

Основы программирования в Windchill

PTC Global Services

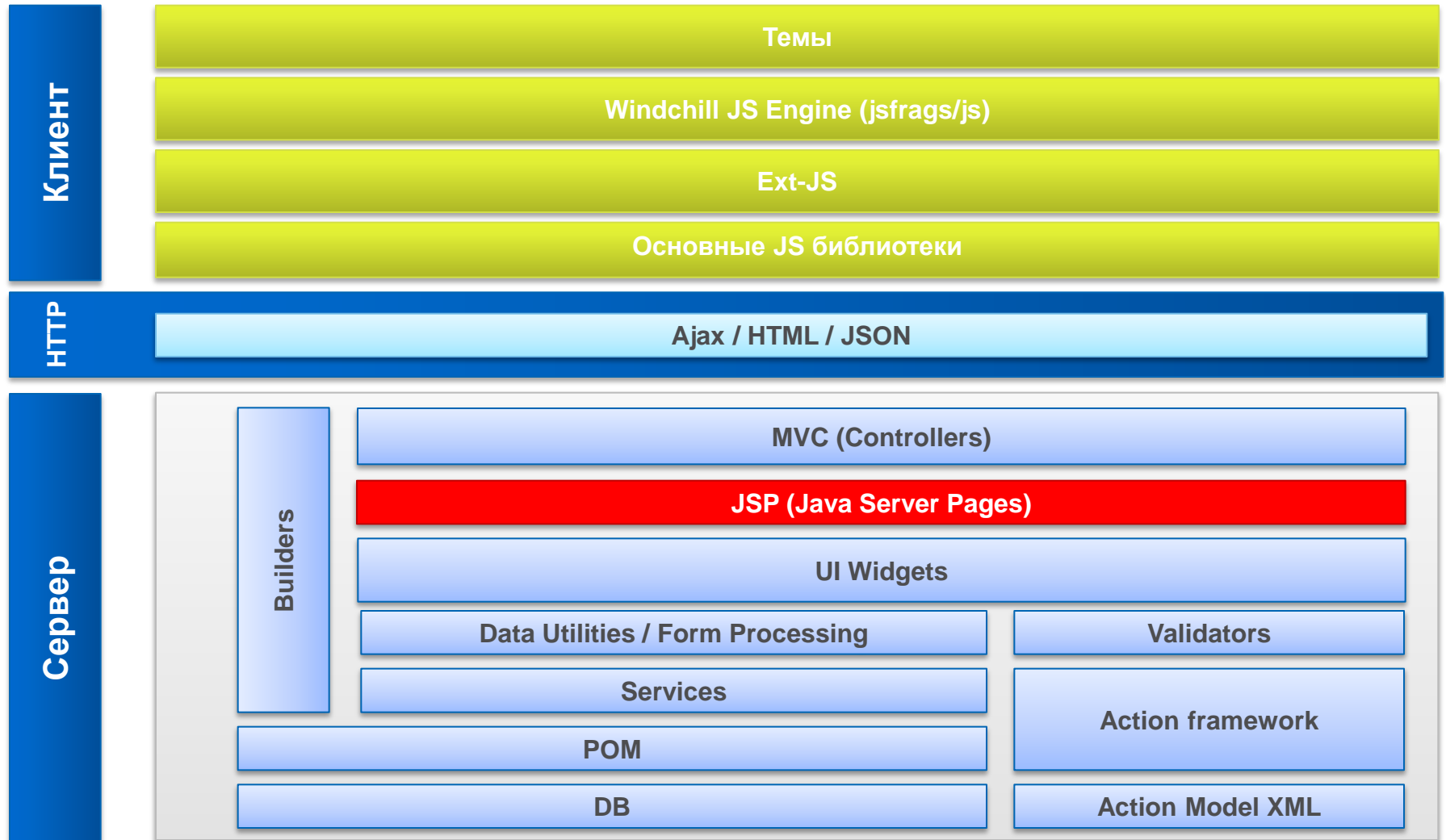


Григорий Чернобыль
Декабрь 2012

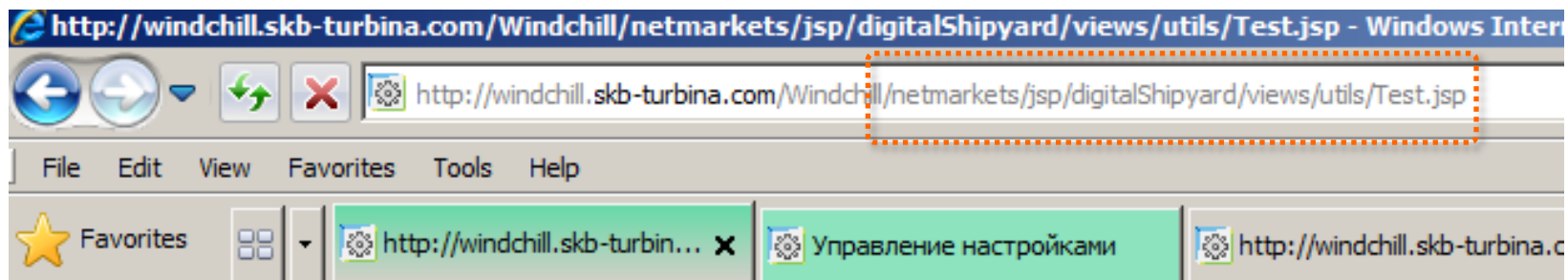
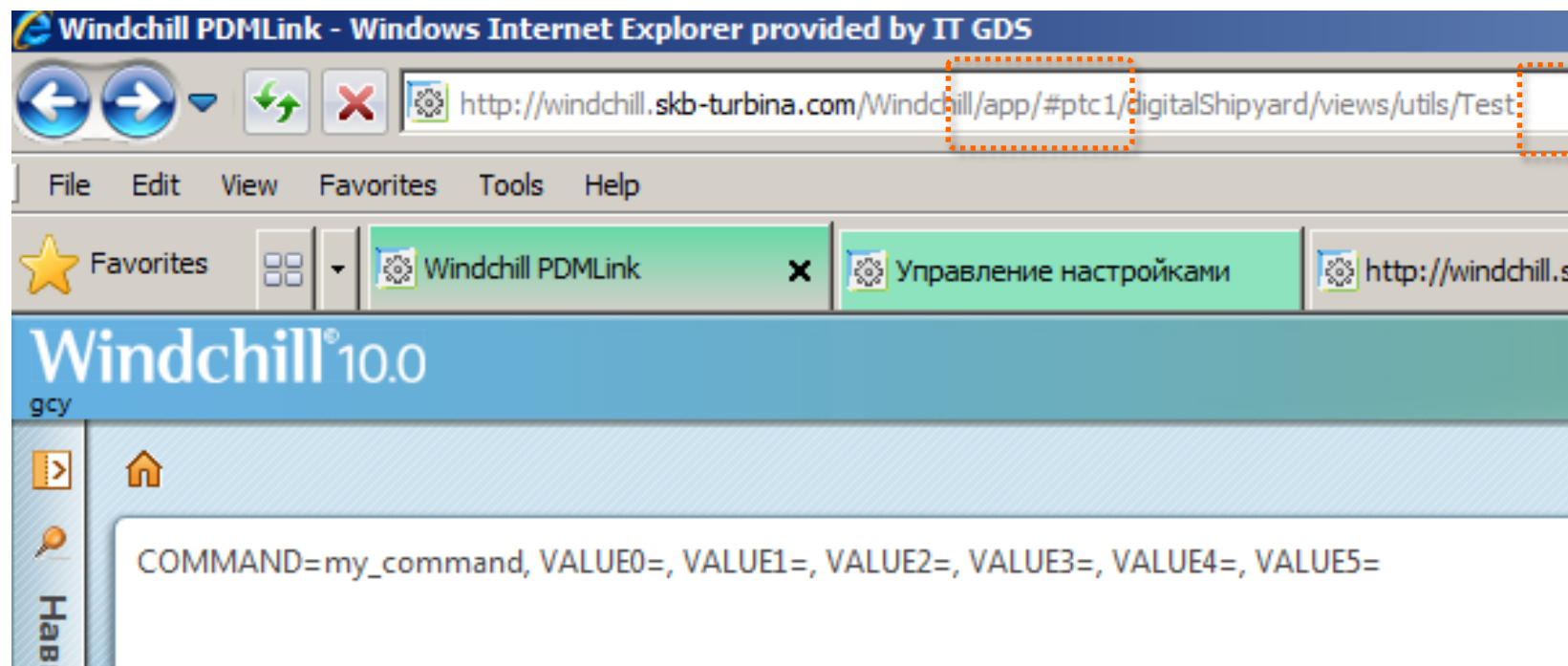
- > Обзор средств и уровней программирования (JSP, JCA, JS, classes)
- > Структура URL и работа с oid
- > Конфигурационные файлы и локализация. Лучшие практики (применение xml)
- > Пользователи и политики доступа
- > Настройка пользовательских интерфейсов (не MVC)
- > Создание действия
- > Создание валидаторов



Обзор средств и уровней программирования (JSP, JCA, JS, classes)

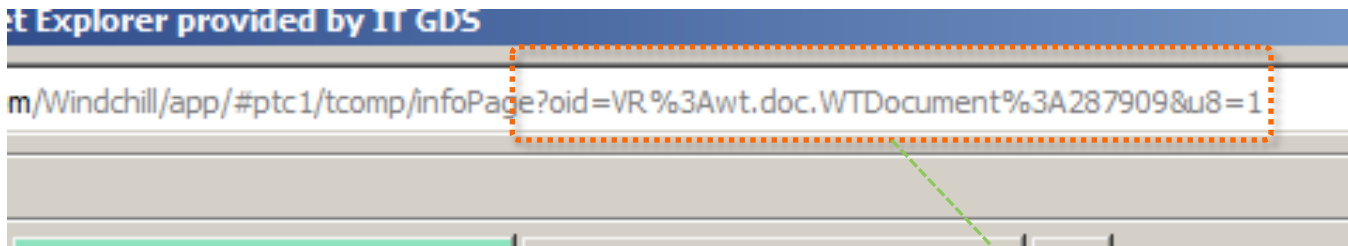


Структура URL и работа с oid

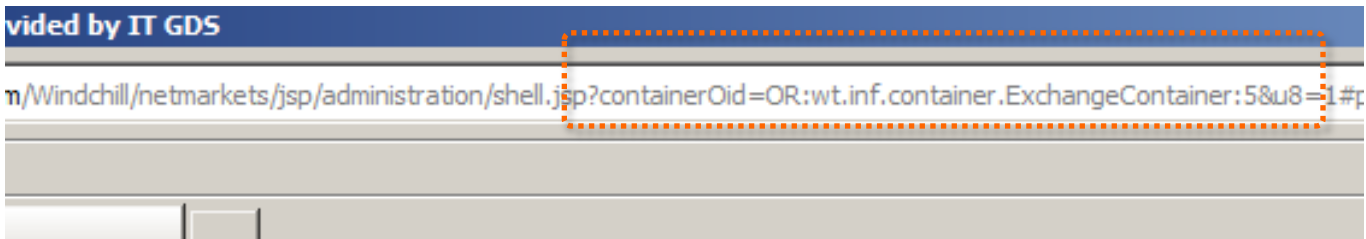


COMMAND=my_command, VALUE0=, VALUE1=, VALUE2=, VALUE3=, VALUE4=, VALUE5=

- > OR – для объектов, которые не имеют итераций
- > VR – для объектов, которые имеют итерации



VR:wt.doc.WTDocument:287909



<http://<windchill>/Windchill/app/#ptc1/digitalShipyard/views/utils/Test?oid=<OID>>

```
<%@page contentType="text/html"%>
<%@page pageEncoding="UTF-8"%>
<%@page import="wt.part.WTPart"%>
<%
try{
wt.fc.WTReference cWTReference = new
    wt.fc.ReferenceFactory().getReference(request.getParameter("oid"));
wt.fc.Persistable cPersistable = cWTReference.getObject();
If (cPersistable instanceof WTPart ){
WTPart cWTPart = (WTPart)cPersistable;
}
out.println(cPersistable.getClassInfo().getClassName());
}catch(Exception cException){
out.println("Error"+ cException.getMessage());
}
%>
```



```
<%  
  
if ( cPersistable instanceof wt.doc.WTDocument ){
```

```
    wt.doc.WTDocument cWTDocument = (wt.doc.WTDocument)cPersistable;
```

```
    out.println("<br>" + cWTDocument.getName());
```

```
}
```

```
%>
```

<%

```
com.ptc.core.meta.common.impl.WCTypeIdentifier cWCTypeIdentifier =  
    (com.ptc.core.meta.common.impl.WCTypeIdentifier)  
    com.ptc.core.meta.common.TypeIdentifierHelper.getType( cPersistable );
```

```
out.println("<br>" + cWCTypeIdentifier.getHierarchy());
```

```
if (  
    cWCTypeIdentifier.getHierarchy().equals("wt.doc.WTDocument|smp.s  
ervers.Definer") ) {
```

```
wt.doc.WTDocument cWTDocument = (wt.doc.WTDocument)cPersistable;
```

```
out.println("<br>" + cWTDocument.getName());
```

```
}
```

%>

Конфигурационные файлы и локализация. Лучшие практики (применение xml)

```
import wt.util.resource.RBEntry;
import wt.util.resource.RBUUID;
import wt.util.resource.WTListResourceBundle;

@RBUUID(value="digitalShipyard.core.ui.resource.TabRB")
public class TabRB extends WTListResourceBundle {
//-----
    @RBEntry(value="Assignment") public static final String
        PRIVATE_CONSTANT_1 = "object.DefinerTab.description";
//-----
}
```

```
import wt.util.resource.RBEntry;
import wt.util.resource.RBUUID;
import wt.util.resource.WTListResourceBundle;

@RBUUID(value="digitalShipyard.core.ui.resource.TabRB_ru")
public class TabRB_ru extends WTListResourceBundle {
//-----
    @RBEntry(value="\u0414\u0430\u0437\u0430\u0430\u0447\u0435\u0434\u0438\u0444 ")
    public static final String PRIVATE_CONSTANT_1 =
        "object.DefinerTab.description";
//-----
}
```

```
<%@page import="digitalShipyard.config.ConfigHelper"%>
```

```
<%
```

```
String cLANG = request.getLocale().getLanguage().toLowerCase();
```

```
out.println("<br>" +
```

```
    ConfigHelper.GetNLSValue(ConfigHelper.GetCODEBASERealPath() +  
        "smp" + ConfigHelper.GetDirSeparator() + "config.xml", "uniq_id", cLANG));
```

```
%>
```

ConfigHelper.GetNLSValue (

<полный путь к файлу>,

<уникальный код в файле, значение которого нужно найти>

<ЯЗЫК>)

```
<?xml version="1.0"?>  
<items>  
  <item id="note_fast_search_by_name" value="По имени (логин)" />  
  <item id="note_fast_search_by_last" value="По фамилии" />  
</items>
```

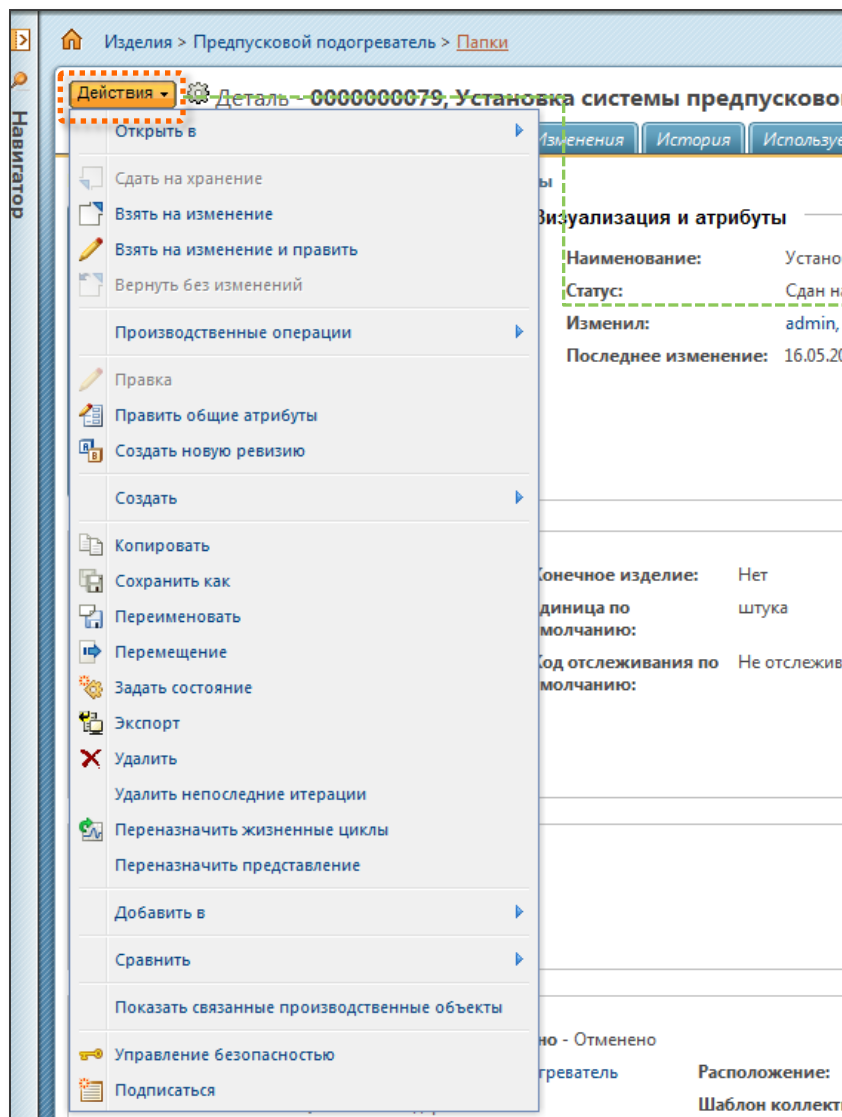
File Explorer view showing the directory structure:

Name	Ext	Size	Date	Attr
[..]		<DIR>	04.12.2012 20:09	—
system.messaging.default	xml	2 162	25.10.2012 19:52	-a-
system.messaging.ru	xml	3 166	25.10.2012 19:52	-a-

Пользователи и политики доступа

Настройка пользовательских интерфейсов (не MVC)

Windchill\codebase\config\actions\PartClient-actionmodels.xml



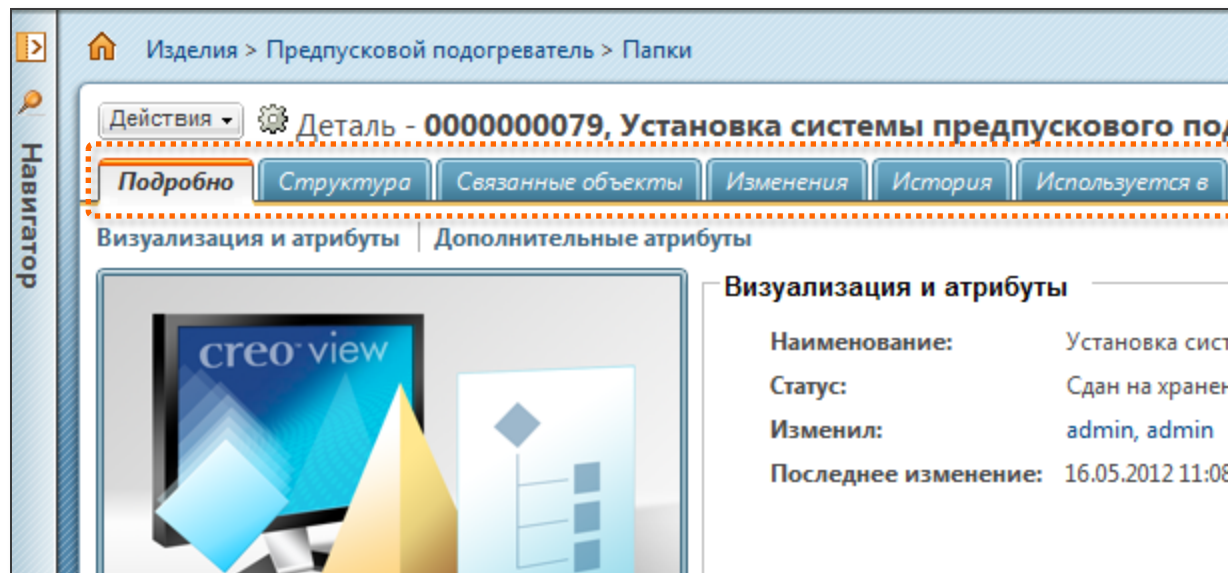
```
<?xml version="1.0"?>
<!DOCTYPE actionmodels SYSTEM 'actionmodels.dtd'>

<actionmodels resourceBundle="com.ptc.windchill.enterprise.part.partResource">

  <!-- ***** -->
  <!-- *** Information Page Actions Lists *** -->
  <!-- ***** -->

  <!-- Part Information page Actions list -->
  <model name="more parts actions" menufor="wt.part.WTPart">
    <action name="view" type="object"/>
    <action name="separator" type="separator"/>
    <submodel name="more parts toolbar actions open"/>
    <action name="separator" type="separator"/>
    <action name="checkin" type="wip"/>
    <action name="WFCHECKIN" type="pdmObject"/>
    <action name="checkout" type="wip"/>
    <action name="checkoutAndEdit" type="part"/>
    <action name="undocheckout" type="object"/>
    <action name="WFCANCELCHECKOUT" type="pdmObject"/>
    <action name="edit" type="part"/>
    <action name="editNewPartInWorkspace" type="part"/>
    <action name="editCheckedOutPartInWorkspace" type="part"/>
    <action name="editPartCommonAttrsWizard" type="part"/>
    <action name="REVISEITEMS" type="pdmObject"/>
    <action name="separator" type="separator"/>
    <action name="fulfillChangeActions" type="effectivity"/>
    <action name="undoFulfillDesignSolutionInfoPage" type="effectivity"/>
    <action name="GenerateChangeActions" type="effectivity"/>
    <action name="displayEffectivityLog" type="effectivity"/>
    <action name="separator" type="separator"/>
    <submodel name="more parts toolbar actions new"/>
    <action name="separator" type="separator"/>
    <action name="editItemOptionRules" type="filterTemplate"/>
    <action name="configure" type="variantspec"/>
    <action name="viewLogicBase" type="generic"/>
    <action name="findVariants" type="variant"/>
    <action name="separator" type="separator"/>
    <action name="copy" type="object"/>
    <action name="WFSAVEAS" type="pdmObject"/>
    <action name="renameObjectWizard" type="object"/>
    <action name="route" type="workflow"/>
    <action name="CONTAINERMOVE" type="pdmObject"/>
    <action name="setState" type="lifecycle"/>
```

Windchill\codebase\config\actions\PartClient-**actionmodels.xml**

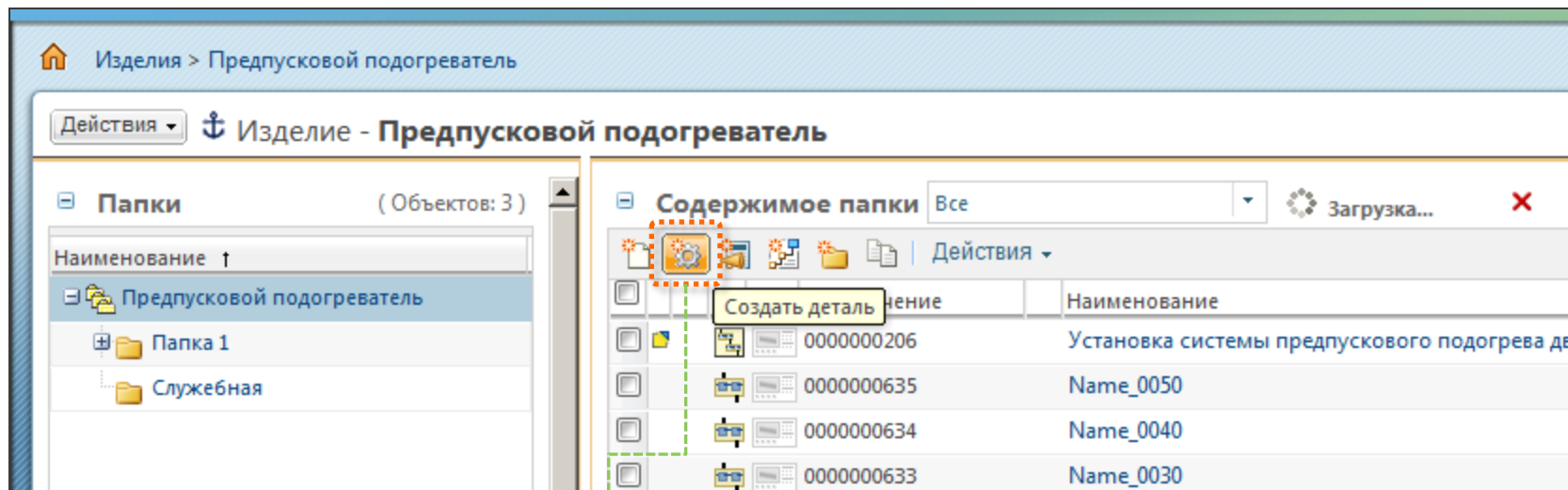


```
<!-- ***** -->
<!-- *** Information Page 3rd Level Navigation Menu Bar *** -->
<!-- ***** -->

<!-- Part information page 3rd level nav menu bar -->
<model name="third_level_nav_part">
  <submodel name="general"/>
  <submodel name="relatedItems"/>
  <submodel name="changes"/>
  <submodel name="history"/>
  <submodel name="collaboration"/>
  <submodel name="prodAnalytics"/>
</model>

<!-- General -->
<!-- Related Objects -->
<!-- Change -->
<!-- History -->
<!-- Collaboration -->
<!-- Product Analytics -->
```

Windchill\codebase\config\actions\PartClient-**actions**.xml



```
<action name="createPartFromFolder" uicomponent="CREATE_PART" ajax="row">  
  <command class="com.ptc.windchill.enterprise.part.forms.CreatePartFormProcessor" method="execute" windowType="popup"  
    url="/netmarkets/jsp/part/createPartWizard.jsp?invokedfrom=folder" />  
  <includeFilter name="showNewActionPreValidation" />  
</action>
```

- 1) В «Windchill\codebase\config\actions\custom-actionModels.xml» копируем весь раздел «more parts actions» из «PartClient-actionModels.xml»

```
<!-- Part information page Actions list -->
<model name="more parts actions" menufor="wt.part.WTPart">
  <action name="view" type="object"/>
  <action name="separator" type="separator"/>
  <submodel name="more parts toolbar actions open"/>
  <action name="separator" type="separator"/>
  <action name="checkin" type="wip"/>
  <action name="WFCHECKIN" type="pdmObject"/>
  <action name="checkout" type="wip"/>
  <action name="checkoutAndEdit" type="part"/>
```

- 2) Добавляем новое действие

<action name="LessonAction" type="LessonAction_type" />

```
<!-- Part information page Actions list -->
<model name="more parts actions" menufor="wt.part.WTPart">
  <action name="view" type="object"/>
  <action name="separator" type="separator"/>
  <submodel name="more parts toolbar actions open"/>
  <action name="separator" type="separator"/>
  <action name="LessonAction" type="LessonAction_type" />
  <action name="checkin" type="wip"/>
  <action name="WFCHECKIN" type="pdmObject"/>
  <action name="checkout" type="wip"/>
  <action name="checkoutAndEdit" type="part"/>
  <action name="undocheckout" type="object"/>
```

2) В «Windchill\codebase\config\actions\custom-actions.xml» добавить:

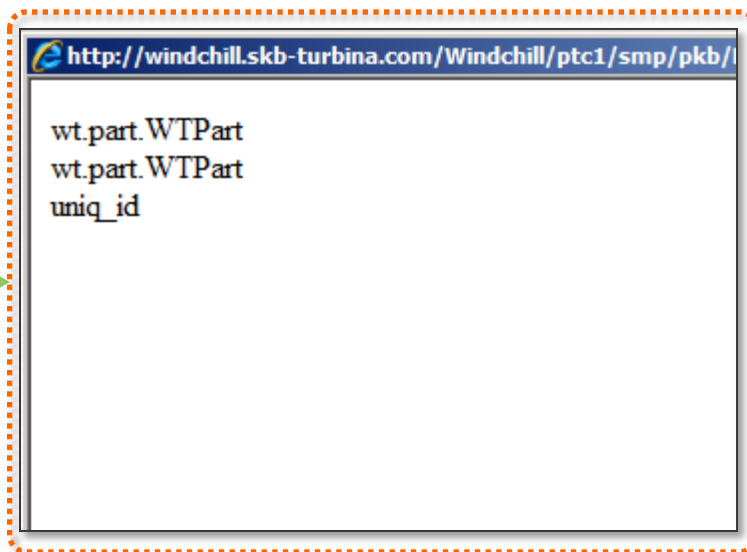
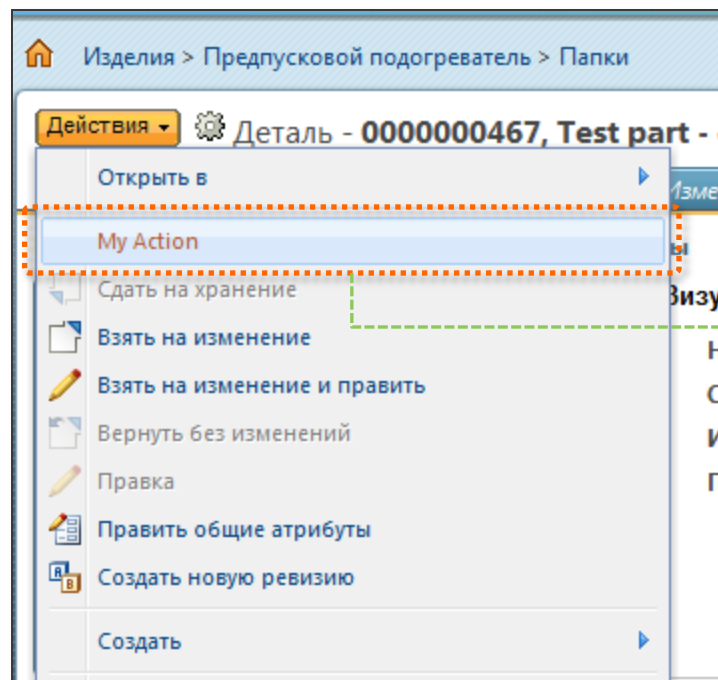
```
<objecttype name="LessonAction_type" class="" resourceBundle="smp.pkb.resourceRB">
  <action name="LessonAction">
    <command url="ptc1/smp/pkb/LessonAction" windowType="popup"/>
  </action>
</objecttype>
```

3) Создать ресурсный файл (RBInfo) и прописать в нем:

```
@RBEEntry(value="My Action") public static final String PRIVATE_CONSTANT_1 =
  "LessonAction_type.LessonAction.description";
@RBEEntry(value="My Action") public static final String PRIVATE_CONSTANT_2 =
  "LessonAction_type.LessonAction.tooltip";
@RBEEntry(value="My Action") public static final String PRIVATE_CONSTANT_3 =
  "LessonAction_type.LessonAction.title";
@RBEEntry(value="netmarkets/jsp/images/accept_task.gif") public static final String
  PRIVATE_CONSTANT_4 = "LessonAction_type.LessonAction.icon";
@RBEEntry(value="width=700,height=600") public static final String PRIVATE_CONSTANT_5 =
  "LessonAction_type.LessonAction.moreurlinfo";
```

4) Создать JSP файл - «ptc1/smp/pkb/LessonAction»

Windchill/netmarkets/jsp/smp/pkb/LessonAction.jsp



Создание валидаторов

```
package smp.pkb;
```

```
import java.util.Locale;  
import wt.fc.Persistable;  
import wt.fc.WTReference;  
import wt.util.WTException;  
import wt.util.WTRuntimeException;  
import com.ptc.core.ui.validation.*;
```

```
public class ActionValidator extends DefaultUIComponentValidator {
```

```
    @Override
```

```
    public UIValidationResultSet performFullPreValidation(UIValidationKey cUIValidationKey,  
        UIValidationCriteria cUIValidationCriteria, Locale cLocale) throws WTException {
```

```
        //код
```

```
    }
```

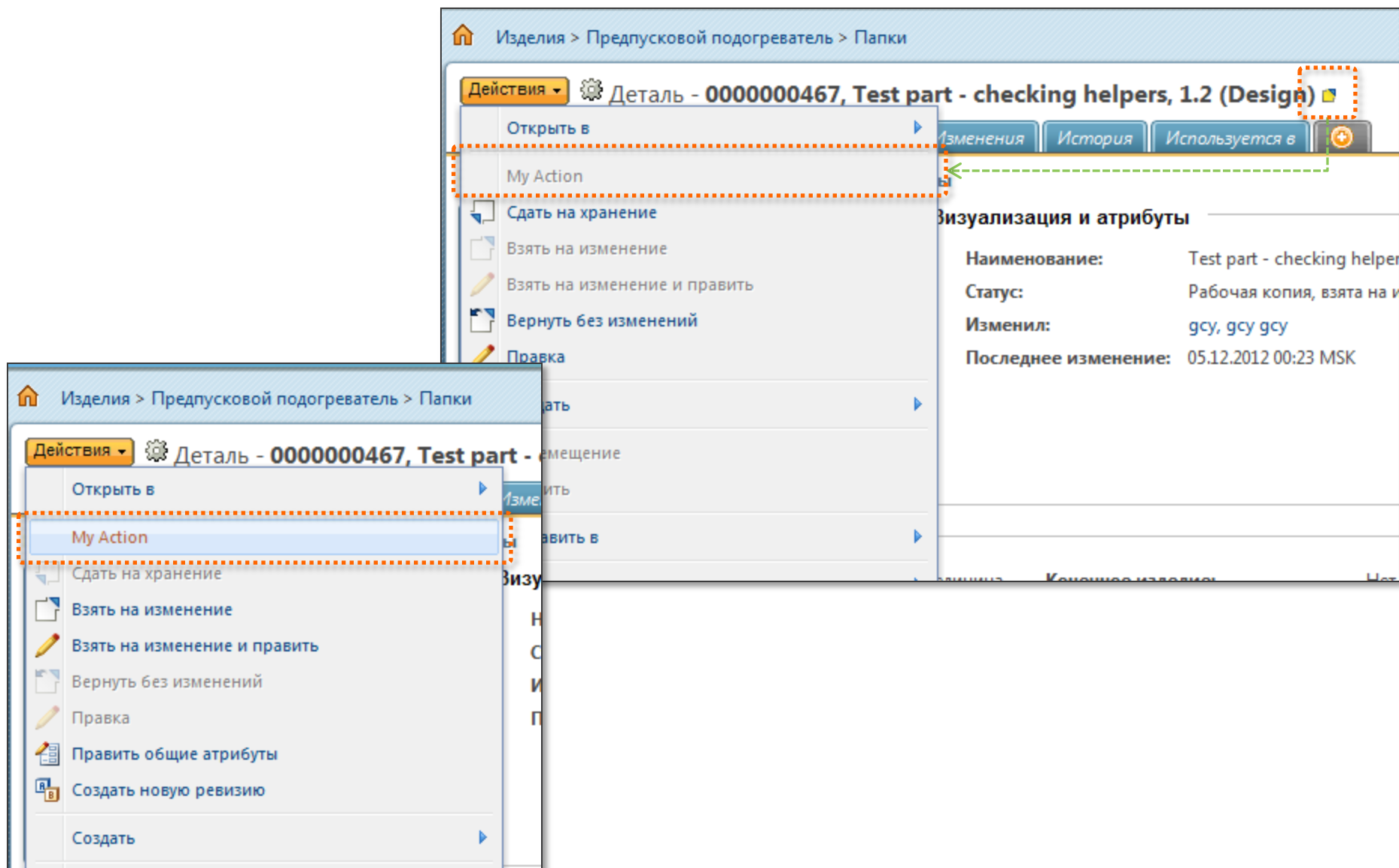


```
UIValidationResultSet cUIValidationResultSet = UIValidationResultSet.newInstance();
UIValidationResult cUIValidationResult = null;
WTRReference cWTRReference = cUIValidationCriteria.getContextObject();
Persistable cPersistable = null;
```

```
try{
    cPersistable = cWTRReference.getObject();
}catch(WTRuntimeException cWTRuntimeException){
    System.out.println("ERROR : " + cWTRuntimeException.getMessage());
    cUIValidationResult = UIValidationResult.newInstance(cUIValidationKey, UIValidationStatus.HIDDEN);
    cUIValidationResultSet.addResult(cUIValidationResult);
    return cUIValidationResultSet;
}
if ( cPersistable instanceof wt.part.WTPart){
    if ( wt.vc.wip.WorkInProgressHelper.isCheckedOut( (wt.vc.wip.Workable) cPersistable) ){
        cUIValidationResult = UIValidationResult.newInstance(cUIValidationKey, UIValidationStatus.DISABLED);
    }else{
        cUIValidationResult = UIValidationResult.newInstance(cUIValidationKey, UIValidationStatus.ENABLED);
    }
}else{
    System.out.println("WARNING : Not WTPart!");
    cUIValidationResult = UIValidationResult.newInstance(cUIValidationKey, UIValidationStatus.HIDDEN);
}
cUIValidationResultSet.addResult(cUIValidationResult);
return cUIValidationResultSet;
```

> Выполнить из командной строки Windchill:

```
@xconfmanager -t codebase/service.properties -s  
"wt.services/svc/default/com.ptc.core.ui.validation.UIComponentValidator/Les  
sonAction/null/0=smp.pkb.ActionValidator/duplicate" -p
```



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Спасибо