

# CA OPS/MVS System State Manager v3

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# Introduction

# Introduction

The System State Manager (SSM) facility automates and controls the management of system resources, such as started tasks, subsystems, JES initiators, and VTAM nodes. The goal of the SSM engine involves always keeping a resource in its desired state. When the current state differs from the desired state, SSM dispatches an action to restore the resource to its proper state.

General Features	
CA Supplied Resource Policy Definitions	Keeps Current State = Desired State
Expandable to any Resource with an Up/Down, On/Off, Active/Inactive State	Prerequisite / Suberequisite Relationships
Single Location for Resource Information	Restart Resource after failure
Customer Expandable	Restart LPAR after IPL
Move Resource across LPARs within a SYSPLEX	Control Groups of Resources
ISPF, Console, or Web Control	Limits Runaway Failure Restarts

# Finding the System State Manager Menu

```
CA OPS/MVS ----- CA11 --- OPSVIEW Primary Options Menu ----- Subsystem OPSL
Option ==>

0 Parms      Set OPSVIEW and ISPF default values      User ID - KIEMI01
1 OPSLOG     Browse OPSLOG                          Time   - 13:25
2 Editors    AOF Rules, REXX programs, SQL Tables    Release - 12.3
3 Sys Cntl   Display/Modify System Resources
4 Control    Control CA OPS/MVS
5 Support     Support information
6 Command    Enter JES2/MVS/IMS/UM commands directly
7 Utilities  Run CA OPS/MVS Utilities
A AutoMate   CA AutoMate rules edit and control
I ISPF       Use ISPF/PDF services
S SYSVIEW    CA SYSVIEW Performance Management
T Tutorial   Display information about OPSVIEW

Control ----- CA11 --- OPSVIEW ----- Subsystem OPSL
Option ==>

1 Parms      View/Modify product parameters
2 MSF Control Control Multi-System Facility
3 OSF Information View Operator Server Facility status
4 ECF Information View Enhanced Console Facility status
5 AOF Control Control Automated Operations Facility
6 Start      Start the main product address space
7 Stop       Stop the main product address space
8 Global Variables Display and Update Global Variables
10 EPI Control Control External Product Interface
11 SSM Control View/Control System State Manager
12 CDF Control View/Modify CICS Operations Facility
13 OPSLOG Control View/Modify OPSLOG Definitions
14 WebCenter Control View/Modify WebCenter Facility LU Prefix: ____

Enter END command to return to primary options.
```

```
System State Manager----- CA11 -- OPSVIEW ----- Subsystem OPSL
Option ==>
Date/Time: 2016/09/07 13:34

1 Control      - Set/Display SSM parameters and resource tables
2 Status       - Set/Display states of SSM controlled local resources
3 Snapshot     - Create/Modify a local SSM started task resource table
4 Scheduler    - Set/Display schedules for SSM controlled resources
5 Group Manager - Create/Manage groups of SSM resources
A Action Editor - Create and maintain SSM action tables
6 Global Status - Set/Display states of SSM controlled global resources
G2 SSMGAU2     - Set/Display states of SSMGAU2 moveable resources
R Resource Edit - Create and maintain SSM resource tables
W WTOR Reply   - Respond to outstanding SSMGA WTORs
P Policy Manager - SSM Resource Policy Manager

Press END to return
```

# Resource Discovery

# Resource Discovery

- Quick way to start using System State Manager to monitor resources
  - Builds required infrastructure
  - Discovers resources running on LPAR
  - Identifies what the resource is and sets default values

```
SSM Resource Policy Manager ----- CA11 -- O P S U I E W ----- Subsystem OPSL
Option  ==> 
D Discovery - Populate SSM policy data
R Resources - Define SSM policy by resource
UC User Columns - Select SSM user columns to include in policy
UT User Types - Define custom SSM resource types

Press END to return
```

```
CA11      ----- Resource Discovery ----- QPSL
Command ==> _____

Add resources to the SSM Policy Manager.
Enter a resource discovery method.

Discovery Method:  =

    D Run resource discovery utility
    S Use existing STC and Action tables

PF3 to exit to SSM Resource List
PF12 to cancel
```

# Policy Based Resource Management



# Policy Based Resource Management

## Overview

- Adds management facilities to standard System State Manager
- Single Location to manage resources
- CA Supplied Best Practices Resource Definitions
  - Users can create or override unique resource definitions
- Ability to Stage and Verify Changes before Product Implementation

```
SSM Resource Policy Manager ----- CA11 -- O P S U I E W ----- Subsystem OPSL
Option  ==>

D  Discovery   - Populate SSM policy data
R  Resources  - Define SSM policy by resource
UC User Columns - Select SSM user columns to include in policy
UT User Types  - Define custom SSM resource types

Press END to return
```

# Policy Types

## Overview

- Best Practice Resource Definitions
  - Description, Start Command, Activation Complete Message, Stop Command, Inactivation Complete Message, Prerequisite Resources, IPL State, and Hook Flag
- Override CA Supplied Policies
- Create Unique Policies

# Policy Types

## Managing User Policy Types

```

User Type Administration CA11 -- O P S V I E W ----- Row 1 to 1 of 1
Command ==> _____ Scroll ==> PAGE
System: *_____

Commands:      ADD to add new type ? Help
Line Commands: B Browse C Copy D Delete E Edit ? Help

SEL  Type Name      Description      Action
Filter _____
_    JOESTC          Test SSM resource      +
***** Bottom of data *****
  
```

Add	Create a new User Policy Type
Browse	Display the User Policy Type definition
Copy	Copy the User Policy Type into a new definition
Delete	Remove the User Policy Type
Edit	Change the User Policy Type

```

ADD User Type      CA11 ----- O P S V I E W ----- Subsystem OPSL
Command ==> _____ Scroll ==> CSR
More: +

* Required field

* Type name: _____ Description: _____ +

* Action to START the resource:
_____ +

* Activation Completion Rule: _____ . _____
Or Activation Completion Event:
Type Id      Text
_____ +

Prerequisite Resources: _____ +
Activation IPL State: UNKNOWN      SSMHook: N (Y/N)

* Action to STOP the resource:
_____ +

* Inactivation Completion Rule: _____ . _____
Or Inactivation Completion Event:
Type Id      Text
  
```

# Policy Types

## Creating User Policy Type from an Existing Resource

```
SSM Resource List -- CA11 ----- O P S U I E M ----- Row 1 to 1 of 1
Command ==> _____ Scroll ==> CSR
System: * _____ Step Through: Y (Y/N)

Commands: ADD LOCATE SORT COMPAREIMPORTLOADVERIFY ALL ?
Line      B Browse  C Copy   CP Compare CT Create user type
Commands: D Delete  E Edit   I Import  L Load   U Verify  ? Help

Resource Name      Type      Table Name      Statu
Filter JES2
CT JES2            JES2          STCTBL
***** Bottom of data *****
```

Allows User Policy Types to be modeled after existing Resources

```
Add User Type      CA11 ----- O P S U I E M ----- Subsystem OPSL
Command ==> _____ Scroll ==> PAGE
More: +

* Required field

* Type name: JES2      Description: _____ +

* Action to START the resource:
  MUSCMD("START &JOBNAME") _____ +

* Activation Completion Rule: _____ . _____
Or Activation Completion Event:
  Type Id      Text
  MSG $HASP492 _____ +

Prerequisite Resources: _____ +
Activation IPL State: UP _____ SSMHook: N (Y/N)

* Action to STOP the resource:
  TSOCMD("OI STOPJES2") _____ +

* Inactivation Completion Rule: _____ . _____
Or Inactivation Completion Event:
  Type Id      Text
```

# Custom User Columns

## Managing Custom User Columns

- Allows SSM expansion to handle unique business needs while still managing through Policy Manager
- Any non-default columns added to an SSM table

```
User Column Administration CA11 -- O P S V I E W ----- Row 1 to 5 of 5
Command ==> _____ Scroll ==> PAGE
System: *_____

Line Commands:  A Add to policy  D Delete from policy  ? Help

SEL  User Column      Table      In Policy  Message
Filter _____
-    OWNER            JOESTC      Y
-    STARTTIME        JOESTC      N
-    STATUS            JOESTC      Y
-    BADCOL            JOECICS     Y      Table not SSM managed
-    CICSTYPE          JOECICS     Y      Table not SSM managed
***** Bottom of data *****
```

# Resource Management

## Main Panel

SSM Resource List -- CA11 ----- O P S V I E W ----- Row 1 to 17 of 41				
Command ==> _____ Scroll ==> CSR				
System: * _____ Step Through: N (Y/N)				
Commands: ADD LOCATE REFRESH SORT COMPAREIMPORTILOADVERIFY ALL ?				
Line B Browse C Copy CP Compare CT Create user type				
Commands: D Delete E Edit I Import L Load U Unload V Verify				
Filter	Resource Name	Type	Table Name	Status
___	AAATEST	DATAACOM-AD	STCTBL	
___	AD14MUF	DATAACOM-AD	STCTBL	
___	AD14SRVR	DATAACOM-SR	STCTBL	
___	ALLOCATE	ALLOCATE	STCTBL	
___	AL2QSRVR	CA7SRVR	STCTBL	
___	AL2QWEBD	CA7WEBCL	STCTBL	
___	APCDB14	DATAACOM-AD	STCTBL	
___	APCMUF14	DATAACOM-AD	STCTBL	
___	APPC	APPC	STCTBL	
___	JES2	JES2	STCTBL	

## Primary Line Commands

Add	Insert new Resource into Policy.
Locate	Find an existing Resource in the Policy listing
Sort	Sort Policy listing by: Name, Type, Table Name, or Status
Compare	Compare a Resources Policy and Production Entry, then display differences.
Import	Bring changes from Production back into Policy
Load	Deploy Policy changes into Production
Unload	Delete Resource from Production
Verify All	Checks required Resource data is correct

# Resource Management

## Line Commands

```
SSM Resource List -- CA11 ----- O P S U I E W ----- Row 1 to 1 of 1
Command ==>                               Scroll ==> CSR
System: *                                Step Through: Y (Y/N)

Comman
Line
Comman
Command ==>

Filter
?
*****

----- SSM Resource Line Commands -----
None: +

B or BR - Browse the selected resource
C or CO - Copy the selected resource
          to create new resource
D or DE - Delete the selected resource preceded by an
          optional confirmation dialog, controlled by
          SSM Verify mode. See menu option 0.1.
E or ED - Edit the selected resource
L or LO - Load the selected resource into SSM
U or UL - Remove the selected resource from SSM
V or VE - Verify the data for the selected resource
I or IM - Import the selected resource from SSM preceded
          by an optional confirmation dialog, controlled
          by SSM Verify mode. See menu option 0.1.
CP       - Compare the selected resource to SSM
CT       - Create a User Type based on the selected
          resources SSM management events and actions.
?       - Display this panel
```

# Resource Management

## Editing a Resource Via Step Through

```
SSM Details ----- CA11 ----- O P S V I E W ----- Subsystem OPSL
Command ==> _____ Step 1 of 4
System: *

Resource Name: JES2          Table Name: STCTBL

* Required field

* Jobname      : JES2
  Type         : JES2
  SSMHook      : N (Y/N)
  Control Group : _____ +
  Description  : _____ +

Enter PF6 for NextPanel
```

User/CA SSM Type List - CA11 -- O P S V I E W ----- Row 1 to 14 of 268  
 Command ==> \_\_\_\_\_ Scroll ==> PAGE

Enter S in the SEL column to make a selection or enter the EXIT command to return without a selection.

SEL	Name	Description	Action
Filter			
-	ABEND AID	COMPUWARE-ABEND AID	+
-	ACF2	CA-ACF2	+
-	ADABASE	SOFTWARE AG-ADABAS	+
-	ADMPRINT	IBM-GDDM PRINT UTILITY PGM=ADMOP	+
-	ALLOCATE	CA-ALLOCATE	+
-	APPC	IBM-APPC	+
-	ASAP	ROCKET-ASAP	+
-	ASCH	IBM-APPC MVS COMMUNICATIONS SCHE	+
-	ASM2	CA-ASM2-BACKUP-AND-RESTORE	+
-	ASM2-IXR	CA-ASM2-BACKUP-AND-RESTORE ( INT	+
-	ASTEX	CA-ASTEX	+
-	BCP11	IBM-BCP11 ( BASE CONTROL PROGRAM	+
-	BDT	IBM-BULK DATA TRANSFER	+
-	BETA88	BETA SYSTEMS-BETA 88 DISCOVERY S	+

Type	Allows User to select predefined policies (CA and Customer defined) populating most required fields.
SSMHOOK	Allows for management of transient address spaces.
Control Groups	Define, or select from preexisting list, a group that can start, stop, and display together.
Description	Define the resource.



# Resource Management

## Editing a Resource Via Step Through

```

SSM Activation ----- CA11 ----- O P S U I E W ----- Subsystem OPSL
Command ==> _____ Step 2 of 4
System: *

Resource Name: JES2          Type: JES2          Jobname: JES2

* Required field

Prerequisite Resources      : _____ +
Activation IPL State        : UP _____
Activation Time             : 0 _____
Auto Restart               : 0 _____

* Action to START the resource:
MUSCMD("START &JOBNAME") _____ +

* Activation Completion Rule: _____ . _____
Or Activation Completion Event:
Type Id      Text
MSG $HASP492 _____ +

MATCH action taken when resource is UP:
_____ +

Enter PF6 for NextPanel or PF5 for PrevPanel
    
```

Prerequisite Resources	Define what resources must be UP before this resource can be started. Works in reverse order for shutting down a resource
Activation IPL State	Define if the Resource should start automatically with an IPL. <ul style="list-style-type: none"> <li>UP – Start at IPL Time</li> <li>DOWN – Don't start at IPL Time</li> <li>IPL – Allow resource to be started, but don't automatically issue start commands</li> </ul>
Activation Time	Number of seconds resource is allowed to be starting before a warning message is issued.
Auto Restart	Number of times a resource will be automatically restarted before it goes UP
Start Command	Define Command required to start resource, use NULL if no command needed
Activation Completion	Define what message indicates a resource is UP <ul style="list-style-type: none"> <li>User Written Rule</li> <li>Supply Message Id to have rule automatically generated</li> </ul>
MATCH Command	Define Command required to be issued after a resource is UP

# Resource Management

## Editing a Resource's Start Command

```
OPS/MVS Action Edit----- CA11 -- O P S U I E W ----- Sub:
Option ==> 1
```

```
Current Action Text: MVSCHD("START &JOBNAME")
```

- |   |        |   |
|---|--------|---|
| 1 | MVSCHD | Issue a z/OS command with no response         |
| 2 | RULE   | Invoke a synchronous request rule             |
| 3 | EVRULE | Same as rule but RC>500 stops further actions |
| 4 | REXX   | Invoke an asynchronous REXX on an OSF server  |
| 5 | TSOCMD | Issue an asynchronous TSOCMD on an OSF server |
| 6 | SETCOL | Update a column of the current resource       |
| 7 | SSACMD | Issue multiple z/OS commands with no response |

```
Press END to return
```

```
MVSCHD Action Edit----- CA11 -- O P S U I E W ----- Subsystem OPSL
Command ==>
```

```
Resource Name: JES2                Type: JES2                Jobname: JES2
```

```
Current Action Text: MVSCHD("START &JOBNAME")                +
```

```
Enter a new command or modify the existing command
z/OS command: START JES2                +
```

```
SSACMD Action Edit----- CA11 -- O P S U I E W ----- Subsystem OPSL
Command ==>
```

```
Resource Name: JES2                Type: JES2                Jobname: JES2
```

```
Current Action Text:                +
```

```
* Required field
```

```
Enter or update z/OS commands and interval values
```

```
* z/OS command 1:                +
```

```
* interval 1:                +
```

```
* z/OS command 2:                +
```

```
interval 2:                +
```

```
z/OS command 3:                +
```

# Resource Management

## Editing a Resource Stop Command

```

SSM Inactivation --- CA11 ----- O P S U I E W ----- Subsystem OPSL
Command ==> _____ Step 3 of 4
System: *

Resource Name: JES2          Type: JES2          Jobname: JES2

* Required field

Inactivation Time: 0____

* Action to STOP the resource:
TSOCMD("OI STOPJES2") _____ +

* Inactivation Completion Rule: _____ , _____
Or Inactivation Completion Event:
Type Id      Text
EOM _____ +

MATCH action taken when resource is DOWN:
_____ +

Enter PF6 for NextPanel or PF5 for PrevPanel
    
```

Inactivation Time	Number of seconds resource is allowed to be stopping before a warning message is issued.
Stop Command	Define Command required to stop resource, use NULL if no command needed
Inactivation Completion	Define what message indicates a resource is DOWN <ul style="list-style-type: none"> <li>User Written Rule</li> <li>Supply Message Id to have rule automatically generated</li> <li>Default entry is EOM (End of Memory)</li> </ul>
MATCH Command	Define Command required to be issued after a resource is DOWN

# Resource Management

## Editing a Resource Move Options

<b>Move Mode</b>	Inactive – Not a movable resource AUTO – automatically move to next available system when current system fails WTOR – Issues WTOR before moving when current system fails
<b>Primary System</b>	Resources home system
<b>System List</b>	Prioritized list of systems resource can be moved too
<b>Move Group</b>	Allows multiple resources to be move simultaneously
<b>AutoHome</b>	Indicates if the Resource should automatically return to Primary System when it becomes available

```
SSM Recovery ----- CA11 ----- OPSVIEW -----
Command ==>
System: *

Resource Name: JES2          Type: JES2

Move Mode      : INACTIVE
Primary system : *,*
System list    :
Move group     :
AutoHome       : N (Y/N)
```

# Resource Management

## Editing Custom User Columns

```
SSM User Data ----- CA11 ----- O P S V I E W ----- Row 1 to 2 of 2
Command ==> _____ Step 5 of 6
System: *
Enter PF6 for NextPanel or PF5 for PrevPanel

Resource Name: JES2      Table Name: JES2

  User Column      Typ Column Value
  -----
= OWNER            CHR CICSGRP
= STATUS           CHR PHASE1
***** Bottom of data *****
```

Lists any non-default columns found in SSM Tables

Indicates type of data required

# Resource Management

## Editing a Resource Summary Page

```
SSM Summary/Load --- CA11 ----- O P S U I E W ----- Subsystem OPSL
Command ==> _____ Step 4 of 4
System: *

Resource Name: JES2          Table Name: STCTBL          More: +

* Required field  Commands: LOAD Load resource  VERIFY Verify resource

Detail
* Jobname       : JES2      Type: JES2      SSMHook: N (Y/N)
  Control Group : _____ +
  Description    : _____ +

Activation
  Prereq        : _____ +
  IPL State     : UP_____
  Activation Time : 0_____
  Auto Restarts  : 0_____

* Action to START the resource:
  MUSCMD("START &JOBNAME")

* Activation Complete Event:
  TYPE(MSG) ID($HASP492) TEXT()

MATCH action taken when resource is UP:
_____
```

```
Inactivation
  Inactivation Time: 0_____

* Action to STOP the resource:
  TSO CMD("01 STOPJES2") _____ +

* Inactivation Complete Event:
  TYPE(EOM) ID() TEXT() _____ +

MATCH action taken when resource is DOWN:
_____ +
```

In Walkthrough=Y, serves as a validation and summary screen

In Walkthrough=N, editing of resource is done from this location

Hot linked back to Detail, Activation, and Inactivation panels

Save – Leaves resource in STAGING table

Load – Copies resource into Active SSM table

Verify – notifies if required information is missing or incorrect

- Must have entries for Jobname, Start & Stop command
- Defined Prereqs must exist
- Activation and Inactivation messages must exist

# Resource Management

LOAD, UNLOAD, IMPORT, and COMPARE

COMPARE – Displays a Resources differences between the STC & ACTION Tables and the STAGING Table

STAGING Table

Table Data Editor				
Command ==>				
COL-->	NAME	SSHTABLE	JOBNAME	TYPE
***** TOP OF DATA *****				
000001	AAATEST	STCTBL	AD14MUF	DATAACOM-AD
000002	AD14MUF	STCTBL	AD14MUF	DATAACOM-AD
000003	AD14SAVR	STCTBL	AD14SAVR	DATAACOM-SA
000004	ALLOCATE	STCTBL	UAM	ALLOCATE
000005	AL2QSAVR	STCTBL	AL2QSAVR	CA7SAVR
000006	AL2QHEB0	STCTBL	AL2QHEB0	CA7HEBCL
000007	APCDB14	STCTBL	APCDB14	DATAACOM-AD
000008	APCHUF14	STCTBL	APCHUF14	DATAACOM-AD
000009	APPC	STCTBL	APPC	APPC
000010	JES2	STCTBL	JES2	JES2
000011	JOESSM1	JOESTC	JOESSM1	JOESTC
000012	JOESSM10	JOESTC	JOESSM10	JOESTC
000013	JOESSM11	JOESTC	JOESSM11	JOESTC
000014	JOESSM12	JOESTC	JOESSM12	JOESTC
000015	JOESSM13	JOESTC	JOESSM13	JOESTC
000016	JOESSM14	JOESTC	JOESSM14	JOESTC

System State Manager Active Tables

STC Table

Table Data Editor									
Command ==>									
COL-->	NAME	CURRENT_STATE	DESIRED_STATE	MODE	PRENODE	REFNODE	ACTNODE	JOBNAME	TYPE
***** TOP OF DATA *****									
000001	JOESSM1	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM1	JOESTC
000002	JOESSM10	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM10	JOESTC
000003	JOESSM11	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM11	JOESTC
000004	JOESSM12	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM12	JOESTC
000005	JOESSM13	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM13	JOESTC
000006	JOESSM14	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM14	JOESTC
000007	JOESSM10	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM10	JOESTC
000008	JOESSM11	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM11	JOESTC
000009	JOESSM12	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM12	JOESTC
000010	JOESSM13	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM13	JOESTC
000011	JOESSM14	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM14	JOESTC
000012	JOESSM10	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM10	JOESTC
000013	JOESSM11	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM11	JOESTC
000014	JOESSM12	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM12	JOESTC
000015	JOESSM13	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM13	JOESTC
000016	JOESSM14	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM14	JOESTC
000017	JOESSM23	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM23	JOESTC
000018	JOESSM24	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM24	JOESTC
000019	JOESSM25	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM25	JOESTC
000020	JOESSM26	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM26	JOESTC

LOA IMPO UNLOAD – Removes Resource from STC and ACTION table, not touching STAGING table

Table Data Editor									
Command ==>									
COL-->	NAME	CURRENT_STATE	DESIRED_STATE	MODE	PRENODE	REFNODE	ACTNODE	JOBNAME	TYPE
***** TOP OF DATA *****									
000001	JOESSM1	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM1	JOESTC
000002	JOESSM10	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM10	JOESTC
000003	JOESSM11	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM11	JOESTC
000004	JOESSM12	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM12	JOESTC
000005	JOESSM13	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM13	JOESTC
000006	JOESSM14	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM14	JOESTC
000007	JOESSM10	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM10	JOESTC
000008	JOESSM11	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM11	JOESTC
000009	JOESSM12	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM12	JOESTC
000010	JOESSM13	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM13	JOESTC
000011	JOESSM14	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM14	JOESTC
000012	JOESSM10	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM10	JOESTC
000013	JOESSM11	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM11	JOESTC
000014	JOESSM12	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM12	JOESTC
000015	JOESSM13	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM13	JOESTC
000016	JOESSM14	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM14	JOESTC
000017	JOESSM23	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM23	JOESTC
000018	JOESSM24	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM24	JOESTC
000019	JOESSM25	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM25	JOESTC
000020	JOESSM26	DOWN	DOWN	ACTIVE	ACTIVE	ACTIVE	ACTIVE	JOESSM26	JOESTC

The background of the slide is a grid of 15 squares arranged in 3 rows and 5 columns. The squares are in two shades of teal: a darker shade and a lighter shade. The top row has 5 dark teal squares. The middle row has 3 dark teal squares followed by 2 light teal squares. The bottom row has 1 dark teal square followed by 4 light teal squares.

# Operations



# Operations

## Overview

- Ability to Start, Stop, Move Resources
- Multiple Options
  - ISPF Panel
  - Console Command
  - Web Page

```
System State Manager----- CA11 -- O P S U I E W ----- Subsystem OPSP
Option  ===> _____
Date/Time: 2016/09/22 10:42

 1 Control      - Set/Display SSM parameters and resource tables
 2 Status      - Set/Display states of SSM controlled local resources
 3 Snapshot    - Create/Modify a local SSM started task resource table
 4 Scheduler   - Set/Display schedules for SSM controlled resources
 5 Group Manager - Create/Manage groups of SSM resources
 6 Action Editor - Create and maintain SSM action tables
 6 Global Status - Set/Display states of SSM controlled global resources
G2 SSMGAU2     - Set/Display states of SSMGAU2 moveable resources
R Resource Edit - Create and maintain SSM resource tables
W WTOR Reply   - Respond to outstanding SSMGA WTORs
P Policy Manager - SSM Resource Policy Manager

Press END to return
```

# Operations

## Status Panel

SSM Resource Status----- CA11 -- O P S V I E W ----- Row 1 to 17 of 76									
Command ==> _____ Scroll ==> CSR									
Date/Time: 2016/09/22 10:27 Filtered: Y View ==> ALL									
System: * SSM Mode: ACTIVE Wait ==> 30									
Disp: E (B/U/E)		States		Nodes					
Cm	Sta	Resource Name	Current	Desired	Res	Pre	Ref	Action	Message
---	---	-----	-----	-----	---	---	---	-----	-----
---	---	APPC	UP	UP	A	A	A	ACTIVE	
---	---	ASCH	UP	UP	A	A	A	ACTIVE	
---	---	CALDAP	UP	UP	A	A	A	ACTIVE	
---	---	CAS9	UP	UP	A	A	A	ACTIVE	
---	---	CAS9DEV	UP	UP	A	A	A	ACTIVE	
---	---	CAS911P1	UP	UP	A	A	A	ACTIVE	
---	---	CAW1SNMP	UP	UP	A	A	A	ACTIVE	
---	---	CHORSTAT	UP	UP	A	A	A	ACTIVE	
---	---	CHORTSFR	UP	UP	A	A	A	ACTIVE	
---	---	CMGRMUF	UP	UP	A	A	A	ACTIVE	
---	---	CMGRSAVR	UP	UP	A	A	A	ACTIVE	
---	---	CSF	UP	UP	A	A	A	ACTIVE	
---	---	CSSMTP	UP	UP	A	A	A	ACTIVE	
---	---	CTS	UP	UP	A	A	A	ACTIVE	
---	---	DFHSM	UP	UP	A	A	A	ACTIVE	
---	---	DMSARH	UP	UP	A	A	A	ACTIVE	
---	---	DSPCMGR	UP	UP	A	A	A	ACTIVE	

AS	Invoke the action selection simulation facility
C	Stop resource by setting desired state to CANCEL
MG	Move a Move Group of resources to an alternate system
MO	Move resource to an alternate system
OB	Invoke OPSLOG browse with jobname profile
P	Display prerequisite status
Q	Start resource and all dependent resources by setting desired states to UP
R	Start resource and all prerequisite resources by setting desired states to UP
S	Start resource by setting desired state to UP
SC	Start a Control Group of resources
U	Determine status by setting current state to UNKNOWN
W	Stop resource and all dependent resources by setting desired states to DOWN
Z	Stop resource by setting desired state to DOWN
ZC	Stop a Control Group of resources

# Operations

## Action Simulation Facility

```
SSM Resources -- CA11 ----- O P S V I E W ----- Row 1 to 1 of 1
Command ==> _____ Scroll ==> CSR

VIEW Resource Action Selection on System: *_____ Wait: 30
Resource Table: STCTBL
Action Table : STCTBL_ACT
State Names Up: UP_____ Down: DOWN_____ Unknown: UNKNOWN
Resource Name : APPC_____ Type: _____

Sel Process Current Desired Actmode Resource Table Resource Name/Type
-----
__ ACTION UP DOWN ACTIVE STCTBL APPC
-----
__ ACTION UP DOWN APPC
==> EVRULE("SSMDOWN &JOBNAME &TYPE");MVSCMD("CANCEL &JOBNAME")

-----
***** Bottom of data *****
```

# Operations

## Prerequisite Status

```
SSM Prereqs----- CA11 -- O P S U I E W ----- Row 1 to 2 of 2
Command ==> _____ Scroll ==> CSR
Date/Time: 2016/09/22 11:23
System: *          SSM Mode: ACTIVE                      Wait ==> 30

Prereq      States      Modes
Name    /Current  Desired  Res Pre Ref Action  Comments and Warnings
-----/-----
>      Prereqs for STCTBL.APPC
>      UP        UP        A  A  A  ACTIVE  Selected resource
STCTBL.NET
      UP        UP        A  A  A  ACTIVE
***** Bottom of data *****
```

# Operations

## Console Commands

- SSMCNTL
  - Mimics commands available in ISPF Interface
- SSMBEGIN
  - Allows for custom system start up options
    - Start resources based upon IPL\_STATE or PREVIOUS\_STATE
    - Set SSM Active, Passive, or Inactive

# Operations

## SSMCNTL commands

Command	Description	Command	Description
<b>SSM CANSHUT</b>	Cancel a system shutdown request.	SSM PREQS JOB=job	Enable prerequisite and subrequisite checking by setting job MODE=ACTIVE
SSM DISPLAY	Display all SSM entries	SSM PT TYPE=type	Set DESIRED_STATE to DOWN for specific SSM type
SSM DISPLAY EXC	Display all SSM exceptions	SSM READD ALL	Actively monitor resources by setting job MODE=ACTIVE for all resources
<b>SSM DISPLAY GROUPS</b> <b>TBL=table</b>	Display all groups for a specific table. TBL= is optional and defaults to STCTBL.	SSM READD JOB=job	Actively monitor this job by setting job MODE=ACTIVE for this job.
SSM DISPLAY GRP=group TBL=table	Display a specific group of resources for a specific table. TBL= is optional and defaults to STCTBL.	SSM REMOVE ALL	Passively monitor resources by setting MODE=PASSIVE for all resources
SSM DISPLAY JOB=job	Display a specific job	SSM REMOVE JOB=job	Passively monitor this job by setting job MODE=PASSIVE for this job.
SSM DISPLAY TYPE=type	Display specific SSM type	SSM SG GRP=group	Set DESIRED_STATE to UP for a specific group and table. TBL= is optional and defaults to STCTBL.

# Operations

## SSMCNTL commands

Command	Description	Command	Description
SSM HELP	Display list of options	<b>SSM SHUTMAINT</b>	Initiate a partial system shutdown leaving resources active needed for performing maintenance.
<b>SSM FCYCLE</b>	Initiate a force cycle of of a job.	<b>SSM SHUTSYS</b>	Initiate complete system shutdown procedures.
SSM NOPREQS JOB=job	Disable prerequisite and subrequisite checking by setting job MODE=NOPREREQ	<b>SSM SHUTSSM</b>	Initiate shutdown of SSM managed resources only.
SSM PG GRP=group TBL=table	Set DESIRED_STATE to DOWN for a specific group and table. TBL= is optional and defaults to STCTBL.	SSM SJ JOB=job	Set DESIRED_STATE to UP for specific job
SSM PJ JOB=job	Set DESIRED_STATE to DOWN for specific job	SSM ST TYPE=type	Set DESIRED_STATE to UP for specific SSM type

# Operations

## Web Interface

Resource monitoring

Resource List

Freeze

Search

Sort

Options

Filter

Full Action List

Select Resource(s) and: 

Select an Action from Short List...

Go

1-31 of 57

...	System ...	Name	Type	Current State	Desired State	Mode	Group	ResMode	PreMode	RefMode	ActMode	IPL State	Extended Display
<input type="checkbox"/>	CA31	ACF2STC	ACF2	UNKNOWN	UNKNOWN	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	UNKNOWN	R=INACTIVE
<input type="checkbox"/>	CA31	ALLOCATE123	ALLOCATE123	UNKNOWN	UP	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	UP	R=INACTIVE
<input type="checkbox"/>	CA31	CICS6	CICS-CTG	UNKNOWN	NULL	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	NULL	R=INACTIVE
<input type="checkbox"/>	CA31	CICS7	CICS-CTG	UNKNOWN	NULL	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	NULL	R=INACTIVE
<input type="checkbox"/>	CA31	CICS8	CICS-CTG	UNKNOWN	IPL	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	IPL	R=INACTIVE
<input type="checkbox"/>	CA31	CICS11	UNKNOWN	UNKNOWN	UNKNOWN	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	UNKNOWN	R=INACTIVE
<input type="checkbox"/>	CA31	CICS18	UNKNOWN	UNKNOWN	UNKNOWN	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	UNKNOWN	R=INACTIVE
<input type="checkbox"/>	CA31	CICS20	CICS	UNKNOWN	UNKNOWN	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	UNKNOWN	R=INACTIVE
<input type="checkbox"/>	CA31	CICS21	CICS-CTGRRMS	UNKNOWN	UNKNOWN	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	UNKNOWN	R=INACTIVE
<input type="checkbox"/>	CA31	CICS25	CICSUTYP	UNKNOWN	UP	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	UP	R=INACTIVE
<input type="checkbox"/>	CA31	CICSA	CICS	UNKNOWN	UNKNOWN	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	UNKNOWN	R=INACTIVE
<input type="checkbox"/>	CA31	CICSSTC1	CICS	UNKNOWN	UNKNOWN	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	UNKNOWN	R=INACTIVE
<input type="checkbox"/>	CA31	COPYTEST	CICS	UNKNOWN	UNKNOWN	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	UNKNOWN	R=INACTIVE
<input type="checkbox"/>	CA31	DEFECTUT1	DEFECTUT	UNKNOWN	UNKNOWN	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	UNKNOWN	R=INACTIVE
<input type="checkbox"/>	CA31	NEWSTC	ADABASE	UNKNOWN	UP	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	UP	R=INACTIVE
<input type="checkbox"/>	CA31	NEWSTC2	CA1	UNKNOWN	UP	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	UP	R=INACTIVE
<input type="checkbox"/>	CA31	OPSKS31	WEBCENTER	UP	UP	AUTOMATED		ACTIVE	ACTIVE	ACTIVE	ACTIVE	UP	
<input type="checkbox"/>	CA31	OPSKWC31	WEBCENTER	UP	UP	AUTOMATED		ACTIVE	ACTIVE	ACTIVE	ACTIVE	UP	
<input type="checkbox"/>	CA31	QASSM1	WEBCENTER	UP	UP	AUTOMATED		ACTIVE	ACTIVE	ACTIVE	ACTIVE	UP	
<input type="checkbox"/>	CA31	QASSM2	WEBCENTER	UP	UP	AUTOMATED		ACTIVE	ACTIVE	ACTIVE	ACTIVE	UP	
<input type="checkbox"/>	CA31	QASSM3	WEBCENTER	UP	UP	AUTOMATED		ACTIVE	ACTIVE	ACTIVE	ACTIVE	UP	
<input type="checkbox"/>	CA31	QASSM4	WEBCENTER	UP	UP	AUTOMATED		ACTIVE	ACTIVE	ACTIVE	ACTIVE	UP	
<input type="checkbox"/>	CA31	QASSM5	WEBCENTER	UP	UP	AUTOMATED		ACTIVE	ACTIVE	ACTIVE	ACTIVE	UP	
<input type="checkbox"/>	CA31	QASSM6	WEBCENTER	UP	UP	AUTOMATED		ACTIVE	ACTIVE	ACTIVE	ACTIVE	UP	
<input type="checkbox"/>	CA31	QASSM7	WEBCENTER	UP	UP	AUTOMATED		ACTIVE	ACTIVE	ACTIVE	ACTIVE	UP	
<input type="checkbox"/>	CA31	QASSM8	WEBCENTER	UP	UP	AUTOMATED		ACTIVE	ACTIVE	ACTIVE	ACTIVE	UP	
<input type="checkbox"/>	CA31	QASSM9	WEBCENTER	UNKNOWN	UNKNOWN	AUTOMATED		ACTIVE	ACTIVE	ACTIVE	ACTIVE	UNKNOWN	
<input type="checkbox"/>	CA31	QASSM10	WEBCENTER	UP	UP	AUTOMATED		ACTIVE	ACTIVE	ACTIVE	ACTIVE	UP	
<input type="checkbox"/>	CA31	REWORK1	CA7ONLN	UNKNOWN	UP	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	UP	R=INACTIVE
<input type="checkbox"/>	CA31	REWORK6	CICSREWORK	UNKNOWN	UNKNOWN	MANUAL		INACTIVE	ACTIVE	ACTIVE	ACTIVE	UNKNOWN	R=INACTIVE
<input type="checkbox"/>	CA31	RSC45	TEST	DOWN	DOWN	MANUAL		PASSIVE	ACTIVE	ACTIVE	ACTIVE	NULL	R=PASSIVE



# Operations

## Web Interface

Browse States, Prerequisites and Subrequisites

Cancel Resource

Change MODE to ACTIVE, INACTIVE, NOPREREQ, PASSIVE

Start Resource and all Dependent Resources


Start Resource and All Prerequisite Resources

Start Resource

Verify Status of Resource

Stop Resource

Stop Resource and All Dependent Resources

OPS/MVS®

Help

**Browse Resource States, Prerequisites and Subrequisites** Close

**Resource Details**

Resource Name: CICS6  
Resource Class: OPSRSC  
System Name: CA31  
System Version: OPSC

Description: Loaded 19-SEP-2016 08.34.19  
Resource Type: CICS-CTG  
Extended Display: R=INACTIVE

**Operational States**

Logical State: ATTENTION  
Current State: UNKNOWN  
Desired State: NULL  
Extended Display: R=INACTIVE

UNKNOWN-NULL  
SCHEDULED DESIRED STATE

**Missing Prerequisites**

0: No Missing Prerequisites

**Prerequisites**

0: No Prerequisites

**Subrequisites**

0: No Subrequisites

**System Information**

Home System: CA31  
Current System: CA31

Back to Top

The background of the slide is a grid of 15 squares arranged in 3 rows and 5 columns. The squares are in two shades of teal: a darker shade and a lighter shade. The top row has 5 dark teal squares. The middle row has 3 dark teal squares followed by 2 light teal squares. The bottom row has 1 dark teal square followed by 4 light teal squares.

# Architecture

# Architecture

## Required Tables

- Resource table
  - Stores info about the status of each managed resource such as NAME, JOBNAME, CURRENT & DESIRED STATES, PREREQ list
- Action table
  - Identifies the actions that SSM is to take to get a resource to its DESIRED state and can also optionally contain user exit points to override default SSM internal logic
- Directory table
  - Searched by SSM to determine what Resource tables are to be managed and what associated Action tables are to be used for its resource tables

# Architecture

## Policy Manager Tables

- Policy Manager Table
  - Used to store changes before being loaded into the Resource and Action tables
- Type Table
  - Stores the CA Best Practice Resource Definitions. Contents in this table should not be changed
- User Type Table
  - Store the User Defined Resource Definitions

# Architecture

## Managing Tables

Manage the Resource and Action tables defined to the Directory Table

Changes Control Modes for SSM and Tables

```
System State Manager----- CA11 -- O P S U I E W ----- Subsystem OPSL
Option ==>
Date/Time: 2016/09/07 13:34
```

- 1 Control - Set/Display SSM parameters and resource tables
- 2 Status - Set/Display states of SSM controlled local resources
- 3 Snapshot - Create/Modify a local SSM started task resource table
- 4 Scheduler - Set/Display schedules for SSM controlled resources
- 5 Group Manager - Create/Manage groups of SSM resources
- A Action Editor - Create and maintain SSM action tables
- G Global Status - Set/Display states of SSM controlled global resources
- G2 SSMGAU2 - Set/Display states of SSMGAU2 moveable resource
- R Resource Edit - Create and maintain SSM resource tables
- W WTOR Reply - Respond to outstanding SSMGA WTORs
- P Policy Manager - SSM Resource Policy Manager

Press END to return

```
SSM Control----- CA11 -- O P S U I E W ----- Row 1 to 3 of 3
Command ==>
Date/Time: 2016/09/22 14:40
System ==> *
Parameters: Stateman ==> ACTIVE (Active/Passive/Inactive/No prereq)
Statetbl ==> SSM_MANAGED_TBL
Version ==> 3
Wait ==> 10
```

Cmd	Managed Table	Mode	Action Table	State Names		
				Up	Down	Unknown
ADD		A		UP	DOWN	UNKNOWN
—	JOECICS	A	JOEACT	UP	DOWN	UNKNOWN
—	JOESTC	A	JOEACT	UP	DOWN	UNKNOWN
—	STCTBL	A	JOEACT	UP	DOWN	UNKNOWN
***** Bottom of data *****						

# Architecture

## Control Modes

<u>Four SSM management Modes</u>	
ACTIVE	Performs all actions where C_S <> D_S
INACTIVE	No actions taken where C_S <> D_S
PASSIVE	No actions taken but D_S is set to C_S
NOPREREQ	Same as ACTIVE mode but no prereq checking is performed

Mode is controlled:

- Globally via the STATEMAN parameter
- At the table level via the TABLE\_MODE column
- At the resource level via the MODE column

# Architecture

## PREMODE and REFMODE

PREMODE - Controls whether prerequisite and subrequisite processing is performed for a resource, when DOWN to UP or UP to DOWN transitions occur.

PreMode	Description
Active	Performs both prerequisite and subrequisite processing according to the standard method that SSM uses.
Inactive	Performs neither prerequisite or subrequisite processing. *This is the same as setting MODE=NOPREREQ
PREREQ	Performs only prerequisite processing for this resource. Subrequisite processing is bypassed.
SUBREQ	Performs only subrequisite processing for this resource. Prerequisite processing is bypassed.

REFMODE - Controls whether other resources process this resource when testing their prerequisite or subrequisite references.

PreMode	Description
Active	Performs both prerequisite and subrequisite references according to the standard method that SSM uses.
Inactive	Evaluates neither prerequisite or subrequisite references to this resource.
PREREQ	Evaluates only prerequisite processing references to this resource. Subrequisite references to this resource are ignored.
SUBREQ	Evaluates only subrequisite processing references to this resource are evaluated. Prerequisite references to this resource are ignored.

# Architecture

## System Start-Up Process

1. SSM engine initializes setting C\_S & D\_S to 'UNKNOWN' for all resource tables defined in the SSM directory table
2. SSM engine internally invokes the SSMBEGIN Request rule passing IPL, old mode, and new mode values and processes any user defined logic within SSMBEGUX that configures the D\_S column, and/or produces a WTOR to force manual setting of the D\_S column. This causes C\_S = 'UNKNOWN' and D\_S='UP/DOWN'.
3. The UNKNOWN action triggers for each resource and sets the C\_S accordingly
4. PREREQ checking is performed for any C\_S='DOWN', D\_S = 'UP' mismatch. User exits defined via ACTION\_PROCESS=XPREREQ are triggered if they exist, otherwise default prereq checking is performed (determine if resources in PREREQ column have C\_S = 'UP')
5. The UP\_DOWN action (usually the START command) is performed for those resources with satisfied PREREQs
6. Enabled AOF rules trap the start-up messages produced by the SSM resources and update the C\_S accordingly (STARTING,UP,ACTIVE,ONLINE...)
7. SSM sweeps the resource table until C\_S=D\_S