

1 System Requirements and Compatibility

1.1 baramundi Management Server and baramundi PXE Relay

- Supported platforms: see 1.16 (bMS column).
- .NET Core 6.x, Asp.Net Core Framework 6.x and .NET Core Desktop 6.x in the same versions is required.
- German and English are supported languages.
- We recommend using a dedicated server to operate the baramundi Management Server.
- Certain ports¹ must be available for the baramundi Management Server.
- Integration into a Windows domain - Windows Active Directory is recommended.
- Hardware requirements server/network:
 - Available RAM: at least 8 GB; recommended 16 GB
 - Processor: at least 4 cores
 - Disk space for installing the bMS: at least 5 GB
 - Network card: at least 1 GB

1.2 Database connection

- Supported platforms:
 - SQL Server 2022
 - SQL Server 2019
 - SQL Server 2017
 - SQL Server 2016 SP3 (deprecated)
 - SQL Server 2014 SP3 (deprecated)
Note: bMS versions from 2024 R1 are no longer compatible with SQL Server 2014.
 - Oracle 19c (deprecated)
Note: bMS versions from 2025 R2 are no longer compatible with Oracle databases. A switch to MS-SQL or our cloud solution (bMSaaS) is recommended.

¹ A list of ports used is available in our online help <https://docs.baramundi.com>.

- At least 10 GB hard drive space for the baramundi database.
- The baramundi Management Server is a database-oriented system, so ensure sufficient database performance and a high-performance connection.
- For environments with up to 250 clients, SQL Express Edition can be used.
- Operation of the database server and the baramundi Management Server on one system is permissible. For greater requirements and larger environments, a dedicated database server is recommended.

1.3 baramundi Management Center

- Supported platforms for the baramundi Management Center, as well as Automation Studio, License Management, Remote Control and ImageMount: see 1.16 (Column bMC).
- Microsoft Edge WebView2 Runtime is required.
- Screen resolution:
 - Minimum screen resolution 1024 x 768 pixels.
 - Recommended resolution is 1280 x 800 pixels or higher.
 - All resolutions refer to a font size display of 100%.

1.4 baramundi OS-Customization Tool

- This baramundi Management Center add-on for customizing Windows 10 or Windows 11 images, provided via managed software, is supported on the platforms visible in MSW.
- The Microsoft ADK for Windows 11 is required to customize the Windows images.

1.5 baramundi DIP

- Supported platforms: see 1.16 (Column bDIP).
- Microsoft Visual C++ Redistributable in version 2015.x-x64 - VC-2022 is required.
- .NET Core 6.x, Asp.Net Core Framework 6.x and .NET Core Desktop 6.x in the same versions is required.
- A 64-bit system is required for the baramundi DIP installation.
- Additional hard disk space is recommended:
 - 10 GB for applications
 - 90 GB for managed software (MSW)
 - 6 GB for each operating system to be distributed with the baramundi OS Install module.

1.6 baramundi Gateway

- Supported platforms: see 1.16 (Column bGW)
- We recommend not operating other services on the same system as the baramundi Gateway.
- Integration in an Active Directory is not necessary.
- The baramundi Gateway should be operated in a DMZ environment to ensure strict separation from the bMS server. Operation of baramundi Gateway and bMS on one system is not supported.

Hardware requirements server/network:

- Available memory: at least 4 GB; recommended 8 GB
- Disk space for installing the baramundi Gateway: at least 1 GB
- Network card: at least 1 GB

1.7 baramundi OS-Install

- The Microsoft ADK for Windows 11 is required to customize the Windows images.
- The ADK is available in Managed Software as ADK10, version 2209.

1.8 baramundi License Management

- Storing license documents in the database can increase memory requirements on the database server.
- The MS-SQL Express database server is limited by Microsoft to 10 GB database size, therefore its use for baramundi License Management is not recommended.
- baramundi License Management supports current versions of the following browsers:
 - Microsoft Edge
 - Google Chrome
 - Mozilla Firefox

1.9 baramundi Interfaces

- bConnect version 1.1 and version 2.0 are both available.
- Deprecated - The bMOL (baramundi Management Object Language) interface is no longer being developed. We recommend switching to and using our bConnect interface.
Note: The bMOL interface will no longer be available as of bMS version 2024 R2.
- Deprecated - The httpMOC interface is no longer being developed. We recommend using our interface bConnect.
Note: The httpMOC interface will no longer be available as of bMS version 2024 R2.
- Deprecated - Direct access to the database (SQL/Oracle) is not supported. We recommend using our interface bConnect.
Note: The DB-Doku will therefore no longer be delivered with 2023 R2.

*) Deprecated: Feature updates and bug fixes are no longer provided. Critical security updates are provided for the current version.

1.10 baramundi Network Devices

- Supported platforms: see 1.16 (Column bND)
- Network scanner is an add-on to Windows bMA. It is available to all customers via Managed Software.
- .NET 4.7.2 is required.

1.11 baramundi OT Devices

- Data acquisition is done via SNMP version1, version2c, version3.
- Supported platforms: Siemens SIMATIC S7 1200 and 1500

1.12 baramundi Kiosk

- Supported platforms: see 1.16 (Column bND)
- For user logon and job assignment on a per-user basis, a Windows Active Directory including configured baramundi AD-Sync is required.
- baramundi Kiosk supports the following browsers, each in the current version:
 - Microsoft Edge
 - Google Chrome
 - Mozilla Firefox

1.13 Support for Android

- Supported Versions:
 - Android Enterprise 13
 - Android Enterprise 12
 - Android Enterprise 11
 - Android Enterprise 10
 - Android Enterprise 9
 - Android Enterprise 8 *)
 - Android Enterprise 7 *)
 - Android version 4.0.4. up to version 9 with Legacy Agent
Note: No longer supported on version 2024 R1 or later.
 - Samsung KNOX on Android version 4.0.4 up to version 9 with Legacy Agent
Note: No longer supported as of version 2024 R1.

*) This operating system has limited support. This may mean that new features are not usable on this operating system or features can no longer be used as before. No support for Zero-Touch.

1.14 Support for iOS

- Supported Versions:
 - iOS Version 17
 - iOS Version 16
 - iOS Version 15
 - iOS Version 14
 - iOS Version 13
 - iOS Version 12

1.15 Support for macOS

- Supported Versions:
 - macOS 14.x (Sonoma)
 - macOS 13.x (Ventura)
 - macOS 12.x (Monterey)
 - macOS 11.x (Big Sur)
 - macOS 10.15 (Catalina)

1.16 Support for Windows

- bMS/R: baramundi Management Server, baramundi PXE Relay
- bMC: baramundi Management Console, including bRemote, ImageMount and License Management Add-on
- bAS baramundi Automation Studio
- bGW: baramundi Gateway
- bDIP: baramundi DIP, bBT und DipSync Service
- bMA: baramundi Agent for Windows
- bND: baramundi Network scanner as add-on to Windows bMA
- X: Completely supported.

Platform	bMS/R	bMC	bAS	bGW	bDIP	bMA	bND
Windows Server 2022 Standard/Datacenter (Desktop display)	X	X	X	X	X	X	X
Windows Server 2022 Standard/Datacenter (Core)						X	
Windows Server 2019 Standard/Datacenter (Desktop display)	X	X	X	X	X	X	X
Windows Server 2019 Standard/Datacenter (Core)						X	
Windows Server 2016 Standard/Datacenter (Desktop display)	X	X	X	X	X	X	X
Windows 11 Pro / Enterprise (N)		X	X		X	X	X
Windows 10 Pro / Enterprise 22H2 (N) (32 Bit und 64 Bit)		X	X		x64	X	X
Windows 10 Pro / Enterprise 21H2 (N) (32 Bit and 64 Bit)		X	X		x64	X	X
Windows 10 Enterprise 2021 LTSC (32 Bit and 64 Bit)		X	X		x64	X	X
Windows 10 Enterprise 2019 LTSC (32 Bit and 64 Bit)		X	X		x64	X	X
Windows 10 Enterprise 2016 LTSC (32 Bit and 64 Bit)		X	X		x64	X	X
Windows 10 Enterprise 2015 LTSC (32 Bit and 64 Bit)		X	X		x64	X	X

1.17 Windows support with limitations

These operating systems are supported by baramundi components only to a limited extent. This may mean that new functions are not usable or that other functions can no longer be

used. Due to the complexity and large number of legacy systems, baramundi cannot guarantee functionality on these systems. Due to the limitations, we recommend the use of newer and current operating systems. We cannot provide support for the baramundi server components on operating systems that are out of Microsoft mainstream support.

baramundi server components (bMS/R, bMC, bAS, bGW, bDIP)

- (1): Is only supported to a limited extent now that Microsoft has ended (basic) product support.
- (2): Version 2021 R2 of the bMA must be used for this operating system. A more recent bMA cannot be run on this operating system. There will be no more security improvements for the bMA 2021 R2.

	bMS/R	bMC	bAS	bGW	bDIP	bMA	bND
Windows Server 2012 R2 Standard/Datacenter (Server mit grafischer Benutzeroberfläche)						1	1
Windows Server 2012 Standard/Datacenter (Server mit grafischer Benutzeroberfläche)						1	1
Windows Server 2008 R2 SP1 Standard /Enterprise / Datacenter						1	1
Windows Server 2008 SP2 Standard / Enterprise / Datacenter (32 Bit / 64 Bit)						1	1
Windows 10 Pro / Enterprise 1703 bis 21H1 (N) (32 Bit und 64 Bit)						1	1
Windows 8.1 Pro / Enterprise (32 Bit / 64 Bit)						1	1
Windows 7 SP1 Professional/Enterprise/Ultimate (N) (32 Bit und 64 Bit)						1	1
Windows Vista SP2 (32 Bit / 64 Bit)						1	1
Windows XP SP3 (32 Bit)						2	

1.18 Languages

The baramundi Management Center, baramundi License Management and Automation Studio are available in:

German, English

The bMA for Windows clients supports user messages in:

English, Bulgarian, Chinese, Czech, Danish, Dutch, Finnish, French, German, Greek, Hungarian, Italian, Norwegian, Polish, Portuguese, Romanian, Russian, Slovak, Spanish, Swedish, Turkish

The baramundi Kiosk supports:

German, English, Polish

More languages can be added by administrators.

For all server-side services (i.e., baramundi Management Server, baramundi Gateway, DIP), the following languages are supported:

German, English

2 Product improvements in detail

2.1 Removed discontinuations / removed properties

- The reports "Comparex Miss Marple" are no longer supported and have been removed.
- The baraDIP transmission path HTTP has been removed. Only HTTPS is supported now.
- The documentation file for the database schema is no longer available. To access baramundi data, bConnect is recommended.
- Under `Application - Installation - Parallel installation mechanism`, as well as `Application - Uninstallation - Parallel uninstal-`
`lation mechanism`, only the `baramundi Deploy Script (bDS)` is supported since 2023 R2. This means that the obsolete `baramundi Deploy Package` and `Rational Visual Test 6.5` are no longer supported. Note: It can still be selected in the bMC, but is no longer supported.
- The `baramundi Virtual` module, including the `Manage Virtual Machine` job step, will be discontinued in version 2023 R2 and will then no longer be available. It can still be selected in the bMC, but is no longer supported.

2.2 General

- The signing of our setups/files now shows baramundi software GmbH as the manufacturer, instead of baramundi software AG.
- For new customers, the outdated `Patch Management Patches (Classic)` is no longer displayed in the bMC. Existing customers are advised to switch to the `Manage Microsoft Updates` job step. The provision of the patch data `bpmda-ta3_re-`
`duced_signed.zip/bpmda3_ signed.zip` will be discontinued as of April 2024.
- If an Eval license is used (e.g. in the test environment), the outdated `Patch Management Patches (Classic)` is no longer visible in the bMC.
- The baramundi licensing now also allows the specification of an activation date, the date can be viewed under `bmc - Configuration - License configuration`
`- Licenses`.

2.3 Windows Agent (bMA)

- If the bMA triggers a restart of the device, the user now receives a further message in the form of a dialog box, with which he can delay the restart by a few seconds.
- Under `bMC - Configuration - Server - Management Agent`, the option `Allow setCustomVar via BMACMD` can be used to set whether the setting of variables via `BMACMD.exe` from the client is allowed. After the Up-date the option is switched on. Switched off by default for new databases.
- The baramundi TrayNotifier window can now no longer be accidentally closed using `Alt+F4` or the `ESC` key.
- When executing a file copy operation of a bD script, incorrect path specifications are now automatically corrected by whitespaces at the beginning or end of the path. This means that the copy operation now also works correctly when installing drivers for Surface Pro 9 devices.
- Bugfix: The timeout set on the job is reset if the situation "a job is already active" occurs. Sometimes the job is then never automatically canceled on the client.
- Bugfix: The hardware inventory runs with special Windows 11 clients on the error "clientvent.exe has returned no result". This means that the bDX update "Upgrade_hwinform.dll_to_v7.47.bdx" is no longer necessary.
- Bugfix: If variables are set in jobs via `bMACMD.exe`, performance losses can occur on the bServer if a large number of variables is set and the job is executed on many clients simultaneously.
- Bugfix: The software inventory needs very much memory with some systems and crashes under circumstances with error code 309.
- Bugfix: An (offline) software inventory runs into an SQL error if very long file paths are captured.
- Bugfix: If an application is redistributed with the option `Application restarts client`, the bMA waits only 120 seconds after the end of the installation for the reboot and then triggers the reboot itself. (Now it waits for the reboot until the job timeout).
- Bugfix: In rare cases, the agent cannot perform hash validation of MSW files and the job aborts with error "The hashes for file validation could not be retrieved from the server". The error frequency has been significantly reduced.

2.4 Management Center (bMC)

- The name of the `industrial control unit` no longer has to be unique. Any number of devices with the same name can now be created.
- The setting for the `security context` under `Job - Step - Server side Action` has been renamed to `bServer context` (`LocalSystem` or `Service user`) so that it is clear which user is used to execute the baramundi Deploy script.
- Under `bMC - Environment - Client - Overview` the version of the operating system is also correctly detected/displayed for clients with Windows 11 IoT Enterprise.
- When copying a `Universal Dynamic Group`, the name and the display name are adjusted if both were the same before.
- If an attempt is made to switch a client to Internet mode even though no gateway is configured, a warning message appears.
- `Dynamic groups (Universal)` can now be used within other `dynamic groups (Universal)`.
- Bugfix: If a password is stored for an SNMP profile under `bMC - Inventory - Network Scan`, this password is overwritten when the configuration is reopened.
- Bugfix: At the automatically created energy asset for monitors, the energy data are also displayed for the standby mode, although these cannot be recorded.
- Bugfix: If a `Dynamic Group (Universal)` is created with the property `Primary IP` is empty or is not empty, another useless input field appears.
- Bugfix: If a `Dynamic Group (Windows)` is modified in such a way that it contains an invalid `SQL` statement, it is not possible to save it, but after leaving the dialog via `Cancel` the `Dynamic Group` disappears from the bMC and reappears only after a module restart.
- Bugfix: The option `Job - Advanced - Activate screen saver at job end` has no effect. This option has been removed. If this option was set in the job, it is automatically switched to `no additional action`.
- Bugfix: Under `bMC - Inventory - Software detection rules` the deletion of rules is not possible if the column `Type` is hidden.

- Bugfix: In multi-domain environments the login to the BMC is partly not possible if the access authorization is configured via a group membership.
- Bugfix: If an existing job is read in again via bDX import, job steps that have already been performed are deleted and can therefore no longer be used.
- Bugfix: Some HTML views hide the display of a BMC notification.
- Bugfix: `Personal` notifications, which should be issued in the interval, do not appear exactly in the specified interval.
- Bugfix: If the dialog `bMC - Configuration - Server - Settings - PXE support` is opened and confirmed with OK, a restart of the bServer is requested even if no changes were made.

2.5 OS Install

- The option `Join domain only after OS installation` under `bMC - Operating system - Hardware profiles - Hardware profile` has been removed.
- In the `Boot Media Wizard` `x64 UEFI` is now the default.
- Bugfix: When adding a driver via the deprecated method `bMC - Operating Systems - Driver - New - Windows Driver` a database error may appear.
- Bugfix: If under `bMC - Configuration - Boot Environments` at a boot environment the option `Visible in the boot menu` is not set, then this cannot be used correctly also in the job or by setting at the client.

2.6 Microsoft Autopilot

- Under `bMC - Configuration - Automatic Registration - Microsoft Autopilot`, an Azure AD group can be stored in the Azure AD Group ID field. Only devices of this group will then be synchronized to the bMS.
- During synchronization, an attempt is now made to match new Autopilot devices with existing devices on the basis of the Mac address and the host name. This also marks existing devices as autopilot devices.
- Bugfix: If an error occurs while synchronizing Autopilot devices, the whole process terminates.

- Bugfix: The serial number of autopilot devices overwritten by the hardware ID on every autopilot sync.

2.7 Mobile Devices

- Enrollment of Android Enterprise devices from Android 9 is possible using Android Zero Touch.
- In the template for the management of dedicated devices on Android devices, it is now possible to specify the start activity of an app that is started instead of the default activity.
- In a Universal Dynamic Group, the `Apple Silicon yes/no` condition can be used.
- The Android Enterprise Agent now understands the `ImproveLocationAccuracy` command to be able to configure the accuracy of the location detection on the device. This can be executed by an `execute` command - `Andro-id Enterprise` step. Furthermore, there is a fallback for the `GetLocation` command so that at least a rough location is returned.
- `Ultra-wideband (UWB)` is now also displayed on the Android Enterprise device under Device inventory.
- Bugfix: The rights inheritance for the node `bMC - Configuration - Automated Enrollment - Apple Automated Device Enrollment` does not work correctly.
- Bugfix: Search for IOS devices does not support phone number, ICCID and IMEI.
- Bugfix: When installing an Enterprise Wifi on Android Enterprise devices the error message "The enterprise network is missing either the root CA or domain name" may appear. To be able to install the profile correctly, it is now possible to specify a domain at the Wi-Fi profile module under `bMC - Extensions - Profiles for mobile devices`.
- Bugfix: If an iOS device does not provide valid XML data, e.g. the name of a `Current-CarrierNetwork` in the hardware inventory, jobs can no longer be executed on this system.
- Bugfix: The enrollment URL for Android Enterprise devices displayed in the bMC leads to an error on the device. However, the QR code worked correctly.
- Bugfix: To be able to edit MDM jobs, rights on `bmc - environment` are required.

- Bugfix: If a user is accidentally deleted from an Android Enterprise device, it cannot be set again. (Now an AD sync will restore the user).

2.8 bServer

- Jobs with steps for `Server Side Actions` (SSA) now no longer require an interactive login in the `LocalSystem` security context and are therefore also executed in hardened environments.
- Improved database queries when restarting job targets, resulting in significantly fewer SQL deadlocks.
- Bugfix: For jobs scheduled by interval, the error counter for `retry in case of error` is not reset even after a successful run and rescheduling of the job.
- Bugfix: Notifications stored under `bMC - Personal Settings - Notifications` may lead to other users not being able to log on to the bMC after the user has been deleted.

2.9 AD Sync

- At the AD user (`bMC - Environment - Users and Groups`) the fields `First name`, `Last name` and `Supervisor` are now additionally available.
- Bugfix: If certain replication projects are available in AD, a `user synchronization job` may run into the error "Object reference not set to an instance of an object".
- Bugfix: A `user synchronization job` may run permanently on error if a user group has been moved in AD.

2.10 PXE relay

- Bugfix: Client hangs in PXE phase when booting via PXE relay if boot is used without DHCP options.
- Bugfix: If the latency from the PXE relay to the database is high, opening the bMC on the PXE relay (to configure the PXE relay) can cause a timeout. The maximum wait time for this has been increased significantly.

2.11 bConnect

- `networkEndpoints` are available.
- `sshConfiguration` and `snmpProperties` can be read.
- Query of `PatchLevel` on `AppleEndpoint` is available.

2.12 Network devices

- A mini inventory for selected Linux distributions is possible. The determined data can be used in universal groups and is also available via bConnect.
- The specification of a `Registered User` on a network device is now supported.
- In the job for OT or network device `steps` script execution via SSH are now possible.
- Under `bMC - Inventory - Network Scan - Profile` there is a new setting `Ignore existing devices outside the group`.
- Under `bMC - Inventory - Network Scan - Profile` a job can now be generated quickly via the `Create Network Scan Job` button.
- Under `bMC - Environment` a personal notification can be configured on the network device as well as on the industrial control device.
- Bugfix: If a comment is set on the network device, this may be reset by another SNMP scan.
- Bugfix: Under `bMC - Inventory - Network Scan - Detection Rules` certain valid OID can not be configured because they are rejected as invalid.

2.13 macOS

- Bugfix: Some devices are detected incorrectly, e.g. a MacBook Air M2 is recognized as iMac 27" (Late 2013).
- Bugfix: Installation of local macOS PKGs larger than 2 GB fails with the message "No manifest data recieved".

2.14 baraDIP

- The baraDIP service for bBT transfer and DipSync has been deeply reworked. Note: a bMS version 2023 R2 or higher is not compatible with older baraDIP. When updating, it is therefore mandatory to replace the baraDIP services on all DIP servers in a timely manner.
- Under `bMC - Configuration - DIP - DIP management`, the trust position can now be conveniently removed for individual DIP servers by resetting TLS and restored by configuring TLS.