CA Workload Automation AE r11.3
Architecture

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Agenda

> Architecture
> Installation
> Database
> Encryption
> Communication
> System Agent
CA Workload Automation 11.3 Architecture
Installation

> Installation DVDs
> Directory Structure
> Install Types
Installation DVDs

> Choice of 4 DVDs

- CCC – Common Services
- Windows Workload Automation AE
- Unix Workload Automation AE
  - Choice of 3 Stand Alone Installs
- Agent and Client only Platforms
Database
Database Support

> Sybase 12.54
> Sybase 15
> Oracle 10g
> Oracle 11g
> MSSQL 2005
> MSSQL 2008
Database Installation

> “AEDB”
  - aedadmin

> CA Workload Automation AE database only
> During Install
> Perl Script
> Indexing
Tables

> 90+ tables
> Job Related
  ▪ Generic
  ▪ Specific
> “Easy” support for new job types
> Metadata table
Metadata

- ujo_meta Enumerations
- ujo_meta Properties
- ujo_meta Rules
- ujo_meta Types
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Encryption
Encryption Areas

> Database
> Client to Server
> Scheduler to Agent
> Configuration Files
Encryption Type

> AES 128 bit Encryption
> FIPS 140-2 Algorithm
> SSL with SSA
  - Optional and no longer required
Instance Wide Configuration

```
# # # # Application Server Parameters # # # #

+--------+
# Keyword: UseEncryption=<0|1|2>
# Specifies whether to encrypt data transmitted within your instance. This option is recommended.
# The valid values are:
# 0 = Do not encrypt data transmitted within the instance
# 1 = Encrypt data transmitted using the product's default key
# 2 = Encrypt data transmitted using a user-defined key

UseEncryption=1
+--------+
```
Configuring Encryption

> Configuring Encryption on Unix

- Change `use_encryption` variable in $AUTOUSER/config.$AUTOSERV to 0/1/2
- Use as_config utility to configure Instance Wide Encryption and create cryptkey.txt in $AUTOUSER folder
- Copy cryptkey.txt from $AUTOUSER folder to System Agent folder if you want to use same Encryption key

> Use keygen to generate Encryption Key file for System Agent
Encryption Keys

> Configurable
  - Default key
  - Custom Key
  - None (why?)

> cryptkey.txt
  - Encrypted File With Key
  - Instance Wide
  - Agent Specific

> Forget the Key?
Communication

> TCP/IP
> IPv4 and IPv6
> SSA
> Non SSA Platforms
Instance Port Configuration

```
# Keyword: SchedAuxiliaryListeningPort=<value>
#
# Specifies a TCP/IP port number the Scheduler will use to receive messages from agents running on platforms for which no CA Secure Sockets Adapter is supported (e.g., 11.3 agents on i5OS and z/OS). This listening port is also used to exchange job dependencies with the mainframe (Workload Automation EE). This port number must be different than the port number specified for the AppSrvAuxiliaryListeningPort.
#
#SchedAuxiliaryListeningPort=

# Application Server Parameters

# Keyword: UseEncryption=<0|1|2>
```
Instance Port Configuration

```bash
# Specifies the Application Server port number.
# AutoServerPort=9000
#
#-----------
# Keyword: AutoServerId=<unique_ID>
# Specifies the Application Server manager ID, which is a unique name
# the agent uses to communicate with the Application Server.
# The value is initialized during installation to be:
#    <instance>_APP_<hostname>
AutoServerId=ACE_APP_lodlcibm003
#
#-----------
# Keyword: AppSrvAuxiliaryListeningPort=<port>
# Specifies a TCP/IP port number the Application Server will use
to receive messages from agents running on platforms for which
no CA Secure Sockets Adapter is supported (e.g., 11.3 agents on
i5OS and z/OS). This port number must be different than the port
number set for the SchedAuxiliaryListeningPort.
#AppSrvAuxiliaryListeningPort=
```
Agent Port Configuration Server Side

/* ------------------ lodlcibm003 ------------------ */

insert_machine: lodlcibm003
type: a
factor: 1.00
port: 49154
node_name: lodlcibm003
agent_name: WA_AGENT
encryption_type: DEFAULT
heartbeat_attempts: 1
heartbeat_freq: 5
provision: n
character_code: ASCII
#
Agent Port Configuration Agent Side

```plaintext
# Agent name
agentname=WA_AGENT

# Communications
communication.inputport=49154
communication.receiver.socket.main=dylan

# Allow agent to start with no managers defined
communication.nomanagers.abort.disable=true
```
System Agent
CA Workload Automation Agents

**Legacy Jobs**
- z/OS Objects
  - z/OS dataset
  - z/OS manual
  - z/OS job
- File Trigger
- FTP Transfer
- Microfocus
- OpenVMS
- OS400
- Tandem
- Link
- Task
- Windows
- Unix/Linux

**ERP Jobs**
- SAP
  - Batch Input Sessions
  - B/W Infopackages
  - B/W Process Chain
  - Data Archiving
  - SAP Event
  - SAP Job Copy
  - SAP Process Monitor
  - SAP R3
- Oracle Apps
  - Request Set
  - Single Request
- Peoplesoft

**Advanced/Emerging Tech**
- J2EE
  - EJB
  - JMS Publish
  - JMS Subscribe
- Database
  - Database Monitor
  - Database Stored Procedure
  - Database Trigger
  - SQL Query
- Monitoring
  - CPU Monitoring
  - Disk Monitoring
  - IP Monitoring
  - Process Monitoring
  - Text File Monitoring
  - Windows Eventlog Monitoring
  - Windows Service Monitoring
General WA System Agent Architecture

- Decentralised, Asynchronous Approach
- Core Component
- Plug-in Architecture
  - Communications Plug-Ins
  - Execution Plug-Ins
Agent Architecture

- Communication Plug-in
- Communication Plug-in
- Communication Plug-in
- Core
- Execution Plug-in
- Execution Plug-in
- Execution Plug-in
System Agent Core Architecture

From Communication Plug-in

Send to manager

Communication plug-in manager

Message Arrived

Inbox

Ask Initiator Manager to submit a job

Initiator Manager

Release initiator?
Can go to manager?

We’ve got a reply

Execution Plug-in Manager

We have an initiator, submit

To Execution Plug-in

Outbox
Agent Configuration

> General Configuration
> Logging
> Communication
> Security
Agent configuration files

> agentparm.txt
> cryptkey.txt
> security.txt
Sample

```
# Unix specific settings
#
#oscomponent.loginshell=false
#oscomponent.defaultshell=/bin/sh
#oscomponent.validshell=/usr/bin/sh,/bin/csh,/bin/ksh,/bin/sh,/bin/bash
#oscomponent.checkvalidshell=true
#oscomponent.lookupcommand=true
#oscomponent.joblog=true
#
# Agent-wide environment variables
#
#oscomponent.environment.variable=/opt/CA/WorkloadAutomationAE/SystemAgent/WA_AGENT/profiles/WAAE.txt
#
# Manager specific environment variables
#
#oscomponent.environment.variable_manager_ACE_SCH=/opt/CA/WorkloadAutomationAE/SystemAgent/WA_AGENT/profiles/ACE.txt
#
# useful settings
networkaddress.cache.ttl=30
networkaddress.cache.negative.ttl=0
#oscomponent.joblog.success.autocleanup=true
runnerplugin.spool.clean.enable=true
runnerplugin.spool.expire=8H
communication.transmitter.senderordelay=3000
initiators.throttle.delay=100
```
Q & A