Technology level update on AIX using smit_update and alt_disk_install method

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AIX Technology level update

Let first Understand AIX oslevel command output before TL update.

#oslevel -r

7100-04

7100 is AIX OS version.

04 is Technolgy level

 # oslevel -s

7100-04-05-1720

7100 is AIX OS version.

04 is Technolgy level

1720 17 is year 2017 and 20 is week of 2017 year in which SP 04 was released.

What exactly AIX Technology update do??

In AIX TL update IBM add new features and support for new hardware and also fixing previous bugs which found or exist in current TL version. It's always good to move to new TL version because of new feature and new hardware support.

Let's see different method for updating TL on AIX.

There are multiple method to update AIX TL.

1. By copying AIX TL fileset to local filesystem on AIX LPAR and then use SMIT

update_all to update AIX TL.

2. Use alt_disk_install method to do AIX TL update (Recommended method).
3. From NIM server create resources for updating AIX LPAR TL and then initiate TL update from NIM server.
   4. From NIM server share AIX TL fileset File system to AIX LPAR and then do update using SMIT update_all to update AIX TL
4. Use multibos method to AIX TL update.

Before updating AIX TL make sure that all required prerequisite are completed.

1. Take MKSYSB backup of AIX LPAR.

2. Take configuration backup of AIX LPAR which include df -gt ,ifconfig –a and all important configuration file backup. In case after update admin may require these backup.

3. Also most important note oslevel command output(**oslevel –r** and **oslevel –s).**

4. Make sure that current OS level is consistent (lppchk -v)and no fileset are missing from current OS.

Let see some command which will verify that currently installed AIX TL is stable and AIX admin can proceed for new TL. It's always recommended that "only proceed for AIX TL update when currently installed TL is stable and all pre-requisite are done.

For example if AIX admin want to update AIX TL to TL 07 and after executing below command he found that output message like "**Not all filesets for 6100-06_AIX_ML were found".** So here admin first bring AIX TL to 6100-06 to correct state and then only proceed for TL 07.

 # instfix -i |grep ML

All filesets for 6100-00_AIX_ML were found.

All filesets for 6.1.0.0_AIX_ML were found.

All filesets for 6100-01_AIX_ML were found.

All filesets for 6100-02_AIX_ML were found.

All filesets for 6100-03_AIX_ML were found.

All filesets for 6100-04_AIX_ML were found.

All filesets for 6100-05_AIX_ML were found.

Not all filesets for 6100-06_AIX_ML were found

Here we found that for AIX 6100-06_AIX_ML some fileset are missing ,so using following command you can find missing fileset.

#lppchk -v Check installed fileset consistency

#instfix -cik 6100-06_AIX_ML | grep -v -e ":=:" -e ":+:"

Keyword:Fileset:ReqLevel:InstLevel:Status:Abstract

Above command will show missing fileset name and level details ,like currently installed fileset level and required fileset level .

Method 1:

Before starting TL update make sure that application /database is down. So in this method we require downtime.

Here I am going to discuss AIX TL update using SMIT command **"SMIT update_all".**

In this method AIX admin copy AIX TL update fileset to Local filesystem which having sufficient space to store these fileset.

Here I am taking local filesystem name as **/TLupdate/AIX61TL07**

Step 1. Cd / TLupdate/AIX61TL07

Step 2.

#smit update_all
Then choose . (Current working directory) and press enter.

On next screen choose

Software to update to "update_all"

Preview only to "yes"

Choose preview to yes To check whether any missing fileset or any missing prerequisite

Extend filesystem if space require to "yes"

Accept new license agreement to "yes"

Pres enter and if preview is OK then AIX admin can proceed for TL update.
switch back to previous screen (ESC +3) and then select preview to **"no" and press enter to start AIX TL update using SMIT update_all**

Here TL update will start and generally it take 40-50 minutes.

Step 3 :

After TL update how AIX admin will confirm that TL is updated or not ??
answer to this question is use following command to check AIX OS health.

#oslevel –r This command will show OS version and Technology level

#oslevel –s This command will show OS version ,Technology level and service pack

#lppchk –v command will show fileset details if its broken, if everything is ok then blank output will be displayed. in short it will check installed software consistency.

“Sometime after TL update when AIX admin executes oslevel –r command, he unable to get correct oslevel . Reason behind this is some fileset are not at correct level, their level is not correct and this causing incorrect AIX OS TL. Other reason for incorrect oslevel after TL update is broken fileset . admin can check broken fileset using command

#lppchek –v and remove broken fileset and install required level fileset again”

"Here I am sharing one incident which I faced while updating AIX 6.1 TL, where AIX OS TL is not showing at correct level after update, I wondered why this is happened??

After analysis found that openssh and openssl fileset wasn’t correct level, so after bringing these fileset to correct level I able to see correct TL" and same issue i faced for java SDK fileset,

because of incorrect level of JAVA SDK fileset incorrect OS level shown by oslvel command.

Command which I used to check which fileset level causing incorrect OS level was,

******Below command is example purpose it's not depicting actual fileset which was missing**

#instfix -cik 6100-06_AIX_ML | grep -v -e ":=:" -e ":+:"

Output:

Keyword:Fileset:ReqLevel:InstLevel:Status:Abstract

6100-06_AIX_ML:Fileset_name:6.0.0.215:6.0.0.200:-:AIX 6100-06 Update

In above output **Fileset_name** is name of filset which need to bring correct level to bring AIX OS TL to required level.

Installed level(**InstLevel)** 6.0.0.200

Required Level (**ReqLevel)** 6.0.0.215

After TL update it's always good to take OS reboot to check whether OS and application are in healthy state after TL update.

Important command to check OS health after TL update

 # Oslevel –r Show AIX version and Technology level.

#Lppchk –v To confirm whether installed fileset in consistent state or not.

 # instfix -i|grep ML Show whether all fileset are installed or not for installed TL.

#instfix -icqk 6100-06_AIX_ML| grep ":-:" Show information about incorrect fileset level like name, installed level and required level details.

Here I discussed AIX TL update using command **SMIT_update** .

Advantage of this type TL update over NFS share based update is it install TL in less time as compare to NFS share TL update. But drawback is if we require to revert back TL to previous TL then we need to restore MKSYSB of previous AIX OS.

If AIX admin want to avoid restore of AIX OS in case of TL rollback, then he must follow AIX TL update using alternate disk cloning method, which I am going to discuss in method 2.

Method 2 :

Before starting TL update perform all pre-requisite check which i discussed in method 1 and then only proceed for TL update.

AIX TL update using alternate disk cloning method.

This is the recommended approach for updating AIX TL.

In this approach AIX admin need new disk which having same size as rootvg disk.

***If there is mirrored rootvg then AIX admin first need to break that mirror

using**unmirrorvg** command and take out one disk for alternate disk install purpose.

How to break mirror rootvg disk for alternate disk install and TL update.

#unmirrorvg rootvg hdisk1

#reducevg rootvg hdisk1

#chpv -c hdisk1

#bosboot -a -d /dev/hdisk0

#bootlist -m normal hdisk0

then to make sure that hdisk1 is out of rootvg by command

#lsvg -p rootvg

Suppose current rootvg disk size is 50 GB then ask storage guy need to assign same size disk as rootvg // This applicable when rootvg having only 1 disk.

#lsvg –p rootvg

lsvg -p rootvg

rootvg:

PV_NAME PV STATE TOTAL PPs FREE PPs FREE DISTRIBUTION

hdisk0 active

New disk will be hdisk1 and size is same as rootvg hdisk0.

Command to update TL using alternate disk install method

 # nohup alt_disk_copy -d hdisk1 -b update_all -l /mnt/AIX_TL > /tmp/altinst_log &

****double check that u r not using current rootvg disk which holding current running OS**

Above command run in background until TL update completed. Advantage of running alt_disk_copy command using "**nohup**" is if console is accidentally closed or user log out then also this command run in background without stop**.**

This command will take 40-50 minutes after completion do AIX OS health check using following command ,After TL update on alternate disk bootlist will automatically set to new disk and admin need to take reboot of AIX server to test whether correct TL is installed or not and application and database is in healthy state and performing well.

Health check command after AIX TL update

#oslevel –r This command will show OS version and Technology level

#oslevel –s This command will show OS version ,Technology level and service pack

#lppchk –v command will show fileset details if its broken if everything is ok then blank output will be displayed

Command which I used to check which fileset level causing incorrect OS level was,

#instfix -cik 6100-06_AIX_ML | grep -v -e ":=:" -e ":+:"

Keyword:Fileset:ReqLevel:InstLevel:Status:Abstract

TL update using NIM server ,will discuss in new POST.

Thanks !!!!!