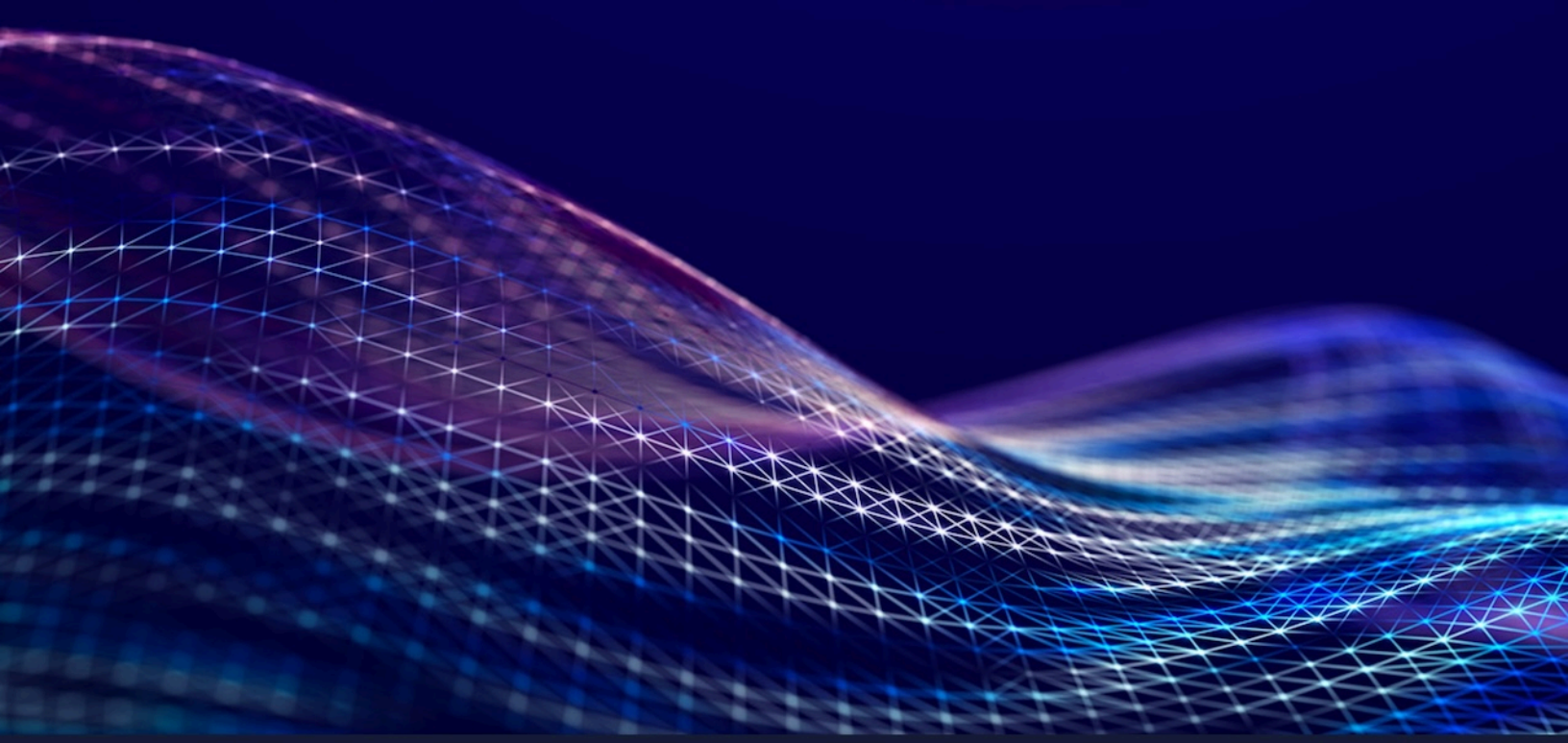


Tungsten Process Director

Technical Specifications

2026.1

TUNGSTEN AUTOMATION

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Revision history

Date	Revision	Description
November 14, 2020	1.0	Initial version
November 22, 2021	1.1	Updated for Process Director 7.10
November 25, 2022	1.2	Updated for Process Director 7.11
November 22, 2023	1.3	Updated for Process Director 7.12
November 18, 2024	1.4	Updated for Process Director 2025.1
January 26, 2025	1.5	General revisions
February 3, 2026	1.6	Updated for Process Director 2026.1

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Introduction

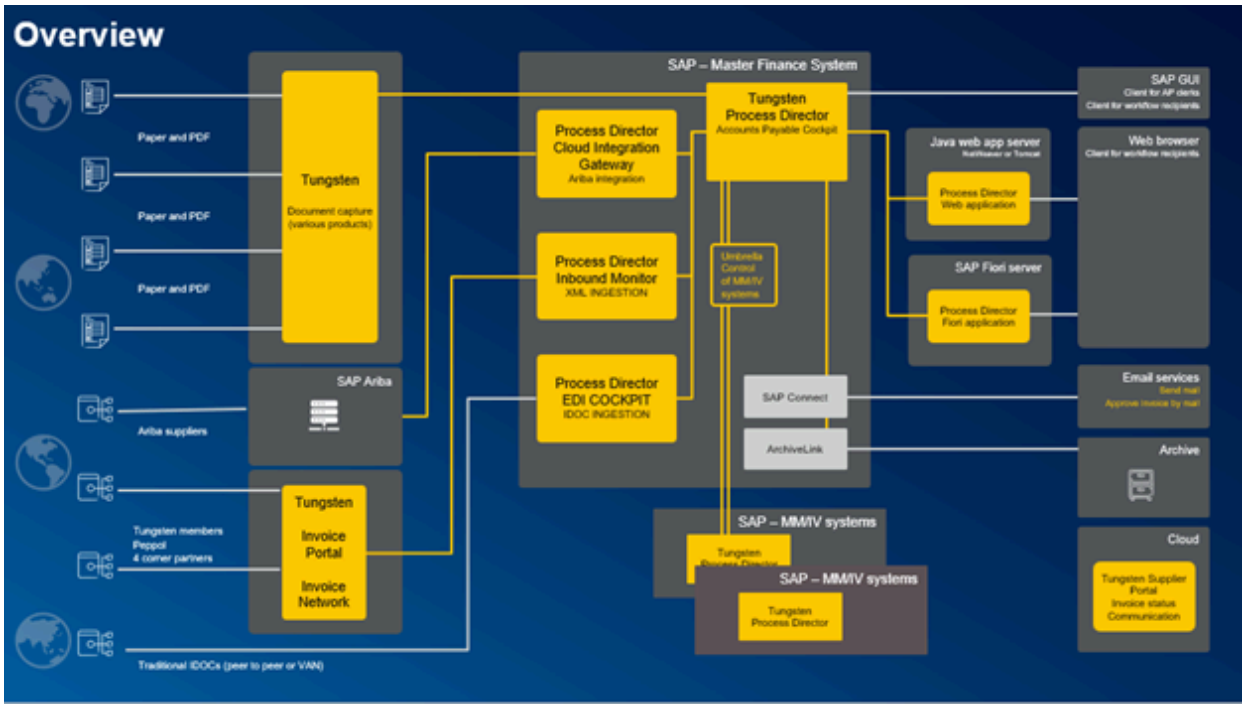
Tungsten Process Director™ is an SAP add-on that is installed in an existing SAP system landscape. It does not require any additional hardware, storage space, or software. Web applications are optional parts of the solution.

The Java services for Web applications can be installed on a separate Java server. The requirements are listed for this scenario.

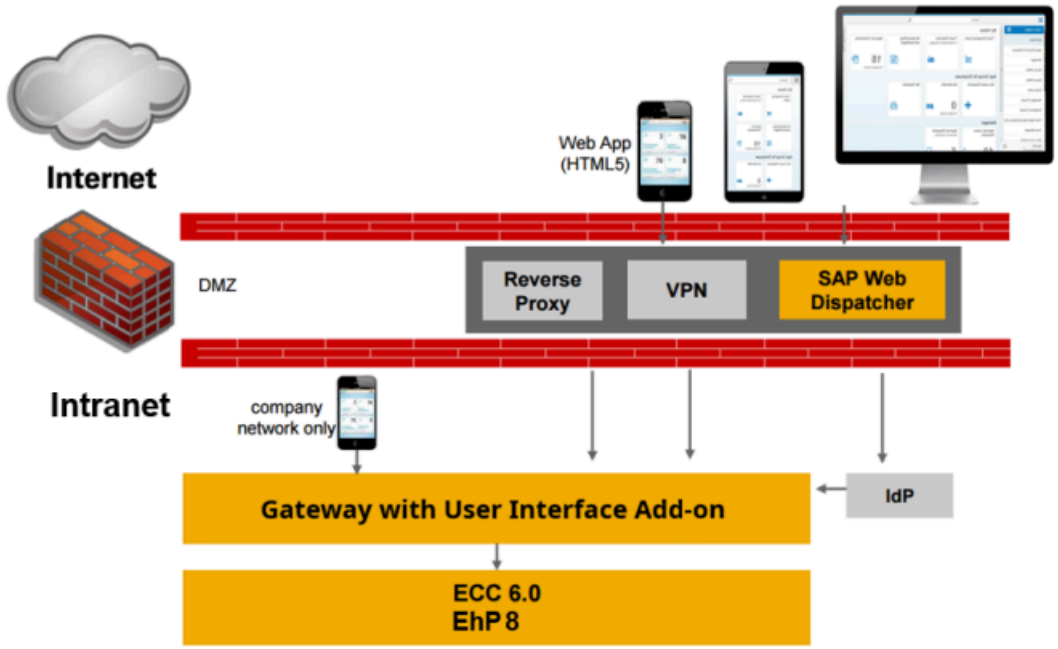
System architecture

Tungsten Process Director™ is a modular solution with a layered architecture. It operates as an add-on within SAP, features a web application layer for browser-based access, and offers robust integration and scalability.

Process Director, Web Application, and Email-based Approval



Process Director for SAP Fiori application



Requirements

The following topics list requirements for Process Director, Process Director Accounts Payable and web components.

- Process Director and Process Director Accounts Payable
- Web Application, Email-based Approval, Info Mail
- Process Director for SAP Fiori

Process Director and Process Director Accounts Payable

Specification	Description
Hardware	Leverages the existing SAP system landscape: no special requirements.
Accessibility	Standard business network connectivity.
Browser	Microsoft Edge based on Chromium Mozilla Firefox Safari Google Chrome
Supported SAP releases	ECC 6.0 with SAP_BASIS Release 700 Level 0026 or newer[1] ECC 6.0 EhP 1[1] ECC 6.0 EhP 2[1] ECC 6.0 EhP 3[1] ECC 6.0 EhP 4[1] ECC 6.0 EhP 5[1] ECC 6.0 EhP 6 ECC 6.0 EhP 7 ECC 6.0 EhP 8 S/4HANA 2020 on premise or private cloud[1] S/4HANA 2021 on premise or private cloud S/4HANA 2022 on premise or private cloud S/4HANA 2023 on premise or private cloud S/4HANA 2025 on premise or private cloud
Mobile operating systems	iOS and Android
Client operating systems	No limitations. SAP GUI or browser must be supported.
Server operating systems	Leverages the SAP system (all SAP supported OS).
DBMS	Leverages the SAP system (no additional database required).

Specification	Description
Required third-party technologies	None. An Archive Link compliant archive repository is recommended.
Compatible third-party technologies	Supporting various SAP standard interfaces (Archive Link, SAP Connect, Ariba, Ariba CIG, OCI).
Required Tungsten Automation software	None.
Compatible Tungsten Automation software	ReadSoft Invoices, AP Essentials, AP Agility, InvoiceAgility
Supported languages	Czech Danish Dutch English Finnish French German Hungarian Italian Japanese Norwegian Polish Portuguese Romanian Russian Simplified Chinese Slovak Slovenian Spanish Swedish Turkish

[1] End of SAP Mainstream Maintenance phase reached. For more information refer to the SAP Product Availability Matrix (PAM).

Web Application, Email-based Approval, Info Mail

Specification	Description
Hardware	8GB (minimum). Each concurrent user session should have 40 MB of memory.
Accessibility	Standard business network connectivity.
Browser	Microsoft Edge based on Chromium Mozilla Firefox Safari Google Chrome
Supported SAP releases	See requirements for Process Director and Process Director Accounts Payable.
Client operating systems	No limitations. Browser must be supported.
Server operating systems	Leverages the SAP system (all SAP supported operating systems) and all operating systems that are supported by the Java EE Server.

Specification	Description
Web application servers	Web Application: Apache Tomcat 10.0 with JDK 21 (minimum) or 11.0 with JDK 21 (recommended) Email-based Approval and Info Mail: Apache Tomcat 9.0 with JDK 8 (minimum) Optionally, other compatible Java EE Servers.
Java Development Kit (JDK)	Web Application: JDK 21 Email-based Approval and Info Mail: JDK 8
Java Standard Edition (SE)	Web Application: Java SE 21 Email-based Approval and Info Mail: Java SE 8
SAP Java Connector (SAP JCo)	3.0 (minimum) 3.1 (recommended)
Required third-party technologies	None. An Archive Link compliant archive repository is recommended.
Compatible third-party technologies	Adobe Acrobat Reader
Supported languages	See supported languages for Process Director and Process Director Accounts Payable.

- Process Director Web Application works only if Tungsten Process Director is installed. For instructions on installing it, refer to the *Tungsten Process Director Import and Upgrade Guide*.
- To deploy the Web Application together with Email-based Approval or Info Mail, configure Tomcat 9 with JDK 8 and Tomcat 11 with JDK21 to run simultaneously on a single Windows machine. Refer to the *Tungsten Process Director Web Application Configuration Guide* for instructions.
- If you are using a 64bit version of JDK, the other components must also be 64bit.
- If you are using SAP JCo 3.1, ensure you use only Long-Term Support (LTS) Java versions, such as Java SE 21.
- The SAP JCo implements functionality that is specific to the operating system because it runs dedicated network sockets and builds an RFC connection to the SAP ERP.
- The JDK is specific to the operating system and its CPU.
- Due to changes in Oracle Java lifecycle policy, we recommend using open-source JDKs, such as OpenJDK. Note that OpenJDK has the same version numbers as the JDK.

Using SAP JCo 3.1

With SAP Java Connector (JCo) 3.1 on Apache Tomcat, only the first deployed instance of Process Director Web Application that connects to JCo after a Tomcat restart works.

The same issue occurs when the Web Application runs together with other applications such as Email-based Approval or Info Mail. To run multiple instances or applications, move the `jcolayer` library to the Tomcat main `lib` folder and remove it from every Web Application `WEB-INF/lib` folder.

To deploy multiple instances of SAP JCo 3.1, complete the following steps.

1. Deploy all necessary instances of the Web Application(s).

2. Start Tomcat.
3. After the WAR files are unpacked, go to the `Tomcat/webapps/pdweb-app/WEB-INF/lib` folder of the newest Web Application and copy the jcolayer*.jar file to the `Tomcat/lib` folder.
4. Remove the jcolayer*.jar file from the `Tomcat/webapps/pdweb-app/WEB-INF/lib` folder of all deployed Web Application instances.
5. Restart Tomcat.

   Refer to the *Tungsten Process Director Web Application Configuration Guide* for instructions on how to install JDK, Tomcat, and SAP JCo.

Process Director for SAP Fiori

The following topics list requirements for different configuration options using SAP Standard runtime environment.

- Single-system configuration
- Two-system configuration, frontend system
- Two-system configuration, backend system

Single-system configuration

Specification	Description
Hardware	Leverages the existing SAP system landscape, for example, SAP ECC 6.0 EhP8. No special requirements other than installing the SAP User-Interface Add-On for Fiori.
Accessibility	Standard business network connectivity. For internet access, use the SAP Web Dispatcher, Customer specific VPN, or Reverse Proxy.
Browser	Supported web browser defined by the SAPUI5 library under control of SAP SE.
Supported SAP releases	See requirements for Process Director and Process Director Accounts Payable. Additional requirements: SAP NetWeaver 7.50 SP25 SAP_UI 7.54 SP11 or newer
Client operating systems	No limitations. Browser must be supported.
Server operating systems	Leverages the SAP system (all SAP supported Operating Systems) and all Operating Systems that the SAP Front-End Server supports.
Web Servers/ Web application servers	SAP NetWeaver
DBMS	None.
Required third-party technologies	None. An Archive Link compliant archive repository is recommended.
Compatible third-party technologies	Adobe Acrobat Reader

Specification	Description
Supported languages	See supported languages for Process Director and Process Director Accounts Payable.

Two-system configuration, frontend system

Specification	Description
Hardware	Leverages the existing SAP system with the installed SAP Fiori version. No special requirements other than installing the SAP User-Interface Add-On for Fiori.
Accessibility	Standard business network connectivity. For internet access, use the SAP Web Dispatcher, Customer specific VPN, or Reverse Proxy.
Browser	Supported web browser defined by the SAPUI5 library under control of SAP SE.
Supported SAP releases	See requirements for Process Director and Process Director Accounts Payable. Additional requirements: SAP NetWeaver 7.50 SP25 SAP_UI 7.54 SP11 or newer
Client operating systems	No limitations. Browser must be supported.
Server operating systems	Leverages the SAP system (all SAP supported Operating Systems) and all Operating Systems that are supported by the SAP Front-End Server.
Web Servers/ Web application servers	SAP NetWeaver
DBMS	None.
Required third-party technologies	None. An Archive Link compliant archive repository is recommended.
Compatible third-party technologies	Adobe Acrobat Reader
Supported languages	See supported languages for Process Director and Process Director Accounts Payable.

Two-system configuration, backend system

Specification	Description
Hardware	Leverages the existing SAP system landscape, for example, SAP ECC 6.0 EhP8. No special requirements other than installing the SAP User-Interface Add-On for Fiori.
Accessibility	Standard business network connectivity. For internet access, use the SAP Web Dispatcher, Customer specific VPN, or Reverse Proxy.
Browser	Supported web browser defined by the SAPUI5 library under control of SAP SE.

Specification	Description
Supported SAP releases	See requirements for Process Director and Process Director Accounts Payable. Additional requirement: SAP NetWeaver 7.50 SP25
Client operating systems	No limitations. Browser must be supported.
Server operating systems	Leverages the SAP system (all SAP supported Operating Systems) and all Operating Systems that are supported by the SAP Front-End Server.
Web Servers/ Web application servers	SAP NetWeaver
DBMS	None.
Required third-party technologies	None. An Archive Link compliant archive repository is recommended.
Compatible third-party technologies	Adobe Acrobat Reader
Supported languages	See supported languages for Process Director and Process Director Accounts Payable.

Tested and supported environments

The following topics list tested and supported environments for Process Director and its components.

- Process Director and Process Director Accounts Payable
- Process Director Web Application
- Process Director for SAP Fiori
- Performance Analytics

Process Director and Process Director Accounts Payable

SAP Release	Supported in Process Director and Process Director Accounts Payable Release			
ECC 6.0 (SAP_BASIS release 700 level 0026 and newer)[1]	7.11.0	7.12.0	2025.1	2026.1
ECC 6.0 EhP 1[1]	7.11.0	7.12.0	2025.1	2026.1
ECC 6.0 EhP 2[1]	7.11.0	7.12.0	2025.1	2026.1
ECC 6.0 EhP 3[1]	7.11.0	7.12.0	2025.1	2026.1
ECC 6.0 EhP 4[1]	7.11.0	7.12.0	2025.1	2026.1
ECC 6.0 EhP 5[1]	7.11.0	7.12.0	2025.1	2026.1
ECC 6.0 EhP 6	7.11.0	7.12.0	2025.1	2026.1
ECC 6.0 EhP 7	7.11.0	7.12.0	2025.1	2026.1
ECC 6.0 EhP 8	7.11.0	7.12.0	2025.1	2026.1
S/4 HANA 1809[1]	7.11.0	7.12.0	No	No
S/4 HANA 1909[1]	7.11.0	7.12.0	2025.1	No
S/4 HANA 2020[1]	7.11.0	7.12.0	2025.1	2026.1
S/4 HANA 2021[2]	7.11.0	7.12.0	2025.1	2026.1
S/4 HANA 2022[2]	7.11.0	7.12.0	2025.1	2026.1
S/4 HANA 2023[2]	7.11.0.2	7.12.0	2025.1	2026.1
S/4 HANA 2025[2]	7.11.0.6	7.12.0.4	2025.1.2	2026.1

[1] End of SAP Mainstream Maintenance phase reached. For more information refer to the SAP Product Availability Matrix (PAM).

[2] SAP S/4HANA systems do not support the use of an ECL viewer. Refer to the SAP Note 2147799 in the SAP Knowledge Base for more information.

Process Director Web Application

Java stack version	Supported in Process Director Web Application Release			
8	7.11.0	7.12.0	2025.1	No
11	7.11.0	7.12.0	2025.1	No
21	No	No	No	2026.1

Process Director for SAP Fiori

Process Director AP for SAP Fiori 2026.1

Process Director AP Work Cycle for SAP Fiori 2026.1

Process Director PO Work Cycle for SAP Fiori 2026.1

Process Director AP Create Invoice for SAP Fiori 2026.1

SAPUI5	Supported in Process Director for SAP Fiori Release			
1.71.69 (SAP Fiori FES 6.0 [1])	7.11.0.6	7.12.0.4	2025.1.2	2026.1
1.136.14 (SAP Fiori FES 2025)	7.11.0.6	7.12.0.4	2025.1.2	2026.1

[1] For SAP Fiori FES 6.0, refer to the SAP Note 2775163 in the SAP Knowledge Base.

Performance Analytics

SAP Release	Supported in Performance Analytics Release
SAP NetWeaver BI 7.3	7.5
SAP NetWeaver BI 7.4 SP Level 2	7.5
SAP NetWeaver BI 7.4 SP Level 3	7.5
SAP NetWeaver BI 7.5 on HANA	7.5

Performance Analytics 7.5 is supported only from SAP NetWeaver BI 7.3 SP14.

Compatible with SAP ERP S/4HANA 1909 on NW 7.54.

Languages supported

The following languages are supported in Process Director-associated products.

Tungsten Performance Analytics

The Tungsten Performance Analytics user interface is available in the following languages.

- Dutch
- English
- French
- German
- Italian
- Portuguese
- Spanish

Tungsten Process Analytics

The Tungsten Process Analytics user interface is available in the following languages.

- English

Tungsten Mobile

The Tungsten Mobile user interface is available in the following languages.

- Czech
- Dutch
- English
- French
- German
- Hungarian
- Italian
- Japanese
- Polish
- Portuguese
- Romanian
- Russian
- Simplified Chinese
- Slovak
- Slovenian
- Spanish
- Swedish
- Turkish