kalmstrom.com Business Solutions

Access Database Converter

User Guide

Access 2000–365 databases (.accdb, .mdb, .accde and .mde)
to SharePoint, Excel, CSV, JSON, XML, SQL Server and SQLite
Runs in the browser at access.kalmstrom.com

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CHAPTER 1

Your Access data, wherever you need it

An Access database often holds years of a company's work, locked in one file that only Access can open. Access Database Converter opens that file in your browser and turns it into a SharePoint site with one list per table, an Excel workbook, CSV files, JSON, XML or a SQL Server or SQLite script. You need no Access license, no installation and no upload: the database never leaves your computer.

1.1 What Access Database Converter does for you

Move to SharePoint in one script

One PowerShell script builds a list for each table, a column for each field and a lookup column for each relationship, then adds every row.

Hand data to Excel users

One workbook with one sheet per table, a bold frozen header and real numbers and dates, ready for filters and pivot tables.

Move to a real database server

A SQL Server or SQLite script creates the tables, keys, defaults and relationships, loads the rows and turns saved queries into views.

Feed other systems

JSON, XML and CSV carry the schema and the rows to integration tools, web apps and reports.

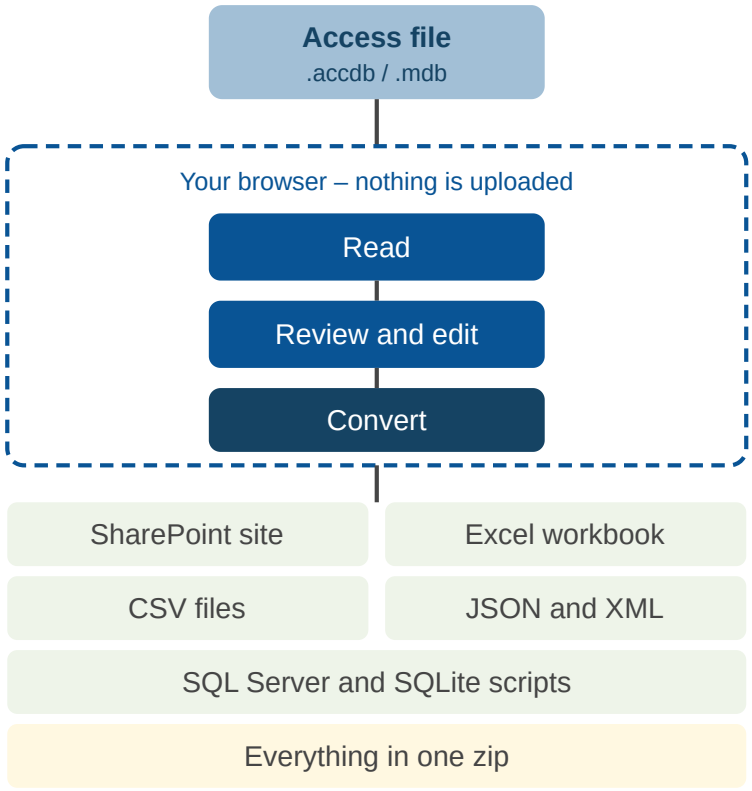
Fix data before you move it

Every table opens in an editable grid. Your corrections go into every download and wait in your browser until you come back.

Keep the data private

The file is read and converted in the browser and downloaded to your computer. Nothing is sent to kalmstrom.com or anyone else.

1.2 How it works



The database is read, reviewed and converted inside the browser.

1.3 What you need

Item	Requirement
Database	Access 2000 or later: .accdb, .mdb, .accde or .mde, at most 512 MB, without a password
Browser	A current Edge, Chrome, Firefox or Safari
Access	Not needed
PowerShell script	PowerShell 7 and the PnP.PowerShell module (see chapter 5)

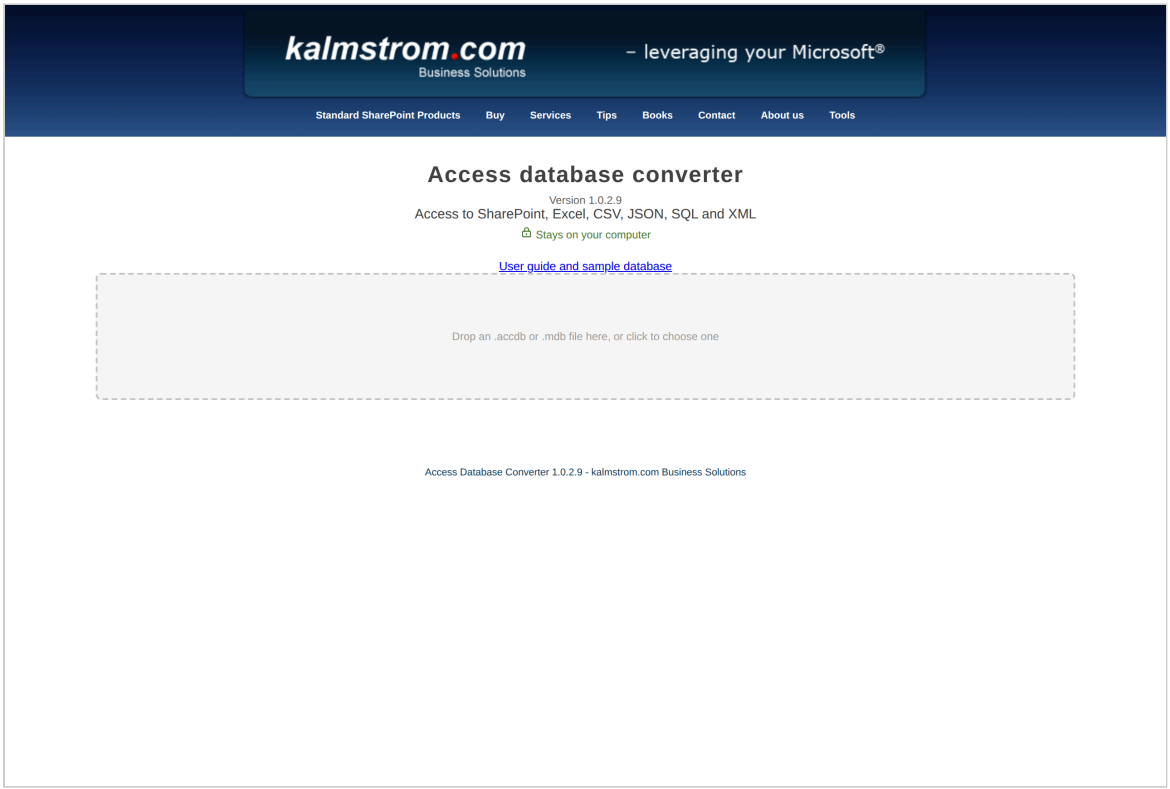
CHAPTER 2

Getting started

> Two minutes from an Access file to a first download. The converter is a web page, so there is nothing to install.

2.1 Open a database

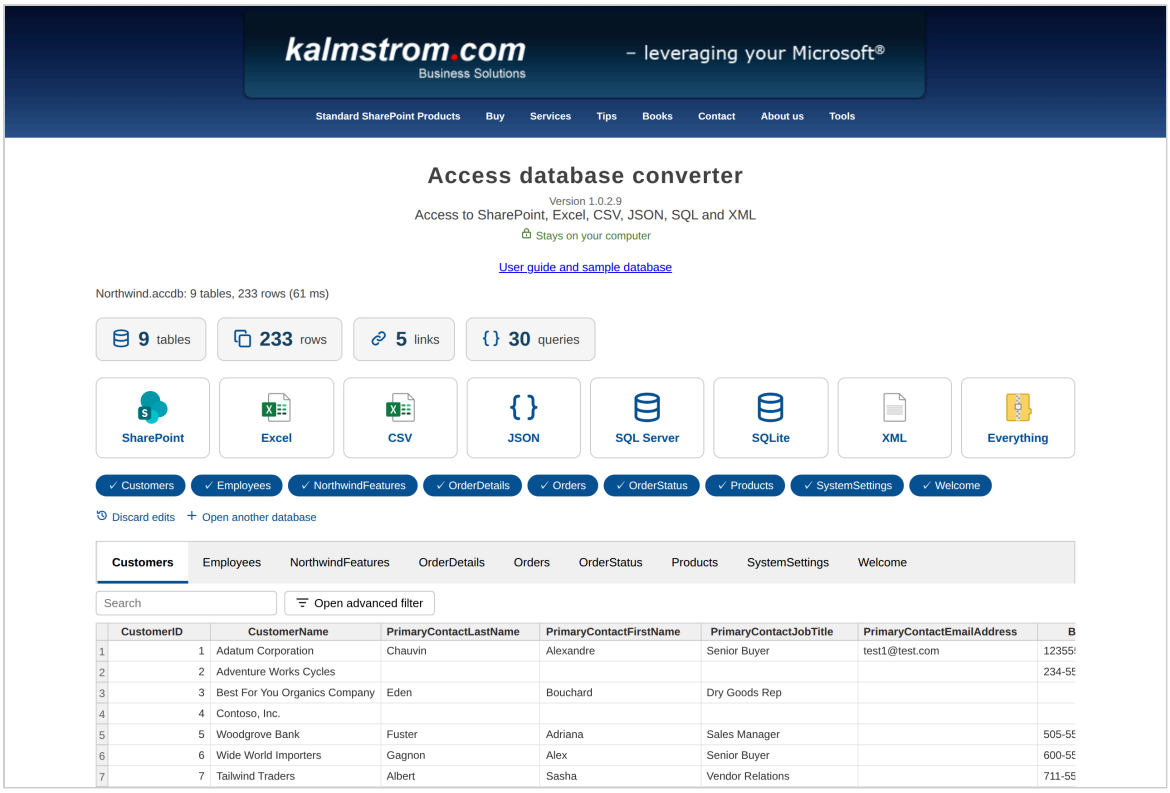
1. Go to **access.kalmstrom.com**. On kalmstrom.com you also find it under **Tools >Access database converter**.
2. Drag your Access database file onto the dashed box, or click the box and choose the file.
3. Wait for the line under the box to show the number of tables and rows. A database of a few megabytes takes well under a second.



The start page. The padlock line reminds you that the file stays on your computer.

2.2 Read the overview

When the file is read, the drop box gives way to the overview of your database.



The Northwind sample: number tiles, download tiles, table chips and the table tabs.

Part	What it tells you or does
Status line	File name, tables, rows and the time it took to read. Errors appear here in red.
Number tiles	Tables, rows, relationships (*links*) and saved queries. Point at *links* or *queries* to see each one listed.
Download tiles	One tile per output. Point at a tile to see what it contains (chapter 4).
Table chips	The tables that go into the downloads. Click a chip to leave a table out (chapter 3).
Discard edits	Forgets your corrections to this file (chapter 3).
Open another database	Shows the drop box again.
User guide and sample database	The link under the title opens the manual page on kalmstrom.com: this guide online and as a PDF, and the Northwind sample database.
Table tabs	Every table in an editable grid with search and paging.

> **Linked tables** point to data in another file or on a server, so their rows are not in your database. Access Database Converter shows *N linked tables skipped* and lists their names when you point at that line.

2.3 Make your first download

1. Click a download tile, for example **Excel**.
2. Excel, CSV and Everything are saved straight away. SharePoint, SQL Server, SQLite, JSON and XML first open in a preview, where you can read or copy the text; click **Download** to save the file.
3. The status line confirms the file name and size, for example *Northwind.xlsx saved (48 KB)*.

> **Tip:** the files are named after your database. `Northwind.accdb` gives `Northwind.xlsx`, `Northwind-SharePoint.ps1`, `Northwind-sqlserver.sql` and so on.

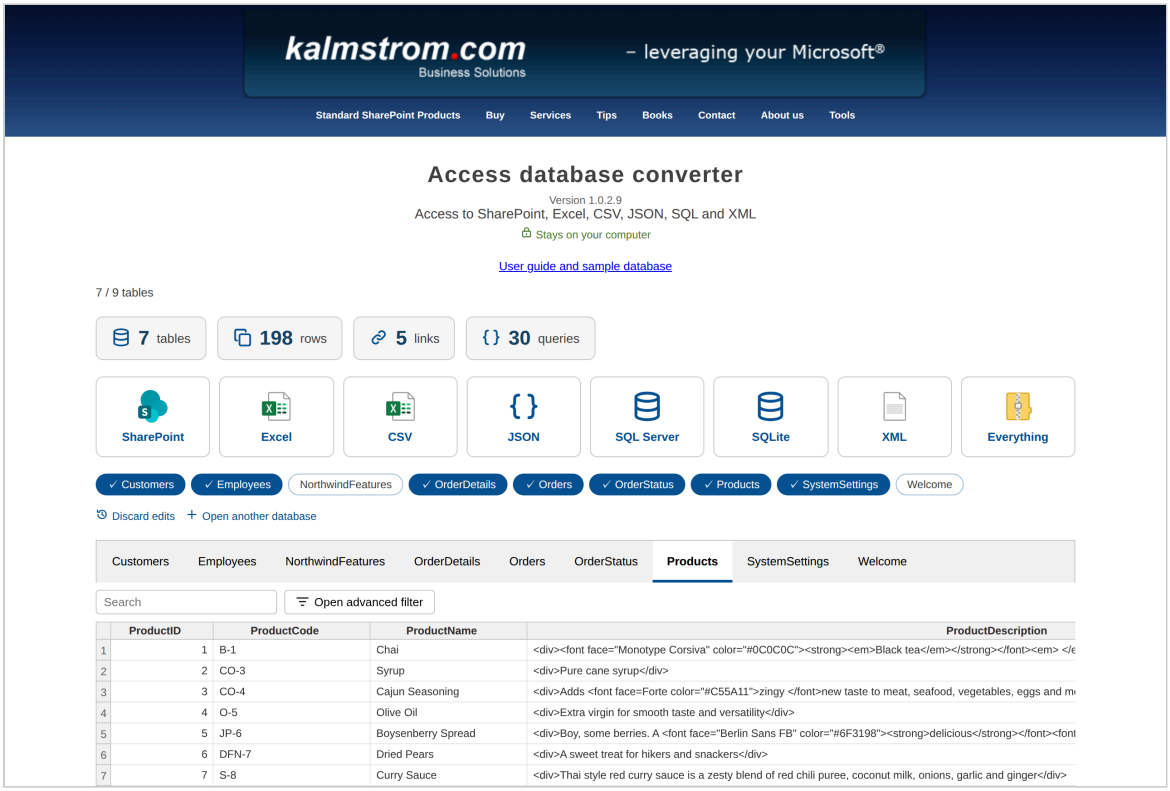
CHAPTER 3

Choose and correct the data

A migration is the right moment to leave old tables behind and to fix wrong values. Access Database Converter lets you do both before you download, without touching the original database.

3.1 Leave tables out

Every table starts ticked. Click a chip to take its table out of all downloads; click it again to put it back. The status line counts what is chosen, for example *7 / 9 tables*. Relationships to a table you leave out are dropped from the outputs.

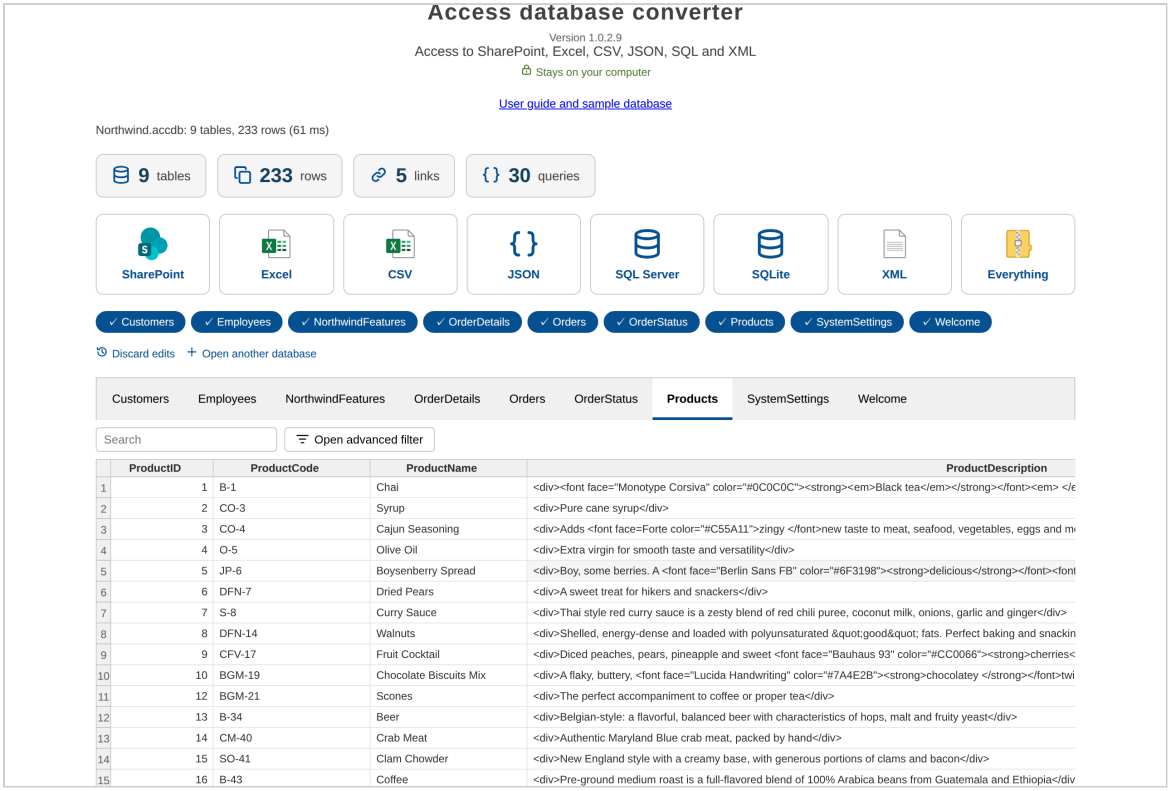


NorthwindFeatures and Welcome are left out; the other seven tables are exported.

Note: with no table chosen, the download tiles are locked and the status line says *No table chosen*.

3.2 Browse a table

Click a tab under the chips to open its table. Type in **Search** to find rows, use **Open advanced filter** to filter by column, and page with **Previous** and **Next**.



	ProductID	ProductCode	ProductName	ProductDescription
1	1	B-1	Chai	Black tea </e
2	2	CO-3	Syrup	Pure cane syrup
3	3	CO-4	Cajun Seasoning	Adds zingy new taste to meat, seafood, vegetables, eggs and m
4	4	O-5	Olive Oil	Extra virgin for smooth taste and versatility
5	5	JP-6	Boysenberry Spread	Boy, some berries. A delicious<font
6	6	DFN-7	Dried Pears	A sweet treat for hikers and snackers
7	7	S-8	Curry Sauce	Thai style red curry sauce is a zesty blend of red chili puree, coconut milk, onions, garlic and ginger
8	8	DFN-14	Walnuts	Shelled, energy-dense and loaded with polyunsaturated "good" fats. Perfect baking and snackin
9	9	CFV-17	Fruit Cocktail	Diced peaches, pears, pineapple and sweet cherries<
10	10	BGM-19	Chocolate Biscuits Mix	A flaky, buttery, chocolatey twi
11	12	BGM-21	Scones	The perfect accompaniment to coffee or proper tea
12	13	B-34	Beer	Belgian-style: a flavorful, balanced beer with characteristics of hops, malt and fruity yeast
13	14	CM-40	Crab Meat	Authentic Maryland Blue crab meat, packed by hand
14	15	SO-41	Clam Chowder	New England style with a creamy base, with generous portions of clams and bacon
15	16	B-43	Coffee	Pre-ground medium roast is a full-flavored blend of 100% Arabica beans from Guatemala and Ethiopia</div

The Products table. Rich-text memo fields show their HTML formatting as text.

3.3 Correct values

1. Click a cell and type the new value, or paste several cells copied from a grid, such as an Excel sheet.
2. Move to another row, another tab or a download. The row is then saved, and the status line says *N edited rows saved in this browser*.
3. Every download from now on carries your corrections.

Column type	How you edit it
Text and memo	Free text
Number, currency	A number. Decimal and 64-bit numbers are edited as text so no digit is lost.
Yes/No	A check box
Date/Time	`yyyy-mm-dd` or `yyyy-mm-dd hh:mm:ss`
AutoNumber, OLE object, binary	Locked

A value that does not fit its column, such as letters in a number column, keeps the old value. Rows cannot be deleted or added here.

3.4 Where your edits are kept

Edits are stored in your browser, linked to the file name and size. Open the same file again later in the same browser and the status line shows *N edited rows restored*. Your original `.accdb` file is never changed.

> **Edits stay in this browser only.** Another computer, another browser or a private window does not see them. Clearing the browser's site data deletes them. Download the result when you are done.

To start over, click **Discard edits** and confirm. The database is read again as it is on disk.

CHAPTER 4

Pick the right download

> Each download tile answers one question: where should this data live next? This chapter shows what each file contains, so you can choose without trying them all.

4.1 Which download for which goal

Your goal	Tile	File
Lists in SharePoint Online	SharePoint	`<name>-SharePoint.ps1`
Data for Excel users, pivot tables	Excel	`<name>.xlsx`
Import into another tool	CSV	`<table>.csv`, or `<name>-csv.zip` for several tables
Web app, Power Automate, scripts	JSON	`<name>.json`
Database on SQL Server or Azure SQL	SQL Server	`<name>-sqlserver.sql`
A single-file database for an app	SQLite	`<name>-sqlite.sql`
Archive, XML-based integration	XML	`<name>.xml`
Keep it all, including attached files	Everything	`<name>-export.zip`

4.2 Excel

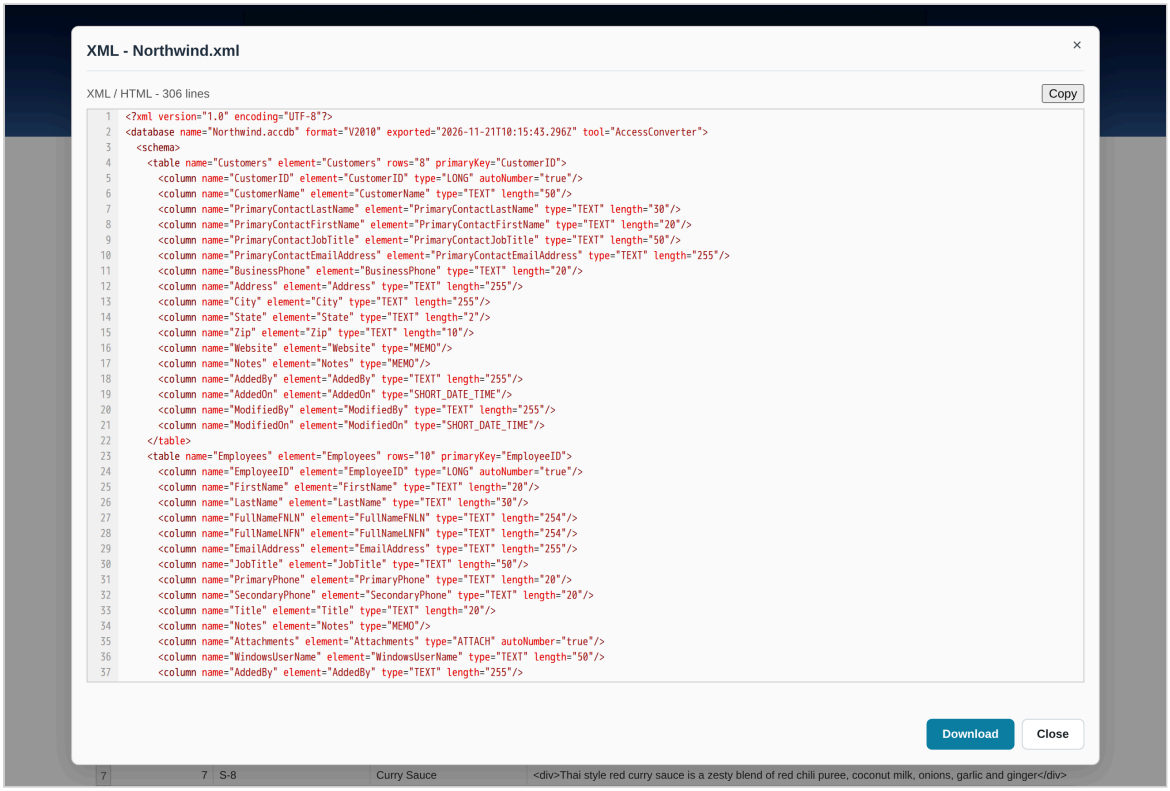
One sheet per table, with the column names in a bold, frozen first row. Numbers, currency and dates are real Excel values, so sorting, filters and formulas work at once. A table larger than Excel's limit of 1,048,576 rows continues on a second sheet named *Table (2)*. Binary values show as *(N bytes)*.

4.3 CSV

One file per table, with a header row of column names. The files are UTF-8 with a byte order mark, so Excel opens accents and characters such as å, ä and ö correctly. With one table chosen you get the `.csv` file itself; with more, a zip of them.

4.4 JSON and XML

Both start with the schema – tables, columns, types, lengths, primary keys, relationships and saved queries – followed by every row. Dates are written as `yyyy-MM-ddTHH:mm:ss`, binary data as base64 and GUIDs as `{...}` text. XML element names follow Access's own XML export.



The XML preview: the schema with column types and relationships, then the rows.

4.5 Everything

One zip with every output for the chosen tables, and the files stored in attachment fields:

```
Northwind-export.zip
  Northwind.xlsx
  Northwind.json
  Northwind.xml
  Northwind-SharePoint.ps1
  Northwind-sqlserver.sql
  Northwind-sqlite.sql
  csv/            one CSV per table
  attachments/    <table>/<row> <column>/<file name>
```

> **Tip:** Everything is the only download that unpacks attachments, such as the employee photos in Northwind, into real files. Use it when the pictures and documents in your database matter.

4.6 The preview

SharePoint, SQL Server, SQLite, JSON and XML open in a preview window first. Read the script before you run it, click **Copy** to paste it somewhere else, or click **Download** to save it. **Close** leaves without saving.

CHAPTER 5

Move the database to SharePoint

> The SharePoint download is a PowerShell script that rebuilds your database as a SharePoint Online site: one list per table, one column per field, lookups for relationships and every row as an item. Your colleagues then work with the data in the browser, in Teams and on their phones – without Access.

5.1 What the script does



Parent lists are created before the lists that look them up. Optional steps in brackets.

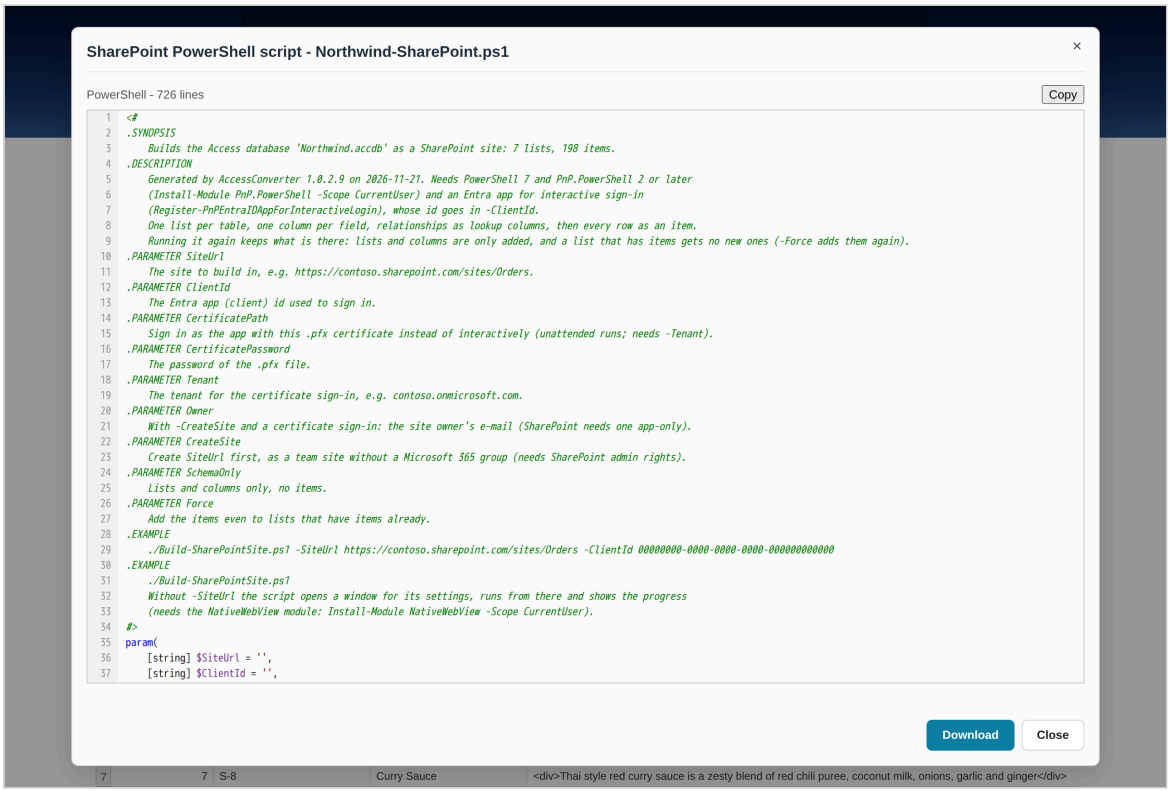
Running the script again is safe: it only adds lists and columns that are missing, and it does not add items to a list that already has items, unless you give `-Force`. If a run stops halfway, run it again and it continues.

5.2 Before you start (once per computer)

1. Install **PowerShell 7** from Microsoft, if you do not have `pwsh` yet.
2. In PowerShell 7, run `Install-Module PnP.PowerShell -Scope CurrentUser`.
3. Register an Entra app for sign-in: `Register-PnPEntraIDAppForInteractiveLogin`. Note the client id it shows. Your tenant administrator may need to approve the app.
4. For the settings window: `Install-Module NativeWebView -Scope CurrentUser`.

5.3 Run the script

1. Click the **SharePoint** tile and then **Download** in the preview.
2. Open PowerShell 7 in the download folder and start the script without parameters: `./Northwind-SharePoint.ps1`. A window asks for the site address and client id, runs the script and shows the progress.
3. Sign in with your Microsoft 365 account when the sign-in page opens.
4. When the script is done, open the site. The new lists are on the left in the site navigation.



The start of the script explains what it builds, how many items it adds and every parameter.

5.4 Parameters

Parameter	Effect
`-SiteUrl`	The site to build in, e.g. `https://contoso.sharepoint.com/sites/Orders`. Without it, the settings window opens.
`-ClientId`	The Entra app id from step 3 in 5.2. Needed together with `-SiteUrl`.
`-CertificatePath`	Signs in as the app with this `.pfx` certificate instead of interactively, for unattended runs. The certificate must be uploaded to the Entra app and the app needs SharePoint application rights.
`-CertificatePassword`	The password of the `.pfx` file, if it has one.
`-Tenant`	The tenant for the certificate sign-in, e.g. `contoso.onmicrosoft.com`. Needed with `-CertificatePath`.
`-CreateSite`	Creates the site first as a team site without a Microsoft 365 group. Needs SharePoint admin rights.
`-SchemaOnly`	Lists and columns only, no items.
`-Force`	Adds the items even to lists that already have items.

```
./Northwind-SharePoint.ps1 -SiteUrl https://contoso.sharepoint.com/sites/Orders -
ClientId <app id> -CreateSite
./Northwind-SharePoint.ps1 -SiteUrl https://contoso.sharepoint.com/sites/Orders -
ClientId <app id>
    -Tenant contoso.onmicrosoft.com -CertificatePath .\app.pfx
```

5.5 How Access fields become SharePoint columns

Access field	SharePoint column
Short Text	Single line of text, same maximum length (at most 255)
Long Text (memo)	Multiple lines of plain text
Number (all sizes), Decimal	Number, with the same decimals
Currency	Currency, two decimals
Date/Time	Date and time
Yes/No	Yes/No
Replication ID (GUID)	Single line of text
Multi-value field	Choice, several selections allowed
Attachment	Multiple lines of text with the file names
Relationship (one column)	Lookup to the parent list
OLE object, binary	Left out; listed in the script's header

Each list's **Title** shows the first short text column, or the key. Column names are kept as display names; the internal names are shortened to safe letters and digits and never clash with SharePoint's own columns.

> **Attached files** are not uploaded to SharePoint; the column lists their names. Get the files themselves from the **Everything** zip (4.5).

> **Dates** are converted with the time zone of the SharePoint site, so 09:00 in Access shows as 09:00 in the list.

CHAPTER 6

Move to SQL Server or SQLite

> When a database has outgrown Access, the SQL downloads move it to a real database server – tables, keys, rules, data and saved queries – in one script you run once.

6.1 What the script contains



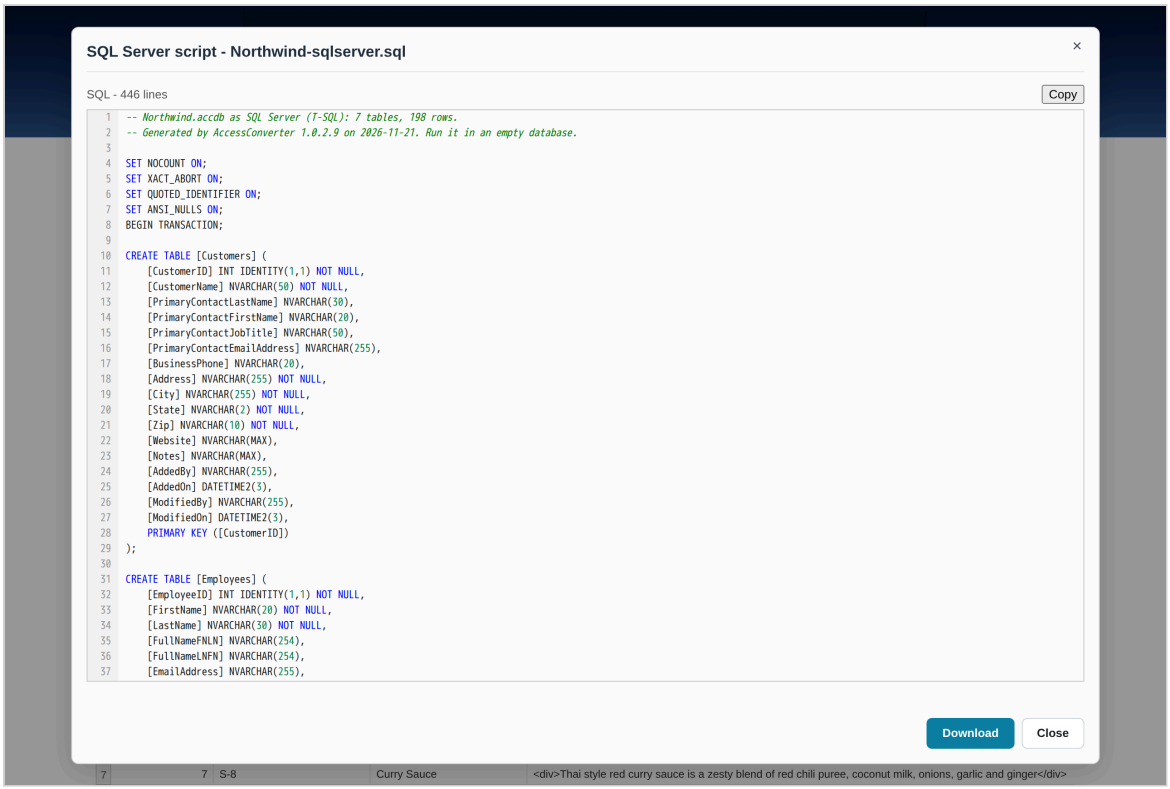
All in one transaction: an error leaves the database as it was.

Access	SQL Server	SQLite
Short Text	`NVARCHAR(n)`	`TEXT`
Long Text, multi-value, attachment names	`NVARCHAR(MAX)`	`TEXT`
Byte, Integer, Long Integer, Large Number	`TINYINT`, `SMALLINT`, `INT`, `BIGINT`	`INTEGER`
Single, Double	`REAL`, `FLOAT`	`REAL`
Currency, Decimal	`MONEY`, `DECIMAL(p,s)`	`NUMERIC`
Date/Time	`DATETIME2(3)`	`TEXT` (ISO date)
Yes/No	`BIT`	`INTEGER`
Replication ID	`UNIQUEIDENTIFIER`	`TEXT`
OLE object, binary	`VARBINARY`	`BLOB`

AutoNumber columns stay identity columns on SQL Server and keep their values, so the relationships still match. Access *Required* becomes `NOT NULL` and simple default values (numbers, text, True/False, `Now()`, `Date()`) become `DEFAULT`.

6.2 Run it on SQL Server

1. Create an empty database, for example in SQL Server Management Studio or on Azure SQL.
2. Open `Northwind-sqlserver.sql` in a query window connected to that database.
3. Run it. The message pane shows no rows-affected noise; it ends after the final `COMMIT`.



The SQL Server script in the preview, before it is downloaded.

6.3 Run it on SQLite

```
sqlite3 Northwind.db < Northwind-sqlite.sql
```

SQLite cannot add a foreign key to an existing table, so the relationships are written inside each `CREATE TABLE`; checking is switched off during the load and on again at the end.

6.4 Saved queries become views

Access Database Converter rebuilds the SQL of every saved query, as Access shows it in SQL view. Select queries become `CREATE VIEW`, each after the queries it reads. Text in double quotes becomes single-quoted, `DISTINCTROW` becomes `DISTINCT`, and on SQLite `TOP n` becomes `LIMIT n`.

> **Moved manually:** action queries (update, append, delete, make-table), crosstab, union, pass-through and DDL queries, and queries that read a table you left out, are written as comments with their Access SQL.
>
> Queries that use Access functions such as `Year`, `Format` or form references (`[Forms]![...]`) need a person too. The SQL Server script recognises them and keeps them as comments, so it always runs through; in Northwind 17 of 30 queries become views. SQLite creates such views anyway, and they fail when they are read (6 of 23 in Northwind).

CHAPTER 7

What is converted, and what is not

> Access Database Converter moves the data and its structure. Knowing the limits up front saves a surprise after the migration.

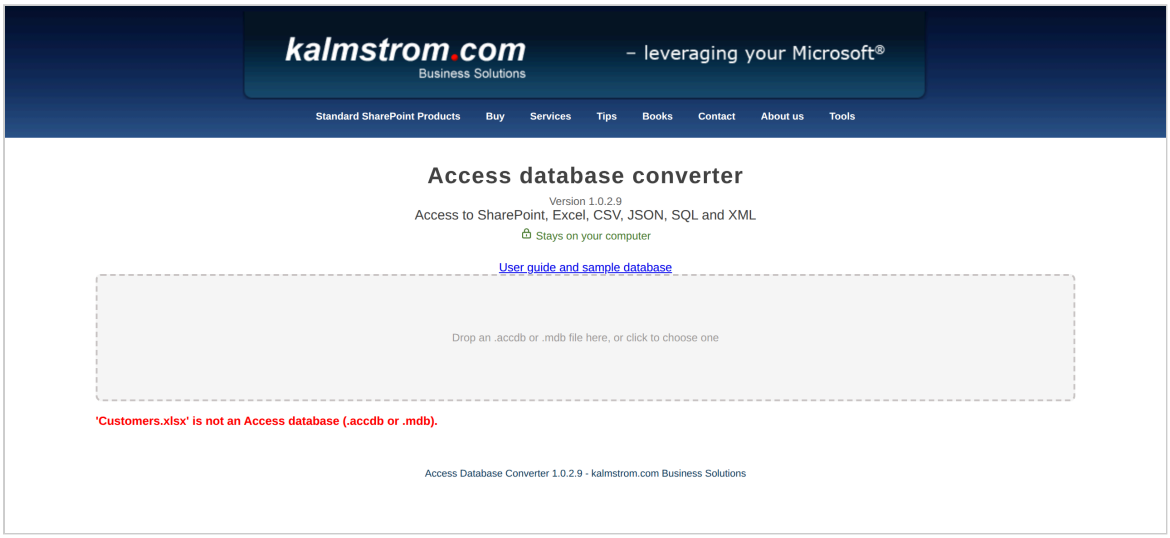
Part of the database	Result
Tables, columns, rows	CONVERTED every output
Primary keys, unique indexes	CONVERTED SQL; key and type listed in JSON and XML
Relationships	CONVERTED lookups in SharePoint, foreign keys in SQL
Required, default values	CONVERTED SQL scripts
Saved select queries	CONVERTED views in SQL; SQL text in JSON and XML
Multi-value fields	CONVERTED items as *a; b*; choice column in SharePoint
Attachment fields	PARTLY files in the Everything zip; names elsewhere
Action and other queries	PARTLY kept as comments (6.4)
OLE objects	PARTLY raw bytes in SQL, JSON and XML; left out in SharePoint
Linked tables	SKIPPED their data is in another file
Version history of append-only memos	SKIPPED
Forms, reports, macros, VBA modules	SKIPPED
Access 97 and older, password-protected files	NOT OPENED see chapter 8

> **Unreadable tables.** If one table is damaged, the others are still converted. The overview then shows *N tables unreadable*; point at it to see which tables and why.

CHAPTER 8

Troubleshooting

> Every message Access Database Converter shows appears in the status line under the drop box or above the tiles. Find the message below for its cause and what to do.



Errors are shown in red in the status line.

Message or problem	Cause and next step
'x' is not an Access database (.accdb or .mdb)	The file has another extension. Choose the Access database file; for an Excel file you need no converter.
'x' is larger than 512 MB	Compact the database in Access (**File >Info >Compact & Repair**), or split it into two files.
... it is an Access 97 (or older) database	Open it in Access and save it as `.accdb`, then try again.
... it is password protected or encrypted	Remove the password in Access: **File >Info >Decrypt Database**.
... it is not an Access database, or it is damaged	Run **Compact & Repair** in Access, or try a backup copy.

Message or problem	Cause and next step
No tables with data	The file holds only forms, reports or linked tables. Convert the back-end file that holds the tables instead.
N linked tables skipped	Those tables live in another file. Open that file too.
No table chosen, tiles greyed out	Click at least one table chip.
This browser cannot write zip files	Excel, CSV and Everything need a current Edge, Chrome, Firefox or Safari.
My edits are gone	They are kept per browser and file. Use the same browser, not a private window, and the same unchanged file (3.4).
The script says *Run this script in PowerShell 7*	Start it from `pwsh`, not Windows PowerShell 5.1.
The script says *Install PnP.PowerShell first*	Run the steps in 5.2.
Sign-in fails in the script	Check the client id and that the Entra app is approved in your tenant.
A query is missing on SQL Server, or a view fails on SQLite	The query uses an Access function or a form reference. Translate it manually from the comment in the script (6.4).

CHAPTER 9

Quick reference and glossary

9.1 From Access file to download

1. Open **access.kalmstrom.com** and drop the file.
2. Click chips to leave tables out.
3. Correct values in the table tabs, if needed.
4. Click a download tile; for a preview, click **Download**.

9.2 Glossary

Term	Meaning
Attachment field	An Access column that stores files, such as photos, inside the database.
AutoNumber	A number Access gives each new row automatically; usually the primary key.
Chip	The rounded table button over the tabs; on means the table is in the downloads.
Entra app	A registration in Microsoft Entra ID that lets the SharePoint script sign you in.
Linked table	A table whose data lives in another Access file or on a server.
Lookup column	A SharePoint column that points to an item in another list; made from a relationship.
Multi-value field	An Access column that holds several choices in one cell.
PnP.PowerShell	The free PowerShell module the SharePoint script uses to talk to SharePoint.
Primary key	The column that identifies each row of a table.
Relationship	A link from a column in one table to the key of another, e.g. Orders to Customers.
View	A saved query in SQL Server or SQLite; made from an Access select query.

> **Try it with Northwind.** The pictures in this guide use Microsoft's Northwind sample database: 9 tables, 233 rows, 5 relationships, 30 saved queries and employee photos.