

Substring Operations

- General format:
 - `${myString:<startChar>[:<length>]}`
- Examples
 - `X=Substring`
 - `echo ${X:3:4} # produces stri`
 - `echo ${X:2:100} # produces bstring`
 - `echo ${X:2} # produces bstring`

String Deletion

X=abcdabcdz

Delete the shortest string that matches (#)

from front of string

echo \${x#*d} #abcdz

#Delete the longest string that matches (##)

from front of string

Echo \${x###*d} #d

String Deletion

```
X=abcdabcdz
```

```
# Delete the shortest string that matches (%)
```

```
# from end of string
```

```
echo ${x%cd*} #abcdab
```

```
#Delete the longest string that matches (%%)
```

```
# from end of string
```

```
echo ${x%%cd*} #ab
```

tr – Translate Characters

- Translate one set of characters to the corresponding set
- `echo abbabbcca | tr a b #bbbbbbccb`
- `echo abbabbcca | tr -d #bbb`
- `echo abbabbcca | tr -c a z #azzazzzza`
- `echo abbabbcca | tr -c ab z #abbabbzza`
- `echo abbabbcca | tr -s bc # ababca`
- `tr a-z A-Z #`Converts input to uppercase
- `tr A-Z a-z #`Converts input to lowercase

tr –Translate Characters

- *tr [-c] [-d] [-s] [string1] [string2]*
- -c Complement the set of characters specified by string1.
- -d Delete all occurrences of input characters that are specified by string1.
- -s Replace instances of repeated characters with a single character.
- string1 First string or character to be changed.
- string2 Second string or character to change the string1.

tail – get the last few lines from a file

- `tail -10` # get the last 10 lines from a file
- `tail -1` # get the last line from a file
- `tail -f` # continue to monitor a file and get the lines that are added.