Retail Data Model 11.3.1(a DB EE Option)

Product Overview
The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decision. The development, release, and timing of any features or functionality described for Oracle’s products remains at the sole discretion of Oracle.
Presentation Overview

• Retail Technology Challenges
• Exadata Intelligent Warehouse for Retail
• Oracle Retail Data Model Features
• Customer Successes
Retailing is Being Redefined
Key Questions Driving Change

Service
How do we better serve the modern customer?

Transformation/Predictability
How do we bring the customer into the equation?

Growth
How do we successfully drive new growth?
Top priorities for retailers include:
- Customer segment analysis
- Customer loyalty analysis
- Market basket analysis

Source: Chain Store Age Survey
Presentation Overview

• Retail Technology Challenges
• Exadata Intelligent Warehouse for Retail
• Oracle Retail Data Model Features
• Customer Successes
Convergence
Combining Vast Experience with Revolutionary Technology

Oracle Retail

39.6%

IBM

22.9%

Microsoft

16.0%

Teradata

11.4%

For Retail
Oracle Exadata Intelligent Warehouse for Retail

- Exadata
- Intelligent Warehouse for Retail

- Retail Data Model
- Business Intelligence Technology
- Exadata
Oracle Exadata

- Optimized for extreme performance
  - Improve query performance by 10x
- Powered by Oracle Database 11g, with built-in, advanced analytics
  - In-database OLAP, data mining, spatial
- Simplified deployment
  - Pre-integrated software, hardware, storage
- Designed to support mixed workloads
  - Run both operational and strategic data warehouse workloads on the same machine
Exadata Intelligent Warehouse for Retail
A Complete Data Warehouse Solution for Retail

• Intelligence
  – Industry-specific data models
  – Packaged advanced analytics

• ... with Extreme Performance
  – Improve query performance 10-100x with Exadata

• ... at a Lower Cost
  – Simplify your infrastructure

• ... for Fast Results
  – Jumpstart development - deliver value quickly
  – Automatically exploit Oracle performance and analytic capabilities
Exadata Intelligent Warehouse Solution for Retail
Packaged Experience and Technology

- Business Insight
  - Leverage enterprise-wide data model for industries
  - Gain insights using prepackaged advanced analytics

- Extreme Performance
  - Improve query performance 10-100x
  - Grow solution to virtually any scale

- Fast Time-to-Value
  - Jumpstart development and deliver value quickly
  - Lower risks
Exadata Intelligent Warehouse
Packaged Experience and Technology

- **Business Insight**
  - Leverage enterprise data model for Industries
  - Gain insights using prepackaged advanced analytics

- **Extreme Performance**
  - Improve query performance 10-100x
  - Grow solution to virtually any scale

- **Fast Results**
  - Jumpstart development and deliver value quickly
  - Lower risks

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Exadata Intelligent Warehouse
Packaged Experience and Technology

- **Business Insight**
  - Leverage enterprise data model for Industries
  - Gain insights using prepackaged advanced analytics

- **Extreme Performance**
  - Improve query performance 10-100x
  - Grow solution to virtually any scale

- **Fast Results**
  - Jumpstart development and deliver value quickly
  - Lower risks
What Does Extreme Performance Mean?

- **Product Reclassification**
  - General purpose server: 4 hr 14 min
  - Oracle Exadata: 60 min
  - 6 x faster

- **Monday Morning Report**
  - General purpose server: 3 hr 10 min
  - Oracle Exadata: 16 min
  - 12 x faster

- **Daily Flash Sales Report**
  - General purpose server: 35 min
  - Oracle Exadata: 3 min
  - 11 x faster

Legend:
- General purpose server
- Oracle Exadata
Fast Results
Retail Performance Metrics and Insight out of the box

Build from Scratch with Best of Breed Approach

Oracle Exadata Intelligent Warehouse

Training & Roll-out
Define Metrics & Dashboards
Data Integration
Analysis and Design
Sizing and Configuration

months or years

weeks or months

Speed to Value, Simplified Deployment with predictable cost

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Hardware and Software
Engineered to Work Together
Presentation Overview

• Retail Technology Challenges
• Exadata Intelligent Warehouse for Retail
• Oracle Retail Data Model Features
• Customer Successes
Retail Data Model

A Database EE Option

ORACLE® Database Technology

ORACLE® Retail Domain Knowledge

ORACLE® BI Technology
Oracle Retail Data Model
More Than Just a Data Model

- Enterprise wide data model for retail industry
  - Over 1,250 tables and 18,500 attributes
  - Over 1,800 industry measures and KPIs
  - Base on ARTS 6.0

- Prebuilt mining models, OLAP cubes and sample reports

- Automatic data movement across the warehouse

- Easily extensible and customizable

- Usable within any retail application
ORDM 11.3.0 New Features

**Functional**
- ARTS 6.0 uptake
- Additional Functional coverage
  - Quick Serve, Casual & Fine Dining
  - Consumer Goods
  - Wholesale & Private Label
  - Multi-channel Retailers
  - Wholesale Franchise
  - Control and Tender Control details
  - Invoice, GL, Journal
- New Advanced Analytics, Forecasting and Prediction
  - Price Elasticity
  - Customer Sentiment
  - Workforce Optimization
  - Customer Orders
- Support for “Retail Math”

**Technical**
- Adoption of 11.2 database features and capabilities
  - Interval Partition
  - Improved OLAP
    - Geneva Best Fit Forecasting
    - Cube-Aware Materialized Views
  - Improved Mining
    - Mining Data Preparation
- Improved Reports
  - Less operational, more advanced analytics
  - Update-able metadata for impact and lineage analysis
# ORDM Feature Comparison

<table>
<thead>
<tr>
<th>Features</th>
<th>ORDM 10.2</th>
<th>ORDM 11.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>RETAIL segments covered</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>Entities/Attributes</td>
<td>650 / 10,000</td>
<td>1250 / 18,000</td>
</tr>
<tr>
<td>Measures &amp; KPI</td>
<td>1200</td>
<td>1800</td>
</tr>
<tr>
<td>Metadata Browser &amp; Refresh</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>OLAP Dimensions / Cubes</td>
<td>3 / 4</td>
<td>6 / 9</td>
</tr>
<tr>
<td>OLAP Forecast</td>
<td>2 (Manual Algorithm Select)</td>
<td>2 (Geneva Best Fit)</td>
</tr>
<tr>
<td>Mining Models</td>
<td>10</td>
<td>13 *</td>
</tr>
<tr>
<td>Data Model Viewer (Flash)</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Automatic Data Movement (ETL)</td>
<td>66</td>
<td>80</td>
</tr>
<tr>
<td>Sample Reports</td>
<td>300+</td>
<td>75**</td>
</tr>
</tbody>
</table>
ORDM 11.3.0 Business Areas Coverage

Calendar Events (i.e., Day Actual, Internal/External, Appointment, Store, Ad)
Call Center Agent & Customer Touch Point
Campaign & Media Promotion Planning
Category Management / Product Mix
Customer & Prospect
Customer Life Time Value & Sentiment
Dine-in Restaurant Servicing
E-Commerce Interaction & Click stream
Employee and Roles
Forecast and Scoring
Inventory Management
Invoice (i.e., terms, conditions)
Item Pricing and Restriction
Loyalty and Gift Card Analysis
Market Area / Trade Area Support
Marketing
Merchandising
Multi-channel Sales and Support
Point of Service Transactions and Detail
POS Department
Privacy
Private Label & Manufacturing
Procurement > Plan-o-gram Management
Promotion Management
Prospects & Customer
RFID / Serialized Item Support & Tracking
Service Tips Reporting
Shipment, Freight Bill
Store Labor and Operations
Survey & Feedback
Vendor Management
Wholesale & Franchise
Workforce Management Analysis
ORDM 11.3.0 Subject Areas

- Account
- Address / Location
  - Demographics
  - Geospatial
- Business Unit
- Calendar
- Call Center
- Campaign
- Catalog / Menu
- Certificate / Voucher
- Channels
- Clickstream
  - Agent
  - Host
  - Search
  - Page
  - Referrer
  - Session
- Competitor
- Contract
- Contribution
- Control Transaction
- Cost
- Deal
- Event
- Food Service
- General Ledger
- Item [Mfg/Retailer]
  - Stock
  - Service
  - Serialized
  - Prepared (Recipe)
  - Collection / Pack
  - Pricing
  - Restrictions
- Inventory
  - Allocation
  - Position / Space
  - Receipts
  - Transfers
  - Out of Stock
  - Forecast
- Invoice
- Order Fulfillment
- Party
  - Customer
  - Prospect
  - Vendor
  - Employee
- Planogram
- Promotion
- Revenue Center
- Touchpoint
  - Workstation / Register
  - Call Center / Agent
- Subscription
- Retail Sales
  - Plan
  - Forecast
  - Channel
- Tender
- Till
  - History
  - Tender Control
- Vendor
  - POs/Receipts
  - Performance
  - Appointments
- Workforce Management
  - Position, Job Role
  - Schedule
  - Payroll
  - Training & Certification
  - Labor
  - Performance

New

Improved

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Answers Business Questions

- **Loyalty**
  - What are the characteristics of my most loyal customers? Least loyal?

- **Marketing**
  - How do customers feel about our company and products?

- **Category**
  - Which items drive sales? Which items are frequently purchased together?

- **Item Price**
  - If I discount an item, will it have an impact on sales and revenue?

- **Multi-Channel Sales**
  - How do my internet sales compare to brick and mortar in terms of revenue and cost?

- **Prospects & Customer**
  - Which prospects should I target to convert into loyal customers? What products or offers would be most effective?

- **Store Labor & Operations**
  - Which combination of employees maximized store performance?

- **Forecasting & Scoring**
  - Will my inventory levels meet sales forecast? When will we run out of stock?
Example of Forecasting
Sales Trends vs Stock predict Out of Stock

- Demonstrates predictive analysis on sales forecast and inventory stock
- Oracle Retail Data Model provides many embedded forecast algorithms
- Oracle Exadata provides extreme performance for daily POS transactions
### Example of Predictive Insight

**Market Basket Analysis**

#### Product Category Mix Analysis

<table>
<thead>
<tr>
<th>Store Name</th>
<th>Year</th>
<th>Month</th>
<th>IF</th>
<th>THEN</th>
<th>Basket Category</th>
<th>% Supporting Transaction</th>
<th>Probability</th>
<th>Target Category Significance (Sales Value)</th>
<th>Basket Significance (Sales Value)</th>
<th>Target Category Sales Value</th>
<th>Total Basket Sales Value</th>
<th>Total Sales Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>BEAUTY, MAGAZINE, GRAB AND GO, PHARMACY</td>
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<td></td>
<td>LIQUOR</td>
<td>5</td>
<td>21.05</td>
<td>97.92</td>
<td>2.74</td>
<td>52.14</td>
<td>18,000</td>
<td>656,706</td>
<td>1,259,579</td>
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<tr>
<td>BEAUTY, PACKAGED BEVERAGES, GRAB AND GO, MAGAZINE</td>
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<td></td>
<td>LIQUOR</td>
<td>5</td>
<td>21.64</td>
<td>97.97</td>
<td>3.95</td>
<td>36.20</td>
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<td>455,946</td>
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<td>BOOKS, MAGAZINE, HEALTH, BEAUTY, GRAB AND GO</td>
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<td>LIQUOR</td>
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<td>20.90</td>
<td>97.90</td>
<td>3.31</td>
<td>43.12</td>
<td>18,000</td>
<td>543,102</td>
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<tr>
<td>HEALTH, HOT FOODS, MAGAZINE, GRAB AND GO</td>
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<td>LIQUOR</td>
<td>5</td>
<td>25.07</td>
<td>98.31</td>
<td>6.89</td>
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<td>261,253</td>
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<td>22.24</td>
<td>98.03</td>
<td>6.70</td>
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<tr>
<td>MEAT, BAKERY, GRAB AND GO</td>
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<td></td>
<td>LIQUOR</td>
<td>5</td>
<td>23.13</td>
<td>99.36</td>
<td>9.44</td>
<td>15.14</td>
<td>18,000</td>
<td>190,728</td>
<td>1,259,579</td>
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</tbody>
</table>

- Market Basket Analysis using Key Performance Indicators (KPIs)
- Oracle Retail Data Model provides flexibility to identify correlations and their strength
- Contains additional qualifying Basket/Component KPIs to identify “interesting”/”useful” rules
- Oracle Exadata provides extreme performance for ultra-fast cross sell analysis
Example of Predictive Insight
Customer Loyalty Analysis

Customer Loyalty Rules - (DT)
Time run: 8/17/2011 5:43:48 AM

<table>
<thead>
<tr>
<th>Customer Profile</th>
<th>Performance Measure Value</th>
<th>% of Supporting Transaction</th>
<th>Probability</th>
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</thead>
<tbody>
<tr>
<td>Years Of Residence = '1', '2', '3', '4', '5' and YearS_OF_RESIDENCE = '1', '2', '3' and Household Size = '3+' and YearS_OF_RESIDENCE = '1'</td>
<td>LEAST LOYAL</td>
<td>2.45%</td>
<td>84.76%</td>
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<tr>
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<td>LEAST LOYAL</td>
<td>0.13%</td>
<td>100.00%</td>
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<tr>
<td>Years Of Residence = '1', '2', '3', '4', '5' and YearS_OF_RESIDENCE = '1', '2', '3' and Household Size = '3+' and YearS_OF_RESIDENCE = '1' and Marital Status = 'MARRIED', 'SINGLE'</td>
<td>LEAST LOYAL</td>
<td>1.60%</td>
<td>87.85%</td>
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<tr>
<td>Years Of Residence = '1', '2', '3', '4', '5' and YearS_OF_RESIDENCE = '4', '5' and Household Size = '3+'</td>
<td>PRETTY LOYAL</td>
<td>10.93%</td>
<td>83.17%</td>
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<tr>
<td>Years Of Residence = '1', '2', '3', '4', '5' and YearS_OF_RESIDENCE = '4', '5' and Household Size = '3+' and Marital Status = 'MARRIED', 'SINGLE'</td>
<td>PRETTY LOYAL</td>
<td>7.30%</td>
<td>81.58%</td>
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<td>Years Of Residence = '1', '2', '3', '4', '5' and YearS_OF_RESIDENCE = '4', '5' and Household Size = 'LESS THAN 3' and Marital Status = 'MARRIED', 'SINGLE'</td>
<td>MARGINALLY LOYAL</td>
<td>9.60%</td>
<td>86.29%</td>
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<tr>
<td>Years Of Residence = '1', '2', '3', '4', '5' and YearS_OF_RESIDENCE = '4', '5' and Household Size = 'LESS THAN 3' and Marital Status = 'MARRIED', 'SINGLE'</td>
<td>MARGINALLY LOYAL</td>
<td>6.52%</td>
<td>84.17%</td>
</tr>
<tr>
<td>Years Of Residence = '10', '6', '7', '8', '9' and Household Size = '3+'</td>
<td>MOST LOYAL</td>
<td>25.01%</td>
<td>88.28%</td>
</tr>
<tr>
<td>Years Of Residence = '10', '6', '7', '8', '9' and Household Size = '3+' and Marital Status = 'MARRIED', 'SINGLE'</td>
<td>MOST LOYAL</td>
<td>17.11%</td>
<td>86.10%</td>
</tr>
<tr>
<td>Years Of Residence = '10', '6', '7', '8', '9' and Household Size = 'LESS THAN 3'</td>
<td>PRETTY LOYAL</td>
<td>26.20%</td>
<td>80.88%</td>
</tr>
</tbody>
</table>

- Identifies attributes that have significance in predicting loyalty
- Segment Customers and determine loyalty
- Can apply findings to identify prospects who fit the loyalty profile
- Oracle Exadata quickly finds transactions of customers in a given loyalty category
Example of Predictive Insight
Price Elasticity Model

- Retail: Price Elasticity helps determine the effect of applying a discount on a particular Item/SKU and analyze the impact on the bottom line (Revenue)
- This report allows the analyst to interact with the Mining Model via a dynamic application of the Discount %
- Can fine tune the discount % (not just steps of 1 but arbitrary value keyed in textbox by the analyst)
- Can apply it to a specific product and interactively see the impact on Revenue
“The Oracle Retail Data Model is not just technology, it is a strategic business tool to support and drive business performance, the Oracle Retail Data Model is technically engineered to satisfy retail subject areas by width and breadth of business ready prebuilt reports and analytics.”
Summary

**Speed to Value**
Standards-based, pre-built, pre-tuned data model with intelligent insight into detailed retailer and market data enabling retailers to quickly gain value

**Reduced Total Cost of Ownership**
Fast, easy and predictable implementation, reduced technology & 3rd Party costs for both immediate and ongoing operations by leveraging pre-built content

**Best in class**
Modern, topical and relevant Data Model developed using deep retail market expertise with leading Data Warehousing and Business Intelligence technology
Oracle Retail Data Model
Complete. Fast Results. Lower Risk.

Time to Implement

- Optimize Performance
- Define Metrics & Reports
- ETL
- Implement Model
- Design Model
- Sizing and Configuration

Custom Warehouse

Oracle Retail Data Model with Exadata

3x Faster
8x More Complete

2 Weeks of POC for Data Model

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Why Oracle Retail Data Model?
Top 10 Reasons

1. Retail expertise with best-in-class technology
2. ARTS based normalized data model
3. Modern and topical with retail depth and breadth
4. Intelligent retail insight using OLAP & Mining
5. Extensive business intelligence metadata
6. Easily extendable & customizable model
7. Usable within any retail environment
8. Designed and optimized for VLDB
9. Automated data flow between components
10. Reduced implementation risk
Presentation Overview

- Retail Technology Challenges
- Exadata Intelligent Warehouse for Retail
- Oracle Retail Data Model Features
- Customer Successes
<table>
<thead>
<tr>
<th>OSI Restaurant Partners LLC</th>
<th>Eddie Bauer</th>
<th>Ahold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morrisons</td>
<td>B2W</td>
<td>W Wollworths</td>
</tr>
<tr>
<td>ABC Stores</td>
<td>TJX</td>
<td>Lombardini</td>
</tr>
<tr>
<td>Boss</td>
<td>Screwfix</td>
<td>The Good Guys</td>
</tr>
<tr>
<td>Pad de Acucar</td>
<td>Ann Summers</td>
<td>Dollar General</td>
</tr>
<tr>
<td>Boonthavorn</td>
<td>Circle K Sunkus</td>
<td>Gordmans</td>
</tr>
<tr>
<td>Academy Sports + Outdoors</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ORDM – Current Customers**
Wm Morrison Supermarkets Plc are the UK’s 4th largest grocery retailer, with annual turnover in excess of £14bn. To accelerate the build of a new EDW, Morrison was using ORDM as a “Hub” to integrate disparate POS and Merchandise system and converge to a common Symantec layer. As a result ORDM was used as source of all operational reports as well as to support analytical applications.

**Challenges**

- Deliver 40+ BI/DW Projects in 5 years for:- Finance, HR, Stores, Trading, Supply Chain & Manufacturing.
- Align BI & DW projects as closely as possible with ERP systems renewals.
- 100 Million + Retail transactions per day.
- Support transition from Legacy to Oracle applications

**Value Delivered To Date**

- Integrated Retalix POS into the EDW.
- Delivered near real time ODS using the ORDM data model.
- Migrated RMS reporting to new BI platform.
- Enabled basket level promotion and event analytics.
- Integrating ORDM with RMS.
- Implementing AP, AR, PS & HR into BI Apps.
ORDM - Morrisons Overview

What Oracle Said:

• Rapid Implementation, Predictable Costs lead to Higher Return on Investment
• Designed and optimized for Oracle Data Warehouse
• Can work with any Retail and Point-of-Sale Application Environment
• Easy to extend and customized – avoids ‘Build from Scratch’ data warehouse, avoids additional data ‘silo’ problems
• Combines deep Retail Market expertise. Oracle Retail Data Model proves and industry standards-compliant foundation schema that is modern, relevant, topical, and addresses the needs of most retail segments
• Normalized data model serves as a detailed and structured representation of the retail business, providing an integrated base for business information with fully defined entities and relationships
• Ensures scalability and performance in the delivery of detailed transaction-level information
How did ORDM stack up?

What Morrisons Says:

• Doesn’t lock you into a toolset, i.e. ETL tools, DB versions, Reporting tools
• The data model has a close alignment to our business
• The model is very comprehensive. No Logistics
• Improved quality and consistency
• Physical model utilizes 11G technology (Partitioning, MV’s, OLAP, DM) and it scales…although configuration is required
• Significant reduction in delivery time, supports EDW rollout by subject area
• Reporting in retail is rarely generic and usually complex, question changes daily. Data model reflects this
• Physical model performs, with customization
• No flaws or holes in Logical and Physical model found. Few performance bugs found – Addresses quickly – Fixes made available thru ‘Patch’
Restaurants Partners LLC

Owns and operates Outback Steakhouse, Carrabba's Italian Grill, Bonefish Grill, Roy's Restaurant and Fleming's Prime Steakhouse & Wine Bar.

OSI Hired a new CEO a few months ago, and she made it a top priority to get a brand new DW going so they could do better analytics and decision making. **OSI went “LIVE” within SEVEN months.** ORDM provided a support of 85% “fit” out-of-box. Deloitte is the implementer and spent most of their time in developing ETL from various source systems to ORDM in addition to extending the model to meet OSI specific needs.

**Key Benefits**

- Value of Exadata as a platform for growth and consolidation
- Time to value – Initial assessment showed over 85% matching between their DW requirements and ORDM out-of-box solution
- Value of Advanced Analytics – Affinity, Loss Prevention & Shrinkage, Revenue Forecast, Customer Loyalty Attribute Importance
- Reduced Consulting Efforts – Went “Live” with predictable cost due to several pre-built components with comprehensive metadata
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