Hyper-V 2.0 Live Migration

Voraussetzungen

Netzwerkadapter:

1 – Live Migration

1 – LAN

1 – Cluster Heartbeat

1 – SAN (FC)

1 – Hyper-V Management

IP-Adressdiagramm

IP-Adressen Hyper-V Cluster

XXX.YYYY.LOCAL

Netzwerkname	IP	SN
Verwaltung	10.80.16.39	255.255.254.0
Ausbildung	10.80.0.39	255.255.248.0
Stiftung	10.80.20.33	255.255.255.0
CSV (Live Migration)	10.0.5.1	255.255.252
Testumgebung	10.80.22.39	255.255.255.0
Cluster-Heartbeat	10.0.6.1	255.255.255.252
HYPER-V-MGMT	10.80.20.30	255.255.255.0

YYY.ZZZZ.LOCAL

Netzwerkname	IP	SN
Verwaltung	10.80.16.40	255.255.254.0
Ausbildung	10.80.0.40	255.255.248.0
Stiftung	10.80.20.34	255.255.255.0
CSV (Live Migration)	10.0.5.2	255.255.255.252
Testumgebung	10.80.22.40	255.255.255.0
Cluster-Heartbeat	10.0.6.2	255.255.255.252
HYPER-V-MGMT	10.80.20.31	255.255.255.0
Cluster Name = SRV-XXX-HYP01	10.80.20.35	255.255.255.0

Ablauf

- Install Windows Server 2008 R2 and enable the Hyper-V role on all nodes in the failover cluster. For more information, see the Hyper-V Planning and Deployment Guide.
- Install the Failover Clustering feature on all servers that you want to include in the cluster. For more information, see the Hyper-V Step-by-Step Guide: Hyper-V and Failover Clustering
- Configure as nodes in a failover cluster. For more information, see the Failover Cluster Deployment Guide.
- Validate the cluster configuration. For more information, see the Failover Cluster Step-by-Step Guide: Validating Hardware for a Failover Cluster.
- Configure Cluster Shared Volumes
- Set up a virtual machine for live migration
- Configure cluster networks for live migration
- Initiate a live migration of a virtual machine

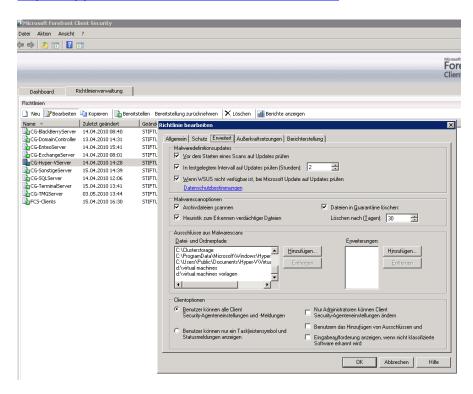
Step by Step Guide

http://www.it-training-grote.de/download/hyperv-livemig.pdf

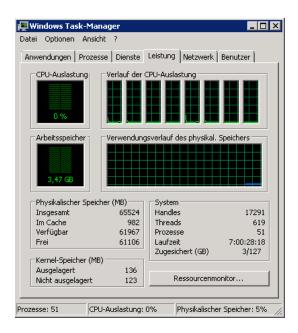
Wichtig: Alle Arbeiten IMMER auf alle Cluster Knoten ausfuehren

FCS Exlusions

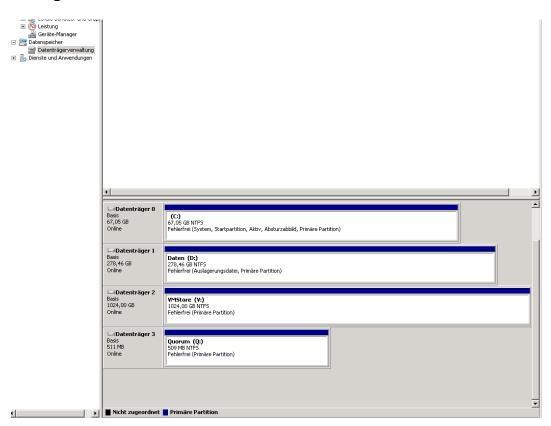
http://support.microsoft.com/kb/961804/en-us



Yes, we can

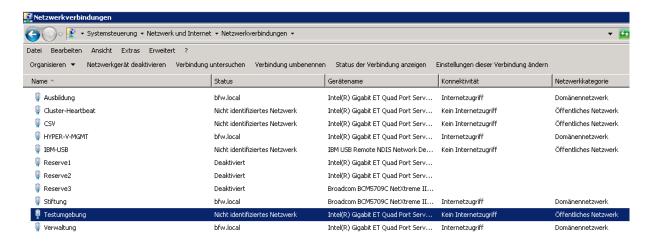


Storage

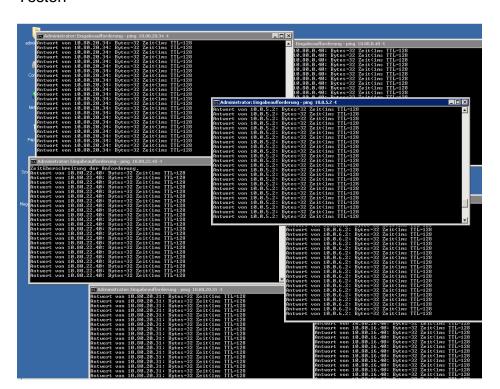


Netzwerk konfigurieren

WICHTIG: fuer die CSV Karte NetBIOS etc. anlassen, da SMB verwendet wird, Cluster-Heartbeat wie Doku fuer Failover Cluster.

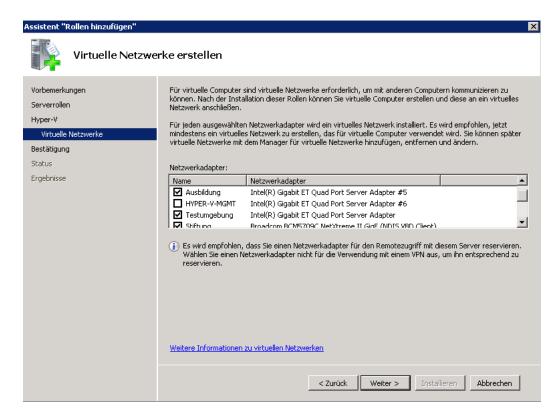


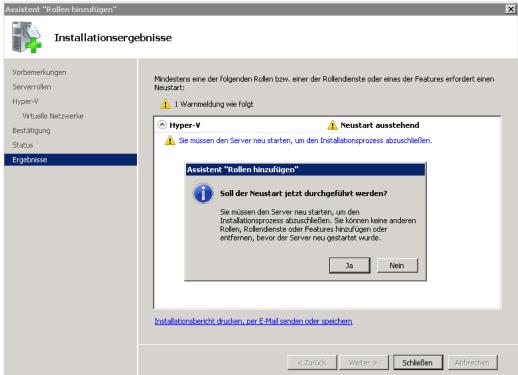
Testen



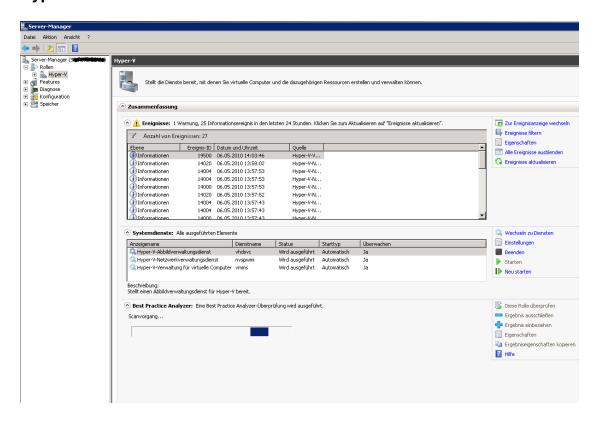
Hyper-V Rolle installieren

Netzwerke fuer virtuelle Maschinen auswaehlen

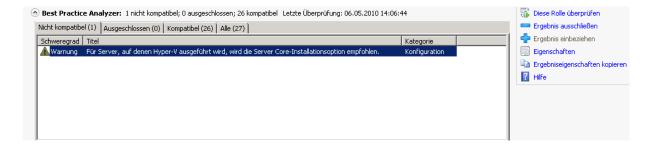




Hyper-V BPA ausfuehren



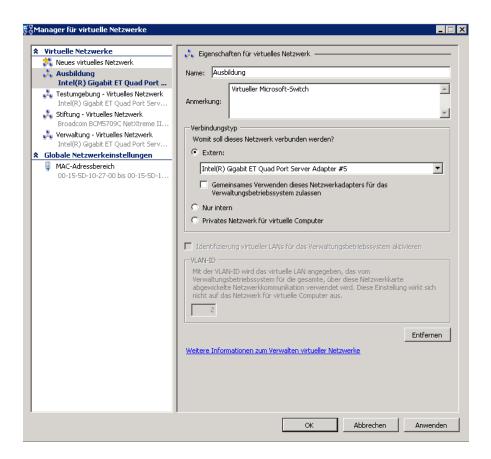
Alles fein ausser Core



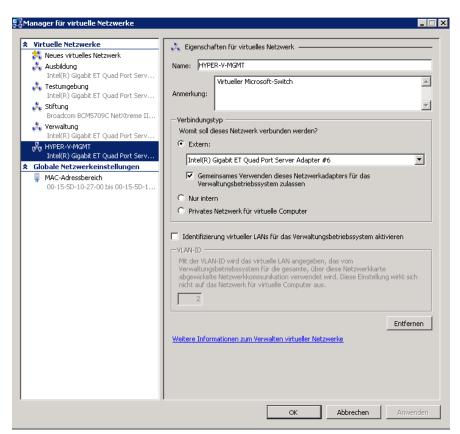
Hyper-V Konfiguration

Netzwerke

Netzwerke fuer virtuelle Maschinen benennen und das Sharing fuer VM Management deaktivieren

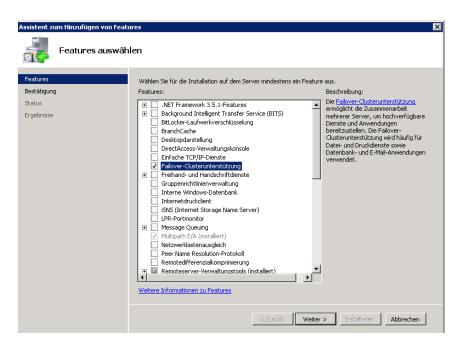


Hyper-V Management Karte konfigurieren

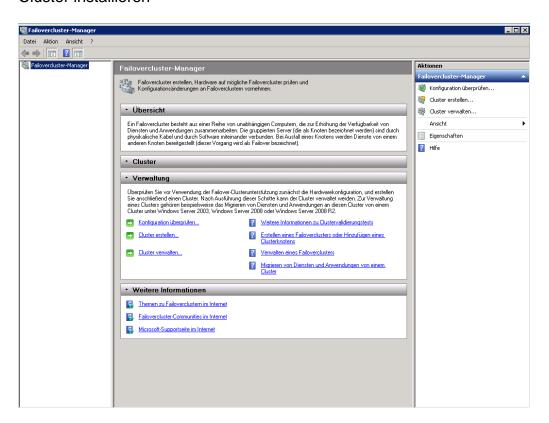


Achtung: GGfs. fuer die V-NIC das Default Gateway setzen. IP Einstellungen werden uebernommen!

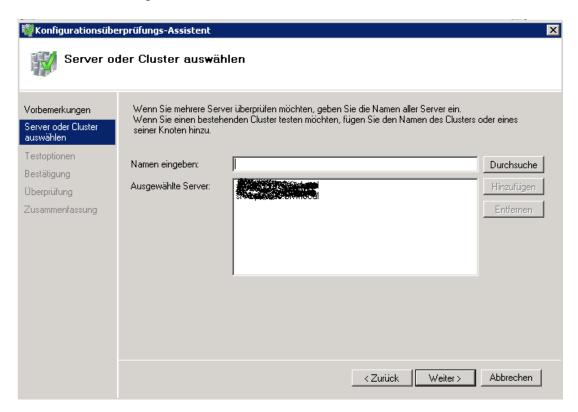
Windows Server 2008 R2 Failover Feature installieren



Cluster installieren

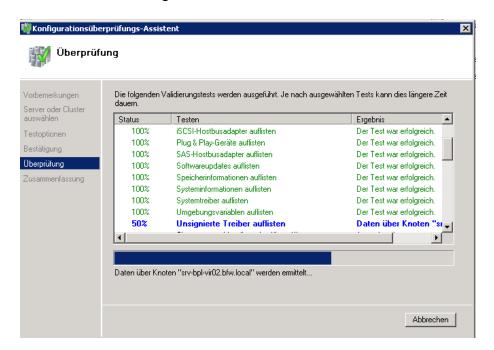


Cluster Validierungstest



Alle Tests

Tests werden durchgefuehrt

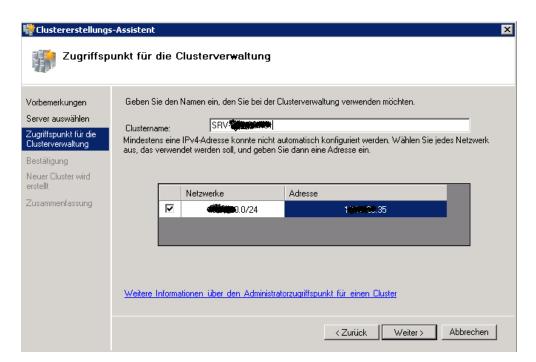


Test nicht bestanden

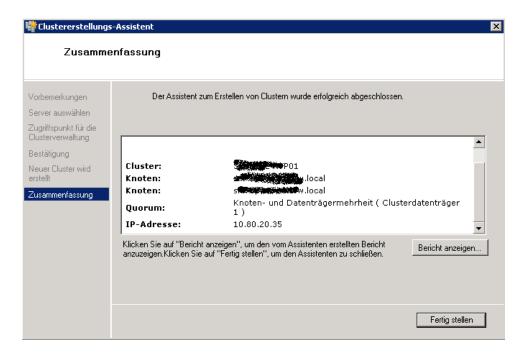


Fixen

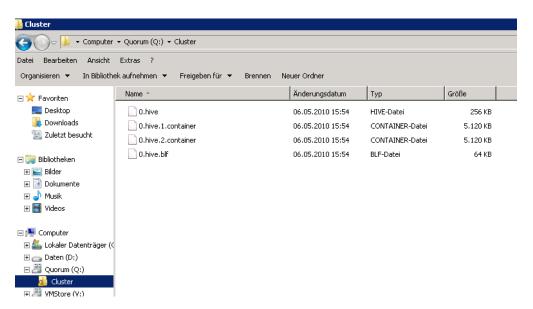
Cluster erstellen



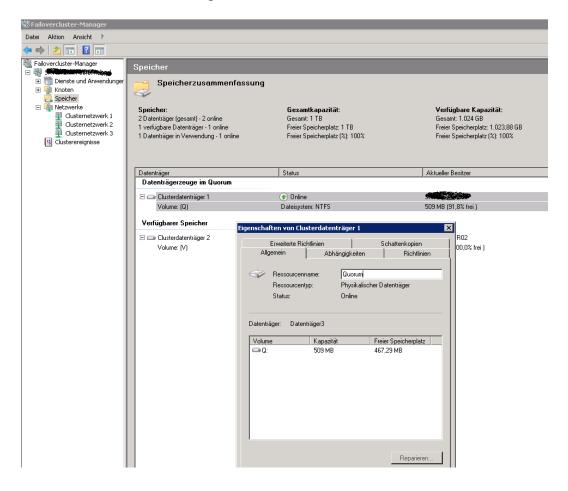
Cluster erstellt



Quorum Store korrekt konfiguriert

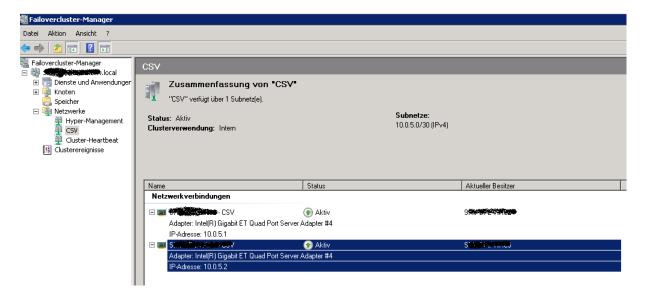


Quorum im Failover Manager umbenennen



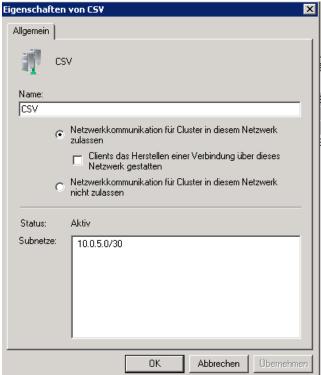
Das gleiche fuer den VMStore (spaeter CSV)

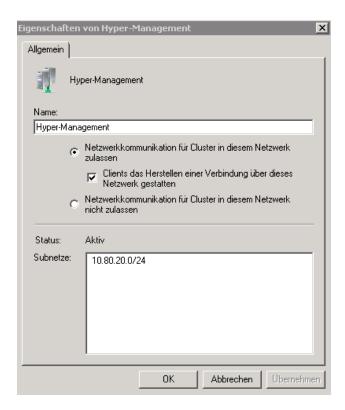
Netzwerkkarten im Failover Manager umbenennen



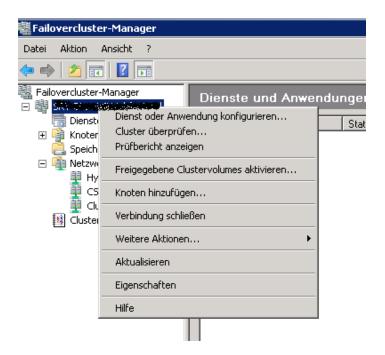
Cluster Netzwerk Verwendung



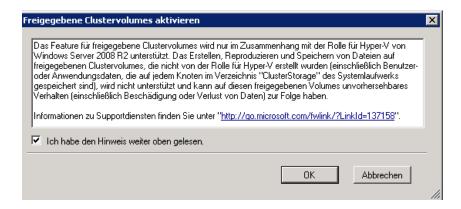




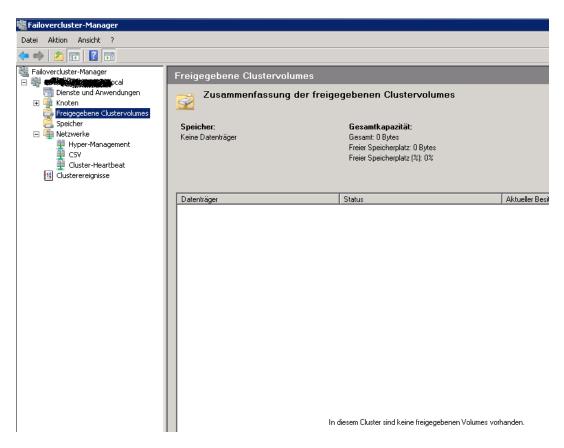
CSV einrichten



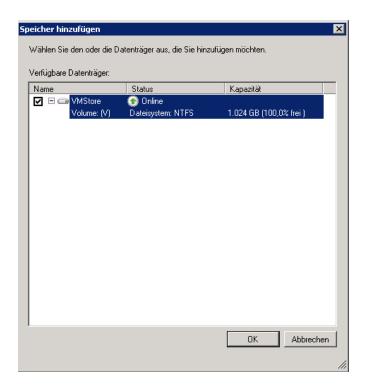
WICHTIG: Hinweis, dass keine direkte Datentraegeraktion auf dem CSV erfolgen darf, sondern nur ueber die Cluster Verwaltung



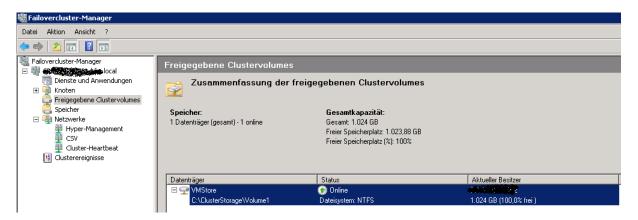
CSV Speicher hinzufuegen



VMStore LUN auswaehlen

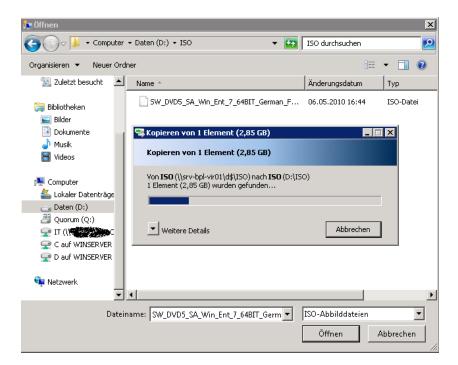


Hinzugefuegt

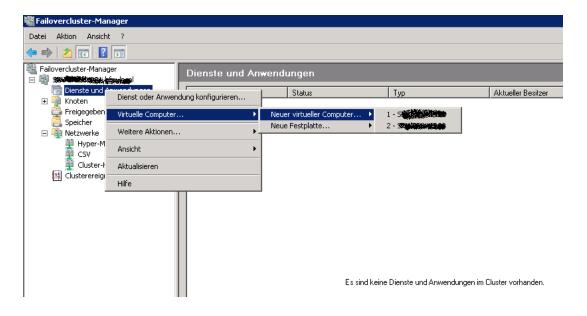


Storage fuer ISO Files anlegen

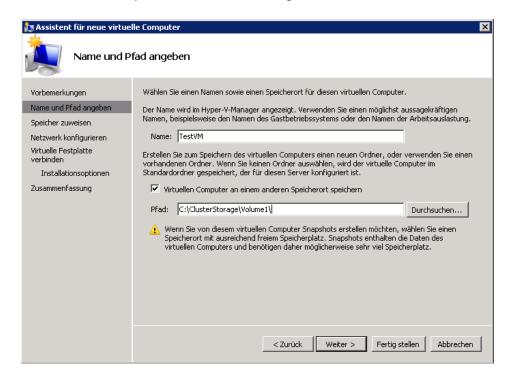
Wichtig: Der Storage fuer die ISO Files muss auf allen Knoten identisch sein!



VM erstellen

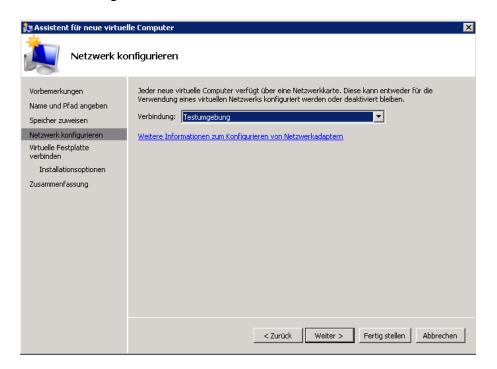


Neue VM muss jetzt auf dem CSV liegen

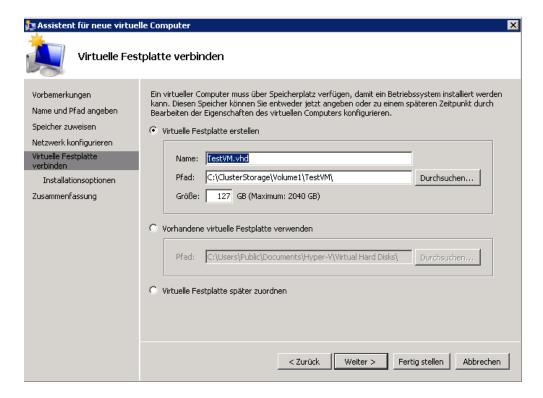


Name und RAM angeben

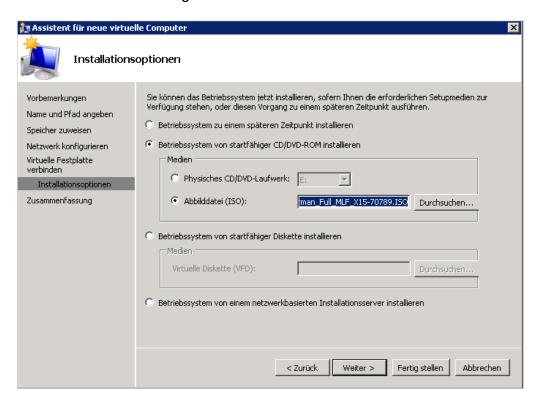
Netzwerk angeben



Speicherort der VM



Installationsmedium angeben



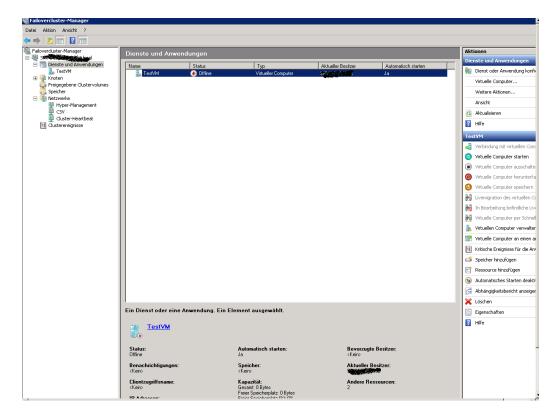
ISO Storage muss auf jedem Cluster Knoten liegen falls ein Failover stattfindet



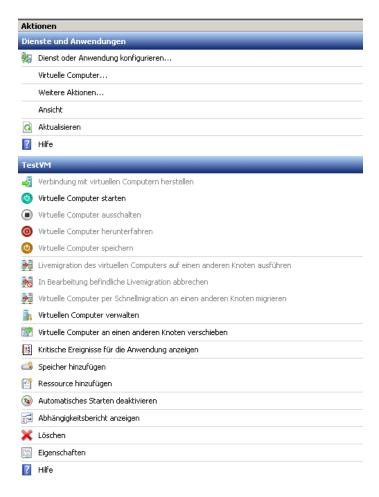
Bericht



VM Properties



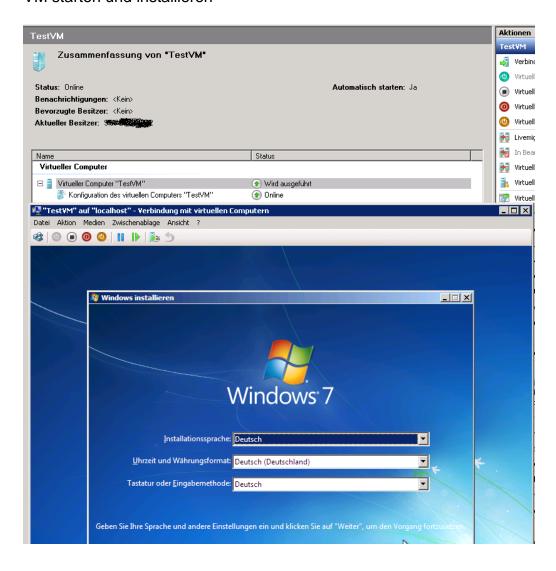
VM Moeglichkeiten im Failover Manager



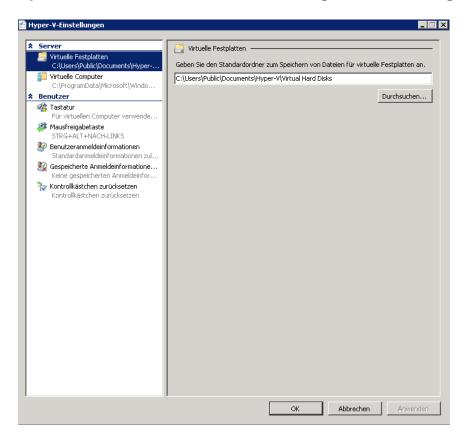
Netzwerk fuer Live Migration konfigurieren



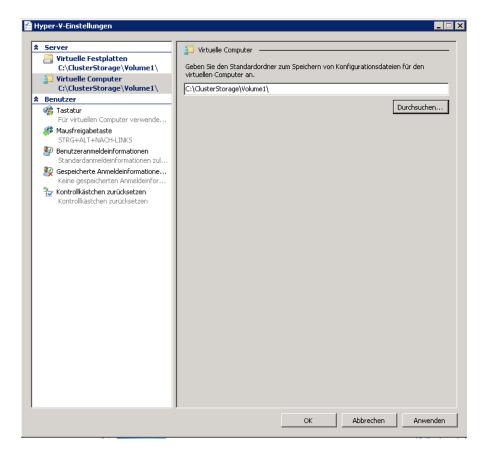
VM starten und installieren



Speicherort fuer neue VM und VM Config auf das CSV legen



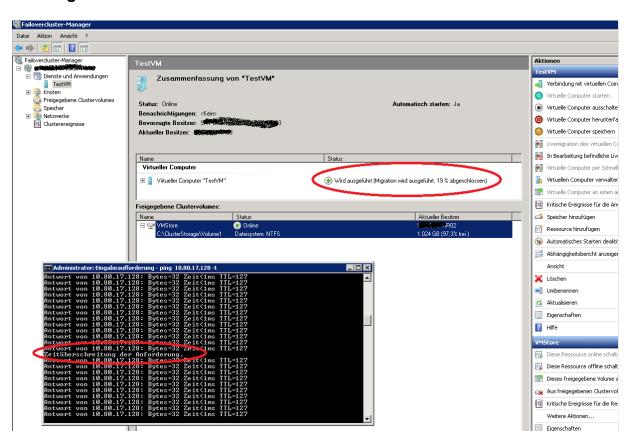
Pfad auf das CSV legen



VM Eigenschaften

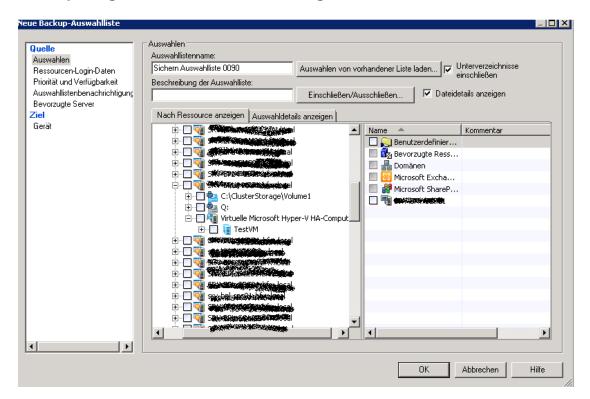


Live Migration

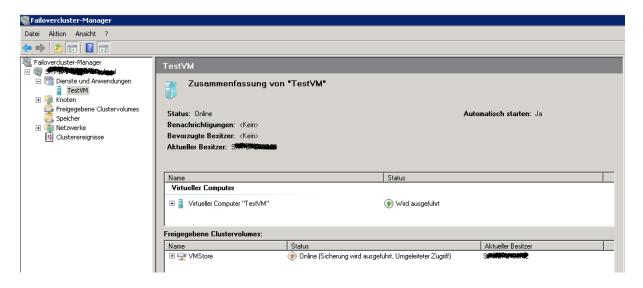


Nur ein Ping Aussetzer

Backup Programm zur Clustersicherung einrichten



Datensicherung wird durchgefuehrt



Importieren von vorhandenen virtuellen Hyper-V Maschinen

Basis:

http://blogs.blackmarble.co.uk/blogs/adawson/archive/2009/09/03/importing-hyper-v-machines-into-a-hyper-v-2008-r2-cluster.aspx

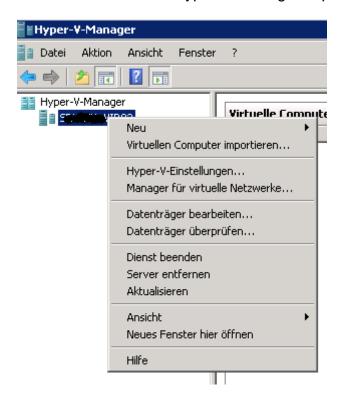
VM exportieren



Exportierte Maschine auf das CSV kopieren



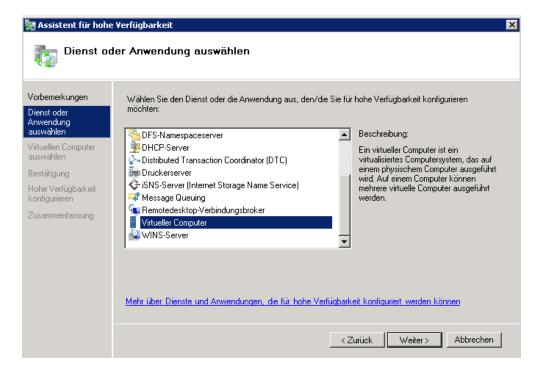
Virtuelle Maschine im Hyper-V Manager importieren

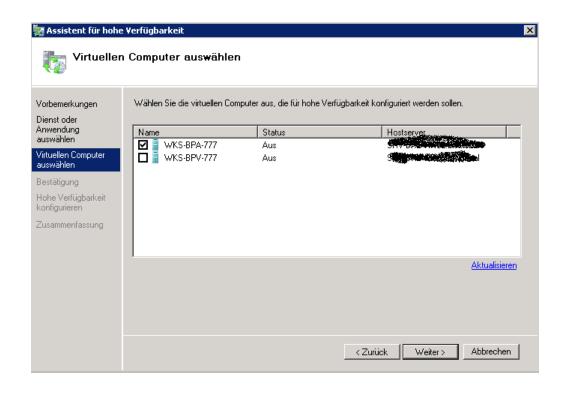


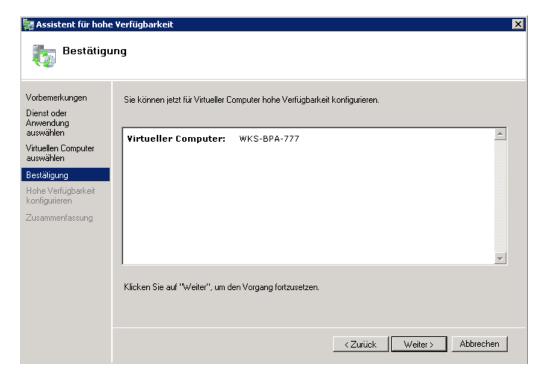


Dienst oder Anwendung im Failover Cluster Manager konfigurieren

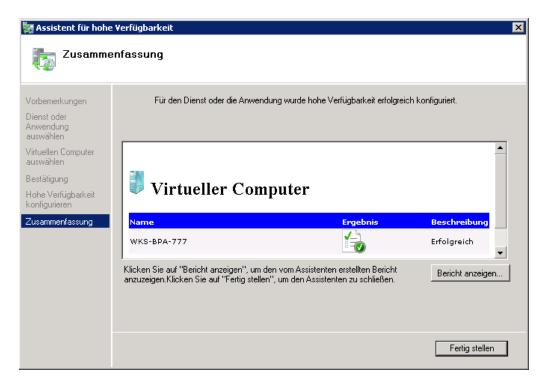








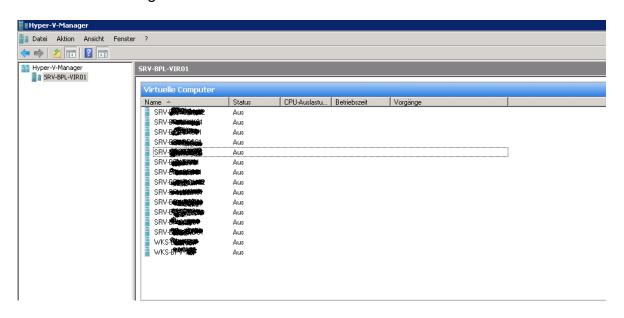
Fertig



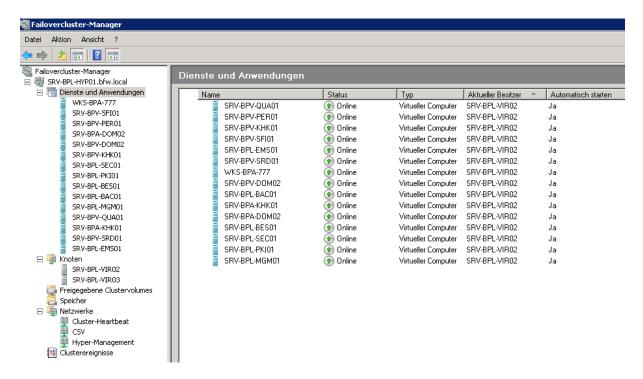
Installation von Geraete Teibern



Alle Maschinen migriert



Alle VM liegen jetzt in der Failover Cluster Verwaltung

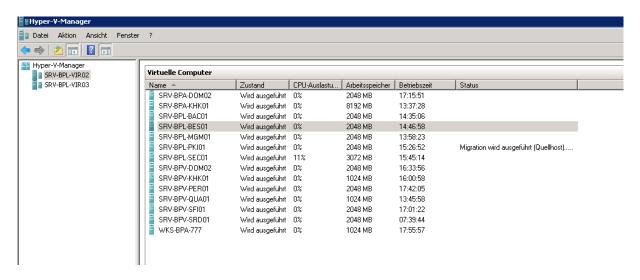


Live Migration der Haelfte der Maschinen auf den anderen Cluster Knoten

Es kann nur eine Live Migration pro CSV zeitgleich stattfinden



Ansicht in der Hyper-V Manager Konsole



Hyper-V 2.0 Live Migration

Part 1:

Der erste Part beschreibt die Einrichtung des Windows Server 2008 R2 Failover Cluster mit Cluster Shared Volume, sowie die erste Einrichtung einer Hyper-V 2.0 HA VM:

http://www.it-training-grote.de/download/Hyper-v-livemig-1.pdf

Das ist Part 2:

Importieren von vorhandenen virtuellen Hyper-V Maschinen

Basis:

http://blogs.blackmarble.co.uk/blogs/adawson/archive/2009/09/03/importing-hyper-v-machines-into-a-hyper-v-2008-r2-cluster.aspx

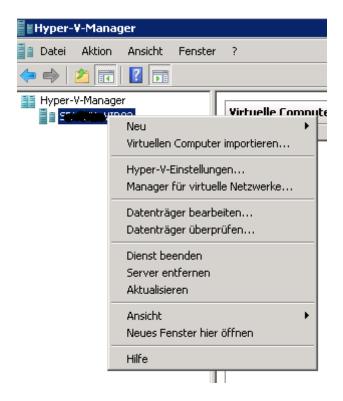
VM exportieren



Exportierte Maschine auf das CSV kopieren

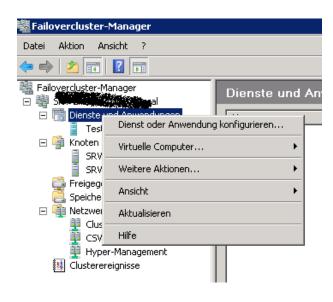


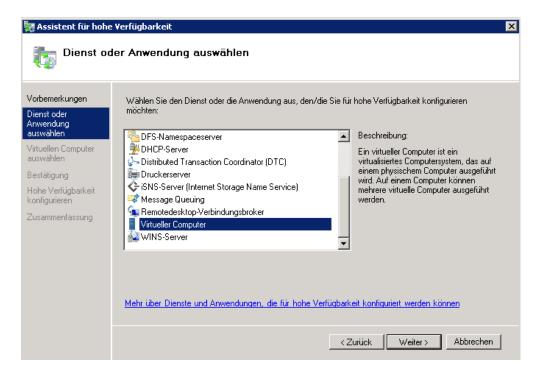
Virtuelle Maschine im Hyper-V Manager importieren

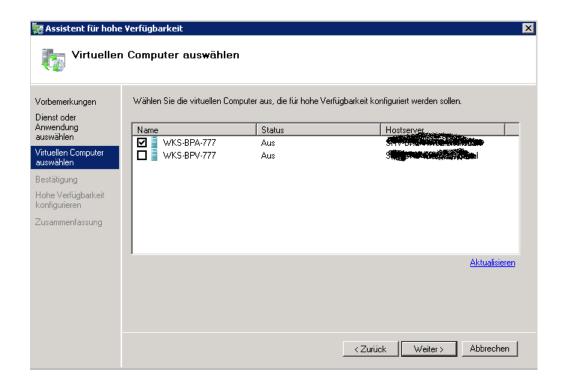


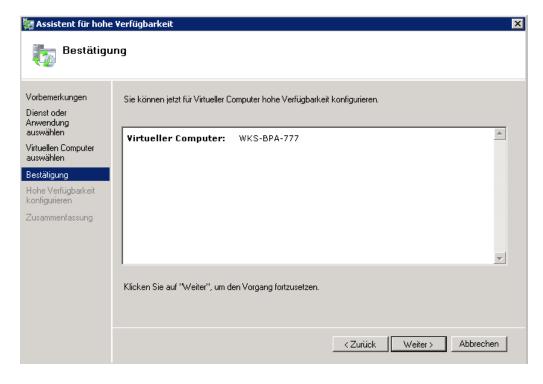


Dienst oder Anwendung im Failover Cluster Manager konfigurieren

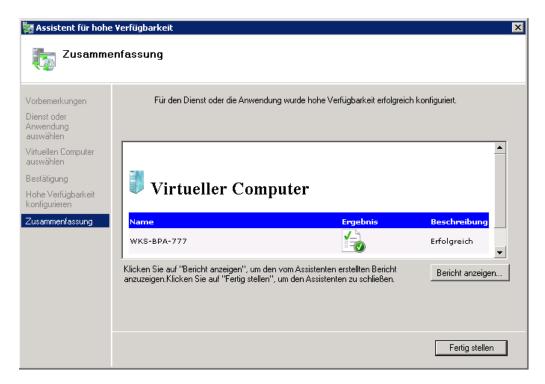








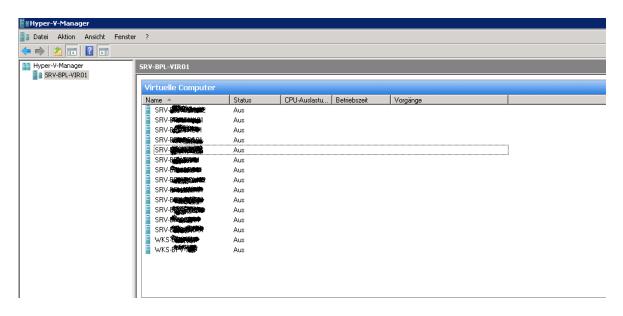
Fertig



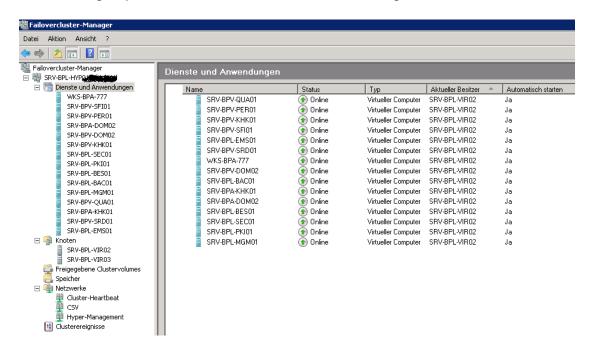
Installation von Geraete Teibern



Alle Maschinen migriert



Alle VM liegen jetzt in der Failover Cluster Verwaltung

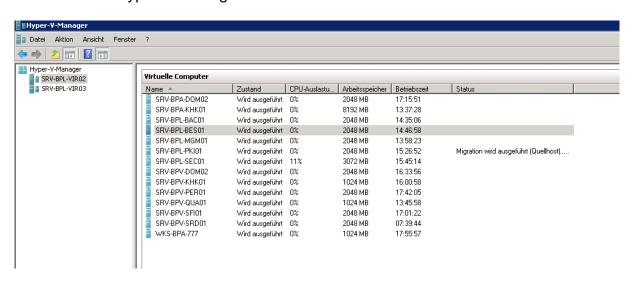


Live Migration der Haelfte der Maschinen auf den anderen Cluster Knoten

Es kann nur eine Live Migration pro CSV zeitgleich stattfinden



Ansicht in der Hyper-V Manager Konsole



Da die VM auf beide Cluster Knoten verteilt sind, Symantec BackupExec aber nur den aktiven Clusternamen und alle verbundenen Maschinen sichern kann, gibt es ein Problem:

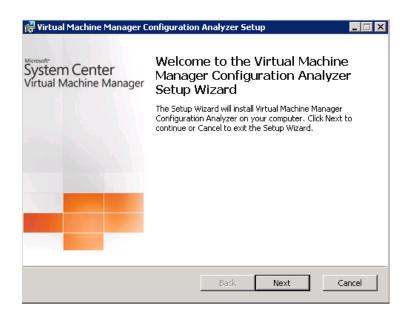


SCVMM Installation

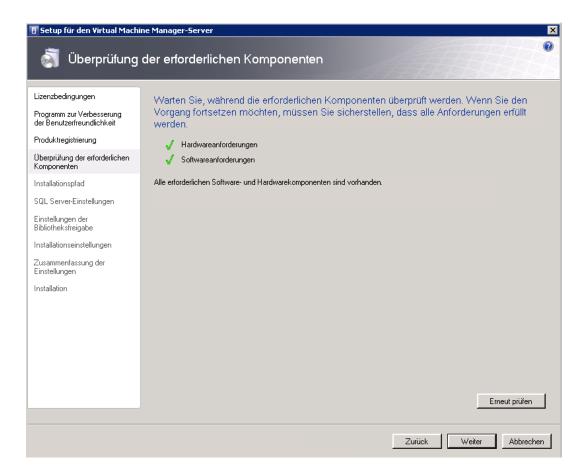
MBCA installieren



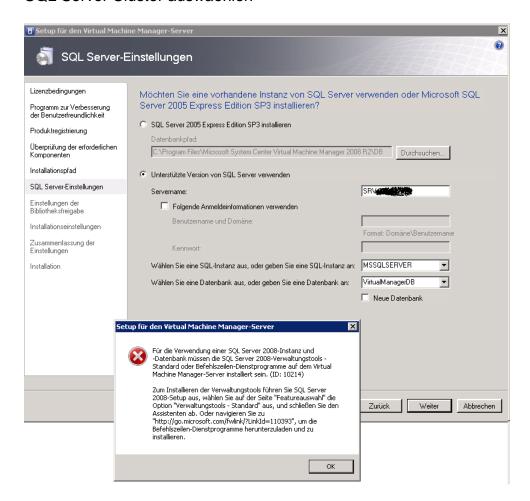
VMMCA installieren



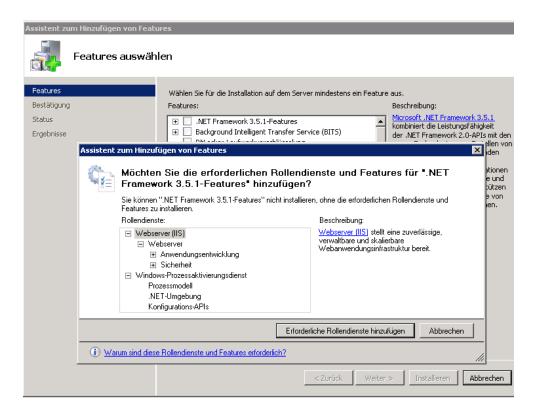




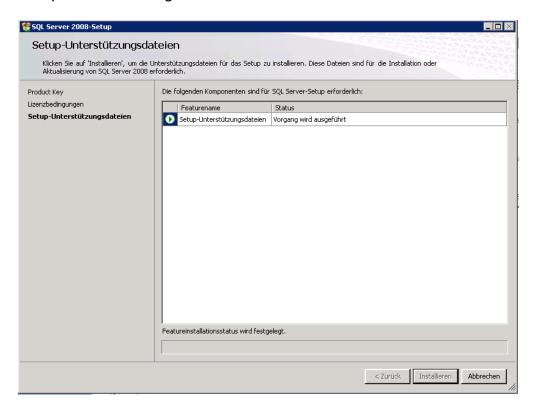
SQL Server Cluster auswaehlen



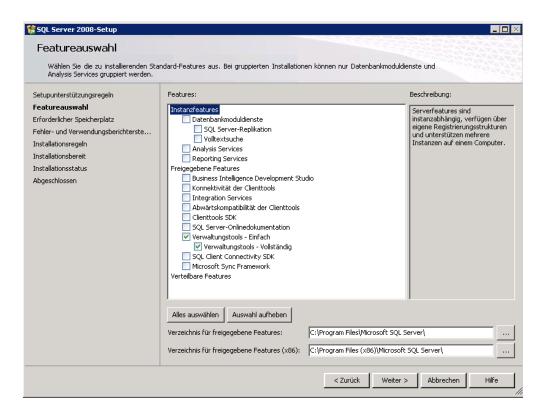
.NET Framework 3.5 installieren



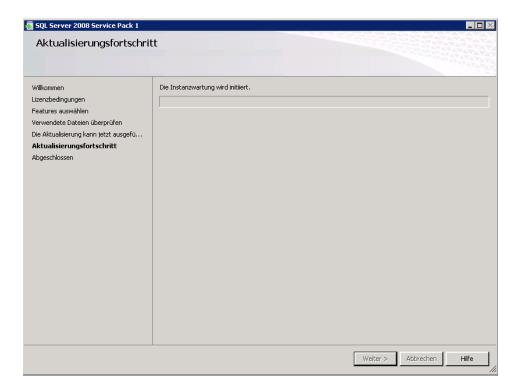
Setup Unterstuetzungs-Dateien installieren

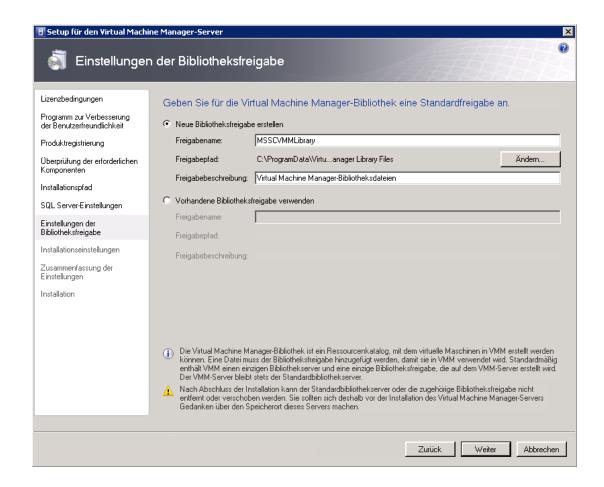


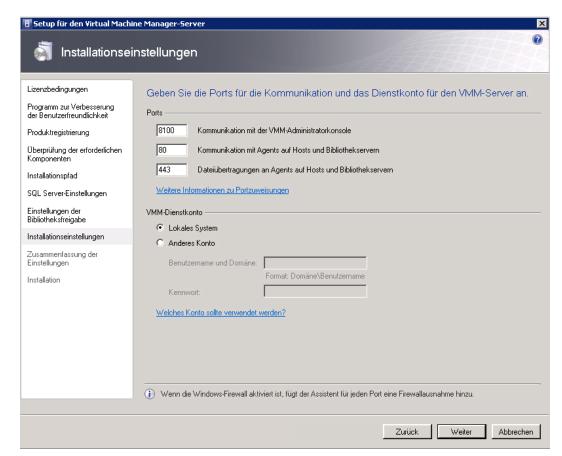
SQL Server Verwaltungstools installieren

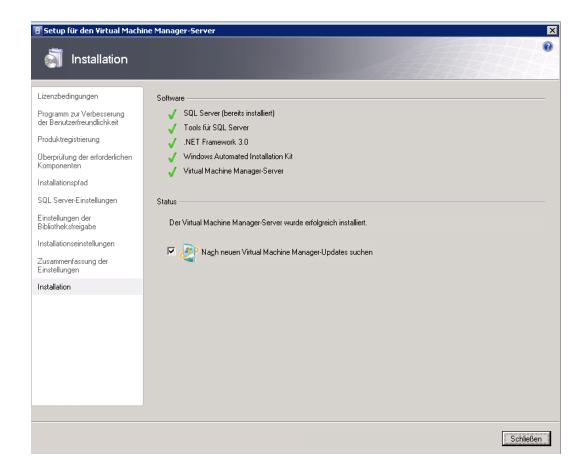


SQL Server 2008 SP1 installieren

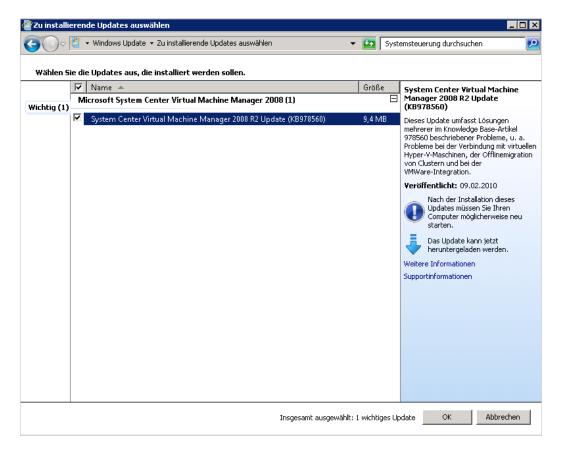






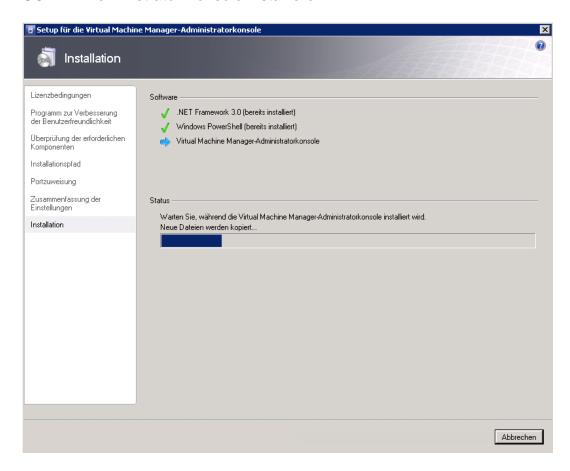


Update verfuegbar

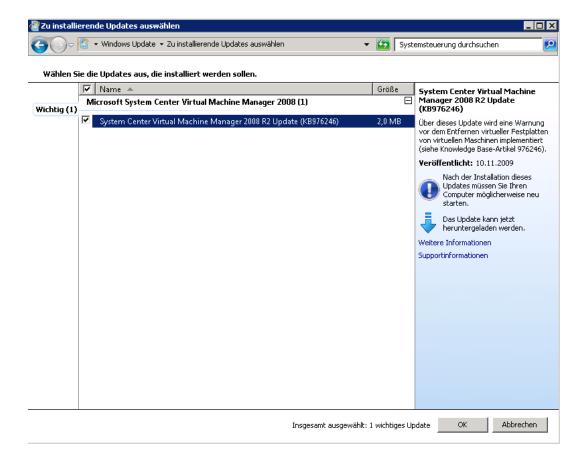


Neustart

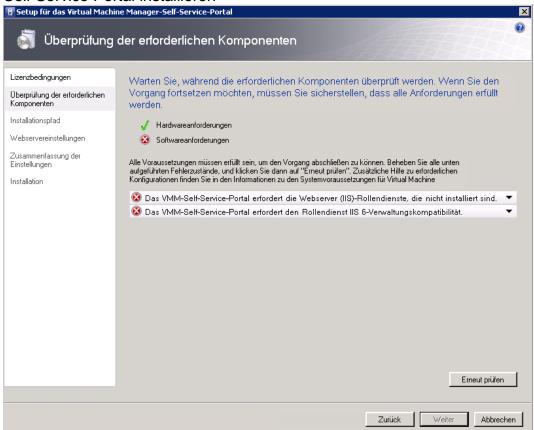
SCVMM Administrator Konsole installieren



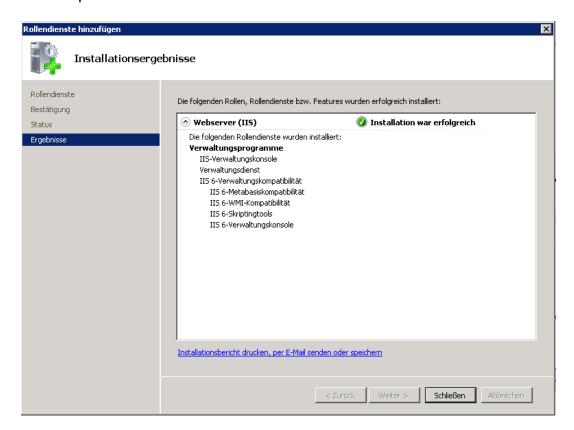
Update verfuegbar ©



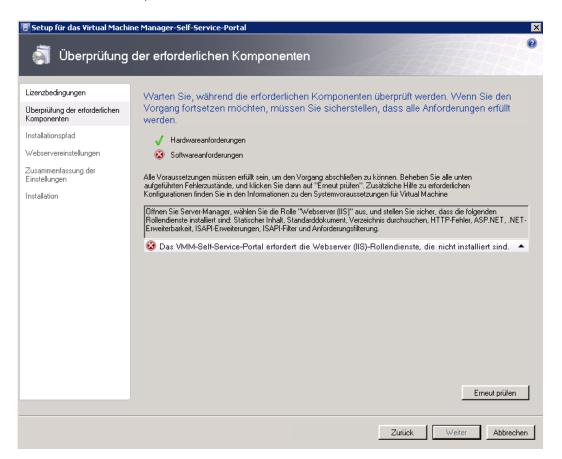
Self Service Portal installieren



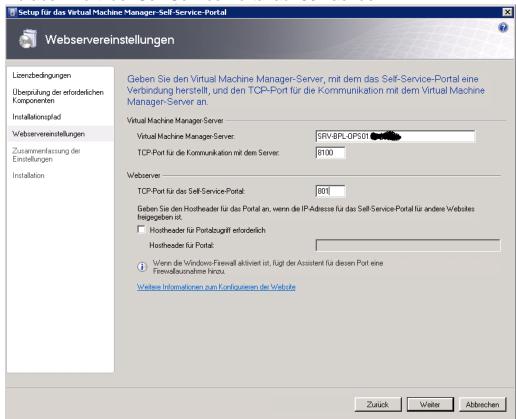
IIS Komponenten installieren



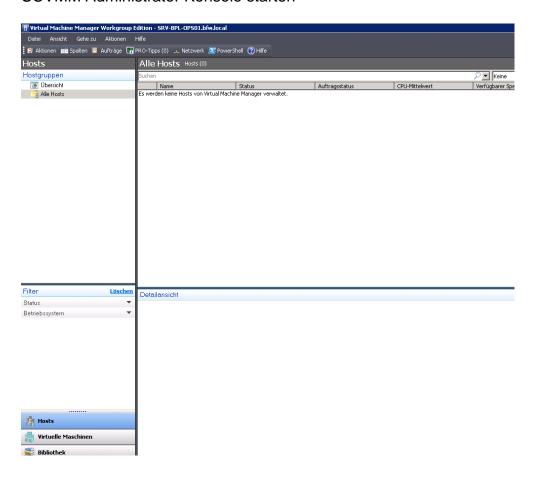
Noch ein Versuch, wer lesen kann ist klar im Vorteil



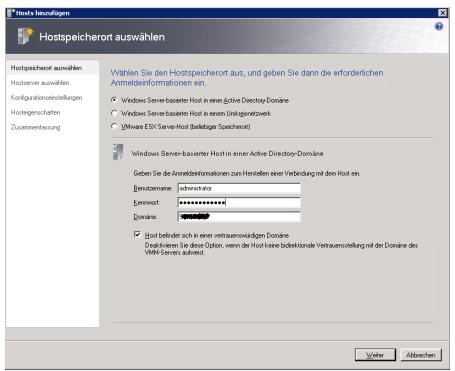
Nu aber. Port fuer Self Service Portal auf 801 aendern



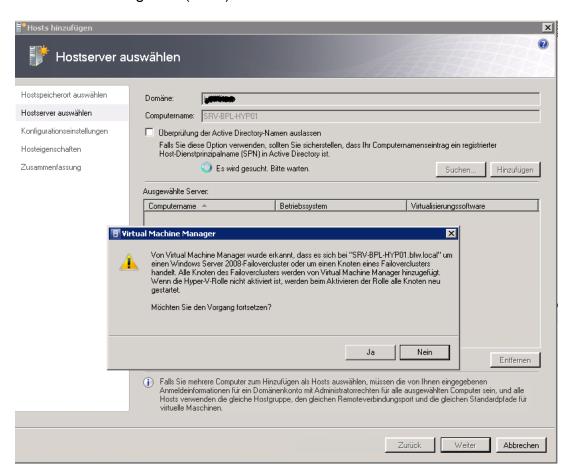
SCVMM Administrator Konsole starten

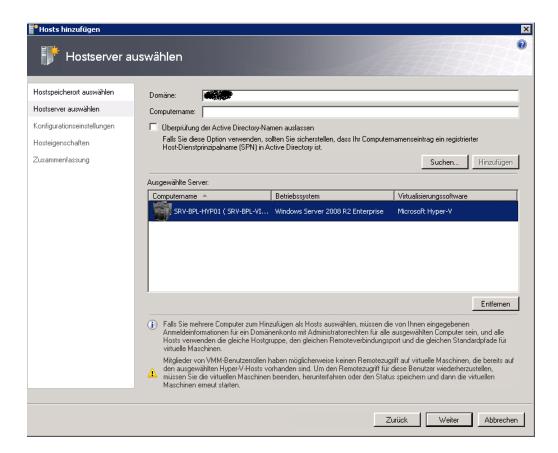


Host hinzufuegen

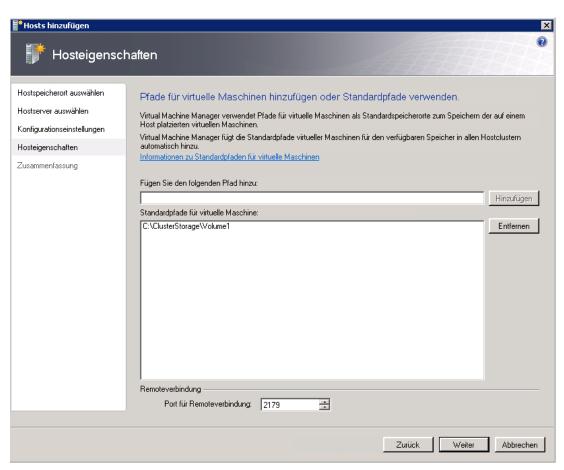


Cluster Name angeben (CNO)

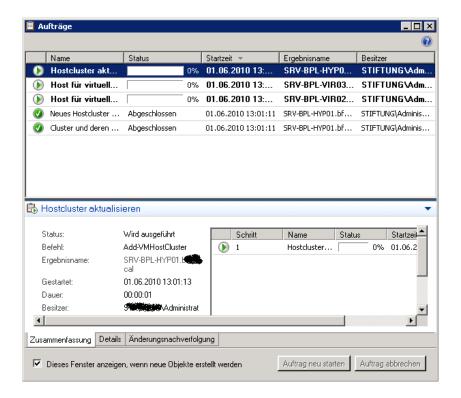




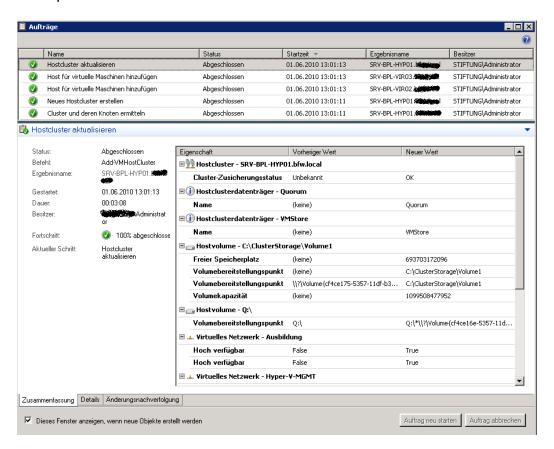
Speicherort fuer virtuelle Maschinen ist das CSV



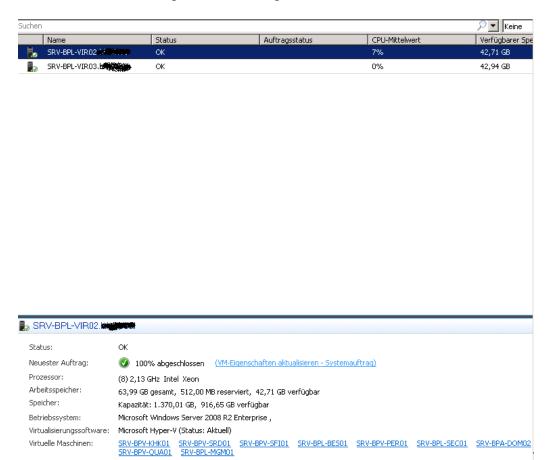
Auftragsverarbeitung – Dauert einige Minuten



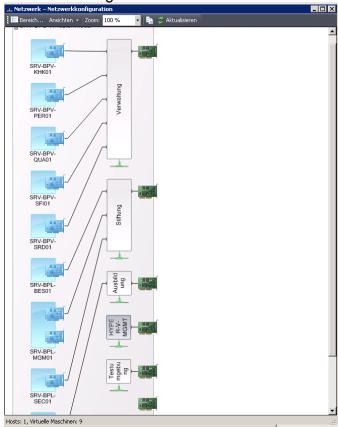
Alles prima



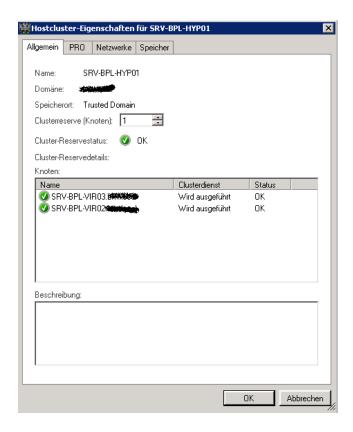
Alle Hosts OK, Auftragsstatus erledigt



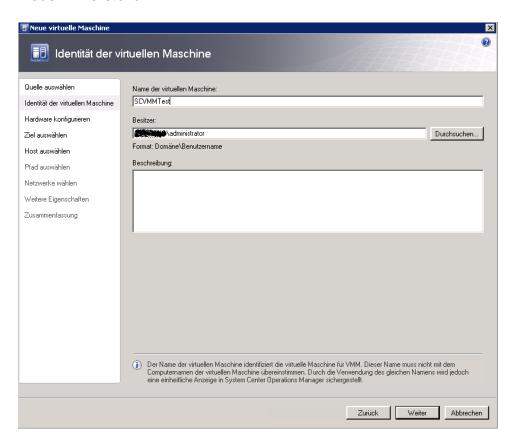
Netzwerkkonfiguration

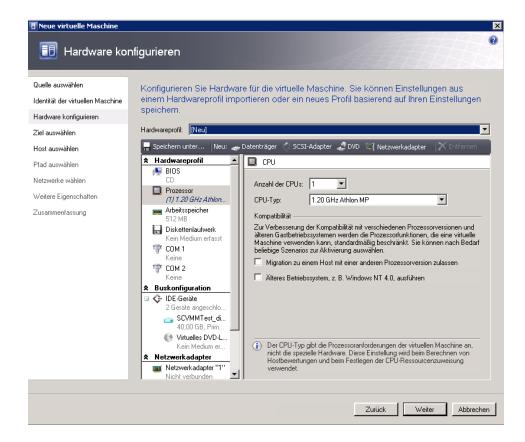


Status des VM-Cluster = OK

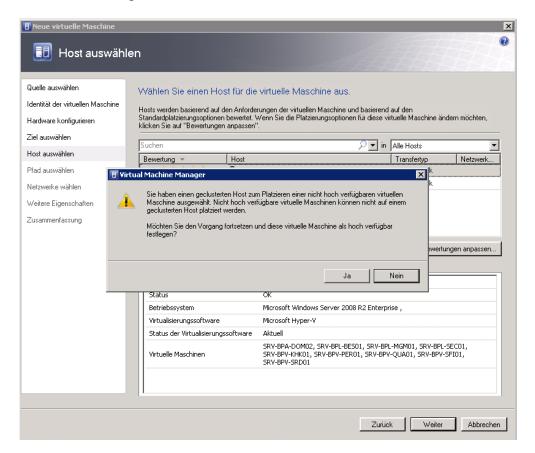


Neue VM erstellen

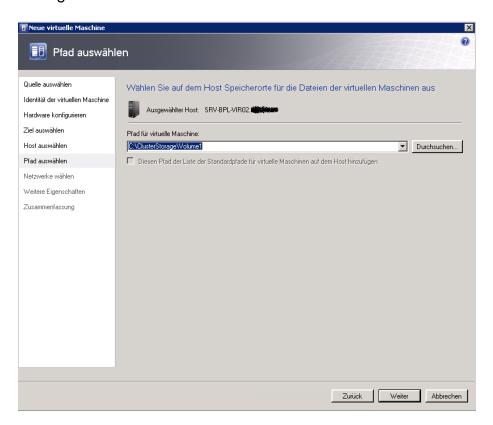




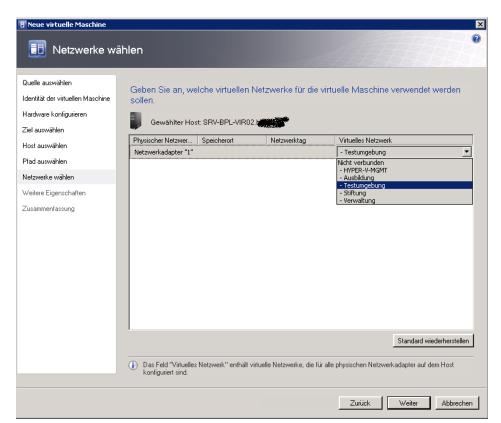
VM hochverfuegbar machen



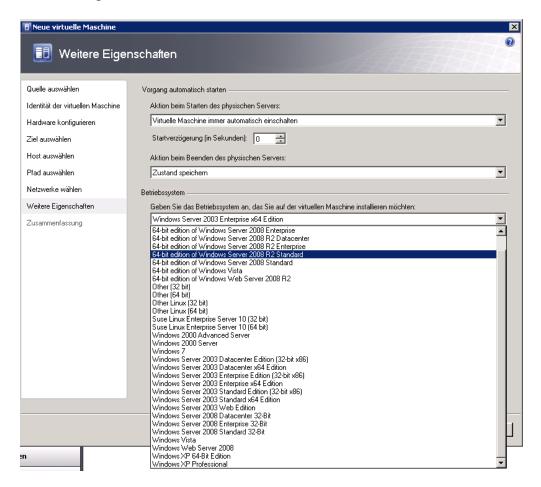
Storage Pfad ist CSV



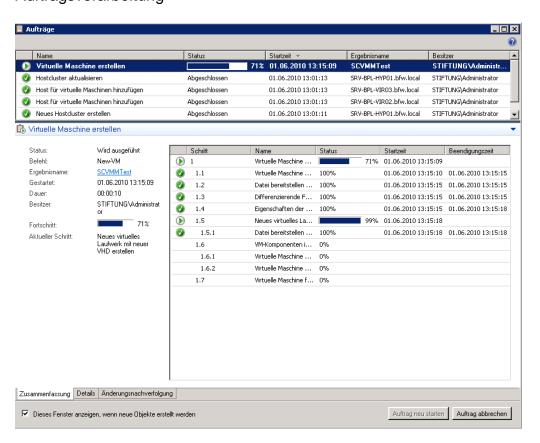
Netzwerkadapter auswaehlen



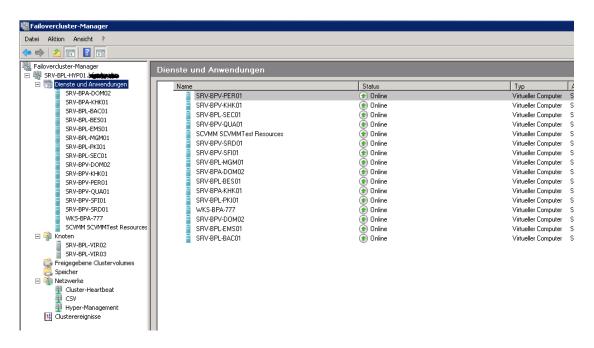
Weitere Eigenschaften



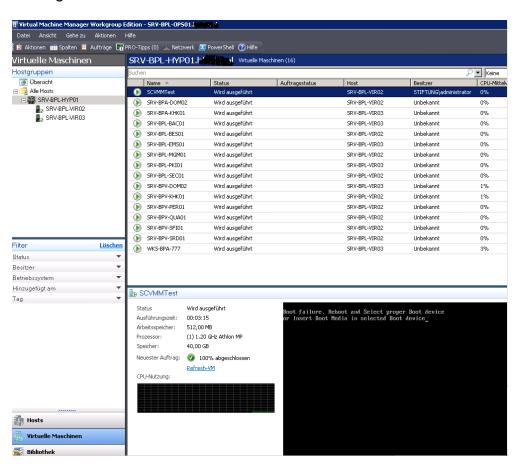
Auftragsverarbeitung



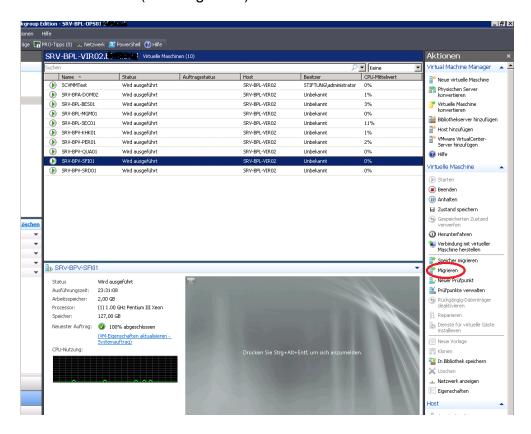
Da isse

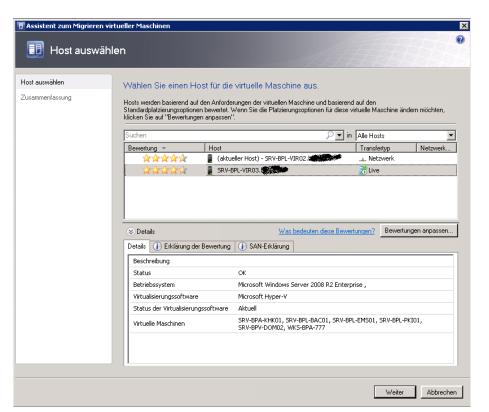


VM Eigenschaften im SCVMM

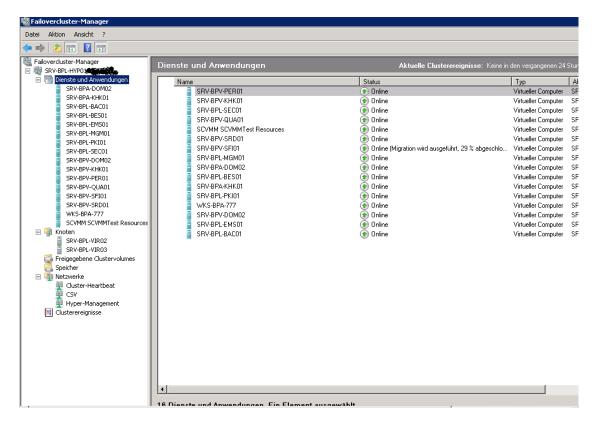


VM verschieben (Live Migration)





Live Migration wird durchgefuehrt



Zusaetzliche Administratoren zur SCVMM Verwaltung hinzufuegen

