IBM Software Group – Tivoli Software

tpae Common Installer 7.5

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- Installation technology - level set
- Enhancements shipped in the previous releases
- tpae 7.5 install contents
- tpae 7.5 upgrade

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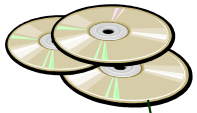
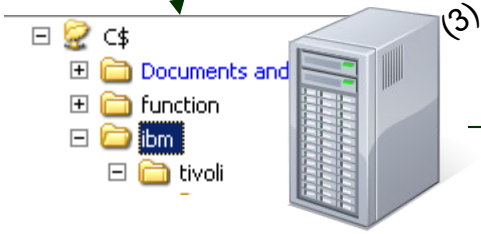
Anatomy of tpae environment for Install

(1) Product Installation Package



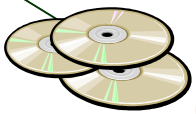


(3) Build EAR

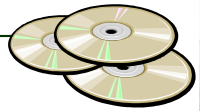
(4) Deploy EAR

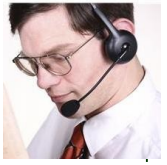
(2) Instantiate & Deploy Schema

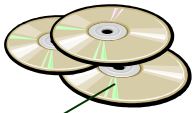
WAS, IHS, ESS, etc



ITDS







DBMS

tpae Admin Workstation

RUNTIME

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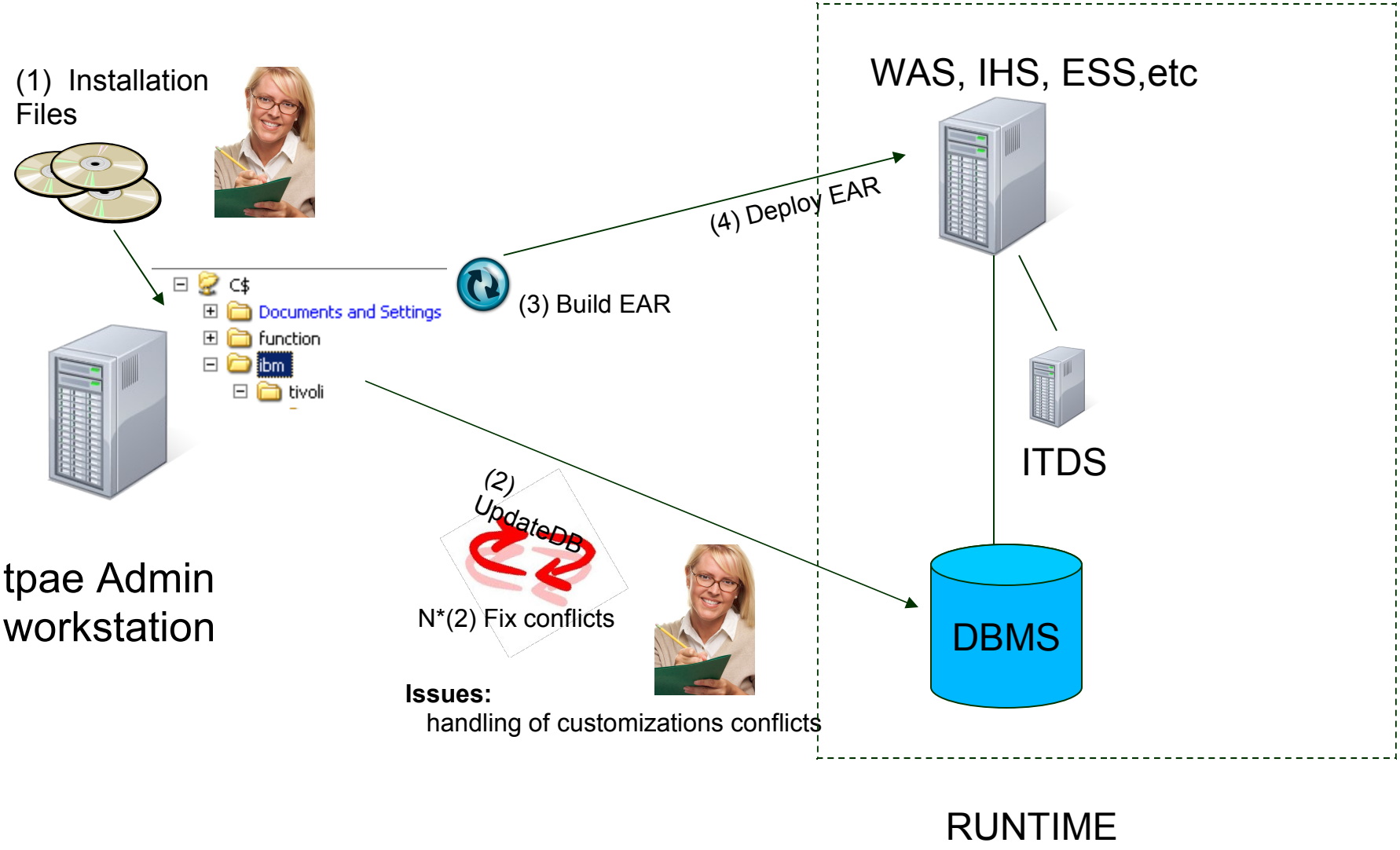
Anatomy of tpae Environment for Update



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tpae Installer

Background

- Tivoli process automation engine – tpae - (aka Maximo) used as a shared component by multiple product offerings
  - EAM, TAMIT, SRM, CCMDB, TPM, TSAM
- Product deployments that are based on tpae containing other reusable components
  - E.g. Service Provider packages, Data Integration Services (DIS), UIWidgets, etc

tpae Installer

- Tooling to package, install and maintain the infrastructure required for products based on the Tivoli process automation engine :
  - IBM Middleware installation and configuration
    - MWI: MiddleWare Installer
  - (maximo) Administrative station install, configuration and maintenance
    - BSI: Base Services Installer
- Delivers a common mechanism to install and configure tpae that can be used across multiple product packaging, and in a multi-product deployment of tpae
- Validate and cross check of dependencies and compatibility of sub-components
- First version of installers available with 7.1 deliveries

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Common Middleware Installer (MWI) for tpae 7.5

Database Server

- DB2 9.7 + FixPack.3a

LDAP Server

- ITDS 6.3
- DB2 9.7 + FixPack 3a
- GSKit 8.0.13.1

J2EE Server

- WAS-ND 7.0. + FP13
- IHS 7.0. + FP13
- WAS plug-in for IHS 7.0. + FP13
- ESS 6.2.1
- Security configured through VMM

Note: specific levels of middleware images are subject to change before GA of the products

Deployments can combine servers as needed for small-scale, POC or demo

- Wizard-based automation installer for IBM middleware products
- validates environment and deploys the tpae required infrastructure
- includes all components and the minimum fix level of middleware required by tpae
- Performs base middleware configuration and minimum setup needed for the deployment of tpae

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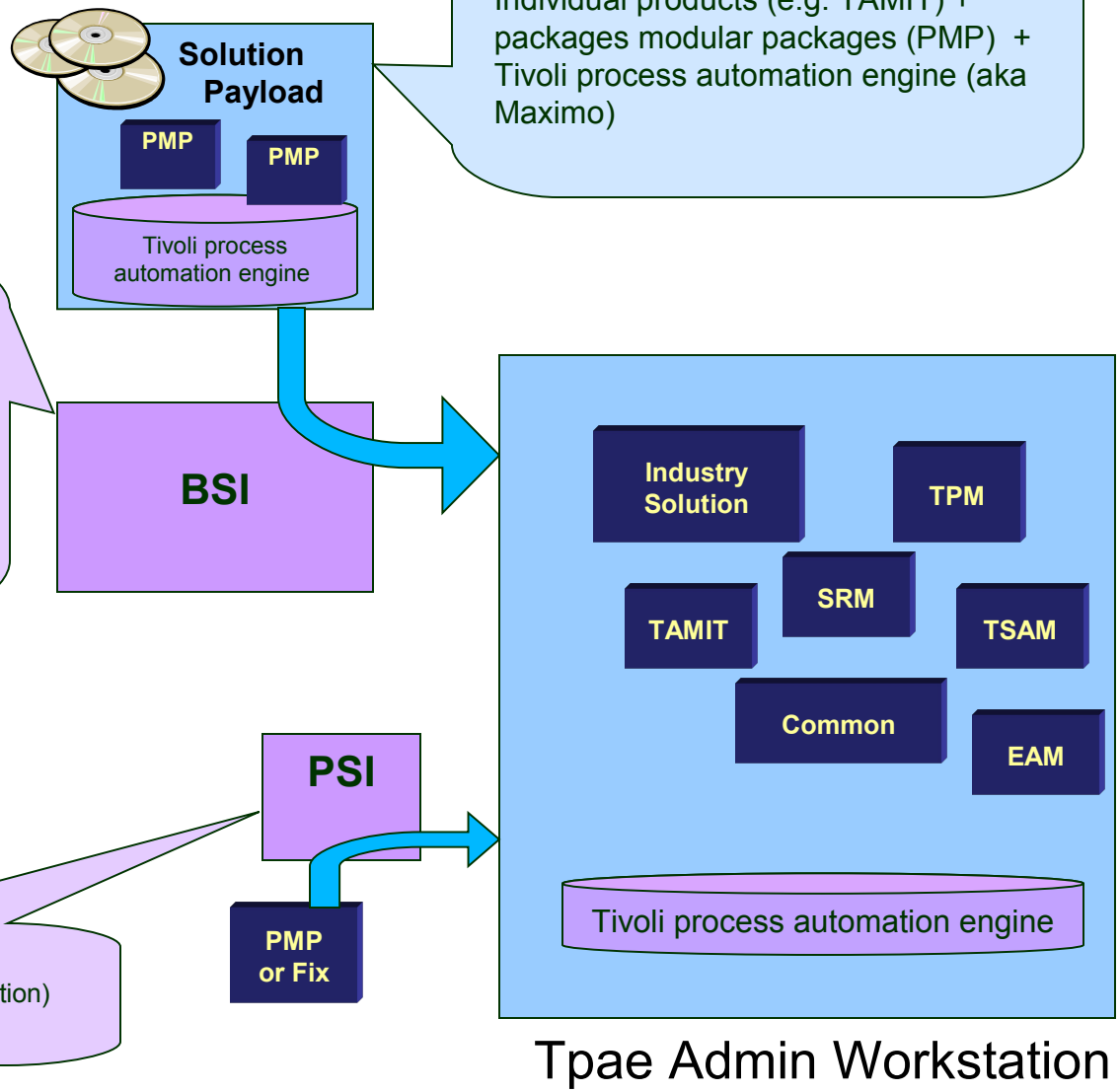
tpae Install Technology Level-Set
Base Services Installer



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tpae 7.5: The Deployment Process

1. Prepare systems
   HW and SW for the adm station and mgmt server
2. Perform environment setup validation (= prereq check)
3. Install middleware (DB2, ITDS, IHS, WAS)
4. Install, configure and deploy product
   Install Tivoli Process Automation Engine (TPAE) and specific product components
5. Perform post install product steps and additional environment configuration
6. Perform configuration of the product

Automated by tpae common installer

Using MWI, BSI

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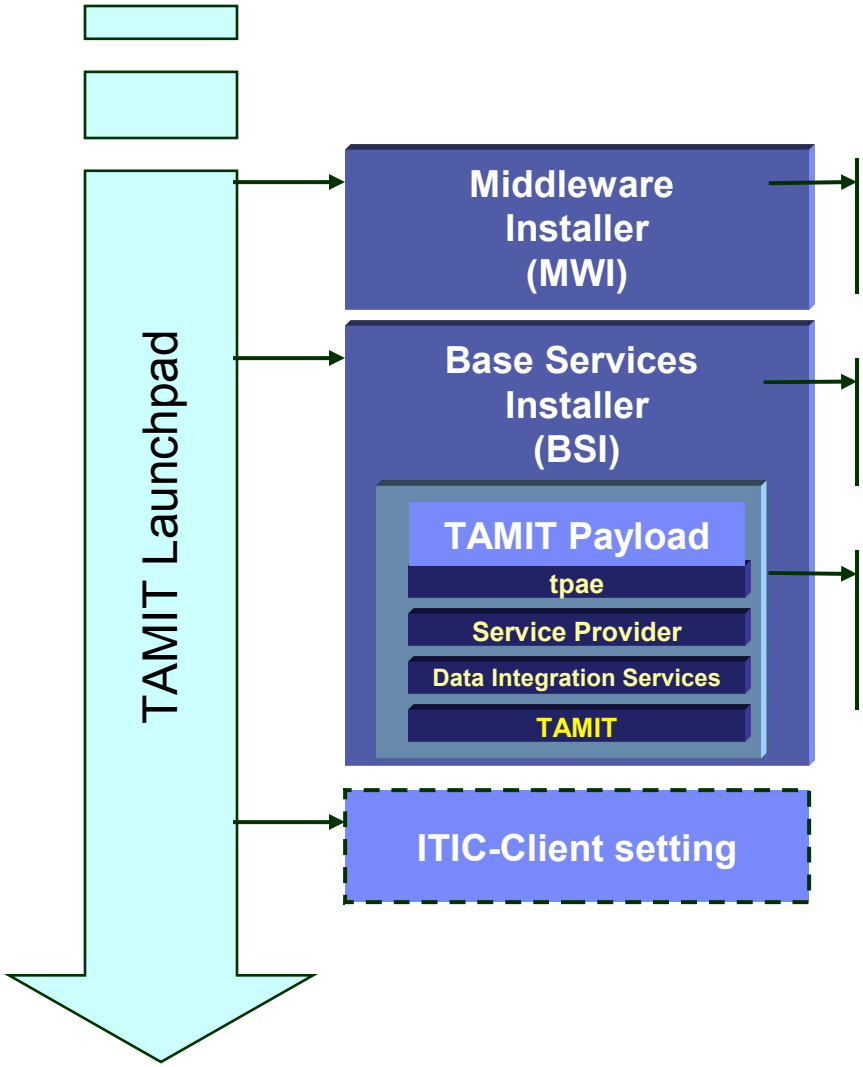
Pulling all together : TAMIT Deployment launchpad



- Install Middleware for Maximo (DB2, WAS, ITDS, and fixes)
- GUI and Silent Installer

- Configures middleware for tivoli process automation engine
- Deploy tpae and Offering Packages
- GUI and Silent Installer

- Payload for Maximo Database, Applications, Content and Enablement Keys
- Includes tpae base code and FP or hotfixes fixes when needed.

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- Installation technology level set
- Enhancements shipped in the previous releases
- tpae 7.5 install contents
- tpae 7.5 upgrade

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Themes for 2010 Releases

Theme	Description
Quality Improvements for Installers	Based on an analysis of historical Install PMRs and Defects, implement actions to address Key problematic areas. Goals: • Reduce failures during install • Avoid user induced errors • Reduce time spent on troubleshooting and retries of installation
Fill Gaps In Maximo Deployment Scenarios	New functions in the Installers that better support the ways in which Maximo has historically been deployed.
Platform and Middleware Currency	Enhancements to the Installers to support updates to the supported operating systems and middleware for tpae.

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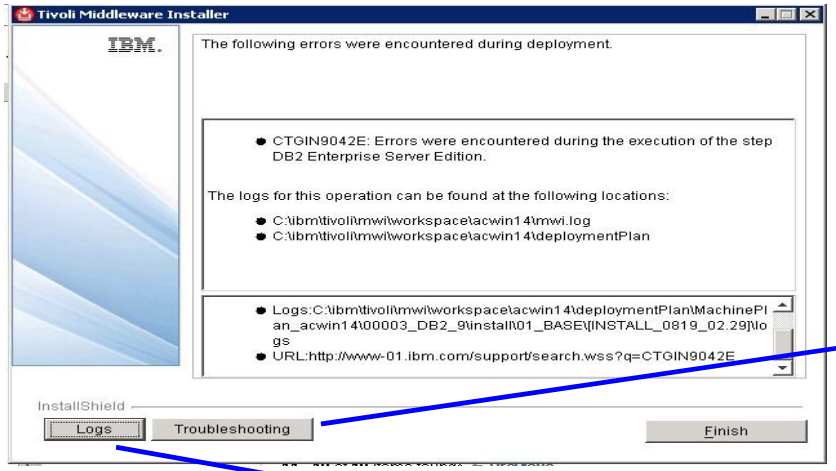
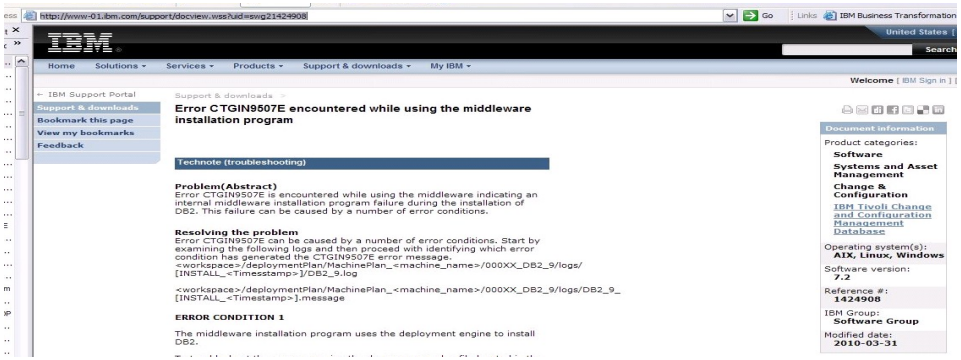
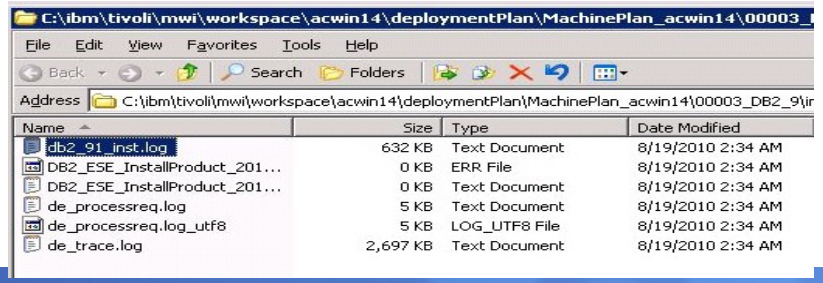
Quality Improvements

- Reduce failures during install
  - Validate Checksums for Middleware Images
  - BSI Panel Text Improvements and HCI Review
- Avoid user induced errors
  - Warn Users Before Upgrading Maximo Base
  - Enhanced Validation of User Input
- Reduce time spent on troubleshooting and retries of installation
  - Extensive validation of typical deployment scenarios
  - Backup of property files with encoded passwords
  - Enhanced support for Troubleshooting







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Fill Gaps in Maximo Deployment

- Support multiple deployments from single admin workstation
- Enable ability to defer update of DB configuration.
- Support of DB2 Schema w/ different owner
- Installation and configuration of DIS and CMS

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Platform and Middleware Currency

- Update internal components to new level
  - ESS
  - JDBC, JRE
  - InstallAnywhere
  - Deployment Engine
- New OS Support
  - Windows Server 2008 R2 Support
  - Support SLES 11 on x86 + zLinux
- New OS support for Admin WS:
  - Windows 7
  - RHEL 5 x86, zLinux
  - SLES 11 (32 & 64 bit)
- New database support
  - Support DB2 9.7
- Enablement of BSI for 23 supported languages

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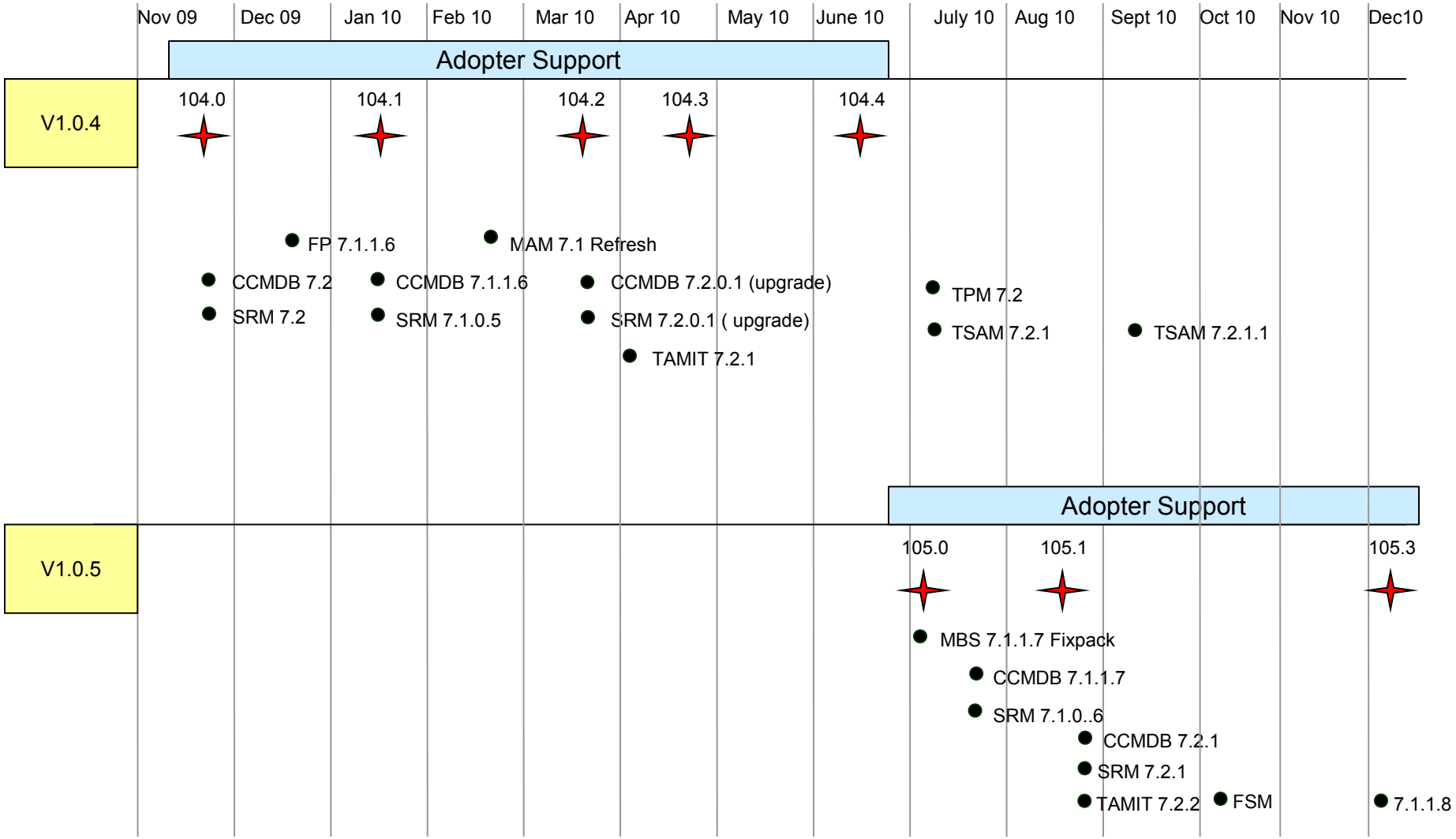
Installers delivered to the field - 2010



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- Installation technology level set
- Enhancements shipped in the previous release
- tpae 7.5 Install contents
- tpae 7.5 upgrade

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Themes for installer of tpae 7.5

Theme	Description
Platform and Middleware Currency	Enhancements to the Installers for the updates of the new operating systems and middleware supported by tpae e.g. WAS 7, JRE 1.6, DB2 9.7 , etc
Enhanced Validation	New tooling to reduce deployment failures caused by the environment Pre-requisite checks for the environment Software Image integrity validation Additional deployment and health checks
Simplify the tpae install experience	Minimize the impact of the installers during deployment of the tpae products e.g. support multiple deployment per admin stations, better support to deploy NLS in tpae Reduce deployment downtime and install limitations

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tpae Common Installer 7.5 – Currency

- Automated installation by MWI
  - WebSphere WAS-ND v7 FP15
  - (LDAP) Tivoli Dir Server (ITDS) v6.3
  - DB2 9.7 Enterprise FP3
- New levels of middleware supported by BSI
  - WebSphere WAS-ND v7
  - Tivoli Directory Server (ITDS) v6.3
  - Microsoft SQL Server 2008 R2
  - Microsoft Active Directory 2008 R2
  - Oracle 11g R2
- Additional platform support
  - Linux on PowerPC-64 processor
  - AIX 7.1 on PPC-64
  - Red Hat RHEL 6.0
- Support for Java 1.6 JVMs in MWI+BSI+PSI installers
- Enablement for additional translations:
  - Slovakian, Turkish

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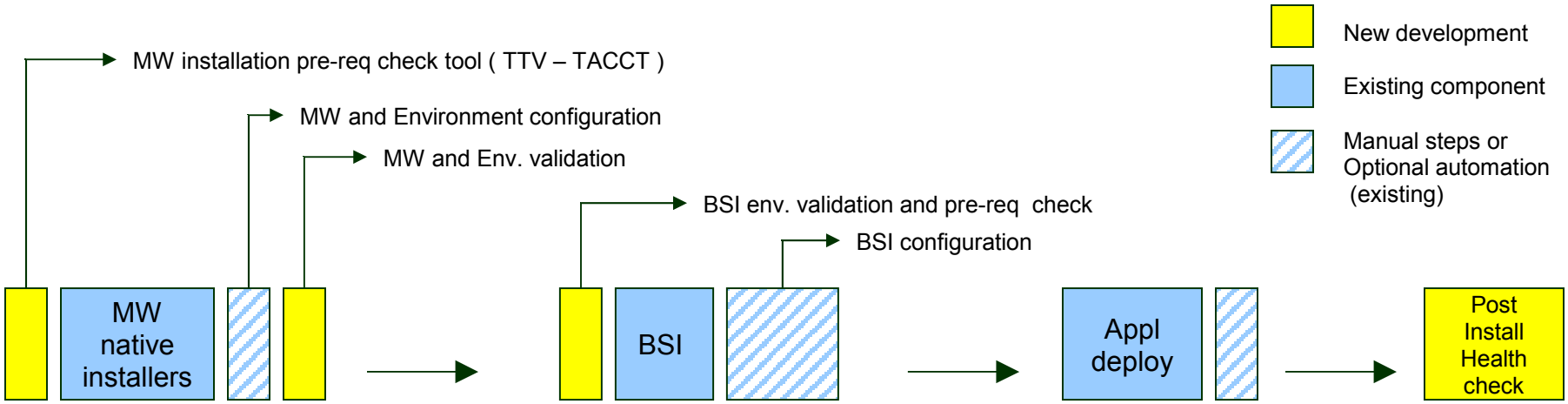
tpae Common Installer 7.5 - pre- checks & post-validation

- Provide a standalone prereq checking tool for MWI and BSI
  - Environment validation at pre-install time
    - Validate the target platform for the deployment of the middleware products
    - Validate the environment for the deployment of tpae base services
- Validate Integrity of the MWI at the target machine
  - Check integrity of the directory structure and files of MWI installation code
- Provide a programmatic way to verify installation/configuration.
  - Mechanism to verify that all the configuration steps of the tpae deployment are valid and consistent with what is expected after a successful installation



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tpae Common Installer 7.5 – simplify the Install experience

- Support duplication of administrative station
  - Support cloning of the administrative station (same OS)
  - Allows initial deployment in one environment, and reconfiguration to target admin station
- Improve support for multiple installs on same administrative station
  - Support for additional administrative workstations on the same machine for the same user
  - Dev , test , production
- Incorporate NLS processing at base installers
  - Eliminate the separate Language Pack Installer and merge its functions into BSI
  - Selection and load of languages becomes a tpae-wide operation
- Cleanup script to uninstall all components on incomplete installations
  - Simplified script to force the removal of all installation components (MWI/BSI/PSI), and cleanup the administrative station for new installs

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tpae Common Installer 7.5 - others

- Installation of IBM Eclipse Help System
  - Supports strategy of moving to an Info Center based approach and away from RoboHelp.
- Improved OOTB MW performance settings
  - Middleware settings for fresh installs of Tpae 7.5 applies best practice configuration
- Improved trace and log files
  - Accelerate problem diagnosis and resolution
- Compliance with IBM accessibility standards
  - Silent installer available, and fully documented
- FIPS 104-2 compliance
  - SSL support
  - Configuration of WAS Thin Admin client.
  - Updates and specific configuration for IBM sub-components (DE, CIT, Derby, RXA)

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- Installation technology level set
- Enhancements shipped in the previous release
- tpae 7.5 Install contents
- tpae 7.5 Upgrade

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Tpae 7.5 Upgrade

- Can be applied on top of tpae 7.1.1.7 or 7.1.1.8
  - Tpae 7.1.1.9 systems will require a 7.5.0.1 upgrade.
- Upgrade operations can be fully automated
  - Options are provided to skip the steps for automatic configuration of WAS, and to defer invocation of execution of updateDB, and the build and deployment of EAR file
- Administrative station is upgraded automatically if found to be on older level
- Database is upgraded via updateDB utility
  - DB upgrade is Invoked automatically by the installer
  - Option to have it done after admin station is upgraded (defer updateDB)
- After upgrade, users can install additional instances of the administrative station at the same workstation.

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7.5 Upgrade steps

Non disruptive to deployed system
Disruptive to deployed system
Potentially disruptive to the deployed system

1. Validate integrity of current content of DB (recommended step)
   a) Run Integrity Checker against existing Maximo DB.
   b) Fix any IC errors, if reported

2. When required, upgrade middleware and O.S. to the levels supported by tpae 7.5
   a) Patch or upgrade OS
   b) Upgrade DB Server
   c) Upgrade LDAP (TDS) Server
   d) Deploy WAS v7
      - Install a fresh instance of WAS v7
      - Use WAS v7 migration tooling to migrate any configuration from pre-existing WASv6.1
      - If automated configuration is selected during tpae upgrade, performance tunings will be automatically applied. Otherwise, apply the recommended performance settings manually.

3. Upgrade admin station to 7.5
   a) If just one product is deployed, the upgrade + updatedb + EAR deployment can be executed automatically within one install operation
   b) Or alternatively, product upgrade can be done as a two steps operation:
      1. Apply the upgrade of the product files at the administrative workstation,
      2. Invoke UpdateDB for DB upgrade, and build+deploy EAR into J2EE Server

Note: In a multi product deployment, the upgrade must be applied to each one of the products. Only after all products have been upgraded, the updateDB and EAR deployment can be invoked by the installer

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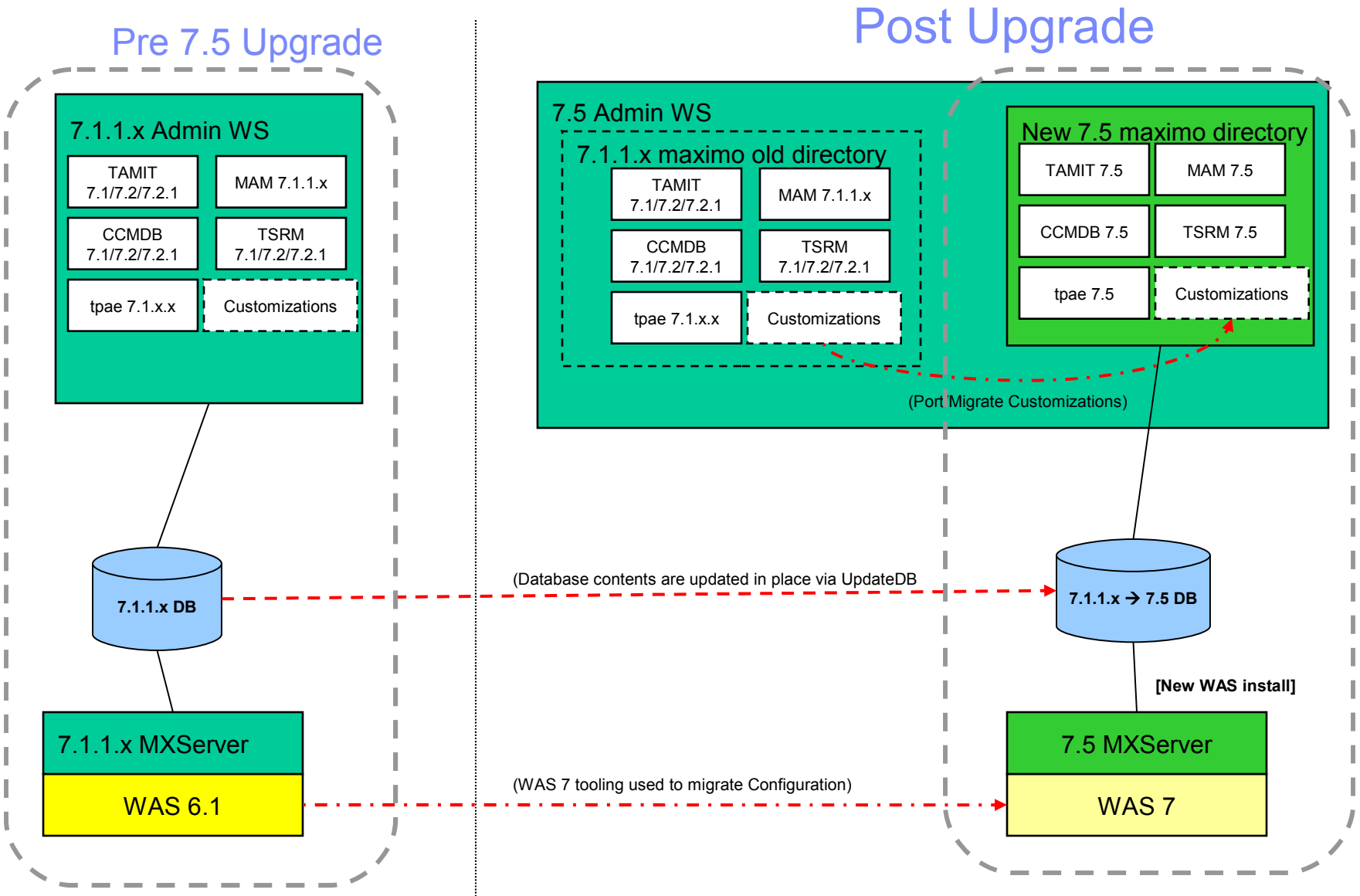

New installation of WAS 7 can be collocated on the same system as WAS6.1 or on a separate system

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Summary

- Common install technology for all products based on Tivoli process automation engine (aka Maximo)
  - Continuous delivery of incremental enhancements
  - Available to be used in all tpae-based product, at its own release cycle
- Installer 7.5 Key Values:
  - Additions validations and robustness applied to the installer tool
  - Simplify the experience to install or upgrade tpae-based products
  - Reduced downtime for multi-product installs or upgrades
  - Enhanced quality

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Backup

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Features supported by MWI

- System prerequisite checking (OS, hardware, software inventory, disk space)
- Install & configure prerequisite middleware
- Progress & remaining time estimates
- Multi-machine local deployments
- Validation of installation and configuration steps
- Creation of a 'Topology File' that can be reused during Base Service Install
- Uninstall
- Silent Install/uninstall
- Visibility of the deployment plan (Ant)
- Error Recovery
  - Gathering of various log files, both for MWI and the native products
  - Partial uninstall (rollback)
  - Resume deployment

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MWI Configuration - High Level Configuration steps

- Database Server
  - Creation of user(s) and database instance(s) for tpae and TADDM
- IBM Tivoli Directory Server
  - Creation of ITDS DB instance
  - Creation of basic organization data
  - Creation of WAS admin user in ITDS
- WebSphere Application Server
  - Installed WAS image bundles, including ISC
  - Install the WAS Update Installer
  - Secure WAS via VMM to a directory server (ITDS or MSAD)
  - Install and configures IHS
  - Install and configures WAS plug-ing
  - Installation and configuration of ESS for single-sign-on

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Platform & Currency

Item	Value	Release
Upgrade ESS from 6.1 to 6.2	Need to keep the ESS level current, so that in a customer shop that has multiple Tivoli products installed, they are all using the same ESS level.	v104
Windows Server 2008 R2 Support	Support the IBM Software Group Strategy Platform Priority	
Support SLES 11 on x86 + zLinux		
BSI Support for 23 langs	Support Tivoli language translation group	
Turkish language	Support Tivoli language translation group	v105
Update internal components to new level of JDBC, InstallAnywhere, DE, JRE, etc	Stability for the install experience	
Platform for Admin WS: Windows 7, RHEL 5 x86, RHEL 5 zLinux, SLISE 11 (32 and 64)	Support the IBM Software Group Strategy Platform Priority	
Platform for MWI SLES 11 (32 and 64)		
Support DB2 9.7		

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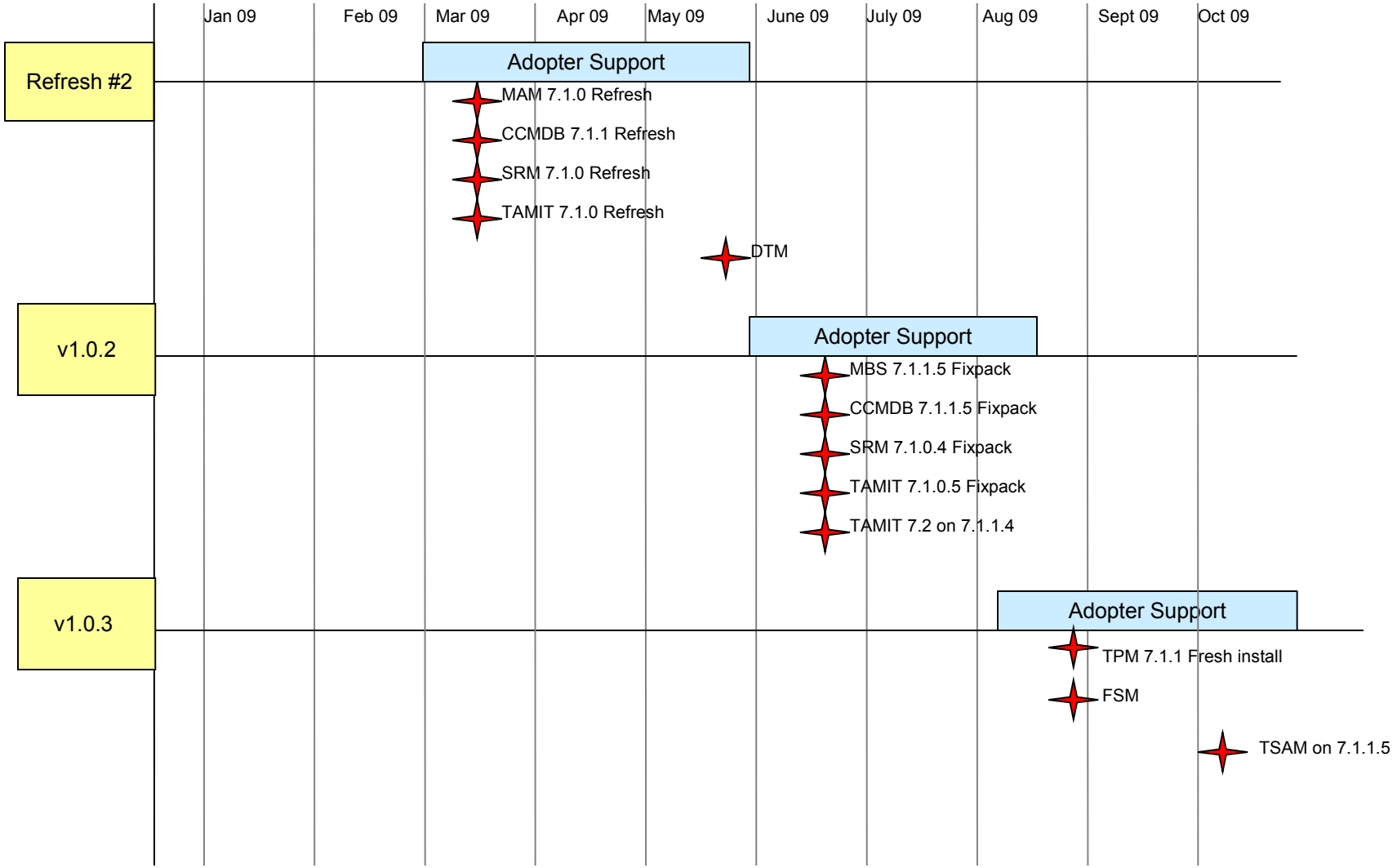
tpae Installers delivered to the field - 2009



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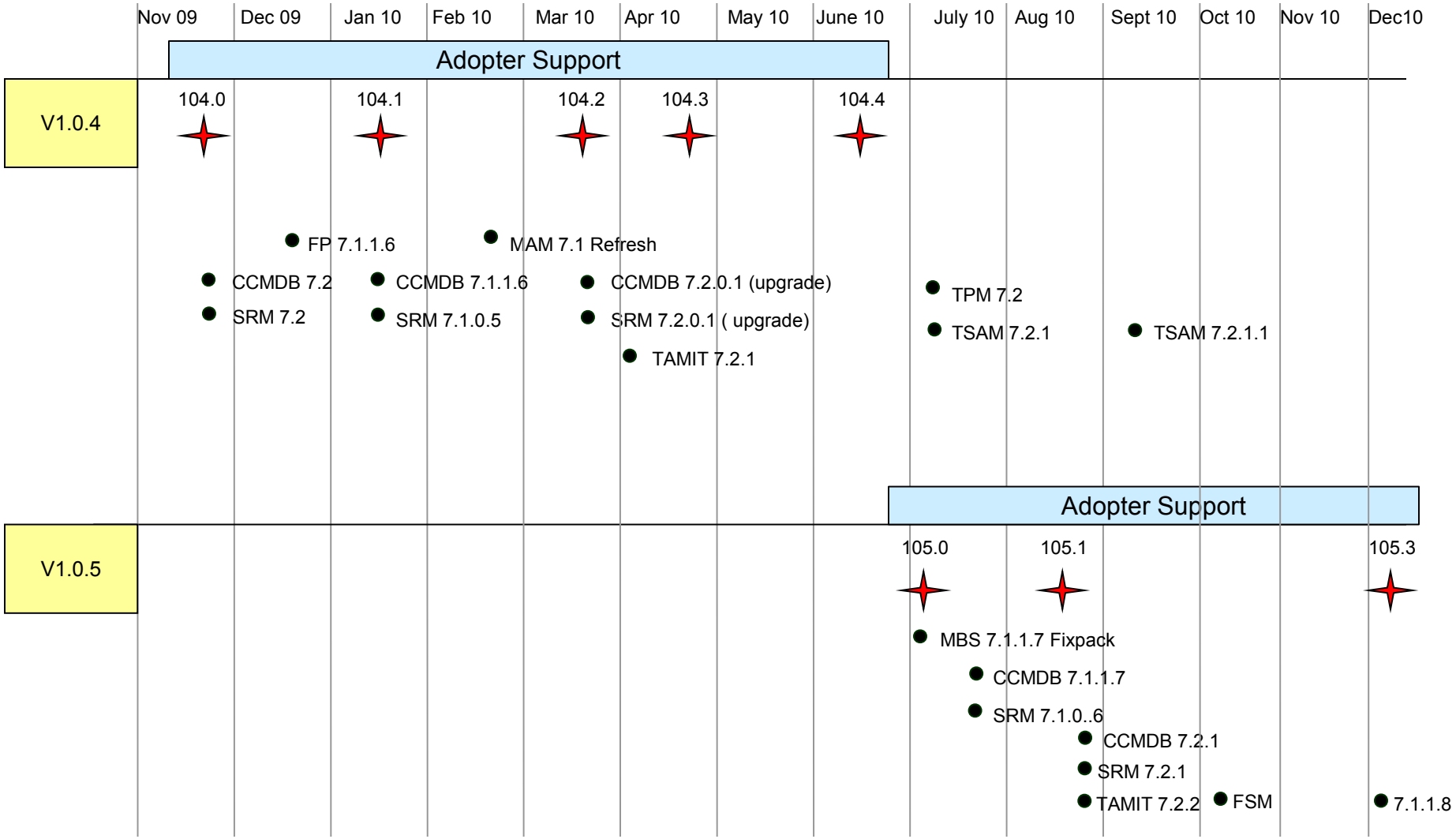
tpae Installers delivered to the field - 2010



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Installer v102 – June - 2009

- BSI and MWI Un-install
- Fixpack Installer
- Policy-driven BSI (allows dynamic loading of PSIs, languages, and other content)
- Separate payload files from install executables
- Customer Selectable Install Options (Weblogic or LDAP)

- Platform Currency
  - SLES 9 – Automation
  - SLES 10 – Automation
  - Solaris 10 – Manual
  - RHEL 5 – Automation
  - HP-UX – Manual
  - AIX 6.1 – Automation
  - DB2 9.5 – Automation (on supported platforms)
  - Oracle 11 – Manual
  - SQL Server 2008 – Manual
  - WAS 6.1 FP23 – Automation

Manual = no MWI automation, BSI & PSI will deploy and configure on

Automation = MWI will automatically install or install on, BSI & PSI will deploy and configure on

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Installer v104

Item	Value	Theme
Refresh Install Engine Independent of Offering	Customers can take advantage of quality improvements made to the TPAE Installer components without waiting for the next Release of the Offering	Quality Improvements for Installers
Warn Users Before Upgrading Maximo Base	Improved Lice-cycle analysis on a cross product solution deployment	
Validate Checksums for Middleware Images	Avoid install problems caused by corrupted middleware images.	
Allow Changes to All Maximo Default Users, and Passwords	Many customers have security policies that prohibit the use of Maximo defaults	
Enhanced Validation of User Input	Enhancements to breadth/depth of user configuration input validation to reduce failures in middleware configuration actions due to user input errors. (40+ points identified since MADT 102)	
BSI Panel Text Improvements and HCI Review	Updated wording provide clearer instructions to the user	
Support SSL-based Configuration	Use the Installers in environments where SSL must be enabled (TPM post-config. Issue).	
Documentation Support for MS-Active Directory	MSAD is highly prevalent in some customer environments.	
Fix, test, fix, test,….	Extensive validation of typical deployment scenarios [8 full test cycles: SRM (x2), CCMDB(x2), MAM, TPM , TSAM, TAMIT 4 fixpack test cycles]	
Support Multiple Deployments from Single Admin Workstation	Reduce the number of Administrative Workstations that need to be setup.	Fill Gaps In Maximo Deployment Scenarios

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Installer v105

Item	Value	Theme
Backup of property files with encoded passwords	Privacy issues, Better user-error recovery process	Quality Improvements for Installers
Support for pure IPv6 stations	Remove limitation of requiring IPv4 enabled during install	
Update support for deployment of CCMDB languages	Allows CCMDB customers to deploy NLS support	
Enhanced support for Troubleshooting in MWI	Access to updated troubleshooting and tech notes information for failures originated during install of middleware	
Cleanup deferred MADT 104 defects	Less interruptions caused by defects during install	
Enable to defer update of the DB config.	UpdateDB consumes the largest slice of time during installs of solutions. Improve time of deployment in a multi-solution deployment	Fill Gaps In Maximo Deployment Scenarios
Support of Db2Schema not same as owner	Flexibility and adaptation of customer deployment policies	
Installation and configuration of DIS and CMS	Integrated installation of DIS/CMS during tpae installs. Enablement of integration of Tivoli's applications delivered Out of the Box	Integration Initiative

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Improvements on tpae 7.5 "Time to install"

- Identifying compatible Images of products and fixes
  - Note: one of the critical problems with tpae 7.1 / 7.2
- Preparing Deployment Environment
  - Identify, **Check(**),** install and configure OS preqs for Admin Station and Target Station
- **Install and Configuring MW**
  - **Check prereq (**)**
  - **Install and Configure MW – automation is optional**
  - **Validate MW configuration (**)**
- **Install Tpae**
  - **Validate environment (**)**
  - **Install tpae**
  - **Install solution**
    - **Update DB**
    - Fix cross-application and upgrade conflicts (manual process)
  - **Build and Deploy EAR**
  - **Validate deployment (**)**
- Additional components
  - ITIC client
- Deploy Content
- Customize runtime
  - Users, startcenter, templates, reports, rules, etc.
  - backend Integration

(**) Tpae Installers enhancements at tpae 7.5

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7.5.0 Install Quality improvement summary 1of 2

These items were added as a result of deployment issues on previous releases and consumer feedback

Description

Provide a stand-alone prereq checking tool for MWI and BSI

Better handling of hot fixes packaged in Payload (BSI+PSI)

Duplicate environment of Admin Station - Same OS (BSI+PSI)

BSI/PSI - Provide policy support for a 2-step upgrade process to provide a upgrade/migration path from a base version (7.1.1) to a new version plus fixpack. (7.2.0.1)

Enhance NLS language processing by using package policy mgmt. Merge LPI into BSI.

Provide a programmatic way to verify the success of the installation/configuration of the product.

Improve management of life-cyle operations for an Interim Fix.

Improve support for multiple Installs on same Admin station (Moving away from local DE)

BSI+PSI install commands need to use the maximo code of the payload being deployed

MWI: Validate Integrity of the MWI at the machine

Be able to identify that a newer version of BSI/PSI is available in the system and use that newer version

Provide a cleanup script to uninstall all components on failed installations. (MWI+BSI+PSI)

Add links from the MWI wizard GUI to InfoCenter documentation and tech notes to diagnose and resolve specific problems.

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7.5.0 Install Quality improvement summary 2of 2

These items were added as a result of deployment issues on previous releases and consumer feedback

Description

Improve OOTB MW performance settings for fresh installs of Tpae 7.5

Enable Tpae Installer to change base language in an existing tpae environment

MWI: Remove DE from the Middleware install and uninstall tasks

Allow tpae installation user to choose to use varchar instead of vargraph during the automatic configuration of DB2

Default Login configuration for app server to FORMS not BASIC

Create a CTGSummaryxx.log to optimize content of CTGInstallTrace.log and CTGInstallMessage.log to accelerate problem diagnosis & resolution

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