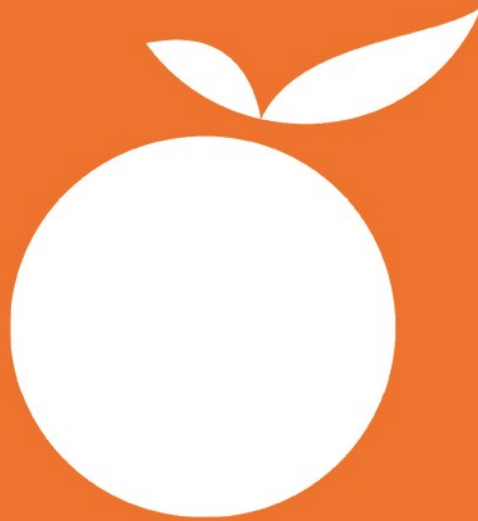


tts performance suite

White Paper



tts performance suite
Context Recognition on Google Chrome

Context Recognition on Google Chrome

Capabilities and restrictions

Context recognition in General

Context for Web Applications run in supported browsers can generally be achieved using three major access points:

- URL
- TITLE
- HTML

Without any configuration, tts performance suite will try to extract context information via URL. After configuration, context information can be extracted as follows:

Application: Fixed name mapped to URL (or parts of it), TITLE or HTML

Additional Context: Fixed or dynamic context mapped to information exposed in URL, TITLE or HTML.

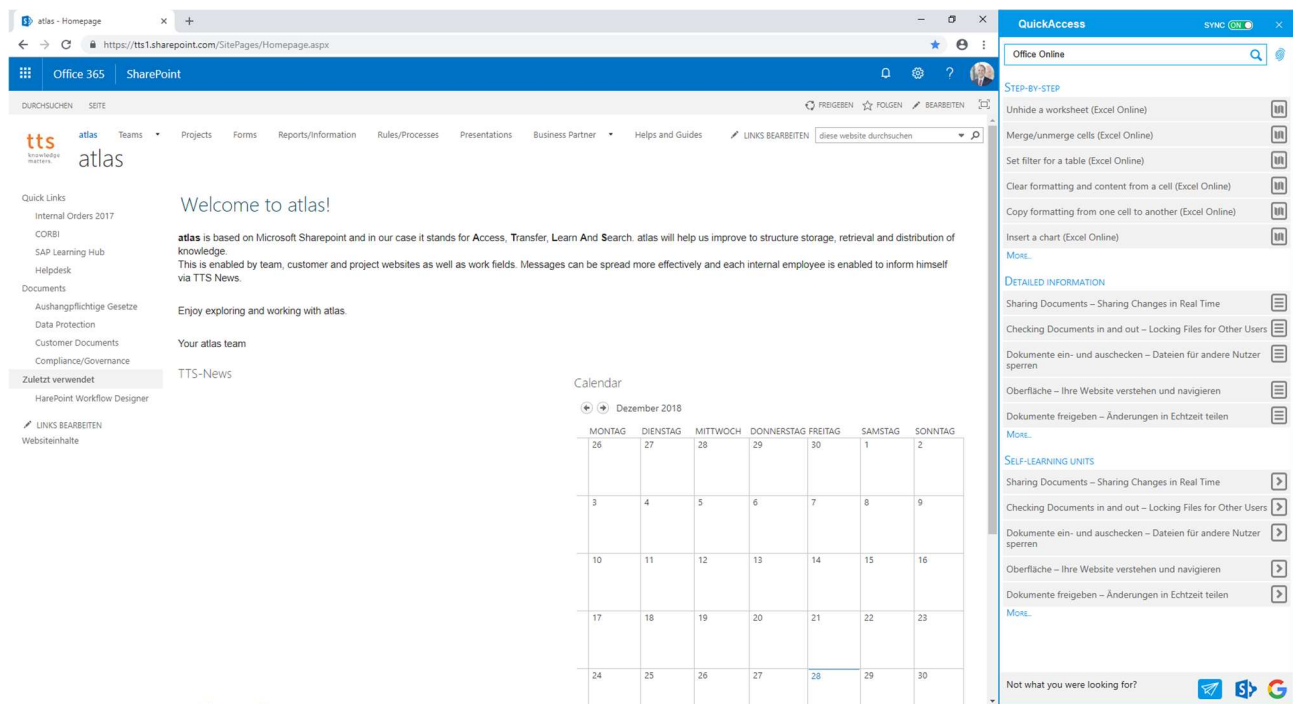


Illustration 1: Application Context based on URL "Office Online"

Additional Context: To extract information in the three access points, tts performance suite utilizes different APIs. For URL and TITLE, MS UI Automation or MSA (Microsoft Active Accessibility) will be used. HTML information is accessed via the Browsers Accessibility API.

The screenshot displays the SuccessFactors Job Requisitions application. The main content area features a table with the following data:

Job Title	Req Id	Hiring Manager	Department	Due	Candidates	Progress	Updated	Age(Days)
Director, Corporate Development	301	Sally Jones	Finance and Accounting	09/26/2015	-		10/24/2016	-
Nurse	501	Catherine Harper	Clinical	11/25/2015	2		02/17/2010	113
Director of Nursing	541	Mary Grimes	Clinical	12/19/2015	5 (1 New)		04/07/2010	89
Account Manager	902	Sid Morton	Sales (SALES)	11/10/2015	-		08/16/2016	312
Sales Manager	924	Vic Stokes	IT (IT)	01/10/2015	-		04/10/2017	-
Director, Sales	1002	Vic Stokes	IT (IT)	04/03/2015	-		03/04/2013	-
Director, Business Development	1003	Vic Stokes	Alliances (ALNCE)	04/03/2015	-		04/11/2017	168
Engineer	1064	Mary Cicilian	Research & Development (RND)	05/25/2015	-		04/25/2013	-
Engineer	1065	Mary Cicilian	Research & Development (RND)	05/25/2015	-		04/25/2013	-
Engineer	1069	Mary Cicilian	Research & Development (RND)	05/25/2015	5 (1 New)		08/16/2016	116
Director, Business Development	1362	Vic Stokes	Alliances (ALNCE)	01/15/2015	-		08/17/2018	0
Account Manager	1363	Sid Morton	Sales (SALES)	01/15/2015	-		01/17/2014	0
HR Generalist	1368	Linda Lewis	Talent Management	01/15/2015	6		01/17/2014	0
Payroll Supervisor	1369	Janet James	Finance	01/15/2015	3		01/17/2014	0
Financial Analyst	1371	Janet James	Finance	01/15/2015	-		01/17/2014	0
Employee Relations Manager	1382	Linda Lewis	Talent Management	01/16/2015	4		01/17/2014	0
Administrative Assistant	1422	Marcus Hoff	Production Engineering (ENG)	04/12/2015	-		04/14/2014	-
HR Specialist	1629	Carla Grant	Enterprises (CORP)	09/16/2016	-		08/17/2016	-
HR Specialist	1642	Carla Grant	Enterprises (CORP)	05/10/2017	-		04/10/2017	-
HR Specialist	1662	Carla Grant	Enterprises (CORP)	05/11/2017	-		06/25/2018	-
HR Specialist	1702	Carla Grant	Industries (IND)	05/20/2017	-		06/25/2018	-
HR Specialist	1703	Carla Grant	Enterprises (CORP)	05/20/2017	-		06/22/2018	-

The right sidebar contains a 'QuickAccess' panel with sections for 'STEP-BY-STEP', 'DETAILED INFORMATION', 'SELF-LEARNING UNITS', 'CONCEPTS AND PROCESSES', and 'CONTACT'. The bottom of the sidebar includes a search bar with the text 'Not what you were looking for?' and icons for search, help, and Google.

Illustration 2: Additional Context based on TITLE "SuccessFactors Job Requisition"

Context Recognition on Google Chrome

Application: Application context is fully supported through URL and TITLE.
For HTML, Google Chrome does not fully provide the necessary Accessibility API.

Additional Context: Additional Context can be provided through URL and TITLE.
For HTML, Google Chrome does not fully provide the necessary Accessibility API.

Technical Background:

Google Chrome is built based upon the open source Chromium project.

For Accessibility, Chromium provides the API "ISimpleDOMNode". The API is specified here: https://github.com/ChromiumWebApps/chromium/blob/master/third_party/isimpledom/ISimpleDOMNode.idl

For Google Chrome, the API is only implemented for a limited set of methods. The details can be found here: https://chromium.googlesource.com/chromium/chromium/+2659a6e8e87f5bdfc25adfb2759ba265cf9e1ff/chrome/browser/accessibility/browser_accessibility_win.h

The method used to extract information from the HTML DOM is documented as follows:

```
380  STDMETHODCALLTYPE get_innerHTML(BSTR* innerHTML) {  
381    return E_NOTIMPL;  
382  }
```

This means that Google Chrome does not provide a possibility to read the HTML DOM. Hence, additional context cannot be extracted through the HTML method in Google Chrome.

Mitigation

URL

Many applications expose context information in URL which provides enough filtering or ordering capability. Extracting additional context from URLs will yield a result very quickly. This is however not possible for single page apps where the URL does not change when users interact with the user interface. In case the target application can be adapted, URL fragments can be used to provide context on single page apps.

TITLE

For custom-built applications, context information can often be extracted from or exposed in the TITLE . In many cases, this is already done without the objective of exposing context information.

Recommendations

Optional vs. mandatory context

Users are not familiar with deep contexts, but need a good starting point to further specify their search. To facilitate this behavior, contexts should be used “optional” (non-filtering/boosting) and not “mandatory” (filtering). In this mode, all documents for an application are shown in the result list with more specific documents appearing on top.

Use Performance Support Categories

To group documents further along use cases or application sections, Performance Support Categories are helpful.

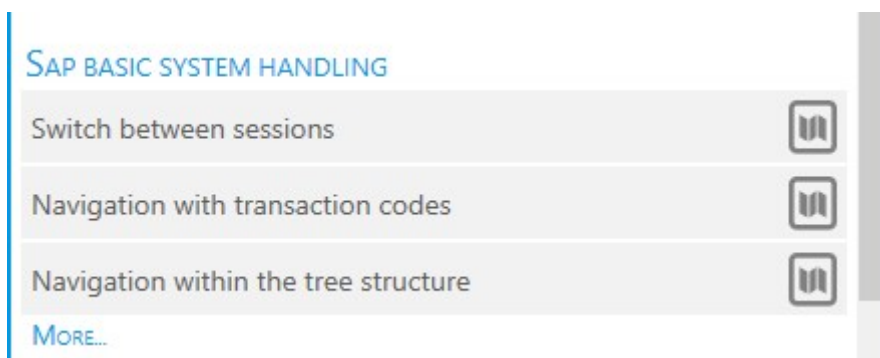


Illustration 3: Performance Support Category to group certain documents

Maintain keywords for more specific search

If keywords are maintained in documents or the context field, users can further specify the automated context search with their own search terms. This will also enable a suggest search.

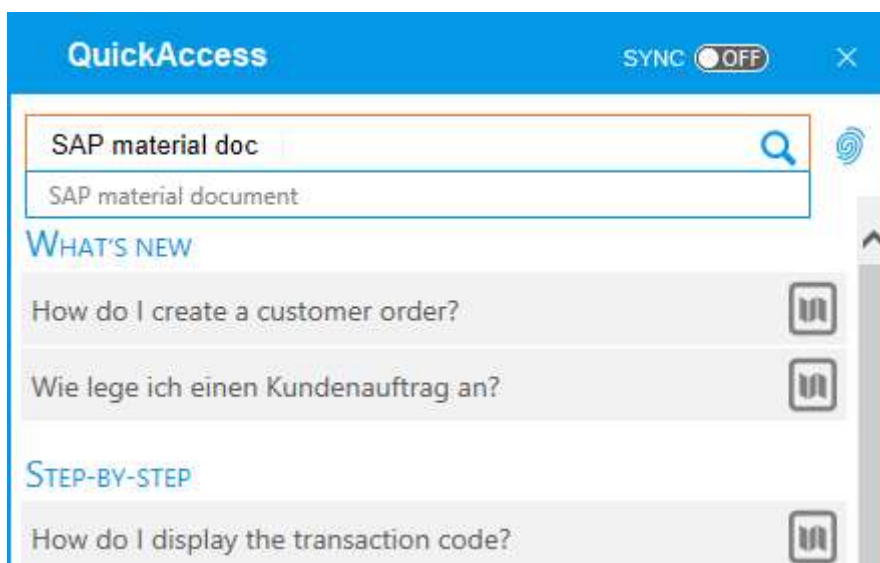


Illustration 4: Suggest search to enhance automated context recognition