

# What's New in IBM App Connect Enterprise

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Session JG









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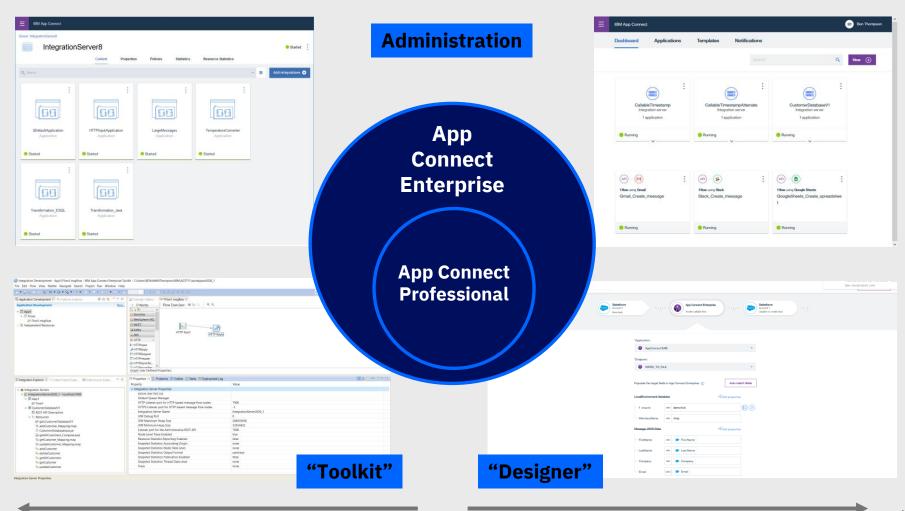
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# **IBM App Connect Enterprise**

IBM App Connect Enterprise v11 combines the existing industry-trusted IBM Integration Bus technology with new cloud native technologies and with IBM App Connect Professional, to deliver a platform that supports the full breadth of integration needs across a modern digital enterprise.



#### ACE v11.0.0.0

Unzip and Go - stand-alone Integration Servers Policy creation in Toolkit & Deploy using a BAR New Web User Interface New REST APIv2

Server config yaml file for start up config
New App Connect Enterprise Developer edition
New Dockerfile @ github.com/ot4i/ace-docker
New Docker image @ hub.docker.com/r/ibmcom/ace/
New Cloud Connector Plan entitlement
Callable Flows across multi-tenant and dedicated runtimes

#### ACE v11.0.0.1

Integration Node capabilities (Tech Preview)
Node-wide HTTP Listener (Tech Preview)
Web User Interface enhancements for support of Nodes
Migration from IIBv9 and IIBv10

Monitoring profiles

Additional admin commands and extended REST APIv2
Web User Interface enhancements for support of Nodes

New Group nodes for non-persistent in-memory aggregation

#### ACE v11.0.0.2

Lifts Tech Preview for Integration Node capabilities Lifts Tech Preview for Node-wide HTTP Listener Eclipse Toolkit upgrade to 4.4.2 Standard out system logging MQ based Auth model for nodes and servers

Time

#### IIB v10.0.0.10 Q3 2017

Docker image on Docker Registry Hub IIB Helm chart for running in Kubernetes Send Resource Stats to Bluemix Logging Send Resource Stats to Filesystem Import Swagger with recursive references Toolkit Export remote node connection info New CPU benchmark processing command

#### Now

#### IIB v10.0.0.14

ACE v11.0.0.3

FTPS Support for the File nodes JMS Shared Subscription

New Group nodes for non-persistent in-memory aggregation Support for IBM Event Streams using the Kafka nodes ODBC connection to SOL Server 2016

#### IIB v10.0.0.11

#### Q4 2017

App Connect REST Request node App Connect REST Pattern Send Activity Log to IBM Cloud Ubuntu 16.04 support Java 8

#### IIB v10.0.0.12

#### Q1 2018

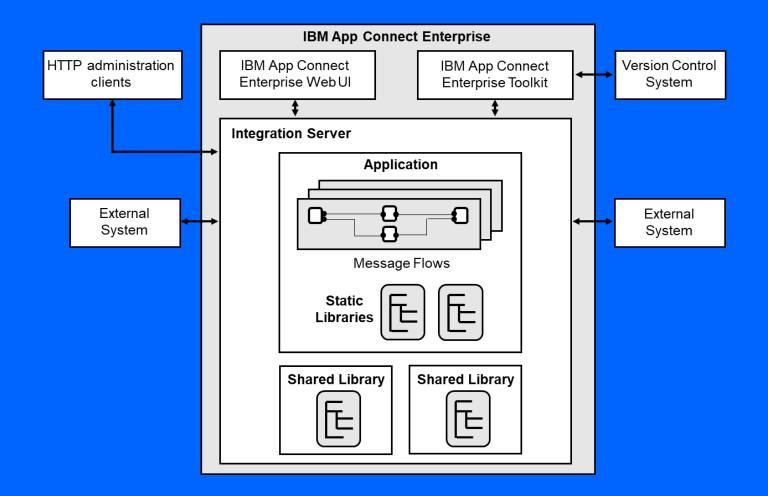
Windows Server 2016 support Node.js v6 upgrade Flow stack reporter JD Edwards 9.2 support

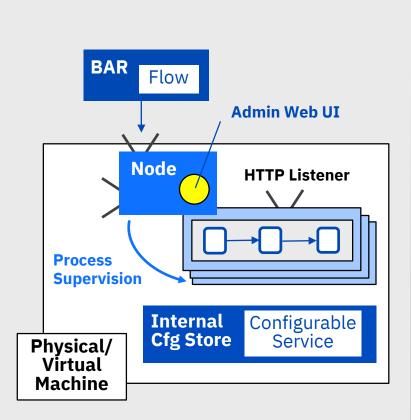
#### IIB v10.0.0.13

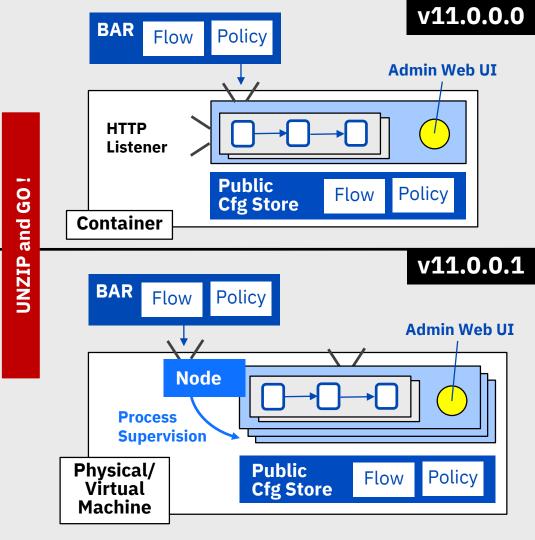
#### Q2 2018

Node.js v8.10.0 upgrade Support for Oracle 12c Release 2 Support for DB2 version 12 on z/OS Support for Sybase v16

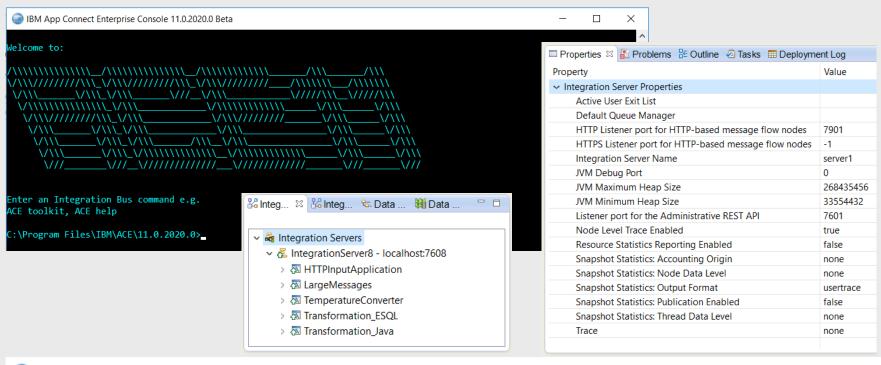








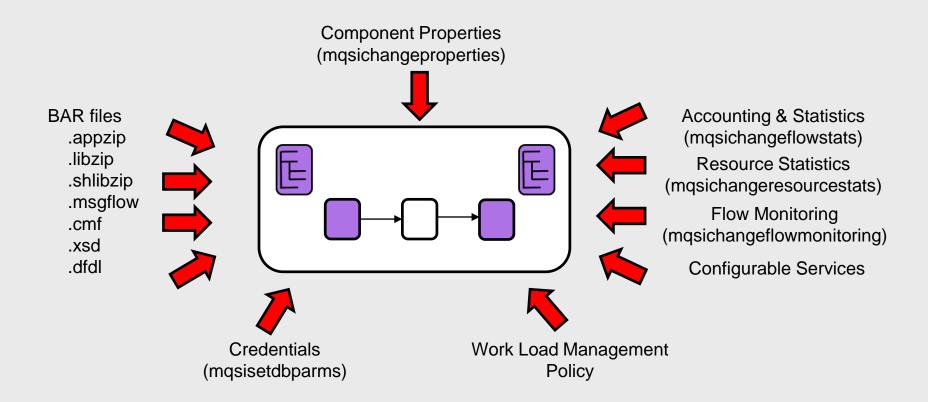
# Getting Started with App Connect Enterprise v11



IBM App Connect Enterprise Console 11.0.2020.0 Beta

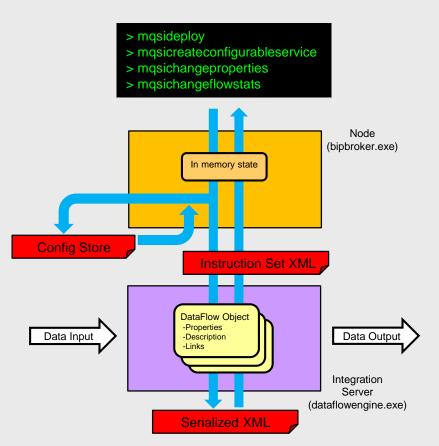
C:\>IntegrationServer --work-dir C:\ACE\_DEMO\server1 --admin-rest-api 7601 --http-port-number 7901 --name server1

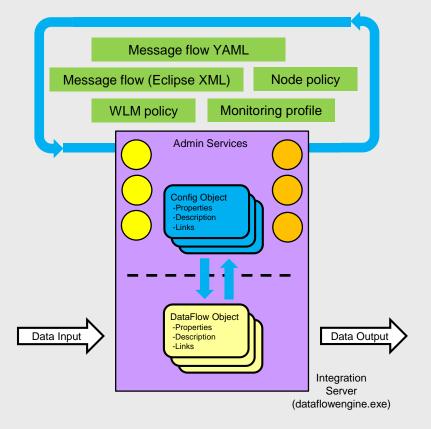
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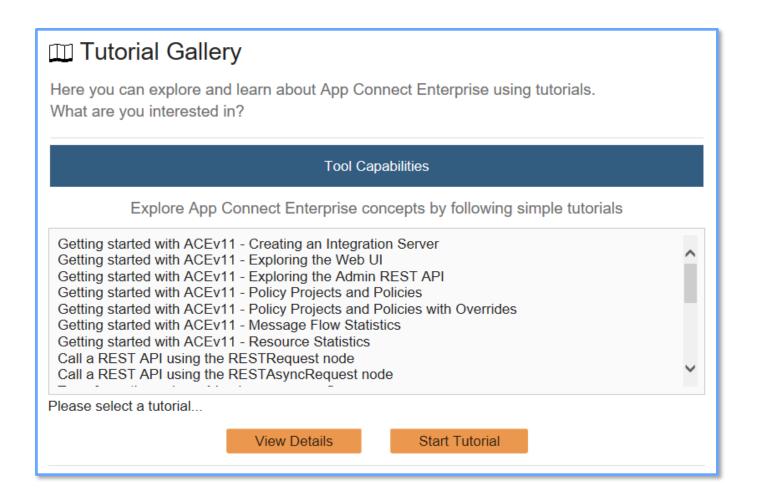


# **BEFORE**

# **AFTER**





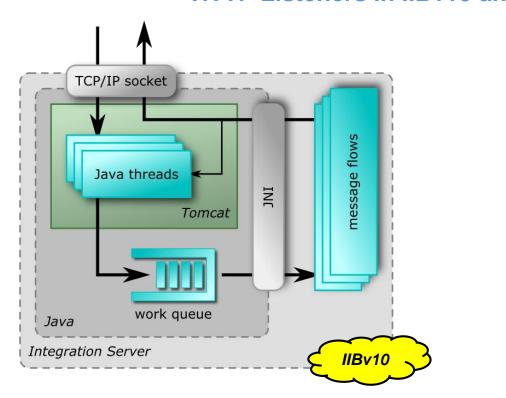


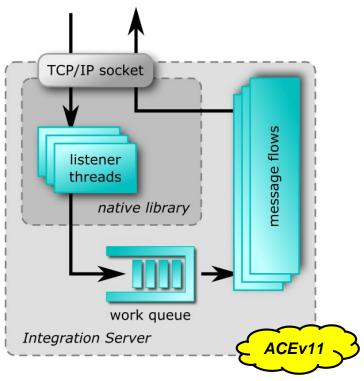
#### GET ▼ http://localhost:7601/apiv2

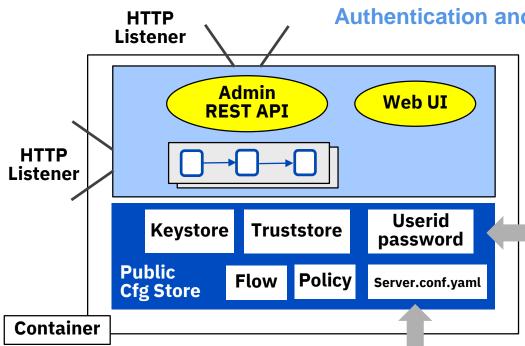
```
"hasChildren": true,
"name": "server1",
"type": "integrationServer",
"uri": "/apiv2",
"properties": {
  "StatsSnapAccountingOrigin": "none",
  "StatsSnapNodeDataLevel": "none".
  "StatsSnapOutputFormat": "usertrace",
  "StatsSnapPublicationOn": false,
  "StatsSnapThreadDataLevel": "none",
  "activeUserExitList": "",
  "adminRestApiPort": 7601,
  "consoleMode": false,
  "defaultQueueManager": "",
  "httpConnectorPort": 7901.
  "identifier": "".
  "inactiveUserExitList": "",
  "jvmDebugPort": 0,
  "jvmMaxHeapSize": 268435456,
  "jvmMinHeapSize": 33554432,
  "name": "server1".
  "operationMode": "enterprise",
  "resourceStatsReportingOn": false.
  "trace": "none".
  "traceNodeLevel": true.
  "type": "IntegrationServer"
"descriptiveProperties": {
 "buildLevel": "ib000-L180303.2017 (S000-L180303.14320)",
  "longDesc": "",
  "platformArchitecture": "AMD64",
  "platformName": "Windows 10 Enterprise",
  "platformVersion": "6.3 build 16299 ".
  "productName": "IBM App Connect Enterprise",
  "shortDesc": "".
  "version": "11000"
```

```
"active": {
 "processId": 236.
 "uniqueName": "integration server"
"actions": {
 "unavailable": {
   "setup": "/apiv2/setup",
   "validate": "/apiv2/validate"
 "available": {
   "delete-all": "/apiv2/delete-all",
   "deploy": "/apiv2/deploy",
   "start-service-trace": "/apiv2/start-service-trace",
   "start-user-debug-trace": "/apiv2/start-user-debug-trace",
   "start-user-normal-trace": "/apiv2/start-user-normal-trace",
   "stop-service-trace": "/apiv2/stop-service-trace",
   "stop-user-debug-trace": "/apiv2/stop-user-debug-trace",
   "stop-user-normal-trace": "/apiv2/stop-user-normal-trace",
   "teardown": "/apiv2/teardown"
"children": {
 "resourceManagers": {
   "hasChildren": true,
   "name": "resource-managers",
   "type": "resourceManagers",
   "uri": "/apiv2/resource-managers"
 "policies": {
   "hasChildren": false,
   "name": "policies".
   "type": "policies",
   "uri": "/apiv2/policies"
  "applications": {
   "hasChildren": false.
   "name": "applications",
   "type": "applications",
   "uri": "/apiv2/applications"
```

# HTTP Listeners in IIBv10 and ACEv11







- **Authentication and Authorization** 
  - Standalone Integration Server provides a file system store based authMode
  - The mgsiwebuseradmin command is providing ACE with the user / password combinations and optionally whether role based authorization is also required.

#### mqsiwebuseradmin

- -w C:\MyServer
- -c
- -u BenWebUser
- -a BenWebPassword
- -r adminRole

#### Security:

#### Permissions:

#Set Admin Security Authorization file permissions by web user role using 'read+:write+:execute+', or 'all+'

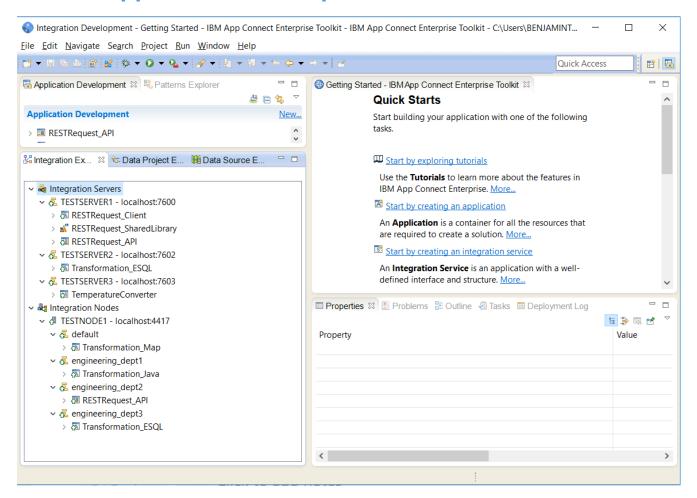
# '+' grants permission, '-' denies permission

# e.g. define the following web user roles 'viewRole' and 'adminRole'

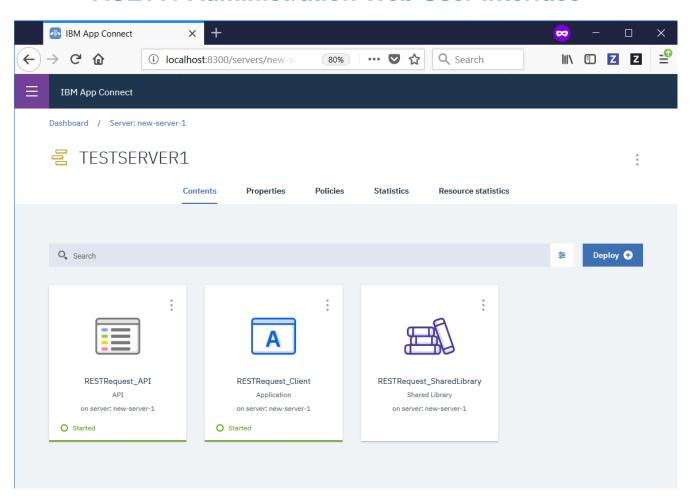
#viewRole: 'read+:write-:execute-'

#adminRole: 'all+'

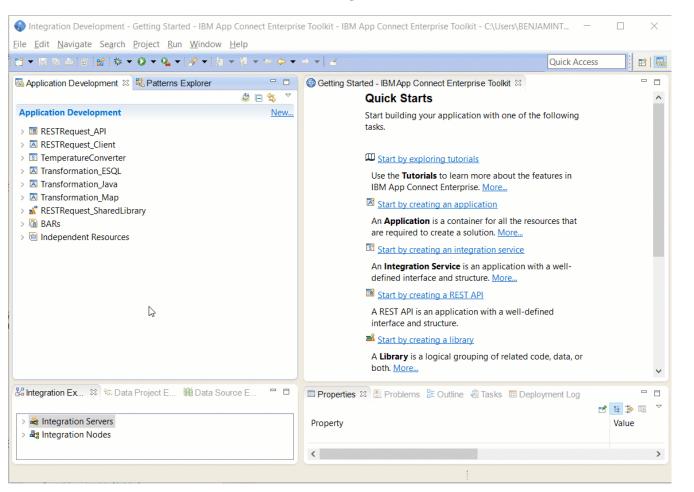
# **App Connect Enterprise v11 Toolkit**



# **ACEv11 Administration Web User Interface**



# **ACEV11 Policy Creation**



# Welcome to your new friend - server.config.yaml

# ACE server configuration file

#

# General notes:

# Integration Server will load server.conf.yaml from directory set via --work-dir

# File paths may be taken as absolute, or relative to the integration server's work directory

serverConfVersion: 1 adminRestApiPort: 7600 defaultQueueManager: " httpConnectorPort: 0 httpsConnectorPort: 0

trace: none # set 1 of : none|service|diagnostic

traceNodeLevel: none

StatsSnapNodeDataLevel: basic # choose 1 of : none|basic|advanced StatsSnapOutputFormat: "csv,bluemix,usertrace" # comma separated list of :

csv,bluemix,json,xml,usertrace StatsSnapPublicationOn: false

StatsSnapThreadDataLevel: none # choose 1 of : none|basic

StatsSnapAccountingOrigin: "resourceStatsReportingOn: false

UserVariables: # equivalent to providing extra user variables on the command

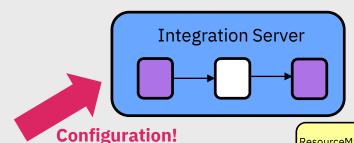
line for IntegrationServer

Thing1: value Thing2: value

EnvironmentVariables: # equivalent to setting environment variables used

during application source load and run

Thing1: value Thing2: value



IntegrationServer: activeUserExitListi: " inactiveUserExitList: " unnamedTraceLevel: none # choose 1 of : noneldebugTrace unnamedUserTraceLevel: none # choose 1 of: noneldebugTrace traceNodeLevel: true processorArchitecture: " consoleMode: " httpNodesUseEmbeddedListener: " soapNodesUseEmbeddedListener: " threadLocalProxyNameManagers: " iniectionMod: " failedMessageWaitTime: " StatsSnapPublicationOn: " StatsSnapThreadDataLevel: " StatsSnapNodeDataLeve: " StatsSnapOutputFormat: " StatsSnapAccountingOrigin: "

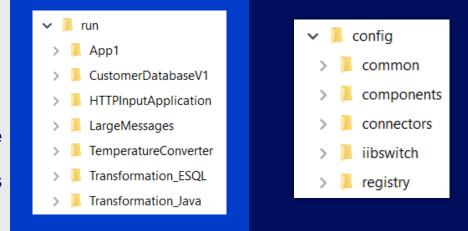
resourceStatsReportingOn: "

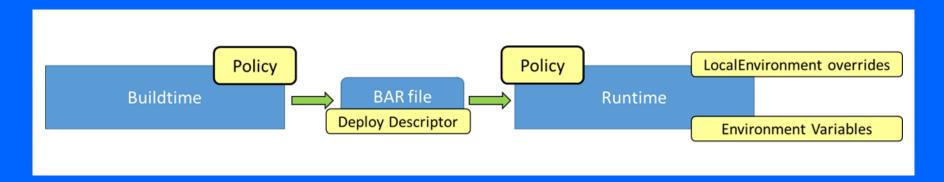
ResourceManagers: JVM: resourceStatsReportingOn: " ivmVerboseOption: none ivmDisableClassGC: " ivmEnableIncGC: " ivmShareClasses: " ivmNativeStackSize: -1 ivmJavaOSStackSize: -1 ivmMinHeapSize: 33554432 jvmMaxHeapSize: 268435456 ivmDebugPort: 19790 ivmSystemProperty: " keystoreType: " kevstoreFile: " keystorePass: " truststoreType: " truststoreFile: " truststorePass: " crlFileList: " enableCRLDP: " kerberosConfigFile: " kerberosKeytabFile: "

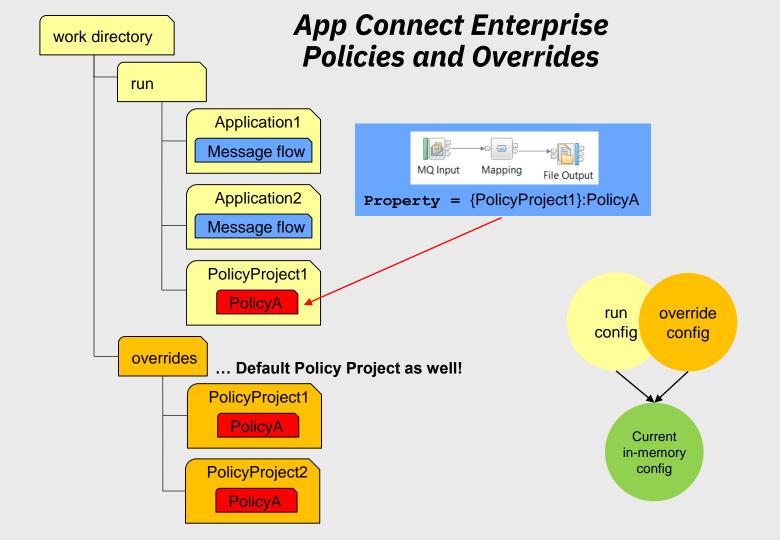
# **The Work Directory**

The Integration Server will relies on three subfolders which live in its work directory:

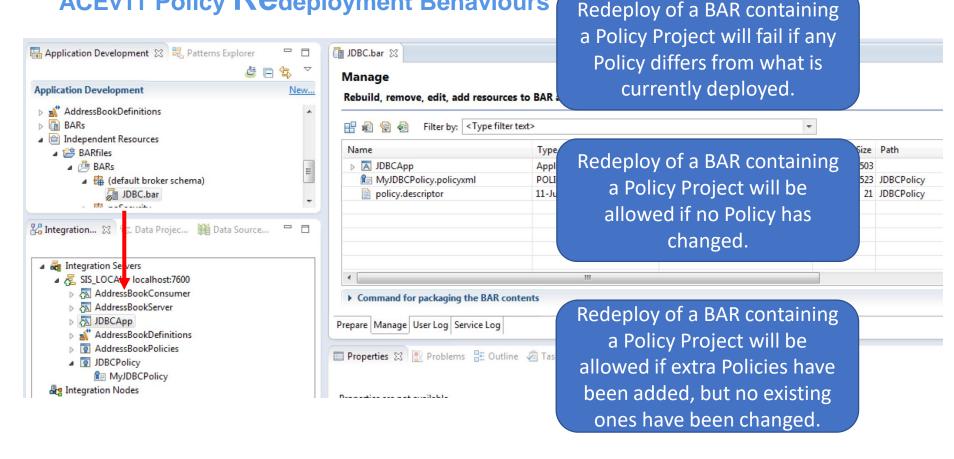
- The *run* directory contains the unzipped deployed content from BAR files
- The overrides directory provides ability to override directly in a particular runtime environment
- The *config* directory holds other configuration files (eg for loopback, switch, security config etc.)



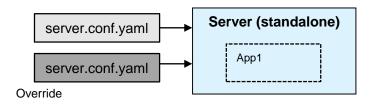




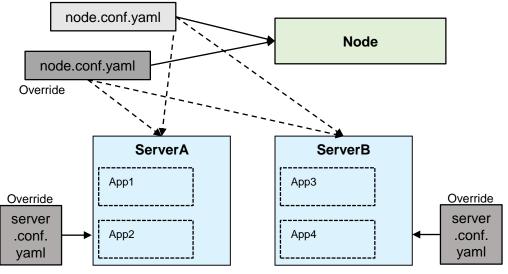
ACEv11 Policy Redeployment Behaviours



# **Configuration of Servers which are associated with Nodes**



- REST APIs update override files only
- Node.conf.yaml provides a limited set of node wide options
- Servers read node-level files rather than having values pushed from bipbroker
  - Avoid translation layer and caching issues



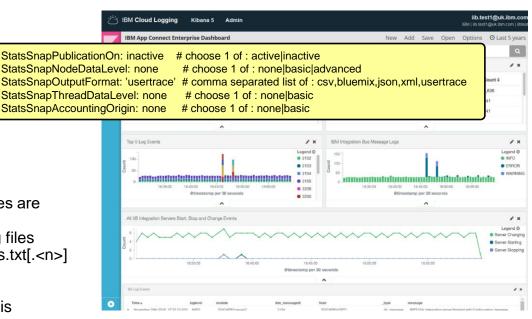
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# Properties Statistics TotalImputMessages TotalisapsedTime TotalCPUTime TotalCPUTime TotalCPUTime TotalCPUTime TotalCPUTime TotalCPUTime Literal Average Highest Lowest Literal Average Highest Lowest Literal Average Highest Lowest Literal Average Highest Lowest Literal Average Highest Lowest

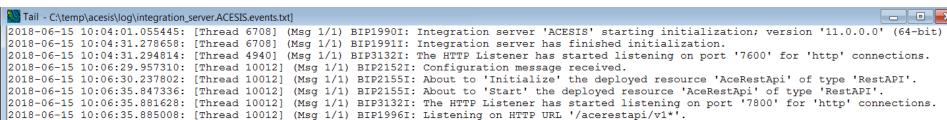
IRM App Connect

Server: Default / API: AceRestApi / Message flow: gen.AceRestApi

# Accounting Statistics, Resource Statistics and Event Logs



- "BIP" Informational, Warning and Error messages are issued to notify operational status and changes
- Standalone servers by default log to rotating log files <workdir>/log/integration\_server.<name>.events.txt[.<n>]
   Override via server.conf.yaml 'eventLog'
- To stdout, --console-log
- Can also be published to IBM Cloud Log Analysis



```
C:\Program Files\IBM\ACE\11.0.0.2>IntegrationServer --work-dir C:\MyServer --name MyServer --admin-rest-api 7600 --http-port-number 7900 --console-log
 ....2018-10-16 08:29:48.400724: .2018-10-16 09:29:48.438820: Integration server 'MyServer' starting initialization; version '11.0.0.2' (64-bit)
                                       .2018-10-16 09:30:05.911203: IBM App Connect Enterprise administration security is inactive.
2018-10-16 09:30:05.982783: Integration server has finished initialization.
2018-10-16 09:30:06.106324: The HTTP Listener has started listening on port '7600' for 'RestAdmin http' connections.
 :\Program Files\IBM\ACE\11.0.0.2>IntegrationServer --work-dir C:\MyServer --name MyServer --admin-rest-api 7600 --http-port-number 7900 --console-log
 ....2018-10-16 09:22:06.020574: .{"type":"ace_message","ibm_product":"IBM App Connect Enterprise","ibm_recordtype":"log","host":"LAPTOP-HH1E10QN","module":"integration
 server.MyServer","ibm serverName":"MyServer","ibm processName":"IntegrationServer","ibm processId":"12960","ibm threadId":"1672","ibm datetime":"2018-10-16T09:22:06.05
4760","loglevel":"INFO","message":"1990I: Integration server 'MyServer' starting initialization; version '11.0.0.2' (64-bit) ","ibm message detail":"1990I: Integration
server 'MyServer' starting initialization; version '11.0.0.2' (64-bit) \nThe integration server is starting. \nNo user action required. ","ibm messageId":"1990I","ibm s
equence":"1539681726054 00000000000001"}
            tion server.MyServer","ibm serverName":"MyServer","ibm processName":"IntegrationServer","ibm processId":"12960","ibm threadId":"1612","ibm datetime":"2018-10-16T09:22:1
 2.842794","loglevel":"INFO","message":"2866I: IBM App Connect Enterprise administration security is inactive. ","ibm message detail":"2866I: IBM App Connect Enterprise
administration security is inactive. \nDescribes whether administration security has been activated or not for the current integration node. Administration security can
 be activated or inactivated by the mqsichangeauthmode command. \nNo action. ","ibm messageId":"2866I","ibm sequence":"1539681732842 0000000000001"}
 "type":"ace message","ibm product":"IBM App Connect Enterprise","ibm recordtype":"log","host":"LAPTOP-HH1E10QN","module":"integration server.MyServer","ibm serverName
 "MyServer", "ibm processName": "IntegrationServer", "ibm processId": "12960", "ibm threadId": "1672", "ibm datetime": "2018-10-16T09: 22: 12: 908991", "loglevel": "INFO", "message"
 1991I: Integration server has finished initialization. ","ibm message detail":"1991I: Integration server has finished initialization. \nThe integration server has fini
shed initialization. \nNo user action required. ","ibm messageId":"1991I","ibm sequence":"1539681732908 0000000000001"}
 "type":"ace message","ibm product":"IBM App Connect Enterprise","ibm recordtype":"log","host":"LAPTOP-HH1E100N","module":"integration server.MyServer","ibm serverName
 "MyServer", "ibm processName": "IntegrationServer", "ibm processId": "12960", "ibm threadId": "1612", "ibm datetime": "2018-10-16T09:22:12.975867", "loglevel": "INFO", "message"
 '3132I: The HTTP Listener has started listening on port '7600' for 'RestAdmin http' connections. ","ibm message detail":"3132I: The HTTP Listener has started listening
on port '7600' for 'RestAdmin http' connections. \nThe HTTP Listener process is currently listening on the integration node-specific TCPIP port '7600' for connections o
```

```
Log:
#consoleLog: true  # Control writing BIP messages to standard out. Set to true or false, default is true.
#outputFormat: 'text'  # Set the format for writing BIP messages ibmjson or text, default is text.
#eventLog: " # Control writing BIP messages to file. Set to '/path/log.txt' to enable, or " to disable.
# Default is <workdir>/log/integration server.<server name>.events.txt
```

type 'RestAdmin http' \nNo user action required. ","ibm messageId":"3132I","ibm sequence":"1539681732975 0000000000001"}

# **Monitoring Profiles**

# Application Development ■ myPolicies □ BARs □ Policy □ WS Policy Sets and Bindings ■ Other Resources □ MonitoringProfile.monprofile.xml ■ Integration Servers ■ Icalhost:7600 □ Transformation\_Map ■ myPolicies ■ MonitoringProfile.monprofile



Monitoring profiles

WLM1

 Are not a "known" resource type in the Toolkit (currently), so there is (currently) no custom editor

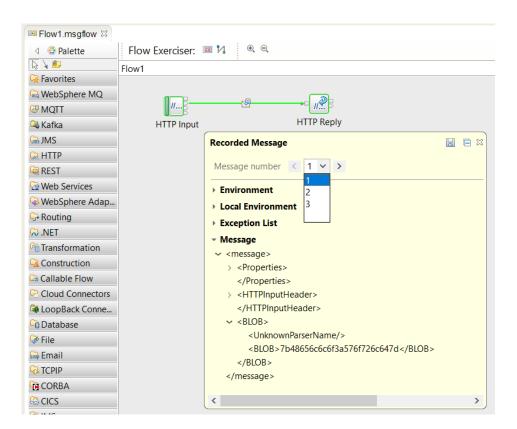
Monitoring

- Have the extension ".monprofile.xml"
- Are located in a Policy project
- Conform to the XML schema provided at <install root>/server/sample/Monitoring/MonitoringProfile.xsd

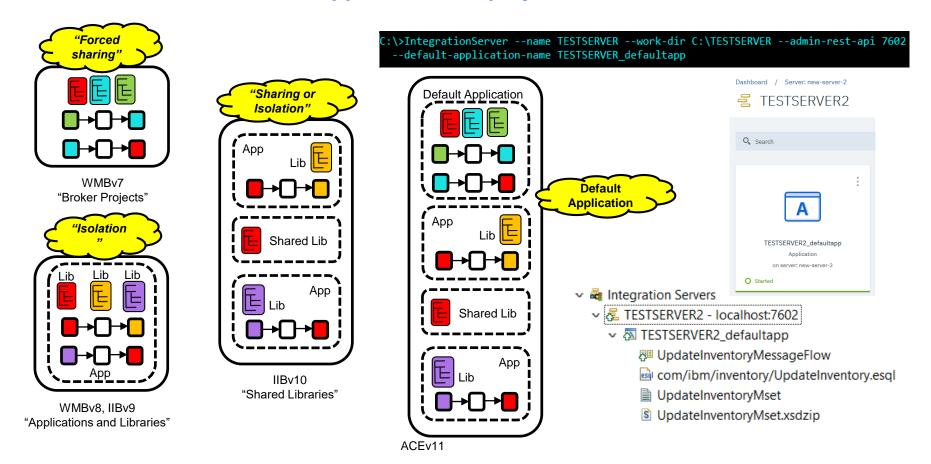
| LoopbackMem.msgflow |  |                               |
|---------------------|--|-------------------------------|
| Configure           | ① Configure properties of selected built resource. |                               |
| Workload Management | Consumer Policy Set                                |                               |
| Details             | Consumer Policy Set Bindings                       |                               |
|                     | Coordinated Transaction                            |                               |
|                     | Monitoring Profile Name                            | {myPolicies}:MonitoringProfil |
|                     | Provider Policy Set                                |                               |
|                     | Provider Policy Set Bindings                       |                               |
|                     | Security Profile Name                              |                               |

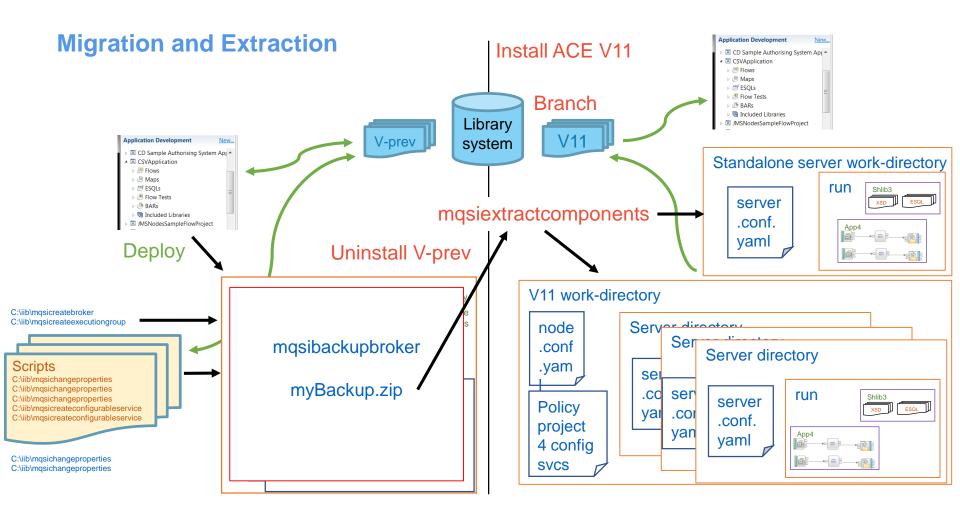
### Flow Exerciser and Unit Testing

- Response now indicates if the message came from an input node
- Node labels included in the response format
- Better identification of sequence information
- Correlation information for injection. Correlation between an input messages and its recorded messages
- It is now possible to identify a single message without its payload and then make a later request to get the payload for that specific message
- Better pagination options than in V10.
- The recorded message record can now be XML or JSON.
- Injection is now enabled at the Flow level instead of the server level. This means that other flows are not impacted by checking if they have injected data.
- There is now an /inject non crud action on message flows when injection mode is enabled. This makes it easy for an API to be flow-centric and removes the need to correctly identify lengthy query parameters.



# **ACEv11 Default Application - Deployment Behaviours**







**Thank you & Questions?**