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Part of the KCOM Group

An Innovative Approach in Productionising Large-Scale DataPower Deployments

28th September 2010
WebSphere User Group UK (WUG), Edinburgh

Alan Philpott

IBM Premier Business Partner

Introduction

Presenter
Who am I?

- Alan Philpott
  Lead Consultant at Smart421

Part 1 Introduction: DataPower Overview

Part 2 Development and Deployment

Part 3 Example Approach

Part 4 Troubleshooting

Part 5 Conclusion

Part 1	Introduction: DataPower Overview
Part 2	Development and Deployment
Part 3	Example Approach
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Introduction
// WebSphere DataPower Appliances // DataPower Overview

Development and Deployment
// Problem Statement: How does configuration currently work?

- Current approach
  - Modifications made within domain completed manually as and when required
  - Resource files edited and uploaded as needed
  - Exporting and importing configuration into new domains to create new environments

- What are the drawbacks?
  - No history of changes
  - No version control of resource files
  - Manual change of environment specific parameters required when importing to new environments
  - Performing manual updates can lead to errors

Development and Deployment
// Development

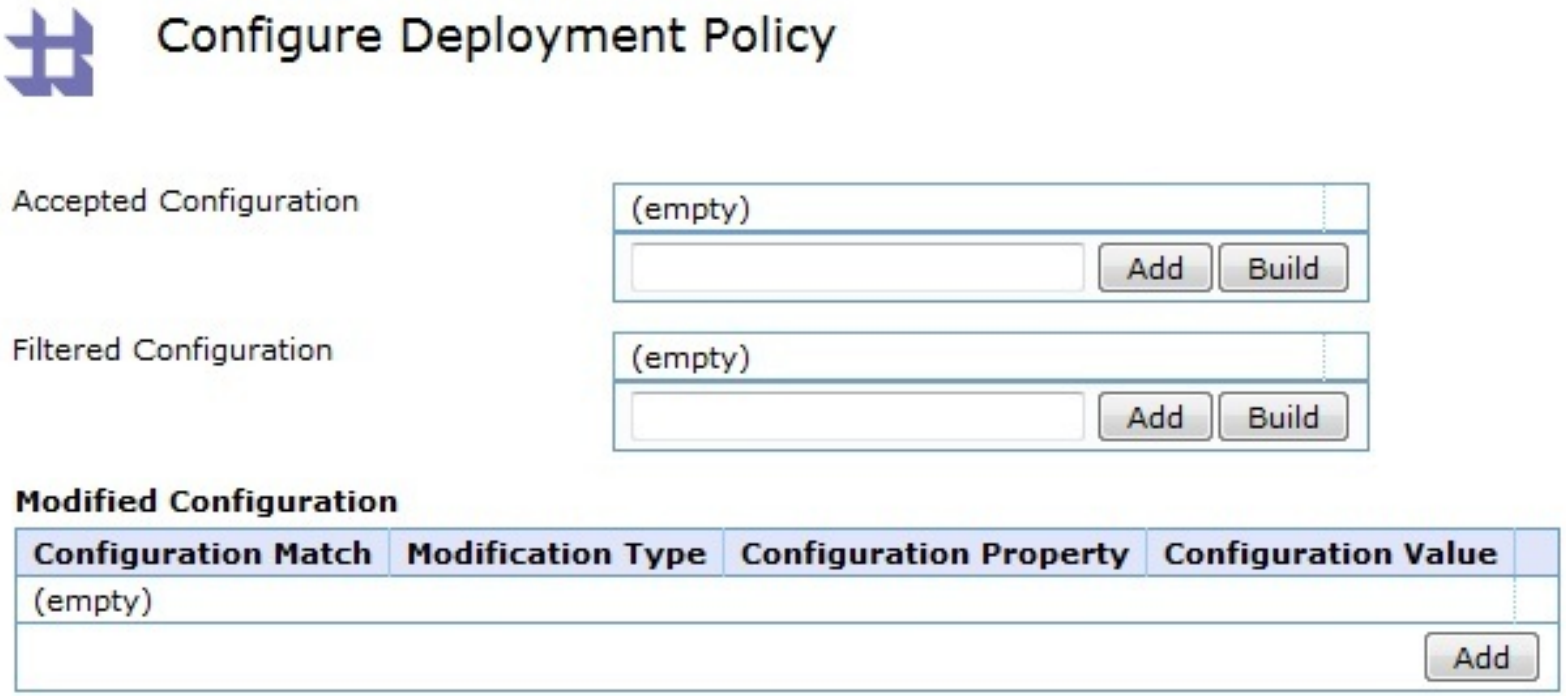
- Domain configuration
- Decide how domains fit architecturally
- Storage of artefacts (XMLs, XSLs, XSDs etc)
  - Source Control mechanism
- Developer responsibilities

Development and Deployment
// Deployment

- How to create deployable packages
  - Methods of domain extraction
- How to deploy packages into new environments?
- Manipulate configuration based on Deployment Policies
  - Implement within a domain
  - Applied during deployment

Development and Deployment
// Deployment

- Deployment Policies - Overview



Development and Deployment
// Deployment

- Deployment Policies - Port Modification Example (1/4)
  - Creation of XML Firewall “WUGFirewall”
  - Export the configuration

Configure XML Firewall

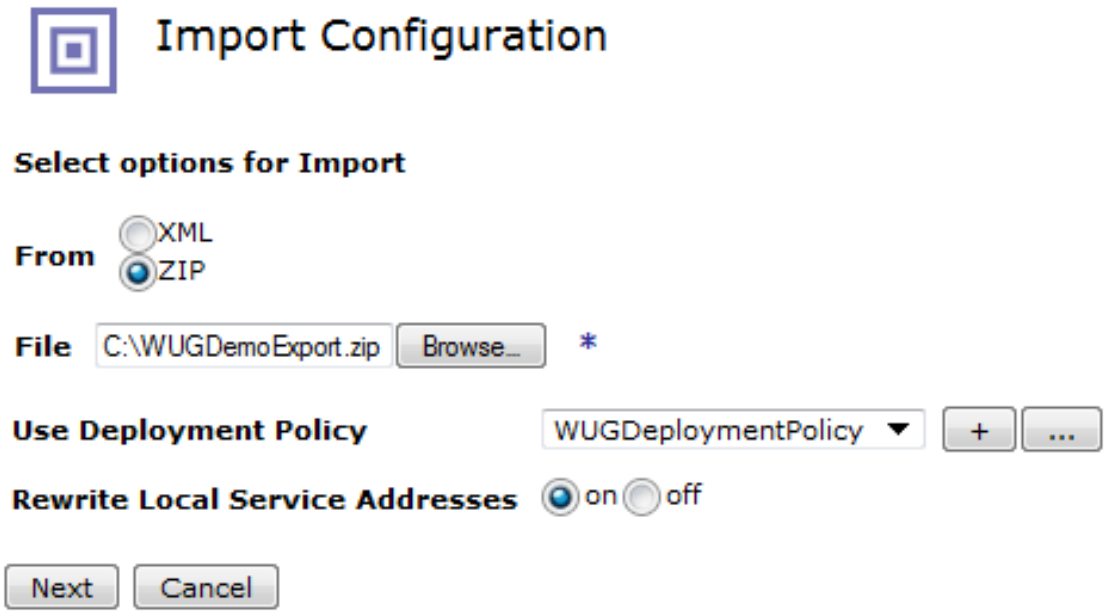
XML Firewall Name	Op-State	Logs	Req-Type	Local Address	Port	Resp-Type	Remote Address	Port
WUGFirewall	up		soap	0.0.0.0	7001	soap		

Development and Deployment
// Deployment

- Deployment Policies - Port Modification Example (2/4)
  - Policy setup within target domain
  - Match = */WUGDemo/services/xmlfirewall?Name=WUGFirewall&Property=LocalPort
  - Modification Type = Change Configuration
  - Configuration Value = 8001

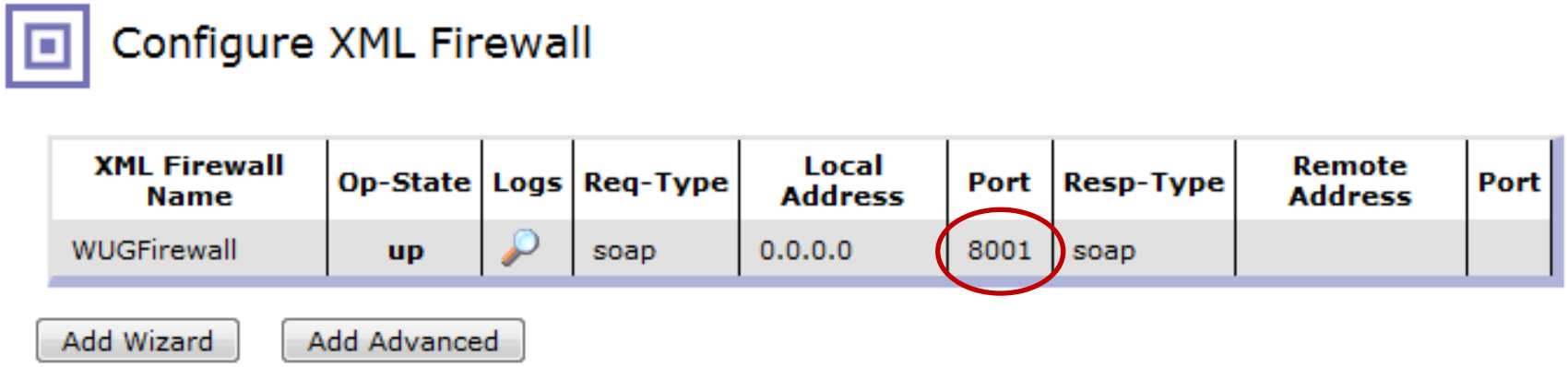
Development and Deployment
// Deployment

- Deployment Policies - Port Modification Example (3/4)
  - Import the configuration



Development and Deployment
// Deployment

- Deployment Policies - Port Modification Example (4/4)
  - Imported object shows new port number



Development and Deployment
// Security Considerations

- Decide an approach to handling Certificates / Keys
  - Store in cert: or sharedcert: ?
- Crypto files stored within sharedcert:
  - Simplifies deployment
  - Every domain will have access
- Crypto files stored within cert:
  - Preload before first deployment
  - Restricts access

Development and Deployment
// Support Scripts

- Creation of Build / Deployment support scripts
  - Utilise the XML Management Interface
  - Identify required processes
- Create appropriate request files
  - XML editors can make this process simple
  - Utilise the schemas on the appliance to help

xml-mgmt-base.xsd
xml-mgmt-ops.xsd
xml-mgmt.wsdl
xml-mgmt.xsd

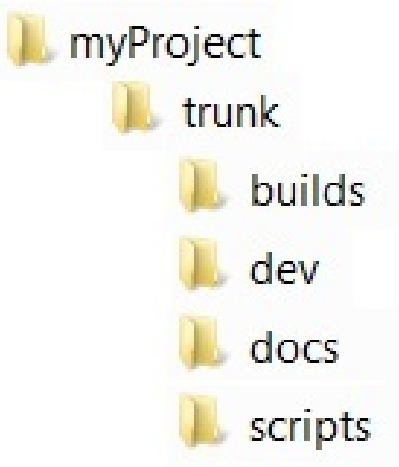
Development and Deployment
// XML Management Request / Response Example

```
<?xml version="1.0" encoding="UTF-8"?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
   <env:Body>
      <dp:request domain="default" xmlns:dp="http://www.datapower.com/schemas/management">
         <dp:get-status class="DateTimeStatus"/>
      </dp:request>
   </env:Body>
</env:Envelope>
```

```
<?xml version="1.0" encoding="UTF-8"?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
   <env:Body>
      <dp:response xmlns:dp="http://www.datapower.com/schemas/management">
         <dp:timestamp>2010-09-20T15:48:09+01:00</dp:timestamp>
         <dp:status>
            <DateTimeStatus xmlns:env="http://www.w3.org/2003/05/soap-envelope">
               <time>Mon Sep 20 15:48:09 2010</time>
               <uptime>5 days 00:20:57</uptime>
               <timezone>BST</timezone>
               <tzspec>GMT0BST,M3.5.0/1:00,M10.5.0/2:00</tzspec>
            </DateTimeStatus>
         </dp:status>
      </dp:response>
   </env:Body>
</env:Envelope>
```

Example Approach
// Example Approach Utilising Tortoise Subversion

- Setup a repository within SVN to support the project
  - Decide on a project structure
  - Support for trunks, tags and branches?



Example Approach
// Apache ANT Integration

- ANT is an effective tool when supporting DataPower
- Commands within SVN can be run using ANT
- Script execution
  - Start with Command Line driven implementation

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Troubleshooting
// Problems with Deployment?

- If deployments don't seem to be working…
  - Firewall issues?
  - Permissions?

Troubleshooting
// Problems with Deployment?

- If deployments don't seem to be working…
  - Is the XML Management Interface is enabled?

Troubleshooting
// Problems with Deployment?

- If deployments don't seem to be working…
  - Enough free temporary space?

Free Encrypted Space	269	Mbytes
Total Encrypted Space	456	Mbytes
Free Temporary Space	210	Mbytes
Total Temporary Space	242	Mbytes
Free Internal Space	200	Mbytes
Total Internal Space	242	Mbytes

Troubleshooting
// Problems with Deployment?

- If deployments don't seem to be working…
  - Is the CPU being utilised heavily?

10 sec	17	%
1 min	15	%
10 min	15	%
1 hour	15	%
1 day	15	%

interval	1000	msec
load	2	%
work list	0	

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Conclusion

- Identify responsibilities
- Integrate with source control
- Automate processes with scripts
- Cryptographic considerations
- Plan ahead!

Contact us

- Smart421
  - Website: www.smart421.com
  - Twitter: @smart421
  - Phone: 01473 421 421
  - Fax: 01473 421 422
- Alan Philpott
  - aphilpott@smart421.com

- Datapower blog
  - smart421.wordpress.com/tag/datapower

Questions

- Smart421
  - IBM Premier/Tier One Partner
  - Official IBM DataPower Reseller
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Alan Philpott
Lead Consultant