Richard Swinbank

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Innovative, business-focused DW/BI Consultant with proven, in-depth Data Warehousing and Business Intelligence skills and experience.

Key skills

- Microsoft SQL Server product stack
- Expert T-SQL for queries, analysis, administration and process engineering
- Configuration-driven dynamic T-SQL
- SSIS (including BIML & BimlScript), SSRS, SSAS
- C# (including SQL CLR assemblies, SSIS script tasks/components, BimlScript), Java
- Requirements-driven data modelling and warehouse development, Kimball methodology
- Effective communicator, able to convey complex technical issues to a range of audiences
- Articulate technical author, able to write proposals, designs, developer and user guides
- Data-driven, analytical problem solver
- Active member of Microsoft Data Platform community; speaker, helper; abreast of latest developments in Azure services & Power BI

Achievements

- Designed multi-tenant data warehouse platform, allowing client to process multiple customers' data in a single instance, reducing administration overhead and cost to customer.
- Wrote T-SQL to dynamically generate stored procedures to extract data over linked servers, reducing development time while ensuring consistency and correctness of deployed code.
- Enabled end-user master data management using Master Data Services (MDS) integrated into ETL.
- Built configurable master data management framework in T-SQL, allowing multiple source systems to be integrated into operational data store using shared data dictionary in the absence of MDS.
- Re-engineered existing data warehouse ETL in situ, replacing old corporate system sources with new ones while allowing valuable reporting assets to remain in use.
- Author of Sprockit (http://sprockit.info) – a free, open-source ETL process controller built in pure T-SQL that reduces end-to-end ETL runtime and accelerates resume after error.
- Built C# application to enable point-and-click developer exploration of large ETL pipelines.
- Built metadata-driven C# data loading application for high-complexity ETL process, eliminating need for further development as source system evolves.
- Built C# application to generate browsable data model documentation and ER diagrams.
- Wrapped API endpoint access in SSIS script source components, integrating API-driven extracts into SQL Server tool stack.
- Used advanced SSRS techniques to provide read-only view of legacy OLTP system database, allowing front-end application to be withdrawn, eliminating license costs.
- Developed data models for complex operational processes in consultation with non-technical domain experts, ensuring that business concepts are represented intuitively and meaningfully.
- Developed low-cost change control approaches to meet specific requirements of DW/BI solutions.

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Experience

January 2018 – present (three renewals)
Data Warehouse Developer – Dyson Ltd

Stabilisation and operationalisation of SQL Server 2016 data warehouse platform.

- Refactored many SSIS & TSQL ETL components, reducing nightly processing time by 60%
- Extended data warehouse model to keep pace with fast-evolving reporting requirements
- Integrated source system data using CSOM (SharePoint) and REST APIs using SSIS script sources and JSON shredding
- Streamlined DW integration by calling Tableau extracts directly from ETL via REST API
- Implemented tooling for routine ETL monitoring and management
- Instituted robust, well-documented deployment pipeline and change control processes

November 2017 – January 2018
DW/BI Consultant – Counter Intelligence Retail

Reimplementation and automation of SQL Server 2016 sales reporting platform to release analyst and developer time, permit integration with corporate master data and facilitate report suite redevelopment.

- Abstracted complex legacy reporting model into simplified star schema
- Prepared model for replacement of legacy dimensions with corporately-managed master data
- Automated data integration from a variety of source system Excel and flat file outputs using SSIS, saving 5+ analyst days per month
- Populated new model from historical data (T-SQL) and new sources (SSIS), demonstrating consistency with existing report outputs and ensuring continued availability of legacy BI assets

August 2016 – August 2017 (one renewal)
Data Warehouse Consultant – North Staffordshire Combined Healthcare NHS Trust

Integration of data from new Lorenzo patient system into existing SQL Server warehouse platform, enabling seamless reporting across source systems and retention of value in existing reporting assets.

- Built SSIS packages for flat file ETL
- Designed and built ETL metadata repository using SSIS to sync supplier metadata
- Used BimlScript to generate 850 SSIS packages to standard ETL pattern from metadata
- Automated T-SQL build of staging objects from metadata, supporting schema upgrades in-situ
- Implemented metadata-driven ETL application in C#
- Built searchable end-user view of historical system data using SSRS and legacy Oracle back end
- Developed master patient record in operational data store, automatically combining records from different sources

March 2015 – July 2016 (three renewals)
ETL Developer – Staffordshire & Shropshire Health Informatics Service

Incorporation of new acute hospital tenant into multi-tenant SQL Server warehouse platform.

- Acquired and refined reporting requirements from known NHS data sets and by liaising with customer stakeholders from a variety of professional backgrounds (technical, clinical, non-clinical)
- Augmented warehouse data model to represent additional business activities
- Integrated data from numerous source systems in a variety of technologies (SQL Server, PostgreSQL, SQLBase, mixed-type CSV files) using T-SQL & SSIS
- Designed integration transformations from a variety of source systems and data models
- Implemented library of CLR functions and stored procedures to perform specialised tasks in C# (e.g. INSERT/EXEC nesting, regular expression matching, inline transformation to 1NF)

October 2014 – March 2015 (one renewal)
BI Developer – Birmingham & Solihull Mental Health NHS Foundation Trust

Implementation and extension of new SQL Server reporting data model.

- Refined initial specifications for warehouse data model
- Revised and extended T-SQL & SSIS staging tools to gather data for evolving reporting requirements
- Refactored existing dynamic T-SQL libraries to increase extensibility and provide debugging utilities
- Ensured consistency of results reported from SQL Server databases and SSAS cubes
- Restructured and parallelised overnight warehouse update, reducing running time by 4-5 hours
- Built reporting objects for mental health and diagnosis information extracted from RiO
- Built reporting objects for IAPT data extracted from IAPTus, including KPI validation

May 2013 – September 2014 (six renewals)
Data Warehouse Developer – Staffordshire & Shropshire Health Informatics Service

Architected and developed shared, multi-tenant SQL Server data warehouse platform hosted by a shared service for the use of multiple customer organisations.

- Designed and implemented warehouse data model
- Collaborated with wide range of customer staff in technical and project management contexts
- Designed architecture to integrate data from heterogeneous source systems, transform it into a reporting-optimised master data model and distribute it to customer-specific reporting instances
- Automated generation of change-based extract interfaces for rapid integration (dynamic T-SQL)
- Built T-SQL framework to map multi-source reference data into single master data dictionary
- Protected essential configuration information using FK & check constraints, triggers
- Surfaced platform monitoring and management data in detailed SSRS dashboards
- Documented technical designs, specifications, manuals, project proposals and updates
- Introduced change control process, scripted deployments

Education

PhD, Computer Science
Virtual forced splitting in multidimensional access methods (http://etheses.bham.ac.uk/213/)
University of Birmingham

MSc, Computer Science
Distinction; placed first in year
University of Birmingham