

INFO-F-??? - Conference Report 1

Atos Wordline

Université Libre de Bruxelles

Hakim Boulahya

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1 Introduction

During the conference of 28 March, Cedric Meuter talk about his activity in Atos Worldline company. The subject of the conference was the use of cryptographic technology within cashless banking payment.

In this paper, we will propose a summary of the content of the conference. We will first describe fundamentals of security. Then we will propose a description of the important cryptographic protocol uses in the domain. Then an important part of the job in banking is to handle the keys used during the communication of the devices during a payment, we will then describe the key management. Finally we will propose some interesting details about engineering in security.

2 Fundamentals of security

It is important for a company to analyse the risk of the infrastructure deployed. Two important questions must be asked for (1) How likely an attacker will try to compromise you and acquire your data (2) What's the impact of the compromise of your data. A good example of an attack that highlights the importance of such risk analysis is the Sony Playstation Network Attack [Rai12]. Sony acknowledge that personal informations were stolen, including credit cards number. There are three important fundamentals of security: (1) Confidentiality (2) Integrity (3) Authenticity.

3 Cryptographic protocols

The Payment Card Industry (PCI) must rely on standard to make sure that the transactions follow the fundamentals of security. Those standards used by the PCI are defined by different institution, such as NIST, FIPS or ANSI. An important protocol used in terminal payment is the DUKPT protocol defined in [?].

DUKPT DUKPT or Derived Unique Key Per Transaction, is at it's named says to generate a unique key per transaction. The goal of such a protocol, if a single transaction is compromised, it will not compromised the all infrastructure. To do so, it is necessary to have a centralized server, usually a HSM (we discuss in more details HSM in section ??).

References

- [Rai12] Costin Raiu. Cyber-threat evolution: the past year. *Computer Fraud & Security*, 2012(3):5–8, March 2012.