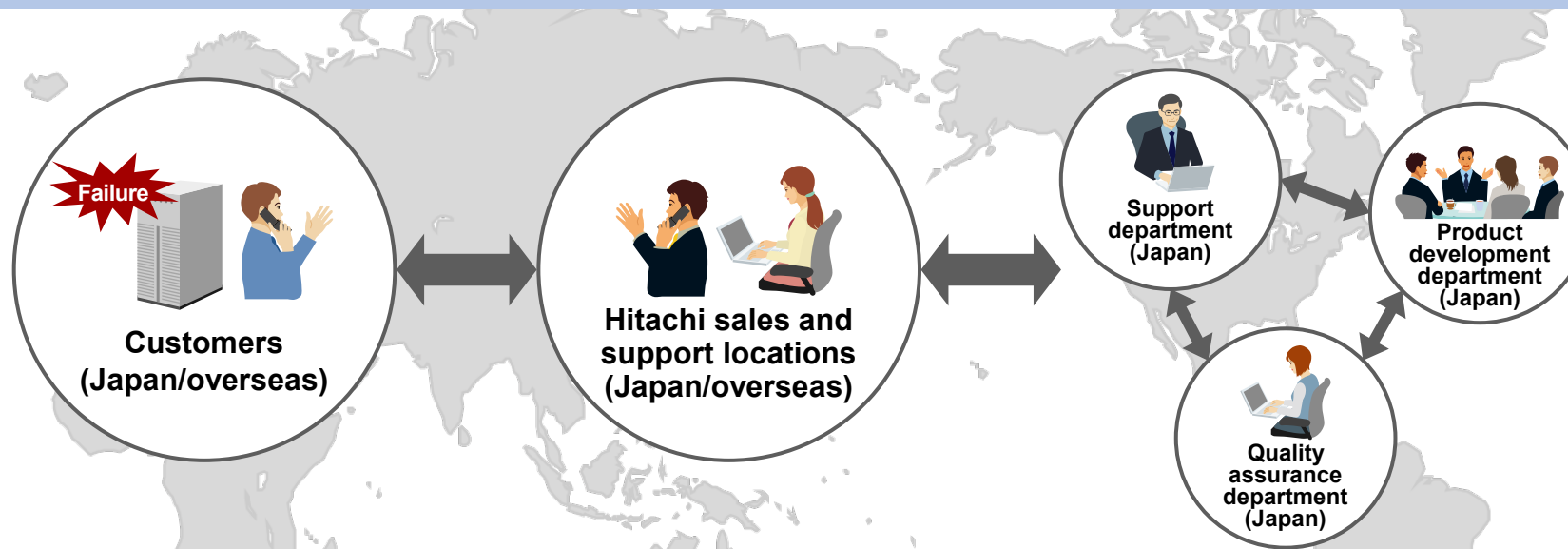
Guaranteed compatibility with the preceding three major versions.
You can operate your system even if it contains different JP1 versions.

Even if you upgrade JP1, interface compatibility is maintained.
Therefore, you can use the linked products, services, user programs without modification.

You can use JP1 with peace of mind around the world.

We support our customers with sales and support locations covering all regions of the world.

Our sales and support locations around the world and in Japan work together to support our customers



We cover all regions of the world including Asia, Oceania, North America, South America, Europe, Middle East and Africa.

Hitachi's sales and support locations support customers in cooperation with the support, quality assurance, and product development departments in Japan.

Achieve stable operation of mission-critical systems!

We have established a system to maintain high quality and high reliability so that customers can use our products with peace of mind.



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If you require more information or clarification, please contact your Hitachi sales representative.
- For the most recent information on the support status of a JP1 product, including supported operating environments, please visit the JP1 website.

END

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Hitachi, Ltd.

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