DB2 Warehouse Mini Overview

Overview:

You can deploy dashDB Local in a wide range of environments, from a basic laptop for development purposes, all the way to a large production cluster. You can choose either a single-node (SMP) setup or a (MPP – massively parallel processing) setup. An MPP setup has a minimum of (3) nodes and a maximum of either 24 / 60 nodes depend on the database layout.

DB2 Warehouse Min Config:

In this guide, we are showing a deployment example of a multimode (MPP) setup with (3) nodes using IBM OpenPower S822LC server(s) (ie 1 head node and 2 data nodes)

The system components is selected with a specific capacity/price /performance for an entry level config.
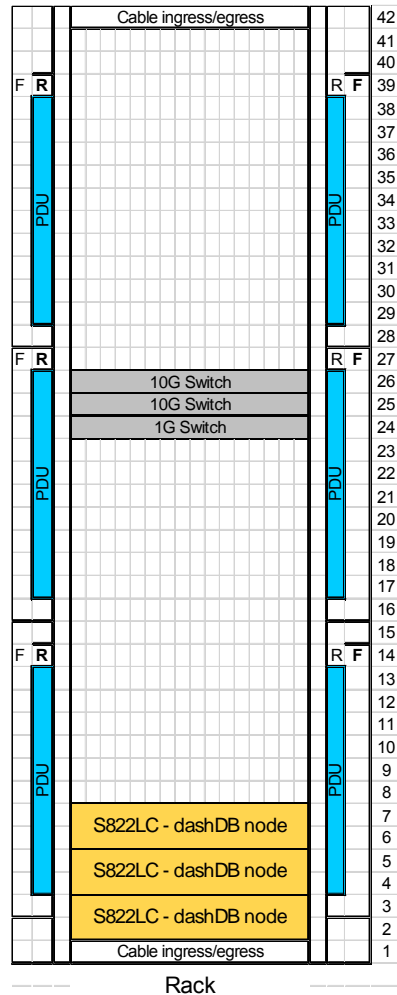
Design consideration for DB2 Warehouse Mini:

- Cluster and Node Memory Consideration (256GB memory minimum is preferred)
  https://www.ibm.com/support/knowledgecenter/en/SS6NHC/com.ibm.swg.im.dashdb.doc/admin/local_prereqs.html
  - If you deployed dashDB Local 1.7 or later and had at least 960 GB of cluster total RAM when you deployed, 60 data partitions were allocated. The maximum number of nodes that you can scale out to is therefore 60 (one head node and 59 data nodes). Recommend for Scale-out: 3, 4, 5, 6, 10, 12, 15, 20, 30, or 60 nodes.
  - If you deployed dashDB Local 1.7 or later and had less than 960 GB of cluster total RAM when you deployed, 24 data partitions were allocated. The maximum number of nodes that you can scale out to is therefore 24 (one head node and 23 data nodes). Even if you increase the cluster total RAM to at least 960 GB after deployment, you cannot scale out to more than 24 nodes. Recommend for Scale-out: 3, 4, 6, 8, 12, or 24 nodes.
- High speed network for inter-nodes communications: 10G minimal (40G preferred)
- Storage: 300GB local storage minimum per node .. (Solid state / Flash drives are preferred)

DB2 Warehouse Mini Config

Cable ingress/egress	42
	41
	40
F R — R F	39
	38
	37
	36
	35
PDU — PDU	34
	33
	32
	31
	30
	29
	28
F R — R F	27
10G Switch	26
10G Switch	25
1G Switch	24
	23
PDU — PDU	22
	21
	20
	19
	18
	17
	16
	15
F R — R F	14
	13
	12
	11
	10
PDU — PDU	9
	8
S822LC - dashDB node	7
	6
S822LC - dashDB node	5
	4
S822LC - dashDB node	3
	2
Cable ingress/egress	1

Rack

Software Stack:
Ubuntu 16.04 .01 or later
RHEL 7.3 (TDB)

Docker Platform
dashDB local Container

Cluster File System :
Spectrum Scale GPFS FPO

dashDB Local Node
Qty = 3

IBM S822LC Bigdata Server Config: (IBM **8001-22C**) (2U)
- **8** Cores (3.3Ghz), 256GB memory
- **1** x SAS Raid Controller
- **2** x SAS HDDs 2TB (OS boot/ mirror)
- **7** x 1.9TB SAS SSD drives– 13TB usable
- **1** x 2-Port 10G/1G NIC adapter

Total cluster:
0.768TB Memory

Network :
1 /(2) x IBM 10G G8264 / Customer provide
1 x IBM 1G G8052 / Customer provide

Space Requirements: 6U
Rack Requirements:
IBM SlimRack 7965-94Y / Customer
provide equivalent.

High Level Network Architecture Diagram:
DB2 Warehouse Mini

2x ISL

Customer Up-Links

Data

1 Gb

IPMI

OS

dashDB Local Node

Local SDDs

IPMI

OS

dashDB Local Node

Local SDDs

IPMI

OS

dashDB Local Node

Local SDDs

GPFS-FPO

10 Gb

PCIe Slot 2
Gen3 x16 PCIe
Full high full length
Double Width
CAPI Enabled

PCIe Slot 3
Gen 3 x8 PCIe
Half high half length

1000W Power Supplies

4-Port 10 Gbps
RJ-45 Ethernet

Dual
USB (3.0)

Serial

IPMI &
BMC Ethernet Port
RJ-45

VGA

IBM 8001-22C