# PYTHON NETMIKO ØVELSER – Network Management

Bemærk, du har brug for en slags netværksenhed for at arbejde på disse øvelser. Dette kan være en virtuel eller fysisk enhed.

1. Brug Netmiko til at oprette en forbindelse til en netværksenhed og udskriv enhedens prompt.
2. Brug send\_command() til at sende en showkommando via SSH-kanalen. Hent resultaterne, og udskriv resultaterne på skærmen.
3. Find en kommando på din enhed, der har yderligere prompting. Brug send\_command\_timing til at sende kommandoen via SSH-kanalen. Fang output, og håndter den ekstra anmodning.  
     
   *Kommando kunne være delete*
4. Brug *send\_config\_set ()* og *send\_config\_from\_file ()* til at foretage konfigurationsændringer.   
     
   Kontroller, at konfigurationsændringen skete korrekt som en del af dit program. Brug f.eks. Send\_command() til at udføre show run og bekræfte den nye konfiguration.
5. (Valgfri) Brug send\_command() sammen med ntc-skabeloner for at udføre en showkommando. Få TextFSM automatisk til at konvertere dette show-kommandooutput til strukturerede data.
6. (Valgfrit) tilslut til tre netværksenheder den ene efter den anden. Brug send\_command () til at udføre en showkommando på hver af disse enheder. Udskriv dette output til skærmen.

## Video

1. **Netmiko Introduction and Basics**  
   Video link [https://vimeo.com/254569911](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiMzY5NDY3NjExMyIsInVybCI6Imh0dHBzOi8vdmltZW8uY29tLzI1NDU2OTkxMT9fX3M9cXJtdXR1OGJvaHZqdGFncGFrbnoifQ)  
   Længde 8 minutter
2. **Netmiko Show Commands**  
   Video link [https://vimeo.com/254578980](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiMzY5NDY3NjExMyIsInVybCI6Imh0dHBzOi8vdmltZW8uY29tLzI1NDU3ODk4MD9fX3M9cXJtdXR1OGJvaHZqdGFncGFrbnoifQ)  
   Længde 13 minutter
3. **Netmiko and Prompting**  
   Video link [https://vimeo.com/254587832](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiMzY5NDY3NjExMyIsInVybCI6Imh0dHBzOi8vdmltZW8uY29tLzI1NDU4NzgzMj9fX3M9cXJtdXR1OGJvaHZqdGFncGFrbnoifQ)  
   Længde 12 minutter
4. **Netmiko and TextFSM**  
   Video link [https://vimeo.com/254611876](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiMzY5NDY3NjExMyIsInVybCI6Imh0dHBzOi8vdmltZW8uY29tLzI1NDYxMTg3Nj9fX3M9cXJtdXR1OGJvaHZqdGFncGFrbnoifQ)  
   Længde 10 minutter
5. **Netmiko Config Changes**  
   Video link [https://vimeo.com/254614073](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiMzY5NDY3NjExMyIsInVybCI6Imh0dHBzOi8vdmltZW8uY29tLzI1NDYxNDA3Mz9fX3M9cXJtdXR1OGJvaHZqdGFncGFrbnoifQ)  
   Længde 8 minutter
6. **Netmiko Troubleshooting**  
   Video link [https://vimeo.com/254786724](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiMzY5NDY3NjExMyIsInVybCI6Imh0dHBzOi8vdmltZW8uY29tLzI1NDc4NjcyND9fX3M9cXJtdXR1OGJvaHZqdGFncGFrbnoifQ)  
   Længde 9 minutter

## Links

[Netmiko Readme](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiMzY5NDY3NjExMyIsInVybCI6Imh0dHBzOi8vZ2l0aHViLmNvbS9rdGJ5ZXJzL25ldG1pa28vYmxvYi9kZXZlbG9wL1JFQURNRS5tZD9fX3M9cXJtdXR1OGJvaHZqdGFncGFrbnoifQ)  
[Netmiko Examples](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiMzY5NDY3NjExMyIsInVybCI6Imh0dHBzOi8vZ2l0aHViLmNvbS9rdGJ5ZXJzL25ldG1pa28vdHJlZS9kZXZlbG9wL2V4YW1wbGVzP19fcz1xcm11dHU4Ym9odmp0YWdwYWtueiJ9)  
[Netmiko Tutorial](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiMzY5NDY3NjExMyIsInVybCI6Imh0dHBzOi8vcHluZXQudHdiLXRlY2guY29tL2Jsb2cvYXV0b21hdGlvbi9uZXRtaWtvLmh0bWw_X19zPXFybXV0dThib2h2anRhZ3Bha256In0)  
*Denne tutorial er en smule gammel, men bør stadig være generelt korrekt.*

Links til flere dokumenter, der kan være nyttige fra et Netmiko-perspektiv:[API Documentation](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiNTAxOTY5OTg5MCIsInVybCI6Imh0dHBzOi8vbmV0bWlrby5yZWFkdGhlZG9jcy5pby9lbi9zdGFibGUvY2xhc3Nlcy9iYXNlX2Nvbm5lY3Rpb24uaHRtbD9fX3M9cXJtdXR1OGJvaHZqdGFncGFrbnoifQ)  
[Netmiko and What Constitutes Done](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiNTAxOTY5OTg5MCIsInVybCI6Imh0dHBzOi8vcHluZXQudHdiLXRlY2guY29tL2Jsb2cvYXV0b21hdGlvbi9uZXRtaWtvLXdoYXQtaXMtZG9uZS5odG1sP19fcz1xcm11dHU4Ym9odmp0YWdwYWtueiJ9)  
[Netmiko and TextFSM](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiNTAxOTY5OTg5MCIsInVybCI6Imh0dHBzOi8vcHluZXQudHdiLXRlY2guY29tL2Jsb2cvYXV0b21hdGlvbi9uZXRtaWtvLXRleHRmc20uaHRtbD9fX3M9cXJtdXR1OGJvaHZqdGFncGFrbnoifQ)  
[Netmiko and Secure Copy](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiNTAxOTY5OTg5MCIsInVybCI6Imh0dHBzOi8vcHluZXQudHdiLXRlY2guY29tL2Jsb2cvYXV0b21hdGlvbi9uZXRtaWtvLXNjcC5odG1sP19fcz1xcm11dHU4Ym9odmp0YWdwYWtueiJ9)  
[Netmiko SSH Proxy Support](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiNTAxOTY5OTg5MCIsInVybCI6Imh0dHBzOi8vcHluZXQudHdiLXRlY2guY29tL2Jsb2cvYXV0b21hdGlvbi9uZXRtaWtvLXByb3h5Lmh0bWw_X19zPXFybXV0dThib2h2anRhZ3Bha256In0)

Links der er nyttige Netmiko-eksempler:  
[Simple Connection](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiNTAxOTY5OTg5MCIsInVybCI6Imh0dHBzOi8vZ2l0aHViLmNvbS9rdGJ5ZXJzL25ldG1pa28vYmxvYi9kZXZlbG9wL2V4YW1wbGVzL3VzZV9jYXNlcy9jYXNlMV9zaW1wbGVfY29ubi9zaW1wbGVfY29ubi5weT9fX3M9cXJtdXR1OGJvaHZqdGFncGFrbnoifQ" \t "_blank)  
[Simple Connection using a Dictionary](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiNTAxOTY5OTg5MCIsInVybCI6Imh0dHBzOi8vZ2l0aHViLmNvbS9rdGJ5ZXJzL25ldG1pa28vYmxvYi9kZXZlbG9wL2V4YW1wbGVzL3VzZV9jYXNlcy9jYXNlMl91c2luZ19kaWN0L2Nvbm5fd2l0aF9kaWN0LnB5P19fcz1xcm11dHU4Ym9odmp0YWdwYWtueiJ9)  
[Simple Connection to Multiple Devices](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiNTAxOTY5OTg5MCIsInVybCI6Imh0dHBzOi8vZ2l0aHViLmNvbS9rdGJ5ZXJzL25ldG1pa28vYmxvYi9kZXZlbG9wL2V4YW1wbGVzL3VzZV9jYXNlcy9jYXNlM19tdWx0aXBsZV9kZXZpY2VzL2Nvbm5fbXVsdGlwbGVfZGV2LnB5P19fcz1xcm11dHU4Ym9odmp0YWdwYWtueiJ9)  
[Basic Show Command](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiNTAxOTY5OTg5MCIsInVybCI6Imh0dHBzOi8vZ2l0aHViLmNvbS9rdGJ5ZXJzL25ldG1pa28vYmxvYi9kZXZlbG9wL2V4YW1wbGVzL3VzZV9jYXNlcy9jYXNlNF9zaG93X2NvbW1hbmRzL3NlbmRfY29tbWFuZC5weT9fX3M9cXJtdXR1OGJvaHZqdGFncGFrbnoifQ)  
[Handling Additional Prompting](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiNTAxOTY5OTg5MCIsInVybCI6Imh0dHBzOi8vZ2l0aHViLmNvbS9rdGJ5ZXJzL25ldG1pa28vYmxvYi9kZXZlbG9wL2V4YW1wbGVzL3VzZV9jYXNlcy9jYXNlNV9wcm9tcHRpbmcvc2VuZF9jb21tYW5kX3Byb21wdGluZy5weT9fX3M9cXJtdXR1OGJvaHZqdGFncGFrbnoifQ)  
[Basic Config Change](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiNTAxOTY5OTg5MCIsInVybCI6Imh0dHBzOi8vZ2l0aHViLmNvbS9rdGJ5ZXJzL25ldG1pa28vYmxvYi9kZXZlbG9wL2V4YW1wbGVzL3VzZV9jYXNlcy9jYXNlNl9jb25maWdfY2hhbmdlL2NvbmZpZ19jaGFuZ2UucHk_X19zPXFybXV0dThib2h2anRhZ3Bha256In0)  
[Config Change from File](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiNTAxOTY5OTg5MCIsInVybCI6Imh0dHBzOi8vZ2l0aHViLmNvbS9rdGJ5ZXJzL25ldG1pa28vYmxvYi9kZXZlbG9wL2V4YW1wbGVzL3VzZV9jYXNlcy9jYXNlNl9jb25maWdfY2hhbmdlL2NvbmZpZ19jaGFuZ2VfZmlsZS5weT9fX3M9cXJtdXR1OGJvaHZqdGFncGFrbnoifQ)  
[SSH Proxy](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiNTAxOTY5OTg5MCIsInVybCI6Imh0dHBzOi8vZ2l0aHViLmNvbS9rdGJ5ZXJzL25ldG1pa28vYmxvYi9kZXZlbG9wL2V4YW1wbGVzL3VzZV9jYXNlcy9jYXNlMTBfc3NoX3Byb3h5L2Nvbm5fc3NoX3Byb3h5LnB5P19fcz1xcm11dHU4Ym9odmp0YWdwYWtueiJ9)  
[Basic Threads Example](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiNTAxOTY5OTg5MCIsInVybCI6Imh0dHBzOi8vZ2l0aHViLmNvbS9rdGJ5ZXJzL25ldG1pa28vYmxvYi9kZXZlbG9wL2V4YW1wbGVzL3VzZV9jYXNlcy9jYXNlMTZfY29uY3VycmVuY3kvdGhyZWFkc19uZXRtaWtvLnB5P19fcz1xcm11dHU4Ym9odmp0YWdwYWtueiJ9)  
[Platform Autodection using SSH](http://t.dripemail2.com/c/eyJhY2NvdW50X2lkIjoiNDI1NDQ5NyIsImRlbGl2ZXJ5X2lkIjoiNTAxOTY5OTg5MCIsInVybCI6Imh0dHBzOi8vZ2l0aHViLmNvbS9rdGJ5ZXJzL25ldG1pa28vYmxvYi9kZXZlbG9wL2V4YW1wbGVzL3VzZV9jYXNlcy9jYXNlOF9hdXRvZGV0ZWN0L2F1dG9kZXRlY3Rfc3NoLnB5P19fcz1xcm11dHU4Ym9odmp0YWdwYWtueiJ9)