



Zentrale Chart-Erstellung

Präsentationsgraphiken in der Datenbank

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Agenda

- 1. Architektur

- 2. Implementierung

- 3. Fazit



Virtualisierung von Geschäftszahlen

Corporate Design

Zentrale Anlaufstelle



Vermögensausweis per 31.08.2011

Performanceentwicklung (TWR), in Euro

Musterportfolio

	Portfolio	Benchmark	Differenz
Performance seit 13.01.2005	27,53%	18,71%	8,82%
annualisiert, p.a.	3,78%	2,65%	1,13%
Risiko	2,83%	0,15%	2,68%
Sharpe-Ratio (risikofreier Zinssatz 1,61%)	0,77	20,58	-6,18

Performance Jahresübersicht

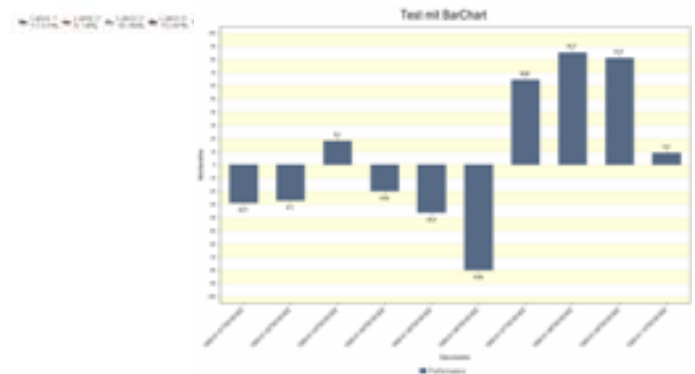
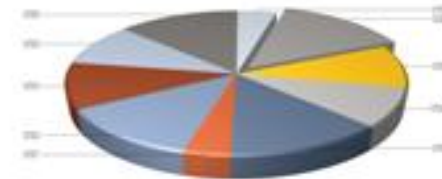
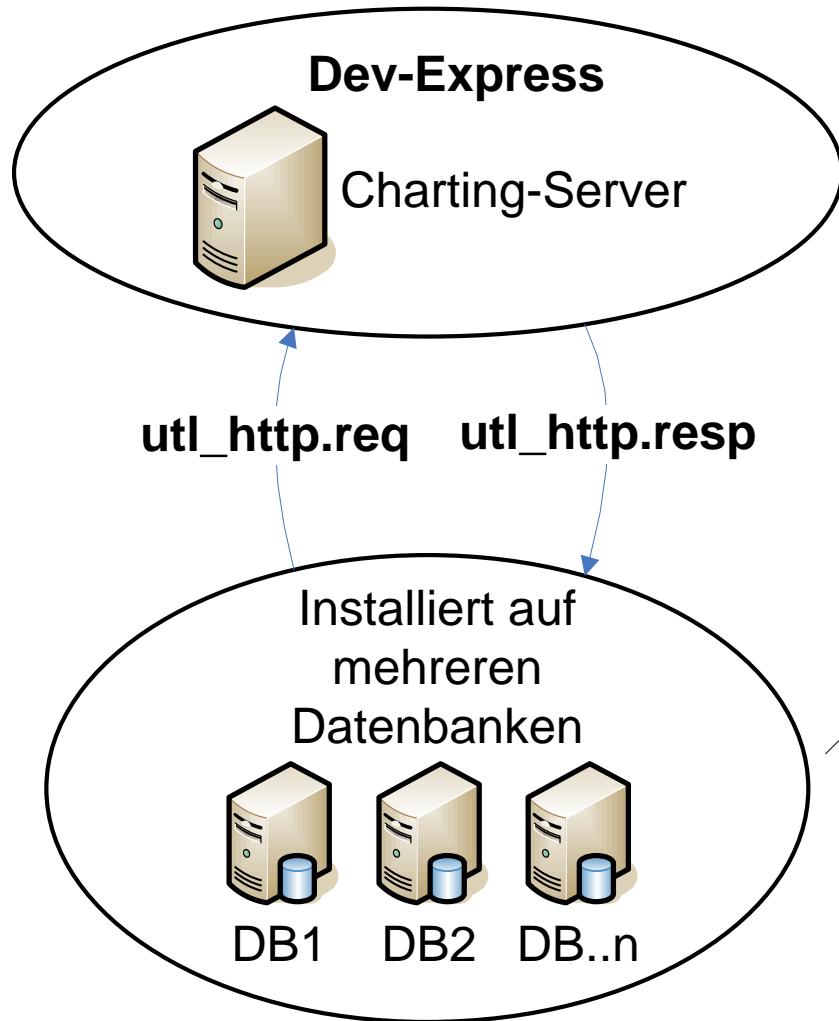
seit 31.12.2010	Portfolio	Benchmark	Differenz
2010	-0,50%	0,77%	-1,27%
2009	2,64%	0,80%	1,84%
2008	4,52%	1,22%	3,30%
2007	-2,65%	4,63%	-7,28%
2006	4,36%	4,26%	0,10%
2005	6,89%	3,45%	3,44%



Architektur

Auswahl zentrale Charting-Komponente

	PL/PDF Chart	Oracle Chart Builder	jFreeChart	DevExpress
Technologie	PL/PDF	Oracle Java	Java	ASP .NET
Chart-Typen	--	-	+	++
Ausgereiftheit	-	0	+	++
Layout	--		+	++
Aktualität		Zuletzt 2002	++	++
Verbreitung		-	++	
Schnittstellen	PL/PDF	PL/SQL	Java	.NET
Support		-	+	+
Kosten	ab 600\$ pro DB	Frei	Frei / 1124€ Doku	600€ pro Entwickler



```
<Chart>
  <Template>Performance2D</Template>
  <Height>600</Height>
  <Width>800</Width>
  <Title>Performance Chart
GBP-Devisenkurse seit 01.02.2012</Title>
  <Axes>
  </Axes>
  <Series>
  </Series>
</Chart>
  <Type>XKúTypeGBP</Title>
  <ArgumentIsInAxisType>
  <TitleFont<AxisType>
  <LabelStaged>true</LabelStaged>
</AxisDATA>
  <Axis><Argument>2012-02-01T00:00:00Z</Argument>
  <Value>16</Value>
  <Title>Kurs GBP/EUR</Title>
  <TitleFontSize>16</TitleFontSize>
  </Axis>
</Axes>
```

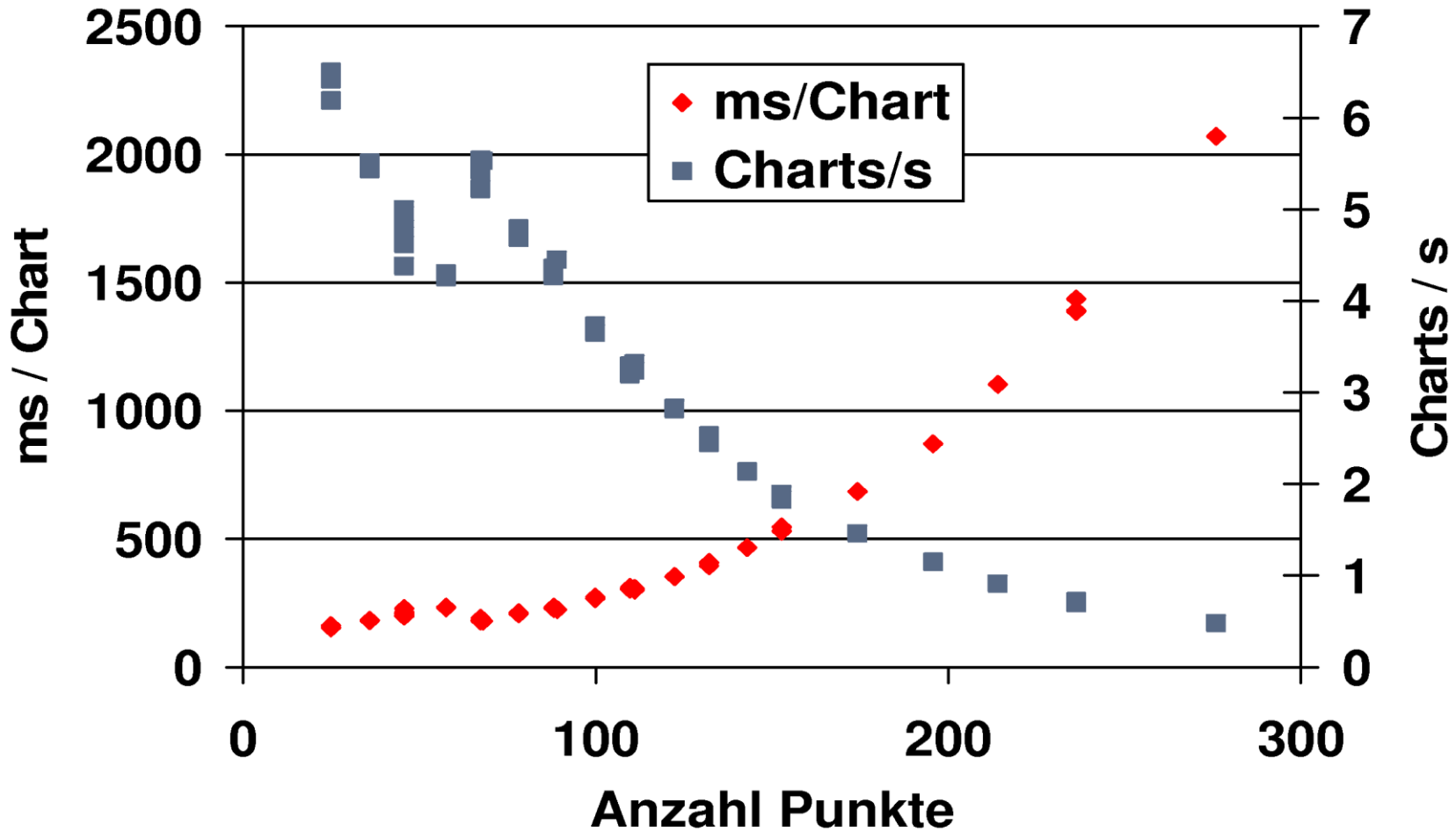
```
CREATE OR REPLACE TYPE BODY GLOBAL.COMP_CHART IS
...
MEMBER FUNCTION Get_XML RETURN SYS.XMLTYPE IS
...
BEGIN
    SELECT XMLROOT(
        XMLELEMENT("Chart"
            , XMLATTRIBUTES('http://www.w3.org/2001/XMLSchema-instance' AS "xmlns:xsi")
            , XMLELEMENT("Template", SELF.CHART_TYP)
            , XMLELEMENT("Height", SELF.HEIGHT)
            , XMLELEMENT("Width", SELF.WIDTH)
            , CASE
                WHEN SELF.CHART_TITLE IS NULL THEN NULL
                ELSE XMLELEMENT("Title", SELF.CHART_TITLE)
            END
            END
        , CASE
            WHEN SELF.tab_axis IS NULL THEN NULL
            ELSE XMLELEMENT("Axes", '')
        END
        , XMLELEMENT("Series", '')
    )
    , VERSION '1.0', STANDALONE YES
    )
    INTO v_xml
    FROM DUAL;
```



```
-- Axes-Tag ist in META_XML enthalten
IF SELF.tab_axis IS NOT NULL THEN
    vn_index:= SELF.tab_axis.FIRST;
    WHILE vn_index IS NOT NULL LOOP
        v_xml:= v_xml.appendChildXML('/Chart/Axes'
                                     , SELF.tab_axis(vn_index).Get_XML());
        vn_index:= SELF.tab_axis.NEXT(vn_index);
    END LOOP;
END IF;

-- Serien ergänzen
vn_index:= SELF.tab_serie.FIRST;
WHILE vn_index IS NOT NULL LOOP
    v_xml:= v_xml.appendChildXML('/Chart/Series'
                                 , SELF.tab_serie(vn_index));
    vn_index:= SELF.tab_serie.NEXT(vn_index);
END LOOP;
```

```
-- Errorhandling initialisieren
utl_http.SET_RESPONSE_ERROR_CHECK(TRUE); utl_http.SET_DETAILED_EXCP_SUPPORT(TRUE);
self.chart_clob:= SELF.GET_XML().getClobVal();
-- HTTP Request absetzen, Connection aufbauen
http_req := utl_http.BEGIN_REQUEST(pc_target_url,'POST', utl_http.HTTP_VERSION_1_1);
utl_http.SET_HEADER(http_req, 'content-Type', 'text/xml');
utl_http.SET_HEADER(http_req, 'content-length', LENGTHB(self.chart_clob));
-- Daten in den Header des Request schreiben
FOR i IN 0 .. MOD(LENGTHB(self.chart_clob),30000) LOOP
    utl_http.WRITE_TEXT(http_req, DBMS_LOB.substr(self.chart_clob,30000,1 + i*30000));
END LOOP;
-- HTTP Response empfangen und verarbeiten
http_resp:= utl_http.GET_RESPONSE(http_req);
BEGIN
    LOOP
        utl_http.READ_RAW(http_resp, response, 32767);
        DBMS_LOB.WRITEAPPEND(chart_blob, UTL_RAW.length(response), response);
    END LOOP;
EXCEPTION -- Endeerkennung nur über Exception
    WHEN utl_http.END_OF_BODY THEN
        utl_http.END_RESPONSE(http_resp);
END;
```



Einheitliches Layout

Zentrale Implementierung

To Do:

Oracle 11g ACL -> Package?

Performance

Hinweis:

Weiterführende Informationen mit Code Beispielen in der DOAG News (Nr.5, Oktober 2011), S. 58.



Vielen Dank für Ihre Aufmerksamkeit

Dr. Rüdiger Harmel
Softwareentwickler
Berenberg Bank

