Constructing CA-OPS/MVS Applications

Course Summary

Description

This course is designed for the attendee who understands REXX and is ready to take the next step toward developing CA-OPS/MVS applications. The course will show you how to construct, manage and maintain your applications. Quizzes and labs are used to reinforce presented topics. This course can be customized to customer's specific needs.

Objectives

At the conclusion of the course, students will understand:

- CA-OPS/MVS Introduction
- Multi-System Facility (MFS)
- OPS/REXX differences
- Automated Operator Facility (AOF) Rules Language
- Building security into your automation
- Programmer Operations Interface (POI)
- Invoking ISPF applications
- Creating routines
- External Product Interface (EPI)
- Introduction to RDF and SSM
- Introduction to CICS Operations Facility
- Introduction to IMS Operations Facility
- New Features of OPS/MVS
- Standards for maintaining applications
- How to develop an Automation Project Plan

Audience

This course is designed for Operations personnel, Automation Analysts, Systems Programmers working with Automation.

Prerequisites

Students should have taken Understanding and Using CA-OPS/MVS, or have equivalent knowledge and experience.

Duration

Three days
Note: Optionally, an instructor can be retained for an extra day(s) to provide on-site programming and systems expertise.

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"Charting the Course ...

... to Your Success!"

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Course Outline

I. CA-OPS/MVS Introduction
- A. Why Automation?
- B. Standards
- C. Base Product Components
- D. Optional Features
- E. OPS/REXX (ORX)
- F. Automated Operations Facility (AOF)
- G. AOF Rule Types
- H. Sample CMD rule
- I. CA-OPS/MVS Architecture
- J. OPSVIEW
- K. OPSLOG WebView
- L. OPS/MVS Server Facility (OSF)
- M. Unix System Services (USS)
- N. External Product Interface (EPI)
- O. Programmable Operations Interface (POI)
- P. Relational Data Framework (RDF)
- Q. System State Manager (SSM)
- R. VM Guest Support (VMGS)
- S. Security
- T. Multi-System Facility (MSF)
- U. CICS Operations Facility (COF)
- V. IMS/DC Operation Facility (IOF)
- W. OPS/MVS Documentation

II. Multi-System Facility (MSF)
- A. MSF Overview
- B. OPS/MVS MSF Display
- C. OPSCTL Environment
- D. MSF Example
- E. Optional Lab: Sending Global Variables
- F. Recap of OPS/MVS MSF Display
- G. Dynamically Defining new MSF Session
- H. OPSLOG MSF Command

III. Intro to OPS/REXX
- A. Review: What's a REXX Procedure?
- B. Portability: REXX Environments
- C. REXX vs. TSO CLIST
- D. Review: The REXX Data Stack
- E. Differences: OPS/REXX Data Stack
- F. OPS/REXX Limitations
- G. Differences: OPS/REXX Trace
- H. OPS/REXX Extensions
- I. OPS/REXX History
- J. OPS/REXX POI (TSO) Cmds
- K. OPS/REXX Variable Syntax
- L. OPS/REXX Global Variables
- M. Nonvolatile Global Variables
- N. Volatile Global Variables
- O. How to Create a Global Variable
- P. Lab: Creating Global Variables
- Q. How to Delete a Global Variable
- R. Optional Lab: Deleting Global Variables
- S. OPS/REXX Address Environments
- T. Address OPER
- U. Lab: Issuing MVS Commands
- V. Address WTO
- W. Multi-line Address WTO
- X. OPS/REXX Functions
- Y. OPS/MVS MVS Info Functions
- Z. OPSDEV() Example
- AA. OPSINFO() Function
- BB. OPSIPL() Example
- CC. OPSENQ() Function
- DD. OPSJES2() Function
- EE. OPSPRMLB() Example
- FF. OPSTATUS() Example
- GG. OPSYSPLX() Example
- HH. OPSYSSYM() Example
- II. OPSLOG() Example
- JJ. OPS/MVS MVS Service Functions
- KK. OPS/MVS Parms affecting OPS/REXX
- LL. OPTIONS REXX Keyword Instruction

IV. Advanced OPS/REXX
- A. OPS/REXX Address Environments
- B. CA-GSS Address Environments
- C. Address NETMASTR Syntax
- D. Address NETMASTR Example
- E. OPSDYNAM Example - ALLOC, FREE
- F. OPSDYNAM Example - CONCAT, DECONCAT
- G. OPS/MVS MVS Service Functions
- H. OPSARM() Example
- I. Opsarmst() – Global ARM Status Vars
- J. Opsarmst() – Basic ARM Element Vars
- K. EXECIO - OPS/MVS I/O Handling
- L. Undocumented OPS I/O Functions
- M. OPS/MVS Management Functions

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N. OPSPRM() Example
O. OPS/MVS Management Functions
P. OPS/MVS Misc Functions
Q. Keyword Instruction – Interpret

V. Intro to AOF Rules

A. What is the AOF?
B. What is a RULE?
C. AOF Event Definition Types
D. AOF Rule Sections
E. Rule Section Example
F. CMD Rule Example
G. OPS/REXX Variable Types
H. Event-Related Variables
I. Nonvolatile Global Variables
J. Volatile Global Variables
K. Global Variables
L. GLVJOBID Variable Example
M. Manipulating Global Variables
N. OPSVALUE() Example
O. Message Event
P. Message Event Scope
Q. Sample MSG Rules
R. MVS Route code (ROUTCDE) Info
S. Controlling Route Codes
T. AOF Test Editor
U. Testing a Message Rule
V. Listing Global variables
W. MSG Rule Exercise
X. Command Event
Y. Command Event Scope
Z. Example CMD rules
AA. Testing a Command Rule
BB. CMD Rule Exercise
CC. Time of Day Event
DD. TOD Event Scope
EE. TOD Examples
FF. Testing a Time of Day Rule
GG. Relative Time Rules
HH. Dynamic Rules
II. TOD Rule Exercise
JJ. OPS/MVS Parms affecting AOF Rules
KK. EasyRule
LL. EasyRule Exercise

VI. Advanced AOF Rules

A. AOF Event Definition Types
B. Advanced MSG rule Example
C. Setting OPS Message Suffix Parms
D. OPS/MVS Message Severity Levels
E. Example OPS/MVS Msg Rule
F. TOD -> REXX Example
G. End of Memory Event
H. Testing an End of Memory Rule
I. End of Job, End of Step Events
J. Time Limit Exceeded Event
K. Delete Operator Message Event
L. OPS Built-in Functions: OPSSEND
M. Global Variable Event
N. Example GLV Rule
O. Test Global Variables
P. Omegamon Event
Q. Omegamon Setup
R. Omegamon JCL
S. Example Omegamon Rule
T. Request Event
U. Sample REQ Rule
V. Security Event
W. OPS Built-in Functions: OPSECURE()
X. Security Rule Example
Y. Dynamic Rules
Z. API Event
AA. Automatic Restart Manager Event
BB. ARM Rule Example

VII. OPS/MVS TSO Commands

A. TSO Commands - Reasons to Avoid
B. TSO Commands - Reasons to Use
C. The OPSWAIT Command
D. The OPSCMD Command
E. The OPSREPLY Command
F. The OPSPARM Command
G. The OPSRMT Command
H. The OPSWTO Command
I. The OPSVIEW and OB Commands

VIII. Understanding and deploying OPSLOG WebView

A. WebView Overview
B. Launching WebView
C. Using WebView

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D. WebView Features
E. WebView Components: Client
F. WebView Components: Server
G. WebView Operator Commands
H. WebView: How it Works
I. Client Installation & Setup
J. Web Applet Installation & Setup
K. OPSLOGSV Installation & Setup
L. OpsLog WebView Lab
M. OpsLog WebView Issues

IX. System State Manager

A. Relational Data Framework
B. SQL CALLS for RDF
C. Returned Data
D. The SQL WHERE Clause
E. SSM V1 Overview
F. StateMan V1 Components
G. Monitoring StateMan From Console
H. Monitoring StateMan From ISPF
I. SSM Versions
J. SSM STCTBL Resource Table
K. Resource Table Structure
L. STCTBL Table View
M. System State Manager
N. Phases in the SSM Cycle
O. Basic PREREQ Checking
P. StateMan Modes & States
Q. StateMan Action Table
R. SSM V1 vs V2 STCTBL Action Table
S. SSM V2 Action Table Columns
T. SSM V1 & V2 ACTION_TEXT Clauses
U. Action Substitution Variables
V. Additional Action Substitution Variables
W. STCTBL Supplied Text Actions
X. Enabling the SSM Rules
Y. Setting the Desired State
Z. SSMBegin REXX Exec
AA. IPL Time
BB. System Shutdown
CC. StateMan IPL Walk-thru
DD. StateMan Parameter Review
EE. Directory Table
FF. StateMan Administration
GG. StateMan Table Editor
HH. SNAPSHOT
II. Understanding SSM V2
JJ. SSM Version 2
KK. SSMV2 Required Resource Table Columns
LL. Process Exit example
MM. SSMV2 Prerequisite Enhancements
NN. SSM v2 PREREQ Syntax
OO. Minimum Number of Prerequisites
PP. Positive & Negative (+/-) PREREQs
QQ. WLM Scheduling Environments
RR. SSM v2 Global Events
SS. Global Event Action Table
TT. SSMv2 Global Event Audit Trail
UU. SSM v2 Global Event Samples
VV. Auxiliary Tables
WW. Sysplex Resource Monitor
XX. Other SSM Enhancements
YY. SSM v2 Migration Considerations

X. Using the OPS/MVS UNIX System Services Interface

A. UNIX System Services
B. CA-Unicenter Common Services
C. OPS/MVS UNIX Interface
D. CA-Unicenter Architecture
E. USS OSF Server Class
F. ADDRESS USS Environment
G. USS Process Start and Stop Events
H. USS Process Events in OPSLOG
I. USS AOF Rules
J. UNIX System Service Msg Event
K. USS Event Variables
L. USS Event Scope
M. Example USS Rule
N. USS Log Monitoring
O. Calling the LOG Monitor Script
P. OPSINFO() UNIX Information
Q. OPSUSS(' Process') Function
R. OPSUSS('Process') Syntax
S. OPSUSS Function: Process Usage
T. Selected OPSUSS() Return variables
U. OPSUSS(' User') & OPSUSS('Group')
V. OPSUSS('Set') Function
W. OPSUSS Function: Examples
X. Running OPS/REXX in USS
Y. OPS/REXX and USS: HFS Files

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Z. OPS/REXX Execution from USS Shell
AA. OPS/REXX Execution from Telnet
BB. OPS/REXX Execution from OMVS
CC. OPS/REXX Execution in UNIX REXX
DD. OPS/REXX Commands in USS
EE. ADDRESS USS Environment
FF. Address USS USSCMD Example
GG. Address USS Return Codes
HH. Address USS CMD Example
II. Address USS API Keywords
JJ. Address USS DOM
KK. Address USS PING
LL. Address USS REPLY
MM. Address USS WTO Example
NN. Address USS WTOR Example
OO. Terminating OPSUSS Servers

XI. Installing and Configuring OPS/MVS USS Support
A. Reasons to Install OPS USS Interface
B. USS Installation Checklist
C. Installation Jobs
D. Installation Jobs: INSTSMPU
E. Installation Jobs: INSTUSEX
F. Parameters and Customization
G. Customizing the OPSUSS Proc
H. Customizing the OPSUSS ENVFILE
I. OPS/MVS USS Parameters
J. Activating OPS/MVS USS
K. Monitoring OPS/MVS USS w/ OpsView
L. Sending work to OPS/MVS USS
M. ADDRESS USS Example
N. Common USS Questions

XII. CICS Operation Facility (COF)
A. CICS Operations Facility Overview
B. CICS Operations Facility Install
C. Other CICS Management Tools

XIII. IMS Operation Facility (IOF)
A. IOF Overview
B. IOF Variables
C. Using OPSINFO() with IOF
D. IOF Message Processing
E. IMS Command Response
F. IOF Install & Configuration Overview
G. Issuing IMS Commands
H. IMS Operations Facility Install
I. ProTech IOF Add-ons

XIV. External Product Interface (EPI)
A. EPI Overview
B. Understanding the EPI Logmode
C. EPI Programming Overview
D. EPI Setup
E. Defining terminals w/ OPEPDFAL exec:
F. EPI in OpsView
G. EPI Define Command
H. EPI Enable/Disable Commands
I. EPI Logon / Logoff Commands
J. EPI Change Command
K. EPI ENQ / DEQ Commands
L. EPI Bind / UnBind Commands
M. EPI MsgId Command
N. EPI RdCursor & MvCursor Commands
O. EPI RdScreen / RdScrRow Commands
P. EPI SubAttr / SubUnpt Commands
Q. EPI SetTerm / SetUname Command
R. EPI TimeOut / Trim Commands
S. EPI InqInput Command
T. EPI Type / TypeSec Commands
U. EPI TypeTest Command
V. EPI Special Key Names for Type
W. EPI GetScrn Command
X. EPI SessCmd Command
Y. GETSCRN & SESSCMD Variables
Z. SESSCMD HLLAPI Keystrokes
AA. EPI Wait / WaitTOD Commands
BB. EPI Debug / Trace Commands
CC. EPI PEEK / POKE Commands
DD. EPI SubSys Command
EE. EPI Hints and Tips
FF. Screen Event
GG. SCR Event Scope

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