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Maximo 6.2 to 7.5 Upgrade

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Agenda

- Architecture
- Maximo 7.5 Overview
- What's New
- Requirements
- Planning
- Process
- Notes
- Resources

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Architecture

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Architecture

- Application Server
  - WebSphere Application Server 7.0, 8.0
  - 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, Microsoft SQL Server 2012
  - DB2 Enterprise Server Edition 9.5.0.7 and future fix packs, DB2 Enterprise Server Edition 9.7.0.3 and future fix packs, IBM DB2 9.8 pureScale, IBM DB2 10.1 Workgroup and ESE
- 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 7,8,9
  - Firefox 3.6, 4.0, 10.0
- Java
  - Java version 1.6.0 SR8 FP1, 1.7

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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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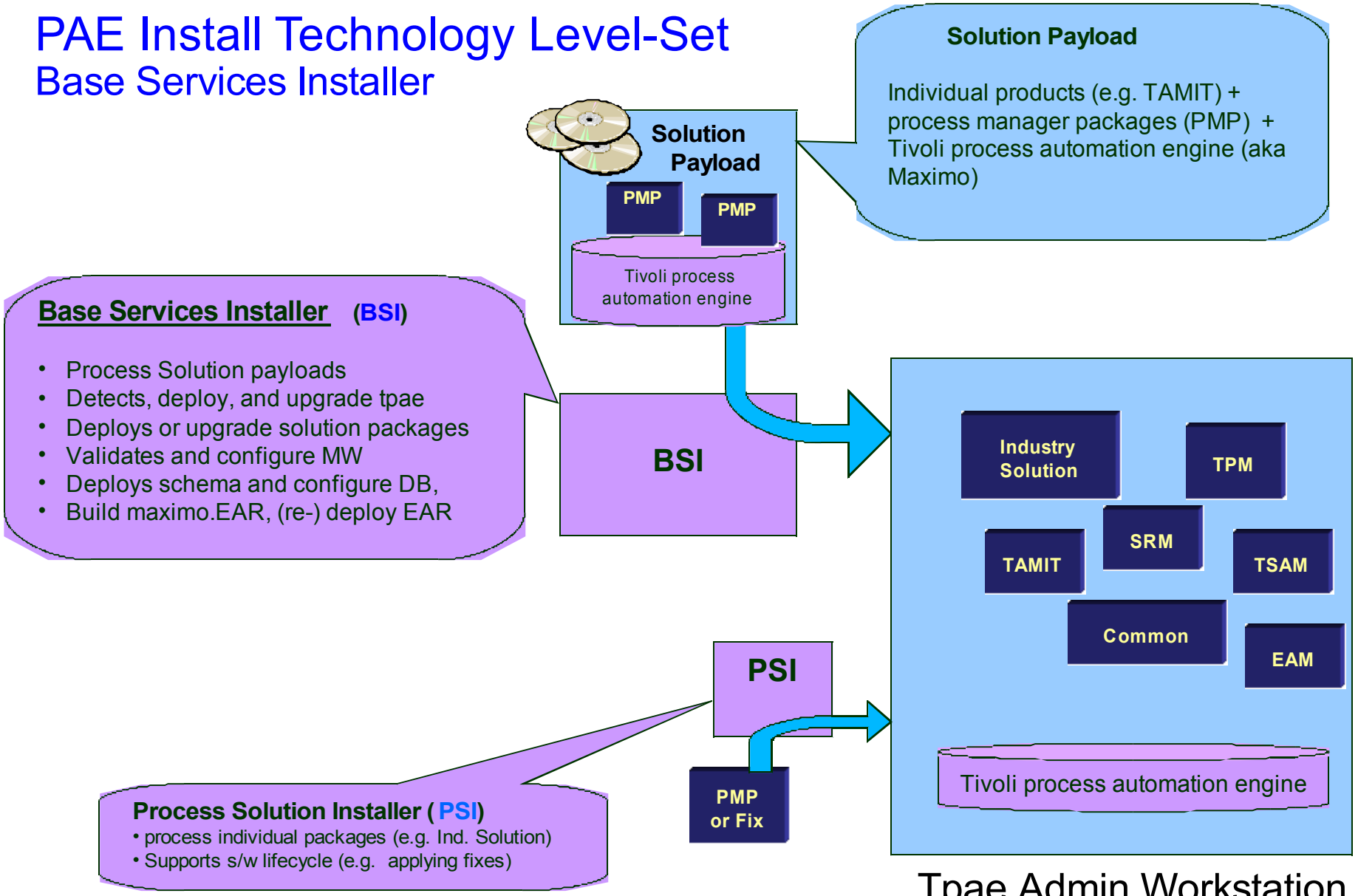
PAE Install Technology Level-Set

Base Services Installer



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What's New

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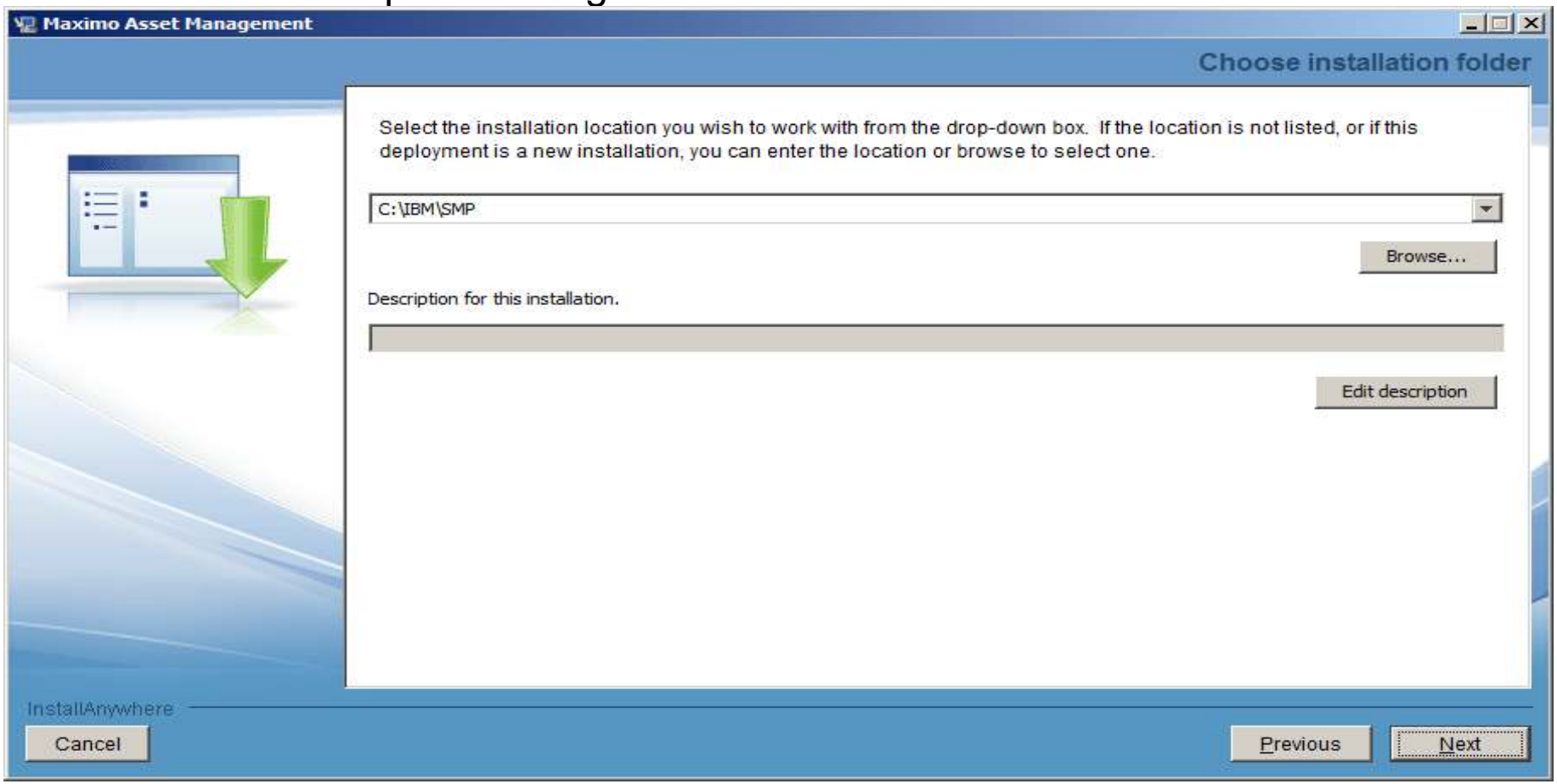
What's New

- 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

- 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

- 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

- Benefits
  - Architecture
    - Eclipse Business Intelligence and Reporting Tool (BIRT)
    - Reduces install complexity and platform dependencies
    - Based on Java
    - Increases growth and flexibility
  - Implementation
    - Base Platform for many products - MAM, SCCD, TSAM, Industry Solutions and add-ons, PMP's More to come
    - Market-driven functionality, Linear Assets, Classifications, WO
    - Migration Manager
    - Conditional UI
    - Base Platform for bolt-on products – MEO, Visual Scheduler, Archiving, Monitoring

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Requirements

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Requirements

Maximo Upgrade
4.1.1 P+
4.1.1 to 5.1.0
5.1.0/5.1P5/5.2P5+/6.0/6.1 to 6.2.8+HF to 7.1.1.11
7.1.1.11 to 7.5.0.4

(+ = latest)

Maximo Upgrade	Oracle		DB2
4.1.1 to 5.1.0	9.2.0.8	2000 SP4	-
5.1.0/5.1P5/5.2P5+/6.0/6.1 to 6.2.x	9.2.0.8	2000 SP4	-
6.2.x to 7.1.x	9.2.0.8, 10.1, 10.2	2000 SP4, 2005 SP2	8.2.7, 9.1.4
***BS 7.1.1.5+*	9.2.0.8, 10.1, 10.2, 11	2005 SP2, 2008	8.2.7, 9.1.4, 9.5
***BS 7.5*	10.2.0.4, 11g	2008	9.5.0.7

** Maximo version 7 is also called Base Services (BS) version 7

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Requirements

- Upgrade paths

- Note:
  - Current path
    - 7.1.1.11 to 7.5.0.4

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Requirements

- Maximo 6.2 to 7.1
  - Maximo 6.2, please note that Maximo 6.2.8 is the prerequisite/minimum version and patch you need to have applied prior to upgrading to 7.1. To upgrade from 6.2 to 7.1, you will follow this process:
    - Apply Maximo 6.2.8 Fix Pack
    - Install 7.1 which includes the 6-7 upgrade program
    - Apply Maximo Base Services 7.1.1.11 Fix Pack
    - Upgrade v6 to 7.1.1.11

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Requirements

- Maximo 6.0/6.1 to 7.1
  - Maximo 6.0 or 6.1, please note that Maximo 6.2.8 is the prerequisite/minimum version and patch you need to have applied prior to upgrading to 7.1. To upgrade from 6.0/6.1 to 7.1, you will follow this process:

    - Install the 6.5.1.1 Upgrade Utilities
    - Install (unzip) the Maximo Upgrade 6.5.1.1 latest hot fix
    - Apply Maximo 6.2.8 Fix Pack
    - Install 7.1 which includes the 6-7 upgrade program
    - Apply Maximo Base Services 7.1.1.11 Fix Pack
    - Upgrade v6 to 7.1.1.11

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Requirements

- Maximo 5 to 7.1
  - Maximo 5.0, 5.1 or 5.2 Patch 04 (or lower), please note that 5.1 Patch 05 or 5.2 Patch 05 is the prerequisite/minimum version and patch you need to have applied prior to upgrading to 7.1. Many Maximo 5 customers can benefit from alternative upgrade options and are urged to contact their IBM Business Solutions Manager to discuss their specific upgrade options. To upgrade from v5 to 7.1, you will follow this process:

    - If Maximo 5.0, upgrade to 5.1.0 and run 5-6 Upgrade utilities
    - If Maximo 5.1.0, run 5-6 Upgrade utilities
    - If Maximo 5.1 Patch 01-Patch 04, upgrade to 5.1 Patch 05 and run Upgrade utilites
    - If 5.2 Patch 04 or lower, apply 5.2 Patch 09 (5.2.9.1)
    - If 5.2 Patch 05 or higher, run 5-6 Upgrade utilities
    - Install the 6.5.1.1 Upgrade Utilities
    - Install (unzip) the Maximo Upgrade 6.5.1.1 latest hot fix
    - Apply Maximo 6.2.8 Fix Pack
    - Using the 5-6 upgrade utility, version 6.5.1.1, upgrade Maximo v5 to v6
    - Install 7.1 which includes the 6-7 upgrade program
    - Apply Maximo Base Services 7.1.1.11 Fix Pack
    - Upgrade v6.2.8 to 7.1.1.11

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Requirements

- Maximo 4.1.1 to 7.1
  - If at a lower version/patch level than 4.1.1, note that 4.1.1 Patch 08 is the prerequisite/minimum version and patch you need to have applied prior to upgrading to 7.1. Many Maximo 3 and 4 customers can benefit from alternative upgrade options and are urged to contact their IBM Business Solutions Manager to discuss their specific upgrade options. To upgrade from 4.1.1 to 7.1, you will follow this process:

    - Minimum requirement is Maximo 4.1.1 Patch 08
    - Utilizing the 4-5 upgrade utilities, upgrade 4.1.1 to 5.1.0
    - Install the 6.5.1.1 Upgrade Utilities
    - Install (unzip) the Maximo Upgrade 6.5.1.1 latest hot fix
    - Apply Maximo 6.2.8 Fix Pack
    - Using the 5-6 upgrade utility, version 6.5.1.1, upgrade Maximo v5 to v6
    - Install 7.1 which includes the 6-7 upgrade program
    - Apply Maximo Base Services 7.1.1.11 Fix Pack
    - Upgrade 6.2.8 to 7.1.1.11

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Planning

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Planning

- Data Size and Archiving
- Integration Points
- Customizations
- Time Requirements
  - Deadline for Go Live
  - Downtime Restrictions
- Technological / Reporting Requirements
- User Training

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Planning

- Data Size and Archive
  - More Data = Longer Upgrade
  - Optim Solution for 6, 7 & 7.5
  - Improves App Performance
  - Mitigates Certain Risks

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Planning

- Integration Points
  - Identify Integration Points in Existing System
  - Evaluate each integration to determine requirement
  - Document change requirements from existing to new

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Planning

- Customizations
  - Java Class Extensions
  - Custom Workflow
  - Code or content added

- Customization work is work done outside the configuration framework provided with the product
- Evaluate new product functionality to determine if it now addresses the custom requirement.

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Planning

- Time Requirements
  - When do you need to be on the new release?
  - How long does the database upgrade take?
  - How long will it take to upgrade integrations?
  - How long will it take to upgrade customizations?
  - How long will reports take?

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Planning

- Technology Changes
  - Hardware
    - 64 bit Hardware and OS
    - 4GB physical memory per JVM
    - 1 Processor core per JVM
    - Maximum 75 active users per JVM
    - Separated/dedicated Cron, Integration, and Report JVMs
  - Middleware (minimum versions)
    - WebSphere 7 / WebLogic 11g
    - Oracle 10.2.0.4
    - DB2 9.5.0.4
    - SQL Server 2008

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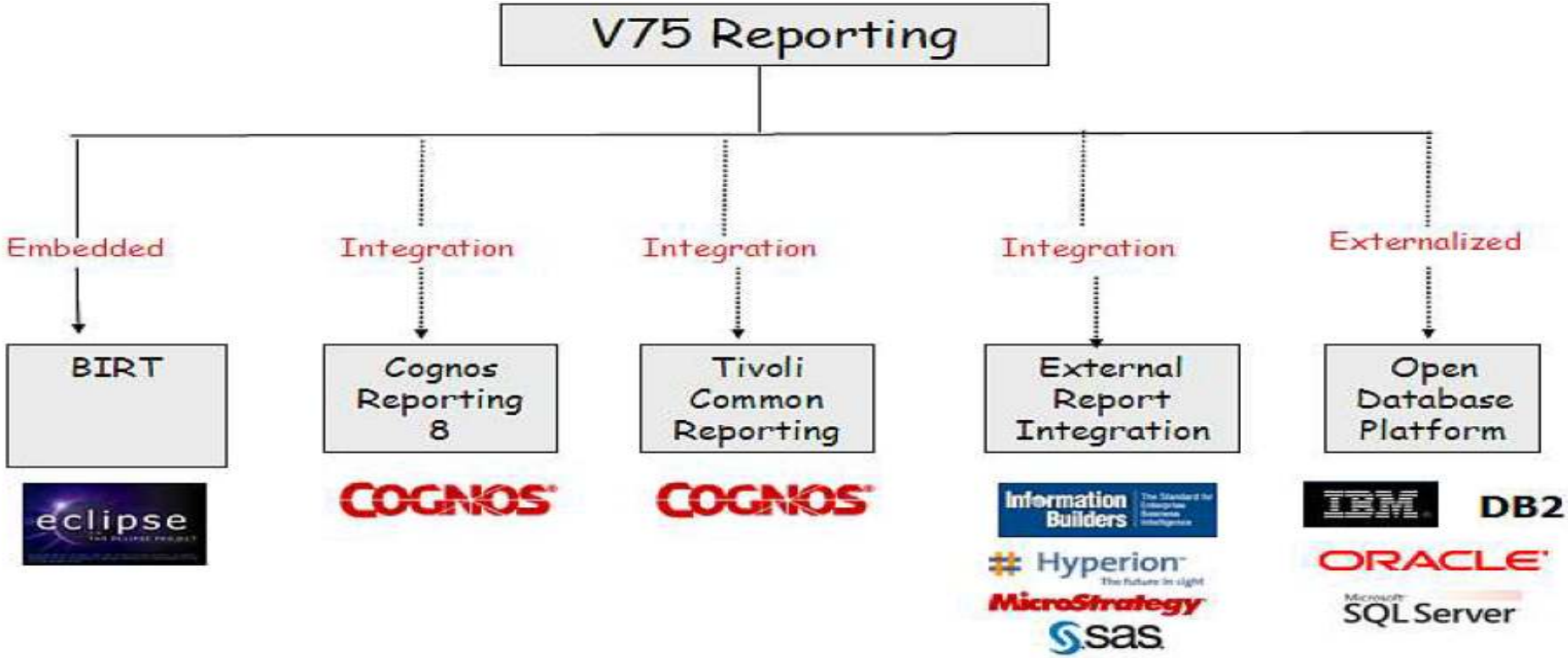
Planning

- Reporting Requirements
  - Reporting Server Changes
    - No Actuate Integration
    - No Crystal Integration



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Planning

- User Training
  - Administrative Users
  - TPAE, Security, Crons, Escalation, Workflow, Performance Monitoring & Tuning
  - General Users
  - Reporting
  - Focus Group Users
    - Call Centers
    - Accounting
    - Management

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Process

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Process Overview

- Overview
  - Apply Maximo 6.2.8 fix pack
  - Complete Maximo 7.1 pre-upgrade tasks
  - Install Maximo 7.1
  - Apply Maximo Base Services fix pack 7.1.1.11
  - Run industry solution and/or add-on installation programs
  - Apply industry solution and/or add-on fix packs
  - Run Maximo 7.1.1.11 upgrade utilities
  - Complete Maximo 7.5 pre-upgrade tasks
  - Run the Maximo 7.5 product installation program to upgrade from 7.1 to 7.5
    - Point to 7.1.1.11 folder
    - Defer database update and application deployment
  - Apply Maximo 7.5.0.4 fix pack
  - Run industry solution and/or add-on installation programs
  - Apply industry solution and/or add-on fix packs
  - Run the product installation program to perform database update operations
  - Complete post-upgrade tasks

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Process

- Maximo 6 – 7.1 Upgrade
  - From the Maximo 7.1.1.11 folders run
    - Upgradeui Utility
      - Integrity Checker – report and repair mode, source meta-data integrity
      - Validation – source versus target meta-data integrity
      - Upgrade – transforms database to version 7 structure
    - Updatedb
      - Transforms database to 7.1.1.11 fix pack
  - Note: Integrity Checker
    - You may be asked to run Database Configuration for your database:
      - Only run the Database Configuration from Maximo 6.2.8

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Process

- Maximo 6 – 7.1 Upgrade
  - Add new tables and columns, using Metadoc
  - Process Callouts for tables, logically sequenced
  - Delete obsolete tables and columns, using Metadoc
  - Metadoc defines database differences
  - Industry Solutions create Metadocs and Callouts
  - Industry Solutions recognized by maxvars

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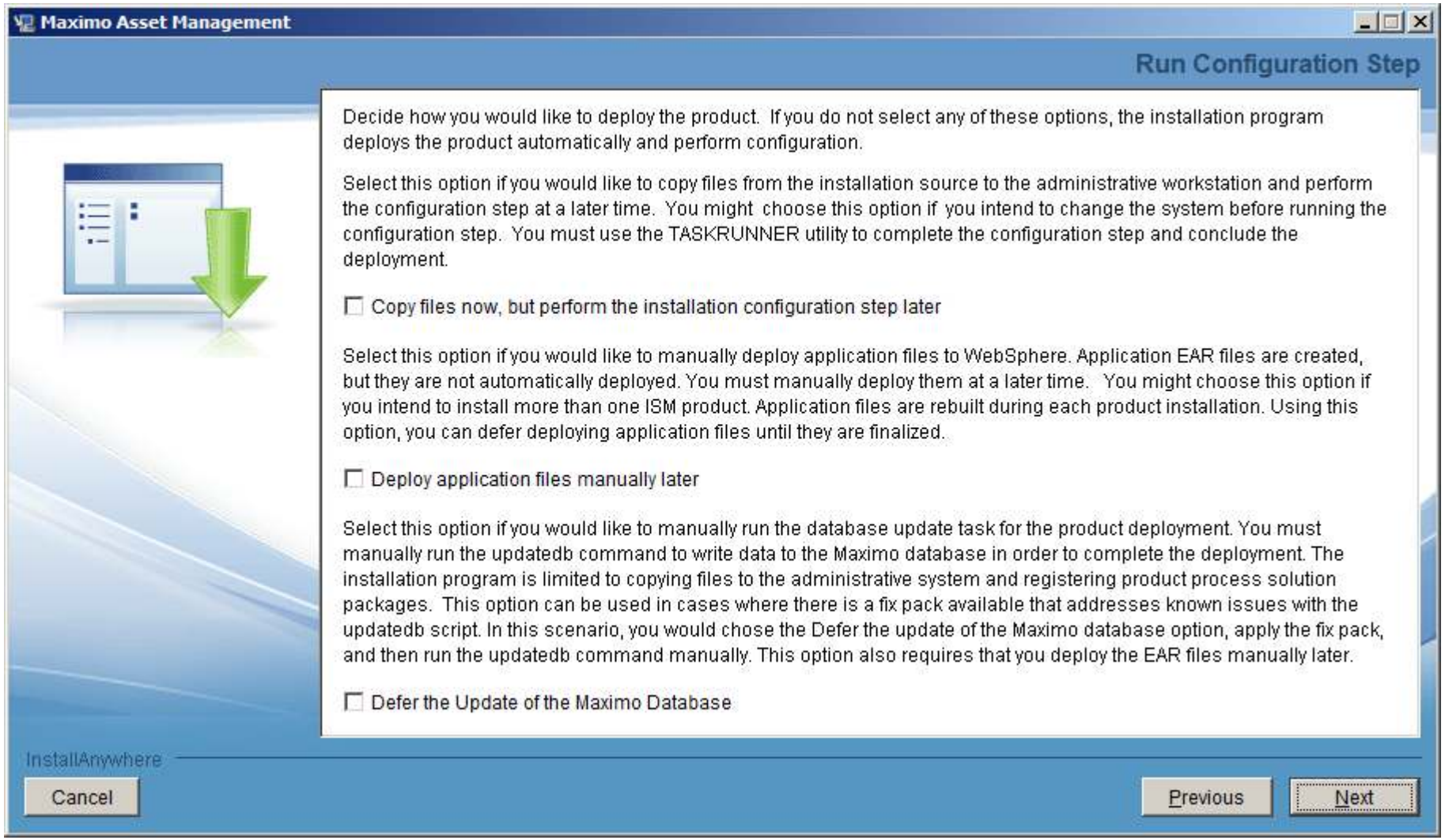
Process – Maximo 7.5 Installation



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Process

- Maximo 7.1.1.11 – 7.5.0.4 Upgrade
  - Database is upgraded via updatedb utility invoked automatically by the installer
    - Only after ALL products are installed at 7.5 level
    - Option is available to have it done only after admin workstation is upgraded (defer updatedb)
  - If not automated by the installer, you must run the following manually
    - Updatedb
    - If languages other than English are deployed: run Tdtoolkit for each PMP installed
    - Build and deploy the EAR file(s)

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Process

- Maximo 7.1.1.11 – 7.5.0.4 Upgrade
  - Validate integrity of current Maximo 7.1 database
    - Run Maximo 7.1 Integrity Checker and fix all errors
  - If required, upgrade/install middleware components and Operating Systems
    - Patch or upgrade Operating System
    - Upgrade database server
    - Upgrade LDAP/directory server
    - Upgrade WebLogic
    - Deploy WebSphere v7
      - Install a fresh instance of WebSphere v7
      - Use WebSphere v7 migration tool to migrate existing WebSphere 6.1 configuration
      - If manual WebSphere configuration, apply recommended performance settings

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Process

- Upgrade Maximo 7.1 to 7.5
  - Maximo folder is renamed to pre_75_maximo
  - If just Maximo is deployed:
    - the upgrade, updatedb, and EAR deployment can be done automatically during the installation at one time
  - If multiple products and/or customizations:
    - defer database update and application deployment
  - Install add-ons and/or Industry Solutions
- Migrate customizations
- Launch 7.5 install and select database update and application deployment
- Validate integrity of Maximo 7.5 database
  - Run Maximo 7.5 Integrity Checker

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Process

- Maximo 7.1.1.11 – 7.5.0.4 Upgrade
  - Product upgrade can be done as 2 ‘manual’ steps
    - Apply the 7.5 files on the administrative workstation
    - Manually run updatedb, tdtoolkit, and build and deploy the EAR files
- Note: In a multi product installation, 7.5 version of all products must be installed first. Only after all products are at 7.5, then updatedb and EAR deployment can be invoked by the 7.5 installer

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Process

- Maximo 7.1.1.11 – 7.5.0.4 Upgrade
  - Run install validation
  - Review upgraded screens
  - Review custom table domains and crossover domains
  - Regenerate request pages for reports
  - Update database statistics

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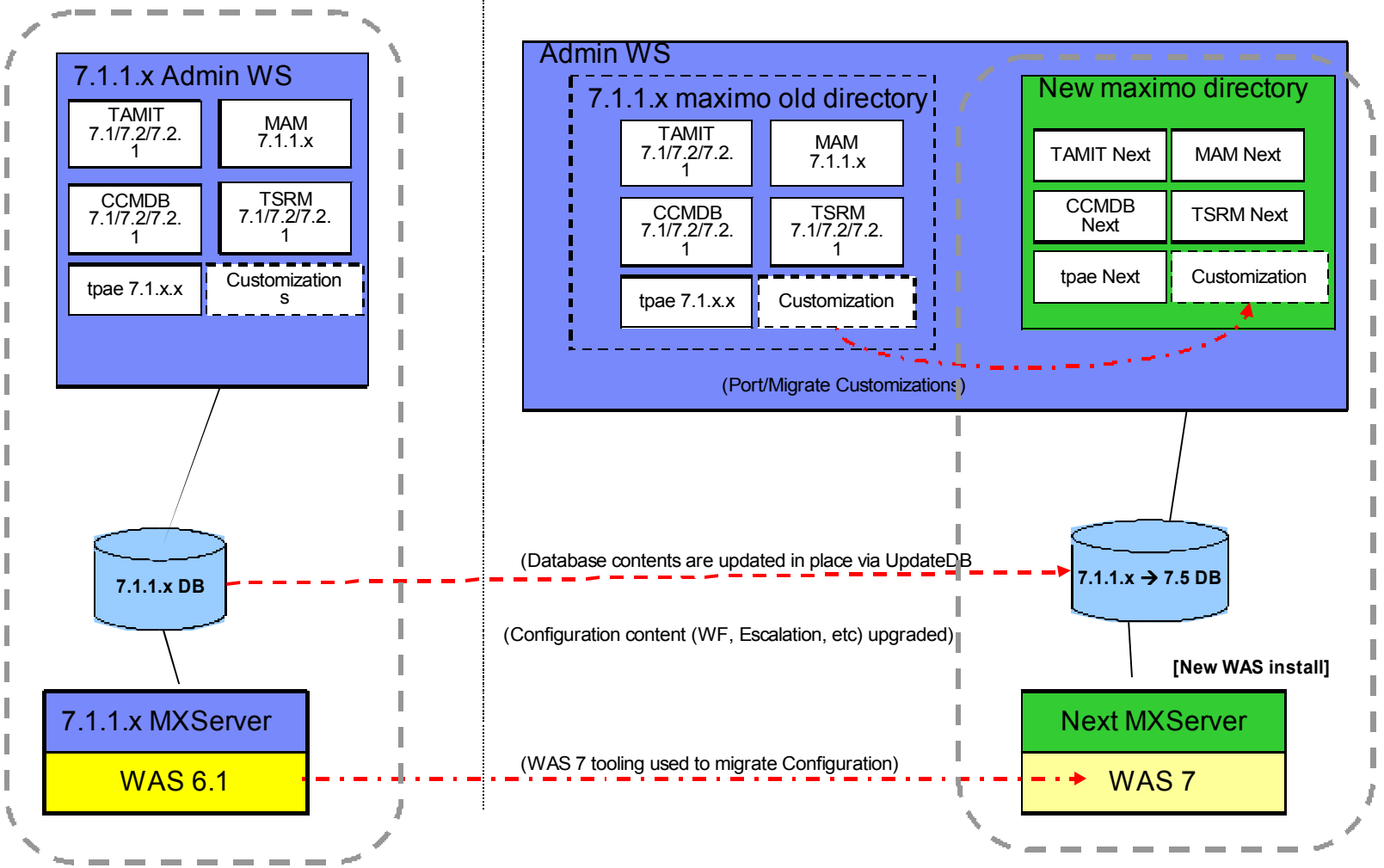
Process

Prior to Upgrade

Post Upgrade



New installation of WAS 7 can be collocated on the same system as WAS6.1 or on a separate system

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Process Notes

- Supported by upgrade
  - All data
  - Any configurations done with the Maximo configuration tools
  - Data model
  - User interface and presentation layer
  - Workflow processes
  - Data validations and defaults
  - Integration definitions
  - Escalations
- Not supported by upgrade
  - Database schema or objects changed outside of Maximo database configuration
  - Database objects created (i.e. stored procedures, triggers, views, synonyms)
  - Custom extensions of Maximo code
  - Moving from one database platform to another

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Notes

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Notes

- End of Support of Maximo 6.2.x is September 2013
- Must be at 7.1.1.11 to upgrade to 7.5.0.4
- Will be 2 release streams
  - 7.1.1.12 Fix Pack
  - 7.5.0.5 Fix Pack
- All products must be at 7.5
  - Cannot upgrade one product to 7.5 and others at 7
- Maximo 7.5 upgrade - No upgrade utilities like in previous upgrades
  - No upgradeui
  - No 7.5 Integrity Checker success before upgrading
  - No Validation success before upgrading
  - No upgrade program
- Maximo 7.5 upgrade - Database upgrade done via updatedb

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Notes

- During Maximo 7.5 installation validation of install location
  - Information that upgrade will be performed when it sees an existing Maximo 7 in specified location
- During Maximo 7.5 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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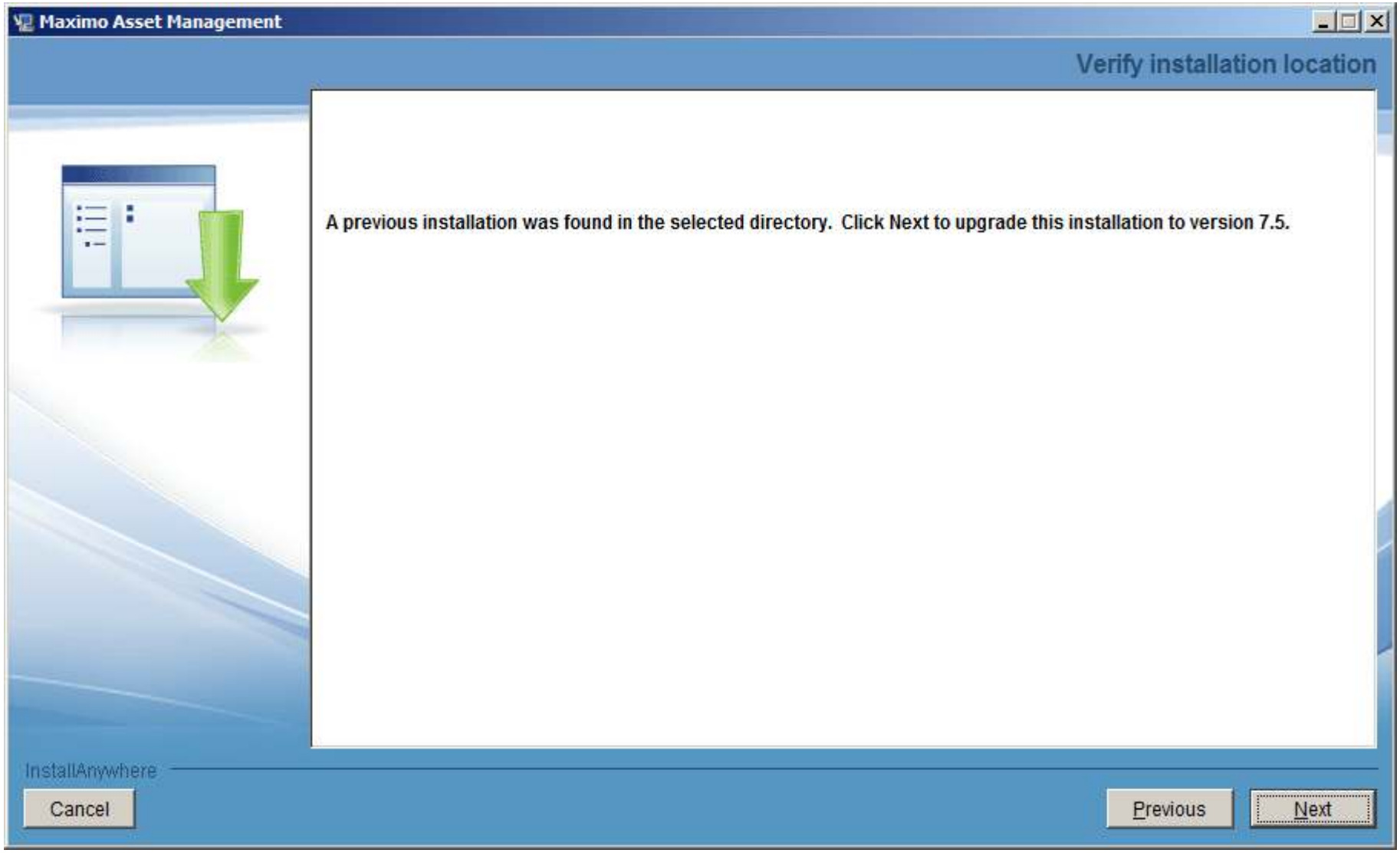
Notes



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Notes

- Perform upgrade is a test environment first
- Backup the database many times during the process
- Disable custom triggers
- If you have Mobile, delete user data

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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
- Upgrade Resources
  - https://www-304.ibm.com/support/docview.wss?uid=swg21266217
- Upgrade Frequently Asked Questions
  - https://www-304.ibm.com/support/docview.wss?uid=swg21368150
- Upgrade Requirements Matrix
  - https://www-304.ibm.com/support/docview.wss?uid=swg21440174

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Resources

- Enterprise Adapter Upgrade Considerations
  - https://www-304.ibm.com/support/docview.wss?q1=upgrade&rs=3214&uid=swg21306367&context=SSLKT6&cs=utf-8&lang=en&loc=en_US
- WebSphere Settings
  - https://www-304.ibm.com/support/docview.wss?uid=swg21498645
- Maximo 7.5 Packaging
  - https://www-304.ibm.com/support/docview.wss?uid=swg21498420
- Configuration Maxtrix
  - https://www-304.ibm.com/support/docview.wss?uid=swg27014419
- 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

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