

# Netezza at the ASX

User Perspective –  
From Evaluation to Deployment

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# Agenda



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AUSTRALIAN SECURITIES EXCHANGE

- Evaluation
- Implementation Activities & Considerations
- Realising the Potential – Next Steps

# Evaluation



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- Strategy needed for the Enterprise Data Warehouse
  - What are we doing with our data?
  - Where are we going with our data?
  - Where is all our data?
- Positioning Technology and our Data for the future
- Keeping the momentum
- Netezza offered obligation free POC

# POC Set up



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- Schemas sent to Netezza
- Appliance delivered into Data Centre
- Appliance Configuration and DB schema creation
- Data unloaded from DW using FastReader into flat files
- Data imported into Netezza
- Wednesday → Friday

# POC Results



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- RDW
  - Total execution time for all queries
    - Old - 2hrs 46 mins / Netezza - 4 mins 34 sec
  - Longest Running single query
    - Old - 27 mins 37 sec / Netezza - 1 min 16 sec
- EDW
  - Total execution time for all queries
    - Old - 1 day 5hrs 54 mins\* / Netezza – 3 mins 9 secs
    - \*Could not complete running all queries.
  - Longest Running single query
    - Old – 10 hrs 12 mins / Netezza 41.8 secs

# Netezza POC Observations



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- **Simplicity**
  - DDL simplified significantly
    - Column definitions and disk distribution key
    - No Indexes or Partitions
    - Total RDW table DDL reduced from 103,600 lines to 2,600
    - One DDL alone reduced from 9208 lines to 13
  - No tuning required

# Netezza POC Observations (cont.)



- Capacity
  - Data compression
    - The ASX data was compressed on average between 2 - 2.4x.
  - The TwinFin3 has a raw disk capacity of 7.5 TB. With the compression ratio seen in the POC, this is effectively 15-18 TB for ASX data

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- Proof of Concept
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# Implementation Activities



- Hardware installation & Productionisation
- Implementation Approach
- Data Migration
  - WisdomForce FastReader
  - EDW – Oracle = 400Gb / Netezza = 40Gb
  - RDW – Oracle = 950Gb / Netezza = 210Gb
  - NPS6 added 30% more compression
- ETLs
  - EDW – Converted & Tested (40-odd)
  - RDW – Converted & Tested (3)
- Universes & Reports
  - 17 Universes & 100+ Reports
- Other
  - End-of-Market/ Day Broker Activity ETL/Report -> 3hrs to 5mins
  - Trade & Order Analysis – New

# Implementation Activities



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- Performance Gains
- ETLs
  - Daily - 7-10 hours → 35 minutes
  - Monthly - 7 hours & 2 hours → 2 minutes & 2 minutes
  - End-of-Market/ Day Broker Activity ETL/Report - 3hrs → 5mins
- Reports
  - RDW – (64) - 2 hours 45 minutes → 12 minutes
  - EDW – (44) - 39 minutes → 3 minutes
- Record Trading Day – 1.5 Million Trades
  - Trade Data - 2 Hours 22 minutes → 5 minutes
  - Full Daily ETL – 5 Hours 3 minutes → 16 minutes 25 seconds

# Lessons Learnt



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- ETLs
  - Bulk Loading options
  - Table Comparison options
  - Primary Key –
    - i.e. not used in Netezza, but needed for Data Services
  - Data Flow restructure opportunities
    - Reduction of loops required
    - More use of staging tables
    - Replace Mart tables and do aggregation on the fly
      - Eg: Dilution Factors

# Lessons Learnt (cont.)



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- Universes / Reports
  - Data store changes
  - Subtle universe syntax changes
    - Eg sysdate/current\_date ; to\_number
  - Clean up – Embedded report SQL moved to Universe Objects (Best Practice advice)

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# Realising the Potential – Next Steps



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- Ability to store / report on more granular data
- Reduce data aggregation complexity
- Faster Data Retrieval = More Analysis Capacity
- Decision Support
- Market Data Products
- Moving from 'experienced' to a 'transformed' organisation, supporting the business with a 'Strong ability to capture, aggregate and analyse data'