

## Assignment 4

### Task 1: Encrypt a Column

1. Using the SSMS GUI, configure the **phone** row of the **salesapp1.Sales.Customers** table to be encrypted using Always Encrypted.
2. Run a SELECT statement against the **salesapp1.Sales.Customers** table to view the encrypted data.

The screenshot displays the Microsoft SQL Server Enterprise Manager (SSMS) interface. The left pane shows the 'Object Explorer' with the 'Sales.Customers' table selected under the 'Sales' database. The right pane shows the 'SQL Query1.sql' window with the query `select * from sales.customers` and the 'Results' window showing the query output.

**Columns in 'Sales.Customers' table:**

- custid (PK, int, not null)
- companyname (nvarchar(40), not null)
- contactname (nvarchar(30), not null)
- contacttitle (nvarchar(30), not null)
- address (nvarchar(60), not null)
- city (nvarchar(15), null)
- region (nvarchar(15), null)
- postalcode (nvarchar(10), null)
- country (nvarchar(15), not null)
- phone (nvarchar(24), null)
- fax (nvarchar(24), null)

**Query Results:**

custid	companyname	contactname	contacttitle	address	city	region	postalcode	country	phone
1	Customer NR2B8	Allen, Michael	Sales Representative	Öbere Str. 0123	Berlin	NULL	10092	Germany	06111FD44B4D9604E88BD
2	Customer MLTDN	Hassall, Mark	Owner	Avda. de la Constitución 5678	México D.F.	NULL	10077	Mexico	061773195DFDAA3978E21E1
3	Customer KBUDE	Peoples, John	Owner	Mataderos 7890	México D.F.	NULL	10097	Mexico	0618D91184C829B5948AE1
4	Customer HFBZG	Arndt, Torsten	Sales Representative	7890 Hanover Sq.	London	NULL	10046	UK	0613C011CEBE05281385D51
5	Customer HGVIZ	Higginbotham, Tom	Order Administrator	Berguvsvägen 5678	Luleå	NULL	10112	Sweden	061F9F13EB882945F204C1
6	Customer YHCV	Poland, Carole	Sales Representative	Forsterstr. 7890	Mannheim	NULL	10117	Germany	061CD0588B467647A946E1
7	Customer QVLA	Bansal, Dhrutyan	Marketing Manager	2345, place Kléber	Strasbourg	NULL	10089	France	0619A40C08B386E10C19F2
8	Customer GUHvH	Ilyes, Julia	Owner	C/ Araquil, 0123	Madrid	NULL	10104	Spain	0616763E48CBED8469047
9	Customer RTXGC	Raghav, Amitanish	Owner	6789, rue des Bouchers	Marseille	NULL	10105	France	061C11ED3178D6554587F7
10	Customer EELAV	Bassoli, Pile Col.	Accounting Manager	8901 Tsawassen Blvd.	Tsawassen	BC	10111	Canada	06107736161544F6C22A25E
11	Customer UBAUJ	Jaffe, David	Sales Representative	Fountainry Circus 4567	London	NULL	10064	UK	0611D06175D632C3D48E3
12	Customer PSNMQ	Ray, Mike	Sales Agent	Cerro 3456	Buenos Aires	NULL	10057	Argentina	06196336CE38FA896A03C1
13	Customer VMLDG	Berito, Almudena	Marketing Manager	Sieras de Granada 7890	México D.F.	NULL	10056	Mexico	0612452D2782C3711576F
14	Customer VNMFA	Jelitto, Jackie	Owner	Hauptstr. 0123	Bern	NULL	10065	Switzerland	061A62400DE35A071653D1
15	Customer JLVWQ	Richardson, Shawn	Sales Associate	Av. dos Lusitânes 6789	Sao Paulo	SP	10087	Brazil	061797DA87E62431233A31
16	Customer GYBSY	Biskby, Dana	Sales Representative	Bekeley Gardens 0123 Bre...	London	NULL	10039	UK	061946C17683E309D0C243

1. Using the SQL Server Management Studio (SSMS) GUI, create a server audit with the following

properties:

- o **Name:** activity\_audit
- o **Queue delay:** 1000 ms
- o **On failure:** continue
- o **Target:** file
- o **Target file path:** D:\Labfiles\Lab04\Starter\Audit

2. Enable the server audit you have created.

