

# System Management Console

## Supporting the Continuity of Care

The System Management Console (SMC) is a powerful tool for biomedical professionals to streamline their workflow and access critical information from the medical ecosystem. The SMC provides a centralized platform where biomedics can monitor, manage, and review essential data, contributing to more effective decision-making and equipment maintenance.

There are two accessible ways to use the SMC, catering to different needs and devices:

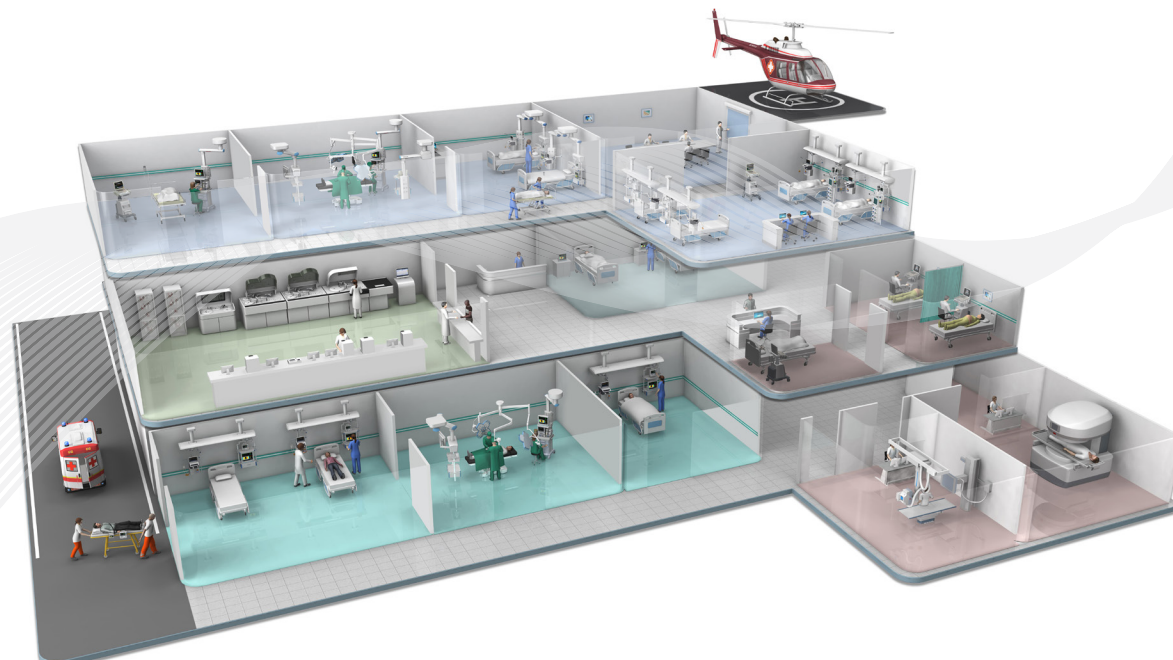


**SMC Client Application** – A Windows® desktop application, offering a robust and feature-rich experience tailored for configuration and management of your medical device equipment.



**SMC Web Portal** – A versatile web-based interface that can be accessed across all devices, ensuring convenience and flexibility on the go.

With its user-friendly design and comprehensive functionality, the SMC empowers biomedics to efficiently manage equipment and ensure optimal healthcare operations.



# SMC Client Application



SMC Client Application provides access to management and configuration functions vital to HTM management of the medical device ecosystem.

## SMC Device Asset Management Dashboard

Management of devices within the Mindray System starts with identifying all devices and determining their location(s). The Mindray SMC Device Asset Management Dashboard provides this capability throughout the healthcare enterprise.

### SMC Device Asset Dashboard Highlights

- Displays an inventory list of Mindray devices and their status within the healthcare system.
- Is filterable and searchable to assist HTM in quickly finding a device
- Provides details for each asset and displays information to help identify the device within the care environment, such as serial number, software/hardware version, and device type
- Provides the last 20 known locations of each asset, equipping the HTM the data needed to locate the device
- Supports remote system log collection from one or multiple assets, without traveling to and locating the device, reducing time and cost related to investigating reported issues
- Provides an exported list of the Mindray assets which can be merged into an enterprise system, for convenient management of multiple vendors' devices and/or to generate custom reports of Mindray assets
- Includes third party assets connected to the Mindray BeneVision N-Series monitors using Benelink or through the M-Connect Interoperability Solution

Device Category	Device Model	Device Serial Number	Device Code	Device Name	Device Status	Location	Device ID	Facility
<input type="checkbox"/> Monitor	BeneVision N22/19	SN_MR234		DeviceName0	Shutdown ( 2020-11-2	Room44 Bed11	00-0B-AB-04-9B-96-B	
<input type="checkbox"/> Monitor	BeneVision N12	SN_MR229		DeviceName0	Offline ( 2020-12-09 1	Cardiology Room48 Bed	00-0F-14-04-9B-0C-3	West Area
<input type="checkbox"/> Monitor	TMS80 Monitor	SN_XF100		DeviceName0	Offline ( 2020-12-09 1	GW Room27 Bed3	AC-9A-22-00-A5-18-0	West Area
<input type="checkbox"/> Monitor	BeneVision N12	SN_MR291		DeviceName0	Shutdown ( 2020-12-0	MICU Room4 Bed27	00-0F-14-04-9B-0C-3	West Area
<input type="checkbox"/> Monitor	BeneVision N12	SN_XF167		DeviceName0	Shutdown ( 2020-12-0	OICU Room45 Bed27	00-0F-14-04-9B-0C-3	West Area
<input type="checkbox"/> Monitor	BeneVision N12	SN_MR245		DeviceName0	Shutdown ( 2020-12-0	PCICU Room28 Bed1 8	00-0F-14-04-9B-0C-3	West Area
<input type="checkbox"/> Monitor	BeneVision N12	SN_MR242		DeviceName0	Offline ( 2020-12-09 1	PCICU Room49 Bed3	00-0F-14-04-9B-0C-3	West Area
<input type="checkbox"/> Monitor	BeneVision N12	SN_XF125		DeviceName0	Shutdown ( 2020-12-0	RICU Room11 Bed1	00-0F-14-04-9B-0C-3	West Area
<input type="checkbox"/> Monitor	BeneVision N12	SN_XF142		DeviceName0	Offline ( 2020-12-09 1	RICU Room20 Bed25	00-0F-14-04-9B-0C-3	West Area
<input type="checkbox"/> Monitor	BeneVision N12	SN_MR235		DeviceName1	Shutdown ( 2020-12-0	Cardiology Room11 Bed	00-0F-14-04-9B-0C-37	East Area
<input type="checkbox"/> Monitor	BeneVision N22/19	SN_XF167		DeviceName1	Shutdown ( 2020-12-0	GW Room40 Bed9	00-0B-AB-04-9B-96-B	West Area
<input type="checkbox"/> Monitor	BeneVision N12	SN_XF117		DeviceName1	Shutdown ( 2020-12-0	MICU Room0 Bed29	00-0F-14-04-9B-0C-3	West Area
<input type="checkbox"/> Monitor	BeneVision N12	SN_MR299		DeviceName1	Offline ( 2020-12-09 1	RICU Room4 Bed1 5	00-0F-14-04-9B-0C-3	West Area
<input type="checkbox"/> Monitor	BeneVision N22/19	SN_XF198		DeviceName2	Shutdown ( 2020-12-0	GW Room8 Bed15	00-0B-AB-04-9B-96-B	West Area
<input type="checkbox"/> Monitor	BeneVision N12	SN_MR200		DeviceName2	Shutdown ( 2020-12-0	ICU Room13 Bed1 0	00-0F-14-04-9B-0C-3	East Area
<input type="checkbox"/> Monitor	BeneVision N12	SN_XF169		DeviceName2	Offline ( 2020-12-09 1	RICU Room7 Bed1 3	00-0F-14-04-9B-0C-3	West Area
<input type="checkbox"/> Monitor	BeneVision N22/19	SN_MR283		DeviceName3	Shutdown ( 2020-11-2	Room 15 Bed23	00-0B-AB-04-9B-96-B	
<input type="checkbox"/> Monitor	BeneVision N22/19	SN_MR210		DeviceName3	Shutdown ( 2020-11-2	Room41 Bed8	00-0B-AB-04-9B-96-B	
<input type="checkbox"/> Monitor	BeneVision N12	SN_XF165		DeviceName3	Shutdown ( 2020-12-0	Cardiology Room27 Bed	00-0F-14-04-9B-0C-3	West Area
<input type="checkbox"/> Monitor	BeneVision N12	SN_MR283		DeviceName3	Shutdown ( 2020-12-0	ICU Room15 Bed23	00-0F-14-04-9B-0C-37	West Area

# SMC Device Configuration Management



The screenshot shows the M-IoT Device Manager (Administrator) interface. The main window displays a table of device configurations. The table has columns for Department, Department Type, Configuration Name, Configuration Type, Device Model, and Time. There are three rows of data, each with a 'Device List' button. Below the table, there are buttons for 'Add Configuration', 'Synchronize Configuration', 'Delete Configuration', and 'Operation Log'. A 'Select All' checkbox is also present.

Department	Department Type	Configuration Name	Configuration Type	Device Model	Time	
<input type="checkbox"/> CCU	General	CCU 1-2-21	Adult Configuration	BeneVision N17	2022-06-10 13:06:25	Device List
<input type="checkbox"/> ED	General	ED 5-1-22	Adult Configuration	BeneVision N15	2022-06-10 13:04:33	Device List
<input type="checkbox"/> ICU	ICU	ICU 6-1-22	Adult Configuration	BeneVision N22/19	2022-06-10 13:05:18	Device List

Devices and device configurations within a healthcare system are constantly evolving. From replacing devices to swapping them out for repair or updating clinical default settings to address a new patient care protocol or alarm fatigue initiative, the need to ensure all devices have the correct configuration is paramount. The Mindray SMC Device Configuration Management Tool provides a centralized and documented management console to reduce the time, travel, and manual documentation required of the HTM, in turn helping to increase productivity and reduce maintenance costs.

## SMC Device Configuration Console Highlights

- Once loaded, device configurations can be pushed to the selected devices within the healthcare system, ensuring the HTM is aware of which devices are required to receive the new configurations
- Enables the management of multiple configuration sets that can be specialized to specific care areas, types of patients, device types, or departments and can be deployed anywhere within the healthcare system
- Improves workflow productivity of the HTM by eliminating the need to visit each device manually
- Provides a log detailing the configuration pushed to each device, which devices received the configuration, and when the settings were downloaded
- Provides a log of devices that failed to receive the new configuration so the HTM can quickly identify which devices need to be addressed

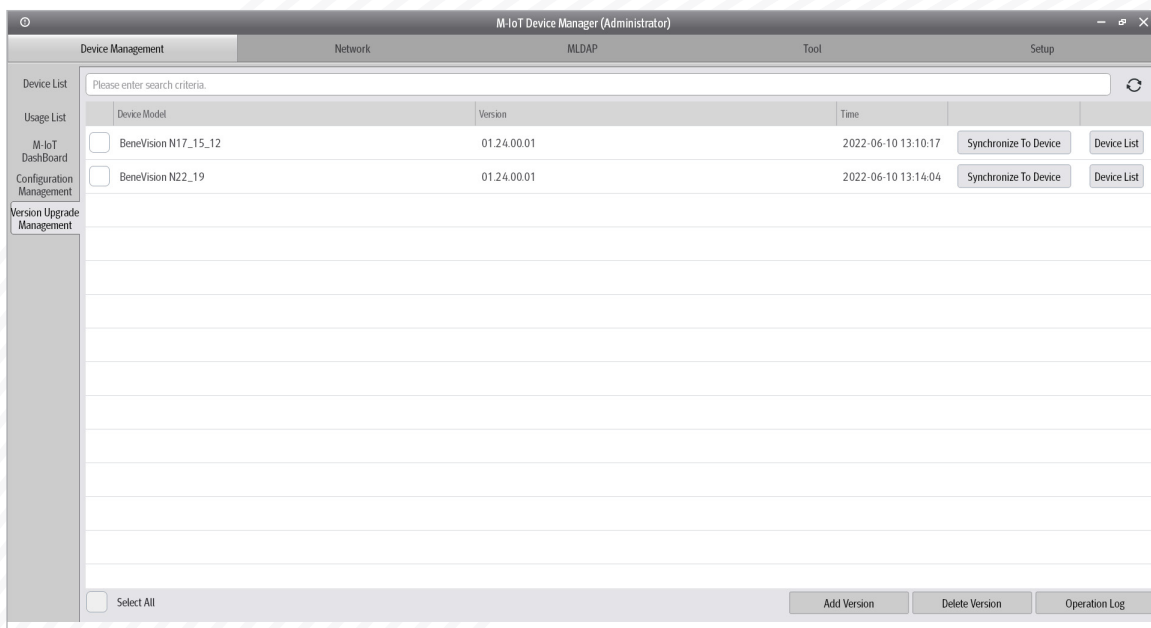
# SMC Software Version Management



When software updates are required to expand capabilities, address issues, or patch security vulnerabilities, the HTM must ensure all required devices are addressed. The Mindray SMC Software Version Management Tool provides a centralized and documented software version management tool to help reduce the time, travel, and manual documentation requirements on the HTM, with the goal of increasing productivity and reducing maintenance costs.

## Software Version Management Console Highlights

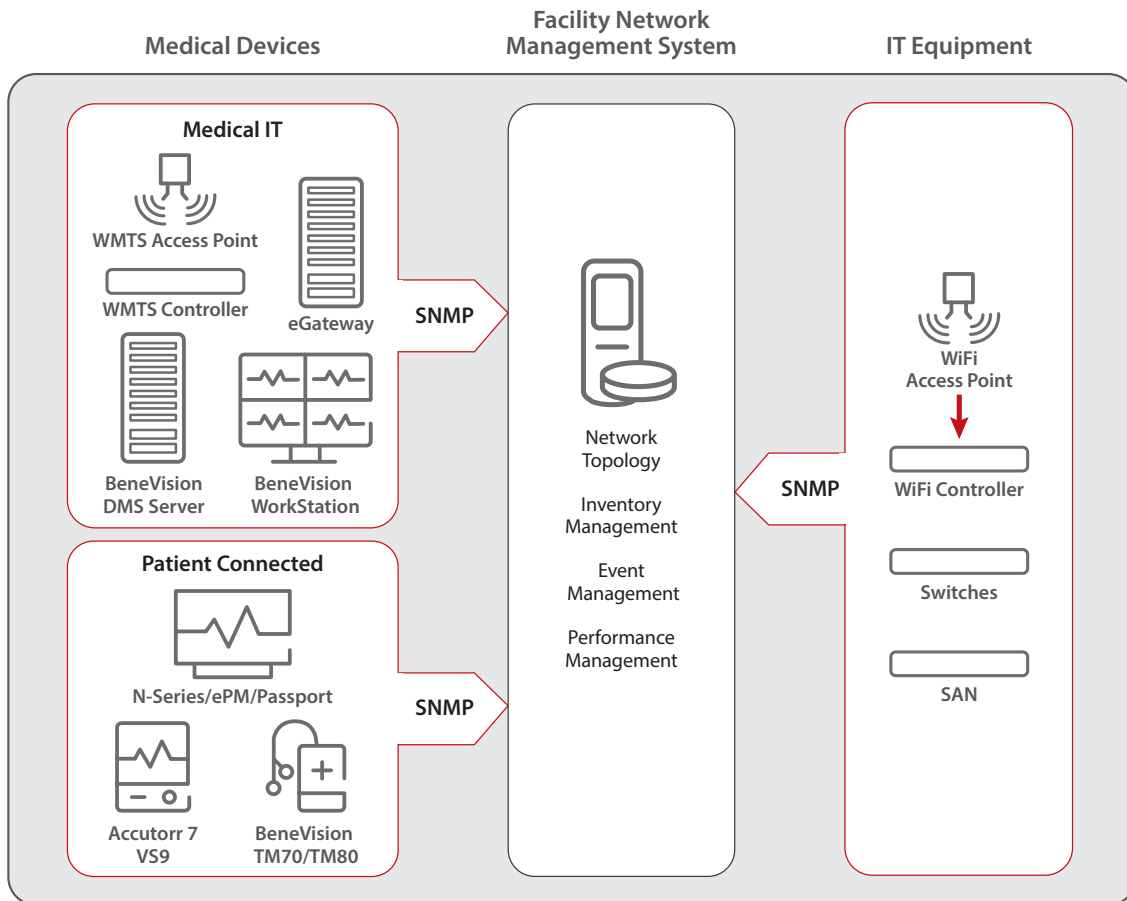
- Users can load software packages, then push them to the selected device within the healthcare system, all in the software version console to ensure the HTM is aware of which devices are required to receive the new software
- Allows management of multiple software releases that can be deployed anywhere with the healthcare system
- Eliminates the need for the HTM to travel to each device and manually update it with a USB
- Software upgrades can be deployed when a patient is not being monitored by the device to reduce any disruption or continuity in care; before the upgrade is performed, the user would acknowledge that the device is not in use
- Provides a list of upgraded devices and documents when the device received the new software and to which version it was upgraded
- Provides a log of devices that were not upgraded due to failure or not being acknowledged on the device so the HTM can quickly identify which devices need to be addressed



# Event Notifications



Providing remote tools to manage devices used in the healthcare system is key to ensuring HTM productivity. However, with the increasing number of devices within healthcare systems, oftentimes this is no longer adequate. The HTM is facing more responsibilities and demands which can limit time spent identifying and mitigating equipment failures. Fortunately, an event-driven notification system such as Mindray's Event Notifications can alert the HTM to devices needing attention and help to prioritize quick intervention and optimize uptime.



**Medical devices and IT equipped with SNMP communication provide notifications to a facilities SNMP compatible Network Management System (NMS)**

- SNMP queries and SNMP traps ensure the HTM will get notified through facility NMS of all issues occurring within the Mindray system, allowing them to leverage the existing facility NMS and workflows for notifications, reducing the cost and time needed to deploy solutions.
- SNMP interfaces provide a complete view of the Mindray system for standard IT equipment (switches, wireless network components, and servers) and Mindray medical devices to ensure the HTM is aware of any issues which may impact the delivery of patient care.

# SMC System Log Tool



Notifications of issues are received two ways – either automatically or by a healthcare provider contacting the HTM – allowing the HTM to have immediate remote access to begin troubleshooting using the Mindray SMC System Log Tool.

Time	Description	Department	Room No. - Bed No.	Device Name
2022-04-29 18:14:47	Network is disconnected. Please check. (End Time: 2022-05-09 17:42:38)			
2022-04-29 16:38:12	Station - Network Disconnected			
2022-04-29 16:38:11	WorkStation (192.168.0.50, 08-00-27-04-9D-F5-05-82 ) Disconnected			
2022-04-29 13:35:04	System Setup/Other/Time, Set System Time : 04-29-2022 13:35:04			
2022-04-29 16:37:56	System Setup, Close			
2022-04-29 16:37:52	System Setup/Other/Time, Set System Time : 04-29-2022 16:37:52			
2022-04-29 13:34:34	System Setup/Other/Time, Set System Time : 04-29-2022 13:34:34			
2022-04-29 16:37:56	System Setup, Close			
2022-04-29 13:34:12	Login Successfully, Password Type : User Maintenance			

## SMC System Log Tool Highlights

- Provides remote access to review logs from anywhere within the healthcare system to decrease response time and eliminate travel for the HTM
- Enables search, sort, and filter by physiological, technical, or security logs to assist the HTM in quickly finding a device or generating reports around the events of interest
- Enables the HTM to export a report detailing the filtered log entries from the Mindray system

Using automated notifications and the ability to access data from anywhere within the healthcare system, the Mindray SMC and M-iOT provide HTMs with the tools required to overcome daily challenges and achieve the critical goal of delivering quality care everywhere. With these tools, HTMs are empowered to reduce response time and maintenance costs, as well as increase productivity and uptime within their healthcare system.

# SMC Web Portal



The SMC Web Portal uses a standard web browser to securely access asset information, equipment status, and utilization information.

The web portal provides access to:

- Device asset management data
- Device usage data
- Customizable dashboards
- Gas utilization rates
- Anesthesia self-test

A secure web service interface is also available to export comprehensive device asset information, ready for automatic integration into an enterprise asset management system.

The screenshots display the following components and data:

- Dashboard 1 (Top):** Overview for 'All Facilities' showing a total of 2921 devices. Breakdown: Working (926, 31.7%), Standby (890, 30.5%), Shutdown (887, 30.4%).
- Dashboard 2 (Middle):** Overview for 'Central Hospital' showing 1424 devices. Breakdown: Working (477, 33.5%), Standby (511, 35.9%), Shutdown (436, 30.6%).
- Dashboard 3 (Bottom):** Comprehensive overview for 'All Facilities' with a total of 2921 devices. It includes a 'Monitor Distribution (Pcs)' table, 'Monitor Usage Trends in 12 Months (%)' line chart, 'Statistics of Monitor Ex-Factory Duration (Pcs)' donut chart, and 'Statistics of Monitor Total Working Hours (Pcs)' bar chart.

Facility	Count
Central Hospital E...	44
Central Hospital N...	43
Specialized Hospit...	40
Specialized Hospit...	40
Central Hospital C...	39
Central Hospital N...	39
Specialized Hospit...	38

Duration	Count
>10 Year	165
5-10 Year	320
<5 Year	939

Category	Count
Monitor	712
Ventilator	356
Anesthesia	249
Pump	107

# SMC Device Asset Management Dashboard



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The screenshot displays the Mindray SMC Device Asset Management Dashboard. The interface includes a sidebar with navigation options: Asset Manage, Usage Analysis, Gas Analysis, Device Selftest, PM Manage, Rescue Debrief, Dashboard, and System Setup. The main content area shows a summary of device counts by category and status. Below this is a 'Device List' table with columns for Device Category, Device Model, Device Serial Number, Asset Number, Device ID, Device Name, Asset Attribution, Device Status, Location, Facility, and Edit/Detail. The table lists various devices such as Syringe Pump, Telemetry, Transport Monitor, Monitor, Transport Ventilator, and Transport Ventilator with their respective details. At the bottom, there is a pagination control showing 'Total 2921' and page numbers 1 through 293.

Device Category	Device Model	Device Serial Number	Asset Number	Device ID	Device Name	Asset Attribution	Device Status	Location	Facility	Edit/Detail
Syringe Pump	BeneFusion nVP	SN1015983210000000	NSL48615082100...	53-5-b5-32-74-...	IGM-113100	Respiratory Medicine	Standby	Room7 Bed4	Central Hos	<a href="#">🔗</a> <a href="#">☰</a>
Telemetry	TM80 Monitor	SN1051979010000000	NSL18237841100...	74-d4-c6-3f-af-...	TM80 Monitor-60100	Infectious Diseases	Standby	Room8 Bed4	Specialized	<a href="#">🔗</a> <a href="#">☰</a> <a href="#">🔍</a>
Transport Monitor	BeneVision N1	SN1072966110000000	NSL19225647100...	a4-df-70-a7-35-...	BeneVision N1-1261...	Gastroenterology an...	Standby	Room9 Bed3	Specialized	<a href="#">🔗</a> <a href="#">☰</a>
Monitor	epm 10	SN1102922100000000	NSL73973698100...	37-86-c5-6c-6e-...	epm 10-926100	Cardiovascular Surg...	Working	Room6 Bed10	Central Hos	<a href="#">🔗</a> <a href="#">☰</a>
Transport Ventilator	TV80S	SN1126804100000000	NSL20013353100...	bf-42-d7-7-70-...	TV80S-618100	Thoracic Surgery	Working	Room10 Bed10	Central Hos	<a href="#">🔗</a> <a href="#">☰</a>
Syringe Pump	BeneFusion nVP	SN1132195210000000	NSL37911232100...	21-8b-39-63-2-...	IGM-188100	Gastroenterology	Working	Room1 Bed3	Specialized	<a href="#">🔗</a> <a href="#">☰</a>
Transport Ventilator	TV80	SN1199175710000000	NSL75008876100...	a-82-71-22-18-...	TV80-216100	Critical Care	Shutdown(2024-01-17)	Room1 Bed9	Specialized	<a href="#">🔗</a> <a href="#">☰</a>
Syringe Pump	BeneFusion nVP	SN1233142910000000	NSL60606992100...	1a-a3-6b-8d-d-...	IGM-324100	Gastroenterology	Working	Room6 Bed10	Central Hos	<a href="#">🔗</a> <a href="#">☰</a>
Transport Ventilator	TV80S	SN1244440810000000	NSL12247521100...	66-ac-da-fa-bc-...	TV80S-199100	Respiratory Medicine	Working	Room1 Bed6	Specialized	<a href="#">🔗</a> <a href="#">☰</a>
Monitor	epm 10	SN1262405310000000	NSL53552855100...	3c-82-c2-3c-3c-...	epm 10-441100	Respiratory Medicine	Standby	Room5 Bed4	Central Hos	<a href="#">🔗</a> <a href="#">☰</a>

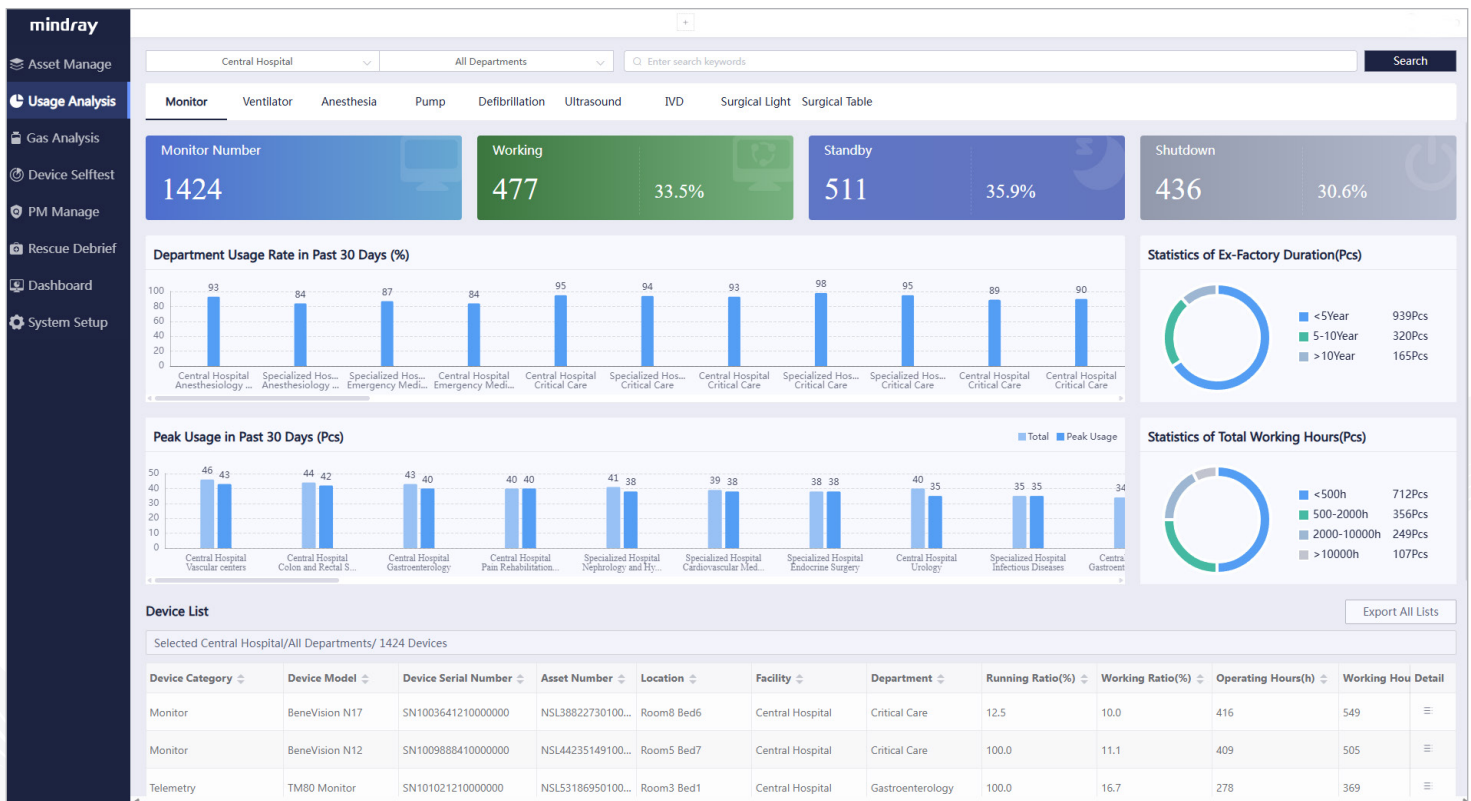
# SMC Device Usage Dashboard



Creating an optimal balance in the purchasing, service, and allocation of equipment assets is essential for healthcare organizations. It directly impacts the ability to deliver quality patient care and can expose an organization to costly inefficiencies when not managed properly. The Mindray SMC Device Usage Dashboard provides usage information of devices within the system, supporting quantitative, data-driven decision-making for asset management.

## The SMC Device Usage Dashboard:

- Provides usage statistics for each device within the healthcare system
- Is available in both tabular and graphical formats for a quick understanding of device usage trends
- Provides data needed to understand where and how devices are being used to ensure the most cost-effective use for healthcare systems
- Allows users to generate custom reports for device usage data for all Mindray assets



# Customizable Dashboard



The Dashboard provides a configurable overview of statistics across the device ecosystem, blending information across facilities, departments, and device modalities.

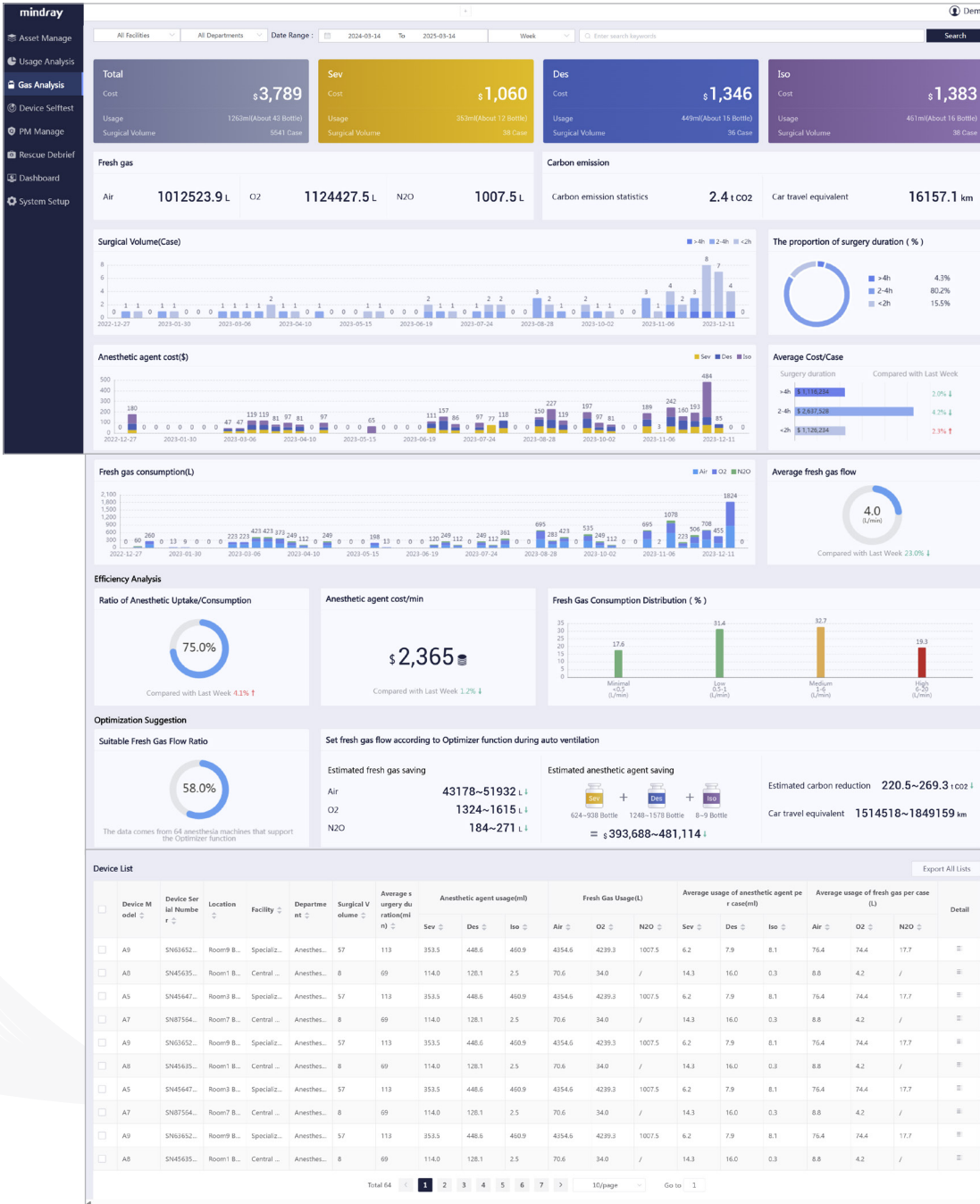


# SMC Anesthesia Management Dashboards



The anesthesia dashboard provides visualization of key metrics that enable data-driven decisions. These insights help users analyze the cost and utilization of both the anesthesia machines and anesthetic gases. A centralized overview of device self-test results ensures optimal fleet utilization by maintaining device availability.

## Utilization Dashboard



**Statistical Periods:** Offers metrics for surgical volume, anesthetic agent cost, and fresh gas consumption across daily, weekly, monthly, and quarterly periods

**Utilization Metrics:** Provides insights into the cost, usage, and surgical volume across anesthesia machines and gases

**Fresh Gas Usage:** Tracks and analyzes fresh gas consumption patterns

**Efficiency Analysis:** Delivers metrics on the ratio of anesthetic uptake/consumption, anesthetic agent cost per minute, and fresh gas consumption distribution

**Optimization Suggestions:** Provides recommendations for optimization based on current gas utilization

**Drill-Down Details:** Allows detailed analysis on a per-device basis for each anesthesia machine

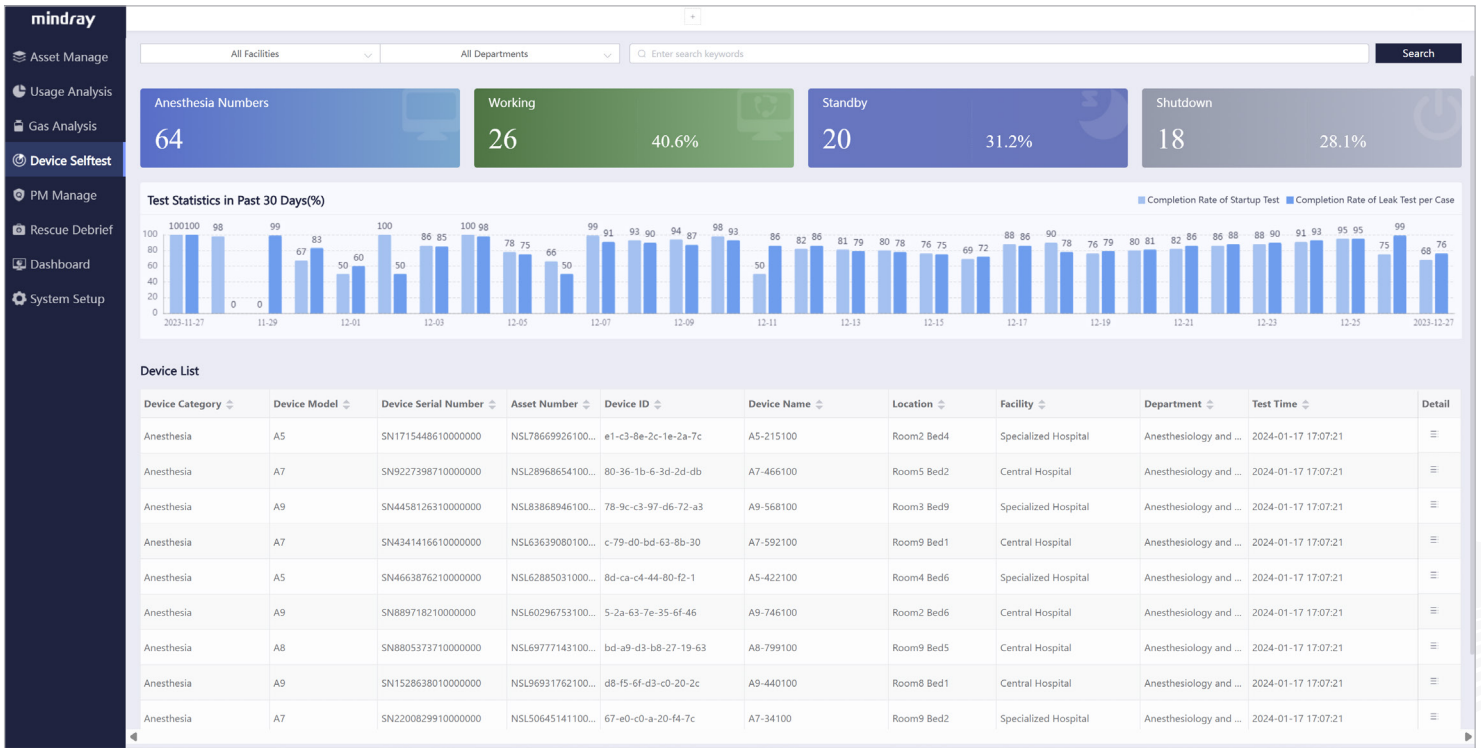
### Footnotes:

- Gas utilization applies to A8/A9 version 01.20 or greater
- Anesthetic Gases include Sev, Des, and Iso; fresh gases include Air, O2 and N2O

# Anesthesia Machine Self-Test Dashboard



The Anesthesia Machine Self-Test Dashboard offers a centralized view of your anesthesia fleet's test status, allowing you to easily track and monitor the results of startup tests, and system tests to ensure the operational and readiness of your anesthesia machine.



## Our Vision

Better healthcare for all

## Our Mission

Advance medical technologies to make healthcare more accessible



Mindray North America  
Headquarters in Mahwah, N.J.

## Quality That Exceeds Expectations

At Mindray, customer-focused quality is at the core of what we do, which means we constantly work to a higher standard to deliver solutions that meet your clinical needs and provide the highest level of quality throughout the product life cycle. From inception to manufacturing, each phase of R&D includes checkpoints to verify quality goals and that customer needs are being met. Design-for-manufacturing means comprehensive assembly line tests are built into the product development process to ensure repeatability in delivering the highest quality, safety, and reliability across our product portfolio. Automation and informatization have been engineered into our manufacturing process for maximum efficiency, helping us not only meet ISO and global quality standards but exceed them. In fact, we've passed a quality management system audit for over three decades in a row.

**Our commitment to quality continues with our North American-based Mindray CARE Team providing service and support 24/7, which means we are focused on uptime, all the time.**

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healthcare within reach