

tts performance suite

System Requirements

Version	Release	Edition
2026	2026	Enterprise

This document specifies the hardware, software, and network requirements for all components of the tts performance suite. It is intended for IT administrators and system integrators responsible for planning and deploying the platform.

1 Producer	2 Content (WBT)	3 Quick Access	4 Object Recognition
5 Curator	6 Server Components	7 Third-Party Products	

1 Producer

The Producer is the authoring environment used to create and manage learning content. The following requirements must be met on any machine running the Producer.

1.1 Hardware

Component	Requirement
Processor	Minimum: Single-core 2.6 GHz Recommended: Dual-core 2.6 GHz
Memory (RAM)	Minimum: 4 GB Recommended: 8 GB (64-bit operating systems)
Free Disk Space	~1,000 MB for program data
Screen Resolution	Minimum: 1024 × 768 Recommended: 1920 × 1080
Multimedia Hardware	16-bit sound card with speakers or headphones

1.2 Software

Component	Requirement
Operating System	Windows 10 Windows 11
Additional Software	Visual C++ Redistributables (x86 + x64) for Visual Studio 2019 (v16.9)
Web Browser Control	Internet Explorer Webbrowser Control must be available in the OS (the Internet Explorer application itself does not need to be installed)
Browser Settings	JavaScript must be enabled
Permissions	Administrator rights required during installation; no changes are made to system folders. Chromium processes must be permitted by the OS and any third-party security tools.

i All components participating in end-to-end communication must support at least HTTP protocol version 1.1.

To use all Producer functionality, policies must allow the Producer process to start an external process named "Gifcreator.exe".

The Windows display zoom must be set to 100% for proper functionality.

Only PC-based (non-touch) configurations are supported on Windows.

1.2.1 Optional Software Components

Depending on your use case, additional software components may be required.

1.2.2 Export Formats

The following export formats are available: .doc, .html, .pdf

Component	Requirement
MS Office Output	MS Office 2016 MS Office 2019 MS Office 2021 MS Office 365
Word Import / Export	MS Office 2016 MS Office 2019 MS Office 2021 MS Office 365
PowerPoint Import / Export	MS Office 2016 MS Office 2019 MS Office 2021 MS Office 365
Text-to-Speech	The TTS engine must support SAPI 5. Supported engines: Readspeaker, Acapela, and Polly.

1.2.3 Video Export

To encode WebM-recorded e-learning videos as MP4, the "FFmpeg" library must be available and properly licensed by the customer. This library and its license are not included with the Producer or the tts performance suite.

1.3 Single Sign-On (SSO)

SSO with the Producer requires the NTLM protocol. Other authentication methods are not currently supported.

1.4 Third-Party Software Compatibility

The following third-party products may affect Producer performance or functionality. Please review the notes for each.

Product	Type	Known Issue / Mitigation
McAfee	Virus Scanner	May reduce performance during content creation. Mitigations can be discussed with the tts consulting team.
HP Quicktest	Testing Tool	Can only be co-installed if the authoring user does not have read access to the Quicktest executable folder.
HP Sprinter	Testing Tool	Installation may cause write-access issues to the Producer profile folder, potentially preventing the WYSIWYG view from loading.
Check Point End Security	Virus Scanner	May strongly reduce performance of the tts performance suite.
Desktop Management Software (e.g. ATI Hydravision)	Multi-monitor	Can cause problems with object recognition during recording and guided walkthroughs.
Bamboo Drivers	Drawing Tablet	Interfere with correct display and object recognition.

Product	Type	Known Issue / Mitigation
Microsoft Snipping Tool	Screen Capture	While running, interferes with object recognition required for recording and playback.
Microsoft Security Policy: Local Machine Lockdown	Group Policy	If enabled, WYSIWYG editing is not possible. Disable this policy to restore editing.

1.5 Technology

The associated Java VM is bundled with the installation package and does not need to be pre-installed. Separately installed Java VMs do not affect the software's operation.

1.6 Installation

The installer does not write files to Windows or system directories. During setup, the following file types are registered:

Component	Requirement
.ttcp	tt content package — document source archive (ZIP-based)
.ttlk	tt license key — auto-installs the license file on double-click
.ttcfg	tt configuration package — configuration-specific data archive
.ttlkr	tt license key request — file for requesting a local license key
.ttop	tt options — transport file for user preferences
.ttscp	tt smart component package — transport file for Smart Components

i Windows 8 and later (with UAC enabled):

Recording or guiding programs that require administrator rights is only possible if the Producer and/or Quick Access also run with administrator rights.

i Group Policy: "Security zones use only machine settings"

For proper functionality, this policy must be set to its default (deactivated), or the following Registry values must be set:

64-bit: HKLM\Software\Wow6432Node\Microsoft\Internet Explorer\MAIN\FeatureControl\FEATURE_BROWSER_EMULATION → "TTKnowledgeForceBrowser.exe"=dword:0000270f

32-bit: HKLM\Software\Microsoft\Internet Explorer\MAIN\FeatureControl\FEATURE_BROWSER_EMULATION → "TTKnowledgeForceBrowser.exe"=dword:0000270f

The tts performance suite installer attempts to set these values automatically during installation.

1.6.1 Profile Folder on a UNC Path

If the Producer profile folder resides on a UNC path, the corresponding server must be placed in the "Intranet" security zone in Internet Explorer security settings — whether accessed via UNC path or a mapped network drive. In a Windows domain where all relevant endpoints are domain members, this is set automatically. Note that performance depends heavily on network quality in this configuration.

1.6.2 Running the Producer with an Active Proxy

"localhost" / "127.0.0.1" must be excluded from proxy access when a proxy is configured.

1.7 Working with Citrix

There are two main access scenarios for Citrix: via Browser-Plugin or via the locally installed Citrix Workspace application. Communication over Citrix VDA channels must be possible in both cases.

1.7.1 Execution Environment Requirements

i Citrix Workspace App must be 32-bit.

Component	Requirement
Server	Tested on Virtual Apps and Desktops with Windows Server 2022 and Citrix VDA 2411
Client	Citrix Workspace for Windows Tested on: Windows 10 Enterprise, Windows 11 Enterprise Citrix Workspace App 24.9.28 (32-bit only)

1.7.2 Browser Plug-In

Virtual Desktop

Both Producer and Quick Access are fully functional and can record and discover contexts within the same virtual desktop.

Virtual Application

i This scenario is not recommended or supported for Producer or Quick Access. Each application opens in its own browser tab; tabs are isolated, preventing inter-application communication. Object and context recognition are not available in this setup.

1.7.3 Citrix Workspace

In the virtual application scenario, both Producer and Quick Access are fully functional when the target application runs as a virtual application on the same machine and within the same user session.

Component	Requirement
Exception 1 Producer on local PC / virtual desktop	Object and context recognition are not supported when each target application runs as a virtual application on a separate server.
Exception 2 Server farm with load balancing	Object and context recognition may fail if the Producer and the target application are opened on different VDAs. Workaround: Assign authors to a dedicated server, or use a group policy to ensure a specific server is always available to the author group.

1.8 Citrix & MS Terminal Server — General Notes

User profile size limits (often 20 MB in these environments) are insufficient for the tts performance suite. A central configuration file can re-route the required directories outside the user profile (e.g. to a per-user mapped home drive such as H:\). Rerouting multiple users to an identical drive or to UNC paths is not supported. With an average document size of ~3 MB (without audio) and ~10 MB of local configuration data, at least 300–350 MB of disk space per author is recommended.

2 tts performance suite – Content


The following requirements must be met to play Web-Based Training (WBT) content.

2.1 Hardware

Component	Requirement
Processor	Minimum: 1.0 GHz Recommended: 1.5 GHz or higher
Memory (RAM)	Minimum: 512 MB Recommended: 1 GB
Screen Resolution	Depends on recording resolution. At least ~100 pixels higher than the recording resolution (to keep browser UI visible). 16-bit colour depth required.
Multimedia Hardware	16-bit sound card with speakers or headphones

2.2 Software

Component	Requirement
Operating System	Windows 10 Windows 11
Browser	Edge 147 Chrome 147 Firefox 150 Safari 18
Browser Settings	JavaScript and session cookies must be enabled
Multimedia Support	Audio: HTML5 Audio element (native) Video: HTML5 Video element (native)

 Minor display differences between browsers may occur due to varying rendering engines.

Flash content is not supported in Safari.

Firefox: Redirecting from an encrypted LO to a non-secure URL at lesson end is no longer possible; the LO will not close and progress will not be saved.

Chrome: Locally stored content cannot be played back.

IE & Chrome: The glossary is unavailable for locally accessed content.

Privacy/incognito modes are not supported.

Touch-based devices (tablets, phones, hybrid notebooks) are not supported.

Automatic video playback with a soundtrack cannot be guaranteed across all browsers due to browser restrictions.

2.3 WBTs on Apple iPad

Apple restricts automatic multimedia playback — a user interaction is required to initiate playback. This has the following implications for tts performance suite learning objects:

- Only the first sound on a page can play automatically.
- Additional sounds on the same page will not play automatically.

- Sounds on the very first page of a learning object cannot play automatically at all.
- If a learning object is resumed at a step other than the first, sounds on that step cannot play automatically.
- It is not recommended to use sounds in the page exit area, as they cannot play automatically and will also prevent the following page's sounds from playing automatically.

2.4 Technology

WBT content is a web browser application based on HTML and JavaScript. No web server is required — content can be played from a local browser (except Chrome and IE). No installation is necessary; the exported content files load automatically in the browser when the start file is accessed.

2.5 Installation

No installation is required. Exported content files are automatically loaded in the browser when the start file is accessed.

2.6 Storage of Training Data

Training data can be stored via SCORM, AICC, or locally via cookies (IndexedDB for HTML5 content). Student data is stored per-user in a database via WebAccess. SCORM versions 1.2 and 2004 (3rd & 4th edition) are supported.

2.7 Browser Settings

i For optimal performance, do not select "Every visit to the page" for the browser cache setting.

2.8 Use of Smart Components

Smart Components extend the tts player via the tt player API. They are loaded once on demand into the browser cache during WBT playback.

i Smart Components may impact player performance. Resolving such issues is solely the responsibility of the Smart Component developer.

Smart Components must be placed only at their designated position within the tts player. Modifications elsewhere are not permitted.

tts may update the software or API at any time without guaranteeing backward compatibility for existing components.

tts is not obligated to fix errors originating in third-party Smart Components or to provide related support.

Customers who integrate their own Smart Components do so at their own risk.

2.9 Network Bandwidth

The following four scenarios were used to measure bandwidth usage during typical WBT playback:

- MS Office 2007 — high-quality simulation, refined graphics
- MS Office 2007 — high-quality simulation, refined graphics, with audio (MP3, 56 kBit/s)
- SAP basic course — standard simulation depth, minimal refinement
- SAP basic course — standard simulation depth, minimal refinement, with audio (MP3, 56 kBit/s)

Scenario	Used Time	Transferred Data	Avg Transfer Rate	Max Transfer Rate
1	7 min 43 s	5.0 MB ↓ / 0.5 MB ↑	11.0 kB/s ↓ / 1.0 kB/s ↑	247.0 kB/s ↓ / 38.0 kB/s ↑
2	9 min 50 s	7.5 MB ↓ / 0.5 MB ↑	12.7 kB/s ↓ / 0.8 kB/s ↑	293.0 kB/s ↓ / 36.8 kB/s ↑
3	5 min 45 s	2.6 MB ↓ / 0.3 MB ↑	7.8 kB/s ↓ / 0.8 kB/s ↑	72.2 kB/s ↓ / 31.0 kB/s ↑
4	11 min 44 s	5.0 MB ↓ / 0.3 MB ↑	7.3 kB/s ↓ / 0.4 kB/s ↑	208.0 kB/s ↓ / 34.2 kB/s ↑

i Scenarios 1 & 2 and 3 & 4 are identical except for the presence of audio. In most cases, users progress faster through content without audio, so adding audio does not necessarily increase bandwidth requirements.

WBT player files are downloaded automatically and only once (cached). The results above assume the player is already cached.

2.10 HTML5 Export

Hardware

Component	Requirement
Processor	Minimum: Dual-core 1.6 GHz Recommended: Quad-core 2.6 GHz
Memory (RAM)	Minimum: 1 GB Recommended: 4 GB

Software

Component	Requirement
Operating System	Windows 10 Windows 11 iOS 26 Android 17
Browser	Edge 147 Chrome 147 Firefox 150 Safari 18
Browser Settings	JavaScript and session cookies must be enabled

i Functionality is tested and verified on reference devices only. Support cases must be reproducible on reference devices.

Minor display differences between browsers may occur.

Locally stored content cannot be played back in Edge and Chrome due to browser security restrictions.

Some touch-behavior differences may occur in Edge on mobile Windows devices.

For a detailed description of supported HTML5 features, refer to the HTML5 Authoring Guidelines.

3 Quick Access (QA)

Quick Access (QA) uses the Chromium project. The OS and third-party security tools must permit Chromium processes. Communication to the server/WebAccess requires HTTPS exclusively.

i From ttsp version 23.0 onwards, the "Creator" component must be deployed and configured for a fully functional ttsp installation.

3.1 Software

Component	Requirement
Operating System	Windows 10 (min. 2022H2 update) Windows 11 For Citrix environments: Windows Server 2022
Additional Software	Visual C++ Redistributables (x86 + x64) for Visual Studio 2019 (v16.9)
Optional Software	Microsoft WebView2 component
Free Disk Space	~560 MB for program data

From ttsp version 2021r2, you can choose between the Chromium Embedded Framework (default) and the Microsoft WebView2 (WV2) component as the webview in QuickAccess.

i Microsoft WebView2 — Licensing Notes:

Data Collection: The software may collect usage data and send it to Microsoft. You can review the Microsoft Privacy Statement at <https://www.microsoft.com/en-us/privacy/privacystatement>.

GDPR: Microsoft commits to the EU GDPR Terms as a data processor/sub-processor. Details at <https://docs.microsoft.com/en-us/legal/gdpr>.

If the Vimeo template is used, the Microsoft WebView2 component is strongly recommended.

Resolution Requirements

Component	Requirement
QA (desktop)	>= 440 px minimum width
QA in Browser / Mobile	>= 360 px minimum width

3.2 Push Notifications

For notifications to display correctly in Windows 10, the following settings are required:

- The notification assistant must be turned off.
- "Notifications from apps and other senders" must be turned on.
- App-specific notifications for QuickAccess must be enabled.

i Push notifications are recommended for Windows 10 builds 1804 and higher. Defects in pop-up notifications have been reported on earlier builds.


3.3 QA for SAP

 This module is only supported for existing installations.

Technology

Client-side: A SAP GUI enhancement activated via function modules in SAP Basis (/TTS/ namespace). Documents are displayed via the client's web browser. Server-side: An HTTP request triggers a content search on WebAccess; content is delivered via HTTP(S).

3.4 Web-QA

 For Chrome (which currently blocks Cross-Site Cookies), the application server must be configured to process cookies correctly. For Tomcat, the "Tomcat cookie processor" must be adjusted.

3.5 Working with Citrix

Please refer to Section 1.7 for Citrix requirements.

3.6 Creator

From release 2022r2, the Creator communicates with the recording component via WebSocket. A WebSocket server is started within QuickAccess using localhost on port 10646 (configurable). The Creator requires both the Curator (Section 5) and Server Components (Section 6) to be fully operational.

4 Object Recognition

4.1 General

Object recognition uses interfaces such as Microsoft Active Accessibility (MSAA) and the Java Access Bridge (JAB) to achieve high recognition rates across standard applications, custom software, and most web applications — without requiring software modifications. The application being recorded must correctly support these APIs and provide plausible data.

4.2 Object Recognition for Standard Applications

Component	Requirement
Microsoft Windows	Windows 10 Windows 11
Microsoft Office	Office 2019 Office 365
Browsers / Web Applications	Edge 147 Chrome 147
SAP GUI	8.0 Patchlevel 17 8.0 Business Client Patchlevel 17 Note: GUI Scripting must be installed and activated on the client and enabled on the server side. sapgui/user_scripting_set_readonly is sufficient — no elevated rights are required.
Java Applications	Java 8 (min. update 20, tested on update #451) Java 17 OpenJDK 21

i When recording a 32-bit Microsoft Office application with the "retrieve all objects" recorder setting enabled, recording performance may decrease and a recorder time of up to 15 seconds per step is expected.

4.3 Object Recognition in SAP GUI

The SAP GUI Scripting interface is used for recording and guiding within SAP GUI. Two SAP GUI settings must be deactivated for reliable object and context recognition:

- "Notify When a Script Attaches to a Running GUI"
- "Notify When a Script Opens a Connection"

These settings are found in GUI Options (Alt+F12 → Options → Scripting tab). The tts performance suite attempts to set these automatically if the user has sufficient rights.

SAP GUI Scripting must also be enabled server-side:

- Open transaction RZ11
- Enter sapgui/user_scripting
- Click "Change value" and set to TRUE
- Click "Save"

i See SAP Note 480149 for additional information.

4.3.1 Security Aspects

The tts performance suite requires only read access to the SAP GUI. Activating SAP GUI Scripting therefore does not introduce a security risk. The following SAP profile parameters provide additional security control:

Component	Requirement
sapgui/user_scripting_disable_recording	Disables all SAP GUI Scripting events on the system. Previously recorded scripts can still be executed, but new recordings are not possible.
sapgui/user_scripting_set_readonly	Restricts the Scripting API to read-only operations. The tts performance suite works correctly in this mode.

For Quick Access, both parameters can be set to TRUE. This means SAP GUI cannot be controlled or recorded by Quick Access or any third-party software, posing no security risk.

ⓘ Known limitations in read-only (sapgui/user_scripting_set_readonly = TRUE) mode:

Auto-entering values: Values are entered key-by-key via Windows keyboard automation instead of directly via the scripting API. Functionality is preserved but may be slightly slower.

Auto-activating input fields: Requires mouse automation, which must be explicitly enabled in the QA configuration for security reasons.

Both limitations affect convenience only and do not prevent QA from being used normally.

The following SAP GUI scripting issues may occur in read-only mode. They are resolved by updating to the specified SAPGUI patch levels:

Component	Requirement
Table heads in SAP table controls	Resolved in SAPGUI 7.2 PL14+ or 7.3 PL2+
Buttons in SAP grid/table tree views	Resolved in SAPGUI 7.2 PL14+ or 7.3 PL2+
Column markers in SAP table controls	Resolved in SAPGUI 7.3 PL6+
Table heads, rows, and cells in SAP grid views	Resolved in SAPGUI 7.3 PL6+

ⓘ See SAP Notes 1578980 and 1751279 for more information.

4.3.2 F4 Help

The SAP GUI scripting interface does not support F4 help in standard (amodal/control) mode. Quick Access interrupts the SAP GUI scripting connection when F4 help is opened to ensure it opens in amodal mode. In this variant, only the table as a whole (with free selection) can be detected — not individual table rows. To detect individual rows in F4 help, change F4 help to modal (dialog-based) mode for all SAP users who use Quick Access (see SAP Note 977584). For general information, see SAP Note 977583.

4.3.3 Object Recognition in SAP Netweaver Business Client (NWBC)

ⓘ Object recognition via SAP Scripting is only possible with the NWBC Client (not browser-based access, which uses the less informative MSAA interface).

Object information is available from the central SAP content area only. Structural and navigation elements in the left and upper areas cannot be accessed.

Object recognition in multiple simultaneous NWBC instances is not supported.

4.4 Cross-Platform and Cross-Language Object Recognition


For cross-platform object recognition, the application process must be identical and the object names of interaction elements (input fields, buttons) must match across systems. Context recognition is explicitly not supported when the GUI language of the recorded application differs from the live application. Separate recordings must be created for each GUI language. Using different instruction languages for the same GUI language does not require re-recording.

4.5 Object Recognition for Java Applications

Java applications use different accessibility technologies depending on the UI framework: JFC/Swing objects use the Java Access Bridge (JAB); JavaFX objects use UI Automation (available since Java 8u40).

4.5.1 JAB for Java 8 and Later

The JAB bundled with the JRE is used — no additional installation is needed. The access bridge is disabled by default and must be individually enabled for each JRE via the "accessibility.properties" file by setting the "assistive_technologies" property to "com.sun.java.accessibility.AccessBridge".

 From Java 9 onwards, Java Swing applications must be recorded at 100% scaling for object recognition to work correctly.

4.6 Object Recognition for Third-Party and Custom Applications


Object recognition works for most Windows software, including custom applications, as the MSAA interface is typically available and supported without additional configuration. This applies to software built with MS .NET, Visual C++, Visual Basic, or using Microsoft Common Controls.

5 Curator

The Curator provides browser-based access to the Document Management area of the tts performance suite. The corresponding server must be installed and running. If any of the requirements below are not met, proper functioning of the Curator cannot be guaranteed.

5.1 Software

Component	Requirement
Operating System	Windows 10 Windows 11
Browser	Edge 147 Chrome 147
Browser Settings	JavaScript and session cookies must be enabled

 Minor display differences between browsers may occur.

Display magnification above 100% is not supported.

5.2 Hardware

Component	Requirement
Processor	Minimum: Single-core 2.2 GHz Recommended: Dual-core 2.6 GHz Note: These are average values. Actual requirements depend on the expected number of authors/end-users.
Memory (RAM)	Minimum: 2 GB Recommended: 4 GB Note: These values represent the RAM available to the Java process. Actual requirements depend on usage.

6 Server Components

6.1 Hardware

Component	Requirement
Processor	<p>Minimum: Single-core 2.2 GHz</p> <p>Recommended: Dual-core 2.6 GHz (Curator) / Quad-core 2.6 GHz (WebAccess)</p> <p>For optimal web application performance, the number of logical processors should be ≥ 10. If not, configure the JVM thread count (see Installation Manual §4.5.1.3).</p>
Memory (RAM)	<p>Minimum: 4 GB</p> <p>Recommended: 6 GB</p> <p>These values represent the RAM available to the Java process.</p>
Hard Drive	<p>500 MB for program data</p> <p>~1 GB / 500 documents (repository)</p> <p>~100 MB / 500 documents (database)</p> <p>These are average values. Actual usage varies with content complexity and media richness.</p> <p>With version management enabled, multiply by the average number of document versions.</p> <p>SSD hard drives are recommended for optimal performance.</p>

6.2 Software

Component	Requirement
Operating System	<p>Windows Server 2019</p> <p>Windows Server 2022</p> <p>Windows Server 2025</p> <p>Linux (min. glibc version: 2.35)</p>
Browser Settings	JavaScript and session cookies must be enabled
Permissions	Administrator rights required for installation
Application Server	<p>Apache Tomcat 10.1.42</p> <p>JDK 25 / OpenJDK 25</p> <p>Note: The full JDK must be installed on the server; the JRE alone is insufficient.</p>
Database	<p>MSSQL Server 2022 CU23</p> <p>Oracle 26ai</p> <p>Note: Database tables must be UTF-8 encoded.</p>
Storage Service	<p>New installations: MinIO RELEASE.2025-07-23T15-54-02Z</p> <p>Updates: MinIO 2022-10-24</p>
Search Functionality	<p>Solr 9.10.1</p> <p>Redis 7.2.7</p> <p>Note: Solr 8.x is no longer supported.</p>
Reverse Proxy (optional)	<p>Tomcat connector for Apache HTTP Server (mod_jk or mod_proxy_ajp)</p> <p>Note: Tomcat connector for Microsoft IIS (ISAPI Redirector) is not supported.</p>

6.3 Technology

Server application based on the Java Enterprise Edition (JEE) framework from Oracle.

6.4 Installation

i All network components (proxy, VPN software, etc.) involved in content uploads must support HTTP 1.1 with chunked transfer coding.

All HTTP communication with the server must use HTTPS exclusively. Unsecured HTTP is no longer supported.

A Solr instance must be available for search functionality in Curator and WebAccess.

If defining MaxMemory Size via JavaSettings: -XX:MaxMetaspaceSize, the minimum value is 768 MB.

6.5 LDAP

Known LDAP interface restrictions:

- Only "internal" authentication (username + password) is supported. SASL (RFC 2222) mechanisms are not supported.
- Start-TLS (RFC 2830) is not currently supported.
- LDAP groups must be associated with user entries. Users associated with groups are not supported.

6.6 SAML

SAML 2.0 is supported with the HTTP POST binding.

6.7 Dashboard

The following are required for Dashboard functionality:

- Matomo version 4
- CustomDimensions Plugin

6.8 Third-Party Software

Product	Type	Known Issue / Mitigation
FortiClient	Virus Scanner	If installed on the server, WBT statusification is not possible.
McAfee	Virus Scanner	May reduce performance and functionality during content creation. Contact tts consulting to discuss mitigations.
HP Quicktest	Testing Tool	Can only be co-installed if the authoring user does not have read access to the Quicktest executable folder.
HP Sprinter	Testing Tool	May cause write-access issues to the Producer profile folder, preventing the WYSIWYG view from loading.
Check Point End Security	Virus Scanner	May strongly reduce Producer performance.
Desktop Management Software (e.g. ATI Hydravision)	Multi-monitor	May cause problems with object recognition during recording and guided walkthroughs.
Bamboo Drivers	Drawing Tablet	Interfere with correct display and object recognition in Quick Access.
Microsoft Snipping Tool	Screen Capture	Interferes with object recognition required for recording while running.

Product	Type	Known Issue / Mitigation
Microsoft Security Policy: Local Machine Lockdown	Group Policy	Disable this policy if WYSIWYG editing is not possible.

7 Third-Party Products

The following tables list all third-party libraries and components included in the tts performance suite, along with their versions and license information.

7.1 HTML5 Player

Name	Version	License
HammerJs	2.0.8	MIT
jPlayer	2.9.2	MIT
jQuery	3.7.1	MIT
MediatorJs	0.11.0	MIT
RequireJS	2.3.7	MIT / BSD

7.2 Default Player

Name	Version	License
iScroll	4.1.9	MIT
jQuery	3.7.1	MIT
RequireJS	2.1.9	MIT / BSD
XRegExp	2.0.0	MIT
mozilla/sanitizer-polyfill	0.9.0	MPL-2.0
DOMPurify	2.4.0	Apache 2.0 / MPL-2.0

7.3 QA StepList Editor

Name	Version	License
XMP Library for Java	5.1.3	BSD License
Composum Assets Metadata Extractor Bundle	1.3.1	MIT License
com.drewnoakes:metadata-extractor	2.11.0	Apache 2.0
Jackson-annotations	2.9.5	Apache 2.0
Jackson-core	2.9.5	Apache 2.0
jackson-databind	2.9.5	Apache 2.0
FindBugs-jsr305	1.3.9 / 3.0.2	Apache 2.0
error-prone annotations	2.1.3 / 2.11.0	Apache 2.0
Guava InternalFutureFailureAccess and InternalFutures	1.0.1	Apache 2.0
Guava: Google Core Libraries for Java	24.1-jre / 31.1-jre	Apache 2.0
guice-assistedinject	4.2.0	Apache 2.0
guice	4.2.0	Apache 2.0
ICU4J	4.0.1-v20090415	ICU License
json-path	0.9.1	Apache 2.0

Name	Version	License
Java Common Annotations API	1.0.0	Apache 2.0
CGLIB Code Generation Library	2.2.0	Apache 2.0
Apache Batik CSS engine	1.7.0	Apache 2.0
Apache Commons Collections	3.2.1	Apache 2.0
Apache Commons Lang	2.4.0	Apache 2.0
Apache Commons Logging	1.1.1	Apache 2.0
Apache ANT	1.8.1	Apache 2.0
Apache Xalan XML Serializer	2.7.1	Apache 2.0
Apache Byte Code Engineering Library	5.2.0	Apache 2.0
Apache Xalan XSLT Support	2.7.1	Apache 2.0
Apache Xerces XML Support	2.9.1	Apache
AspectJ Runtime / Weaver	1.6.12-RELEASE	EPL
ObjectWeb ASM	1.5.3	BSD
Jaxen XPath Engine	1.1.1	Werken Company License
jsoup	1.5.2	MIT
jna / jna-platform	4.1.0	Apache 2.0
Apache Commons IO	2.5	Apache 2.0
Groovy Runtime	2.0.1	Apache 2.0
Joda-Time	2.8.1	Apache 2.0
JUnit	4.11 / 4.12	CPL 1.0 / EPL 1.0
Apache Log4j	1.2.17	Apache 2.0
Apache Commons Compress	1.8.1	Apache 2.0
Apache Commons CSV	1.6.0	Apache 2.0
EasyMock	3.5.1	Apache 2.0
SLF4J API Module	1.7.30	MIT
Hibernate Validator	4.2.0-Final	Apache 2.0
JDeferred Core Library	1.2.3	Apache 2.0
Hamcrest Core	1.3	New BSD License

7.4 C++ (Client)

Name	Version	License
Internet Time Utility	1.7.0	Apache 2.0
Jackson-annotations	2.13.4	Apache 2.0
Jackson-core	2.13.4	Apache 2.0
jackson-databind	2.13.4.1	Apache 2.0
Jackson-dataformat-YAML	2.13.4	Apache 2.0
ClassMate	1.5.1	Apache 2.0
Guava	31.1-jre	Apache 2.0

Name	Version	License
Nimbus JOSE+JWT	9.31	Apache 2.0
okhttp / okio	4.10.0 / 3.0.0	Apache 2.0
Apache Commons Codec	1.15	Apache 2.0
Netty (various)	4.1.84.Final	Apache 2.0
Reactor Netty (core/HTTP)	1.0.24	Apache 2.0
Non-Blocking Reactive Foundation (JVM)	3.4.24	Apache 2.0
swagger-annotations	2.2.3 / 1.6.7	Apache 2.0
Jakarta Annotations API	1.3.5	EPL 2.0
JUnit	4.13.2	EPL 1.0
Apache Commons Lang	3.12.0	Apache 2.0
Apache HttpClient	4.5.13	Apache 2.0
Apache Log4j API/Core	2.20.0	Apache 2.0
tomcat-embed-core/el/websocket	9.0.68	Apache 2.0
AssertJ Core	3.24.2	Apache 2.0
Graaljs / Graaljs Scriptengine	22.3.1	MIT / UPL-1.0
Hibernate Validator Engine	6.2.5.Final	Apache 2.0
Kotlin Stdlib (various)	1.6.21	Apache 2.0
JUnit Jupiter (Aggregator/API/Engine/Params)	5.8.2	EPL v2.0
mockito-core / mockito-junit-jupiter	4.5.1	MIT
Spring Boot (starter family)	2.7.5	Apache 2.0
Spring Security (config/core/crypto/web)	5.7.4	Apache 2.0
Spring Framework (AOP/Beans/Context/Core/Web)	5.3.23	Apache 2.0
SnakeYAML	1.30	Apache 2.0
AWS Java SDK v2 (various)	2.20.28–2.20.29	Apache 2.0

7.5 Server

Name	Version	License
AntLR Parser Generator	2.7.7	BSD
XMP Library for Java	6.0.6	BSD
AWS SDK for Java (Core/S3/KMS/Logs/STS)	1.11.890 – 1.12.147	Apache 2.0
Jackson-annotations/core/databind	2.12.3 / 2.13.1	Apache 2.0
Guava	31.0.1-jre	Apache 2.0
ICU4J	68.2	Unicode/ICU License
Apache Commons (BeanUtils/CLI/Codec/Collections/Compress/Exec/Lang/Math/Pool)	Various	Apache 2.0
Apache Hadoop (Annotations/Auth/Common/HDFS Client)	3.2.2	Apache 2.0
Apache HttpClient / HttpCore	4.5.13 / 4.4.13–14	Apache 2.0

Name	Version	License
Apache Log4j (API/Core/SLF4J Binding/Web)	2.17.1	Apache 2.0
Lucene (Core + Analyzers + Extras)	8.11.1	Apache 2.0
Apache Solr (Core/Solrj)	8.11.1	Apache 2.0
Apache Velocity Engine / Tools	2.3 / 3.1	Apache 2.0
Akka (actor/http/stream/protobuf)	2.5.31 / 10.1.12	Apache 2.0
Scala Library / Compiler	2.13.x	Apache 2.0
Spring Boot	2.4.11	Apache 2.0
Spring Framework (various)	5.3.18	Apache 2.0
Spring Security	5.6.1	Apache 2.0
Spring Batch (Core/Infrastructure/Test)	4.3.4	Apache 2.0
Jetty (HTTP2/ALPN/Client/Server)	9.4.44.v20210927	Apache 2.0 / EPL 1.0
Graaljs / Truffle API	21.1.0	MIT / UPL-1.0
Bouncy Castle (PKIX/Provider/ASN.1)	1.69	Bouncy Castle Licence
Hibernate Validator	6.0.2.Final / 6.2.0.Final	Apache 2.0
opensaml / openws / xmltooling	2.6.5 / 1.5.5 / 1.4.6	Apache 2.0
SnakeYAML	1.26	Apache 2.0
Jedis	3.7.0	MIT
quartz	2.3.2	Apache 2.0
OWASP AntiSamy / ESAPI	1.5.3 / 2.1.0.1	BSD
JUnit Jupiter (Aggregator/API/Engine/Params)	5.8.2	EPL v2.0
mockito-core / mockito-junit-jupiter	4.2.0 / 4.3.1	MIT
Micrometer (core/cloudwatch/jmx/prometheus)	1.6.5	Apache 2.0
Prometheus Java Simpleclient	0.9.0	Apache 2.0

7.6 Server npm

Name	Version	License
abortcontroller-polyfill	1.7.3	MIT
adm-zip	0.5.9	MIT
ajv	8.6.1	MIT
axios	0.25.0	MIT
@babel/polyfill	7.12.1	MIT
base64-js	1.5.1	MIT
classnames	2.3.1	MIT
core-js	2.6.12	MIT
cuid	2.1.8	MIT
exifr	6.3.0	MIT
follow-redirects	1.14.9	MIT

Name	Version	License
font-roboto	1.0.1	BSD 3-clause
get-form-data	2.0.0	MIT
hydrolysis	1.19.1	BSD 3-clause
ieee754	1.2.1	BSD-3-Clause
iron-ajax	1.0.0	BSD 3-clause
iron-flex-layout	1.0.4	BSD 3-clause
iron-icon / iron-icons	1.0.5 / 1.0.4	BSD 3-clause
jquery	3.5.1	MIT
jsms	1.0.16	MIT
lodash.debounce / throttle	4.0.8 / 4.1.1	MIT
marked	0.3.5	MIT
mediator-js	0.9.9	MIT
memoize-one	5.2.1	MIT
nanoid	3.2.0	MIT
node-fetch	2.6.7	MIT
pako	1.0.11	MIT / Zlib
paper-button	1.0.0	BSD 3-clause
polymer	1.0.6	BSD 3-clause
preact	10.5.14 / 8.2.9	MIT
redux	4.1.1	MIT
resize-observer-polyfill	1.5.1	MIT
spark-md5	3.0.2	WTFPL / MIT
stream-browserify	3.0.0	MIT
ts-md5	1.2.9	MIT
@uppy/core	2.0.3	MIT
@uppy/dashboard	2.0.3	MIT
@uppy/aws-s3	2.0.3	MIT
@uppy/xhr-upload	2.0.3	MIT
uuid	8.3.2	MIT
vue	2.6.14	MIT
vuetify	2.6.4	MIT
whatwg-fetch	3.6.2	MIT
webcomponentsjs	0.7.14	BSD

7.7 JS Libraries

Name	Version	License
hashmap.js	—	BSD-3-Clause
json2.js	2012-10-08	Public Domain

Name	Version	License
Prototype	1.6.1 / 1.7.1	MIT
zip.js	—	BSD-3-Clause
Bootstrap: carousel.js	3.1.0	MIT
Hammer.js	1.0.6	MIT
iscroll.js	4.1.9	MIT
jQuery Plugin: Autosize	1.17.2	MIT
jCaret	1.02	MIT
Clearable Text Field	0.3.2	MIT (dual MIT/GPL)
Hammer.js jQuery Plugin	1.0.0	MIT
Infinite Scroll PACKAGED	4.0.1	Commercial (purchased)
jQuery Infinite Scroll	2.0b2.120519	MIT
jQuery custom content scroller	2.3.2	MIT
jQuery Mousewheel	3.0.6	MIT
jQuery Tag-it!	2.0	MIT
jQuery	1.12.4	MIT
jQuery UI	1.12.1	MIT
JSMS	1.0.16	MIT
JSMS extension for CEF integration	2.0.0-alpha.0	MIT
jQuery File Upload Plugin	5.19.7	MIT
TabFocus Script	1.0	Free (private & commercial)
UUID	8.3.2	MIT