

Tue 5:30-7

ASMX vs. .NET Remoting

Cool .NET Website : sells brothers.com ?

WS security

xml/dsig

xml/encryption

Stress tool for denial of service attacks

global security handler -

xmlquery

Serialized dataset strongly typed • getxml/string()

saraw@microsoft.com MSN moderator

Fun

Create an ASP ^{web}scraper service?
web service

Look for way to limit robots on our site.

Create main pages for each sub web

Find .NET WebService provider

Make name generator randomly grab by a stored proc to limit res returned.

60 developers working on
microsoft.com website

Add outlook calendar file to Yahoo Group Web

Can you do ASP.NET events?

Jobtrax webapp / web service

Can we thread adventure hook?

~~add~~ ^{add} hyperlinks in returned adventure hook
to return a link to a popup webapp
for NPC or even maps.

Create a tool to paste a paragraph,
name the paragraph - remove
specific pieces.

The boy walked his dog to the store.

<entity.boy>

<entity.dog>

<to place the
store>

dotnetbooks.com

artinsoft.com

ms.com/vbupgrade - ^{VB} upgrade guide book

msdn.ms.com/library/techart/vb6tovbdotnet.htm

Blue CD

ms.com/library/en-us/dnbsla/html/exceptdotnet.asp
emabrm.asp

Email: Red-Gate (Simon) a few weeks before demo -
he will advertise the VB.NET Learners Group

Decompile ^{Demo} Red-gate ANTS product & SQL to SQL product

Can decompiler work on exes or dlls only?

Use codehound to find other decompilers

Ask MSDN User Group support about promoting VBLG -
can we do a mailout -

create a stenographic web service

Who would pay for a 1 day ^{6hr} .NET Tech Ed
overview and review

GMH Create a webservice to hit ^{language} ~~web~~ sites for word
comparison for descriptive names - like lookup color red
return German, French, Spanish, Esperanto etc... for

Artisoft - windows to web forms wizard

Read up on GDI+ for graphics methods ^{look for}
GDI demo

New VB.NET samples on msdn site
cobl threading demo with sorting

Mike Bonel and Mike Jern

VB Programmer

95% code conversion

Preparing for upgrade - Partial or Full

Use com interop - allows this -

upgrade a subset to VB.net

Learn the delta VB.net

Use upgrade report

Declare now has an Auto clause

Declare Auto Function...

can overload declares now

Comt alternative upgrade

Enterprise Services

Context Util

must use sn to make
sub file

requires to register .net

component in comt

Look for way to generate
webservice automatically for
component.

VB Wizard

Build an XOTier app and
upgrade it to VB.net app

is there a VB.net or VB6
to ASP.net converter

Make XOTier build .NET code too!

Document XOTier (Roger) (Je)

Convert GMM forms "Weapons"

Convert NPC Generator

VB6
Create App Wizard ~~check everything~~
and fix all issues after conversion.

Demo to VB6

Get stats line count on CLATRE

DEV 311 4/11/2002 Arch Ent App w/ VS.NET p2

Microsoft Solutions Initiative -

ms.com/BDADotNET

FastTrack

Lab - Microsoft Application Blocks & Data ? where do we get this?

DEV 312 4/11/2002 Arch. Ent App w/ VS.NET p3

sample code to be
in MSDN Universal

Asynch pipelined WS calls

BeginInvoke, EndInvoke methods

Asynch Pipeline Framework

Enable pollback from web browser for partial results

use requested to track a set of FSBServiceAgents

Solution Construction Kit - tie into FM Stocks F&B account data

Personal Financial Portal

make a Personal News Portal
for Reuters using framework

look at FMStocks sample to make - go through tutorial

* has show the code functionality

install all .NET samples
on a .netsample web
or samples\.net ?

* return data that is time stamped

4/12/2002 Enterprise Templates - Building Application Construction Kits

variable implementation

framework's project wizard (VBC wizard)

Enterprise Template Project - (can apply policy)
contains other projects

Wizard

Title				
All Pages	Page			
	Help	Prev	Next	Finish
				Cancel

element - anything that can be added to a solution -

JIT activation - help in IDE

VS Help Integration Kit (VSHIK) - free download
access to MS Help 2.0 SDK

msdn.microsoft.com/download/default.asp

C++ projects - Custom Wizard for making wizards
use this for XOTier -

See how VS modifies htm - it has a design and html view

Thur 4/11/2002

Deploying N-Tier Web Services and Applications

DEV339

Ron Jacobs

XML Enterprise Services

ISA - reverse proxy

Put webservices on another port

~~COM~~

DCOM now supports port assignment - W2K SP3

Load only CLR debugging when debugging on a server

Make ASP.net run as SYSTEM for dynamic registration

Handle exceptions in constructor

Use DebugView from Sys Internals to see
Debug.write messages from server app

4/16/2002

Black Belt webForms

www.Swarren.net

tips & tricks in pages space -

Viewstate - stores ui state of page

(use view in browser)

don't store state if you pull from data

don't store if you post to another page

can be modified at control, page, or application level

Most grids don't need viewstate

use Viewstate to store sortfield for datagrids (see example)

Wizard ASP.net

(wizards sample)

use Panel control - manage visibility

Context.Items + Server.Transfer - use to transfer into to other pages

Context.Handler - last page browsed

context.Items.add("username", value)
Server.Transfer

see [Page.Context]

can pass HttpContext.Current to a middle tier

Context.Handler gives you info about the previous page

Server.Transfer("next ~~current~~ page.aspx")

check postback - try to get Type(Context.Handler.Source)

previous page

Application Relative Paths ~ maps to application root path (alias for request.ApplicationPath)
does not work in static html - only in server controls

hooking client events to server controls -

button.Attributes.Add("onclick", "return fo();") - works when button doesn't cause validation

ASP.NET (cont)

www.asp.net

customize list appearance in ~~code~~ code

handle onitemcreated event

check if item created is listitemtype pager

see susan's example of adding (page# of pagecount)

~~e.Item~~ or ~~e.Item.DataItem~~

Dynamically putting templates : ex: pivot a report

(show this to David)

Load Template - pass it an ascx user control

(ad skts example)

can add to a column

Can have a datagrid nested in a control to use as a datagrid column template

or create a template in code implement ITemplate

use: InstantiateIn()

assign to template property

Susan Warren

User Controls (pagelets) - supports output caching
scoped to a single app

correct

easy

<http://asp.net/control/gallery>

Custom Controls - support multiple apps - good design time support in VS.NET

tag = <namespace: class

instantiated? is it a ^{real} word?

Whatever causes postback actually gets called last,
simple control example overrides render

Derive from a control
XML Edit Grid?

<look for checked list box control>
bullet list sample

Simple link button - map browser event fire server event
implement IPostBackEventHandler

look for book by Susan Warren

request object has a browser object with properties of the browser

Implement INamingContainer to create namespaces for controls in a composite control
override createChildControls

lookup literal control ()

[.NET Framework SDK Docs
on Control Development

got dotnet.com / quickstart examples

look for aspxsd files

Asp.net web security

check current thread identity — `WindowsIdentity.GetCurrent().name`

VB Performance

use Structure for small objects — value types
use classes for large objects — ref types

option strict will catch slow casts

arrays use arrays of arrays instead of multi-dimensional arrays [search for arrays of arrays]
use arraylist instead of redim (redim copies entire array)

strings are immutable — strings don't change — & operator makes a new string.
stringbuilder works faster (learn to use string builder)

mid() ^{assignment} is not efficient any longer

use ToString instead of format() } ignore cultural sensitive or locale specific functionality
use binary compare rather than text

String constants are faster — chr() can be used in constants now

exceptions — use only for errors — not events — exceptions are expensive
avoid on error — skip resume

com
Dcom
interop

use Chunky not Chatty calls

Don't allocate memory you don't need
" have a large # of locals
" write large methods

use overridable only when needed
JIT tries to optimize methods
use return statement

VB optimizations (cont)

use release builds

debug - asserts, PDB, easy debugging

release - optimized, less debuggable

} set finer grain options

read up on only deploying release version.

Windows Application Forms Performance

minimize code in app startup

turn off connection pooling if it is not needed.

use addrange instead of iterating

ngen.exe - pre JITed assembly is persisted - reduces startup time
(breaks xcopy deployment) still needs original IL PE for metadata

Optimizing ASP.net

use `<output cache %>` directive

fragment caching - by using user controls

use data readers when caching is not necessary

use SQL when appropriate - avoid ADO - use sp's

avoid com components - use aspcompat when necessary

Application Profiler? find on comnet?

•NET Remoting

DEV340

Friday 4/12/2002
xml messaging

xmethods.net

creating remote objects -
can be hosted inside IIS or a user app (must listen to a port, can be a service)

[see Direct Host Service sample]

Dev 351 "No Impact" Deployment Jamie Cool

4/13/2002

Is this the same as auto deployment?
" " " " " no touch deployment?

URL launched apps - link on web page
on demand download - from web

(No reflection)

- just copy release exe and dll into a web
- will auto load and auto download the dll assembly
- running in a sandbox - just like a web page in a browser - can't access ^{client} PC
- can use strong names for more features
- runs in download cache not GAC [get good picture on slideshow on how it works]

gacutil /ddl - shows download cache

Windows forms browser controls - contained in the web page

File share - run the app from a file share - no registration required (Security)

Decision Points - online only - no install step - semi-trusted - extension to web site app

No Touch Update - assume we want it just like a normal app (shortcuts, extensions etc)

Load assemblies from web server - uses ~~reflection~~ assembly.loadFromC

2nd form doesn't need direct reference - check for new ^{assembly} app only happens on initial load

when assemblies are large - net connection slow - app may appear slow or hung
- avoid this by opening large forms Async

(Games Dot Net) look for it

Code download

Pro: small install - incremental download - auto update

Con: no offline support - updates only once - app must be tailored appropriately

Auto-update app no explicit uninstall

- 1) poll to update detect via a ws, or direct file/time stamp check, manifest file
- 2) download update as a background operation - must be safe and robust
- 3) apply the update - difficult while app is running

.NET application updater component

(look for app updater component)

<http://gotdotnet.com/team/windowsforms>
" " /team/w " /appupdater.aspx

Win. Application Security Permissions -

security only works with verifiable code / C# in unverifiable

Loading Assemblies -

Demands Make it work - checks call stack.

Intranet permissions come from running

in browser
assembly.load
url activation
unc/file share

Local machine - gets full permission set (must exist on PC)

Intranet - limited permissions

- unlimited ui, same protocol access to site and DNS
- file read access to origin
- access with end user involved - default printer (user interaction)
- unlimited local storage
- write to event log
- some env variables

Win app security (cont)

{ look for Notepad sample code }
where does isolated storage really exist

file dialogs give you stream access.

can programmatically determine if you need file dialog.

Intranet - changing policy - done by administrators
enterprise / machine / user
can trust a server or a particular strong name

Caspol - or go to control panel - ms.net framework configuration tool

Asserts are another way to get higher access

{ what would prevent someone sending
an msil totally unsecure.
(look for change security app demo)

Send Jaimec@microsoft.com

Jaime Cool - send reflection error we are
receiving

http://gotdotnet.com/team/clrf/about_security.aspx

4/13/2002

ADO.NET and XML

Michael Pizzo

Dataset $\xleftrightarrow{\text{sync}}$ XML Data Document

XPathDocument - optimized XML store

Dataset - in memory - relational cache - no connection info - makes it removable
schema is removed through XSD schema

ds.ReadXml(schema(xsd schema)) can read xsd file, xml reader, stream
generates xml matching XSD

ds.ReadXml() has rules -

What happens if a attribute is named as an element?

{if one schema has a child and another has 2 how do we write code?
to handle both?}

Controlling How XML is generated - use by XSD

can specify at data column or data table level how to represent in XML

dc.ColumnMapping = MappingType.attribute

ds.RelatedNested = true

SAXML.NET 3.0

4/13/2002 Advanced ADO.NET DAT402

Command builder has a round trip hit - uses dynamic sql
specify at design time using SqlCommand and set CommandType

Dataset keeps track of original values
look at sourceversion = datarow version. ^{original}
(look at optimistic Concurrency slide)

Server Cursors

Data Reader is simple server cursor (optimized at network level) holds state on db ^{locks rows}
only use when reading data quickly ←
pessimistic concurrency → { fast for trivial processing } → does not scale - ^{supported} use transactions ①

Scrollable Server Cursors

→ keeps state on server - not exposed in VS.NET 1.0 - keeps connection open - not scalable
→ many round trips - chatty - supported through DML ②

① open transaction in connection, use same transaction for data adapter
da.SelectCommand.transaction = tran (isolation level serializable)
explicitly open ~~set~~ connection
set connection and transaction for update command - da.UpdateCommand.transaction = tran
da.Update(dataset)
tran.commit

② dc.CommandText = "Declare mycursor Scrollable Cursor for select * from customers"
dc.ExecuteNonQuery
dc.CommandText = "Open mycursor"
dc.ExecuteNonQuery
dc.CommandText = "Fetch Next From mycursor"
dc.ExecuteReader
CommandText = "CLOSE mycursor, DEALLOCATE mycursor"

See example
on ppt

pessimistic
concurrency
explicitly hold
locks

Scrollable
Server
Cursors

SQLServer.NET will support .NET CLR languages within it (goodbye TSQL)
server cursors will be allowed in .NET v2.0

Using DataSet as a cache

store DS in cache - read from cache - refresh cache after writing

Control XML layout - can force column mapping to mappingtype.attribute
or relations().nested=true to make inside values internally represented

Working with identity columns

simple - use GUID

set auto increment seed step to -1

after update, select back primary key that SQL chooses
always insert parents before children

Get code example
from ppt

refreshing data in dataset

Handling large resultsets

use top n in SQL Server

use maxrows on other databases - page by ordinal range

nest Top end queries within another top end

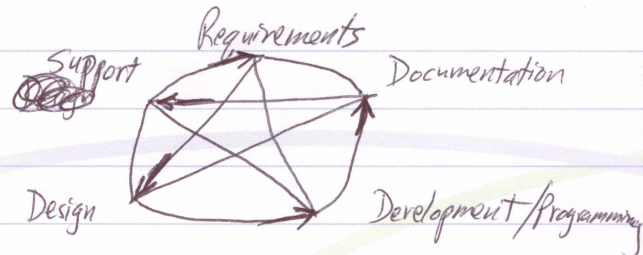
Join Queries against DataSet using XML Documents

Recordset $\Leftarrow$ DataSet

transform using XSL or write it yourself

Architect using .NET DEV309 APR 10, 2002

Development Process
Architectural Guidance, ^{Communicate} App Arch.



Enterprise Templates

TDL policy

Application Structure - projects, code etc...

context & html - custom help - plug in to dynamic help - help for component developer is working on

predefine common properties - can limit user

* New Project - other Projects - Enterprise Template Projects -

VISO can create generated .NET code based on UML

can reverse engineer .NET applications

Publish diagrams and models on Intranet - wide # of reports

Document VS project in the form of soft arch./design

* Visto 2002 - UML Model - drag a class - name it - add attributes - add operation
code gen. options - code preview

UML - code - generate

Reverse Engineer - Project → UML → reverse engineer

Data Modeling - conceptual, logical, physical models

ORM - object role modeling - create natural language facts - creates objects and predicates

reverse engineer data - validate logical and physical data

perform data model synchronization - Build database (looks like DataModeler)

Wed 4/10/2002

sysinternals.com, wininternals.com, ntinternals

Sysinternals Tools

Denied filemon and regmon - showed notepad's incorrect error message when opening a file in a protected folder

use highlight to focus on a particular

Process Explorer - similar to Tlist

- Shows environment variables

may display what process uses ...\\.\com2 folder by searching for handle close handle is possible

MM column loaded as data not an image

Diff mode will display new stuff

handle.exe or listdll.exe

TDIMon - network activity
looks at TCP/IP level

Debugview - captures debug trace output - across network

Dishmon -

PMon - thread

PortMon - serial /parallel monitoring

Tokenmon - show processes as security

Admin Tools

Mark Russinovich

PsTools - PsList - similar to ~~P~~list and Tlist

Pslist can list remote PC tasks

pskill - removes a task - can kill unkillable processes - uses debug process

psinfo - undocumented api - uses WMI and registry

psloglist - like elglist - dump event logs - gets event strings
allows events to be filtered

PsService - control services - like sc utility -

search network for services - looks across lan for the service

Psexec - can ipconfig on another PC

Pssuspend - can actually suspend a process, -r allows resuming

bginfo - background info - creates an auto generated informative desktop background

File system tools

Contig - single file defragmenter or entire disk of files

PageDefrag -

NTFS DOS read only allows dual boot to read files from NTFS partition

Architect continued

Application Center Test -

can record browser movements - set test params, runtime report
trace info - performance data - custom graphs

Generates
Code!

New Project - AET project

- add new item - browser record - hit start - browse to website.

creates VB script of browser session - cool graphs and report details

Visual Source Safe - integrates with VS.NET

www.orm.net

ms.com/applicationcenter

DEV 310: Architecting Enterprise Applications with VS.NET part 1

David Keogh
David Noble

Personal Financial Portal web app

system architecture vs. application architecture

"Hurricane" system arch.

Login.aspx should be https protected
in web.config

```
<forms name="xyz" protection="All" timeout="5" path="/"
loginUrl="secure/login.aspx">
```

login.aspx.vb

cred^s credentials = member credentials.credentials

look for credentials object using forms authentication ticket (pw, 5)

uses http request from web tier to IIS on app tier using NET remoting
shut down port 80 on app tier ^{IIS} uses a different port

Where do we store configuration info if not in config files?

Use impersonation features - and create an account for anon access to database? ^{How?} What?

Get this presentation for future arch. discussions!

Do a set of role checks based on a machine.config DES ^{encryption} key

<Authorization>

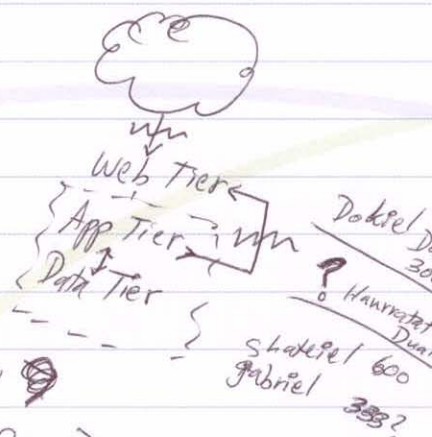
<allow roles="Member">

<deny users="?">

"IDC reference application"

Different folder for roles and (secure SSL)

look for principle class



wed 4/10/2002

<http://msdn.microsoft.com/webservices>

GXA - Global ^{XML} WebServices Architecture - infrastructure level protocols

AsmX - Asmx files or XML web services

"SOAP at the end of the day is simple" - Don Box
aspect oriented programming.

GXA

Security, Transactions, Reliable Messaging, Business Process (Ignore these)

Don Box - Network Virtualization, ^{Decentralized} Message level security, Distributed agreement

ws-routing

ws-licen~~se~~

TIP (now)

~~ws-security~~
ws-referral

ws-security

XLANG (now)

"ad hoc hacking" - Don Box

ws-il -

~~ws~~ DIME - instead of soap with attachments - different multipart mime
look in SOAP toolkit 3.0