#### IBM Cloud

**IBM Agent Builder 6.3.4**



**TV384 (Classroom)**

# Course description

In this class, you learn to create agents that monitor a vast array of data sources. You learn to add custom IBM Tivoli Monitoring application support, such as queries, situations, and workspaces. You learn to add IBM Application Performance Management dashboards and OSLC properties. You learn to deploy your custom agent in a multiplatform environment. This class includes extension hands-on experience.

The lab environment for this course uses the Windows and Linux® operating systems.

For information about other related courses, visit the IBM Training website:

<http://www.ibm.com/training>

**General information**

#### Delivery method

Classroom or instructor-led online (ILO)

#### Course level

ERC 1.0

#### Product and version

IBM Agent Builder 6.3.4

#### Audience

This course is intended for agent developers, system administrators, and application administrators who need to create customized agents to monitor resources and integrate that monitoring into an IBM Tivoli Monitoring or IBM Application Performance Management environment.

#### Learning objectives

* Describe the IBM Agent Builder application and the kinds of agents you can create
* Describe the basic process of creating a custom agent with Agent Builder
* Troubleshoot an Agent Builder agent during the development process and after installation
* Create agents for both the IBM Tivoli Monitoring and IBM Application Performance Management environments
* Create and test agents that monitor the availability of resources, such as processes, Windows services, command return codes, and network devices
* Create and test agents that monitor events from log systems, log files, and SNMP
* Create and test agents that monitor data from server technologies
* Create and test agents that monitor data from custom technologies, such as scripts, log files, Java applications, and socket connections
* Create and test agents that include remote monitoring, custom attributes, derived attributes, Navigator groups, user-entered configuration information, and Tivoli Enterprise Portal components, such as queries, situations, and workspaces
* Create and test agents that use subnodes to optionally monitor local or remote data sources

#### Prerequisites

Before taking this course, make sure that you have the following skills:

* Administrator-level skills in Windows and Linux
* Administrator-level skills in either of the following IBM monitoring environments:
	+ IBM Tivoli Monitoring 6.X, including creating queries, situations, Navigators, and workspaces
	+ IBM Monitoring 8.x or IBM Application Performance Management base 8.x, SaaS or on-premises
* Experience installing, configuring, starting, and stopping IBM agents and application support in Windows and UNIX or Linux
* Basic understanding of potential data sources, including processes, Windows services, Windows Management Infrastructure (WMI), Windows Performance Monitor (Perfmon), Common Information Model (CIM), Simple Network Management Protocol (SNMP), Simple Network Management Protocol (SNMP) events, Java Database Connection (JDBC), Java Management Extensions (JMX), HyperText Transfer Protocol (HTTP), ICMP ping, log files, Windows Event log, command return codes, socket connections, and Java API

#### Duration

3 days

#### Skill level

Intermediate

#### Classroom (ILT) setup requirements

**Table 1 Configuration for instructor and each student**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **System label** | **Machine type and processor** | **RAM** | **Hard disk** | **Display resolution** | **Operating system** |
| APM | 2.5 GHz or faster Multi Core (8 processors) | 10000 MB | 32 GB | 1280 x 1024 | RHEL 6.6 64-bit |
| ITM | 2.5 GHz or faster Quad Core | 4696 MB | 37 GB | 1280 x 1024 | Windows Server 2008 R2 SP1 64-bit |
| WIN1 | 2.5 GHz or faster Quad Core | 3072 MB | 31 GB | 1024 x 768 | Windows Server 2008 R2 SP1 64-bit |
| WIN2 | 2.5 GHz or faster Quad Core | 2048 MB | 26 GB | 1024 x 768 | Windows Server 2008 R2 SP1 64-bit |
| LIN4 | 2.5 GHz or faster Quad Core | 2048 MB | 12 GB | 1024 x 768 | SLES 11.3 64-bit |

**Table 2 Required network configurations**

**Network configuration Classroom requirement**

Specify **isolated networks** or a **single network** isolated networks

Specify whether **Internet access** is required must not be provided during setup Specify whether a **DHCP server** is required not necessary

Specify whether **promiscuous mode** is required not necessary

**Table 3 Required software for class**

|  |  |  |  |
| --- | --- | --- | --- |
| **Software product** | **Version** | **Operating systems** | **System labels requiring software product** |
| Windows Server | 2008 R2 SP164-bit | Windows Server 2008 R2 SP1 64-bit | ITM WIN1 |
|  |  |  | WIN2 |
| SLES | 11.3 64-bit | SLES 11.3 64-bit | LIN4 |
| RHEL | 6.6 64-bit | RHEL 6.6 64-bit | APM |
| 7 zip | 9.2 | Windows | WIN1 |
| Acrobat Reader | 11.0.0.03 | Windows | WIN1 |
| Active Perl | 5.20.2 Build 2001 64-bit | Windows | LIN4 WIN1 |

**Table 3. Required software for class (continued)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Software product** | **Version** | **Operating systems** | **System labels requiring software product** |
| DB2 Workgroup Server editionPart number; CI8NFML | 9.7.1 | Windows | ITM WIN1 |
| Filezilla client | 3.7.1 | Windows | WIN1 |
| Firefox browser | 10.0.12 | Window | WIN1 |
| IBM Agent Builder | 6.3.4 | Windows and Linux | LIN4 |
| Link below\* |  |  | WIN1 |
| IBM Director | 5.2 | Windows | WIN2 |
| Part number: C96U1EN |  |  |  |
| IBM Tivoli Directory Server | 6.3 | Windows | ITM |
| Part number: CZKH0ML |  |  |  |
| IBM Monitoring | 8.3.1 | Linux | APM |
| eAssembly: CRW7XML |  |  |  |
| Part numbers |  |  |  |
| Agents Win 64: CN5Y7ML |  |  |  |
| Agents Win 32: CN5Y8ML |  |  |  |
| Agents Lin 64: CN5Y9ML |  |  |  |
| Agents AIX: CN5YAML |  |  |  |
| Agent Builder: CN5YBML |  |  |  |
| IM server: CN5YEML |  |  |  |
| Hybrid Gateway: CN5YFML |  |  |  |
| IBM Tivoli Monitoring | 6.3.0.7 | Windows | ITM |
| eAssembly: CRQ9WML |  |  |  |
| Part numbers are: |  |  |  |
| Base Win 64: CIQ3GEN |  |  |  |
| Agents: CIQ3QML |  |  |  |
| Putty | 0.62 | Windows | WIN1 |
| WebSphere Community Edition | 2.1 | Windows | WIN2 |
| Setup CD |  | Windows and Linux | LIN4 |
|  |  |  | WIN1 |
|  |  |  | WIN2 |

**Notes**

The following unit and exercise durations are estimates, and might not reflect every class experience.

This course is an update of TV383 IBM Agent Builder 6.3.1 ERC1.0

# Course agenda

The course contains the following units:

### Unit 1. Introduction to IBM Agent Builder Estimated time: 45 minutes

|  |  |
| --- | --- |
| Overview | This unit introduces you to Agent Builder by describing key abilities and functions that you use to create IBM agents for custom monitoring solutions.This unit has no exercises. |
| Learning objectives | After completing this unit, you should be able to:* Describe the main functions of IBM Agent Builder
* Install and start the Agent Builder application
* List the kinds of data sources from which Agent Builder agents can monitor
 |

**Unit 2. Agent creation basics Estimated time: 1.7 hours**

|  |  |
| --- | --- |
| Overview | The process for creating an agent is simple and straightforward. In this unit, you learn the basic process for creating an agent. The skills you gain in this unit apply to almost all agents. You can create many kinds of agents with Agent Builder. The agents can differ based on what they monitor, how they handle the data they gather, how you install and configure them, and how they dis- play the data. How you create each agent differs based on these same criteria.In this unit, you create an agent that is named AB1. It monitors the HTTP server and DB2® services of any target Windows host. |
| Learning objectives | After completing this unit, you should be able to:* Describe the basic process of creating an agent
* Create an agent that monitors the availability of Apache and DB2 Windows services
* Navigate and describe the Agent Builder editor interface
* Describe troubleshooting techniques for Agent Builder
* Install an Agent Builder agent with a quick local installation and with installation scripts
* Describe troubleshooting techniques for your installed agent
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**Unit 3.1 Customizing agents for IBM Application Performance Management Unit 3.2 Customizing agents for IBM Tivoli Monitoring**

**Estimated time: 1.5 hours**

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| --- | --- |
| Overview | In Part 1 of this unit, you learn how to modify an agent so that you can deploy it within an IBM Application Performance Management environment. You also learn how to generate and install the agent by using the script installers.Part 2 of this unit gives you an overview of how to install an agent into an IBM Tivoli Monitoring environment and how to build custom application support for an IBM Tivoli Monitoring environment.ITM exerciseIn this unit, you install the AB1 agent in an IBM Tivoli Monitoring environment. You then customize the agent to include custom IBM Tivoli Monitoring application support.APM exerciseIn the exercise in this unit, you modify the AB1 agent in preparation for installing it into an IBM Performance Management environment. |
| Learning objectives | After completing the first part of the unit, you should be able to:* Modify an agent for an IBM Application Performance Management environment
* Create filters for existing data sources
* Manage an Agent Builder agent in an IBM Application Performance Management environment
* Manage an Agent Builder agent in an IBM Tivoli Monitoring environment
* Add custom IBM Tivoli Monitoring workspaces and situations to your agent

After completing the second part of the unit, you should be able to:* Manage an Agent Builder agent in an IBM Tivoli Monitoring environment
* Add custom IBM Tivoli Monitoring workspaces and situations to your agent
 |

**Unit 4.** Monitoring Windows resources

### Estimated time: 1.34 hours

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| --- | --- |
| Overview | In this unit, you expand your previous solution by adding several new Windows data sources. You are introduced to ways in which you can modify the target attributes your agent gathers. Last, you learn how various data sources organize the data they display and how you can modify that layout with Navigator groups.In this exercise, you modify your AB1 agent to monitor the following items:* The web server that provides the HTML portions of the application
* The DB2 database services and process that provide the database of this application
* The logical disk space where the database is stored
* Windows systems events for events that are related to the HTTP server and DB2
 |
| Learning objectives | After completing this unit, you should be able to:* Add monitoring of Windows Management Instrumentation (WMI) data sources to an agent
* Add monitoring of Windows Performance Monitor (Perfmon) data sources to an agent
* Add monitoring of Windows Log Event data to an agent
* Edit data source attributes
* Create a Navigator Group that contains data from multiple sources
* Join two attribute groups into a combined attribute group
* Test a new data source attribute group and a full agent in Agent Builder
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**Unit 5.** Monitoring processes and command return codes

**Estimated time: 1.67 hours**

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| Overview | In this unit, you learn about availability monitoring of processes and command return codes. Unlike the Windows-only data sources, these data sources are run on multiple operating systems.In the first exercise in this unit, you create a single, multiplatform agent that can be installed on both Windows and Linux. The agent monitors related but different items on each operating system. You add availability monitoring of the HTTP server process so that when the agent is installed on Windows, it monitors the Windows HTTP server process. But, when the agent is installed on Linux, it monitors the Linux HTTP server process. |
| Learning objectives | After completing this unit, you should be able to:* Add monitoring of multiplatform processes to an agent
* Add monitoring of multiplatform command return code to an agent
 |

**Unit 6. Monitoring custom data sources Estimated time: 5.25 hours**

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| --- | --- |
| Overview | This unit introduces you to custom data sources. Custom data sources require you to provide the instrumentation that is needed to gather the data that you want monitored. Custom data sources include monitoring with scripts, sockets, Java API, and parsing log files. It also introduces the runtime configuration feature, showing you how to create custom runtime configuration parameters. This unit finishes the installation topic by showing you how to generate Agent Builder output with the command-line interface (CLI).In this unit, you modify your agents to gather and monitor data with custom instrumentation. |
| Learning objectives | After completing this unit, you should be able to:* Add local and remote monitoring of script output to an agent
* Add local and remote monitoring through a socket connection
* Add monitoring of log files to an agent
* Add monitoring by a custom Java application
* Create runtime configuration properties
* Generate agent installer files from the command-line interface (CLI)
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**Unit 7.** Monitoring remote and optional resources

**Estimated time: 5 hours**

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| --- | --- |
| Overview | This unit teaches you how to use subnodes in your agent. You can use subnodes to enable a single installed agent to monitor multiple remote resources. You can also use them to create an agent with optional data sources that you can activate or not activate at run time. This unit also introduces several new data sources, including Simple Network Management Protocol (SNMP), HTTP server URLs, ICMP (Ping), Java Management Extension (JMX), Common Information Model (CIM), and Java Database Connectivity (JDBC). Each of these data sources requires runtime configuration, which you must refine for your agent.In this unit, you modify your agents to monitor remote resources and contain optional data sources. |
| Learning objectives | After completing this unit, you should be able to:* Monitor remote data sources
* Add optional data sources to an agent
* Manage runtime configuration parameters
* Add monitoring of Simple Network Management Protocol (SNMP) to an agent
* Add monitoring of HTTP server URLs to an agent
* Add monitoring of network availability to an agent
* Add monitoring of Java Management Extension (JMX) data sources to an agent
* Add monitoring of Common Information Model (CIM) data sources to an agent
* Add monitor of a database with the JDBC data source to an agent
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**For more information**

To learn more about this course and other related offerings, and to schedule training, visit ibm.com/training. To learn more about validating your technical skills with IBM certification, visit ibm.com/certify.