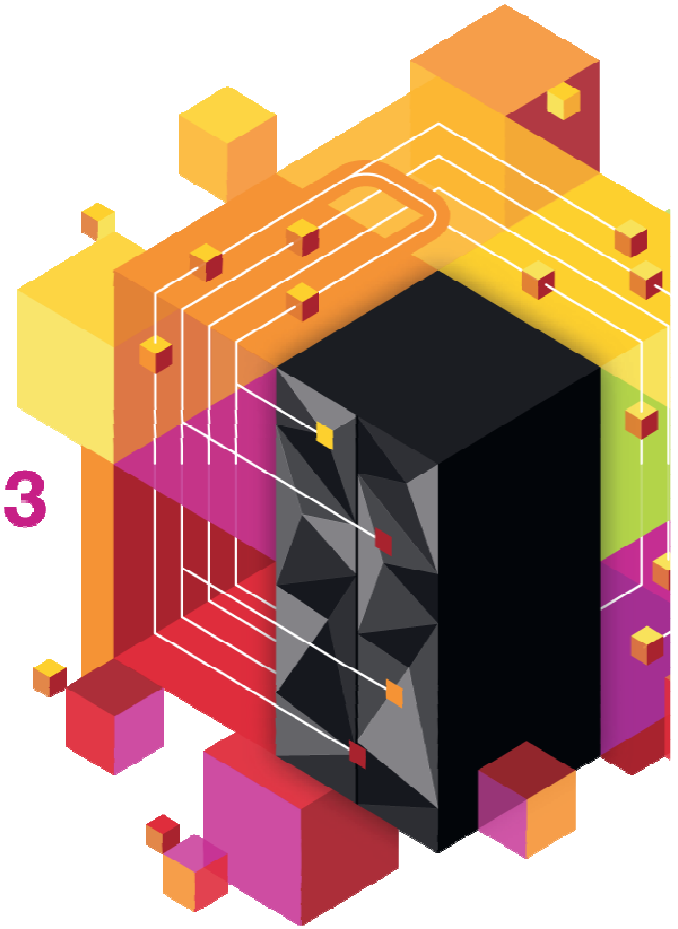
# Université du Mainframe 2013

## 4-5 avril



# Optim Configuration Manager

*DB2 z/OS : connaître les clients qui s'y connectent*

*et agir …*

***Catherine Chochoy***
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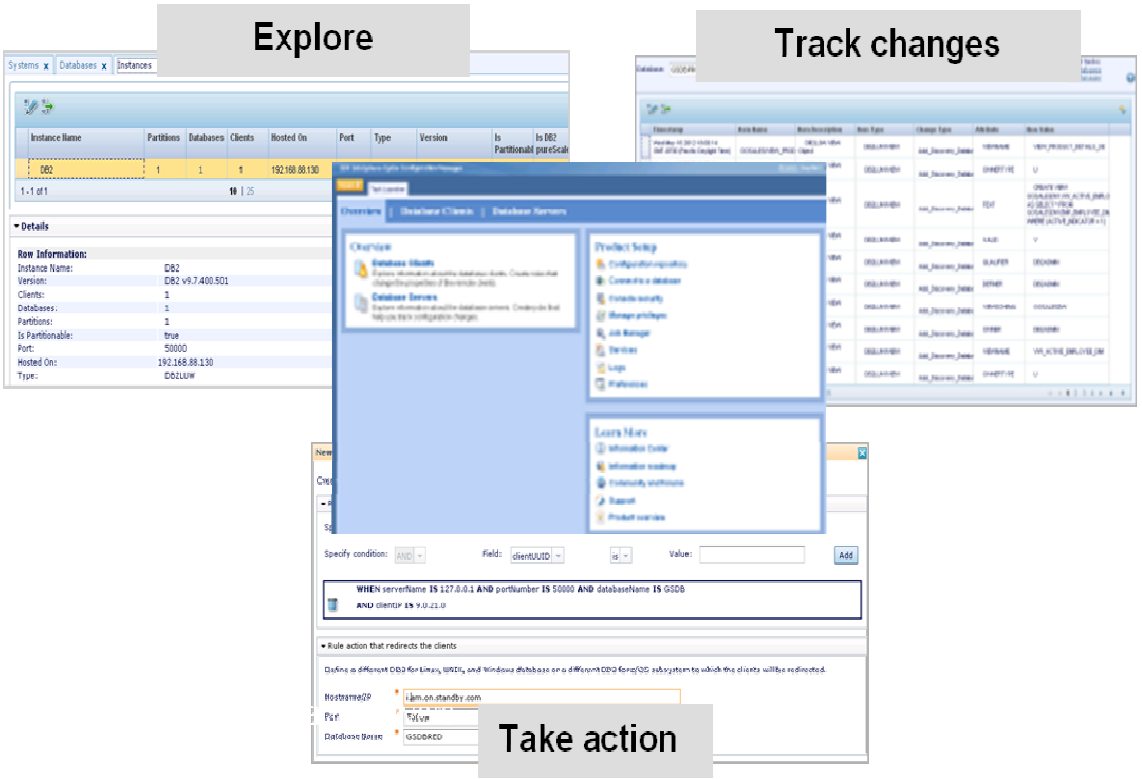
# Agenda

- **Optim Configuration Manager**
- ***Demo***
- ***Annexes :***
  - *Informations collectées*
  - *Fonctions clés : Règles*

# Optim Configuration Manager

*Centralizes management of database configurations both servers and clients on z/OS and LUW*




## *Clients des bases de données*

- Seule solution du marché conçue pour gérer de manière centralisée les clients de bases de données et pister les changements de configuration advenus sur les clients et les serveurs.

## *Serveurs*

- Accroît l'efficacité opérationnelle en facilitant la mise en conformité avec les standards définis par les DBAs.

# Fonctions d'OCM

## Comprendre l' environnement

- ***Explorer*** les propriétés des serveurs de bases de données et leurs clients
- ***Etablir*** un inventaire des clients pour en faciliter les évolutions

## Résoudre plus rapidement les problèmes

- ***Prévenir*** les problèmes en planifiant des jobs de comparaison de configuration qui alertent sur les différences
- ***Garder*** les configurations en cohérence
- ***Déboguer*** plus rapidement en retrouvant les changements récents intervenus sur les configurations des clients ou des serveurs

## Control Clients (JCC, CLI, .NET)

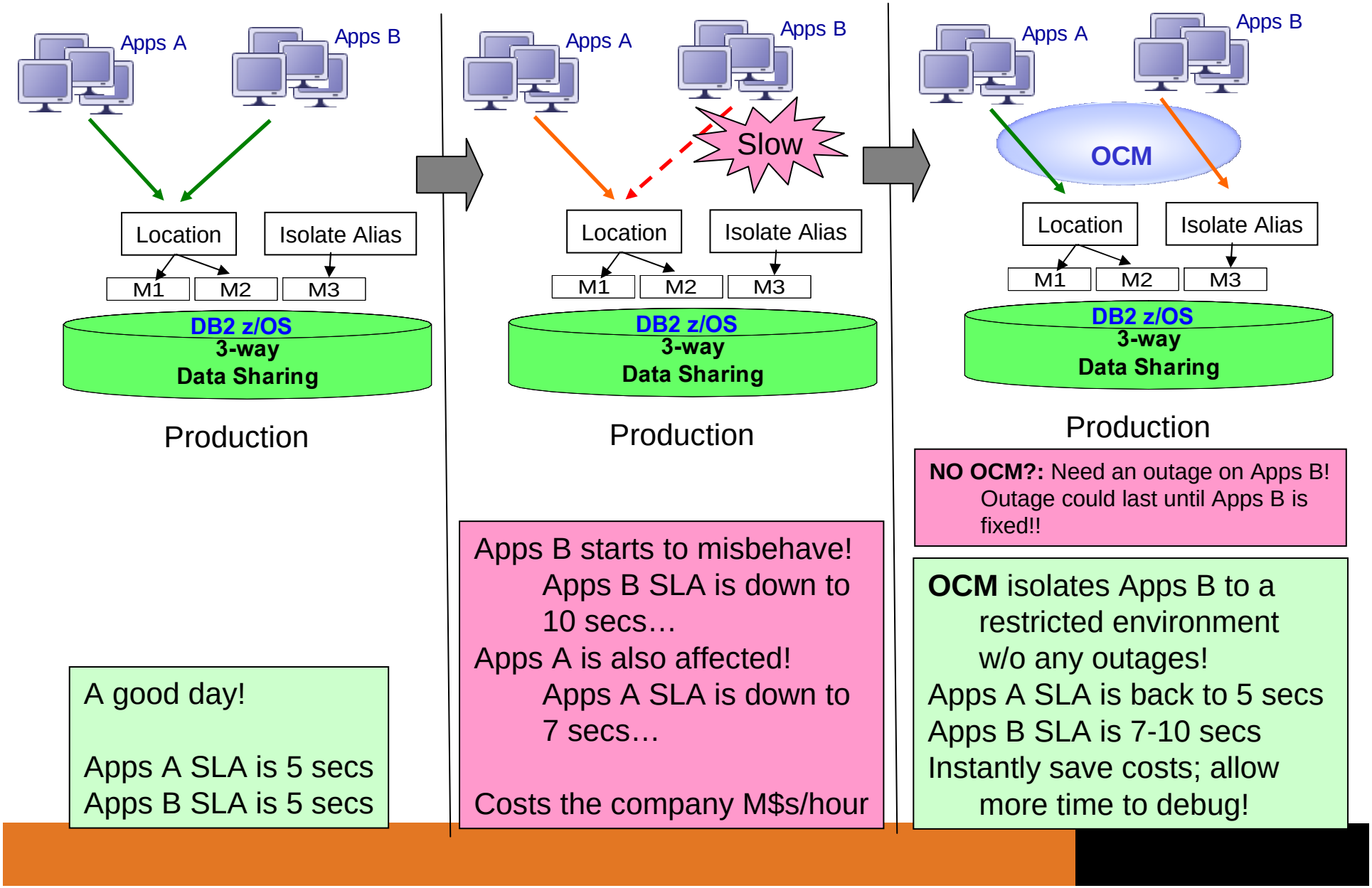
- ***Isolate/Throttle : agir*** *sur les applications "rogue" et limiter leur impact sur le SYSPLEX*
- ***Appliquer*** *les bonnes pratiques– WLM, WLB, WAS Pool*
- ***Rediriger*** *les* connexions client d'un DB2 vers un autre (ex: haute disponibilité)

***Note: With OCM client install***

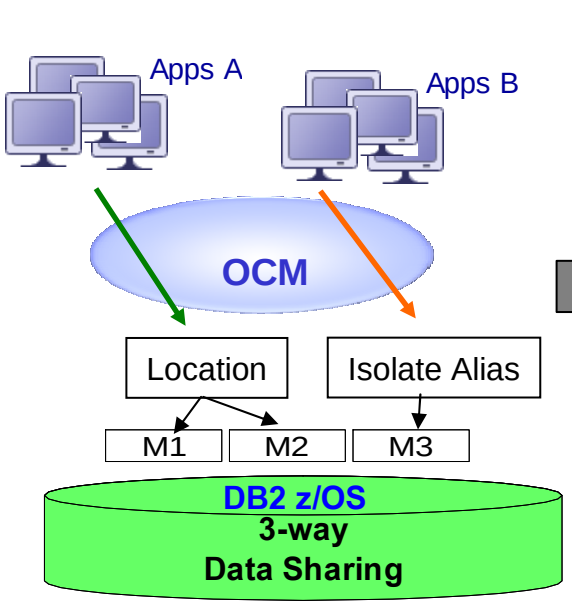
## Gérer de manière centralisée la totalité de l'environnement DB2 z/OS

- ***Déployer*** les alias de localisation ou les profils d'application en DB2 z/OS v10
- ***Définir*** *les* zParms de DB2 z/OS v9 ou DB2 z/OS v10
- ***Voir*** les changements faits par les outils d'administration

# Scenario d'utilisation - étape 1: Isoler

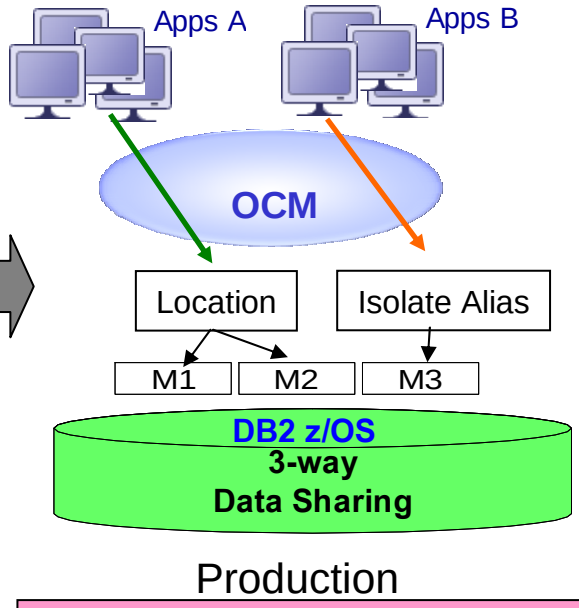


# Scenario d'utilisation - étape 2: Diagnostiquer & prévenir




Production

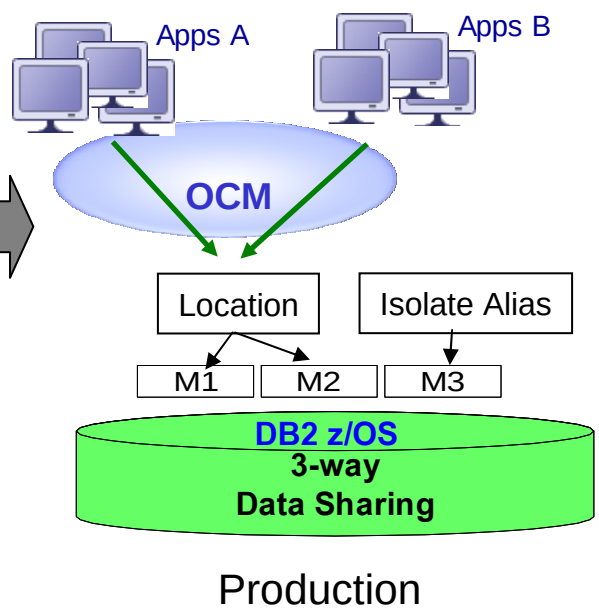
**OCM** isolates Apps B to a restricted environment w/o any outages!
Apps A SLA is back to 5 secs
Apps B SLA is 7-10 secs




Production

**NO OCM?:** Need to figure out what changed in Apps B configuration? Requires significant time and cross team co-ordination!

**OCM** tracks changes to all server and client configurations!
**OCM** allows you to centrally modify/enforce application, data source and driver properties!!




Production

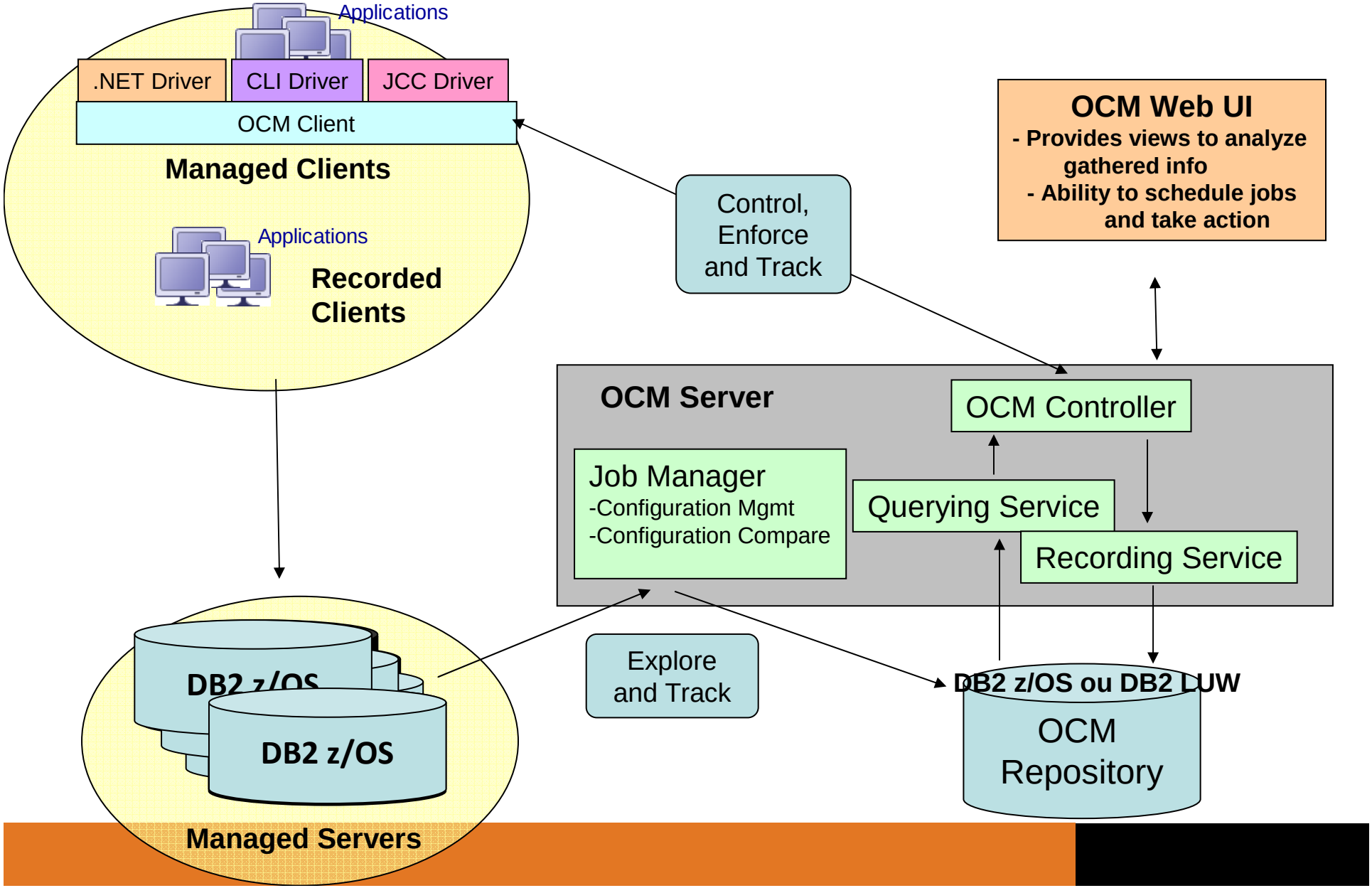
**OCM** routes Apps B to production!
Apps A SLA is 5 secs
Apps B SLA is 5 secs

**OCM** continually enforces properties so the same problem does not occur in the future!!

# Optim Configuration Manager

- ✓ Maintenir en conformité des serveurs et des clients de bases de données
- ✓ Simplifier les plannings de migration avec un inventaire des serveurs et des clients de bases de données
- ✓ Gagner du temps (et $) dans la résolution des problèmes
- ✓ €conomiser en réduisant certains coûts opérationnels en agissant rapidement sur les applications en cause
- ✓ ***Unique IBM en cours de brevet***

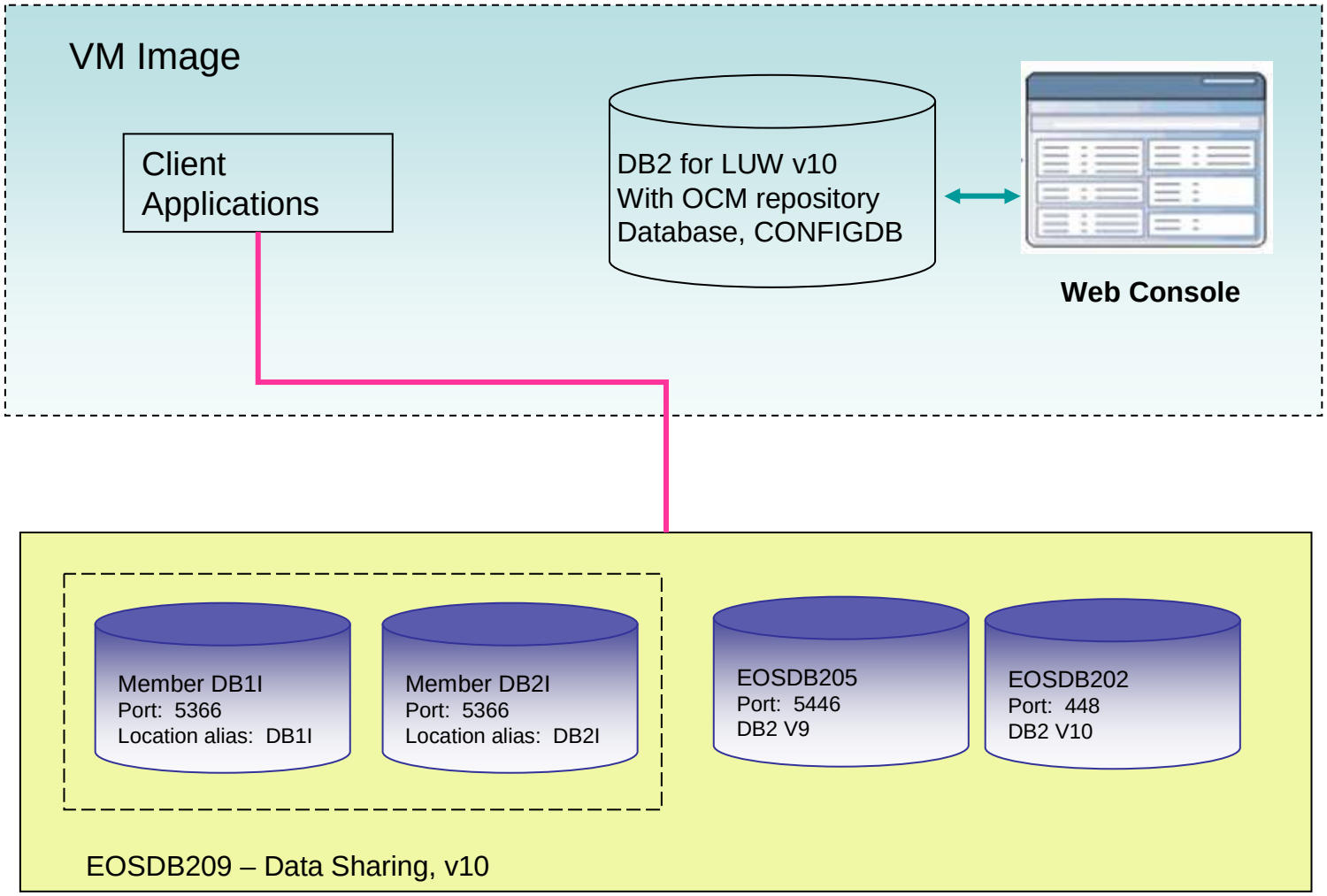
# Architecture OCM



# Agenda

- ***Optim Configuration Manager***
- **Demo**
- ***Annexes :***
  - *Informations collectées*
  - *Fonctions clés : Règles*

# Environnement de démonstration




DB2 z/OS Host: zserveros.demos.ibm.com

# Demo

- *Bases de données : serveurs et clients*
  - Déclarer des serveurs
  - **Explorer** leurs configurations
  - Comparer

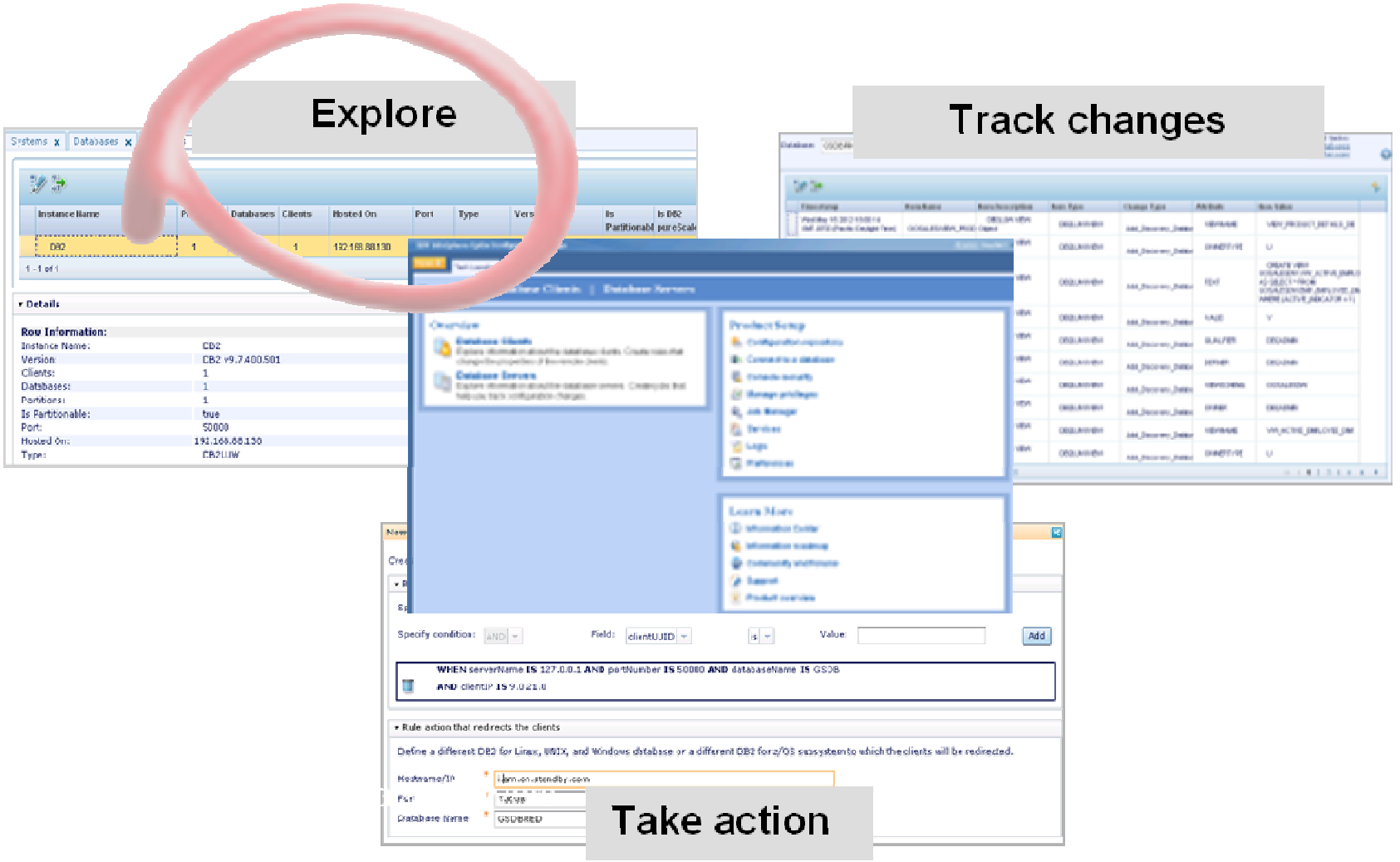
- *Pister et analyser les changements*
  - Définir des jobs de **comparaison** de configuration
  - Constater les **changements** intervenus
  - Alertes
  - Rapport de job

- *Isoler des transactions (penalty boxing)*
  - Gérer les ‘ location alias’
  - Créer une règle pour **isoler une application**
  - L’appliquer à un workload qui sera rerouté vers un autre membre

# Agenda

- ***Optim Configuration Manager***
- ***Demo***
- **Annexes :**
  - **Informations collectées**
  - Fonctions clés : Règles

# Cas d'usage d'OCM : 'Explorer' en profondeur

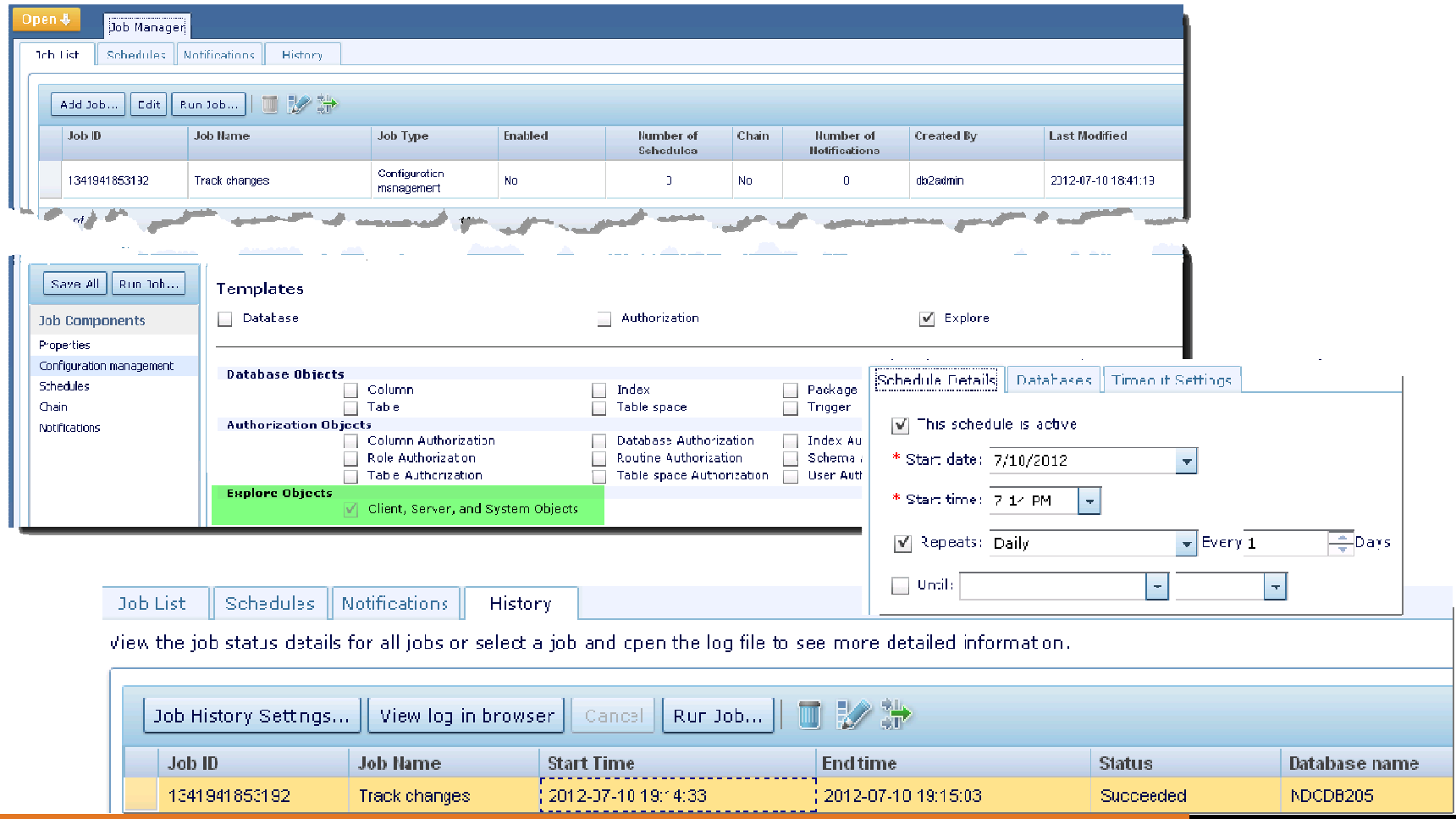


# Informations capturées sur les serveurs

- Systems:
  - Host name, IP address, Clients, Instances, DBs, Subsystems, OS name, etc
- Data sharing Groups:
  - Group name, Systems hosted on, Members List, Clients
- Instances, Databases:
  - DB2 version and fixpak, Clients
- Subsystems:
  - System hosted on, Port, DB2 version

# Explorer les serveurs de données

*Utiliser le job manager pour capturer périodiquement l'information sur les serveurs*



# Explorer les serveurs (suite)

*Résultats :*

- **System**

| Host Name | IP Address | Instances/Data Sharing Groups | Databases/Subsyster | Recorded Clients | OS Name | OS Version |
|---|---|---|---|---|---|---|
| 192.168.24.130 | | 1 | 1 | 1 | WIN32_NT | 5.1 Service Pack 2 |
| demomvs.demopkg.ibm.com | 9.39.68.147 | 1 | 1 | 1 | z/OS | z/OS 01.13.00 |
| demomvs2.demopkg.ibm.com | 9.39.68.146 | 1 | 1 | 0 | z/OS | z/OS 01.13.00 |

- **Subsystems**

| Name | Managed Database ID | Recorded Clients | Group Name | Hosted On | IP Address | Port | Version |
|---|---|---|---|---|---|---|---|
| DB1S | NDCDB205 | 1 | DSNSG | demomvs.demopkg.ibm.com | 9.39.68.147 | 5446 | 910 |
| DB2S | NDCDB205 | 0 | DSNSG | demomvs2.demopkg.ibm.com | 9.39.68.146 | 5446 | 910 |

- **Data sharing groups**

| Group Name | Version | Shared | Recorded Clients | Members | Main Location | Hosted On | IP Address | Port | Members List |
|---|---|---|---|---|---|---|---|---|---|
| DSNSG | 910 | true | 1 | 2 | NDCDB205 | demomvs.demopkg.ibm.com, demomvs2.demopkg.ibm.com | 9.39.68.147, 9.39.68.146 | 5446 | DB1S, DB2S |

# Informations capturées sur les clients

- Recorded clients i.e. informations client récupérées depuis DB2 – display threads (z/OS)
  - Authentication ID, Where Hosted?
  - DB name, client driver information
- Managed clients i.e. clients munis du code client OCM
  - IP address, UUID, client information fields
  - JDBC/JNDI information, WAS information, client driver information
  - Target IP, Port, DB name

# Explorer les “Recorded Clients”

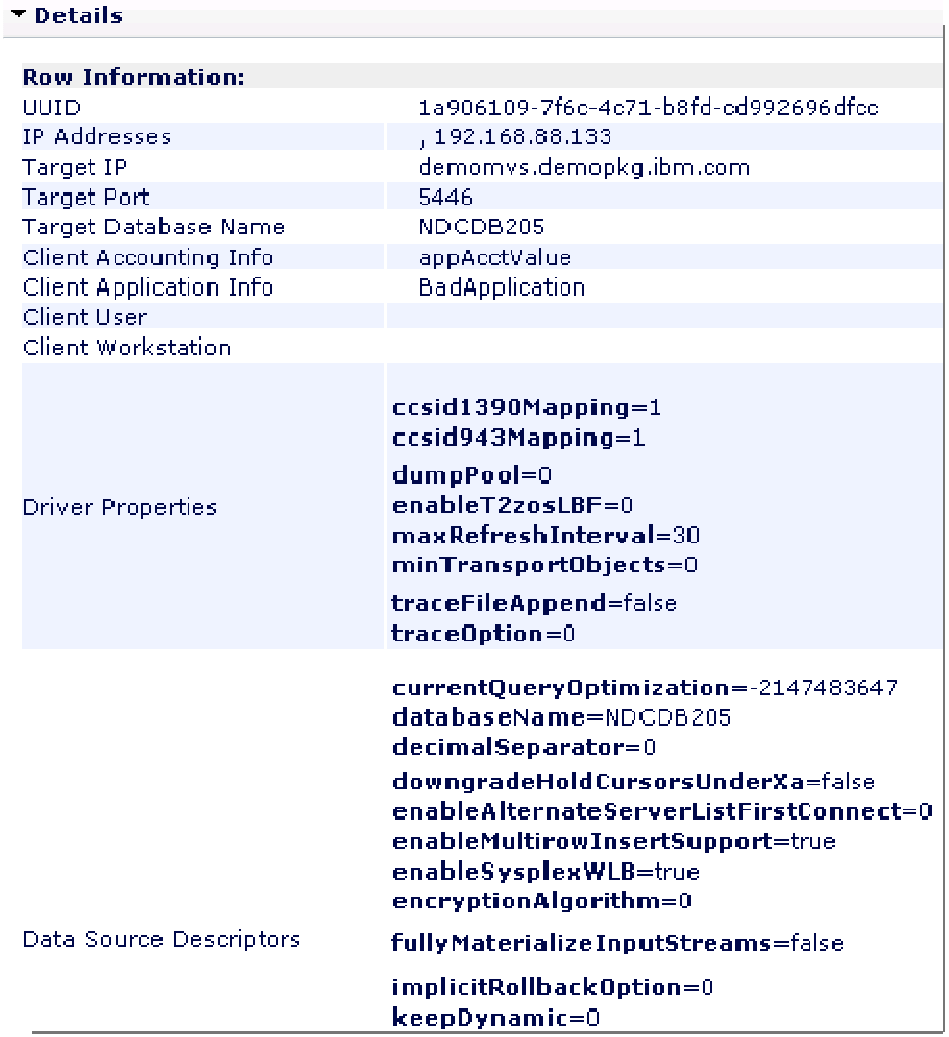
- *Lancer le job manager pour capturer périodiquement l’information sur les clients connectés*
- *Prerequis: procédure stockée SYSPROC.ADMIN* sur la base de données cible*
- **Collecte:**
  - Origin, driver information (type, version), connection information

| Name | Host | Drivers Used | Connection Start Time | Last Connection Authentication ID | Last Connection System | Last Connection Database Name | Last Connection Driver | Last Connection ID |
|---|---|---|---|---|---|---|---|---|
| DS_ConnMgt_ | 9 | JCC03630 | Tue Ju 2012 21:14:42 GMT-0700 (Pacific Daylig Time) | DDS0737 | demomvs.demopkg.ibm.com | DBIS | JCC03630 | G91E1262.D687.C9D91B035165 |

- **Utiliser cette information pour identifier les clients ‘impactés’ lors**
  - D’une montée de niveau de Driver (qui utilise un driver non supporté?)
  - De migrations (qui accèdent un serveur?)

# Explorer les “Managed Clients”

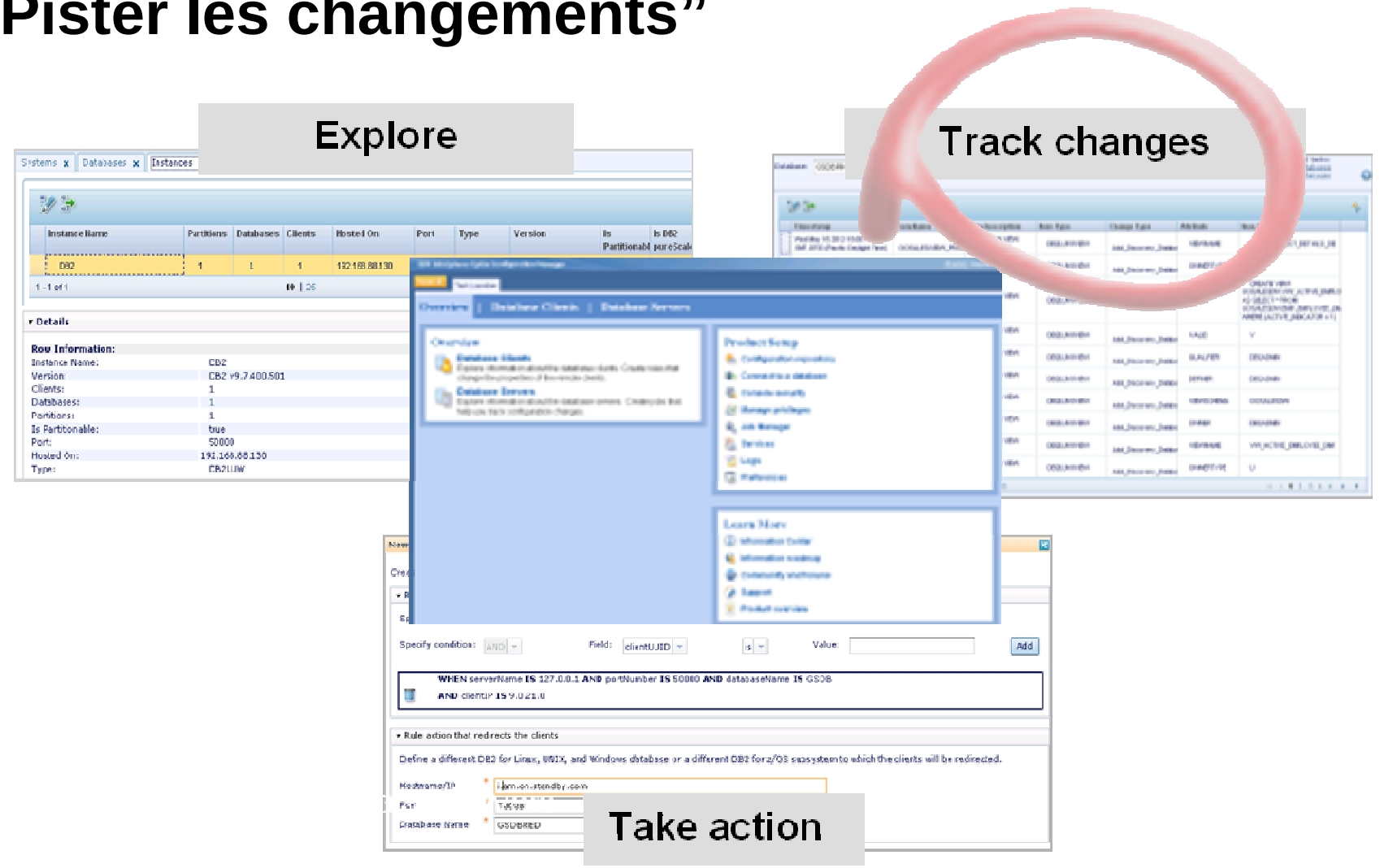
- **Collecte :**
  - Connection information
  - Driver type,
    driver version, …
  - Driver configuration
  - Data source configuration
  - WAS information



▼ Details

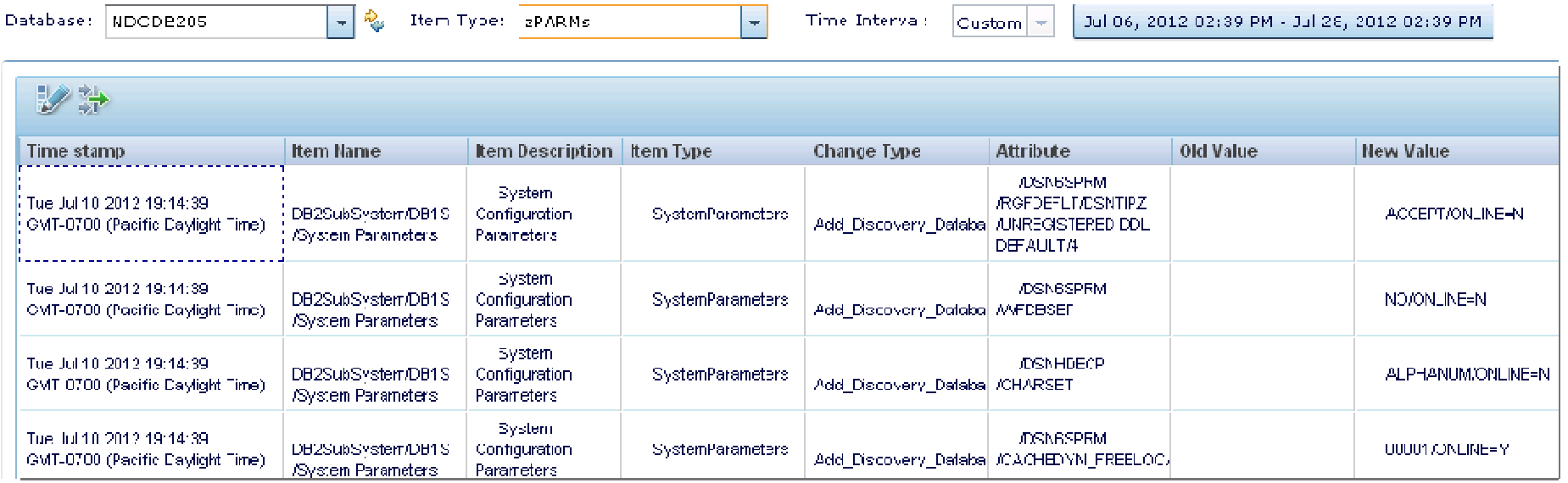
| Row Information: | |
|---|---|
| UUID | 1a906109-7f6c-4c71-b8fd-cd992696dfcc |
| IP Addresses | , 192.168.88.133 |
| Target IP | demomvs.demopkg.ibm.com |
| Target Port | 5446 |
| Target Database Name | NDCDB205 |
| Client Accounting Info | appAcctValue |
| Client Application Info | BadApplication |
| Client User | |
| Client Workstation | |
| Driver Properties | **ccsid1390Mapping**=1<br>**ccsid943Mapping**=1<br>**dumpPool**=0<br>**enableT2zosLBF**=0<br>**maxRefreshInterval**=30<br>**minTransportObjects**=0<br>**traceFileAppend**=false<br>**traceOption**=0 |
| Data Source Descriptors | **currentQueryOptimization**=-2147483647<br>**databaseName**=NDCDB205<br>**decimalSeparator**=0<br>**downgradeHoldCursorsUnderXa**=false<br>**enableAlternateServerListFirstConnect**=0<br>**enableMultirowInsertSupport**=true<br>**enableSysplexWLB**=true<br>**encryptionAlgorithm**=0<br>**fullyMaterializeInputStreams**=false<br>**implicitRollbackOption**=0<br>**keepDynamic**=0 |

# Cas d'usage d'OCM : "Pister les changements"



# Pister les  changements de configuration

- **Identifier les changements via le log viewer.**
  - Connection profile
  - Information : client, server, system, data sharing group, subsystem, connections, zPARMs, locations, location aliases, WLM service classes, table objects, index objects …
  - Date (range)




| Time stamp | Item Name | Item Description | Item Type | Change Type | Attribute | Old Value | New Value |
|---|---|---|---|---|---|---|---|
| Tue Jul 10 2012 19:14:39 GMT-0700 (Pacific Daylight Time) | DB2SubSystem/DB1S /System Parameters | System Configuration Parameters | SystemParameters | Add_Discovery_Databa | /DSNZPRM /RGFDEFLT/DSNTIPZ /UNREGISTERED DDL DEFAULT/4 | | ACCEPT/ONLINE=N |
| Tue Jul 10 2012 19:14:39 GMT-0700 (Pacific Daylight Time) | DB2SubSystem/DB1S /System Parameters | System Configuration Parameters | SystemParameters | Add_Discovery_Databa | /DSNZPRM /MAXDBSET | | NO/ONLINE=N |
| Tue Jul 10 2012 19:14:39 GMT-0700 (Pacific Daylight Time) | DB2SubSystem/DB1S /System Parameters | System Configuration Parameters | SystemParameters | Add_Discovery_Databa | /DSNHDECP /CHARSET | | ALPHANUM/ONLINE=N |
| Tue Jul 10 2012 19:14:39 GMT-0700 (Pacific Daylight Time) | DB2SubSystem/DB1S /System Parameters | System Configuration Parameters | SystemParameters | Add_Discovery_Databa | /DSNRSPRM /CACHEDYN_FREELOC/ | | UUUU1/ONLINE=Y |

# Agenda

- ***Optim Configuration Manager***
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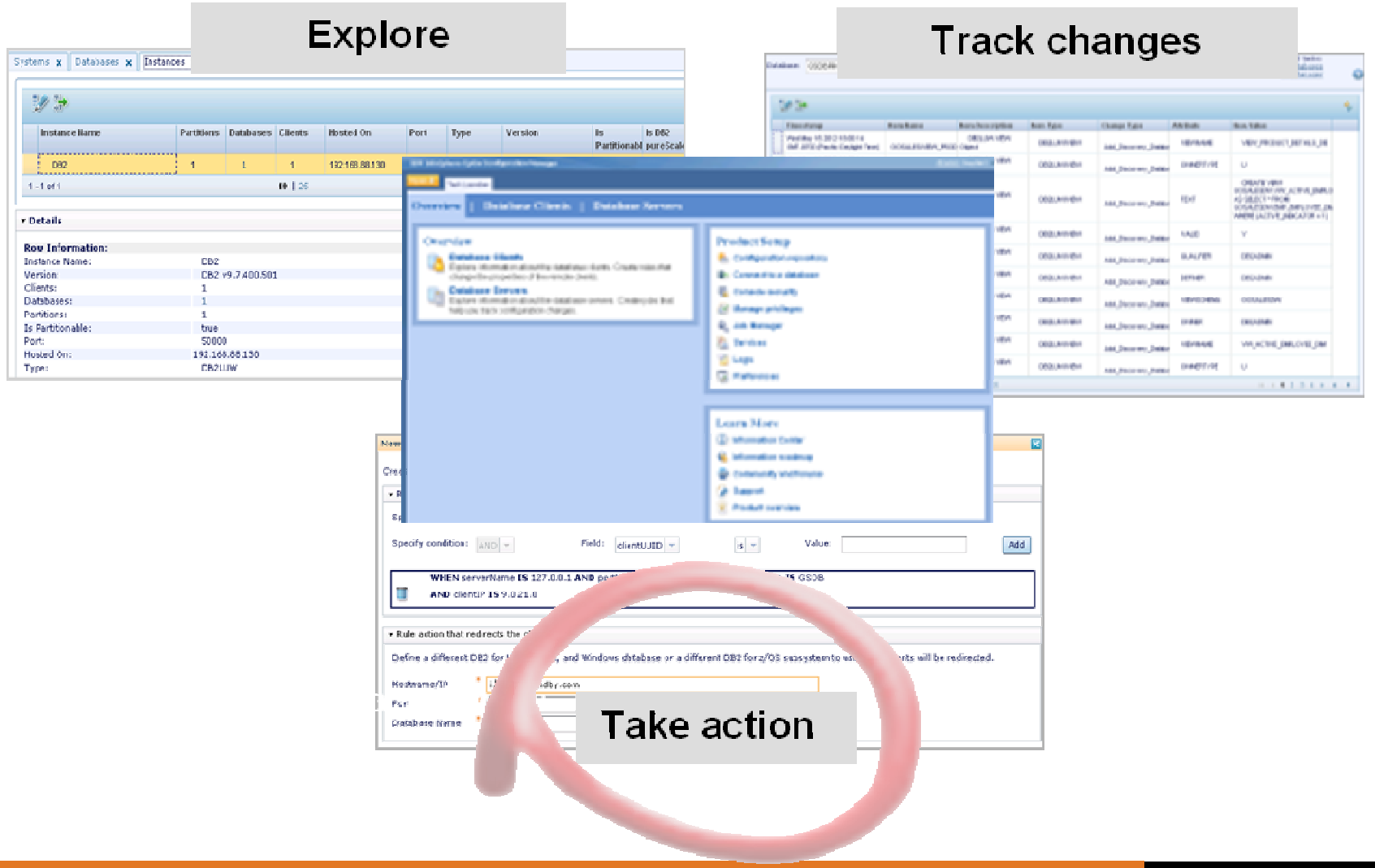
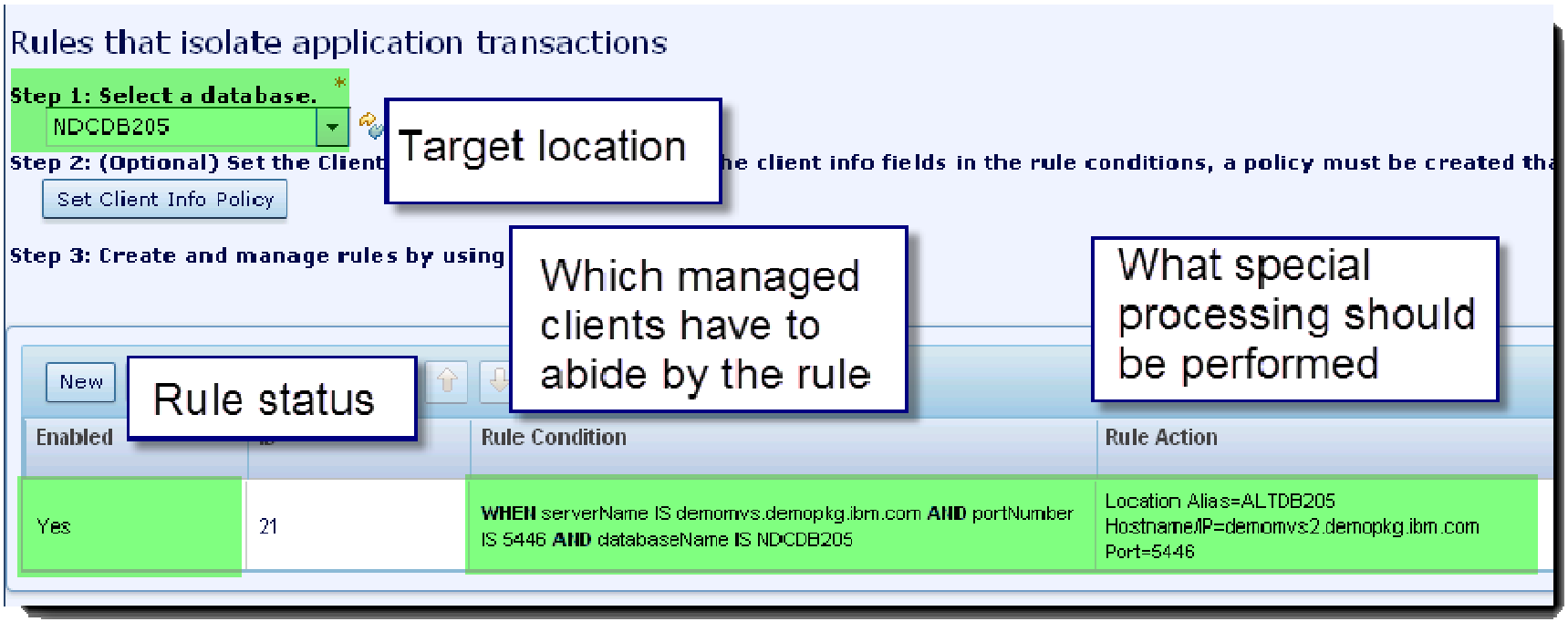
# Cas d'usage d'OCM : 'Agir'



# Gérer les Clients

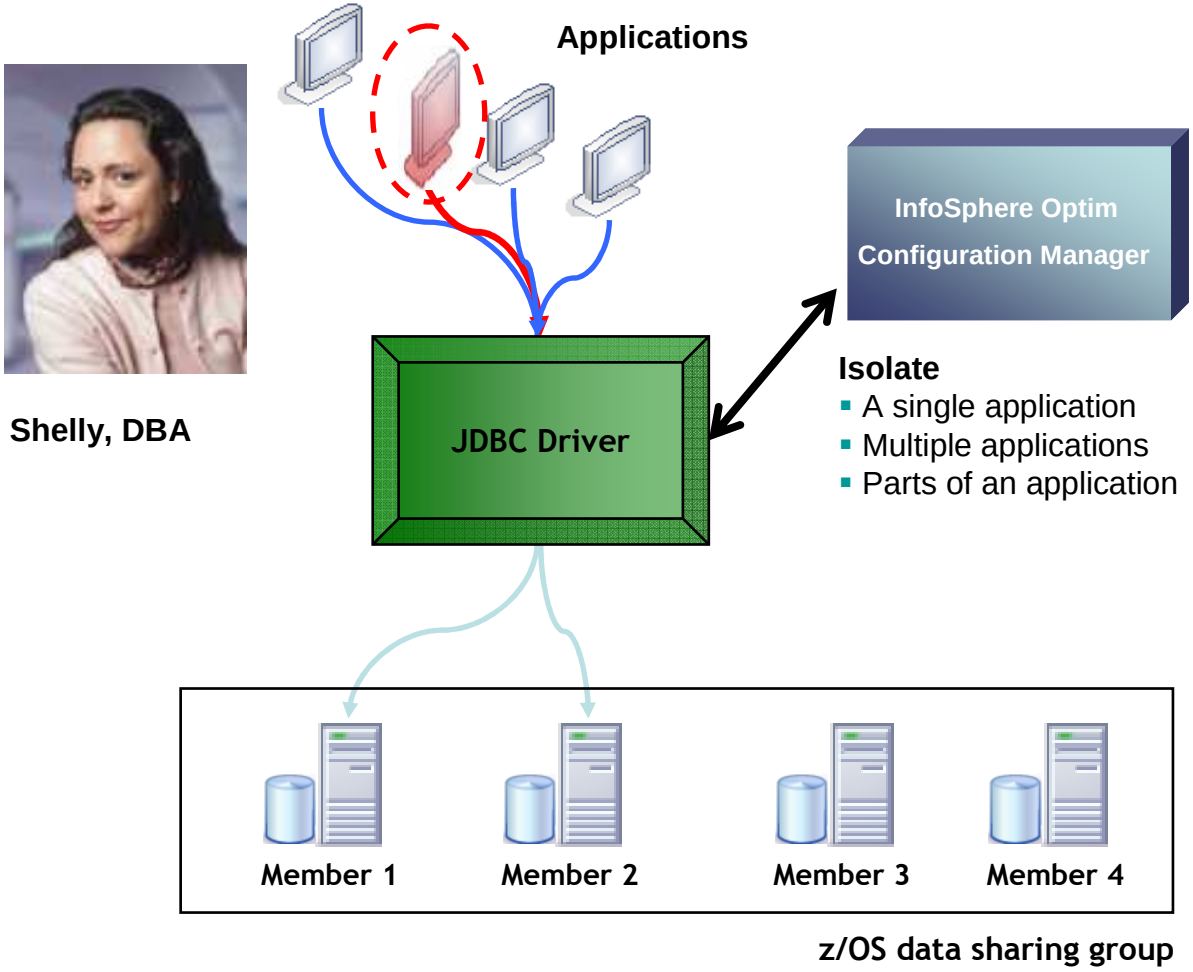
- **Pour contrôler à distance les “managed clients” via la web console d’OCM :**
  - Identifier la cible
  - Définir les règles qui identifient : QUI contrôler et QUOI faire
  - Activer / désactiver la règle selon le besoin



# Gérer les Clients

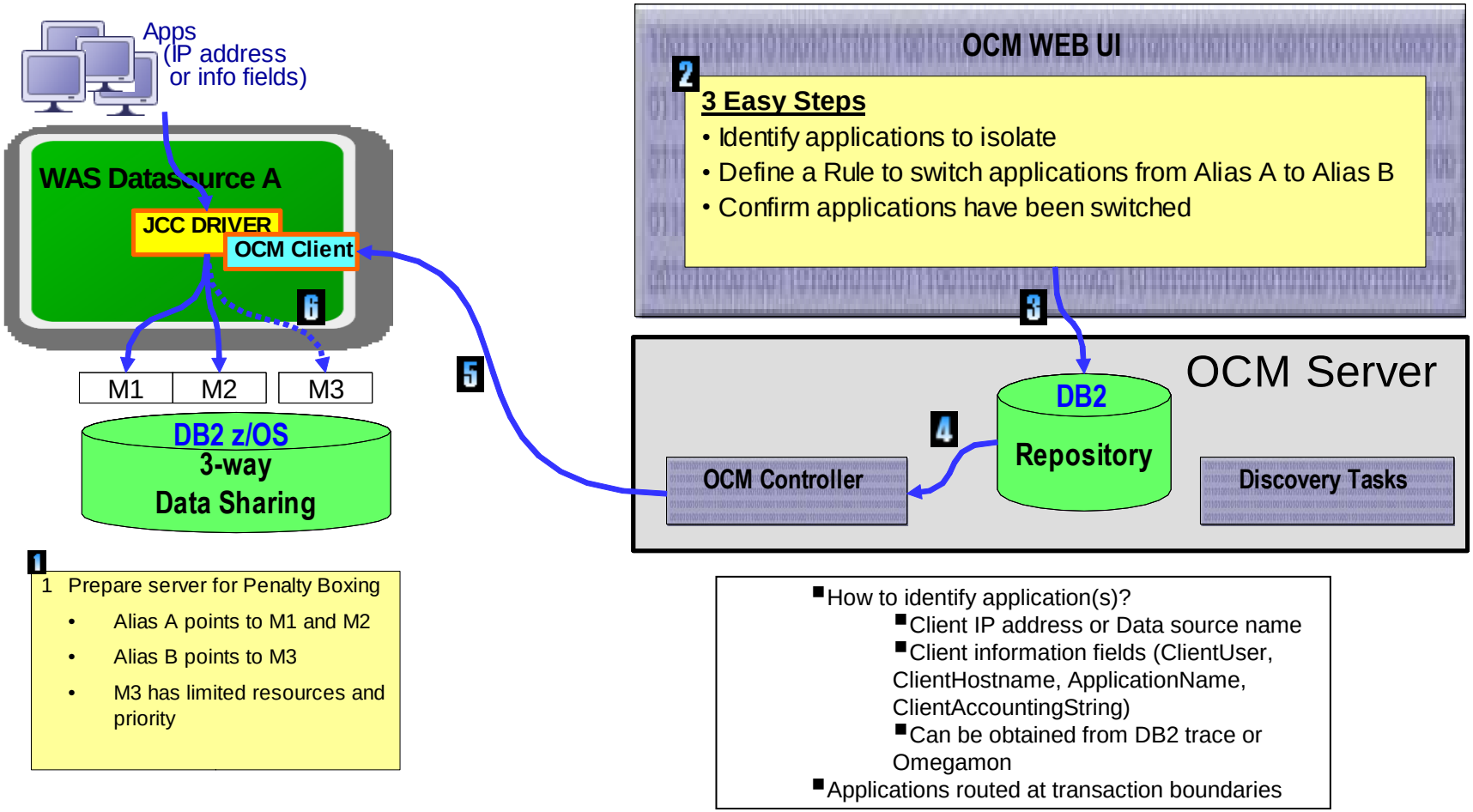
- **Règles définies par “location”**
- **Type de règles :**
  - Isoler des transactions applicatives (workloads)
  - Rediriger les connections database
  - Jouer sur le nombre de connections
  - Ajuster les propriétés de WLB
  - Mapper les classes de service WLM
- **Conditions**
  - Identifier l’application qui nécessite d’être gouvernée

# Scenario: Isoler une application

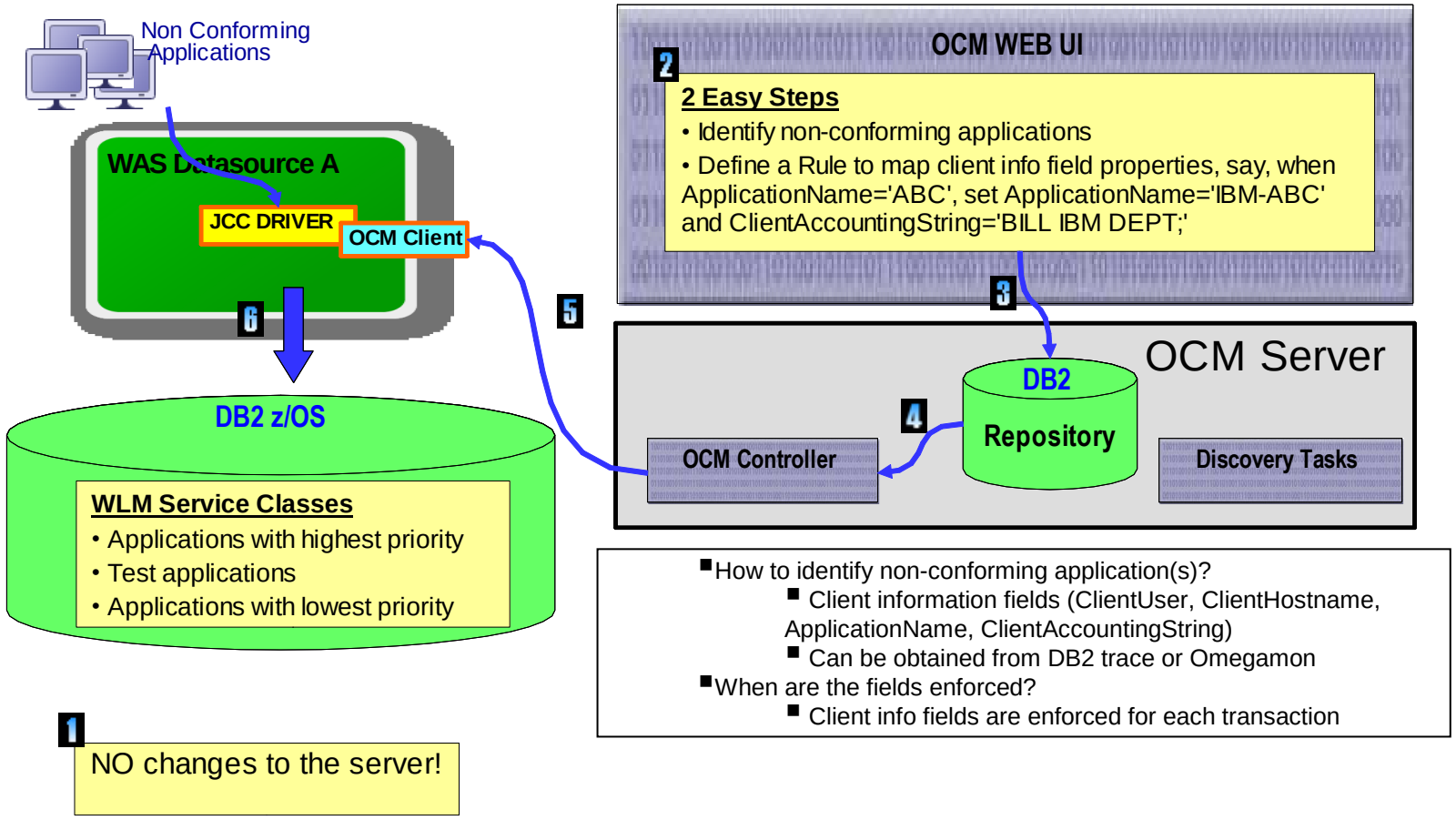



- Goals
  - Minimize the impact of an application on the applications that share the same resources
- Challenges
  - Difficult to isolate individual applications without causing outages
  - Requires coordination of different roles within the enterprise

# Isoler des applications dans un environnement en datasharing (*)



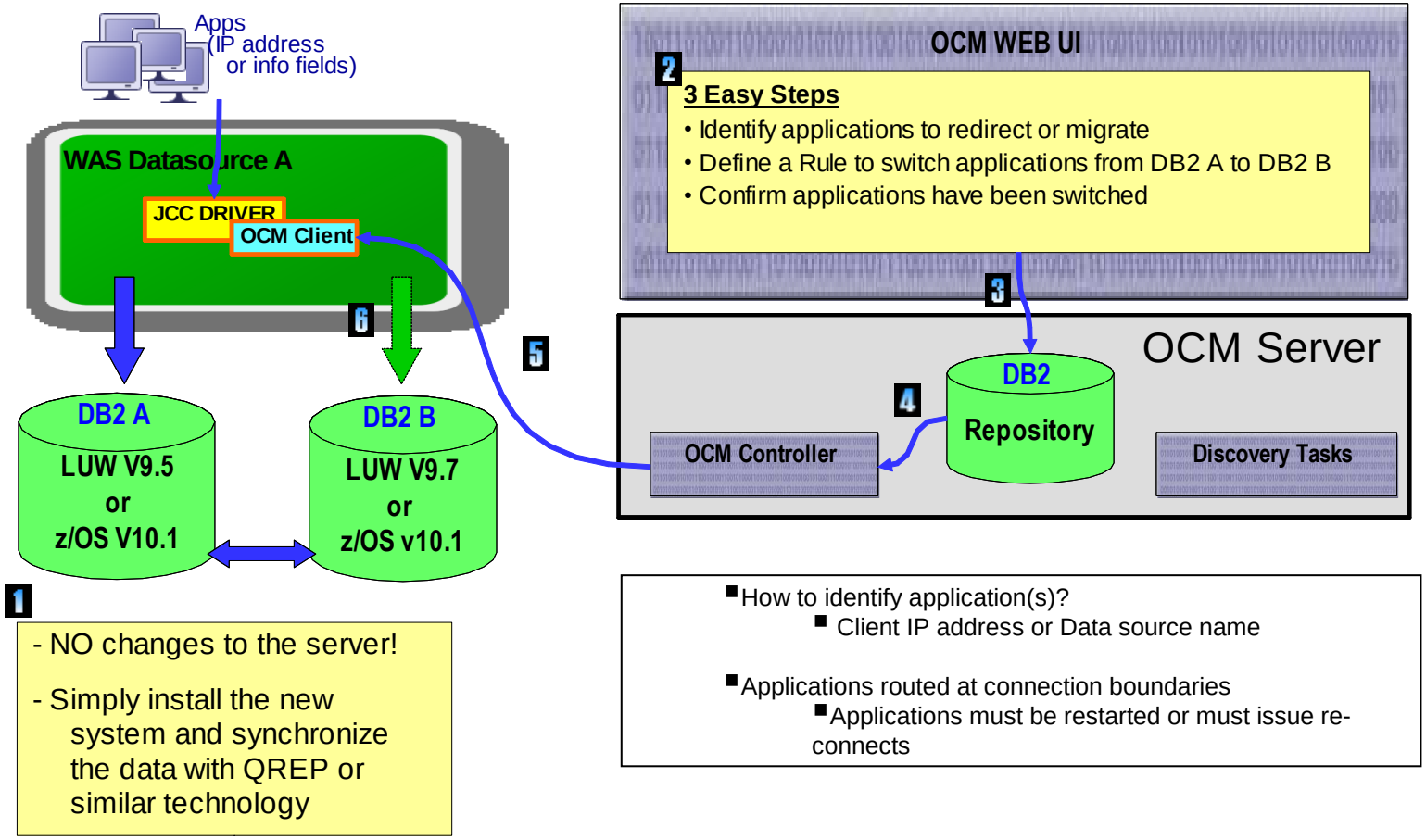
# Mapper les classes de service WLM (*)



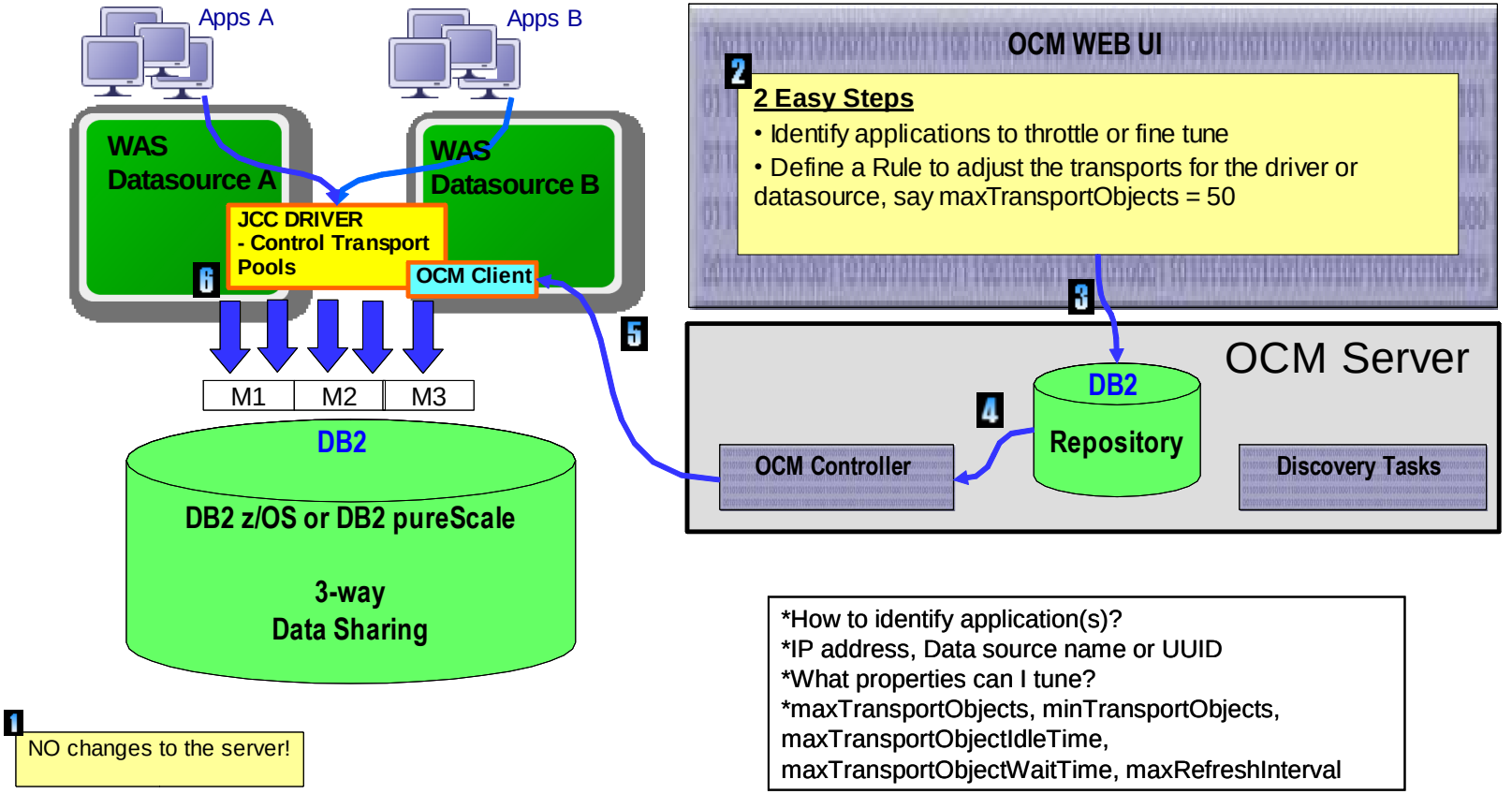

- How to identify non-conforming application(s)?
  - Client information fields (ClientUser, ClientHostname, ApplicationName, ClientAccountingString)
  - Can be obtained from DB2 trace or Omegamon
- When are the fields enforced?
  - Client info fields are enforced for each transaction

1 NO changes to the server!

# Rediriger des connections

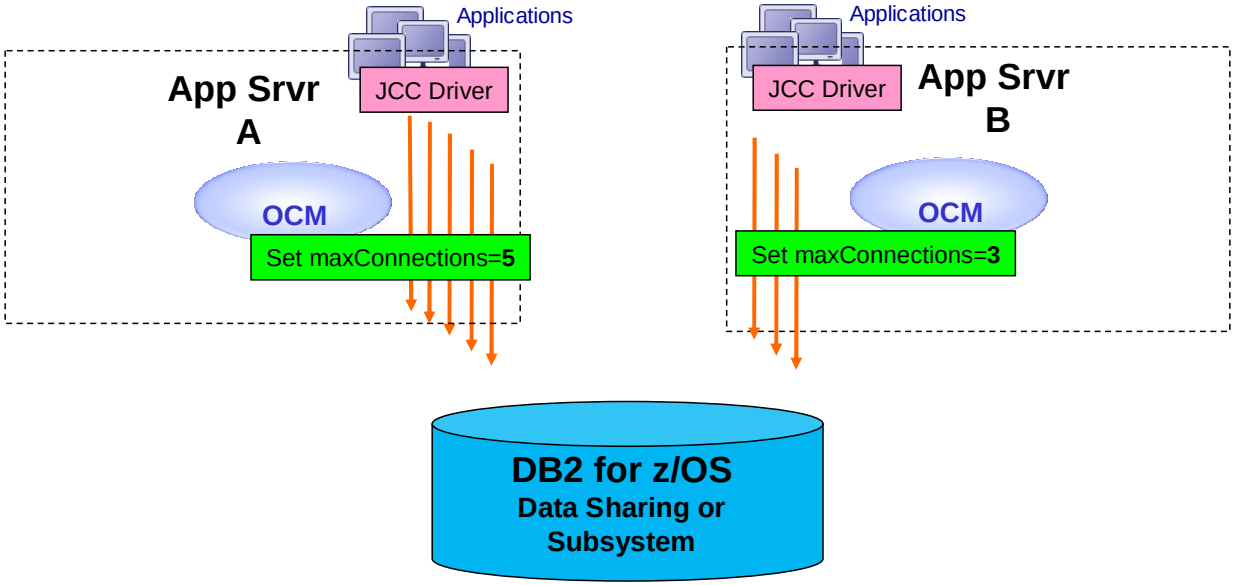


# Maîtriser les connections à DB2 z/OS
# “tuner” les propriétés de Workload Balancing



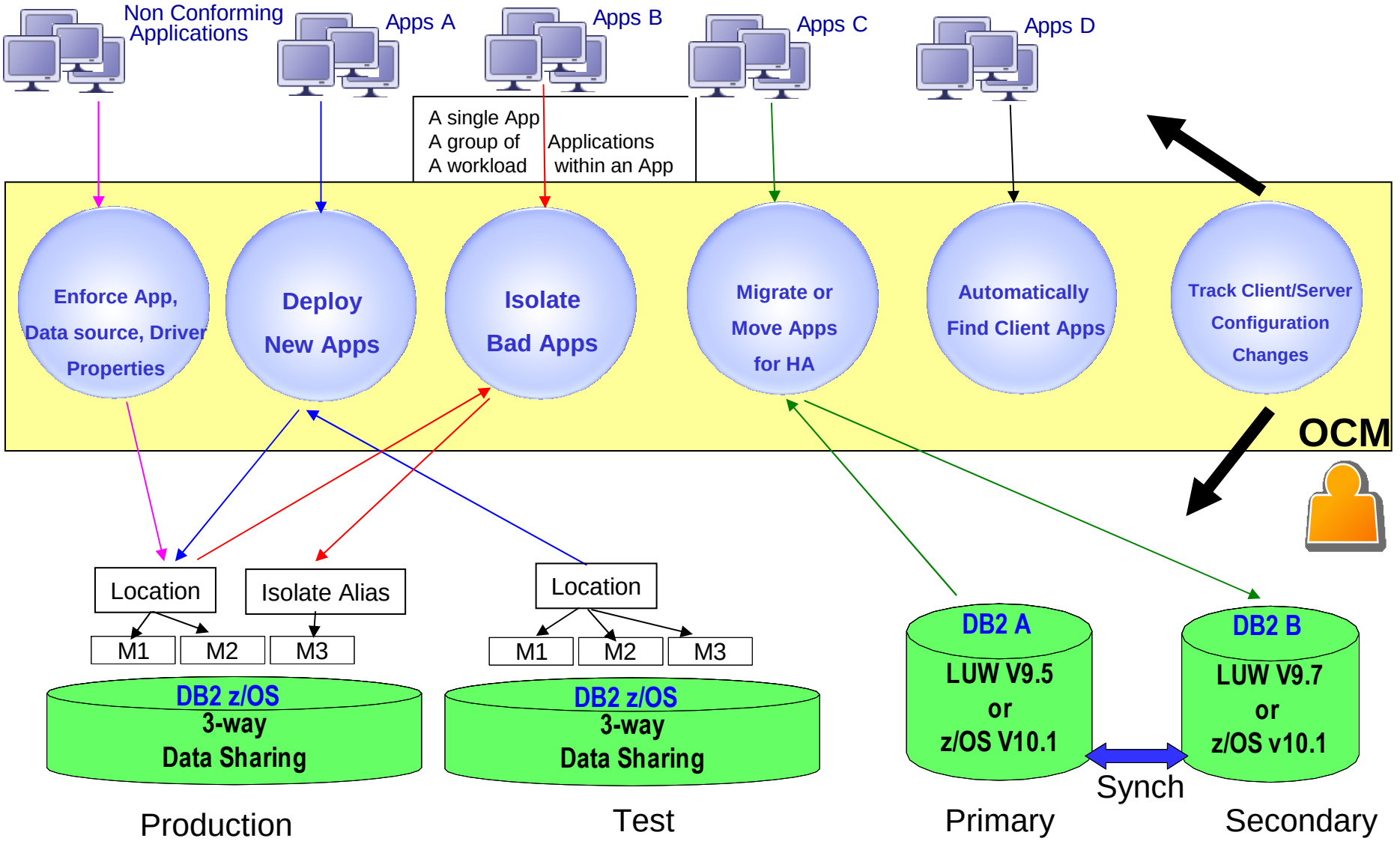
# Gérer le pool de connection WAS

## Remotely Manage WAS Connection Pool




**OCM** allows you to centrally modify/enforce/tune Websphere Application Server connection pool size!

# En synthèse, ce qu' OCM fait pour vous ...



# Ressources aditionnelles

- IOCM demo video
  - Optimize data availability and resource utilization with InfoSphere Optim Configuration Manager
- IOCM podcasts
  - Curt Cotner Exec Talk: Infosphere Optim Tools in DB2 v10
- IOCM Information Roadmap
  - Information roadmap on DeveloperWorks
- IOCM forum
  - IOCM forum

Questions?

# InfoSphere Optim Configuration Manager (OCM)

| | z/OS | LUW |
|---|---|---|
| **Explore** data servers, **track changes** and **compare** configurations | ✓ | ✓ |
| **Explore** clients, **track changes** and **compare** configurations | ✓ | ✓ |
| **Redirect** database **connection** requests | ✓ | ✓ |
| **Isolate applications**; (penalty box, proving ground or general purpose) | ✓ (*) | |
| **Enforce client properties** so that they conform to the established policies of z/OS Workload Management Service Classes | ✓ (*) | |
| Modify properties of deployed database clients and drivers to achieve optimal workload balancing in the database | ✓ | ✓ **(pureScale)** |
| **Identify storage optimization opportunities** through reclaimed storage, compression and least used objects | | ✓ |