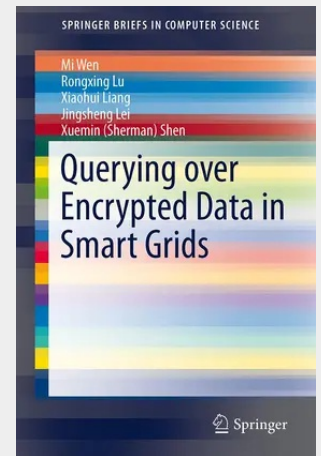


Querying over Encrypted Data in Smart Grids

This SpringerBrief presents the concept of the smart grid architecture and investigates the security issues of the smart grid and the existing encrypted data query techniques. Unique characteristics of smart grid impose distinguished challenges on this investigation, such as multidimensional attributes in metering data and finer grained query on each dimension. Three kinds of queries are introduced, namely, equality query, conjunctive query and range query. For the equality query over encrypted metering data, an efficient searchable encryption scheme is introduced and can be applied for auction in emerging smart grid marketing. Later chapters examine the conjunctive query and range query over encrypted data. Different techniques are used, including the Public key Encryption with Keyword Search (PEKS) and Hidden Vector Encryption (HVE), to construct the comparison predicate and range query predicate. Their correctness is demonstrated in the book. Concise and practical, Encrypted Data Querying in Smart Grids is valuable for professionals and researchers involved in data privacy or encryption. It is also useful for graduate students interested in smart grid and related technologies.

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