

RELEASE NOTE | October 2020

# **System Data Manager – SDM600**

## **SDM600 Ver. 1.2 FP2**



# SDM600 1.2 FP2

## Release Note

### Introduction

This release includes new features and corrections for functional issues in SDM600 1.2. It is a cumulative release containing all changes since the 1.2 release.

### Recommendation

It is recommended to upgrade all existing SDM600 1.2 installations to this SDM600 1.2 FP2.

### Technical requirements and supported products

SDM600 is a generic application that supports a wide range of IEDs and other devices for its provided functionality. However, it cannot be ensured that the full functionality can be supported for all IEDs. The supported protocols and functionality are described in the product factsheet.

### Supported Operating Systems:

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**Operating system**

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Windows 10 1809 and newer

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Microsoft Windows Server 2012

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Microsoft Windows Server 2016

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Microsoft Windows Server 2019

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### Ordering and delivery information

Existing licenses for SDM600 1.1 need to be upgraded to use SDM600 1.2.

### Documentation

Following documentation is available for download:

- SDM600 installation guide
- SDM600 cyber security deployment guide
- SDM600 user manual
- SDM600 release notes

## Limitations and known issues

- SDM600 stores its data in Microsoft SQL Server 2012 SP3 Express databases. This variant of SQL Server has a limitation of 10GB per database (dedicated databases for disturbance recorder files, security events and configuration data are used).  
In case more than 10 GB of storage is required, the SQL Server needs to be upgraded to another edition (e.g. SQL Server Standard). This requires an additional license (product key) purchased from a local Microsoft distributor.



Drastic performance degradation has been observed even when running below the 10GB database size limitation. It is recommended to upgrade to standard SQL Server license when the DB size is larger than 7GB.

- Disturbance Recorder files with same names and file dates are not uploaded, even if the files are different (rollover of file name at the same day).
- Receiving the same security events via Syslog UDP and Syslog TCP will cause misalignment in SDM600.
- Parent-Child and Hot-Standby SDM600 systems need to be in the same IP network and the default network interface must be set to the network where the SDM600 systems are connected.
- Accessing SDM600 via Remote Desktop Protocol (RDP) might lead to refresh / caching issues and is not recommended. Use Internet Explorer with https to access SDM600.
- The alternative IP address field is only used for certificate generation and not to actively communicate with the device.
- When using SDM600 for RTU500 file management, it is recommended to use a dedicated user account (a service or technical account name) for the SDM600-RTU connection. Only when using a dedicated account, it can be ensured that the SDM600 caused Login/Logout events are filtered out correctly.
- Central Account Management for Windows Computer will not work for Windows 10 Version 1903 and newer.
- CSV format is currently not supported for receiving and processing of syslog messages, because it is not compliant with RFC 5424 syslog format
- Changing the UTC offset for Syslog, requires a restart of the “ABB SDM600 Centralized Activity Logging Service” to take the new offset into account.

## Installation

SDM600 is a web-based client / server system. SDM600 will be installed on a computer that can communicate with the supervised IEDs, computers and other devices. The user interface of SDM600 can be opened from any supported web browser (Internet Explorer 11) either locally or from a remote computer. The installation is described in the SDM600 installation guide. SDM600 requires a license key to function during start-up and runtime.



Do not forget to **backup** and **redeploy** any modified configuration files such as ftp response parsing files (ftp\_regex.txt), Radius Role2Right mapping (CAMRoleToRadiusRights.xml) or own Device Templates **before** re-installation. Always check for changes in the template files delivered with a new SDM600 installation before restoring your modified configuration.



SDM600 needs to be installed using the SDM600 installer also in virtual environments. **Simply cloning virtual machines will lead to non-functional SDM600** (unique keys and certificates which are created by the installer are required on each instance of SDM600).



Each instance of SDM600 requires unique keys and certificates. The certificates are part of the SDM600 backup, therefore **backup restoration as basis for a new SDM600 configuration in production environments is not recommended** - specifically with Parent / Child or Hot-Standby configurations.



It is recommended to **restart the computer before SDM600 installation**, specifically after uninstalling ABB Authentication Service or any other software component that forces a reboot.



SDM600 installation might fail due to MS SQL Server installation problems.

It has been observed that this can be resolved by **changing the Regional and Language Settings to English (United States) (en-US) during the installation process**. Restarting the computer and re-running the installer a second time can be an alternative solution.

## Upgrade

Upgrading to SDM600 1.2 FP2 from previous versions of SDM600 is performed by installing SDM600 1.2 FP2 on an existing SDM600 system (including previous Service Pack or Feature Pack releases). Before upgrading an existing system to 1.2 FP2, it is best practice and highly recommended to create a SDM600 backup first.

A computer restart is requested after the installation has been completed. It is advisable to perform the restart to ensure system stability.



To upgrade Parent-Child systems, it is no longer required to disconnect all child systems from the parent. Install SDM600 1.2 FP2 on top of current SDM600 installation.



Existing Hot-Standby Systems need to be re-established.

Disconnect the two SDM600, upgrade both SDM600 to 1.2 FP2 and re-configure the Hot-Standby.



During upgrade to 1.2 FP2 a Database integrity check will be performed. In case of inconsistencies, Log Files will be created that help to identify and clean the Database using the SDM600 Application Administration Tool.

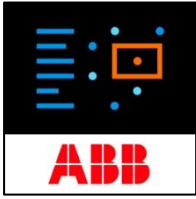


In case SDM600 login screen is not shown after re-installation and computer reboot, please check certificate binding in IIS configuration. When the certificate is deleted manually from the certificate store, it can happen that the binding is not re-configured.



After Upgrading SDM600 to 1.2 FP2 (or newer), the Windows Event Log Forwarder and Windows Agent must be upgraded on all connected Computers. Manually uninstall previous Versions via "Add Remove Programs", download the new installation packages from SDM600 and re-install the components.

## All releases and included changes since SDM600 1.2



### SDM600 1.2 FP2 release (2020-10)

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#### New and enhanced features

Data Retention Policy allows to configure how long data will be stored in the SQL Database.

List of officially supported Windows versions has been updated.

#### General fixes and improvements

Restore functionality successfully restores a backup without compromising the LDAP functionality.

Windows Event Forwarder can be updated without uninstalling the previous version.

Long Syslog messages are correctly received and displayed.

Adding a comment to a Security Event without RAW message is now possible.

Events received from child systems are successfully forwarded by the parent (Event Forwarding).

Automatic Service Data Export can be configured with a frequency greater than 31 days.

Radius Authentication and Authorization supports Customer defined Roles

The CAMRoleToRadiusRights.xml has been updated. If you have modified this file in an older version of SDM600, make sure to merge (and not just replace the file) your changes into the new template.

The default values for the vendor dictionary has been updated.

When merging your modified vendor\_dictionary file make sure that following entries are NOT included (those has been added to the default list)

VENDOR	15004	RuggedCom		
VENDORATTR	15004	RuggedCom-Vendor-name	1	string
VENDORATTR	15004	RuggedCom-Privilege-level	2	string
VENDOR	5597	Meinberg		
VENDORATTR	5597	MBG-Management-Privilege-Level	1	integer
VENDOR	90001	PhoenixMGuard		
VENDORATTR	90001	Filter-ID	1	string

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## SDM600 1.2 FP1 Hotfix11 release (2020-09)

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### New and enhanced features

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Updated ABB Wavewin to H.M.6 (Re-installation on client computer required, Installation package is available from SDM600)

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### General fixes and improvements

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Automatic/Manual Service Data export functionality is generating an Excel File at the specified local folder.

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Detailed version information for Windows computers is collected. This requires fresh download from SDM600 and re-installation of the Windows Agent on the connected Computer.

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Improved the collection of DR files from IEDs using zipped COMTRADE files

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Improved DR file handling to avoid adding the same DR file twice to the DB

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SQL Server user is created during the installation on all supported Windows versions

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Device Settings changes done on a child system are also visible on the parent system.

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Corrected timestamp in the exported DR filename when <TIME\_SRV> is configured in a custom template.

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Newly created users can now successfully change the initial password and log in.

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## SDM600 1.2 FP1 Hotfix10 release (2020-08)

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### New and enhanced features

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Changes in the SDM600 configuration are logged, show in the Configuration Changes Tab and reported via Syslog

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Syslog messages that couldn't be parsed (e.g. due to incompatible date/time format) are now displayed in its raw format in a dedicated tab

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### General fixes and improvements

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Improved fault tolerance when reading .scd files

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Windows Event Log Forwarding is working again.

***This requires manual un-installation of the existing version, fresh download from the SDM600 server and re-installation on the connected computer.***

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Application Administration Tools improved. Specifically restoring of certificates and working with large databases.

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Removed version information from HTTP response header following cyber security best practice.

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Syslog messages larger than 480 bytes are processed to support max. syslog message length (e.g. Fortinet)

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Serial Number, Configuration Version and Software Version are shown in the Service data Tab if available.

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## SDM600 1.2 FP1 Hotfix9 release (2020-07)

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### New and enhanced features

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Windows Agent collects exact Windows Version including Build Number (required fresh download from the SDM600 server and re-installation on the connected computer)

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The Service Data can be exported automatically using a defined frequency

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DR, Event and Service Data can be deleted from the Data Base using the SDM600 Application Administration Tool

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User and Application Settings have been renamed to "Options". All options are user specific. The default user options can be configured in the Application Administration Tool.

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### General fixes and improvements

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Syslog Notice Events are received and processed

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Improved IED Communication Service stability and optimized the way DR files are retrieved from IEDs

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SAN's (Subject Alternative Name) attribute of the SSL/TLS certificate now include the FQDN name of the host machine. This will give the page the green HTTPS indicator that meets browser guidelines and that give visitors confidence to connect to the SDM600 website.

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SDM600 installer additionally installs Microsoft URL Rewrite Module 2.0 for IIS

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Syslog Message forwarding includes the full raw message received by SDM600

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Security Events export in Excel contains all columns (including UTC time)

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Corrected problem in parsing COMTRADE file when .cfg contains multiple lines of Sampling rate information (e.g. NOJA Power devices)

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## SDM600 1.2 FP1 Hotfix8 release (2020-05)

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### New and enhanced features

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The "SDM600 Restore Tool" has been renamed to "SDM600 Application Administration Tool"

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The Authentication Method for SDM600 Hot-Standby and Parent Child communication can be configured in the SDM600 Application Administration Tool (Certificate based for Standalone Computers and Domain User/PW for computers joined to a domain).

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### General fixes and improvements

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IEC 61850 (MMS) File Transfer stability improvements to always close files on the devices. This helps to prevent IEDs from entering into internal relay fault status (IRF7 on Relion 615/620)

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Calendar format is no longer switched

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SDM600 Hot-Standby and Parent Child communication Services are no longer causing Windows Security Event 4625 (Audit Failed) on computers joined to a domain

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The SDM600 structure tree navigation on the parent system is no longer collapsed each time when the data is refreshed from a child system

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## SDM600 1.2 FP1 Hotfix7 release (2020-03)

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### New and enhanced features

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none

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### General fixes and improvements

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Timeline limits are correctly considered to filter data (in the dashboard and lists)

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RTU Firmware version is now correctly visualized when value is updated/refresh

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Auto Log Out will not be triggered while executing PDF/Excel export operation.

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## SDM600 1.2 FP1 Hotfix6 release (2020-03)

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### New and enhanced features

none

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### General fixes and improvements

Improved long term stability in DR File collector Service

The Date Format doesn't switch between different formats when selecting a new time window

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## SDM600 1.2 FP1 Hotfix5 release (2020-02)

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### New and enhanced features

none

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### General fixes and improvements

The DR file export for given time range uses the configured start and end date (in the Configuration – DR Configuration Tab)

DR Evaluation tool can be configured per user (previously it was application wide)

The default time window setting is aligned with the dashboard and can be configured per user. The initial setting will be one day

Forwarding Syslog Events from Parent System includes all Syslog Events from Child Systems

Performance Improvements in Parent / Child synchronization

Improved recover procedure for SQL Server Service in case of failure

Collecting DR files improved when using File Directory Protocol

Device information is automatically shown in the configuration tab when refreshed

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## SDM600 1.2 FP1 Hotfix4 release (2020-01)

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### New and enhanced features

none

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### General fixes and improvements

Minimized the CPU load for SDM600 Hot Standby (HSB) configuration.

Additional improvement in Windows Event Forwarder installation to make it work on Windows 10.

Automatic Export of DR files to the disk on the parent of a hierarchical works after restart of the parent.

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## SDM600 1.2 FP1 Hotfix3 release (2019-12)

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### New and enhanced features

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Disturbance Recorder Export feature can use customer name / description as part of the exported file name

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Folder names for Disturbance Recorder Export feature can be switched between structure name and customer name / description.

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### General fixes and improvements

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Memory consumption of the IEDCommService Service was optimized, so the service uses less memory and runs more stable.

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SDM600 1.2 FP1 HF2 installation problem on Non-English OS are fixed

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Windows Event Forwarder installation is working on Windows 10, but still might fail on Windows 7 or Windows 8.1

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SDM600 1.2 FP1 HF2 introduced a problem to generate Short reports, this is working again.

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Corrected Firmware Version mismatch between Configuration and Service Data tab.

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To have consistent information it is required to read the Firmware in SDM600 after writing a Firmware Update to the RTU (to confirm successful installation in the RTU500).

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Also it is required to logout/login in order to see the updated Firmware Version in the Configuration Tab.

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## SDM600 1.2 FP1 Hotfix2 release (2019-10)

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### New and enhanced features

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Updated to latest ABB User Activity Logging message definition (additional Event Numbers are available)

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It's possible to customize the default IEC 61850 attributes read from a device (this requires direct access to the database and is only recommended via SDM600 support-line)

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SDM is filtering log in / log out messages from RTU500 devices based on the user name that is configured for accessing the RTU device. It is recommended to use a dedicated user account in SDM600.

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### General fixes and improvements

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Download button from service data tab no longer freezes SDM600 UI

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Device supervision stability has been improved and provides reliable connection information

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DR Short report creation will work on computers with different culture setting

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Overall SDM600 status LED is also visible for users with limited SDM600 user rights

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Passwords for IED connections are no longer shown

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Configuration and firmware files for RTU500 file management are also updated when the file date is older than the actual configuration.

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SDM600 is showing consistent information in all tables for RTU500 configuration versions.

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Configuration and firmware files for RTU500 file management is no longer showing empty filenames in the "Upload Firmware" window. This will work for newly read files, older files which are already in the SDM600 Database could still have an empty filename.

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Improved SQL Installation on Windows 10 1803 and newer when using specific regional formats.

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The DR file viewer can be changed even if ABB WaveWin is not installed

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Windows Event Forwarder installation is working on Windows 10 1803.

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The Email summary report is showing correct number of configuration changes

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Using Custom Properties for SNMP supports vendor specific OIDs

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Custom Properties for SNMP must contain full OID. In previous versions a ".1" was added to the request.

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## SDM600 1.2 FP1 Hotfix1 release (2019-07)

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### New and enhanced features

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None

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### General fixes and improvements

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The option introduced in version 1.2 FP1 to not record SDM600 caused Log-In / Log-Out events was filtering out too many successful login messages. This has been corrected.

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The signing of the application (XAP) is using a different time server certificate which is available as default on more Windows Systems

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The device supervision has been improved (throttling the ICMP ping requests)

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The installation could fail on Win10 (1801) when using newly introduced code-pages.

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Under some conditions the DR file export was creating duplicated files for the same COMTRADE file on the disk when customized file name was used.

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## SDM600 1.2 Feature pack 1 release (2019-04)

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### New and enhanced features

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Central Account Management support for RTU500 12.4

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Secure FTP protocol support for DR file retrieval (FTPS implicit)

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Enhanced .csv configuration import (including API supporting structure import and deletion of devices)

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Updated ABB Wavewin to H.G.24 (Re-installation on client computer required, Installation package is available from SDM600)

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Dashboard is showing events in local time and also considering the configured device UTC offset

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New option is introduced to not record SDM600 caused Log-In / Log-Out events (e.g. events generated when SDM600 itself is reading version information from devices)

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Timeline is more intuitive. The timeline shows now the selected period, backward/forward will move the time window by the selected time period

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“Send test email” button added to Email configuration

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Central Account Management (CAM) configuration package includes Certificate also in p7b format

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Updated German and Czech translations

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When importing a .scd file, devices will no longer be automatically licensed to allow UTC time offset configuration before the first COMTRADE files are collected.

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Changed UTC offset to TimeZone supporting daylight saving.

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### General fixes and improvements

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Disturbance Recorder (DR) Short report generation improved for DR files which are not fully compliant with the COMTRADE standard

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Improved DR short report generation when CZ language is active

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DR file export takes UTC offset of the device into account

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Added fraction of hours to UTC offset configuration

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DR File Export supports additional structure Levels (e.g. <BAY> for Bay name , <VL> for Voltage Level Name)

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The RTU500 firmware filename is shown

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RTU firmware version is shown in the File Management configuration to allow filtering

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Added support for IEDs using RFC3659 compatible FTP Server (e.g. ABB REF615)

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FTP\_REGEX.txt file handling optimized to allow different FTP server configuration

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Structure Tree View refreshing issue fixed (e.g. when adding a new Child System). Possibility to manually refresh the structure tree has been added.

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Information is displayed when user tries to generate Certificates with a validity period that is longer than the SDM600 license

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The MicroSCADA CAM configuration package can only be created when user confirms that SDM600 is not installed on the same computer.

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Improved stability when configuring parent-child and hot-standby systems

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Device connection stability (e.g. using IEC 61850) is improved

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Security Event Mapping is showing newest events on first page.

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Logging improved and extended to support troubleshooting

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Updated information message when number of failed login attempts has been reached.

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Syslog forwarding supports TCP protocol

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## **SDM600 1.2 Service pack 2 release (2018-05)**

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### **New and enhanced features**

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Official support for Windows Server 2016

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UTC Time Offset for devices can be set. Some device implementation are using local time instead of UTC in COMTRADE. To avoid misalignment, an offset from UTC can be defined (default value is 0, which means the time is stored in UTC). SDM600 stores all time information in UTC and displays it according the setting of the Client PC.

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Support for RTU500 series HMI project File.

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Project name of RTU500 configuration files is shown.

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Support for SQL Server 2014 SP2 (and newer) and 2016 SP1 (and newer) database engine. (SDM600 default is still SQL Server 2012). Migration to other than SDM600 default Server is manual work and not described in SDM600 documentation.

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### **General fixes and improvements**

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German translation reviewed and misleading translations have been corrected.

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Content of .pdf and .xls exports are synchronized.

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Security Events tab is automatically refreshed every minute.

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Configuration import from .csv allows to add IEDs without DR functionality.

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Certificate expiration email formatting updated

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The OR condition in security events mapping is fixed

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Reading IEC 61850 version information from valRef and paramRev are corrected

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DR trigger time (milliseconds) is rounded and shown properly

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Cyber Security related upgrades of components (open SSL)

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## SDM600 1.2 Service pack 1 release (2017-06)

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### **New and enhanced features**

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The “Disturbance Records“ list can be automatically refreshed every minute to show new COMTRADE files

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The “Cyber Security Events“ list can be automatically refreshed every minute to show new Syslog events

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The disturbance recorder trigger time includes milliseconds

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The daily aggregation of Security Events can be configured in the dashboard. Using the aggregation feature will reduce the loading time in case of many security events.

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### **General fixes and improvements**

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The “Disturbance Records“ list is sorted correctly according the trigger time. It is now based on the actual Date/Time instead of the textual representation

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The CSV template for importing an SDM600 structure contains better configuration examples

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Disturbance Recorder trigger channel calculation is more robust and will not slow down the whole SDM600 DR functionality in case COMTRADE files contain values outside of the standard.

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Certificate expiration email message content is cleaned up.

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Poll cycle setting is moved to “Configuration” -> “General Settings” tab and is applicable also for other applications like Service data retrieval.

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Switching between different user interface languages (e.g. to the German translation) has been fixed

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The agent to collect version information from Windows systems was not starting automatically all the times

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## SDM600 1.2 Release (2017-02)

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### New and enhanced features

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Several COMTRADE Files can be opened simultaneously and subsequently merged in Wavewin

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DR File retrieval from RTU500 for COMTRADE based files

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Software version information can be retrieved from SNMP capable devices and Windows Computers.

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Configuration and firmware file management for RTU500 (Rel.12 and newer)

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Launching of native or web based configuration tool for devices

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Import SDM600 configuration from .csv file

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Rule based Email Notifications

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Customizable logon Banner

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DR file export supports flexible renaming of original DR Files including COMNAME standard

### Improvements

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Support for Microsoft Windows 10.

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Superior overview in the SDM600 Dashboard

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Time window handling improved

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Support for more devices and SDM600 child systems (limits are documented in the SDM600 factsheet).

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License usage shown in SDM600 Supervision Tab

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NERC-CIP rating can be set per device

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All Grids can be exported to Excel and include structure info e.g. the full path to the device

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Indication when DB size is about to exceed SQL express limits

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Dedicated event list for configuration changes

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Additional email notification options for certificate expiry and statistics.

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Additional email notification options for statistics (daily, weekly, and monthly).

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Commented events are visualized in the dashboard

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SDM600 Restore Utility supports creation of backups

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Option to backup only SDM600 configuration data

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Unknown Security Events mapping - rules handling (selecting target events, deleting multiple rules)

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New description attribute for user accounts

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Support DR file import from nested Windows Folders

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Support for COMTRADE 2013

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Robustness for COMTRADE file handling for trigger channel and short report generation improved

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Extended password policy. Number of failed login attempts to lock the account and lockout duration

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Support for CAM/CAL on all network interfaces

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