DataPower

Common Applications

Alan Philpott & Dan Mudge

4th March 2008

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Introduction

Presenters

Who are we?

- Alan Philpott
  - Senior Developer
- Dan Mudge
  - Lead Consultant

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Introduction

Common Applications of DataPower Presentation Structure

- Introduction
  - DataPower and Smart421
- Part 1: DataPower Overview
- Part 2: Common Usage Scenarios

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Introduction

DataPower & Smart421

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Introduction

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Who are we?

- IBM Premier/Tier One Partner
- Official IBM DataPower Reseller
- Solution Integrator (Insurance, Utilities, Telco.)

AVIVA e·on O2

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Services

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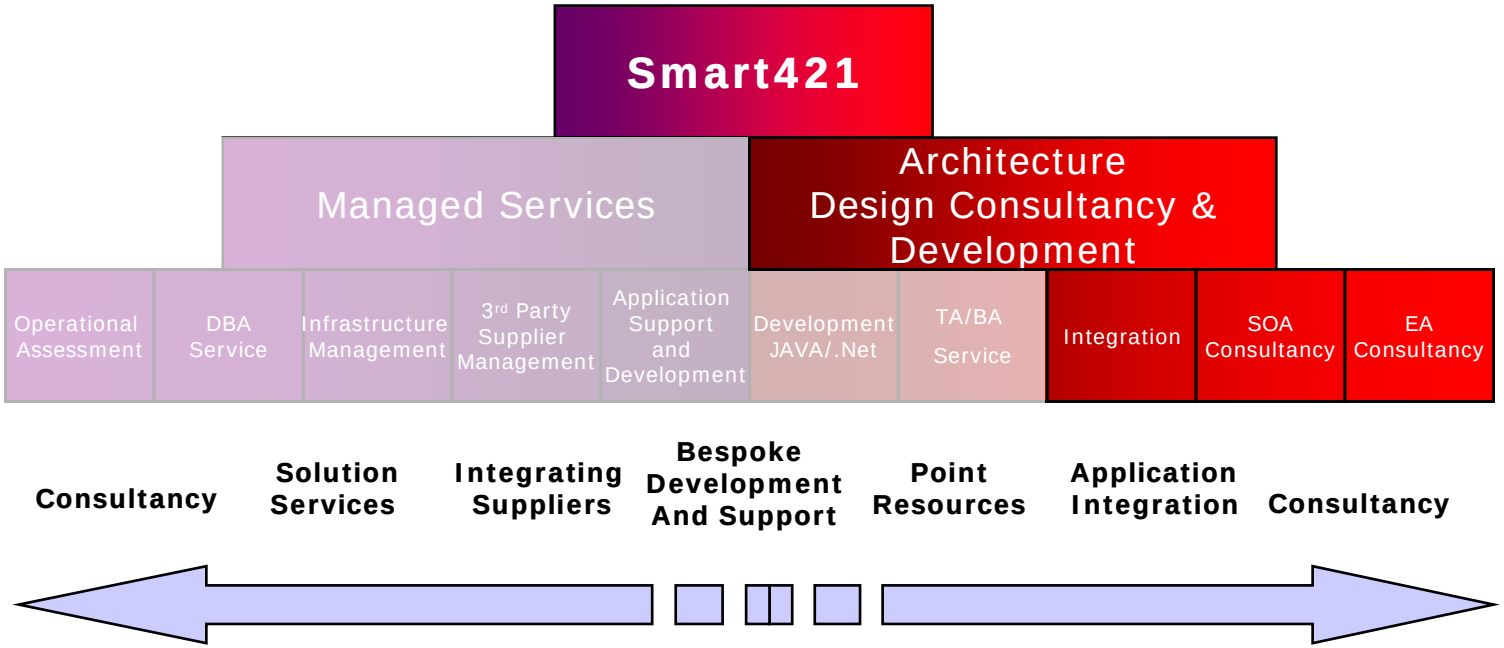
Who are we?



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Part One

DataPower Overview

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Introduction

SOA Appliance

What is it?

- U1 Rack-mountable network device
- Purpose built to perform common SOA functions
- Service / Application Security and Integration
  - Industry Standard Security and Transport Support

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Overview

Available Models

DataPower comes in three flavours, each one building on the feature set of the one before.

XML Accelerator XA35

XML Security Gateway XS40

Integration Appliance XI50

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Overview

XML Accelerator XA35

Feature Overview

A Subset…

- XML Parsing Acceleration
- XML Transformation Acceleration
- SSL Acceleration
- Schema Validation

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Overview

XML Security Gateway XS40

Feature Overview

Everything from the slide before plu

- XML Firewall
  - Message Routing
- Threat Protection
  - Denial Of Service, SQL Injec
- Message and Field Level S
  - Encryption, Decryption and
- Authentication, Authorisat
  - LDAP, WS-Security, SAML, S

Billion Laughs XML

```
<?xml version="1.0"?>
<!DOCTYPE billion [
<!ELEMENT billion (#PCDATA)>
<!ENTITY laugh0 "ha">
<!ENTITY laugh1 "&laugh0;&laugh0;">
<!ENTITY laugh2 "&laugh1;&laugh1;">
<!ENTITY laugh3 "&laugh2;&laugh2;">
….more entities here …
<!ENTITY laugh24 "&laugh23;&laugh23;">
<!ENTITY laugh25 "&laugh24;&laugh24;">
<!ENTITY laugh26 "&laugh25;&laugh25;">
<!ENTITY laugh27 "&laugh26;&laugh26;">
<!ENTITY laugh28 "&laugh27;&laugh27;">
<!ENTITY laugh29 "&laugh28;&laugh28;">
<!ENTITY laugh30 "&laugh29;&laugh29;">
]>
<billion>&laugh30;</billion>
```


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Overview

Integration Appliance XI50

Feature Overview

Everything from the slide before plus…

- Protocol Bridging
  - HTTP, HTTPS, MQ, JMS etc.
- Multi-Protocol Gateway
- Transformation between XML & Non-XML Formats

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Summary

Overview Conclusion

Key DataPower Features

- Acceleration
  - Dedicated processing for typical XML processing
- Security
  - Support for an extensive list of security methods
- Integration
  - Protocol Bridging, Multiples Protocols
- Standards!

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Part Two

Common Usage Scenarios

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Scenarios

Common Usage Scenarios

- Scenario 1: Web Service Proxy
- Scenario 2: Legacy Integration
- Scenario 3: Securing Web Applications

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Scenario One

Web Service Proxy

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Scenario One: Web Service Proxy

Problem

- Web Service Exposed to XM
  - Denial of Service Attack ,Dict
- Unsecured Web Services
  - User and / or role based acce
- Service Level Agreements
  - Bronze, Silver and Gold subscription levels

Protect Backend Servers from excessive load.

Reuse Infrastructure for all service consumers.

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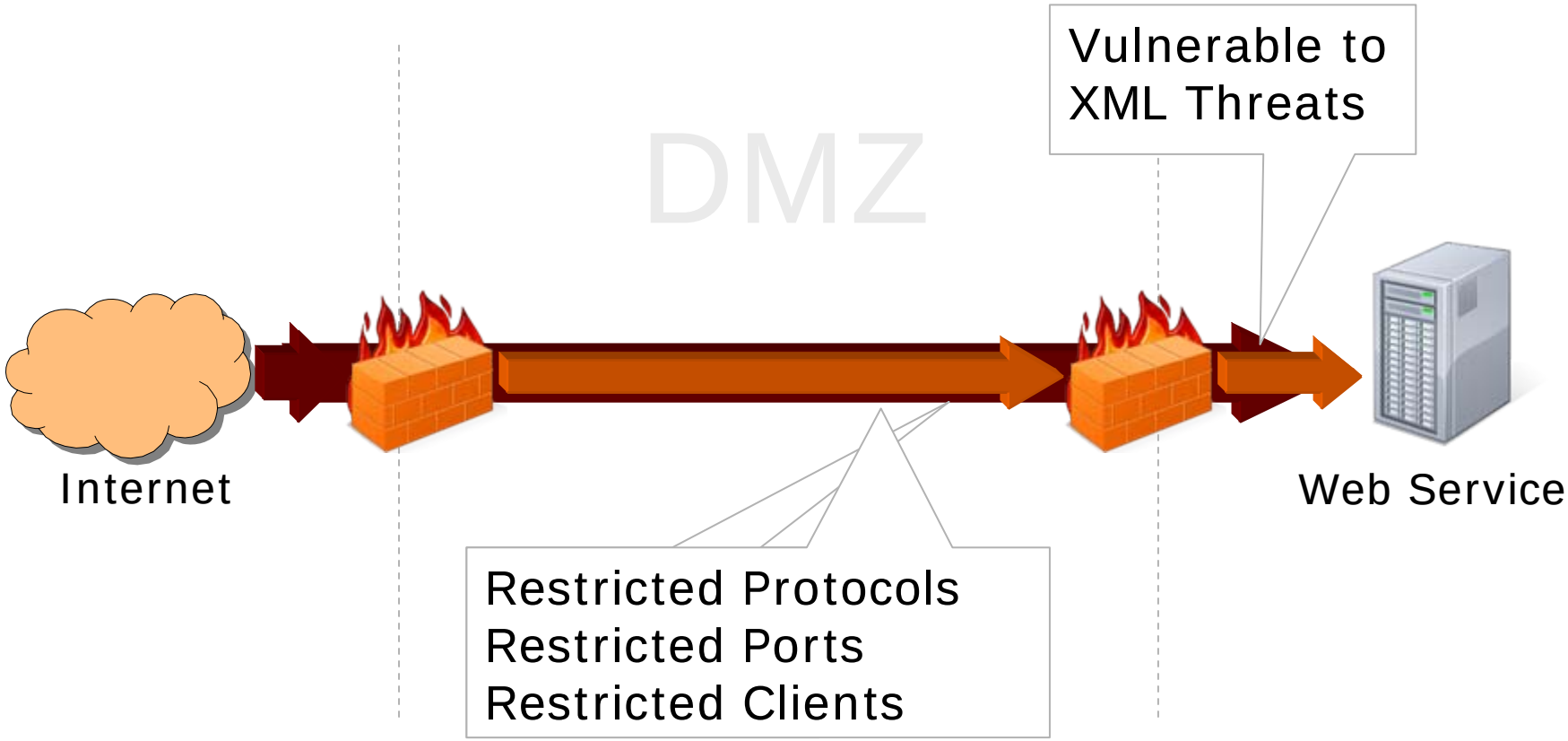
Scenario One: Web Service Proxy



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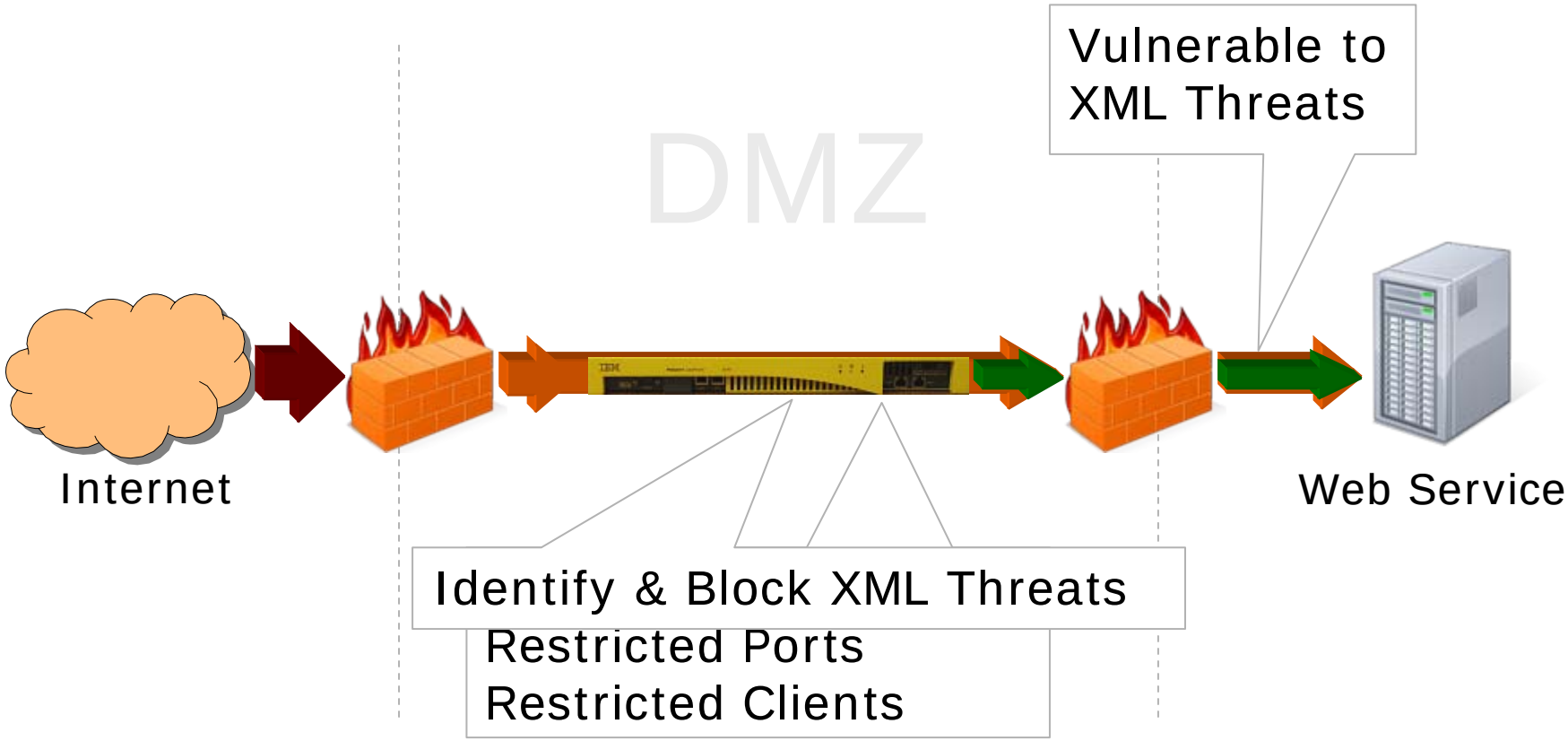
Scenario One: Web Service Proxy



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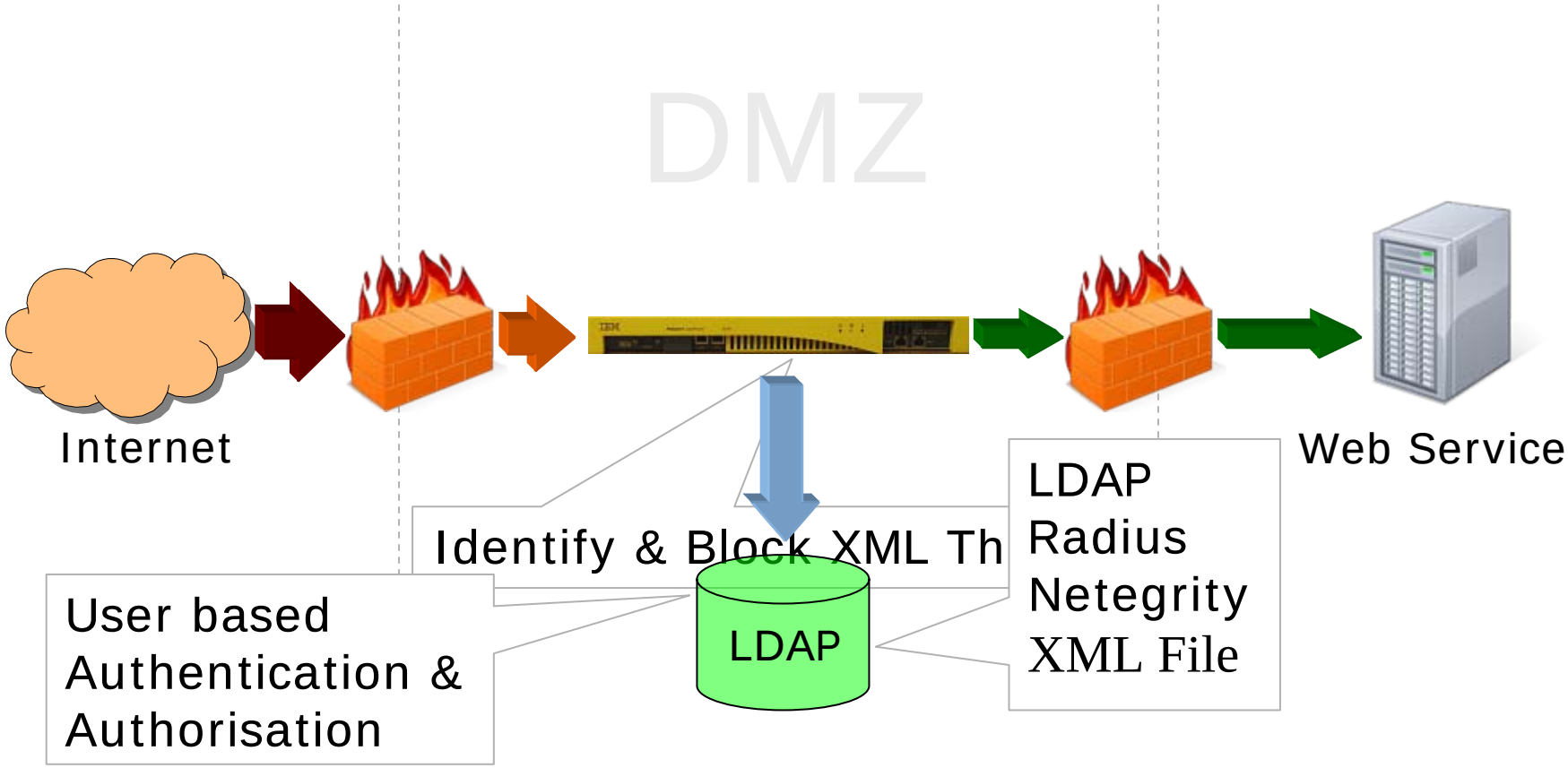
Scenario One: Web Service Proxy



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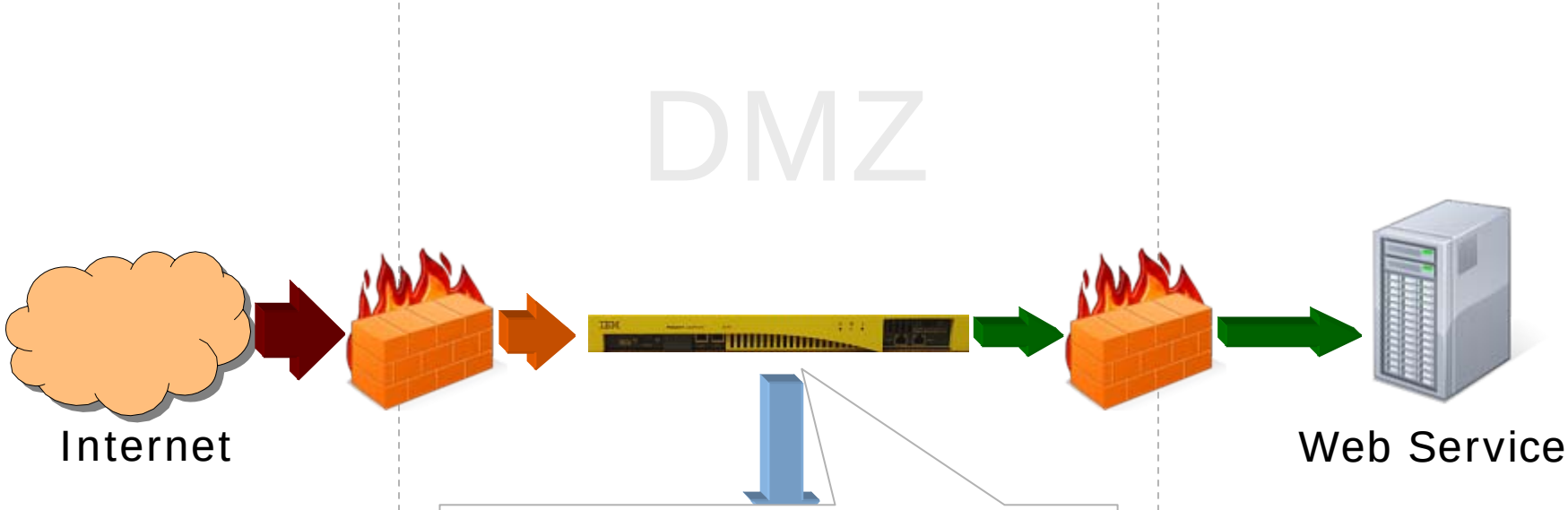
Scenario One: Web Service Proxy



User based
Authentication &
Authorisation

SLA

Bronze: <=5 per minute
Silver: <=10 per minute
Gold: unlimited

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Scenario One: Web Service Proxy

Solution

- XML Threats Rejected by XML Firewall
- Web Service Secured using Industry Standards
- SLAs Enforced using Traffic Shaping and Throttling

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Scenario Two

Legacy Integration

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Scenario Two: Legacy Integration

Problem

- Legacy Applications to be Exposed as Services via an ESB
  - Legacy Applications only able to expose MQ interface
- Services to be called using Multiple Protocols
  - Services called asynchronously and synchronously
- Proprietary Message Format Conversion
  - Legacy Applications use proprietary non-XML message formats

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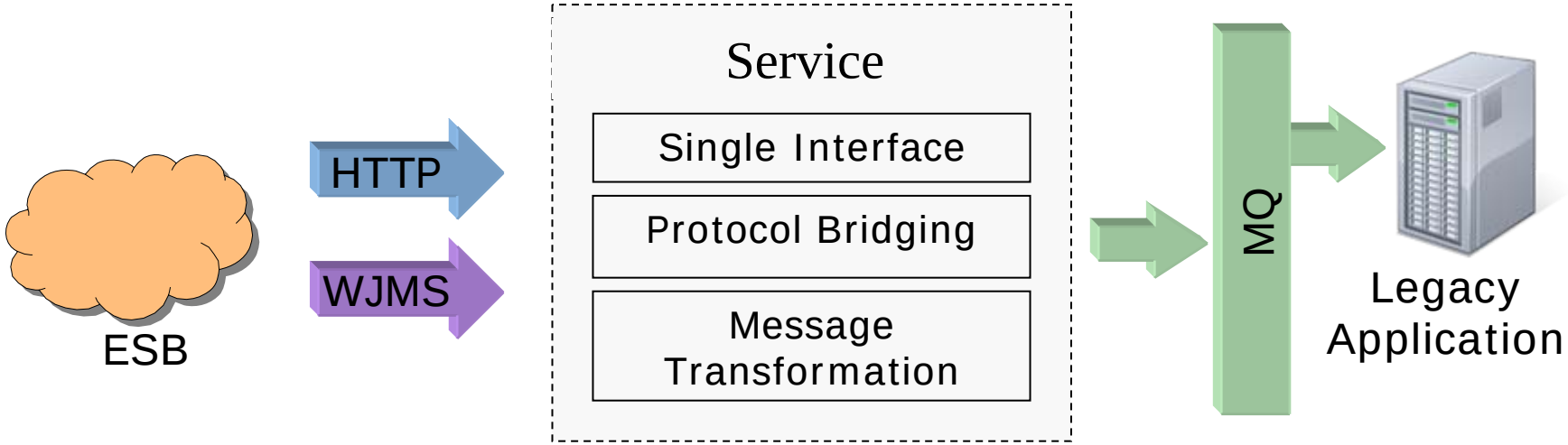
Scenario Two: Legacy Integration



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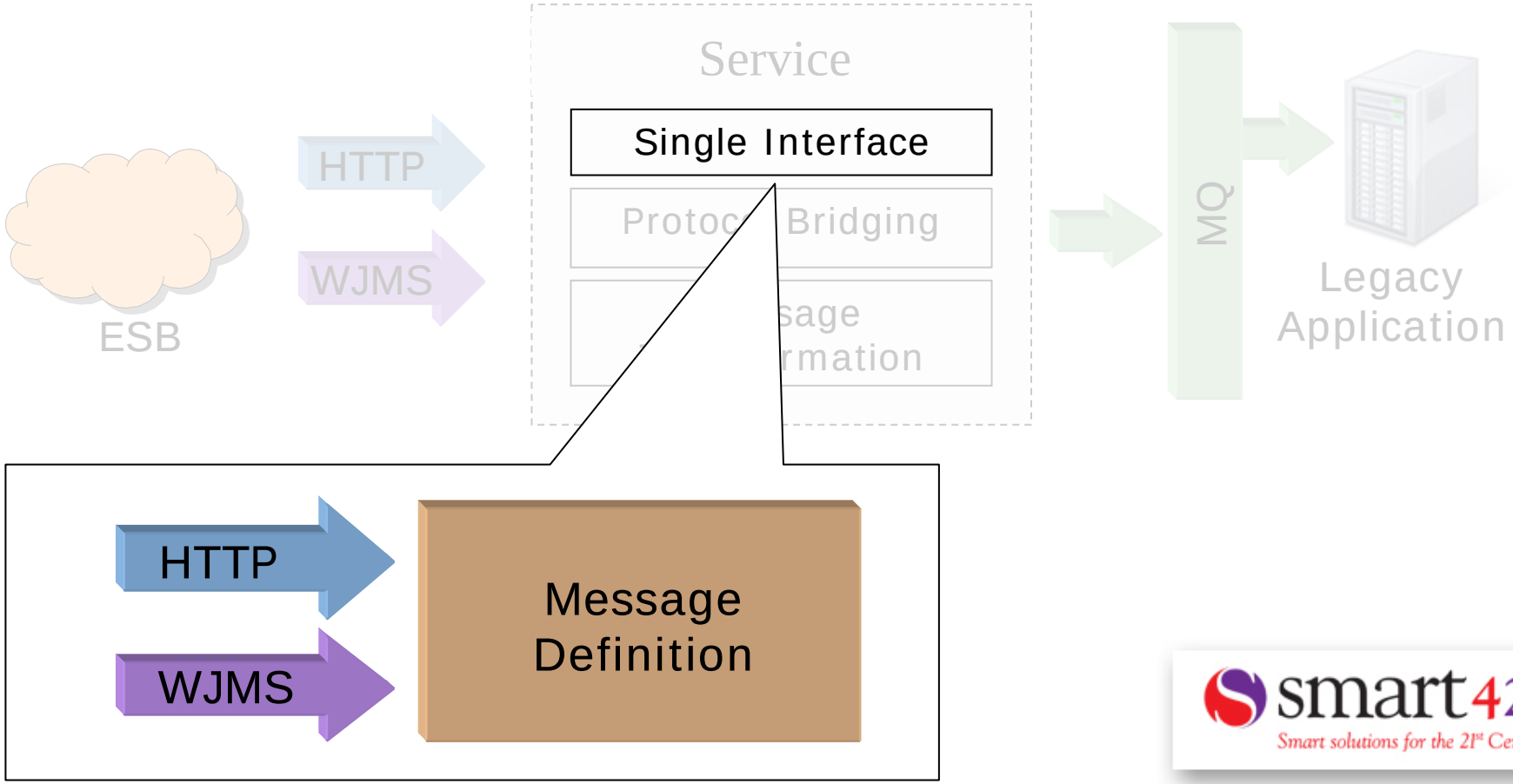
Scenario Two: Legacy Integration



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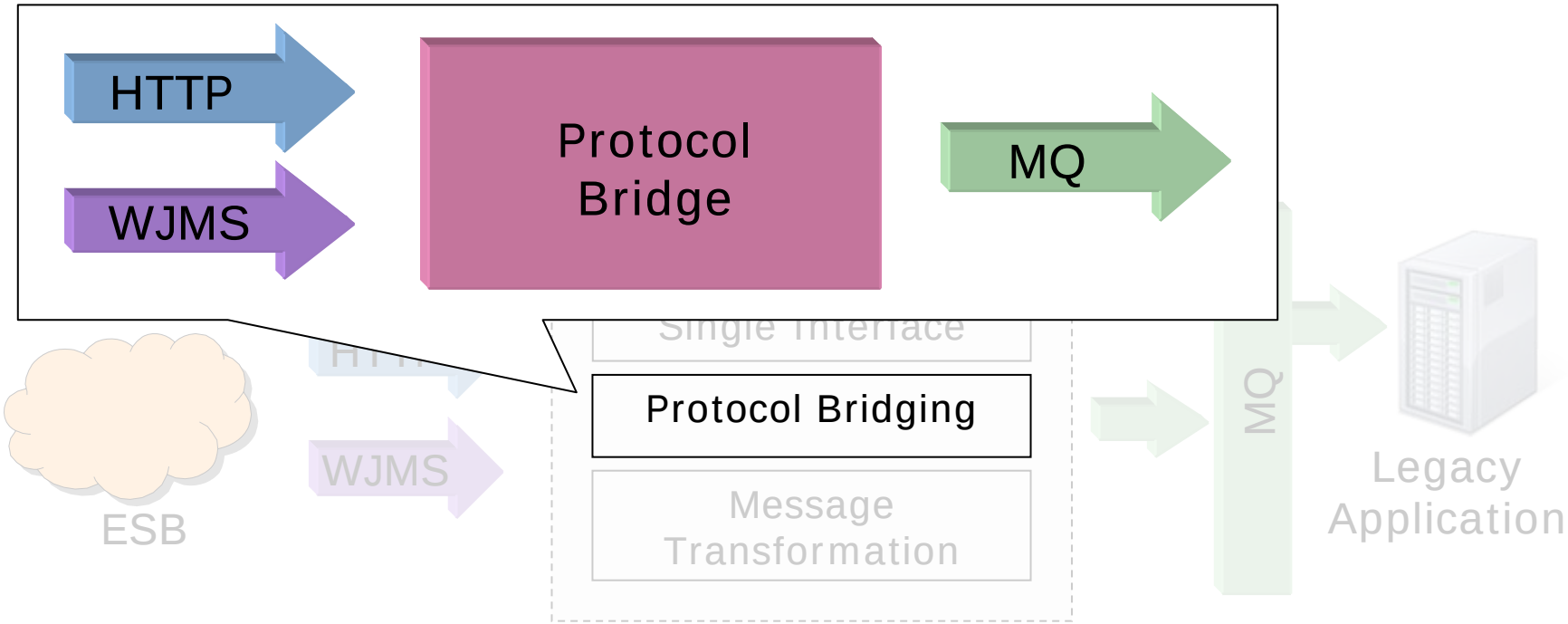
Scenario Two: Legacy Integration



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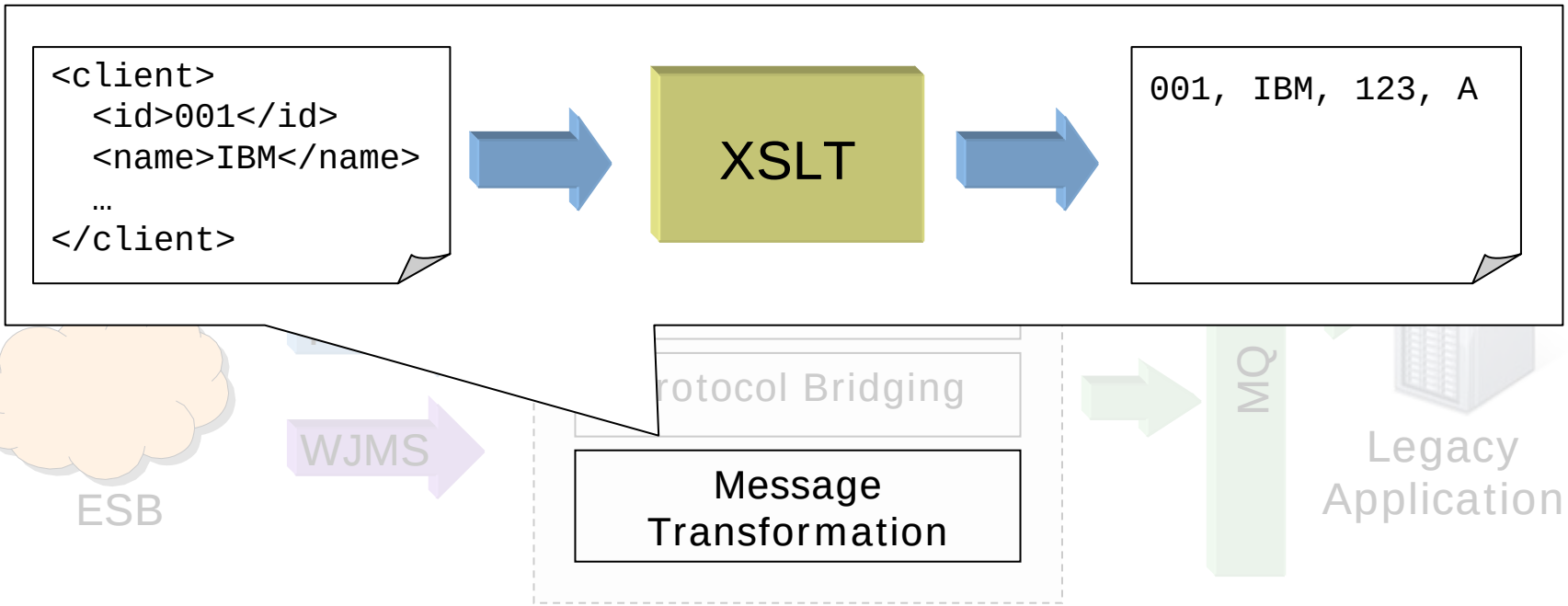
Scenario Two: Legacy Integration



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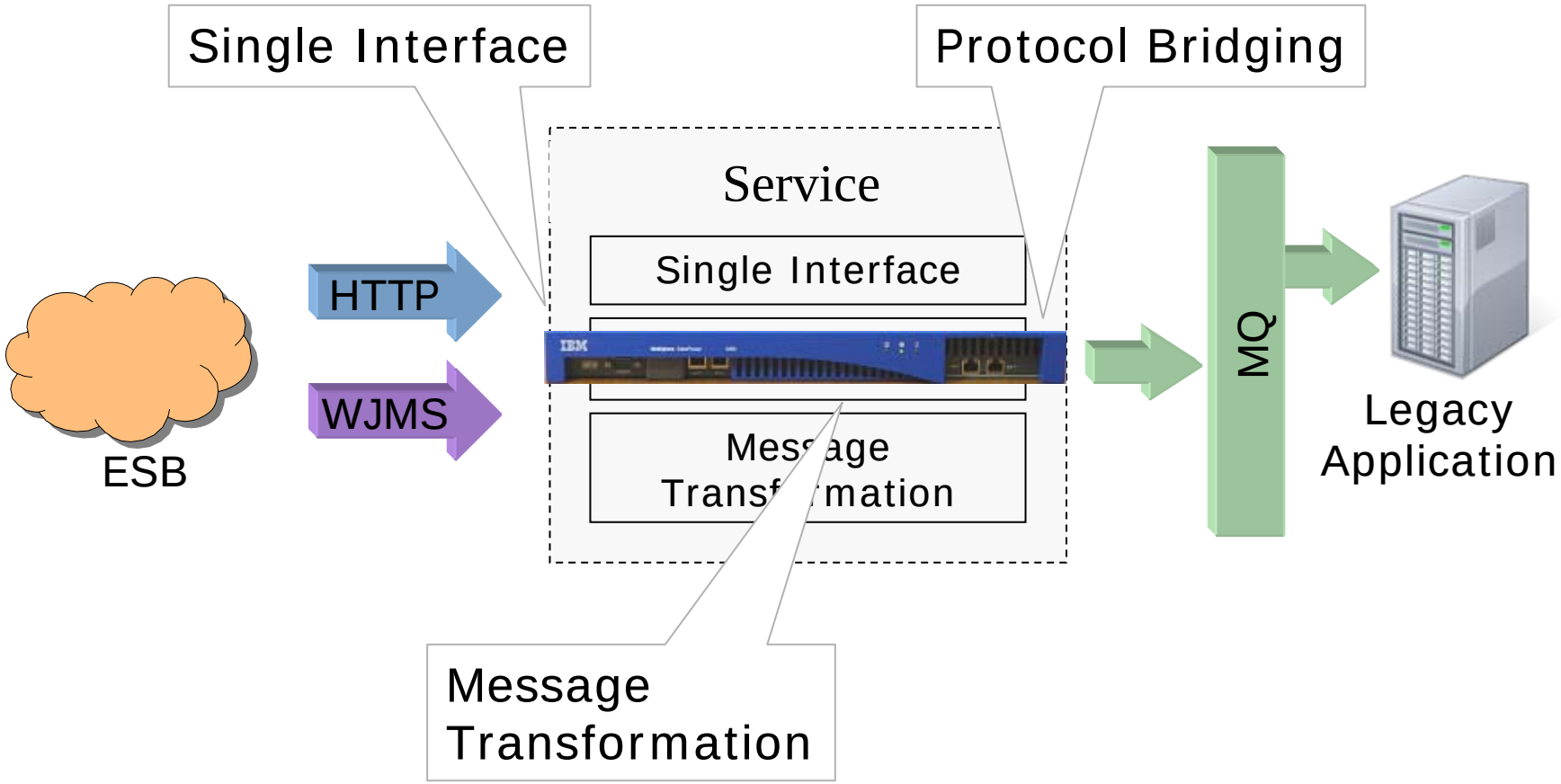
Scenario Two: Legacy Integration



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Scenario Two: Legacy Integration

Solution

- Protocol Bridging between ESB and Legacy Application
  - ESB Protocol converted to MQ
- Single Interface Exposed over Multiple Protocols
  - Interface exposed as HTTP and WebSphere JMS
- Messages Converted between Formats
  - ESB Message converted to Proprietary format and vice versa

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Scenario Three

Securing Web Applications

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Scenario Three: Securing Web Applications

Problem

- Existing Web Application to be exposed externally
  - Unsecured Web Application
- Single Sign On Required by Internal Users
  - Users on Active Directory domain
- Authentication Required for External Users
  - No Single Sign On required

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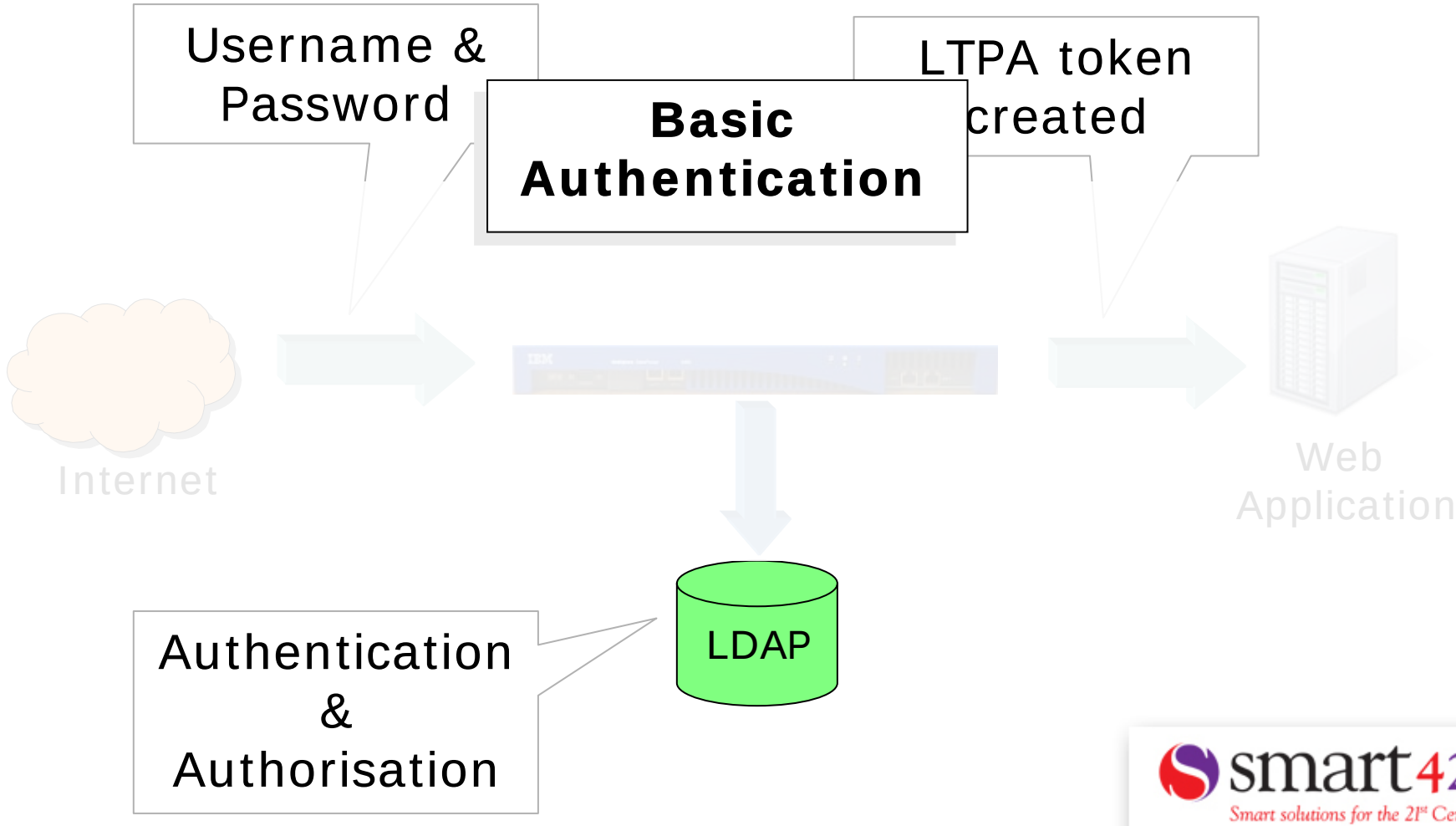
Scenario Three: Securing Web Applications



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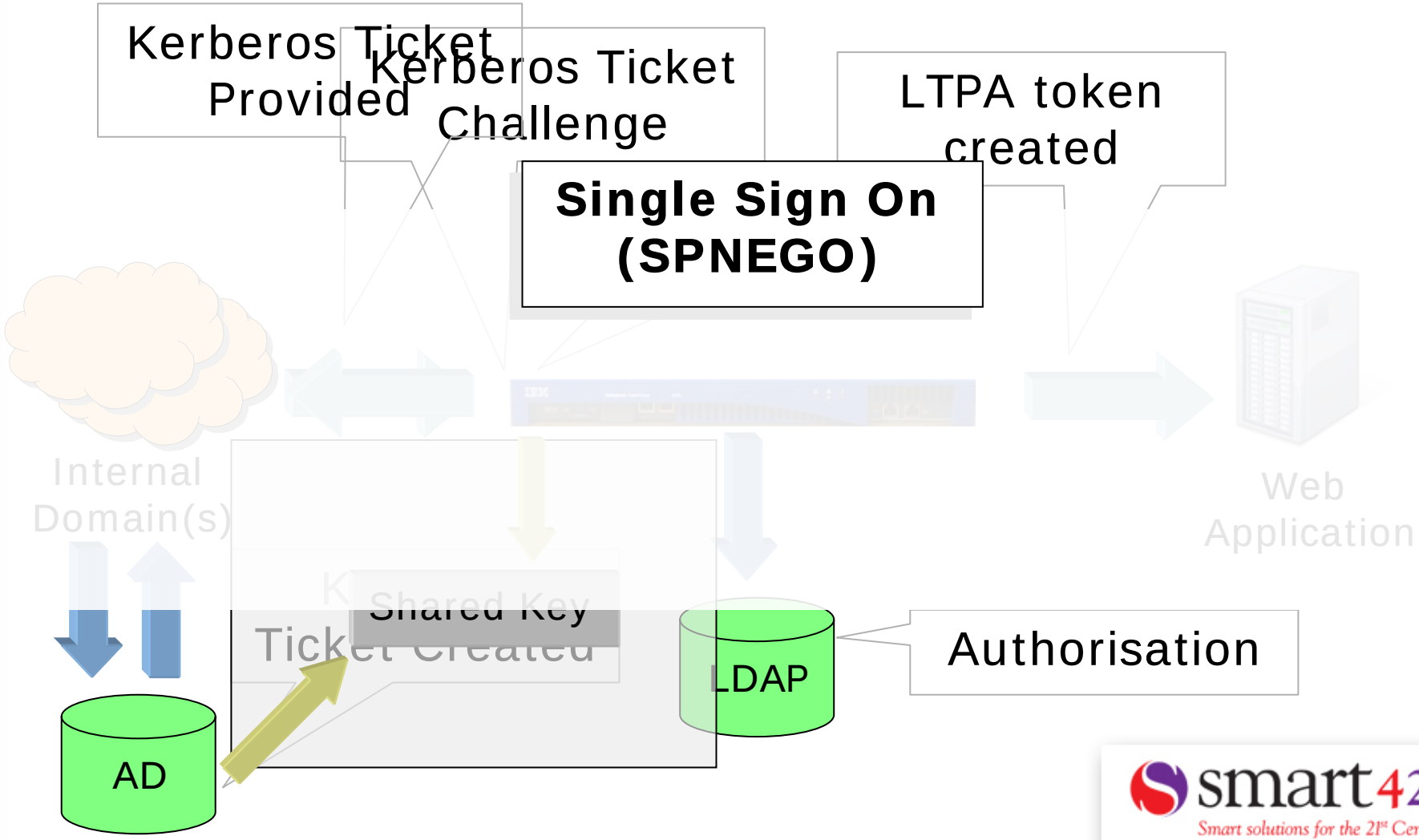
Scenario Three: Securing Web Applications



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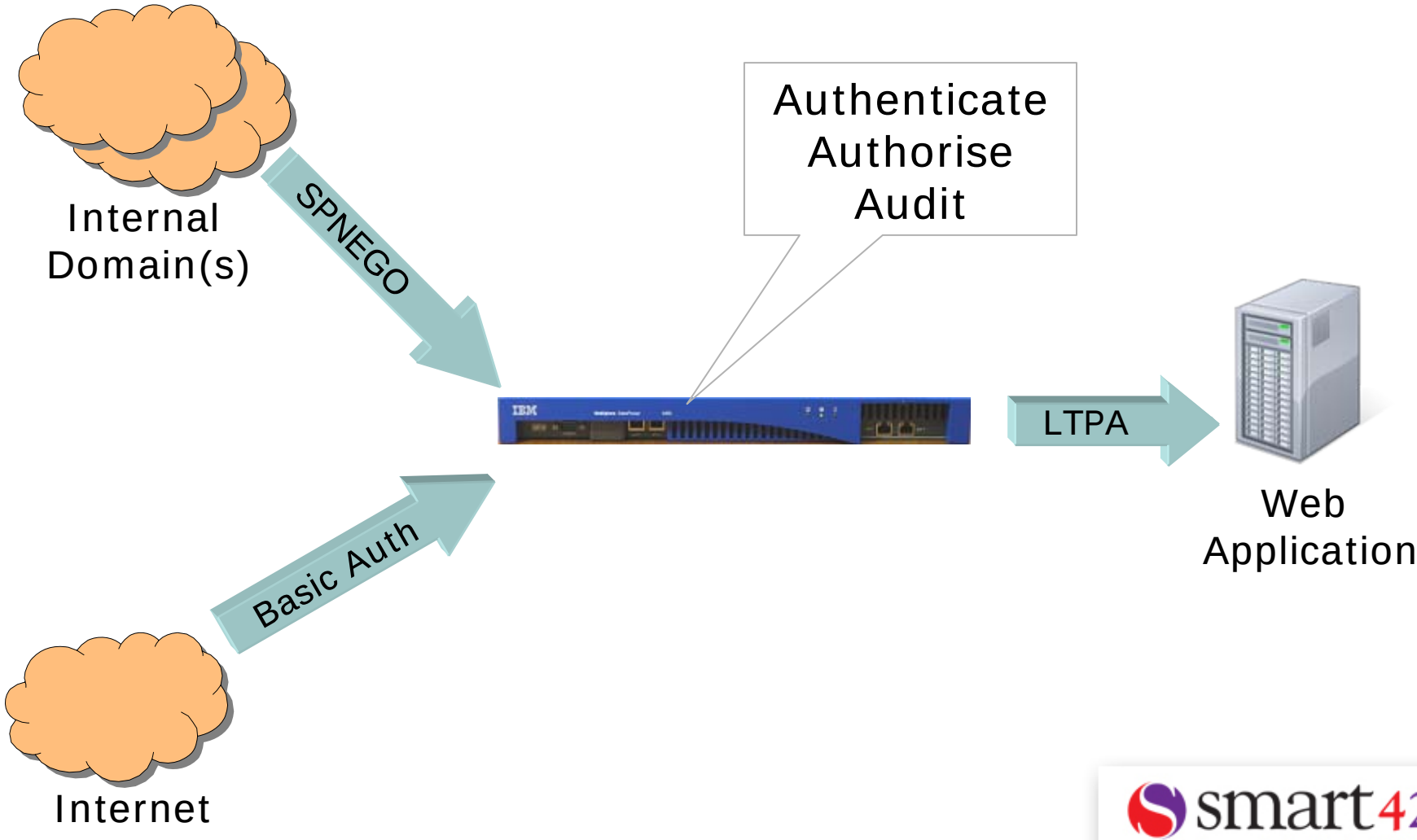
Scenario Three: Securing Web Applications



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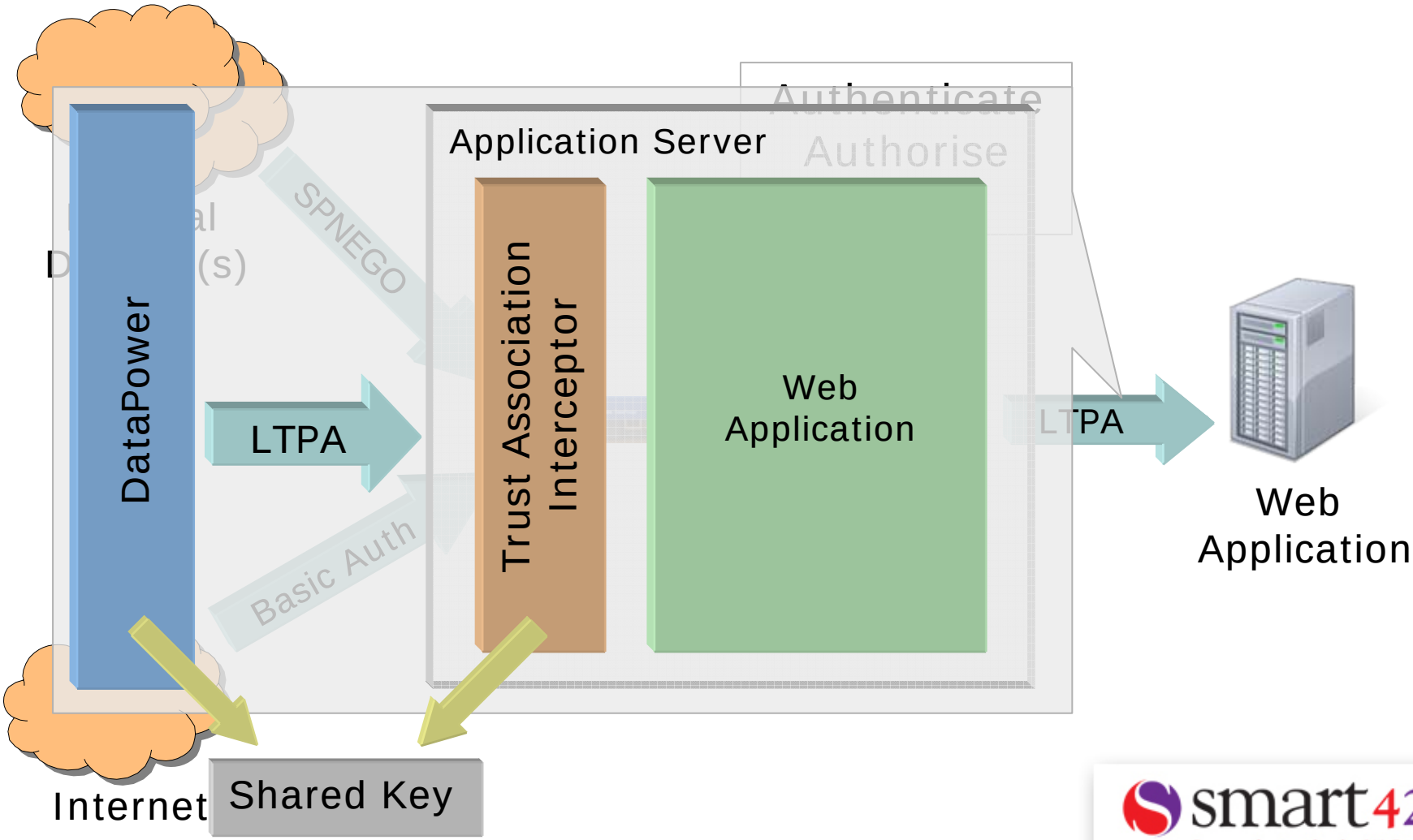

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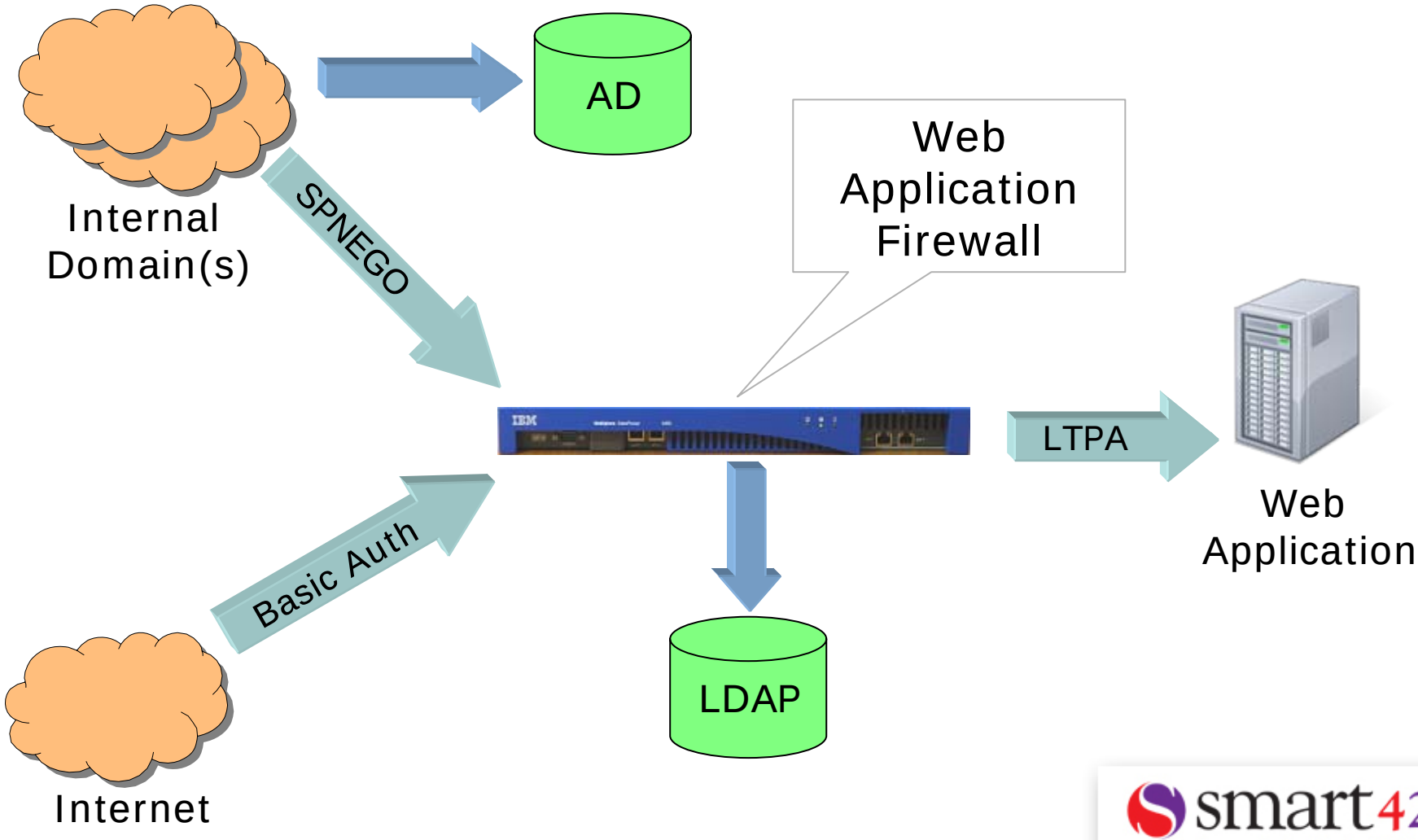

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Scenario Three: Securing Web Applications

Solution

- Trust Association Created
  - LTPA used between DataPower and Web Application Server
- Single Sign On using SPNEGO/Kerberos
  - Available for Internal Users on company domain
- External Users Authenticated as Appropriate
  - Authentication and Authorisation against LDAP

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Conclusion

- Acceleration, Security & Integration
- SOA Focused Functionality
- Numerous Applications within the Enterprise
  - Not Just a ESB Gateway or XML Firewall

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Questions

Any Questions?

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Contact Details

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