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# STE: Maximo 7.5 Installation

September 11, 2012

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# Agenda

- Architecture
- Overview
- What's New
- Installation Options and Settings
- TaskRunner
- Deployment Engine
- Logs
- Concerns
- Troubleshooting
- Resources
- Q&A


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# Architecture

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# Architecture

- Application Server
  - WebSphere Application Server 7.0.0.15 (runs support of WebSphere 8)
  - Oracle WebLogic Server 11g Release 1 (10.3.3) and future fix packs
- Database
  - Oracle 10g Release 2 10.2.0.4 , Oracle 11g Release 1, Oracle 11g Release 2
  - Microsoft SQL Server 2008, Microsoft SQL Server 2008 R2, Microsoft SQL Server 2008 SP1
  - DB2 Enterprise Server Edition 9.5.0.7 and future fix packs, DB2 Enterprise Server Edition 9.7.0.3 and future fix packs, DB2 9.8 PureScale
- Directory Server
  - Microsoft Active Directory 2008 R2
  - Tivoli Directory Server v6.3


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# Architecture

- Middleware Installer
  - Microsoft Windows Server 2003 SP2, Microsoft Windows Server 2003 R2 SP2
  - Microsoft Windows Server 2008 SP1, Microsoft Windows Server 2008 R2
  - SUSE Linux Enterprise Server SP2 10.0
  - SUSE Linux Enterprise Server 11.0
  - Red Hat Enterprise Linux v5 U2
  - Red Hat Enterprise Linux v6
  - AIX 6.1
  - AIX 7.1
- Solaris and HP-UX is a manual install of middleware


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# Architecture

- Administrative workstation
  - Windows Server 2003, Windows Server 2003 R2
  - Windows Server 2008, Windows Server 2008 R2
  - Windows Vista
  - Windows XP SP2
  - Windows 7
- Browser
  - Internet Explorer 7,8
  - Firefox 3.6
- Java
  - Java version 1.6.0 SR8 FP1


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# Architecture

- Windows 2008 Server Notes
  - Security changes to be made prior to installing Maximo
    - Create a local administrator account and use that account to install
    - Disable the Windows Firewall Service during the Maximo install
    - Turn off User Account Control (UAC)
    - Turn off Data Execution Prevention (DEP)
  - Launch any executable, command file, etc.
    - Right-click and select "Run as administrator"


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# Architecture

- For optimal application performance, plan on one JVM for every 40 users (32- bit OS). The installation program sets maximum memory to 1.5 GB for 32-bit platforms and 4 GB for 64-bit platforms if automatic configuration for WebSphere is selected

Note: Every implementation is different. 40 users per JVM is a guideline. Real World load testing must be done in each implementation to determine that number


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# Overview

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# Overview

- Middleware
- process automation engine (Maximo)
- Process Solution Installer (PSI)
- Deployment Engine (DE)
- Fix Pack


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# Middleware

- IBM middleware components installed automatically via middleware installer
  - Download middleware package(s)
  - Extract all to same location

- Non IBM middleware components must be installed manually before Maximo installation


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# Middleware

- Database
  - Enable Text Searching
  - Storage
  - User(s) and rights
  - Oracle
    - CURSOR_SHARING=FORCE


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# Middleware

- J2EE Server
  - Enable Administrative Security if using WebSphere
    - Middleware installer enables
  - Do not configure Application Server Security during Maximo installation. Configure Application Server Security after the installation
  - Remove Program Files from all directory paths if installing on Windows


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# process automation engine

- Maximo installed on Windows administrative machine
- Contains common functionality Tivoli process automation engine
- Launchpad option – Maximo Asset Management
- Multiple Maximo installations on one administrative machine


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# Process Solution Installer (PSI)

- Used to install the different components
- PSI provides a common deployment mechanism for Process Solutions
- PSI supports deployment of both Process Manager Products (PMPs) and Integration Modules (IMs)


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# Deployment Engine (DE)

- PSI is based around a common component called *Autonomic Deployment Engine* (DE) which defines an installable package format and provides a set of runtime services used to install those packages
- In order to be installed via PSI, an installable package must adhere to the DE packaging structure
- DE database contains information regarding products installed (c:\ibm\smp\ctg_de\acsi)


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# Fix Packs

- Collection of APAR fixes

- Uses PSI to install


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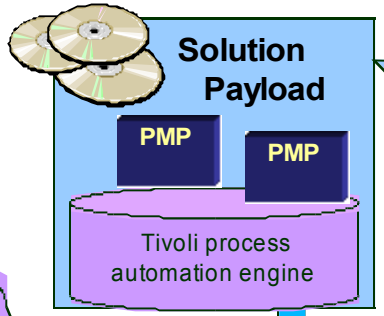
# PAE Install Technology Level-Set

## Base Services Installer

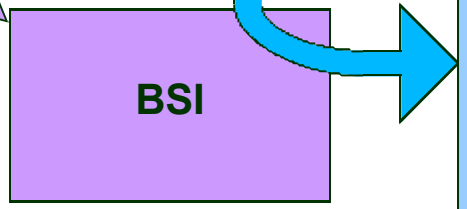
**Solution Payload**

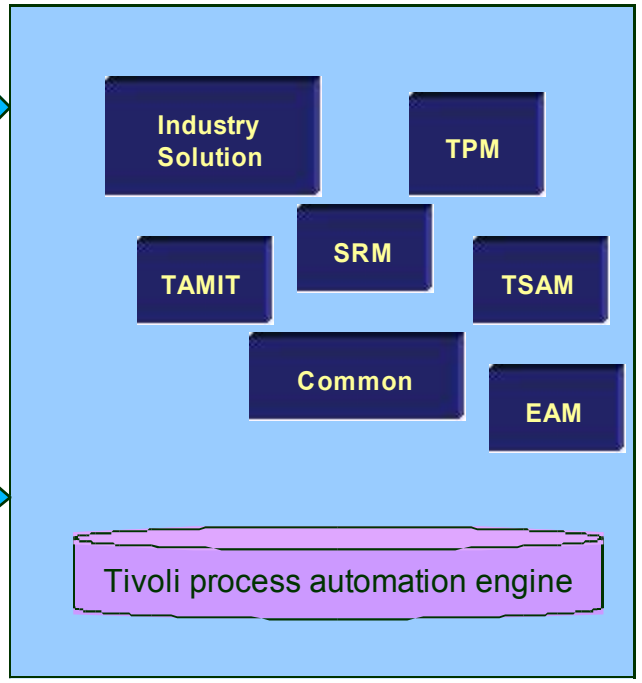
Individual products (e.g. TAMIT) + process manager packages (PMP) + Tivoli process automation engine (aka Maximo)

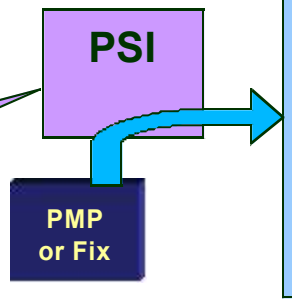



**Base Services Installer (BSI)**

- Process Solution payloads
- Detects, deploy, and upgrade tpae
- Deploys or upgrade solution packages
- Validates and configure MW
- Deploys schema and configure DB,
- Build maximo.EAR, (re-) deploy EAR




**Process Solution Installer ( PSI)**
- process individual packages (e.g. Ind. Solution)
- Supports s/w lifecycle (e.g. applying fixes)

Tpae Admin Workstation



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# What's New

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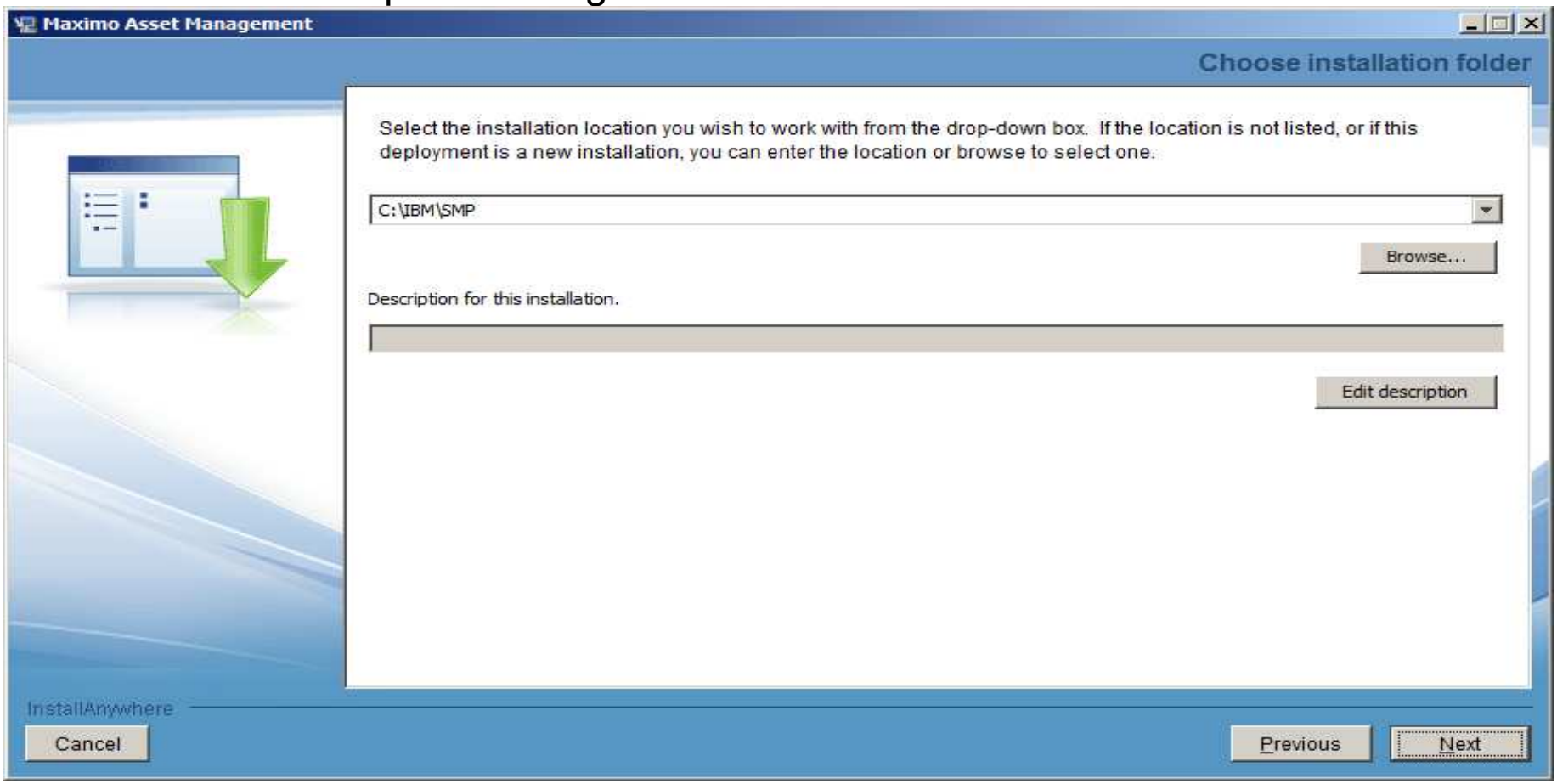
# What's New

- Multiple Maximo installs on same administrative machine as same admin user
  - Install location panel during 7.5 installation





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# What's New

- No Global Deployment Engine (DE) or local user DE
- Deployment Engine (DE) private to Maximo install (ibm\smp\ctg_de folder)
  - New DE version – 1.4
  - No DE service running (ADE engine)
- Middleware DE is installed inside MWI workspace under DE folder
- DE updated prior to updatedb and EAR deploy


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# What's New

- New installation logs
- **CTGSummary00.log**
  - Contains the message entries plus a subset of the information currently traced in the trace log
  - Cluttering reduced by eliminating the java class full qualified names and the method names.
  - Timestamp of entries from the new trace can be used to locate detailed logging in the full trace file
- **CTGError.log**
  - Captures only failure output containing
    - Logs to identify run dates and installer version information
    - Any trace with an exception/throwable
    - Severe level traces


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# What's New

- New installation logs
- **Notes:**
  - While the CTGInstallMessage00.log is about 1% of the messages from the trace, the new CTGSummary00.log trace will contain about 10% of the traced entries
  - The data that goes into the CTGInstallMessage00.log and CTGInstallTrace00.log has not changed


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# What's New

- Language Pack installation now part of Maximo 7.5 install
  - Base language selected
  - Additional language(s)

- Pre-req checker
  - Middleware pre-req checker
  - Option on launchpad
  - Optional
  - Command line option
    - Inputs through properties file or interactive mode
  - Check middleware products one by one or all together
  - Status report


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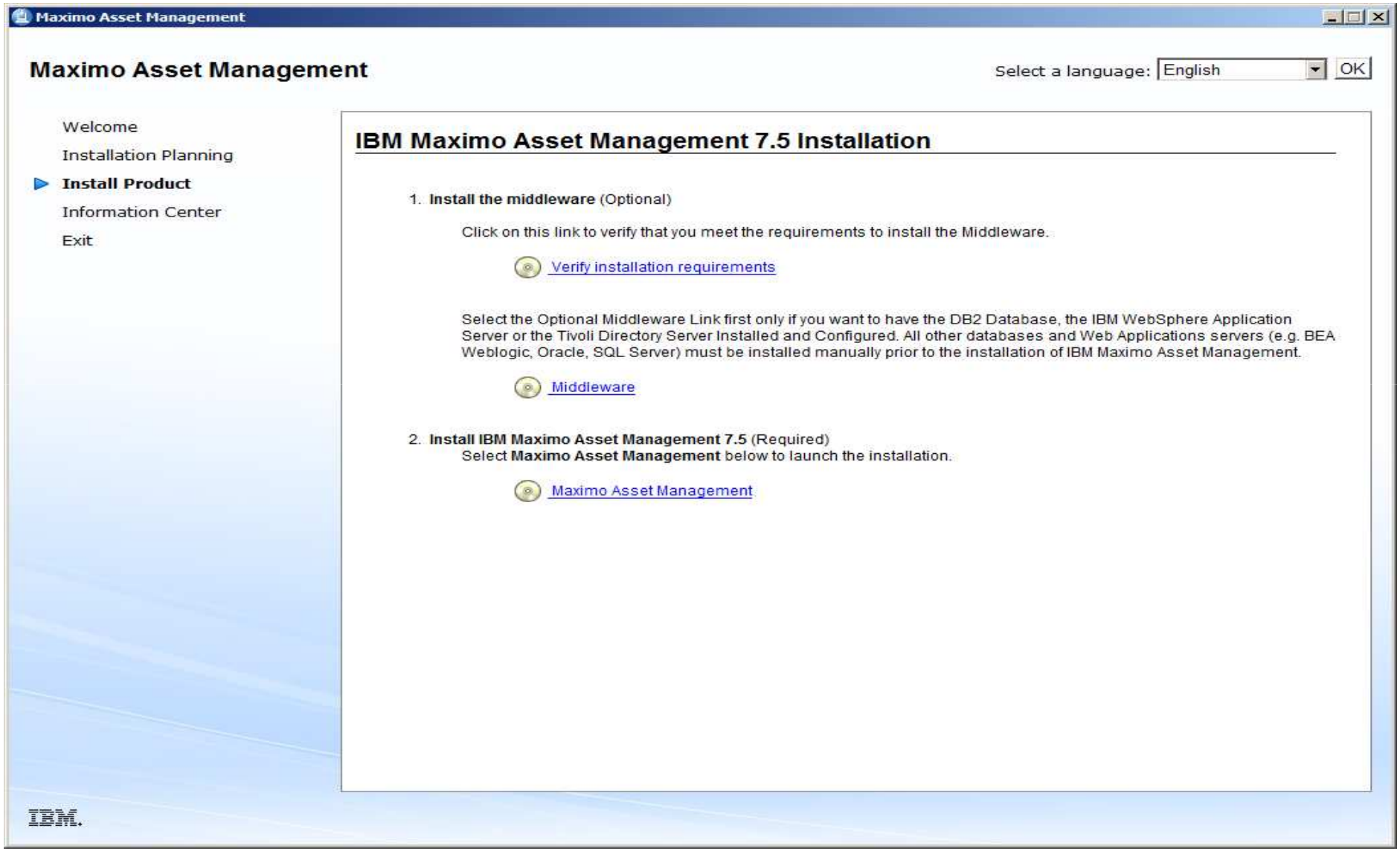
# What's New





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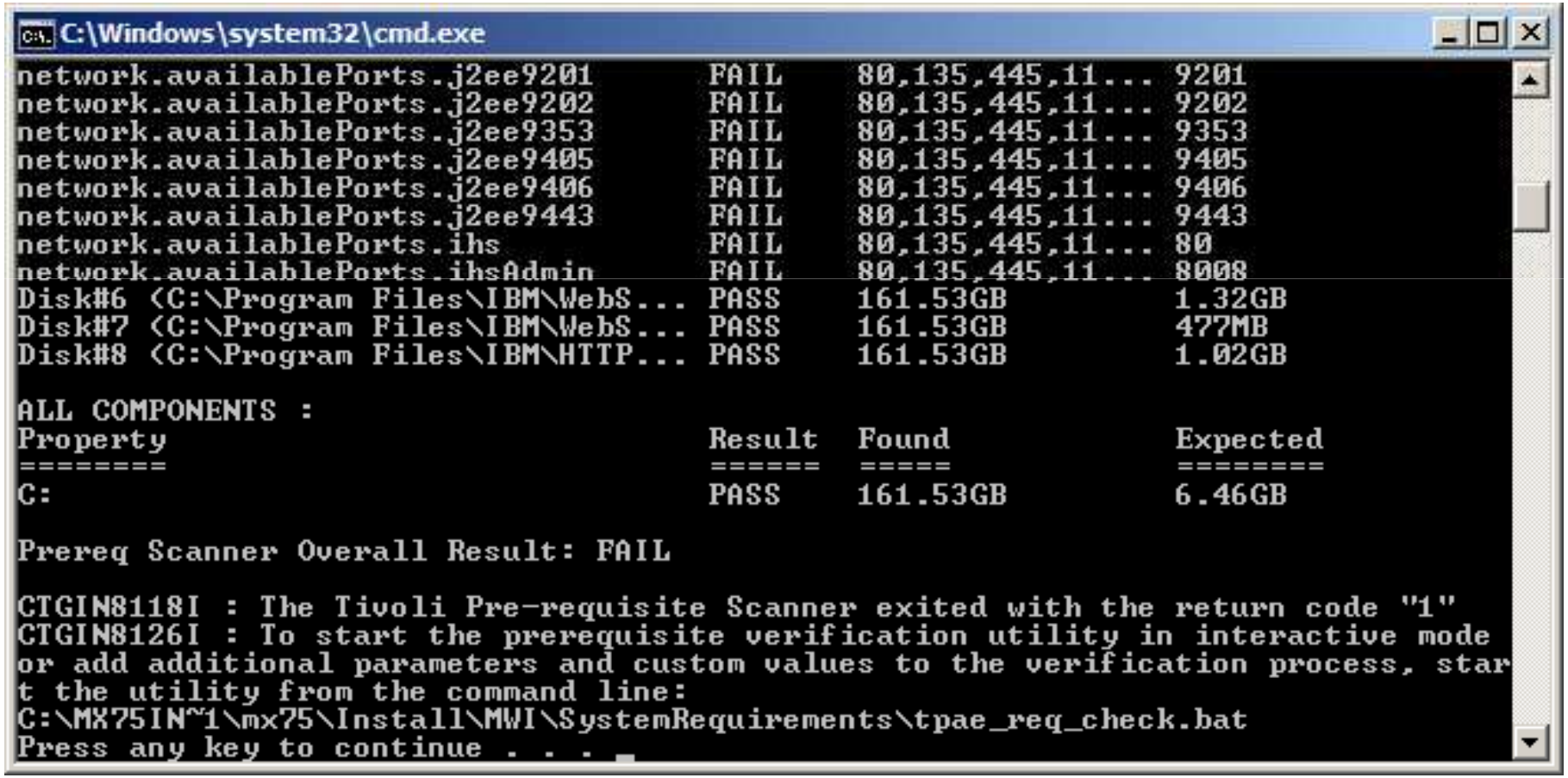
# What's New

- Pre-req checker





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# What's New

- Install validation
  - Middleware
    - Validates the health of the middleware components
    - Command line option
  - Maximo
    - Validates the health of the product installation
    - Command line option


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# What's New

- WebSphere Network Deployment v7
  - Migration option to migrate v6.1 profile to v7
    - Manual install of v7 on same machine as v6.1
    - Migration tool
    - V6.1 no longer useable
  - MWI
- WebSphere configuration settings to be inline with performance best practices with WebSphere automated configuration


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# What's New

- Performance Enhancement on Deployment
  - Update of the database (updatedb) is only run once at the end of the install(s)
  - Build and deploy of EAR files task is only run once at the end of the install(s)
  - Both tasks of updating the database and deploy of EAR happens after installation of components are complete. (i.e. after the DE registered the packages)


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# Installation Options and Settings

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# Installation Options and Settings

- Use Middleware Installer for IBM middleware components (DB2, WebSphere, Tivoli Directory Server)
- Remote access to all servers at the Administrator level
- Local Administrator/User to server (not Domain user)
- Maximo must be installed on Windows
- Disable Firewall
- Select Configure manually later when presented


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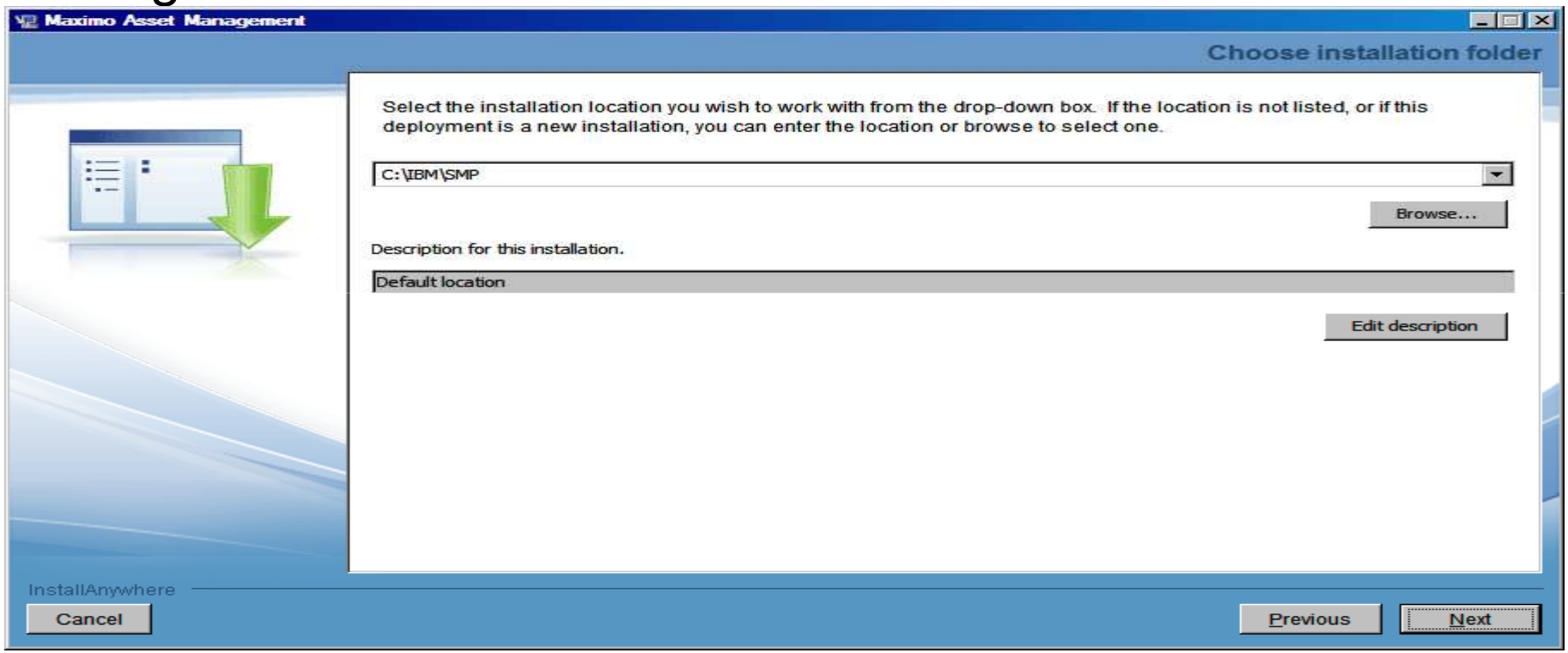
# Maximo Installation

- Follow through the screens to the Choose installation folder dialog




  - Select installation location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# Maximo Installation

- Once install has passed the Location Validation Panel you cannot go back and choose a new installation location without exiting and restarting the installation


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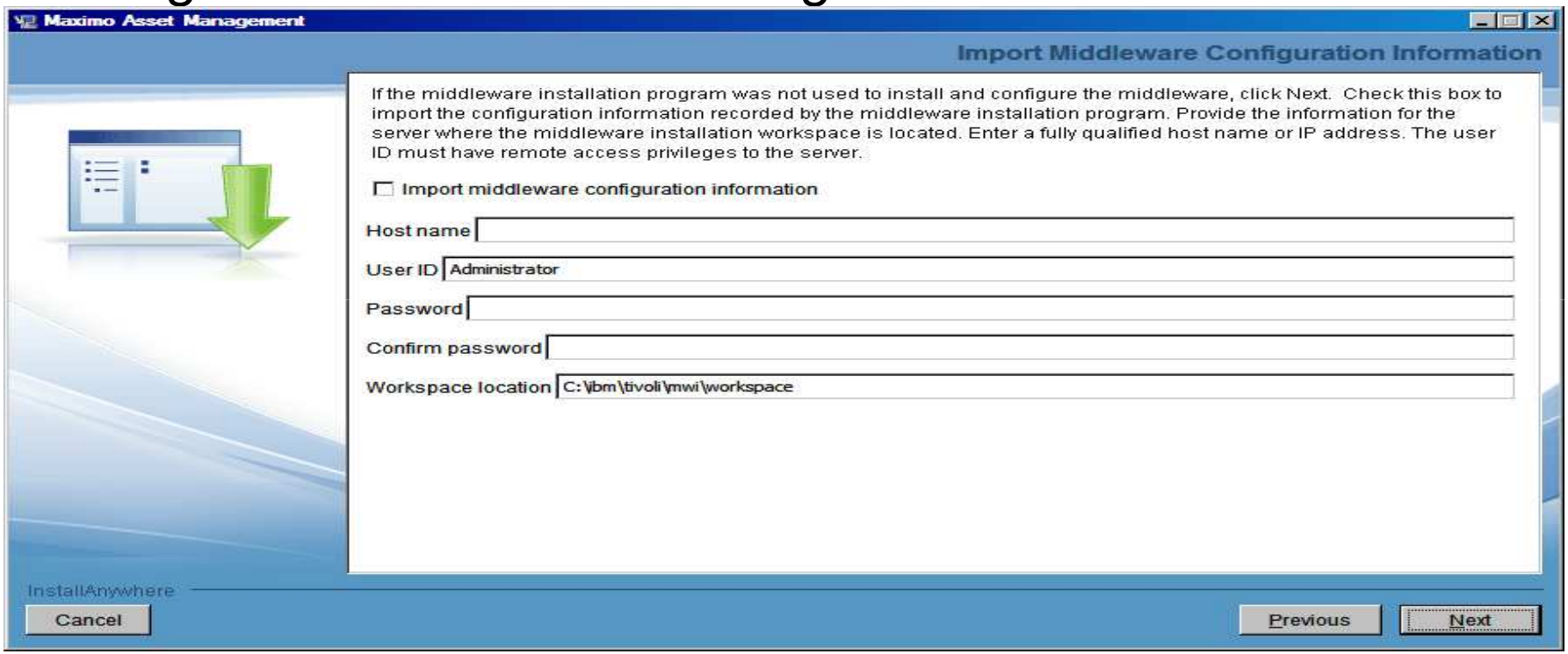
# Maximo Installation

- Follow through the screens to the Import Middleware Configuration Information dialog




  - Recommendation - Do not select Import middleware configuration information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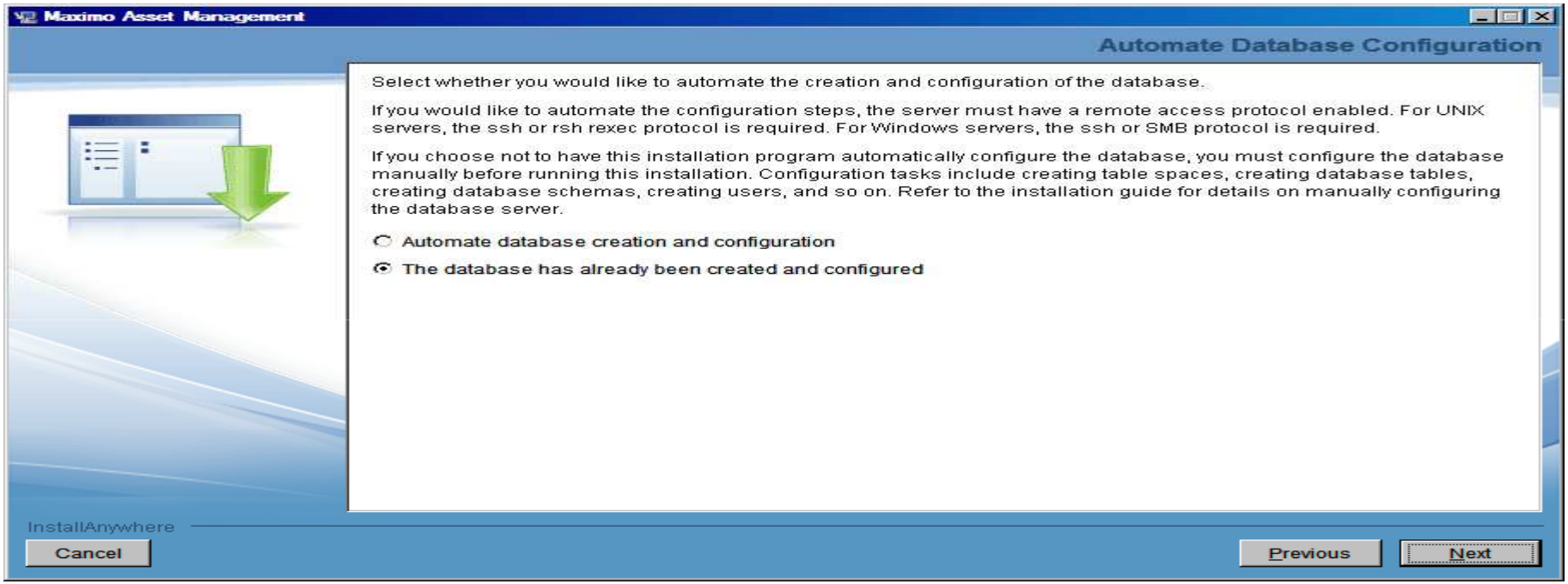
# Maximo Installation

- Follow through the screens filling in the correct data to the Automate Database Configuration Information dialog




- Select Automate database creation and configuration – If only the database was created
- Select The database has already been created and configured – If database, tablespaces, users, etc. were created
- Recommendation – Manually configure the database and select The database has already been created and configured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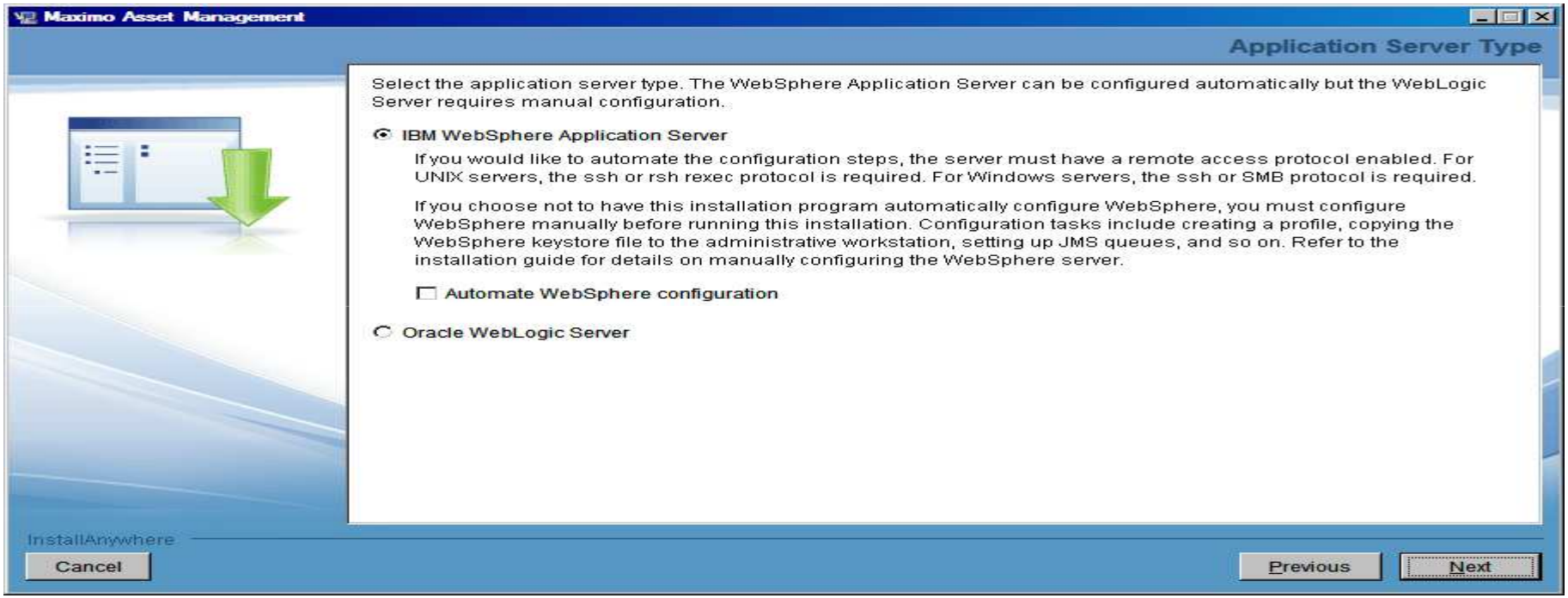
# Maximo Installation

- Follow through the screens filling in the correct data to the Application Server Type, if using WebSphere




- Select Automate – If MXServer and JMS Queues configuration has not been done
- Select Do not automate – If MXServer and JMS Queues configuration has manually been done
- Recommendation – Select Automate WebSphere configuration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# Maximo Installation

- Follow through the screens filling in the correct data to the Security dialog

- Select Use Maximo internal authentication (Configure Application Server Security after the installation)


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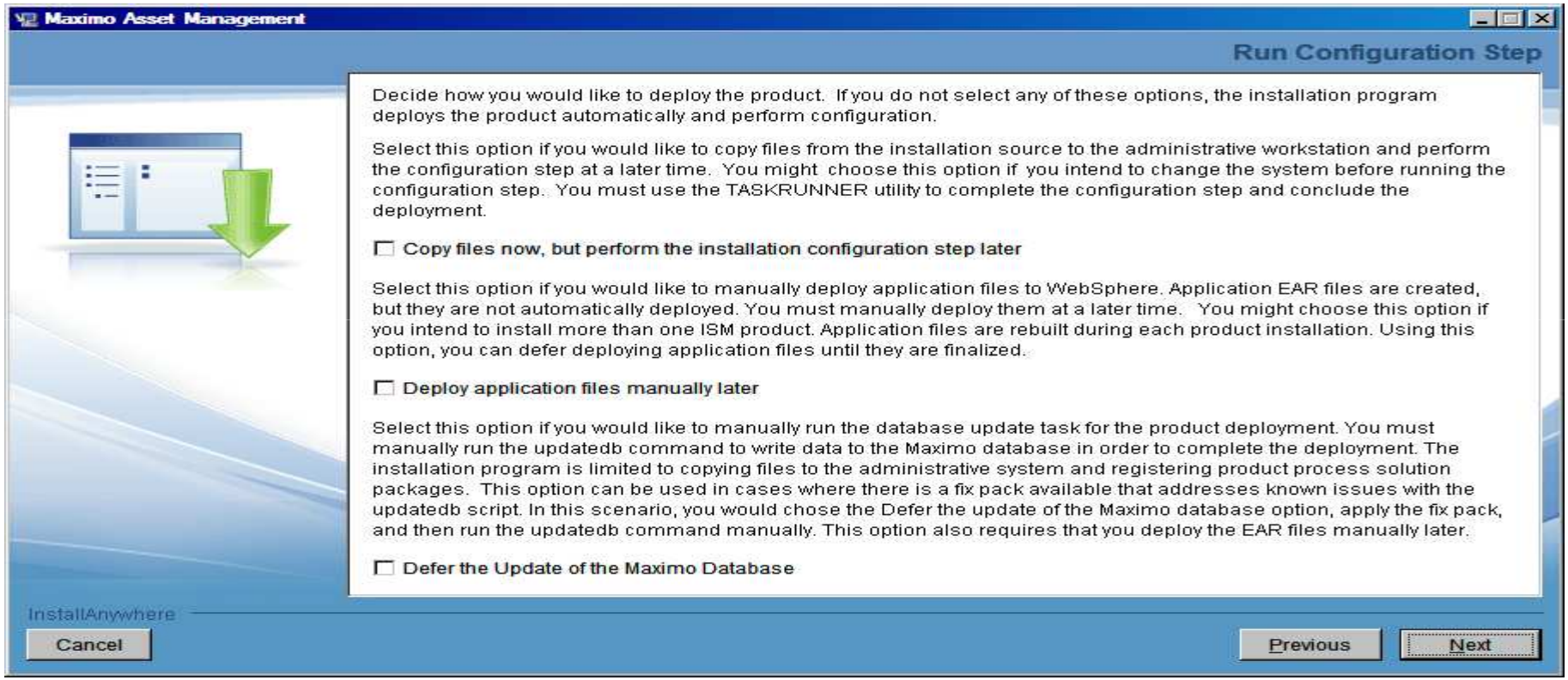
# Maximo Installation

- Follow through the screens filling in the correct data to the Run Configuration Step dialog




- Select Copy files now, but perform the installation configuration step later
- Select Deploy application files manually later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# A moment to talk about TaskRunner

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# TaskRunner

- Runs the configuration and creates the Maximo objects in the database

- From Command Prompt – ibm\smp\scripts (open with “Run as administrator”)
  – taskrunner.bat CONTINUE STOPONERROR

- Can restart and will start from last completed step


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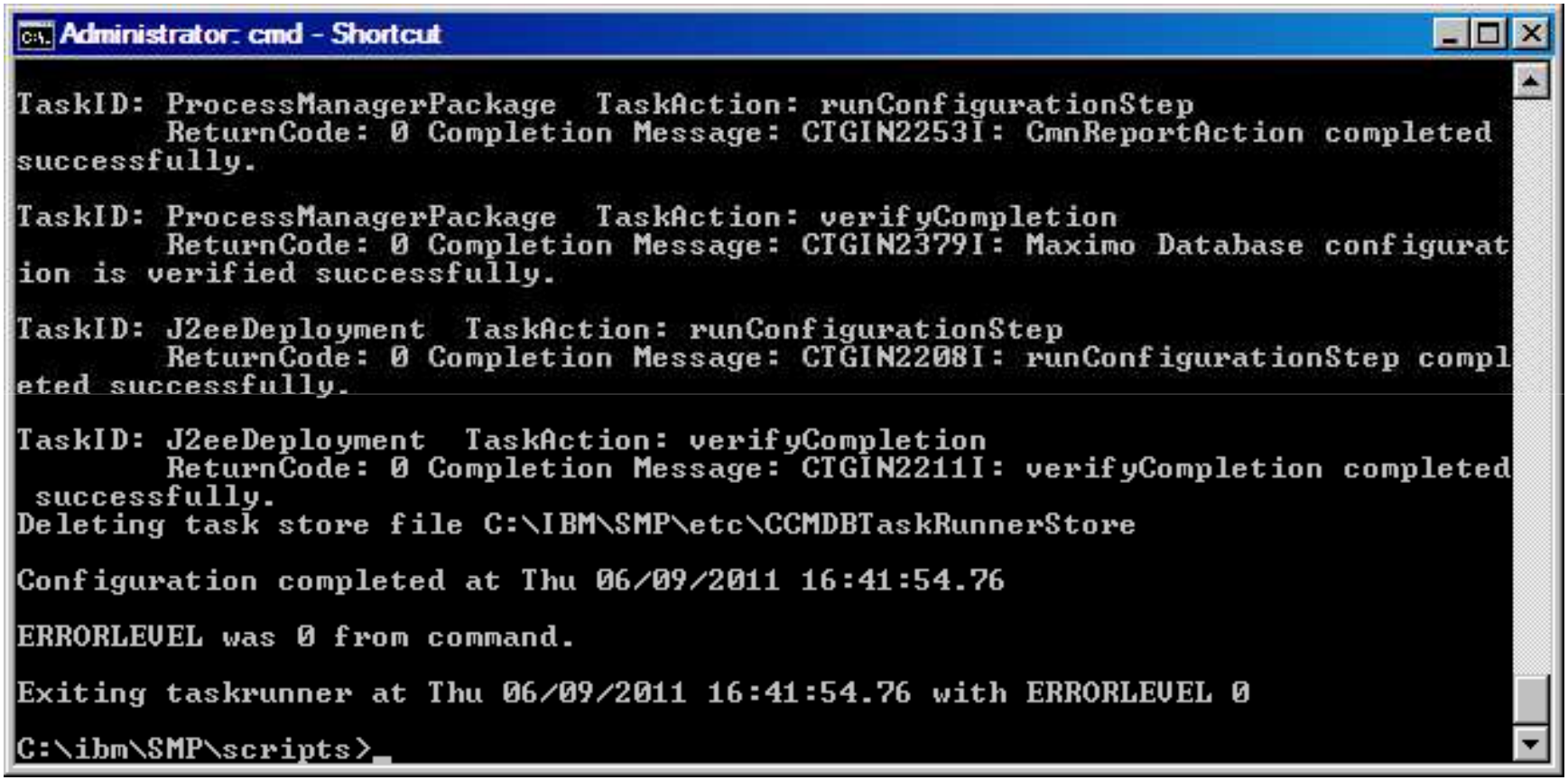
# TaskRunner





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# Build EAR Files

- From command prompt change to ibm\smp\maximo\deployment (open with “Run as administrator”)
  - Run buildmaximoear
  - Run buildmxiehsear


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# Deploy EAR Files

- Deploy EAR files (WebSphere)
  - Log into the WebSphere Integrated Solutions Console
  - Expand Applications
  - Expand Application Types
  - Click WebSphere enterprise applications
  - If the Maximo and MXIEHS applications are listed
    - o Select both and click Uninstall
  - Click Install
  - Browse to location of the EAR files (ibm\smp\maximo\deployment\default)
  - Click Next
  - Click Next
  - Click Next
  - Click Next
  - Select all modules and select MXServer and webserver1 and click Apply
  - Click Next


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# Deploy EAR Files

- Deploy EAR files (WebSphere)
  - Select the maximo_host virtual host for each module
  - Click Next
  - Click Finish
  - When EAR is deployed click Save to Master Configuration
  - Repeat deploy process for Maximo Help EAR


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# Deployment Engine

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# Deployment Engine

- Installed to c:\ibm\smp\ctg_de\acsi
- Backup/restore


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# Deployment Engine

- View contents of DE
  - Run Listiu
    - Command prompt change to Program files\ibm\smp\ctg_de\acsi
      - Run setenv
    - Change to bin folder
      - Run listiu


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# Deployment Engine

C:\ibm\SMP\CTG_DE\acsi\bin>listiu

IU UUID: DDCE934782398B3E81431666515AC8B5 Name: DE Extensions Interfaces CLI IU Version: 1.4.0.13

IU UUID: C37109911C8A11D98E1700061BDE7AEA Name: Deployment Engine IUVersion: 1.4.0.13

IU UUID: 39BC4EED169A46BCBABE2CF84E9B92F4 Name: MAM71_PACKAGE_IU Version: 7.5.0.0

IU UUID: 3D2FFFEAA4C34409A21320BD5593574A Name: MADT_Install_Files Version: 7.5.0

IU UUID: 443D6188FFFFBEEFBABEAB257CFFFFFF Name: CCMDB Log Trace Analyzer PM Language Support IU Version: 7.5.0.0

IU UUID: 0794CE26E761421987D484491844F7DF Name: LTA_WAR_Package_IU Version: 7.5.0.0

IU RootIU UUID: 167210CE0B3E47D395F906A9C939E9DB Name: MADT_RootIU Version: 7.5.0

IU RootIU UUID: 56CB9E49C593486BBE0B140FC9796034 Name: LTA_WAR_Package Version: 7.5.0.0

IU RootIU UUID: 70E41B7F4A204AB9B0131EB6E28E80AA Name: EAM711Package Version: 7.5.0.0

IU RootIU UUID: D94240D11C8B11D99F2D00061BDE7AEA Name: Install IU Version: 1.4.0.13

Feature (RootIU UUID: 56CB9E49C593486BBE0B140FC9796034 Name: Log Trace Analyzer PM Language Support Feature)Feature Name:Log Trace Analyzer PM Language Support Feature


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# Deployment Engine

- View contents of DE
  - Run Solutioninstaller
    - Command prompt change to ibm\smp\bin
      - Run solutioninstaller –action showinstalled –type all

C:\ibm\SMP\bin>solutioninstaller -action showinstalled -type all

CTGIN0055I: The process solution installation client received the following command: "-action showinstalled -type all ".

CTGIN0054I: The command is correctly formed and will be sent to the process solution installation service.

CTGIN0059I: There are currently "3" installed process solution element packages that matched the specified criteria.

| Name | Version | Solution Type | Package Type | Unique Identifier |
|---|---|---|---|---|
| Application Deployment Toolkit | 7.5.0 | Process Manager Product | Full Update | 167210CE0B3E47D395F906A9C939E9DB |
| Maximo Asset Management Package | 7.5.0.0 | Process Manager Product | Full Update | 70E41B7F4A204AB9B0131EB6E28E80AA |
| process automation engine Package | 7.5.0.0 | Process Manager Product | Full Update | 56CB9E49C593486BBE0B140FC9796034 |


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# Deployment Engine

- Backup DE
  - From command prompt change to c:\ibm\smp\ctg_de\acsi
  - Run setenv
  - Change to bin folder
  - Run backupdb <backupfile>
    - i.e. backupdb c:\ibm\smp\de_backups\maximo75


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# Deployment Engine

- Restore DE
  - From command prompt change to c:\ibm\smp\ctg_de\acsi
  - Run setenv
  - Change to bin folder
  - Run restoredb <backupfile>
    - i.e. restoredb c:\ibm\smp\de_backups\maximo75


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# Logs

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# Logs

- DE Runtime Trace Logs (Maximo Admin Machine)
  - C:\ibm\smp\ctg_de\acsi\logs\<userid>
    - de_trace.log
    - de_install.log
    - de_msg.log
- Install Trace Logs (Maximo Admin Machine)
  - ibm\smp\logs\CTGInstallTracenn.log
  - ibm\smp\logs\ CTGInstallMessagenn.log
  - ibm\smp\logs\ CTGSummarynn.log
  - ibm\smp\logs\ CTGErrornn.log
- WebSphere Server Trace Logs (WebSphere Machine)
  - ibm\websphere\appserver\profiles\<maximoprofile-name>\ logs\mxserver folder
    - SystemOut.log
    - SystemErr.log
    - Trace.log


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# Logs

- Maximo Logs (Maximo Admin Machine)
  - ibm\smp\maximo\tools\maximo\log
- Package-Specific Action Trace Logs (Maximo Admin Machine)
  - ibm\smp\solutions\logs\<package-name>
- LogZipper
  - Zips related log files
  - ibm\smp\scripts
- In temp folder during the installation before ibm\smp\logs folder created


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# Concerns

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# Concerns

- Multiple versions of installer
- Installer lays down a file with the build number
  - Build number in file build.name (ibm\smp\logs)
    - Build number 201104152149 – 7.5 GA level (April 2011 release)
    - Build number 201104151659 – 7.5 Refresh #1 level (May 2011)


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# Concerns

- Properties are stored in the Maximo database, and in ibm\smp\maximo\applications\maximo\properties\maximo.properties and ibm\smp\etc\install.properties
  - maximo.properties precedes database value
  - Product installations look at both properties files
  - Properties and values in the maxprop and maxpropvalues tables


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# Troubleshooting

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# Troubleshooting

- Gather the logs via logzipper
- Connectivity test tools
  - Remote connectivity – TestRXA
    - ibm\smp\scripts folder
    - Testrxa <hostname> <username> <password>
  - WebSphere connectivity – Thinwsadmin
    - Ibm\smp\wasclient folder
    - Thinwsadmin –username <username> -password <password>
    - Verify values in the thinwsadmin are correct for WebSphere environment
- Properties in maximo.properties, install.properties and maxpropvalues
  - Maximo.properties – ibm\smp\maximo\applications\maximo\properties
  - Install.properties – ibm\smp\etc
  - Maxpropvalues table


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# Troubleshooting

- Errors during the taskrunner process
  - Gather the logs via logzipper
  - Review the CTGSummary00.log and CTGError00.log in the ibm\smp\logs folder
  - The last error in the log may not be the issue.  Search up from that error
  - Ac.si errors are typically DE errors
  - Review the de_trace.log in the C:\ibm\smp\ctg_de\acsi\logs\<user> folder


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# Troubleshooting

- Errors during a solution install step during taskrunner
  - Review the solution logs in the ibm\smp\solutions\logs\<solution> folder
- Errors during update database step during taskrunner
  - Review the updatedb.log in the ibm\smp\maximo\tools\maximo\logs folder


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# Troubleshooting

- Once errors are addressed taskrunner can be started again
  - From command prompt change to ibm\smp\scripts
    - taskrunner CONTINUE STOPONERROR


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# Troubleshooting

- Summary
  - Review the solution installer and DE logs
  - Verify install related properties in the maximo.properties file, maxprop table, maxpropvalue table, and install.properties
  - Verify Deployment Engine status
  - LogZipper to send logs to IBM Maximo Support


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# Resources

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# Resources

- Maximo Info Center
  - http://publib.boulder.ibm.com/infocenter/tivihelp/v49r1/index.jsp?topic=/com.ibm.mam.doc/welcome.html
- Maximo 7.5 What's New
  - http://publib.boulder.ibm.com/infocenter/tivihelp/v49r1/index.jsp?topic=/com.ibm.mam.doc/overview/whatsnewmam75.html
- System Requirements
  - http://www.ibm.com/developerworks/wikis/display/maximo/System+Requirements+for+Version+7.5+Maximo+Products
- Maximo 7.5 Packaging
  - https://www-304.ibm.com/support/docview.wss?uid=swg21498420
- Maximo Asset Management 7.5
  - https://www-304.ibm.com/support/docview.wss?uid=swg24029458
- Configuration Maxtrix
  - https://www-304.ibm.com/support/docview.wss?uid=swg27014419


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# Resources

- WebSphere Settings
  - https://www-304.ibm.com/support/docview.wss?uid=swg21498645
- Pre-Req Checker
  - https://www-304.ibm.com/support/docview.wss?uid=swg21498097
- process automation engine wiki
  - https://www.ibm.com/developerworks/wikis/display/tivolispa/Home
- Performance Best Practices White Paper
  - https://www-304.ibm.com/support/docview.wss?uid=swg21440192
- Windows 2008 command prompt
  - https://www-304.ibm.com/support/docview.wss?uid=swg21458965
- Installation of Maximo 7.x on Windows 2008
  - https://www-304.ibm.com/support/docview.wss?uid=swg21502398
- Multiple Environments on one Administrative Machine
  - https://www-304.ibm.com/support/docview.wss?uid=swg21498585


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# Q&A

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# Questions


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