arun's tech documentation



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 - i can improve my skills of dealing well with peopleand working well under stress
 - i want to join the call center as it's booming field have inclination ,and having the flexible schedule ... also it's package is good .
 - i want join call centre because i will learn how to deal with different types of people with eqanimity. it will be my great success.
 - hi guys if any one ask this type of question that why should i hire you then reply ?i have all the abilities which one you want, gud communication skills, gud listining power, confident, and i always work with a gud direction, work with smart work not hard work
 - if they asked for yourself at first you need to tell your name your address and your technical skill after that you will tell your strength and weakness .at last you should tell them bpo is booming inclination and it has good salary package also.it encourages their employer also.doing work with BPO is my dream job.you have to show your keen interest in BPO sector.it should be just two minute.that,s all .thanks
 - well, BPO is one of the most growing sector in this scenario as compare to another industries. here u get chance to groom ur self and ur potential. BPO give top class compentation and career growth.
 - i want to work in a branded company and i believe working in this company will benificial for me in every respect as i can learn so many things while working in this company.
 - Q.why did you want to join the call center?
 - reason i wish to join in a call centre.
 - Q.What is your greatest strength?
 - ** Co-operative
 - © 01_50_irregular_verbs_past_simple_part_1
 - © 02_50_irregular_verbs_past_simple_part_2
 - © 03_50_irregular_verbs_past_participle_part_1
 - 04_50_irregular_verbs_past_participle_part_2
 - **=** 5-6present_perfect_cd-irregular
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- 02_50_irregular_verbs_past_simple_part_2
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Intro

Linux		
Linux - command_root		
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Linux

RedHat Enterprise linux – RHCE preparation kit

Linux Principles

List the Basic Principles of Linux Operating system:

- 1. Everything is a file
- 2. Configuration data stored in text files
- 3. Small, single purpose programs
- 4. Ability to chain programs together to perform complex tasks
- 5. Avoids captive user interface

1. Everything is a file:

• Linux systems have many powerful utilities designed to create and manipulate files. • The Linux security model is based around the security of files. • By treating everything as a file, a consistency emerges. • You can secure access to hardware in the same way as you secure access to a file.

2. Configuration Data stored in Text:

Text is a universal interface, and many Linux utilities exist to manipulate text. Storing configuration in text allows an administrator to move a configuration from one machine to another easily. There are several revision control applications that enable an administrator to track which change was made on a particular day, and provide the ability to roll back the system configuration to a particular date and time.

3. Small, single purpose programs:

Linux provides many small utilities that perform a single task very well. When new functionality is required, the general philosophy is to create a separate program – rather than to extend an existing utility with new features.

4. Ability to chain programs together to perform complex tasks:

The core design feature of Linux is that the output of one program can be the input for another. This gives the user the flexibility to combine many small programs together to perform a larger, more complex task.

5. Avoid Captive user interface.

Interactive commands are rare in Linux. Most commands expect their options and arguments to be typed on the command line when the command is launched. The command completes normally, possibly producing output, or generates an error message and quits. Interactivity is reserved for programs where it makes sense, for example, text editors.

Features of Linux

Multi User and Multi-tasking OS

Linux is a multi-user and multi-tasking OS. That means that more than one person can be logged on to the same Linux computer at the same time from different terminals.

Linux is multi – tasking: a user can have more than one process executing at the same time.

Components of Linux User Environment

- 1. Kernel:
- 2. Kernel is the core of Linux. It loads into RAM when a machine boots, where it runs until the computer is shut down.
- 3. Its job is to perform many low-level and system-level functions, to interpret and send instructions to the system's hardware, to schedule and run processes, and to manage input and output.
- 4. Shell:
- 5. The Shell provides an interface by which the user can communicate with the kernel.
- 6. It examines and evaluates commands typed at its prompt, then passes them to the kernel.
- 7. It then receives the results back from the kernel and displays the results.
- 8. The shell also provides a mechanism by which these results can be captured in a file, and by which the input to a command can be directed from a file. It enables the output of one command to be supplied as the input to another command. The shell most often used in Linux is bash

Files Linux supports several different types of files:

1. Regular files	
2. Directories	
3. Symbolic links	
4. Character devices	
5. Block devices	
6. Named Pipes	
7. Sockets	
What are the types of files supported by Redhat Linux	
1. Regular file	
2. Directory d	
3. Symbolic link l	
4. Character special file c	
5. Block special file b	
6. Named pipe p	
7. Socket s	
Linux supports several different types of files:	
8. Regular files	
9. Directories	
10. Symbolic links	
11. Character devices	
12. Block devices	
13. Named Pipes	
14. Sockets	

We know about 1. Regular file, 2. Directory, 3. symbolic links

We have two types of hardware device files.

- 1. Character special file:
- 2. Block special file

What are Character Special files?

- 1. Character special files are used to communicate with hardware one character (or byte by byte) at a time.
- 2. Character devices must be read and written to in order. (Serial)

What are Block Special files?

- Block special files are used to communicate with hardware a block of data at a time: 512 bytes, 1024 bytes,.
- Block devices are also capable of being randomly accessed.

Where can you see device files? Under /dev folder e.g. run Is –I /dev | less ... we can see various block special files and character special files.

What is the name of the pipe? p named pipe: A file that processes data between processes.

It stores no data itself, but passes data between one process writing data into the named pipe and another process reading data from the named pipe.

How can you create a named pipe? A named pipe can be created using the mknod command mknod mypipe p

Where are sockets used? Sockets are used in interprocess communication.

01_Basic_Principle

- List the Basic Principles of Linux Operating system
- Explain the Basic Principles of Linux Operating system

02_Components of Linux User Environment

- List the components of Linux User Environment
- Explain the components of Linux User Environment

03_The Seven Fundamental File types

• List the 7 fundamental file types in Linux

- Explain the 7 fundamental file types in Linux.
- How device files communicate with I/O devices?
 - 1. What are the types of files supported by Redhat Linux
 - 2. What are Character Special files?
 - 3. What are Block Special files?
 - 4. Where can you see device files?
 - 5. What is the named pipe?
 - 6. How can you create a named pipe?
 - 7. Where are sockets used?

04_Features of Linux

• List the major feature of Linux Operating System

Linux - command_root

User Group Administration

What are the basic rules on User accounts in linux? Users

- 1. Every user of the system is assigned a unique User ID (uid)
- 2. User's names and uids are stored in a file /etc/passwd
- 3. Users are assigned a home directory and a program that is run when they log in(shell)
- 4. Users cannot read, write and execute each other's files without permission

What are the basic rules on User accounts in linux? Groups

- 1. Users are assigned to groups with unique group id (gid)
- 2. Gids are stored in /etc/group
- 3. Each user is given their own private group
- 4. Each user can also be added to other groups to gain additional access.
- 5. All users in a group can share files that belong to the group.

How to change the primary group of a user? Which command to use? The users primary group can be changed using the newgrp command #newgrp othergroup

Which account has complete control over the system? The root user The superuser, having complete control over the system.

How is the Linux Security Model designed?

- 1. Files and resources are controlled with the help of users and groups.
- 2. Every file on the system is owned by a user and associated with a group
- 3. Every process has an owner and group and can only access the resources its owner or group can access.

How is Linux File Security defined? Permissions are set for whom? What permissions are set? Every file and directory has permissions set that determine who can access it. Permissions are set for:

- 1. The owner of the file
- 2. The group members

3. All others

Permissions that are set are called

- 1. Read
- 2. Write
- 3. execute

What are the 4 files for managing user groups in linux?

- 1. /etc/passwd user list is maintained.
- 2. /etc/group group list is maintained.
- 3. /etc/shadow user passwords are maintained.
- 4. /etc/gshadow group passwd is maintained

What is a /etc/shadow file? • The /etc/shadow file is readable only by the root account and is therefore less of a security risk. • contains encrypted password as well as other information such as account or password expiration values, etc.

What is a /etc/gshadow file? • The /etc/gshadow file is readable only by the root user and contains an encrypted password for each group, as well as group membership and administrator information.

What is /etc/skel/ directory contains? The /etc/skel directory contains files and directories that are automatically copied over to a new user's home directory when such user is created by the useradd program

How to delete a user account? #userdel username To delete the user account.

How to delete a user account recursively? userdel -r username

How to reset the password for a user? passwd

What are the two basic files which manage user account details?

- 1. /etc/passwd
- 2. /etc/shadow

How to modify user properties? Which command and parameters to use? #usermod -c "some comments" -c comment -d home directory -e expire date -g primary group -G comma separated supplemental group for the user -l login name -s shell -u user id -p passwd -L lock the password -U unlock the account

passwd ageing

chage -m minimum number of days between password changes chage -M Maximum days between password changes chage -I number of days inactive since password expired before locking account chage -E date expire the password on this date chage -W start warning about password expiry.

Groups: What are the two basic files which maintain group properties?

- 1. /etc/group group list is maintained.
- 2. /etc/gshadow group passwd is maintained.i h

How to add a new group? #groupadd groupname

How to delete a group name? #groupdel groupname

How to modify the properties of a group? #groupmod -n groupname1 groupname2

What is gpasswd command? gpasswd command is used to administer the /etc/group and /etc/gshadow.

Ownership How to change the ownership of files and folders? Which command to use? chown -R user:user /home/user chown -R user:user /home/user

Linux - filesystem

File System Hierarchy Concepts

- 1. Files and directories are organized into a single-rooted inverted tree-structure, including distinct physical volumes such as floppy disk and CD-ROMs and multiple hard disks.
- 2. The base of the inverted tree-hierarchy is known as root or / the top of the file system.
- 3. A forward slash separates elements of a pathname, for example /usr/bin/X11/X.
- 4. Files and directory names in Linux file hierarchy are case sensitive.
- 5. Each shell and process has a current working directory.
- 6. . refers to the current directory.
- 7. .. refers to the parent directory of any particular directory.
- 8. Files and directories whose names begin with . are hidden, that is they are not displayed by default.
- 9. A users path is a list of directories that are searched for commands typed at the command line.

Linux Commands v 1.0

Basic Commands - Intro. \$man command : To get help for commands \$info command : To get help for commands /usr/share/doc : Help file documents

\$

\$pwd : To get to the present working directory ~ : A user's home directory

• : The previous working Directory

\$date : To get date \$cal : To get the current calendar \$cal –y 2003 : To get the calendar for year 2003 \$cal 2 2003 : To get the calendar for month 2 year 2003

\$id : Gives the user id \$groups : To get the groups to which the user belongs

\$whoami : To give the username \$logname : To give the logname of the user

\$id username : Gives the username's id \$groups user : Gives the users group

\$who : Lists all users who have logged in \$w : Long listing of command who \$last : last login with times \$last user : last login time of user \$finger username : user's details

\$passwd : To change the password \$id : To get the user id \$id username : To get the username's id

File & Directory Operation Commands

\$mkdir : To create to directory \$mkdir dirname ; cd dirname : two commands can be used simultaneously.

What is the difference between Absolute path and Relative path? Absolute Path name begins with the /. Relative Path name begins from the current directory.

CD - Change Directory \$cd : Change to home directory \$cd dirname : Change to dirname \$cd .. : Change to parent directory \$cd - : Change to previous working directory \$cd ~ : Change to home directory

Ls - List Contents \$ls : List the directory contents \$ls dirname : List the contents of dirname directory \$ls -a : List the hidden files too \$ls -l : List the files and folders in long listing format \$ls -d : List the directory names \$ls -R : Recursive listing.list contents of subdirectories \$ls -i : List the contents with inode value \$ls -h : List the contents in human readable format

Copy \$cp source destination : copy source to destination \$cp -r : Recursive copying \$cp -p : To preserve timestamps... while copying. \$cp -i : To copy interactively.

Move \$mv source destination : Moving source to destination \$mv source source : Renaming source to source2

Remove \$rm : Removes a file \$rm –i : Interactive Removing files \$rm –r : Recursive removal (includes subdirectories) \$rm –f : Forcible removable

\$mkdir dirname : creating new directory \$rmdir : remove an empty directory \$rm -r : remove a non-empty directory with files in recursive method

\$touch file1 file2: To set the time stamp to current time and if no file exists with that name, it will create a new empty file.

\$file filename: To determine file contents/type/properties

\$cat filename: To view the contents of a file \$cat -A: Show all characters \$cat -b: number each line of output \$cat -s: squeeze multiple blank lines into single line. \$cat filename.txt | more: show multiple lines with more piping. \$cat filename.txt | less: show multiple lines with less piping.

Spacebar: Move ahead one page return: Move ahead one line Ctrl+d: Move ahead half a screen Ctrl+C: To save and quit the file \$cat > file.txt: To create a new file with cat command \$cat >> file.txt: To append the file with new contents

/search : To search text in files n : To repeat the search q : Quit

\$head filename: To view first 10 lines of file \$head -n 3 filename: To view first 3 lines of a file

 $tail\ filename: To\ view\ the\ last\ 10\ lines\ of\ a\ file\ tail\ -n\ 4: To\ view\ the\ last\ 4\ lines\ of\ a\ file\ tail\ -f\ filename: Will\ continue\ to\ show\ update\ of\ the\ file\ until\ Ctrl+C$

Not used. Pico is a text editor similar to VI \$pico : Text Editor \$pico -w : To turn off wrapping of text

Search and locate

Slocate \$slocate /pathfilename : To locate the filename(uses a database) \$locate /path filename : To softlink to slocate

updatedb: To update the slocate database

/var/lib/slocate/slocate.db : Slocate database file

Find (dynamic searching, better than slocate) \$find /etc -name ".conf" --- (works) \$find /etc -iname ".conf" --- (case insensitive) \$find /home -user arun --- (it works) \$find /home -group arun \$find /etc -perm 777 \$find /etc -type c (character special file) (d), p(pipe) I (symbolic link) s(socket), f(plain file)b(block special file) \$find /etc -size 7 (7 characters long)

\$find /home -atime +10 (accessed, more than ten days back) \$find /home -atime -10 (accessed, from today to ten days in betwen--- last ten days)

\$find /home -mtime +10 (modified, more than ten days back) \$find /home -mtime -10 (modified, last ten days)

Finding and processing files Find with exec \$find /etc -name "*.conf" -exec ls {} \;

FILE COMPRESSION TOOLS GZIP \$gzip filename: to get filename.gz \$gunzip filename.gz: to get back filename \$gzip -v filename : To get verbose output

BZIP \$bzip2 filename: to get filename.bz2 \$bunzip2 filename.bz2: to get filename

ZIP \$zip files+dirs: to zip files and directories .zip \$unzip .zip: to get back filename

\$compress: ??

compress – 50 % gzip -1/3 rd of original bzip2-1/4th of original

bzip2 better than gzip better than compress

TAR \$tar -cvf file1,file2,file3 : To archive files \$tar -cvf dirname.tar dirname : To archive the directory and its contents \$tar -ttf archive.tar : To display the contents of files inside .tar \$tar -tvfarchive.tar : causes long listing of each files inside .tar \$tar -xvf archive.tar : To extract files inside *.tar

\$tar –cvzftar.gztarfolder/ \$tar –xvzftar.gz

FILE SYSTEM BASICS

File systems: Ext2: The Extended Linux file system. Ext3: Third extended Linux file system. Enhanced version of ext2 file system, that uses journaling to improve file system data integrity. Ext4:

Inode: An Inode table contains a list of all files in an ext2 or ext3 filesystem. (It is kind of database, can think it like a excel sheet) The inode is an entry in the table, containing information about a file including:

- 1. file type
- 2. permissions
- 3. link count
- 4. UID, GUID
- 5. file size
- 6. time stamp
- 7. pointers to the file's data blocks on disk (***)
- 8. other data

For any partition one inode table will be there.

The computer's reference for the file is the inode number. The human way to refer to a file is by file name along with the path of the file.

Whenever a file name is referenced by a command or application, linux references the inode value and gets the location of the file and pulls the file for viewing or manipulation.

\$ls -i

Copying and inode. When you copy file1 to file2 a new inode number is created and a new entry is created in the inode table. Copies data into the new file(new location in hard disk)

LAB: create file1, check the inode value, copy file1 file2, check the inode value for both, two different inode values should be there.

Even if they are in different partitions the same inode value creation happens.

Moving with inode: 2 types occur: same filesystem, different filesystem. If both the files are on the same filesystem(partition) Creates a new filename, deletes the old filename, but keeps the same inode entry, no impact on the inode table.

LAB: do it just like the above, but you will see the same inode value.

When they are in different file systems(partitions) Creates a new inode entry in the destination partition. Data is deleted from the parent partition and moved to the destination partition.

Remove with inode: When using rm file1, deletes the filename from the inode table. Data is not actually removed, but will be overwritten when the data blocks are used by another file.

Symbolic links: A symbolic link points to another file Syntax: \$In -s filename [linkname]

A new inode entry for the symbolic link is created. Which points to the data of the filename?

The size of the symbolic link is always the number of characters in the path name.

Hard links: One physical file on the filesystem. Each link references the file's inode File is present in the filesystem as long as at least one link remains. Cannot span drives or partitions.

Syntax: \$In filename [linkname]

All the files will have the same inode value.

It is not possible to use the In command to create additional hard links to directories.

Disk Usage \$df: disk Usage e.g. #df /home \$df -h: Disk usage in human readable format

\$du filename : Space occupied by file filename \$du -sh

du -hcs *

BASH What is meant by bash? Bash is a shell.

What is a shell?

- 1. Shell is used to communicate with the kernel.
- 2. It acts like an intermediate between user and kernel.
- 3. A variety of shells are there in the linux world among them, bash is famous.
- 4. We have Cshell, korn shell.

How to find how many shells are present in a linux server? cat /etc/shells

Where bash resides? /bin/bash is the command to start the bash. Whenever we are logging in linux we are using bash indirectly. Without a shell we cannot communicate to the kernel. So any one of the shells should be there in the linux machine so that we can use the linux machine.

What is the use of studying bash? Short cuts, tricks, tab key and its usefulness

BASH shortcuts !! to repeat the last command !c to repeat the last command that started with c !n to repeat a command by its number in history output

What is the meaning of ~? ~ meaning the home directory. cd ~ will take us to the home directory.

*, for multiple characters ? for single character [a-z] for the range from a -z a-z all except a-z

Use of backquotas () are called command substitution. hostname` will be giving the result for the command hostname.

Echo " HOSTname is hostname"

Backlash (\) is the escape character and makes the next character literal. Means, next character will not be considered as a command or whatever it means

Use CTRL + R for search for a command in command history

Where to find the history of all the commands used in bash? \$history | less ~/.bash_history

BASH Variables

we have a lot of variables programmed into bash, which we can use for our purpose. Some of the variables are HOME, HISTSIZE,

\$HISTSIZE #echo \$HOME #echo \$HISTSIZE \$history \$history | less \$history | more ~/.bash_history == history file \$HISTSIZE

echo \$HISTSIZE : to get the current history size Change HISTSIZE in /etc/profile for increasing the history size.

\$su : Substitute user to root without root profile. \$su root : Substitute user to root without root profile. \$su - username : Substitute for username with profile.

\$file filename: To view the type of file. \$stat filename: To view the data stored in the inode for a file

Vi Editor Basics: Vi or Visual Editor Vi and Vim (Vi Improved)

To start vi \$vi filename If the file exists it opens the file, else creates it when the edits are saved for the first time.

Three Modes of vi

- 1. Command Mode
- 2. Insert Mode
- 3. Ex Mode

When we start vi editor we will be in command mode, Useful for Navigation across the file, changing the text, copying, pasting, entering into insert mode, entering into ex mode.

To go to insert mode from command mode: i for inserting a for appending o for opening a line below.

A append to end of line I insert at beginning of a line O open a line above.

Insert Mode: Our keystrokes are actually data entered into your document, rather than command.

Ex Mode: Extended commands like: saving, exiting, search and replace.

Cursor movement: Please refer the BOOK

Leaving Insert Mode: Escape Demo Please:

Change, Delete, and Yank. Copying and Pasting. Refer BOOK pls

Undoing changes: u undo most recent changes U undo all changes to the current line since the cursor landed on the line. Ctrl + r redo last undone change.

Searching for text /text search downwards for text ?text search upwards for text n continue search in the same direction N continue searching in the opposite direction.

Saving and Exiting: ex mode:w:wq:q:q!

Useful options while using vi: \$vi -m myfile : file is non modifiable \$vi -R myfile : file is only modifiable by using the exclamation point: w! \$vi -n myfile : do not use a swap file for backup \$vi -r myfile : recover data from a swap file after a crash. \$vi -x myfile : encrypt the file when saving, decrypt the file when saving.

Gettting back to command mode === use escape

cc == changing a line... (removes the line and replaces with other contents) dd == deletes a line yy == copies the line p = paste the yanked line.

Refer Unit 6 page 10 for further reference:

Yanking and pasting... p below the current line P above the current line

u == undo most recent change. U == undo all changes to the current line since the cursor.

Ctrl + r == redo last undone.

Saving file :w = writes :w! =forcible writing :q =quits (if some modification is there it will ask you to save first, else will quit) :q! =quits (even if you have modified work which are not saved.) :wq = normal way of writing and quitting.

Yanking of multiple lines Deleting of multiple lines $===5 \text{dd} \times \text{delets}$ a character

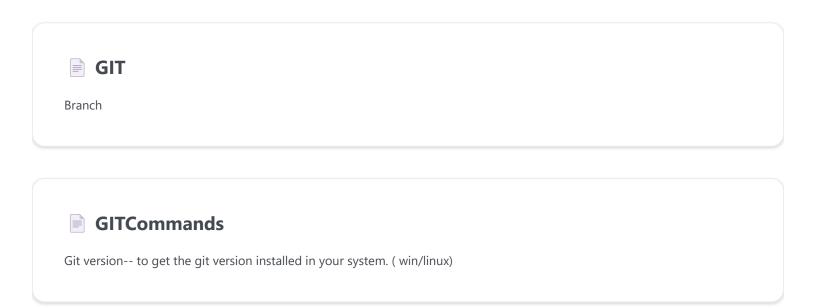
File Repositioning: From command mode G go to the last line in the file 1G go to first line in file (any number can be given and cursor will jump to that line)

Ctrl + f =go down one full screen Ctrl+b =go up one full screen Ctrl + d =go down half a screen Ctrl+u =go up half a screen.

Screen Repositioning H =first line in the screen M =go to middle line on screen L =go to last line on screen

z enter = make current line first line on screen z- make current line last line on screen

Printing Commands in Linux Ipr send a job to the queue to be printed. Ipq view the contents of the queue Iprm Remove a job from the queue Iprm 917 : Iprm followed by job number.



GIT - CommandsMORE

What is GIT? (more)

GIT

Branch

- A branch is a parallel version of your Repository.
- It is contained within the repository but does not affect the master branch, allowing you to work freely without disrupting the live version
- When you have made changes to your branch, you can merge your branch back into the master branch to publish your changes
- Branch is an independent line of development

Clone

- A Clone is what you get, when you clone a remote repository and receive a local copy for your own modification.
- Git will keep track of all your modifications locally.
- With this clone you can edit the files in your preferred editor and use git to keep track of your changes without having to be online.
- It is however connected to the remote version, so that changes can be synced between the two when required.
- You can push your local changes to the remote to keep them in sync when you are online

Fetch

- Fetch is a pull without a merge. Fetching refers to getting the latest changes from a repository (either local repository or online repository like github.com)
- Once these changes are fetched you can compare them to your local branches, the code residing on your local machine.

Merge

- Merging takes the changes from one branch and place them into another branch
- It can be in the same repository or from a different Fork.
- Merging often happens as part of a pull request which can be thought of as a request to fetch and merge

Pull

- A pull is a request to fetch and merge the changes.
- When you do a pull the latest changes are merged.

• for instance, if someone has edited the remote file which you are both working on you will want to put in those changes you were local copy so that it is up to date

Push

- Pushing refers to sending your committed changes to your master Repository.
- (Master repository can be a local repository or a remote Repository such as github.com)
- if you want your files to be applied on the remote repository you want to do a push

Checkout

- Checkout lets you navigate between branches.
- The checkout command lets you navigate between the branches created by git branch
- Checking out the branch updates the files in the working directory to match the version stored in that branch and it tells git to record all new commits on that branch

Head

- HEAD represents your current working branch
- The head pointer can be moved to different branches
- bags all commits using get check out

Gitignore

- To exclude certain files or file types being tracked by git, git uses a file called .gitignore.
- The file or file types which need to be excluded are to be listed in the .gitignore file.
- GIT will ignore the files or file types listed in .gitignore from being tracked.

Commit

• A git object, a snapshot of your entire repository compressed into a SHA.

Staging

Before committing the modified contents are moved to the staging area.

The Three States of GT

- 1. Modified
- 2. Staged
- 3. Committed

- 1. Modified
- 2. Modified means that you have changed the file but have not staged it for committing it to your database yet.
- 3. Staged
- 4. Staged means that you have marked a modified file in its current version to go into your next commit snapshot.
- 5. Committed
- 6. Committed means that the data is safely stored in your local database.

Git Directory

- The Git directory is the directory where Git stores the metadata and object database for your project.
- This is the most important part of Git, and it is what is copied when you clone a repository from another computer.

Types of Local Repository, Online repository

- Local repository for single user
- Local repository for multi users
- Remote repository for multi users (shared storage folder.)
- Online repository for multi users with added features like Access control.
- Github/Bitbucket are online repositories . 5GB of space on their SAN storage. Give access to many persons, through Access control.

Development is done in different branch

Bug fixes are also done in different branches.

What branch production ready applications run on?

Master Branch

Master Branch

- Master Branch is a permanent branch, always going to reflect production ready state.
- Highly discouraged to develop on master branch

GITCommands

Git version-- to get the git version installed in your system. (win/linux)

SETUP/ git global configuration

• You may also specify options --system, --global, --local to read that value at a particular level.

div export EDITOR=gedit /div

git config -global user.name name \diamond Define author name to be used for all commits in current repo. Devs commonly use --global flag to set config options for current users.

To view the above modified Git config --list Or Git config --global --list

Global git configurations are stored in a file called .gitconfig. You can modify the file directly to add the configurations.

git config --global user.name "[firstname lastname]" \diamond set a name that is identifiable for credit when reviewing version history. Define the author name to be used for all commits by the current user

git config --global user.email '[valid-email]" Define the author email to be used for all commits by the current user . set an email address that will be associated with each history marker

git config --global color.ui autoset \diamond automatic command line coloring for Git for easy reviewing

git config --global alias. alias-name git-command \diamond Create a shortcut for a Git command. E.g. alias.glog log --graph --oneline will set git glog equivalent to git log --graph --oneline.

git config --system core.editor editor \diamond Set text editor used by commands for all users on the machine. editor arg should be the command that launches the desired editor (e.g., vi).

git config --global --edit \diamond Open the global configuration file in a text editor for manual editing.

SETUP & INIT git init directory \diamond This is to create a local empty repository on git, using git software. Standard is to use remote/online repository like github.com or bitbucket.com

git clone repo link \diamond Clone a repository located at repo link into a local machine. \diamond Original repo can be located on the local filesystem or on a remote repository machine via HTTP or SSH. \diamond Github and bitbucket are examples of remote online repositories.

git add file \diamond Stage the file for the next commit.

git commit -m "message" Commit your staged content as a new commit snapshot. Commit the staged snapshot, but instead of launching a text editor, use message as the commit message.

git diff git status commit Undoing Changes git revert commit git reset file overwriting any changes. git clean -n clean

Git Branches git branch git branch branch git checkout -b branch git merge branch Remote Repositories Show un-staged changes between your index and working directory List which files are staged, unstaged, and untracked. show modified files in working directory, staged for your next Create new commit that undoes all of the changes made in commit, then apply it to the current branch. Remove file from the staging area, but leave the working directory unchanged. This unstages a file without Shows which files would be removed from working directory. Use the -f flag in place of the -n flag to execute the List all the branches in your repo. Add a branch argument to create a new branch with the name branch. List all the branches in your repo. Add a branch argument to create a new branch with the name branch. Create and check out a new branch named branch. Drop the -b flag to checkout an existing branch. Merge branch into the current branch.

git fetch remote branch ♦ Fetches a specific branch, from the repo. Leave off branch to fetch all remote refs.

git pull remote \diamond Fetch the specified remote's copy of current branch and immediately merge it into the local copy.

git push remote branch \diamond Push the branch to remote, along with necessary commits and objects. Creates named branch in the remote repo if it doesn't exist.

git log git statusList which files are staged, unstaged, and untracked. show modified files in working directory, staged for your next commit git logDisplay the entire commit history using the default format. For customization see additional options git log -limitLimit number of commits by limit. E.g. git log -5 will limit to 5 commits. git log --onelineCondense each commit to a single line. git log -pDisplay the full cliff of each commit. git log --statInclude which files were altered and the relative number of lines that were added or deleted from each of them. git log --author="pattern" Search for commits by a particular author. git log --grep="pattern"Search for commits with a commit message that matches pattern. git log since..untilShow commits that occur between since and until. Args can be a commit ID, branch name, HEAD, or any other kind of revision reference git log -- fileOnly display commits that have the specified file. git log --graph -- decorate--graph flag draws a text based graph of commits on left side of commit msgs. --decorate adds names of branches or tags of commits shown

git diff git diffdiff of what is changed but not staged git diff --stageddiff of what is staged but not yet committed git diff HEADShow difference between working directory and last commit git cliff --cachedShow difference between staged changes and last commit git reset git resetReset staging area to match most recent commit, but leave the working directory unchanged. git reset --hardReset staging area and working directory to match most recent commit and overwrites all changes in the working directory git reset commitMove the current branch tip backward to commit, reset the staging area to match, but leave the working directory alone. git reset --hard commitSame as previous, but resets both the staging area & working directory to match. Deletes uncommitted changes, and all commits after commit. git rebase git rebase -i baseInteractively rebase current branch onto base. Launches editor to enter commands for how each commit will be transferred to the new base. git pull git pullallow to see what others have contributed to the project git pull --rebase remoteFetch the remote's copy of current branch and rebases it into the local copy. Uses git rebase instead of merge to integrate the branches

git push git pushpublish to remote repository git push remote --forceForces the git push even if it results in a non-fast-forward merge. Do not use the --force flag unless you're absolutely sure you know what you're doing

git push remote --all ♦ Push all of your local branches to the specified remote.

git push remote --tagsTags aren't automatically pushed when you push a branch or use the --all flag. The --tags flag sends all of your local tags to the remote repo. The branching is used also when a repository are made by only one developer, normally one branch correspond to a new functionality or a new update (also called patch) of the software this can help to organize the project. it also provide a better way to test new functionality of the software without touch the master code and if this functionality are no more requested you can simply delete the branch where are stored without too many efforts. Rewriting Git History

git commit --amendReplace the last commit with the staged changes and last commit combined. Use with nothing staged to edit the last commit's message.

git rebase baseRebase the current branch onto base. base can be a commit ID, a branch name, a tag, or a relative reference to HEAD git reflogShow a log of changes to the local repository's HEAD. Add --relative-date flag to show date info or --all to show all refs.

Commands Git rm --cached index.html to unstage a staged file

Git add . Git status

Git log

HEAD reference point to another reference HEAD represents the current working branch.

How many branches are there in the repository? Git branch

How many branches are there in the repository and which branch we are in? Git branch

o in the output specifies the branch you are in.

Git branch user-authentication- creates a new branch user-authentication Git checkout user-authenticationmoves to the user-authentication branch

Git diff index.html

Git checkout master Git merge user-authentication

After merging to master branch

Git tag -a v1.0.0 -m "Version 1.0.0 release" Git tag

GIT is DVCS Distributed version control system

SSH keypairs are used to authenticate yourself on servers.

Git config --global --add difftool kdiff3 Git config --global --add difftool.kdiff3.path /path/to/kdiff3 Git config --global --add difftool.kdiff3.trustExitcode false

GIT - CommandsMORE

What is GIT? (more)

• GIT is a distributed software version control system. • GIT is part of SCM tools. (SCM tools include source management tools, source deployment tools, bla bla)) • (Source Control Management) • Git is a free and open source, designed to handle everything from small to very large projects with speed and efficiency.

Single person using the source control tool for his use alone. \diamond Version control. He can have multiple versions of his own source code, so he can review them whenever he wants to.

A team of persons using the source control for their teams. \diamond A team can use this source control so that the entire team can contribute/review and approve the source code.

Legacy SCM Tools: First one is the VCS == version control System. CVS === Concurrent Version system. These other systems (CVS Subversion, Perforce, Bazaar)

Why is GIT better than other systems? • These other systems (CVS, Subversion, Perforce, Bazaar, and so on) think of the information they store as a set of files and the changes made to each file over time (this is commonly described as delta-based version control). Conceptually, those older systems store information as a list of file-based changes.

How does GIT treat its Data? • Git does not think of or store its data as files or folders. Instead, Git thinks of its data more like a series of snapshots of a miniature filesystem. • With Git, every time you commit, or save the state of your project, Git basically takes a picture of what all your files look like at that moment and stores a reference to that snapshot. • To be efficient, if files have not changed, Git does not store the file again, just a link to the previous identical file it has already stored. Git thinks about its data more like a stream of snapshots. • This makes Git more like a mini filesystem with some incredibly powerful tools built on top of it, rather than simply a VCS.

Features of GIT

- 1. Speed
- 2. Integrity

Speed: • Most operations in Git need only local files and resources to operate — generally no information is needed from another computer on your network. • If you're used to a CVS where most operations have that network latency overhead, this aspect of Git will make you think that the gods of speed have blessed Git with

unworldly powers. Because you have the entire history of the project right there on your local disk, most operations seem almost instantaneous.

GIT Has Integrity • Git stores everything in its database not by file name but by the hash value of its contents.

- Everything in Git is check summed before it is stored and is then referred to by that checksum. This means it is impossible to change the contents of any file or directory without Git knowing about it.
- This functionality is built into Git at the lowest levels and is integral to its philosophy. You cannot lose information in transit or get file corruption without Git being able to detect it.
- The mechanism that Git uses for this check summing is called a SHA-1 hash. This is a 40-character string composed of hexadecimal characters (0-9 and a—f) and calculated based on the contents of a file or directory structure in Git.



NODE JS



Pranayama Breathing Exercise - 01

dev languages

NODE JS

Is node js a programming language? What is Node.js?

- Node. js is an open-source and cross-platform runtime environment for executing JavaScript code outside a browser.
- You need to remember that NodeJS is not a framework and it's not a programming language

What is NodeJS used for?

- Node. js is primarily used for non-blocking, event-driven servers, due to its single-threaded nature.
- It's used for traditional web sites and back-end API services, but was designed with real-time, push-based architectures in mind.

What is node.JS and how does it work?

- It is used as a backend service where javascript works on the server-side of the application.
- This way javascript is used on both frontend and backend.
- Node. js runs on chrome v8 engine which converts javascript code into machine code, it is highly scalable, lightweight, fast, and data-intensive.
- A common misconception among developers is that Node js is a backend framework and is only used for building servers.
- This isn't true: Node. js can be used both on the frontend and the backend

What is the difference between JavaScript and NodeJS?

- Javascript is a programming language that is used for writing scripts on the website.
- NodeJS is a Javascript runtime environment

Is NodeJS just JavaScript?

- Node.is a JavaScript runtime built on Chrome's V8 JavaScript engine.
- Node. is uses an event-driven, non-blocking 1/0 model that makes it lightweight and efficient

When should I use node js vs Java?

 Java is heavily used for building complex web-based applications with an already provided framework built using Java, whereas Node JS is best suited for real-time collaborative drawing or editing applications like Google Docs.

Should I learn PHP or Nodejs?

- While PHP may feel faster to code, Node. js provides much better application speed.
- Legacy PHP code is known to be slow.
- Its non-blocking model gives developers the ability to deploy solutions that perform significantly quicker.

JAVA SPRING

• Java ○ Spring ■ Springboot • nodejs • spring framework • quarkus-native • quarkus-jvm

What is the difference between Java and Spring?

- JavaEE is used for web development.
- Spring is used for a template design for an application.

The differences between Java and spring can be classified in the below three types:

- 1. Different architectures
- 2. Languages supported
- 3. Structures

Different architectures:

• Java EE is based on a three-tier architecture. ○ The first is the presentation tier that contains the user interface and focuses on delivering a fluid and stable experience. ○ The second is the application tier that contains the main business logic of the application and ○ The third tier is the data-tier, which comprises the database and other data needs. • Spring, on the other hand, is based on a layered architecture that includes different modules. Each module delivers different features for the applications and all these modules are built on top of their core containers.

Languages supported: ● Java EE uses a high-level object-oriented programming language. ○ Java is used in Java EE that checks each described feature of a programming language. ● Spring does not have any specific programming model. Developers have the option to use Java as well as Kotlin in Spring.

Structures: ● Java EE can be used to develop either web-based or non-web-based structures, whereas ● Spring offers a variety of structures for your application ranging from Microservices, cloud, serverless event driver, web applications, etc.

SpringBoot

• Spring Boot is basically an extension of the Spring framework, which eliminates the boilerplate configurations required for setting up a Spring application.

What is the difference between Spring and spring boot?

- Spring is an open-source lightweight framework widely used to develop enterprise applications.
- Spring Boot is built on top of the conventional spring framework, widely used to develop REST APIs

Is spring boot a backend? Framework?

- Spring Boot is a backend framework, built on top of Spring, used for developing web applications.
- Spring Boot is an open-source micro framework maintained by a company called Pivotal.
- It provides Java developers with a platform to get started with an auto configurable production-grade Spring application
- It lets Java developers start building web applications quickly, without fuss.
- Spring Boot helps developers create applications that just run.
- Specifically, it lets you create standalone applications that run on their own, without relying on an external web server, by embedding a web server such as Tomcat or Netty into your app during the initialization process

What is REST API in spring boot?

- Spring Boot is a Java framework, built on top of the Spring, used for developing web applications.
- It allows you to create REST APIs with minimal configurations.

 A few benefits of using Spring Boot for your REST APIs include: No requirement for complex XML configurations.

What is Rest API?

- A REST API (also known as RESTful API) is an application programming interface (API or web API) that
 conforms to the constraints of REST architectural style and allows for interaction with RESTful web
 services
- REST stands for representational state transfer
- API : An API is a set of definitions and protocols for building and integrating application software

** REST

- 1. REST is a set of architectural constraints, not a protocol or a standard.
- 2. API developers can implement REST in a variety of ways.

When a client request is made via a RESTful API, it transfers a representation of the state of the resource to the requester or endpoint. This information, or representation, is delivered in one of several formats via HTTP: JSON (Javascript Object Notation), HTML, XLT, Python, PHP, or plain text. JSON is the most generally popular file format to use because, despite its name, it's language-agnostic, as well as readable by both humans and machines.

Something else to keep in mind: Headers and parameters are also important in the HTTP methods of a RESTful API HTTP request, as they contain important identifier information as to the request's metadata, authorization, uniform resource identifier (URI), caching, cookies, and more. There are request headers and response headers, each with their own HTTP connection information and status codes.

In order for an API to be considered RESTful, it has to conform to these criteria:

- 1. A client-server architecture made up of clients, servers, and resources, with requests managed through HTTP.
- 2. Stateless client-server communication, meaning no client information is stored between get requests and each request is separate and unconnected.
- 3. Cacheable data that streamlines client-server interactions
- 4. A uniform interface between components so that information is transferred in a standard form. This requires that:
- 5. resources requested are identifiable and separate from the representations sent to the client.

- 6. resources can be manipulated by the client via the representation they receive because the representation contains enough information to do so.
- 7. self-descriptive messages returned to the client have enough information to describe how the client should process it.
- 8. hypertext/hypermedia is available, meaning that after accessing a resource the client should be able to use hyperlinks to find all other currently available actions they can take.
- 9. A layered system that organizes each type of server (those responsible for security, load-balancing, etc.) involves the retrieval of requested information into hierarchies, invisible to the client.
- 10. Code-on-demand (optional): the ability to send executable code from the server to the client when requested, extending client functionality.

Though the REST API has these criteria to conform to, it is still considered easier to use than a prescribed protocol like SOAP (Simple Object Access Protocol), which has specific requirements like XML messaging, and built-in security and transaction compliance that make it slower and heavier.

Microservices

What are microservices?

Microservices - also known as the microservice architecture - is an architectural style that structures an
application as a collection of services that are • Highly maintainable and testable • Loosely coupled •
Independently deployable • Organized around business capabilities • Owned by a small team

What are the benefits of microservice architecture?

• The microservice architecture enables the rapid, frequent and reliable delivery of large, complex applications. It also enables an organization to evolve its technology stack.

What are the six characteristics of Microservices?

- 1. Multiple Components
- 2. Built For Business
- 3. Simple Routing
- 4. Decentralized
- 5. Failure Resistant
- 6. Evolutionary

Pranayama_Breathing

Pranayama Breathing Exercise - 01

Method 1: LONG, DEEP BREATHING:

BENEFITS The simplest of all breathing techniques and most natural, the long and deep breathing relieves stress and tension. It reduces toxic buildup in the mucous linings of the alveoli of the lungs, cleanses the blood and as a result of increased oxygen flow to your brain and body, your health improves in many ways.

TECHNIQUE

- 1. Sit in your most comfortable seated position.
- 2. Relax your shoulders and chest.
- 3. Inhale, relax the abdomen, pushing your belly forward, expanding it.
- 4. Then, as you exhale, allow the abdomen to shrink back in, tightening your belly muscles and pushing the air out.
- 5. Do this without straining yourself.
- 6. Open up and free up the breath.

You may place one hand on your belly to feel the abdomen expanding and contracting as you inhale and exhale. Practice in even lengths. Breathe out for the same length of time as you breathe in.

WHEN TO DO THIS

- 1. Before meditation
- 2. Before going to bed
- 3. Before a meeting, presentation, or a big decision
- 4. Before studying, before an exam, or an interview
- 5. And whenever you can think of --- in the car, at work, or while waiting in line.

Method 2: NOSTRIL BREATHING:

BENEFITS Encourages mind to higher levels of discrimination, concentration and thoughts. Gives more energy and oxygen to the physical body and helps calm your nerves and improve circulation.

TECHNIQUE

- 1. Sit in a relaxed position, spine straight. Close your eyes.
- 2. Press and close the right nostril with the thumb of the right hand. Draw in a deep breath through the left nostril.
- 3. After taking a full breath, close the left nostril with the middle, ring and little finger of your right hand, taking the thumb away from the right nostril and slowly let the air out, expelling the breath fully.
- 4. Inhale through your right nostril. a. After a full inhalation, close your right nostril with the thumb and release the fingers from your left nostril and breathe out through your left nostril.
- 5. This completes one round. Begin with three rounds each time and gradually increase rounds as you progress through the weeks.

SPECIAL NOTES For a more advanced technique, consult a yoga teacher or a spiritual teacher. Your teacher may be able to teach the pranayama technsique that will be most beneficial to your mental and physical health and prepare you to complement the pranayama with mantra and meditation. No one should risk harm by practicing these techniques without consulting a trained yoga teacher or a physician.

WHEN AND WHERE TO DO THIS

- 1. Do this in a well-ventilated, clean, smoke-free, dust-free, odor-free room.
- 2. Do not perform this technique after yoga postures asanas.

Method 3: Kundalini Breathing Exercise

DO NOT SHARE

Set aside at least one hour alone without interruptions for this exercise. Sit in a cast circle on the floor facing North or East, arms and legs uncrossed. Listen to the sound of your breath. Can you hear "Hahm" on the intake and "Sah" on the exhale? This is the mantra to use in this exercise. Do not speak it -- just hear it in the breath. When I say "Hahm", I refer to the inhale, and "Sah" to the exhale. Try it for a few minutes. Hahm - Sah - Hahm - Sah. Make sure you are relaxed and not forcing your breath.

Next, visualize the air in the room as breathable light. With each "Hahm," you should imagine the light entering up through your nose, past your third eye, around the inside of your skull, and down your spine to the lowest tip of your coccyx (tail) bone. You should not feel the energy "hop" or avoid chakra points. Hold your breath as long as comfortable, then exhale "Sah."

As you exhale, you should visualize light of a slightly different shade going back up your spine, pushing out the light you inhaled. This second light is your personal

Kundalini energy. The light should follow the same path, up your spine, over the top of your head, and out your nose. As it goes, you should hear the "Sah" part of your breath stretched out for a few long seconds. Continue this for about 20 minutes. Haaahhhhm - hold - saaaahhh. You will notice yourself physically relaxing at the end of the 20 minutes, if you are doing it right.

Once you have this part down, and can do it comfortably, don't hold your breath at the base of the spine, but just pause a moment. Then, using your stomach muscles, you should release the breath in short bursts, hearing "sah, sah, sah, sah, sah," as many times as it takes before your lungs empty. Keep up the light visualizations: The light will jump with the breathing. Repeat this for another 20 minutes. Haaahhhhm, sah sah sah sah sah. You may be able to see your energy increase with each breath.

If you begin shaking and jerking, know that is a normal reaction to the increased energy in your system, and you should not fight it. (Like a shiver down the spine, it is totally involuntary and natural.) Don't scare yourself into stopping the exercise at this point. Soon, the jerking motions will stop, and you may begin moving in a very fluid fashion. You will not be able to hold still after this point, and you shouldn't try.

The energy will increase to the point where it reaches your Third Eye chakra. Once you have this flow at maximum capacity, CONTINUE FOR AS LONG AS YOU CAN. When you finally release the energy into the Universal Current, BE SURE YOU CONCENTRATE ON PURE LOVE. This is the easiest thing to do, and is a good default target spell. If you have no blocks, you will get the experience of a lifetime from this exercise. Do not be shocked at anything your physical body does, or where your mind goes when you release the energy. It will open you up to feeling energy like you never have before. Remember to ground out any residual energy before removing the circle.

If you have stuck chakras, or knots, you will give up after a time, having only raised the energy to whatever chakra the knot lays in. It is vital for magickians to have free-flowing energy. Any knots must be untied. When you feel the knot, or stuck chakra, STOP the exercise, let the energy subside, and ground the rest. Then, remember which chakra the energy stopped at. This is the one that is blocked. I advise anyone who comes to this point to seek the advice of a Priest or Priestess.



resume_common

OBJECTIVES

resume_common

OBJECTIVES

Job Title: Web Administrator, Middleware administrator, DevOPS Engineer, Cloud Engineering

- · To associate myself with a company which gives me dynamic and challenging tasks, which can enhance my skills to the maximum, having a strong desire to work as System Administrator in the Heterogeneous Environment.
- · In quest of career enrichment opportunities in with an organization of repute
- · And highly motivated individual with proven ability to learn fast and work well under pressure.
- · Aim to be associated with a progressive organization that gives me scope to update my knowledge and skills in accordance with cutting edge technology and be a part of team that dynamically works towards the organization and gains satisfaction thereof.

Aim to be with cutting edge technology.

About Myself

Qus. Tell me about yourself?

Ans. This is the dreaded, classic, open-ended interview question and likely to be among the first. It's your chance to introduce your qualifications, good work habits, etc. Keep it mostly work and career related.

- I am an engineer with hands on experience in handling systems, servers, internet applications and how they communicate with each other.
- Passionate about newer technology. (mostly internet applications)
- I am highly organized with an attitude for work excellence.

Qus. Why do you want to leave your current job? (Why did you leave your last job?)

Ans.Be careful with this. Avoid trashing other employees and making statements like, "I need more money." Instead, make generic statements such as, "It's a career move."

- The move was needed because of my career targets.
- I felt like i am getting stagnated.

- In order to spearhead my career growth, i need to move
- I am a strong believer of the words "Change is constant"

Qus. What are your strengths?

Ans. Point out your positive attributes related to the job.

- I am super organized with positive growth mindset.
- Super organized and high attitude.
- Always looking to add value to my work, life.

Qus. What are your weaknesses? Ans. Everybody has weaknesses, but don't spend too much time on this one and keep it work related. Along with a minor weakness or two, try to point out a couple of weaknesses that the interviewer might see as strengths, such as sometimes being a little too meticulous about the quality of your work. (Avoid saying "I work too hard." It's a predictable, common answer.) For every weakness, offer a strength that compensates for it.

• Over enthuciasm. •

Qus.Which adjectives would you use to describe yourself? Ans.Answer with positive, work-oriented adjectives, such as conscientious, hard-working, honest and courteous, plus a brief description or example of why each fits you well.

• Organized, customer-friendly. • Fast with work.

Qus. What do you know about our company? Ans.To answer this one, research the company before you interview.

Qus. Why do you want to work for us? Ans.Same as above. Research the company before you interview. Avoid the predictable, such as, "Because it's a great company." Say why you think it's a great company.

Qus. Why should I hire you? Ans.Point out your positive attributes related to the job, and the good job you've done in the past. Include any compliments you've received from management.

• Highly organized, customer-friendlys • I can motivate others who are around me with positive vibrations.

Qus. What past accomplishments gave you satisfaction? Ans.Briefly describe one to three work projects that made you proud or earned you pats on the back, promotions, raises, etc. Focus more on achievement than reward.

• eBranch rollout in Nigeria. • Vulnerability remediation team in DSUNXAC • Openshift cloud migration from on-premises servers.

Qus. What makes you want to work hard? Ans.Naturally, material rewards such as perks, salary and benefits come into play. But again, focus more on achievement and the satisfaction you derive from it.

Qus. What type of work environment do you like best? Ans. Tailor your answer to the job. For example, if in doingyour jobyou're required to lock the lab doors and work alone, then indicate that you enjoy being a team player when needed, but also enjoy working independently. If you're required to attend regular project planning and status meetings, then indicate that you're a strong team player and like being part of a team.

Qus.Why do you want this job? Ans.To help you answer this and related questions, study the job ad in advance. But a job ad alone may not be enough, so it's okay to ask questions about the job while you're answering. Say what attracts you to the job. Avoid the obvious and meaningless, such as, "I need a job."

Qus. How do you handle pressure and stress? Ans. This is sort of a double whammy because you're likely already stressed from the interview and the interviewer can see if you're handling it well or not. Everybody feels stress, but the degree varies. Saying that you whine to your shrink, kick your dog or slam down a fifth of Jack Daniels are not good answers. Exercising, relaxing with a good book, socializing with friends or turning stress into productive energy are more along the lines of the "correct" answers.

- Talk to peers lot. Take quick breaks often. Work in early morning hours. Get to know how they handled.
- Always look for keep things organized, which will lead to delegation/automation •

Qus. Explain how you overcame a major obstacle. Ans. The interviewer is likely looking for a particular example of your problem-solving skills and the pride you show for solving it.

Qus. Where do you see yourself five (ten or fifteen) years from now? Ans. Explain your career-advancement goals that are in line with the job for which you are interviewing. Your interviewer is likely more interested in how he, she or the company will benefit from you achieving your goals than what you'll get from it, but it goes hand in hand to a large degree. It's not a good idea to tell your potential new boss that you'll be going after his or her job, but it's okay to mention that you'd like to earn a senior ormanagement position.

• I want to be an Engineering manager role • Cyber Security and related work.

Qus. What qualifies you for this job? Ans.Tout your skills, experience, education and other qualifications, especially those that match the jobdescription well. Avoid just regurgitating your resume. Explain why.

Qus. Why did you choose your college major? Ans. The interviewer is likely fishing to see if you are interested in your field of work or just doing a job togetpaid. Explain why you like it. Besides your personal interests, include some rock-solid business reasons that show you have vision and business sense.

11.What kind of salary do you need? or What kind of salary are you looking for? A loaded question. A nasty little game that you will probably lose if you answer first. So, do not answer it. Instead, say something like, That's a tough question. Can you tell me the range for this position? In most cases, the interviewer, taken off guard, will tell you. If not, say that it can depend on the details of the job. Then give a wide range.

- 12. Are you a team player? You are, of course, a team player. Be sure to have examples ready. Specifics that show you often perform for the good of the team rather than for yourself are good evidence of your team attitude. Do not brag, just say it in a matter-of-fact tone. This is a key point.
- Yes.I am a team player. I have been a very dedicated team member, as well dynamic team lead.
- 13. How long would you expect to work for us if hired? Specifics here are not good. Something like this should work: I'd like it to be a long time. Or As long as we both feel I'm doing a good job.
- 14. Have you ever had to fire anyone? How did you feel about that? This is serious. Do not make light of it or in any way seem like you like to fire people. At the same time, you will do it when it is the right thing to do. When it comes to the organization versus the individual who has created a harmful situation, you will protect the organization. Remember firing is not the same as layoff or reduction in force.

• Not yet.
15. What is your philosophy towards work? The interviewer is not looking for a long or flowery dissertation here. Do you have strong feelings that the job gets done? Yes. That's the type of answer that works best here. Short and positive, showing a benefit to the organization.
16. If you had enough money to retire right now, would you? Answer yes if you would. But since you need to work, this is the type of work you prefer. Do not say yes if you do not mean it.I will simulate the retirement.
17. Have you ever been asked to leave a position? If you have not, say no. If you have, be honest, brief and avoid saying negative things about the people or organization involved.Not yet.
 18. Explain how you would be an asset to this organization You should be anxious for this question. It gives you a chance to highlight your best points as they relate to the position being discussed. Give a little advance thought to this relationship. I will be a positive
19. Why should we hire you? Point out how your assets meet what the organization needs. Do not mention any other candidates to make a comparison.
20. Tell me about a suggestion you have made Have a good one ready. Be sure and use a suggestion that was accepted and was then considered successful. One related to the type of work applied for is a real plus.
• VEPL \diamondsuit About web based application along with mobile. • CTS - Technology office team. \diamondsuit Lots of suggestions, training organization.

Tell me something about yourself.? Why do you want to leave this project/work What's Your Biggest Weakness? What is your biggest power? What are your strengths? Tell me about your ability to work under pressure. Where do you see yourself in five years' time? What is the biggest mistake you have committed? What did you hate most on your previous job or organization? What are your short-term goals? What do you think it takes to be successful in this career? Do you consider yourself organized? And do you manage your time well?

Difficult Interview Questions Page -1 Question 1: Tell me about yourself?

Answer: Whenever you go for the interview, most probably this is the first question asked to interviewee. This is likely to be a warm-up question. So you should not waste your best points on it. More difficult questions are yet to be asked. So just cover up our topics for answering this question: early years, education, work history, and recent career experience.

Question 2: Would you please tell me about your work history? or What applicable attributes / experience do you have?

Answer: Though Interviewer panel have your resume or job application before to them, they asks it to you to know about the details of your previous job regarding your responsibilities, your projects, your salary package, your designation all sorts of facts in your own voice. You should never be fumble, because many times the interviewee are not so comfortable in answering this question as they mention wrong or false entries. Too much glorification of your job history can harm your career as the hiring manager check it also with they check your references. Before going to the interview you must go through your that resume which you have submitted at the time of applying for the job. It is the best way to have a zerox copy of your resume which you have applied at the time of interview. This makes you ready for answering the question. When the panel asks the cross questions regarding your previous jobs, don't tell him a lie, you may be fired after getting the job when the management committee catches your fault. To make easy for facing the interview download a sample job application ahead of time. Do a lot of hard home work on your resume. Remember the formula of "KISS" (Keep it short and simple.) Your answer should be match to your resume. Give the brief description of your experience, your responsibilities, team leadership quality, project you have handled, designation, exact time duration period of your jobs and salary package with true facts as well as also tell them the vacant time in which you have not done any sorts of job with some reasonable reason. Mostly focus on those responsibilities that are directly related to the new job's requirement. Your qualification must also be fulfilled the job requirement.

Question 3: Why you had so many jobs in such a short period of time? Answer: If you have switches various jobs in quick succession, this question can be asked most often to the interviewee. Don't hesitate to answer it in a positive way with confidence, but try to escape over confidence. Only logical answer can satisfy the

panel otherwise quick switching is not a good sign, the candidate loses his reliability. So your answer should like it "I was able to pursue different opportunities that aligned with my career goals because I am a reliable quick learner from different sorts of people with the skills needed to fit in and be effective in different environments. I got opportunities to see how different companies doing things and that is the reason I am here today." You have to convince the interviewer to spent more time for the welfare of yourself and the company both. You have to add this point that you can contribute to everyone's success by giving your full commitment with different types of experiences.

Question 4: What do you know about our organization?

Answer: Every recruiters have an interest to know about your interest in the their company that up to what extent do you know about this company. You are be able to answer the question. If you have to conduct some researches regarding this company. But always remember this fact that you have to represent yourself as you have done some research work about this company and gained some information and you are keen to know more. Don't overwhelm the interviewer. This may hurt the interviewer's ego. You can discuss about it's products or services, revenues, reputation, image, goals, problems, management style, people, history and philosophy. This is the safe way to answer this question, "In my job search, I've investigated a number of companies. Yours is one of the few that interests me, for these reasons I am here" Don't say like this: "Well, everyone tells me that you're in all sorts of trouble, and that's why I'm here". For answering this question you have to prepare yourself in advance. Go through internet and read blogs and check Discussion Boards and social networking sites. If you are a college going student go to the career office or placement department you can get a list of alumni who work for the company. Mark up some relevant information easy to remember. This will put up a dogmatic impact over the interviewer panel.

Question 5: Why do you want this job?

Answer: For answering this question, you have to define yourself as the eligible and best candidate on the behalf of your experience and qualities needed for the job. Also mentioned that you the company has an excellent image and you want to work for an organization like it. You can do your best and enjoy a lot while working for this company.

Question 6: Why do you want to work for us?

Answer: The answer of this question is as same as the answer of the above question. You can say that your research has shown that the company is doing things you would like to be involved with, and the way of performing the task attracts you very much. Always try to answer in the company's favor as the company asks for it's employee. For doing this you have to do enough home work for getting success. Don't tell a lie to the interviewers because they are also very smart and more experienced than you.

Question 7: How would you approach this job? How would you do it?

Answer: For beating interview successfully, you have to identify the two or three main issues of that company and say how you'll deal with them, which shows you can focus on what's important. If there was any drawback or fault in the company's planning or strategy or functioning, you can indicate that points to the interviewers, if you are right, then you will win the game. Emphasize your personal strengths that are very relevant for the company's requirements.

Question 8: Please give me your definition of the position for which you are being interviewed.?

Answer: Your answer must be brief and task oriented. Before attempting the answer analyze the weight of that designation in terms of responsibility and accountability. If unable to do this, ask for the same to the interviewer and you will get the exact answer.

Question 9: What do you find most attractive about this position? What seems least attractive about it?

Answer: Beware of answering to this question, the answer of this question reflects your personality, whether you see more positive aspects or see negative aspects. If you mention more negative aspects of the company, you will be realize as a negative thinker, otherwise positive thinker. So list three or four attractive factors of the job, and mention a single, minor, unattractive item and explain it softly with having a perfect logic.

Question 10: What do you look for in a job?

Answer: Your answer should be oriented to opportunities at this organization not more than personal security. Express your desire to perform well and you should be recognized for your contributions.

Question 11: How long would it take you to make a meaningful contribution to our firm?

Answer: Don't be imaginary, and never say that "I am too flexible and easily assimilated in the organization from the very first day". Be realistic and say that, I'll take six months to a year as I'll pull my weight from the first day to fulfill the needs of the company so that I can put my major contribution.

Question 12: Why should we hire you?

Answer: The best way to answer of this question is to convince them by giving the examples of your skills and worthiness why you are the best candidate for the job. Compare the job description with your abilities before them, as well as also mentioned what you have accomplished in your other positions. Be positive and attracts their attention towards your ability, your experience, and your energy. Also show your interest in the company and the position.

Question 13: What can you do for us that someone else can't?

Answer: Here you have to establish yourself superior to others. For this you have to show your skill, interest, career history, achieved targets and projects with confidence and sound. Talk about your record of getting things done, getting results, your energy, and your ability to set priorities, identify problems, and use your experience and energy to solve them.

Question 14: How do you plan and organize your work?

Answer: Say like this, "I am a proactive person, I know the value of planning. Perfect planning is the first step to success. So I write the plan well ahead according to the importance of the work. I am able to differentiate between the urgent and the important. is very important. I try to perform my best efforts what I can do , if I feel any sort of difficulty, I take advice to our seniors. I have the habit to learn from my previous fault and examples. I understand the priorities of the work and manage my time according to importance of the work. I also plan for that things which are not pre-decided like planning schedule, processing duration, trouble shooting and creativity.

Question 15: Tell me about the culture at your last company/employer?

Answer: The culture of the company reflects of the image of the company and it's environment also it reflects the image of the employee. So always put the positive image of the past culture. If your previous company has a good culture, there is no problem, explain it like this, "The culture encouraged people to develop, grow, take responsibility. People were coached and mentored towards quality and productive effort. All of this helped me a great deal because I identify with these values, and respond to these opportunities". But if the past companies have the bad or non-supportive culture, even though put a positive image of the culture like this, "there are lots of freedom for me to take initiative, responsibility, find new ways to contribute, a free market allowing the good workers to naturally excel and develop reputation and internal working relationships, etc."

Question 16: What were your starting and final levels of compensation?

Answer: This is also a crucial question mostly asked to the interviewers, because on the basis of previous salary, they determine your salary. So they asks for the details of your compensation history. Be alert to answer this question, because your answer should match to the details of your compensation history, which you have mentioned in your resume or job application. So recall your memory before going to the interview. The best way is to have a Photostat copy of resume or job application. Never exaggerate your earning, because you can be caught while cross- checking, because many company confirm the salary package when it checks your references.

Question 17: What were your responsibilities in your previous job?

Answer: This is also a very crucial and common question can be asked to you like the previous question. But the difference is that you have to answer only the current job or just previous job. Be specific and positive. Describe in detail of your responsibilities of the last job and co-relate it to the this job for which you are interviewing. Be honest and give the right information.

Question 18: What were your expectations for the last job?

Answer: This question is often asked to know the ambition and achievement of the candidate, this is asked for psychological interpretation. The interviewer want to know what you expected from your last job when you were hired and to what extent were they met? Though there isn't any right or wrong answer to this question. But be careful to answer this question and don't focus too much on the negative, instead of addressing the highlights of the job. Prepare well ahead some examples to deliver it before the interviewer. Mostly focus your delivery on the job itself, not the company, your boss, or your co-workers (if they were a problem). Your response should be specific. e.g. if you had the part of any big project, give the example what program or contribution you had done. Also mention if you have got some rewards or incentive for that work.

Question 19: What did you achieve in your last job?

Answer: This question is co-related with the previous question and will be asked after it. So prepare a number of relevant examples and explain in chronological order by going down well and punchy. Examples should show the significance of organizational benefits; making money, saving money/time, improving quality, anticipating or creatively solving problems, winning/keeping customers, improving efficiency.

Question 20: What was the biggest accomplishment / failure in this position?

Answer: For answering this sort of question, give an example of something you accomplished that is directly related to the job you are interviewing for. Go to the positive attitude and avoid to be negative. Count down your bigger successes and say your minor failure. Also review your resume and match all the content you have to deliver also speak in the favor of the company which is beneficial to the company you are interviewing for. Try to express your views that how important you could be in the welfare of the company. Don't be embellish too much, otherwise it may go against you.

Question 21: How would you evaluate your present firm?

Answer: Always put a positive image of the company whether you have get bitter experience, because your answer reflects your personality. So you can say like this: "I've gain many excellent and interesting experience from an excellent company."

Question 22: What Are Three Positive Things Your Last Boss Would Say About You?

Answer: This is the time to express your best old performance appraisals given by your last boss by your own mouth. This is a great way to brag about yourself through someone else's words: "My boss has told me that I am the best marketing manager he has ever had. He knows he can rely on me, and he likes my communication skill, intelligence, sense of humor and presence of minds."

Question 23: What Do You Think of Your Last Boss?

Answer: Answer in brief with carefully that indicates your respect for the authority and your ability to get along with the superiors.

Question 24: When Were You Most Satisfied in Your Job?

Answer: By this question interviewer guesses what motivates you most. Give an example of a job or project when you were excited, so that the interviewer may come to know what are your job preferences. Say, "I was very satisfied with my last job, because I interacted directly to the customers and their problems; that was an important part of the job for me."

Question 25: What is the worst feedback you have ever got?

Answer: If you have got any sort of bad feedback or lots of worse feedback, answer the worst according to your opinion. Be bold and share your areas of improvement and also mentioned what action you have taken against it. This will indicate your ability to take criticism well. Your answer should reflect your openmindedness.

Question 26: What is the most difficult situation you have faced?

Answer: The interviewer wants to get an idea regarding your ability, your skill and mental strength, how you overcome from the most difficult situation you have faced so far. There are two phase of this question: How do you define difficult? and, how can you handled the situation? You should speak the truth and mentioned the most difficult situation you have faced in the last job also mentioned how did you overcome from that situation. What was the prefect plan and what step had you taken to eradicate this problem. How did you perform task management and maintained good interaction with your team members and other peers. Close your answer by highlighting the lesson learnt out of that incident.

Question 27: What has been your biggest professional disappointment?

Answer: There is no harm to accept the fact of being disappointed because many times the situation goes beyond your control. Accept it and express no negative feelings.

Question 28: Tell me about the most fun you have had on the job?

Answer: Talk about having fun by accomplishing something for the organization.

Question 29: Give me an example of when you've produced some poor work and how you've dealt with it?

Answer: It may harmful to accept that you have done any sort of poor work. Say as being a human being I've also done one or two mistakes like everyone does but every time I've taken a lesson from my faults and definitely I wont be repeat it again in the future. Those faults made me too strong because each and every fault give me the strength to confront them.

Question 30: Tell me about a time when you helped resolve a dispute between others?

Answer: This question checks your communication skill and problem solving technique. Pick up a specific incident and explain how did you settle the dispute. What action did you take and what technique or strategy did you applied.

Question 31: Why were you fired?

Answer: This is the most difficult and deadly question can be asked to you, many time it hurts you. But have a patience and answer it with cool mind and in the positive way. Not need to accept that you have fired but say that you have resigned the job by giving some reasonable reason and also tell them that now you are ready for the new responsibilities. There are many reasons can be told there, some of them are given below:

- Actually I wanted to move my career in a different direction, and there I've got the saturation point of learning, so I realize that I should go in a different organization. So I resigned there and for the change and for the new responsibilities I am here. I hope I'll be suitable for the environment of this company.
- There were some sorts of personal problems, unfortunately upset my work life. I was unable to put my 100 percent commitment. So I left the job and solved my problem. Now these problems are no more and I am looking for a deserving new job.
- Actually the job wasn't working out so my boss and I mutually agreed that I should move onto a better position to get better return that will be beneficial for both. That's why I am here for getting change and better contribution.
- A new comer manager wanted to work with his old staff. That's why he cleaned house to replace their old members. So I've to look for a better opportunities elsewhere.
- As I completed my academic qualification, I was desperate for work. So I wanted to pick up a job as soon as possible and in hurry I took the wrong job without looking around the corner. I've learn the lesson and won't make that mistake again. I'd prefer an environment that is congenial, structured and team-oriented, where my best talents can shine and make a substantial contribution.

• Actually I could not assess the exact reason, why he released me so quickly before giving a chance to prove myself, may be possible that I didn't fully understand my boss's expectations. Though I was very successful in school and got along well with both students and faculty.

Question 32: Why are you leaving your job?

Answer: This is a very typical question mostly asked in an interview, if you escape from the previous question. Don't criticize your boss or the culture of your last job or your ex-collogues. You can reply as given above of the previous question besides these there are some tailor-made answer, you can use it with efficiency. These are: \diamond I am looking for a bigger challenge and bigger opportunity in a bigger organization, so that I can boost my career in the right direction.

- ♦ I want to utilize my technical skills and experience against new challenges in a different capacity than I have done in the past.
- ♦ My skills and experience matches exceedingly well with this position and I am fully willing to utilize them that is not being possible in my current job.
- ♦ I keen to have more responsibility and more new challenge. I've the passion to work more that is not available in my current small company.
- ♦ Actually this job sounds like an exciting opportunity and have an ideal match with my qualifications. That' why I am here to present myself. I've not decide to move until I get this attractive job.
- ♦ I am looking for growing in a team-oriented environment and also to contribute there as I couldn't do it in my last job after serving several years in my last position.
- ♦ I got bored with the same sort of work and looking for more challenges. I am an excellent employee and passionate for more work This cause me switch to my present job onto a new working environment.
- ♦ I am looking for secure position in a stable company with room for growth and opportunity for advancement.
- ♦ I was wasting a significant amount of time each day on traveling within the city for performing job. This waste my energy and time and putting bad effects on my job. So for the nearness factor, I would prefer to be closer to home.
- ♦ There was a merge between the two corporate industries thus became the cause of restructuring the staff and I had to loss my job with several other employees. That's why I am looking for a better and bigger opportunity.

Question 33: How do you feel about leaving all your benefits to find a new job?

Answer: Be positive and mentioned that these are the part of the game. Accept it to be like a natural things and pronounced a famous quote "No gains without pains" Don't show you are panicked, you should be ready to accept some risk to find the right job for yourself.

Question 34: Describe a typical work week? or How many hours do you normally work? or How would you describe the pace at which you work?

Answer: Interviewers want to know the dedication and commitment given by you in your last job by asking this question. They have the interest to know whether you perform only official task or pay more attention towards non-official task. Before answering consider the position you are applying for and how your current or past positions relate to it. The more you be able to connect your past experience with the current job opening, the more success you will gain. So focus your answer only on the official task. Give the brief detail about how you perform an organized task with perfect planning.

Question 35: How do you handle stress and pressure?

Answer: Now days doing job is very hectic and the employee or executive have to bear lots of stress and pressure. The person who be able to handle this sort of pressure can survive the job successfully, otherwise there is no place for them. So this is a typical interview question can be asked to get a sense of how you handle stress and pressure on the job. There are some examples of good responses include: \diamond This one could be the best answer that actually I work better under pressure and enjoy working in a challenging environment.

- ♦ I am be able to handle the stress and pressure because I know how to differentiate between the good stress and bad stress. I can make the correct balance between good stress and bad stress. So stress is very important to me.
- ♦ To eradicate the stress I visit daily to the gym. By doing some exercise I remove all my stress, because I think it is the best mean to handle the stress and pressure.
- ♦ To deactivate the stress and pressure I make a prefect plan to how to perform the tasks in an organizing way. Thus the pressure of work splits. This is the easiest way to manage the stress and pressure.

Question 36: What are your strengths?

Answer: It is also not an easy question, because you have to count only those strengths that will relevant to the requirements of the job. So prepare three most relevant strength by mixing up some behaviors, knowledge and experience and well as skills and also make sure them you are absolutely be able to

differentiate among them and understand the difference. You can analyze the quality of all of them. Your style should be quite confidence but not looks like arrogance or over-confidence.

Question 37: What are your Weaknesses?

Answer: It's not just a pull legging question but also brainteasers that will ask the check your presence of mind. Be positive and deliver your answer in such a way that your weakness should reflect to your strengths. For example, say you are a stickler for meeting deadlines and will stay on top of a project until it is done according to your specifications, which may cause you to sometimes work late nights. Be confident and answer it in a good sound.

Question 38: Describe your work ethic?

Answer: Work is worship for me and my company is my temple. I do my work for the benefits to the organization. I believe in hard working with excellent use of my talent, skills and experience. My dedication and commitment is towards my company.

Question 39: What is your ideal job?

Answer: Beware! This is a trapping question mostly asks to the interviewee to measure their career by time scale (at what point in your career?). So before answering you should analyze your career on the time scale measured by you, because you determine what do you want to be in future. You can count your strength before them and according to it deliver your answer. A poor answer will trigger a probing follow up that puts pressure on the interviewee to justify a daft response while a good answer need nothing to probe and the interviewer can move on to other question. A good answer may be like, "I'd like to become an expert in my field (state function if relevant), where I'm able to use my skills and abilities to make a real difference to the company's performance." Question 40: What do you look for in a job?

Answer: I want to be recognized by my working performance, knowledge, skills, dedication and talent. Question 41: Why haven't you found a new position before now?

Answer: I've found various jobs but couldn't find suitable for me. I think that finding a job is easy; but finding the right job is more difficult. I was looking for a more challenging job.

Question 42: Had you thought of leaving your present position before? What happened that force you to do like that?

Answer: No not at all. Whenever I was facing challenging tasks there, I was quite comfortable. At that time I was new there and was not so efficient, but now I am more efficient and there was no more challenging jobs

in my last company and I am looking for more challenging job where there I can utilize my skills, talent and experience in the best way.

Question 43: What are your hobbies?

Answer: This question is generally asked to assess whether you are "introvert" or "extrovert". This is a psychological type of question. Answer the question according to the requirement of your job designation for which you are facing the interview. But in general condition speak the truth and tell your real hobbies. This enables the organization to place you accordingly after selection in the big organization. It also indicates your preference for team-oriented activities or projects with solo contributions.

Question 44: What are your favorite subjects?

Answer: This is the leading question generally asks to you to checks your knowledge base and in-depth understanding. So select the topics in which you are most competent, because the panel members can probe in your knowledge base areas.

Question 45: What motivates you?

Answer: Different types of persons have different sorts of factors that motivates them. There isn't any specific answer of this question. The interviewer tries to understand the key what made you so successful in the previous job and up to what extent you are fit in the role for which you are interviewing for. You can deliver your answer by using these examples: \diamond I am a perfectionist and can not satisfied until reach on the perfection of my work. This virtue or demerit motivates me most.

- ♦ I was team leader of several projects in the previous jobs where I directed development teams and implemented repeatable processes. Every time my teams achieved 100% on-time delivery of software products. Thus motivated me both, by the challenge of finishing the projects ahead of schedule and by managing the teams that achieved our goals.
- ♦ I am highly desirous to do an excellent job for my personnel satisfaction and my organization at whatever position I'm in. This quality motivates me most.
- ♦ My customer's satisfaction motivates me most. I have always wanted to ensure that my company's clients get the best customer service, that I provide.
- ♦ I motivate by my compensation package, because I want to be the top sales person.

Question 46: What are the most difficult decision you have made so for ? or What (will be)/ is the most difficult situation or matter that captures you in dilemma?

Answer: There is no certain answer of this type of questions like "What are the most difficult decisions to make?" or "Describe a difficult work situation / project and how you overcame it." These are behavioral type interview questions designed to discover how you handle these sorts of circumstances. The logic behind these type of questions is to make a idea of your behavior that how you behaved in the past is a predictor of what you will do in the future. Give solid examples of those difficult situations that actually held in your previous job and also mentioned how you solved that problem. Keep your answers positive and brief. For answering this question just refresh your memory and recall those situation you have dealt with or projects you have worked on and also illustrate how you overcome to these sort of situation.

Question 47: If You Were an Animal, Which One Would You Want to Be?

Answer: On the first time it looks rubbish, what is it? But interviewers use this type of psychological question to see whether you can think quickly or not it also reflects your attitude and behavior. If you answer "a bird," This represent that you like liberty". If you answer "Eagle" this represent your sharpness and target achiever virtue.

Question 48: In your opinion, what sorts of qualities should be in your boss?

Answer: Be positive as much as you can. Like a potential boss should have these sort of qualities like: he must be more talented, intelligent, experienced, able to handle the situations easily, willing to talk to their employees and must have the leadership qualities.

Question 49: What do you feel this position should pay? or What is your salary expectation?

Answer: This is the most common and sometimes difficult question asks always whenever you go for an interview. Wait and realize about some topics like: \diamond Are you in a position to ask about a certain amount of compensation package?; especially for the fresher. or

- ♦ If you have less working experience, can you ask for more salary package rather than you deserves. or
- ♦ Are you in a great dilemma what to ask or what to not?.
- ♦ Are you changing job only for the money matter?

Before beginning your answer you should realize all the above topic whichever implements upon you. After analyzing it now you have to decide what you have to do whether keep quite or whether answer like these: Though I am a fresher, I am looking for the experience and polishing up my skills, talent and knowledge. So it would be better that give me those salary package that is determined by the company for the fresher and also given to others.

- ♦ As being a less experienced person, before asking any compensation I would like to ask the responsibilities and nature of my designation. I think you know better than me what should I get.
- ♦ If you are in a great dilemma, it would be better to keep silent, because many time the company offers you beyond your expectation. You can also ask to the panel about the salary package range offered by the company for the same designation with same responsibilities.
- ♦ If you are changing your job only for the money matter and if there are a certain fixed amount in your mind, ask it to the company. There is a fifty-fifty chance to be accepted depending upon the company's policy.
- ♦ If you are definitely unsure write negotiable salary. It is the best policy especially for the new comers or for the less experience person.

Question 50: Why aren't you earning more at your age?

Answer: That's why I am here sir, I want to earn more. No need to be defensive.

Question 51: Are you willing to travel?

Answer: There are some jobs in which traveling is the part of the job especially marketing, survey and field jobs. But there are not so much traveling in the in-office jobs. So this question is asked to you. Answer according to the job designation and if you like traveling. It will be a surprise for you. If you don't like traveling, then ask about the frequency and duration of the traveling. You can weigh how much you would need to be on the road and is it fits in your life style. Now answer according to your nature, but you have to do some adjustment.

Question 52: "What are your goals for the future?"

Answer: The answer of this question reflects your target or your ambition that can be evaluated by the interviewer whether it is in the favor of the company or not or whether the candidate is willing in this organization or want to switch? Don't be overwhelmed, be honest and use your mind and answer according to your strength. The best way to answer this question are given below: \diamond Generally co-relate your answer with the company's fortune like, "I am willing to continue to learn, take on additional responsibilities, and contribute as much as possible as in the behalf of the company".

- ♦ I would like to be the top performing employee in a well-established organization, like this one.
- ♦ I am a quick learner, within five years I'll gain lots of technical experience and will move towards management position.

Question 53: How will you achieve these goals?

Answer: This must be a follow up question, if the previous one is asked to you. A good answer of this question may be: "I am a proactive person, for achieving my target I'll be enhance my knowledge and skill, I'll attend the training session, seminars and keep on further study as well as I wont be hesitate to take the help of our senior colloques.

Question 54: How successful do you have been so far?

Answer: Answer this question with confidence but not overstate or show overconfidence, this may irritate the interviewer and you may loss your candidature in the queue of job. Speak the truth up to what extent you've been succeed. Answer in the positive way like this, "Sir, in my point of view, I am happy with my career progress and I think, my career is going on the right way with right speed in the right direction, and definitely one day I'll achieve my target on the exact date, which I've decided to achieve it."

Question 55: How long would you stay with us?

Answer: Don't be hesitate to answer this question, because the manager or interview panel wants to know that won't you ditch them in the way. If it is not a very big and reputed organization, the chances of leaving the organization has been increased. So this question is most often asked. Answer that I'll be here till I'll face the challenges and every time new challenges. I don't like repetition of work or routine work. If I keep on facing challenges in this organization, I'll will be everlasting here.

Question 56: Can you work under pressures, deadlines, etc.?

Answer: Yes, why not. I usually perform my best in under pressure and I am passionate to complete my task within deadline.

Question 57: What important trends do you see in our industry?

Answer: If you are fresh for the company, you can deliver your answer on the basis of your research about the company. Prepare two or three strong points about the company that you like most. If you are interviewing for the job promotion, you are not new for the company and you are well aware about the culture, environment and policy about the company. Be positive and don't criticize whether you don't like something about the company. Always explain the strongest point that you have noticed but not known commonly.

Question 58: Can you share your mistakes with others?

Answer: Yes, absolutely I do. I usually share my mistakes with my senior or more experience person to get the guideline. By this way I learn how should I do this work so that I can not repeat it again.

Question 59: How have you changed the nature of your job?

Answer: I've improved myself by learning new things, gaining experience, by enhancing my productivity and efficiency. Explain the way how you have improved your self.

Question 60: In your present position, what problems have you identified that had previously been overlooked?

Answer: Nothing is perfect in this world. Some demerits exists everywhere. If you think there is something a really big- big problem in your position, get aware to the owner in brief and don't brag. No need to say in the minor problem.

Question 61: What about the job offered do you find the most attractive? Least attractive?

Answer: Be positive and define three or more attractive factors and only one minor unattractive factor.

Question 62: What would you like to be doing five years from now? or Where do you see yourself in five years?

Answer: Generally this question is asked to valuate your career plan and your existence in this company. The answer of this question also reflects the rate of your career growth and to assess if the company will be able to provide that opportunity over period of time. Be realistic and if you need to take the guidance from your seniors, don't be hesitate to take their help.

Question 63: Do you prefer working with others or alone?

Answer: Before answering the question, just realize about the nature of the job. Team work is necessary for the official job. So you must have the quality of a team player or leadership quality. Your answer will determine what post would you like? So answer appropriately.

Question 64: What other types of jobs or companies are you considering?

Answer: There is no need to open all the cards before the panel. Keep your answer related to that field for what you are interviewing for. Don't give out specific company names.

Question 65: Your resume suggests that you may be over-qualified or too experienced for this position. What's Your opinion?

Answer: This is because of my long term relationship with my previous company. I ensure you that my experience and my knowledge will be beneficial for the company and myself too. Every strong organization

must have strong employee. As I am a well- qualified person, my sub-ordinates, can learn quickly and can give better input in the favor of the company.

Question 66: Had you thought of leaving your present position before? If so, what do you think held you there?

Answer: No, sir. I didn't think it before that as I am getting the challenging job to leave that organization until my job became no longer challenging. and that you feel your talents are best used elsewhere.

Question 67: When are you available to start?

Answer: Mentioned exact timing when you feel comfortable to join the company.

Question 68: What is your management style?

Answer: For answering this question you have to verify yourself as a task oriented, result oriented, paternalism (take care of your subordinates and give them the right direction) and versatile manager, how are are different to others. The best way of management system is "Open-door management system (to motivate people and delegate responsibility)" Now days. You must reply by using the examples of this method.

Question 69: Are you a good manager? Give an example. Why do you feel you have top managerial potential?

Answer: For proving your answer count your list of achievement that your team have got in the previous job. Mention your management skills like planning, organizing, interpersonal, etc. to make yourself versatile to others.

Question 70: Give me some examples of how you have adapted your own communicating style to deal with different people and situations?

Answer: This is time to show your strength, do not waste it. Explain the most effective examples that show your good communicational skills including verbal and written communication for getting feedback. I am able to motive my employees by delivering my speech. Give examples of how you verbally motivate the people who respond to challenge and recognition. Question 71: What do you look for when you hire people?

Answer: While hiring people I look for their skills, education, initiative, adaptability and experience.

Question 72: What type of people do you get on with most/least?

Answer: Though I hire people after lots of checking according to their merit, but some times I was ditched and those hiring people are not so qualified as they claim. But, this is the part of the game. After all I am also a human being. I do also mistake. But I try to put my best for the fortune of the company.

Question 73: Did you ever fire anyone? If so, what were the reasons and how did you handle it?

Answer: To be honest, give a brief example of that time when you faced this, and stress that it worked out well.

Question 74: What position do you prefer on a team working on a project?

Answer: If you are quite comfortable as a team leader, be bold and told the panel, if not told to be ready for the part of team. If you are comfortable in different roles, point that out.

Question 75: How do you measure talent? or How do you measure talent in an organization (or company or team)? or How do you grow/develop talent in an organization (or company or team)?

Answer: Different types of person has different types of view. The criteria of measurement differs from person to person. You can say that in my opinion talented people works from the first day on the top that can observe by others. His performance is usually excellent. Question 76: What do you see as the most difficult task in being a manager?

Answer: Managing is a tough task. To make a perfect plan and to get completed within the budget and time limit is a tougher task for me, but motivating employees and to manage them to get the best in the favor of both is the toughest task for me.

Question 77: How do you resolve conflict on a project team?

Answer: Conflict can be resolved by communicating to one another in the panel of experts or in the meeting. As a team leader I prefer to discuss the private issues more than complications.

Question 78: Prepare a plan for your first 1/2/3 months in the role and present it at the interview?

Answer: This question is generally asked to the marketing managers or commercial managers, but can also be asked to the other managers too. This question is asked to valuate the knowledge and planning skill of the manager. Don't to be exaggerate. You can take the help of Gantt chart to represent it, this is also a better way for representation. Question 79: What do your subordinates think of you?

Answer: To be honest and say positively. You can say that it would be better to ask this question to my subordinate. Question 80: What is your biggest strength as a manager?

Answer: As for as myself is concern, The strongest strength of myself is that I am able to motivate my subordinates to complete the task within time limit and under budget with minimum efforts and maximum joys. I am able to organize the team according to their most efficient skills, so that they can put their best. Question 81: What is your biggest weakness as a manager?

Answer: Accept your biggest weakness honestly. but be positive. There could be many answers of this question. e.g., "I don't enjoy admonishing people, so I try to begin with something positive first."

Question 82: What makes you mad?

Answer: Though I am a cool person and nothing really makes me mad, yet certain things makes me upset like cheating, rudeness, arrogance, liar, spitefulness and blaw blaw. Choose any obvious nasty traits or behaviors that interviewer itself dislikes it personally too.

Question 83: Have you ever had to fire people? What were the reasons, and how did you handle the situation?

Answer: Accept it if you had done this. Explain that the situation was out of control, it was not easy to handle, so I've to fired that person. Explain that what was the matter and how you handle it also mentioned that this action worked out well and it became beneficial in the favor of both, the company and the employee. You must illustrate that though you don't enjoy unpleasant tasks but that you can resolve them efficiently and wont be hesitate to fire anyone but humanely not brutally.

Question 84: How Would You Deal with a High-Strung Personality?

Answer: This question is asked to get an idea of about your confidence and communication skills. You must answer this question with confidence and ask the interviewer panel, "Am I not dealing you?" This makes the environment light up to some extent. You may answer like this, " If any difficult or high-strung personality asks something as a client, I tries my best to satisfied them. If they have any sort of problem, I primarily tries to resolve the problems as become a team leader. I try my best to give the solution. If unable to fulfill their requirement, which happed rarely, I sent those to our seniors.

Question 85: What important trends do you see in our industry?

Answer: If you are an experienced person, you must have the knowledge of your job background, so be ready to answer this question with two or three trends that illustrate how well you understand your industry. If you are a fresher, you might have done some research about the job background for which you are going

for the interview. You answer should focus on the technological challenges or opportunities, economic conditions, or even regulatory demands of the industry.

Question 86: Do you generally speak to people before they speak to you?

Answer: It depends on the circumstances.

Question 87: How would you describe your own personality?

Answer: This question can be asked to you in another way like "Describe your personality in one words?" The main purpose for asking this sort of question is to get an idea of your personality in your own words. "What do you think about yourself?" The answers may differ from person to person depending upon it's strength and weakness. But before answering must realize about the types of job, designation and company. What are the requirements of these? "Balanced" is the nice word to be used.

Question 88: What would your references say about you?

Answer: This is the biggest opportunity to illustrate your positive personality, your strengths, skills and behavior before them. It may be also a good answer, "It would be better that you should ask this question to my references that I've mentioned in my application or in resume. They will speak the exact fact about me"

Question 89: Can we check your references? Answer: Yes sir, why not.

Question 90: How do you like to be managed /not like to be managed? Answer: To be honest and truthful, deliver your answer in such a way that express your attitude as a dominating nature, but in the mild and soft style. e.g. "I'm very flexible and easily assimilate in to the most management styles. In the previous jobs, many times, I've helped my bosses to get the best out of me by talking to them and developed a mutual understanding between us. They provided me freedom and give some responsibilities to load off their shoulders." also mentioned that how do you not like to be managed by giving some logical examples without being negative. Question 91: Are you a leader?

Answer: Absolutely! I've the leadership quality. Specify your answer by giving some specific examples using your current job as a reference point.

Question 92: How to do measure your own effectiveness?

Answer: I measure my effectiveness by my achievements and the way I've achieved it. Give the examples of two or three of your greatest achievement and also mentioned it how did you achieve this. Also say that if it is not quite enough, I'll be able to create one.

Question 93: How do you evaluate success?

Answer: The measurement of evaluating success differs from person to person. But the ideal answer may like: "According to my point of view, Success depends upon lots of factors like, Intelligence, knowledge, presence of minds, proper guidance, Hard working, dedication, commitment and passion to work. I would like to include a little bit luck factor in it too. The hotchpotch of all these factors makes the success". s Question 94: If you won a million on the lottery what would you do?

Answer: The answer of this question reflects your thoughts regarding money. The interviewer tries to guess the valve of work and money for you. Do you earning only for money or there is also the place of work in your life if you get plenty of money. The answer differs according to views of the person but it may one of the answers: "Obviously I'll save most of it. May be possible to give a small treat for myself but not waste even a single coin and It is also possible to start my own business, if I am absolutely sure about its success.

Question 95: Are you creative? Answer: Absolutely yes. Specify your answer by giving some specific examples.

Question 96: What was the last book you read or movie you saw or sporting event you attended? How did it affect you?

Answer: This question is asked to guess your taste and interest about books, sports or films what you prefer more and up to what extent it affects you. Be honest and tell them what you have done among these in the recent period of time. Specify your answer by giving logical view why you choose it and up to what extent had you affected from it. Be truthful because one of the interviewer's panel might have watch it.

Question 97: Tell Me a Story? Answer: This question is asked to judge your presence of minds, your intelligence and creativity. Before delivering your answer asks the clarification about the question, which type of story do you want to listen. This makes you thoughtful and you have to be specific. Weave a short and meaningful story that establishes you a great thinker. This skill shows your versatility and diversity from others.

Question 98: Tell me about your life at College or University (or even your time in your previous job)? Answer: The purpose of asking this question is to look for that sort of qualities especially soft skills and extra curricular qualities that is necessary for deserving candidate. This can makes the difference between you and others. So give the brief list of your achievements, experience, positive behavior and leadership quality. This will impress the interviewer because of its relevance to the required role. Most probably the interviewer might be looking for the same capabilities and behavior in your college (or university or previous job) life that they want in the job.

Question 99: What does/did your father do for a living? Answer: Speak the truth, whatever your father is. No need to ashamed or to proud, because your father is a different people and you are you not anyone else. It

is not a correct view that by your success and failure depends upon your parental influence on others. Only your intelligence, experience, knowledge and skills make you successful person.

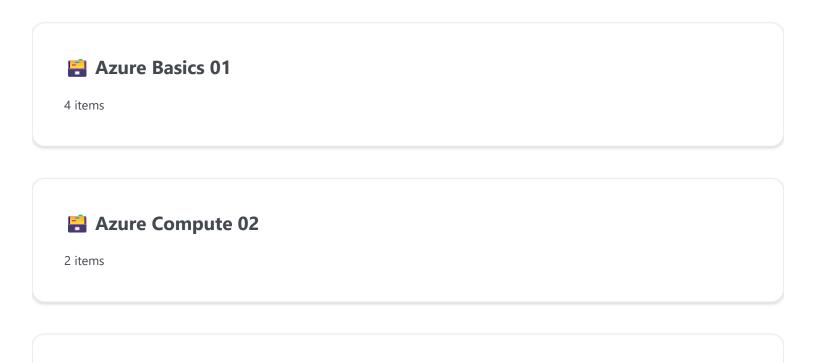
Question 100: Do you have any questions? Answer: Don't answer like that "No Sir, I think you have covered everything what I want to know. I'm sure, I'll have more questions if I get the job."It is a very passive response that demonstrate your lack of interest in the company or lack of imagination in yourself. If you really want the job, show your interest in the company and ask several question regarding company's policy, working culture, responsibilities of your job designation in that company, the first challenge for the new one in that company, etc. There are two benefits of asking this sort of question. One it would represent that you are really interested in this job and you will also come to know whether this company is suitable for you or not. So you can take a right decision.

Question 1: Tell me about yourself? Question 2: Would you please tell me about your work history? or What applicable attributes / experience do you have? Question 3: Why you had so many jobs in such a short period of time? Question 4: What do you know about our organization? Question 5: Why do you want this job? Question 6: Why do you want to work for us? Question 7: How would you approach this job? How would you do it? Question 8: Please give me your definition of the position for which you are being interviewed.? Question 9: What do you find most attractive about this position? What seems least attractive about it? Question 10: What do you look for in a job? Question 11: How long would it take you to make a meaningful contribution to our firm? Question 12: Why should we hire you? Question 13: What can you do for us that someone else can't? Question 14: How do you plan and organize your work? Question 15: Tell me about the culture at your last company/employer? Question 16: What were your starting and final levels of compensation? Question 17: What were your responsibilities in your previous job? Question 18: What were your expectations for the last job?

Question 19: What did you achieve in your last job? Question 20: What was the biggest accomplishment / failure in this position? Question 21: How would you evaluate your present firm? Question 22: What Are Three Positive Things Your Last Boss Would Say About You? Question 23: What Do You Think of Your Last Boss? Question 24: When Were You Most Satisfied in Your Job? Question 25: What is the worst feedback you have ever got? Question 26: What is the most difficult situation you have faced? Question 27: What has been your biggest professional disappointment? Question 28: Tell me about the most fun you have had on the job? Question 29: Give me an example of when you've produced some poor work and how you've dealt with it? Question 30: Tell me about a time when you helped resolve a dispute between others? Question 31: Why were you fired? Question 32: Why are you leaving your job? Question 33: How do you feel about leaving all your benefits to find a new job? Question 34: Describe a typical work week? or How many hours do you normally work? or How would you describe the pace at which you work? Question 35: How do you handle stress and pressure? Question 36: What are your strengths? Question 37: What are your Weaknesses? Question 38: Describe your work ethic? Question 39: What is your ideal job? Question 40: What do you look for in a job? Question 41: Why haven't you found a new position before now? Question 42: Had you thought

of leaving your present position before? What happened that force you to do like that? Question 43: What are your hobbies? Question 44: What are your favorite subjects? Question 45: What motivates you? Question 46: What are the most difficult decision you have made so for? or What (will be)/ is the most difficult situation or matter that captures you in dilemma? Question 47: If You Were an Animal, Which One Would You Want to Be? Question 48: In your opinion, what sorts of qualities should be in your boss? Question 49: What do you feel this position should pay? or What is your salary expectation? Question 50: Why aren't you earning more at your age? Question 51: Are you willing to travel? Question 52: "What are your goals for the future?" Question 53: How will you achieve these goals? Question 54: How successful do you have been so far? Question 55: How long would you stay with us? Question 56: Can you work under pressures, deadlines, etc.? Question 57: What important trends do you see in our industry? Question 58: Can you share your mistakes with others? Question 59: How have you changed the nature of your job? Question 60: In your present position, what problems have you identified that had previously been overlooked? Question 61: What about the job offered do you find the most attractive? Least attractive? Question 62: What would you like to be doing five years from now? or Where do you see yourself in five years? Question 63: Do you prefer working with others or alone? Question 64: What other types of jobs or companies are you considering? Question 65: Your resume suggests that you may be over-qualified or too experienced for this position. What's Your opinion? Question 66: Had you thought of leaving your present position before? If so, what do you think held you there? Question 67: When are you available to start? Question 68: What is your management style? Question 69: Are you a good manager? Give an example. Why do you feel you have top managerial potential? Question 70: Give me some examples of how you have adapted your own communicating style to deal with different people and situations? Question 71: What do you look for when you hire people? Question 72: What type of people do you get on with most/least? Question 73: Did you ever fire anyone? If so, what were the reasons and how did you handle it? Question 74: What position do you prefer on a team working on a project? Question 75: How do you measure talent? or How do you measure talent in an organization (or company or team)? or How do you grow/develop talent in an organization (or company or team)? Question 76: What do you see as the most difficult task in being a manager? Question 77: How do you resolve conflict on a project team? Question 78: Prepare a plan for your first 1/2/3 months in the role and present it at the interview? Question 79: What do your subordinates think of you? Question 80: What is your biggest strength as a manager? Question 81: What is your biggest weakness as a manager? Question 82: What makes you mad? Question 83: Have you ever had to fire people? What were the reasons, and how did you handle the situation? Question 84: How Would You Deal with a High-Strung Personality? Question 85: What important trends do you see in our industry? Question 86: Do you generally speak to people before they speak to you? Question 87: How would you describe your own personality? Question 88: What would your references say about you? Question 89: Can we check your references? Question 91: Are you a leader? Question 92: How to do measure your own effectiveness? Question 93: How do you evaluate success? Question 94: If you won a million on the lottery what would you do? Question 95: Are you creative? Question 96: What was the last book you read or movie you saw or sporting event you attended? How did it affect you? Question 97: Tell Me a Story? Question 98: Tell me about your life at College or University (or

even your time in your previous job)? Question 99: What does/did your father do for a living? Question 100: Do you have any questions?			

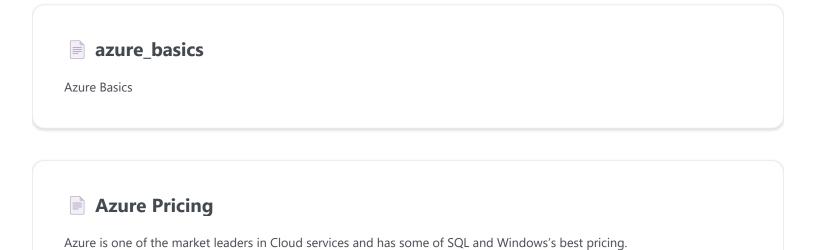


Azure Security 01

2 items

Azure DevOPS 01

1 items



Resource_manager

https://learn.microsoft.com/en-us/azure/azure-resource-manager/ - Azure Resource Manager

azure_policy

Azure Policy

azure_basics

Azure Basics

Azure administration tools

Azure provides 5 administration tools to manage azure resources

- 1. The Azure Portal
- 2. The Azure CLI
- 3. Azure PowerShell
- 4. Rest API
- 5. SDK's

Azure Resource Group

What is Azure Resource Group:

- Azure Resource group is a container that holds related resources for an azure solution
- The resource group can include all the resources for the solution, or only the resources that you want to manage as a group.

What is a Tag?

- We can apply tags to Azure resources to logically organize them by categories.
- A Tag consists of a Key (name) and a value.
- Keys are case insensitive.
- Values are case sensitive.

You can also click on "Download a template for automation" and download the template and save it to the library additionally for future use.

! EXAM POINT

• Resource groups can't be nested inside resource groups

No.

• What's possible is to link resources from other resource groups within a resource group.

! EXAM POINT 2

• When we delete a resource group, all the resources within the resource group are also gets deleted.

Azure Pricing

Azure is one of the market leaders in Cloud services and has some of SQL and Windows's best pricing. It can leverage several features to save costs, and

 Azure provides several tools that can help calculate costs and cost-effectively plan our infrastructure and service.

Some of the available tools are:

- 1. Azure Pricing Calculator
- 2. Cost Management Center
- 3. Billing Data API & Advisor
- 4. DB & Cosmos DB Capacity calculator
- 5. Migration planning ((Estimation, Workload, and right-sizing))

Some of the features that we can leverage to save costs are as follows:

- 1. Azure Hybrid Benefit
- 2. Spot Virtual machines -
- 3. Reservations -
- 4. Azure Dev/test pricing -

1. Azure Hybrid Benefit -

We can use our existing Windows & SQL licenses to save on costs

2. Spot Virtual machines -

This feature allows us to take advantage of the unused CPU at a significantly lower cost at almost 90% savings.

3. Reservations -

We can commit to 1-year or 3-year and choose to pay upfront or monthly to buy RIs. (Reserved Instances)

4. Azure Dev/test pricing -

For development environments, we can get special discounted rates

Ways to optimize Cost

- 1. Choose the right azure compute service for your need
- 2. Shut-down unused resources
- 3. Right size underused resources
- 4. Configure autoscaling
- 5. Reservation of instances for consistent workloads (RI)
- 6. Azure Hybrid benefit
- 7. Setup budgets

Are there any other ways to save costs?

- 1. EA Enterprise Agreements With this, we can get good pricing offers from Azure.
- 2. Price Match with AWS This might not be known to all, but we can ask MS to do a price match.

Resource_manager

https://learn.microsoft.com/en-us/azure/azure-resource-manager/ - Azure Resource Manager

Azure resource group is different from Azure resource manager.

Azure Resource Manager (ARM)

- 1. Azure Resource Manager provides a management layer to create, update, and delete resources in our Azure account.
- 2. Azure Resource manager (ARM) uses management features, like access control, locks, and tags, to secure and organize our resources after deployment.
- 3. When a user sends a request from any of the tools, (azure portal, Azure CLI, Azure PowerShell, Rest APIs, SDKs) the ARM receives the request and authenticates/authorizes it.
- 4. Then it sends the requests to azure services to act on azure resources.
- 5. Since it acts as a central point, it leads to consistent results.

Benefits of Resource Manager

- 1. Declarative templates so we don't have to worry about the current state.
- 2. Define dependencies so the correct order of deployment is done.
- 3. Applies access-control via RBAC natively.
- 4. Applies tags to organize resources logically.
- 5. Allows for group deployments.
- 6. Allows for redeployment and have confidence that the same results will be achieved.

Scopes

There are 4 levels/scopes available for deploying/applying changes to resources.

- 1. Resource
- 2. Resource Groups
- 3. Subscriptions
- 4. Management Groups

Resource

- 1. This is the lowest manageable item in Azure resources
- 2. Examples of Azure resources are
- 3. Virtual machines,
- 4. virtual networks,
- 5. databases,
- 6. webapps
- 7. storage accounts and
- 8. tags.
- 9. Resource groups, Subscriptions, management groups are also examples of resources.

Resource Groups:

- 1. We can logically group resources at a resource group level.
- 2. We can create multiple resources within a resource group.
- 3. We can delete an entire resource group, and all resources will be deleted within the resource group.
- 4. We can even move a whole resource group with all objects within it.

Subscriptions:

- Subscription is a logical container used to provision resources.
- We will be billed at the subscription level.
- We can have multiple subscriptions.

Management Groups:

1. At this level, we can combine multiple subscriptions to apply changes at an Organizational level.

2.	We can combine subscriptions with a hierarchy where there is one management group at the root level.
	1) This is called Nesting.

Azure Resource Manager templates

- 1. To implement infrastructure as code for your Azure solutions, use Azure Resource Manager (ARM) templates.
- 2. The ARM template is a JavaScript Object Notation (JSON) file that defines the infrastructure and configuration for our project.

Refer: https://docs.microsoft.com/en-us/azure/azure-resource-manager/templates/overview

azure_policy

Azure Policy

• Azure Policy is a free service in Azure that we could use to define, assign, and manage standards for resources.

Every organization has a set of standards which are set up. Some of these could be best practices for smooth functioning or cost optimization.

• Others could be mandatory compliance adhering to Government laws and/or governing bodies like

♦ ISO ♦ HIPAA or ♦ PCI

- Let's say that GDPR policy mandates that data should not leave the country.
 - Then we can create a policy that could prevent or just mark as non-compliant if data were stored outside the country.
 - Once such a policy is set, it would even point to such previously created resources which are noncompliant.
 - With built-in policies under categories such as Storage, Networking, Compute, Security Center, and Monitoring, it is very convenient to select the policy that suits us and use them simply.

Here are the steps to using Azure Policy

- Policy Definition
- Policy Initiative definition.
- Define Policy parameters.
- Define Policy Initiative parameters.
- Assign Policy/Initiative

Step 1: Policy Definition

- 1. First, we create a policy definition
- 2. We could also use existing definitions.
- 3. We could take multiple policies and create a policy definition.

Step 2: Policy Initiative definition

- Once the policy definition is done, we need to create the policy initiative definition.
- We can define policy parameters and initiative parameters.
- We then create the initiative definition.

Step 3: Assign Policy/Initiative

- We could either assign a policy or an initiative.
- It is better to assign initiative as we can assign multiple policies.
- Select the scope.
- We can assign to an entire subscription or resource groups within a subscription.
- Also, we could exclude resources.
- Let's say we selected subscription 1 but we want to exclude one Resource group. Then we use the exclusions. In the example below, 5 resources are excluded from the above-selected resource group.

Step 4: We select the initiative definition.

- In our case below, we selected HITRUST/HIPAA, and this initiative will have lots of policies as per the regulatory compliance for the HIPAA act.
- If we planned to enable it later, we could mark the policy as disabled.

Common use cases for Azure Policy

- 1. Implementing Governance
- 2. Regulatory compliance like GDPR/HIPAA/PCI DSS
- 3. Security
- 4. Cost
- 5. Management
- All Azure Policy data and objects are encrypted at rest.
- Once set up, we can see the non-compliant policies, and we will be able to remediate.

How are policies evaluated?

The following are the times or events that cause a resource to be evaluated:

- A policy or initiative is newly assigned to a scope.
- A resource is created, updated, or deleted in a scope with a policy assignment.
- A policy or initiative already assigned to a scope is updated.
- During the standard compliance evaluation cycle, which occurs once in every 24 hours.

Some built-in Policies available

- In Azure Policy, we get several built-in policies that are available by default. For example:
- Allowed Locations (Deny):
- We can allow only certain locations like the USA if the company operates in the USA.
- Not allowed resource types (Deny):
- If a particular resource type like CosmosDB is not allowed, then we cannot create the same.



azure_functions

Azure Functions



azure_containers

Azure Container Instances

azure_functions

Azure Functions

- Azure Functions is a serverless Functions-as-a-service (Faas) solution. Azure Functions provides serverless compute for Azure. Azure Functions is a cloud service available on-demand that provides all the continually updated infrastructure and resources needed to run your applications. → You focus on the code that matters most to you, in the most productive language for you, and Functions handles the rest.
- Azure Functions is optimized for running event-driven applications using the functions programming model.
- The Azure Functions programming model provides productivity benefits for teams looking to triggerthe execution of our functions on events and bind to other data sources. The Azure Functions programming model is available as a base container image, making it portable to other container based compute platforms allowing teams to reuse code as environment requirements change
- The Azure Functions shares many characteristics with Azure Container Apps around scale and integration with events, but optimized for ephemeral functions deployed as either code or containers.

You can use Functions to

- 1. build web APIs,
- 2. respond to database changes,
- 3. process IoT streams,
- 4. manage message queues, and more

Azure Logic apps :; https://learn.microsoft.com/en-us/azure/logic-apps/

- 1. Both Azure Functions and Azure Logic Apps enable serverless workloads.
- 2. Both can create complex orchestrations
- 3. Azure Functions is a serverless compute service, whereas
- 4. Azure Logic Apps is a serverless workflow integration platform

Both can create complex orchestrations • An orchestration is a collection of functions or steps, that are executed to accomplish a complex task.

x (called actions in Logic Apps), For Azure Functions, we develop orchestrations by writing code using the Durable Functions extension. For Logic Apps, we create orchestrations by using a GUI or editing configuration files.

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Azure Web Jobs

Azure App Service • Azure App Service provides fully managed hosting for web applications including • Azure AppService allows us to run applications on the cloud.

- 1. websites and
- 2. web APIs
- Azure App Service is optimized for web applications When building web apps, Azure App Service is an ideal option. These web applications may be deployed using code or containers. Run and Scale on Windows/Linux Supports NET, .NET Core, Java, Ruby, Node.js, PHP, Python HTTP based Service for hosting web applications, REST APIs, and mobile backends. Azure App Service is integrated with other Azure services including Azure Functions or Azure Container Apps.

App Service Plan \diamond App Services run under a pa service plan. \diamond App service plan is the logical abstraction that represents one or more VMs that runs the pa service. It consists of compute resources like CPU, memory and disk space. \diamond We pay for pa service plans and not the pa service. \diamond Also, we can have more than one pa service running inside an pa service plan. The number of pa services that can run inside an pa service plan depends on the pa service plan. Also, the amount of resources like CPU, RAM and disk space depends on the paservice plan.

FAQs 1 How does app service plan work? ♦ App service plan is supported by Service Fabric. ♦ Service fabric replaces instances if an existing one fails. Also, it adds instances if there is a requirement.

App Service types ♦ Webapps – Websites/Online Apps ♦ Webapps for Containers – Containerization ♦ API apps – backend data

Tips ♦ When you move an Apservice from one RG to another, the App Service plan doesn't change. ♦ Destination RG cannot contain ApService resources like Web ap or ApService plan. ♦ .Net Core aplication can be deployed on Windows or Linux OS ♦ ASP.Net app CANNOT be deployed on Linux OS. Only Windows

OS \diamond Multiple Web Apps can be hosted on a single ApService plan. \diamond Web Ap and Ap Service plans must exist in the same region

WebApp (previously Azure Websites) API App Logic Ap Mobile Ap (previously delivered by Azure Mobile services)

Application Service Environments

- There are 3 components for hosting web pa s/ Docker containers/ Mobile pa s and functions. There are appservice plans which host the spservices. When we host the regular app services, the apps are directly exposed to the internet, and the resources are shared.
- Some organizations prefer to host the services in the internal network, and security features like firewalls and security groups could be aplied to protect the apps.
- For such scenarios, there is a feature called the Azure App Service Environment, which provides a fully isolated and dedicated environment for securely running App Service apps at a high scale.
- Ap Service environments (ASEs) provide very high scaling with isolation and secure network access with high memory utilization.
- We can create multiple ASEs within a single Azure region or across multiple Azure regions, making it ideal for horizontally scaling stateless application tiers when we have high requests per second (RPS) workloads.
- ♦ There are three types of workloads available when choosing the workload tier. They are Dev/test, Production, and Isolated.
- Of these, the isolated offering provides the ASE environments which host applications within the client's VNets. As stated, we have fine-grained control over inbound and outbound application network traffic.
- While the other category of app services has a fixed suffix of azurewebsties.net, we can create our own domain name.
- Also, ASEs come with op werful computers, which is twice as op werful as the regular app service plans. They also come with 1TB Storage as compared to 50GB of space for the regular ones.
- We can host up to 01 instances which are sufficient to host a miniature web service hub. We can expect the service to cost us about 250-30\$ per month, which is very cheapf or the services being provided.

Steps to creating App Service Environment \diamond In the first screen, we select if the service is public-facing or internal

- ♦ Then we select whether we are hosting Windows-based or Linux-based OS.
- ♦ On the second screen, we select the Vnet where we want to host the service. (Since
- services are being created in our private infrastructure, it takes much longer time to
- create)
- ♦ Then we can DNS resolution. We can create our own private zone and use that name. This is not possible when choosing the other ap service plans

Steps to creating Web Apps under ASE \diamond Please note that the process is similar except that we dropdown the region and select the ASE which we just created. \diamond Also, the below screen shows various features under ASE and pricing under each of the pricing tier s I1and I2 and I3. 13.

Note: The Private link vnetLink (wlase1.apserviceenvironment.net/vnetLink) is also created below. You can go to the Resource group and click on "Show hidden types" to see this resource. Note: Please see the Ap Service plan as I1:1 in the screenshot below to identify the isolated service plan.

https://learn.microsoft.com/en-us/azure/spring-apps/overview

Azure Spring Apps • Azure Spring Apps is a fully managed service for Spring developers. • If you want to run Spring Boot, Spring Cloud or any other Spring applications on Azure, Azure Spring Apps is an ideal option. • The service manages the infrastructure of Spring applications so developers can focus on their code.

- Azure Spring Apps makes it easy to deploy Spring Boot applications to Azure without any code changes. Azure Spring Apps supports both Java Spring Boot and ASP.NET Core Steeltoe apps. Steeltoe support is currently offered as a public preview. With public preview offerings, you can experiment with new features prior to their official release.
- Azure Spring Apps provides lifecycle management using comprehensive monitoring and diagnostics, configuration management, service discovery, CI/CD integration, blue-green deployments, and more.

Why use Azure Spring Apps? You get the following benefits when you deploy applications to Azure Spring Apps: • Efficiently migrate existing Spring apps and manage cloud scaling and costs. • Modernize apps with Spring Cloud patterns to improve agility and speed of delivery. • Run Java at cloud scale and drive higher

usage without complicated infrastructure. • Develop and deploy rapidly without containerization dependencies. • Monitor production workloads efficiently and effortlessly.

Azure Container Instances

• Azure Container Instances (ACI) provides a single pod of Hyper-V isolated containers on demand • It can be thought of as a lower-level "building block" option compared to Container Apps. • If you need a less "opinionated" building block that doesn't align with the scenarios Azure Container Apps is optimizing for; Azure Container Instances is an ideal option. • Concepts like scale, load balancing, and certificates are not provided with ACI containers • Users often interact with Azure Container Instances through other services

Azure Container Instance (ACI) • Containerization is the buzzword today. Instead of spinning Physical servers and installing all the dependencies, and installing the application, we can create a container containing all the required dependencies.

- We then package and create an image and deploy it into a container. Docker is one of the platforms where we can run these containers in the Open-source world. Azure has two solutions. One of those is the ACI. ACI is a great solution in scenarios where we need to run isolated containers. ♦ Examples are simple applications, task automation, and build jobs.
- The drawback of ACI is that it cannot be used for full orchestration like multiple containers, auto-scaling, and coordinated application upgrades. Please consider AKS for such scenarios, which is the other offering from Azure. In simple terms, for Production, use AKS (Azure Kubernetes Service), and for simple and isolated containers, use ACI. One of the other best use cases for ACI is where we have production issues, and we need to troubleshoot AKS, ACI comes to our rescue where we deploy the trouble-making container in ACI and try to debug.

Advantages of ACI \diamond Fast Startup Startup times \diamond Container access \diamond Custom Sizes \diamond Persistent Storage – We do this by mounting Azure file shares. \diamond Virtual Network deployment – When deployed in a Vnet, ACI can securely communicate with other resources in the Vnet.

What are container groups? \diamond Like AKS for orchestration, we can use container groups to combine and manage containers. \diamond They get scheduled on the same host machine. \diamond The concept is like pods in Kubernetes. The use case for this is in scenarios where we want to divide a single functional task into a smaller number of container images. • An example is front-end container and a back-end container. \diamond The front end might serve as a web application, with the back end running a service to retrieve data.

- 1. What are probes in ACI?
- 2. Liveness probe
- 3. Readiness probe

o You can configure the liveness probe. We check the liveness probe to see if the container is healthy. If the container is not healthy, we need to restart. There are common scenarios when containers run for a long time. o You can configure the readiness probe. Here we might have a scenario where the container (maybe DB for the backend) is just coming up. We run the readiness probe and send requests to the container only if the probe succeeds.

- 1. How can we monitor ACI?
- \diamond We use Azure Monitor. Here are the available metrics currently. \diamond CPU Usage measured in millicuries (One millicore is 1/10th of a CPU core) \diamond o Memory Usage in bytes \diamond o Network bytes received persec ond. \diamond o Network bytes transmitted persec ond

https://learn.microsoft.com/en-us/azure/container-apps/overview

Azure Container Apps • Azure Container Apps is a fully managed environment that enables you to run microservices and containerized applications on a serverless platform. • Azure Container Apps enables you to build serverless microservices based on containers. • Azure Container Apps provide many application-specific concepts on top of containers, including certificates, revisions, scale, and environments. • Azure Container Apps doesn't provide direct access to the underlying Kubernetes APIs. • If you require access to the Kubernetes APIs and control plane, you should use Azure Kubernetes Service

• However, if you would like to build Kubernetes-style applications and don't require direct access to all the native Kubernetes APIs and cluster management, Container Apps provides a fully managed experience. • For these reasons, many teams may prefer to start building container microservices with Azure Container Apps.

Common uses of Azure Container Apps include: • Azure Container Apps enables executing application code packaged in any container and is unopinionated about runtime or programming model. • With Container Apps, you enjoy the benefits of running containers while leaving behind the concerns of managing cloud infrastructure and complex container orchestrators

- 1. Deploying API endpoints
- 2. Hosti ng backgrou nd processing a pplications
- 3. Handling event-driven processing

4. Running microservices

Applications built on Azure Container Apps can dynamically scale based on the following characteristics:

- 1. HTTP traffic
- 2. Event-driven processing
- 3. CPU or memory load
- 4. Any KEDA-supported scaler

https://learn.microsoft.com/en-us/azure/container-apps/media/overview/azure-container-apps-example-scenarios.png

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azure_containers

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https://learn.microsoft.com/en-us/azure/container-apps/media/overview/azure-container-apps-example-scenarios.png

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• Azure Kubernetes Service https://learn.microsoft.com/en-us/azure/aks/

Azure Kubernetes Service

- Azure Kubernetes Service (AKS) provides a fully managed Kubernetes option in Azure. It supports direct access to the Kubernetes API and runs any Kubernetes workload. The full cluster resides in your subscription, with the cluster configurations and operations within your control and responsibility. Teams looking for a fully managed version of Kubernetes in Azure, Azure Kubernetes Service is an ideal option.
- Azure Kubernetes Service (AKS) simplifies deploying a managed Kubernetes cluster in Azure by offloading the operational overhead to Azure.
- As a hosted Kubernetes service, Azure handles critical tasks, like health monitoring and maintenance.

- When you create an AKS cluster, a control plane is automatically created and configured. This control plane is provided at no cost as a managed Azure resource abstracted from the user. You only pay for and manage the nodes attached to the AKS cluster.
- AKS also supports Windows Server containers.

Azure Kubernetes Service (AKS)

What is Containerization? • In the traditional computing system, we had to install an Operating system and install all dependencies for an application to work. Only a single OS could be installed.

- Then came Virtualization where we could install multiple OS by introducing another layer between the hardware and the OS and this was called Virtualization. So only physical machines appeared as multiple systems.
- Then came a lightweight alternative to virtualization, which was called Containerization. This removed the drawback of having a full machine, and this had only the necessary components.
- Containers will encapsulate an application with its operating system. This would contain all the dependencies that were needed for an application to run. So we take the container and run it on any operating system, and it will run.
- Some of the containerization options are Docker, which is the most popular and
- ♦ sometimes equated to containers. But there are others like LXC/LXD, ContainerD, Rocket.
 - This service supports Azure Lighthouse, which lets service providers sign in to their own tenant to manage subscriptions and resource groups that customers have delegated. Azure Lighthouse:: https://learn.microsoft.com/en-us/azure/lighthouse/

AKS with Azure AD

• You can configure an AKS cluster to integrate with Azure AD. • With Azure AD Integration, you can set up Kubernetes access based on existing identity and group membership. • * Your existing Azure AD users and groups can be provided with an integrated sign-on experience and access to AKS resources.

Access, security, and monitoring

• For improved security and management, you can integrate with Azure AD to:

- 1. Use Kubernetes role-based access control (Kubernetes RBAC).
- 2. Monitor the health of your cluster and resources.

Kubernetes RBAC

- 1. To limit access to cluster resources, AKS supports Kubernetes RBAC.
- 2. Kubernetes RBAC controls access and permissions to Kubernetes resources and namespaces.

Orchestration

- ♦ Orchestration is the system that is used to manage the deployment of containers. We use Orchestrators as tools to achieve this. Some of the performed activities are automating the maintenance of those applications, replacing failed containers automatically, and managing the rollout of updates and reconfigurations of those containers during their lifecycle.
- ♦ The popular tools are
- Docker Swarm by Docker,
 Nomad by Hashicorp,
 Flocker, and
 Kubernetes by Google.
- ♦ Kubernetes, also stylized as K8s, is an open-source container orchestration system. It is used for automating comput er aplic ation deployment, scaling, and management.
- ♦ It was originally designed by Google and influenced by Google's Borg System and is now maintained by the Cloud Native Computing Foundation. It is a cluster management software for Docker containers mainly but suports others also.
- AKS \diamond Kubernetes has become very popular, and many cloud service providers offer a Kubernetes-based platform or infrastructure as a PaS or IaS offering.
- ♦ Google has GKE (Google Kuberne tes Engine), ♦ AWS has EKS (Elastic Kuberne tes Service), and ♦ Azure has AKS (Azure Kuberne tes Service)

Kubernetes Terminologies

Clusters and nodes

- AKS nodes run on Azure virtual machines (VMs).
- With AKS nodes, you can connect storage to nodes and pods, upgrade cluster components, and use GPUs.

 AKS supports Kubernetes clusters that run multiple node pools to support mixed operating systems and Windows Server containers.

Cluster node and pod scaling

- As demand for resources change, the number of cluster nodes or pods that run your services automatically scales up or down.
- You can adjust both the horizontal pod autoscaler or the cluster autoscaler to adjust to demands and only run necessary resources.

Storage volume support

- To support application workloads, you can mount static or dynamic storage volumes for persistent data.
- Depending on the number ofconnected pods expected to share the storage volumes, you can use storage backed by:
- Azure Disks for single pod access
- Azure Files for multiple, concurrent pod access

Virtual networks and ingress

- An AKS cluster can be deployed into an existing virtual network.
- In this configuration, every pod in the cluster is assigned an IP address in the virtual network and can directly communicate with other pods in the cluster and other nodes in the virtual network.
- Pods can also connect to other services in a peered virtual network and on-premises networks over ExpressRoute or site-to-site (S2S) VPN connections.

Ingress with HTTP application routing

- The HTTP application routing add-on helps you easily access applications deployed to your AKS cluster.
- When enabled, the HTTP application routing solution configures an ingress controller in your AKS cluster,
- As applications are deployed, publicly accessible DNS names are auto-configured.
- The HTTP application routing sets up a DNS zone and integrates it with the AKS cluster.

• You can then deploy Kubernetes ingress resources as normal.

Development tooling i ntegration

- Azure provides several tools that help streamline Kubernetes.
- Kubernetes has a rich ecosystem of development and management tools that work seamlessly with AKS.
- These tools include Helm and the Kubernetes extension for Visual Studio Code.

Helm

Docker image support and private container registry

- AKS supports the Docker image format.
- For private storage of your Docker images, you can integrate AKS with Azure Container Registry (ACR).

**

Kubernetes components

**

Components of Kubernetes

- **1. The Cluster** o The Cluster contains 2c omponen ts Control Plane this consists of kube-apiser ver, etcd, kube-scheduler and kube-controller-manager Nodes that run the applications
- **2** . **Persistent Volumes** o Since the nodes are added and removed on-demand and the storage associated with it is temporary, we need to create storage outside of the cluster. Hence we create persistent volumes.
- **3. Node** ♦ We create Node pools in Kubernetes (as shown below). Here we choose a VM size, and that will be the unit size of the nodes within the pool.
- ♦ We can add node pools as needed. The first node poolcreated is the system node pool which hosts critical system podslk e coreDNS and tunnel front.
- ♦ We then add user node pools for aplic ation suportand create different pools based on theaplication requirements.
- ♦ Pods will be created within the nodes, and the max pod setting is configured at the node pool level. ♦ **4** . **Containers** ♦ We store our code that is going to be run inside containers. There are readily available pre-

built containers stored in container repositories or we can create our own containers.

- One or more programs can be run from the containers
- **5. Pods** ♦ Nodes create Pods, and kubernetes use Pods to run instances.
- ♦ Usually, only one container is run within a pod, but multiple containers could run in a pod if there was a requirement from the application.
- ♦ We scale based on pods. When we can scale, we simply use pod replicas.
- ♦ A new pod will be spun up in another node, and we now have an additional pod.
- ♦ Sameway, we can remove the pods to scale down.

Deployments ♦ We don't launch podsdir ectly. Instead, we create deployments.

- ♦ A deployment will state how many replicas should run and the system manages that.
- **7. Ingress** ♦ By default, Kubernetes provides isolation between pods and the outside world. If you want to communicate with the service running in the pods, you need to open the communication. This is called Ingress.
- ♦ You can achieve this communication in several ways. The most common ways are Ingress controller or a load balancer. Please see the sample service.yaml file which creates an external load balancer. We get the IP of this service and connect.

x Azure Red Hat Openshift

https://learn.microsoft.com/en-us/azure/openshift/

Azure Red Hat OpenShift extends Kubernetes.

- Running containers in production with Kubernetes requires additional tools and resources.
- This often includes needing to juggle
- image registries,
- storage management,
- networking solutions, and
- logging and monitoring tools all of which must be versioned and tested together.

• Building container-based applications requires even more integration work with middleware, frameworks, databases, and CI/CD tools. • Azure Red Hat OpenShift combines all this into a single platform, bringing ease of operations to ITteams while giving application teams what they need to execute.

Azure Red Hat Openshift Service • Azure Red Hat OpenShift is jointly engineered, operated, and supported by Red Hat and Microsoft to provide an integrated product and support experience for running Kubernetes-powered OpenShift. • • If your team or organization is using OpenShift, Azure Red Hat OpenShift is an ideal option. • With Azure Red Hat OpenShift, teams can choose their own

```
    registry,
    networking,
    storage, and
    Cl/CD solutions, or
    *oR
    use the built-in solutions for automated source code management, container and application builds, deployments, scaling, health management, and more from OpenShift.
```

- Master, infrastructure, and application nodes are patched, updated, and monitored on your behalf by Red Hat and Microsoft
- Azure Red Hat OpenShift provides an integrated sign-on experience through Azure Active Directory.
- You can choose your own registry, networking, storage, and CI/CD solutions, or use the built-in solutions
 for automated source code management, container and application builds, deployments, scaling, health
 management, and more.

Access, security, and monitoring

- For improved security and management, Azure Red Hat OpenShift lets you integrate with Azure Active Directory (Azure AD) and use Kubernetes role-based access control (Kubernetes RBAC).
- You can also monitor the health of your cluster and resources.

Cluster and node

- Azure Red Hat OpenShift nodes run on Azure virtual machines.
- You can connect storage to nodes and pods and upgrade cluster components.

Service Level Agreement

Azure container Registry

https://learn.microsoft.com/en-us/azure/container-registry/

What is a Container Registry? • A Container Registry is a central repository to store and distribute container images.

- A container image includes all the data needed to start a container for example, the operating system, libraries, runtime environments, and the application itself.
- We first build an image, and then we push the image to the repository. When needed, we pull the image into the target environment. With versioning as a feature, we have multiple versions of the container, and different versions like the stable version would be used for Production.
- Versions being tested would be in non-production regions. In the example below, v2 is a stable version, and the developer makes changes and creates v3. Once v3 is tested, it would be then pulled into Production.

Azure Container Registry • Azure Container Registry allows you to build, store, and manage container images and artifacts in a private registry for all types of container deployments. • Use Azure container registries with your existing container development and deployment pipelines. • Use Azure Container RegistryTasks to build container images in Azure on-demand, or automate builds triggered by source code updates, updates to a container's base image, or timers

Popular providers Few providers provide the container registry services, and they are: ♦ Docker Hub ♦ Azure ACR (Azure Container Registry) ♦ AWS ECR (Elastic Container Registry) ♦ GitHub Container Registry ♦ Google Container Registry

ACR Service Tiers ACR is available in 3ser vice tiers, also called SKUs.

- 1. Basic Cost Optimized for developers.
- 2. Standard All features of Basic plus increased storage and image throughput. For Production
- 3. Premium highest amount of storage and concurrent operations. It also includes geo-replication, content trust, and private link.

FAQs ♦ Can we change Service tiers – • YES

- ♦ What is geo-replication? With this feature, a replica of the ACR will be created for DR purposes and local use.
- ♦ How can we secure the images in ACR? There is a concept called CONTENT TRUST. With this, images will be signed with certificates.

• To enable this feature, enable registry content trust.

sidebar_position: 2

Azure Container Instances

• Azure Container Instances (ACI) provides a single pod of Hyper-V isolated containers on demand • It can be thought of as a lower-level "building block" option compared to Container Apps. • If you need a less "opinionated" building block that doesn't align with the scenarios Azure Container Apps is optimizing for; Azure Container Instances is an ideal option. • Concepts like scale, load balancing, and certificates are not provided with ACI containers • Users often interact with Azure Container Instances through other services

Azure Container Instance (ACI) • Containerization is the buzzword today. Instead of spinning Physical servers and installing all the dependencies, and installing the application, we can create a container containing all the required dependencies.

- We then package and create an image and deploy it into a container. Docker is one of the platforms where we can run these containers in the Open-source world. Azure has two solutions. One of those is the ACI. ACI is a great solution in scenarios where we need to run isolated containers. ♦ Examples are simple applications, task automation, and build jobs.
- The drawback of ACI is that it cannot be used for full orchestration like multiple containers, auto-scaling, and coordinated application upgrades. Please consider AKS for such scenarios, which is the other offering from Azure. In simple terms, for Production, use AKS (Azure Kubernetes Service), and for simple and isolated containers, use ACI. One of the other best use cases for ACI is where we have production issues, and we need to troubleshoot AKS, ACI comes to our rescue where we deploy the trouble-making container in ACI and try to debug.

Advantages of ACI \diamond Fast Startup Startup times \diamond Container access \diamond Custom Sizes \diamond Persistent Storage – We do this by mounting Azure file shares. \diamond Virtual Network deployment – When deployed in a Vnet, ACI can securely communicate with other resources in the Vnet.

What are container groups? \diamond Like AKS for orchestration, we can use container groups to combine and manage containers. \diamond They get scheduled on the same host machine. \diamond The concept is like pods in Kubernetes. The use case for this is in scenarios where we want to divide a single functional task into a smaller number of container images. • An example is front-end container and a back-end container. \diamond The front end might serve as a web application, with the back end running a service to retrieve data.

- 1. What are probes in ACI?
- 2. Liveness probe
- 3. Readiness probe

o You can configure the liveness probe. We check the liveness probe to see if the container is healthy. If the container is not healthy, we need to restart. There are common scenarios when containers run for a long time. o You can configure the readiness probe. Here we might have a scenario where the container (maybe DB for the backend) is just coming up. We run the readiness probe and send requests to the container only if the probe succeeds.

- 1. How can we monitor ACI?
- \diamond We use Azure Monitor. Here are the available metrics currently. \diamond CPU Usage measured in millicuries (One millicore is 1/10th of a CPU core) \diamond o Memory Usage in bytes \diamond o Network bytes received persec ond. \diamond o Network bytes transmitted persec ond

https://learn.microsoft.com/en-us/azure/container-apps/overview

Azure Container Apps • Azure Container Apps is a fully managed environment that enables you to run microservices and containerized applications on a serverless platform. • Azure Container Apps enables you to build serverless microservices based on containers. • Azure Container Apps provide many application-specific concepts on top of containers, including certificates, revisions, scale, and environments. • Azure Container Apps doesn't provide direct access to the underlying Kubernetes APIs. • If you require access to the Kubernetes APIs and control plane, you should use Azure Kubernetes Service

• However, if you would like to build Kubernetes-style applications and don't require direct access to all the native Kubernetes APIs and cluster management, Container Apps provides a fully managed experience. • For these reasons, many teams may prefer to start building container microservices with Azure Container Apps.

Common uses of Azure Container Apps include: • Azure Container Apps enables executing application code packaged in any container and is unopinionated about runtime or programming model. • With Container Apps, you enjoy the benefits of running containers while leaving behind the concerns of managing cloud infrastructure and complex container orchestrators

- 1. Deploying API endpoints
- 2. Hosti ng backgrou nd processing a pplications
- 3. Handling event-driven processing

4. Running microservices

Applications built on Azure Container Apps can dynamically scale based on the following characteristics:

- 1. HTTP traffic
- 2. Event-driven processing
- 3. CPU or memory load
- 4. Any KEDA-supported scaler

https://learn.microsoft.com/en-us/azure/container-apps/media/overview/azure-container-apps-example-scenarios.png

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• Azure Kubernetes Service https://learn.microsoft.com/en-us/azure/aks/

Azure Kubernetes Service • Azure Kubernetes Service (AKS) provides a fully managed Kubernetes option in Azure. • It supports direct access to the Kubernetes API and runs any Kubernetes workload. • The full cluster resides in your subscription, with the cluster configurations and operations within your control and responsibility. • Teams looking for a fully managed version of Kubernetes in Azure, Azure Kubernetes Service is an ideal option.

- Azure Kubernetes Service (AKS) simplifies deploying a managed Kubernetes cluster in Azure by offloading the operational overhead to Azure.
- As a hosted Kubernetes service, Azure handles critical tasks, like health monitoring and maintenance.
- When you create an AKS cluster, a control plane is automatically created and configured. This control plane is provided at no cost as a managed Azure resource abstracted from the user. You only pay for and manage the nodes attached to the AKS cluster.
- AKS also supports Windows Server containers.

Azure Kubernetes Service (AKS) What is Containerization? • In the traditional computing system, we had to install an Operating system and install all dependencies for an application to work. Only a single OS could be installed.

• Then came Virtualization where we could install multiple OS by introducing another layer between the hardware and the OS and this was called Virtualization. So only physical machines appeared as multiple

systems.

- Then came a lightweight alternative to virtualization, which was called Containerization. This removed the drawback of having a full machine, and this had only the necessary components.
- Containers will encapsulate an application with its operating system. This would contain all the dependencies that were needed for an application to run. So we take the container and run it on any operating system, and it will run.
- Some of the containerization options are Docker, which is the most popular and
- ♦ sometimes equated to containers. But there are others like LXC/LXD, ContainerD, Rocket.
 - This service supports Azure Lighthouse, which lets service providers sign in to their own tenant to manage subscriptions and resource groups that customers have delegated. Azure Lighthouse:: https://learn.microsoft.com/en-us/azure/lighthouse/

AKS with Azure AD • You can configure an AKS cluster to integrate with Azure AD. • With Azure AD Integration, you can set up Kubernetes access based on existing identity and group membership. • * Your existing Azure AD users and groups can be provided with an integrated sign-on experience and access to AKS resources.

Access, security, and monitoring

- For improved security and management, you can integrate with Azure AD to:
- 1. Use Kubernetes role-based access control (Kubernetes RBAC).
- 2. Monitor the health of your cluster and resources.

Kubernetes RBAC

- 1. To limit access to cluster resources, AKS supports Kubernetes RBAC.
- 2. Kubernetes RBAC controls access and permissions to Kubernetes resources and namespaces.

Orchestration \diamond Orchestration is the system that is used to manage the deployment of containers. We use Orchestrators as tools to achieve this. Some of the performed activities are automating the maintenance of those applications, replacing failed containers automatically, and managing the rollout of updates and reconfigurations of those containers during their lifecycle.

♦ The popular tools are

- Docker Swarm by Docker,
 Nomad by Hashicorp,
 Flocker, and
 Kubernetes by Google.
- ♦ Kubernetes, also stylized as K8s, is an open-source container orchestration system. It is used for automating comput er aplic ation deployment, scaling, and management.
- ♦ It was originally designed by Google and influenced by Google's Borg System and is now maintained by the Cloud Native Computing Foundation. It is a cluster management software for Docker containers mainly but suports others also.

AKS \diamond Kubernetes has become very popular, and many cloud service providers offer a Kubernetes-based platform or infrastructure as a PaS or IaS offering.

♦ Google has GKE (Google Kuberne tes Engine), ♦ AWS has EKS (Elastic Kuberne tes Service), and ♦ Azure has AKS (Azure Kuberne tes Service)

Kubernetes Terminologies

Clusters and nodes

- AKS nodes run on Azure virtual machines (VMs).
- With AKS nodes, you can connect storage to nodes and pods, upgrade cluster components, and use GPUs.
- AKS supports Kubernetes clusters that run multiple node pools to support mixed operating systems and Windows Server containers.

Cluster node and pod scaling

- As demand for resources change, the number of cluster nodes or pods that run your services automatically scales up or down.
- You can adjust both the horizontal pod autoscaler or the cluster autoscaler to adjust to demands and only run necessary resources.

Storage volume support

- To support application workloads, you can mount static or dynamic storage volumes for persistent data.
- Depending on the number ofconnected pods expected to share the storage volumes, you can use storage backed by:

- Azure Disks for single pod access
- Azure Files for multiple, concurrent pod access

Virtual networks and ingress

- An AKS cluster can be deployed into an existing virtual network.
- In this configuration, every pod in the cluster is assigned an IP address in the virtual network and can directly communicate with other pods in the cluster and other nodes in the virtual network.
- Pods can also connect to other services in a peered virtual network and on-premises networks over ExpressRoute or site-to-site (S2S) VPN connections.

Ingress with HTTP application routing

- The HTTP application routing add-on helps you easily access applications deployed to your AKS cluster.
- When enabled, the HTTP application routing solution configures an ingress controller in your AKS cluster,
- As applications are deployed, publicly accessible DNS names are auto-configured.
- The HTTP application routing sets up a DNS zone and integrates it with the AKS cluster.
- You can then deploy Kubernetes ingress resources as normal.

Development tooling i ntegration

- Azure provides several tools that help streamline Kubernetes.
- Kubernetes has a rich ecosystem of development and management tools that work seamlessly with AKS.
- These tools include Helm and the Kubernetes extension for Visual Studio Code.

Helm

Docker image support and private container registry

- AKS supports the Docker image format.
- For private storage of your Docker images, you can integrate AKS with Azure Container Registry (ACR).

Kubernetes components

Components of Kubernetes

- 1 . The Cluster o The Cluster contains 2c omponen ts Control Plane this consists of kube-apiser ver, etcd, kube-scheduler and kube-controller-manager Nodes that run the applications
- 2 . Persistent Volumes o Since the nodes are added and removed on-demand and the storage associated with it is temporary, we need to create storage outside of the cluster. Hence we create persistent volumes.
- 3. Node \diamond We create Node pools in Kubernetes (as shown below). Here we choose a VM size, and that will be the unit size of the nodes within the pool.
- ♦ We can add node pools as needed. The first node poolcreated is the system node pool which hosts critical system podslk e coreDNS and tunnel front.
- ♦ We then add user node pools for aplic ation suportand create different pools based on theaplication requirements.
- \diamond Pods will be created within the nodes, and the max pod setting is configured at the node pool level. \diamond 4 . Containers \diamond We store our code that is going to be run inside containers. There are readily available prebuilt containers stored in container repositories or we can create our own containers.
- ♦ One or more programs can be run from the containers
 - 5. Pods ♦ Nodes create Pods, and kubernetes use Pods to run instances.
- ♦ Usually, only one container is run within a pod, but multiple containers could run in a pod if there was a requirement from the application.
- ♦ We scale based on pods. When we can scale, we simply use pod replicas.
- ♦ A new pod will be spun up in another node, and we now have an additional pod.
- ♦ Sameway, we can remove the pods to scale down.

Deployments \diamond We don't launch podsdir ectly. Instead, we create deployments.

- ♦ A deployment will state how many replicas should run and the system manages that.
- 7. Ingress \diamond By default, Kubernetes provides isolation between pods and the outside world. If you want to communicate with the service running in the pods, you need to open the communication. This is called

Ingress.

♦ You can achieve this communication in several ways. The most common ways are Ingress controller or a load balancer. Please see the sample service.yaml file which creates an external load balancer. We get the IP of this service and connect.

x Azure Red Hat Openshift https://learn.microsoft.com/en-us/azure/openshift/

Azure Red Hat OpenShift extends Kubernetes.

- Running containers in production with Kubernetes requires additional tools and resources.
- This often includes needing to juggle
- image registries,
- storage management,
- networking solutions, and
- logging and monitoring tools all of which must be versioned and tested together.
- Building container-based applications requires even more integration work with middleware, frameworks, databases, and CI/CD tools. Azure Red Hat OpenShift combines all this into a single platform, bringing ease of operations to ITteams while giving application teams what they need to execute.

Azure Red Hat Openshift Service • Azure Red Hat OpenShift is jointly engineered, operated, and supported by Red Hat and Microsoft to provide an integrated product and support experience for running Kubernetes-powered OpenShift. • • If your team or organization is using OpenShift, Azure Red Hat OpenShift is an ideal option. • With Azure Red Hat OpenShift, teams can choose their own

```
    registry,
    networking,
    storage, and
    Cl/CD solutions, or
    *oR
    * use the built-in solutions for automated source code management, container and application builds, deployments, scaling, health management, and more from OpenShift.
```

- Master, infrastructure, and application nodes are patched, updated, and monitored on your behalf by Red Hat and Microsoft
- Azure Red Hat OpenShift provides an integrated sign-on experience through Azure Active Directory.

You can choose your own registry, networking, storage, and CI/CD solutions, or use the built-in solutions
for automated source code management, container and application builds, deployments, scaling, health
management, and more.

Access, security, and monitoring

- For improved security and management, Azure Red Hat OpenShift lets you integrate with Azure Active Directory (Azure AD) and use Kubernetes role-based access control (Kubernetes RBAC).
- You can also monitor the health of your cluster and resources.

Cluster and node

- Azure Red Hat OpenShift nodes run on Azure virtual machines.
- You can connect storage to nodes and pods and upgrade cluster components.

Service Level Agreement

• Azure container Registry https://learn.microsoft.com/en-us/azure/container-registry/

What is a Container Registry? • A Container Registry is a central repository to store and distribute container images.

- A container image includes all the data needed to start a container for example, the operating system, libraries, runtime environments, and the application itself.
- We first build an image, and then we push the image to the repository. When needed, we pull the image into the target environment. With versioning as a feature, we have multiple versions of the container, and different versions like the stable version would be used for Production.
- Versions being tested would be in non-production regions. In the example below, v2 is a stable version, and the developer makes changes and creates v3. Once v3 is tested, it would be then pulled into Production.

Azure Container Registry • Azure Container Registry allows you to build, store, and manage container images and artifacts in a private registry for all types of container deployments. • Use Azure container registries with your existing container development and deployment pipelines. • Use Azure Container RegistryTasks to build container images in Azure on-demand, or automate builds triggered by source code updates, updates to a container's base image, or timers

Popular providers Few providers provide the container registry services, and they are: \diamond Docker Hub \diamond Azure ACR (Azure Container Registry) \diamond AWS ECR (Elastic Container Registry) \diamond GitHub Container Registry \diamond Google Container Registry

ACR Service Tiers ACR is available in 3ser vice tiers, also called SKUs.

- 1. Basic Cost Optimized for developers.
- 2. Standard All features of Basic plus increased storage and image throughput. For Production
- 3. Premium highest amount of storage and concurrent operations. It also includes geo-replication, content trust, and private link.

FAQs ♦ Can we change Service tiers – • YES

♦ What is geo-replication? • With this feature, a replica of the ACR will be created for DR purposes and local use.

How can we secure the images in ACR? There is a concept called CONTENT TRUST. With this, images will be signed with certificates. To enable this feature, enable registry content trust.

It is available under Policies Content Trust - Enabled and then save.



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Azure Security Center



One more security

1 items

azure_security_center

Azure Security Center

Introduction:

In today's world, Security has been a biggest concern for any application hosted/built in either on-premises or cloud and it is the foremost duty of a developer to prevent unwanted access to applications and prevent all other security issues. So security in the cloud is foremost important and it should also provide accurate and timely information about security.

Azure Security Center:

- The Azure Security Center in Azure Cloud is a unified infrastructure security management system that can be used to strengthen the overall infrastructure and data security and provide advanced threat protection across various workloads such as Azure cloud or any other cloud providers or even onpremises infrastructure and data.
- When an application is being moved to Azure laaS, the customer has more responsibility on securing the infrastructure and data when compared to moving to PaaS.
- So, the security center offers various tools that can be used to harden the network and secure the various cloud services.

The security center can be used to address the 3 major security challenges:

- 1. Strengthen the environment:
- 2. Protect against modern threats:
- 3. Secure the environment faster:

1. Strengthen the environment:

- The security center assesses the whole azure environment and all the resources deployed on it.
- It understands the security status of the same.
- By doing so, it provides detailed security related information.

2. Protect against modern threats:

Today we have various threats that can easily take over the application.

- So, a security center can be used to provide various threat prevention recommendations by assessing the deployed workloads and also provides timely security alerts.
- 3. Secure the environment faster: Since the security center is natively built in azure cloud, it can be used to quickly secure the cloud environment and protect against various threats.

Key Pointers:

- 1. Since the Security center is natively part of Azure, various PaaS services, VMs, SQL Database and storage accounts can automatically be monitored by the security center without making any additional deployment.
- 2. The Azure VMs are auto provisioned in the security center when they are deployed and do not require any additional installations.
- 3. Security centers can be used to protect not only azure services but also applications deployed in other cloud providers or even in on-premises infrastructures and applications.
- 4. To perform protecting non-azure infrastructures and applications, a log analytics agent needs to be installed in the external application.
- 5. Through the log analytics agent installed in the external systems, Azure will be collecting various information and the same will be processed in the security engine to provide detailed recommendations and actions to secure the data and the workload.
- 6. It is also very important that these recommendations should be considered, and necessary actions should be taken. By doing so, the environment can be highly secure and malicious activities can be prevented.

Environment assessment:

• The security center continuously monitors all the resources deployed in the cloud and provides various recommendations to secure it. • Based on the recommendations, it also displays the necessary action to be taken to secure the resources. • Also based on the analysis, it provides a security score which as per recommendation should be 100%. Below is the image of the security center portal. • The details here are filtered based on a subscription in which it displays the security posture of various resources in the subscription. • The red bar on the right denotes that the particular security recommendation "Remediate vulnerabilities" was not implemented and some resources may be affected due to this. • If a recommendation is clicked, it displays furthermore information about the recommendations, severity of it and total number of affected resources. • Also, it is the user's/Administrator's choice whether to perform or skip a particular security center's recommendation. • It is not mandatory to perform all the recommendations and Microsoft does not produce any discounts/credits if the security score is kept 100%. • If a user chooses to skip a recommendation, he/she can go inside the recommendation and give "Exempt" to overcome this recommendation. • It is also possible to enforce a particular recommendation and by doing so, it will be

creating a template deployment which will make sure to use the "DeployIfNotExist" policy and create the resource with this security recommendation.

All these recommendations and security alerts provided by the security center provide a great insight of what all security threats may occur to the resources and how to prevent it well before-hand.

Cost of Azure Security Center:

The azure security center is a free service.

Azure Defender

- The azure security center is a free service, but to have more features other than providing recommendations and actions, a paid service called the azure defender is available and it can be used to extract below additional details.
- 1. Just in time VM Access
- 2. Adaptive application controls and network hardening
- 3. Regulatory compliance Dashboard
- 4. Threat protection for Azure VMs and non-Azure servers (Including server EDR)
- 5. Threat protection for PaaS services
- 6. Microsoft Defender for Endpoint (servers)

https://learn.microsoft.com/en-us/azure/sentinel/

Azure Sentinel

- //// Azure Security Centre provides us with basic visibility and Analytics, but Azure Sentinel goes beyond this and provides complete cybersecurity whereby it can provide
- \diamond visibility/analytics and \diamond Hunting/ Incidents and \diamond finally responding to the incidents with automation.
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Initiating Sentinel ♦ To initiate the Sentinel service, we need to create or connect Log Analytic Workspaces. ♦ Once done, you will see the Sentinel Panel.

Here are the phases of Azure Sentinel:

- 1. Collect data.
- 2. Create Alerts
- 3. Automate and orchestrate.

1. Collect data

- 1. Azure Sentinel can collect data at cloud scale across the enterprise, both on-premises and in multiple clouds.
- 2. There are 98 data connectors available as of today like Azure/ AWS etc and we can connect to these sources and receive the data.
- 3. Examples of Azure data are azure sign-in activity from Azure AD.

2. Create Alerts

- 1. Once the data is collected, we can run queries against the data. We focus on what is important using the analytics and create suitable alerts.
- 2. There are pre-built workbooks available which can be selected and used to get insights.
- 3. Workbooks selection
- 4. We need to select the template and save it and we will be able to get the details.

3. Automate and Orchestrate

- 1. We build automation rules which will automate incident configuration. We could trigger playbooks to handle security alerts.
- 2. We create rules which will trigger the playbooks to be run automatically based on the conditions

Hunting Feature \diamond Azure Sentinel has the hunting feature where we could go further and search for various activities like listing of storage keys or high DNS queries etc., \diamond This will help us identify attacks targeted and we could go and proactively block the malicious activity.

Sentinel Community \diamond There is a sentinel community where we can get different types of resources like Workbooks, Analytics rules, Hunting queries, and Playbooks.

Azure Sentinel pricing \diamond Billing is based on the volume of data ingested for analysis. Azure Sentinel offers a flexible and predictable pricing model, and we could pay either with Capacity Reservations or Pay-as-you-

Go. ♦ With Capacity Reservations, we can get as much as 60% less as compared to Pay-as-you-Go.					



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azure_devops

https://learn.microsoft.com/en-us/azure/devops/?view=azure-devops

azure_devops

https://learn.microsoft.com/en-us/azure/devops/?view=azure-devops

What is Azure DevOps?

• Azure DevOps supports a collaborative culture and set of processes that bring together developers, project managers, and contributors to develop software. • It allows organizations to create and improve products at a faster pace than they can with traditional software development approaches.

Two types of DevOPS

- 1. Cloud Azure DevOps Servicesor
- 2. on-premises using Azure DevOps Server.

For more information, seeDifferences between Azure DevOps Services and Azure DevOps Server.

- 1. Azure Repos
- 2. Azure Pipeline
- 3. Azure Artifacts
- 4. Azure Boards
- 5. Azure Test Plans

Azure Repos • Azure Repos provides Git repositories or Team Foundation Version Control (TFVC) for source control of your code.

Azure Pipelines • Azure Pipelines provides build and release services to support continuous integration and delivery of your applications.

Azure Artifacts • Azure Artifacts allows teams to share packages such as Maven, npm, NuGet, and more from public and private sources and integrate package sharing into your pipelines.

Azure Boards • Azure Boards delivers a suite of Agile tools to support planning and tracking work, code defects, and issues using Kanban and Scrum methods.

Azure Test Plans • Provides several tools to test your apps, including manual/exploratory testing and continuous testing.

For more information about Azure Repos, seeWhat is Azure Repos? For more information about Azure Pipelines, seeWhat is Azure Pipelines? For more information about Azure Artifacts, seeOverview of Azure Artifacts For more information about Azure Boards, seeWhat is Azure Boards?

For more information about Azure Test Plans, seeOverview of Azure Test Plans

Choose Azure DevOps Services

Azure DevOpsServicessupports integration with GitHub.com and GitHub Enterprise Server repositories.

Choose Azure DevOps Services when you want the following outcomes: • Quick set-up • Maintenance-free operations • Easy collaboration across domains • Elastic scale • Rock-solid security

Azure DevOps Services also gives you access to cloud build and deployment servers, and application insights. Start for freeand create an organization. Then, either upload your code to share or source control. Begin tracking your work using Scrum, Kanban, or a combination of methods. For more information, see the Azure DevOps and GitHub integration overview.

Choose Azure DevOps Server

Azure DevOpsServersupports integration with GitHub Enterprise Server repositories. Choose on-premises Azure DevOps Server when: • You need your data to stay within your network. • Your work tracking customization requirements are met better with the on-premises XML process model over the inheritance process model. The on-premises model supports modification of XML definition files.

When you deploy Azure DevOps Server, you can also configure the following servers or integration points: \diamond Build serversupports on-premises and cloud-hosted builds. \diamond SQL Server and SQL Analysis Serversupport SQL Server Reports and the ability to create Excel pivot charts based on the cube.

Start for free by downloadingAzure DevOps Server Express. Then, either upload your code to share or source control. Or, begin tracking your work using Scrum, Kanban, or a combination of methods. For more information about managing Azure DevOps Server, see theAdministrative tasks quick reference.



terraform_basics

What is Terraform?

- Terraform is an open-source infrastructure provisioning tool that is based on "Infrastructure as a Code" paradigm.
- Terraform is used to define and provision the complete infrastructure using an easy-to-learn declarative language.

Features of Terraform (7 points)

- 1. With terraform we can store our cloud infrastructure setup as codes.
 - a. It's very similar to tools such as CloudFormation, which you would use to automate your AWS infrastructure, but you can only use that on AWS.
 - b. With Terraform, you can use it on other cloud platforms as well.
- 2. Terraform is written in Golang and uses own syntax HCL (Hashicorp Configuration Language), but also supports JSON
- 3. Terraform is a multipurpose composition tool.
 - a. Composes multiple tiers (SaaS/PaaS/laaS)
 - b. A plugin-based architecture model
- 4. Applies Graph Theory to IaaC and provides Automation, Versioning and Reusability
- 5. Helps to evolve the infrastructure, safely and predictably.
- 6. Designed on immutable infrastructure principles.
- 7. Terraform is a cloud-agnostic tool.
- 8. It embraces all major Cloud Providers and provides common language to orchestrate the infrastructure resources.

Agnostic, in an information technology (IT) context, refers to something that is generalized so that it is interoperable among various systems.

Terraform is NOT

• Terraform is not a configuration management tool like chef, ansible, that exists in the market.

Benefits of using Terraform. (6 points)

- 1. Does orchestration, not just configuration management.
- 2. Supports Client only architecture, so no need for additional configuration management on a server.
- 3. Easily portable to any other provider
- 4. Provide immutable infrastructure where configuration changes are done smoothly.
- 5. Uses easy to understand language, HCL (HashiCorp configuration language)
- 6. Supports multiple providers such as AWS, Azure, GCP, DigitalOcean and many more

Terraform Core concepts.

Below are the core concepts/terminologies used in Terraform:

• Provider:

Provider is a plugin that is used to interact with the APIs of cloud service provider and access its related resources.

• Plan:

Plan is one of the stages where terraform determines what needs to be created, updated, or destroyed to move from the current state of the infrastructure to the desired state of the infrastructure.

Apply:

Apply is one of the stages where terraform applies the changes to the current state of the infrastructure to move to the desired state.

State:

Terraform state consists of cached information about the infrastructure managed by Terraform and its related configurations.

• Resources:

Resources refers to a block of one or more infrastructure objects which are used in configuring and

managing the infrastructure. E.g. compute instances, virtual networks, etc.

Module:

Module is a folder with Terraform templates where all the configurations are defined

• Variables:

Variables are key-value pairs that are used by Terraform modules to allow customization.

- Variables are also known as input-variables.
- Data Source:

Data source is implemented by providers to return information about external objects to terraform.

• Output Values:

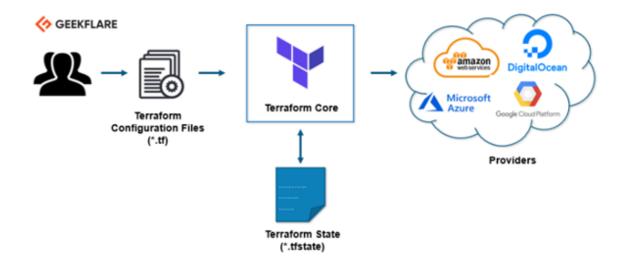
Output Values are the return values of a terraform module that can be used by other configurations.

- 1. Provider
- 2. Plan
- 3. Apply
- 4. State
- 5. Resources
- 6. Module
- 7. Variables
- 8. Data Source
- 9. Output Values

How Terraform Works?

Terraform has two main components that make up its architecture:

- 1. Terraform Core
- 2. Providers



Terraform Core

- .tf file.
- o Terraform configuration file with extension (tf)
- o Or Desired State
- .tfstate file.
- o Terraform state file where terraform keeps the up-to-date state of how the current set up of the infrastructure looks like.
- o Or Current state of infrastructure.
- Terraform core uses the above two input sources to do its job.
- The first input source is a Terraform configuration file (.tf) that we, as a user, configure.
- o Here, we define what needs to be created or provisioned. (.tf)
- And the second input source is a state(*.tfstate) file where terraform keeps the up-to-date state of how the current set up of the infrastructure looks like.
- So, what terraform core does is it takes the input, and it figures out the plan of what needs to be done to achieve the desired state.
- It compares the state, what is the current state, and what is the configuration that you desire in the result.
- It figures out what needs to be done to get to that desired state as described in the configuration file.
- It figures what needs to be created, what needs to be updated, what needs to be deleted to create and provision the infrastructure.

Providers

- The second component of architecture is providers for specific technologies.
- Terraform providers (or plugins) provide abstraction above the upstream API and are responsible for understanding API interactions and exposing resources.

- This could be cloud service providers like AWS, Azure, GCP,
- It is also a provider for more high-level components like Kubernetes or other platform-as-a-service tools, even some software as a self-service tool.
- It gives you the possibility to create infrastructure on different levels.
- o For example create an AWS infrastructure, then deploy Kubernetes on top of it and then create services/components inside that Kubernetes cluster.
- Terraform has over a hundred providers for different technologies, and each provider then gives terraform user access to its resources.
- So, through AWS provider, for example, you have access to hundreds of AWS resources like EC2 instances, the AWS users, etc.
- With Kubernetes provider, you access commodities, resources like services and deployments and namespaces, etc.

So, this is how Terraform works, and this way, it tries to help you provision and cover the complete application setup from infrastructure all the way to the application.

Digital Certificates

1 items



Digital_Certificates

Digital Certificates

Digital_Certificates

Digital Certificates

Intro From https://sites.google.com/site/ddmwsst/digital-certificates https://phoenixnap.com/kb/openssl-tutorial-ssl-certificates-private-keys-csrs

01_What is a Digital Certificate

What is a Digital Certificate?

- Public Key Certificate is commonly referred to as a 'digital certificate'.
- Digital certificates are electronic credentials that are used to assert the online identities of individuals, computers, and other entities on a network.
- Digital certificates function similarly to identification cards such as passports and driver's licenses.

What does a digital certificate contain?

Most commonly they contain a public key and the identity of the owner.

Who issues the digital certificate?

• They are issued by certification authorities (CAs) that must validate the identity of the certificate-holder both before the certificate is issued and when the certificate is used.

What does a certificate authority do before issuing a certificate? CA must validate the identity of the certificate-holder.

Where is the digital certificate used? Common uses include business scenarios requiring

- 1. authentication,
- 2. encryption, and
- 3. digital signing.

Certificate Purposes What are the four purposes of a digital certificate?

- 1. Encryption
- 2. Signature

- 3. Signature and Encryption
- 4. Signature and smartcard logon

Explain the 4 certificate purposes • Encryption. A certificate with this purpose will contain cryptographic keys for encryption and decryption. • Signature. A certificate with this purpose will contain cryptographic keys for signing data only. • Signature and encryption. A certificate with this purpose covers all primary uses of a certificate's cryptographic key, including encryption of data, decryption of data, initial logon, or digitally signing data. • Signature and smartcard logon. A certificate with this purpose allows for initial logon with a smart card, and digitally signing data; it cannot be used for data encryption.

Where is the digital certificate first used? SSL is probably the first protocol to use digital certificates. Nowadays they are widely used wherever there is a need for signing and encryption.

What is a Digital Certificate What does a digital certificate contain? Who issues the digital certificate? What does a certificate authority do before issuing a certificate? Where is the digital certificate used? What are the four purposes of a digital certificate? Explain the 4 certificate purposes Where is the digital certificate first used?

Certificate Authority

Who issues a digital certificate?

• A Certificate Authority (CA) issues digital certificates that contain a public key and the identity of the owner.

What does the digital certificate contain? contains a public key and the identity of the owner.

Who is keeping the private key? The matching private key is not made available publicly, but kept secret by the end user who generated the key pair.

What does the digital certificate imply? The certificate is also a confirmation or validation by the CA that the public key contained in the certificate belongs to the person, organization, server or other entity noted in the certificate.

The certificate is also a confirmation or validation by the CA that the public key contained in the certificate belongs to the person, organization, server or other entity noted in the certificate. A CA's obligation in such schemes is to verify an applicant's credentials, so that users and relying parties can trust the information in

the CA's certificates. CAs use a variety of standards and tests to do so. In essence, the Certificate Authority is responsible for saying "yes, this person is who they say they are, and we, the CA, verify that".

If the user trusts the CA and can verify the CA's signature, then he can also verify that a certain public key does indeed belong to whoever is identified in the certificate. Browsers maintain a list of well known CAs root certificates. Aside from commercial CAs, some providers issue digital certificates to the public at no cost. Large institutions or government entities may have their own CAs.

What do the digital certificates contain?

- Digital certificates that contain a public key and the identity of the owner.
- The certificate is also a confirmation or validation by the CA that the public key contained in the certificate belongs to the person, organization, server or other entity noted in the certificate.

What is a key pair? While generating a certificate it creates a public key and a private key. This is known as the key pair.

Who maintains the private key? The matching private key is not made available publicly, but kept secret by the end user who generated the key pair

CA Hierarchy CAs are hierarchical in structure. There are generally three types of hierarchies, and they are denoted by the number of tiers.

How are CA's structured? CAs are hierarchical in structure.

How many types of hierarchies available in CA? 3 ties,, and they are denoted by numbers.

- 1. Single/one Tier hierarchy
- 2. Two Tier hierarchy
- 3. Three Tier Hierarchy

Explain single/one tier hierarchy in CA Single/One Tier Hierarchy

A single tier Hierarchy consists of one CA. The single CA is both a Root CA and an Issuing CA. A Root CA is the term for the trust anchor of the PKI. Any applications, users, or computers that trust the Root CA trust any certificates issued by the CA hierarchy. The Issuing CA is a CA that issues certificates to end entities. For security reasons, these two roles are normally separated. When using a single tier hierarchy they are combined.

Explain two tier hierarchy in CA:

Two Tier Hierarchy

A two tier hierarchy is most common. In some ways it is a compromise between the One and Three Tier hierarchies. In this design there is a Root CA that is offline, and a subordinate issuing CA that is online. The level of security is increased because the Root CA and Issuing CA roles are separated. But more importantly the Root CA is offline, and so the private key of the Root CA is better protected from compromise. It also increases scalability and flexibility. This is due to the fact that there can be multiple Issuing CA's that are subordinate to the Root CA. This allows you to have CA's in different geographical locations, as well as with different security levels.

Explain Three Tier Hierarchy

Specifically the difference between a Two Tier Hierarchy is that the second tier is placed between the Root CA and the issuing CA. The placement of this CA can be for a couple different reasons. The first reason would be to use the second tier CA as a Policy CA. In other words the Policy CA is configured to issue certificates to the Issuing CA that is restricted in what type of certificates it issues. The Policy CA can also just be used as an administrative boundary. In other words, you only issue certain certificates from subordinates of the Policy CA, and perform a certain level of verification before issuing certificates, but the policy is only enforced from an administrative not technical perspective.

The other reason to have the second tier added is so that if you need to revoke a number of CAs due to a key compromise, you can perform it at the Second Tier level, leaving other "branches from the root" available. It should be noted that Second Tier CAs in this hierarchy can, like the Root, be kept offline.

Who issues a digital certificate? What does the digital certificate contain? Who is keeping the private key? What does the digital certificate imply? What do the digital certificates contain? What is a key pair? Who maintains the private key?

How are CA's structured?

How many types of hierarchies available in CA? Explain single/one tier hierarchy in CA

Explain two tier hierarchy in CA: Explain Three Tier Hierarchy

Obtaining a Certificate From CA

What are the methods of obtaining a digital certificate?

- 1. Obtain from a CA.
- 2. generate a self-signed certificate on your own.

Explain the process of obtaining a Certificate From CA You can obtain a certificate for your business from commercial CAs. The Issuing entities of commercial CAs provide certificates with a cost. Users can directly approach an issuing CA, in this case issuing CA will generate a Key pair on user's behalf. Hand over the private key to the user and provide the certificate containing the public key with Issuing CA's signature after all necessary validations as per CA's policy.

Explain the process:

- 1. User can generate a Key pair on their own using some tool like Keytool in Java and generate a
- 2. Users can generate a Certificate Signing Request (CSR) using tools like Keytool and then send the CSR to Issuing CA for a certificate.
- 3. CSR contains the public key of the user and user identity information in a format that issuing CAs would normally expect.
- 4. Users must keep the private key secret. If the private key is compromised or lost then issuing CA must be informed. This is similar to losing a credit card. CAs keep the certificates in Certificate Revocation List whose private keys are believed to have been compromised or lost.

Explain the process of generating a self-signed certificate: You can yourself be a CA and issue your own certificates, these are called self signed certificates but for commercial purpose your self signed certificated will not be trusted. Only established and well known CAs self signed certificates are trusted.

Who signs the Root certificate of a CA? Root certificate of a CA is always self signed.

What are the methods of obtaining a digital certificate? Explain the process of obtaining a Certificate From CA Explain the process of generating a self-signed certificate: Who signs the Root certificate of a CA?

04_certificate chain or path

What is called a chain of trust?

• When you get a certificate for your public key from a commercial CA then your certificate is associated with a chain of certificates or sometimes called a chain of trust.

What determines the number of certificates in the chain? The number of certificates in the chain depends on the CA's hierarchical structure.

The following image shows a certificate chain for a two tier CA. The owners/users certificate is signed by a Issuing CA and issuing CA's certificate is signed by the Root CA. Root CA's certificate is self signed.

How a browser should validate a certificate? During a User's certificate validation by a browser or a program, the browser needs to validate the signature by finding the public key of the next issuing CA or intermediate CA. The process will continue until the root certificate is reached.

Root CA is self signed and must be _ by the browser at the end. trusted

Browsers keep all well known _ in their trust store CAs root certificates

What is AIA Authority Information Access

What is AIA Locations? ● When a client or application is validating a certificate it needs to not only validate the certificate that is being used but also the entire chain of the certificate. ● In other words, the application or client needs a certificate from each CA in the chain beginning with the issuing CA and ending with the Root CA. ● If the application or client does not have access to the certificates in the chain locally the application or client needs a place from which to obtain the certificates. ● This location is called the Authority Information Access or AIA. ● The AIA location is the repository where the CA certificate is stored so that it can be downloaded by clients or applications validating a certificate.

Where can we get the AIA location? The AIA location is included in the AIA extension of a certificate.

What is CDP? CDP = CRL Distribution Point

What is CRL? Certificate Revocation List

What are CDP Locations? • A CRL Distribution Point (CDP) is where clients or applications that are validating a certificate download the certificate revocation list (CRL) to obtain revocation status. • CA's periodically publish CRLs to allow clients and applications to determine if a certificate has been revoked.

What does the CRL contain? CRLs contain the serial number of the certificate that has been revoked, a timestamp indicating when the certificate was revoked, as well as the reason for revocation.

What is called a chain of trust? What determines the number of certificates in the chain? How a browser should validate a certificate? Root CA is self signed and must be __ by the browser at the end. Browsers keep all well known __ in their trust store.

What is AIA What is AIA Locations? Where can we get the AIA location?

Anatomy of a Certificate

A digital certificate binds a user, computer, or service's identity to a public key by providing information about the subject of the certificate, the validity of the certificate, and applications and services that can use the certificate. Certificates issued in PKIs are structured to meet these objectives based on standards established by the Public-Key Infrastructure (X.509) Working Group (PKIX) of the Internet Engineering Tasks Force (IETF).

What does a digital certificate bind to itself? A digital certificate binds a user, computer, or service's identity to a public key by providing information about the subject of the certificate, the validity of the certificate, and applications and services that can use the certificate.

What is the standard used by digital certificates? Public-Key Infrastructure (X.509) Working Group (PKIX) of the Internet Engineering Tasks Force (IETF).

What standards do digital certificates meet? Certificates issued in PKIs are structured to meet these objectives based on standards established by the Public-Key Infrastructure (X.509) Working Group (PKIX) of the Internet Engineering Tasks Force (IETF).

What is inside a Digital Certificate? The following figure shows the contents of X.509 version 3 certificates

List some of the common fields supported in X.509 version 1. 1 Version 2 Serial Number 3 Signature Algorithm 4 Signature hash Algorithm 5 Issuer 6 Valid from 7 Valid to 8 Subject 9 Public Key 10 Signature Value

Extensions 1 Subject Key identifier 2 CRL Distribution Point 3 Authority Information Access 4 Certificate Template name Critical extensions 1 Basic Constraints Properties: 1 Thumbprint algorithm 2 Thumbprint

List 10 of the common fields supported in X.509 version 1.

- 1. Version
- 2. Serial Number
- 3. Signature Algorithm
- 4. Signature Hash Algorithm
- 5. Issuer
- 6. Valid from

- 7. Valid to
- 8. Subject
- 9. Public Key
- 10. Signature Value.

X.509 Version 3 certificates support the following fields that have been supported since X.509 version 1:

Version: Version provides the version of X.509 • Serial Number: Provides a unique identifier for each certificate that a CA issues. • Signature Algorithm: The algorithm used to sign the certificate. • Signature Hash Algorithm: • Issuer: Provides a distinguished name for the CA that issued the certificate. The issuer name is commonly represented by using an X.500 or LDAP format. • Valid From: Provides the date and time when the certificate becomes valid. • Valid To: Provides the date and time when the certificate is no longer considered valid. The date when an application or service evaluates the certificate must fall between the Valid From and Valid To fields of the certificate for the certificate to be considered valid. • Subject: Provides the name of the computer, user, network device, or service that the CA issues the certificate to. The subject name is commonly represented by using an X.500 or Lightweight Directory Access Protocol (LDAP) format. • Public Key: Contains the public key of the key pair that is associated with the certificate. • Signature Value: Bit string containing the digital signature.

In addition to the version 1 fields, X.509 version 3 certificates include extensions that provide additional functionality and features to the certificate. These extensions are optional and are not necessarily included in each certificate that the CA issues:

- Subject alternative name: A subject can be presented in many different formats.
 - For example, if the certificate must include a user's account name in the format of an LDAP distinguished name, e-mail name, and a user principal name (UPN), you can include the e-mail name or UPN in a certificate by adding a subject alternative name extension that includes these additional name formats.
 - CRL distribution points (CDP): When a user, service, or computer presents a certificate, an
 application or service must determine whether the certificate has been revoked before its validity
 period has expired. The CDP extension provides one or more URLs where the application or service
 can retrieve the certificate revocation list (CRL) from.
 - Authority Information Access (AIA): After an application or service validates a certificate, the
 certificate of the CA that issued the certificate also referred to as the parent CA must also be
 evaluated for revocation and validity. The AIA extension provides one or more URLs from where an
 application or service can retrieve the issuing CA certificate.
 - Enhanced Key Usage (EKU): This attribute includes an object identifier (OID) for each application or service a certificate can be used for. Each OID is a unique sequence of numbers from a worldwide registry.

Certificate policies: Describes what measures an organization takes to validate the identity of a
certificate requestor before it issues a certificate. An OID is used to represent the validation process
and can include a policy-qualified URL that fully describes the measures taken to validate the
identity.

Classification Commercial CAs uses the concept of classes for different types of digital certificates. For example VeriSign has the following classification

- 1. Class 1 for individuals, intended for email.
- 2. Class 2 for organizations, for which proof of identity is required.
- 3. Class 3 for servers and software signing, for which independent verification and checking of identity and authority is done by the issuing certificate authority.
- 4. Class 4 for online business transactions between companies.
- 5. Class 5 for private organizations or governmental security.

Other vendors may choose to use different classes or no classes at all as this is not specified in the specification, though, most do opt to use classes in some form.

What does a digital certificate bind to itself? What is the standard used by digital certificates? What standards do digital certificates meet? What is inside a Digital Certificate?

List 10 of the common fields supported in X.509 version 1.



1 items



13 items

WebSphere_Topics

16 items



JAVA_JDK

JAVA JDK

JAVA JDK

JAVA JDK

What is Java Virtual Machine and how is it considered in the context of Java's platform independent feature?

- When Java is compiled, it is not compiled into a platform specific machine, rather into platform independent bytecode.
- This byte code is distributed over the web and interpreted by virtual Machine (JVM) on whichever platform it is being run.
- Java byte code interpreter is known as Java Virtual Machine.

List two Java IDE's?

Netbeans, Eclipse, etc.

List some Java keywords(unlike C, C++ keywords)?

Some Java keywords are import, super, finally, etc.

What is the difference between JRE and JDK?

- The JRE is the Java Runtime Environment. It is a package of everything necessary to run a compiled Java program, including the Java Virtual Machine (JVM), the Java Class Library, the java command, and other infrastructure. However, it cannot be used to create new programs.
- The JDK is Java Development Kit, the full-featured SDK for Java. It has everything the JRE has, but also the compiler (javac) and tools (like javadoc and jdb).
- The JDK is capable of creating and compiling programs.
- Usually, if you only care about running Java programs on computers you will only install the JRE. It's all you need. On the other hand, if you are planning to do some Java programming, you need to install the JDK instead

What will you use for a middleware server? A JRE or JDK? Why?

• JDK. Because the server needs to compile the jsp and other files

Explain the relation between JDK, JRE, JVM.

1. JVM = Class loader system + runtime data area + Execution Engine.

- 2. JRE = JVM + Java Packages Classes(like util, math, lang, awt, swing etc)+runtime libraries.
- 3. JDK = JRE + Development/debugging tools.
- Development tools such as compilers and debuggers that are necessary or useful for developing applets and applications

Questions

- 1. What is Java Virtual Machine and how is it considered in the context of Java's platform independent feature?
- 2. List two Java IDE's?
- 3. List some Java keywords(unlike C, C++ keywords)?
- 4. What is the difference between JRE and JDK?
- 5. What will you use for a middleware server? A JRE or JDK? Why?
- 6. Explain the relation between JVM, JRE, JDK

WebSphere_QA_01 What is EAR file ?
WebSphere_QA_02 1. What is master repository?
WebSphere_QA_04 1. When do you get stale connection exception.?
WebSphere_QA_05 What is the difference between Web Server and Application Server?
WebSphere_QA_07 IBM WebSphere Application Server Interview Questions
WebSphere_QA_08 Easy Questions:

WebSphere_QA_09 1. Are you responsible for production support?
WebSphere_QA_10 http://middlewareforum.com/weblogic/?p=1298
WebSphere_QA_11 Set 1
WebSphere_QA_12 Learner
WebSphere_QA_13 Questinos alone
■ WebSphere_QA_03
■ WebSphere_QA_06

WebSphere_QA_01

What is EAR file? Enterprise Archive file. A JAR archive that contains a J2EE application.

What is ebXML? Electronic Business XML. A group of specifications designed to enable enterprises to conduct business through the exchange of XML-based messages. It is sponsored by OASIS and the United Nations Centre for the Facilitation of Procedures and Practices in Administration, Commerce and Transport What is EJB? Enterprise JavaBeans. What is EJB container? A container that (U.N./CEFACT). implements the EJB component contract of the J2EE architecture. This contract specifies a runtime environment for enterprise beans that includes security, concurrency, life-cycle management, transactions, deployment, naming, and other services. An EJB container is provided by an EJB or J2EE server. What is EJB container provider? A vendor that supplies an EJB container. What is EJB context? A vendor that supplies an EJB container. An object that allows an enterprise bean to invoke services provided by the container and to obtain the information about the caller of a client-invoked method. What is EJB Home object? An object that provides the life-cycle operations (create, remove, find) for an enterprise bean. The class for the EJB Home object is generated by the container's deployment tools. The EJB Home object implements the enterprise bean's Home interface. The client references an EJB Home object to perform lifecycle operations on an EJB object. The client uses JNDI to locate an EJB Home object. What is EJB JAR file ? A JAR archive that contains an EJB module. What is EJB module? A deployable unit that consists of one or more enterprise beans and an EJB deployment descriptor. What is EJB object? An object whose class implements the enterprise bean's remote interface. A client never references an enterprise bean instance directly; a client always references an EJB object. The class of an EJB object is generated by a What is EJB server? Software that provides services to an EJB container. container's deployment tools. For example, an EJB container typically relies on a transaction manager that is part of the EJB server to perform the two-phase commit across all the participating resource managers. The J2EE architecture assumes that an EJB container is hosted by an EJB server from the same vendor, so it does not specify the contract between these two entities. An EJB server can host one or more EJB containers. What is EJB server provider? A vendor that supplies an EJB server. What is element? A unit of XML data, delimited by tags. An XML element can enclose other elements. What is empty tag? A tag that does not enclose What is enterprise bean? A J2EE component that implements a business task or business any content. entity and is hosted by an EJB container; either an entity bean, a session bean, or a message-driven bean.

What is enterprise bean provider? An application developer who produces enterprise bean classes, remote and Interview Questions - Home interfaces, and deployment descriptor files, and packages them in an EJB JAR file. What is enterprise information system? The applications that constitute an enterprise's existing system for handling companywide information. These applications provide an information infrastructure for an enterprise. An enterprise information system offers a well-defined set of services to its clients. These services are exposed to clients as local or remote interfaces or both. Examples of enterprise

information systems include enterprise resource planning systems, mainframe transaction processing systems, and legacy database systems. What is enterprise information system resource? An entity that provides enterprise information system-specific functionality to its clients. Examples are a record or set of records in a database system, a business object in an enterprise resource planning system, and a transaction program in a transaction processing system.

What is EAR file? What is ebXML? What is EJB? What is EJB container? What is EJB container provider? What is EJB context? What is EJB Home object? What is EJB JAR file? What is EJB module? What is EJB object? What is EJB server? What is EJB server provider? What is What is enterprise bean? element? What is empty tag? What is enterprise bean provider? What is enterprise information system? What is enterprise information system resource?

WebSphere_QA_02

1. What is master repository?

Ans: Deployment manager contains the MASTER configuration and application files. All updates to the configuration files should go through the deployment manager.

2. Tell me IHS executable files, means bin directory files?

Ans: Apache, ApacheMonitor, htpasswd, htdigest, htdbm, ldapstash, httpd.exe

3. Why given the httpd.conf file to installation of plug-in?

Ans: Identify the web server (port, virtual hosts) to configure the web server definition

4. How to configure remote system httpd.conf file?

Ans: Select web server machine (remote)

5. Several types of log files in the appserver?

Ans: system out, system err, trace, native out, native err, activity.

6. WebSphere packages?

Ans: Express, Base, Network Deployment

7. What is the profile?

Ans: Profiles are a set of files that represent a WebSphere application server configuration.

8. What is the trace?

Ans: A trace is an informational record that is intended for service engineers or developers to use. As such, a trace record might be considerably more complex, verbose and detailed than a message entry.

9. What is heap memory?

Ans: Objects storage space for objects references created at run time in a jvm is heap memory.

10. Out of memory exception is there, how to handle that exception?

Ans: To increase heap memory size

11. What about IHS?

Ans: IHS (IBM HTTP Server) is one of the web servers. It serves the static content only and it takes up only http requests.

12. What about plug-in?

Ans: plug-in is one of the modules it is interface between application server and web server, the plug-in process receives the request from the client first. If the request is for dynamic content, the plug-in diverts the request to the WebSphere application server. If the request is for static content, the plug-in forwards it to the Http server.

13. What is the global security?

Ans: It provides the authentication and authorization for WebSphere application server domain (administration client or console).

14. How to configure the global security?

Ans: Open console and then select security option in the right side menu, and then select localOs registry in the user registry, then enter the username, passwords. And again select global security then Itpa option then provide the password, then save the configuration. And restart the deployment server and then relogin the console.

15. What is SSL?

Ans: SSL is a protocol for providing encrypted data communications between two processes.

16. What is PMI? How to configure PMI?

Ans: Monitoring and tuning—>PMI—>select any process (server1, nodeagent, dmgr) and then enable PMI—>then apply and then save. Select performance viewer—>current activity and then select enabled process and click the start monitoring button after that process select.

17. What is the UNIX command of all display server processes?

Ans: ps -ef| grep java

18. What is node?

Ans: logical group of servers.

19. How to start the server?

Ans: startserver.sh server1

20. How you get nodeagent.....what you have to install to get nodeagent?

Ans: Custom Profile

21. How to add the node?

Ans: addnode.sh 8879

22. What is the application server?

Ans: The application server provides a runtime environment in which to deploy, manage, and run j2ee applications.

23. What is the node?

Ans: A node corresponds to a physical computer system with a distinct IP host address. The node name is usually the same as the host name for the computer.

24. What is the node?

Ans: A node corresponds to a physical computer system with a distinct IP host address. The node name is usually the same as the host name for the computer.

25. How many types of profiles are in nd product?

Ans: 1.deployment manager profiles 2.application server profiles 3.custom profile

26. What is diffrence b/w dmgr and other profiles?

Ans: dmgr app custom

28. What is the difference between web server and application server?

Ans: Application Server: takes care of Security, Transaction, Multithreading, Resource pooling, load balancing, clustering, performance, highly availability, scalability, etc. Exposes business logic to client applications through various protocols, possibly including HTTP. Supports deployment of .war and .ear files Application server = web server + EJB container.

30. Some problem is there in web server, so this information which log file contain?

Ans: http.log, plugin.log

31. What is jdbc?

Ans: jdbc is a low level pure java api used to execute sql statements.

32. What is datasource?

Ans: A data source is associated with a jdbc provider that supplies the specific jdbc driver implementation class

33. What is diff b/w type4 and type2?

Ans: type4 type2

Type 4. It is pure java oriented Type 2 .it is not a pure java oriented driver Type 2. require client side software Type 4. no need any client software

34. Some application not accessing, so what is the problem? This information which log file contains?

Ans: systemout, systemerr

35. In type3 client software which machine you have install?

Ans: server side machine

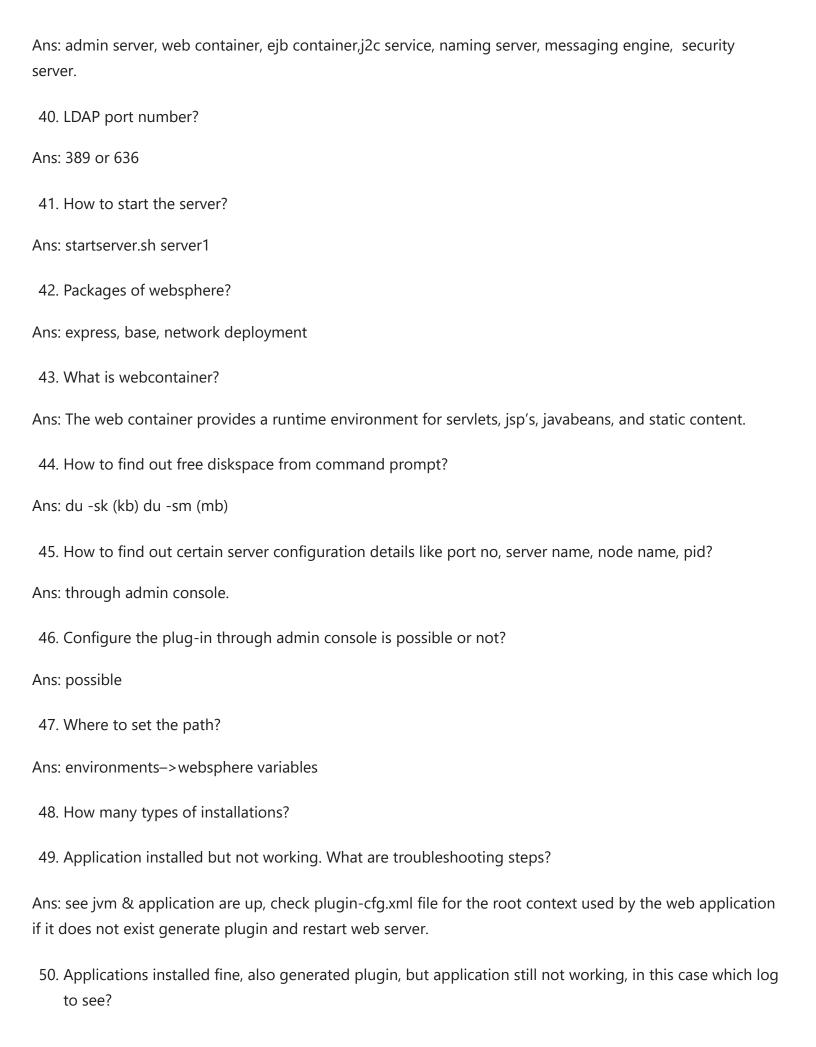
36. two databases there (oracle and db2),so I want 3 datasources for oracle and 2 data sources for db2 so create 3 datasource names for oracle and 2datasourcename for db2 is possible or not?

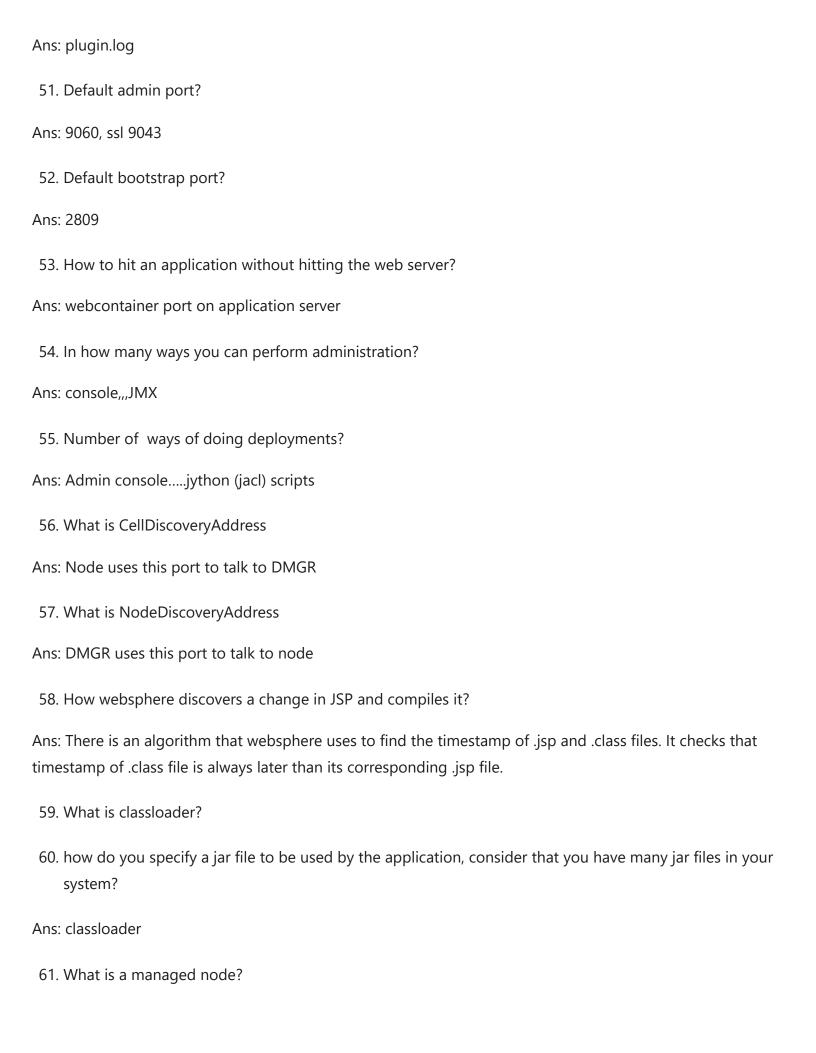
Ans: possible

- 37. What is jndi? Ans: we can register resources in the application server's java naming and directory interface (jndi) namespace. Client applications can then obtain the references to these resource objects in their programs.
- 38. Why use the bootstrap port number?

Ans: client applications use the bootstrap port to access websphere's built-in object request broker (orb) to use enterprise java beans in applications installed on the application server. The java naming and directory interface service provider url used by the client application needs to reference the bootstrap port to obtain an initial context for looking up ejb's it wants to use. (For communicate two servers)

39. What are the appserver components?





Ans: Node with NodeAgent

62. What is a managed webserver?

Ans: Remote webserver access through local (dmgr/cell)

- 1. what is the difference b/n managed and unmanaged node managed node has a nodeagent
- 2. Which is the tool provided by IBM for key management in IHS/WAS ikeyman
- 3. what is a virtual host? what are the default virtual hosts in WAS admin_host, proxy_host, default_host
- 4. where do you find the port numbers of a JVM (config file name)
- 5. which component initilizes the sync process in a cell Node
- 6. you have edited some config files at JVM level, and the JVM was restarted after some time. What will happen to the changes you done to JVM config files changes will be discarded as the sync is one way (from DMGR)
- 7. How do you administrate a webserver from websphere admin console create a webserver definition and add it as managed/unmanaged node
- 8. what is the name of the plug-in configuration file plugin-cfg.xml
- 9. You have added a new virtual host to the WAS, what should you do for the webserver to be aware of this addition generate and propagate the plugin
- 10. describe the steps to configure SSL b/n WAS and IHS
- 11. how do you take backup of all the config files of a profile run backupconfig from profile bin
- 12. how do you apply a fixpack Stop all the JVM/Node/DMGR on which you are going to apply fixpack first check and update the update installer Place the .pak files in maintenance folder of updateinstaller directory create the response files run ./update.sh -silent -options"path-to-responsefile" check the versioninfo fron the WAS bin directory
- 13. How do you generate a cell level plugin configuration file in console.... check under administration section
- 14. If nodeagent is stopped, can you perform the sync no in adminctonsole Answer is No and if we r doing syncnode by command mode then Nodeagent should be stopped..

15. How do you federate a node to cell addnode command

one of the cluster member (jvm) is having issues. To troubleshoot the issue, you decided to take it out of the cluster. How do you do that? Make its runtime weight to 0

In a complex environment, there are 10 machines. Machine A is having 8GB RAM and machine B having 2GB of RAM. The administrator decided to send twice as many request as machineB to machineA. How can he achive it? give machineA twice the weight as machineB

After making some changes on a cluster, it is required to recycle/restart all the cluster JVMs. The lead admin told you to make sure that there should not be any downtime during this recycle. Which option do you use to achieve it? Ripplestart A large application which has 5web modules has been deployed on to a cluster. After some months, the developer asked you to update one of the 5web modules. How do you do it? Rollout

can you change the cluster name, once it was created No

- 1) What is the default user registry, if you enable Global Security at the time of installation Its federated repositories.... actually it is a file
- 2) Which commands require username/password, if you enable admin security all stop*, syncNode, addNode(?)
- 3) When can you enable global security? while installing
 - After installation also
- 4) Does enabling admin security needs j2ee security to be enabled? No
- 5) Does enabling admin security enables j2ee security? yes
- 6) What is the most important step to do, if you change your user repository. recycle all the JVMs. otherwise the key tokens will not be updated for the new repo
- 7) who can change admin security settings? Adminstrator
- 8) what is the tool supplied by IBM for SSL management in Websphere ikeyman
- 9) How do you change the cell wide SSL?
- 10) how do you replace the default plugin-key.kdb file with new kdb file?
- 11) can we use diffrent SSL for nodes and plugin? Yes

what is cluster

how do you create a cluster go to servers -> clusters-> new ->give cluster_name->define first member->define other members->finish

how do you add a new cluster member go to servers -> clusters->cluster_name ->cluster members ->new ->give name/node/others->apply->ok->save

- 1. What is master repository?
- 2. Tell me IHS executable files, means bin directory files?
- 3. Why given the httpd.conf file to installation of plug-in?
- 4. How to configure remote system httpd.conf file?
- 5. Several types of log files in the appserver?
- 6. WebSphere packages?
- 7. What is the profile?
- 8. What is the trace?
- 9. What is heap memory?
- 10. Out of memory exception is there, how to handle that exception?
- 11. What about IHS?
- 12. What about plug-in?
- 13. What is the global security?
- 14. How to configure the global security?
- 15. What is SSL?
- 16. What is PMI? How to configure PMI?
- 17. What is the UNIX command of all display server processes?
- 18. What is node?
- 19. How to start the server?
- 20. How you get nodeagent……what you have to install to get nodeagent?
- 21. How to add the node?
- 22. What is the application server?

23. What is the node?
24. What is the node?
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32. Some application not accessing, so what is the problem? This information which log file contains?
33. In type3 client software which machine you have install?
34. two databases there (oracle and db2),so I want 3 datasources for oracle and 2 data sources for db2 so create 3 datasource names for oracle and 2datasourcename for db2 is possible or not?
35. What is jndi?
36. Why use the bootstrap port number?
37. Why use the bootstrap port number?
38. What are the appserver components?
39. LDAP port number?
40. How to start the server?
41. Packages of websphere?
42. What is webcontainer?
43. How to find out free diskspace from command prompt?

44. How to find out certain server configuration details like port no, server name, node name, pid? 46. Configure the plug-in through admin console is possible or not? 47. Where to set the path? 48. How many types of installations? 49. Application installed but not working. What are troubleshooting steps? 50. Applications installed fine, also generated plugin, but application still not working, in this case which log to see? 51. Default admin port? 52. Default bootstrap port? 53. How to hit an application without hitting the web server? 54. In how many ways you can perform administration? 55. Number of ways of doing deployments? 56. What is CellDiscoveryAddress 57. What is NodeDiscoveryAddress 58. How websphere discovers a change in JSP and compiles it? 59. What is classloader? 60. how do you specify a jar file to be used by the application, consider that you have many jar files in your system? 61. What is a managed node? 62. What is a managed webserver? 63. what is the difference b/n managed and unmanaged node 64. Which is the tool provided by IBM for key management in IHS/WAS 65. what is a virtual host? what are the default virtual hosts in WAS

- 66. where do you find the port numbers of a JVM (config file name)
- 67. which component initilizes the sync process in a cell
- 68. you have edited some config files at JVM level, and the JVM was restarted after some time. What will happen to the changes you done to JVM config files
- 69. How do you administrate a webserver from websphere admin console
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- 72. describe the steps to configure SSL b/n WAS and IHS
- 73. how do you take backup of all the config files of a profile
- 74. how do you apply a fixpack
- 75. How do you generate a cell level plugin configuration file
- 76. If nodeagent is stopped, can you perform the sync
- 77. How do you federate a node to cell can you change the cluster name, once it was created
- 1) What is the default user registry, if you enable Global Security at the time of installation 2) Which commands require username/password, if you enable admin security
- 3) When can you enable global security? 4) Does enabling admin security needs j2ee security to be enabled?
- 5) Does enabling admin security enables j2ee security? 6) What is the most important step to do, if you change your user repository. 7) who can change admin security settings? 8) what is the tool supplied by IBM for SSL management in Websphere 9) How do you change the cell wide SSL? 10) how do you replace the default plugin-key.kdb file with new kdb file? 11) can we use diffrent SSL for nodes and plugin? what is cluster how do you create a cluster how do you add a new cluster member

WebSphere_QA_04

1. When do you get stale connection exception.?

Stale connection normally comes if the DB service was down or restarted and the connections in websphere side are not timed out.

What steps you will take to tune the application server? • performance tuning

- OS
- WebServer
- Plugin
- Application Server (JVM)
- Connection pools, (thread, db)
- Application

What version of Websphere software is required to install WebSphere clustering? How would you configure Websphere for clustering: list basic steps? WebSphere Application Server Network Deployment is the software required to install a WebSphere cluster. Install base with Deployment Manager Create profiles for Deployment Manager and each node in the cell using with the Profile Management Tool ensuring the nodes are federated. Use the Deployment Manager's Administration Console to create the cluster and set cluster settings as appropriate. Create Windows Services or Start up scripts for Deployment Manager, Node manager and Severs to ensure restart when OS is rebooted. How would you ensure that a Websphere Application server or Websphere Application Server Node is started when the OS being windows 2000/2003 is re-booted? Use the command WASService to register the Websphere Application Server or Websphere Application node as a Windows service.

What Websphere tool can be used to run scripts and where is it located? WSAdmin tool located in the installroot\bin directory

- 1. How do you set java path in a linux server?
- 2. JAVA_HOME=/usr/java/jdk & export JAVA_HOME
- 1. What is EJB?

Enterprise JavaBeans (EJB) technology is the server-side component architecture for the Java 2 Platform, Enterprise Edition (J2EE) platform. EJB technology enables rapid and simplified development of distributed, transactional, secure and portable applications based on Java technology.

How do you generate thread dump for stand-alone (non-WAS) Java application. Thread dump for standalone java application is bit complex. We need to use windows dr.watson utility to perform a dump. The java process will die during the dump creation. Another option to monitor the application/java threads in the standalone java application is using J- Console. This feature is available only in JDK1.5, we need custom code changes to monitor jdk1.4

Which of the following situations would require manual editing of the plugin-cfg.xml? Installing a new application.

What is the WebSphere Application Server Console and what is it's role? What is the default URL and port for accessing it? WAS console is the web-gui interface for administering the websphere applications and servers. the default url is http://server:9060/ibm/console or 9443 for secured port.

How do you generate thread dump in for WAS? You can generate thread dump using kill -9 command in linux. You can use the built in commands to generate thread dumps using JACL or jython commands. Not sure on this now.

How do you decode password which was present in the admin console? http://www.sysman.nl/wasdecoder/

27. Diff b/w 5.0 and 6.0?

Ans: Web Sphere Studio 3.5, comes up with Visual Age for Java. WSAD 5.0 supports J2EE 1.3 java specifications. RAD 6.0 supports J2EE 1.4 and integrated with Eclipse 3.0, UML Visual Editor, Tomcat Jakarta, Ant scripting, EJB universal test client and SOA tools.

29. Diff b/w weblogic and websphere?

Ans: Both BEA Weblogic and IBM's WebSphere provide J2EE based application servers which are competitors. WebSphere leverages more on connectivity issues with MQ and legacy systems with strong dominance in J2EE.

How would use ensure WebSphere server logs are created on a different drive than the installation root? Change the WebSphere server's server variables using the Administrative Console or use scripts.

What Development Environment(s) are available to develop applications for WebSphere? IBM provides several industrial strength development environments based on Eclipse development framework the current

IDE is Rational Developer for Websphere. Applications can also be developed with the Websphere Application Server Toolkit and third party tools like Jbuilder, and Eclipse/ANT etc.

What are the different application servers and Web Servers supporting J2EE technology's ? JBoss Is an Application Server that supports J2EE ... IBM Websphere and BEA WebLogic servers are a combination of Application Server, Web Server & container Jakarta Tomcat is a Servlet container and a Web server. Apache Sever is a Web server

What is EJB? Enterprise JavaBeans (EJB) technology is the server-side component architecture for the Java 2 Platform, Enterprise Edition (J2EE) platform. EJB technology enables rapid and simplified development of distributed, transactional, secure and portable applications based on Java technology.

How do you set java path in a linux server? JAVA_HOME=/usr/java/jdk export JAVA_HOME

How do you decode password which was present in the admin console? http://www.sysman.nl/wasdecoder/

What is Exceptions in java? Exceptions are used for handing errors and other exceptional events in Java programming language. 100% CPU utilization is known as CPU regression 100% CPU utilization is known as CPU regression and this can be avoided by making log level as info=fatal in WAS admin console. Please try and let me know.

♦ What version of Websphere software is required to install WebSphere clustering? How would you configure Websphere for clustering: list basic steps?

WebSphere Application Server Network Deployment is the software required to install a WebSphere cluster.

Install base with Deployment Manager

Create profiles for Deployment Manager and each node in the cell using with the Profile Management Tool ensuring the nodes are federated.

Use the Deployment Manager's Administration Console to create the cluster and set cluster settings as appropriate.

Create Windows Services or Start up scripts for Deployment Manager, Node manager and Severs to ensure restart when OS is rebooted.

♦ How would you ensure that a Websphere Application server or Websphere Application Server Node is started when the OS being windows 2000/2003 is re-booted?

Use the command WASService to register the Websphere Application Server or Websphere Application node as a Windows service. ♦ What Websphere tool can be used to run scripts and where is it located?

WSAdmin tool located in the installroot\bin directory ♦ What is ANT?

In WebSphere how would you provide the ability for an Web application (JSP) to be able to provide authentication for both a local user and LDAP. Using the Administration Console: Turn on Administrative security. Federate a local repository and an LDAP repository together. Restart server. Ensure Web application has a web.xml file to be able assign LDAP groups to roles.

When do you get stale connection exception.? What steps you will take to tune the application server? What version of Websphere software is required to install WebSphere clustering? How would you configure Websphere for clustering: list basic steps? What Websphere tool can be used to run scripts and where is it located? How do you set java path in a linux server? What is EJB? How do you generate thread dump for stand-alone (non-WAS) Java application. Which of the following situations would require manual editing of the plugin-cfg.xml? What is the WebSphere Application Server Console and what is it's role? What is the default URL and port for accessing it? How do you generate thread dump in for WAS?

How do you decode password which was present in the admin console? 27. Diff b/w 5.0 and 6.0? 29. Diff b/w weblogic and websphere? How would use ensure WebSphere server logs are created on a different drive than the installation root? What Development Environment(s) are available to develop applications for WebSphere? What are the different application servers and Web Servers supporting J2EE technology's? What is EJB?

How do you set java path in a linux server?

What is Exceptions in java? What version of Websphere software is required to install WebSphere clustering? How would you configure Websphere for clustering: list basic steps? How would you ensure that a Websphere Application server or Websphere Application Server Node is started when the OS being windows 2000/2003 is re-booted? What Websphere tool can be used to run scripts and where is it located? What is ANT?

WebSphere_QA_05

What is the difference between Web Server and Application Server? WebServer is used for serving static contents over the web. Scripting languages can be used to produce dynamic web pages.

Application server is hosting the applications we develop using the standard languages like Java, J2EE. An application server can connect to DB, JNDI interfaces and has many other facilities.

How do you set java path in a linux server? JAVA_HOME=/appserver/java/ export JAVA_HOME

What is the difference between war file and ear file? WAR file is webarchive. Which is holding all the Servlets, jsps & required files of a web based application. EAR is enterprise archive. In EAR file, in addition to WAR contents, if the application is using EJB contents, that can be put in. EAR contains EJB contents, whereas WAR does not.

What is a plugin file? How do you generate it? Plugin file is an xml file, which is used in communication between web server and application server. You need to use a command genplugin-cfg.sh to generate the plugin file. This file needs to be mapped in webserver so that web server to app server communication can be established.

What is JNDI Context? Like JDBC (Java Database Connectivity), JNDI is not a service, but a set of interfaces that allows applications to access many different directory service providers using a standardized API. The deployed enterprise beans in EJB have an environment-naming context that can be accessed using the JNDI API.

What is a Class path?

Classpath specifies the location of the user defined class and the packages in a Java program for the Java Virtual Machine The Classpath is an argument that is path through the command line. Classpath can also be set though an environment variable. Setting the class path is mandatory to run a java application. Class path in java can set by using different techniques. Here are the some techniques that can be used to set the class path. By default JAVA class files should be put up in library folder and if any additional jars needed, should be using shared path.

What is Java Garbage Collection? The Java language is the most widely used programming language to rely on garbage collection. The name "garbage collection" implies that objects that are no longer needed by the program are "garbage" and can be thrown away or destroyed.

What is Java Heap? The JVM's heap stores all the objects generated by a running Java program. Java uses the new operator to create objects and memory for new objects is allocated on the heap at run time.

What is a Deployment Descriptor? In the Java Platform, Enterprise Edition, a deployment descriptor contains information about a web application or enterprise application and also includes the information about how the application should be deployed.

What is the deployment descriptor file name for jar, war, ear, rar, application-client, webservices?

• WAR- web.xml • EAR- application.xml • RAR- ra.xml • EJB- ejb-jar.xml • Portlets-portlet.xml • application-client-application-client.xml • webservices-webservices.xml

What are Exceptions in java? Exceptions are used for handling errors and other exceptional events in Java programming language.

What is CPU regression? how to avoid it? 100% CPU utilization is known as CPU regression and this can be avoided by making log level as info=fatal in WAS admin console. Please try and let me know.

This can cause because of the below reasons. Some threads taking too much time to complete. Either they are waiting for input from DB, or in infinite loop. DB connection failure could cause 100%CPU usage.

How would we ensure WebSphere server logs are created on a different drive than the installation root?

Change the WebSphere server's server variables using the Administrative Console or use scripts.

What language is the default scripting language for Websphere and which language is the preferred scripting language?

JACL is the default scripting language for Websphere and Jython is the preferred scripting language.

What is EJB? Enterprise JavaBeans (EJB) technology is the server-side component architecture for the Java 2 Platform, Enterprise Edition (J2EE) platform. EJB technology enables rapid and simplified development of distributed, transactional, secure and portable applications based on Java technology.

How do you take websphere backups? How do you restore it? You can use a command called backupConfig.sh to take backup of was configurations. To restore it you need to use a command called restoreConfig.sh

What is the difference between authentication and authorization? Authentication is a process to tell whether the user is having correct credentials to login to the application. Whereas Authorization tells us what components/modules the user has permission to access.

What is JDBC? JDBC technology is an API (included in both J2SE and J2EE releases) that provides cross-DBMS connectivity to a wide range of SQL databases and access to other tabular data sources, such as spreadsheets or flat files. With a JDBC technology-enabled driver, you can connect all corporate data even in a heterogeneous environment

What are server.xml and serverindex.xml? server.xml is an xml file which contains the information needed for your JVM, like, your jvm name, clustername, services, properties, threadpoolsettings, process definitions, components and so on serverindex.xml :This is the file whoch holds : host name info, deployed application info, ur app server ports info, etc

What is a Class Loader? The Java ClassLoader is an abstract class which extends the Object class. Java class loader is a part of the Java Runtime Environment that dynamically loads Java classes into the Java Virtual Machine.

What are all configuration files changed when we add a node into a cell? When you federate, dmgr takes control of ur federated node. so, it copys DMGRCell into ur node, and pushes ur node info into dmgrcell.

In Websphere, what is client reroute? Client reroute is used to configure active/passive db or resources to was.

What steps will you take to tune the application server? To tune the application performance we have to tune in many places. OS tuning has to happen JVM and heap memory has to be tuned. Thread pool configurations has to be tuned Application server Datasource connection properties has to be tuned.

What is the purpose of a proxy server? Proxy server is used by internal servers/clients to communicate to external resource using secure method.

What is reverse proxy? Where it is used? With reverse proxy external resources can access the application in secure way. It is used where the applications are kept inside the DMZ zone.

Out of memory exception is there, how to handle that exception? The application is running out of memory. You need to increase the memory as per the application requirement. Check whether any memory leak is there in application which could always get into out of memory exceptions. Profiling can be done to find the correct memory requirement of application??

When do you get stale connection exception.? Stale connection exception happens when the database is not accessible. either by down or network issue. Restarting the JVM may fix the issue. Its good to check the connectivity between app server and db server before restarting the JVM.

What is a Certificate revocation list? The list of certificates which needs to be removed from our repository is known as certificate revocation list.

What is FFDC? First Failure Data Capture. logs used by IBM for analysing the behaviour of runtime

What are the three property files that control the behavior of FFDC? ffdcStart.properties ffdcRun.properties ffdcStop.properties

What is JAXP? Java APIs for XML Processing? JAXP (Java APIs for XML Processing) enables applications to parse, transform, validate and query XML documents using API. This API is independent of a particular XML processor implementation.

- 1.WHAT IS TRACING? Tracing is when you go through an entire program and record the value of variables and the output. You trace a program when you want to find out what actually went wrong
- 2.WHERE TO GIVE APPLICATION PRIORITY WHILE STARTING SERVER? it will be under Enterprise applications ->app name -> startup behaviour ->Startup order in the admin console
- 3.HOW TO MOVE CODE DEV ENVIRONMENT TO TESTING ENVIRONMENT? I'm sure what they mean by code here. I think, incase of applications, export them from in DEC and deploy in TEST.
- 4.WHAT IS SSL?WHEN IT ENCRYPT & DECRYPT THE DATA? SSL are digital signed certificates. user for meesage/communication integrity and confidentiality. Generally encrypt at Sender side and decrypt at receiver side
- 5.WHAT IS INCIDENT MANAGEMENT? It is part of ITIL process..... simple explanation is, when there is a problem in ur WAS environment, which procedure do you follow.
- 6.WHEN APPLICATION IS DOWN WHAT U WILL DO? First look at the logs for errors. If you find the error, save the logs and start ur application. Then start trouble shoot. If no error found, run a trace and look for FFDC etc.. More about this. Find out where the failure occurs. check for URL, LB, instances. Write more on this.
- 7.I HAVE 16GB RAM, WHAT IS THE MINIMUM & MAXIMUM HEAPSIZE? No relation. Heap settings should be made depending on application modules used and the size of those modules.
- 8.HOW TO OPEN ADMIN CONSOLE IN AIX/UNIX & WHAT IS THE DEFAULT FILE SYSTEM OF AIX? admin console can be viewed from remote machine which has a browser, if not behind firewall.
- 9.WHAT IS FILE DESCRIPTORS IN AIX? A file descriptor is a handle created by a process when a file is opened. There is a limit to the amount of file descriptors per process. If the file descriptor limit is exceeded for a process, you may see the following errors: "Too Many Open Files"
- 10. HOW TO RESOLVE PORT CONFLICTS IN PRODUCTION ENVIRONMENT? check why there is port conflict run updateports script in WAS

Explain node, node agent and node groups. • A node is a logical grouping of server processes managed by WebSphere and that share common configuration and operation control. •

• A node is associated with one physical server installation of WebSphere Application Server. • In a standalone application server configuration, there is only one node. ♦ With Network Deployment, you can configure multiple nodes to manage from onecommon administration server. In these centralized management configurations, each node has a node agent that works with a deployment manager to manage administration processes. ♦ A node group is a new concept introduced with WebSphere Application Server V6. A node group is a grouping of nodes within a cell that have similar capabilities.

Explain cell in WebSphere . \diamond A cell is a grouping of nodes into a single administrative domain. \diamond A cell can consist of multiple nodes which are all administered from a single point.

- 11). What is scope in WebSphere ? \diamond Scope can be Cell or node or app server of everything. \diamond Whenever you want to affect changes through dmgr, you need to define the scope whether it is going to affect cell, node or only app servers or application alone.
- 12). What is the relation you know with cell profile –node agent apps servers? \diamondsuit A cell can have multiple profiles. Every profile must have at least one node agent. \diamondsuit One node agent can have multiple app servers App servers are nothing but jvms, which are nothing but .war, .ear, .jar files.
- 3). What is the difference between JMS and MQ SERIES? ♦ In JMS communication between the applications is possible only if the apps are in the same cell. ♦ But in MQ series, inter application communication is possible even if the apps are in the different cell.
- 14 What is virtual host? \diamond We need to map the app server to a virtual host. We cannot access the app server from thebrowser if it is not mapped to a virtual host. \diamond Example: //www.yahoo.com/mail Mail is a virtual host. Internally mail may contact sever .ear files.
- 15). If dmgr (deployment manager) is down, can you access app server? ♦ Yes, you can access application server and everything will be fine. Only issues are that you cannot do any management of the jvms using admin console.
- 16). What is the effect of node agent? ♦ Application server will be running, but you cannot manage the app server because the node agent is down
- 17). What action would you take it if you get "page not found error "? ♦ Basically in three tier architecture, in tier 1 you have webserver, tier 2 is web sphere application server and in tier 3 you have Database. ♦ Request from the client browser basically reaches the web server and then for application execution, it reaches the web applications. ♦ For data it connects to the database server. E ♦ ither webserver is down or not reachable. Or application server is down. ♦ Write down the troubleshooting steps.

- 18). Explain the flow of processing a JSP page request. \diamond If the JSP has already been compiled and the servlet loaded, the flow is as follows \diamond A Web page is submitted from a client browser with a URL request for a JSP (http://myserver/MyPage.jsp) \diamond The HTTP server receives the request and forwards it to the WebSphere server. WebSphere creates a thread for the client session and processes the servlet, accessing data etc. \diamond WebSphere returns the generated results as an HTML page back to the client browser.
- 19). What are the common errors that can occur while accessing webpage? ♦ General categories of errors ♦ Most errors fall into general error categories when running Web applications. The codes below are typical for many common errors.

Code description \diamond 404 page not found for an HTML or JSP page (often an application configuration or WebSphere plugin problem) \diamond 403 authorization error (an authentication or authority error for a resource requested by the client) \diamond 500 error running servlet or jsp (Many different causes possible. A common one is Class Definition Not Found that will show in the error page which class is not found on the class path).

24). Explain different types of containers WAS 6.0 ? Application server containers \diamond Each application server provides the following container support:

Web container The Web container processes servlets, JSPs (processed as servlets), and other types of serverside includes. Each application server runtime has one logical Web container, which can be modified but not created or removed. Requests are received by the Web container through the Web container inbound transport chain. The chain consists of a TCP inbound channel that provides the connection to the network, an HTTP inbound channel that serves HTTP 1.0 and 1.1 requests, and a Web container channel over which requests for servlets and JSPs are sent to the Web container for processing. Requests for HTML and other static content that are directed to the Web container are served by the Web container inbound chain. Although the Web container can serve static content, a more likely scenario is that you will use an external Web server to receive client requests and a Web server plug-in to forward requests for servlets to the Web container. EJB container The Enterprise JavaBeans container provides all of the runtime services that are needed to deploy and manage enterprise beans. It is a server process that handles requests for both session and entity beans. The container provides many low-level services, including threading and transaction support. From an administrative viewpoint, the container manages data storage and retrieval for the contained enterprise beans. A single container can host more than one EJB Java archive (JAR) file. Portlet container The Portlet container processes JSR168 compliant Portlets. The Portlet container is an extension to the Web container. Session Initiation Protocol container The SIP container processes applications that use at least one SIP servlet written to the JSR 116 specification. The Portlet container is an extension to the Web container. Application client container The application client container is a separately installed component on the client's machine. It enables the client to run applications in a J2EE environment that is compatible with EJB.

- 29). What is configuration repository? The configuration repository holds copies of the individual component configuration documents stored in XML files. Central configuration repository is with dmgr And local configuration repository is with node agents
- 45). What are Managed nodes? \diamond Managed node has a node agent to manage the webservers or appservers.
- 46). What is FFDC? ♦ The First Failure Data Capture (FFDC) function preserves the information generated from a processing failure and returns control to the affected engines.
- 47). What are the three property files that control the behavior of FFDC? ♦ There are three property files located in <was_home>/properties which control the behavior of the FFDC filter.

ffdcStart.properties, used while the server is starting ffdcRun.properties, used after the server is ready ffdcStop.properties, used while the server is stopping \diamond The captured data is saved automatically in the cprofile_home>/logs/ffdc directory for use in analyzing the problem, and could be collected by the Collector tool.

- ♦ The First Failure Data Capture tool is intended primarily for use by IBM Service. It runs as part of the WebSphere Application Server and you cannot start or stop it. It is recommended that you not attempt to configure the FFDC tool.
- 7). What is the admin console default session timeout limit? The default is 30 minutes. Edit the <was_home>/systemApps/adminconsole.ear/deployment.xml file in a text editor.

What are all configuration files changed when we add a node into cell? When you federate, dmgr takes control of your federated node. so, it copys DMGRCell into your node, and pushes your node info into dmgrcell.

What is the difference between Web Server and Application Server? How do you set a java path in a linux server? What is the difference between war file and ear file? What is a plugin file? How do you generate it? What is JNDI Context? What is a Class path? What is Java Garbage Collection? What is Java Heap? What is a Deployment Descriptor? What is the deployment descriptor file name for jar, war, ear, rar,application-client,webservices? What are Exceptions in java? What is CPU regression? how to avoid it?

How would we ensure WebSphere server logs are created on a different drive than the installation root? What language is the default scripting language for Websphere and which language is the preferred scripting language?

What is EJB?

How do you take websphere backups? How do you restore it?

What is the difference between authentication and authorization?

What is JDBC ? What are server.xml and serverindex.xml? What is a Class Loader? What are all configuration files changed when we add a node into a cell?

In Websphere, what is client reroute? What steps will you take to tune the application server?

What is the purpose of a proxy server? What is reverse proxy? Where it is used?

Out of memory exception is there, how to handle that exception? When do you get stale connection exception.?

What is a Certificate revocation list?

What is FFDC? What are the three property files that control the behavior of FFDC? What is JAXP? Java APIs for XML Processing?

1.WHAT IS TRACING? 2.WHERE TO GIVE APPLICATION PRIORITY WHILE STARTING SERVER? 3.HOW TO MOVE CODE DEV ENVIRONMENT TO TESTING ENVIRONMENT? 4.WHAT IS SSL?WHEN IT ENCRYPT & DECRYPT THE DATA? 5.WHAT IS INCIDENT MANAGEMENT? 6.WHEN APPLICATION IS DOWN WHAT U WILL DO?

7.I HAVE 16GB RAM, WHAT IS THE MINIMUM & MAXIMUM HEAPSIZE?

8.HOW TO OPEN ADMIN CONSOLE IN AIX/UNIX & WHAT IS THE DEFAULT FILE SYSTEM OF AIX? 9.WHAT IS FILE DESCRIPTORS IN AIX? 10. HOW TO RESOLVE PORT CONFLICTS IN PRODUCTION ENVIRONMENT?

Explain node, node agent and node groups. Explain cell in WebSphere . 11). What is scope in WebSphere ? 12). What is the relation you know with cell – profile –node agent – apps servers? 3). What is the difference between JMS and MQ SERIES? 14 What is virtual host? 15). If dmgr (deployment manager) is down, can you access app server? 16). What is the effect of node agent? 17). What action would you take it if you get "page not found error "? 18). Explain the flow of processing a JSP page request. 19). What are the common errors that can occur while accessing webpage?

24). Explain different types of containers WAS 6.0 ? 29). What is configuration repository? 45). What are Managed nodes?

46). What is FFDC? 47). What are the three property files that control the behavior of FFDC? 7). What is the admin console default session timeout limit?					

WebSphere_QA_07

IBM WebSphere Application Server Interview Questions

What is the difference between Web Server and Application Server? WebServer is used for serving static contents over the web. Scripting languages can be used to produce dynamic web pages. Application server is hosting the applications we develop using the standard languages like Java, J2EE. An application server can connect to DB, JNDI interfaces and has many other facilities.

1. What is the difference between Web Server and Application Server?

Webserver:

A Web server handles the HTTP protocol. When the Web server receives an HTTP request, it responds with an HTTP response, such as sending back an HTML page. To process a request, a Web server may respond with a static HTML page or image, send a redirect, or delegate the dynamic response generation to some other program such as CGI scripts, JSPs (JavaServer Pages), servlets, ASPs (Active Server Pages), server-side JavaScripts, or some other server-side technology. Whatever their purpose, such server-side programs generate a response, most often in HTML, for viewing in a Web browser.

Application Server:

As for the application server, according to our definition, an application server exposes business logic to client applications through various protocols, possibly including HTTP. While a Web server mainly deals with sending HTML for display in a Web browser, an application server provides access to business logic for use by client application programs. The application program can use this logic just as it would call a method on an object

2. What is JDBC?

JDBC technology is an API (included in both J2SE and J2EE releases) that provides cross-DBMS connectivity to a wide range of SQL databases and access to other tabular data sources, such as spreadsheets or flat files. With a JDBC technology-enabled driver, you can connect all corporate data even in a heterogeneous environment

3. What is EJB?

Enterprise JavaBeans (EJB) technology is the server-side component architecture for the Java 2 Platform, Enterprise Edition (J2EE) platform. EJB technology enables rapid and simplified development of

distributed, transactional, secure and portable applications based on Java technology.

4. What are the different application servers and Web Servers supporting J2EE technology's?

Apache Sever is a Web server. Jakarta Tomcat is a Servlet container and a Web server. JBoss Is an Application Server that supports J2EE IBM Websphere and BEA WebLogic servers are a combination of Application Server, Web Server & container

5. What is the WebSphere Application Server Console and what is it's role? What is the default URL and port for accessing it?

The administrative console is a browser-based interface that allows you to configure application server settings, deploy and manage applications, and perform additional tasks that are not included in the HTTP Server Administration interface. It used to be a Java application, however to be firewall safe it was made into a web-based application.

It runs on the default install port 9060 e.g http:\hostname:9060\ibm\console http://www.webspheretips.com/sites/webspheretips.nsf/%5C%5Chostname:9060%5Cibm%5Cconsole, however this can be changed by editing virtual_hosts names. also when during installation ie GUI or response-file install you can set the ports that will be used.

6. What Development Environment(s) are available to develop applications for WebSphere?

IBM provides several industrial strength development environments based on Eclipse development framework the current IDE is Rational Developer for Websphere. Applications can also be developed with the Websphere Application Server Toolkit and third party tools like Jbuilder, and Eclipse/ANT, Netbeans.

7. In WebSphere how would you provide the ability for an Web application (JSP) to be able to provide authentication for both a local user and LDAP.

Using the Administration Console: Turn on Administrative security. Federate a local repository and an LDAP repository together. Restart server. Ensure Web application has a web.xml file to be able assign LDAP groups to roles.

8. What version of Websphere software is required to install WebSphere clustering? How would you configure Websphere for clustering: list basic steps?

WebSphere Application Server Network Deployment is the software required to install a WebSphere cluster. Install base with Deployment Manager Create profiles for Deployment Manager and each node in the cell using with the Profile Management Tool ensuring the nodes are federated. Use the

Deployment Manager's Administration Console to create the cluster and set cluster settings as appropriate. Create Windows Services or Start up scripts for Deployment Manager, Node manager and Severs to ensure restart when OS is rebooted.

- 9. How would you ensure that a Websphere Application server or Websphere Application Server Node is started when the OS being windows 2000/2003 is re-booted?
 - Use the command WASService to register the Websphere Application Server or Websphere Application node as a Windows service.
- 10. What language is the default scripting language for Websphere and which language is the preferred scripting language? What Websphere tool can be used to run scripts and where is it located?
 - wsadmin, JACL, Jython are the languages available for scripting in WAS. Jython is the preferred scripting language as JACL is now deprecated. JACL is deprecated now. WSAdmin tool located in the installroot\bin directory
- 11. What type of files are required to deploy an application into Websphere. How can they be installed?

 WAR or EAR files.
 - Can be installed using Administration Console or scripts.
- 12. How would use ensure WebSphere server logs are created on a different drive than the installation root?

 Change the WebSphere server's server variables using the Administrative Console or use scripts.

How do you generate thread dump for stand-alone (non-WAS) Java application.

Thread dump for standalone java application is bit complex. In Windows, we need to use windows dr.watson utility to perform a dump. The java process will die during the dump creation. Another option to monitor the application/java threads in the standalone java application is using J- Console. This feature is available only in JDK1.5, we need custom code changes to monitor jdk1.4

WebSphere_QA_08

Easy Questions:

SET 3 1. Tell me something about yourself.? 2. Why do you want to leave this project/work 3. What's Your Biggest Weakness? 4. What is your biggest power? 5. What are your strengths? 6. Tell me about your ability to work under pressure. 7. Where do you see yourself in five years' time? 8. What is the biggest mistake you have committed? 9. What did you hate most on your previous job or organization? 10. What are your short-term goals? 11. What do you think it takes to be successful in this career? 12. Do you consider yourself organized? And do you manage your time well?

WebServer

- Can you explain more about web server? 2. What is Web server plug-in?how do you What are the lists of web servers that web sphere can manage? 4. special feature in IBM http server compared to other servers? 5. Tell me IHS executable files, means Why given the httpd.conf file to installation of plug-in? 7. What is the difference between IP based hosting and name based virtual hosting? 8. Why we need to define virtual host in websphere? 9. Some problem is there in web server, so this information which log file contain? 10. What is the difference between IP based hosting and name based virtual hosting? Tell me IHS executable files, 11 What is Web server plug-in?how do you generate it? 12. means bin directory files? 13. Why given the httpd.conf file to installation of plug-in? 14. What is the purpose of a proxy server? 15. What is reverse proxy? where it is used? 1.
- Set 1 1. What is an application server? 2. How do you set java path in a linux server? 3. How to you determine the Java version. 4. Explain node, node agent and node How to add the node? 6. What is the groups. 5. What is core group? 7. difference between node group and core group? 8. What is core group bridge service? What is High Availability Manager? 10. How you get nodeagent.....what you have to 9. install to get nodeagent? 11. What are all configuration files got changed when we add a node into What is scope in WebSphere? 13. cell? 12. Explain cell in WebSphere 14. Explain about WebSphere administrative console. 15. How do you start the administrator console? 16. Ports for the administration console and the administration console secure port, respectively? 17. What are the functions of WASPreUpgrade What EARExpander command used? 18. command & WASPostUpgrade command? 19. How do you automate the installation of WAS Server? 20. How do you take WebSphere backups? How do you restore it? 21. admin console default session timeout limit? 22. What are the three major areas of admin console GUI? 23. Can multiple users enter the dmgr? 24. What is virtual host? 25. If dmar

(deployment manager) is down, can you access app server? What is the effect of node agent? 26. Explain different types of containers WAS 6.0? 27. Standalone server and distributed server configuration – difference ? 28. What is configuration repository? 29. What are unmanaged nodes? 30. What are Managed nodes? 31. What version of WebSphere software is required to install WebSphere clustering? How would you configure WebSphere for clustering: list basic steps? 32. What is the profile? 33. How many types of profiles are in nd product? 34. Explain the java web application components. 35. What is classloader? 36. Why use the boostrap port number? 37. What are the appserver components? 38. How would you ensure that a Websphere Application server or Websphere Application Server Node is started when the OS being windows 2000/2003 is re-booted? 39. What Websphere tool can be used to run scripts and where is it located? 40. What is the difference between war file and ear file? 41. What is ANT? 42. What is JNDI Context? What is jndi? 43. What is a Class path? 44. What is Java Garbage Collection? 45. What language is the default scripting language for Websphere and which language is the preferred scripting language? 46. What Development What are the different Environment(s) are available to develop applications for WebSphere? 47. application servers and Web Servers supporting J2EE technology's ? 48. What is EJB ? 49. What is the difference between authentication and authorization? 50. What is Exceptions in java? What is the difference between wsadmin tool and ant.? 52. What is Java Heap? 51. 53. What are server.xml and serverindex.xml? 54. How do you create thread dump? heap dump? 55. How to create thread dump and heap dumps in Linux and Windows.?

- What is CellDiscoveryAddress 3. 1. LDAP port number? 2. What is Deployment Descriptor? 4. Can you explain about Application packaging? 5. What is datasource? 6. What is JNDI? 7. What are JDBC providers and data sources? 8. What are JCA resources? 9. What is JDBC? 10. What is diff b/w type4 and type2? 11. In type3 client software which machine you have install? 1. How do you install and configure resource resource adapters? 2. What does .rar file contain? 3. adapters? 4. What is the difference between JMS and MQ SERIES? 5. Explain the flow of processing a What are the common errors that can occur while accessing webpage? 7. JSP page request. 6. Explain the WebSphere runtime environment objects. 8. What are the services provided by application server? What is the purpose of a proxy server? 10. Explain the application flow. 11. How do you develop 9. and deploy application, can you explain? 12. Explain about various roles in WAS administration. 13. What is JMX? 14. What is FFDC? 15. What are the three property files that control the behavior of FFDC? What is Application Server Toolkit 17. How to find product information 18. What is JAXP? Java APIs for XML Processing 19. What is a Class Loader?
- 1. Several types of log files in the appserver? 2. WebSphere packages? 3. What is the trace? 4. What is heap memory? 5. What is the global security? 6. How to configure the global security? 7. What is

SSL? 8. What is PMI? How to configure PMI? 9. What is the UNIX command of all display server processes?

- 1. Diff b/w 5.0 and 6.0? 2. Some problem is there in web server, so this information which log file contain? 3. Some application not accessing, so what is the problem? This information which log file contains? 4. How websphere discovers a change in JSP and compiles it?
- 1. What action would you take it if you get "page not found error "? 2. Out of memory exception is there, how to handle that exception? 3. Weight in plugin file? : The RefreshInterval needs to be set to 1800
- 4. What is reverse proxy? 5. Which of the following situations would require manual editing of the plugin-cfg.xml? Installing a new application. 6. What is Certificate revocation list?

Message: SSL0226I: Handshake Failed, I/O error during handshake. Reason: The communication between the client and the server failed. This is a common error when the client closes the connection before the handshake has completed. Solution: Retry the connection from the client.

1. Difference between in-memory replication and database memory replication using database? which method is good? ● how do you create a policy for High Availability group? ● Why you need to create a policy for HA group?

SET 2

- 1. If dmgr (deployment manager) is down, can you access app server? What is the effect of node agent?
- 2. Standalone server and distributed server configuration difference?
- 3. How to add the node?
- 4. How do you set java path in a linux server?
- 5. Explain the java web application components.
- 6. What is classloader?
- 7. Why use the boostrap port number?
- 8. What are the appserver components?
- 9. LDAP port number?
- 10. What is CellDiscoveryAddress
- 11. Can you explain more about web server?
- 12. What is Web server plug-in?
- 13. What is a plugin file? how do you generate it?
- 14. What is datasource?
- 15. What is JNDI?

- 16. What are JDBC providers and data sources?
- 17. What are JCA resources?
- 18. What is JDBC?
- 19. What is diff b/w type4 and type2?
- 20. In type3 client software which machine you have install?
- 21. When do you get stale connection exception.?
- 22. Stale connection normally comes if the DB service was down or restarted and the connections in websphere side are not timed out.
- 23. What are resource adapters?
- 24. What does .rar file contain?
- 25. How do you install and configure resource adapters?
- 26. What is the difference between JMS and MQ SERIES?
- 27. What action would you take it if you get "page not found error "?
- 28. Explain the flow of processing a JSP page request.
- 29. What are the common errors that can occur while accessing webpage?
- 30. Explain the WebSphere runtime environment objects.
- 31. What are the services provided by application server?
- 32. What is the purpose of a proxy server?
- 33. Explain the application flow.
- 34. Can you explain about Application packaging?
- 35. How do you develop and deploy application, can you explain?
- 36. Explain about various roles in WAS administration.
- 37. What is JMX?
- 38. Can multiple users enter the dmgr?
- 39. What are the lists of web servers that web sphere can manage?
- 40. What is the special feature in IBM http server compared to other servers?
- 41. What is FFDC?
- 42. What are the three property files that control the behavior of FFDC?
- 43. What is Application Server Toolkit
- 44. How to find product information
- 45. How to you determine the Java version.
- 46. How would you ensure that a Websphere Application server or Websphere Application Server Node is started when the OS being windows 2000/2003 is

- 47. re-booted?
- 48. What Websphere tool can be used to run scripts and where is it located?
- 49. What is the difference between war file and ear file?
- 50. What is ANT?
- 51. What is JNDI Context? What is jndi?
- 52. What is a Class path?
- 53. What is Java Garbage Collection?
- 54. What language is the default scripting language for Websphere and which language is the preferred scripting language?
- 55. What Development Environment(s) are available to develop applications for WebSphere?
- 56. What are the different application servers and Web Servers supporting J2EE technology's?
- 57. What is EJB?
- 58. What is the difference between authentication and authorization?
- 59. What is Deployment Descriptor?
- 60. What is Exceptions in java?
- 61. What is the difference between wsadmin tool and ant.?
- 62. What is Java Heap?
- 63. What are server.xml and serverindex.xml?
- 64. How do you create thread dump? heap dump?
- 65. How to create thread dump and heap dumps in Linux and Windows.?
- 66. What is JAXP? Java APIs for XML Processing
- 67. What is a Class Loader?
- 68. What are all configuration files got changed when we add a node into cell?
- 69. Tell me IHS executable files, means bin directory files?
- 70. Why given the httpd.conf file to installation of plug-in?
- 71. Several types of log files in the appserver?
- 72. WebSphere packages?
- 73. What is the profile?
- 74. What is the trace?
- 75. What is heap memory?
- 76. Out of memory exception is there, how to handle that exception?
- 77. Out of memory exception is there, how to handle that exception?
- 78. What about plug-in?

- 79. What is the global security?
- 80. How to configure the global security?
- 81. What is SSL?
- 82. What is PMI? How to configure PMI?
- 83. What is the UNIX command of all display server processes?
- 84. Some application not accessing, so what is the problem? This information which log file contains?
- 85. How websphere discovers a change in JSP and compiles it?

SET 4

WAS Easy Questions 1 1. What version of Websphere software is required to install WebSphere clustering? How would you configure Websphere for clustering: list basic steps? 2. How would you ensure that a Websphere Application server or Websphere Application Server Node is started when the OS being windows 2000/2003 is re-booted? 3. How about the same in Linux/AIX? 4. What Websphere tool can be used to run scripts and where is it located? 5. What is the difference between war file and ear file? 6. What is a plugin file? how do you generate it? 7. What is ANT? 8. What is JNDI Context? 9. What is a Class path? 10. What is Java Garbage Collection?

SET 5 WAS LPSEG

Learner

1. What is an application server? 2. Can you explain more about web server? 3. What is the difference between Web Server and Application Server? 4. How to you determine the Java version. 5. WebSphere packages? 6. Explain node, node agent and node groups. 7. How to add the node? 8. What is scope in WebSphere? 9. How do you take websphere backups? How do you restore it? 10. What EARExpander command used? 11. Explain cell in WebSphere . 12. What is virtual host in webserver? and what are the two types? 13. What are Managed nodes? 14. What are unmanaged nodes? 15. What is ear file and what is war file? 16. What is the difference between ear file and war file.? 17. How do you deploy application, can you explain? 18. What is a Cluster? 19. LDAP port number? 20. What is CellDiscoveryAddress 21. What is the UNIX command of all display server processes? 22. What is the difference between authentication and authorization? 23. What is JDBC? 24. What are the ports for the administration console and the administration console secure port,respectively? 25. How do you start the administrator console? 26. How do you decode password which was present in the admin console? http://www.sysman.nl/wasdecoder/

Practitioner 1. Diff b/w 5.0 and 6.0? 2. What is the profile? 3. How you get nodeagent.....what you have to install to get nodeagent? 4. Explain about WebSphere administrative console. 5. What is configuration repository? 6. What is core group?

7. What are the lists of web servers that web sphere can manage? 8. What is the admin

console default session timeout limit? 9. Can you explain about Application packaging? 10. What language is the default scripting language for Websphere and which language is the preferred scripting language? 11. Explain different types of containers WAS 6.0? 12. What version of Websphere software is required to install WebSphere clustering? How would you configure Websphere for clustering: list basic steps? 13. What are resource adapters? 14. What is Exceptions in java? 15. What is Java Garbage Collection? 16. What are JDBC providers and data sources? 17. What is datasource? 18. What is classloader? Why we need to define virtual host in websphere? 2. Specialist 1. What is the difference between node group and core group? 3. What is core group bridge service? Difference between in-memory replication and database memory replication using database? which method is good? 5. What is High Availability Manager? 6. What are all configuration files got changed when we add a node into cell? 7. how do you automate the installation of WAS Server? 8. What does .rar file contain? 9. What action would you take it if you get "page not found error "? 10. Weight in plugin file? : The RefreshInterval needs to be set to 1800 11. What is JMX? 12. What is Java Heap? 13. If dmar (deployment manager) is down, can you access app server? What is the effect of node agent? 14. What is FFDC? 15. What is diff b/w type4 and type2? Expert 1. Explain the application flow. 2. What steps you will take to tune the What is the difference between JMS and MQ SERIES? 4. application server? 3. What is the purpose of a proxy server? 5. Out of memory exception is there, how to handle that What is reverse proxy? 7. how do you create a policy for High exception? 6. Availability group? 8. Why you need to create a policy for HA group? 9. When do you get stale connection exception.? 10. How to create thread dump and heap dumps in Linux and What is Certificate revocation list? 12. Windows.? 11. What are the three property files that control the behavior of FFDC? Guru 13. Troubleshooting methods? 14. Automations 15. How do you do the performance tuning (OS, WebServer, Plugin, Application Server (JVM), Connection pools, (thread, db), Application) 16. Migration from 6.x to 7.x? What are the functions of WASPreUpgrade command & WASPostUpgrade command? 17. What is the special feature in IBM http server compared to What are the three major areas of admin console GUI? 19. Can multiple other servers? 18. If dmgr (deployment manager) is down, can you access app server? What users enter the dmgr? 20. is the effect of node agent? 21. Standalone server and distributed server configuration – difference? 22. How many types of profiles are in nd product? 23. Explain the java web application Why use the boostrap port number? 25. What are the appserver components. 24. What are JCA resources? 27. In type3 client software which machine you components? 26.

How do you install and configure resource adapters? 29.

Explain the flow

have install?

28.

of processing a JSP page request. 30. What are the common errors that can occur while accessing webpage? 31. Explain the WebSphere runtime environment objects. 32. What are the services provided by application server? 33. Explain about various roles in WAS administration.

1. What is Application Server Toolkit 2. How to find product information

How would you ensure that a Websphere Application server or Websphere Application Server Node is started when the OS being windows 2000/2003 is re-booted? What Websphere tool can be used to run scripts and where is it located?

- 3. What is ANT? 4. What is JNDI Context? What is jndi? 5. What is a Class path? 6. What language is the default scripting language for Websphere and which language is the preferred scripting language? 7. What Development Environment(s) are available to develop applications for WebSphere? 8. What are the different application servers and Web Servers supporting J2EE technology's ? 9. What is the difference between wsadmin tool and ant.? 10. What are server.xml and serverindex.xml? 11. How do you create thread dump? heap dump? 12. What is JAXP? Java APIs for XML Processing 13. What is a Class Loader? 14. Several types of log files in the appserver? 15.
- 34. What is the trace? 35. What is heap memory? 36. What is the global security? 37. How to configure the global security? 38. What is SSL? 39. What is PMI? How to configure PMI? 40. Some problem is there in web server, so this information which log file contain? 41. Some application not accessing, so what is the problem? This information which log file contains? 42. How websphere discovers a change in JSP and compiles it?

Message: SSL0226I: Handshake Failed, I/O error during handshake. Reason: The communication between the client and the server failed. This is a common error when the client closes the connection before the handshake has completed. Solution: Retry the connection from the client.

SET 6 WebSphere EAsy Questions

websphereinterview-simplequestions

1. How would use ensure WebSphere server logs are created on a different drive 2. than the installation root? 3. What language is the default scripting language for Websphere and which language is the preferred scripting language? 4. What Development Environment(s) are available to develop applications for WebSphere? 5. What is the WebSphere Application Server Console and what is it's role? What is the default URL and port for accessin 6. What are the different application servers and Web Servers supporting J2EE technology's 7. What is EJB ? 8. What is the difference between Web Server and

Application Server? 9. How do you set java path in a linux server? 10. How do you decode password which was present in the admin console? 11. How do you take websphere backups? How do you restore it 12. What is the difference between authentication and authorization? 13. What is Deployment Descriptor? 14. What is the deployment descriptor file name for jar, war, ear, rar, webservice, & application clients? 15. What is Exceptions in java? 16. How do you generate thread dump in for WAS? 17. How do you generate thread dump for stand-alone (non-WAS) Java application. What Development Environment(s) are available to develop applications for WebSphere? IBM provides several industrial strength development environments based on Eclipse development framework the current IDE is Rational Developer for Websphere. Applications can also be developed with the Websphere Application Server Toolkit and third party tools like Jbuilder, and Eclipse/ANT etc. What are the different application servers and Web Servers supporting J2EE technology's? JBoss Is an Application Server that supports J2EE ... IBM Websphere and BEA WebLogic servers are a combination of Application Server, Web Server & container Jakarta Tomcat is a Servlet container and a Web server. Apache Sever is a Web server

SET 7 WAS Medium Qs

- 1. What is the difference between wsadmin tool and ant.?
- 2. What is JDBC?
- 3. What is Java Heap?
- 4. What are server.xml and serverindex.xml?
- 5. How do you create thread dump? heap dump?

6.

websphereinterview-difficult questions

difficult questions In WebSphere how would you provide the ability for an Web application (JSP) to be able to provide authentication for both a local user and LDAP.

Using the Administration Console:

Federate a local repository and an LDAP repository together.

Restart server.

Ensure Web application has a web.xml file to be able assign LDAP groups to roles.

Tough Questions

Expert 1. Explain the application flow. 2. What steps you will take to tune the application server? 3. What is the difference between JMS and MQ SERIES? 4. Out of memory exception is there, how to handle that exception? how do you create a policy for High Availability group? 8. Why you need to create a policy for HA group? 9. When do you get stale connection exception.? 10.

How to create thread dump and heap dumps in Linux and Windows.? 11. What is Certificate revocation list? 12. What is FFDC? 13. What are the three property files that control the behavior of FFDC?

14. What is CPU regression? how to avoid it? 15. What is a Class path?

- 1) if i have already Application installed on Was server... and if i want to connect the WAS servers to deployment manager then is it possible to do and if yes then how we can do that
 - 1. If you are using a standalone(AppSrv) profile having a standalone JVM, then you can perform the addNode(Federation) operation by specifying the -includeApps as an extra arguement along with the normal addNode command..

In this case, the existing standalone(AppSrv) profile will be federated to DMGR profile along with the installed applications and henceforth the standalone profile will be managed by DMGR.

You can refer IBM links for addNode command usage.

Questinos alone 1. What is a webserver? Give examples. 2. What is an application server? Give examples 3. What is a browser? 4. What is HTTP standard? What is the current version of HTTP protocol used.? 5. What is a cluster? 6. What is a Node.? 7. What is a Node Agent? 8. What is a Cell.? 9. What is a Core group? 10. What is a Shared Library 11. What is a Virtual Hosts? 12. What is a Host aliases? 13. What is a HTTP Session? 14. What is JDBC? 15. What is Connection Pool? 16. What is Class Loading? 17. What is JNDI NameSpace? 18. What is a Plugin? 19. What is JVM? 20. What is WebContainer? 21. What is EJB Container? 22. What is Applet Container? 23. What is portlet Container? 24. What is WAR 25. What is EAR 26. What is JAR 27. What is Remote Plugin? 28. What is the difference between server.xml and serverindex.xml? 29. What are all the configuration files got changed when we add a node into a cell? 30. What is 100% CPU utilization known as? and how can we avoid it? 31. How to know that there is a memory leak? 32. What are the extra features of WAS6.0 compared to was 5.x? 33. What is Cluster Replication? And how can we do cluster replication in running server? 34. What is FFDC? 35. What are server.xml and serverindex.xml? 36. How to know that there is a memory leak? 37. What is the extra feature of WAS 6.x compared to WAS 5.x 38. What r the differences btn WAS ND V6.0 & WAS ND V6.1? 39. What is an application server? 40. Explain node, node agent and node groups. 41. Explain cell in WebSphere . 42. Explain about WebSphere administrative console. 43. How do you start the administrator console? 44. How do you take websphere backups? How do you restore it? 45. What is the admin console default session timeout limit? 46. What are the three major areas of admin console GUI? 47. What is scope in WebSphere? 48. What is the relation you know with cell – profile –node agent – apps servers? 49. What is virtual host? 50. If dmgr (deployment manager) is down, can you access app server? What is the effect of node agent? 51. Explain different types of containers WAS 6.0 ? 52. Standalone server and distributed server configuration – difference ? 53. What is configuration repository? 54. What are unmanaged nodes? 55. What are Managed nodes? 56. What version of Websphere software is required to install WebSphere

clustering? How would you configure Websphere for clustering: list basic steps? 57. What is node? 58. How to add the node? 59. How do you set java path in a linux server? 60. Explain the java web application components. 61. What is classloader?

Why use the bootstrap port number? 2. What are the appserver components? 3. LDAP port number? 4. What is CellDiscoveryAddress 5. Can you explain more about web server? 6. What is Web server plug-in? 7. What is a plugin file? how do you generate it? 8. What is datasource? 9. What is JNDI? 10. What are JDBC providers and data sources? 11. What are JCA resources? 12. What is JDBC? 13. What is diff b/w type4 and type2? 14. In type3 client software which machine you have install? 15. When do you get stale connection exception.? 16. Stale connection normally comes if the DB service was down or restarted and the connections in websphere side are not timed out. 17. What are resource adapters? 18. What does .rar file contain? 19. How do you install and configure resource adapters? 20. What is the difference between JMS and MQ SERIES? 21. What action would you take it if you get "page not found error "? 22. Explain the flow of processing a JSP page request. 23. What are the common errors that can occur while accessing webpage? 24. Explain the WebSphere runtime environment objects. 25. What are the services provided by application server? 26. What is the purpose of a proxy server? 27. Explain the application flow. 28. Can you explain about Application packaging? 29. How do you develop and deploy application, can you explain? 30. Explain about various roles in WAS administration. 31. What is JMX? 32. Can multiple users enter the dmgr? 33. What are the lists of web servers that web sphere can manage? 34. What is the special feature in IBM http server compared to other servers? 35. What is FFDC? 36. What are the three property files that control the behavior of FFDC? 37. What is Application Server Toolkit 38. How to find product information 39. How to you determine the Java version. 40. How would you ensure that a Websphere Application server or Websphere Application Server Node is started when the OS being windows 2000/2003 is re-booted? 41. What Websphere tool can be used to run scripts and where is it located? 42. What is the difference between war file and ear file? 43. What is ANT? 44. What is JNDI Context? What is jndi? 45. What is a Class path? 46. What is Java Garbage Collection? 47. What language is the default scripting language for Websphere and which language is the preferred scripting language? 48. What Development Environment(s) are available to develop applications for WebSphere? 49. What are the different application servers and Web Servers supporting J2EE technology's ? 50. What is EJB ? 51. What is the difference between authentication and authorization? 52. What is Deployment Descriptor? 53. What is Exceptions in java? 54. What is the difference between wsadmin tool and ant.? 55. What is Java Heap? 56. What are server.xml and serverindex.xml? 57. How do you create thread dump? heap dump? 58. How to create thread dump and heap dumps in Linux and Windows.? 59. What is JAXP? Java APIs for XML Processing 60. What is a Class Loader? 61. What are all configuration files got changed when we add a node into cell? 62. Tell me IHS executable files, means bin directory files? 63. Why given the httpd.conf file to installation of plug-in? 64. Several types of log files in the appserver? 65. WebSphere packages? 66. What is the profile? 67. What is the trace? 68. What is heap memory? 69. Out of memory exception is there, how to handle that exception? 70. Out of memory exception is there, how to handle that exception? 71.

What about plug-in? 72. What is the global security? 73. How to configure the global security? 74. What is SSL? 75. What is PMI? How to configure PMI? 76. What is the UNIX command of all display server processes? 77. How you get nodeagent......what you have to install to get nodeagent? 78. What is the application server? 79. How many types of profiles are in nd product? 80. Diff b/w 5.0 and 6.0? 81. Some problem is there in web server, so this information which log file contain? 82. Some application not accessing, so what is the problem? This information which log file contains? 83. How websphere discovers a change in JSP and compiles it 84.

- 1. What is master repository?
- 2. How to configure remote system httpd.conf file?
- 3. Several types of log files in the appserver?
- 4. WebSphere packages?
- 5. What is the profile?
- 6. What is the trace?
- 7. What is heap memory?
- 8. Out of memory exception is there, how to handle that exception?
- 9. What about IHS?
- 10. What about plug-in?
- 11. What is the global security?
- 12. How to configure the global security?
- 13. What is SSL?
- 14. What is PMI? How to configure PMI?
- 15. What is the UNIX command of all display server processes?
- 16. What is node?
- 17. How to start the server?
- 18. How you get nodeagent.....what you have to install to get nodeagent?
- 19. How to add the node?
- 20. What is the application server?
- 21. What is the node?
- 22. What is the node?
- 23. How many types of profiles are in nd product?
- 24. What is diffrence b/w dmgr and other profiles?
- 25. Diff b/w 5.0 and 6.0?
- 26. What is the difference between web server and application server?

- 27. Diff b/w weblogic and websphere?
- 28. Some problem is there in web server, so this information which log file contain?
- 29. What is jdbc?
- 30. What is datasource?
- 31. What is diff b/w type4 and type2?
- 32. Some application not accessing, so what is the problem? This information which log file contains?
- 33. In type3 client software which machine you have install?
- 34. two databases there (oracle and db2),so I want 3 datasources for oracle and 2 data sources for db2 so create 3 datasource names for oracle and 2datasourcename for db2 is possible or not?
- 35. What is jndi?
- 36. Why use the bootstrap port number?
- 37. What are the appserver components?
- 38. LDAP port number?
- 39. How to start the server?
- 40. Packages of websphere?
- 41. What is webcontainer?
- 42. How to find out free diskspace from command prompt?
- 43. How to find out certain server configuration details like port no, server name, node name, pid?
- 44. Configure the plug-in through admin console is possible or not?
- 45. Where to set the path?
- 46. How many types of installations?
- 47. Application installed but not working. What are troubleshooting steps?
- 48. Applications installed fine, also generated plugin, but application still not working, in this case which log to see?
- 49. Default admin port?
- 50. Default bootstrap port?
- 51. How to hit application without hitting the web server?
- 52. In how many ways you can perform administration?
- 53. No of ways of doing deployments?
- 54. What is CellDiscoveryAddress
- 55. What is NodeDiscoveryAddress
- 56. How websphere discovers a change in JSP and compiles it?
- 57. What is classloader?

- 58. how do you specify a jar file to be used by the application, consider that you have many jar files in your system?
- 59. What is a managed node?
- 60. What is a managed webserver?
 - 1. What is the difference b/n web and app servers
- 2. What are the new features in WAS ND 6.1
- 3. How many types of profiles are available in WAS ND6.1
- 4. What is a Cell
- 5. What is NodeAgent
- 6. What is DMGRs default admin port
- 7. What are the pre-perquisites for installing WAS
- 8. While installing WAS, if the installation fails and no logs are found. Which location should you check for the details
- 9. While installing WAS, can we create any CELL in WAS ND 6.1
- 10. After installing WAS, you found INSTALLCONFPATIALSUCCESS in the install log, what does it mean?
- 11. While installing as non-root, can WAS detect other existing WAS installations
- 12. Which file hold the existing WAS installation details
- 13. After installation you found that some ports are conflicting, how do you change/update the ports
- 14. Where do you find the installation logs
- 15. If the DMGR is not running, can you start the other JVMs?
- 16. While installing using silent installation method, if you do not wish to install sample applications. Which parameter should you change in the response file?
- 17. You have been asked to install WAS and create a CELL profile, how many response files do you need?
- 18. How do you get a new nodeagent

- 19. After you install the WAS, how do you verify the installation
- 20. How do you delete a profile?

Part-4

what is a backup cluster

websphereinterview-toughquestions

- 1. How do you create thread dump? heap dump?
- 2. What is the difference between wsadmin tool and ant.?
- 3. What language is the default scripting language for Websphere and which language is the preferred scripting language?
- 4. What is the WebSphere Application Server Console and what is it's role? What is the default URL and port for accessing it?
- 5. What is the difference between Web Server and Application Server?
- 6. How do you take websphere backups? How do you restore it?
- 7. What is the difference between authentication and authorization?

Learner

- 1. What is an application server?
- 2. Can you explain more about web server?
- 3. What is the difference between Web Server and Application Server?
- 4. How do you set java path in a linux server?
- 5. JAVA_HOME=/usr/java/jdk & export JAVA_HOME
- 6. How to you determine the Java version.
- 7. WebSphere packages?
- 8. Explain node, node agent and node groups.
- 9. How to add the node?
- 10. What is scope in WebSphere?
- 11. How do you take websphere backups? How do you restore it?
- 12. What EARExpander command used?
- 13. Explain cell in WebSphere .
- 14. What is virtual host in webserver? and what are the two types?

- 15. What are Managed nodes?
- 16. What are unmanaged nodes?
- 17. What is ear file and what is war file?
- 18. What is the difference between ear file and war file.?
- 19. How do you deploy application, can you explain?
- 20. What is a Cluster?
- 21. LDAP port number?
- 22. What is CellDiscoveryAddress
- 23. What is the UNIX command of all display server processes?
- 24. What is the difference between authentication and authorization?
- 25. What is JDBC?
- 26. What is EJB? Enterprise JavaBeans (EJB) technology is the server-side component architecture for the Java 2 Platform, Enterprise Edition (J2EE) platform. EJB technology enables rapid and simplified development of distributed, transactional, secure and portable applications based on Java technology.
- 27. What are the ports for the administration console and the administration console secure port, respectively? How do you start the administrator console?

How do you decode password which was present in the admin console? http://www.sysman.nl/wasdecoder/ Practitioner

- 1. Diff b/w 5.0 and 6.0?
- 2. What is the profile?
- 3. How you get nodeagent what you have to install to get nodeagent?
- 4. Explain about WebSphere administrative console.
- 5. What is configuration repository?
- 6. What is core group?
- 7. What are the lists of web servers that web sphere can manage?
- 8. What is the admin console default session timeout limit?
- 9. Can you explain about Application packaging? What is Deployment Descriptor? In the Java Platform, Enterprise Edition, a deployment descriptor contains information about a web application or enterprise application and also includes the information about how the application should be deployed. What are the deployment descriptors for ear file and war file.? What language is the default scripting language for Websphere and which language is the preferred scripting language? Explain different types

of containers WAS 6.0? What version of Websphere software is required to install WebSphere clustering? How would you configure Websphere for clustering: list basic steps?

- 10. What are resource adapters?
- 11. What is Exceptions in java?
- 12. What is Java Garbage Collection?
- 13. What are JDBC providers and data sources?
- 14. What is datasource?
- 15. What is classloader?
- 16. What is JNDI Context? Like JDBC (Java Database Connectivity), JNDI is not a service, but a set of interfaces that allows applications to access many different directory service providers using a standardized API. The deployed enterprise beans in EJB have an environment-naming context that can be accessed using the JNDI API. Specialist
- 17. Why we need to define virtual host in websphere?
- 18. What is the difference between node group and core group?
- 19. What is core group bridge service?
- 20. Difference between in-memory replication and database memory replication using database? which method is good?
- 21. Waht is High Availability Manager?
- 22. What are all configuration files got changed when we add a node into cell?
- 23. how do you automate the installation of WAS Server?
- 24. What does .rar file contain?
- 25. What action would you take it if you get page not found error ??
- 26. Weight in plugin file? : The RefreshInterval needs to be set to 1800
- 27. What is JMX?
- 28. What is Java Heap?
- 29. If dmgr (deployment manager) is down, can you access app server? What is the effect of node agent?
- 30. What is FFDC?
- 31. What is diff b/w type4 and type2?
- 32. What is Java Garbage Collection? The Java language is the most widely used programming language to rely on garbage collection. The name "garbage collection" implies that objects that are no longer needed by the program are "garbage" and can be thrown away or destroyed.

Expert

1. Explain the application flow.

- 2. What steps you will take to tune the application server?
- 3. What is the difference between JMS and MO SERIES?
- 4. What is the purpose of a proxy server?
- 5. Out of memory exception is there, how to handle that exception?
- 6. What is reverse proxy?
- 7. how do you create a policy for High Availability group?
- 8. Why you need to create a policy for HA group?
- 9. When do you get stale connection exception.?
- 10. How to create thread dump and heap dumps in Linux and Windows.?
- 11. What is Certificate revocation list?
- 12. What are the three property files that control the behavior of FFDC? What is CPU regression? how to avoid it?

 100% CPU utilization is known as CPU regression and this can be avoided by making log level as info=fatal in WAS admin console.Please try and let me know. What is a Class path? The Classpath is an argument that is path through the command line. Classpath can also be though an environment variable. Classpath specify the location of the user defined class and the packages in a Java program for the Java Virtual Machine. Setting the class path is mandatory to run a java application. Class path in java can set by using different techniques. Here are the some techniques that can be used to set the class path.

guru Troubleshooting methods? Automations How do you do the performance tuning (OS, WebServer, Plugin, Application Server (JVM), Connection pools, (thread, db), Application) Migration from 6.x to 7.x? What are the functions of WASPreUpgrade command & WASPostUpgrade command? How do you generate thread dump for stand-alone (non-WAS) Java application. Thread dump for standalone java application is bit complex. We need to use windows dr.watson utility to perform a dump. The java process will die during the dump creation. Another option to monitor the application/java threads in the standalone java application is using J- Console. This feature is available only in JDK1.5, we need custom code changes to monitor jdk1.4

- 1. What is the special feature in IBM http server compared to other servers?
- 2. What are the three major areas of admin console GUI?
- 3. Can multiple users enter the dmgr? If dmgr (deployment manager) is down, can you access app server? What is the effect of node agent? Standalone server and distributed server configuration � difference ?
- 4. Explain the java web application components.

- 5. Why use the boostrap port number?
- 6. What are the appserver components?
- 7. What are JCA resources?
- 8. In type3 client software which machine you have install?
- 9. How many types of profiles are in nd product?

Stale connection normally comes if the DB service was down or restarted and the connections in websphere side are not timed out.

- 1. How do you install and configure resource adapters?
- 2. Explain the flow of processing a JSP page request.
- 3. What are the common errors that can occur while accessing webpage?
- 4. Explain the WebSphere runtime environment objects.
- 5. What are the services provided by application server?
- 6. Explain about various roles in WAS administration.
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- 8. How to find product information
- 9. How would you ensure that a Websphere Application server or Websphere Application Server Node is started when the OS being windows 2000/2003 is re-booted?
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- 19. How do you create thread dump? heap dump?
- 20. What is JAXP? Java APIs for XML Processing
- 21. What is a Class Loader?

- 22. Tell me IHS executable files, means bin directory files?
- 23. Why given the httpd.conf file to installation of plug-in?
- 24. Several types of log files in the appserver?
- 25. What is the trace?
- 26. What is heap memory?
- 27. What is the global security?
- 28. How to configure the global security?
- 29. What is SSL?
- 30. What is PMI? How to configure PMI?
- 31. Some problem is there in web server, so this information which log file contain?
- 32. Some application not accessing, so what is the problem? This information which log file contains?
- 33. How websphere discovers a change in JSP and compiles it?

Which of the following situations would require manual editing of the plugin-cfg.xml? Installing a new application. Message: SSL0226l: Handshake Failed, I/O error during handshake. Reason: The communication between the client and the server failed. This is a common error when the client closes the connection before the handshake has completed. Solution: Retry the connection from the client.

WebSphere_QA_09

- 1. Are you responsible for production support? A) Yes As per on call support, we have dedicate mobile and laptop every week, they will change. And Prioritize, change at every week on 24x7 basis.
- 2. Breifly explain about the topology of production environment? A) In my production environment we are having 200 applications running across 70 RHEL boxes in 20 WebSphere cells. Each cell has 3 nodes under dmgr, all nodes are established in horizontal cluster (different RHEL boxes), All clusters will have 3 jvms run across the RHEL boxes. Resources: 8 onsite + 8 off shore Role hierarchy:Business head -- IT MGR -- Middleware mgr -- off-shore team lead -- My role is Level-1 and 2. We are did a migration from 5.1 to 6.0/6.1, in my environment, 5.1 will be completely migrated this year end. We are using paid support from IBM 5.1(3 cells) as free support stopped by IBM.
- 3. Which environment you are using? A) Soloaris 6.1/8.x, RHEL Linux: 5.1
- 4. How many servers and how many applications? A) Discussed
- 5. which kind of applications? A) Client Business:
- 6. Mortgage, 2. Trading applications
- 7. Applications are running on clusters? Yes.
- 8. How do you verify that you are using Horizontal clusters not a vertical cluster? A) if u have all the servers in same machine(Host), than its vertical, if cluster servers are installed in different machine than its horizontal. -OR- Go to WAS console =- select Nodes in left side =- in the right side of the console you can see how many nodes make's your CELL, and also the hostname of the boxes in which the node exists. if you see all the nodes from different hostnames then its Horizontal clustering if you see same hostname here then its Vertical clustering
- 9. your cluster contains how many nodes? A) 3 nodes
- 10. Both nodes are running on dmgr. Dmgr is on both nodes? A) All my production Dmgr in a single box. Nodes will be across different boxes. Note: if in case failure of DMGR node, then how do we handle the issue? In that case we need to wait till that problem gets resolved, for any configuration changes in theconsole. Generally start and stop server activities will do in application server node.
- 11. Is it necessary to have dmgr on both nodes? A) NO, Single dmgr.
- 12. Do you have dmgr as standalone? A) We can, but No use.

- 13. Can we create more than one server in standalone-environement? A)Never worked on stand alone environment.
- 14. can we have more than one application in a single server? A) many
- 15. I want to depoly the application in any one of the node but not cluster? A)Node is a server
- 16. What kind of database you are using? t A)Oracle 10g
- 17. What kind of security mode you are using or JDBC connection? A) J2C Authentication
- 18. What type of driver you are using? Type 4 driver A) Type 1 driver:JDBC-ODBCBridge This driver called as JDBC-ODBC bridge. The Java Statements converts to JDBC statements. JDBC statements calls ODBC by using JDBC-ODBC bridge. ODBC drivers convert into the requirements of databases. Java----JDBCStat----JDBC-ODBC bridge----ODBC----Databases. Type 2 driver: Native-API/partly Java driver This driver is called as Native Driver where it requires the some native code to connect to the databases. Type 3 Driver: Net-protocol/all-Java driver This driver is called as Protocal driver where Java----JDBC statements---- SQLStatements---- databases. Type 4 Driver: This driver directly converts the java statements to SQl Statements which require to databases. It wont convert to JDBC statement.
- 19. The application should be authenticate before interacting with database? A) It will happened, we are creating uid, pwd that will work
- 20. what is meant by connection pooling? A)aconnection poolis acacheofdatabase connectionsmaintained by the database so that the connections can be reused when the database receives future requests for data. Connection pools are used to enhance the performance of executing commands on a database. Opening and maintaining a database connection for each user, especially requests made to a dynamic database-drivenwebsiteapplication, is costly and wastes resources. In connection pooling, after a connection is created, it is placed in the pool and it is used over again so that a new connection does not have to be established. If all the connections are being used, a new connection is made and is added to the pool. Connection pooling also cuts down on the amount of time a user must wait to establish a connection to the database.
- 21. what are the different methods to deploy application? A)
- 22. for ear file is context root is necessary? A) Hostname:9089/appname- context root Yes.
- 23. I updated the new application but the user is getting the old application only? A) need to Restart, synch
- 24. what are the options you have to improve performance? A) Connection pool, Thread pool of web container, EJB container, web server parameter, jdbc connection pool Tuning Application server Tuning

JVM, Tuning Applications, Tuning Database, Tuning JMS, Tuning security, Tuning operating systems, Tuning Web servers Connection pool perameters: \$AdminControl getAttribute \$objectname surgeCreationInterval \$AdminControl setAttribute \$objectname surgeCreationInterval 30 \$AdminControl getAttribute \$objectname surgeThreshold \$AdminControl setAttribute \$objectname surgeThreshold 15

- 25. to sepcify the weight of a cluster member in which file i have to modify? A) have to modify in Plugin file
- 26. I am getting server 500 erro, what will be the reason? A) Internal server error (server to db middleware)
- 27. How do enable GC? In the Administrative Console, expand Servers and then click on Application Servers. .Click on the server that is encountering the¬ "OutOfMemory" condition. .On the Configuration tab, under Server¬ Infrastructure, expand Java and Process Management, and click Process Definition. .Under the Additional Properties section, click Java Virtual¬ Machine. .Select the Verbose garbage collection check box.¬ .Click¬ Apply. .At the top of the Administrative Client, click Save to apply changes¬ to the master configuration. .Stop and restart the Application Server The verbose garbage collection output is written to either native_stderr.log or native_stdout.log for the Application Server verbosegc Tells you what is being done, whether heap size is at min or max.
- 28. Ho to check GC is active or not, if you don't have? A) We can check in logs.
- 29. can you tell me about profiles? A) WebSphere application binary, profile sharing binaries of existing instance,
- 30. what is the use of virtual host? A) Configuration that lets a single host machine resemble multiple host machines. Each virtual host has alogical name and a list of one or more domain name system (DNS) aliases by which it is known.
- 31. Is webserver & application server should be installed in a single machine or different machines? A) We can do it, but in production different machines. Webserver OS tuned in different way, app. server different way, normally these web servers in DMZ- Demilitarized Zone.
- 32. Difference between managed node and unmanaged node? A)Managed have node agent, unmanaged not.Unmanaged node we not control from console.
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- 34. How to check WAS is running or not through PS? A)Ps -grep WAS Edge Components These are the some of the WAS Edge Components.

Caching Proxy Proxy Server Load Balancer Network Dispatcher Component Content Based Routing (CBR) Site Selector Component

The SSL configuration for WebSphere provides the authentication between the WEB Server (IBM IHS 2.0.47.1) and the WebSphere JVM. The configuration uses Self Signed Certificates with a Five Year (1825 days) operational limit. No Keys are purchased to provide this security as no customer facing interaction is involved, hence certificates are self signed.

The principle sections of the setup are: - ServerKey.jks - Holds the WebSphere Server Certificate

ServerTrust.jks - Holds the Server Key, Client Key and the Plugin Key allowing WebSphere to trust client connections (SAS, SOAP) and the WEB Server via the WEB Plugin.

ClientKey.jks - Holds the Client Certificate for SAS & SOAP / WebServices Authentication.

ClientTrust.jks - Holds the Server Key and Client Key allowing the SAS & SOAP Web Services to trust the WebSphere JVM.

PluginKey.kdb - Holds the Plugin Certificate and the Server Key to enable the Web Server to trust the WebSphere JVM.

PluginKey.sth - Holds the Access password for the PluginKey.kdb

1)Tellme About yourself? A) Worked as a Websphere administrator. Was responsible for deploying, configuring, tuning, clustering, and troubleshooting WebSphere related issues. 2)Configuration of WebServer with AppServer? A) This configuration available in httpd.conf file of a web server, in this file we will configure virtual hosts and domains etc. 3) Role of Plugin-Cfg.xml? A) When ever request comes to Webserver it identifies the app. server configuration in this configuration file. 4) Tell me about RemoteConfiguration? 5) How do you deploy an application in AdminConsole? 6) How do you deploy an EAR file in admin console? 7) What is meant by default bindings? A) It will bind the resources to connect....at time of startup 8)What are precompiled jsps? 9) Are you comfortable with MQ? A) I have a little bit knowledge. 10)Tell me about MQConfiguration with WAS? A) We will configure from console, resources -- JMS -- Queues-- integrating with MQ. 11) Tell me the command to find RAM size in AlX/Unix? A)prtconfonly for AlX 12)Command to find diskfree space? A)Df -k or m 13) how do you provide Custom security? A) Developer will give the authorization from an application(may be uid/pwd from Oracle DB) 14)Suppose if u enable customsecurity after opening the admin console in the rightside suppose if you got only 2 options instead of 3 then what to do? A) question not clear 15)How much you are comfortable with scripting(JACL/JYTHON)? A) I have little bit knowledge. Set \$ puts "About to dump threads for this jvm..." \$AdminControl invoke \$jvm dumpThreads

puts "... done"

Invoke the generateHeapDump operation on a JVM MBean, for example, Finding JVM objectName: set objectName [\$AdminControl queryNames WebSphere:type=JVM,process=<servername-,node=
<nodename-,*] Invoking the generateHeapDump operation on JVM MBean: \$AdminControl invoke
\$objectName generateHeapDump Ex: wsadmin -f test.pyabc test.py content: import sys first=sys.argv[0]
second = sys.argv[1] third = sys.argv[2] arglen = len(sys.argv) 16)In Jython script how to invoke a variable
which was defined in another jython script? Using MBeans Calling scripts using another script Use
theexecfilecommand to call a Jython script from another Jython script. For example: Create a script
calledtest1.pythat contains the following: execfile('c:/temp/script/testFunctions.py') print printName('Cathy',
'Smith') Create a script calledtestFunctions.pythat contains the following: def printName(first, last): name =
first + ' ' + last return name Then pass the following path as a script argument: wsadmin -lang jython -f
'c:/temp/script/test1.py'

- 1) What are your daily day to day Activates? A) We have ticketing tools, We have 2 Type of tickets:
 - 1. Change request: scheduled activities like new resources creation, JVM settings, Configuration of the application and development teams raised tickets
 - 2. Incident request: production support or monitoring like up gradation. We have a dev team; if they found any issues they will raise a ticket. We have a production support team, and Monitoring team, if they come across some thing abnormal then they will raise a production support tickets. We are having WAS 5.1 and 6.1, so daily we are having configuration setups for migration, and building the similar environment as 5.1 in 6.1In different boxes as new environment. Right now I don't have chance to write new scripts. How to check thread dump in jacl How do you check the health of the appserver? Is there any tool is avialable with you? A) We have monitoring tools, at the time issue only, TPV (Tivoli Performance Viewer)/Willy Introscope, and normally it is disabled, at the time of performance issue only we will do monitoring. 2 kinds of monitoring: 1. Availability, 2. performance monitoring 24/7 or not. L1 team using SiteScope:SiteScope WebSphere Performance Servlet Monitor to monitor the server statistics of IBM WebSphere Server (versions 3.0x, 3.5, 3.5.x, and 4.0) via a WebSphere Performance Servlet. The error and warning thresholds for the monitor can be set on as many as ten performance statistics. 3) Can u configure multpile apache webservers? A) we can configure in httpd.conf file. 4) Is it possible to configure 10 domain names in apache? if yes? How? A) we can use virtual hosts. 5) How do you perform heap dump and thread dump? A) Kill -3 <- Heap dump relate to jvm memory usage, Thread dump relate jvm thread usage 6) Is kill -3,kill a process or create a thread dump? explain! A) kill -3 is used create thread dump. 7) Did u work with any tools which helps you to see the heap dump or thread dump? A) Heap dump jmap, IBM heap analyzer tool, thread dump using IBM thread analyzer /samurai 8) How to configure security and LDAP? A) Global security, Security availability: 1. OS security 2. LDAP (3rdparty security)3. Custom security(Application from DB) 9) What are 202 errors? Accepted. 10) In Is -

Irt, what t stands for and r stands for I stands for? A) -I shows you huge amounts of information (permissions, owners, size, and when last modified.) -r reverses the order of how the files are displayed. -t shows you the files in modification time 11) How to check a particular port is working or not in unix? A) netstat -a | grep 80

- 1. What is session affinity? A) Is nothing but a persistence. Most servers use the term "Session Affinity" to indicate that with in a cluster of servers, requests from the same client always get routed back to same server. This eliminates the need to replicate session data like HTTP session or Stateful session Beans.
- 2. JVM which has been clustered, the server is in production? A) 1. Memory to memory replication 2. Database persistence Heartbeat mechanism work in a cluster, member of the cluster identifies that the other server is not responding it checks 3 times for every 60 seconds, if not responded then it takes the configuration using memory replication process then completes request.
- 3. What is fix pack? A) Patches to fix a particular issue for a particular in environment only not other.
- 4. What is patch? A) It is like independent to every body, bug fix of WAS.WAS 6.1.0.17
- 5. What is migration? How can you migrate from one version to another version? A) discussed
- 6. How can you disable the security without admin console? A) we can disable in Security.xml, but we can't enable.
- 7. Complete configureation steps for SSL? A) We have to install ibm http server, by using ikeyman tool we can create and use SSL certificates.
- 8. How to configure session management? A)we can configure though console, either in application/deployment descriptor.
- 9. How can you provide security authentication for web server? A) eTrust SiteMinder tool
- 10. How to know webserver version? A) we can find in Logfile.
- 11. How to identify old and new context roots? A) in Httpd.conf file we can see commented(old) and uncommented(new) data.
- 12. Difference between v5 & v6. A)
- 13. Multiple Profile creations with a single installation (All profiles share same WebSphere binaries)
- 14. Introduction of Service Integration Bus (SIB) for messaging
- 15. Has default JMS providers
- 16. Supports mixed version nodes in a v6 ND Cell
- 17. Has some extra add-ons in the Admin console navigation tree
- 18. JACL has been deprecated in 6.1
- 19. What is the difference between WAS and WL? A)
- 20. In weblogic u cant do clustering accros the domain, but in Websphere u can.

- 21. In weblogic all the configurations are stored in a single file called Config.xml ,but in Websphere its stored in a directory structure called CELL
- 22. In weblogic u can start the managed server without a Adminserver(using MSI-config.xml),in websphere u can not start a node with out Dmgr.
- 23. In websphere u can add webserver as a unmanaged node where as u cannnt do that in weblogic.
- 24. How many types of installation are there? A)GUI, using Response file (silent mode), command line .
- 25. JACL scripting? Alredy discussed
- 26. If the performance, of the appliacation goes down? what will u do? A) Performance Information should collect from monitoring tool
- 27. what is the difference between L1, L2, L3? A) I1- is basic level (monitoring, basic configuration) I2 -back up who are senior staff (trouble shooting) I3 –architechts(designing / architect/ requirement(ram/box))
- 28. the uesr submitted the request, when that request is on processing in the middle the server crashes then what happens? It will lost.
 - 1. Are you responsible for production support? A) Yes As per on call support, we have dedicate mobile and laptop every week, they will change. And Prioritize, change at every week on 24x7 basis.
- 2. Breifly explain about the topology of production environment? In my production environment we are having 200 applications running across 70 RHEL boxes in 20 WebSphere cells. Each cell has 3 nodes under dmgr, all nodes are established in horizontal cluster (different RHEL boxes), All clusters will have 3 jvms run across the RHEL boxes. Resources: 8 onsite + 8 off shore Role hierarchy:Business head -- IT MGR -- Middleware mgr -- off-shore team lead -- My role is Level-1 and 2. We are did a migration from 5.1 to 6.0/6.1, in my environment, 5.1 will be completely migrated this year end. We are using paid support from IBM 5.1(3 cells) as free support stopped by IBM.
- 3. Which environment you are using? A) Soloaris 6.1/8.x, RHEL Linux: 5.1
- 4. How many servers and how many applications? A) Discussed
- 5. which kind of applications? A) Client Business:
- 6. Mortgage, 2. Trading applications
- 7. Applications are running on clusters? Yes.
- 8. How do you verify that you are using Horizontal clusters not a vertical cluster? A) if u have all the servers in same machine(Host), than its vertical, if cluster servers are installed in different machine than its horizontal. -OR- Go to WAS console =- select Nodes in left side =- in the right side of the console you can see how many nodes make's your CELL, and also the hostname of the boxes in which the node

- exists. if you see all the nodes from different hostnames then its Horizontal clustering if you see same hostname here then its Vertical clustering
- 9. your cluster contains how many nodes? A) 3 nodes
- 10. Both nodes are running on dmgr. Dmgr is on both nodes? A) All my production Dmgr in a single box. Nodes will be across different boxes. Note: if in case failure of DMGR node, then how do we handle the issue? In that case we need to wait till that problem gets resolved, for any configuration changes in theconsole. Generally start and stop server activities will do in application server node.
- 11. Is it necessary to have dmgr on both nodes? A) NO, Single dmgr.
- 12. Do you have dmgr as standalone? A) We can, but No use.
- 13. Can we create more than one server in standalone-environement? A)Never worked on stand alone environment.
- 14. can we have more than one application in a single server? A) many
- 15. I want to depoly the application in any one of the node but not cluster? A)Node is a server
- 16. What kind of database you are using? A)Oracle 10g
- 17. What kind of security mode you are using or JDBC connection? A) J2C Authentication
- 18. What type of driver you are using? Type 4 driver A) Type 1 driver:JDBC-ODBCBridge This driver called as JDBC-ODBC bridge. The Java Statements converts to JDBC statements. JDBC statements calls ODBC by using JDBC-ODBC bridge. ODBC drivers convert into the requirements of databases. Java----JDBCStat---JDBC-ODBC bridge---ODBC---Databases. Type 2 driver: Native-API/partly Java driver This driver is called as Native Driver where it requires the some native code to connect to the databases. Type 3 Driver: Net-protocol/all-Java driver This driver is called as Protocal driver where Java----JDBC statements----SQLStatements---- databases. Type 4 Driver: This driver directly converts the java statements to SQl Statements which require to databases. It wont convert to JDBC statement.
- 19. The application should be authenticate before interacting with database? A) It will happened, we are creating uid, pwd that will work
- 20. what is meant by connection pooling? A)aconnection poolis acacheofdatabase connectionsmaintained by the database so that the connections can be reused when the database receives future requests for data. Connection pools are used to enhance the performance of executing commands on a database. Opening and maintaining a database connection for each user, especially requests made to a dynamic

database-drivenwebsiteapplication, is costly and wastes resources. In connection pooling, after a connection is created, it is placed in the pool and it is used over again so that a new connection does not have to be established. If all the connections are being used, a new connection is made and is added to the pool. Connection pooling also cuts down on the amount of time a user must wait to establish a connection to the database.

- 21. what are the different methods to deploy application? A)
- 22. for ear file is context root is necessary? A) Hostname:9089/appname- context root Yes.
- 23. I updated the new application but the user is getting the old applicaion only? A) need to Restart, synch
- 24. what are the options you have to improve performance? A) Connection pool, Thread pool of web container, EJB container, web server parameter, jdbc connection pool Tuning Application server Tuning JVM, Tuning Applications, Tuning Database, Tuning JMS, Tuning security, Tuning operating systems, Tuning Web servers Connection pool perameters: \$AdminControl getAttribute \$objectname surgeCreationInterval \$AdminControl setAttribute \$objectname surgeCreationInterval 30 \$AdminControl getAttribute \$objectname surgeThreshold \$AdminControl setAttribute \$objectname surgeThreshold 15
- 25. to sepcify the weight of a cluster member in which file i have to modify? A) have to modify in Plugin file
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WAS Edge Components

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WebSphere_QA_10

http://middlewareforum.com/weblogic/?p=1298

- 1). What is WebSphere Application Servers? Explain 3 tier architecture. WebSphere Application Servers are a suite of servers that implement the J2EE specification. The primary component of the WebSphere Application Server products is the application server, which provides the environment to run your Webenabled E-business applications. You can think of an application server as Web middleware, the middle tier in a three-tier e-business environment. The first tier is the Web server that handles requests from the browser client. The third tier is the business database, for example DB2® UDB, and the business logic, for example, traditional business applications such as order processing. The middle tier is IBM WebSphere Application Server, which provides a framework for consistent, architected linkage between the HTTP requests and the business data and logic.
- 2). What is an application server? The application server is the primary runtime component in all configurations. It is where an application executes. All WebSphere Application Server configurations can have one or more application servers. In the Express and Base configurations, each application server functions as a separate entity. There is no workload distribution or common administration among application servers.
- With Network Deployment, you can build a distributed server environment consisting of multiple application servers maintained from a central administration point. In a distributed server environment, you can cluster application servers for workload distribution.
- 5). Explain about WebSphere administrative console. In WebSphere Application Server V6, the administrative console groups administrative tasks into the following categories: Servers Applications Resources Security Environment System administration Monitoring and tuning Troubleshooting Service integration UDDI
- 6). How do you start the administrator console? Make sure that deployment manager, dmgr, is running by using this command: UNIX: dmgr_profile_home/bin/serverStatus.sh -all If the dmgr status is not STARTED, start it with the following command: On UNIX: dmgr_profile_home/bin/startManager.sh Open a Web browser to the URL of the administrative console. The default port is 9060 for HTTP and 9043 for HTTPS. https://hostname:9043/admin
- 8). What are the three major areas of admin console GUI? The WebSphere administrative console has the following main areas: Taskbar Navigation tree Workspace, including the messages and help display areas. Options and description are given below:

What are the options you see in Navigation tree?

- 10). What is JNDI? The Java Naming and Directory Interface (JNDI) is part of the Java platform, providing applications based on Java technology with a unified interface to multiple naming and directory services. You can build powerful and portable directory-enabled applications using this industry standard
- 20 Explain the WebSphere runtime environment objects.
- 21). Explain the java web application components.
- 22). What is Web server plug-in? ◆ A Web server can serve requests that do not require any dynamic content (for example, HTML pages). However, when a request requires dynamic content, such as Java Server Pages (JSP™) or servlet processing, it must be forwarded to WebSphere Application Server for handling. Note: As a special case, if the unmanaged Web server is an IBM HTTP Server, you can administer the Web server from the WebSphere administrative console. ◆ Then, you can automatically push the plug-in Configuration file to the Web server with the deployment manager using HTTP commands to the IBM HTTP Server administration process. ◆ This configuration does not require a node agent. ◆ To forward a request, you use a Web server plug-in that is included with the WebSphere Application Server packages for installation on a Web server. You copy an Extensible ◆ Markup Language (XML) configuration file, configured on the WebSphere Application Server, to the Web server plug-in directory. The plug-in uses the configuration file to determine ◆ whether a request should be handled by the Web server or an application server. ◆ When WebSphere Application Server receives a request for an application server, it forwards the request to the appropriate Web container in the application server. ◆ The plug-in can use HTTP or Https to transmit the request.
- 23). Can you explain more about web server? Web servers can be defined to the administration process as a Web server node, enabling applications to be associated with one or more defined Web servers. Web server nodes can be managed or unmanaged. Managed nodes have a node agent on the Web server machine that enables the deployment manager to administer the Web server. You can start or stop the Web server from the Deployment manager, generate the Web server plug- in for the node, and automatically push it to the Web server. You would normally have managed Web server nodes behind the firewall with the WebSphere Application Server installations. Unmanaged Web server nodes, as the name implies, are not managed by WebSphere. You would normally find these outside the firewall or in the demilitarized zone. You must manually copy or FTP Web server plug-in configuration files to the Web server. However, if you define the Web server as a node, you can generate custom plug-in configuration files for it. In a z/OS environment, you must use unmanaged nodes if the Web server is a non- z/OS product.
- 25). What are the services provided by application server? The following are the broad level of services J2EE Connector Architecture services Transaction service Dynamic cache service Message listener service Object Request Broker service Administrative service Name service Performance Monitoring Infrastructure service Security service Web services engine Data Replication Service

26). Standalone server and distributed server configuration – difference? Stand-alone server configuration: Express, Base, and Network Deployment all support a single stand-alone server environment. With a standalone configuration, each application server acts as a unique entity. An application server runs one or more J2EE applications and provides the services that are required to run those applications. Each stand-alone server is created by defining an application server profile. Multiple stand-alone application servers can exist on a machine, either through independent installations of the WebSphere Application Server code or through multiple profiles within one installation. However, WebSphere Application Server does not provide for central management or administration for multiple application servers. Stand-alone application servers do not provide workload management or failover capabilities. Distributed server configuration With Network Deployment, you can build a distributed server configuration, which enables central administration, workload management, and failover. In this environment, you integrate one or more application servers into a cell that is managed by a deployment manager. The application servers can reside on the same machine as the deployment manager or on multiple separate machines. Administration and management is handled centrally from the administration interfaces via the deployment manager. With a distributed server configuration, you can create multiple application servers to run unique sets of applications and then manage those applications from a central location. However, more important, you can cluster application servers to allow for workload management and failover capabilities. Applications that you install in the cluster are replicated across the application servers. When one server fails, another server in the cluster continues processing. Work is distributed among Web and Enterprise JavaBeans™ . (EJB™) containers in a cluster using a weighted round-robin scheme Application servers The application server is the primary runtime component in all configurations and is where an application actually executes. All WebSphere Application Server configurations can have one or more application servers. In the Express and Base configurations, each application server functions as a separate entity. There is no workload distribution or central administration among application servers. With Network Deployment, you can build a distributed server environment consisting of multiple application servers maintained from a central administration point. In a distributed server environment, you can cluster application servers for workload distribution.

27). What is the purpose of a proxy server? A proxy server is a specific type of application server that routes HTTP requests to application servers that host the applications. The proxy server is the initial point of entry, after the firewall, for requests into the enterprise. The proxy server can be configured with rules to route to and load balance the clusters of application servers. The proxy server is also capable of securing the transport, using Secure Sockets Layer (SSL), and the content using various authentication and authorization schemes. Another important feature is its capability to protect the identity of the content servers from the Web clients by using response transformations (URL rewriting). The proxy server can also improve performance by caching content locally and by protecting the content servers from surges in traffic.

2.28 Explain the application flow. The figure shows the typical application flow for Web browser clients using either JDBC from a servlet or EJB to access application databases.

The typical application flow is as follows:

- 1. A Web client requests a URL in the browser input page.
- 2. The request is routed to the Web server over the Internet.
- 3. The Web server immediately passes the request to the Web server plug-in. All requests go to the WebSphere plug-in first.
- 4. The Web server plug-in examines the URL, verifies the list of host namealiases from which it will accept traffic based on the virtual host information, and chooses a server to handle the request.
- 5. A stream is created. A stream is a connection to the Web container. It is possible to maintain a stream over a number of requests. The Web container receives the request and, based on the URL, dispatches it to the proper servlet.
- 6. If the servlet class is not loaded, the dynamic class loader loads the servlet (servlet init(), then doGet() or doPost()).
- 7. JNDI is used for lookup of either datasources or EJBs required by the servlet.
- 8. Depending upon whether a datasource is specified or an EJB is requested, the JNDI directs the servlet: To the corresponding database and gets a connection from its connection pool in the case of a data source. To the corresponding EJB container, which then instantiates the EJB when an EJB is requested.
- 9. If the EJB requested involves an SQL transaction, it goes back to the JNDI to look up the datasource.

 10.The SQL statement is executed and the data retrieved is sent back either to the servlet or to the EJB.

 11.Data beans are created and handed off to JSPs in the case of EJBs. 12.The servlet sends data to JSPs.

 13.The JSP generates the HTML that is sent back through the WebSphere plug-in to the Web server.

 14.The Web server sends the output HTML page to the browser.
- 30). Can you explain about Application packaging? J2EE applications are packaged into EAR files to be deployed to one or more populication servers. A J2EE application contains any or all of the modules as shown in Table
- 31) How do you develop and deploy application, can you explain? Please find below the diagrams that explains how the applications are developed and deployed.

The first step is application design Design tools like Rational Rose® or Rational XDE™ can be used to model the application using the Unified Modeling Language. Application development: Application development is done using Rational Application Developer or a comparable IDE to create the enterprise application. During the development phase, you can do component testing using the built-in WebSphere Application Server test environment. Application packaging: J2EE applications are packaged into EAR files to be deployed to one or more application servers. The WebSphere Enhanced EAR, introduced in WebSphere Application Server V6, is a regular J2EE EAR file with additional configuration information for resources usually required by J2EE applications. While adding this extra configuration information at packaging time is not mandatory, it can

on application servers using the administrative console or the wsadmin scripting interface. You can deploy an application to a single server or a cluster. In a cluster, the application is installed on each application server in the cluster. Installing an application involves the following tasks: • _ Binding resource references, created during packaging, to real resources For example, a data source would need to be bound to a real database.
• Defining JNDI names for EJB home objects. • Specifying data source entries for entity beans • Binding EJB references to the real EJB JNDI names. • Mapping Web modules to virtual hosts. • Specifying listener ports for message-driven beans. • Mapping application modules to application servers • Mapping security roles to users or groups The use of an enhanced EAR file simplifies this installation process. After a new application is deployed, the Web server plug-in configuration file needs to be regenerated and copied to the Web server.

simplify deployment of J2EE applications to WebSphere Application deployment: Applications are installed

- 32). Explain about various roles in WAS administration. WebSphere Application Server provides a granularity of access control through the provision of four administrative security roles: Monitor can view the system state and configuration data, but cannot make any changes. Operator has all the functions of Monitor as well as ability to make operational changes, for example start/stop servers. Configurator has all the functions of Monitor as well as ability to make Configurational changes. Administrator has all the functions of Operator and Configurator. Using these roles requires that WebSphere global security be enabled. Users and groups can be assigned these roles through the administrative console
- 33) What is JMX? Java Management Extensions. JMX is a framework that provides a standard way of exposing Java resources, for example application servers, to a system management infrastructure. The use of JMX opens the door to third-party management tool providers. Users of WebSphere are no longer restricted to IBM-supplied management tools.
- 35) Can multiple users enter the dmgr? A user ID must be unique to the deployment manager. If you enter an ID that is already in use and in session, you will receive the message Another user is currently logged with the same User ID The message another user is currently logged with the same User ID appears if a previous session ended without a logout. If the user closed a Web browser during a session and did not logout first or if the session timed out.
- 36) What is the admin console default session timeout limit? The default is 30 minutes. Edit the was_home/systemApps/adminconsole.ear/deployment.xml file in a text editor
- 37) What are JDBC providers and data sources? A data source represents a real-world data source, such as a relational database. When a data source object has been registered with a JNDI naming service, an application can retrieve it from the naming service and use it to make a connection to the data source it represents. Information about the data source and how to locate it, such as its name, the server on which it resides, its port number, and so on, is stored in the form of properties on the DataSource object. This makes

an application more portable because it does not need to hard code a driver name, which often includes the name of a particular vendor.

38) What are JCA resources? The J2EE Connector architecture (JCA) defines a standard architecture for connecting the J2EE platform to heterogeneous Enterprise Information Systems (EIS), For example, ERP, mainframe transaction processing, database systems, and legacy applications not written in the Java programming language. The JCA Resource Adapter is a system-level software driver supplied by EIS vendors or other third-party vendors. Multiple resource adapters (one resource adapter per type of EIS) are pluggable into an application server. This capability enables application components deployed on the application server to access the underlying EISs.

In WebSphere Application Server, two types of objects are configured for JCA support: Resource adapters, Connection factories

The role of the WebSphere administrator is to: Install and define the resource adapter. Define one or more connection factories associated with the resource adapter.

- 39) What are resource adapters? A WebSphere resource adapter administrative object represents the library that supplies implementation code for connecting applications to a specific EIS, such as CICS or SAP.
- Resource adapters are stored in a Resource Adapter Archive (RAR) file, which is a Java archive (JAR) file used to package a resource adapter for the connector architecture. The . file has a standard file extension .rar
- 40) What does .rar file contain? A RAR file can contain the following: EIS-supplied resource adapter implementation code in the form of JAR files or other executables, such as DLLs Utility classes Static documents, such as HTML files for developer documentation, not used for runtime J2C common client interfaces, such as cci.jar A mandatory deployment descriptor (ra.xml) This deployment descriptor instructs the application server about how to use the resource adapter in an application server environment. The deployment descriptor contains information about the resource adapter, including security and transactional capabilities, and the ManagedConnectionFactory class name.
- 41). How do you install and configure resource adapters? To use a resource adapter, you need to install the resource adapter code and create connection factories that use the adapter. Resource adapter configuration is stored in the resources.xml file. To install a resource adapter (.rar file), do the following: 1). From the administrative console, expand Resources from the navigation tree. 2). Click Resource Adapters. The administrative console shows all the configured resource adapter objects. In Figure you see the two resource adapters supplied with WebSphere.
- 3). Click Install RAR to install a new resource adapter. 4). Enter the path to the RAR file supplied by your EIS vendor. It can reside locally, on the same machine as the browser, or on any of the nodes in your cell.

- 5). Select the node where you want to install the RAR file. You have to install the file on each node separately.
- 6). Click Next. The Configuration page for the resource adapter selected is displayed. This is shown in Figure.

In this example you do not have to configure any properties. The defaults combined with the information supplied in the RAR file provide all the information needed. However, you have the option of configuring the following: Name Create an administrative name for the resource adapter. Description Create an optional description of the resource adapter, for your administrative records. Archive path This field is the path where the RAR file is installed. If this property is not specified, the archive will be extracted to the absolute path represented by the \${CONNECTOR_INSTALL_ROOT} variable. The default is profile_home/installedConnectors/adaptername.rar Class path A list of paths or JAR file names which together form the location for the resource adapter classes. The resource adapter codebase itself, the RAR file, is automatically added to the classpath.

- 42). What are the lists of web servers that web sphere can manage? Apache HTTP Server Domino Web Server IBM HTTP Server Microsoft Internet Information Services Sun Java System Web Server (formerly Sun ONE and iPlanet)
- 43). What is the special feature in IBM http server compared to other servers? If the Web server is defined on an unmanaged node, automatic propagation of a plug-in configuration is only supported for IBM HTTP Servers. WebSphere Application Server supports some additional administrative console tasks for IBM HTTP Servers on managed and unmanaged nodes. For instance, you can start IBM HTTP Servers, stop them, terminate them, display their log files, and edit their . configuration files
- 44). What are unmanaged nodes? An unmanaged node does not have a node agent to manage its servers. In a standalone server environment, you can define one Web server and it, by necessity, resides on an unmanaged node. In a distributed server environment, Web servers defined to an unmanaged node are typically remote Web servers.
- 8). What is Application Server Toolkit The Application Server Toolkit is included with WebSphere Application Server V6. It includes debugging functionality built on the Eclipse workbench. It provides the following adapters: WebSphere Application Server debug adapter JavaScript debug adapter Compiled language debugger Java development tools (JDT) debugger
- 49). How to find product information The easiest way to get comprehensive information about the installation is to use the administrative console. You can use this when the server is running.
 - 1. Select Servers Application Servers.
 - 2. Click the server.
 - 3. Select the Runtime tab.

4. Click Product Information from the Additional Properties list.

versioninfo.sh is the command line utility to find the information on WebSphere version.

50). How to you determine the Java version. 1). Look in the SystemOut.log file of one of the profile instances. profile_home/logs/server1/SystemOut.log 2). Run java –fullversion

WebSphere_QA_11

Set 1 SET 2 SET 3 SET 4 SET 5 WAS LPSEG SET 6 WebSphere EAsy Questions SET 7 WAS Medium Qs SET 7 WAS MEDIUN Q Tough Questions

What is an application server? • How do you set java path in a linux server? ● How to you determine the Java version. • Explain node, node agent and node groups. • How to add the node? What is core group? • Waht is the difference between node group and core group? • core group bridge service? ● Waht is High Availability Manager? ● How you get nodeagent.....what you have to install to get nodeagent? • What are all configuration files got changed when we add a node into cell? • What is scope in WebSphere? • Explain cell in WebSphere . • Explain about WebSphere administrative console. • How do you start the administrator console? • Ports for the administration console and the administration console secure port, respectively? • What EARExpander command used? What are the functions of WASPreUpgrade command & WASPostUpgrade command? • automate the installation of WAS Server? • How do you take websphere backups? How do you restore it? What is the admin console default session timeout limit? • What are the three major areas of admin Can multiple users enter the dmgr? • What is virtual host? • If dmgr (deployment manager) is down, can you access app server? What is the effect of node agent? • Explain different types of containers WAS 6.0? • Standalone server and distributed server configuration – difference? What is configuration repository? • What are unmanaged nodes? • What are Managed nodes? • version of Websphere software is required to install WebSphere clustering? How would you configure Websphere for clustering: list basic steps? ● What is the profile? ● How many types of profiles are in nd product? • Explain the java web application components. • What is classloader? • Why use the What are the appserver components? • boostrap port number? • How would you ensure that a Websphere Application server or Websphere Application Server Node is started when the OS being windows 2000/2003 is re-booted? • What Websphere tool can be used to run scripts and where is it located? • What is the difference between war file and ear file? • What is ANT? What is JNDI Context? What is jndi? ● What is a Class path? ● What is Java Garbage Collection? ● What language is the default scripting language for Websphere and which language is the preferred scripting language? • Development Environment(s) are available to develop applications for WebSphere? • different application servers and Web Servers supporting J2EE technology's? • What is EJB ? ● the difference between authentication and authorization? • What is Exceptions in java? • difference between wsadmin tool and ant.? • What is Java Heap? ● What are server.xml and serverindex.xml? • How do you create thread dump? heap dump? ● How to create thread dump and heap dumps in Linux and Windows.?

- 1. Can you explain more about web server? 2. What is Web server plug-in?how do you generate it? 3. What are the lists of web servers that web sphere can manage? 4. What is the special feature in IBM http server compared to other servers? 5. Tell me IHS executable files, means bin directory files? 6. Why given the httpd.conf file to installation of plug-in? 7. What is the difference between IP based hosting and name based virtual hosting? 8. Why we need to define virtual host in websphere? 9. Some problem is there in web server, so this information which log file contain?
- 1. LDAP port number? 2. What is CellDiscoveryAddress 3. What is Deployment Descriptor? 4. Can you explain about Application packaging? 5. What is datasource? 6. What is JNDI? 7. What are JDBC providers and data sources? 8. What are JCA resources? 9. What is JDBC? 10. What is diff b/w type4 and type2? 11. In type3 client software which machine you have install?
- What are resource adapters?
 What does .rar file contain?
 How do you install and configure resource adapters?
 What is the difference between JMS and MQ SERIES?
 Explain the flow of processing a JSP page request.
 What are the common errors that can occur while accessing webpage?
- Explain the WebSphere runtime environment objects. What are the services provided by What is the purpose of a proxy server? • Explain the application flow. • application server? • How do you develop and deploy application, can you explain? • Explain about various roles in WAS administration. • What is JMX? • What is FFDC? ● What are the three property files that control the behavior of FFDC? • What is Application Server Toolkit • How to find product information • What is JAXP? Java APIs for XML Processing • What is a Class Loader?
- 1. Several types of log files in the appserver? 2. WebSphere packages? 3. What is the trace? 4. What is heap memory? 5. What is the global security? 6. How to configure the global security? 7. What is SSL? 8. What is PMI? How to configure PMI? 9. What is the UNIX command of all display server processes?
- Diff b/w 5.0 and 6.0? Some problem is there in web server, so this information which log file contain? Some application not accessing, so what is the problem? This information which log file contains? How websphere discovers a change in JSP and compiles it?
- 1. What action would you take it if you get "page not found error "? 2. Out of memory exception is there, how to handle that exception? 3. Weight in plugin file? : The RefreshInterval needs to be set to 1800 4. What is reverse proxy? 5. Which of the following situations would require manual editing of the plugin-cfg.xml? Installing a new application. 6. What is Certificate revocation list?

Message: SSL0226I: Handshake Failed, I/O error during handshake. Reason: The communication between the client and the server failed. This is a common error when the client closes the connection before the handshake has completed. Solution: Retry the connection from the client.

1. Difference between in-memory replication and database memory replication using database? which method is good? • how do you create a policy for High Availability group? • Why you need to create a policy for HA group?

SET 2

If dmgr (deployment manager) is down, can you access app server? What is the effect of node agent? Standalone server and distributed server configuration – difference? • How to add the node? • How do you set java path in a linux server? ● Explain the java web application components. • What is classloader? • Why use the boostrap port number? • What are the appserver components? • **LDAP** port number? ● What is CellDiscoveryAddress ● Can you explain more about web server? ● What is Web server plug-in? ● What is a plugin file? how do you generate it? ● What is datasource? ● What What are JDBC providers and data sources? • What are JCA resources? • is JNDI? ● What is JDBC? What is diff b/w type4 and type2? ● In type3 client software which machine you have install? ● When do you get stale connection exception.? • Stale connection normally comes if the DB service was down or restarted and the connections in websphere side are not timed out. • What are resource What does .rar file contain? ● How do you install and configure resource adapters? ● adapters? ● What is the difference between JMS and MQ SERIES? • What action would you take it if you get "page not found error "? ● Explain the flow of processing a JSP page request. • What are the common errors that can occur while accessing webpage? • Explain the WebSphere runtime environment objects. • What are the services provided by application server? • What is the purpose of a proxy server? • Explain the application flow. • Can you explain about Application packaging? • How do you develop and deploy application, can you explain? • Explain about various roles in WAS administration. • Can multiple users enter the dmgr? • What are the lists of web servers that web sphere can is JMX? ● What is the special feature in IBM http server compared to other servers? • What is FFDC? manage? • What are the three property files that control the behavior of FFDC? • What is Application Server How to find product information ● How to you determine the Java version. ● How would you ensure that a Websphere Application server or Websphere Application Server Node is started when the OS being windows 2000/2003 is • re-booted? • What Websphere tool can be used to run scripts and What is the difference between war file and ear file? • where is it located? • What is ANT? • What is JNDI Context? What is indi? • What is a Class path? ● What is Java Garbage Collection? ● What language is the default scripting language for Websphere and which language is the preferred scripting What Development Environment(s) are available to develop applications for WebSphere? What are the different application servers and Web Servers supporting J2EE technology's? What is EJB? ● What is the difference between authentication and authorization? • What is Deployment What is Exceptions in java? • What is the difference between wsadmin tool and ant.? Descriptor? • What is Java Heap? • What are server.xml and serverindex.xml? • How do you create thread dump? heap dump? ● How to create thread dump and heap dumps in Linux and Windows.? ● What is

JAXP? Java APIs for XML Processing • What is a Class Loader? • What are all configuration files got changed when we add a node into cell? • Tell me IHS executable files, means bin directory files? • Why given the httpd.conf file to installation of plug-in? ● Several types of log files in the appserver? • WebSphere packages? • What is the profile? • What is the trace? • What is heap memory? • Out of memory exception is there, how to handle that exception? • Out of memory exception is there, how to handle that exception? • What about plug-in? • What is the global security? • How to configure the global security? • What is SSL? ● What is PMI? How to configure PMI? ● What is the UNIX command of all display server processes? • Some application not accessing, so what is the problem? This information which log file contains? • How websphere discovers a change in JSP and compiles it?

SET 3 1. Tell me something about yourself.? 2. Why do you want to leave this project/work 3. What's Your Biggest Weakness? 4. What is your biggest power? 5. What are your strengths? 6. Tell me about your ability to work under pressure. 7. Where do you see yourself in five years' time? 8. What is the biggest mistake you have committed? 9. What did you hate most on your previous job or organization? 10. What are your short-term goals? 11. What do you think it takes to be successful in this career? 12. Do you consider yourself organized? And do you manage your time well?

SET 4

WAS Easy Questions 1 1. What version of Websphere software is required to install WebSphere clustering? How would you configure Websphere for clustering: list basic steps? 2. How would you ensure that a Websphere Application server or Websphere Application Server Node is started when the OS being windows 2000/2003 is re-booted? 3. How about the same in Linux/AIX? 4. What Websphere tool can be used to run scripts and where is it located? 5. What is the difference between war file and ear file? 6. What is a plugin file? how do you generate it? 7. What is ANT? 8. What is JNDI Context? 9. What is a Class path? 10. What is Java Garbage Collection?

What is ANT?

SET 5 WAS LPSEG

Learner

1. What is an application server? 2. Can you explain more about web server? 3. What is the difference between Web Server and Application Server? 4. How to you determine the Java version. 5. WebSphere packages? 6. Explain node, node agent and node groups. 7. How to add the node? 8. What is scope in WebSphere? 9. How do you take websphere backups? How do you restore it? 10. What EARExpander command used? 11. Explain cell in WebSphere . 12. What is virtual host in webserver? and what are the two types? 13. What are Managed nodes? 14. What are unmanaged nodes? 15. What is ear file and

what is war file? 16. What is the difference between ear file and war file.? 17. How do you deploy application, can you explain? 18. What is a Cluster? 19. LDAP port number? 20. What is CellDiscoveryAddress 21. What is the UNIX command of all display server processes? 22. What is the difference between authentication and authorization? 23. What is JDBC? 24. What are the ports for the administration console and the administration console secure port,respectively? 25. How do you start the administrator console? 26. How do you decode password which was present in the admin console? http://www.sysman.nl/wasdecoder/

What is the difference between IP based hosting and name based virtual hosting? • Practitioner • What is Web server plug-in?how do you generate it? • Diff b/w 5.0 and 6.0? • What is the profile? How you get nodeagent.....what you have to install to get nodeagent? • Explain about WebSphere What is configuration repository? • What is core group? • administrative console. • lists of web servers that web sphere can manage? • What is the admin console default session timeout Can you explain about Application packaging? • limit? • What language is the default scripting language for Websphere and which language is the preferred scripting language? • Explain different types of containers WAS 6.0? • What version of Websphere software is required to install WebSphere clustering? How would you configure Websphere for clustering: list basic steps? • What are resource What is Exceptions in java? • What is Java Garbage Collection? • What are JDBC adapters? • providers and data sources? • What is datasource? • What is classloader?

Why we need to define virtual host in websphere? • What is the difference between node Specialist • group and core group? • What is core group bridge service? • Difference between in-memory replication and database memory replication using database? which method is good? • What is High Availability Manager? • What are all configuration files got changed when we add a node into cell? • how do you automate the installation of WAS Server? • What does .rar file contain? • What action would you take it if you get "page not found error "? • Weight in plugin file? : The RefreshInterval needs to be set to 1800 • What is JMX? • What is Java Heap? ● If dmgr (deployment manager) is down, can you access app server? What is the effect of node agent? • What is FFDC? ● What is diff b/w type4 and type2?

Explain the application flow. • What steps you will take to tune the application server? • Expert • What is the difference between JMS and MQ SERIES? • What is the purpose of a proxy server? • Out of memory exception is there, how to handle that exception? • What is reverse proxy? • how do you create a policy for High Availability group? • Why you need to create a policy for HA group? • When do you get stale connection exception.? • How to create thread dump and heap dumps in Linux and Windows.? • What is Certificate revocation list? • What are the three property files that control the behavior of FFDC?

Guru Troubleshooting methods? Automations How do you do the performance tuning (OS, WebServer, Plugin, Application Server (JVM), Connection pools, (thread, db), Application) Migration from 6.x to 7.x? What

What is the special feature in IBM http server compared to other servers? What are the three major areas of admin console GUI? Can multiple users enter the dmgr? If dmgr (deployment manager) is down, can you access app server? What is the effect of node agent? Standalone server and distributed server configuration – difference? How many types of profiles are in nd product? Explain the java web application components. Why use the boostrap port number? What are the appserver components? What are JCA resources? In type3 client software which machine you have install?

How do you install and configure resource adapters? Explain the flow of processing a JSP page request. What are the common errors that can occur while accessing webpage? Explain the WebSphere runtime environment objects. What are the services provided by application server? Explain about various roles in WAS administration.

What is Application Server Toolkit How to find product information

How would you ensure that a Websphere Application server or Websphere Application Server Node is started when the OS being windows 2000/2003 is re-booted? What Websphere tool can be used to run scripts and where is it located?

What is ANT? What is JNDI Context? What is jndi? What is a Class path?

What language is the default scripting language for Websphere and which language is the preferred scripting language? What Development Environment(s) are available to develop applications for WebSphere? What are the different application servers and Web Servers supporting J2EE technology's?

What is the difference between wsadmin tool and ant.? What are server.xml and serverindex.xml?

How do you create thread dump? heap dump?

What is JAXP? Java APIs for XML Processing What is a Class Loader?

Tell me IHS executable files, means bin directory files? Why given the httpd.conf file to installation of plugin? Several types of log files in the appserver?

What is the trace? What is heap memory? What is the global security? How to configure the global security? What is SSL? What is PMI? How to configure PMI?

Some problem is there in web server, so this information which log file contain? Some application not accessing, so what is the problem? This information which log file contains? How websphere discovers a

change in JSP and compiles it?

Message: SSL0226I: Handshake Failed, I/O error during handshake. Reason: The communication between the client and the server failed. This is a common error when the client closes the connection before the handshake has completed. Solution: Retry the connection from the client.

SET 6 WebSphere EAsy Questions

websphereinterview-simplequestions

1. How would use ensure WebSphere server logs are created on a different drive 2. What language is the default scripting language for Websphere and which language installation root? 3. is the preferred scripting language? 3. What Development Environment(s) are available to develop applications 4. for WebSphere? 4. What is the WebSphere Application Server Console and what is it's role? What is the default URL and port for accessing it? 5. What are the different application servers and Web Servers supporting J2EE technology's ? 6. What is EJB ? 7. What is the difference between Web Server and Application Server? 8. How do you set java path in a linux server? 9. How do you decode password which was present in the admin console? 10. How do you take websphere backups? How do you restore it? 11. What is the difference between authentication and authorization? 12. What is Deployment Descriptor? 13. What is the deployment descriptor file name for jar, war, ear, rar, webservice, & application clients? 14. What is Exceptions in java? 15. How do you generate thread dump in for WAS? 16. How do you generate thread dump for stand-alone (non-WAS) Java application.

What Development Environment(s) are available to develop applications for WebSphere? IBM provides several industrial strength development environments based on Eclipse development framework the current IDE is Rational Developer for Websphere. Applications can also be developed with the Websphere Application Server Toolkit and third party tools like Jbuilder, and Eclipse/ANT etc.

What are the different application servers and Web Servers supporting J2EE technology's?

JBoss Is an Application Server that supports J2EE ... IBM Websphere and BEA WebLogic servers are a combination of Application Server, Web Server & container Jakarta Tomcat is a Servlet container and a Web server. Apache Sever is a Web server

websphereinterview-mediumlevelquestions What is the difference between wsadmin tool and ant.? What is the difference between wsadmin tool and ant.? What is JDBC ? What is Java Heap? What are server.xml and serverindex.xml?

SET 7 WAS MEDIUN Q

websphereinterview-difficult questions

difficult questions In WebSphere how would you provide the ability for an Web application (JSP) to be able to provide authentication for both a local user and LDAP.

Using the Administration Console:

Federate a local repository and an LDAP repository together.

Restart server.

Ensure Web application has a web.xml file to be able assign LDAP groups to roles.

How do you create thread dump? heap dump?

Tough Questions

Explain the application flow. 2. What steps you will take to tune the application Expert 1. server? 3. What is the difference between JMS and MQ SERIES? 4. What is the purpose of a What is reverse proxy? where it is used? 6. proxy server? 5. Out of memory exception is there, how to handle that exception? 7. how do you create a policy for High Availability group? 8. Why you need to create a policy for HA group? 9. When do you get stale connection exception.? How to create thread dump and heap dumps in Linux and Windows.? 11. What is Certificate 10. revocation list? 12. What is FFDC? 13. What are the three property files that control the behavior What is CPU regression? how to avoid it? 15. of FFDC? 14. What is a Class path?

Explain the application flow. What is the difference between JMS and MQ SERIES? How do you create a policy for High Availability group? Why you need to create a policy for HA group? How to create thread dump and heap dumps in Linux and Windows.?

- 1) if i have already Application installed on Was server... and if i want to connect the WAS servers to deployment manager then is it possible to do and if yes then how we can do that
 - 1. If you are using a standalone(AppSrv) profile having a standalone JVM, then you can perform the addNode(Federation) operation by specifying the -includeApps as an extra arguement along with the normal addNode command.

In this case, the existing standalone(AppSrv) profile will be federated to DMGR profile along with the installed applications and henceforth the standalone profile will be managed by DMGR.

You can refer IBM links for addNode command usage.

Questinos alone 1. What is a webserver? Give examples. 2. What is an application server? Give examples 3. What is a browser? 4. What is HTTP standard? What is the current version of HTTP protocol used.? 5. What is a cluster? 6. What is a Node.? 7. What is a Node Agent? 8. What is a Cell.? 9. What is a Core group? 10. What is a Shared Library 11. What is a Virtual Hosts? 12. What is a Host aliases? 13. What is a HTTP Session? 14. What is JDBC? 15. What is Connection Pool? 16. What is Class Loading? 17. What is JNDI NameSpace? 18. What is a Plugin? 19. What is JVM? 20. What is WebContainer? 21. What is EJB Container? 22. What is Applet Container? 23. What is portlet Container? 24. What is WAR 25. What is EAR 26. What is JAR 27. What is Remote Plugin? 28. What is the difference between server.xml and serverindex.xml? 29. What are all the configuration files got changed when we add a node into a cell? 30. What is 100% CPU utilization known as? and how can we avoid it? 31. How to know that there is a memory leak? 32. What are the extra features of WAS6.0 compared to was 5.x? 33. What is Cluster Replication? And how can we do cluster replication in running server? 34. What is FFDC? 35. What are server.xml and serverindex.xml? 36. How to know that there is a memory leak? 37. What is the extra feature of WAS 6.x compared to WAS 5.x 38. What r the differences btn WAS ND V6.0 & WAS ND V6.1? 39. What is an application server? 40. Explain node, node agent and node groups. 41. Explain cell in WebSphere . 42. Explain about WebSphere administrative console. 43. How do you start the administrator console? 44. How do you take websphere backups? How do you restore it? 45. What is the admin console default session timeout limit? 46. What are the three major areas of admin console GUI? 47. What is scope in WebSphere? 48. What is the relation you know with cell – profile –node agent – apps servers? 49. What is virtual host? 50. If dmgr (deployment manager) is down, can you access app server? What is the effect of node agent? 51. Explain different types of containers WAS 6.0 ? 52. Standalone server and distributed server configuration – difference ? 53. What is configuration repository? 54. What are unmanaged nodes? 55. What are Managed nodes? 56. What version of Websphere software is required to install WebSphere clustering? How would you configure Websphere for clustering: list basic steps? 57. What is node? 58. How to add the node? 59. How do you set java path in a linux server? 60. Explain the java web application components. 61. What is classloader?

1. Why use the bootstrap port number? 2. What are the appserver components? 3. LDAP port number? 4. What is CellDiscoveryAddress 5. Can you explain more about web server? 6. What is Web server plug-in? 7. What is a plugin file? how do you generate it? 8. What is datasource? 9. What is JNDI? 10. What are JDBC providers and data sources? 11. What are JCA resources? 12. What is JDBC? 13. What is diff b/w type4 and type2? 14. In type3 client software which machine you have install? 15. When do you get stale connection exception.? 16. Stale connection normally comes if the DB service was down or restarted and the connections in websphere side are not timed out. 17. What are resource adapters? 18. What does .rar file contain? 19. How do you install and configure resource adapters? 20. What is the difference between JMS and MQ SERIES? 21. What action would you take it if you get "page not found error

"? 22. Explain the flow of processing a JSP page request. 23. What are the common errors that can occur while accessing webpage? 24. Explain the WebSphere runtime environment objects. 25. What are the services provided by application server? 26. What is the purpose of a proxy server? 27. Explain the application flow. 28. Can you explain about Application packaging? 29. How do you develop and deploy application, can you explain? 30. Explain about various roles in WAS administration. 31. What is JMX? 32. Can multiple users enter the dmgr? 33. What are the lists of web servers that web sphere can manage? 34. What is the special feature in IBM http server compared to other servers? 35. What is FFDC? 36. What are the three property files that control the behavior of FFDC? 37. What is Application Server Toolkit 38. How to find product information 39. How to you determine the Java version. 40. How would you ensure that a Websphere Application server or Websphere Application Server Node is started when the OS being windows 2000/2003 is 41. re-booted? 42. What Websphere tool can be used to run scripts and where is it located? 43. What is the difference between war file and ear file? 44. What is ANT? 45. What is JNDI Context? What is indi? 46. What is a Class path? 47. What is Java Garbage Collection? 48. What language is the default scripting language for Websphere and which language is the preferred scripting language? 49. What Development Environment(s) are available to develop applications for WebSphere? 50. What are the different application servers and Web Servers supporting J2EE technology's ? 51. What is EJB ? 52. What is the difference between authentication and authorization? 53. What is Deployment Descriptor? 54. What is Exceptions in java? 55. What is the difference between wsadmin tool and ant.? 56. What is Java Heap? 57. What are server.xml and serverindex.xml? 58. How do you create thread dump? heap dump? 59. How to create thread dump and heap dumps in Linux and Windows.? 60. What is JAXP? Java APIs for XML Processing 61. What is a Class Loader? 62. What are all configuration files got changed when we add a node into cell? 63. Tell me IHS executable files, means bin directory files? 64. Why given the httpd.conf file to installation of plug-in? 65. Several types of log files in the appserver? 66. WebSphere packages? 67. What is the profile? 68. What is the trace? 69. What is heap memory? 70. Out of memory exception is there, how to handle that exception? 71. Out of memory exception is there, how to handle that exception? 72. What about plug-in? 73. What is the global security? 74. How to configure the global security? 75. What is SSL? 76. What is PMI? How to configure PMI? 77. What is the UNIX command of all display server processes? 78. How you get nodeagent.....what you have to install to get nodeagent? 79. What is the application server? 80. How many types of profiles are in nd product? 81. Diff b/w 5.0 and 6.0? 82. Some problem is there in web server, so this information which log file contain? 83. Some application not accessing, so what is the problem? This information which log file contains? 84. How websphere discovers a change in JSP and compiles it

- 1. What is master repository?
- 2. Tell me IHS executable files, means bin directory files?
- 3. Why given the httpd.conf file to installation of plug-in?
- 4. How to configure remote system httpd.conf file?
- 5. Several types of log files in the appserver?

- 6. WebSphere packages?
- 7. What is the profile?
- 8. What is the trace?
- 9. What is heap memory?
- 10. Out of memory exception is there, how to handle that exception?
- 11. What about IHS?
- 12. What about plug-in?
- 13. What is the global security?
- 14. How to configure the global security?
- 15. What is SSL?
- 16. What is PMI? How to configure PMI?
- 17. What is the UNIX command of all display server processes?
- 18. What is node?
- 19. How to start the server?
- 20. How you get nodeagent.....what you have to install to get nodeagent?
- 21. How to add the node?
- 22. What is the application server?
- 23. What is the node?
- 24. What is the node?
- 25. How many types of profiles are in nd product?
- 26. What is diffrence b/w dmgr and other profiles?
- 27. Diff b/w 5.0 and 6.0?
- 28. What is the difference between web server and application server?
- 29. Diff b/w weblogic and websphere?
- 30. Some problem is there in web server, so this information which log file contain?
- 31. What is jdbc?
- 32. What is datasource?
- 33. What is diff b/w type4 and type2?
- 34. Some application not accessing, so what is the problem? This information which log file contains?
- 35. In type3 client software which machine you have install?
- 36. two databases there (oracle and db2),so I want 3 datasources for oracle and 2 data sources for db2 so create 3 datasource names for oracle and 2datasourcename for db2 is possible or not?
- 37. What is jndi?

- 38. Why use the bootstrap port number?
- 39. What are the appserver components?
- 40. LDAP port number?
- 41. How to start the server?
- 42. Packages of websphere?
- 43. What is webcontainer?
- 44. How to find out free diskspace from command prompt?
- 45. How to find out certain server configuration details like port no, server name, node name, pid?
- 46. Configure the plug-in through admin console is possible or not?
- 47. Where to set the path?
- 48. How many types of installations?
- 49. Application installed but not working. What are troubleshooting steps?
- 50. Applications installed fine, also generated plugin, but application still not working, in this case which log to see?
- 51. Default admin port?
- 52. Default bootstrap port?
- 53. How to hit application without hitting the web server?
- 54. In how many ways you can perform administration?
- 55. No of ways of doing deployments?
- 56. What is CellDiscoveryAddress
- 57. What is NodeDiscoveryAddress
- 58. How websphere discovers a change in JSP and compiles it?
- 59. What is classloader?
- 60. how do you specify a jar file to be used by the application, consider that you have many jar files in your system?
- 61. What is a managed node?
- 62. What is a managed webserver?

Part 2 of the questionnaire is in the bottom of the pages..

1.its used for administration 1.admin console is there 1.plain node purpose of remaining profiles 2.initially one app server there 2.empty node 2.it supports the distributed 3.work independently environment. 4. Put applications 3.it is not included app server 4.admin console is there 5.work independently 6.do not put applications

1. What is the difference b/n web and app servers 2. What are the new features in WAS ND 6.1 3. How many types of profiles are available in WAS ND6.1 4. What is a Cell 5. What is NodeAgent 6. What is DMGRs default admin port 7. What are the pre-perquisites for installing WAS 8. While installing WAS, if the installation fails and no logs are found. Which location should you check for the details 9. While installing WAS, can we create any CELL in WAS ND 6.1 10. After installing WAS, you found INSTALLCONFPATIALSUCCESS in the install log, what does it mean? 11. While installing as non-root, can WAS detect other existing WAS installations 12. Which file hold the existing WAS installation details 13. After installation you found that some ports are conflicting, how do you change/update the ports 14. Where do you find the installation logs 15. if the DMGR is not running, can you start the other JVMs? 16. While installing using silent installation method, if you do not wish to install sample applications. Which parameter should you change in the response file? 17. You have been asked to install WAS and create a CELL profile, how many response files do you need? 18. How do you get a new nodeagent 19. After you install the WAS, how do you verify the installation 20. How do you delete a profile?

Part-4

what is a backup cluster

websphereinterview-toughquestions How do you create thread dump? heap dump? What is the difference between wsadmin tool and ant.? What language is the default scripting language for Websphere and which language is the preferred scripting language? What is the WebSphere Application Server Console and what is it's role? What is the default URL and port for accessing it? What is the difference between Web Server and Application Server? How do you take websphere backups? How do you restore it? What is the difference between authentication and authorization?

WebSphere_QA_12

Learner

What is an application server? Can you explain more about web server? What is the difference between Web Server and Application Server? How do you set java path in a linux server? JAVA_HOME=/usr/java/jdk & export JAVA_HOME How to you determine the Java version. WebSphere packages? Explain node, node agent and node groups. How to add the node? What is scope in WebSphere? How do you take websphere backups? How do you restore it? What EARExpander command used? Explain cell in WebSphere. What is virtual host in webserver? and what are the two types? What are Managed nodes? What are unmanaged nodes? What is ear file and what is war file? What is the difference between ear file and war file.? How do you deploy application, can you explain? What is a Cluster? LDAP port number? What is CellDiscoveryAddress What is the UNIX command of all display server processes? What is the difference between authentication and authorization? What is JDBC? What is EJB? Enterprise JavaBeans (EJB) technology is the server-side component architecture for the Java 2 Platform, Enterprise Edition (J2EE) platform. EJB technology enables rapid and simplified development of distributed, transactional, secure and portable applications based on Java technology. What are the ports for the administration console and the administration console secure port, respectively? How do you start the administrator console?

How do you decode password which was present in the admin console? http://www.sysman.nl/wasdecoder/

Practitioner What is the difference between IP based hosting and name based virtual hosting? What is Web server plug-in?how do you generate it? Diff b/w 5.0 and 6.0? What is the profile? How you get nodeagent ��what you have to install to get nodeagent? Explain about WebSphere administrative console. What is configuration repository? What is core group? What are the lists of web servers that web sphere can manage? What is the admin console default session timeout limit? Can you explain about Application packaging? What is Deployment Descriptor? In the Java Platform, Enterprise Edition, a deployment descriptor contains information about a web application or enterprise application and also includes the information about how the application should be deployed. What are the deployment descriptors for ear file and war file.? What language is the default scripting language for Websphere and which language is the preferred scripting language? Explain different types of containers WAS 6.0? What version of Websphere software is required to install WebSphere clustering? How would you configure Websphere for clustering: list basic steps? What are resource adapters? What is Exceptions in java? What is Java Garbage Collection? What are JDBC providers and data sources? What is datasource? What is classloader? What is JNDI Context? Like JDBC (Java Database Connectivity), JNDI is not a service, but a set of interfaces that allows applications

to access many different directory service providers using a standardized API. The deployed enterprise beans in EJB have an environment-naming context that can be accessed using the JNDI API.

Specialist Why we need to define virtual host in websphere? What is the difference between node group and core group? What is core group bridge service? Difference between in-memory replication and database memory replication using database? which method is good? Waht is High Availability Manager? What are all configuration files got changed when we add a node into cell? how do you automate the installation of WAS Server? What does .rar file contain? What action would you take it if you get page not found error? Weight in plugin file? : The RefreshInterval needs to be set to 1800 What is JMX? What is Java Heap? If dmgr (deployment manager) is down, can you access app server? What is the effect of node agent? What is FFDC? What is diff b/w type4 and type2? What is Java Garbage Collection? The Java language is the most widely used programming language to rely on garbage collection. The name "garbage collection" implies that objects that are no longer needed by the program are "garbage" and can be thrown away or destroyed.

Expert Explain the application flow. What steps you will take to tune the application server? What is the difference between JMS and MQ SERIES? What is the purpose of a proxy server? Out of memory exception is there, how to handle that exception? What is reverse proxy? how do you create a policy for High Availability group? Why you need to create a policy for HA group? When do you get stale connection exception.? How to create thread dump and heap dumps in Linux and Windows.? What is Certificate revocation list? What are the three property files that control the behavior of FFDC? What is CPU regression? how to avoid it? 100% CPU utilization is known as CPU regression and this can be avoided by making log level as info=fatal in WAS admin console.Please try and let me know. What is a Class path? The Classpath is an argument that is path through the command line. Classpath can also be though an environment variable. Classpath specify the location of the user defined class and the packages in a Java program for the Java Virtual Machine. Setting the class path is mandatory to run a java application. Class path in java can set by using different techniques. Here are the some techniques that can be used to set the class path.

guru Troubleshooting methods? Automations How do you do the performance tuning (OS, WebServer, Plugin, Application Server (JVM), Connection pools, (thread, db), Application) Migration from 6.x to 7.x? What are the functions of WASPreUpgrade command & WASPostUpgrade command? How do you generate thread dump for stand-alone (non-WAS) Java application. Thread dump for standalone java application is bit complex. We need to use windows dr.watson utility to perform a dump. The java process will die during the dump creation. Another option to monitor the application/java threads in the standalone java application is using J- Console. This feature is available only in JDK1.5, we need custom code changes to monitor jdk1.4

What is the special feature in IBM http server compared to other servers? What are the three major areas of admin console GUI?

Can multiple users enter the dmgr?

If dmgr (deployment manager) is down, can you access app server? What is the effect of node agent?

Standalone server and distributed server configuration � difference ?

How many types of profiles are in nd product?

Explain the java web application components.

Why use the boostrap port number? What are the appserver components?

What are JCA resources?

In type3 client software which machine you have install?

Stale connection normally comes if the DB service was down or restarted and the connections in websphere side are not timed out.

How do you install and configure resource adapters?

Explain the flow of processing a JSP page request. What are the common errors that can occur while accessing webpage? Explain the WebSphere runtime environment objects. What are the services provided by application server?

Explain about various roles in WAS administration.

What is Application Server Toolkit How to find product information

How would you ensure that a Websphere Application server or Websphere Application Server Node is started when the OS being windows 2000/2003 is re-booted? What Websphere tool can be used to run scripts and where is it located?

What is ANT? What is JNDI Context? What is jndi? What is a Class path?

What language is the default scripting language for Websphere and which language is the preferred scripting language? What Development Environment(s) are available to develop applications for WebSphere? What are the different application servers and Web Servers supporting J2EE technology's?

What is the difference between wsadmin tool and ant.?

What are server.xml and serverindex.xml?

How do you create thread dump? heap dump?

What is JAXP? Java APIs for XML Processing What is a Class Loader?

Tell me IHS executable files, means bin directory files? Why given the httpd.conf file to installation of plugin? Several types of log files in the appserver?

What is the trace? What is heap memory?

What is the global security? How to configure the global security? What is SSL? What is PMI? How to configure PMI?

Some problem is there in web server, so this information which log file contain? Some application not accessing, so what is the problem? This information which log file contains? How websphere discovers a change in JSP and compiles it?

Which of the following situations would require manual editing of the plugin-cfg.xml? Installing a new application. Message: SSL0226I: Handshake Failed, I/O error during handshake. Reason: The communication between the client and the server failed. This is a common error when the client closes the connection before the handshake has completed. Solution: Retry the connection from the client.

WebSphere_QA_13

Questinos alone 1. What is a webserver? Give examples. 2. What is an application server? Give examples 3. What is a browser? 4. What is HTTP standard? What is the current version of HTTP protocol used.? 5. What is a cluster? 6. What is a Node.? 7. What is a Node Agent? 8. What is a Cell.? 9. What is a Core group? 10. What is a Shared Library 11. What is a Virtual Hosts? 12. What is a Host aliases? 13. What is a HTTP Session? 14. What is JDBC? 15. What is Connection Pool? 16. What is Class Loading? 17. What is JNDI NameSpace? 18. What is a Plugin? 19. What is JVM? 20. What is WebContainer? 21. What is EJB Container? 22. What is Applet Container? 23. What is portlet Container? 24. What is WAR 25. What is EAR 26. What is JAR 27. What is Remote Plugin? 28. What is the difference between server.xml and serverindex.xml? 29. What are all the configuration files got changed when we add a node into a cell? 30. What is 100% CPU utilization known as? and how can we avoid it? 31. How to know that there is a memory leak? 32. What are the extra features of WAS6.0 compared to was 5.x? 33. What is Cluster Replication? And how can we do cluster replication in running server? 34. What is FFDC? 35. What are server.xml and serverindex.xml? 36. How to know that there is a memory leak? 37. What is the extra feature of WAS 6.x compared to WAS 5.x 38. What r the differences btn WAS ND V6.0 & WAS ND V6.1? 39. What is an application server? 40. Explain node, node agent and node groups. 41. Explain cell in WebSphere . 42. Explain about WebSphere administrative console. 43. How do you start the administrator console? 44. How do you take websphere backups? How do you restore it? 45. What is the admin console default session timeout limit? 46. What are the three major areas of admin console GUI? 47. What is scope in WebSphere? 48. What is the relation you know with cell – profile –node agent – apps servers? 49. What is virtual host? 50. If dmgr (deployment manager) is down, can you access app server? What is the effect of node agent? 51. Explain different types of containers WAS 6.0 ? 52. Standalone server and distributed server configuration – difference ? 53. What is configuration repository? 54. What are unmanaged nodes? 55. What are Managed nodes? 56. What version of Websphere software is required to install WebSphere clustering? How would you configure Websphere for clustering: list basic steps? 57. What is node? 58. How to add the node? 59. How do you set java path in a linux server? 60. Explain the java web application components. 61. What is classloader? 62. 1. Why use the boostrap port number? 2. What are the appserver components? 3. LDAP port number? 4. What is CellDiscoveryAddress 5. Can you explain more about web server? 6. What is Web server plug-in? 7. What is a plugin file? how do you generate it? 8. What is datasource? 9. What is JNDI? 10. What are JDBC providers and data sources? 11. What are JCA resources? 12. What is JDBC? 13. What is diff b/w type4 and type2? 14. In type3 client software which machine you have install? 15. When do you get stale connection exception.? 16. Stale connection normally comes if the DB service was down or restarted and the connections in websphere side are not timed out. 17. What are resource adapters? 18. What does .rar file contain? 19. How do you install and configure resource adapters? 20. What is the difference between JMS and MQ SERIES? 21. What action would you take it if you get "page not found error"? 22. Explain the flow of processing a JSP page request. 23. What are the

common errors that can occur while accessing webpage? 24. Explain the WebSphere runtime environment objects. 25. What are the services provided by application server? 26. What is the purpose of a proxy server? 27. Explain the application flow. 28. Can you explain about Application packaging? 29. How do you develop and deploy application, can you explain? 30. Explain about various roles in WAS administration. 31. What is JMX? 32. Can multiple users enter the dmgr? 33. What are the lists of web servers that web sphere can manage? 34. What is the special feature in IBM http server compared to other servers? 35. What is FFDC? 36. What are the three property files that control the behavior of FFDC? 37. What is Application Server Toolkit 38. How to find product information 39. How to you determine the Java version. 40. How would you ensure that a Websphere Application server or Websphere Application Server Node is started when the OS being windows 2000/2003 is 41. re-booted? 42. What Websphere tool can be used to run scripts and where is it located? 43. What is the difference between war file and ear file? 44. What is ANT? 45. What is JNDI Context? What is jndi? 46. What is a Class path? 47. What is Java Garbage Collection? 48. What language is the default scripting language for Websphere and which language is the preferred scripting language? 49. What Development Environment(s) are available to develop applications for WebSphere? 50. What are the different application servers and Web Servers supporting J2EE technology's? 51. What is EJB ? 52. What is the difference between authentication and authorization? 53. What is Deployment Descriptor? 54. What is Exceptions in java? 55. What is the difference between wsadmin tool and ant.? 56. What is Java Heap? 57. What are server.xml and serverindex.xml? 58. How do you create thread dump? heap dump? 59. How to create thread dump and heap dumps in Linux and Windows.? 60. What is JAXP? Java APIs for XML Processing 61. What is a Class Loader? 62. What are all configuration files got changed when we add a node into cell? 63. Tell me IHS executable files, means bin directory files? 64. Why given the httpd.conf file to installation of plug-in? 65. Several types of log files in the appserver? 66. WebSphere packages? 67. What is the profile? 68. What is the trace? 69. What is heap memory? 70. Out of memory exception is there, how to handle that exception? 71. Out of memory exception is there, how to handle that exception? 72. What about plug-in? 73. What is the global security? 74. How to configure the global security? 75. What is SSL? 76. What is PMI? How to configure PMI? 77. What is the UNIX command of all display server processes? 78. How you get nodeagent.....what you have to install to get nodeagent? 79. What is the application server? 80. How many types of profiles are in nd product? 81. Diff b/w 5.0 and 6.0? 82. Some problem is there in web server, so this information which log file contain? 83. Some application not accessing, so what is the problem? This information which log file contains? 84. How websphere discovers a change in JSP and compiles it? 63.

WebSphere_QA_03

WebSphere_QA_06

Garbage_Collection_01 What is java garbage collection?
Garbage_Collection_02 Garbage Collection
HeapSizeconfiguration - Operating systems indeed use swap space to create the so called virtual memory
HeapDumps_01 What is a heap dump?
Heap_dumps_02 Heap Dumps generation
ThreadDumps_1 What is the meaning of " java thread dump"?

ClassLoaders
Introduction to Class Loaders
■ Cache
How to clear the websphere Cache?
best_practices_for_managing
List 10 best practices for managing WebSphere Application Server
sysutil
Editing Sysctl.conf and Ulimit Configurations
TuningParameters
IBMIHS 2.0
Semaphores
What is a semaphore?

HPEL_Logging	
MORE	
☐ Troubleshooting	
WebSphere_Topics_33	

Garbage_Collection_01

What is java garbage collection?

- 1. Java garbage collection is the process by which Java programs perform automatic memory management.
- 2. Java programs compile to bytecode that can be run on a Java Virtual Machine, or JVM for short. When Java programs run on the JVM, objects are created on the heap, (which is a portion of memory dedicated to the program).
- 3. Eventually, some objects will no longer be needed.
- 4. The garbage collector finds these unused objects and deletes them to free up memory.

Is java garbage collection a manual or automatic process? Where it is implemented?

- 1. Java garbage collection is an automatic process
- 2. The programmer does not need to explicitly mark objects to be deleted
- 3. The garbage collection implementation lives in the JVM.

What is the process used in identifying objects for garbage collection?

- 1. In the first step,unreferenced objects are identified and marked as ready for garbage collection.
- 2. In the second step, marked objects are deleted.
- 3. Optionally, memory can be compacted after the garbage collector deletes objects, so remaining objects are in a contiguous block at the start of the heap. The compaction process makes it easier to allocate memory to new objects sequentially after the block of memory allocated to existing objects

What are the Benefits of Java Garbage Collection?

- 1. The biggest benefit of Java garbage collection is that it automatically handles the deletion of unused objects or objects that areout of reachto free up vital memory resources
- 2. Programmers working in languages without garbage collection (like C and C++) must implement manual memory management in their cod

Can you predict when a garbage collection will run in java?

• there is no way to predict when garbage collection will occur at run time • It is possible to include a hint in the code to run the garbage collector with the System.gc() or Runtime.gc() methods, but they provide no guarantee that the garbage collector will actually run.

What are the different methods of garbage collection?

- 1. Serial
- 2. Parallel:
- 3. Parallel Compacting GC
- 4. CMS (Concurrent Mark Sweep):
- 5. G1 (Garbage First)
- 6.
- 7. -XX:+UseSerialGC

What are the two types of GC collection?

- 1. Full GC
- 2. Minor GC

When is GC tuning needed?

1. if the GC execution time is 1-3 seconds, or more than 10 seconds, GC tuning is necessary.

What are the three parts of generation of garbage collection?

- 1. Young(New) generation,
- 2. Tenured(Old) Generation and
- 3. Perm Areaof the heap

To explicitly enable the particular GC we can use given (-XX:+UseSerialGC, -XX:+UseSerialGC, -XX:+UseParallelGC,-XX:+UseG1GC) VM options

Garbage_Collection_02

Garbage Collection

C++ In C++ malloc() and free() functions allocates a block of size bytes of memory, for the program execution. These two functions have to be called manually. This is a dynamic memory. This dynamic memory should be freed using free() function once it is no longer needed.

Java In Java this dynamic memory is allocated through new() operator, which allocates space for an object(program) to run.

In Java deallocation happens automatically. The technique that accomplishes this is called garbage collection. This memory will be available for as long as the program cares for it. As soon as the user no longer have any references of any objects(memory), it will become available for reuse by the rest of the system.

In Java the user doesn't have to call free() or delete().

This is known as Garbage Collection.

We have two type of variables available 1) Value Type. (Stack) 2) Reference Type. (Heap)

This two variables are allocated in different space in memory and algorithm used for allocating this two variables are different.

One is called stack(Value) and another is Heap(Refernce)

Heap

Heap is an area of memory reserved for use by the CLR for a running programming. Reference types are allocated on the heap.

A heap is a space for storing arbitrary(since it has lots of references) quantitys of various objects. It needs to be able to change size dynamically to suit its contents as they are added and removed on demand. It requires tight management of the resources to be effective and efficient despite often having a haphazard disorganized appearance ...

Stack An area of program memory used to store local program variables, method parameters, and return values. Value types are allocated on the stack

If you have Value type variables more in your code use high Stack value. If you have more number of Reference type Variables in your code increase the Heap size.

The Garbage Collection is done by JVM

Advantages of Garbage Collection In addition to freeing unreferenced objects, a garbage collector may also combat heap fragmentation. Heap fragmentation occurs through the course of normal program execution.

Java programmers are unable to accidentally (or purposely) crash the JVM by incorrectly freeing memory.

Because Java's garbage collector runs in its own thread, it will, in most cases, run transparently alongside the execution of the program.

Plus, if a programmer really wants to explicitly request a garbage collection at some point, System.gc() or Runtime.gc() can be invoked, which will fire off a garbage collection at that time.

Disadvantage of Garbage Collection. A potential disadvantage of a garbage-collected heap is that it adds an overhead that can affect program performance. The JVM has to keep track of which objects are being referenced by the executing program, and finalize and free unreferenced objects on the fly. This activity will likely require more CPU time than would have been required if the program explicitly freed unnecessary memory.

Garbage collection algorithms The garbage-collected heap is one area in which JVM designers can strive to make their JVM better than the competition's.

Any garbage collection algorithm must do two basic things. First, it must detect garbage objects. Second, it must reclaim the heap space used by the garbage objects and make it available to the program

With the folling command one can, if necessary, increase the heape-memory of an application "java - Xmx256MB"

To really understand the difference between value types and reference types—a fundamental distinction in the CTS—you must first understand how memory is allocated for instances of each type. In managed code, values can have their memory allocated either on the stack managed by the CLR or on a CLR-managed heap. Variables allocated on the stack are typically created when a method is called or when a running method creates them. In either case, the memory used by stack variables is automatically freed when the method in which they were created returns. Variables allocated on the heap, however, don't have their memory freed when the method that created them ends. Instead, the memory used by these variables is freed via a process called garbage collection.

HeapSizeconfiguration

- Operating systems indeed use swap space to create the so called virtual memory
- which is obviously bigger than the RAM you might have. It is usually enabled by default, but you need to check.
- You can not instruct the JVM to use only the physical RAM alone, but that would be a limitation of the OS itself and not JVM
- You can disable swap (againfor the OS, not JVM), but that is a bad idea
- There are multiple processes that run inside the operating system and they each need space to run into (that at some point in time might exceed your actual RAM). It indeed affects performance, but what is worse some performance penalties (I assume the OS has many things to make this better for you) or the death of the application?

How to control memory/heap used by a JVM? There are two parameters that control how much heap you will have:

- 1. Xms- initial/minimum heap that the JVM process will use.
- 2. Xmx- maximum heap that the JVM process will use.

I think -Xmx and -Xms configure how much heap is available for the java process that is run inside the virtual machine. The virtual machine itself is a native process that requires additional heap for running the virtual machine itself. The JVM process can therefore consume more memory then that indicated by the -Xmx option. Xmsactually allocates (commits) it but does not necessarily prefault it. Xmxmerely reserves virtual address space.

Does the JVM process make a reservation for the specific amount of memory? Yes, the JVM reserves the memory specified byXmsat the start and might reserve uptoXmxbut the reservation need not be in the physical memory, it can also be in the swap. The JVM pages will be swaped in and out of memory as needed.

Why/When is it recommended to have the same value for Xms and Xmx?

How heapsize affects Garbage Collection?

- ♦ Starting off with small heap sizes results in garbage collection more often
- ♦ Bigger heap sizes reduce the number of gcs that happen because more memory is available to object allocation
- ♦ However it must be noted that increased heap sizes increases gc pause times, This is an advantage only if

your garbage collection has been tuned properly and the pause times don't increase significantly with increase in heap sizes.

The maximum Heapsize a.k.a –Xmx The Maximum heap size is the absolute maximum amount of memory JVM can allocate for your application (for creating application objects etc). When the Heap is exhausted and GC (Garbage Collection) can no longer find unused objects to clean up, you are DONE.

How to correctly determine the maximum heap size? Give three points

- 1. It must never be more than the actual RAM (Physical memory) available in your Server
- 2. Minimize the time that JVM is spending on Garbage Collection
- 3. Fulfill the memory requirement of your application

Explain the above: It must never be more than the actual RAM (Physical memory) available in your Server Each Server (physical or virtual) has a definite amount of RAM that is used by all the processes running on that server, including the Operating System. Your 'max heap size' should never exceed this amount. Why? After RAM is exhausted, the OS will start using the assigned disk space as SWAP spacei.e, it will start moving memory pages in and out of the disk based on the usage of the memory pages. And this is are source intensive process. As soon as the JVM memory pages falls into Disk swap, the performance will noticeably reduce and you don't want that.

- 1. Minimize the time that JVM is spending on Garbage Collection
- 2. Bigger the heap, the full GC will belonger. But it will occur less frequently.
- 3. Smaller the heap, the full GC will be quicker but will occur more frequently.

Trust me, GC time is no good for the end-user. Almost half of the performance related problems (I may be exaggerating here, but it definitely feels like it) areGC time related. Fulfill the memory requirement of your application This goes without saying. If your application needs 1GB max heap and you have set 128MB max heap, forget about othertuning, your application won't last few hours with load. With that said, one can write really poor code that just eats up all the memory (for example,retrieving millions of records from databasewithout any paging mechanism and sorting them in memory – bad idea). You can determine the max memory requirement for your application in two different ways. You can go to production without any tuning andincrease the max memory size based on the 'out of memory' errors you encounter. But one problem with this approach is, by the time you arrive at optimal 'max heap size', you may not have any customers using the application. A better approach will be to 'load test' your application using free tools like JMeter (or commercial products like LoadRunner) and monitor the Heap utilization and GC times Tweak the size of the heap based on the load test results and you will be good to go.

What is the restriction for 32BIT JVM and heap size? A final note about 'max heap size'. If you are running 32 BIT JVM (I don't know why you would still be doing this), your 'max heap size' can't exceed 2 GB.

-Xms - at the start. -Xmx- maximum amount

When a GC cycle will begin? GC cycle will start when the java heap usage reaches around 80% The main point is that the Java heap usage will grow until about 80% usage when the GC occurs and then drop back to a much lower level.

The saw tooth like pattern is just normal life Java garbage collection and nothing to worry about. This however will make it difficult to know how much memory the program actually uses needs.

What happens when Java runs out of memory?

- If JVM can't free enough memory with a simple GC it will run a Full GC which will be a stop-the-world collection
- This suspends the JVM execution until the collection is done

How can a full GC cycle be visible through jconsole?

• A Full GC can be seen as a sudden drop on the amount of used memory, for example as seen in this image

How can I monitor garbage collection heap usage?

- The best way is to use JMX with some handy tool like jconsole.
- JConsole is a GUI utility which comes with all JDK distributions and can be found under the bin/ directory (jconsole.exe in windows).
- You can use the jconsole to connect into a running JVM and extract a lot of different metrics out of it and even tweak some settings on the fly.

How to enable JMX?

JMX needs to be enabled, which can be done by adding these arguments to the JVM command line: (This will vary depending the version of JVM being used.)

- -Dcom.sun.management.jmxremote
- -Dcom.sun.management.jmxremote.port=9010
- -Dcom.sun.management.jmxremote.rmi.port=9010
- -Dcom.sun.management.jmxremote.local.only=false

- -Dcom.sun.management.jmxremote.authenticate=false
- -Dcom.sun.management.jmxremote.ssl=false

These will print GC statistics to the log file, here's an actual example:

17500.125: [GC 876226K->710063K(4193024K), 0.0195470 secs] 17569.086: [GC 877871K->711547K(4193024K), 0.0200440 secs] 17641.289: [GC 879355K->713210K(4193024K), 0.0201440 secs] 17712.079: [GC 881018K->714931K(4193024K), 0.0212350 secs] 17736.576: [GC 881557K->882170K(4193024K), 0.0419590 secs] 17736.620: [Full GC 882170K->231044K(4193024K), 0.8055450 secs] 17786.560: [GC 398852K->287047K(4193024K), 0.0244280 secs]

Conclusion

- Java JVM will eat all the memory which you give to it (this is normal)
- You need to tune the JVM-Xmsand-Xmxparameters to give it enough but not too much memory so your application works.
- The memory wont be released back to the OS until JVM exists, but the OS can swap the JVM memory out. Usually this is bad and you need to decrease the memory you give to the JVM.
- Use JMX to monitor the JVM memory usage to find suitable values.

jvmtop (http://code.google.com/p/jvmtop/) also help sysadmins for getting a quick insight at all running jvms and their cpu/memory consumption https://github.com/patric-r/jvmtop

How to control memory/heap used by a JVM?

Does the JVM process make a reservation for the specific amount of memory? Why is it recommended to have the same value for Xms and Xmx?

How heapsize affects Garbage Collection?

How to correctly determine the maximum heap size? Give three points Explain them

What is the restriction for 32BIT JVM and heap size?

When a GC cycle will begin?

What happens when Java runs out of memory?

How can a full GC cycle be visible through jconsole?

How can I monitor garbage collection heap usage? How to enable JMX?

HeapDumps_01

What is a heap dump?

• A heap dump is a snapshot of the memory of a Java process.

What is heapdump?

Heap dump is a file of the memory that is used to check the objects and data in the Java memory. This file can be created by using the jmapcommand included in the JDK. While creating the file, the Java process stops. Therefore, do not create this file while the system is operating.

What does the snapshot of the heap dump contain?

 The snapshot contains information about the Java objects and classes in the heap at the moment the snapshot is triggered.

When is a heap dump useful?

• Heap Dump is useful for analysing what an app is up to at some point in time, and if done at intervals handy in diagnosing some kinds of 'execution' problems (e.g. thread deadlock).

What command is used to take memory related statistics?

• jmap command prints memory-related statistics for a running VM or core file.

Give the syntax for jmap? jmap -dump:live,format=b,file=heap.bin <pid

What tool is used to read a heap dump?

Heap analyzer.

Take Heap dumps anytime you wish to see what is being held in memory or when you see Out-of-memory errors Heap dumps - picture of in memory objects - used for memory analysis

How to capture Heap dump when OOM errors are appearing? When you pass '-

XX:+HeapDumpOnOutOfMemoryError' system property during application startup, JVM will capture heap dumps right at the point when JVM experiences OutOfMemoryError.

What is that system parameter used? HeapDumpOnOutOfMemoryError

What is the java parameter to take heap dump when OOM errors are appearing? -

XX:+HeapDumpOnOutOfMemoryError -XX:HeapDumpPath=/opt/tmp/heapdump.bin

How to generate Heap dump for websphere application server? If your application is running on IBM Websphere Application Server, you can use the administrative console to generate heaps. Steps: Start administrative console In the navigation pane, click Troubleshooting Java dumps and cores Select the server_name for which you want to generate the heap dump Click Heap dump to generate the heap dump for your specified server

Heap Analyzer

https://www.ibm.com/support/knowledgecenter/en/SSLLVC_5.0.0/com.ibm.jinwoo.heapanalyzer.doc/docs/readme.html

HEAP

What is a heap dump?

What does the snapshot of the heap dump contain?

When is a heap dump useful?

What command is used to take memory related statistics?

Give the syntax for jmap?

What tool is used to read a heap dump?

Take ___anytime you wish to see what is being held in memory or when you see Out-of-memory errors

How to capture Heap dump when OOM errors are appearing? (What is that system parameter)

What is the java parameter to take heap dump when OOM errors are appearing?

Heap_dumps_02

Heap Dumps generation

Heap Dumps Heap dump is a text file which keeps record of all objects in the java heap. It contains the information like size and address of all objects, as well as the addresses of all objects that it references.

Heap dump is nothing but a snap shot of our JVM's Heap memory, contains all active java objects and their activities which object doing what and how much memory it is occupying.

Whenever OutOfMemoryException occurs Websphere application Server creates heap dump in profile's home directory.

It is useful in situations, most notable for memory leak problems or memory allocation problems for example OutOfMemoryExceptions.

Automated heap dump generation

Click Servers > Application servers in the administrative console navigation tree. Click server_name > Performance and Diagnostic Advisor Configuration. Click the Runtime tab. Select the Enable automatic heap dump collection check box. Click OK.

Generating Heap dump manually

set jvm [\$AdminControl completeObjectName type=JVM,process=server1,*] Where server1 is the name of application server for which we want heapdump. For generating heap dump: \$AdminControl invoke \$jvm generateHeapDump.

In order to manually generate a heapdump, you must first enable signal-based heapdumps by setting the IBM_HEAPDUMP=TRUE and IBM_NOSIGHANDLER=TRUE environmental variables.

What is the effect of changing max heap and min heap size of a jvm

Max Heap Size: When you have established the maximum heap size that you need, you might want to set the minimum heap size to the same value; Using the same values is not usually a good idea, because it delays the start of garbage collection until the heap is full. The first time that the Garbage Collector runs, therefore, becomes a very expensive operation. Also, the heap is more likely to be fragmented and require a heap compaction. Again this is a very expensive operation.

Min Heap Size: The recommendation is to start your application with the minimum heap size that it needs. When it starts up, the Garbage Collector will run often and, because the heap is small, it runs efficiently.

Whats the max heap allowed by AIX

Minimum heap size allowed

AIX:

16 MB

LINUX:

16MB

WINDOWS: 16 MB

Maximum heap size allowed AIX: Half the available memory with a minimum of 16 MB and a maximum of 512 MB LINUX: Half the available memory with a minimum of 16 MB and a maximum of 512 MB WINDOWS: Half the real (physical or RAM) memory with a minimum of 16 MB and a maximum of 2 GB

What are the effects of large initial heap/max heap

The time between garbage collections will increase, but the garbage collection will take longer, which indirectly effects the turn-around-time of the application performance.

(Or)

Because it delays the start of garbage collection until the heap is full. The first time that the Garbage Collector runs, therefore, becomes a very expensive operation. Also, the heap is more likely to be fragmented and require a heap compaction.

Again this is a very expensive operation.

ThreadDumps_1

What is the meaning of "java thread dump"? A thread dump is a list of all the Java threads that are currently active in a Java Virtual Machine (JVM) A Java thread dump is a snapshot what every thread in the JVM is doing at a particular point in time

What is the use of thread dump? Java dump is useful to analyze your application, if it seems to have hung. This is useful if your Java application sometimes seems to hang when running under load.

Why do we take Thread Dumps? Thread dumps are vital artifacts to diagnose CPU spikes, deadlocks, memory problems, unresponsive applications, poor response times, and other system problems.

What can you see in the thread dump? In a dump, we can see the java thread activity inside the JVM

What can be done with this thread dump? Thread dumps can be analyzed to find out where the threads are stuck.

A thread dump is a dump of the stacks of all ____ .. live threads.

With respect to WebSphere, a javacore file is a ___ .. thread dump.

Java cores is also known as thread dumps or java dumps, It is highly recommended to take more than _ thread dump. 1

========

Which command displays all the java process ids? jps .. (The Java JDK ships with the jps command which lists all Java process id)

How to obtain a thread dump using jstack? To obtain a thread dump using jstack, run the following command: jstack -l pid You can output consecutive thread dumps to a file by using the console output redirect/append directive: jstack -l pid threaddumps.log

Jastack command to be run on a 64 bit version of servers? If the java process isn't responding, then it can sometimes help to use the option -J-d64 (on 64 bit systems), for example: jstack -J-d64 -I pid threaddumps.log

Which tool can be used to analyze thread dump? IBM Thread and Monitor Dump Analyzer for Java

Where can we find that? IBM Support Assistant.

https://	/www.ibm.com/	/support/knowl	edgecenter/en/SSL	LVC 5.0.0/kc a	en/master m	nap-gen1.html
		- /	3 , - ,		, - , -	- 1 - 3

THREAD Dumps

What is the meaning of "java thread dump"? What can you see in the thread dump? What is the use of thread dump? What can be done with this thread dump? A thread dump is a dump of the stacks of all _____ ... With respect to WebSphere a javacore file is a ____ ... _ is also known as thread dumps or java dumps, It is highly recommended to take more than _ thread dump.

Which command displays all the java process ids?

How to obtain a thread dump using jstack? Jastack command to be run on a 64 bit version of servers? Which tool can be used to analyze thread dump? Where can we find that?

ClassLoaders

Introduction to Class Loaders

What is a class loader? Class loaders are responsible for loading Java classes during runtime dynamically to the JVM (Java Virtual Machine). Hence, the JVM doesn't need to know about the underlying files or file systems in order to run Java programs thanks to class loaders

Does the class loader load all classes into memory? No. these Java classes aren't loaded into memory all at once, but when required by an application. This is where class loaders come into the picture. They are responsible for loading classes into memory.

What are the 3 different types of class loaders?

- 1. bootstrap (displayed as null)
- 2. Application
- 3. Extension

What is the difference between 3 types of class loaders?

What is the function of the bootstrap class loader? The bootstrap class loader is written in native code, not java. So it does not show up as java class.

What is an application class loader? An application or system class loader loads our own files in the classpath.

What is an extension class loader? Extension class loaders load classes that are an extension of the standard core Java classes.

How can you analyze a Class Loader? We can analyze Class loader using a tool called "Classloader analyzer"

https://www.ibm.com/support/knowledgecenter/en/SSLLVC_5.0.0/com.ibm.esupport.tool.classloader.doc/docs/readme.html

Introduction to Class Loaders What is a class loader? Class loaders are responsible for loading Java classes during runtime dynamically to the JVM (Java Virtual Machine).

Hence, the JVM doesn't need to know about the underlying files or file systems in order to run Java programs thanks to class loaders

Does class loader loads all classes into memory. no. these Java classes aren't loaded into memory all at once, but when required by an application. This is where class loaders come into the picture. They are responsible for loading classes into memory.

What are the different types of class loaders? application, extension, and bootstrap (displayed as null) As we can see, there are three different class loaders here;

A bootstrap or primordial class loader is the parent of all the others. This is because the bootstrap class loader is written in native code, not Java – so it doesn't show up as a Java class. An application or system class loader loads our own files in the classpath. Extension class loaders load classes that are an extension of the standard core Java classes.

What is a class loader? Does the class loader load all classes into memory? What are the 3 different types of class loaders? What is the difference between 3 types of class loaders?

What is the function of bootstrap class loader? What is an application class loader? What is an extension class loader? How can you analyze a Class Loader?

Cache

How to clear the websphere Cache?
1. JVM cache cleaning
2. OSGi cache cleaning
3. Clean the temporary folders.
4. wstemp
5. temp
6. config/temp
7. Javasharedresources folder
Explain the steps in clearing the websphere cache: • Server has to be stopped before clearing the Cache • Clean JVM cache. • Clean OSGi cache. • Clean the temporary folders. (wstemp, temp, config/temp, javasharedresources folder)
What script to be run to clean the JVM Cache? clearClassCache.sh
What script to be run to clear the OSGi Cache osgiCfgInit.sh
What is OSGi? Open Services Gateway Interface
What temp folders can be cleaned?
 wstemp temp config/temp Javasharedresources folder

How to clear the websphere Cache? Explain the steps in clearing the websphere cache: What script to be run to clear the JVM Cache? What script to be run to clear the OSGi Cache

What is OSGi? What temp folders can be cleaned?

best_practices_for_managing

List 10 best practices for managing WebSphere Application Server

- 1. All WebSphere Application processes should be running as non-admin/root user.
- 2. Enabled Global Security.
- 3. Enabled Application Security.
- 4. Configure WebSphere Security with proper LDAP repository.
- 5. Leverage Administrative roles.
- 6. Use HTTP Server as an interface for the Applications.
- 7. HTTP and WebSphere on the Different box.
- 8. Logs on External Drive.
- 9. Logs Archive. 9.1 Separate application logs from Server logs.
- 10. Logs Archive.
- 11. Read-only Logs Access for Developer.
- 12. Log Level.
- 13. Leverage WebSphere Application Servers' high availability and failover capabilities.
- 14. Minimum Cluster Members in Cluster.
- 15. Database and WebSphere on Same box.
- 16. Use Type-4 JDBC Drivers.
- 17. Protect application server to database link.
- 18. Script based WebSphere Administration. 18.2 Script based WebSphere Deployment & Log analyzing
- 19. Monitoring.
- 20. EAR vs. WAR Files.
- 21. Don't run samples in production.
- 22. Environments.
- 23. Performance Tuning.
- 24. Separate your production network from your intranet.
- 25. Separate your production networks from your internal network using firewalls.
- 25A Keep up-to-date with patches and fixes. 26. Uninstall or remove old unused applications or nodes #7 Minimize HTTP Session Content

General Best Practices for WebSphere Application Environments This article provides a list of general best practices to apply to any WebSphere Application Server V7 and V8 environment. However, some of the recommendations only apply to specific conditions and scenarios. These recommendations could be used to set up any WebSphere environment. General Best Practices for WebSphere Application Environments

- 1. All WebSphere Application processes should be running as non-admin/root user. It's not a good practice to run a process as an admin/root user. For obvious reasons, you don't want more folks to know about the admin/root password and generally the WebSphere admins are not the system admins. Create a services user account on the box and use it for the WebSphere Application's start and stop purposes.
- 2. Enabled Global Security. By default, the WebSphere Application Server enables administrative security. Thus, for the most part, the infrastructure provides for reasonable authentication, authorization, and encryption of administrative traffic by default. When administrative security is enabled, the WebSphere Application Server's internal links between the deployment manager and the application servers and traffic from the administrative clients (Web and command line) to the deployment manager are encrypted and authenticated. Among other things, this means that administrators will be required to authenticate when running the administrative tools.
- 3. Enabled Application Security. In addition to leveraging the application server's security for administration, it's strongly recommend that you leverage it for application security. Doing so gives your applications access to a strong and robust standards-based security infrastructure. Applications that didn't leverage application server security were typically found to have serious security holes. Designing and implementing a secure distributed infrastructure is not easy. To enable application security, go to the global security panel and select Enable application security.
- 4. Configure WebSphere Security with proper LDAP repository. WebSphere security supports different configurations, including LDAP servers, local users and local operating system levels users. However, it's recommended that you use a proper LDAP server for this purpose.
- 5. Leverage Administrative roles. WebSphere Application Server allows for a variety of administrative roles depending on the version: Administrator, Operator, Monitor, Configurator, AdminSecurityManager, iscadmins, Deployer, or Auditor. These roles make it possible to give individuals (and automated systems) access that's appropriate to their level of need. It's strongly recommended that you take advantage of roles whenever possible. By using the less powerful roles of monitor and operator, you can restrict the actions an administrator can take. For example, you can give the less senior administrators just the ability to start and stop servers and the night operators just the ability the watch the system (monitor). These actions greatly limit the risk of damage by trusting people with only the permissions they need.
- 6. Use HTTP Server as an interface for the Applications. Use HTTP servers in front of an application layer, i.e., WebSphere Application. Don't allow communications directly with WebSphere's http web container

port from either a load balance or from browsers.

- 7. HTTP and WebSphere on the Different box. At least in higher environments, install and configure the http server on a different box than the WebSphere box. In the lower environments the same box can be used for both layers.
- 8. Logs on External Drive. At least in higher environments, write the WebSphere and application log files to an external drive, so it won't fill up the server's file space.
- 9. Logs Archive. Depending on the application, rotate and clean up the logs in a timely manner. Bad Practice: Logs which are not rotated and occupying more space. Single log file having more than GB in size. 9.1 Separate application logs from Server logs. If possible multiple logs for the application on different functions would be good for monitoring. Bad practice: logs not put on its own directory.
- 10. Read-only Logs Access for Developer. If it's okay with the security team, grant developers read-only access for WebSphere and the applications logs on the external drive.
- 11. Alternate Log Access for Developers. To enable developers to view the production application and WebSphere logs, host those shared folders from the web server instead of giving them access to those boxes. Once the logs are hosted from the web server, developers need only a web browser to view those files from their computers.

 Bad Practice: Sending logs via email.
- 12. Log Level. Configure log level to error in high environments. Logs in the higher environments don't need to produce unnecessary information. In the lower environments it can be set to info or debug level.
- 13. Leverage WebSphere Application Servers' high availability and failover capabilities. Out-of-the-box WebSphere support high availability and failover functionality. There is no need to use any external component or product for this. One of the key benefits is that user http session can be shared within the cluster members and, in the case of failover, the other active cluster members can resume the activity using same session.
- 14. Minimum Cluster Members in Cluster. In the WebSphere clustered environment, define and create at least three cluster members. In the case of failover with two cluster members, not only the entire load will shift to one node but it also becomes a single point of failure. With three nodes, at least the load will still be distributed to two nodes and there is no single point of failure.
- 15. Database and WebSphere on Same box. At least in higher environments, separate the application layer from the data layer and install them on different boxes. In the lower environments the same box can be used for both layers.
- 16. Use Type-4 JDBC Drivers. Type-4 JDBC drivers don't require any component to be installed on the application layer. For the type-2 and type-3, the database's client needs to install on the WebSphere box.

- 17. Protect application server to database link. As with any other network link, confidential information can be written to or read from the database. Most databases support some form of network encryption and you should leverage it.
- 18. Script based WebSphere Administration. In general, it's good practice to use scripts to avoid human errors during the deployment and configuration, especially in higher environments. However, it requires an investment in time and resources to develop these scripts, especially if it is first time and / or script-based administration is not part of the current culture. Once the scripts are created, they can be used in all environments and maybe automate some of the tasks. 18.2 Script based WebSphere Deployment & Log analyzing Automate repetitive tasks like deployment and server restart, new environment building using scripts. You can write scripts to analyze the logs for potential errors.
- 19. Monitoring. Use proper application and infrastructure runtime monitoring tools that can monitor environments and application thresholds and potentially alert you to problems before they cause service interruptions.
- 20. EAR vs. WAR Files. According to J2EE specs, EAR file should be deployed in WebSphere. However, WebSphere does support deploying WARs and upgrade class functionality. Developers should produce EAR files from their development tool or generate EAR should it be created from the deployment scripts before deploying the application in WebSphere.
- 21. Don't run samples in production. WebSphere Application Server ships with several excellent examples to demonstrate various parts of the WebSphere Application Server. These samples are not intended for use in a production environment. Don't run them there, as they create significant security risks. In particular, the showCfg and snoop servlets can provide an outsider with tremendous amounts of information about your system. This is precisely the type of information you don't want to give a potential intruder. This is easily addressed by not installing the samples during the profile creation.
- 22. Environments. Generally, it's good to have more environments. Typically four would be a sufficient enough: development, QA, staging and production. Development and QA environments don't need a lot of hardware resources. It's recommended that the staging environment be a replica of production in terms of application data and hardware resources. The staging environment can also be used for stress testing and / or for production support.
- 23. Performance Tuning. Tune WebSphere application servers properly for each application. Performance tuning includes optimization of a number of web container threads, JVM heap sizes, JDBC connections, OS tuning, etc. After configuring these parameters to optimize values, boost the application performance. Stress / staging environment should be used for load testing.
- 24. Separate your production network from your intranet. Most organizations today understand the value of a DMZ that separates the outsiders on the Internet from the intranet. However, far too many organizations fail to realize that many intruders are on the inside. You need to protect against internal as well as external threats. Just as you protect yourself against the large untrusted Internet, you should also protect your production systems from the large and untrustworthy intranet.

- 25. Separate your production networks from your internal network using firewalls. These firewalls, while likely more permissive than the Internet-facing firewalls, can still block numerous forms of attack. 25A Keep up-to-date with patches and fixes. As with any complex product, IBM occasionally finds and fixes security bugs in WebSphere Application Server, Virtual Enterprise, Datapower and other products. It's crucial that you keep up-to-date on these fixes. It's advisable that you subscribe to support bulletins for the products you use and, in the case of WebSphere Application Server and WebSphere Virtual Enterprise, monitor the security bulletin site for your version. Those bulletins often contain notices of recently discovered security bugs and the fixes. You can be certain that potential intruders learn of those security holes quickly. The sooner you act the better. More information on WebSphere Application Server security, including recommendations on hardening the WebSphere Application Server infrastructure, is available on the WebSphere Application Server security page.
- 26. Uninstall or remove old unused applications or nodes Consolidation of old instances There is a slide in with AZ BQC doc for consolidation /upgradation of IIS which yielded many benefits for customer. In \$ value.

Second set of it? Reducing WebSphere Application Server I/O overhead Best practices for reducing I/O overhead of WebSphere Application Server: are I/O intensive If you applications on WAS are I/O intensive i.e do a lot of logging then following the best practices below will help reduce the stress on the OS I/O subsystem. If you run into issues with incomplete logging or with truncated javacores then reducing the amount of information logged to the system may help reduce the severity of the problem.

1. Disable the WebSphere Application Server service log/activity log The service log is more commonly known as the activity.log and is found in the /profiles//logs directory. There is only one activity.log for each node. WebSphere Application Server runtime events are logged to the activity.log. It is written in binary format, so it cannot be viewed in a text editor.

The main purpose of the activity.log is that it can be viewed with the Log Analyzer tool, is a graphical user interface that displays the events from the activity.log and uses a symptom database to analyze the events and diagnose problems. This service is not essential to WAS and very few system administrator make use of the activity / service log. You can configure properties of the activity.log in the administrative console:

- 1. Select Troubleshooting → Logs and Trace.
- 2. Select the WebSphere Application Server process.
- 3. Select IBM® Service Logs. Disable the activity.log.
- #10 Properly Tune the Operating System Operating System is consistently overlooked for functional tuning as well as performance tuning. Understand the hardware infrastructure backing your OS.

 Processor counts, speed, shared/unshared, etc ulimit values need to be set correctly. Main player here is the number of open file handles (ulimit –n). Other process size and memory ones may need to be set based

Make sure NICs are set to full duplex and correct speeds • Large pages need to be on application • enabled to take advantage of -Xlp JDK parametes • If enabled by default check RAS settings on OS and Configure TCP/IP timeouts correctly for your applications needs • tune them down • Depending on the load being placed on the system look into advanced tuning techniques such as pinning WAS processes via RSET or TASKSET as well as pinning IRQ interrupts #9 – Keep Application Logging to a Minimum • Never should there be information outside of error cases being written to SystemOut.log • If using logging build your log messages only when needed • Good if(loggingEnabled==true){ errorMsg = "This is a bad error" + " " + failingObject.printError();} • Bad errorMsq = "This is a bad error" + " " + failingObject.printError(); If(loggingEnabled==true){ Keep error and log messages to the point and easy to debug • System.out.println(errorMsg); } • lf using Apache Commons, Log4J, or other frameworks ensure performance on your system is as expected Ensure if you must log information for audit purposes or other reasons that you are writing to a fast disk #8 – Understand and Tune Infrastructure (databases & other interactive server systems) • WebSphere Application Server and the system it runs on is typically only one part of the datacenter infrastructure and it has a good deal of reliance on other areas performing properly. Think of your infrastructure as a plumbing system. Optimal drain performance only occurs when no pipes are clogged. On the WAS system itself you need to be vary aware of O What other WAS instances (JVMs) are doing and their CPU / IO profiles O How much memory other WAS instance (or other OS's in a virtualized case) are using O Network utilization of other applications coexisting on the same hardware • supporting infrastructure O Varying Network Latency can drastically effect split cell topologies, cross site data replication and database query latency ■ Ensure network infrastructure is repeatable and robust Don't take for granted bandwidth or latency before going into production always test as labs vary O Firewalls can cause issues with data transfer latencies between systems • On the database system O Ensure that proper indexes and tuning is done for the applications request patterns O Ensure that the database supports the number of connected clients your WAS runtime will have O Understand the CPU load and impacts of other applications (batch, OLTP, etc all competing with your applications) • database system O Ensure that proper indexes and tuning is done for the applications request patterns Ensure that the database supports the number of connected clients your WAS runtime will have O 0 Understand the CPU load and impacts of other applications (batch, OLTP, etc all competing with your On other application server systems or interactive server systems O applications) • performance of connected applications is up for the load being requested of it by the WAS system O Verify that developers have coded specific handling mechanisms for when connected applications go down (You need to avoid storm drain scenarios) #7 – Minimize HTTP Session Content • High performance data replication for application availability depends on correctly sized session data O Keep it under 1MB in all Only should be storing information critical to that users specific interaction with the If composite data is required build it progressively as the interaction occurs O Session Replication in WAS to meet your needs O Use different configuration options (async vs. synch) to

give you the availability your application needs without compromising response time. O Select the
replication topology that works best for you (DB, M2M, M2M Server) O Keep replication domains small
and/or partition where possible #6 – Correctly Tune Thread Pools ● Thread pools and their corresponding
threads control all execution on the hardware threads. • Understand which thread pools your application
uses and size all of them appropriately based on utilization you see in tuning exercises O Thread dumps,
PMI metrics, etc will give you this data O Thread Dump Memory Analyzer and Tivoli Performance viewer
(TPV) will help in viewing this data. • Think of the thread pool as a queuing mechanism to throttle how
many active requests you will have running at any one time in your application. O Apply the funnel based
approach to sizing these pools ■ Example IHS (1000) -> WAS (50) -> WAS DB connection pool (30) ->
■ Thread numbers above vary based on application characteristics ○ Since you can throttle active
threads you can control concurrency through your codebase • Thread pools needs to be sized with the
total number of hardware processor cores in mind O
instances thread pools have to be tuned with that in mind. O You need to more than likely cut back on
the number of threads active in the system to ensure good performance for all applications due to context
switching at OS layer for each thread in the system O Sizing or restricting the max number of threads a
application can have can sometimes be used to prevent rouge applications for impacting others. •
Default sizes for WAS thread pools on v6.1 and above are actually a little to high for best performance O
Two to one ratio (threads to cores) typically yields the best performance but this varies drastically between
applications and access patterns
"5 T IDDGD : 6
#5 –Tune JDBC Data Sources • Correct database connection pool tuning can yield significant gains in
performance • This pool is highly contended in heavily multithreaded applications so ensuring significant
available connections are in the pool leads to superior performance. Monitor PMI metrics via TPV or
others tools to watch for threads waiting on connections to the database as well as their wait time. O
threads are waiting increase the number of pooled connections in conjunction with your DBA OR decrease
the number of active threads in the system O In some cases, a one-to-one mapping between DB
connections and threads may be ideal • Frequently database deadlocks or bottlenecks first manifest
themselves as a large number of threads from your thread pool waiting for connections • Always use the
latest database driver for the database you are running as performance optimization in this space between
versions are significant • Tune the Prepared Statement Cache Size for each JDBC data source O Can
also be monitored via PMI/TPV to determine ideal value #4 −Create Cells To Group Like Applications •
Create Cells and Clusters of application servers with an express purpose that groups them in some manner
• Large Cells (400-500-1000 members) for the most part while supported don't make sense ● Group
applications that need to replicate data to each other or talk to each other via RMI, etc and create cells and
clusters around those commonalities. • Keeping cell size smaller leads to more efficient resource
utilization due to less network traffic for configuration changes, DRS, HAManager, etc. O For example,

make migration forward to newer versions of products easier and more compartmentalized.

#3 – Ensure Uniform Configuration Across Like Servers • Uniform configuration of software parameters and even operating systems is a common stumbling block • Most times manifests itself as a single machine or process that is burning more CPU, Memory or garbage collecting more frequently • Easiest way to manage this is to have a "dump configuration" script that runs periodically • Store the scripts results off and after each configuration change or application upgrade track differences • Leverage the Visual Configuration Explorer (VCE) tool available within ISA

#2 – Correctly Tune The JVM • Correctly tuning the JVM in most cases will get you nearly 80% of the possible max performance of your application • The big area to focus on for JVM tuning is heap size Monitor verbose:gc and target GCing no more than once every 10 seconds with a max GC pause of a Incremental testing is required to get this area right running with expected customer second or less. O Only after you have the above boundary layers met for GC do you want to start to load on the system O experiment with differing garbage collection policies • Beyond the Heap Size settings most other parameters are to extract out max possible performance OR ensure that the JVM cooperates nicely on the The Garbage Collector Memory Visualizer is an excellent tool system it is running on with other JVMs • tool for diagnosing GC issues or refining JVM performance tuning. O Provided as a downloadable plug-in within the IBM Support Assistant

#1 – Perform Proper Load Testing • Properly load testing your application is the most critical thing you can do to ensure a rock solid runtime in production. • Replicating your production environment isn't always 100% necessary as most times you can get the same bang for your buck with a single representative machine in the environment O Calculate expected load across the cluster and divide down to single Drive load and perform the usual tuning loop to resolve the parameter set you need to machine load O Look at load on the database system, network, etc and extrapolate if it will support the tweak and tune. O full systems load and if not of if there are questions test • Performance testing needs to be representative of patterns that your application will actually be executing • Proper performance testing keeps track of and records key system level metrics as well as throughput metrics for reference later when changes to hardware or application are needed. • Always over stress your system. Push the hardware and software to the max and find the breaking points. • Only once you have done real world performance testing can you accurately size the complete set of hardware required to execute your application to meet your demand.

sysutil

Editing Sysctl.conf and Ulimit Configurations

The parameters available are those listed under /proc/sys/. You need to use /etc/sysctl.conf file, which is a simple file containing sysctl values to be read in and set by sysctl. This is a configuration file for setting system variables. So all you have to do is add variable = value in /etc/sysctl.conf file. So the changes remains the permanent.

Example For example, your above command echo /proc/sys/fs/file-max, should be added as follows:

vi /etc/sysctl.conf

Append following line: /proc/sys/fs/file-max = 65536 Save the file.

Here is my sample sysctl.conf file: net.ipv4.ip_forward = 1 kernel.shmall = 2097152 kernel.shmmax = 2147483648 kernel.shmmni = 4096 kernel.sem = 250 32000 100 128 fs.file-max = 65536 net.ipv4.ip_local_port_range = 1024 65000

File Descriptors under Linux Tuning file descriptor kernel parameters is non-trivial, and Zeus Support are only able to provide very general advice on how to do this: The best settings for any server will be unique to it and the load that it is designed to handle.

Global File Descriptor Tuning To examine your file descriptor usage as a snapshot in time, use the following cat /proc/sys/fs/file-nr

Three numbers will be returned, for example: 1022 427 8192 | | | | | | | maximum open file descriptors permitted | total free allocated file descriptors total allocated file descriptors since boot A low value or even 0 in the second column would indicate a lack of available file descriptors. In current (2.4+) Linux kernels, file descriptors are dynamically created as necessary, but cannot be removed or reduced other than by rebooting the server. A very large number of file descriptiors (the maximum possible number of which is 2,147,483,647; although this is realistically limited to less than 536,870,912) could actually result in server instability due to lack of memory.

Process File Descriptor Tuning In addition to configuring system-wide global file-descriptor values, you must also consider per-process limits. The following example describes how to raise the maximum number of file descriptors per process to 4096 on the RedHat distibution of Linux:

- 1. Allow all users to modify their file descriptor limits from an initial value of 1024 up to the maximum permitted value of 4096 by changing /etc/security/limits.conf
- 2. soft nofile 1024
- hard nofile 4096 In /etc/pam.d/login, add: session required /lib/security/pam_limits.so
- 1. Increase the system-wide file descriptor limit by adding the following line to the /etc/rc.d/rc.local startup script:

echo -n "8192" /proc/sys/fs/file-max or, on 2.6 kernels: echo -n "8192" \$(mount | grep sysfs | cut -d"" -f 3)/fs/file-max Now restart the system or run these commands from a command line to apply these changes.

1. You will then need to tell the system to use the new limits:

ulimit -n unlimited(bash) or ulimit -n 65535(bash) or unlimit descriptors(csh,tcsh).

1. Verify this has raised the limit by checking the output of:

ulimit -a(bash) or limit(csh,tcsh)

1. Restart the web server using:

\$ZEUSHOME/restart-zeus or by running: \$ZEUSHOME/stop-zeus followed by: \$ZEUSHOME/start-zeus The current setting for maximum number of open files can be viewed with the command:

ulimit -n

This number indicates the maximum number of files normal users (i.e. non-root) can have open in a single session. Note that for the root user, ulimit -n will sometimes output 1024 even after following the procedure to increase the maximum number of open files. This won't effect root's ability to open large numbers of files, as only normal users are bound by this value.

To increase the maximum number of open files beyond the default of 1024, two changes to the system may be necessary. In these examples, we will increase the maximum number of open files to the arbitrary value of 2048. All changes need to be made by the root user and users will need to log out and log back in before the changes will take effect.

1. Configure the system to accept the desired value for maximum number of open files Check the value in /proc/sys/fs/file-max to see if it is larger than the value needed for the maximum number of open files:

cat /proc/sys/fs/file-max

If the value isn't large enough, echo an appropriate number into the variable and add the change to /etc/sysctl.conf to make it persistent across reboots. If the number is already larger than the value you wish to use, skip to step 2.

echo 2048 /proc/sys/fs/file-max

and edit /etc/sysctl.conf to include the line:

fs.file-max = 2048

2. Set the value for maximum number of open files In the file /etc/security/limits.conf, below the commented line that reads

#domain type item value

add this line:

o nofile 2048

This line sets the default number of open file descriptors for every user on the system to 2048. Note that the "nofile" item has two possible limit values under the type header: hard and soft. Both types of limits must be set before the change in the maximum number of open files will take effect. By using the "-" character, both hard and soft limits are set simultaneously.

The hard limit represents the maximum value a soft limit may have and the soft limit represents the limit being actively enforced on the system at that time. Hard limits can be lowered by normal users, but not raised and soft limits cannot be set higher than hard limits. Only root may raise hard limits.

When increasing file limit descriptors, you may want to simply double the value. For example, if you need to increase the default value of 1024, increase the value to 2048 first. If you need to increase it again, try 4096, etc.

TuningParameters

IBMIHS 2.0

ThreadsPerChild Fixed Number of threads Per Child ThreadLimit Maximum

Configured Value ThreadsPerChild MaxRequestPerChild After how many Request the Child Process
is recycled and a new one is Launched MaxClients Maximum Number of Threads that may
be Launched StartServers Number of Processes that will Launched Intially MinSpareThreads
and MaxSpareThreads Totall Number of ideal threads that will be Monitored with in the Limits ServerLimit

Web Container

Max Number of Concurrent Connection to the Web Container (<= 90% of Maximum WebContainer Threads) MaxKeepAliveRequest Max Number of Request in a Single KeepAlive Connection ConnectionKeepAliveTimeout Maximum Number of Seconds to wait for the next Request... ConnectionIOTimeOut Maximum Number of Seconds to wait while Trying to Read or Process data during a Request (5) ConnectionResponseTimeout Maximum Number of Seconds to wait while Trying to Write or Process data during a Request (300) MaxConnectBackLog Maximum Number of Outstanding Connections that OS will buffer (511) KeepAliveTimeout

DataSource

Minimum Number of Managed Connection Connection Timeout

has ro wait to get a Connection from the Pool ReapTime

start to Check Unused Timeout and Aged Timeout... UnusedTimeout

which unused Connection will get back to the Pool AgedTimeOut

which unused Aged Connection will be discarded PurgePolicy

Connection is established from the Connection Pool the Connection is checked for stability

Number of Prepared Statement Cache Per Connection

Number of Seconds that Client

Interval in Seconds a Thread will

Interval in Seconds ,after

Every Time when a

Connection is established from the Connection Pool the Connection is checked for stability

Semaphores

What is a semaphore? A semaphore is a way to lock a resource so that it is guaranteed that while a piece of code is executed, only this piece of code has access to that resource. This keeps two threads from concurrently accessing a resource, which can cause problems.

Is Semaphore restricted only to only one thread? This is not restricted to only one thread. A semaphore can be configured to allow a fixed number of threads to access a resource. As mentioned in other answers, semaphores can be used to restrict access to a certain resource to a maximum (but variable) number of processes

List down the steps in clearing semaphores

- 1. shutdown all the web server processes.
- 2. Remove the semaphores which are pending or hanging..
- 3. Remove all the pending shared memory also.
- 4. Then start the web server process.

https://communities.ca.com/thread/105688566

semaphore commands: What is the command used to list the semaphores and shared memory? ipcs = Inter Process Communication Status. ipcs -s: list semaphoresUsed to list the semaphores used. ipcs -m: list shared memoryUsed to list the shared memory

What is the command used to remove the semaphores and shared memory? IPCRM = InterProcess

Communication ReMove: Removes message queue, semaphore set, or shared memory identifiers.) ipcrm -s:
remove semaphores ipcrm -m: remove shared memory

What is a semaphore? Is Semaphore restricted only to only one thread?

List down the steps in clearing semaphores

What is the command used to list the semaphores and shared memory? What is the command used to remove the semaphores and shared memory?

HPEL_Logging

MORE

Troubleshooting

WebSphere_Topics_33



team_leadership

As a team leader how do you enforce priority on a group member when he feels that the other thing is more important th...

Agile_Framework

AGILE_FRAMEWORK

What is Agile in a nutshell?

- Agility means the ability to move quickly and easily.
- Agile software development is a software development methodology that is based on iterative processes.
- These iterative processes are centered on its members' self-development and learning process.
- Agile methodology uses 'Minimum Viable Product' (MVP) as its concept.

What is the agile process?

- Agile process is an iterative approach to project management and software development that helps teams deliver value to their customers faster and with fewer headaches.
- Instead of betting everything on a "big bang" launch, an agile team delivers work in small, but consumable, increments.

What is the Agile methodology in layman's terms?

- The Agile methodology is a way to manage a project by breaking it up into several phases.
- It involves constant collaboration with stakeholders.
- It includes continuous improvement at every stage.
- Once the work begins, teams' cycle through a process of planning, executing, and evaluating.

What is an Agile Framework?

• An Agile framework is a specific approach to planning, managing, and executing work.

What are the two major categories of Agile Framework?

- Frameworks designed for teams.
- Frameworks designed to help organizations practice Agile at scale, across many teams.

What are 2 Agile practices?

· Agile Frameworks, Practices, and Methodologies · Each of them has its own areas of use and distinctive features. The most popular frameworks and practices are. o Scrum, o Kanban, o Hybrid, o Lean, o Bimodal, o XP, and o Crystal.

Do we need documentation in agile?

- Agile typically has some amount of documentation necessary to maintain a project stable.
- However, Agile promotes collaboration over documentation as a preferred way of sharing knowledge.

What are the principles of agile?

Customer

- Customer Satisfaction. The customer needs to be satisfied with the quick delivery of the product.
- Customer collaboration over contract negotiation

Product:

- Working software
- Frequent delivery
- Early and continuous delivery of valuable software
- Working on software over comprehensive documentation
- Embrace change.
- Constant Pace
- Responding to change over following a plan.
- Welcome Change. Even late in the development process, changing needs need to be addressed.

Team Members:

- Individuals and interactions over processes and tools
- Work Together
- Face-to-face
- Cooperation
- Autonomy and motivation.
- Motivated Team
- Better communication

• Stable work environments

What are the top agile techniques/frameworks?

There are 5 main Agile methodologies:

- 1. Scrum,
- 2. Kanban,
- 3. Extreme Programming (XP),
- 4. Dynamic Systems Development Method (DSDM)
- 5. Feature-Driven Development (FDD)
- 6. Lean Development
- 7. Crystal.

How do I choose an agile framework?

- The choice of agile framework should be a collaborative discussion between teams, organizational leadership, and any stakeholders.
- Every part of the team should have input into what key features they will need from the framework.

What are the 5 components of agile?

- · Cultural agility
- · Business agility
- · Change management agility.
- · Process agility
- · Technical agility

What are the 6 phases in agile lifecycle?

- · The Agile software development life cycle is the structured series of stages that a product goes through as it moves from beginning to end. · It contains six phases:
 - 1. concept,

inception,
 iteration,
 release,
 maintenance,

6. retirement.

What are the 7 dimensions of agile?

The "7 Product Dimensions" are.

- 1. User,
- 2. Interface,
- 3. Action,
- 4. Data,
- 5. Control,
- 6. Environment, and
- 7. Quality Attribute.

What do the 3 C's stand for in agile?

- · The 3 Cs are.
 - 1. Cards,
 - 2. Conversation, and
 - 3. Confirmation.

o These are essential components for writing a good User Story. o The Card, Conversation, and Confirmation model was introduced by Ron Jefferies in 2001 for Extreme Programming (XP) and is suitable even today.

AGILE SPRINT

What is a sprint in Agile?

· A sprint is a short, time-boxed period when a scrum team works to complete a set amount of work. · Sprints are at the very heart of scrum and agile methodologies, and getting sprints right will help your agile team

ship better software with fewer headaches.

How long is a sprint in agile?

- One week to one month
- Sprints are time-boxed periods of one week to one month, during which a product owner, scrum master, and scrum team work to complete a specific product addition.
- During a sprint, work is done to create new features based on the user stories and backlog.
- A new sprint starts immediately after the current sprint ends.

AGILE VS OTHERS

What is Agile vs waterfall? Agile vs waterfall

- The key difference between Agile vs. Waterfall is that Waterfall breaks down software development into isolated phases that flow into each other,
- While Agile advocates iterative development cycles in which multiple lifecycle phases can run in parallel.

Is Lean Six Sigma the same as Agile? Agile vs sig sigma? How Lean Six Sigma and Agile Can Work Together.

- Agile methodology focuses on better management of projects.
- Lean Six Sigma methodology focuses on improving processes.
- Combining the two may be the key to maximizing process efficiency.

Which comes first, scrum or Agile? Agile vs scrum

• Scrum precedes the Agile Manifesto by about 8 years but is considered part of agile due to its iterative and incremental approach to delivering customer value.

team_leadership

As a team leader how do you enforce priority on a group member when he feels that the other thing is more important than the first?

· The ability of a team lead to convince a team member that thing A is of more priority than the other thing B entirely depends on his/her quality of communication. · One of the possible ways to do this would be arrange the sequence of events in a manner that would emphasis the occurrence of A before B. · For instance, one might say - "But don't you think that if A were to happen before B we could be able to achieve B in a more efficient manner?" · Make it an open question and let the team member ponder over this... · At least while s/he thinks this through, the team lead will buy time to get the higher priority thing done!

If conflict arises between two people how will solve that. If one person is overlooking into others job how to deal with such type of people · I'll conduct an informal investigation, then have an informal talk to both parties, settle the issue, correct the mistakes, and avoid re doing it. · However, if it happens again, the issue should now be recorded, submitted to the Manager. The manager will provide the next step.

What are the approaches or methods by which guidance to team members is given by team lead? \cdot public speaking or you can term it as common addressing.... \cdot another one is run time training.... \cdot Third and the most imp is that team lead should lead by example.

What are the attributes that make a good team lead...

A good team leader must have.

- 1. Good knowledge of the project (s) he is leading.
- 2. Genuinely interested in the success of projects AND individuals.
- 3. Helping and problem-solving team members
- 4. Open to suggestions from team members
- 5. Must be responsible for whatever decision a team member has taken.
- 6. Not afraid of failure
- 7. Nice to have: a. technically sound to replace any of the team member

What are the attributes that make a good team lead...

- · A good team should be a good motivator. I know many teams disintegrate due to lack of motivation. Even though a team member gets lower pay compared to his colleagues, if you can motivate him, then you can expect lot more than you expect. · Personally, I am a big fan of motivation. You can do this by showing appreciation for what he/she is doing. If you think your team or a team member did a wonderful job, then send the appreciation letters to managers copying them.
- · Then another attribute I would like to add is courage. You should be able to stand up for your team. If your team has taken an initiative on which you yourself are not sure of the success, then you are taking the risk and you should be able to justify why you are taking this risk. In this scenario, if the team feels insecure, then they won't be able to deliver a quality product.

What are the attributes that make a good team leader?

- 1. Trust and confidence
- 2. Make sound and timely decisions
- 3. Lead by example
- 4. Keep the team informed with the changes
- 5. Develop a sense of responsibility for the team members
- 6. Use the full capabilities of your team members

How will the deliverables be measured in terms of time to be spent?

 \cdot Deliverables are measures in man hours (1man hours = 8 hours). \cdot The total time spend on the deliverables will be the sum of time spend for Analysis, development, testing and documentation.

Explain how you estimate your project / task end dates and then monitor them to ensure that deadlines are met.

Assign the tasks to the team members. Ask then to break the task into subtasks so that each sub task completion time is round a day or two and ask him to estimate the time. Once they have estimated sit with the team members and review the task/ sub tasks time and review the time lines and make adjustments if needed. Once this is done, you can meet every morning for 10-15 minutes to track the tasks/sub tasks. Since

the tasks are now granular the tracking of the tasks completion are easy. Even if you are slipping and if there are any bottle necks it is easy to track it very early so that you take appropriate action/decision.
RE: Prioritising
Highest priority should be given to the task, if it is the top level task, meaning that the other tasks in the completion list are dependent on. Tasks that are core functions of the software, with out which the software can't function should be identified should be marked as a higher priority.
RE: An executive in the team is absconding for 10 days and did not inform his team leader. He text his leader on 11th day that he is unwell but when TL tried calling him back, he did not respond. After 1 week, he came back to office with a medical certifi
As per me i believe all the companies have a policy of waiting for an employee for no later than days and if is found not in touch should close there file as absconding and in your case if you don't have such rule/policy than you being a TL need to consult manager and make sure that if he/she is just showing fake details than should take action or else if the case was very critical wherein the employee could not even call than based on severity should decide the scenario
Why is people management attribute very important for a team lead?
Attribute is a point where the management can analyze about us. People management attribute is very much important to balance the relation ship between your superiors and lower laps.
RE: How you will resolve if there is problem between your Team member and get work done?
When team members are at odds, I ask them to review what our task is. The answer should be "to achieve our target". I ask them to remember that we are not required to like each other, but we are required to work together with respect and that nothing less will be tolerated. The team members in question are then asked

if they can work out their problem by themselves or if they need a third party to intervene. If they feel they

need a third party, I ask them who that party should be: me, the department director -- maybe Human

Resources. Then I make it clear that the issue is to be resolved today, or at the latest tomorrow, that their dissention is putting the project at risk and that is not acceptable.

At all times, I make every effort to not lay blame on either team member unless the situation is extreme. (If the situation was extreme, there would be little or no discussion -- we would go directly to HR.) Whatever the problem might be, I make it clear that we will work it out and we will work it out now.

RE: What are the training methodologies a team leader must take to educate a team?

Training plays an very important role in team success, they basically many training methodologies which can implemented, I have some of them discussed here.

1) If the team leader is well versed with the knowledge then it is better to go for a class training. 2) They are possibilities that some of the associate may not understand the class room training in this cases you can go for one on one training. 3) Other is mentoring were you can sit beside the employee and explain everything. 4) The major difference between the mentoring and class room training: in the class the knowledge passed to every one on equal basis keeping that everyone is in same page and each of them is capable of understanding, were as mentaring is after the knowledge is already based then you are particularly training in specific knowledge.

RE: 13. What steps must a team lead take to focus the skills of team members to higher authorities?

One of the good quality of a leader is to search the leadership qualities in his team, if he find the qualities in one of the team member then it should not be kept within himself but to exposed to other higher authorities, some of the points which he needs to taken care while explaning the qualitites to authorities. The team lead should test the member in all situation, all the recognization should be on paper and if the authority ask to prove his talent or give the scenario were he has explicit himself on document, that is the reason that documents are very important.

RE: As a team lead how do you pacify an angry client?

There are two rules to follow when dealing with a client: 1st: Client is always Right 2nd: Even if the client is Wrong, Refer to rule no 1.

Since the client is angry, as a lead accept the mistake (blame) whatever the client has to say. If you start with this... the client is bound to get relaxed after 5/10 minutes of shouting... Then try to explain the game plan to follow from NOW (Please prepare for this as a lead you should be ready for this anytime).

RE: What are the attributes a team leader must look for while selecting members for their team?

- 1. Zeal to learn. As the technologies are changing everyday, a person who has a zeal to learn new things, will learn it fast
- 2. Good team player. Person should not have an attitude of his/her knowledge
- 3. Flexibility
- 4. Sincerity
- 5. Honesty

RE: How can a team lead keep the team organized to meet deadlines or goals?

Team members have to be provided access to the bigger picture. This not only assists them in attaining their goals but is also a moral booster when they realize the overall impact of their contribution.- Periodic feedback to members allows them to gauge their progress and mitigate any issues before they go out of control- Nip it in the bud: conflict resolution skills are vital. Organize the team to ensure that sub-teams members respect each other i.e do not have personality conflicts

RE: How does a team lead identify performance problems and solve the same among their team members?

Assuming "performance problems" refers to individual job performance problems ...A successful team lead will have laid out clearly defined objectives for each member of his team and therefore held accountable for reaching those individual goals. Team leads should periodically review the level of effort put forth by each team member. This makes it easier to identify and efficiently rectify performance problems. Periodic feedback to members is crucial in ensuring that any concerns are promptly resolved.

RE: What size team have you led and how did your success as a team leader?

I have led a team of X "engineers and technicians". I measure my success as a team lead by the degree to which the project goals were achieved within a set of project constraints.

RE: How important is leadership and communication skill plays part in a team leader role?

A team lead role can be defined as follows...A person with good communication and interpersonal skills. The main responsibility of a team lead is to co-ordinate the team members during the life cycle of various projects. Communication skill is important because a team can consists of a number of individuals with various ideas and skills. In order to drive them to a common goal, the leader should be able to communicate with the team as well the higher management. A good team lead is naturally a good communicator and a good communicator can be a good team lead. If he is not able to communicate the achievements of his teams to the management, then the team starts disintegrate. At the same time, if he fails to communicate the management visions to his subordinates, there could be problems due to unawareness. He should effectively communicate to stake holders and mangers about the possible problems which can be or faced by the team such as work-load etc. So effective communication skills makes him a good negotiator as well and hence he would be able to get the trust of the team members

RE: What steps must a team leader take to motivate the team?

These are the few steps you should take to motivate the team

- 1) Don't even think of selling the credit of a team member on your name. Give the credit to individual in team and encourage him/her for the same verbally.
- 2) In case of some bad reputation comes to your team, try to shield the team members from losing their morals, but do not forget to take or suggest preventive steps to let happen same thing again.
- 3) Start work by self on some of the tasks which are boring though required (like documentation) before asking team members to do the work.

There are lot many tips like this one, but these few will help get hold of the team.

RE: What is Self-managed team leadership?

Self-managed team leadership is different from traditional leadership and provides an alternative to traditional leader's role. Self-managed team leaders lead without positional authority. Self-managed team leadership is moving inside one's subordinate work group to lead. Self-managed team leadership defines a different role for the leader. The leader is not responsible for making decisions, developing action plans or giving orders. In these situations, the team is given the responsibility, authority and accountability for managing a defined area of responsibility. When the work group is given control over one or more defined areas of team responsibility, it is the leader's role to use self-managed leadership skills and systematic processes to help the team to operate effectively and efficiently.

RE: How must the team leader play the role of learner to benefit a team?

A good learner only could be a good leader. The team leader must attend induction training, seminars arranged by companies in various skills to keep them updated with the current technology. They must learn and induct it their team members which proves them to be a good team leader.

RE: What are the Leadership Styles a good team leader must follow?

There is no direct answer to this question.

If you think of it then it is a flamboyant style that usually would distinguish a leader from the team. However, at the same time flamboyance has to be complemented with actual knowledge of the technology/issues being addressed by the solution.

A few qualities that can make a good team lead: 1) Due diligence - A cliched term, but makes a lot of sense when one is leading a team of highly qualified technologists. Delving into the details of what each team member is involved in helps in constant monitoring of activities. It is a merry go round but is useful. 2) Reach the next level - communicate what the team is upto and what the achievements of the team have been to the next higher level. Gives visibility to the team as well as the lead 3) Personal outreach - common human beings (which means everyone except superman-m.h.r.i.p and Paris Hilton) are surrounded by pressures which can restrict thought flow at critical junctures. A good team lead can provide a reassuring pat on the back to team members who are under pressure. To do this you have to be able to identify with the team member and be able to give thoughtful advice (DO NOT discuss such issues with anyone - breaks the trust bond). 4) Encourage independent thinking - Reduces a lot of design and implementation problems. 5) Take the team out for a team-building session once in a while. Make sure the team gets "face time" with higher management. Invite higher management of course.

RE: How is the effectiveness of a team measured by teamlead

It can be measure by statistics and graphs, what and how team have performed. Leader effectiveness can be measure by getting the maximum potential from its team, motivate them and bring out regular improve output. Make them work freely, create their own ideas, check them if they forget the objective and goals. Note: A check can be made by high attrition. If its high, there is not satisfaction or employees are under pressure.

RE: What are the Core skills needed for Team Lead?

Task (or Project) Management Skills (scheduling and budgeting resources) Personnel Management Skills (delegating, dispute resolution, personality conflict resolution) Mentoring Skills Communication Skills (downstream and upstream)

- 17. What are the communication methods you followed within team and to client?
- 18. As a Team Lead how do you deal with the toughest group and get their cooperation?
- 19. How should a team lead handle a team member who always gives defensive response?
- 20. How should a team lead play as a good team player?
- 21. What are the important responsibilities of Team Leaders?
- 22. What are the weakest qualities or attributes a team leader should avoid definitely?
- 23. What are vital Contingency plans a team lead must take care?

RE: What are the Core skills needed for Team Lead?

Task (or Project) Management Skills (scheduling and budgeting resources) Personnel Management Skills (delegating, dispute resolution, personality conflict resolution) Mentoring Skills Communication Skills (downstream and upstream)

You are questioning whether the candidate has leadership skills or potential. You seek to identify the leadership style of your candidate, from his or her perspective and from the perspective of his or her direct reporting staff and peers. You are determining whether the candidate's style is congruent with the culture of your organization. It is helpful if you have created beforehand a leadership profile that identifies the skills and traits of successful leaders within your organization.

Leadership style is best demonstrated in stories. Self-examination and commentary is self-serving, at best, in an interview setting. Ask your candidates for many specific stories and examples.

- 1. How to Deal with a Negative Coworker: Negativity Matters Some people exude negativity. They don't like their jobs, or they don't like their company. Their bosses are always jerks and they are always treated unfairly. The company is always going down the tube and customers are worthless. You know these negative Needs and Nellies every organization has some and you can best address their impact on you via avoidance.
- 2. How to Implement Strategic Planning: Vision Statement, Mission Statement, Values In an earlier article, I gave you a strategic planning framework, samples, and examples for creating your organization's mission statement, vision statement, and more. As a result of the strategic planning article, people ask: now that I know what all of this strategic planning should look like, how do I actually make strategic planning happen in my organization? This strategic planning question strikes at the heart of how to make change of any kind happen in your organization. Find out how.
- 3. When Management Systems Fail: Why Employees Don't Do What You Want Them to Do Managers perennially ask why employees don't do what they are supposed to do. While part of the responsibility falls on choices individual employees make, managers need to shoulder part of the blame, too. Employees want to succeed at work. I don't know a single person who gets up in the morning and says, "I think I'll go to work to fail today." Many of the reasons employee responsibility fails is due to a failure in the employee management systems.
- 4. How Do You Know When It's Time for You to Go? Are you feeling increasingly unhappy about your job? Do you find yourself day dreaming about other things you could be doing with the time you spend at work? Do you dread the thought of Monday mornings? Then it may be time for you to quit your job. Take a look.
- 5. Personal Courage and Conflict Resolution at Work Practicing personal courage is necessary if you want to really resolve conflicts at work. Many people are afraid of conflict resolution. They feel threatened by conflict resolution because they may not get what they want if the other party gets what they want.

Even in the best circumstances, conflict resolution is uncomfortable because people are usually unskilled.

- 6. Workplace Conflict Resolution: Managing Your Human Resources As an organization leader, manager or supervisor, you are responsible for creating a work environment that enables people to thrive. If turf wars, conflicts, disagreements and differences of opinion escalate into interpersonal conflict, you must intervene immediately. Conflict resolution, with you as mediator, is essential. Conflict resolution is an immediate priority for your organization.
- 7. Achieve Your Dreams: Six Steps: Accomplish Your Goals and Resolutions Don't let your goals and resolutions fall by the wayside. Chances are that to achieve your dreams and live a life you love, those goals and resolutions are crucial. Goal setting and goal achievement are easier if you follow these six steps for effective and successful goal setting and resolution accomplishment.
- 8. Rise Above the Fray: Options for Dealing With Difficult People at Work Difficult people do exist at work. Difficult people come in every variety and no workplace is without them. How difficult a person is for you to deal with depends on your self-esteem, your self-confidence and your professional courage. Dealing with difficult people is easier when the person is just generally obnoxious or when the behavior affects more than one person. Dealing with difficult people is much tougher when they are attacking you or undermining your professional contribution.
- 9. Bad to the Bone: Dealing With a Bad Boss or Bad Managers You're weary. You're frustrated. You're unhappy. You're demotivated. Your interaction with your boss leaves you cold. He's a bully, intrusive, controlling, picky and petty. He takes credit for your work, never provides positive feedback and misses each meeting he schedules with you. He's a bad boss, bad to the bone. Dealing with less than effective managers, or just plain bad managers and bad bosses, is a challenge too many employees face. These ideas will help you deal with your bad boss.
- 10. Twelve Tips for Team Building People in every workplace talk about building the team, working as a team, and my team, but few understand how to create the experience of team work or how to develop an effective team. Here are twelve tips for building successful work teams.

More Job Interview Questions for Employers

The following sample job interview questions about leadership enable you to assess your candidate's skills in leadership. Feel free to use these job interview questions in your own candidate interviews.

1. You decided to reorganize the department or work unit that you lead. Tell me how you proceeded with the reorganization?

2. Have you ever been a member of a successful team? If so, describe the role you played on the team and in its success.

3. Give me an example of a time when you played a leadership role in an event, an activity, a department or work unit, or a project. Describe how you led the efforts. Tell me how people responded to your leadership.

4.If I were to ask your reporting staff or your peers to comment about your leadership style, your leadership strengths, and your leadership weaknesses, how would they respond? What would this discussion tell me about you as a leader?

5.Tell me about a time when you created agreement and shared purpose from a situation in which all parties originally differed in opinion, approach, and objectives.

6.As a leader within an organization, you must often build support for goals and projects from people who do not report to you and over whom you have no authority. Tell me about a situation in which you demonstrated that you can build the needed support.

7. What are the three most important values you demonstrate as a leader? Tell me a story that demonstrates each of these leadership values in practice within your workplace.

8. During your work experiences while attending college, tell me about a time when you demonstrated that you have leadership ability and skill.

Given below are some BPO Interview Questions answer them if you can.:

1.If You join the company then what is the first thing you want to do, which you were not able to do in ur previous company?

2.why did you want to join the call center?

3.why do you left your previous job?

4. What is your greatest strength?

5.where do you see yourself from (Ten or fifteen)years from now?

6.If u will be the principal of a school what will u can do best for school?

7. Take Over Means?

8. What are your biggest weaknesses?

Some Views

i can improve my skills of dealing well with peopleand working well under stress

i want to join the call center as it's booming field have inclination, and having the flexible schedule ... also it's package is good .

i want join call centre because i will learn how to deal with different types of people with eqanimity. it will be my great success.

hi guys if any one ask this type of question that why should i hire you then reply? i have all the abilities which one you want, gud communication skills, gud listining power, confident, and i always work with a gud direction, work with smart work not hard work

if they asked for yourself at first you need to tell your name your address and your technical skill after that you will tell your strength and weakness .at last you should tell them bpo is booming inclination and it has good salary package also.it encourages their employer also.doing work with BPO is my dream job.you have to show your keen interest in BPO sector.it should be just two minute.that,s all .thanks

well, BPO is one of the most growing sector in this scenario as compare to another industries. here u get chance to groom ur self and ur potential. BPO give top class compentation and career growth.

i want to work in a branded company and i believe working in this company will benificial for me in every respect as i can learn so many things while working in this company.

Q.why did you want to join the call center?

A. Business Process Outsoucing is an industry which not only pays in terms of Finacial benifit of course gives me and oppurtunity to be a part of a team which is of course Global Business, My Efforts have always been to be a part of a Global business environment, that the

reason i wish to join in a call centre.

Q.What is your greatest strength?

A. **Flexibility to handle change.** Adaptable, can work anywhere, anytime/long hours. **Good leadership and team building ability.** Optimistic, positive thinking.

** Co-operative

	—— Q.Speak on topic movie:-
	— A.whenever we hear this word,the 1st
thing which flashes in our mind is entertainment but if we give	a deep thought to this

then surely we will come to know that its all not about entertainment only, movies are also represents the culture of a

country as this is an industry which supplies as per demand.producing a movie is like making a cup of tea. as we need a fix

proportion of sugar,tea,milk,water to make tea tastier similarly a movie needs all moods,humour,sensibility and many more in

it.producing a movie requires sufficient time & patience.as we all know rome was not built in a singly day,rome is a very	/
beautiful city,its building,path architecture,musicians and many things but all these were not built in day it took	a singly
very long time to reach there similarly creating a movie demands proper attention,skill and sufficient i hope now	time.so
onwards whenever u will hear this word entertainment will not be the only thing which will flash in young mind, thank you.	our
——————————————————————————————————————	
"Shanti'. His film started in 1977 and ended in 2007. He was a Junior Artist in the 70's. She was	
a Superstar of the 70's. He was her biggest fan. She was his biggest inspiration. He was madly in love was waiting for	. She
love. He wanted to be a "superstar'. She wanted to be a "girl next door'. He was ready to give up all hadreams for love.	nis
She was ready to give up everything she had for love. He felt betrayed in life. She felt betrayed in lov then started	e. And
the saga of "Om Shanti Om' For some love stories one life time is not enough.	
life? ————————————————————————————————————) i used bar and
——————————————————————————————————————	
established company with a good brand name.	
lam proud to have such a good supporting family.	
——————————————————————————————————————	
——————————You should hire me because I?m t	he best

bring an additional quality that makes me the best person for the job-my passion for excellence. I am passionately committed to producing truly world class results.
——————————————————————————————————————
Q.Why did you want to change(leave) your current(present) job? ———————————————————————————————————
Q.where do you see yourself from (Ten or fifteen)years from now? A.I see myself as a successful person in future, and I will be taking on new challenges. I would also like to add that nobody has seen the future and one can only make better future by living at present and working hard to make better
future. ———————————————————————————————————
work anywhere, anytime/long hours. Good leadership and team building ability. Optimistic, positive thinking. ** Co-operative
Q.why should i hire u? A.I am
industrious, innovative and willing to adapt to changes in work. I get along very well with people and can promote good team play, which can lead to a good working environment.
These qualities plus enthusiasm, persistence, punctuality and my willingness to work hard with perseverance makes me an asset of the company.
——————————————————————————————————————
regular/correspodent profession course. i would like to get in to corporate field and deliver my maximum concentration toward the job profile which would help me for my career growth as wel as professionally

adding experice to me.

person for the job. I realize that there are likely other candidates who also have the ability to do this job. Yet I

——————————————————————————————————————	you want to join call center 5 Process Outsoucing in a indusrty which
not only pays in terms of Finacial benifit of course gives me and open of course Global Business, My Efforts have always been to be a pathe reason i wish to join in a call centre	ppurtunity to be a part of an team which is
Q.How do you answer 'What are your strengths and weaknesses' in	n a job interview?
A."My strength is my flexibility to handle change,I work very well we that everyone has	vith all kinds of people, and understand
different perspectives about projects and work tasks — so when I vicomes to the table	work with others I realize that everyone
with different priorities and objectives. I keep this in mind when I caccomplished with	communicate tasks that need to be
positive reinforcement and awareness of what others are working	on.
I believe I should always be improving upon myself, good or bad.	
I'm little egoistic when it comes to winning things and get a little r I am not in a position to complete the assigned job in time.	ruthless too.Lose patience sometimes when
I have to work on having more patience and giving myself a break once.	because I always want everything done at
My Strenght is that i m a hardworker and this is not upto only work weakness is that i lack planing skillsi always go on with the flowl trying to improve itnow, i even keep a small pocket diary with me	but as i have recognised my weaknessi m
Q.Wh	
current(present) job?	
challenging career in a firm with a larger employee base such as you time has come for me to move onto the next rung of the ladder are achieved in a company like this.	

arrange,what you will prefer? ————————————————————————————————————
A.In love marriage, two people fall in love without any judgment. So they accept the person as it is. And love changes a person.
But in arrange marriage, there is a list of characteristics which a girl should possess and one feels as if its been slaughter in some market.
Everyone changes with time so is the person we marry with our consent. So, if we understand each other and accepts the other person as it is, life becomes easier.
i think love marriage is betterbeacause arrange marriage may leave u feeling unhappyits like ur marrying a stranger!
Love marriage is fine only if the couple trusts each other completely. Trust is the foundation of any relationship
Love marriageshave stronger bondsa stronger relationship because u know the person
if you know who you are then it becomes easier to know if that person is right for you. and after that one should try to form their identity as a couple. its important to get the facts right before marriage.
In the last I can only say, I prefer Love marriage on arrange marriage but with the consent of my parents and elders.
· Team Meeting is NEITHER a one-man Show NOR a Monologue. · Team Meeting is a WORK Meeting. · Team Meeting is a TEAM Meeting. · It requires Preparation from all Team Members. · It requires Active Participation and Involvement of all Team Members.
Team Members shall:
 Prepare for the meeting. Participate in the meeting by: a. Asking questions b. Reporting Problems c. Proposing solutions d.
Proposing Improvements e. Bringing Ideas

Team Meeting shall result into:

1. Team Plan Update/Improvement

- 2. Decisions
- 3. Action Points List
- 4. Work Follow-up
- 5. Time Plan Update/Adaptation
- 6. Re-negotiation of Individual planning (Hours to finish)
- 7. Make decisions on time.
- 8. Real-Time Feedback (work spent vs. work planned)
- 9. Precise History of the Teamwork
- 10. Input to Teamwork Reporting to the Project

In an automated, social-networking driven world, we sometimes miss out on building strong relationships at work. There are, however, ways to improve your rapport with co-workers. Shreya Roy speaks to experts to come up with five.

Build an Emotional Bank Balance

Often, we take from people, without having much to give in return. "Before you start taking from your colleagues, make sure you have done enough for them, and created enough goodwill to ask; what I would call creating an emotional bank balance," says Elango R, global chief HR officer at Mphasis. Seek out opportunities to collaborate with your colleagues in an unobtrusive manner.

Dedicate Time to Relationships

Try to dedicate a fraction of your time every week on catching up with co-workers. It is easy to get into a "plug-in-plug-out" mode, unless you make a conscious effort to know people. "It surprises me that people don't ask each other how their weekend was, or enquire about each other's lives. Try & grab a lunch together," says Mark Driscoll, Human Capital leader, PwC India.

Trust is key to all relationships, and make sure you build your brand as a trustworthy person. Do not let people down by not delivering; avoid talking about people in their absence. "You should be someone people will never doubt based on what somebody says about you," adds Elango.

Recognise their Efforts

It is often difficult for people to be openly appreciative of someone else's work. This is not necessarily out of ill-will, and sometimes, it just feels awkward to convincingly tell someone that they did a good job. But a little pat on the back can go a long way in building rapport. "Recognise them for their efforts and time spent helping achieve deliverables," says Driscoll.

Know What Value You Bring

You are most likely to have stronger relationships, if people know what they can come to you for. "Are you a subject matter expert, do you have information, or expertise in something; what should people see in you is important," says Elan

01_50_irregular_verbs_past_simple_part_1 Make the past simple:
02_50_irregular_verbs_past_simple_part_2 Perfect-English-Grammar.com
03_50_irregular_verbs_past_participle_part_1 Make the past participle of the verb:
04_50_irregular_verbs_past_participle_part_2 Make the past participle:
5-6present_perfect_cd-irregular

01_50_irregular_verbs_past_simple_part_1

Make the past simple:

- 1. She _ (bring) some chocolates to the party.
- 2. I _ (hear) a new song on the radio.
- 3. I _ (read) three books last week.
- 4. They _ (speak) French to the waitress.
- 5. He _ (understand) during the class, but now he doesn't understand.
- 6. I _ (forget) to buy some milk.
- 7. She _ (have) a baby in June.
- 8. You _ (lose) your keys last week.
- 9. They _ (swim) 500m.
- 10. I _ (give) my mother a CD for Christmas.
- 11. At the age of 23, she _ (become) a doctor.
- 12. I _ (know) the answer yesterday.
- 13. He _ (tell) me that he lived in Toronto.
- 14. We _ (lend) John £200.
- 15. She _ (drink) too much coffee yesterday.
- 16. The children _ (sleep) in the car.
- 17. He _ (keep) his promise.
- 18. I _ (choose) the steak for dinner.
- 19. The film _ (begin) late.
- 20. We _ (fly) to Sydney.
- 21. They _ (drive) to Beijing.
- 22. He _ (teach) English at the University.
- 23. I _ (send) you an e-mail earlier.
- 24. We _ (leave) the house at 7 a.m..
- 25. He _ (feel) terrible after eating the prawns.

Answers: 26. She brought some chocolates to the party. 27. I heard a new song on the radio. 28. I read three books last week. 29. They spoke French to the waitress. 30. He understood during the class, but now he doesn't understand. 31. I forgot to buy some milk. 32. She had a baby in June. 33. You lost your keys last

week. 34. They swam 500m. 35. I gave my mother a CD for Christmas. 36. At the age of 23, she became a doctor. 37. I knew the answer yesterday. 38. He told me that he lived in Toronto. 39. We lent John £200. 40. She drank too much coffee yesterday. 41. The children slept in the car. 42. He kept his promise. 43. I chose the steak for dinner. 44. The film began late. 45. We flew to Sydney. 46. They drove to Beijing. 47. He taught English at the University. 48. I sent you an e-mail earlier. 49. We left the house at 7 a.m.. 50. He felt terrible after eating the prawns.

02_50_irregular_verbs_past_simple_part_2

Perfect-English-Grammar.com Irregular Verbs Past Simple (Part 2)

- 1. I _ (come) to England in 1993.
- 2. She _ (stand) under the tree to shelter from the rain.
- 3. They _ (do) their homework yesterday.
- 4. We _ (sing) too much last night, I have a sore throat!
- 5. He already _ (eat) all the cake.
- 6. The child _ (fall) off his bicycle.
- 7. It _ (take) three hours to drive to Paris.
- 8. I _ (find) your keys under the table.
- 9. She _ (get) a new bike for her birthday.
- 10. She _ (sell) her house last year.
- 11. We _ (go) to New York in January.
- 12. Finally my mother _ (let) me go to a party.
- 13. It _ (be) cold last night.
- 14. I _ (meet) John at the weekend.
- 15. Lucy _ (pay) the bill, before leaving the restaurant.
- 16. We _ (see) the new film yesterday.
- 17. She _ (wear) her new coat to the party.
- 18. I _ (think) my football team would win.
- 19. They _ (put) their bags in the bedroom.
- 20. Billy _ (run) after the bus.
- 21. She _ (say) that she would come later.
- 22. I _ (buy) some books this morning.
- 23. We _ (make) a cake, it was delicious.
- 24. He _ (sit) on the old chair, and it broke.
- 25. They _ (write) a letter to their parents.

Answers:

1. I came to England in 1993.

- 2. She stood under the tree to shelter from the rain.
- 3. They did their homework yesterday.
- 4. We sang too much last night, I have a sore throat!
- 5. He already ate all the cake.
- 6. The child fell off his bicycle.
- 7. It took three hours to drive to Paris.
- 8. I found your keys under the table.
- 9. She got a new bike for her birthday.
- 10. She sold her house last year.
- 11. We went to New York in January.
- 12. Finally my mother let me go to a party.
- 13. It was cold last night.
- 14. I met John at the weekend.
- 15. Lucy paid the bill, before leaving the restaurant.
- 16. We saw the new film yesterday.
- 17. She wore her new coat to the party.
- 18. I thought my football team would win.
- 19. They put their bags in the bedroom.
- 20. Billy ran after the bus.
- 21. She said that she would come later.
- 22. I bought some books this morning.
- 23. We made a cake, it was delicious.
- 24. He sat on the old chair, and it broke.
- 25. They wrote a letter to their parents.

03_50_irregular_verbs_past_participle_part_1

Make the past participle of the verb:

- 1. Julie wasn't at home, she had _ (go) to the shops.
- 2. We've already _ (have) lunch.
- 3. This was the first time she had _ (do) her homework
- 4. They have _ (begin) painting the living room.
- 5. We have _ (keep) this secret for three years.
- 6. He has never _ (drive) a motorbike before.
- 7. I have _ (be) sick all week.
- 8. By the time we arrived, the children had _ (eat) all the chocolate.
- 9. The books had _ (fall) off the table, and were all over the floor.
- 10. "Are you okay?" " I've _ (feel) better."
- 11. I 'd _ (lend) my umbrella to John, so I got wet.
- 12. I've been looking for ages, but I haven't _ (find) my keys yet.
- 13. The birds have _ (fly) south for the winter.
- 14. She has finally _ (come).
- 15. Don't worry, we haven't _ (forget) about the meeting.
- 16. It had _ (become) very cold, so we went inside.
- 17. You have _ (buy) a lot of new clothes recently.
- 18. I'd (get) a lovely new bike for my birthday, so I was keen to try it.
- 19. She'd _ (bring) a cake to the party, but we didn't eat it.
- 20. Have you _ (choose) your university yet?
- 21. Have you ever _ (drink) Turkish coffee?
- 22. I've _ (give) some money to Julia.
- 23. Had you _ (hear) of this band before you came to the USA?
- 24. She has _ (know) about the problem for three months.
- 25. Why has John (leave) already?

Answers:

1. Julie wasn't at home, she had gone to the shops.

- 2. We've already had lunch.
- 3. This was the first time she had done her homework
- 4. They have begun painting the living room.
- 5. We have kept this secret for three years.
- 6. He has never driven a motorbike before.
- 7. I have been sick all week.
- 8. By the time we arrived, the children had eaten all the chocolate.
- 9. The books had fallen off the table, and were all over the floor.
- 10. "Are you okay?" " I have felt better."
- 11. I had lent my umbrella to John, so I got wet.
- 12. I've been looking for ages, but I haven't found my keys yet.
- 13. The birds have flown south for the winter.
- 14. She has finally come.
- 15. Don't worry, we haven't forgotten about the meeting.
- 16. It had become very cold, so we went inside.
- 17. You have bought a lot of new clothes recently.
- 18. I'd got a lovely new bike for my birthday, so I was keen to try it.
- 19. She'd brought a cake to the party, but we didn't eat it.
- 20. Have you chosen your university yet?
- 21. Have you ever drunk Turkish coffee?
- 22. I've given some money to Julia.
- 23. Had you heard of this band before you came to the USA?
- 24. She has known about the problem for three months.
- 25. Why has John left already?

04_50_irregular_verbs_past_participle_part_2

Make the past participle:

- 1. She has never _ (let) her daughter have a boyfriend.
- 2. Have you already _ (read) today's newspaper?
- 3. The house has been _ (sell).
- 4. He has _ (lose) his wallet again.
- 5. I have _ (write) three essays this week.
- 6. That clock was _ (make) in Switzerland.
- 7. He had _ (run) 6 miles when he hurt his ankle.
- 8. I have never _ (see) such a beautiful view.
- 9. He has _ (teach) hundreds of students during his career.
- 10. Have you ever _ (meet) a famous person?
- 11. Because she hadn't _ (pay) the bill, the electricity went off.
- 12. They have _ (send) Christmas cards to all their friends.
- 13. Where have we _ (put) the car keys?
- 14. We have never _ (sing) in public before.
- 15. She had _ (wear) her blue dress many times.
- 16. John had never _ (speak) English before he came to London.
- 17. Why have you _ (stand) up? Are we leaving?
- 18. Have you ever _ (swim) in the Atlantic Ocean?
- 19. It had _ (take) three hours to reach the station, so they missed the train.
- 20. I have never _ (say) that I didn't love you.
- 21. David jumped into the air. He had _ (sit) on a drawing pin.
- 22. The weatherman had _ (tell) us it would be sunny, but it rained all day.
- 23. I'm sorry I'm so tired. I haven't _ (sleep).
- 24. Have you _ (think) about changing jobs?
- 25. He'd thought he had _ (understand) the problem, but now he realised he had made a mistake.

Answers:

1. She has never let her daughter have a boyfriend.

- 2. Have you already read today's newspaper?
- 3. The house has been sold.
- 4. He has lost his wallet again.
- 5. I have written three essays this week.
- 6. That clock was made in Switzerland.
- 7. He had run 6 miles when he hurt his ankle.
- 8. I have never seen such a beautiful view.
- 9. He has taught hundreds of students during his career.
- 10. Have you ever met a famous person?
- 11. Because she hadn't paid the bill, the electricity went off.
- 12. They have sent Christmas cards to all their friends.
- 13. Where have we put the car keys?
- 14. We have never sung in public before.
- 15. She had worn her blue dress many times.
- 16. John had never spoken English before he came to London.
- 17. Why have you stood up? Are we leaving?
- 18. Have you ever swum in the Atlantic Ocean?
- 19. It had taken three hours to reach the station, so they missed the train.
- 20. I have never said that I didn't love you.
- 21. David jumped into the air. He had sat on a drawing pin.
- 22. The weatherman had told us it would be sunny, but it rained all day.
- 23. I'm sorry I'm so tired. I haven't slept.
- 24. Have you thought about changing jobs?
- 25. He'd thought he had understood the problem, but now he realised he had made a mistake.

5-6present_perfect_cd-irregular