
Senju DevOperation Conductor 2018

Share the Next Values!

Nomura Research Institute, Ltd.
Cloud Computing Service Division

List of Senju Family products

More than 45 years of know-how in system maintenance and operation at NRI are consolidated as “IT operation management products.”
Supports increased efficiency of operation in environments that include cloud technology and improved quality of IT services.

Senju/DC

System operation management

Event management

Configuration management

Job schedule

Monitoring

Capacity

DevOps portal

IT relation management

Runbook automation

AWS management

Senju/EN

Integrated operations management infrastructure

Message integration

Advanced message filtering

Business impact assessment

Automatic issuing of incident vouchers

Automation of periodic monitoring

External tool link

Senju/EN ESP

Troubleshooting navigation

Filtering template

Senju/SM

Service desk tools

Service desk

Automatic issuing of incident vouchers

Service requests

Problem management

Change management

Release management

Service level management

Smartphone Web

Configuration management

Overview of Senju DevOperation Conductor

Senju DevOperation Conductor is composed of shared functions and 5 sub-systems depending on the usage objective. Installation can be performed as necessary. Only the necessary detailed functions can be added as extensions. Function enhancement can be performed easily.

Capacity

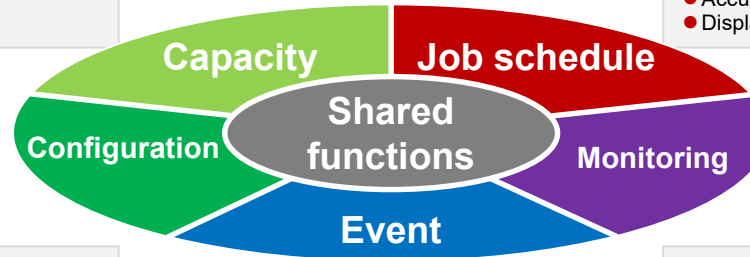
- Accumulation of operation history
- Graph display (line, pie, bar, etc.)
- Display by day, week, and month
- History data output function
- Support for capacity planning / reporting
- Support for trend investigation / analysis during trouble

Shared functions

- Registration of management node
- Information management for managed resources
- Registration of user commands
- Registration of parameters
- Registration of calendar
- Registration of weekly schedule
- Remote maintenance of Senju Agent
- Registration of items
- Management of relation

Job schedule

- Automatic plan operation using a calendar
- Control of execution sequence for jobs/nets
- Operation status display for jobs/nets/frames
- Operations for jobs/nets/frames which are currently being executed
- Execution of jobs/nets/frames across several servers
- Specification of execution users/nodes via operating environment settings
- Setting of various triggers for starting jobs/nets
- Load balance function
- Execution of identical jobs on multiple nodes
- Accumulation of operation history
- Display of graphs/lists for operation history



Configuration

- Accumulation of configuration information
- Accumulation of Senju configuration management item
- Acquisition of file information
- Acquisition of file list information
- Accumulation of information via command execution
- Accumulation of SNMP items
- Accumulation of WMI information
- Accumulation of registry information
- Accumulation of event log information
- Change detection

Event

- Uniform management of messages
- Automatic actions for messages
- Automatic emails for messages
- Automatic telephone calls for messages
- Runbook automation (automatic execution of procedure manuals)
- Accumulation of log information
- Application response
- Message guide

Monitoring

- Monitoring of node alive
- Monitoring of system information
- Monitoring of disk capacity
- Monitoring of process operation status
- Monitoring of system detailed information
- Monitoring of web server
- Monitoring of DB server
- Monitoring of email server
- Monitoring of AP server
- Monitoring of ERP package
- Network monitoring
- Virtualization monitoring
- Cloud service monitoring
- Custom monitoring
- Log monitoring
- Trap collection
- Monitoring of threshold values by time period

Overview of Senju DevOperation Conductor

Easy operation via GUI

- Operation at an interface GUI screen where all functions are consolidated. Easy operation even by operators who are unfamiliar with the UNIX/Linux environment.

System for division of labor via multiple consoles

- System management can be performed from multiple operation management consoles.
- Realizes operation that considers division of labor for system administrators (person in charge of registration, change work, etc. of management targets) and operators (person in charge of operation and monitoring).

Integrated operation management from Senju Manager

- From a single Senju Manager, enables operation management for a server group of multiple business systems operated on the network.
- Performing intensive management from Senju Manager reduces the workload of administrators.

Operation management from diverse perspectives

- By using the Multi-Agent function, it is possible to independently operate multiple Senju Agent functions on a single server.
- Enables operation management which shifts the focus to individual business systems and divisions.

Realizes agentless monitoring

- Senju Sensor enables monitoring and job execution without the need to install agent software on the target server.
- Realizes smooth installation even at large-scale systems without affecting applications which are currently activated.

Configuration management via collection of configuration information

- Enables periodic acquisition of configuration information from the server targeted for management, and confirmation of the server configuration management and any changes that may have been made.

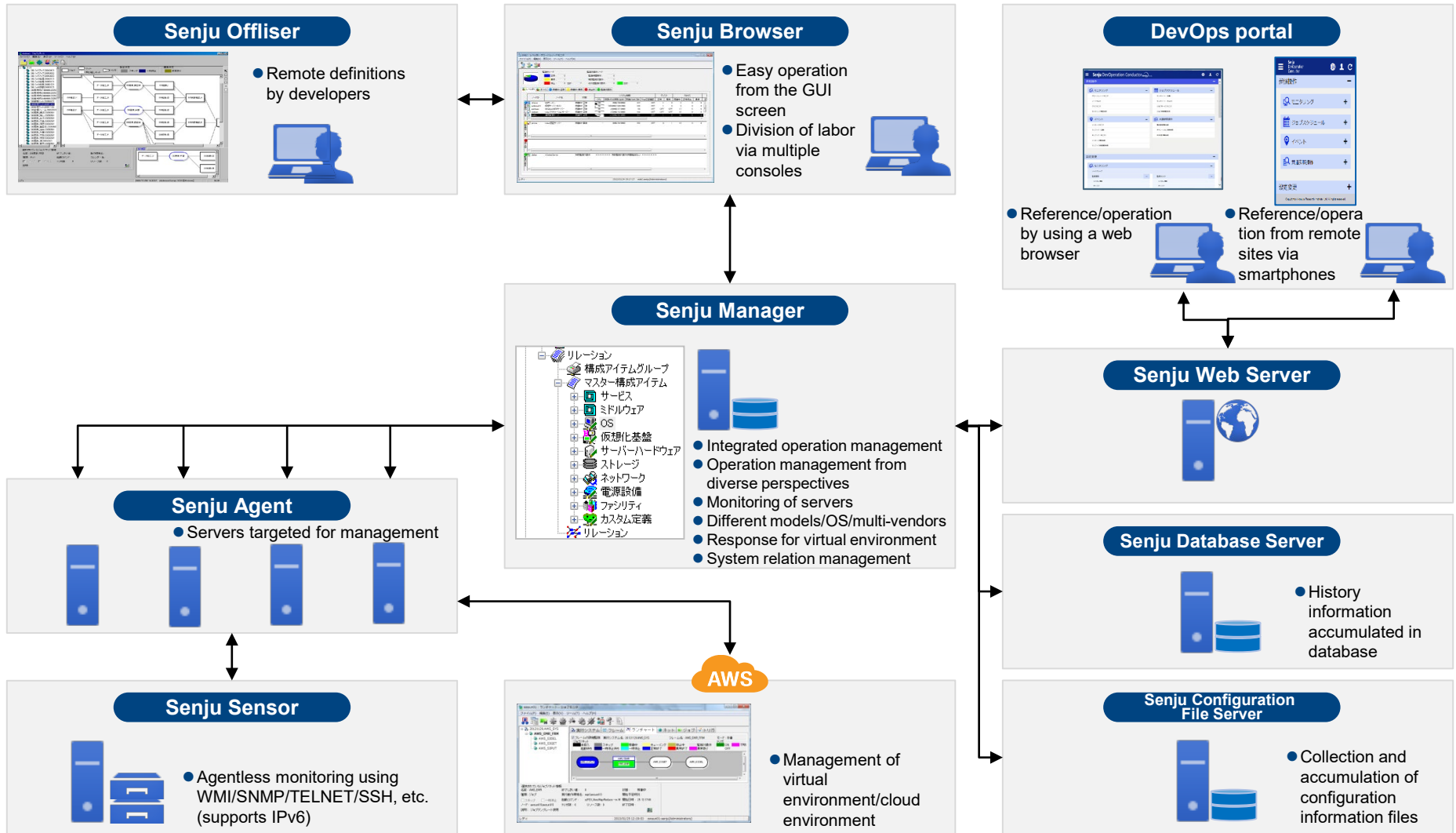
System relation management

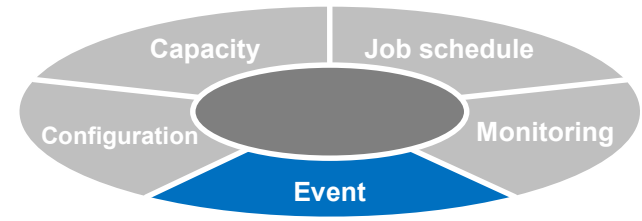
- By defining IT devices and services which configure the system and by setting item relationships, it is possible to perform integrated management of configuration information for the entire system.
- In the event of trouble, enables fast identification of occurrence locations and the effected scope, as well as quick response.

Disclosure of information to System Maintenance Management Division

- Enables disclosure of system operation information to the System Maintenance Management Division via the web browser.
- When the person in charge of system maintenance management is investigating system trouble, enables remote investigation to be performed quickly.

System Configuration of Senju DevOperation Conductor

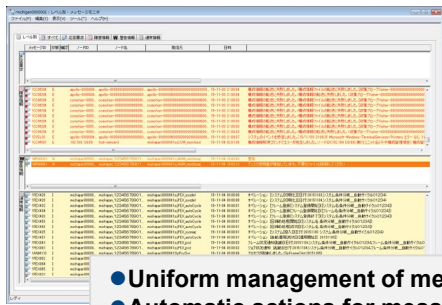




Event (Overview)

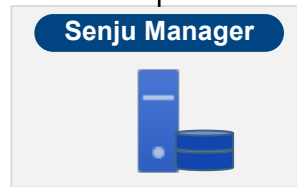
Event overview

- Collects messages issued within the Senju system and performs uniform management of monitoring information.
- By setting actions for messages, enables automatic execution of actions for messages which match conditions.
- Also enables automatic execution of complex procedures.

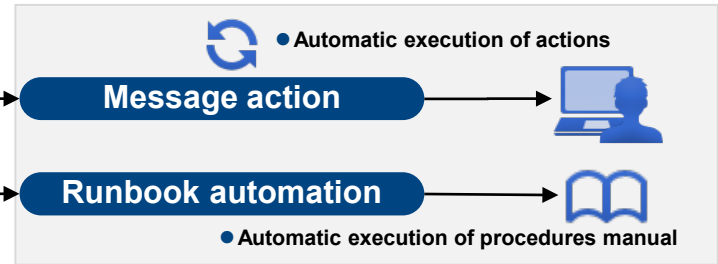
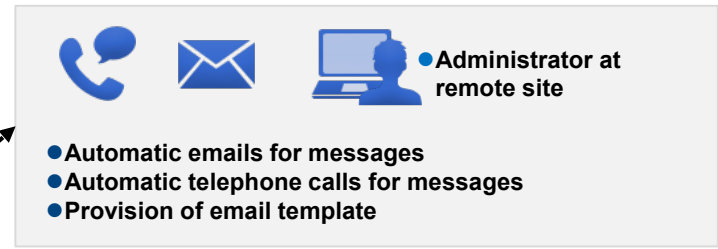


Message notification

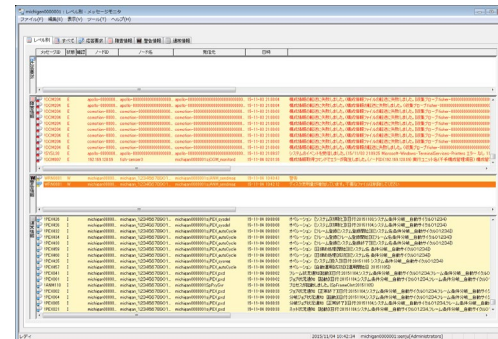
- Uniform management of messages
- Automatic actions for messages
- Automatic email for messages
- Automatic telephone calls for messages
- Automatic execution of procedures via runbook
- Accumulation of log information
- Application response
- Message guide

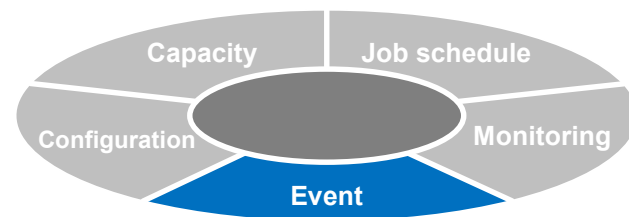


- Automatic execution of procedures manual via runbook
- Automatic actions for messages



Event occurrence

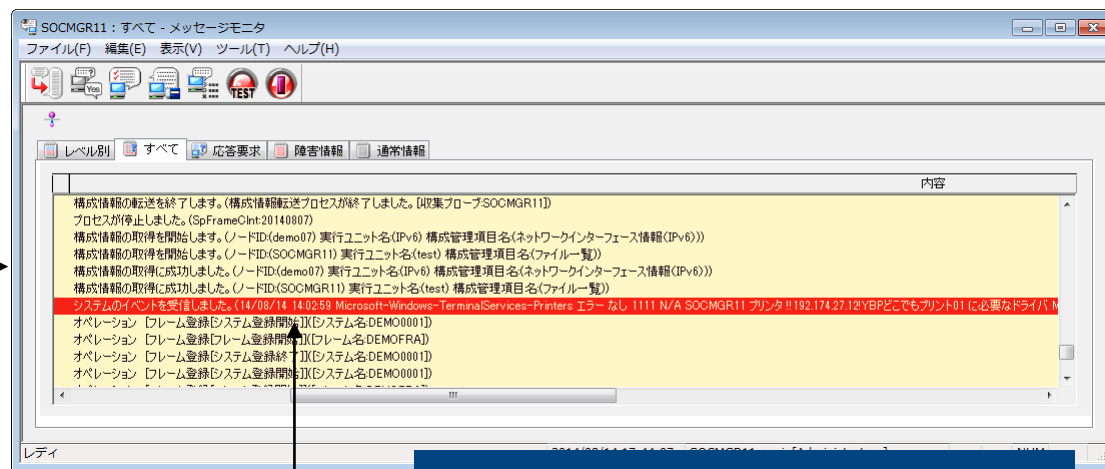
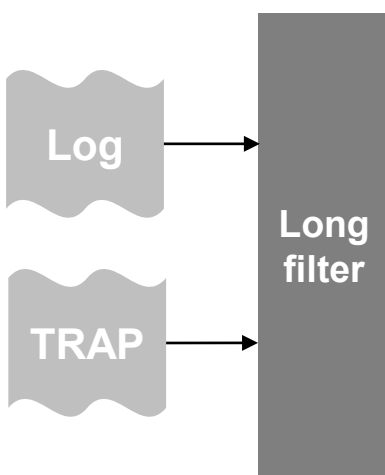




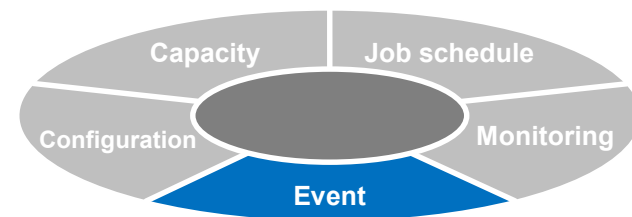
Event (Message Send Command Extension)

Provides new extension message send command and extension message send API. With Senju Message, it is possible to send a maximum of 3,160 bytes of additional wording.

Even in the case of logs with long messages, display messages with all necessary information.



Send messages with up to 3,160 bytes of given information.



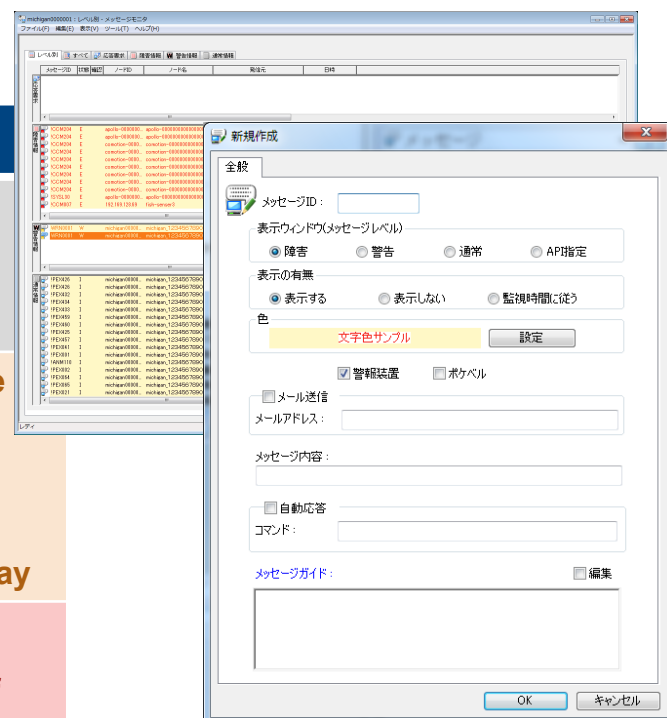
Event (Warning Level Message)

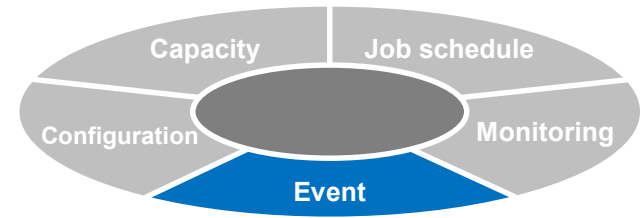
In addition to “Normal” and “Trouble,” it is possible to **specify “Warning”** as a level for Senju Message.

By setting events with a low level of importance as “Warning” level, reduce the risk of overlooking important trouble events.

Message monitor

Level	Explanation	Usage scene
Normal	Notification is sent as a checkpoint during daily operation, but no measures are required.	<ul style="list-style-type: none"> ● Execute operation ● Normal completion of the job
Warning	Notification is sent for a problem which requires response before trouble occurs, although it is not a highly urgent problem such as system failure.	<ul style="list-style-type: none"> ● Increase the disk usage amount ● Increase the network usage amount ● Discontinuation associated with job delay
Trouble	Notification is sent for a status in which a service/system does not function normally, or a situation which affects the function.	<ul style="list-style-type: none"> ● Server failure ● Incorrect completion of the job





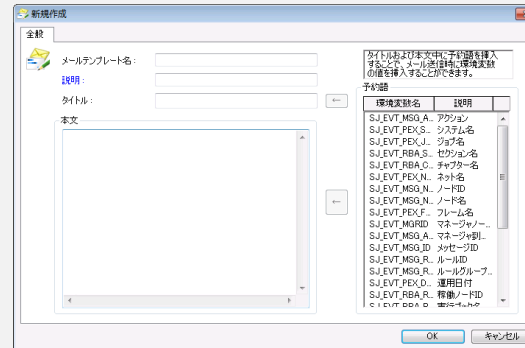
Event (Automatic Response: Message Action)

Message action

- Identifies messages (events) which have occurred and automatically executes actions based on results of identification.
- Identification conditions (schedule, message ID, message level, node / node group, source process, message body)
- Action (send email: specify address/email template, telephone call, execute command, execute runbook)

Send template email

- Automatically assembles the environmental variables when sending an email.
- The message information which caused the action to be executed can also be specified as an environmental variable.



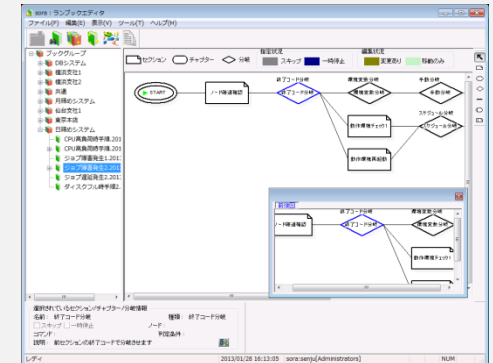
Email template

Contact by telephone

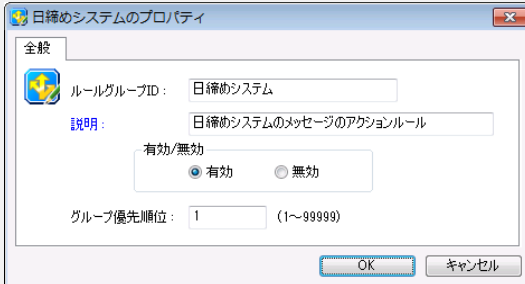
- Telephone calls are made automatically to contact groups which have been registered in advance.

Execute runbook

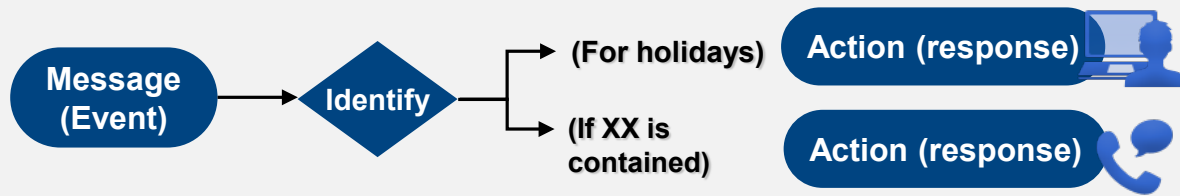
- Automatically execute runbook (procedures manual) in cooperation with the Runbook Automation function.

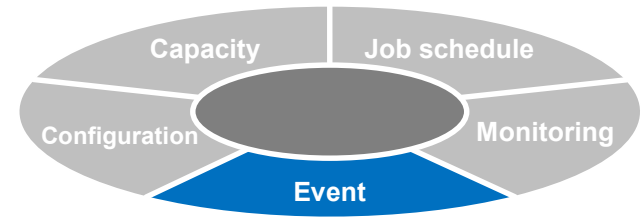


Runbook Editor



Rules for message identification

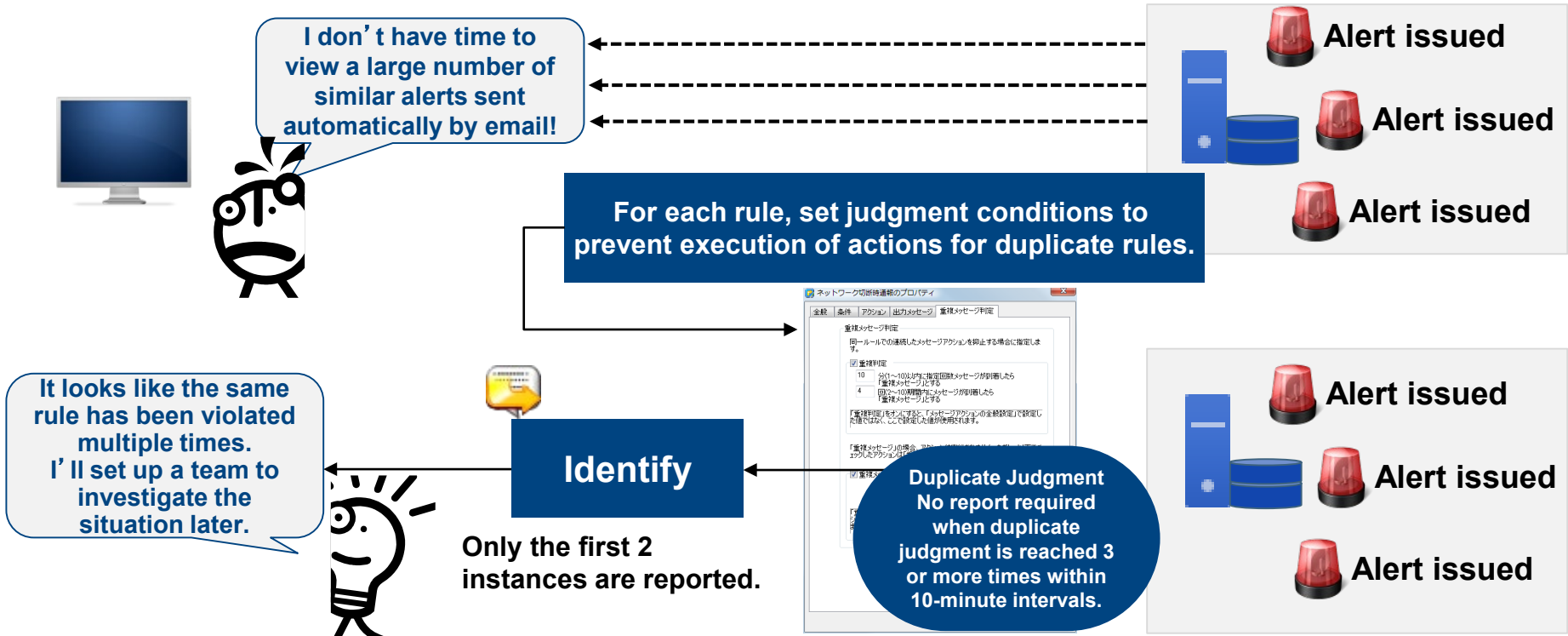


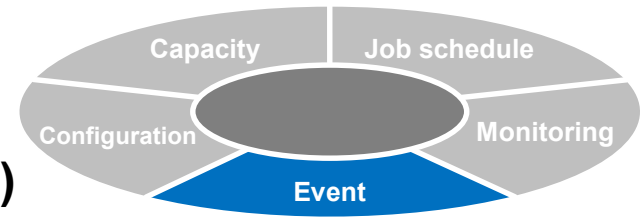


Event (Enhanced Judgment for Duplicate Message Actions)

For message actions which perform automatic execution based on message identification, provides a function for setting judgment of duplicates by number of times and judgment of duplicates by rules.

Suppresses burst of automatic commands which increase due to automated implementation.





Event (Automatic Response: Runbook Automation)

Runbook automation (Extension)

- Automates direct-operation tasks (portions requiring human judgment) which are executed in accordance with procedure manuals. For example, diagnosis/recovery tasks during system failure, server maintenance and operation tasks, etc.
- Enables automatic execution from message actions, and manual execution or execution via commands from the Senju Browser.

Execute command

- Execute an arbitrary command at the specified node.
- The execution node can also be specified in a virtual environment. Also enables flexible specification. For example, specification for the node which issues a message, at the time of book execution, etc.

Refer to execution results

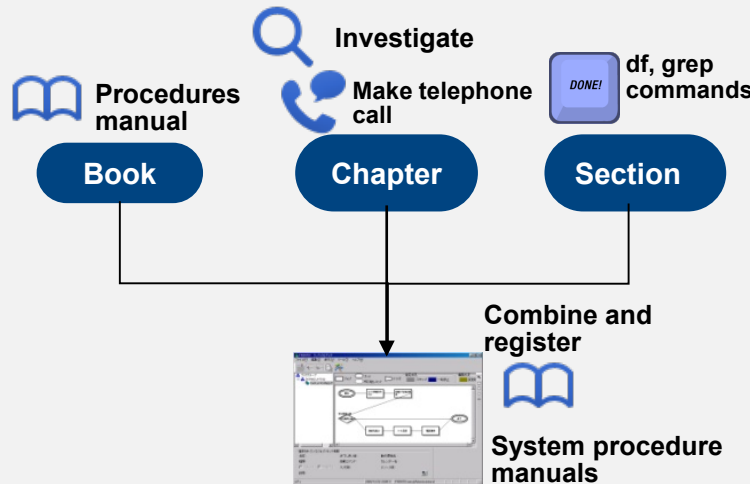
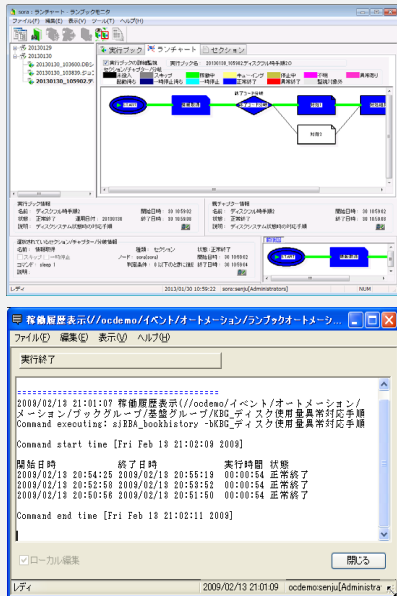
- The execution results (standard output) of the preceding section can be confirmed from the Senju Browser. The execution results file can also be used at the subsequent section.

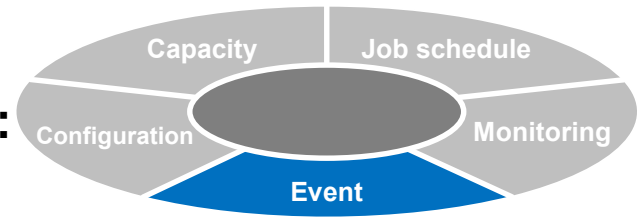
Sensor execution

- Even for agentless Senju Sensors, it is possible to connect and execute via ssh or telnet.

Branch section

- It is possible to branch the execution processing of subsequent sections based on the completion results of the preceding section.
- Completion code branching, standard output branching, environmental variable branching, schedule branching, manual branching

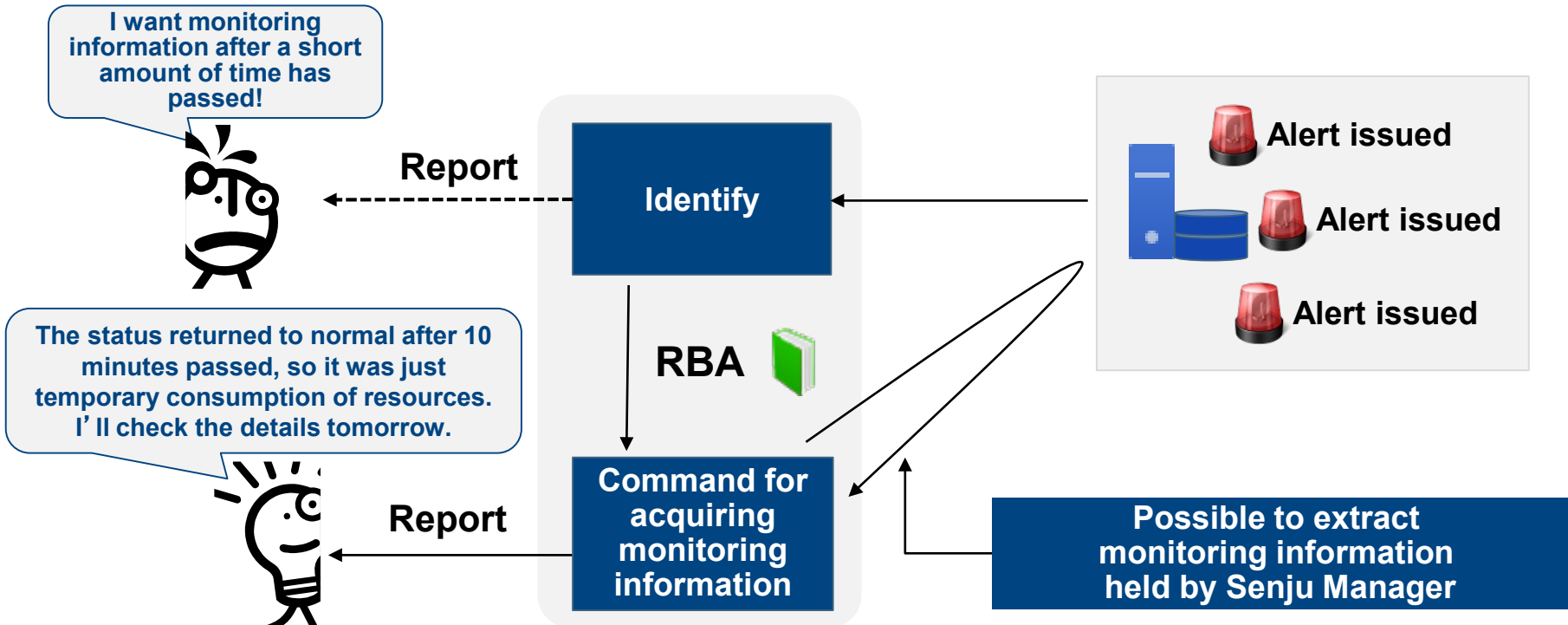




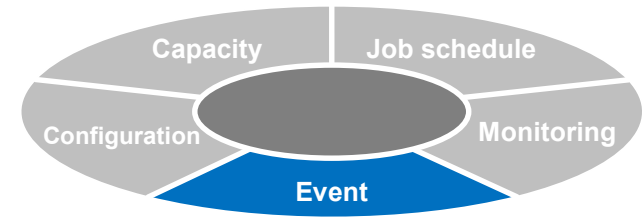
Event (Monitoring Information Acquisition Function: Runbook Automation)

Freely acquire monitoring information (values and status for each monitoring target) held by Senju/DC within runbook automation.

Automatically acquire Senju monitoring information, etc. through additional investigation at the time of trouble occurrence during runbook automation.



Event (Parallel Processing, Book Call: Runbook Automation)



Parallel chapter function

- Reduces operating time by specifying multiple sections for simultaneous startup and executing parallel processing.
- Via runbook, supports patterns in which similar procedures are executed by division among multiple operators.

Book link section

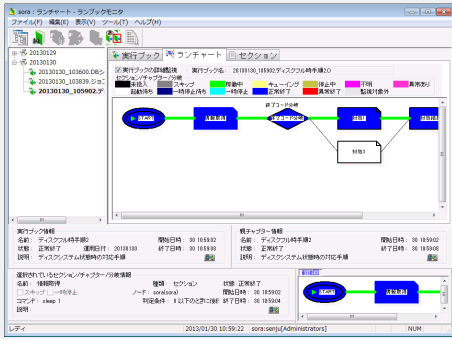
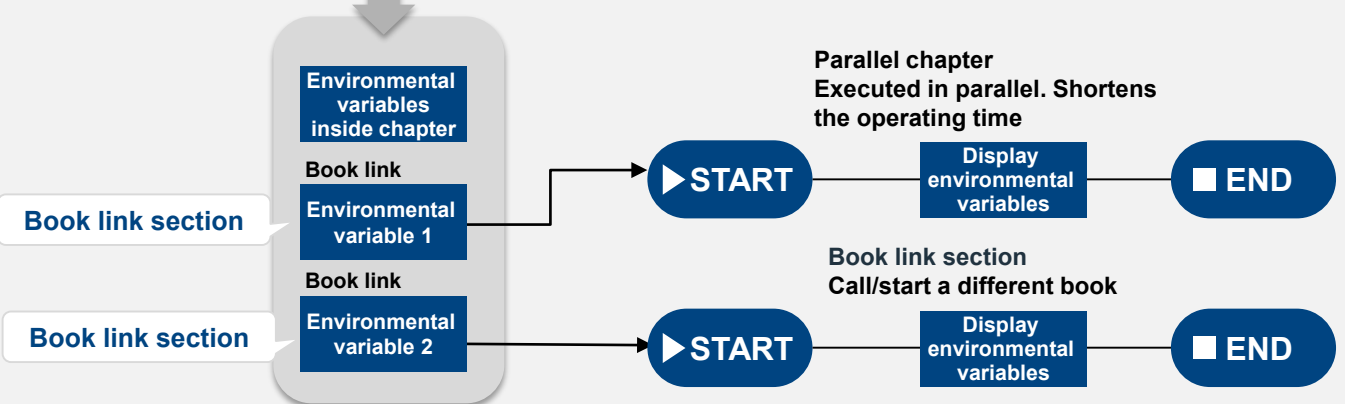
- At sections inside the executing book, calls another books and waits until startup/completion.
- Runbook can handle execution patterns in which a certain procedure refers to a different procedure. Not necessary to create a similar book.

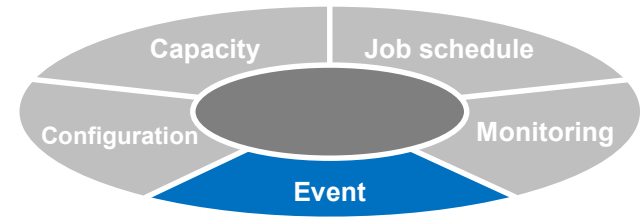


Time required for sequential execution.



Parallel chapter Executed in parallel. Shortens the operating time

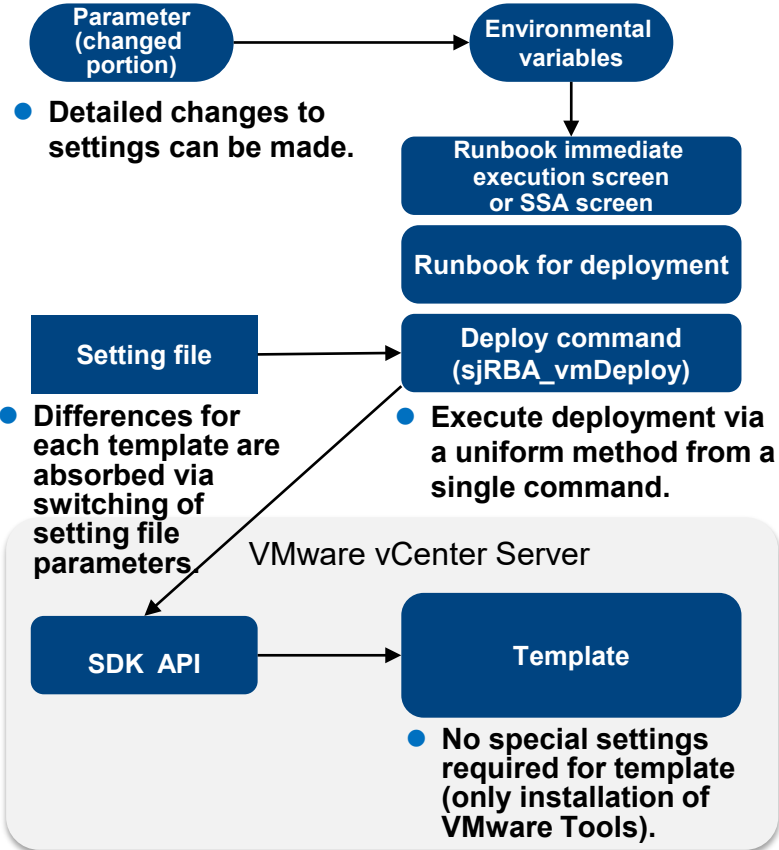
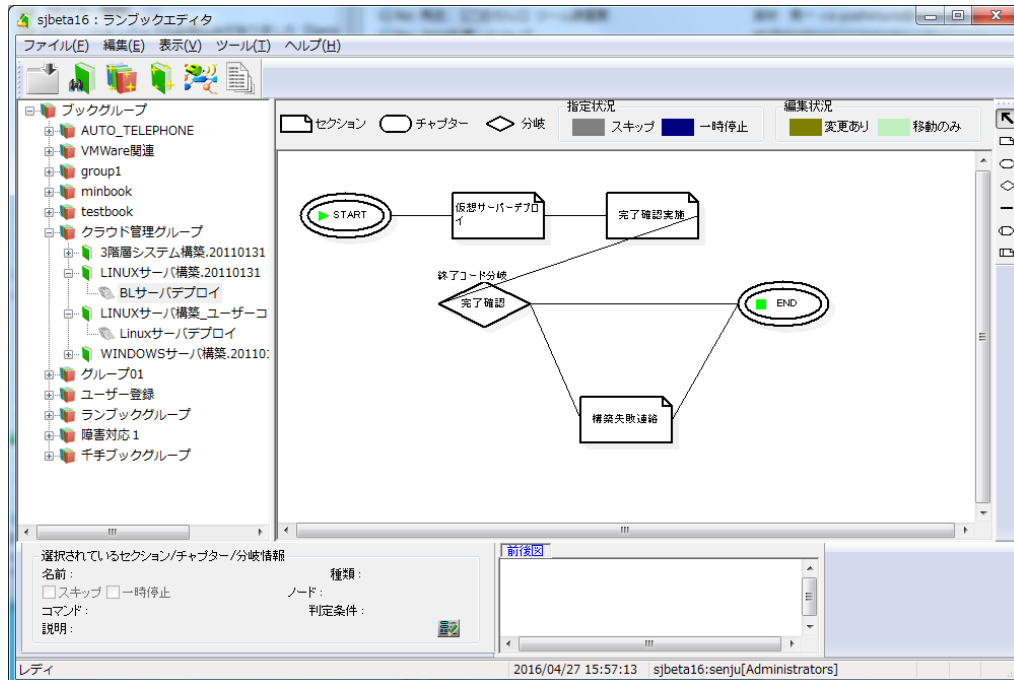


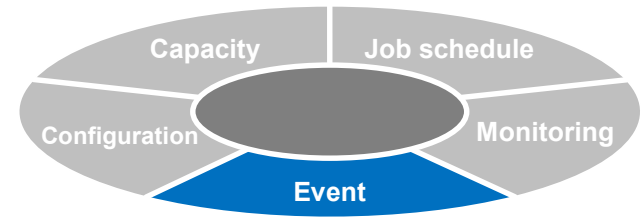


Event (VMware Virtual Machine Deploy Command)

Deploy a virtual machine from the VMware template

Via vCenterServer, it is possible to deploy (change settings for) a virtual machine from the VMware template. Utilizes without modification “vSphere SDK for Perl,” which is used in the existing virtualization function.

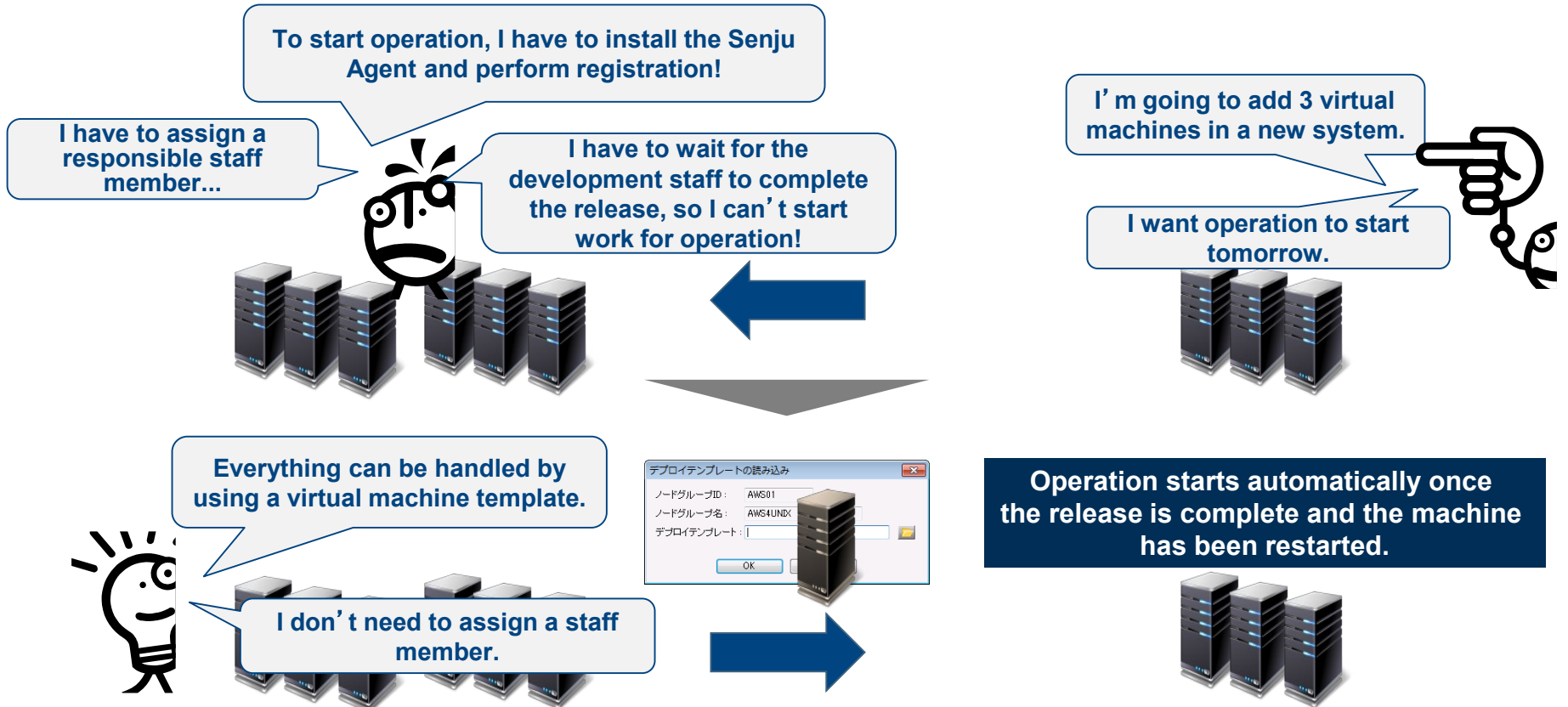


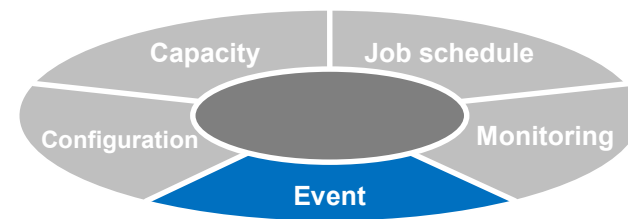


Event (Auto Scale)

Automatic registration of Senju Agent and Senju Sensor through combination with runbook automation

Automatically start operation using Senju via runbook automation



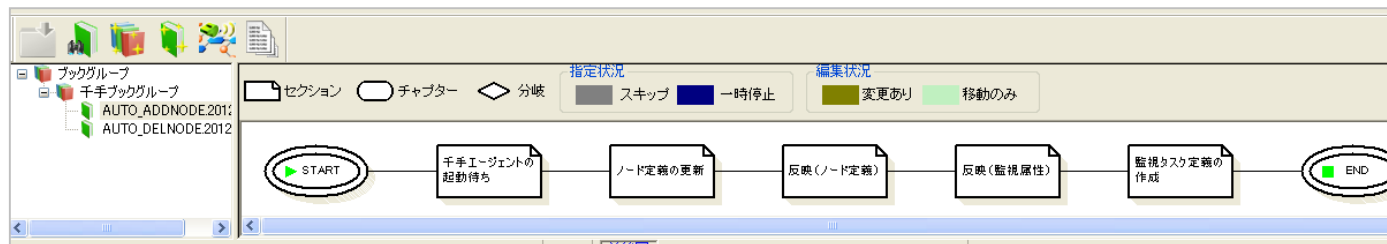
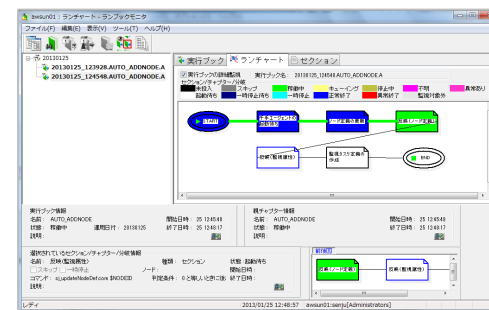
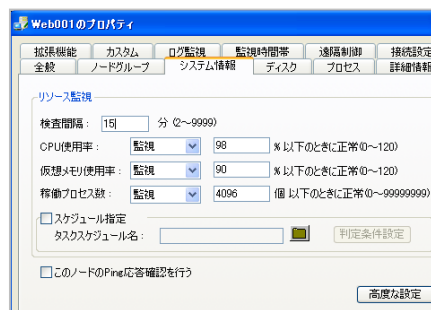
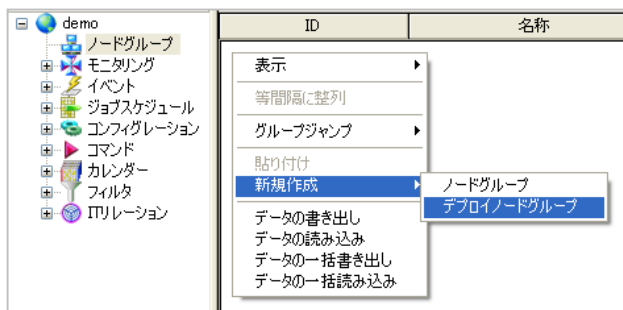
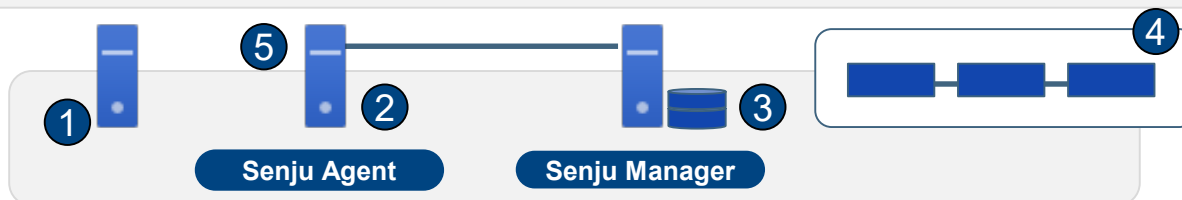


Event (Auto Scale)

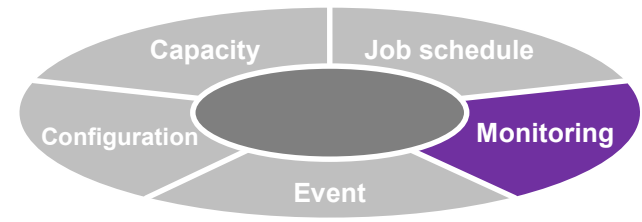
Automatic registration of nodes

- Machine image is copied; automatically registered as a management-target node when the OS is started.
- Registration/deletion as a management-target node is possible simply by executing the command at the management-target node.
- Reduces the load of initial configuration for cloud and virtual machine environments.
- Also supports operation in which authority for infrastructure staff and operation staff is separated due to internal controls.

- Copy image, start machine.
- Start the Senju Agent and the node registration command is automatically executed only when performing initial startup.
- Accept node registration command, start runbook, create node definition.
- Set node properties in runbook, update (node definition), execute update (monitoring attributes).
- Start monitoring as a management-target node.



Book definitions are prepared in advance



Monitoring

監視中ノード

- 正常: 1
- 異常: 0
- 停止: 3 合計: 4

監視対象外ノード

- 監視時間帯外: 0
- 特別監視対象外: 0
- その他監視対象外: 11 合計: 11

ノードID	ノード名	状態	CPU	仮想メモリ
sjbeta16	運用管理サーバ	稼働中・正常	0%	3556MB/

ディスク一覧

名称	状態	監視動作	全体	使用率	使用量	未使用量	付加情報
/	警告	監視中	127267MB	38%	45749MB	75046MB	/dev/mapp... 2
/boot	正常	監視中 - 監視中 - N/A	476MB	24%	107MB	N/A	/dev/sda1 2
/dev/shm	異常	監視中 - 監視中 - N/A				N/A	2

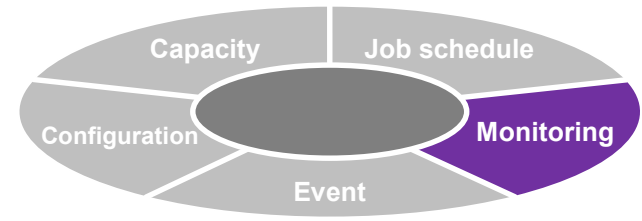
詳細

名称: / 取得日時: 2015/12/07 19:17:56

付加情報: /dev/mapper/vg00-lv_root 全体: 127267 MB

タスクスケジュール名:

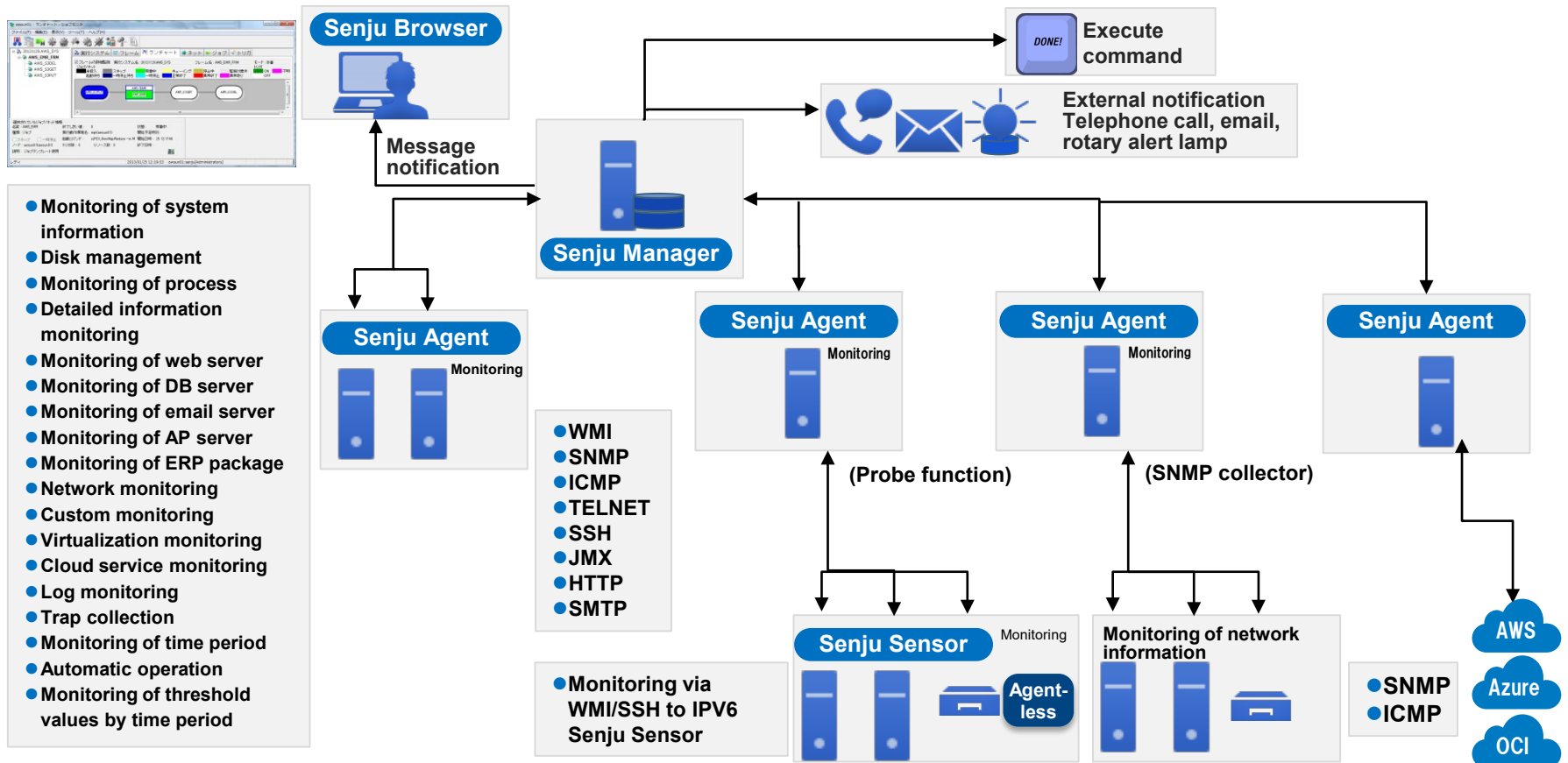
判別条件	状態	監視動作
使用率: 38 % 90 %より大きいときに異常, 30 %より大きいときに異常, 10	警告	監視中
使用: 45749 MB 100000000 MBより大きいときに異常, 10	正常	監視中
未使用: 75046 MB 100 MBより小さいときに異常, 1000 MB	正常	監視中

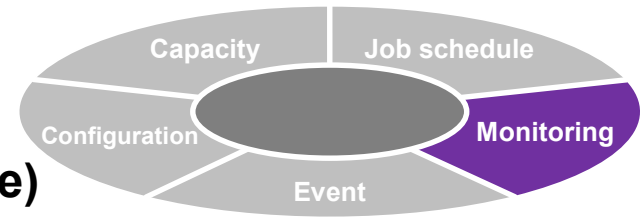


Monitoring (Overview)

Overview of monitoring

- Increases the monitoring efficiency for integrated monitoring/control business systems and enables stable operation for the multiple servers on the network and for application groups operated on the server.

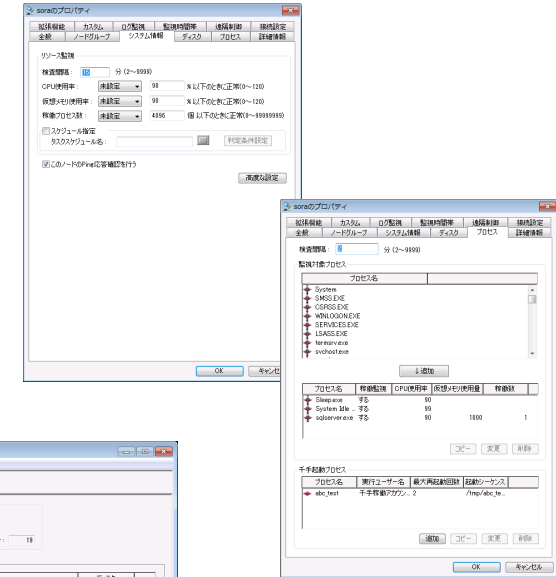




Monitoring (Monitoring Settings, Monitoring Console)

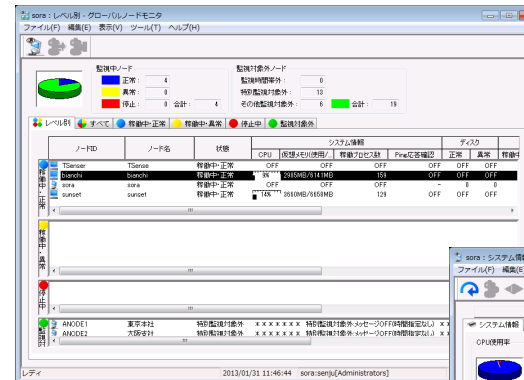
Monitoring settings

- Set items to be monitored, **“warning threshold values,”** monitoring schedules, etc.
 - In addition to notifying on the message monitor, settings can also be specified to send email notifications and execute commands when trouble is detected.
 - For when Telnet/SSH is used to perform monitoring and when omitting all parameters for connection information of the monitoring task, added a function to perform monitoring by using connection settings information for the specified node.
- (When copying monitoring settings to multiple nodes, it is no longer necessary to change connection information for all monitoring tasks for each node. This makes it possible to efficiently specify settings for monitoring.)



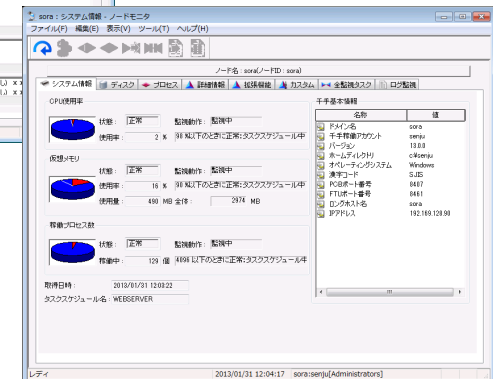
Global node monitor

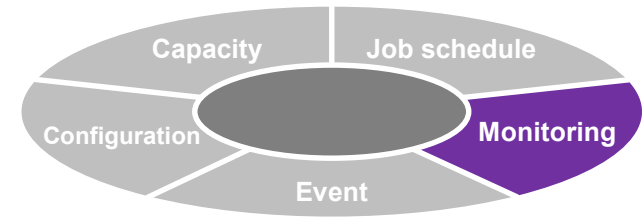
- Summarizes and lists the operation status for multiple nodes.
- Displayed by level (currently operating—normal, currently operating—error, stopped, not being monitored).
- List contents can be written to a file and sent by email.
- If a virtual machine is used for the Senju Sensor or Senju Agent, it is possible to refer to information of the virtual server host which is being operated by that virtual machine.
- For the node of a virtual server host, refer to the virtual server information which is operated by that host.



Node monitor

- Display detailed information for nodes which are currently operating.
- In addition to system information, disk, process, and detailed information, the displayed monitoring information also includes the extension function (Extension) customization and log monitoring.
- List contents can be written to a file and sent by email.





Monitoring (Log Monitoring/Event Log Monitoring)

Use advanced filter settings to monitor the text logs and event logs which are output by the application and OS.

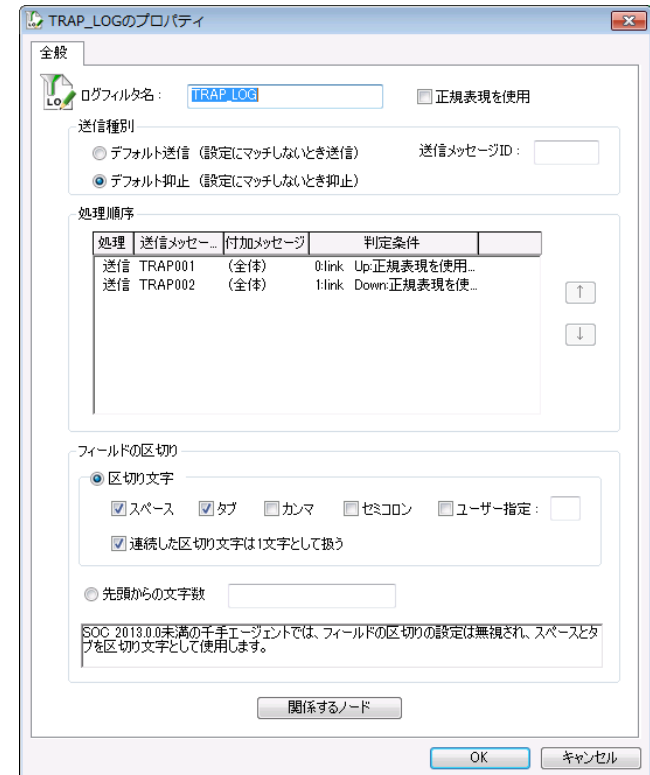
Also supports agentless monitoring.

Filter items for log monitoring/event log monitoring

- For the log monitoring filter, provides a wide range of functions which support various formats.
- (extension of target fields, enhancement of division settings, segmentation of regular expression targets, easy settings for conditions, etc.)

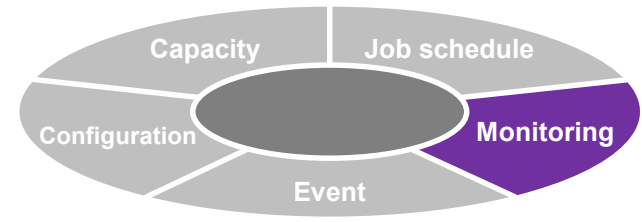
Filter switch function for log monitoring/event log monitoring

- From the command line, immediately switch the filter used for log monitoring.



For a variety of application logs, enables extraction and monitoring for only the required information using the log filter.

Monitoring (Log Monitoring Origin Conversion, Support for Extended Regular Expressions)

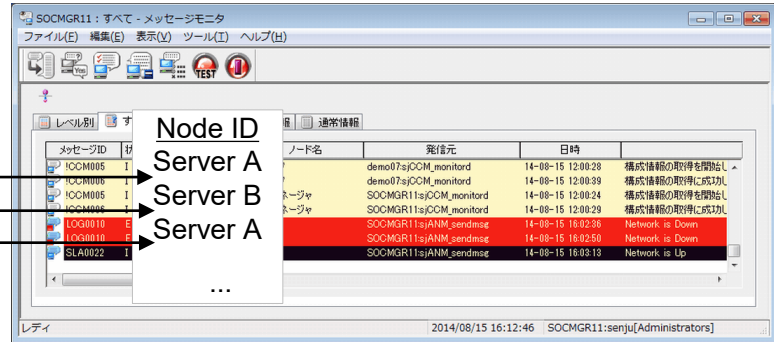


Log monitoring origin node conversion

- Treat the specified column within the log file as a node ID, replace with the Senju Message origin node ID, and send the message.

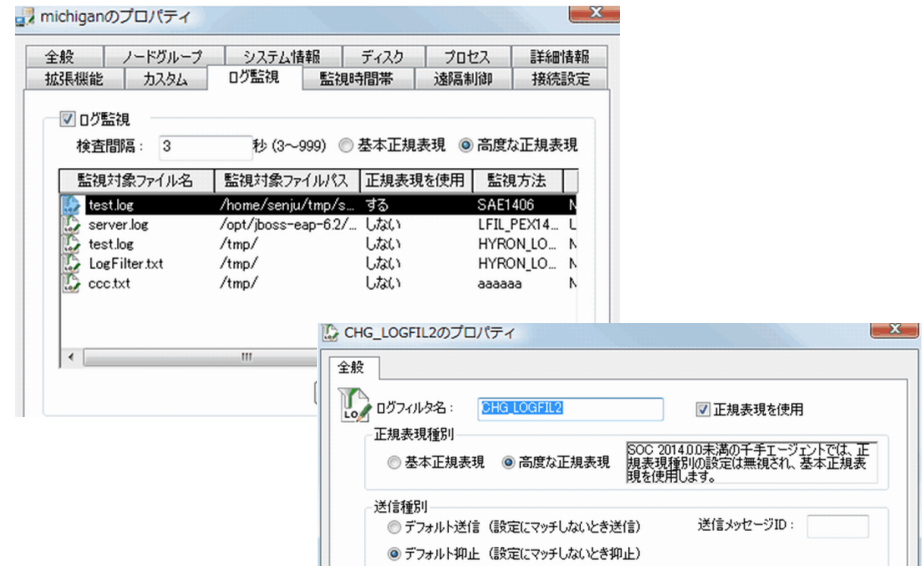
Monitoring target log file

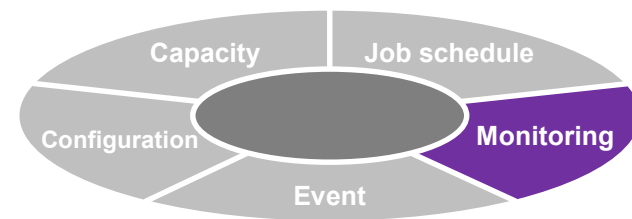
1st column	2nd column	3rd column
000001	Network is down	Server A
000002	Network is down	Server B
000003	Network is Up	Server A
...



Support for extended regular expressions

- In addition to basic regular expressions for log monitoring, message actions, etc., also supports extended regular expressions.
- Enable correct judgment for target character strings which include multi-byte characters

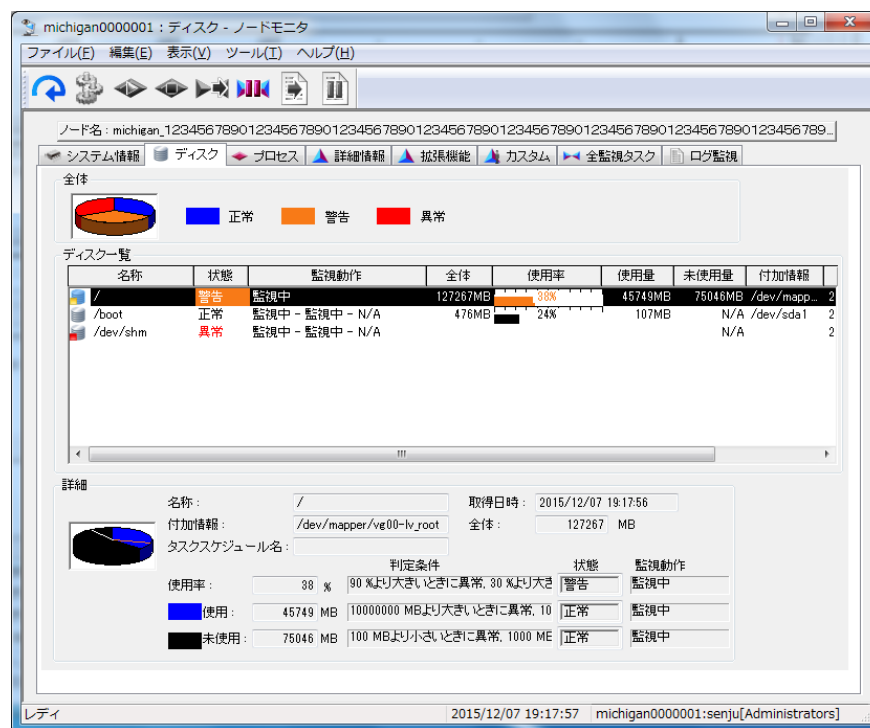
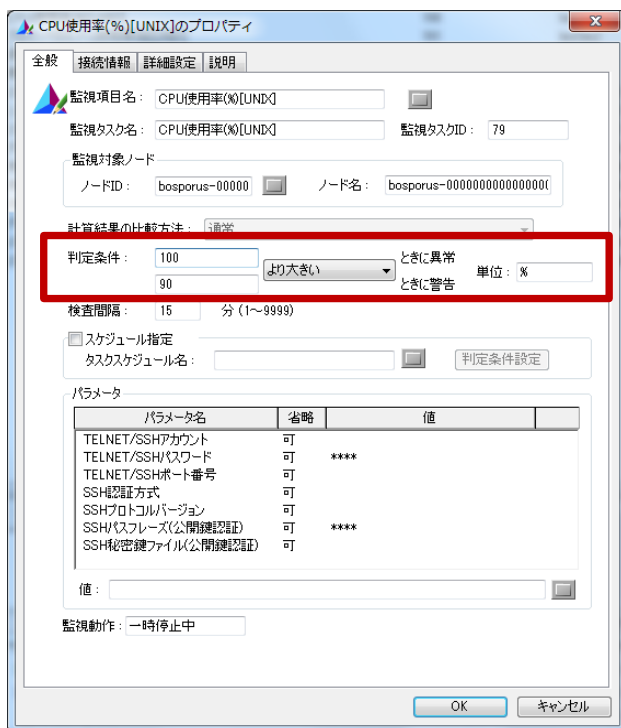


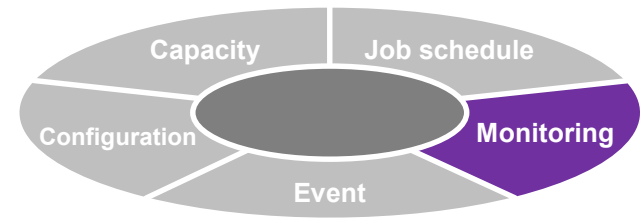


Monitoring (Warning Status/Setting of Warning Threshold Values)

Added a “Warning” status to the monitoring task and added a function for setting the warning threshold value in the monitoring definition. For 1 monitoring task, enables monitoring using 2 levels

2 levels of monitoring can be performed depending on the level of urgency and the necessity of response.





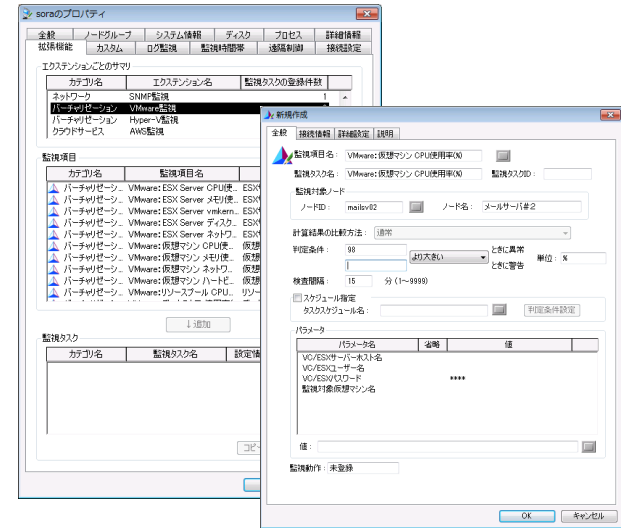
Monitoring (Support for Virtualization)

Virtualization monitoring (Extension)

- Monitoring of resource information for the virtual server host and virtual machine of VMware and Hyper-V (CPU utilization of ESX server host , memory utilization of virtual machine, etc.)
- Monitoring results are displayed on the global node monitor/node monitor, and a message is sent in the event of trouble.

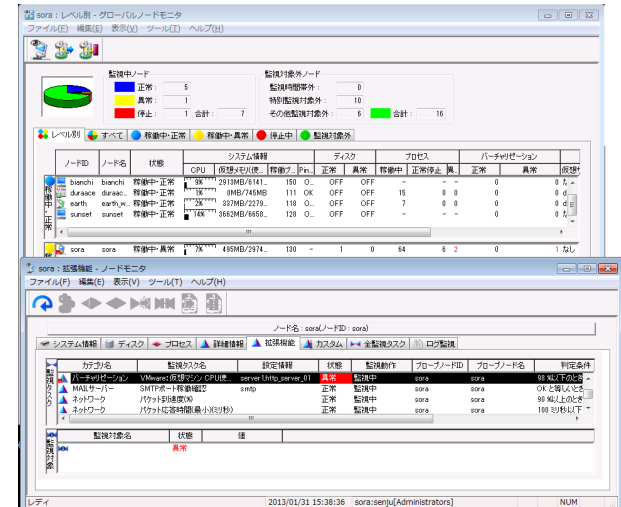
Immediate acquisition of virtual platform relation information

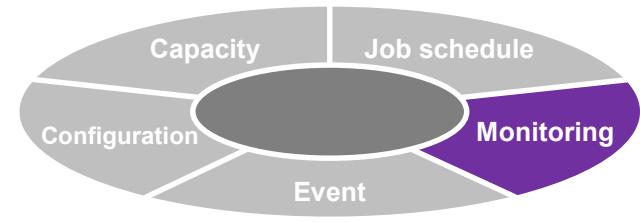
- Enables updating of managed information to the latest information via operation of the Senju Browser.
- Enables immediate confirmation for any changes to the link between the virtual server and virtual machine (for example, live migration, etc.)



Refer to virtual information at the global node monitor

- At the global node monitor, refer to information of the virtual server host on which the virtual machine is operating.
- For the node of a virtual server host, enables reference to the virtual server information which is operated by that host.
- In the event of trouble at the virtual platform, the scope of effect can be ascertained immediately at the global node monitor.
- Even more detailed judgment is possible at the node monitor.

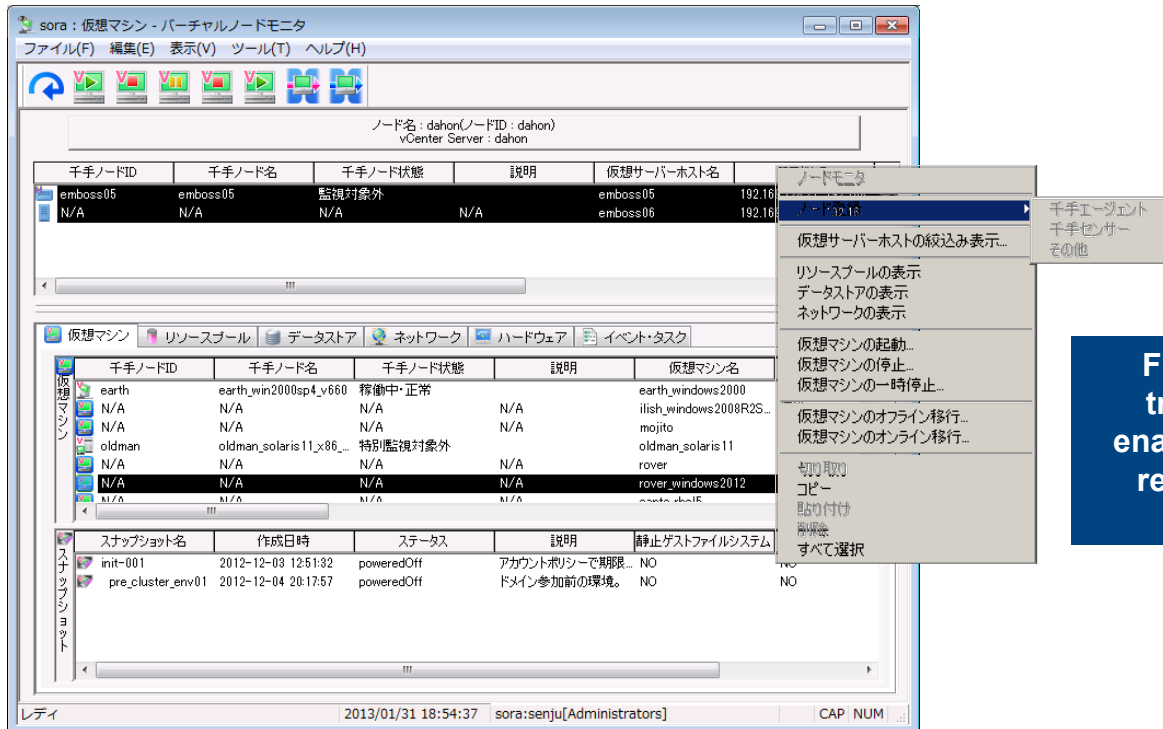




Monitoring (Support for Virtualization)

Virtual node monitor (virtual platform relation management)

- Manage the relationship between the host OS and guest OS for each component.
- For VMware and Hyper-V, displays a view which enables comprehensive management of the operation status and relationship between components configuring the virtual platform (data store, network adapter, virtual machine, etc.) and the Senju Agent/Sensor.
- Display can be performed including the data stores which configure the virtual platform and the nodes related to the network adapter. Supports judgment of which virtual servers are affected by trouble such as insufficient available space in the data store or physical trouble in the network adapter.

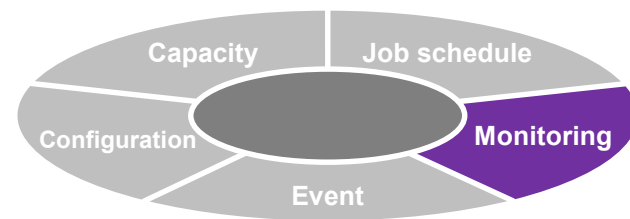


From the node at which the trouble message occurred, enables detailed refinement via resource pools, data stores, networks, etc.

Introduction of Main Sub-systems

Monitoring

(List of VMware Virtualization Environment Monitoring Items/Management Commands)



VMware Monitoring Items	Overview
ESX Server CPU utilization rate (%)	Monitoring of CPU load for ESX server hosts
ESX Server memory utilization rate (%)	Monitoring of memory utilization status for ESX server host
Memory capacity used by ESX Server vmkernel (KB)	Monitoring of memory capacity used by vmkernel of ESX server host
ESX Server disk command wait time (milliseconds)	Monitoring of average command wait time from the guest OS in the ESX server host
ESX Server network utilization rate (KBps)	Monitoring of network utilization rate (total amount of all NIC sent/received data) of ESX server host
Virtual machine CPU utilization rate (%)	Monitoring of CPU load for virtual machine
Virtual machine memory utilization rate (KB)	Monitoring of memory utilization status for virtual machine
Virtual machine disk command wait time (milliseconds)	Monitoring of average command wait time from virtual machine
Virtual machine network utilization rate (KBps)	Monitoring of network utilization rate (total amount of all NIC sent/received data) of virtual machine
Number of heartbeats for virtual machine	Monitoring of number of system heartbeats for virtual machine
Resource pool CPU utilization amount (MHz)	Monitoring of CPU load for resource pool

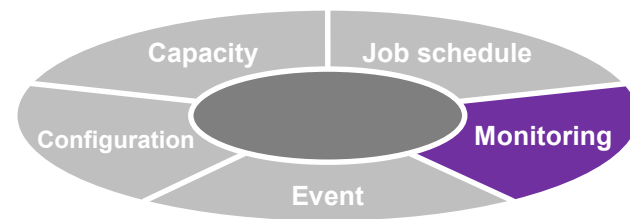
Monitoring Items	Overview
Resource pool memory utilization rate (%)	Monitoring of memory utilization status for resource pool
Data store utilization rate	Monitoring of utilization status for data store
Available data store capacity	Monitoring of usable capacity for data store
Number of disk I/O bytes for ESX Server (KBps)	Monitoring of disk I/O for ESX server host
Number of received bytes for ESX Server network (KBps)	Monitoring of data amount received by the network interface of the ESX server host
Number of sent bytes for ESX Server network (KBps)	Monitoring of data amount sent by the network interface of the ESX server host
Number of disk I/O bytes for virtual machine (KBps)	Monitoring of disk I/O for virtual machine
Number of received bytes for virtual machine (KBps)	Monitoring of data amount received by the network interface of the virtual machine
Number of sent bytes for virtual machine (KBps)	Monitoring of data amount sent by the network interface of the virtual machine

VMware Control Commands	Overview
Restore virtual machine snapshot	Restore certain snapshot for a specified virtual machine.
Create list of virtual machine snapshots	Display list of snapshots for a specified virtual machine.
Shift to online virtual machine	During execution of an action, dynamically re-register a virtual machine which has been registered to a specified ESX server host to a different ESX server.
Delete virtual machine snapshot	Delete certain snapshot or descendant snapshot for a specified virtual machine.
Restore virtual machine current snapshot	Restore current snapshot of a specified virtual machine.
Start virtual machine	Turn on power for a virtual machine which has been registered to a specified ESX server host.
Stop virtual machine	Turn off power for a virtual machine which has been registered to a specified ESX server host.
Create virtual machine snapshot	Create snapshot for a specified virtual machine.
Restore virtual machine snapshot	Restore snapshot for a specified virtual machine.

Introduction of Main Sub-systems

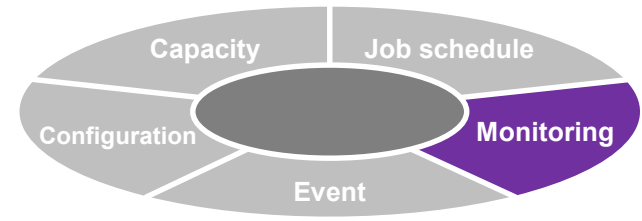
Monitoring

(List of Hyper-V Virtualization Environment Monitoring Items/Management Commands)



Hyper-V Monitoring Items	Overview
Host CPU utilization rate	Monitoring of load for host CPU (Hypervisor CPU and guest OS CPU))
Hypervisor CPU utilization rate	Monitoring of load for Hypervisor CPU
Parent partition CPU utilization rate	Monitoring of load for parent partition CPU (parent partition Hypervisor CPU and parent partition guest OS CPU)
Virtual machine CPU utilization rate	Monitoring of load for virtual machine CPU (virtual machine Hypervisor CPU and virtual machine guest OS CPU)
Virtual machine health status	Monitoring of virtual machine health status
Number of read bytes for memory device of virtual machine	Monitoring of number of read bytes for memory device of virtual machine
Number of written bytes for memory device of virtual machine	Monitoring of number of written bytes for memory device of virtual machine
Virtual network adapter utilization amount	Monitoring of virtual network adapter utilization amount
Virtual switch utilization amount	Monitoring of virtual switch utilization amount

Hyper-V Control Commands	Overview
Refer to list of virtual machine snapshots	Restore the latest snapshot for a specified virtual machine.
Create virtual machine snapshot	Create snapshot for a specified virtual machine.
Restore virtual machine snapshot	Delete snapshot for a specified virtual machine.
Restore virtual machine snapshot (latest)	Restore snapshot for a specified virtual machine.
Delete virtual machine snapshot	Refer to list of snapshots for a specified virtual machine.
Start virtual machine	Refer to virtual switch list of specified HyperV Server.
Shutdown virtual machine	Refer to list of virtual network adapters for a specified HyperV Server.
Acquire list of virtual machines	Shutdown all virtual machines which satisfy the specified conditions.
Acquire list of virtual network adapters	Start all virtual machines which satisfy the specified conditions.
Acquire list of virtual switches	Refer to virtual machine list of specified HyperV Server.
Temporarily stop virtual machine	



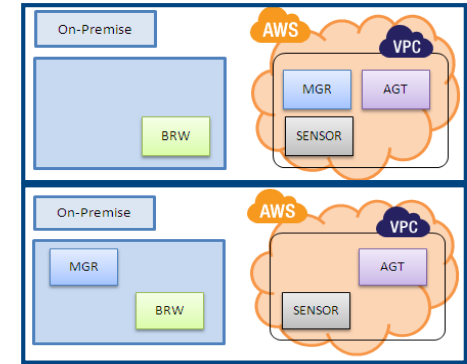
Monitoring (Cloud Support)

Operation support in hybrid cloud environment

- Through various combinations of on-premise/AWS, supports the operation of components for Senju DevOperation Conductor.
- Enables operation in freely assembled environments, without restrictions associated with on-premise or cloud.

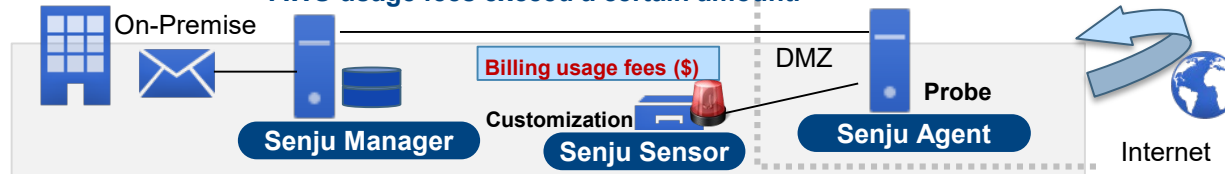
AWS monitoring

- Added monitoring items which monitor resource information of Amazon Web Services.
- Integrated monitoring of on-premise/cloud servers and service operation status.
- Enables AWS resource monitoring through combinations with functions such as message actions, capacity, etc.



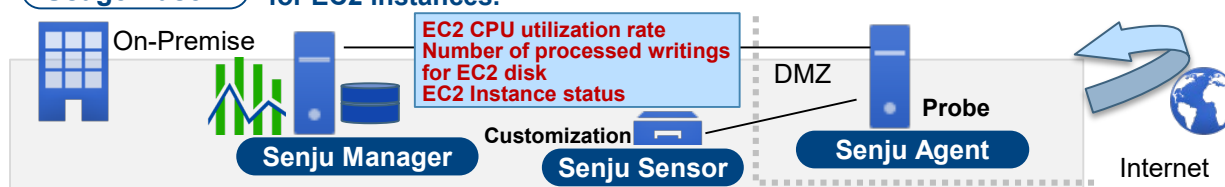
AWS	
Amazon EC2	Amazon SNS
Amazon EBS	Amazon EMR
Amazon ELB	Amazon S3
Amazon SQS	Amazon CloudWatch
Amazon RDS	Amazon Billing

Usage Case 1 Email notification sent when the monthly AWS usage fees exceed a certain amount.



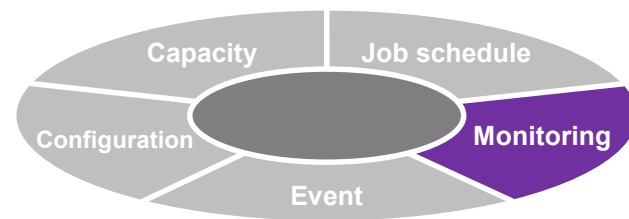
AWS
Amazon Billing

Usage Case 2 Refer to a graph showing the resource history for EC2 instances.



AWS
Amazon EC2

Monitoring (List of Cloud Services [AWS Monitoring])



Supports tag specification for Amazon Web Services monitoring

For monitoring items which monitor information of EC2 and EBS for Amazon Web Services, it is possible to monitor only information of tagged instances by specifying tags as parameters

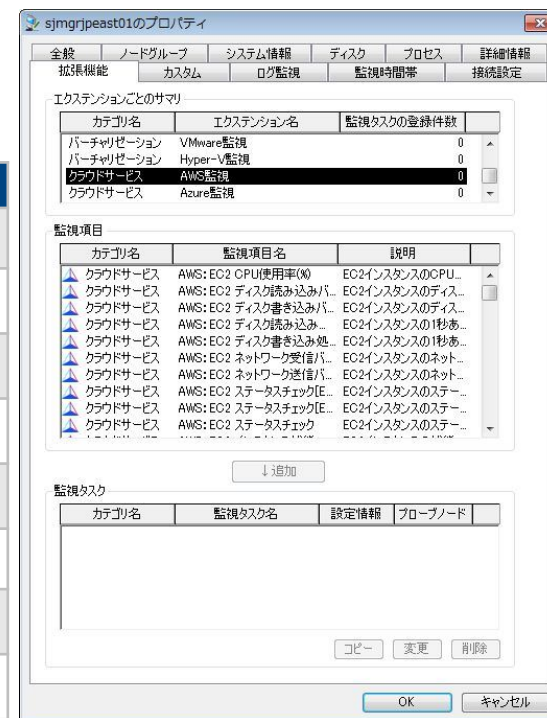
Support for profile of Amazon Web Services monitoring

For monitoring items which monitor information of Amazon Web Services, by specifying profiles, monitoring can be performed using connection information based on profiles

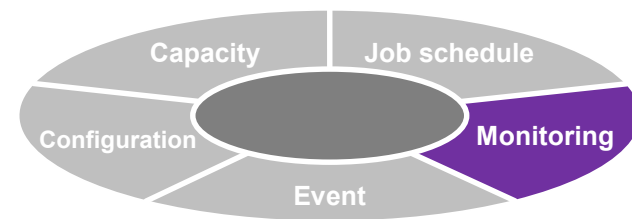
Supports Assume Role for Amazon Web Services monitoring

For monitoring items which monitor information of Amazon Web Services, Assume Role can be used to monitor instance information of different accounts from the management account

AWS Monitoring Items	Overview
AWS: EC2 CPU utilization rate (%)	Monitoring of CPU load for EC2 instance
AWS: Number of read bytes for EC2 disk (KB)	Monitoring of reading amount for EC2 instance disk
AWS: Number of written bytes for EC2 disk (KB)	Monitoring of writing amount for EC2 instance disk
AWS: Number of disk processed readings for EC2 (/secs)	Monitoring of number of disk processed readings per 1 second for EC2 instance
AWS: Number of processed writings for EC2 disk (/secs)	Monitoring of number of disk processed writings per 1 second for EC2 instance
AWS: Number of received bytes for EC2 network (KB)	Monitoring of CPU load for EC2 instance
AWS: EC2 CPU utilization rate (%)	Monitoring of reading amount for EC2 instance disk
AWS: Number of read bytes for EC2 disk (KB)	Monitoring of writing amount for EC2 instance disk
AWS: Number of written bytes for EC2 disk (KB)	Monitoring of number of disk processed readings per 1 second for EC2 instance



*A large number of other monitoring items for AWS monitoring are also available. For details, refer to the attached list of monitoring items



Monitoring (Microsoft Azure [OMS Log Analytics])

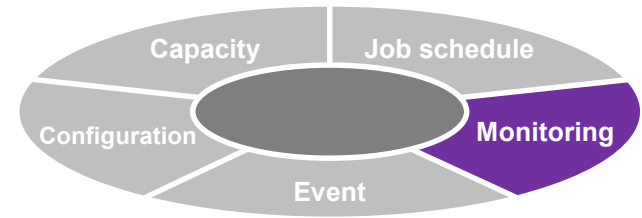
Microsoft Azure monitoring

Azure Monitoring Items	Overview
Azure: Compute Percentage CPU (%)	The percentage of CPU usage by the virtual machine
Azure: Compute Network In (KB)	The number of bytes of incoming traffic received on all network interfaces by the virtual machine (s)
Azure: Compute Network Out (KB)	The number of bytes of outgoing traffic on all network interfaces by the virtual machine (s)
Azure: Compute Disk Read (KB)	The data amount read from disk by virtual machine is monitored
Azure: Compute Disk Write (KB)	The data amount written to disk by virtual machine is monitored
Azure: Compute Disk Read Operations/Sec	The disk read IOPS by virtual machine is monitored
Azure: Compute Disk Write Operations/Sec	The disk write IOPS by virtual machine is monitored
Azure: Compute/ScaleSets Percentage CPU (%)	The percentage of CPU usage in Scale Sets is monitored
Azure: Compute/ScaleSets Network In (KB)	The number of bytes of incoming traffic received on all network interfaces in Scale Sets is monitored
Azure: Compute/ScaleSets Network Out (KB)	The number of bytes of outgoing traffic on all network interfaces in Scale Sets is monitored
Azure: Compute/ScaleSets Disk Read (KB)	The data amount read from disk in Scale Sets is monitored
Azure: Compute/ScaleSets Disk Write (KB)	The data amount written to disk in Scale Sets is monitored

*A large number of other monitoring items for MS Azure are also available. For details, refer to the attached list of monitoring items

Linking to “OMS Log Analytics” function



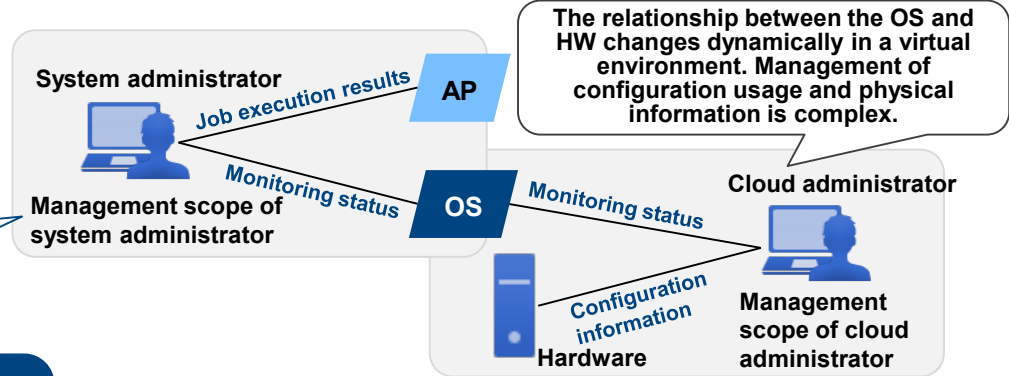


Monitoring (IT Relation Management)

Issues with virtual platforms

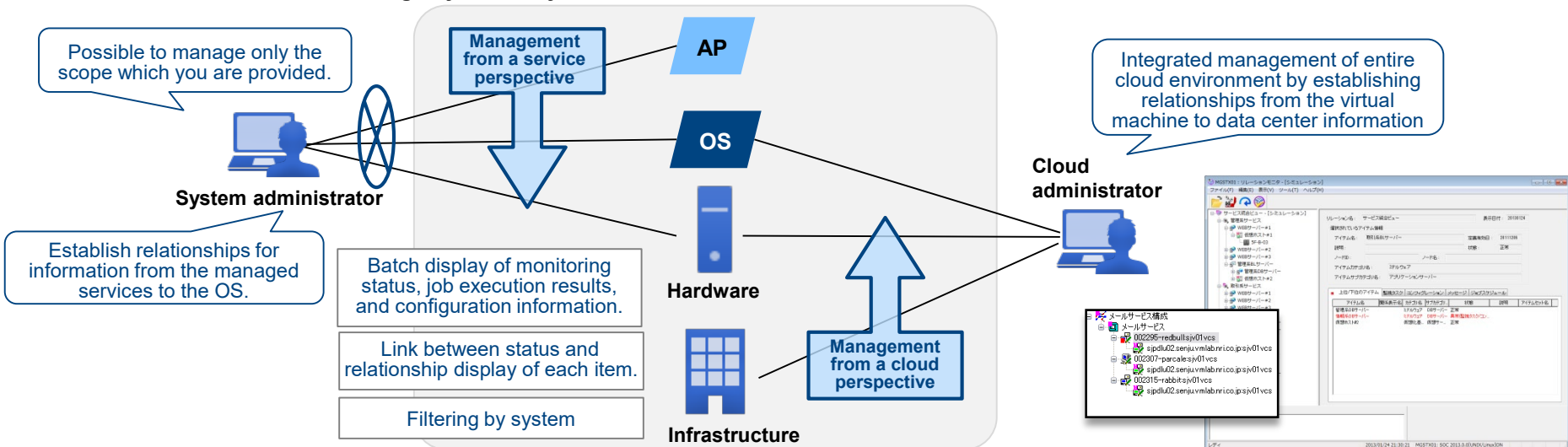
- In the case of a virtual platform, the same platform is used by multiple users.
- Large scope of effect in the event of trouble

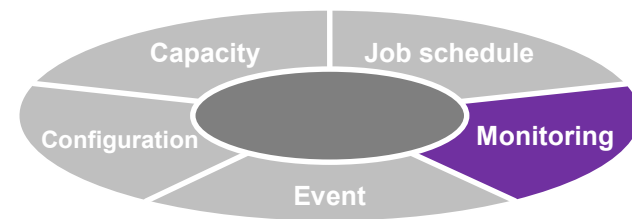
Not possible to link the application and subordinate platform information; the effect on service is unclear.



Overview of "IT relation management" function

- Set elements (services, middleware, OS, network devices, etc.) as items with a hierarchical relationship.
- Easily assess the superior/subordinate relationship for each item, and quickly identify the causes and scope of effect in the event of trouble.
- Automatic configuration of relationships and configuration information in virtual environments. Latest information can be used to confirm virtual environments which change dynamically.





Monitoring (IT Relation Management)

Confirm information from relation monitor

- When specifying a relation definition from the relation monitor, from that definition, it is possible to check the occurrence of trouble messages, the progress of the job schedule, etc. for the actual relation tree and its selected configuration items.

sora : リレーションモニタ
ファイル(E) 編集(E) 表示(V) ツール(I) ヘルプ(H)

リレーション名: 下位から上位へ 表示日付: 20130212

選択されているアイテム情報

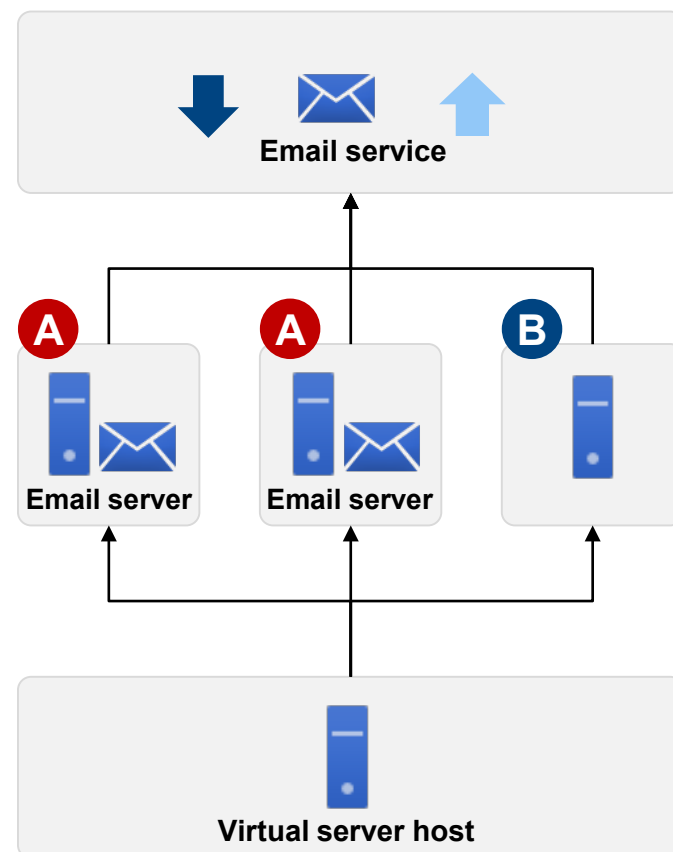
アイテム名: 定義有効日:
説明: 状態: 正常
ノードID: ノード名:
アイテムカテゴリ名:
アイテムサブカテゴリ名:

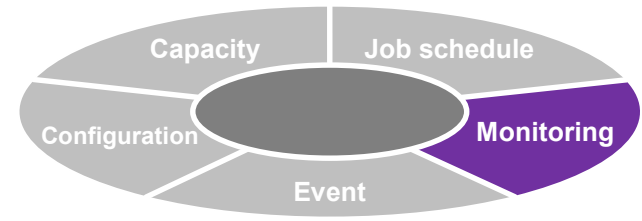
上位/下位のアイテム 監視タスク コンフィグレーション メッセージ ジョブスケジュール

アイテム名	関係表示名	カテゴリ名	サブカテゴリ...	状態	説明	アイ...
earth_windows2000.da...		OS	Windows	正常		
arena_windows2003R...		OS	Windows	正常		
rover_windows2012.da...		OS	Linux	正常		

アウトプットビュー
2013/02/12 14:47:00 ジョブサービスグループ情報取得コマンド(//sora)
正常終了

レディ 2013/02/12 14:47:27 sora:senju[Administrators]

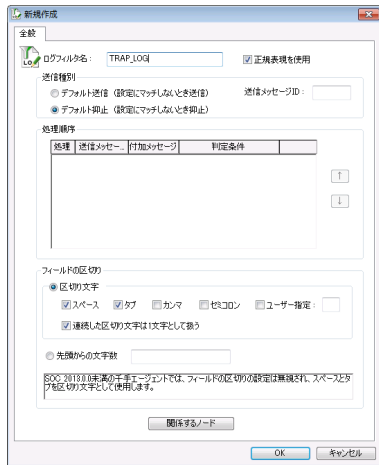




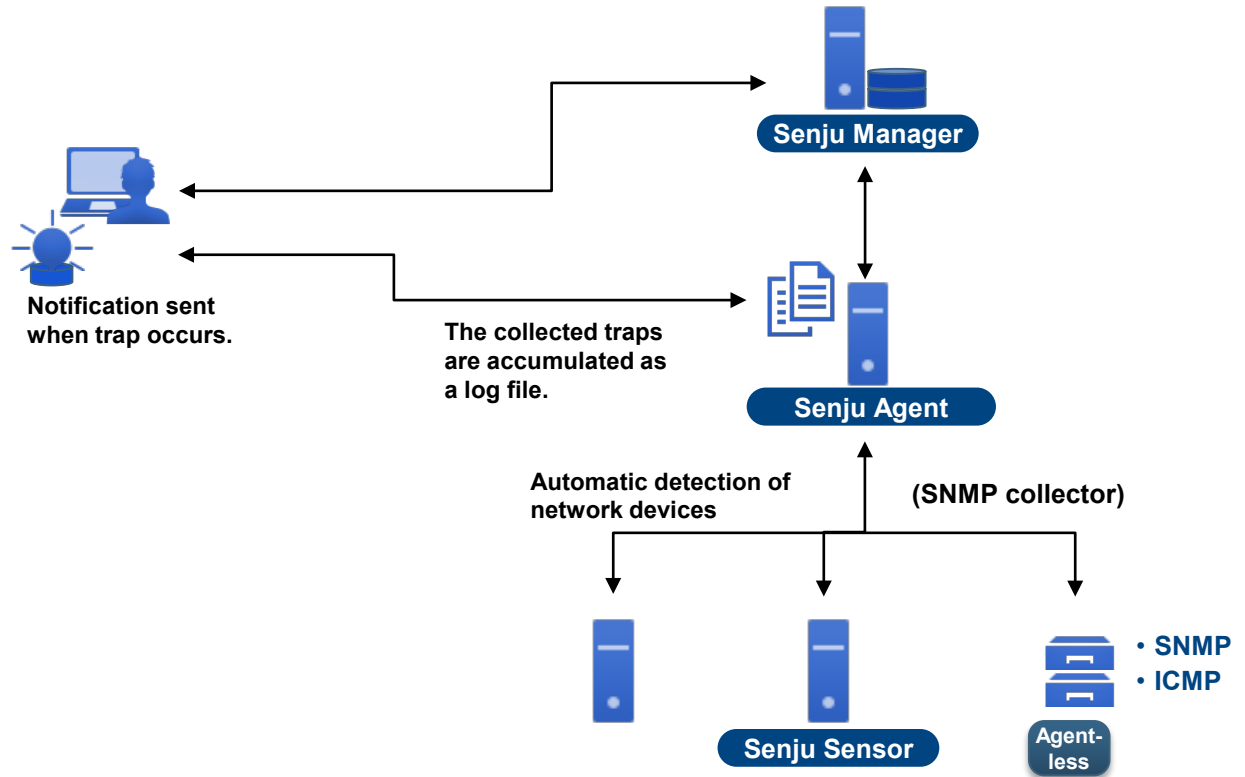
Monitoring (Trap Collection)

Trap collection (Extension)

- Collect traps from each node via the SNMP collector (Senju Agent).
- Ascertain the device status by analyzing/monitoring the collected trap information.
- Ascertain device information by converting/analyzing/monitoring the character code for collected trap information.



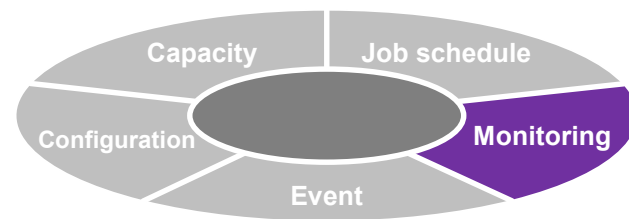
Use the accumulated log files to set trap monitoring.



Introduction of Main Sub-systems

Monitoring (Main Monitoring Items)

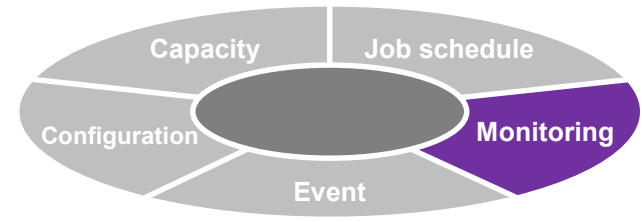
*For details, refer to the monitoring item list



Monitoring items (Base)	Details				
Monitoring of system information	Monitoring of utilization rate for CPU and virtual memory, monitoring for resources of the operating process number				
Monitoring of disk	Monitoring of disk utilization rate, utilization amount, and available space				
Monitoring of process	Monitoring of resource utilization status, error stoppage, etc. for processes of applications and middleware being operated on the system				
Monitoring of detailed information	<ul style="list-style-type: none"> Physical memory utilization rate CPU utilization rate/memory utilization amount for each parent process CPU utilization rate/memory utilization amount by n superior processes Operation status of Windows services 	<ul style="list-style-type: none"> Number of processes and threads awaiting execution File Disk I/O status 	<ul style="list-style-type: none"> Monitoring of number of operations for processes with the same name Status of time alteration required for command execution System port operation status 		
Monitoring of network	Monitoring of packet reachability and response time using ICMP; network monitoring such as information related to sending/receiving data using SNMP				
Monitoring of customization	User monitors information by creating arbitrary monitoring items using commands, WMI, SNMP, JMX, etc.				
Monitoring of log	Monitoring of Windows event log and text-format log files which are created by other applications on the management-target node				
Monitoring of time period	Using the time period monitoring function, define the monitoring schedule for the management-target node by day and time period, and then monitor				
Monitoring of threshold values by time period	For each monitoring item, automatically switch the stop/start of monitoring for each time period, change the threshold value, and change the inspection interval				
	<ul style="list-style-type: none"> System information Monitoring of DB server Monitoring of virtualization 	<ul style="list-style-type: none"> Monitoring of disk Monitoring of email server Monitoring of customization 	<ul style="list-style-type: none"> Monitoring of process Monitoring of AP server 	<ul style="list-style-type: none"> Monitoring of detailed information Monitoring of ERP package 	<ul style="list-style-type: none"> Monitoring of web server Monitoring of network

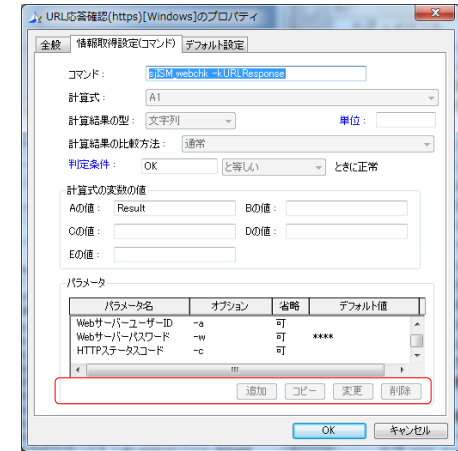
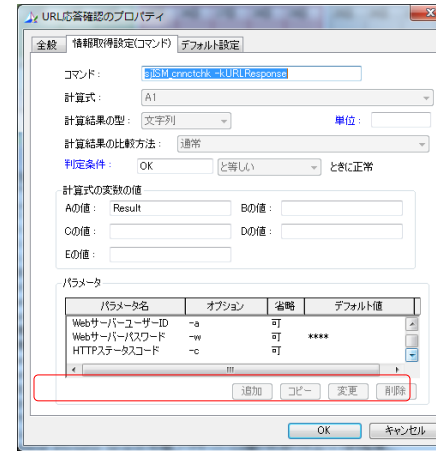
Monitoring items (Extension)	Details				
Monitoring of web server	Monitoring of web servers, including confirmation of URL response/URL response time, monitoring of Apache, monitoring of IIS, etc.				
Monitoring of DB server	Monitoring of database servers for Oracle, SQL Server, DB2 UDB, and PostgreSQL				
Monitoring of email server	Monitoring of time required for response confirmation at ports and sending/receiving email for SMTP, POP3, IMAP; monitoring of email server for Exchange Server				
Monitoring of AP server	Monitoring of application servers for WebLogic, WebSphere, JBoss, .and NET Framework				
Monitoring of ERP package	Monitoring of mySAP				
Virtualization monitoring	Monitoring of VMware/Hyper-V				
Trap collection (SNMP collector)	Trap information is collected from the management-target node by the Senju Agent which has been specified as an SNMP collector.				

Monitoring (Enhancement of URL Response Monitoring, OS Operation Date Monitoring)



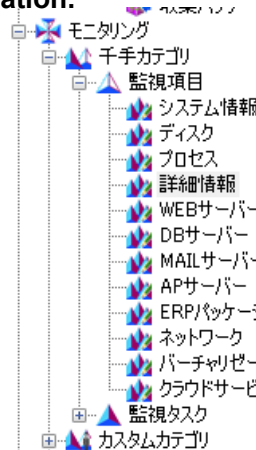
Enhancement of URL Response Monitoring

- For the response code from the connection destination web server, enables judgment as normal using an arbitrary number.



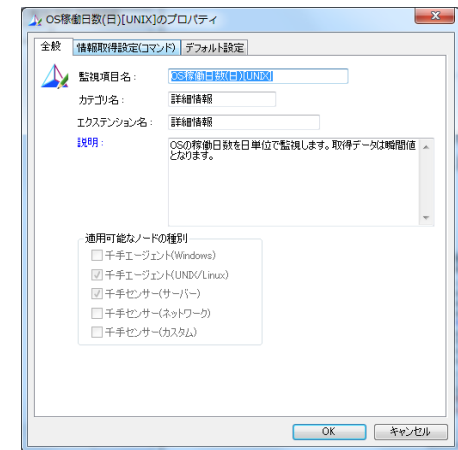
Support for OS Operation Date Monitoring

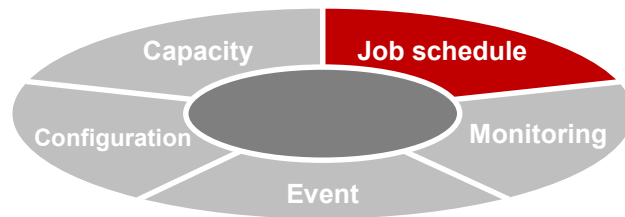
- Added a monitoring item for judging the status based on the number of days of OS operation.



- メモリ使用量TOP(n)プロセス(MB)[UNIX]
- メモリ使用量TOP(n)プロセス(MB)[WMI]
- ディスクI/O数(/秒)[UNIX]
- ディスクI/O数(/秒)[WMI]
- ディスクI/Oバイト数(KB/秒)[UNIX]
- ディスクI/Oバイト数(KB/秒)[WMI]
- ディスクI/O待ちプロセス数(/秒)[UNIX]
- ディスクI/O待ちプロセス数(/秒)[WMI]
- ディスクI/O WAIT率(%)[UNIX]
- ディスクI/O所要時間(秒)
- ディスクI/O書き込み密度(回/秒)
- ディスクI/O読み込み密度(回/秒)
- ディスクI/O書き込みスループット(MB/秒)
- ディスクI/O読み込みスループット(MB/秒)
- OS稼働日数(日)[UNIX]**
- OS稼働日数(日)[WMI]

メモリを最も使用し、メモリを最も使用し、1秒間に発生したディスクI/O数、1秒間に発生したディスクI/O数、1秒間に発生したディスクI/O待ちプロセス数、1秒間に発生したディスクI/O待ちプロセス数、1秒間に発生したディスクI/O WAIT率、指定されたファイルのディスクI/O所要時間、指定されたファイルのディスクI/O書き込み密度、指定されたファイルのディスクI/O読み込み密度、指定されたファイルのディスクI/O書き込みスループット、指定されたファイルのディスクI/O読み込みスループット、OSの稼働日数をEの稼働日数をE



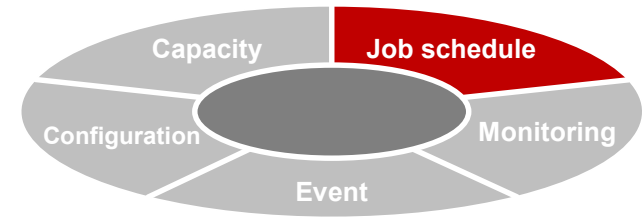


Job schedule

The image displays several windows from the 'sora' job monitoring system:

- Top-Left Window:** 'sora : ランチャート - ジョブモニタ'. It shows a job flowchart for '20130125.夜間バッチ処理'. The flow includes steps like '起動前処理', '起動前処理1', and '起動前処理2'. A legend indicates job states: 未投入 (grey), スキップ (grey), 稼働中 (green), キャンセル (yellow), 起動待ち (black), 一時停止待ち (blue), 一時停止 (cyan), and 正常終了 (blue).
- Top-Right Window:** '稼働日確認'. It displays a calendar grid for job execution dates, with filters for '稼働日' (execution date) and '非稼働日' (non-execution date).
- Bottom-Left Window:** 'sora : 統計情報 - ジョブレポート'. It shows a bar chart of execution times for various jobs, with a legend for 'フレーム' (frames).
- Bottom-Right Window:** 'MANAGERPOOLのプロパティ'. It shows configuration details for the 'MANAGERPOOL' job, including '稼働時間' (execution time) and '実行環境名' (execution environment name).

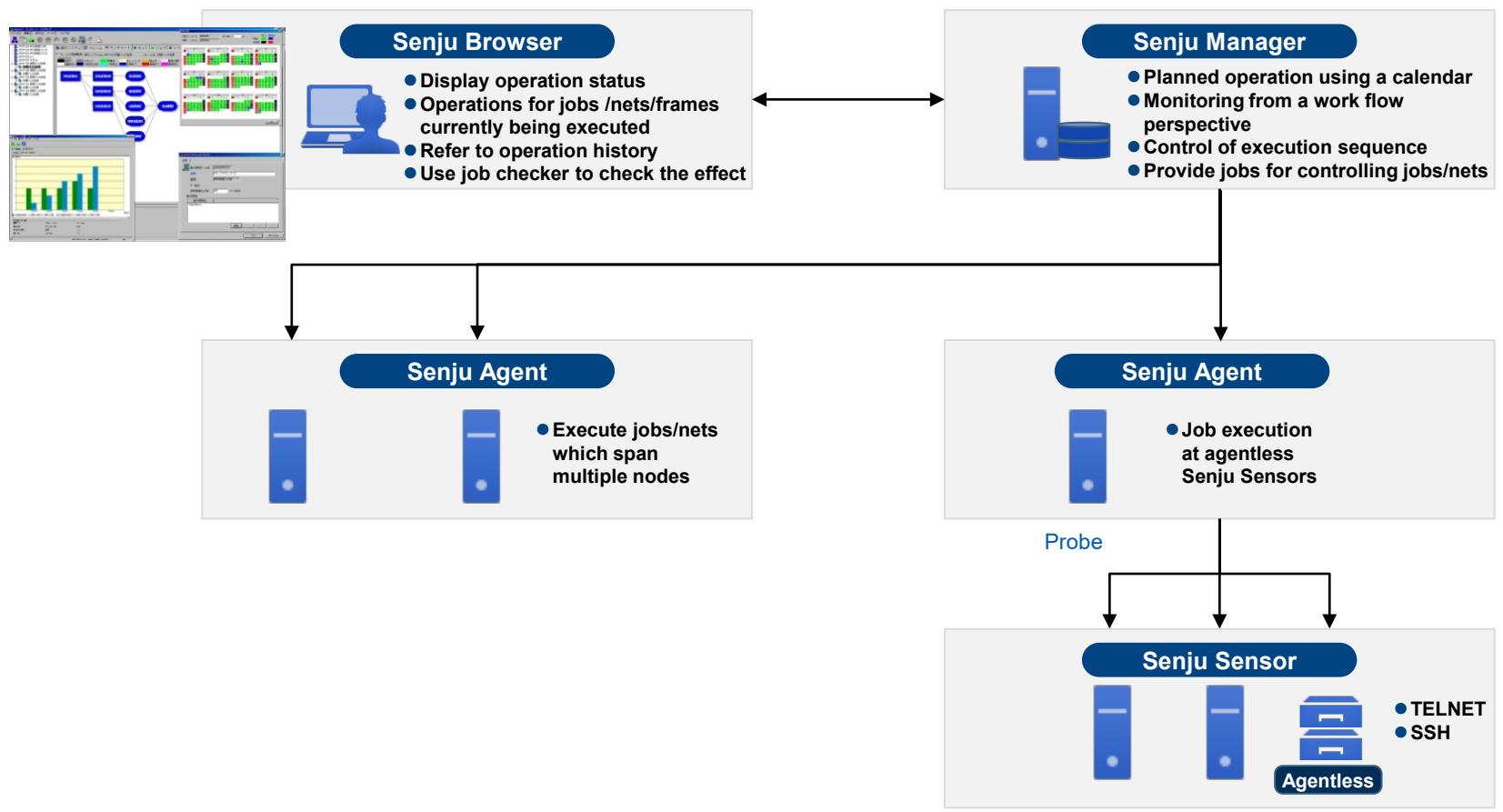
Blue callouts and arrows connect the workflow steps in the top-left window to the configuration and calendar views, indicating how the job schedule is managed and monitored.



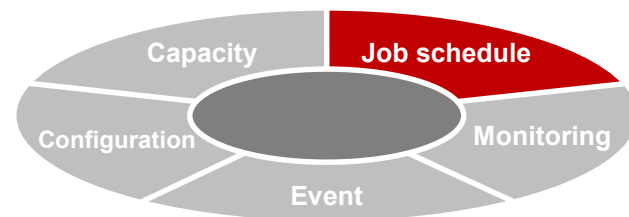
Job Schedule (Overview)

Overview of job schedule

- Performs uniform management of jobs operated by the business system and controls execution.
- Enables planned operation of jobs by creating a calendar with defined operation dates.



Introduction of Main Sub-systems



Job Schedule (Flexible Job Scheduling)

Monitoring of delays

- Enables flexible monitoring of delays, including start/stop time, required time, etc.

Start conditions

- Flexible settings such as calendars, triggers, time specifications, resources, etc.
- Depending on the completion code, it is possible to branch by judging starting/skipping for subsequent nets
- Possible to set the conditions "XX or greater," "greater than XX," "smaller than XX," "equal to XX," or "different than XX" as judgment conditions for the job completion threshold value
- By using the job start command, possible to apply environmental variables and start

Branch net during errors

- Automatic recovery at time of error completion

Automatic monitoring of delays

- Past operating results used in automatic detection of delays for long-run jobs
- If the start time for jobs/nets waiting to be skipped has been delayed, a message is sent to notify that the jobs/nets have not been skipped
- When a job delay has been detected via monitoring for delays, it is possible to automatically execute actions for that job and subsequent jobs

Monitoring of required time

- Monitoring to check that the job, net, or frame has been completed within the specified required time. When not completed, a trouble message is sent.
- Possible to enhance monitoring of required time for repeat nets, and to set monitoring for each repeat

Specification of start time

- Function for starting jobs/nets at the specified time.
- Even when start conditions (other previous jobs/nets, triggers, etc.) have already been satisfied, the target jobs and nets are not started until the specified time.

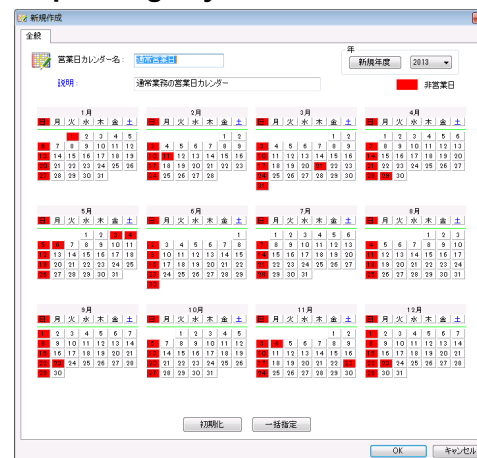
Business day calendar

- Calendar for specifying business days and non-business days for each day

Operating day calendar

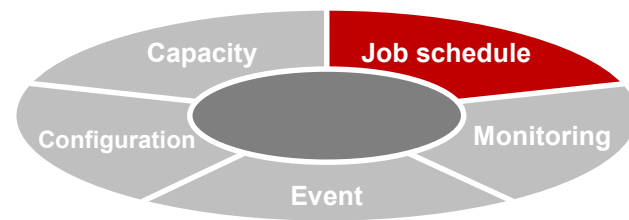
- Possible to specify the applied valid term
- Detailed settings of operating conditions and non-operating conditions based on the business day calendar.
- Jobs/nets/frames are operated based on the operation day calendar.
- Possible to associate a single operating day calendar with multiple jobs.

Operating day calendar



Introduction of Main Sub-systems

Job Schedule (Server Virtualization, Configuration Management, Change History)



Operating environment

- Possible to create virtual groups of nodes and to perform load balancing for jobs
- By specifying the node group, automatic allocation is performed so that the number of operating jobs within groups is equal
- By specifying the probe (Senju Agent), it is possible to execute jobs at Senju Sensor

Create list of related items

- Ascertain the scope of effect due to definition data which has not yet been used and to configuration changes
- Added a function for jumping from the related items list screen to a copy of the target item and to the target item

Confirm update history for job definitions

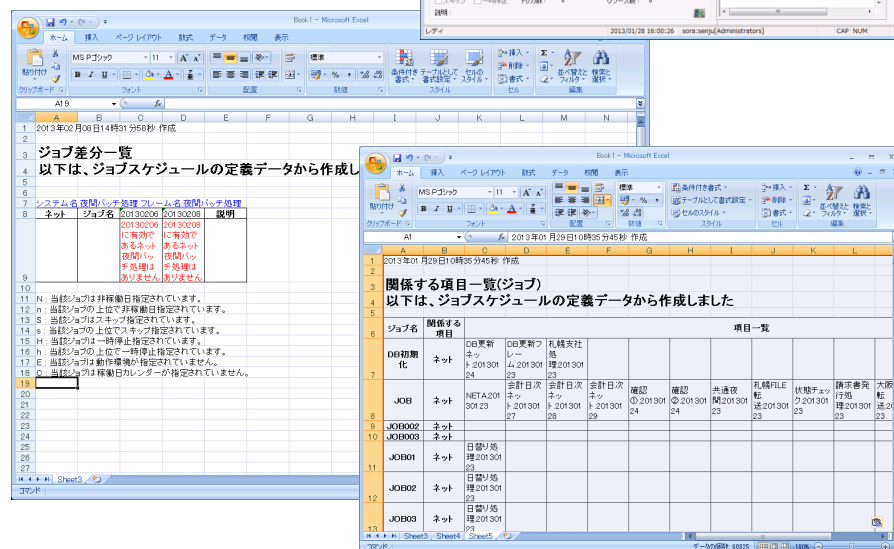
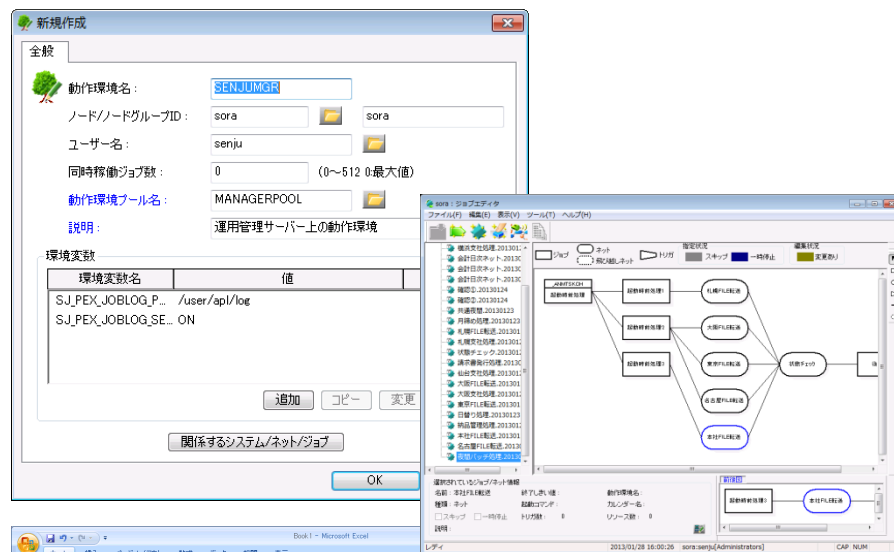
- Possible to track the change history for definitions

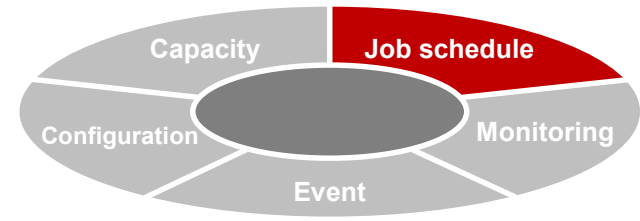
Confirm operation information

- Possible to track invalid/mistaken information for operation

Create list of job operation dates and list of job differences

- Load data from the job operation date list into spreadsheet software and create a list.
- Create a list of differences for two dates specified from the definition data.





Job Schedule (Operation Control)

Resource

- Defined to control operation of jobs and nets
- By waiting until resources can be acquired when starting jobs and nets, control jobs and nets which operate exclusively or simultaneously
- Possible to change consumption values for each resources in jobs and nets. Also, within the maximum value for resources, possible to make multiple jobs and nets acquire resources before starting

Commands during normal completion/commands during errors

- Start the specified command when the frame, net, or job is completed normally, or when an error occur

Automatic skipping during an error/automatic re-running during an error

- When a job ends in an error, this function is used to automatically skip the job and end the operation, or to automatically re-run the job

File wait trigger

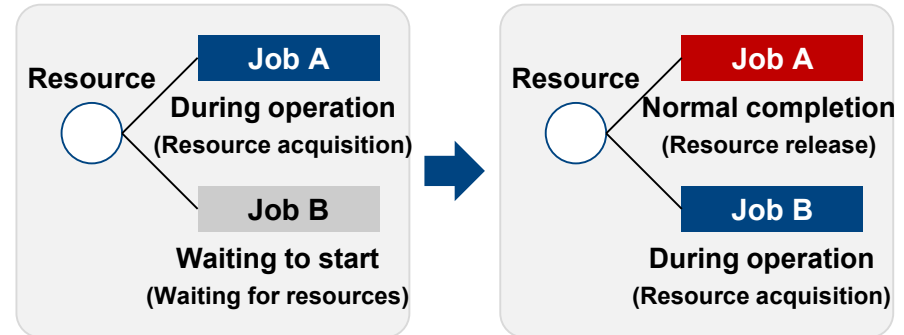
- Trigger for which start conditions are satisfied (trigger which turns on) when a certain file has been generated
- Used in cases such as when you want to start the subsequent job/net after file generation
- **For file wait triggers, a regular expression can be used to specify a file**

Event wait trigger

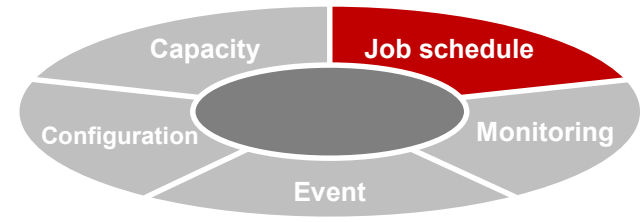
- Trigger which waits to start the subsequent job/net until the trigger send command has been issued
- Used in cases such as when you want to start the subsequent job/net after a specific event has been issued

Frame relation trigger

- Trigger for which start conditions are satisfied (trigger which turns on) when a certain frame/net/job has been completed normally (or has been skipped and completed).
- Used in cases such as when you want to start the subsequent job/net after a different frame/net/job has been completed normally (or has been skipped and completed).



Exclusivity of jobs and nets which you don't want to operate simultaneously can be realized, thus avoiding competition for resources



Job Schedule (Enhancement of Trigger Function)

Function for associating event wait/file wait triggers

- Preceding frames/nets/jobs can be associated with the trigger definition and jumping is possible from the link source display
- Clarifies the related job net and the preceding relationship, and improves the efficiency of job operation management

Function for related trigger reference from the link source job/net

- At job editor, possible to refer to trigger information used as the link destination from the job net
- A warning can be displayed when deleting a job net definition. This prevents accidents in which the link destination trigger does not turn on.

Function for checking the trigger reference destination

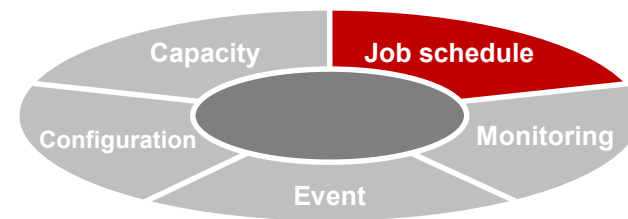
- Added a presence check function for the job net definition which is set in the trigger reference destination

Enhanced function for trigger detection

- At job editor, detect triggers used in the net from the run chart

Similar to frame relation triggers, it is possible to set event wait triggers and file wait triggers in the preceding job. Visualization of preceding relationships which cannot be seen.

Display a list of triggers which refer to below the frame/net/job



Job Schedule (Create Job, Schedule)

Job editor

- Function for visual confirmation and creation of job, net, and trigger configuration.
- Even complex nets can be easily edited on the visual screen.

Automatic cycle operation

- Automatically executes a series of daily tasks.
- The automatic cycle operation check function automatically checks at fixed intervals whether or not the automatic cycle operation is functioning properly. A trouble message is sent if scheduling has not been performed properly or if the required processing is not performed at the specified time.

Net definition effective date

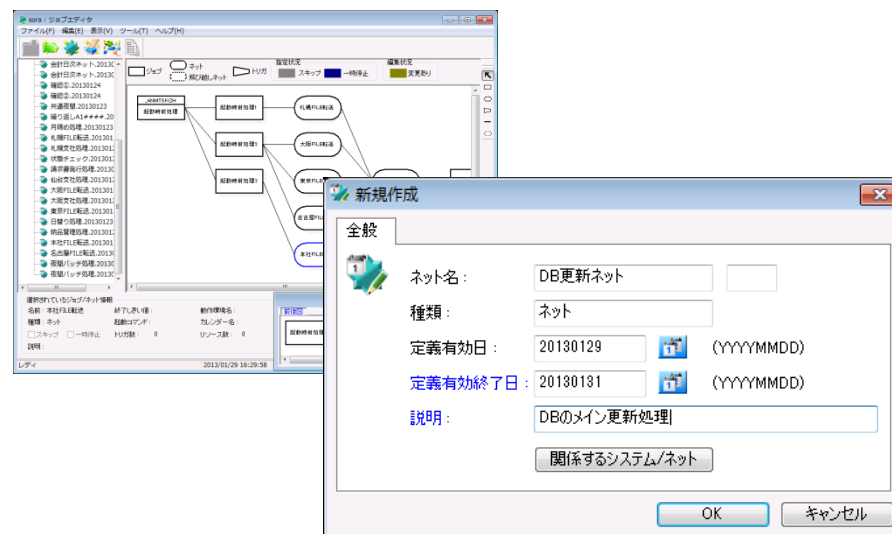
- Enables creation of multiple nets which have the same name but different definition effective dates.
- The operated net definition can be changed by setting the definition effective date

Execution system creation check

- Displays the number of jobs/nets within 1 frame in the check results. If the upper limit has been exceeded and it is not possible to create an execution system, a warning is displayed
- Enables advance response prior to errors in the execution system

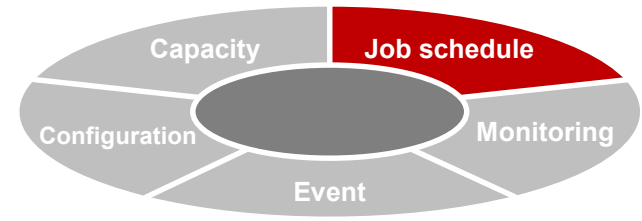
Job checker

- Performs an operation test for the registered job/net/frame Prevents definitions mistakes and other errors during actual operation.
- Uses color-coding to display subsequent jobs/nets which are affected by changes to the start/finish time and execution time. Enables visual confirmation of the influence path.
- Estimates the predicted start/finish time based on past operation performance and displays the estimate.



システム名:HOU_SYS		
フレーム名	20120518	20120519
HOU_NET	OK (ネット + ジョブ合計数: 31 / 20000)	OK (ネット + ジョブ合計数: 31 / 20000)
システム名:IW_SYSTEM00001		
フレーム名	20120518	20120519
IW_NET00000001	OK (ネット + ジョブ合計数: 2 / 20000)	OK (ネット + ジョブ合計数: 2 / 20000)
IW_NET00000002	OK (ネット + ジョブ合計数: 2 / 20000)	OK (ネット + ジョブ合計数: 2 / 20000)
IW_NET00000003	OK (ネット + ジョブ合計数: 3 / 20000)	OK (ネット + ジョブ合計数: 3 / 20000)
IW_NET00000004	OK (ネット + ジョブ合計数: 10 / 20000)	OK (ネット + ジョブ合計数: 10 / 20000)
システム名:大量システム		
フレーム名	20120518	20120519
大量フレーム	フレーム内のネット + ジョブ数が、上限値を越えています(20021 / 20000)	フレーム内のネット + ジョブ数が、上限値を越えています(20021 / 20000)

Introduction of Main Sub-systems



Job Schedule (Ascertain Job Operation Status)

Job monitor

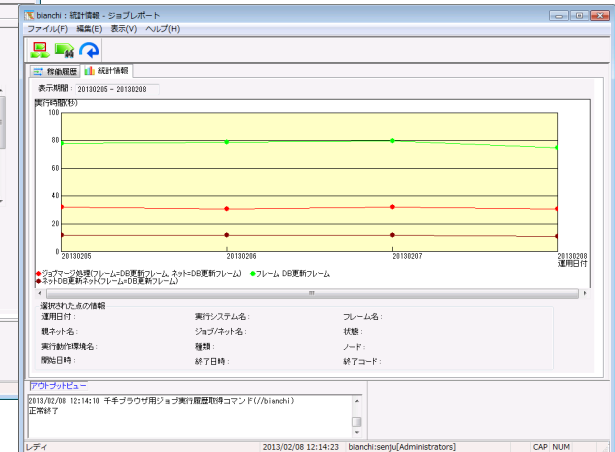
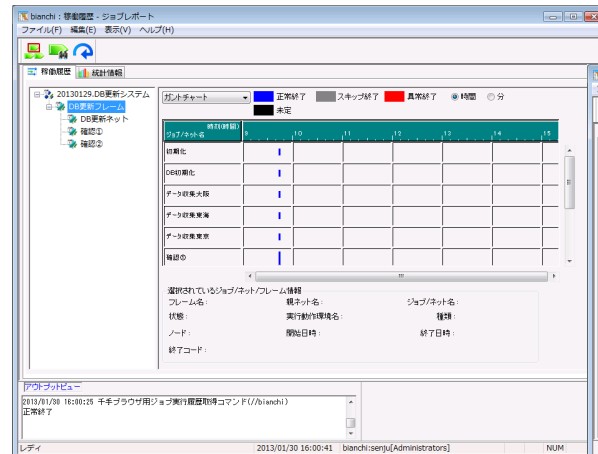
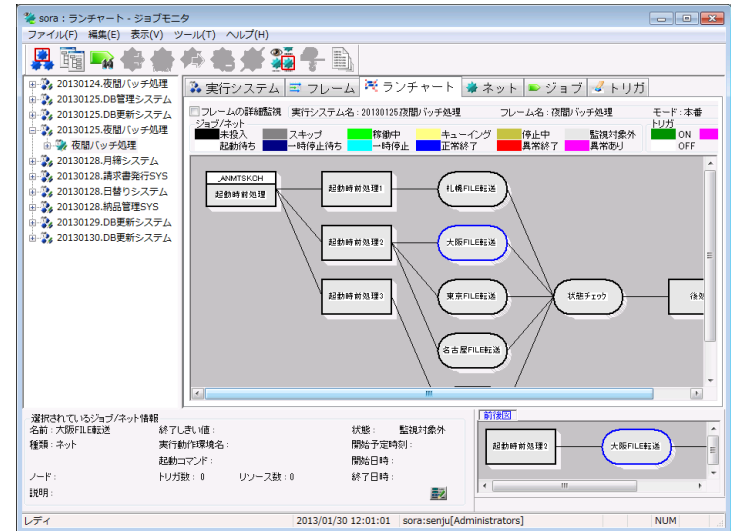
- The operation status is graphically displayed and the status can be ascertained at a single glance.

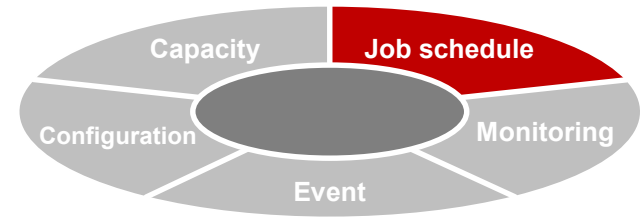
Job service

- The job operation monitoring results are displayed in lists for each service group.
- Enables monitoring from the perspective of work flow/service, and makes it easy to ascertain the scope of affected work in the event of trouble.

Job report (Extension)

- Makes it possible to accumulate job operation performance and refer to operation history.
- Increases the efficiency of comparison with past operation performance and identifies bottleneck processing.
- The accumulation of operation performance makes it possible to output files as a list and supports the creation of reports





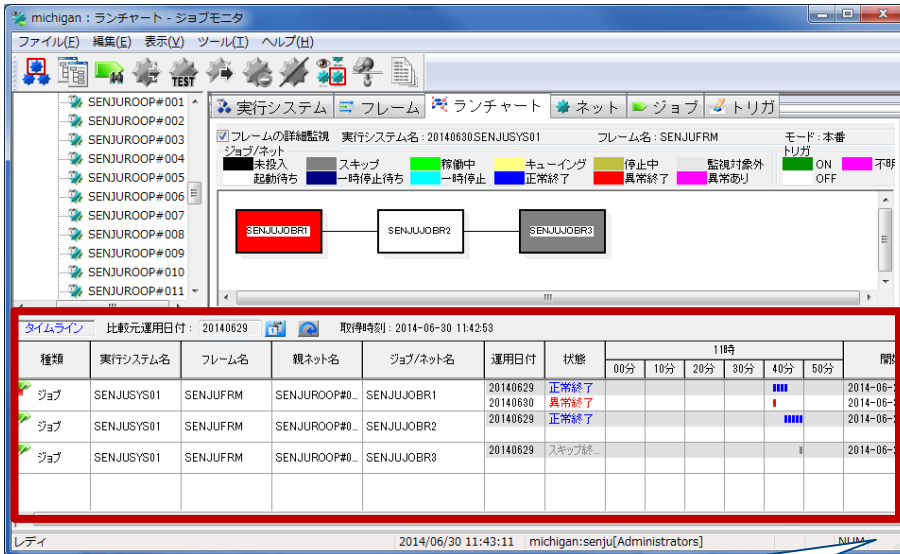
Job Schedule (Display Timeline)

In a timeline format, display the operation performance for a specified operation date and the current status of a certain frame.

Job monitor extension

- Added a timeline display field to job monitor. Compare operation history information for the current operation date and a past operation date

Job monitor screen

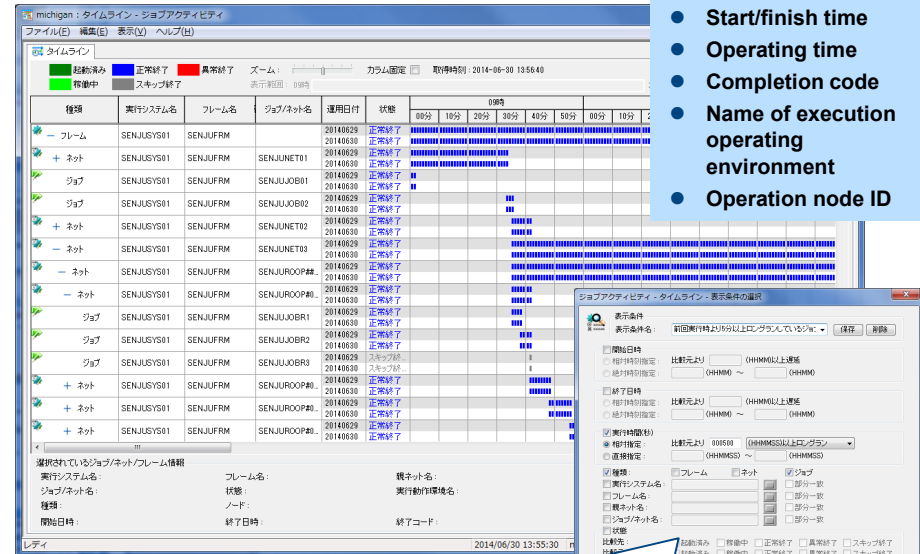


For nets/jobs of the run chart, displays past performance and current status in chronological order

Job activity

- For two specified past operation dates, compare the operation history information for frames/nets/jobs
- The activity information written at the Senju Browser can be displayed at Senju Offiser

Job activity screen

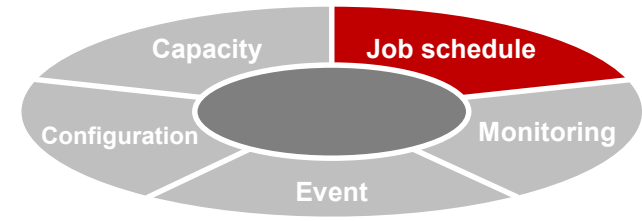


- Operation status
- Start/finish time
- Operating time
- Completion code
- Name of execution operating environment
- Operation node ID

Refine the display target by selecting display conditions (comparison and delayed completion, long running, etc.)

Introduction of Main Sub-systems

Job Schedule (Action Mode Switch, Recovery Action Skip)



Function for switching job action mode

- Added a mode switch function for switching actions of the entire job schedule. When the production environment definition is synchronized with a DR environment or comprehensive test environment, it is not necessary to change settings due to environmental differences

Switching for skip processing and automatic cycle operation

- Use environmental variable settings for batch switching of on/off for job net skipping and on/off for automatic cycle operation

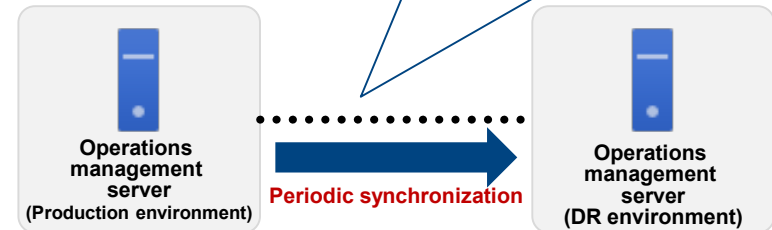
Function to skip recovery action

- Added an action mode to skip job recovery processing of Senju Manager. Skips communication retry processing at the time of large-scale trouble such as stoppage of multiple agents and restores Senju Manager as fast as possible. Makes it possible to quickly confirm the job status at the time of trouble and improves the speed of recovery from trouble.

Improvement of recovery processing function

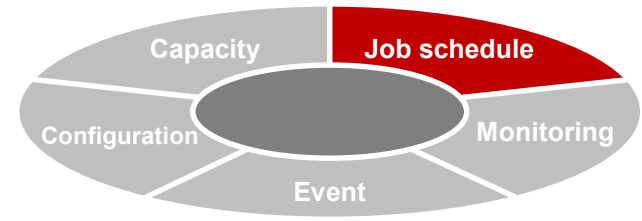
- Made improvements to realize recovery of job status which had been excluded from the recovery target, and made improvements to match the status before/after recovery

The DR environment definition can be exactly the same as the production environment, so synchronization is easy



During execution, enables definition for operating in the production environment and skipping in the DR environment

ジョブ/ネット名: XXTRGRM
種類: ジョブ
親ネット名: XXTRGON###
 スキップ指定 一時停止指定
カレンダー名:
動作環境名:
 開始時刻指定
◎ 絶対時刻 (HHMMに起動)
◎ 相対時刻 フレーム開始から (HHMMに起動)
動作モード切替時の指定
 スキップ スキップ解除

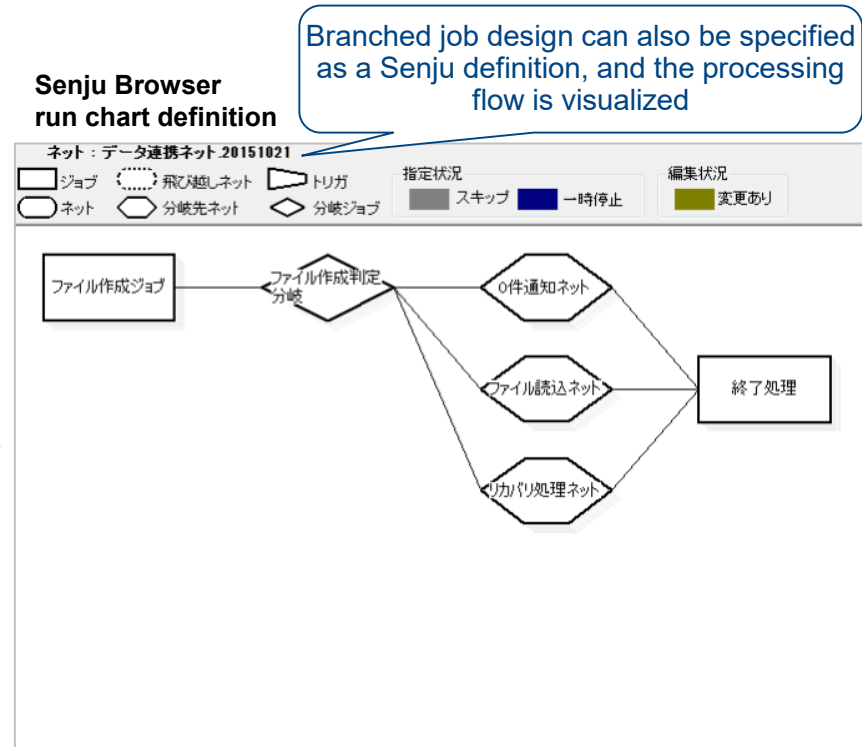
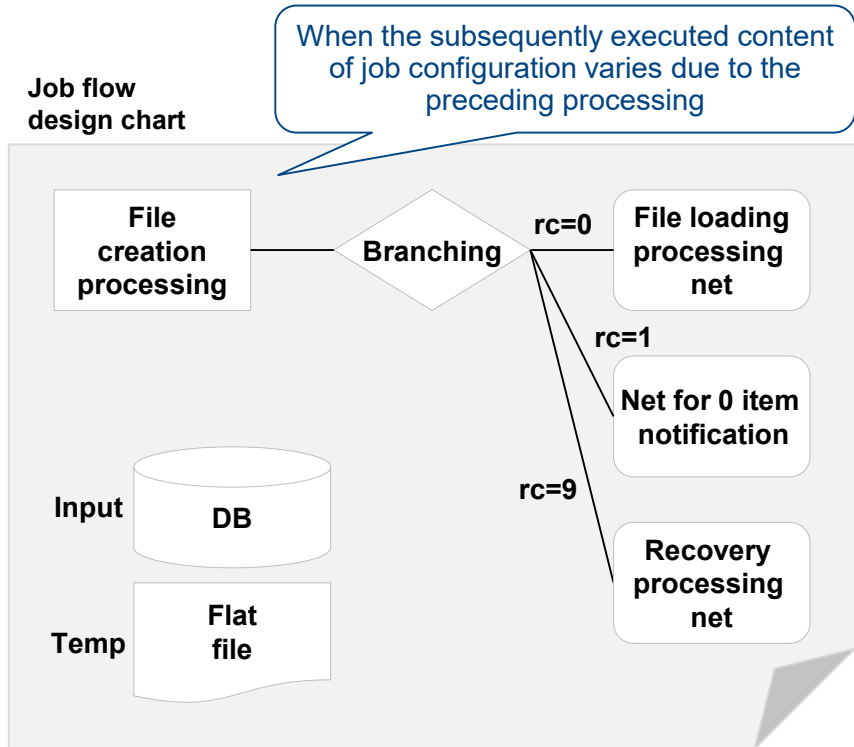


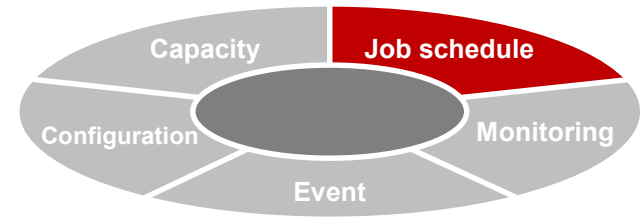
Job Schedule (Job Condition Branching)

Function for job condition branching

- Added a function for branching based on start/skip judgment for the subsequent net depending on the job completion code

Makes it easier to understanding a correspondence between job flow design and run chart definition.
Also makes it possible to visually ascertain what processing has been performed.



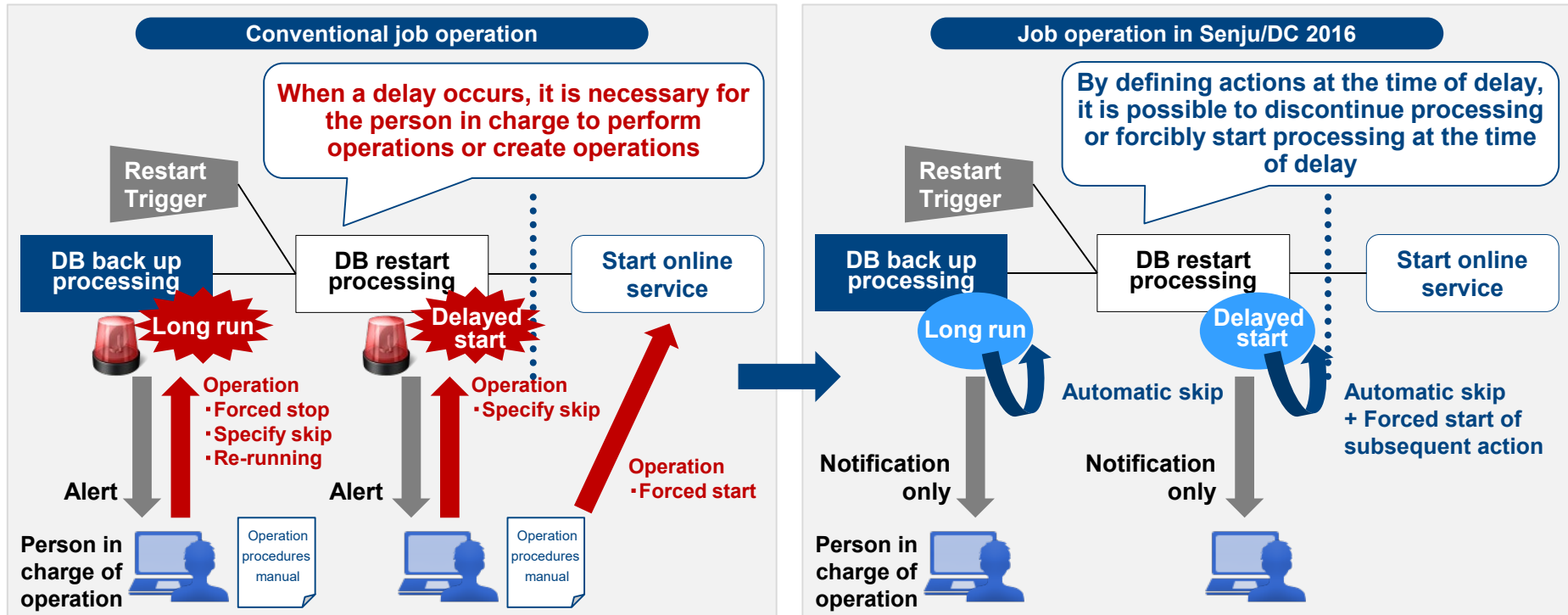


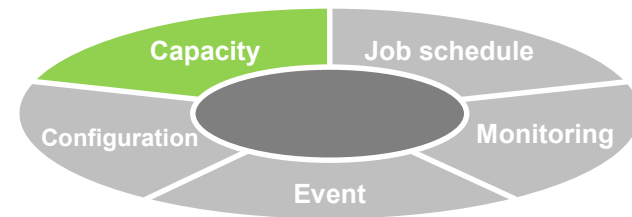
Job Schedule (Actions at Time of Job Delay)

Function for action at time of job delay

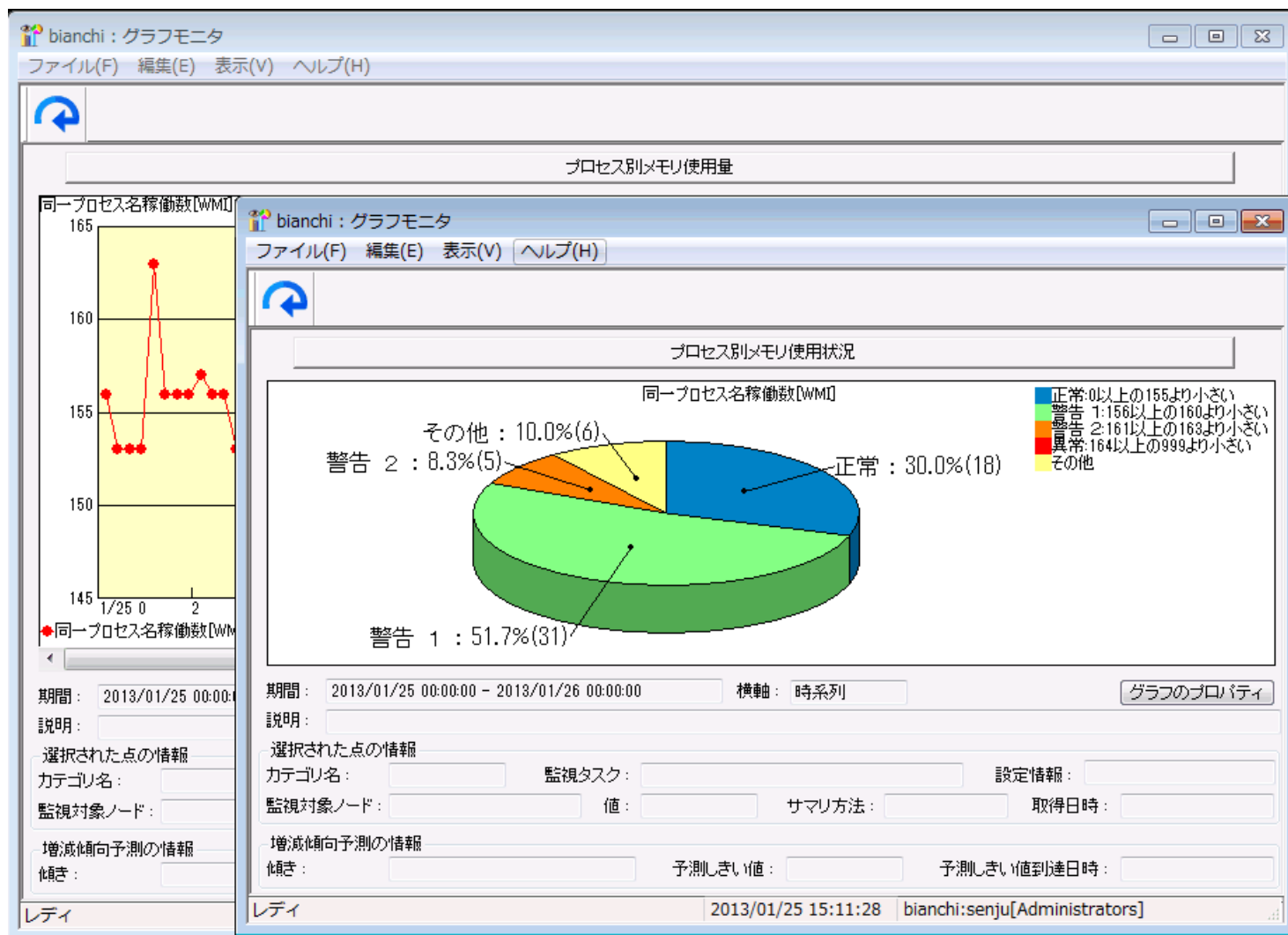
- Added a function to automatically execute actions for a job and subsequent jobs when a job delay has been detected via monitoring for delays

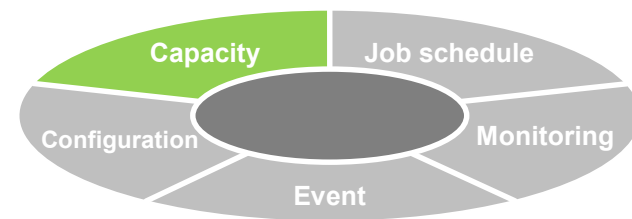
When a delay has occurred, if you want to skip processing for a certain job, delay monitoring settings can be used to forcibly stop that job and activate a subsequent job





Capacity

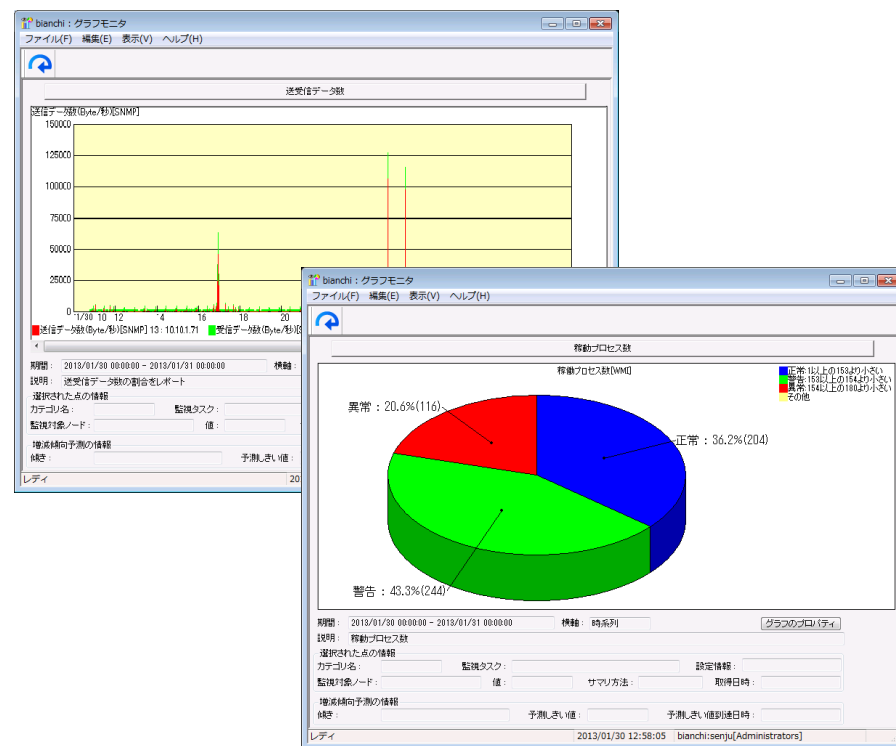
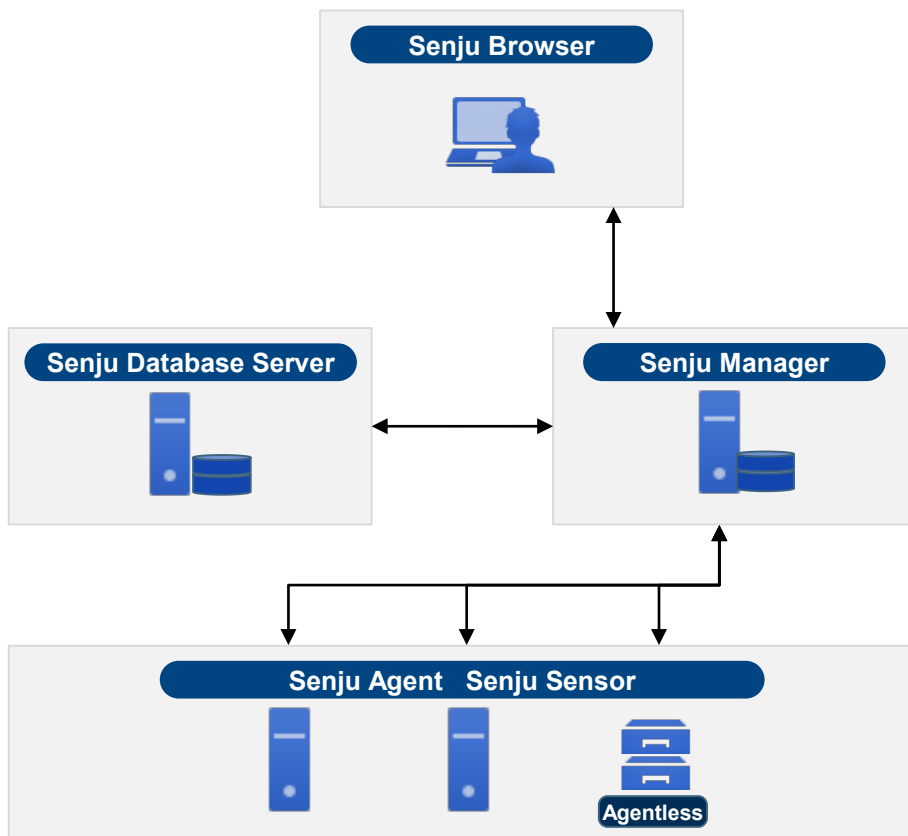




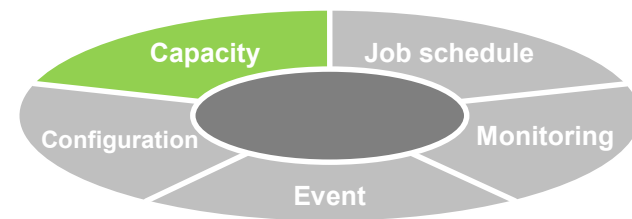
Capacity (Overview)

Overview of capacity

- Accumulate the acquired monitoring status as history data and display as a graph.
- Support for capacity planning and operation status reporting
- Can also be used for trend analysis at the time of trouble, thus realizing maintenance and improvement of the service level.



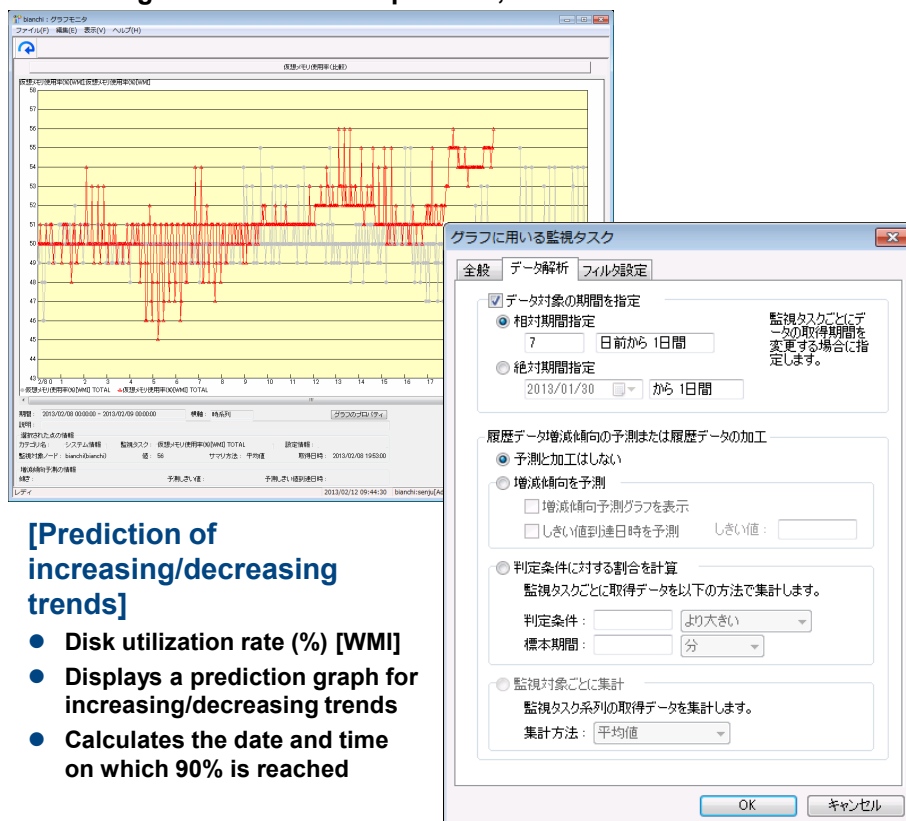
- Accumulation of operation status history data
 - History data (minute, hour, day) for each inspection interval
 - Monitoring task history data (average value, minimum value, maximum value, total value, latest value)
- Graphical display of accumulated data (bar graph, line graph, stacked graph, stacked line graph, pie graph)
- Writing of graph data (text, CSV, HTML)
- Printing of graph monitor



Capacity (Capacity Analysis)

Prediction of increasing/decreasing trends

- Displays increasing/decreasing trends of acquired history data and predicts the date and time on which the threshold value will be reached
- Enables smooth confirmation in cases such as when it is necessary to systematically increase resources due to capacity management for a virtual platform, etc.

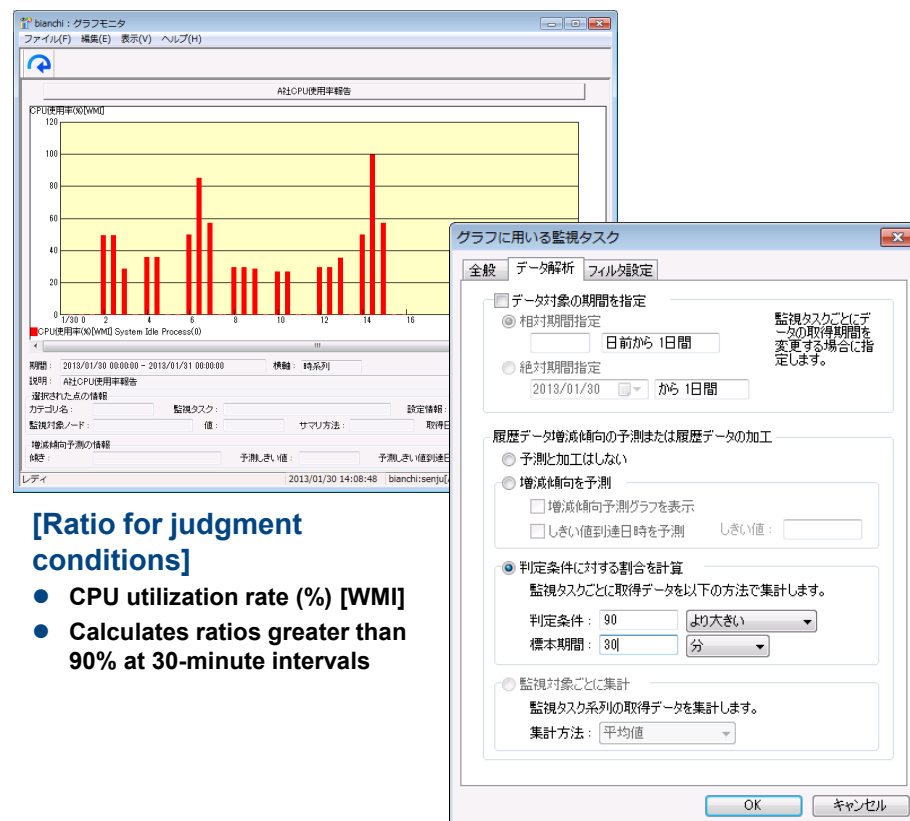


[Prediction of increasing/decreasing trends]

- Disk utilization rate (%) [WMI]
- Displays a prediction graph for increasing/decreasing trends
- Calculates the date and time on which 90% is reached

Calculation of ratios for judgment conditions

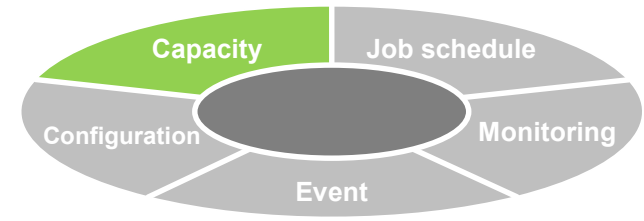
- For the acquired history data, displays ratios which exceed the threshold value by time period
- Enables analysis of service level for each time period
- In info-search (web browser), enables identification of trends and prediction of future trends based on the monitoring results history



[Ratio for judgment conditions]

- CPU utilization rate (%) [WMI]
- Calculates ratios greater than 90% at 30-minute intervals

Capacity (Analysis of Data, Display of Configuration Information)



Analysis of capacity data

- Accumulates monitoring data, displays a graph of analysis results, and utilizes for capacity planning and trend analysis

Display a list of details for capacity data analysis

- Displays a list for capacity trends and predicted dates and times on which threshold values will be reached, and enables checking of areas which require response

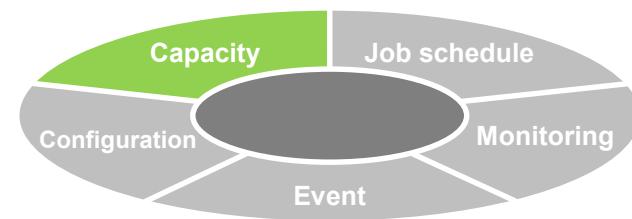
Display configuration information

- Automatic periodic collection and accumulation of information targeted for management such as configuration/setting information, logs, command execution results, etc.

監視タスクID	7433	4902
監視タスク名	CPU使用率(%)[wmi]	仮想メモリ使用率(%)[wmi]
設定情報		
監視対象ノードID	bianchi	bianchi
監視対象ノード名	bianchi	bianchi
サマリ方法	平均値	平均値
監視対象名	System Idle Process(O)	TOTAL
データ対象の期間		
2013/1/30 0:00	6	79
2013/1/30 0:01		
2013/1/30 0:02		
2013/1/30 0:03		

ノードID	ノード名	2013/01/26	01/26	01/27	01/28	01/29
bianchi	bianchi	取得成功	取得成功	取得成功	取得成功	取得成功
danace	danace.danace.jp1	取得成功	取得成功	取得成功	取得成功	取得成功
michigan	michigan	取得成功	取得成功	取得成功	取得成功	取得成功
sjv8hvc	sjv8hvc	取得成功	取得成功	取得成功	取得成功	取得成功
sora	sora	取得成功	取得成功	取得成功	取得成功	取得成功

Ascertain capacity trends for the entire system
Ascertain the latest configuration information for the entire system



Capacity (Simple Graphical Display)

Provides a function for graphical display of changes in values until the most recent monitoring task from the node monitor.

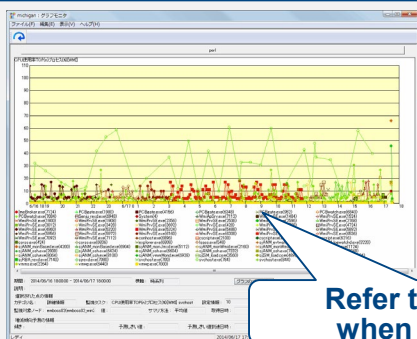
Efficient visualization of the monitoring status

- Enables simple graphical display at specified periods without the need to create a graph definition in advance.
- Visually ascertain the time passed until reaching the threshold value

Conventional



Although the CPU utilization rate at the time of trouble was high, it is necessary to specify settings in advance in order to check the time from which the rate was high

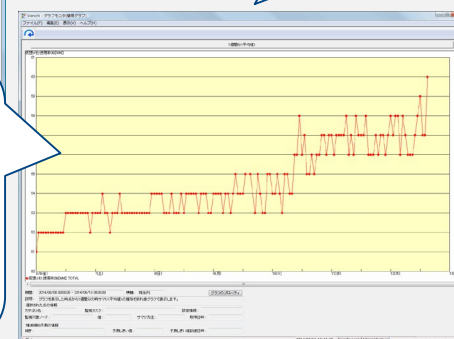


Refer to as graph when necessary

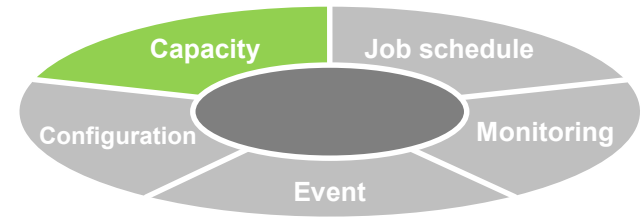
Enhanced function

User simply selects the monitoring task and specifies the period

Changes in the CPU utilization rate around the time of trouble occurrence can be checked simply through selection, without the need to create a graph definition in advance.



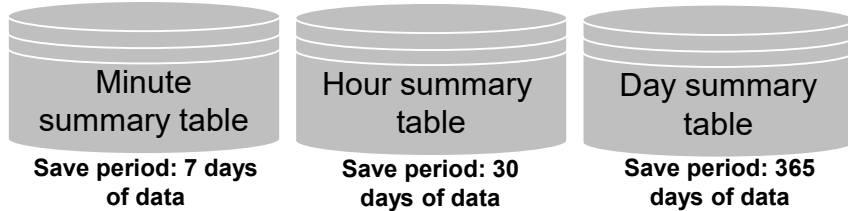
Reduces load and improves operation quality during operation work



Capacity (Utilization of History Data)

Management of history data

- History data acquired for each inspection interval is accumulated in 3 types of summary tables and is managed in the DB.
- Enables setting of the upper limit value for the history data save period.



Amount of history data

- Estimate for 1 days' worth of history data in the minute summary table at which the greatest amount of history data is saved.

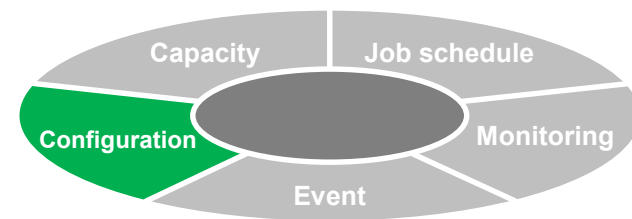
Amount of history data for 1 monitoring task = $\text{Approx. } 500 \text{ bytes} \times 60 \text{ min/Monitoring interval} \times 24 \text{ hours} \times \text{Number of monitoring targets} \times \text{Number of summary methods}$

Example) Monitoring at 10-minute intervals, monitoring target = 1, summary methods = 3 \rightarrow $\text{Approx. } 500 \text{ bytes} \times 6 \times 24 \times 1 \times 3 = 216,000 \text{ bytes (approx. 216 KB)}$

Analysis of history data

- Makes it possible to specify the data target period and to process history data.
- Specification of data target period: Supports trend analysis for past data and current data
- Processing of history data: For each time period, displays the ratio of exceeding the acquired threshold value in the time period, thus supporting analysis of the service level.

Configuration



bianchi : 最新値 - 構成モニタ

ファイル(F) 編集(E) 表示(V) ツール(T) ヘルプ(H)

千手構成管理項目

- 千手基本情報
- 千手パッチ情報
- ホスト情報
- ディスク情報
- ネットワーク情報
- ソフトウェア/パッチ情報
- サービス情報
- ユーザー情報
- ログイン情報

ノードID	ノード名	OS	最終実行日時	状態
altus003	altus003	千手エージェント(UNIX)	2013/01/28 02:00:00	取得成功(変更対象外)
arena	arena0000000001_v1300	千手エージェント(Windows)	2013/01/28 02:00:00	取得成功(変更対象外)
bianchi	bianchi	千手エージェント(Windows)	2013/01/28 02:00:00	取得成功(変更対象外)
chorus	chorus	千手センサー(サーバー)	2013/01/28 02:00:00	取得成功(変更対象外)
dinosaur	dinosaur	千手センサー(サーバー)	2013/01/28 02:00:00	取得成功(変更対象外)
emboss01	emboss01	千手エージェント(Windows)	2013/01/28 02:00:00	取得成功(変更対象外)

bianchi : 履歴 - 構成モニタ

ファイル(F) 編集(E) 表示(V) ツール(T) ヘルプ(H)

取得成功

変更対象外 (緑) 変更なし (青) 変更あり (赤) 変更不明 (紫) 取得失敗 (黒)

ノードID	ノード名	2012/12/01	12/02	12/03	12/04	12/05	12/06	12/07	12/08
altus0...	altus003	緑	緑	緑	緑	緑	緑	緑	緑
arena	arena0000...	緑	緑	緑	緑	緑	緑	緑	緑
bianchi	bianchi	赤	赤	赤	赤	赤	赤	赤	赤
chorus	chorus	赤	赤	赤	赤	赤	赤	赤	赤
dinos...	dinosaur	赤	赤	赤	赤	赤	赤	赤	赤
esxwi...	esxwin05...	緑	緑	緑	緑	緑	緑	緑	緑
gemini	gemini	緑	緑	緑	緑	緑	緑	緑	緑
swain	swain	緑	緑	緑	緑	緑	緑	緑	緑

項目: [選択]

名称: [] 種別: [] 取得対象: []

ノードID: [] 取得日時: [] 状態: []

接続設定名: [] 取得方法: [] 付加情報: []

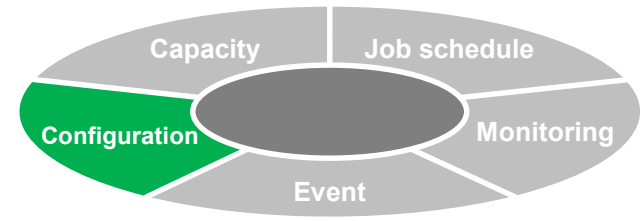
ユーザー名: [] プロープ: []

アウトプットビュー

2013/01/28 12:01:38 構成管理ステータスの取得(履歴)(/bianchi) 正常終了

レディ

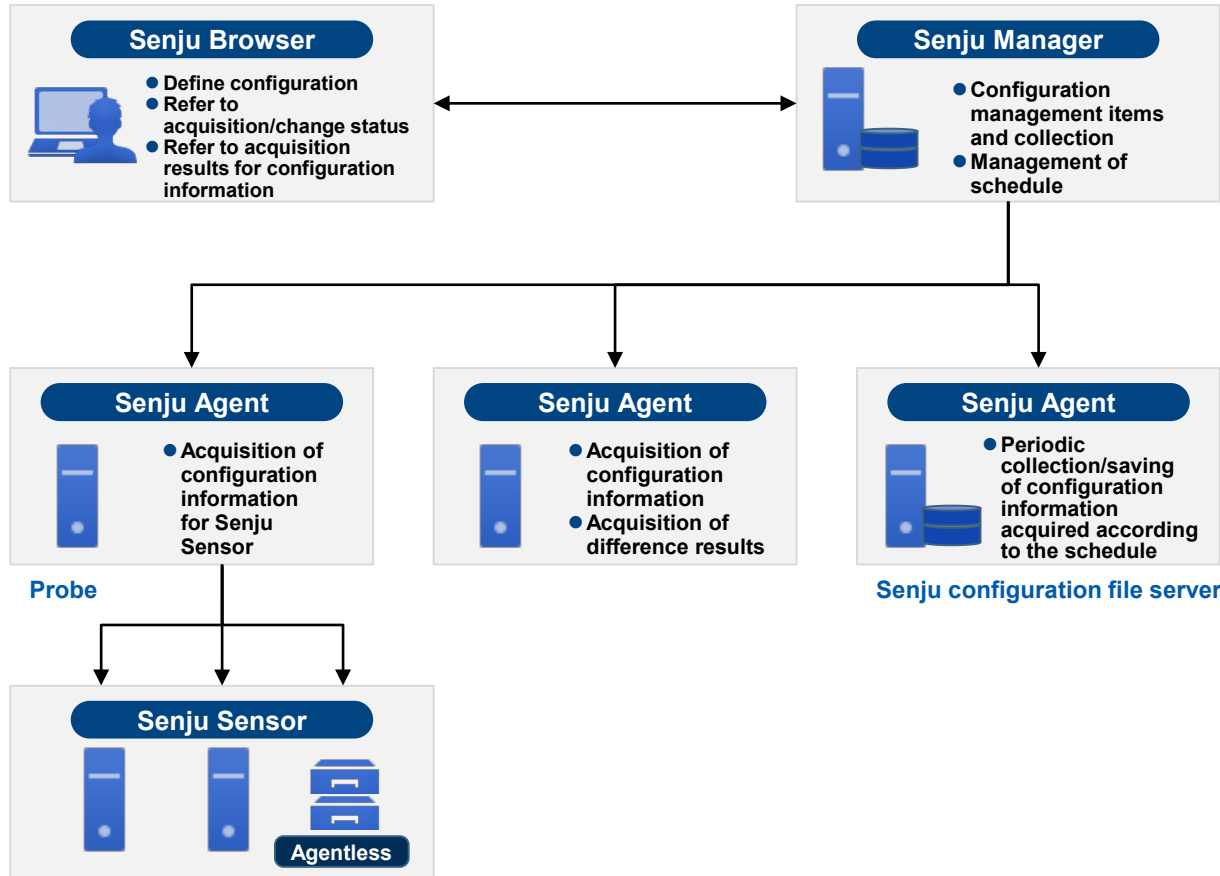
2013/01/28 12:04:15 bianchi:senju[Administrators] NUM



Configuration (Overview)

Overview of configuration

- Defines configuration information/setting information, log, and arbitrary command execution results of the management target (server, network device) as configuration management items.
- Collects, accumulates, and performs uniform management for this information.

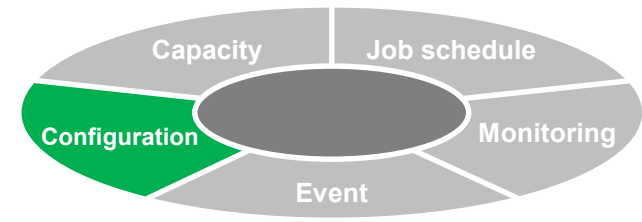


- WMI
- SNMP
- TELNET
- SSH
- SMTP
- FTP
- FTU

- Senju basic information
- Senju patch information
- Host information
- Disk information
- Network information
- Software/patch information
- Service information
- Login information
- File
- File list
- Command execution results
- SNMP information
- WMI information
- Registry information
- Even log information

Introduction of Main Sub-systems

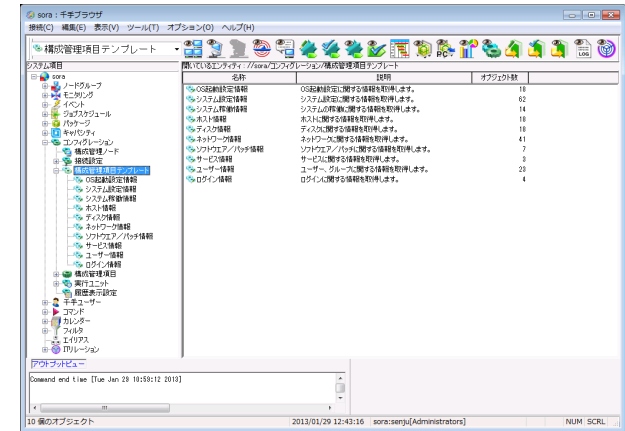
Configuration (Definition/Registration of Configuration Management)



Template for configuration management item

- Representative commands and files for managing OS configuration information are prepared as templates. This supports registration of management items.
- Templates are classified and sorted by category.

(OS start settings information, system settings information, system operation information, host information, disk information, network information, software/patch information, service information, user information, login information)



Detection of collection and change

- Possible to set whether or not to detect collection and changes for individual Senju configuration management items.
- When a difference occurs in change detection, it is possible to display an arbitrarily created message at the browser.

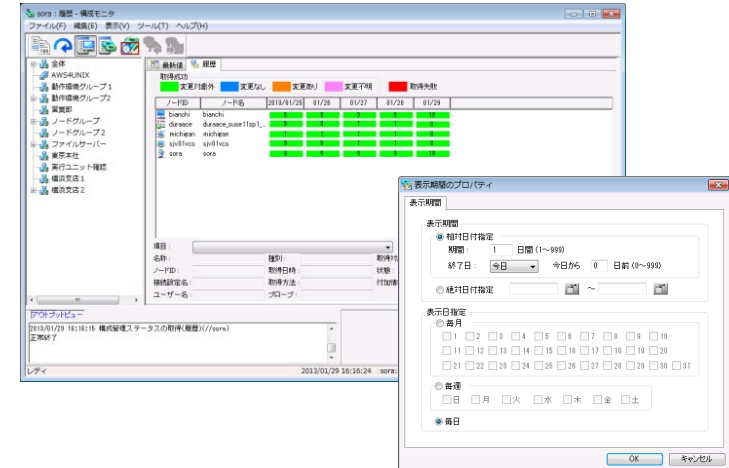
History display settings

- Settings can be specified for display/reference at the configuration monitor for collection status and change detect status of Senju configuration management items, file information of configuration management items, command items, SNMP items, and Windows items.

Display period: Select either "specify relative date" or "specify absolute date."

Specify display date: Select "every month," "every week," or "every day."

- Displays the acquisition/change status for items set for each node.



File size of Senju configuration file server

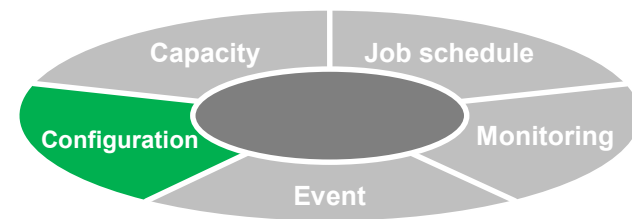
- File size required when setting the save format during creation of definition
- $F \times n \times S \times D \times r$ (bytes)
 - F:** File size (bytes)
 - N:** Number of acquisitions per 1 day (times/day)
 - S:** Number of servers targeted for collection (machines)
 - D:** Number of save days (days)
 - R:** Reduction rate

When 10,000 bytes of text are collected from 100 nodes once per day and data is stored for 100 days (file reduction rate = 0.05)

When not reducing/encrypting: $10 \text{ (Kbytes)} \times 1 \text{ (time/day)} \times 100 \text{ (machines)} \times 100 \text{ (days)} = 100 \text{ (Mbytes)}$

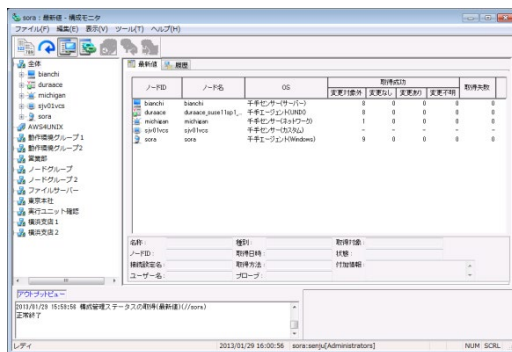
When reducing/encrypting: $10 \text{ (Kbytes)} \times 1 \text{ (time/day)} \times 100 \text{ (machines)} \times 100 \text{ (days)} \times 0.05 = 5 \text{ (Mbytes)}$

Configuration (Confirmation of Configuration Management Information)

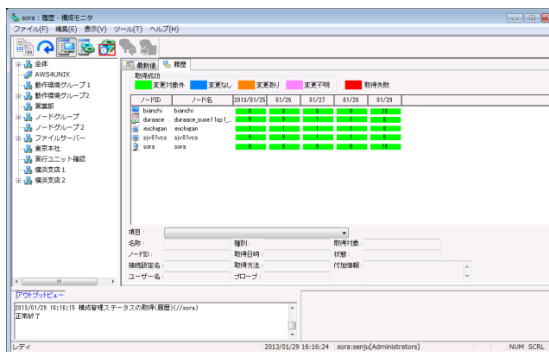


Configuration monitor

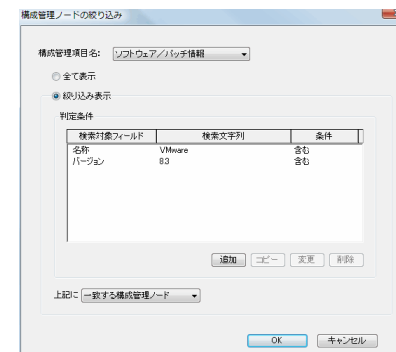
- Checks the acquisition/collection status and change detection status of Senju configuration management items and configuration management information for each configuration management node as the latest condition / history information.
- Confirms detailed status for each item during implementation of configuration monitor items.
- Makes it possible to search by refining the collected information, extract only nodes which satisfy conditions, and display those nodes in a list.



Latest values

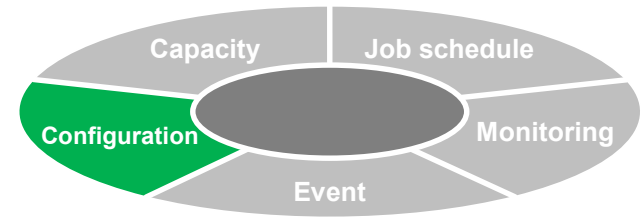


History



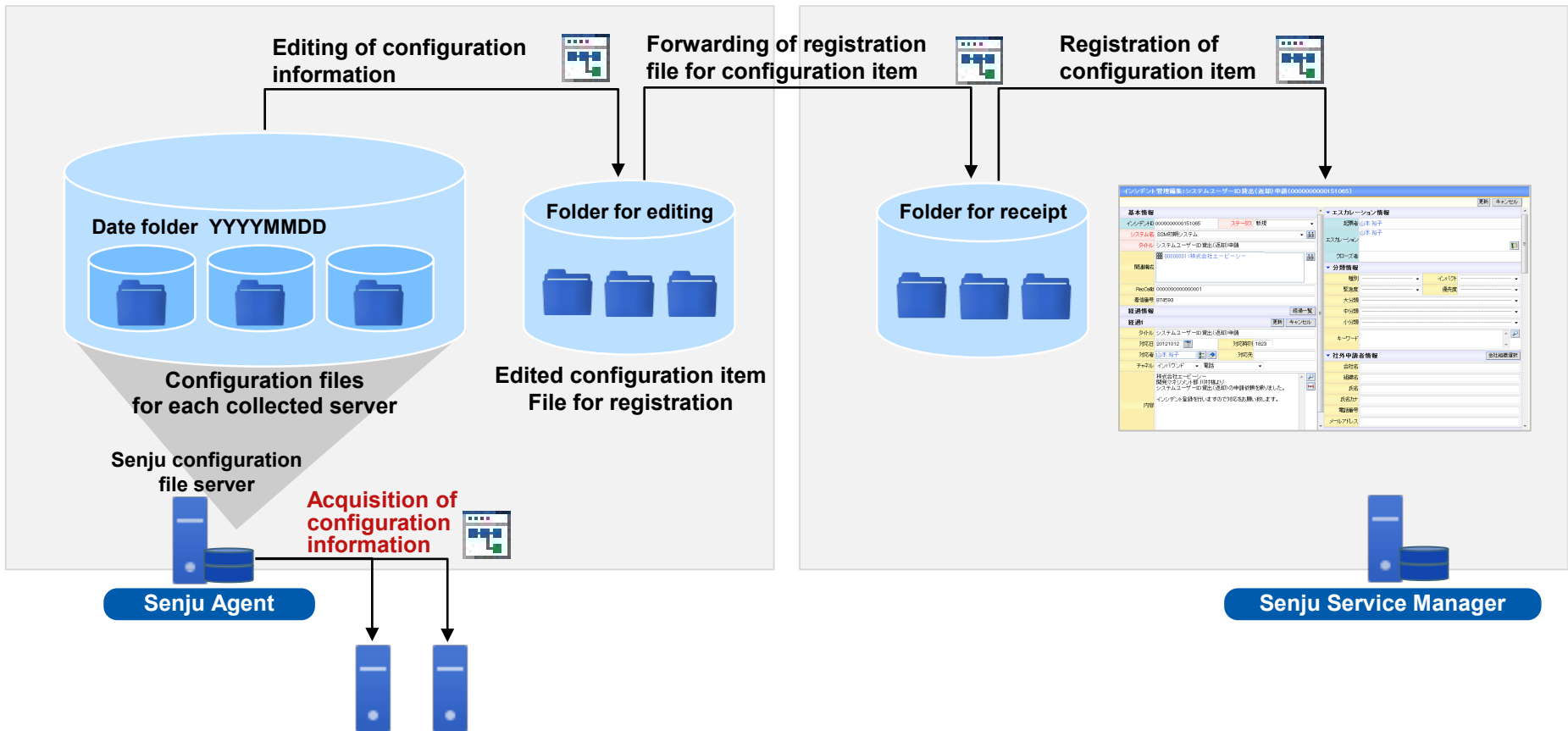
Refined search

Configuration (Automatic Registration of Configuration Information)



Automatic registration of configuration items to Senju Service Manager (service desk)

- Utilizes the job schedule to automatically register the acquired configuration information to configuration items of Senju Service Manager (service desk).
- Enables usage plan management, change management, and reference of history information as configuration items in Senju Service Manager.



(*) Senju Service Manager (available separately) is required to use this function

Operation Console for Senju DevOperation Conductor

Senju Browser

Provides a graphical display for all management items of the system, thus supporting operation

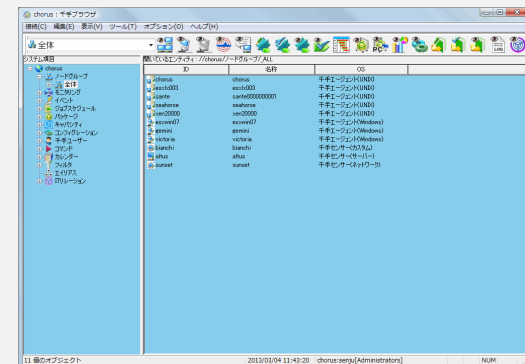
Design which is visually easy-to-understand

Realizes a functional feeling of use through intuitive icons and screen configuration



Screen display change using Senju domain

Prevents connection to a mistaken Senju domain by changing the display name and background color for each Senju domain

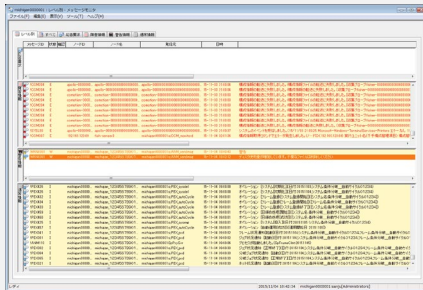


ID	名前	OS
chonus	chonus	キヤノンシステム(RS)
senj0001	senj0001	キヤノンシステム(RS)
senj0002	senj0002000001	キヤノンシステム(RS)
senj0003	senj0003	キヤノンシステム(RS)
senj0004	senj0004	キヤノンシステム(RS)
senj0005	senj0005	キヤノンシステム(RS)
senj0006	senj0006	キヤノンシステム(RS)
senj0007	senj0007	キヤノンシステム(RS)
senj0008	senj0008	キヤノンシステム(RS)
senj0009	senj0009	キヤノンシステム(RS)
senj0010	senj0010	キヤノンシステム(RS)
senj0011	senj0011	キヤノンシステム(RS)
senj0012	senj0012	キヤノンシステム(RS)
senj0013	senj0013	キヤノンシステム(RS)
senj0014	senj0014	キヤノンシステム(RS)
senj0015	senj0015	キヤノンシステム(RS)
senj0016	senj0016	キヤノンシステム(RS)
senj0017	senj0017	キヤノンシステム(RS)
senj0018	senj0018	キヤノンシステム(RS)
senj0019	senj0019	キヤノンシステム(RS)
senj0020	senj0020	キヤノンシステム(RS)
senj0021	senj0021	キヤノンシステム(RS)
senj0022	senj0022	キヤノンシステム(RS)
senj0023	senj0023	キヤノンシステム(RS)
senj0024	senj0024	キヤノンシステム(RS)
senj0025	senj0025	キヤノンシステム(RS)
senj0026	senj0026	キヤノンシステム(RS)
senj0027	senj0027	キヤノンシステム(RS)
senj0028	senj0028	キヤノンシステム(RS)
senj0029	senj0029	キヤノンシステム(RS)
senj0030	senj0030	キヤノンシステム(RS)
senj0031	senj0031	キヤノンシステム(RS)
senj0032	senj0032	キヤノンシステム(RS)
senj0033	senj0033	キヤノンシステム(RS)
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senj0035	senj0035	キヤノンシステム(RS)
senj0036	senj0036	キヤノンシステム(RS)
senj0037	senj0037	キヤノンシステム(RS)
senj0038	senj0038	キヤノンシステム(RS)
senj0039	senj0039	キヤノンシステム(RS)
senj0040	senj0040	キヤノンシステム(RS)
senj0041	senj0041	キヤノンシステム(RS)
senj0042	senj0042	キヤノンシステム(RS)
senj0043	senj0043	キヤノンシステム(RS)
senj0044	senj0044	キヤノンシステム(RS)
senj0045	senj0045	キヤノンシステム(RS)
senj0046	senj0046	キヤノンシステム(RS)
senj0047	senj0047	キヤノンシステム(RS)
senj0048	senj0048	キヤノンシステム(RS)
senj0049	senj0049	キヤノンシステム(RS)
senj0050	senj0050	キヤノンシステム(RS)
senj0051	senj0051	キヤノンシステム(RS)
senj0052	senj0052	キヤノンシステム(RS)
senj0053	senj0053	キヤノンシステム(RS)
senj0054	senj0054	キヤノンシステム(RS)
senj0055	senj0055	キヤノンシステム(RS)
senj0056	senj0056	キヤノンシステム(RS)
senj0057	senj0057	キヤノンシステム(RS)
senj0058	senj0058	キヤノンシステム(RS)
senj0059	senj0059	キヤノンシステム(RS)
senj0060	senj0060	キヤノンシステム(RS)
senj0061	senj0061	キヤノンシステム(RS)
senj0062	senj0062	キヤノンシステム(RS)
senj0063	senj0063	キヤノンシステム(RS)
senj0064	senj0064	キヤノンシステム(RS)
senj0065	senj0065	キヤノンシステム(RS)
senj0066	senj0066	キヤノンシステム(RS)
senj0067	senj0067	キヤノンシステム(RS)
senj0068	senj0068	キヤノンシステム(RS)
senj0069	senj0069	キヤノンシステム(RS)
senj0070	senj0070	キヤノンシステム(RS)
senj0071	senj0071	キヤノンシステム(RS)
senj0072	senj0072	キヤノンシステム(RS)
senj0073	senj0073	キヤノンシステム(RS)
senj0074	senj0074	キヤノンシステム(RS)
senj0075	senj0075	キヤノンシステム(RS)
senj0076	senj0076	キヤノンシステム(RS)
senj0077	senj0077	キヤノンシステム(RS)
senj0078	senj0078	キヤノンシステム(RS)
senj0079	senj0079	キヤノンシステム(RS)
senj0080	senj0080	キヤノンシステム(RS)
senj0081	senj0081	キヤノンシステム(RS)
senj0082	senj0082	キヤノンシステム(RS)
senj0083	senj0083	キヤノンシステム(RS)
senj0084	senj0084	キヤノンシステム(RS)
senj0085	senj0085	キヤノンシステム(RS)
senj0086	senj0086	キヤノンシステム(RS)
senj0087	senj0087	キヤノンシステム(RS)
senj0088	senj0088	キヤノンシステム(RS)
senj0089	senj0089	キヤノンシステム(RS)
senj0090	senj0090	キヤノンシステム(RS)
senj0091	senj0091	キヤノンシステム(RS)
senj0092	senj0092	キヤノンシステム(RS)
senj0093	senj0093	キヤノンシステム(RS)
senj0094	senj0094	キヤノンシステム(RS)
senj0095	senj0095	キヤノンシステム(RS)
senj0096	senj0096	キヤノンシステム(RS)
senj0097	senj0097	キヤノンシステム(RS)
senj0098	senj0098	キヤノンシステム(RS)
senj0099	senj0099	キヤノンシステム(RS)
senj0100	senj0100	キヤノンシステム(RS)

Realizes advanced operation through intuitive feeling of use and measures to reduce operation mistakes

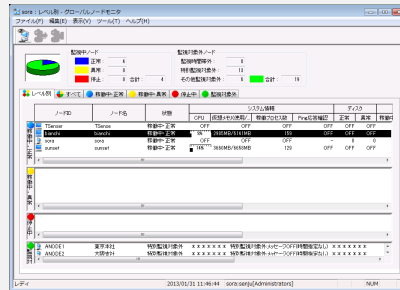
List of Operation Consoles (1)

Message monitor



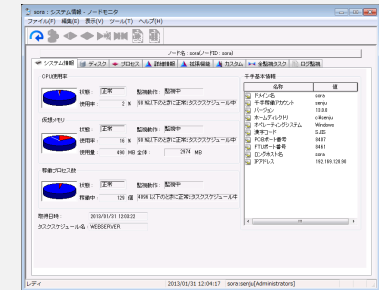
- Displays messages occurring at each node by sorting into the 4 categories of “Normal,” “Trouble,” “Warning,” and “Response Request”

Global node monitor



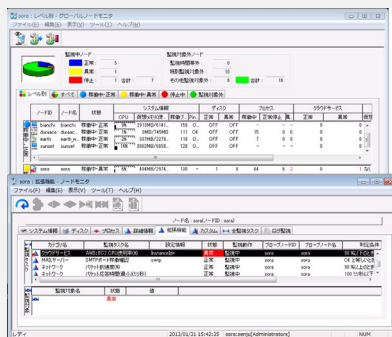
- Displays a list of monitoring nodes

Node monitor

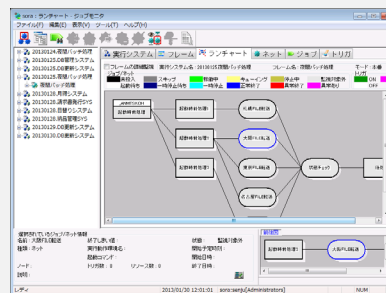


- CPU utilization rate and virtual memory for each node
Displays monitoring results such as the number of operating processes, etc.

AWS resource monitoring

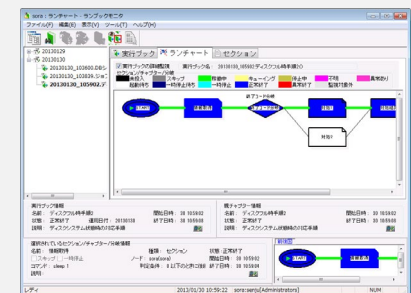


Job monitor



- Displays the job operation status

Runbook monitor



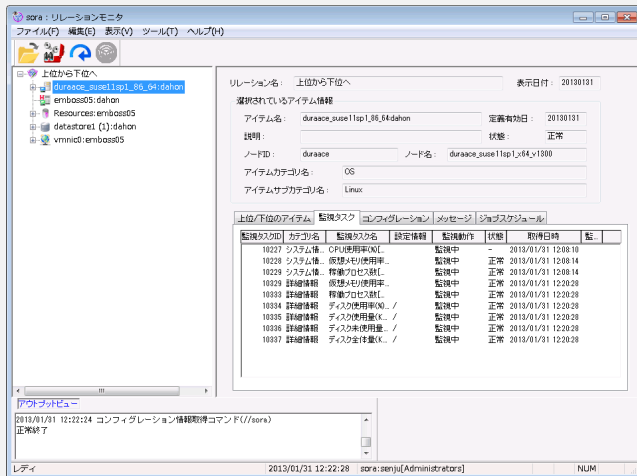
- Displays the execution results for runbook

List of Operation Consoles (2)

Relation monitor

(Monitoring console for relationships of configuration items)

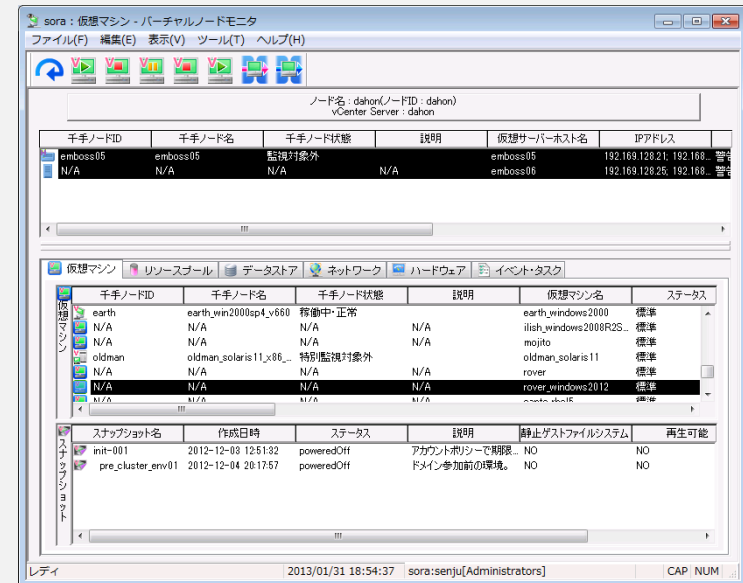
- Uniform management of relationship for items configuring systems of IT devices, services, etc.



Virtual node monitor

(Detailed monitoring console of virtual environment)

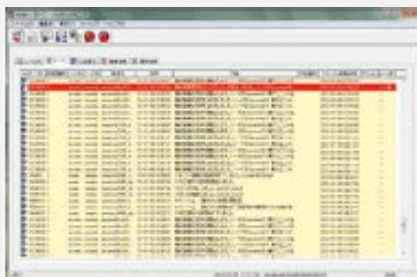
- Displays detailed monitoring information for the virtual server host and virtual machine



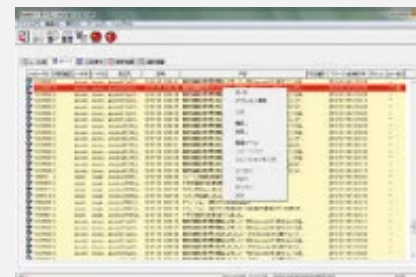
List of Operation Consoles (3) Confirmation of Service Effect from the Message Monitor

Jump from the message monitor to items related to origin nodes
(Open the relation monitor from the message monitor and jump to origin node information)

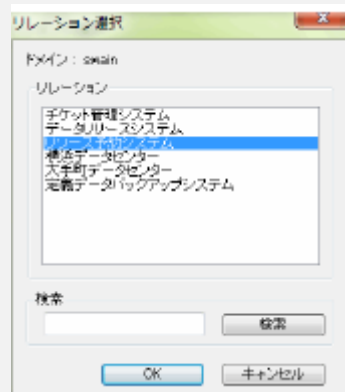
① Detect trouble message at message monitor



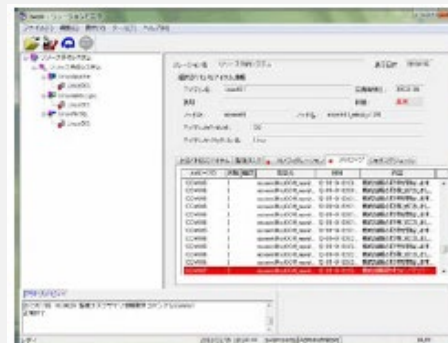
② Select the relation monitor from the context menu



③ Select the relation from the relation selection dialog box



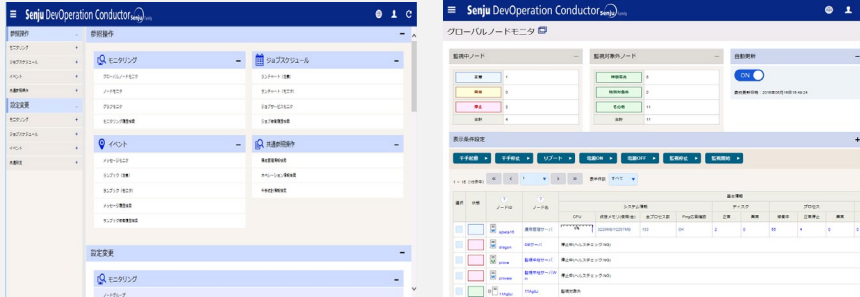
④ At the relation monitor, the item linked to origin node is automatically opened and the applicable message is selected. At the same time, it is possible to check the status of upper-level services at the tree.



List of Operation Consoles (4) Web Console

Renewal of UI for Senju web connection

- Integrated the Senju InfoView Screen and the Senju InfoSearch Screen
- It is possible to use English language for the Senju web label display
- For the network rotary warning light notification function, performs uniform management of warning devices connected to the network. For monitoring which used Senju InfoView, warning devices which were connected to the network can be used easily



Search history

- The execution history of messages and message actions is accumulated in the database, and it is possible to search/refer to required information from the web console
- Supports multi-devices



Senju operating statistics display

- From the web screen, easily view statistical information for operation and ascertain the operating status
- Search statistical information by specifying time periods and display a graph of operation status by week or month

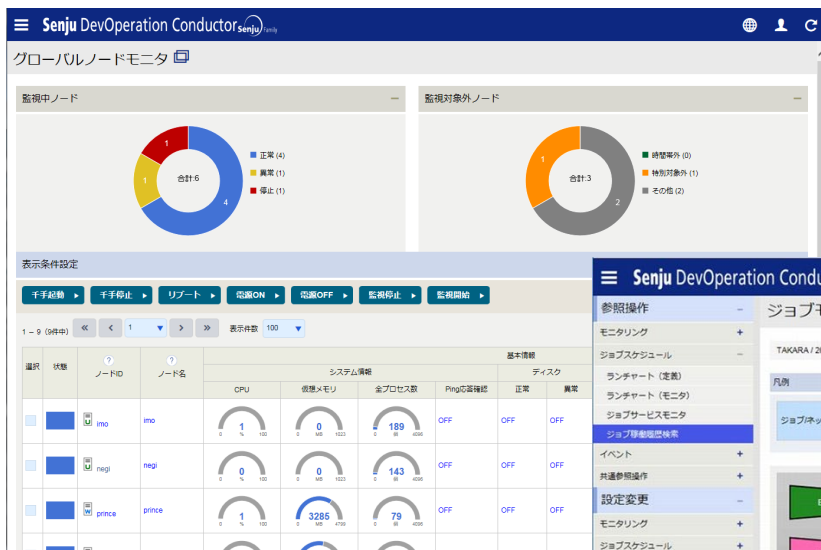
Summary report makes it possible to ascertain operating information and trends by week/month



Perform deep statistical searches such as detailed information on the number of reports and specific content

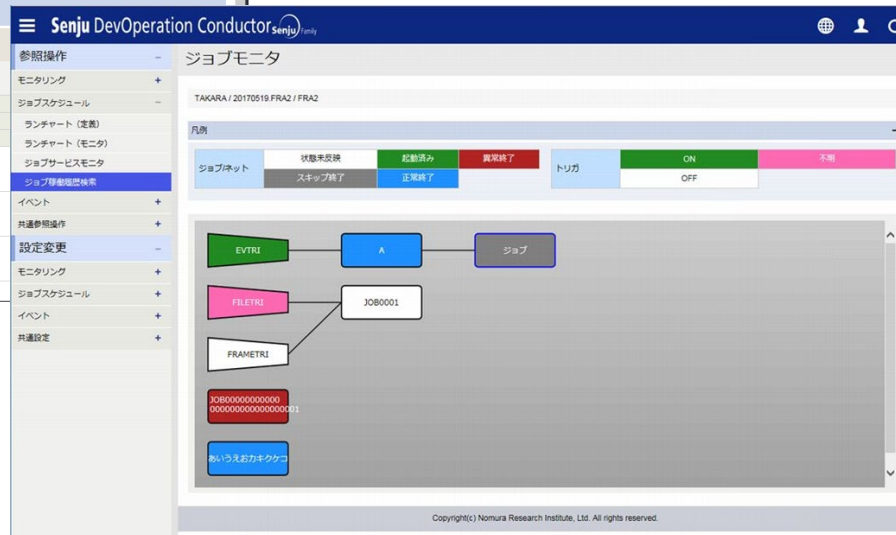
WEB connection (DevOps portal)

- ✓ Access via mobile devices (iPad, iPhone) from outside
- ✓ Appropriate IT governance control (access control, data control)
- ✓ Easy to use services without affecting the production environment (non stop or non restart)



Global node monitor

Job monitor (HTML5)



Monitors for smart phone

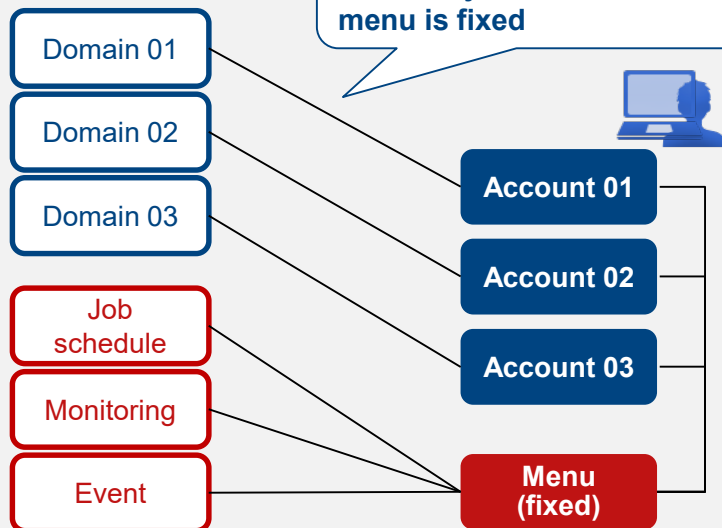
User Management of Senju Web Connection

Added a function to manage user information at Senju web connection

When using multiple Senju domains in Senju web,
it is possible to perform batch management of user information on the web
Usable menus can be specified for each user

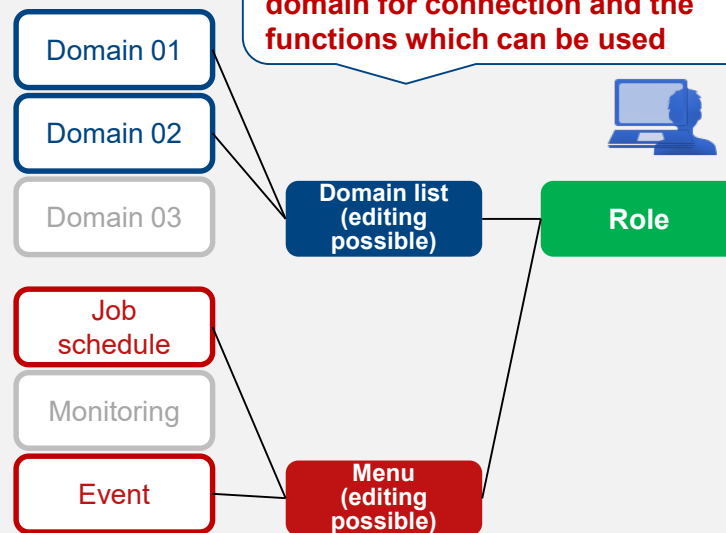
Conventional user management

The login user is different for each Senju domain and the menu is fixed



Senju/DC 2016 user management

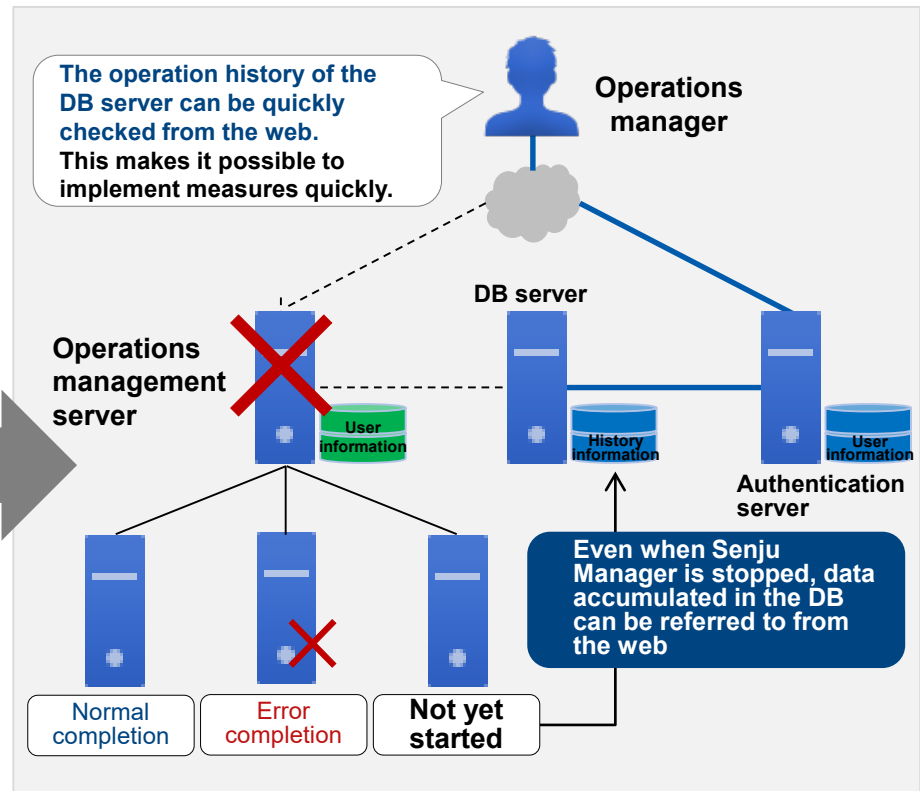
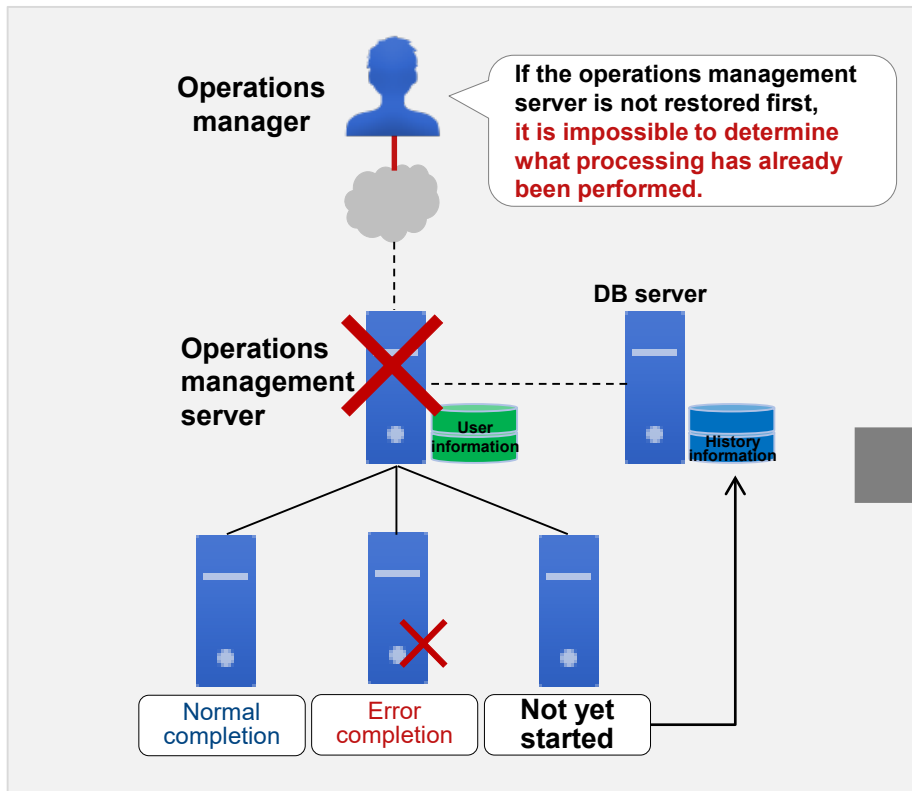
Each user has a single web account. Possible to flexibly control the Senju domain for connection and the functions which can be used



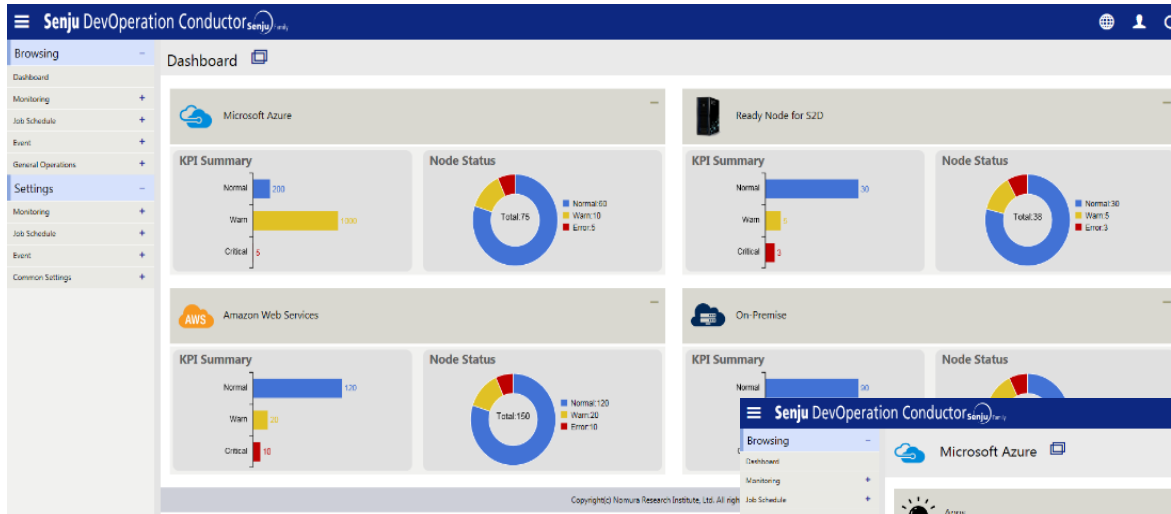
Senju Web Connection (Login Function for When Senju Manager is Stopped)

Provides a function for linking to an external authentication server and logging in even when Senju Manager is stopped

Makes it possible to quickly ascertain the latest operation status even in the event of large-scale trouble, and enables efficient system recovery

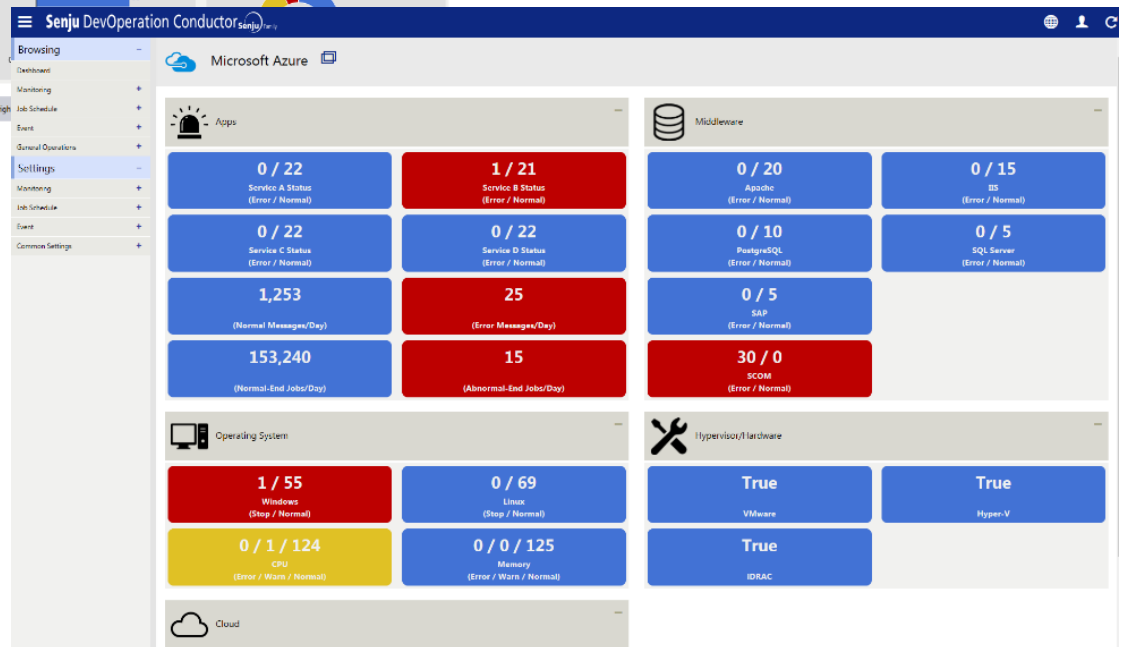


Multi-Cloud dashboard



Integrated review of public cloud (Azure, AWS,OCI) , private cloud, on-premise operation information

Visually confirm the operation information for each environment by category (APP, middle, OS, H/W, cloud)



Other Functions of Senju DevOperation Conductor

Event (Automatic Response: Senju Service Automation)

Senju Service Automation

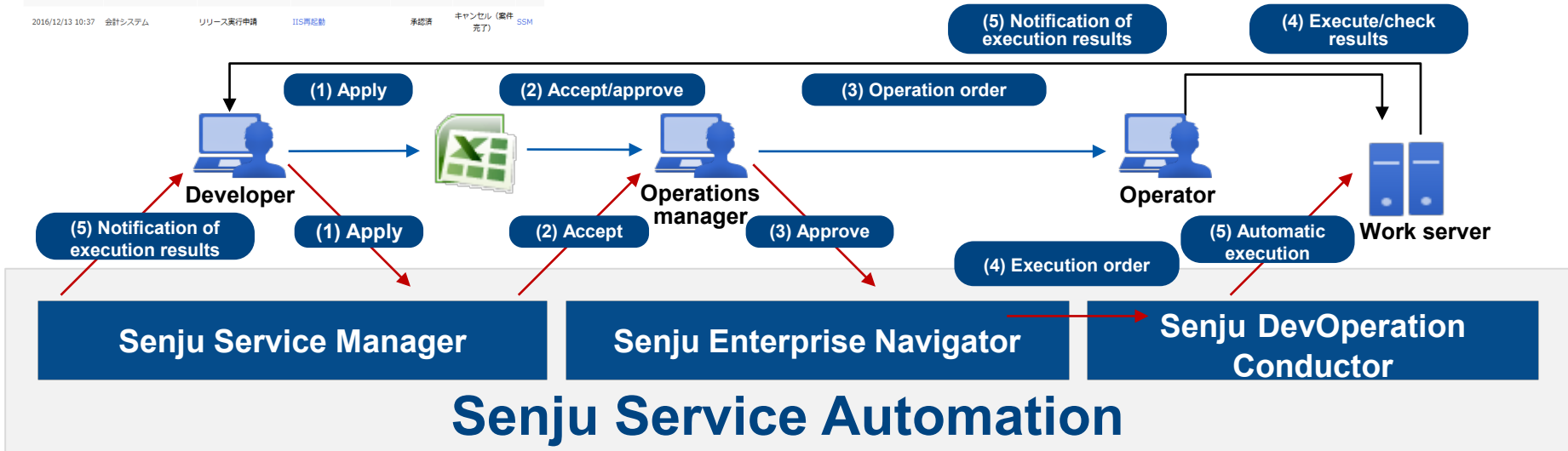
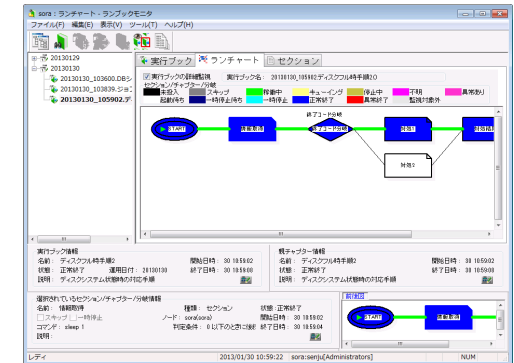
- As service requests from Senju Service Manager, "accept" and "approve" operation requests. Supports workflow management and control.
- After the application contents have been approved, automatically executed by Senju DevOperation Conductor. Reduces operating load and operating mistakes.



ワークフロー-加配:手順書03の実行指示(RBA-CLD000000003)

承認フローの履歴を一覧表示します

NO	タイトル	職員/ユーザー/役割	承認者	承認条件	承認者/承認日時	承認者/承認日時	承認者/承認日時	承認者/承認日時	承認者/承認日時	承認者/承認日時	承認者/承認日時
1	案件登録	全員	阿夫利創代(開発)	阿夫利創代(開発)	-	-	-	-	-	-	2017/04/21 18:40
2	案件承認待ち	開発承認者 (MSP 利用者)	野村 太郎	海野守(開発)	海野守(開発)	-	-	-	-	-	2017/04/21 18:41
3	運用承認待ち	運用担当者 (MSP 利用者) 運用承認者 (MSP 利用者) オペレータ (MSP 利用者) 運用管理者 (MSP 利用者)	千手 仙人 毎日元次(運用) 統括一部(運承) 平和由紀(オペ) 運高順子(運管)	統括一部(運承) 統括一部(運承)	-	-	-	-	-	-	2017/04/21 18:41

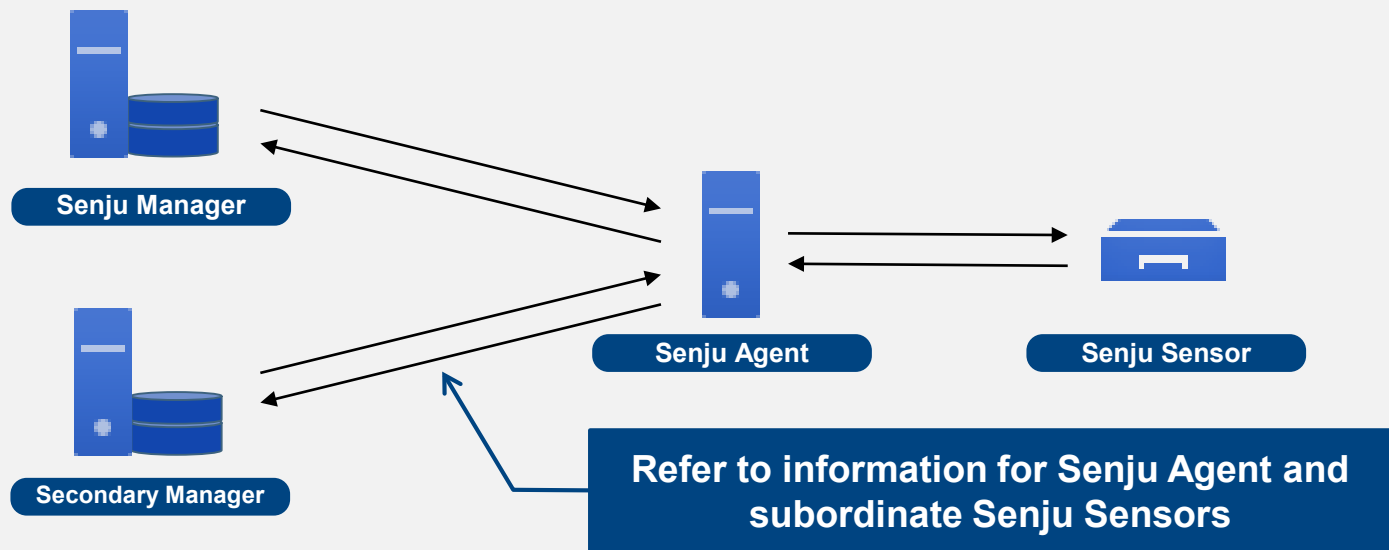


Secondary Managers

Manage the Senju Agent from multiple Senju Managers which are separate from the main manager

Added sensor types for secondary nodes

- For Senju Sensors, by registering secondary sensors of new node types, management is performed at the secondary manager and message information / monitoring information is linked to the secondary manager

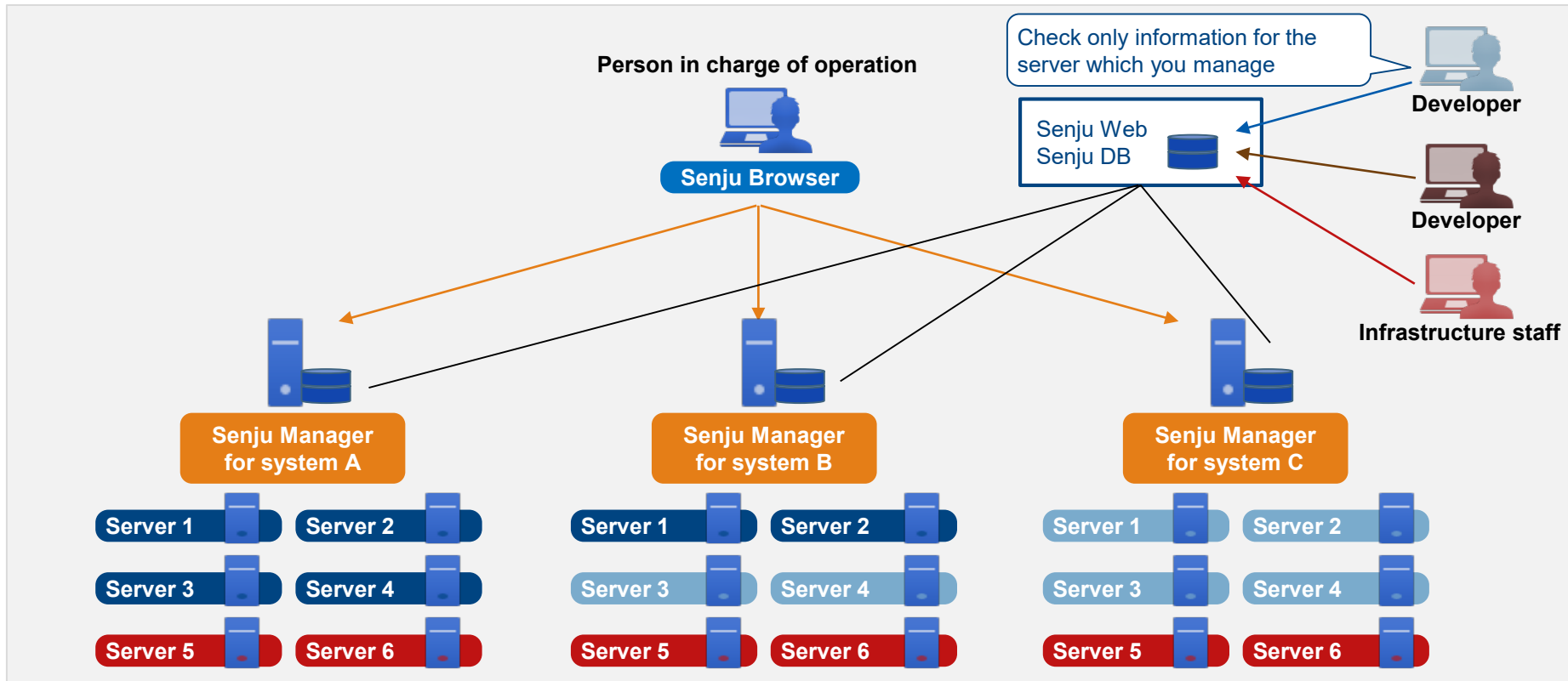


**Even when the main manager is stopped,
it is possible to check the operation status for Senju Agents and
Senju Sensors from the secondary manager**

Large-Scale Support (Multi-Domain)

Search for information across multiple domains

- Accumulate information for multiple Senju domains in a single DB/configuration file server (Senju Agent)
- Searches can be performed across accumulated information at the web console (InfoSearch)
- Search for operation information by focusing on the server which you manage
- Increases the efficiency of operation management performed using multiple teams and multiple systems



Agentless Monitoring/Jobs (Senju Sensor)

Transition from other tools is possible through a small number of man-hours

- Telnet/SSH connection is possible: Monitoring, runbook automation (remote execution), job schedule (sensor job execution), configuration.
- Supports IPv6 for Windows/Linux devices (monitoring*, configuration, job schedule, runbook automation)
(*Please contact us for details on response to extension options for monitoring.)
- Supports SSH monitoring from Windows probe node. (supports system information monitoring, disk monitoring, process monitoring, and detailed information monitoring)
- Custom monitoring for the Unix version of Senju Sensor (added connection command used for executing a script in the Unix version of Senju Sensor and performing custom monitoring)

The diagram illustrates the architecture of Senju. At the top, a server icon represents the **Senju Manager**. Below it, three server icons represent **Senju Sensor** nodes. An arrow labeled **Execute job** points from the Manager to the Sensors, and another arrow labeled **Monitoring** points from the Sensors back to the Manager. The entire sensor setup is enclosed in an oval labeled **Agentless**. To the right, three screenshots show the Senju Manager interface: a network topology diagram, a performance chart, and a configuration window titled "hermannのプロトタイプ".

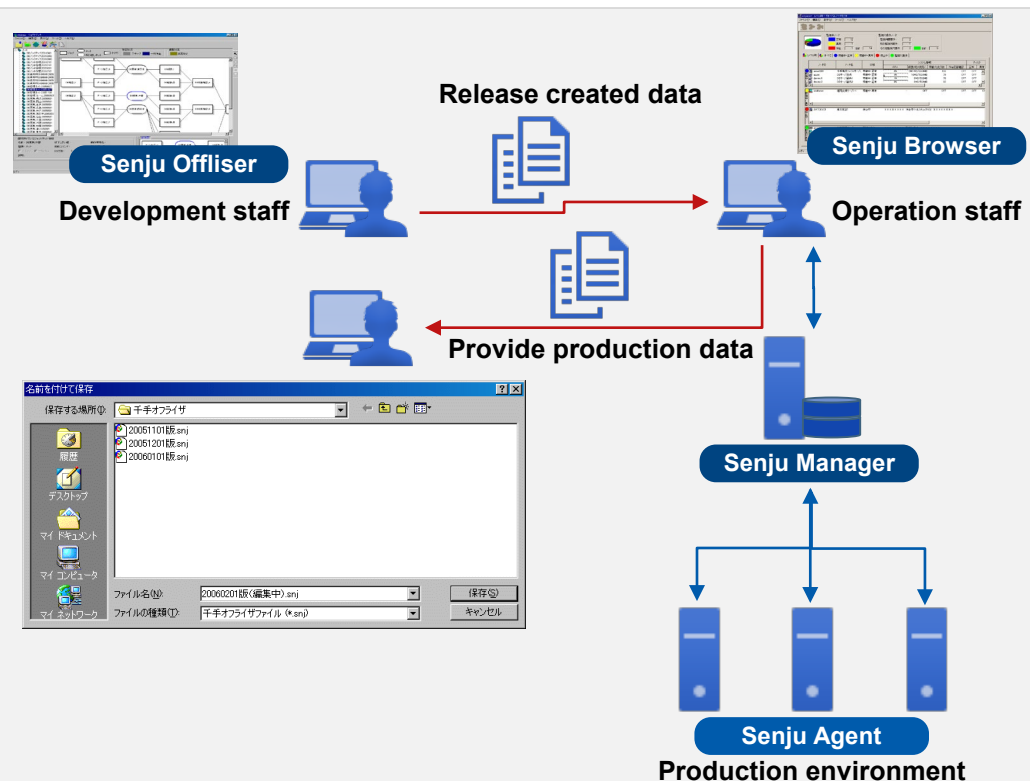
The configuration window "hermannのプロトタイプ" shows the following settings:

- プロブノード: ノードID: sora, ノード名: sora
- WMI/ログによる監視: ユーザー名: senju, パスワード: *****
- SNMPによる監視: バージョン: SNMPv1, コミュニティ名: "public"を使用 (selected), リトライ回数: 2 (回(0~10)), タイムアウト: 10 (秒(1~150))
- コマンド/テキストログによる監視(UNIX/Linux): TELNETによる接続, ユーザー名: senju, パスワード: *****
- SSHの高機能化設定: 文字コードを指定する (selected: Shift_JIS)
- 仮想サーバーホストログインの設定: ホスト種別: VMware ESX/ESXi/VC Server, ホスト名: (完全修飾ドメイン名), サーバー名: , ユーザー名: , パスワード:

Offline Solutions (Senju Offliser)

Senju Offliser

- Enables user of a GUI similar to Senju Browser in an offline environment without connection to the Senju system.
- Based on data created by the development staff, the operation staff can load data in the production environment without modification. This reduces mistakes during manual registration work.
- Definable data (monitoring, configuration, event, job schedule)
- **Added a function to output a file containing difference information for current settings and import settings when importing a definition (same for Senju Browser)**

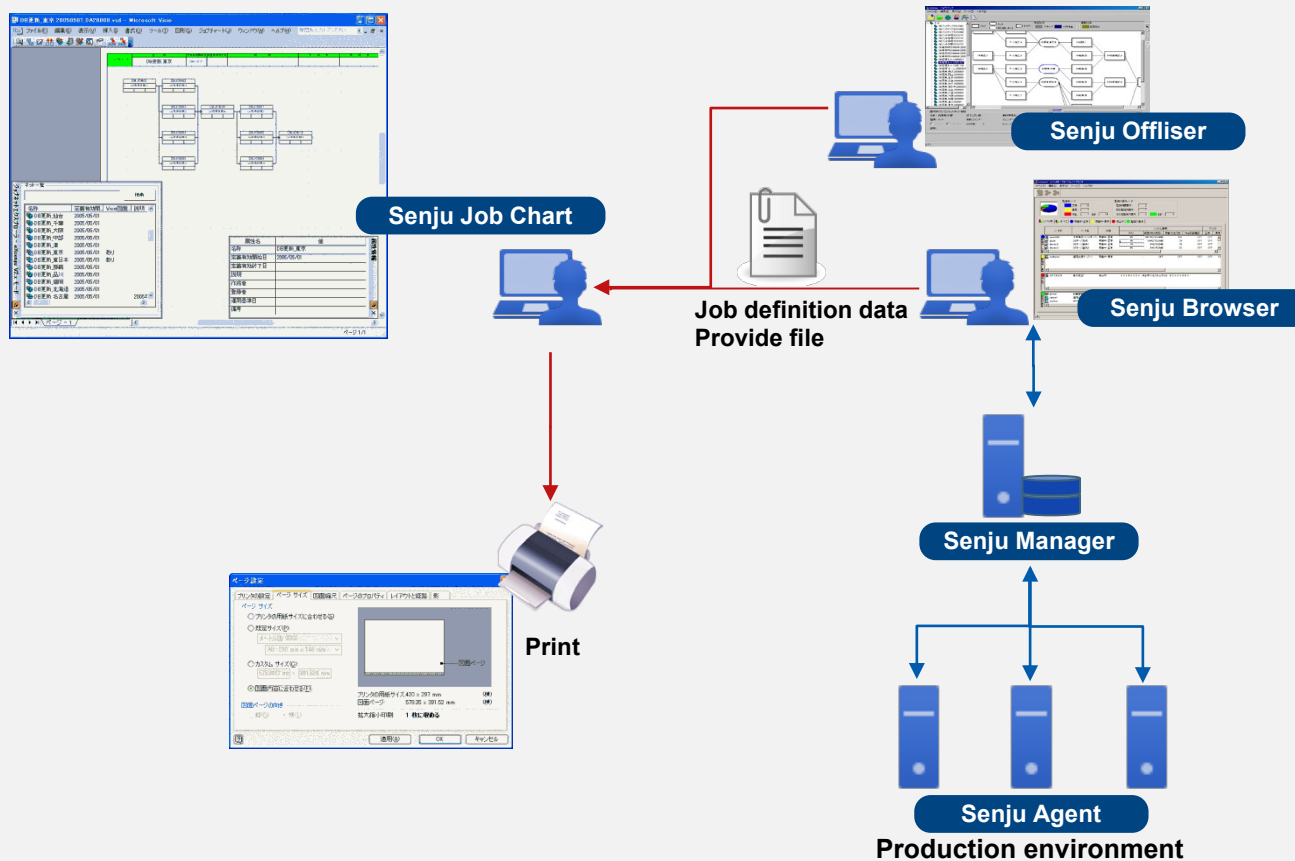


Senju Offliser: Loaded definition data			
Monitoring	Configuration	Event	Job schedule
Node group	Configuration management node	Message	Node group
Node information	Connection settings	Business day calendar	Node information
Monitoring Items	Configuration management items	Message action (Overall settings)	Business day calendar
Monitoring task	Execution unit	Message action	Operating day calendar
Log filter	History display settings	Email template	Trigger
Event log filter		Email contact	Resource
Weekly schedule		Contact group	Operating environment
Task schedule		Section template	Operating environment pool
Business day calendar		Book	Job
		Message filter	Effective date for net definition
			System
			Job service
			Job report
			Parameters

Offline Solutions (Senju Job Chart)

Senju Job Chart

- Possible to read Senju job definition data and output a job chart as Visio image data.
- For the created Visio image chart, it is possible to change/save position information, add comments, and print. This supports reporting and document creation.

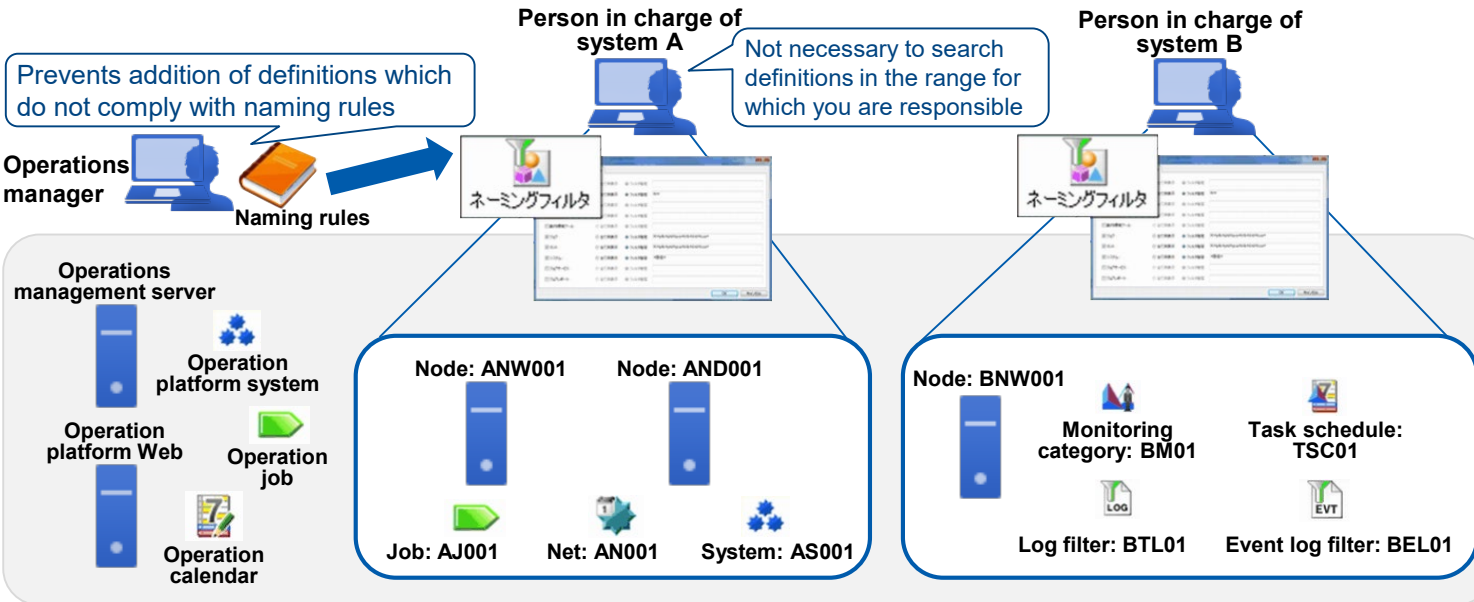


Naming Policy Function

Filters objects in the Senju Browser by name and controls reference/addition/deletion.

Naming filter

- Controls whether to display or hide objects for each user (filter settings for regular expressions)
- Prevents creation/editing of definitions which do not comply with naming rules



- Node group relation
- Node
- Custom monitoring categories
- Log filter
- Event log filter
- Weekly schedule
- Task schedule
- Business day calendar

- Operating day calendar
- Trigger
- Resource
- Operating environment
- Operating environment pool
- Job
- Net
- System
- Job service
- Job report

Enhances internal controls through refined display

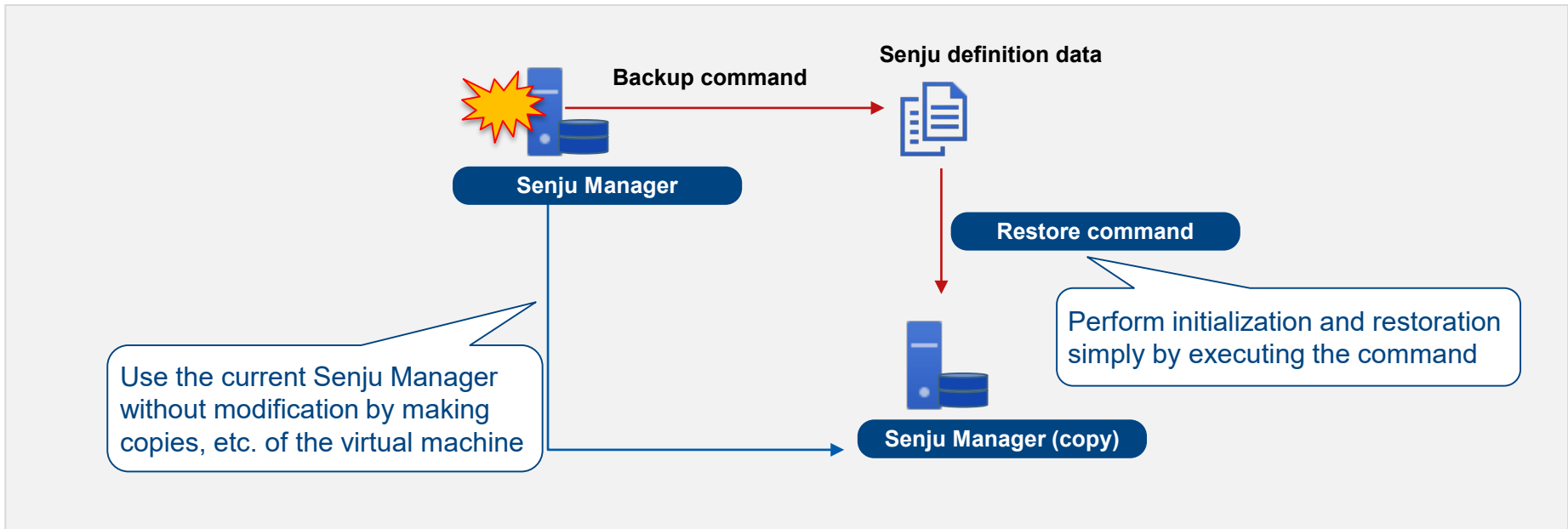
Encourages standardization of operation via thorough compliance of naming rules

Senju Reset/Restore Function

Enhanced the command for restoring definition data of Senju Manager.
Increases the efficiency of restoration.

Increases the efficiency of restoration work

- When restoring Senju definition data, it is no longer necessary to use Senju Manager in the default installation status. Initialization of definitions and restoration of backup files for the existing Senju Manager can be performed using just a single command.



Increases the efficiency of restoration and significantly shortens restoration time

Information on Senju Family

- **Two-Day Senju Training Course**

<https://senjufamily.smartseminar.jp/public/seminar/view/161>

- **Senju DevOperation Conductor Hands-On Seminar: Held monthly (free)**

<https://senjufamily.smartseminar.jp/public/seminar/view/44>

- **User case download**

<https://senjufamily.nri.co.jp/case/>



Senju Information Center

Email : senjuinfo@nri-itsa.com

URL : <http://senjufamily.nri.com>

NRI

**Dream up
the future.**