



#### Contents



#### Introduction

Purpose, Usage, Architecture

#### Installation

#### • Operation in X3

Automation Schedule

Housekeeping

- Troubleshooting
- Quick Demo



# Introduction

### What is Elastic Search



Elastic Search is an Open Source product.

In simple terms, it provides the ability to search through structured and unstructured data in order to find anything relating to your search criteria. In Sage terms, this could be a customer name or a function name you are searching for.

It is based on the Java full text search library Lucene.

Technically, the search engine creates its own search indexes, which it then uses when a user submits a query to search for something. The Sage X3 development teams will define what data is indexed out of the box, but customers can modify the fields that can be indexed and therefore searched, in order to satisfy their own business requirements

It Is part of the X3 Web Stack as seen in the next slide

#### X3 Web Stack

#### Web Stack

The Sage ERP X3 web stack is built on components widely used in Cloud solutions. Below is some information to better acquaint you with the web stack components used within Sage ERP X3. All of the components listed below are scalable and may be deployed in clusters. Regarding the web servers, a load balancer is included, to front-end the node.js processes.



**Node.js** is an open source, cross-platform runtime environment for server-side and networking applications. Node.js applications are written in JavaScript, and can be run within the Node.js runtime on OS X, Microsoft Windows, Linux and FreeBSD.Fast and asynchronous, node.js is notably used by Groupon, SAP, LinkedIn, Microsoft, Yahoo!, Walmart, and Paypal.



**Elasticsearch** is a search server based on Lucene, a free, open source information retrieval software library. It provides a distributed, multitenant-capable full-text search engine with a RESTful web interface and schema-free JSON documents. Elasticsearch is developed in Java and is used by Deezer, github, and Mac-Graw Hill, Foursquare, Etsy, FDA, CERN and Stack Exchange.



**mongoDB** is a document database for administration data and documents that is fast, scalable, and able to work very efficiently with JavaScript structures. It is regarded as the most popular NoSQL database system available today. Companies using mongoDB to store production data include Expedia, eBay, Foursquare, LinkedIn, SAP, SourceForge, CERN, github, and the New York Times.

## When to Use and Why



Sage X3 primarily uses Elasticsearch for the search bar at the top of the dashboard once you have logged in, and also for help topics not linked to online help.

This gives the user the capability for rapid searches and results of data specific to their business function.

The associated X3 screens can then be accessed directly from the search output results.

#### Architecture







Elastic Search can be installed on its own server, or alongside any other Sage X3 components. Logically it would naturally sit on the same server as the Syracuse server, as Syracuse is the process which will be accessing Elastic Search data.

Alternatively a cluster configuration could be considered where ElasticSearch consists of multiple nodes and data is organized and distributed between them.

Syracuse can only point to one ElasticSearch host/port , hence if a node in the cluster is unavailable Syracuse would need to be reconfigured to point to a working node. An external load balancer in front of the ElasticSearch nodes could be a potential workaround to this.



# Installation





ElasticSearch is no longer delivered alongside other X3 technology components and must be obtained from the ElasticSearch website.

ElasticSearch is built using Java, a bundled version of OpenJDK is maintained with each distribution and is located within the jdk subdirectory under ElasticSearch home

ElasticSearch requires Oracle Java Development Kit (JDK) version 8 or higher to run

If extensive use of indexing is to be made it may be worth considering a performing storage tier for hosting ElasticSearch data. However the use of 10krpm drives in RAID-10 should give adequate performance for user data queries and indexing.

Ideally in addition ElasticSearch requires at least 2 cores and 4GB of RAM and hosted on a dedicated VM



C	2021	The	Sade	Group	plc.	or its	licensors.	All	riahts	reserved.

#### Servers, frameworks, and middleware

Component	Update 9	Version 11	Version 12
node.js	0.12.15 to 10.0.0	4.6.0 to 12.20.x	8.11.3 to 12.22.x
Elasticsearch	1.5.*	1.5.*	2.4.4
		6.4 since Syracuse 11.17 in V11.0.14	6.4 since Syracuse 12.3 in release 2019R3/V12.0.18
		6.8 since Syracuse 11.20 in V11.0.16	6.8 since Syracuse 12.6 in release 2020R1/V12.0.21
		7.9 since Syracuse 11.24 in Sage X3 Warehousing V11.0.10/Sage X3 V11.0.19	7.9 since Syracuse 12.9 in release 2020R4 / V12.0.24
JVM	7.x	8u201 or later 8.x recommended	8u201 or later 8.x recommended
Apache	<ul><li>2.2 (obsolete and deprecated)</li><li>2.4 recommended</li></ul>	<ul><li>2.2 (obsolete and deprecated)</li><li>2.4 highly recommended</li></ul>	<ul><li>2.2 (obsolete and deprecated)</li><li>2.4 highly recommended</li></ul>
во	Business Object XI 4.1 SP3 patch 1	Business Object XI 4.1 SP3 patch 1	Business Object XI 4.2 SP8 patch 600
.Net framework	3.5 and 4	3.5 and 4	3.5 and 4

Rroweare





#### Sage X3 ... → Sage X3 UK Announcements, News, and A... → Sage X3 Version 12 (August 2...

[1] Ensure you review the information in the patch documentation, which you will find in the extracted ZIP file. You will find the installation instructions and the list of fixes. For further information on the fixes contained in all patches, including this patch, see our new Version 12 specific <u>Patchfinder</u> (v1.0.8) which is now available.

[2] Sage UKI Customers and Business Partners can download all patches and documentation from the Sage X3 <u>FTP</u> site

[3] The DVD images have also been refreshed. You can download ISO images of the full installation media from our FTP site at URL "<u>https://ukienterprisedownloads.sage.co.uk/Support/SageX3/X3V12/ISO\_Images/</u>"

[4] Sage strongly recommend you upgrade to the <u>latest certified version of Elastic Search</u>. The licensing of Elastic Search from v6.4 onwards has changed: Sage will not deliver the Elastic Search setup in future deliveries on our official media for on-premise Customers. Partners and customers will have to download the setup files when deploying Sage X3. You can download the latest version of Elastic Search that is certified with Sage X3 from <u>www.elastic.co</u>. Read the included documentation for further instructions and also refer to <u>Sage</u> <u>KB article 99424</u> "Additional notes when upgrading ElasticSearch."

[5] Review the guidelines discussed in the document "<u>Node.js web server recommendations</u>" to help you configure and tune Syracuse to meet your performance and stability needs

. . . . .

Mute	
More	
Locked	
0 replies	
26 subscribers	
5384 views	
1 member is here	
✓ V12	
🖋 X3	
🖋 Patch	
	Related
	Sage X3 Versi
	Sage X3 Versi

ALERT: Sage X R2) is now avai

+ Start a post

sage

#### **ElasticSearch Location**



$\rightarrow$	C	elastic.co/fr/do	ownloads	/elasticsearch	i									G	*
Apps	🖪 Sa	age Bookmarks 🛛 📟 🛛	Home (	Sage Univer	rsity UKI (	File sharing Dashbo	分 МуХ3	S Sage Knowledgebase	🜔 Chatter Home   Sal	LinkedIn Learning:	K Knova	Sage Learning	📙 Importe	d	~
		😽 elasti	с	Products	Clients	Resources	Company	Prices		Contact	Log i	n Fr	ee try	Q	

#### **Download Elasticsearch**

Version:	7.14.0	
Release date:	August 03, 2021	
License:	Elastic License 2.0	
Downloads:	▲ WINDOWS shaase	<u>     MACOS</u> shaasc
	<u>▲ LINUX X86_64</u> shaasc	<u>     LINUX AARCH64</u> shaasc
	DEB X86_64 shaasc	DEB AARCH64 shaasc
	<u> </u>	☆ <u>RPM AARCH64</u> shaasc
	≛ <u>MSI (BETA)</u> shaasc	
Managers Package:	Install with yum, dnf, or zypper	
	Install with <u>apt-get</u>	
	Install with homebrew	

#### **ElasticSearch Location**





#### **ElasticSearch Enironment Variables**



1 chronnanoc		User variables for x3admin			
Visual effects, processor schedulin	ng, memory usage and virtual memory	Variable Path	Value C:\Users\x3admin\AppData\Local\Microsoft\WindowsApps;;C:\Pro		
	Settings	TEMP	C:\Users\x3admin\AppData\Local\Temp		
User Profiles Desktop settings related to your sid	an-in	TMP	C:\Users\x3admin\AppData\Local\Temp	ρ	0
	Settings			^	
Start-up and Recovery System start-up, system failure and	debugging information		New Edit Delete		
	Settings	System variables			
	Environment Variables.	Variable DriverData ES_HOME	Value C:\Windows\System32\Drivers\DriverData D:\Sage\FreeComponents\ElasticSearch\7.9.3\		
	OK Cancel Apply	ES_PATH_CONF NUMBER_OF_PROCESSORS	D:\Sage\FreeComponents\ElasticSearch\config 2		
in	api-ms-win-core-hea	OS	Windows_NT		
lk	api-ms-win-core-inte	Path	C:\Program Files\Zulu\zulu-8-jre\bin\;C:\Windows\system32;C:\Wi		
bin	api-ms-win-core-libr	PAIREAL	COMPERENDATION DI VESTVELISTISET VISITIMISC		
conf	api-ms-win-core-loc		New Edit Delete		
include	api-ms-win-core-me			-	
imods	api-ms-win-core-nar		OK Cancel	~	

#### **ElasticSearch Installation**



Pages / X3 Matrix Team Home / How-to 🛭 🙆 🛛 📲 1 Jira link

🖌 Edit 🛛 🟠 Save for later 💿 Watch < Share

#### Install elasticsearch 7.9 as windows service

Created by Bogdan Posea, last modified on 16/09/2020

Download the 7.9 zip file from https://www.elastic.co/fr/downloads/elasticsearch and unzippe it on your target instalation folder.

Open a windows console and go to previously instalation folder

cd elastic\_search\_home
elasticsearch-service.bat install

To customize the service settings there are several environment variables (either using the set command from the command line, or through the System Properties->Environment Variables GUI). Plese reffer this doc for more informations https://www.elastic.co/guide/en/elasticsearch/reference/7.x/zip-windows.html#windows-service-settings

Start the service

elasticsearch-service.bat start

• If the service fail to start xith the error ERROR: the system property [es.path.conf] must be set

#### **ElasticSearch Installation**





#### Notice Configuration Plugins

#### Minor Upgrade from 7.9.3 to 7.14.1

You are running a minor upgrade please take this time to read more about the best practices

Read the upgrade documentation to learn more

Start the service after this installation is complete

#### Read only properties during upgrade

Installation directoryD:\Sage\FreeComponents\ElasticSearch\7.14.1Data directoryD:\Sage\FreeComponents\ElasticSearch\dataConfiguration directoryD:\Sage\FreeComponents\ElasticSearch\configLogs directoryD:\Sage\FreeComponents\ElasticSearch\logsInstall as a serviceYes

B) (?) (8

BACK NEXT



# **Operation in X3**

### **ElasticSearch Terminology**



- 1. FIELDS Smallest unit of data, analogous to Database Column
- 2. DOCUMENTS Base unit of storage , json objects , analogous to Database Row
- 3 INDEX Largest unit of data, logical partitions of documents, analogous to Database
- 4 SHARD A Lucence index, used to split indices across operations and nodes
- 5 NODE A single server instance
- 6 CLUSTER A group of nodes organized to process data efficiently
- 7 REPLICA Copies of Index Shards often used for high availability

### **Search Index Administration**



sage x3 📾			Super administrator	Super administrate	or X3ERPV12_SEED	?	☆.	Q
All > Administration > Usage	Classe	6	Ok	×				Default +
Search indexes administration	Chasse	•		~				Actions :
Endpoint		Page si	ize: 50 🝷 🜔 🔘 😂	<u>2</u>				
X3ERPV12_SEED		Entity	Searchable					
Endpoints describe services locations		T	T 🗌					
Entities		ABANK	~	<u> </u>				
<b>Q</b>		ACCCOD	~					
Entities to be indexed. Leave empty for all entities		ACODNUM	~					
		ACONSTANT	т 🖌					
English (United Kingdom) C 🔤 🛰		ACONTACTO	CRM 🖌					
		ACTIV	~					
		ADOPAR 🗸						
		AFCTFCT	~					
		AOBJET	~					
		ATYPEPRO	~					
		AUTILIS	~					
				*				





As new data is added to the entities, the indexes will become stale. The statistics held for each index will need to be updated to ensure an up to date status for the data optimizer.

In addition newly entered user data will not be searchable until the indexes are updated.

Schedule regular updates of the search indexes via batch server tasks. This can be achieved via the Automation scheduler screen which can be seen in the following slides

Check the logging level of ElasticSearch messages in the logging.yml. The default logging level is INFO which is quite verbose, hence consider setting to WARN.

Regularly archive the logs to reduce diskspace overhead, the ElasticSearch service needs to be shutdown in order to archive the latest logs

### **Automation Schedule**



Import	Pay	yment / Receipt Ent	ry Orders	Ехро	rt Invoices	Customer BP Invoices	Reports	Printouts	Script editor	Invoices						
sage	3	ХЗ 🛗						Super	administrator	Super administrator	X3ERPV12	_SEED	?	☆.	Ø	Q
All > Admi	nistrat	tion > Usage > Au	tomation													
Autom	ati	on schedule	s											[	Actio	ons :
														o		
~		Schedule name	:		Server logs	expiry	Last sta	rted		Last completed		Status				
		۲			۲		۲			m T	<u></u>	۲			-	
Ø	5	ElasticSearch		- 8		1	30		18/08/2021 11:	02	18/08/2021 11:23	Planned				
ø	1	LDAPsync				(	50		18/08/2021 11:	02	07/01/2021 13:30	Running				

#### **Automation Schedule**



Import	Payment	/ Receipt Entr	y Orde	rs Export	Invoices	Customer BP Invo	ices Repo	rts P	rintouts	Script editor	Invoices							
sage	Х3	1100 La 1111 L							Super	administrator	Super adn	ninistrator	X3ERPV12_	SEED	?	☆ •	Ø	(
All > Admir	nistration >	Usage > Aut	omation														De	efault
Schedu	Ile Flastic	Search																_
	Liastic	Search															Acti	ons
Inform	nation	Events	Tasks															
Inform	nation																^	1
Schedu	le name						Server	logs exp	piry			Last	started					
ElasticS	earch					:						30	18/08/2021 1	1:02				
			-				expresse	ed in day	s									
Last co	mpleted 18/08/20	21 11:23	Planned															
																	_	
Event	s																~	
Events																		
Events																27		
<b>~</b> [	Description	n		Ev	ent type		Every day	y		Next	run		Suspende	d				
~ 1	ElasticSearc	h daily		ті	me			~	/			18/08/2021	14:00	×				
		-															_	
Tasks																	~	
Tasks																		
Tasks																		
					-											×^		
Des	cription	Susp	pended	Log level	Task									User		Role		
Sear	rch index up	odate	×	All	Update m	odified records only=	true; Dataset	=X3ERPV	12_SEED;	Endpoint=(X3ERP	V12_SEED); Loca	ales=(English (l	Jnited Kingdom))	<u>ukadmin</u> uk	admi	<u>Super</u>		

#### X3 Search







1. Go to Development--> Data and Parameters--> Classes--> Classes (GESATB), select the class you wish to make searchable (e.g. WORKCOST) and tab Properties (check if the field you are interested in, such as "ACCCOD" field is searchable). If not make it searchable and do a "**Global Validation**"

2. Go to Development--> Data and Parameters--> Classes--> Representations (GESASW) Select the appropriate name (e.g. WORKCOST) and ensure "Used for search results" is checked. Also look in the "Available Properties" tab check "Detail" is set to "Yes" for the field you are interested in. Save any changes then run "**Global Validation**" to ensure the representation record is up to date

3. Go to Administration--> Usage--> Search Index Management. Click the "Entities" button and you should now see the entity you just updated on the list (e.g. WORKCOST) You can now select this entity, then select "Delete index before update" and launch the "Update Index" for this entity

4. You can then test this new entity is searchable within X3 itself

Demo : TABPLACE



# Troubleshooting

## Troubleshooting



1. Check for matching port configuration in:-

nodelocal.js value of searchengine: elasticsearch.yml value of http port:

- 2. Check the port is in use Powershell command \$netstat –anop TCP | sls –pattern "LISTEN"
- 3. Check the ElasticSearch process is running via the Windows Task manager
- 4. Check if proxy used and ElasticSearch server is Excluded
- 5. Obtain additional trace information by configuring logging level in logging.yml and check logs
- 6 Add the browser plug-in extension 'Elasticsearch Head'
- 7. Use of TCP packet analyzer e.g Wireshark
- 8. Sage Support Investigation Script mzElasticURL

## **Troubleshooting – Syracuse Logs**



N3						Super auministr	ator Su	per administrator	ASERFVIZ_SEED	0	W.	
Administration Administr	ration > Settings											
ttings												ſ
General settings A	Authentication Proxy Mailer	CTI Service	Licence	Logs	Patch	Synchronisation	History	Global variabl	es			
notifications	Notification service	Error										
🕨 🖿 orm	Object-relational mapping											
patch	Patch integration	Error										
🖿 pubsub	Publish/Subscriber messaging	Error										
🖿 sage-rr		Error										
Sagees												
🕨 🖿 sagefr												
Sagept	Sage Portugal											
🖿 scheduler		Info										
Scm.		Error										
🖿 sdata		Error										
search.	Elasticsearch communication	Error										
session		Error										
🕨 🖿 soap	Generic incoming soap web services											
studio	SAFE X3 Studio											
h fin a starten	System											
system	STATES TO AN A STATES AND A S											

## **Troubleshooting – ElasticSearch logs**



SETUP GUIDE					
📙    🛃 🔜 😓    logs				—	
File Home Share View					~ 🕐
Image: Second system       Pin to Quick copy     Copy     Paste     Image: Second system     Image: Second system       Pin to Quick copy     Copy     Paste     Image: Second system     Image: Second system       Pin to Quick copy     Copy     Paste     Image: Second system     Image: Second system       Clipboard     Clipboard     Image: Second system     Image: Second system	Copy to * Organise Copy to * Copy to * Copy to * Copy to * Copy to * Copy to * Copy to * Copy to *	n • ess • Properties • Edit • Open • • Edit • Select all • Select non • Invert sele • Select	e ction		
← → · ↑ 🕞 > This PC > D-X3 Stuff + SQL	Data (D:) > Sage > FreeComponents > Elastic	Search > logs	~ Ō	Search logs	م
Documentation	Name	Date modified Type	Size		^
FreeComponents	📄 gc.log	09/09/2021 11:31 Text Document	81 KB		
Apache24	gc.log.22	09/09/2021 10:11 22 File	2 KB		
ElasticSearch	ES-X3ERPV12.log	09/09/2021 00:50 Text Document	1 KB		
7.9.3	ES-X3ERPV12_server.json	09/09/2021 00:50 JSON File	3 KB		
config	📄 gc.log.21	09/09/2021 00:50 21 File	182 KB		
data	BS-X3ERPV12-2021-09-08-1.json.gz	09/09/2021 00:50 GZ File	4 KB		
	ES-X3ERPV12-2021-09-08-1.log.gz	09/09/2021 00:50 GZ File	4 KB		
nodes	ES-X3ERPV12_deprecation.json	08/09/2021 12:03 JSON File	112 KB		
0	ES-X3ERPV12_deprecation.log	08/09/2021 12:03 Text Document	72 KB		
state	gc.log.31	08/09/2021 09:55 31 File	2 KB		
indices	gc.log.26	08/09/2021 00:50 26 File	143 KB		
3QE3Q91RiyVvT76-b5Kmg	ES-X3ERPV12-2021-09-07-1.json.gz	08/09/2021 00:50 GZ File	4 KB		
_state	ES-X3ERPV12-2021-09-07-1.log.gz	08/09/2021 00:50 GZ File	3 KB		
0	gc.log.23	07/09/2021 10:10 23 File	2 KB		
ctate	ES-X3ERPV12-2021-09-06-1.json.gz	07/09/2021 00:50 GZ File	4 KB		
_state	ES-X3ERPV12-2021-09-06-1.log.gz	07/09/2021 00:50 GZ File	3 KB		
Index	ES-X3ERPV12-2021-09-05-1.json.gz	06/09/2021 00:50 GZ File	10 KB		
translog	ES-X3ERPV12-2021-09-05-1.log.gz	06/09/2021 00:50 GZ File	10 KB		
logs 🗸 🗸	ES-X3ERPV12-2021-09-04-1.json.gz	05/09/2021 00:50 GZ File	4 KB		~
128 items					



This is a basic visualization tool for the data stored in ElasticSearch. It is particularly useful for testing queries, mappings of indices and reviewing data structures of the documents

We can see the Cluster Health RAG status indicating primarily the status of the Shards – Red (primary shards not available. Yellow – some replica shards not available. Green – all available.

There are details on the index names e.g gb\_entities and the number of documents within each index

Basic CRUD queries can be performed on the indices

## Troubleshooting – ElasticSearch Head - Overview sage



### **Troubleshooting – ElasticSearch Head - Indices**



## **Troubleshooting – Script mzElasticURL**



C:\Windows\system3	2\cmd.exe	-		×
Run WebRequest For URL : http://l	ocalhost:9200/sorder.x3.erp.x3erpv12_x3.en-us			^
StatusCode StatusDescription Content RawContent	: 200 : OK : : HTTP/1.1 200 OK Content-Length: 1465 Content-Type: application/json; charset=UTF-8			
Forms Headers Images InputFields Links ParsedHtml RawContentLength	: {} : {[Content-Length, 1465], [Content-Type, application/json; charset=UTF-8]} : {} : {} : {} : mshtml.HTMLDocumentClass : 0			
Invoke-WebRequest allowed: [GET, DEL At D:\Sage\Investi + Invoke-WebRe	: {"error":"Incorrect HTTP method for uri [/sorder.x3.erp.x3erpv12_x3.en-us] and method [ ETE, HEAD, PUT]","status":405} gationScripts\PowerShell\ElasticSearch\mzElasticURL.ps1:40 char:2 quest -outFile \$mzOutFileName -PassThru -Uri \$mzURL	POST],		
+ CategoryInfo eption + FullyQualifi StatusCode	<pre>edErrorId : WebCmdletWebResponseException,Microsoft.PowerShell.Commands.InvokeWebRequestCo : 200</pre>	st], W ommand	lebExc İ	~



## **Quick Demo**

#### **Demo Screens – Data Search**



		Super administrator	Super administrator	X3ERPV12 / SEED	?	☆.	Ø	20reef
							Default 🔻	FILTERS FOR D
rch results starting with '20reef'								
arch option: Widen result set to similar	results	DATA (0)						_
CTIONS (0)	هي.	DATA(0)					1.0	
								•



sage x3 💼	1		Super a	administrator Super	r administrator	X3ERPV12 / SEED	?	\$
Classes	All > Develop	ment 👌 Data and parameters 👌 Classes						
T <sub>x</sub> Clear filter	All > Development > Data and parameter	s > Classes					Default	•
Code De	Linked classes 🕐					Г	:	×
							_	
TABCONTAINER C	Tree structure							
	Expand all					\$ x <sup>3</sup>		-
		Activity code Class	Туре	Acti	ivity code Refe	rence		
	A 🍕 TABCONTAINER Container	:	- Persistent		- Mai	n table TABCONTAINEF		^
	Scripts	1						₫
	4					÷		
	Information						_	- 8
	Number of classes Tr	ee structure depth						
	1	1						- 8
	Classes						_	
	: Q					\$ x <sup>*</sup>		
	L Class	Description	Parent class	Collection	Table	Cardinality		- 8
	1 1 TABCONTAINE	R Container			TABCONTAI	NER		
4	2 :							- 8
Lastread		<				•		
Persistent classes								



asses	All > Development > Data and parameters > Classes
Clear filter O v *	Tree structure     Validation     Comparing
	General Methods Standard methods Properties Mapping Miscellaneous
BCONTAINER Container Commc	â
	Class code * Description *
	TABCONTAINER Container
	General Management mode
	Type Table - view
	Persistent TABCONTAINER Q
	Index *
4	TCTRO Q: Transaction management
	Keys
	TCTRNUM
	Activity code     Module       →     Q:       Common Data         Collections
st read	Collections



$\uparrow \downarrow \underline{\downarrow}$ Classes					Tree	structure	Validation	Сору	ור
ය General M	ethods St	andard m	nethods	Properties	Mapping	Miscellaneou	IS		
â								* 🖉	^
Class code *			Descripti	on *					
TABPLACE		Q:	Places						
General									^
Management mode									
Туре	Table -	view							
Persistent	▼ TABP	LACE	QE						
Index *									
TPC0 Q	L E			~	Transaction m	anagement			
Keys									
TPC									
Activity code	Module								
→ Q, :	Common	Data			•	In cache	✓ Searchal	ble	
Collections									



sage X3 🛗				Super administr	ator Super administ	rator X3ERPV1	2/SEED ? ☆ -
lasses	All 🗦 Development 🗦 Data and	parameters > Classes					
, Clear filter	<b>⊼</b> ↑ ↓ <b>↓</b> Classes					Tree structure	Validation Copy
ode Description Modu	General Met	hods Standard met	thods Properties	Mapping Misce	llaneous		
TABCONTAINER <b>Y</b>	Properties		•	11 0			
ABCONTAINER Container Comm	· · ·				30	Results Display: 15	▼ <u>1</u> 23  ▼ <sup>*</sup>
	Property	e Man	Control table De	ependency Acces	is code Searcha	able Cat	egory
	1 : TCTRTYP	Q. Yes *	Q. :	Q. :	q:		Q:
	2 TCTRNUM	Q Yes *	Q:	Q. :	q:		Q :
	3 EDESAXX	Q. i Yes 🔻	Q.I	Q. :	Q.I		Q. :
	4 SHOAXX	Q: No -	Q. :	Q. :	Q. :		Q. :
	5 RGT	Q: No -	Q:	Q:	Q. :		Q. :
	6 : TEU	Q No -	Q:	Q. :	Q. :		Q.:
	7 ENAFLG	Q: No -	Q:	Q. :	Q:		Q. :
	8 EDIU	Q No 🔻	Q.I	Q.I	Q. :		Q. :
	9 : TCTRHEI	Q: No -	Q.I	Q. I	Q. :		Q :
	10 : TCTRLEN	Q: No -	Q. :	Q. :	Q:		Q. :
	11 : TCTRWID	Q: No -	Q. :	Q. :	Q:		Q :
	12 : WEU	Q: No -	Q. :	Q :	Q:		Q :
	13 TARWEI	Q: No -	Q. :	Q :	Q:		Q:
.ast read	14 : MAXWEI	Q. No -	Q.I	Q. :	Q:		Q:
Persistent classes	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0:	0:	0:	0:		0:

### **Demo Screens - Representations**



Saye X3	Super administrator Super administrator X3ERPV12 / SEED 😯 💢
epresentations	All > Development > Data and parameters > Classes
Clearfilter	↑ ↑ ↓ ↓     Representations     Invalid links     Menus     Tree structure
ode Description Mode	General Properties Methods Organization Displayed properties Links Menus
ABCONTAINER Container Com	â
Container Container Com	Representation code * Description *
	TABCONTAINER Container
	General General Class code ★ TCTR Used for search results Container
	Functions
	Authorization Convergence
	Container
	Characteristics
	Activity code Module
	→ Q i Common Data ·

### **Demo Screens - Representations**



уе Х3	::::									Super	admini	strator	Sup	er adr	ninistrator	X3	ERPV12	/ SEED	?	☆ •
sentatio	ns		All > De	velopment >	Data and parameters	Classes														
rfilter		00.*	<b>↑</b> ↑↓	<u>↓</u> Rep	resentation	S									Invalid link	(5	Mer	nus	Tree str	ucture
ONTAINER	Description	Module	۵.	General	Properties	Methods	Organization	Disp	layed	prope	erties	Lin	(S	Menus	20 Kesuita	וקנוט פ	idy. 20		· <u>1</u> 2	<b>*</b> *
TAINER	Container	Commc		Alias					Filter	r P	Entr	уP	Quer	у	Initial status		Deta	<b>.</b>	Initial statu	IS
		6 0 6 0 8	1	E TCTRM	NUM		QI	Q. :	No	<b>*</b>	No	* i	Yes	+ i	Visible	- 1	Yes		Visible	<b>*</b> *
				2 E DESAX	X		Q:	Q. :	No	*	No	- I	Yes	* :	Visible	*	Yes		Visible	
			-	TCTRT	YP		Q.:	Q.:	No	Ŧ	No	* i	Yes	- 1	Visible	* :	Yes	• :	Visible	
			-	SHOA	XX		QI	Q :	No	*	No	<b>*</b>	Yes	* i	Visible	* :	Yes	- i	Visible	
				ENAFL	G		QI	Q.:	No	*	No	*	No	• :	Visible	*	Yes	- :	Visible	
			(	INTFL	G		Q.I	Q:	No	Ŧ	No	* :	Yes	- :	Visible	*	Yes	- :	Visible	
			1	LPNR	EFCOU		Q. :	Q. :	No	Ŧ	No	-	Yes	* :	Visible	- I	Yes	* :	Visible	
			1	MONI	TMFLG		Q.I	Q. :	No	Ŧ	No	* 1	No	• :	Visible	-	Yes	- :	Visible	
			9	MONI	OTFLG		Q.:	Q:	No	-	No	- i	No	+ :	Visible	- 1	Yes	- i	Visible	
		4	10	LBEFN	ЛТ		Q.I	Q:	No	*	No	- I	No	* [	Visible	-	Yes	• :	Visible	
			1	FREFL	G		Q.I	Q:	No	*	No	* :	Yes	• :	Visible	- :	Yes	- :	Visible	-
			12	RGT			Q. :	Q. :	No	*	No		No	• :	Visible	-	Yes	- :	Visible	-
			13	E TEU			Q. :	Q. :	No	*	No	- 1	No	+ i	Visible	*	Yes		Visible	*
		4	14	DIU			Q:	Q:	No	*	No	-	No	+ :	Visible	-	Yes	- :	Visible	*
			15		HEI		Q:	Q:	No	*	No	- I	No	+ :	Visible	- i	Yes	- :	Visible	*
			10	TCTRL	EN		Q.I	Q:	No	-	No		No	• :	Visible		Yes	- :	Visible	-
			17	: TCTRV	NID		0.1	a i	No	-	No	<b>*</b> I	No	+ 1	Visihle	• 1	Vec	¥ 1	Visihle	

#### **Demo Screens – Search Index**



		Super administrator	Super administrator	X3ERPV12 / SEED	0	T
> Administration > Usage		_				
earch index management	Classes	Ok X				
Indpoint						
X3ERPV12 / SEED Q	🕵 Clear filter Display: 50	* 00 C x*				
indpoints describe services locations	Entity	Searchable				
intities	II TAB	T 🗌				
<b>Q</b>		~				
intities to be indexed. Leave empty for all entities		~				
	TABCOUNTRY					
English (United States) 🔾 🗑 🛰	TABCUR	~				
	TABEXPENS	~				
Delete indexes before update	TABFOR	~				
	TABLOCTYP	×				
	TABMAT	~				
	TABPAYTYP	~				
	TABSUBDIVD	~				
	TABUNIT	~				

#### **Demo Screens – Search Index**



C 1 A Not secure | x3erpv12sqivm:0124/syracuse-main/ntmi/main.ntmi/uri=%2Fsdata%2Fsyracuse%2Fcollaboration%2Fsyracuse%2FsearcnAdmins%2F%24template%2F%24t

Sage X3 🛗	Super administrator	Super administrator	X3ERPV12 / SEED
All > Administration > Usage			
Search index management			
Endpoint			
X3ERPV12 / SEED Q			
Endpoints describe services locations			
Entities			
TABCONTAINER 📋 🤁			
Container			
Entities to be indexed. Leave empty for all entities			
Locales			
English (United States) 🔍 🖨 🔍			
Delete indexes before update     Update modified records only			

#### **Demo Screens – Search Index**





#### **Demo Screens – ES Head Indices**



S Sage X3	× (B elasticsearch-head ×	+	
	ElasticSearch Head   chrome-extension://ffmkiejjme	ecolpfloofpjologoblkegm/elasticsearch-head/index.html	
Elasticsearch	http://localhost:9200/	Connect ES-X3ERPV12 cluster health: green (328 of 328)	
Overview Indices Brow	wser Structured Query [+] Any Request [+]		
squote.x3.erp.x3er	pv12 x3.fr-fr	208B/208B 0	
stoloc.x3.erp.x3erp	pv12_seed.en-us	396ki/396ki 2.68k	
stoloc.x3.erp.x3erp	pv12_seed.fr-fr	418ki/418ki 2.68k	
stoloc.x3.erp.x3erp	pv12_x3.en-us	5.92ki/5.92ki 1	
stoloc.x3.erp.x3erp	pv12_x3.fr-fr	5.92ki/5.92ki 1	
storagevolume.syr	acuse.collaboration.syracuse.en-us	10.1ki/10.1ki 5	
storagevolume.syr	acuse.collaboration.syracuse.fr-fr	10.1ki/10.1ki 5	
syracuse.collabora	tion.syracuse.en-us_entities	2.68Mi/2.68Mi 24	
syracuse.collabora	tion.syracuse.fr-fr_entities	4.38Mi/4.38Mi 25	
tabcoeff.x3.erp.x3	erpv12_seed.en-us	20.7ki/20.7ki 50	
tabcoeff.x3.erp.x3	erpv12_seed.fr-fr	20.7ki/20.7ki 50	
tabcoeff.x3.erp.x3	erpv12_x3.en-us	22.8ki/22.8ki 53	
tabcoeff.x3.erp.x3	erpv12_x3.fr-fr	22.7ki/22.7ki 53	
tabcontainer.x3.er	p.x3erpv12_seed.en-us	13.6ki/13.6ki 31	
tabcountry.x3.erp.	x3erpv12_seed.en-us	65.1ki/65.1ki 218	
tabcountry.x3.erp.	x3erpv12_seed.fr-fr	65.6ki/65.6ki 218	
tabcountry.x3.erp.	x3erpv12_x3.en-us	67.9ki/67.9ki 229	
tabcountry.x3.erp.	x3erpv12_x3.fr-fr	68.1ki/68.1ki 229	
tabcur.x3.erp.x3er	pv12_seed.en-us	47.3ki/47.3ki 171	
tabcur.x3.erp.x3er	pv12_seed.fr-fr	47.5ki/47.5ki 171	
tabcur.x3.erp.x3er	pv12_x3.en-us	46.7ki/46.7ki 167	
tabcur.x3.erp.x3er	pv12_x3.fr-fr	46.7ki/46.7ki 167	
tabexpens.x3.erp.x	<pre>x3erpv12_seed.en-us</pre>	15.9ki/15.9ki 33	
tabexpens.x3.erp.x	x3erpv12_seed.fr-fr	15.9ki/15.9ki 33	
tabexpens.x3.erp.x	c3erpv12_x3.en-us	208B/208B 0	
tabexpens.x3.erp.x	c3erpv12_x3.fr-fr	208B/208B 0	
tabfor.x3.erp.x3erp	pv12_seed.en-us	24.8ki/24.8ki 47	
tabfor.x3.erp.x3erp	pv12_seed.fr-fr	24.8ki/24.8ki 47	
tabfor.x3.ern.x3er	nv12 x3.en-us	14.1ki/14.1ki 5	

#### **Demo Screens – ES Head Structured Query**

- I

S Sage X3 X	elasticsea	arch-head	×	+							
← → C ☆ SelasticSearch H	ead   chro	me-extens	on://ffmkiej	jjmecolpfloofpjolo	goblkegm/elast	icsearch-head	d/index.html				
Elasticsearch http://loca	alhost:9200	/		Connect ES	5-X3ERPV12	cluster	health: gre	en (328 of	328)		
Overview Indices Browser Structure	ed Query [·	+] Any Re	equest [+]								
Search tabcontainer.x3.erp.x3erpv12_seed	.en-us (31	docs)		✓ for document	s where:						
must 🗸 match_all	✔ + -	]									
Search Output Results: Table 🗸 Numbe	r of Results	: 10 🗸	Show qu	iery source							
Searched 1 of 1 shards. 31 hits. 0.199 sec	onds										
_index	_type	_id	_score 🔺	<pre>\$entityName</pre>	TCTRNUM	CREUSR	UPDUSR	\$access	\$site	\$description	\$url
tabcontainer.x3.erp.x3erpv12_seed.en-us	_doc	20D	1	TABCONTAINER	20D	XRPA	НСХ	_all	_all	20D	/sdata/x3/erp/X3ERPV
tabcontainer.x3.erp.x3erpv12_seed.en-us	_doc	20FT_FCL	1	TABCONTAINER	20FT_FCL	XREGU	HCX	_all	_all	20FT_FCL	/sdata/x3/erp/X3ERPV
tabcontainer.x3.erp.x3erpv12_seed.en-us	_doc	20OPT	1	TABCONTAINER	20OPT	XRPA	КЛН	_all	_all	20OPT	/sdata/x3/erp/X3ERPV
tabcontainer.x3.erp.x3erpv12_seed.en-us	_doc	20REEF	1	TABCONTAINER	20REEF	XRPA	HCX	_all	_all	20REEF	/sdata/x3/erp/X3ERPV
tabcontainer.x3.erp.x3erpv12_seed.en-us	_doc	40D	1	TABCONTAINER	40D	XRPA	КЛН	_all	_all	40D	/sdata/x3/erp/X3ERPV
tabcontainer.x3.erp.x3erpv12_seed.en-us	_doc	40FT_FCL	1	TABCONTAINER	40FT_FCL	XREGU	НСX	_all	_all	40FT_FCL	/sdata/x3/erp/X3ERPV
tabcontainer.x3.erp.x3erpv12_seed.en-us	_doc	40OPT	1	TABCONTAINER	40OPT	XRPA	HCX	_all	_all	400PT	/sdata/x3/erp/X3ERPV
tabcontainer.x3.erp.x3erpv12_seed.en-us	_doc	40REEF	1	TABCONTAINER	40REEF	XRPA	HCX	_all	_all	40REEF	/sdata/x3/erp/X3ERPV
tabcontainer.x3.erp.x3erpv12_seed.en-us	_doc	AAF-LD26	1	TABCONTAINER	AAF-LD26	ACX	HCX	_all	_all	AAF-LD26	/sdata/x3/erp/X3ERPV
tabcontainer.x3.erp.x3erpv12_seed.en-us	_doc	AAP-LD9	1	TABCONTAINER	AAP-LD9	ACX	HCX	_all	_all	AAP-LD9	/sdata/x3/erp/X3ERPV

sage

#### **Demo Screens – X3 Search**



← → C ☆ ▲ Not secure   x3erpv12sqlvr	m:8124/syracuse-main/html/main.html?url=%2	Fsdata%2Fsyracuse%2Fsearch%2Fsyracuse	%2F%24search%3F	represen	⊶☆28 ≱ 🛎 :
sage X3 🛗	Super administrator Super	administrator X3ERPV12 / SEED	?☆.	Ø	norfolk 🗙
				Default 👻	FILTERS FOR DATA
Search results starting with 'norfolk	ť				ТҮРЕ
Search option: Widen result set to	o similar results				Postal codes (31)
FUNCTIONS (0)	DATA (32)				Places (1)
	××	32 Results Disp	olay: 20 💌 <u>1</u> 2 🙀	•	
	US~0205	6~ Norfolk~02056			
	Postal codes				
	City: Norfo	Ik City (search): NORFOLK			
	US~0605	8~ <mark>Norfolk</mark> ~06058			
	Postal codes				
	City: Norfo	Ik City (search): NORFOLK			
					P
	<u>US~13667</u>	~ <mark>Norfolk</mark> ~13667			
	Postal codes				
	City: Norfo	Ik City (search): NORFOLK			
	US~23501	~Norfolk~23501			
					11

#### **Demo Screens – Results**



	Not secure   x3erpv1	2sqivm:8124/syracuse-ma	in/html/main.html?url	=%2Fsdata%2Fx3%	2Ferp%2FX3ERPV	TZ_SEED%2FTABP	LACE(%27N	IORFOLK.	. 07	¥ I	5 🛪	
age x3 🗰			:	Super administrato	r Super admi	inistrator	X3ERPV12	SEED	?	☆,	. Ø	)
Common data > Logisti	ics tables											Def
cation											Ac	:tio
ocation											/	、
ocation												
ace type	Location	Description		Short descript	ion							
arbor	NORFOLK	Port of Norfolk		NORFOLK								
lease time (days)	Site											
	3											
upplier												
ddress												
dresses												-
											×*	
	Description	Country	Country name	Address line 1	Address line 2	Address line 3	Postal co	ode Cit	у	State		
Address				T	т	т	т	QT		т		
Address	Q <b>T</b>	Ŧ	~~ ·									
Address T ( AD1 Port of Norfolk	Q. <b>T</b> Port of Norfolk	▼ <u>US</u> United States of America	United States				13667	: No	orfolk	<u>NY</u> N	ew Yo	
Address T ( AD1 Port of Norfolk	Q <b>T</b> Port of Norfolk	▼ <u>US</u> United States of America	United States				<u>13667</u>	: No	orfolk	<u>NY</u> N	ew Yo	

#### **Demo Screens – Automation Schedule**



← → C ☆ ▲ Not secure   x3erpv12sq	lvm:8124/syracuse-main/html/main.html?url=	http%3A%2F%2Fx3erpv12sqlvm%3A8124%2Fsdata%2Fsy	racuse%2Fcollaboration%2Fsyracuse%2Fautomates	5(%27 <b>0-</b>
sage X3 🛗		Super administrato	or Super administrator X3ERPV12 / SE	ed ?
The resource has been saved. Schedule ElasticSearch				
Information Events Tasks				
Information				
Schedule name ElasticSearch	Server	logs expiry La 30	st started Last completed	
Status Planned				
Events				
Events				
✓ Description	Event type	Every day Next run	Suspended	
<ul> <li>ElasticSearch Daily</li> </ul>	Time	~	9/20/2021 11:00 PM	×
4				
Tasks				
Tasks				
Description description			<b>D</b> -1-	

No data to display



← → C ① ▲ Not secure | x3erpv12sqlvm:8124/syracuse-main/html/main.html?url=%2Fsdata%2Fsyracuse%2Fcollaboration%2Fsyracuse%2FsearchAdmins%2F%24template%2

Sage X3 🛗	Super administrator	Super administrator
All > Administration > Usage		

#### Search index management

Endpoint	
X3ERPV12 / SEED	Q
Endpoints describe services locations	
Entities	
TABPLACETIME     Q <ul> <li>Transport lead time</li> </ul>	
Entities to be indexed. Leave empty for all entities	
Locales	
English (United States) 🔍 🍵 🚭	
Delete indexes before update	Update modified records only



Sac

![](_page_51_Picture_1.jpeg)

![](_page_52_Picture_1.jpeg)

sage X3 🛗		Super administrator	Super administrator
All > Administration > Usage > Automation			
Server logs			
		/1 Results Display: 50	× 12 ×
Severity	Message		
info	3 records of externalUrlSecurityPolicy indexed		^
info	0 records of ctiService indexed		
info	0 records of mailTemplate indexed		
info	0 records of studioSessionInfo indexed		
info	mobileApplication mapping updated		
info	14 records of mobileApplication indexed		
info	mobileDashboard mapping updated		
info	22 records of mobileDashboard indexed		
info	mobileGadget mapping updated		
info	68 records of mobileGadget indexed		
info	x3solution mapping updated		
info	1 records of x3solution indexed		
info	badge mapping updated		
info	17 records of badge indexed		
success	Index update ended: syracuse en-US		
info	TABPLACETIME mapping updated		
info	14 records of TABPLACETIME indexed		
success	Index update ended: X3ERPV12_SEED en-US		

#### **Demo Screens – Modified Index**

![](_page_53_Picture_1.jpeg)

Pin to Quick Copy Paste access	Copy to " Organice Copy to " Copy to	item • access • Properties	en 👻 🖶 Select all t 📄 Select none 📑 Invert selection		
← → × ↑ → This PC → D-X3 Stuff + SOL D	ata (D:) > Sage > FreeComponents > Ela	sticSearch > data > nodes	> 0 > indices >	✓ ♂ Search indices	
Videos A	Name	Date modified	Tune Size		
- C-W2K10 Std+ Sci2K10 Dev (C)	The second se	Dute mouned	type size		
	c-aOsikXRrmWsHLjOrUdQA	20/09/2021 16:11	File folder		
D-X3 Stuff + SQL Data (D:)	_4fEqys1SGKYFNAKMHI_UQ	20/09/2021 09:23	File folder		
Program Files	_tYCrNmQS1iYFF3qGKiq7w	20/09/2021 09:23	File folder		
Sage	ygctEo6T6GV0uSy2d0vRw	20/09/2021 09:23	File folder		
	3tHU3c1qQ4WSQagaipOiog	20/09/2021 09:23	Filefolder		
	4Nc8Fw14Qa60f3fvmtmnaA	20/09/2021 09:23	Filefolder		
Apache24	5E3aVyAPTJK8LJubrE39YQ	20/09/2021 09:23	File folder		
ElasticSearch	5 O MOM-T MSDOL-005-0	20/09/2021 09:23	File folder		
793	6DDL allos Har Dr. MVM/M7a	20/09/2021 09:23	File folder		
config	7517 eKuT7ClbMPfabyOda	20/09/2021 09:23	File folder		
- comig		20/09/2021 09:23	File folder		
data	77kAtyECSfybA1bMBf4ldA	20/09/2021 09:23	File folder		
nodes	8G9sSnW9ORWSes 21AixWO	20/09/2021 09:23	File folder		
0	8sDUpHwYSTGKsr O2ZRLKw	20/09/2021 09:23	File folder		
state	9Ggp0 sxS9KrRLryJSyy2g	20/09/2021 09:23	File folder		
📙 indices 🗸 🗸	a6J2a-F6RJ-6d5ZDv2hQwQ	20/09/2021 09:23	File folder		
207 : +		Tel estere : estere			

:

### **Demo Screens – Modified Index**

ge

![](_page_54_Picture_1.jpeg)

Sal

#### **Demo Screens – Modified Index**

![](_page_55_Picture_1.jpeg)

m cr		
1	?×1 INICELucene50CompoundData NUBNUBNUBNUBNUBNUBNUBNUBNUBNUBNUBNUBNUBN	
2	Lucene80_0 SOH#Egt.«Í NUDNUDNUDNUDNUDNUDNUDNUDNUDRADMINEOD_all SOH#Egt.«Í NUDNUDNUDNUDNUDNUDNUDNUDNUDNUDRADMINEOD_all SOH#Egt.«Í NUDNUDNUDNUDNUDNUDNUDNUDNUDRADMINEOD_all SOH#Egt.«Í NUDNUDNUDNUDNUDNUDNUDNUDRADMINEOD_all SOH#Egt.«Í NUDNUDNUDNUDNUDNUDNUDNUDRADMINEOD_all SOH#Egt.«Í NUDNUDNUDNUDNUDNUDNUDRADMINEOD_all SOH#Egt.«Í NUDNUDNUDNUDNUDNUDNUDNUDRADMINEOD_all SOH#Egt.«Í NUDNUDNUDNUDNUDNUDNUDRADMINEOD_all SOH#Egt.«Í NUDNUDNUDNUDNUDNUDNUDRADMINEOD_all SOH#Egt.«Í NUDNUDNUDRADMINEOD_all SOH#Egt.«Í NUDNUDNUDNUDNUDRADMINEOD_all SOH#Egt.«Í NUDNUDNUDNUDNUDRADMINEOD_all SOH#Egt.»	
3	SOR SO SOR SU SOR DEL SOR DEL SOR DEL SOR DEL SOR DEL SOR NAK SOR SUR SOR EN SOR EN SOR SUB SOR SOR SOR DEL SOR	1
4	RUUA RUUA RUUA RUUA RUUA SOH RUUA RUUA SOH RUUA RUUA COTI RUUA RUUA COTI RUUA RUUA RUUA RUUA RUUA RUUA RUUA RUU	1
5	BEDE NULHNULHNULHNULHNULD) STYLSOH BED STYLEOT (SNA SOHACKÀ ( " È NULHNULHNULHNULHNULHNULHNULHNULHNULHNULH	1
6		1
7	_primary_termSTXNUDNUDSOH999999999999999999999999999999999999	
8	STRISON GOV ÖYÖYÖYÖ SON GSPerField Postings Format.format GSLucene 84 (SSPerField Doc Values Format.format GSLucene 80 (GSPerField Postings Format.suffix SON (SSPerField Doc Values Format.format)	nde
9	STRISON 2019 9999999999999999999999999999999999	E.
0	\$site.keyword DC4 STX SCH ZOD ÿÿÿÿÿÿZOD CS PerField Postings Format.format CS Lucene 84 CS PerField Doc Values Format.format CS Lucene 80 CS PerField Postings Format.suffix SOH	1 - I
1	Lucene84_0?×100000000000000000000000000000000000	1 - I
2	Lucene 84 05 SOH DE SOH SOH SOH SOH SOB SO EOT all EOT all ?*1 ETBETX FST NUE NUE BED SOH ETX SOH STX NUE NUE SOH NAK SO STX SO SO DE A-SHENZEN~CDG~1~ ETWH1~FR021~6~5	1 - I
3	SO SO ZOT ALL ZOT ALL Z'×1 ZTE ZTW FST NUM NUM REM SOF ZTW	1 - I
4	* STRINUM NUM SOFTRE	1 - I
5	SOSOa/sdata/x3/erp/X3ERPV12_SEED/TABPLACETIME ('A-SHENZEN~CDG~1~')?representation=TABPLACETIME.\$details]/sdata/x3/erp/X3ERPV12_SEED/TABPLACETIME ('WH1~FR021~6~	1 - I
6	* STXNULNULSON STXÚ4 SO SO SO ACKDERLIN STXWH1>2*1 STBETX FST NULNULED SOHETX 4Ú STXNULNULSON	1 - I
7	STX ; 7 SO SO ACKBERLIN 27×1 2TB 2TX FSI NUB NUB BED SOH 2TX 7 ; STX NUB NUB SOH	1
8	SOH STX%9 SO SO NUBNUB (? × 1 278) 278) FST NUBNUB BED SOH 278 9% STX NUBNUB SOH SO E O STX%9 SO SO E DNA dmin 201 x paA ? × 1 278) 278 FST NUBNUB BED SOH 278 9% STX NUB NUB SOH SO E O STX%9 SO SO E DNA dmin 201 x paA ? × 1 278) 278 FST NUB NUB BED SOH 278 9% STX NUB NUB SOH SO E O STX%9 SO SO E DNA dmin 201 x paA ? × 1 278) 278 FST NUB NUB BED SOH 278 9% STX NUB NUB SOH SO E O STX%9 SO SO E DNA dmin 201 x paA ? × 1 278) 278 FST NUB NUB BED SOH 278 9% STX NUB NUB SOH SO E O STX%9 SO SO E DNA dmin 201 x paA ? × 1 278) 278 FST NUB NUB BED SOH 278 9% STX NUB NUB SOH SO E O STX%9 SO SO E DNA dmin 201 x paA ? × 1 278) 278 FST NUB NUB BED SOH 278 9% STX NUB NUB SOH SO E O STX %9 SO SO E DNA dmin 201 x paA ? × 1 278) 278 FST NUB NUB BED SOH 278 9% STX NUB NUB SOH SOH SO E O STX %9 SO E O SO E DNA DMIN 201 X paA ? × 1 278) 278 FST NUB NUB BED SOH 278 9% STX NUB NUB SOH SO E O SO E DNA DA DMIN 201 X paA ? × 1 278) 278 FST NUB NUB RUB SOH 278 9% SO E O SO	
9	ýwhi~fro21~6~G?×1 <b>378</b> 3787557 <b>00100000000000000000000000000000000</b>	
0	Lucene84_0LNUESOHSOHSOHSOHSOHSOHSOHSOHSOHSOHSOHSOHSOHS	
1		
2	SI BEBETX ENGEDTACKEDTISTX ACKIEBLEOTISTX SOHNULSOHSOHSOHSOHSOHSOHSOHSOHSOHSOHSOHSOHSOHS	
3	Lucene84_00000\$ all CONCONCONCONCONCONCONCONCONCONCONCONCONC	
4	A-SHENZEN-CDG~1~CHENZHOU~BERLIN~5~NEW~NORFOLK~5~NYC~WH1~1~NYC~WH1~5~SHA~LAS~2~SHA~NEW~2~SHA~SAV~2~SHENZEN~NORFOLK~2~SNG~LAS~2~SNG~NEW~2~SNG~SAV~2~WH1~FR011~5~	
5		
6		
7		
8		
9	0.02	
0		
1		
2		
3	Ì STX/STX/gNULSOHI37ACKACK/STX CSOHADMINERPUSXJAXRPASSION/CONCONCONCONCONCONCONCONCONCONCONCONCONC	
4	ENGEOTINULACKNULSOHACKNULSOHACKNULSOHACKNULSOHENNULSOHENSOHENSOHENSOHENSOHENSOHENSOHACKETXICLASTXA-SHENZENCHENZHOUNEWNYCSHASHENZENSNGWH1DL3 BSETX Y	
	>	
mal	I text file length : 12,357 lines : 72 Ln : 1 Col : 1 Pos : 1 Unix (LF) ANSI INS	

![](_page_56_Picture_0.jpeg)

# More information

### **Information Sources**

![](_page_57_Picture_1.jpeg)

Sage University - targeted training courses at :-

https://sageu.com/access/su/home.html

Sage City – Information/Blogs/Videos etc on Technical specifics at:-

https://www.sagecity.com/gb/sage-x3-uk/

ElasticSearch Documentation at :-

https://www.elastic.co/guide/index.html

# Thank you

![](_page_58_Picture_1.jpeg)

©2021 The Sage Group plc or its licensors. All rights reserved. Sage, Sage logos, and Sage product and service names mentioned herein are the trademarks of Sage Global Services Limited or its licensors. All other trademarks are the property of their respective owners.