Hocus Pocus!
The New “Magic” Behind FOCUS

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Objectives

**Acquire** a basic understanding of MEDITECH’s newest proprietary technology platform called FOCUS.

**Contrast** the basic differences between FOCUS and previous technologies and become better equipped to understand the benefits and challenges of a future migration to FOCUS.
Defining NPR…

- “Pre-FOCUS” Client/Server technology

- Includes ALL 5.x versions (5.0 – 5.6)

- Is a technology, not a report writer!
TECHNOLOGY
What Is Client/Server 6.0?

- Hybrid of NPR and new FOCUS Applications
- In 6.0 Adv. Clinicals are written in FOCUS (EMR, PCS, ED, OM - along with HIM and MIS)
- Everything else in 6.0 (for now) is NPR
- Communication between FOCUS and NPR
- Very Similar UI across FOCUS and NPR
What Is Client/Server 6.0?

Focus File Servers
- OM
- EMR
- PCS
- EDM
- HIM
- MIS & RW

NPR File Servers
- ADM
- LAB/PHA
- ABS/SCH
- BAR
- GL/MM/AP/FA
- UNV/ITS

Archive Server

Connections

SQL Server - DR
What is FOCUS?

- Development environment built for FS
- FOCUS is to FS what NPR Magic was to $T Magic
- “Chronological” Database Technology
- Optimized Network Management
- Updated Interface Tools for Screens / Reports
What Is FS?

• FS = new(er) programming language

• Stands for “Functional System”

• Interpreted language with lots of function calls

• Emphasis on client-side processing

• Very little support of Data Defs & Variables
Functional Programming

Stack Value → Function → Stack Value
CODE COMPARISON
Hello World Code in Magic

T("")^#,
N("Hello World!")^#;
Hello World in FS

:Code Main

`200,300'@Iw@OW,
"My First App"@Ih
"Hello World!!"@Wb,
DO{@RK~:=27}@CW;

Name of Function
Create a window
Add a title to the window
Output string in the foreground
Exit when user presses ‘ESC’
Close the Window
Hello World in FOCUS

#Translation
:Options
Result MSFile
:Product
Type Unstructured

#Preamble
:Options
Type Process

#Magic
:Code Main
`200,300'@Iw@OW,
"My First App"@Ih
"Hello World!!"@Wb,
DO{@RK~=-27}@CW;
Hello World in FOCUS

#Translation
:Options Result MSFile
:Product Type Unstructured

#Preamble
:Options Type Process

#Magic
:Code Main
'200,300'@Iw@OW,
"My First App"@Ih
"Hello World!!"@Wb,
DO{@RK~=27}@CW;

Same as FS code in the Main body
Hello World in FOCUS

#Translation

:Options
:Result
:Product
:Type

MSFile
Unstructured

#Preamble

:Options
:Type

Process

#Magic

:Code Main

`200,300'@Iw@OW,
"My First App"@Ih
"Hello World!!"@Wb,
DO{@RK~=-27}@CW;

Used to determine “run-time” behavior
#Translation

:Options
  Result  MSFile
:Product
  Type    Unstructured

#Preamble

:Options
  Type    Process

#Magic

:Code Main
`200,300'@Iw@OW,
"My First App"@Ih
"Hello World!!"@Wb,
DO{@RK~:=27}@CW;
USER INTERFACE
New Screen Technology

- Menu Navigation
- Desktop Screen Regions
- Data Entry Screens
- FOCUS vs. NPR
- Lookups
- History / Audit Trail
Menu Navigation

Mix of FOCUS and NPR Routines

Bolded Selections; Creates “Visual Pathway”
## Role-Based Desktop

### Analyst Desktop

#### System Information
- File Servers
- Background Job Clients
- Application Servers
- Network
- Print Servers
- Alert Service
- SAN Backup

#### Application Information
- Accounts Payable
- Admissions Module
- Authorization & Referral Management
- Billing/Accounts Receivable
- Case Mix Abstracting Module
- Conversion Utilities
- Cost Accounting
- Data Repository (Focus)
- Electronic Medical Record (Focus)
- Emergency Department Management
- Executive Support System
- File Management
- Fixed Assets
- General Ledger
- Laboratory Module
- Medical Records Indexing Module
- Medical Records Management
- Medication Administration
- Order Management (Focus)
- Patient Care System (Focus)
- Pharmacy Module
- Payroll/Personnel System
- Quality/Risk Management
- Radiology And Departmental Management
- Registration (Focus)
- Scheduling
- The HUB
- Upgrade Tools
- Universe (Focus)
Desktop Screen Regions

- **HEADER**
- **BODY**
- **MENU**
- **FOOTER**
Data Entry Screens

- **Multi-Page Controls**
- **Navigation (Scroll) Bars**
- **Chosen Menu Option**
- **Historical Audit Trail**
- **New Cancel & Save Buttons**
**History**

![Image of IATRIC systems interface with history tab open](image)

- **Choose Record (Segment)**
- **Choose Entry**
- **Lists changes over time**

<table>
<thead>
<tr>
<th>Date/Time</th>
<th>User</th>
<th>Client</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/13/07 07:02</td>
<td>Iatrics.User</td>
<td>MIMIS</td>
</tr>
<tr>
<td>07/23/07 17:32</td>
<td>Mt, Meditech</td>
<td>MTBJPL1</td>
</tr>
<tr>
<td>05/22/07 15:29</td>
<td>Mt, Meditech (meditech)</td>
<td>MTFS07</td>
</tr>
</tbody>
</table>

**Dictionary History**

- **Transaction**
- **Current**

**Instance**

- **ElementMnemonic**
  - A
  - C
  - H
  - HB
  - HC
  - N

**History**

<table>
<thead>
<tr>
<th>When</th>
<th>Action</th>
<th>ElementResponse</th>
<th>ElementRank</th>
<th>ElementValue</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/13/07 07:02</td>
<td>edit</td>
<td>ASPIRIN</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>07/23/07 17:32</td>
<td>edit</td>
<td>ASPIRIN</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>05/22/07 15:29</td>
<td>new</td>
<td>ASPIRIN</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>
FOCUS vs. NPR

FOCUS Enter/Edit Order Dx

NPR Enter/Edit OE Procedure Dx
Lookups

Type full or partial mnemonic and press <Enter> - Choices populate in window below

<table>
<thead>
<tr>
<th>Name</th>
<th>Active</th>
<th>Mnemonic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pt. Care Ref - Behavior</td>
<td>Yes</td>
<td>PD.PCR4</td>
</tr>
<tr>
<td>Pt. Care Ref - Communication</td>
<td>Yes</td>
<td>PD.PCR3</td>
</tr>
<tr>
<td>Pt. Care Ref - Disabilities</td>
<td>Yes</td>
<td>PD.PCR1</td>
</tr>
<tr>
<td>Pt. Care Ref - Impairments</td>
<td>Yes</td>
<td>PD.PCR2</td>
</tr>
<tr>
<td>PT/PTT RESPONSES</td>
<td>Yes</td>
<td>LABPTPTT</td>
</tr>
</tbody>
</table>

Lookup Options

- Identifier
- Mnemonic
- Name
- Any Word
- Active
- Inactive
- Both
Lookups

TYPE-AHEAD TECHNOLOGY

Stylus-Input Keyboard
HARDWARE
Hardware

Typical Configuration

6 NPR and 3 Focus File Servers

SAN attached storage

2 Transaction Servers

11 Background Job Processors

Other needed machines

Cost vs. Under Configuring?
Network Design

- Careful application design allows correctly-grained network usage
- Network protocols allow efficient transfers
- Minimized effect of high latency or slow bandwidth
- Small runtime footprints
System Architecture

Transaction Server

- Controls all database writes
- Protects database from client/user failure
- Backups are transactionally aware across servers
- Roll-forward a database from a prior backup
System Architecture

Conversion Server

- Limit Downtime
- Allow for database file conversions to be performed offline
- Transactions can be rolled in and also converted offline
Chronological Database

- Append Only
- Reliable
- Natural complete historical audit
Initial Entry 5/22/07

Edit on 7/23/07

Edit on 9/13/07
Application Design Tools

Abstraction — Application tools enforce abstraction

- Screen Design can allow for web-based display and data entry
- Database file distribution design allows for scalability
- User Interface enforces consistency
- Modern look and feel
IMPROVEMENTS
• Built-in audit trails of everything
• Improved network performance
• Reduced downtime; increased reliability
• Data corruption virtually eliminated
• Modern screen technology & workflow
Improvements

- Easier for MEDITECH to support
- A LOT less “locking” issues in FOCUS
- The concept of multiple databases is gone
REPORT WRITER
Report Writing in FOCUS

• Good News!! There is a Report Writer!!

• Terminology has changed a little…
  • DPMs are now called Objects
  • Segments are now called Records
  • Data elements are now called Fields

• No fragments, macros or current ability to use FS code inside computed fields
Report Writing in FOCUS

- Rule Editor / Wizard *may* eliminate need for code
- No abbreviations (e.g. GE, LE, EQ)
- All FOCUS application data is available with no special “tricks” needed
- No current plan to allow FOCUS to get NPR data
- Output is via “Frames” – one per region
SNEAK PREVIEW… shhh!
Report Writing in FOCUS

Familiar “Process Reports” Menu

Two Report Writer Options
The new “ADM.PAT”
a.k.a. main “segment”
“Basic” Report Mode
Define Main Record (aka “Segment”)
Define Index

Define Attributes for Selection Fields

Datatype | DATE
Font Style | VariableSansSerif
Font Size | 2
Justify | Left

Report Writing in FOCUS
### Report Writing in FOCUS

**Define Output Regions**

<table>
<thead>
<tr>
<th>Code</th>
<th>Region</th>
<th>Active</th>
</tr>
</thead>
<tbody>
<tr>
<td>BR</td>
<td>Banner Region</td>
<td></td>
</tr>
<tr>
<td>PH</td>
<td>Page Header</td>
<td></td>
</tr>
<tr>
<td>RH</td>
<td>Report Header</td>
<td></td>
</tr>
<tr>
<td>KH1</td>
<td>Header for RegAcct.RegDate</td>
<td></td>
</tr>
<tr>
<td>KH2</td>
<td>Header for RegAcct.AbsCptCode</td>
<td></td>
</tr>
<tr>
<td>DR1</td>
<td>Detail #1</td>
<td></td>
</tr>
<tr>
<td>DR2</td>
<td>Detail #2</td>
<td></td>
</tr>
<tr>
<td>KT2</td>
<td>Trailer for RegAcct.AbsCptCode</td>
<td></td>
</tr>
<tr>
<td>KT1</td>
<td>Trailer for RegAcct.RegDate</td>
<td></td>
</tr>
<tr>
<td>RT</td>
<td>Report Trailer</td>
<td></td>
</tr>
<tr>
<td>PT</td>
<td>Page Trailer</td>
<td></td>
</tr>
</tbody>
</table>

### Attribute - Value - Rule Table

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
<th>Rule</th>
</tr>
</thead>
</table>
Rumors, Future Possibilities…

- Phased approach for 6.x / FOCUS
- Scripting in 6.0 / FOCUS?
- Alternate Hardware Configurations?
- Greater use of web technologies?
- Habla espanol?
THANK YOU!!!!