



# PRIN**T**AURUS

## Release Notes PrinTaurus 6.2

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# 1 Information on installing PrinTaurus 6.2



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## **Discontinuation PrinTaurus versions < 6.0**

As of 30.06.2022 we will discontinue all PrinTaurus versions < 6.0.

If you have any questions about the discontinuation of older versions or need assistance in updating to the current PrinTaurus Windows version, please contact our sales or support staff.

### **Updating versions older than 5.9**

If you are using a PrinTaurus version older than 5.9, please contact AKI Support in any case before performing the update!

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## **Notice**

### **Before starting the installation**

Check the system requirements of the individual components!

All software components have to belong to the same release version!

The current file versions can be found in the release notes, the versions you are using in the landscape information of the PrinTaurus GUI.

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If necessary, contact our support to clarify further questions before carrying out the update.

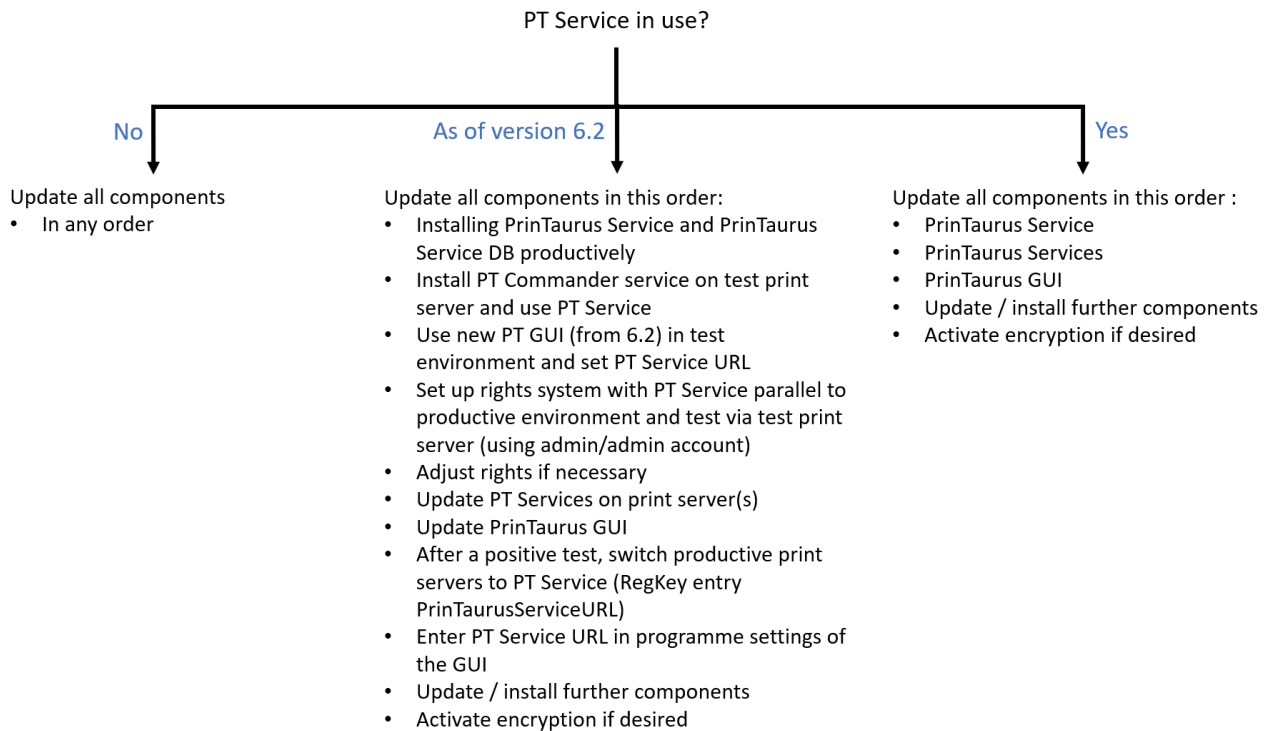
### **PrinTaurus for SAP® Systems**

New SAP® transport requests with improved security features are available.

When updating the SAP® transport requests to the new version, please note that the rights of the RFC users used must be adapted!

## Procedure for updating to version PrinTaurus 6.2

Due to the introduction of the new central service PrinTaurus Service with PrinTaurus version 6.0, the procedure for carrying out an update depends on whether this service has already been used.



## Your current version

Please send us a current version of your *Landscape* information to [support@aki-gmbh](mailto:support@aki-gmbh) after updating PrinTaurus. The *Landscape* information is generated in *Extras* menu of the PrinTaurus GUI.

## 2 New functions

### Changes to the system requirements of the PrinTaurus product suite

Discontinuation MS SQL Server 2012

With this release we discontinue the support of the version MS SQL Server 2012.

.NET Framework

With this version, the .NET Framework 4.7.2 is required for

- Print servers
- Computers on which the PrinTaurus GUI is installed
- SmartSpread web server
- SmartSpread clients
- Server for the services of the PrinTaurus Economist MSI
- Server for PrinTaurus ERP Solution Service.



Further components of the PrinTaurus product suite will be converted to the .NET Framework 4.7.2 with the next versions.

### Encryption of the communication between PrinTaurus GUI and PrinTaurus Commander Service

The communication between the PrinTaurus GUI and the Commander Service for Windows and Linux/Unix servers can now be encrypted with TLS 1.2 (or higher).

The `pmcd` uses OpenSSL for TLS. Under Unix/Linux, the installed OpenSSL version is used.

Server icon

If encryption is enabled, the server node gets a new icon in the PrinTaurus GUI tree structure for Windows print servers  and for UniSpool print servers .

Encryption options

There are several options available for TLS-encrypted communication between PrinTaurus GUI and the print servers:

Possibilities

1. no encryption (communication in plain text)
2. encryption of the communication between PrinTaurus GUI and print server with server certificate
3. encryption of communication between PrinTaurus GUI and print server with server certificate (print server) and client certificate (PrinTaurus GUI computer)

## Overview

PT GUI (ptcmd.exe)	Print server / PT Commander Service (pmconsrv.exe)					
	As before	Client certificate No	Client certificate No	Client certificate No	Client certificate Yes	Client certificate Yes
		ForceClientCertificate				
		0	0	0	1	1
		TLS off	TLS if possible	TLS enforced	TLS if possible	TLS enforced
		TlsMode				
		0	1	2	1	2
As before	○	○	○	–	○	–
No encryption (TlsMode = 0)	○	○ / X after installation or update	○	–	○	–
Encryption oppor- tunistic without client certi- ficate (TlsMode = 1)	○	○	×	×	×	×
Enforced encryption without client certi- ficate (TlsMode=2)	–	–	×	X <sup>1</sup> after Update and enforcing TLS	×	×
Encryption oppor- tunistic with client certificate (TlsMode=1, UseCli- entCertificate = 1)	○	○	×	×	×	×
Enforced encryption with client certificate (TlsMode =2, Use- ClientCertificate = 1)	–	–	×	×	×	X <sup>2</sup> Highest possible security level

– = Configuration not possible

○ = Configuration possible, Communication takes place unencrypted in plain text

× = Configuration possible, but not recommended / sensible

X<sup>1</sup>+X<sup>2</sup>= recommended configurations

In the highest security level, in addition to the forced encryption of the communication, optionally the print server can check the client certificate of the PrinTaurus GUI computer.

In addition, the system a check for revoked certificates can be carried out.



### Specification of the host name of the print server is necessary when using encryption!

Normally, the certificates are generated on the FQDN (e.g. *printserver1.aki.local*). If this is not the case, the certified host name must be specified during installation/updates of the `PrinTaurus Services.msi`.

The FQDN or the certified hostname must then be specified:

- for the server connection
- in the OMS configuration of the LOMSe in SAP

After an update, these setting **must** be adjusted accordingly!

Also ensure that the resolution of the FQDN / certified host name works correctly.



### Identic configuration of encryption for print servers

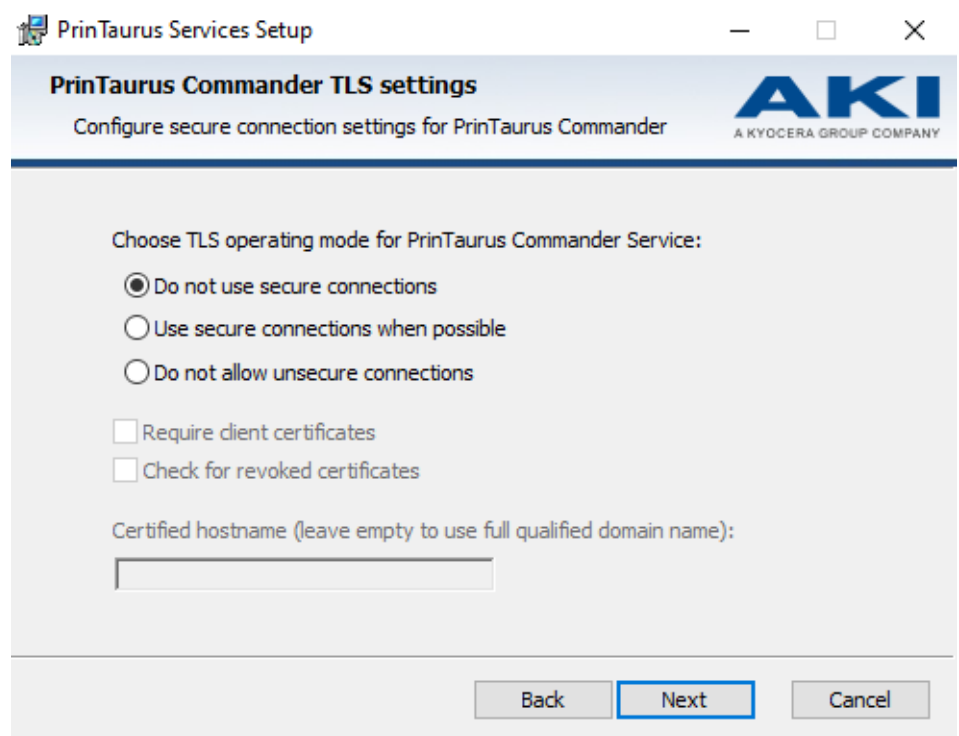
Make sure that the parameters for the encryption configuration of the print servers are set so that the servers can communicate with each other.

Otherwise, malfunctions may occur when print servers need to communicate with each other (e.g. during driver distribution, when one of the print servers expects encrypted communication but the other print server does not offer it, or during cross-server redirection of print files).

Setting opportunistic encryption is always possible, but does not provide the highest possible security.

### Installing PrinTaurus Commander Service (Windows) from PrinTaurus Services 6.2

- Install `PrinTaurus Services.msi`.
- Set TLS settings:



Option	Meaning
Do not use secure connections	No encryption (default)
Use secure connections when possible	Use encryption if both opposite sides can encrypt (opportunistic)
Do not allow unsecure connections	Force encryption. No communication takes place if the other party does not encrypt.
Require client certificates	Force transmission of the client certificate
Check for revoked certificates	Check in the list of revoked certificates if the certificate has been revoked (default: deactivated).
Certified hostname	Name of the certificate.  If empty, the certificate is searched for in the certificate store ( <i>LocalMachine/My</i> ) using the local FQDN (default).  The FQDN or the name of the server specified here must be used for server connections in the PrinTaurus GUI and for specifying the OMS command in SAP.

## Encryption

The settings can be checked in the registry (in `TlsMode` at `Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\PMConSrv\Parameters`).

Analogous to the encryption mode of the service, the encryption mode for the PrinTaurus GUI must be set.

This setting has to be done manually in the registry of the PrinTaurus GUI computer under `HKEY_CURRENT_USER\Software\AKI GmbH\PrinTaurus GUI\PersistentUser\` in the DWORD entry `TlsMode`:

0 = no encryption

1 = opportunistic encryption

2 = forced encryption

The settings of both sides must match each other (cf. tabular overview).

For optimal data security, we recommend enforcing TLS encryption on both sides.

## Enforcing the Client Certificate

If the highest possible security is to be set, the client certificate can also be enforced.

In this case

- When installing the service, the option *Require client certificate* must be selected (sets the registry value `ForceClientCertificate` to 1).
- A valid client certificate must be available on the PrinTaurus GUI computer.
- On the PrinTaurus GUI computer, `UseClientCertificate` (REG\_DWORD) must be created with the value 1 in the registry.

## Checking for revoked certificates

- When installing the service, the option *Check for revoked certificates* must be selected (sets the registry value `CheckCertificateRevocation` to 1)



- On the GUI side no configuration is to be done.

### Installation PrinTaurus Commander on Unix / Linux

On the UniSpool print server(s)

- `pmcd.pem` (certificate + private key must be present)
- The client must trust the CA
- Store `pmcd.pem` in `home/unispool/pcontrol`
- Set owner of `pmcd.pem`:  

```
chown unispool:unispool /home/unispool/pcontrol/pmcd.pem
```
- Set owner permission (read only):  

```
chmod 400 /home/unispool/pcontrol/pmcd.pem
```

Configure options

The parameter for the encryption level (Encryption) is `-e`:

0 = no encryption

1 = opportunistic encryption

2 = forced encryption

3 = enforced encryption + enforced client certificate

Default is 0.

The parameter must be specified when starting `pmcd` (e.g. `-e2`).

### Installing PrinTaurus GUI 6.2

Provide the certificate (private and public key) in the certificate store (local machine) on the PrinTaurus GUI computer.

1. Install the PrinTaurus GUI `x64.msi`.

When installing the PrinTaurus GUI, no encryption options can be set. The PrinTaurus GUI will continue to communicate unencrypted after installation (`TlsMode = 0`, default).

This opportunistic approach is important to ensure communication during the installation process as long as the other side cannot communicate encrypted.

Afterwards, the installation of the PT GUI is basically complete (X).

### Update of GUI and PrinTaurus Services 6.2

Execute the PrinTaurus GUI `x64.msi` and the PrinTaurus Services `msi`. Set the settings analogous to the description of the new installation.

## Increased security in communication with PrinTaurus for SAP® components

The implementation of the PrinTaurus product suite was hardened by several measures and the transport encryption options were added.

Change of the folder structure

The PrinTaurus for SAP® programme components are no longer stored in the folder of the PrinTaurus Commander Service. They are now located in the PrinTaurus for SAP® Services folder - even after an update.

SAP® .NET Connector

Only use the SAP® .NET Connector 3.0 (from file version 3.0.21) for .Net Framework 4.0 and activate the option *Install assemblies in GAC* during the installation.

## Transport files

For SAP systems of version 756, you must use the SAP®.NET Connector 3.0 from file version 3.0.24.

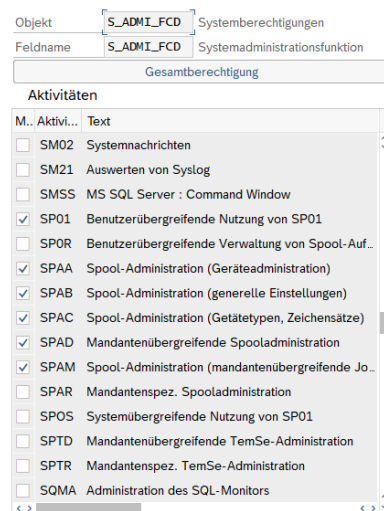
If you are using older SAP®.NET Connector versions, delete the `SAPnco.dll` and `SAPnco_util.dll` files from the PrinTaurus GUI, PrinTaurus Commander Service and PrinTaurus ERP Solution Service program folders.

In order to meet current security requirements, adjustments have also been made to the available transport requests.

We recommend that you import the latest transport requests into your SAP® systems.

Please note that you must then also adjust the rights of the RFC user.

Extend the object `S_ADMI_FCD` by the values `SP01`, `SPAA`, `SPAB`, `SPAC`, `SPAM`.



## TLS 1.2 encryption

The communication between the PrinTaurus components on the SAP® servers and the print servers can now be encrypted with TLS 1.2 (or higher).

This results in a number of new features and adjustments when using and installing or updating PrinTaurus for SAP®.

## OpenSSL

The `netxom` uses OpenSSL for TLS. Under Unix/Linux, the installed OpenSSL version is used. Under Windows, `netxom` is delivered with OpenSSL 1.1.1l.

**Encryption options**

Various options are available for TLS-encrypted communication between PrinTaurus SAP® components and the print servers:

## Options

1. no encryption (communication in plain text)
2. encryption of the communication between print server and SAP® server with server certificate (of the print server)
3. encryption of the communication between print server and SAP® server with server certificate (print server) and client certificate (SAP® server)

For the use of encryption

- `netxom` and `xomd.net` must support TLS (from PrinTaurus Release 6.2)
- valid certificates must be provided by the user's certificate infrastructure

## Overview

SAP® server  (netxom / hanetxom)	Print server (xomd.net)					
	As before	Client certificate No	Client certificate No	Client certificate No	Client certificate Yes	Client certificate Yes
		ForceClientCertificate				
		0	0	0	1	1
		TLS off	TLS if possible	TLS enforced	TLS if possible	TLS enforced
		TlsMode				
		0	1	2	1	2
As before	○	○	○	–	○	–
No encryption (-h0)	○	✕ after installation or update of netxom / hanetxom	○	–	○	–
Encryption op- portunistic without client cer- tificate (-h1)	○	○	✕	✕	✕	✕
Encryption en- forced without client cer- tificate (-h2)	–	✕	✕	✕ <sup>1</sup> after update and enforcing TLS	✕	✕
Encryption op- portunistic with client certi- ficate (-h1)	○	○	✕	✕	✕	✕
Encryption en- forced with client certi- ficate (-h2)	–	–	✕	✕	✕	✕ <sup>2</sup> Highest possible security level

– = Configuration not possible

○ = Configuration possible, Communication takes place unencrypted in plain text

✕ = Configuration possible, but not recommended / sensible

✕<sup>1</sup> + ✕<sup>2</sup> = recommended configurations

In the highest security level, in addition to the forced encryption of the communication, the print server can also optionally check the client certificate.

netxom / hanetxom

### Configuration of encryption for netxom / hanetxom

The encryption for `netxom` / `hanetxom` is controlled by the parameter `-h`.

The default for `netxom` / `hanetxom` is `-h0` / no encryption. If this default is to be retained, no changes are necessary.

The parameters for encryption are

`-h0` = no encryption (default)

`-h1` = opportunistic encryption

`-h2` = forced encryption.

If the default is changed, the parameter must be specified when calling `netxom` / `hanetxom` on the command line as well as in the command call in LOMS, e.g.

```
sap11:/opt/pmc4sap/62 # ./netxom submit -d discard -h1 -i
123 -r 123 -f /etc/hosts -h1 -n printserver1 2.00 4 1
00008_84961
```

#### *Unix / Linux*

If the SAP® server is a Unix / Linux system, it needs its certificate and private key in the file `netxom.pem` in the `netxom` directory if encryption is activated.

#### *Windows*

If the SAP® server is a Windows system, the certificate (private and public key) must be available in the certificate store (local machine).

### **Configuration of encryption for XOMD.net**

#### *Windows print server*

The encryption for the `XOMD.net` is controlled by the parameter `TlsMode`. If the default (no encryption, `TlsMode` = 0) is to be kept, no changes are necessary.

If encryption is to be switched on, the certificate (private and public key) must be provided in the certificate store (local machine).

Values for encryption:

`TlsMode` = 1 = opportunistic encryption

`TlsMode` = 2 = encryption enforced.

This must be set in the registry of the print server:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\XOMD.NET\Parameters.
```

In addition, the transmission of the client certificate can be forced.

This is controlled via the parameter `ForceClientCertificate`. If the default (no transmission, `ForceClientCertificate` = 0) is to be changed, the value in the registry must be set to 1:

```
HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\XOMD.NET\Parameters
```

#### *Unix / Linux print server*

Only for UniSpool 6.23.

The parameter for the encryption level is `-e`:

0 = no encryption

1 = opportunistic encryption

2 = forced encryption

3 = enforced encryption + enforced client certificate

Default is 0.

The parameter must be specified when starting pmcd (e.g. -e2).

### Installation PrinTaurus for SAP® 6.2

1. Provide the certificate (private and public key) in the certificate store (*local machine*) on the print server(s) (xomd.net computer).
2. Install xomd.net on the print server(s) (PrinTaurus Services.msi).
  - Windows print server: use PrinTaurus Services.msi
  - Unix print server: drop Binary xomd

After installation, the xomd communication is not encrypted (TlsMode = 0, default) to ensure communication during the installation process.

Parameters for encryption:

- Windows: TlsMode (0 = not encrypted (default), 1 = opportunistic, 2 = enforced encryption)
  - Unix: Tls mode definition by using parameter -e when xomd is called (-e0 = not encrypted (default), -e1 = opportunistic, -e2 = enforced encryption, -e3 = enforced encryption with client certificate)
3. Install the netxom / hanetxom on the SAP® server(s).
    - Windows server: with PrinTaurus NetXom.msi.
    - Linux server: Store binary netxom on the server.

It makes sense to use the path /opt/pmc4sap/ as this path is used as default when creating a LOMS for the specification in the command call.

In principle, you can also choose a different storage location as long as the SAP spoolwork process can access it.

The server requires his own certificate and his private key (store the certificate and the key as file netxom.pem in the netxom directory).

Default for encryption is -h0 (no encryption) for netxom and hanetxomm.

For netxom and hanetxom no further settings have to be done if default is used.

If the default setting should be changed, you have to set the parameter TlsMode in the Registry key / state the parameter -h in the netxom / hanetxom program call and state the parameter h when calling the (ha) netxom and in the LOMS command call.

After that, the installation is basically complete (X). For optimal data security, we recommend performing further configurations:

4. Enforce TLS encryption (optional, recommended, X<sup>1</sup>).

If all components are up to date and support TLS encryption, it can be enforced.

To do this

- set the TlsMode on the print server to 2 in the registry under  
HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\XOMD.NET\Parameters.
- set the parameter -h2 in the LOMS command call on each SAP® server.

Afterwards restart the service.

5. In addition, the client certificate can be enforced (optional, X<sup>2</sup>).

On Unix / Linux print servers, the file `netxom.pem` with the private key **must** be located in the directory of the `netxom` binary.

On the print server(s), the `RegKey TlsMode` must be set to 2 and the `Registry Key ForceClientCertificate` must be set to 1 under `HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\XOMD.NET\Parameters`.

Then restart the services.

Parameter specifications in detail For the SAP® server in LOMS:

- `-h0`: no encryption (default without explicit specification in LOMS)
- `-h1`: Opportunistic: if the remote terminal can encrypt, encryption is used, otherwise not
- `-h2`: Encryption is forced

The parameter must only be specified when calling the command path for the `netxom.exe` in the LOMS (e.g. `C:\Program Files\AKI\netXom\netxom.exe -h1`) if the default is not desired.

*For the print server:*

- Specify the parameters in the registry in the key  
`[HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\XOMD.NET\Parameters]`
- `TlsMode`  
`0`=TLS off  
`1`=TLS if possible  
`2`=TLS forced
- `CertHostName`  
Name of the certificate, if empty, certificate is searched for using the local FQDN in the certificate store (*LocalMachine/My*) (default)
- `ForceClientCertificate`  
`0` = Client certificate is not enforced (invalid certificate is not possible, default)  
`1` = Client certificate is enforced
- `CheckCertificateRevocation`  
`0` = deactivated, default  
`1` = activated, service checks in CSR whether certificate is still valid.

The system administrator is responsible for setting up the certificate infrastructure.

## Deactivation of individual ports for services or functions that are not required.

Individual services or functions are deactivated by default with this version or can be deactivated if not used.

This is done in the respective key under HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\PMConSrv\Parameters.

Disabled by default is

- Cerebrum  
(Registry Key EnableCerebrum)
- Central Logging  
(Registry Key EnableLoggingPort)

Active by default

- The connection between PrinTaurus GUI and PrinTaurus Commander service  
(Registry Key EnableGuiPort)
- The connection between UniSpool and PrinTaurus Commander service  
(Registry Key EnableUspReceiver)

In each case deactivated = 0, activated = 1.

### **PrinTaurus for SAP® - new transport requests for import into SAP® S/4HANA systems with ATC checks**

If *ATC security checks* are executed during the import of the transport request, error messages (findings) may occur during the import if older transport request versions are already available on the SAP® system that contain the programme /AKIGMBH/PMCQCONF.

These older versions must be deleted before importing a current transport request.

Deleting /AKIGMBH/PMCQCONF on the SAP® system:

1. Select transaction `se802`
2. Repository Browser -> Package /AKIGMBH/PMC --> Expand programmes
3. Right click on /AKIGMBH/PMCQCONF --> delete
4. Select *includes*
5. Click *delete*
6. Create new workbench request
7. Enter any suitable description
8. Save
9. Confirm
10. Programme /AKIGMBH/PMCQCONF no longer exists in package /AKIGMBH/PMC
11. Select *Transport Organizer*
12. Click on *Update Object List*
13. Release both entries of the new Workbench request (if necessary, expand it first and navigate to it)
14. Click on *Update Object List* --> Workbench request should have disappeared
15. The programme should have disappeared in the Repository Browser.

Then import the current transport request for PrinTaurus for SAP® 6.2.

## PrinTaurus Service - Extensions in database-based user administration

### UniSpool Server

The database-based user administration with the PrinTaurus Service has been extended for UniSpool print servers. As with the connection of Windows print servers, both a login via single sign-on and the implementation of high availability are possible.

The assignment of authorisations is done in the PrinTaurus GUI.

Prerequisite:

- UniSpool Version 6.23
- Linux 3.0 / Red Hat EL 7.9 x86\_64
- Linux 4.18 / Red Hat EL 8.0 x86\_64
- SuSE (reported to work)
- Ubuntu (reported to work).

When installing the PrinTaurus service, the SSL service endpoint option must be enabled for UniSpool print servers in the `PrinTaurus Service.msi`.

### General optimisations

For the use of the PrinTaurus Service the display and editing of already assigned permissions in the user administration has been simplified and presented more clearly.

- Server display independent of connected servers (display of servers from the database)
- If the right for logging in already exists for a server, it is marked in bold in the server selection
- Server schemas for cross-server authorisations can be created
- Server schemas also authorise servers added in the future
- The character limit for the user name is 128 characters
- The filtering of users according to users with / without rights has been implemented

### Changing SID for AD groups

The SID for AD groups can be changed, existing permissions for this group remain unchanged.


The call is made via the context menu, an entry in the form of a SID must be made, the existence of the SID in the AD is not checked.

### Right for Server Log-In

The right to log in to a server has been explicitly included in the authorisation assignment for servers.

To be able to view or edit configurations on servers, the log-in right must be assigned.

If the user has not been assigned a log-in right for a server, the server symbol in the tree structure has a key: .

If the user has the log-in right for a server but no other rights on the server, the server symbol is displayed with a red exclamation mark: .

### Right for administration of licences

The right to manage licences has also been explicitly included in the user administration.

For this purpose, the previous tab *User Administration* has been revised.

The right to manage licences is now located on the *PrinTaurus Service* tab together with the right to assign the user management right to other users.



## PrinTaurus Service - Saving configuration information in the PrinTaurus Service database

The configuration information of the printing environment (server, printer queues, drivers, ports) was previously done by the PrinTaurus Economist Configuration Service or the PrinTaurus SmartSpread Configuration Service.

Being a central service for various PrinTaurus functions, configuration information is now stored centrally in the PrinTaurus service database by the PrinTaurus Service.

For this purpose, the new role *spooler replication* has been implemented for the PrinTaurus Service, which can be assigned during the installation of the service.

If this role is activated, the PrinTaurus Economist Synchronizer Service has to be installed (on the Solution Server) and the previous installations of PrinTaurus Economist CS and / or PrinTaurus SmartSpread CS must be removed.

## PrinTaurus Economist Synchronizer Service - Synchronisation of spooler information between PrinTaurus Service and PrinTaurus Economist database

A new service has been developed to synchronise the configuration data stored by the PrinTaurus Service with the PrinTaurus Enterprise or PrinTaurus Economist database.

This ensures the compatibility of all PrinTaurus functions when using PrinTaurus Service with *spooler replication* role, PrinTaurus SmartSpread and PrinTaurus Economist.

If the PrinTaurus SmartSpread Configuration Service and PrinTaurus Economist Configuration Service were already installed in the network, they must be uninstalled.

## PrinTaurus Services - Logging in the event log

XOMD

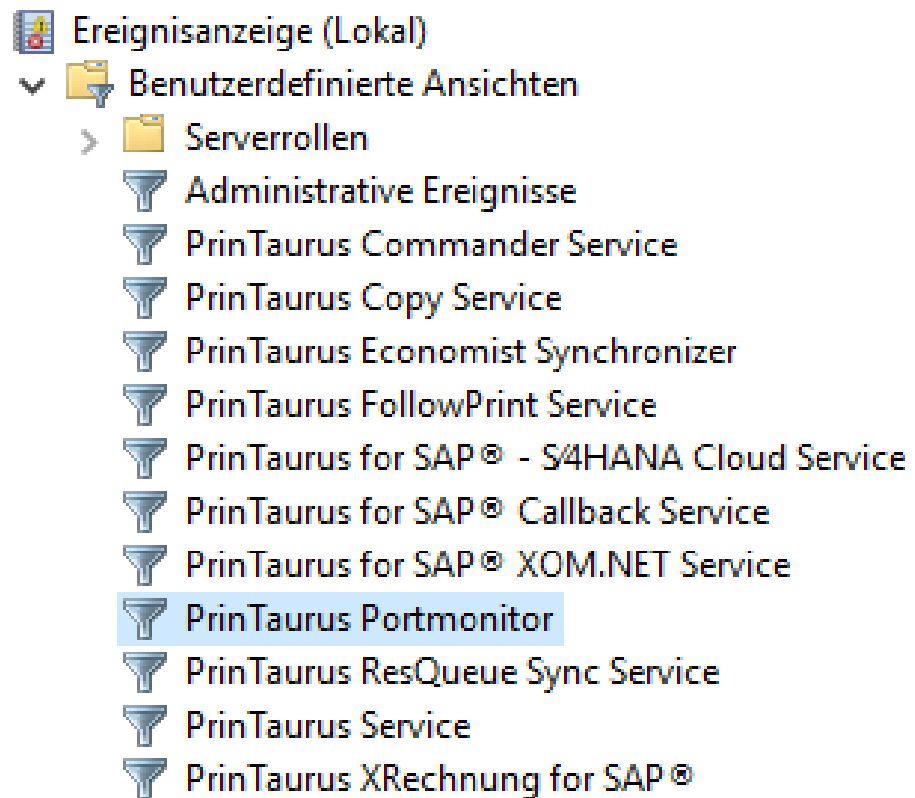
The logging of the XOMD is no longer done in a log file but in the event log of the server. The corresponding configuration options for the creation of the log file in the server properties in the task devices have been removed.

During an update, the configuration information that is no longer required is removed.

The configuration of the ReportContext is still done in `PTXOMCBD.exe.config`.

User-defined views

User-defined views have also been implemented for various services, which are made available when installing / updating the corresponding services.



Custom views of services after installation

### PrinTaurus Services - Expansion of the SNMP feature Central Management of Services

For security reasons (cf. Bundesamt für Sicherheit in der Informationstechnik) the SNMP feature for the central management of PrinTaurus services on the print servers has been removed.

During an update, the components required for this are uninstalled, the tab *Manage Services* in the server properties is no longer available.

### Printing from the SAP® S/4 HANA Cloud with the PrinTaurus for SAP® S/4 HA-NA Cloud Service

If SAP® is used in the cloud, XOM-based products for printing from SAP® are normally not applicable. The newly developed PrinTaurus for SAP® S/4 HANA Cloud Service closes this gap and enables printing in on-premise environments also from the SAP® S/4 HANA Cloud.

With this innovation, AKI GmbH is one of the first SAP® partners whose solution has been certified for printing from the SAP® Cloud (external link to certificate, PDF 44kb).

To print documents, printer queues are first configured in an SAP® Cloud instance. The print outputs are delivered as so-called elements in these print queues and wait there to be collected.

A communication agreement is defined for the connection between the print server and the SAP® S/4 HANA Cloud, which includes the access data to the SAP® system.

The interface is defined as a pull interface, the linking of the concrete assignment of devices takes place in the OMS.

This function is made possible by the PrinTaurus for SAP® - S/4 HANA Cloud Service. With this service, it is possible to link the printer queues of both worlds.

Documents from printer queues from SAP® instances can then be retrieved by this service from the SAP® S/4 HANA Cloud via the internet and are printed on a printer in your network or the file is processed in another way. Alternatively, you can save the documents locally or make them available on a shared directory of the print server.

## **PrinTaurus for Healthcare - Printing from hospital information systems**

With Release 6.2, the PrinTaurus for Healthcare module is available.

As one of the technical core processes in hospitals, printing is often associated with considerable time expenditure and challenges.

Linking hospital information systems

Linking printers via hospital information systems and the respective special applications to the user is one of the main challenges in everyday life.

Due to the high number of employees, local workstations and special applications with high printing requirements, the number of printer queues increases massively in the hospital environment. This presents administrators with the challenge of maintaining an overview of the print landscape, keeping the drivers for the individual device manufacturers up to date and distributing the printers easily and effectively to the individual employees.

- High number of individual print queues, making a centralised management approach difficult
- Lack of overview of single configurations or print infrastructure
- Adjustments should preferably be made outside the hospital information system
- Form allocation to printers or paper trays takes place locally at the workstation
- Troubleshooting requires a lot of effort
- Danger of user errors - misprints due to selection of the wrong print queue
- High availability for print servers or individual printer locations required
- Large manual effort when changing the printer manufacturer.

### **The PrinTaurus for Healthcare solution**

We offer a printing solution that has been tailored precisely to the requirements and needs of hospitals.

- Overview and security for IT
  - Overview of your entire print landscape.
- Printing via Microsoft print server or from SAP and (HIS) special applications.
  - Everything is manageable and transparent from a single graphical user interface.
  - The management and administration of printers can be automated, print drivers can be easily exchanged and adjustments can be made quickly and centrally.

- Printing processes can be automatically secured and set up with high availability.
- Simplify printing from various hospital information systems.
  - Only one printer queue per user to perform form settings. This reduces the effort for administration and distribution by a factor of 10.
- Satisfied end users
  - The use of printers is drastically simplified for end users. All users are automatically connected to the printers they need for their daily work.
  - The printer follows the user from workstation to workstation.
  - The reduction of necessary printer queues for end users makes it easier for them to select the correct printers.

It is possible to assign granular permissions for PrinTaurus for Healthcare.

The detailed programme description can be found in the PrinTaurus manual.

A separate licence is required for PrinTaurus for Healthcare.

### 3 Changes in detail

PrinTaurus Service	<ul style="list-style-type: none"><li>• Authentication errors could occur when displaying print file contents. This has been fixed.</li><li>• The specification of the used port and the activation of the SSL endpoint for the PrinTaurus Service (for UniSpool print servers) can now already be done during the installation.</li></ul>
PrinTaurus PortMonitor	<ul style="list-style-type: none"><li>• With a spooler start, certain settings in the PortMonitor regarding control procedures and programme calls were reset to the default. This has been fixed.</li><li>• If command lines longer than 105 characters were used for PMC ports, display and execution problems occurred. The character limit for command line calls was increased to 1023 characters.</li></ul>
PrinTaurus Commander	<ul style="list-style-type: none"><li>• If the automation was called via <code>autoq.exe</code>, jobs were not executed successfully. This was fixed by aligning the call parameter in the database and <code>xsd</code> schema.</li><li>• If redirection was set up and a filter programme call was used at the same time, the redirection was not displayed correctly, but the print files were transferred correctly. The incorrect display has been fixed.</li><li>• When creating printer messages on Windows and UniSpool print servers, an incorrect creator was displayed. The deletion of these printer messages could take place despite the lack of authorisation of other users. The actually creating user, however, could not delete the printer messages. This has been fixed.</li></ul>
PrinTaurus GUI	<ul style="list-style-type: none"><li>• In some cases the entries of lookup tables were not visible although they existed. This has been fixed.</li><li>• When setting up a manual redirection for a print queue, the redirection was technically set correctly, but in the PrinTaurus GUI display different redirections were shown. The display has been corrected.</li><li>• Task <i>Devices</i>: The sorting of the number of saved spool files for printers has been corrected. The sorting is now correctly numerical.</li><li>• UniSpool Server, Task <i>Configuration</i>: The values for the option <i>Keep log files</i> on the tab <i>Default values for new clients</i> were not correctly adopted.</li><li>• The functionality to send e-mails via SMTP authentication has been implemented in all mail functions of PT Economist and in the preview function of the PrinTaurus GUI.</li><li>• The PrinTaurus GUI did not always start in the last opened view. The GUI now always opens in the device task, regardless of which tab was open when exiting.</li><li>• Despite different compatibility modes, script errors were reported for the display of HTML pages of individual printers. The GUI could only be closed via the task manager. Script errors are now handled differently, the GUI remains operable.</li><li>• Creating a template for a queue is now also possible in the context menu of the queue in the list view.</li></ul>

- If a filter was set that filtered the list of saved print files based on the number of print files per print queue, the GUI could crash. This occurred if the context menu of a print file was to jump to a print queue that contained fewer print files than specified in the filter. This has been fixed.
  - LDAP/FILE mode of user administration: If a user already had rights for a print server and was subsequently given rights for the EnterpriseServer, these were not recorded in the database. This has been fixed.
- PrinTaurus for SAP®
- Fixed incorrect numerical sorting in the list view of *All SAP® Systems* for the *Transport Order Version* and *AutoQ Interval* columns.
  - The back button in the *QConfigurator* wizard was not always available. This has been fixed.
  - The check of the accessibility of the XOMD by the netxom on Windows servers has been changed. It is no longer necessary to release the Internet Control Message Protocol (ICMP) in the firewall to perform a ping.
  - The replication interval for already replicated SAP® systems can now also be changed via multiple selection.
- PrinTaurus SmartSpread
- There was an error message in the monthly definition of the execution of the configuration backup for a cluster if the day was not available in a month. This has been fixed: If the corresponding day does not exist in a month, the last valid day of a month is taken.
  - When using different printer and share names for a queue, the forced default printer was not correctly assigned to the clients. This has been fixed. (Known issue: the corresponding queue is displayed twice by Windows.)
  - If the (thin) client is changed without a new logon to the terminal server, the assignments are set to match the client.
- PrinTaurus DriverServer
- In certain cases, the driver distribution for updating existing drivers failed due to errors in the XML file. This has been fixed.
- PrinTaurus Economist
- In interaction with the PrinTaurus Service, the properties of a report server could not be called even if all required permissions were available. This has been fixed.
- UniSpool
- SAP® connection: If a timeout occurred when printing from SAP with (ha) netxom, the temporary spoolfile from the receiving xomd remained in the /tmp folder and is not deleted. This behaviour also occurred when the netxom was terminated.  
The problem also persisted when a different temp folder is specified using -t at xomd startup.  
When reaching a timeout, the temporary files are now automatically deleted from the temp folder.
  - In the PrinTaurus GUI a UniSpool configuration was exported, changed and then imported again, the printers should be overwritten: During the import, an error message was displayed stating that the corresponding UniSpool profiles were not available, although they had been exported before. This error has been fixed.
  - From version UniSpool 6.23 the stsserv is activated by default and the entry in the config screen is removed. The field is also removed in the PrinTaurus GUI if you are connected to a UniSpool server greater than / equal to 6.23.

- The *pmcd* hung up in some cases when calling the properties of the UniSpool server in the PrinTaurus GUI. This has been fixed in UniSpool version 6.23.37.

## 4 Service and file versions

The list is based on the storage of the files in the corresponding installation directories.

*Italics* refer to Unix components.

### PrinTaurus GUI

- ptcmd.exe: 6.2.8026.16270 / 6.2.8026.16270
- ptcmd32.exe: 6.2.0.0 / 6.2.0.0
- AkiCommons.dll: 1.0.7955.20048 / 1.0.7955.20048
- PtUserManagement.dll: 2.0.7908.27281 / 2.0.7908.27281
- Automation\AutoQ.exe: 1.1.7933.18583 / 6.2
- Automation\AkiCommons.dll: 1.0.7893.20629 / 1.0.7893.20629
- Automation\automate.xsd: 1.45
- Automation\PtUserManagement.dll: 2.0.7908.27281 / 2.0.7908.27281
- de\ptcmd.resources.dll: 6.2.8026.16270 / 6.2.8026.16270

### PrinTaurus Services

- pmconsvr.exe: 3.13.1
- *pmcd*: 3.13.00
- AddLDAPGroup.exe: 1.0.0.2 / 1.0.0.2
- AddLDAPUser.exe: 1, 0, 0, 2 / 5, 0, 0, 0
- AkiCommons.dll: 1.0.7958.24374 / 1.0.7958.24374
- AllTables.sql: 6.1 CheckIn: 09.12.2019 14:55:42
- cleanjob.exe: 1, 3, 0, 3 / 4, 1, 0, 0
- CopyService.exe: 1.0.0.7 / 1.0.0.7
- EconomistDbKeeper.exe: 2.2.7839.21097 / 6.1.0.0
- PrinTaurus Enterprise database version: 6.1
- PMCFollowPrint.exe: 1.3.38
- PMCQDump.exe: 1, 0, 0, 6 / 5, 2, 0, 0
- PMCQLoader.exe: 0, 6, 0 / 5, 9, 0, 0
- PMCResQueue.exe: 1, 2, 0, 5 / 5, 9, 0, 0
- PrinTaurus21.dll: 1, 0, 4, 0 / 6, 1, 0, 0
- PtServiceConnector.dll: 2.0.7964.25577 / 2.0.7964.25577
- PtUserManagement.dll: 2.0.7908.27281 / 2.0.7908.27281
- ResQueueSyncService.exe: 1.1.7937.23302 / 6.2.0.0
- PrinTaurus Commander Service\lpnt.exe: 1, 2, 0, 0 / 3, 7, 7, 0
- PrinTaurus PortMonitor\lpnt.exe: 1, 2, 0, 0 / 3, 7, 7, 0
- PrinTaurus PortMonitor\PTSetRetry.exe: 1, 0, 0, 2 / 1, 0, 0, 1
- pmcmon.dll: 1, 9, 9, 9 / 6, 2, 0, 0
- pmcmonui.dll: 1, 9, 9, 9 / 5, 8, 0, 0



PrinTaurus for SAP® Systems	<ul style="list-style-type: none"><li>• SAP transport file:1.0.58<ul style="list-style-type: none"><li>– 702 D09K900020</li><li>– 710 T04K900013</li><li>– 740 T01K900049</li><li>– 740 – ISH T01K900048</li></ul></li></ul>
PrinTaurus PTXOMCBD	<ul style="list-style-type: none"><li>• PrinTaurus for SAP® Services\PTXOMCBD\PTXOMCBD.exe: 1.9.7937.21608 / 6.2</li><li>• PrinTaurus for SAP® Services\PTXOMCBD\AkiCommons.dll: 1.0.7899.25928 / 1.0.7899.25928</li><li>• PrinTaurus for SAP® Services\PTXOMCBD\Ptxomcbdef.dll: 1.9.7937.21608 / 6.2</li><li>• PrinTaurus for SAP® Services\PTXOMCBD\PTXOMCBLIB.dll: 1.9.7937.21608 / 6.2</li></ul>
PrinTaurus XOMD	<ul style="list-style-type: none"><li>• PrinTaurus for SAP® Services\PTXOMCBD\ptxomcbqcfgd.dll: 1.9.7937.21608 / 6.2</li><li>• PrinTaurus for SAP® Services\XOMD.NET\xomd.Net.exe: 1.0.9.46 / 6.2</li><li>• PrinTaurus for SAP® Services\XOMD.NET\xomd.Net.Server.exe: 1.0.0.9 / 1.0.0.9</li><li>• PrinTaurus for SAP® Services\XOMD.NET\AkiCommons.dll: 1.0.7726.21725 / 1.0.7726.21725</li><li>• <i>xomd</i>: 1.0.9.44</li></ul>
PrinTaurus NetXom	<ul style="list-style-type: none"><li>• HAnetXOM.exe: 2.0.0.0 / 6.2.0.0</li><li>• netXOM.exe: 2.0.0.1 / 6, 2, 0, 0</li><li>• <i>hanetxom</i>: 2.0.0.0</li><li>• <i>netxom</i>: 2.0.0.0</li></ul>
PrinTaurus ERP Solution Service	<ul style="list-style-type: none"><li>• ERPSolutionService.exe: 1.2.7936.27260 / 6.2.0.0</li><li>• AkiCommons.dll: 1.0.7461.17358 / 1.0.7461.17358</li><li>• EconomistDbKeeper.exe: 2.2.7839.21097 / 6.1.0.0</li><li>• AllTables.sql: 6.1 CheckIn: 09.12.2019 14:55:42</li><li>• ErpssPrompt.exe: 1.1.7936.27261 / 6.2.0.0</li></ul>
PTS4HCOMSD	<ul style="list-style-type: none"><li>• PTS4HCOMSD.exe: 1.0.7943.29261 / 6.2</li><li>• AkiCommons.dll: 1.0.7570.15348 / 1.0.7570.15348</li><li>• SapHanaConnector.dll: 1.36.2.0 / 1.36.2</li></ul>

	<ul style="list-style-type: none"> <li>• SpoolerApi.dll: 1.6.7557.16405 / 1.6.7557.16405</li> <li>• Win32Api.dll: 2.2.7580.17251 / 2.2.7580.17251</li> </ul>
PrinTaurus QConfigurator	<ul style="list-style-type: none"> <li>• pmcqcfgd.exe: 1.0.17.0</li> <li>• <i>pmcqcfgd</i>: 1.0.12.0</li> </ul>
PrinTaurus Service	<ul style="list-style-type: none"> <li>• PrinTaurus Service Database scheme version:16</li> <li>• PrinTaurusService.exe: 6.2.7942.29107 / 6.2.7942.29107</li> <li>• AkiCommons.dll: 1.0.7894.17686 / 1.0.7894.17686</li> <li>• SpoolerApi.dll: 1.6.7502.26836 / 1.6.7502.26836</li> <li>• Win32Api.dll: 1.0.7440.20732 / 1.0.7440.20732</li> <li>• <i>PtServiceConnectorPmcd</i>: 1.0.21356.1050</li> </ul>
PrinTaurus SmartSpread	<ul style="list-style-type: none"> <li>• SmartSpreadTools\AssignmentCreator.exe: 1.6.7542.21399 / 5.9.4.0</li> <li>• SmartSpreadTools\AkiCommons.dll: 1.0.6887.29838 / 1.0.6887.29838</li> <li>• SmartSpreadTools\ImportSmartSpreadAssignments.xsd: 1.53</li> </ul>
PrinTaurus SmartSpread For Print Server	<ul style="list-style-type: none"> <li>• PtSmartSpreadConfigService.exe: 1.9.7937.23612 / 1.9.7937.23612</li> <li>• ResQueueSyncService.exe: 1.1.7937.23302 / 6.2.0.0</li> <li>• PMCResQueue.exe: 1, 2, 0, 5 / 5, 9, 0, 0</li> <li>• CopyService.exe: 1.0.0.7 / 1.0.0.7</li> <li>• PtSmartSpreadSharedLibrary.dll: 1.9.7937.23611 / 1.9.7937.23611</li> <li>• SpoolerApi.dll: 1.6.7557.16405 / 1.6.7557.16405</li> </ul>
PrinTaurus SmartSpread Webservice	<ul style="list-style-type: none"> <li>• PtSmartSpreadService.dll:1.9.7937.23614 / 6.2.0.0</li> <li>• EconomistDbKeeper.exe:2.2.7839.21097 / 6.1.0.0</li> <li>• AllTables.sql:6.1 CheckIn: 09.12.2019 14:55:42</li> <li>• PtSmartSpreadSharedLibrary.dll:1.9.7937.23614 / 1.9.7937.23614</li> </ul>
PrinTaurus SmartSpread Client	<ul style="list-style-type: none"> <li>• PtSmartSpreadClient.exe: 1.9.7940.20933 / 1.9.7940.20933</li> <li>• AkiCommons.dll: 1.0.7899.25928 / 1.0.7899.25928</li> <li>• PtSmartSpreadSharedLibrary.dll: 1.9.7940.20930 / 1.9.7940.20930</li> <li>• de\PtSmartSpreadClient.resources.dll: 1.9.7940.20933 / 1.9.7940.20933</li> <li>• fr\PtSmartSpreadClient.resources.dll: 1.9.7940.20933 / 1.9.7940.20933</li> </ul>
PrinTaurus for Healthcare	<p>The files are located below the installation directory of the PrinTaurus GUI.</p> <ul style="list-style-type: none"> <li>• Healthcare\Editor\PrinTaurusForHealthcareEditor.exe: 1.0.7954.29485 / 1.0.7954.29485</li> <li>• Healthcare\Editor\AkiCommons.dll: 1.0.7893.20629 / 1.0.7893.20629</li> <li>• Healthcare\Editor\PtUserManagement.dll: 2.0.7908.27281 / 2.0.7908.27281</li> </ul>

	<ul style="list-style-type: none"> <li>Healthcare\Editor\Win32Api.dll: 2.2.7580.17251 / 2.2.7580.17251</li> <li>Healthcare\Editor\WpfCommons.dll: 1.0.7954.28622 / 1.0.7954.28622</li> <li>Healthcare\Editor\de\PrinTaurusForHealthcareEditor.resources.dll: 1.0.7954.29485 / 1.0.7954.29485</li> <li>Healthcare\Importer\PrinTaurusForHealthcareImporter.exe: 1.0.7933.18832 / 1.0.7933.18832</li> <li>Healthcare\Importer\AkiCommons.dll: 1.0.7893.20629 / 1.0.7893.20629</li> <li>Healthcare\Importer\PtUserManagement.dll: 2.0.7908.27281 / 2.0.7908.27281</li> <li>Healthcare\Importer\de\PrinTaurusForHealthcareImporter.resources.dll: 1.0.7933.18832 / 1.0.7933.18832</li> </ul>
PrinTaurus OneQueueRouter Plugin	<ul style="list-style-type: none"> <li>OneQueueRouterClient.exe: 1.0.7933.18564 / 1.0.7933.18564</li> <li>AkiCommons.dll: 1.0.7893.20629 / 1.0.7893.20629</li> <li>PtUserManagement.dll: 2.0.7908.27281 / 2.0.7908.27281</li> <li>SpfLibrary.dll: 1.0.7830.18898 / 1.0.7830.18898</li> </ul>
PrinTaurus Economist Configuration Service	<ul style="list-style-type: none"> <li>PrinTaurusCS.exe: 5, 9, 1, 3 / 5, 9, 1, 0</li> </ul>
PrinTaurus Economist Synchronizer	<ul style="list-style-type: none"> <li>PrinTaurusEconomistSynchronizer.exe: 6.2.7941.16954 / 6.2.7941.16954</li> <li>AkiCommons.dll: 1.0.7494.24343 / 1.0.7494.24343</li> </ul>
PrinTaurus Economist	<ul style="list-style-type: none"> <li>PrinTaurusDS.exe: 6.2.7936.24151 / 6.2.7936.24151</li> <li>PrinTaurusPS.exe: 5.9.7466.26601 / 5.9.7466.26601</li> <li>PrinTaurusRS.exe: 6.2.7936.24157 / 6.2.7936.24157</li> <li>Conf2EnterpriseDb.exe: 1.0.5.0 / 1.0.5.0</li> <li>EconomistDbKeeper.exe: 2.2.7839.21097 / 6.1.0.0</li> <li>AllTables.sql: 6.1 CheckIn: 09.12.2019 14:55:42</li> <li>PTECleanUp.exe: 1.0.7516.20556 / 1.0.7516.20556</li> <li>EconomistCounter.exe: 6.2.0.0 / 6.2.0.0</li> </ul>
MSI versions	<ul style="list-style-type: none"> <li>PrinTaurus Economist Configuration Service.msi: 6.2.2</li> <li>PrinTaurus Economist Synchronizer.msi: 6.2.7941.16954</li> <li>PrinTaurus Economist.msi: 6.2.5</li> <li>PrinTaurus ERP Solution Service.msi: 6.2.3</li> <li>PrinTaurus GUI x64.msi: 6.2.21</li> <li>PrinTaurus NetXom.msi: 6.2.12</li> <li>PrinTaurus OneQueueRouter Plugin.msi: 1.0.7933.18564</li> <li>PrinTaurus QConfigurator.msi: 6.2.2</li> <li>PrinTaurus RLP.msi: 2.0.29</li> <li>PrinTaurus Service.msi: 6.2.1</li> </ul>

- PrinTaurus Services.msi: 6.2.37
- PrinTaurus SmartSpread Client x64.msi: 6.2.1
- PrinTaurus SmartSpread Client x86.msi: 6.2.1
- PrinTaurus SmartSpread for Print Server.msi: 1.9.4
- PrinTaurus SmartSpread Webservice.msi: 6.2.1
- PTS4HCOMSD.msi: 1.0.7943.29261