Stay ahead with Pacemaker, the new Db2 cluster manager for automated failover

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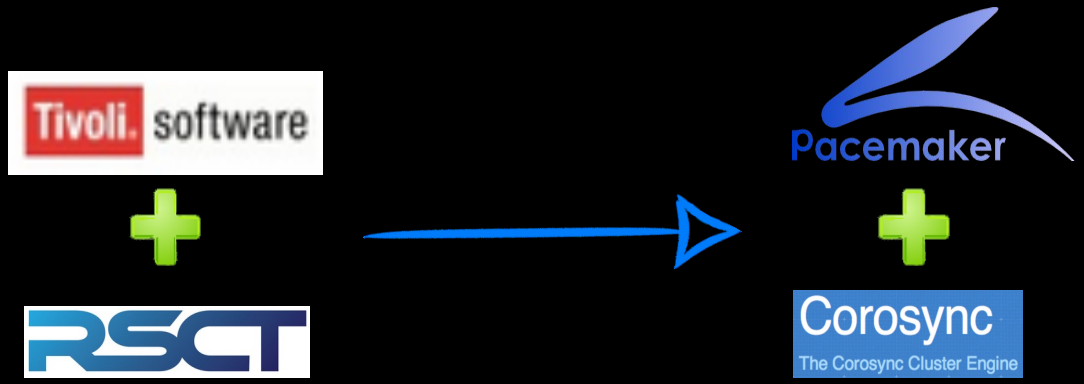
Why Pacemaker?



Pacemaker is planned to become the future cluster solution for all types of Db2 deployments including pureScale, DPF, and containerized Db2 deployments in the cloud.

- Modernized stack
  - Cloud ready
  - Open source
    Allow for future port to AIX
- Simpler...
  - Architecture
  - Diagnostics
  - Support model
- Better performance

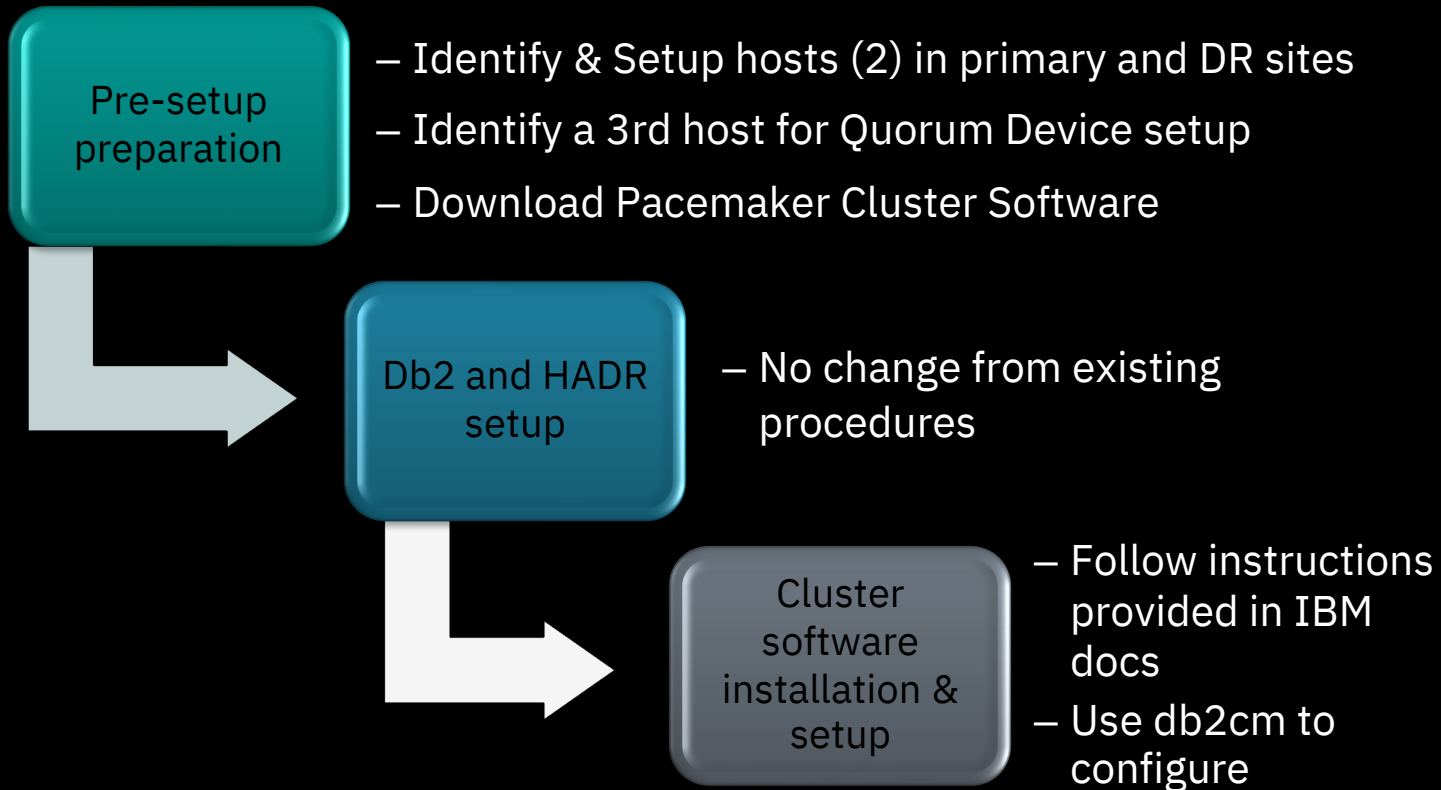
Quorum Support

- No IP/Disk tiebreaker support in Pacemaker
- Pacemaker recommends using Qdevice for reliable quorum
  - Qdevice requires a 3rd light weight host to run an arbitrator daemon.
  - No need to install Db2 or full Pacemaker stack on the 3rd host.
  - Small memory footprint.
- A single Qdevice host can provide quorum support for multiple clusters.
- Qdevice is the recommended quorum solution

Alternatively:

- Fencing on AWS: https://www.ibm.com/support/pages/setting-two-node-db2-hadr-pacemaker-cluster-fencing-aws
- Fencing on Azure: https://www.ibm.com/support/pages/setting-two-node-db2-hadr-pacemaker-cluster-fencing-microsoft-azure

High level flow of new installation & Setup



db2cm -list

```
[root@db2tea1 ~]# db2cm -list
```

Domain

```
Domain information:
Domain name                 = hadom
Pacemaker version           = 2.0.2-1.db2pcmk.el8
Corosync version            = 3.0.3
Current domain leader       = db2tea1
Number of nodes             = 2
Number of resources         = 6
```

Cluster membership

```
Node information:
Name name            State
---------------      --------
db2tea1              Online
kedge1               Online
```

Resources

```
Resource Information:

Resource Name       = db2_db2inst1_db2inst1_SAMPLE
  Resource Type                 = HADR
    DB Name                     = SAMPLE
    Managed                     = true
    HADR Primary Instance       = db2inst1
    HADR Primary Node           = db2tea1
    HADR Primary State          = Online
    HADR Standby Instance       = db2inst1
    HADR Standby Node           = kedge1
    HADR Standby State          = Online

Resource Name       = db2_db2tea1_db2inst1_0
  State                         = Online
  Managed                       = true
  Resource Type                 = Instance
    Node                        = db2tea1
    Instance Name               = db2inst1

Resource Name       = db2_db2tea1_
  State                         = Online
  Managed                       = true
  Resource Type                 = Network Interface
    Node                        = db2tea1
    Interface Name              = eth1

Resource Name       = db2_kedge1_db2inst1_0
  State                         = Online
  Managed                       = true
  Resource Type                 = Instance
    Node                        = kedge1
    Instance Name               = db2inst1

Resource Name       = db2_kedge1_eth1
  State                         = Online
  Managed                       = true
  Resource Type                 = Network Interface
    Node                        = kedge1
    Interface Name              = eth1
```

db2cm –list (cont'd)

Fence

```
Fencing Information:
  Not Configured
```

Quorum

```
Quorum Information:
  Qdevice

Qdevice information
-------------------
Model:                  Net
Node ID:                1
Configured node list:
    0 Node ID = 1
    1 Node ID = 2
Membership node list:  1, 2

Qdevice-net information
----------------------
Cluster name:       hadom
QNetd host:         tierce1:5403
Algorithm:          LMS
Tie-breaker:        Node with lowest node ID
State:              Connected
```

Service Offering Pacemaker

IBM Expert Labs DACH - Data and AI

Experienced Db2 specialists help you to run Pacemaker quickly!

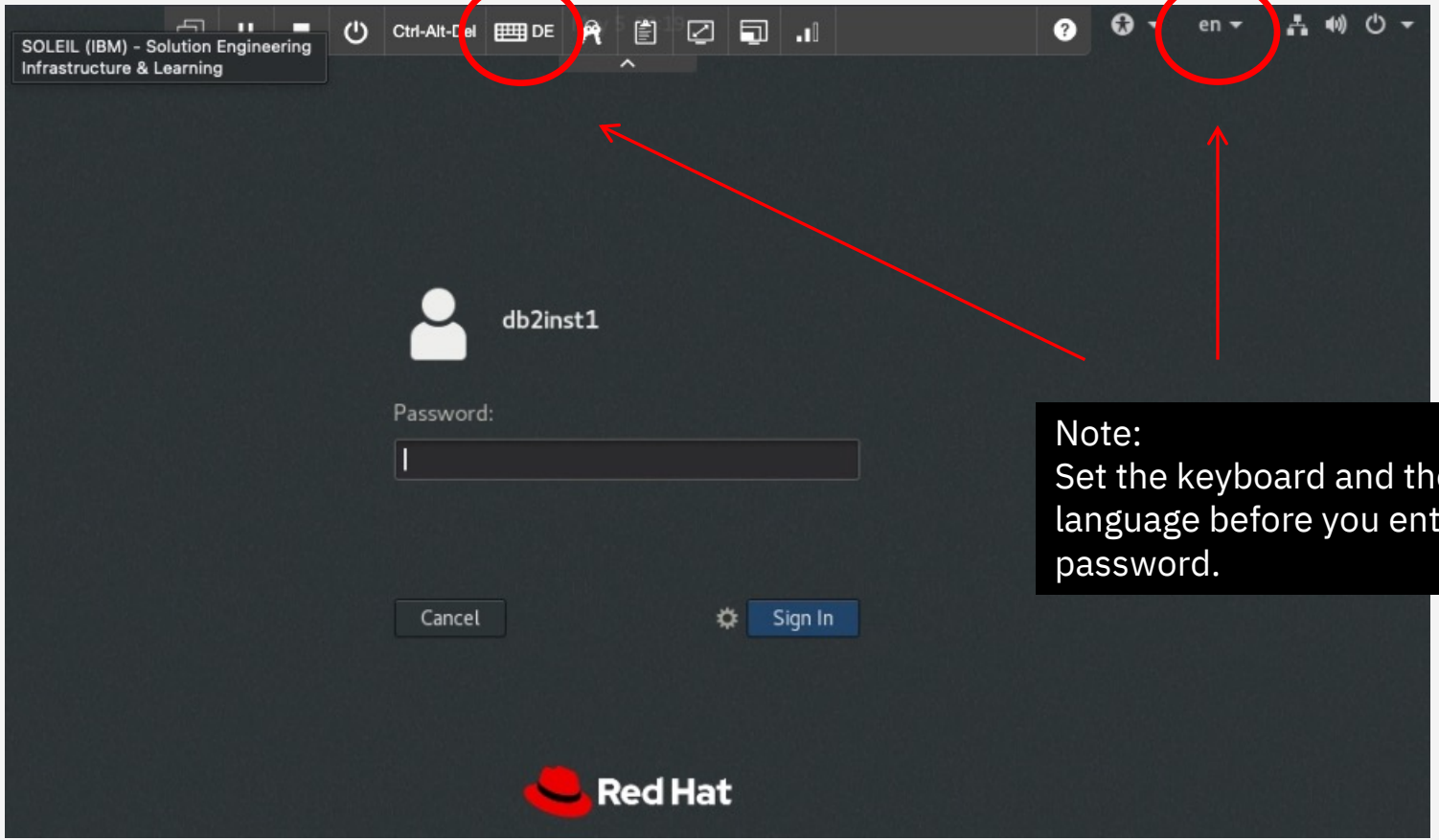
- Offering for new customers

  Setup of Pacemaker as Cluster Manager for HADR environments
  - Analysis of *Requirements* and *Restrictions*
    - *Software Build, Versions*
  - Installation and setup of Pacemaker Software (Qdevice)
  - Validation of the cluster (Testcases like Reboot, user takeover,...)

- Offering for TSA customers

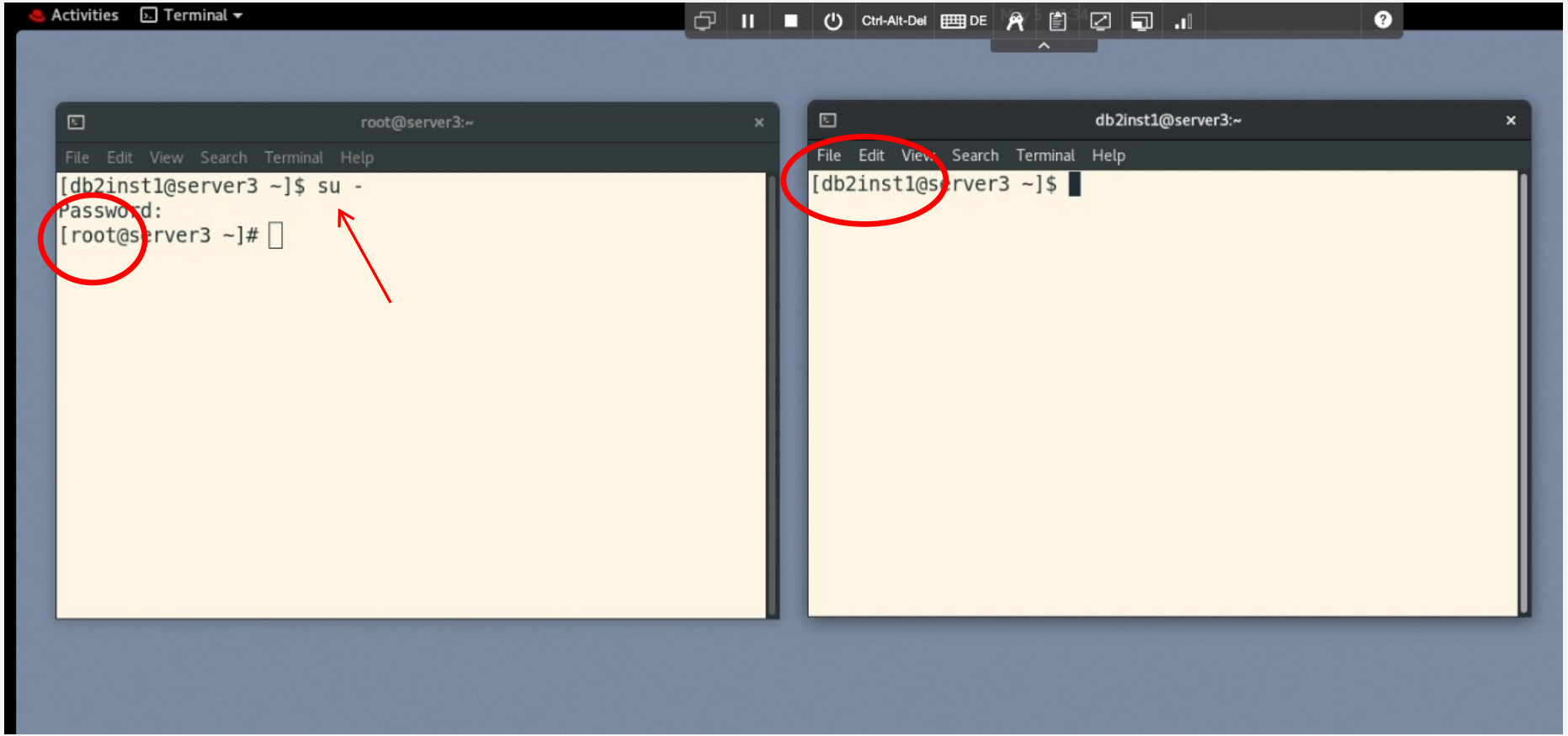
  Migration of existing TSA Cluster to Pacemaker
  - Installation Pacemaker Software
  - Migration
    - Backup of existing TSA configurations
    - TSA Cluster Cleanup
    - Creation of Pacemaker Cluster and Ressources
  - Validation of Cluster (Testcases like Reboot, user takeover,...)

Lab Environment - Login



Note:
Set the keyboard and the language before you enter the password.

Lab Environment - Terminals



Important Commands

crm status
- Prints the status of the cluster at the time it was run

crm_mon
- Same output as crm status, but continuously updates as the cluster is running.

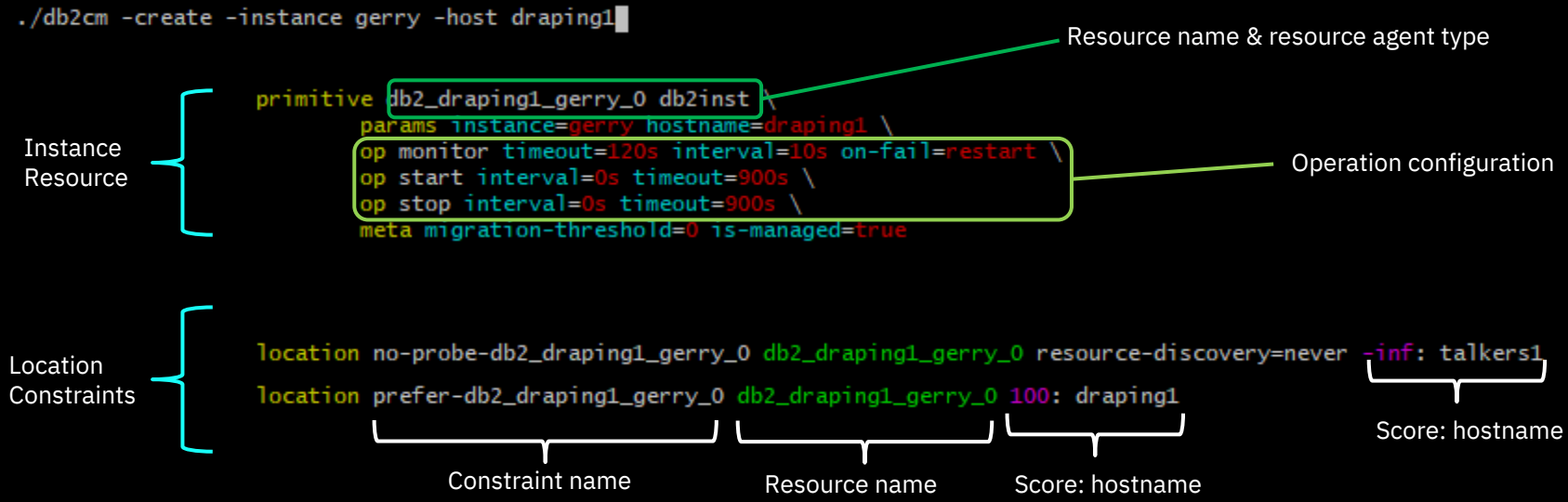
crm config show
- Prints out cluster's configuration including resources, constraints, and more.

crm resource refresh
- Resets resources failure counts. May be asked to run this by db2 support.

db2cm –list
- Db2 command that prints information relating to resource status and cluster configuration.

db2cm

- New command line tool replacing db2haicu
- Configures automation for Db2 ‘services’ (db2 instance, HADR database)



The above information can be displayed using the `crm config show` command.

See the Pacemaker documentation for more information.