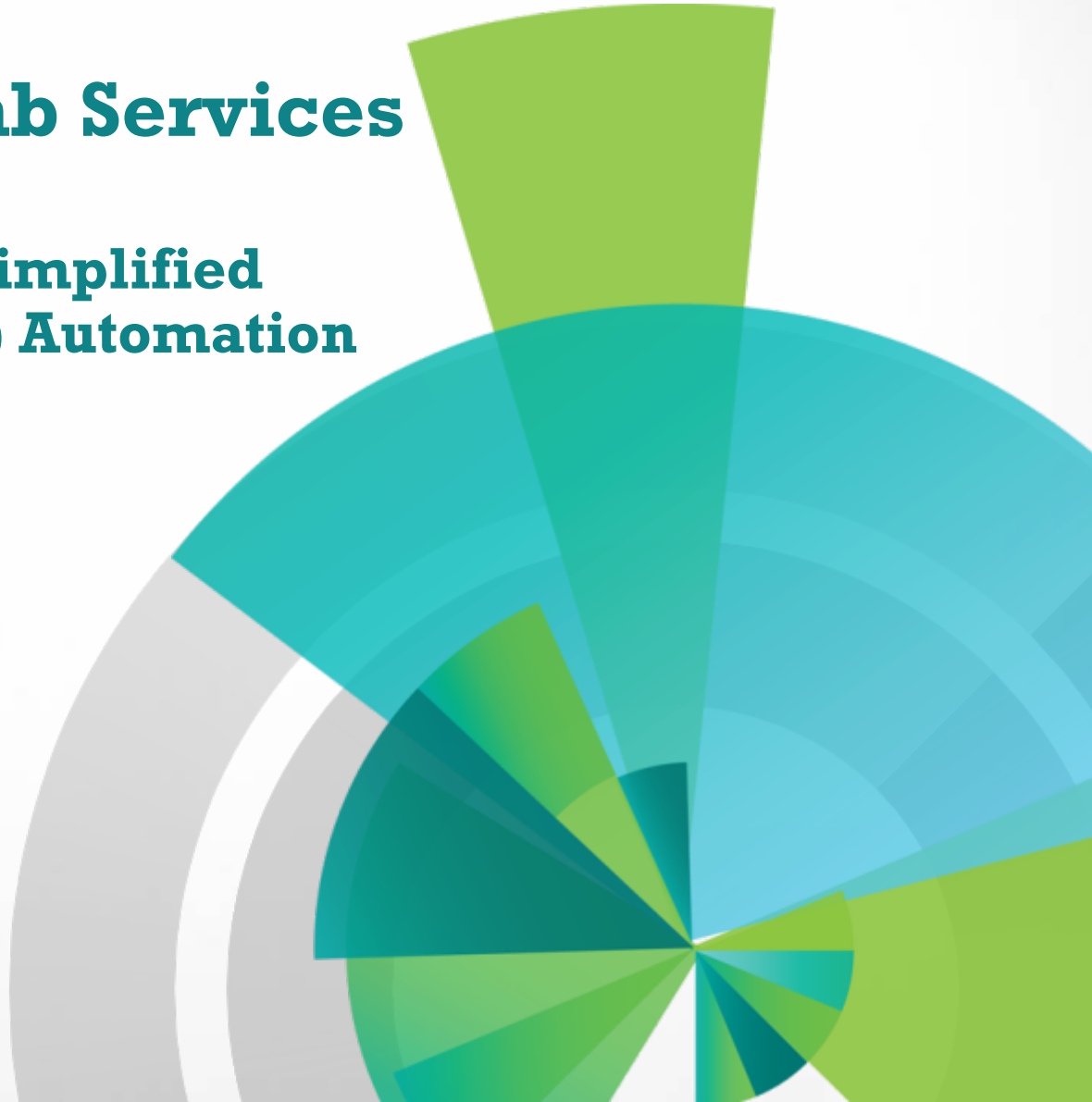
IBM Systems Lab Services

PowerVM LPM and Simplified Remote Restart (SRR) Automation Tool

Bob Foster
bobf@us.ibm.com



PowerVM LPM and SRR Tool

- This tool was released in 4Q2014. Over 160 customers worldwide have already adopted it. There is very high customer satisfaction with this tool.
- This tool is the fastest growing ever in lab-services and is used on every continent and sub-continent (other than Antarctica).
- With the new SRR feature of Power8 servers, this tool is becoming a must for any customer wanting to use SRR.
- Customers current use of LPM
  - Customers are using LPM more and more as part of their daily tasks (workload balancing) and planned maintenance procedures
  - The HMC GUI only allows a single partition to be selected at at time
  - Some customers are writing scripts to move many partitions at a time
  - Imagine having to move 100 partitions from a server (esp using the GUI -(that's a lot of clicks!)

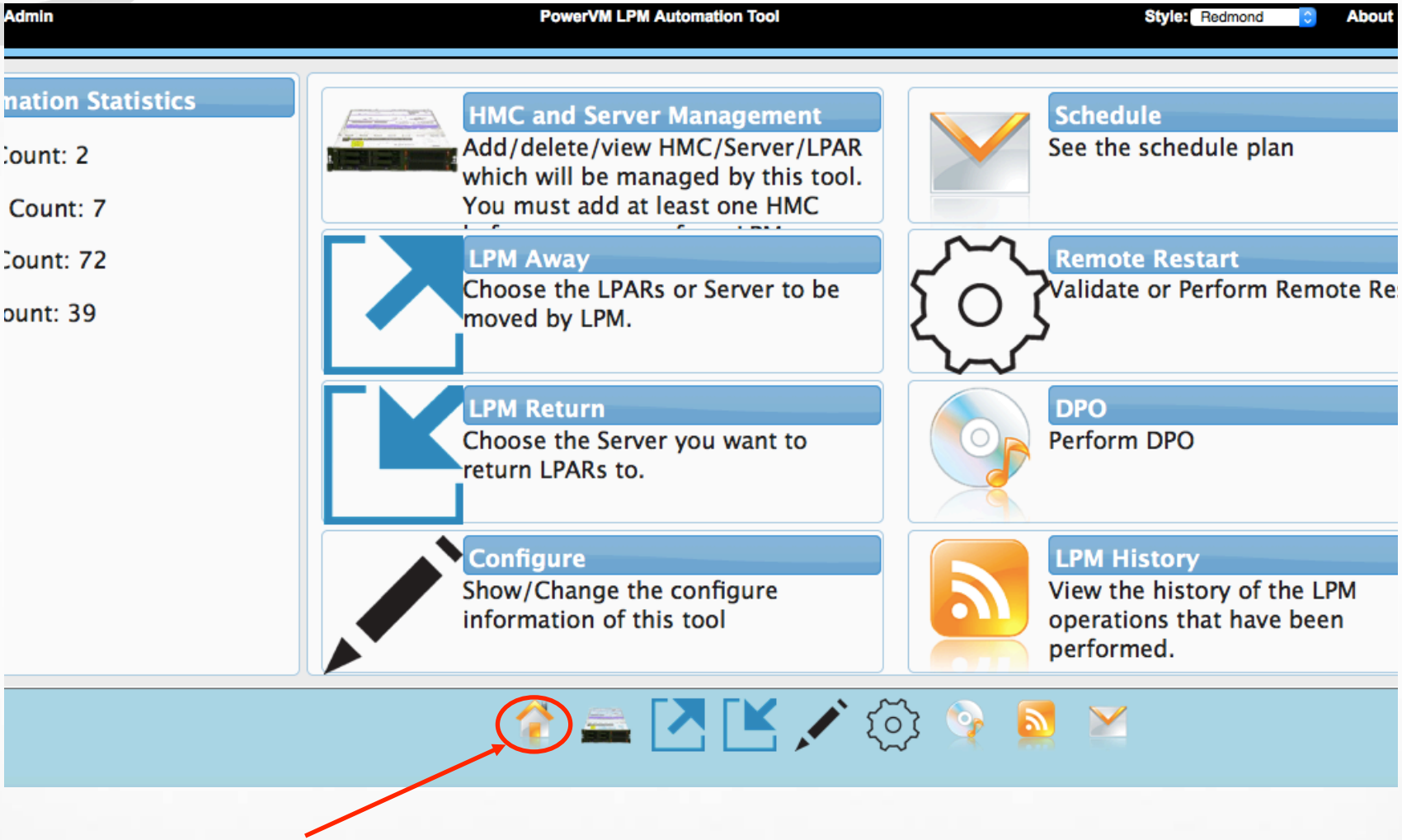
PowerVM LPM and Remote Restart Tool

- Automated use of LPM
  - This tool was developed to allow a customer to quickly move one or many partitions from a server using LPM to other servers (as few as 4 clicks)
  - It can also return the partitions back to the original server with the original mappings (HBA/virtual slot id) (again, as few as 4 clicks)
  - You can build a plan(s) in advance and execute the plans during maintenance windows
  - You can schedule LPM operations
- Automated use of Simplified Remote Restart (SRR)
  - Use of SRR on the HMC is only thru command line (CLI). There is no GUI for the SRR function and you can only move 1 partition at a time via the HMC CLI.
  - The tool works similar to both LPM and SRR, you can use a GUI to quickly SRR many or all of the partitions to one or more destination servers.
  - You can build a plan(s) in advance and execute the plans during an outage.
  - A huge benefit of the tool is that once the server is repaired, the tool can move all the partitions back to the original server with just a few clicks using LPM.

New features in Version 8.5

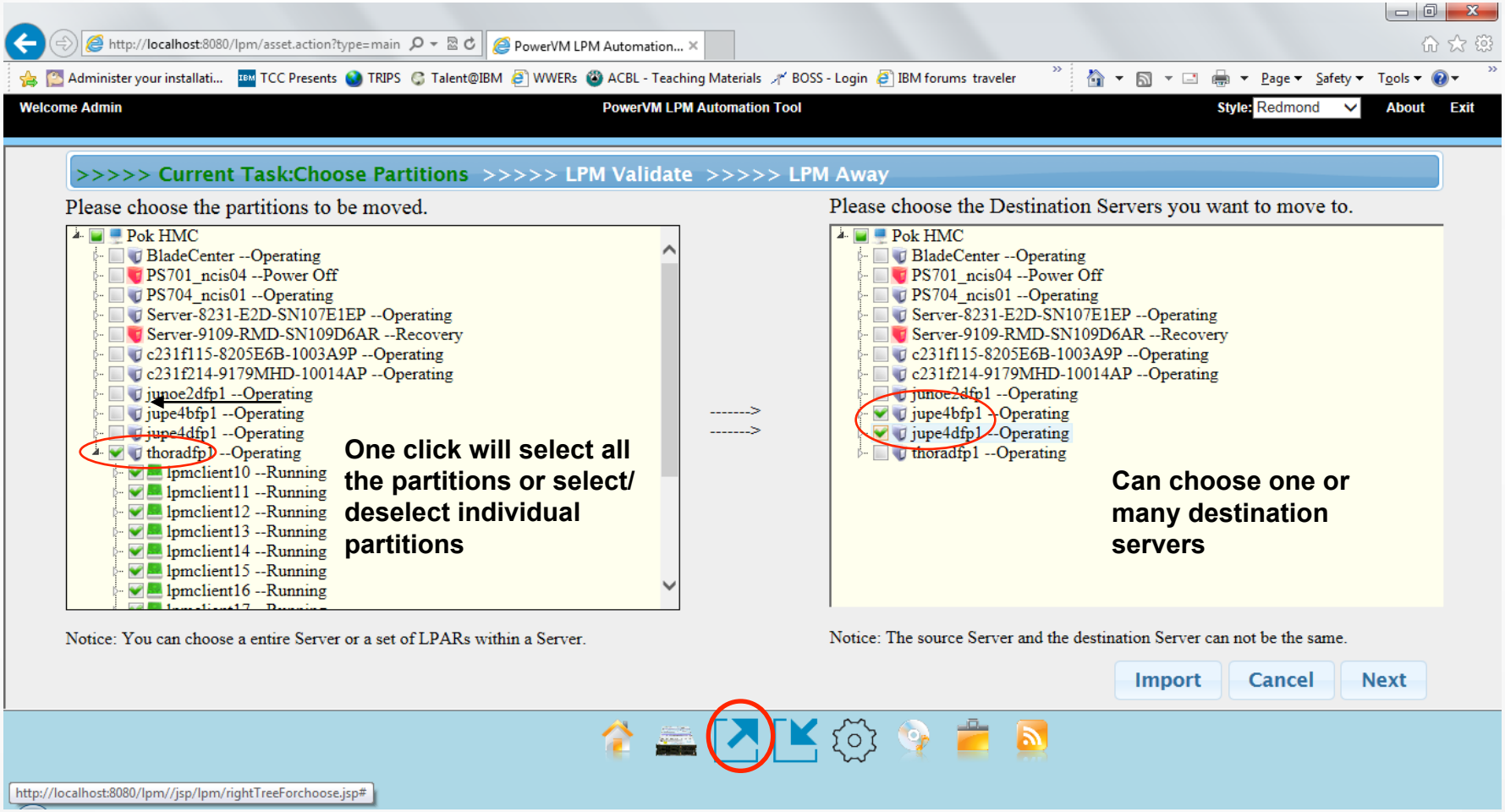
- The tool version numbering is changed to match the features of the highest HMC version it can exploit.
- For example, HMC V8.5 can specify vfc mappings and shared proc pools when doing SRR. V8.5 of the tool supports those features.
- The tool still supports older HMC levels.
- New features are –
  - Specifying new Vswitch mapping during LPM
  - Specifying sr-iov vnic mappings during LPM
  - Increasing number of vfc mapping support from 63 to unlimited
  - Subdividing partitions into different groups of concurrent LPMs
  - Specifying concurrency performance levels on a per partition basis
  - Returning SRR partitions back to original server with original settings
  - Remote HMC support for SRR
  - Use of ssh keys instead of HMC passwords
  - Enabling SRR during LPM operations

Home Screen – V8.5 release



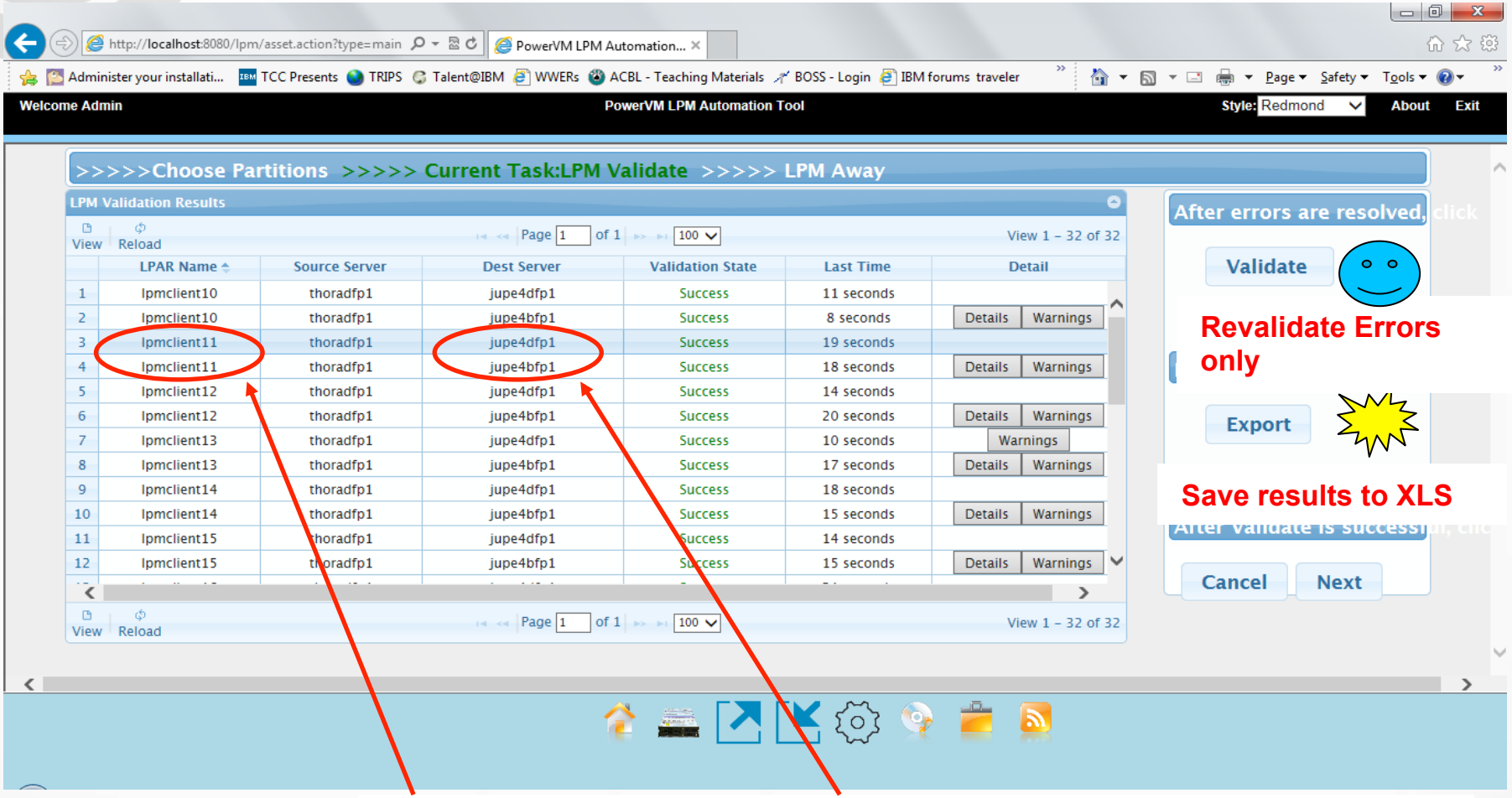
This icon gets you to this screen

LPM Away – Choose servers



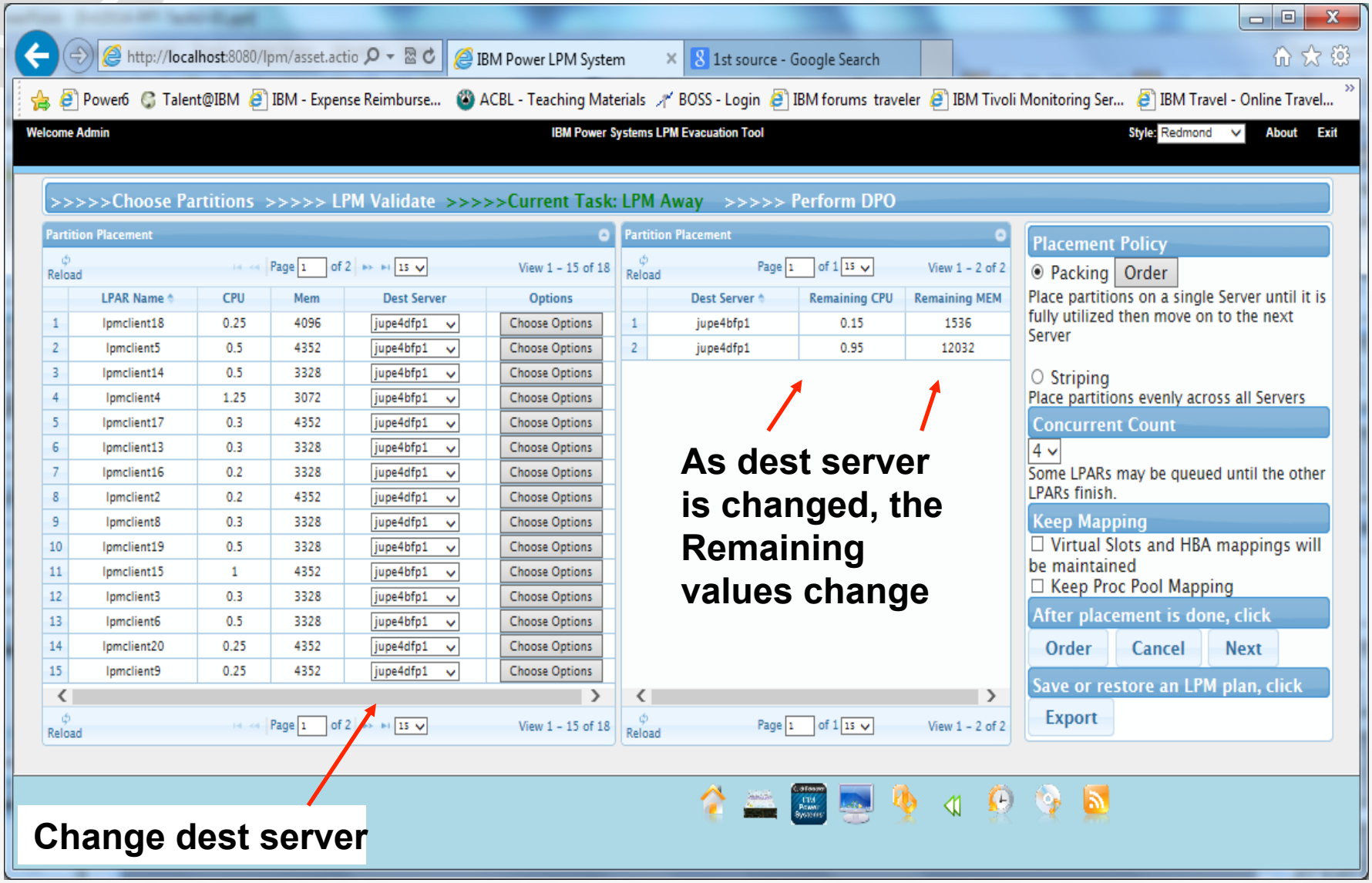
This icon gets you to this screen

LPM Away – Validate Complete

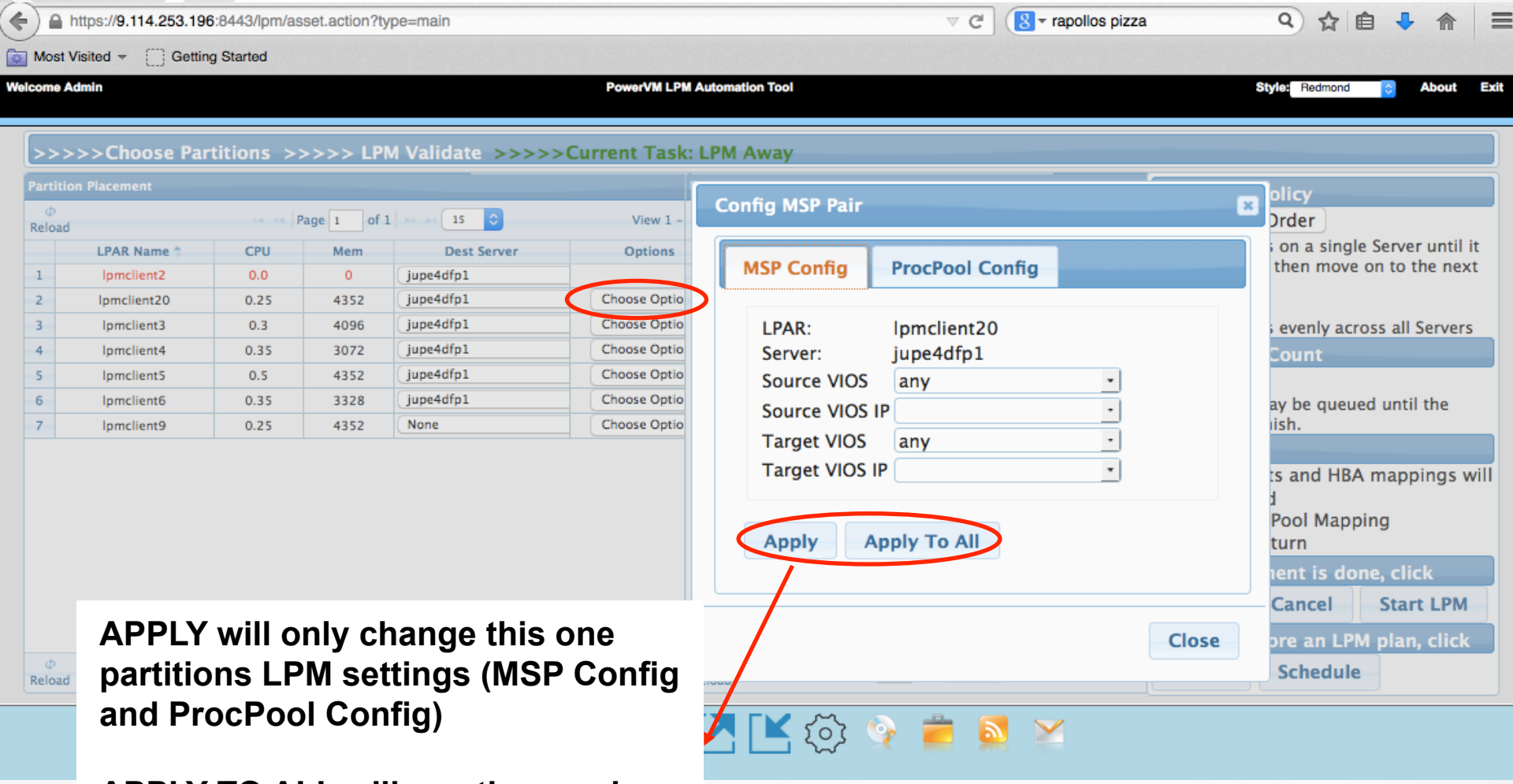


Notice how each partition was validated to both possible destination servers.

LPM Away – Placement Panel



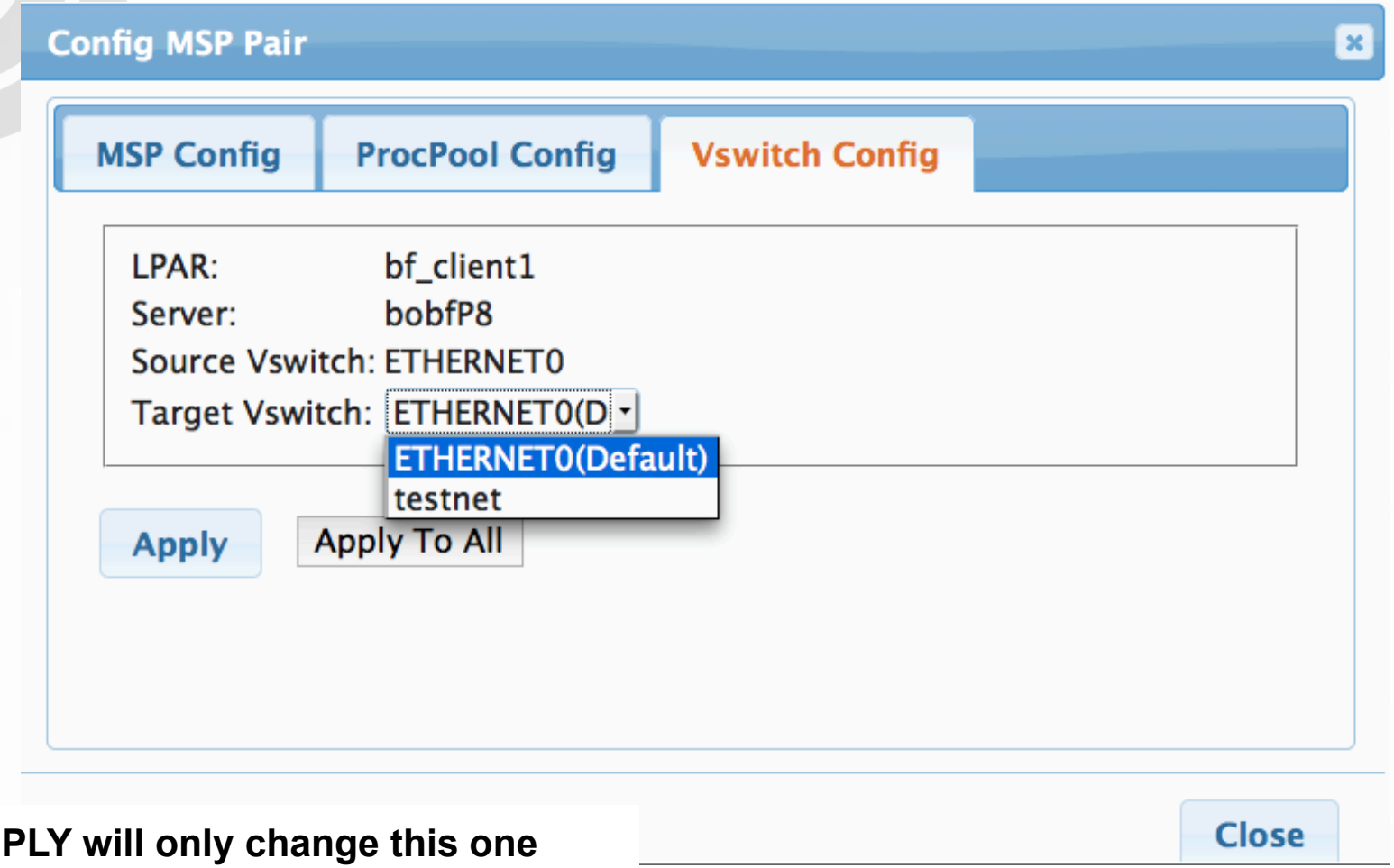
LPM Away – MSP and Shared Proc Pool



APPLY will only change this one partitions LPM settings (MSP Config and ProcPool Config)

APPLY TO ALL will use these value for all partitions MSP Configs going to the same Dest Server (MSP Config)

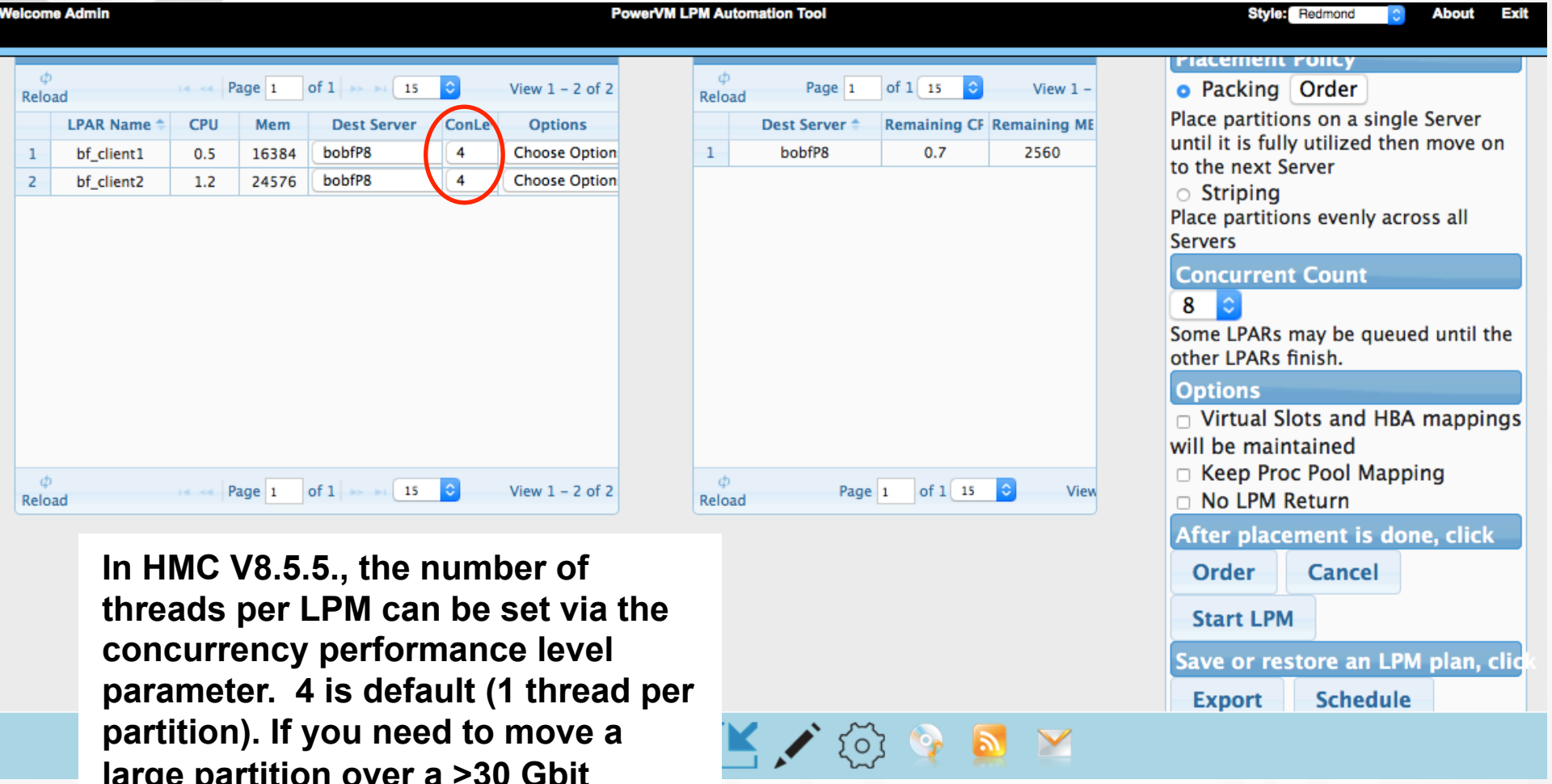
LPM Away – Vswitch support in V8.5



APPLY will only change this one partition's Vswitch

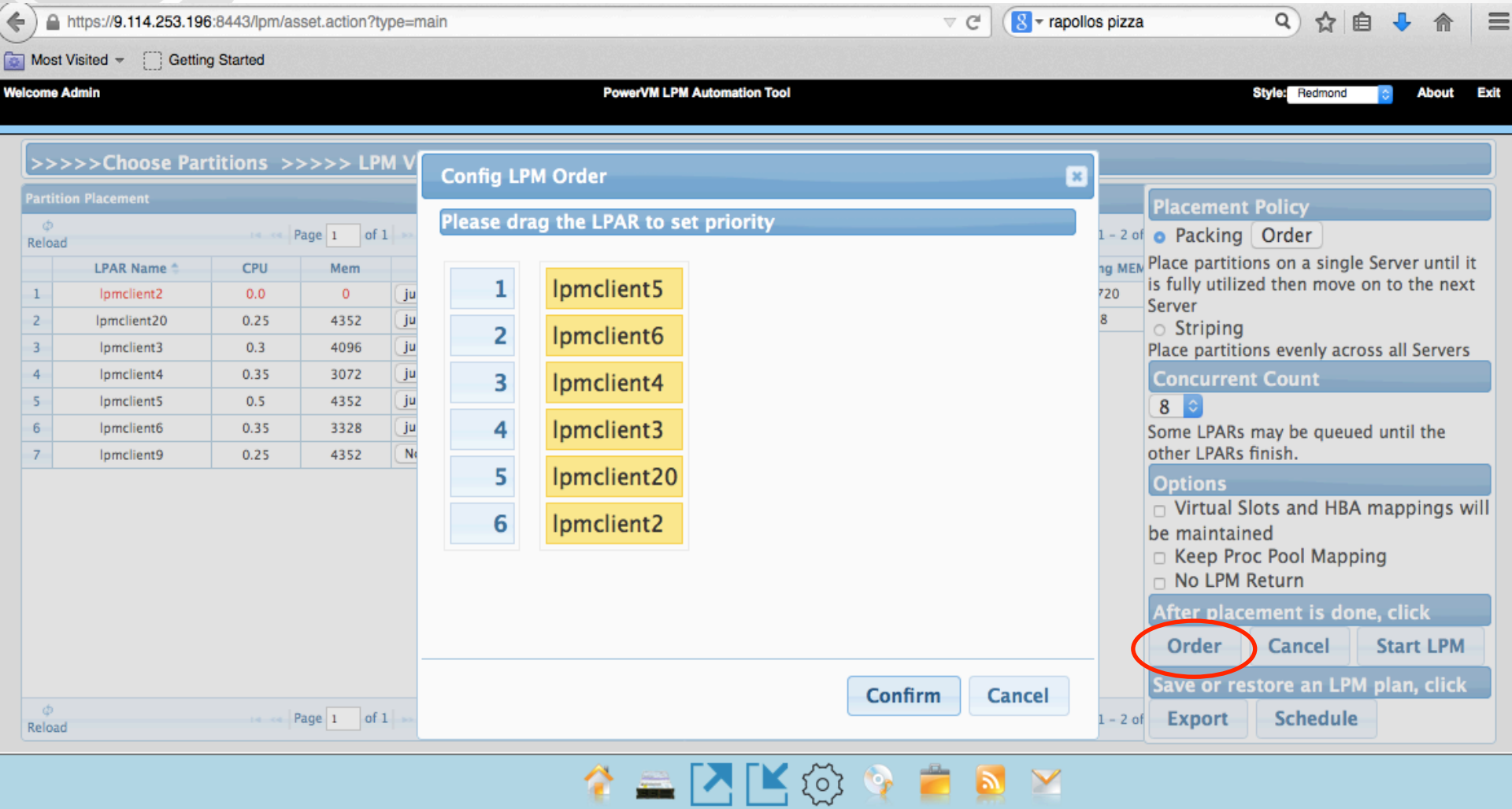
APPLY TO ALL will use this value for all partitions

LPM Away – ConcurrPerf Level in V8.5



In HMC V8.5.5., the number of threads per LPM can be set via the concurrency performance level parameter. 4 is default (1 thread per partition). If you need to move a large partition over a >30 Gbit network, you can set this to 1 and then 4 threads in a VIOS will be used to transfer data for that 1 partiition

Ability to change partition LPM order



Click and drag a partition name up or down. 1 goes first, then 2, etc

No LPM Return Checkbox

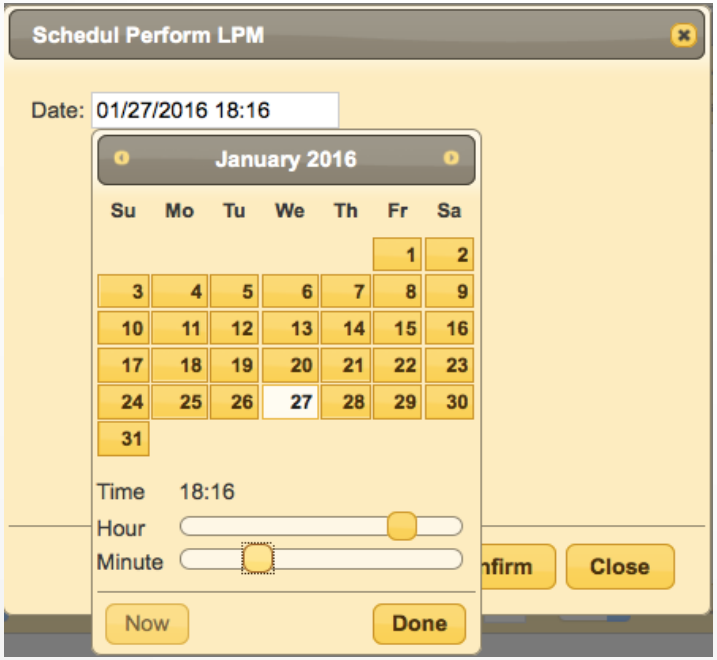
- This new feature in V4 allows a customer to move the LPARs one way and not have the LPAR show up on the LPM Return Panel.
- This is useful if you are migrating LPARs from a P7 server to a P8 server and don't ever plan on returning the LPAR back to the P7 as the P7 will be decommissioned.
- This is also useful for customers who are just doing Workload Balancing and won't move it back later (or if they do, it will be part of another workload balancing operation).
- When you click this box, the LPAR will be moved but its source server and all its original mappings will not be saved in the tool's database for a later Return.

- If you are uncertain if an LPAR will be returned, don't check this box. Then if you decide to not return it, you can Delete if from the tool's database by clicking Delete on the LPM Return screen (more on that later).

Schedule Button

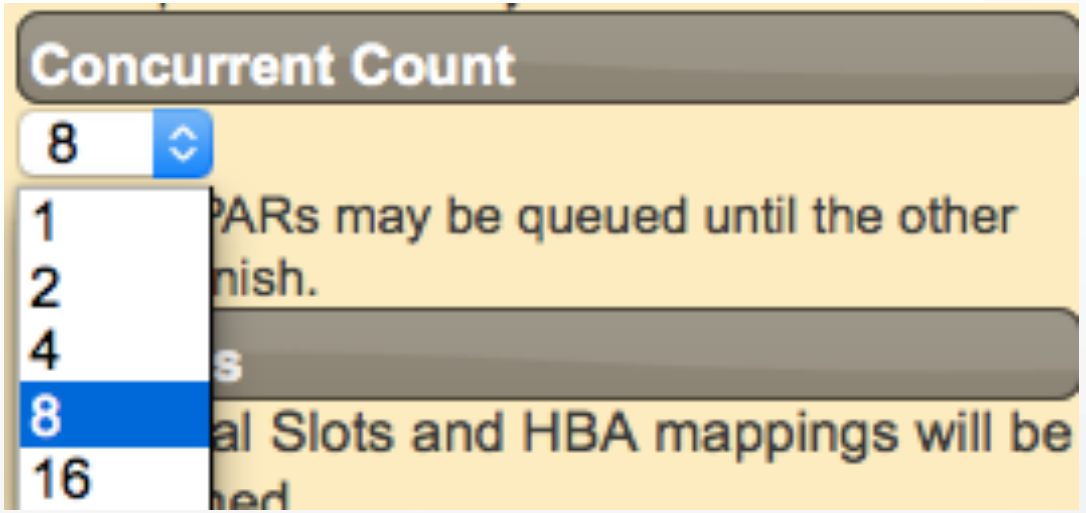
- This new feature in V4 allows a customer schedule the LPM operation for a later time.

- You manage Schedule Operations on another panel (more on that later)



LPM Away process – deciding concurrency

- The tool will intermix LPMs to different servers depending on the LPM order and concurrency. Generally 8 or less LPMs at a time is recommended. More that 8 requires more planning.
- To do more than 8 at a time, you'll want to export the plan and then set up the MSP pairings to use 2 VIOS on both the source and destination servers and change the order of the LPMs.
  - Then when you import the changed plan, change the Concurrent Count on the Placement Panel



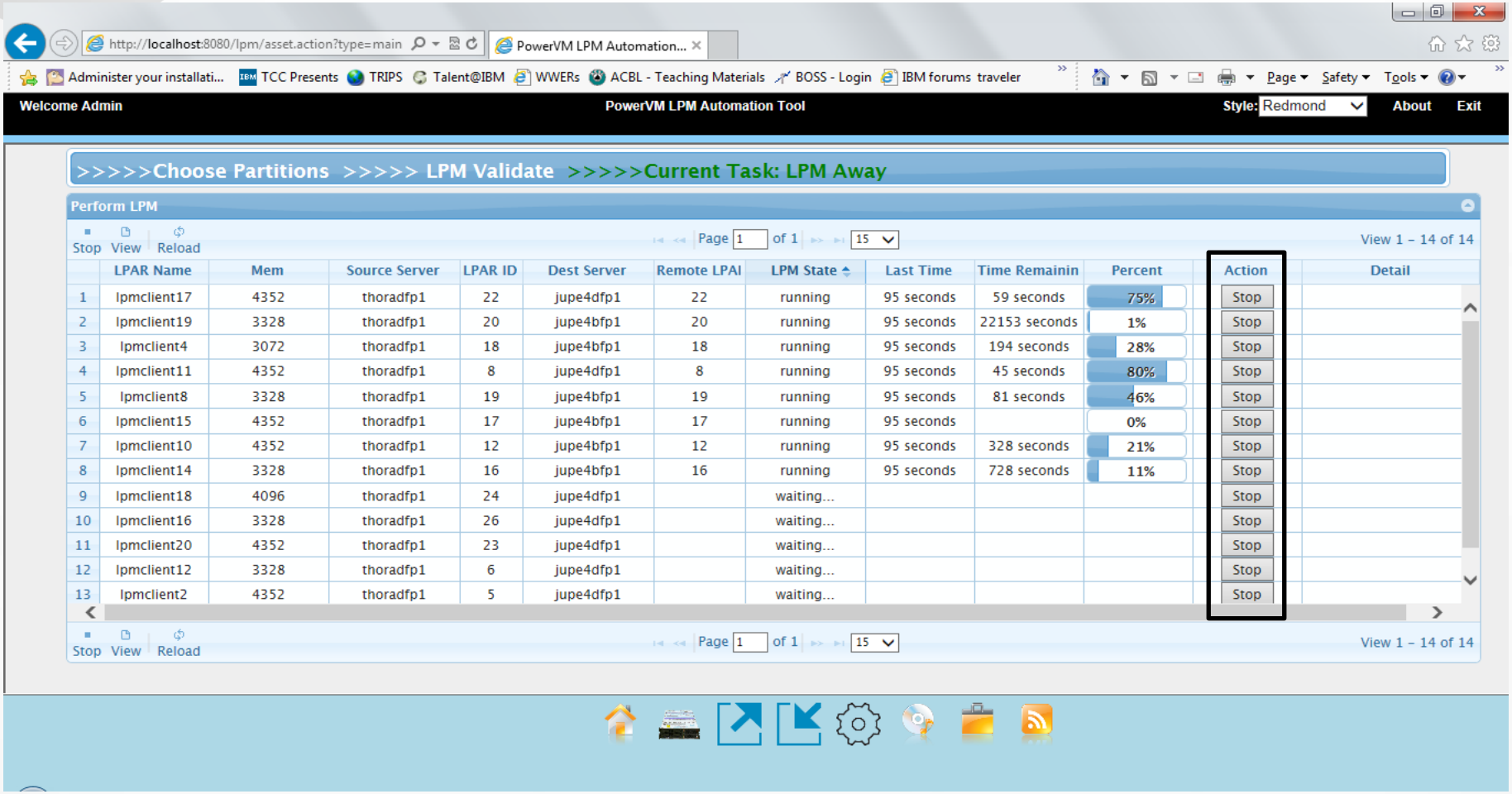
Subdividing partitions into LPM groups – V8.5

- So the tool supports different concurrency performance levels and the number of concurrent migrations to be performed.
- In Version 8.5 of the tool, there is a new option to subdivide partitions into different groups so that all the partitions in 1 group will be moved before the tool starts moving partitions in the next group.
- This feature is supported via the spreadsheet/plans option. There is a new column called “GROUP ID” which uses integers for group ids.
- A customer may want to move 3 partitions first and not start others till after those 3 complete. So even though the concurrent migrations count is set to 8 (default value), only 3 partitions will be moved concurrently in that group. If another group has 20 partitions in it, and the concurrency count is 8, the tool will start 8 LPM operations and then as 1 completes, another will be started to keep 8 going at one time.

An example of using Group IDs – V8.5

- With this new feature, you can pre-plan a complex migration as follows.
- Let's say you have a 40 Gbit Link Aggregration between your MSPs.
- You can move your app servers in one group and use the default concurrency performance level and the partitions will be transferred up to your concurrent migrations count (default of 8).
- Then when you want to move the DB server which has a much larger memory footprint and you want it to move as quickly as possible, you put it into its own Group ID, and set the concurrent performance level to 1 (4 threads in a VIOS will be used to move the memory footprint as quickly as possible).
- The VIOS/MSP is capable of transferring data at near line speeds in this case…..40 Gbits/second. So a 500 Gbyte partition can be moved in less than 2 minutes.

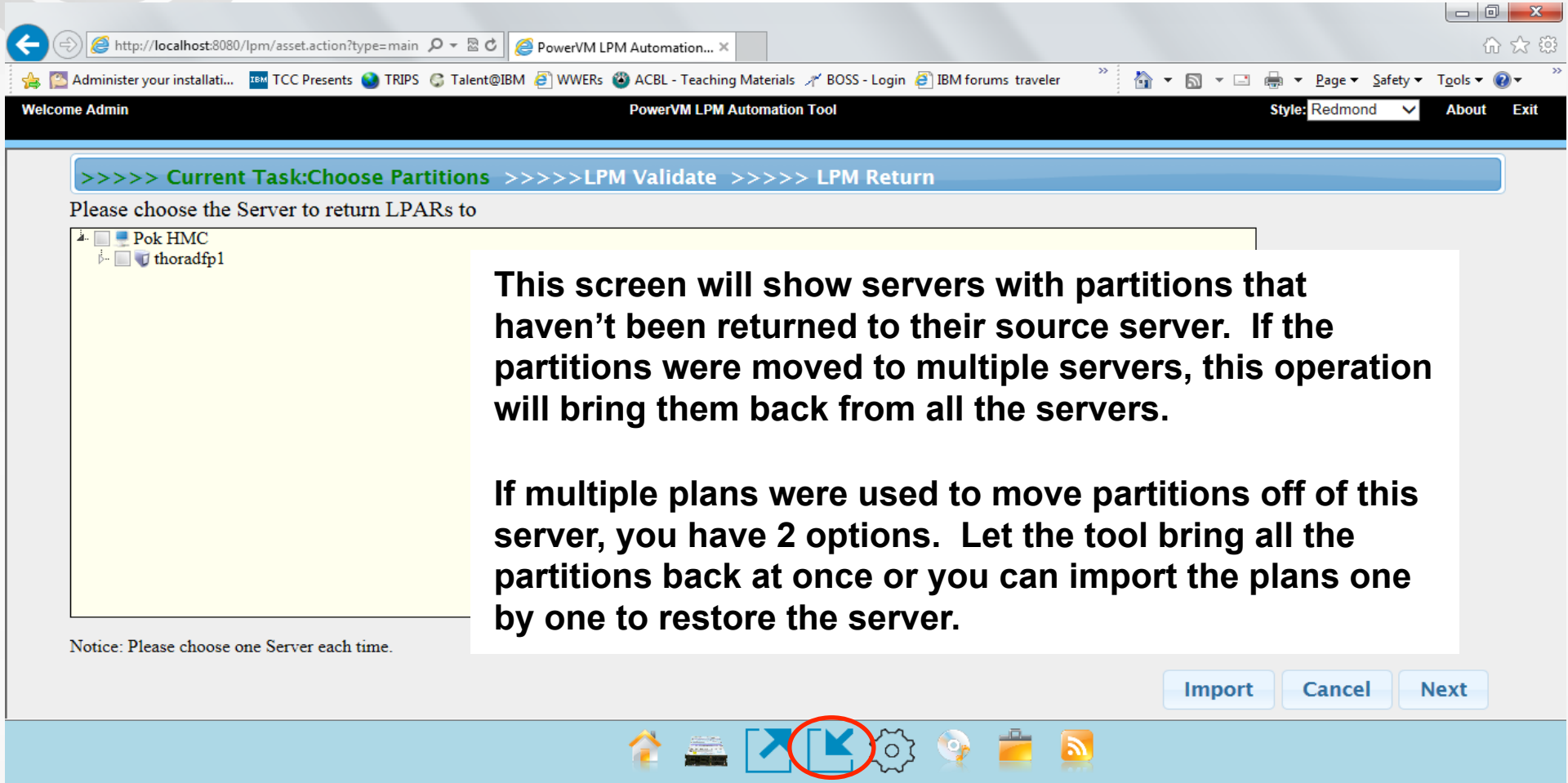
LPM Away – migration in progress



	LPAR Name	Mem	Source Server	LPAR ID	Dest Server	Remote LPAI	LPM State	Last Time	Time Remainin	Percent	Action	Detail
1	lpmclient17	4352	thoradfp1	22	jupe4dfp1	22	running	95 seconds	59 seconds	75%	Stop	
2	lpmclient19	3328	thoradfp1	20	jupe4bfp1	20	running	95 seconds	22153 seconds	1%	Stop	
3	lpmclient4	3072	thoradfp1	18	jupe4bfp1	18	running	95 seconds	194 seconds	28%	Stop	
4	lpmclient11	4352	thoradfp1	8	jupe4dfp1	8	running	95 seconds	45 seconds	80%	Stop	
5	lpmclient8	3328	thoradfp1	19	jupe4bfp1	19	running	95 seconds	81 seconds	46%	Stop	
6	lpmclient15	4352	thoradfp1	17	jupe4bfp1	17	running	95 seconds		0%	Stop	
7	lpmclient10	4352	thoradfp1	12	jupe4bfp1	12	running	95 seconds	328 seconds	21%	Stop	
8	lpmclient14	3328	thoradfp1	16	jupe4bfp1	16	running	95 seconds	728 seconds	11%	Stop	
9	lpmclient18	4096	thoradfp1	24	jupe4dfp1		waiting...				Stop	
10	lpmclient16	3328	thoradfp1	26	jupe4dfp1		waiting...				Stop	
11	lpmclient20	4352	thoradfp1	23	jupe4dfp1		waiting...				Stop	
12	lpmclient12	3328	thoradfp1	6	jupe4dfp1		waiting...				Stop	
13	lpmclient2	4352	thoradfp1	5	jupe4dfp1		waiting...				Stop	

Stop View Reload
Page 1 of 1 15
View 1 – 14 of 14

LPM Return – return partitions to original server

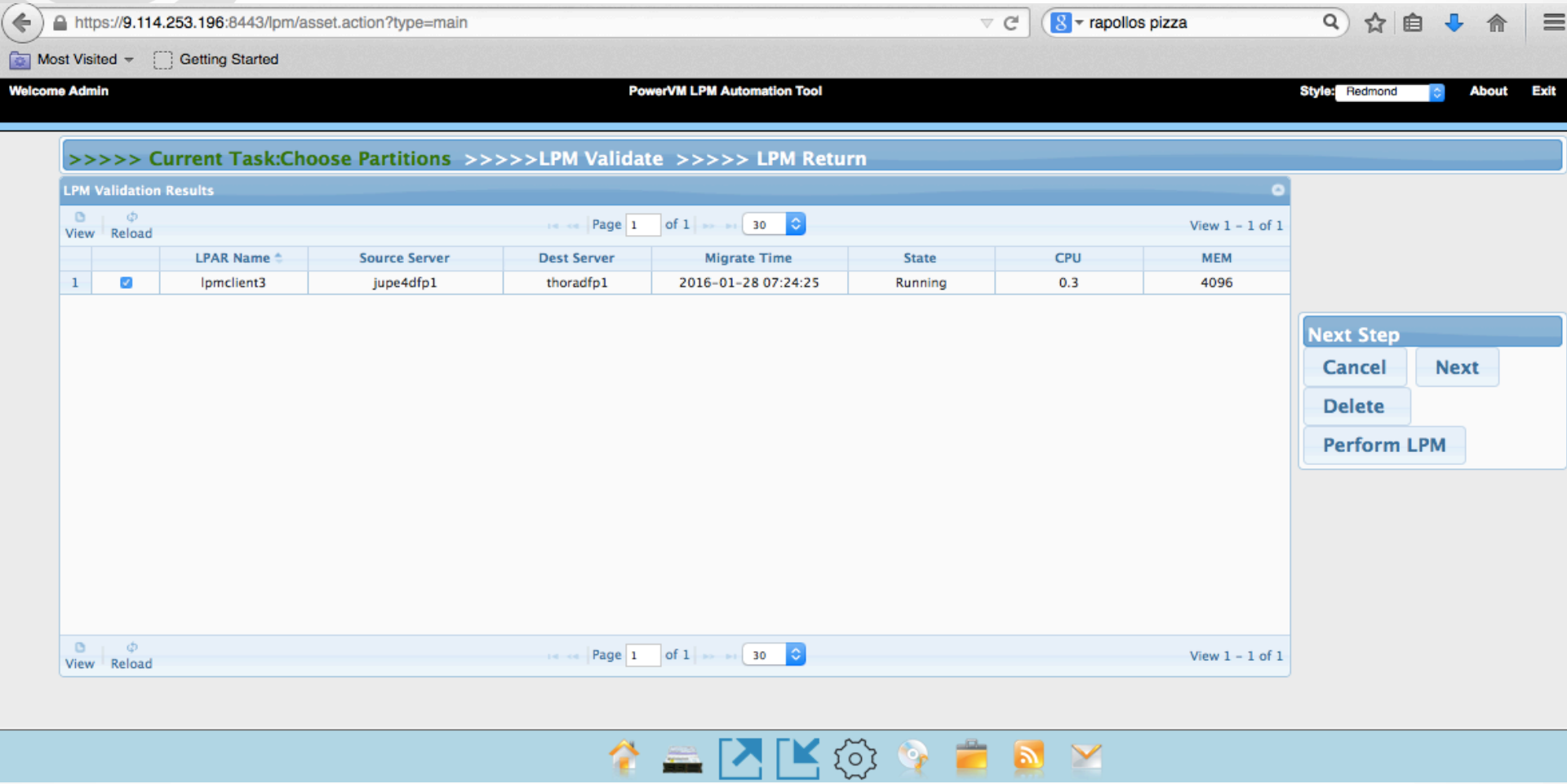


This screen will show servers with partitions that haven't been returned to their source server. If the partitions were moved to multiple servers, this operation will bring them back from all the servers.

If multiple plans were used to move partitions off of this server, you have 2 options. Let the tool bring all the partitions back at once or you can import the plans one by one to restore the server.

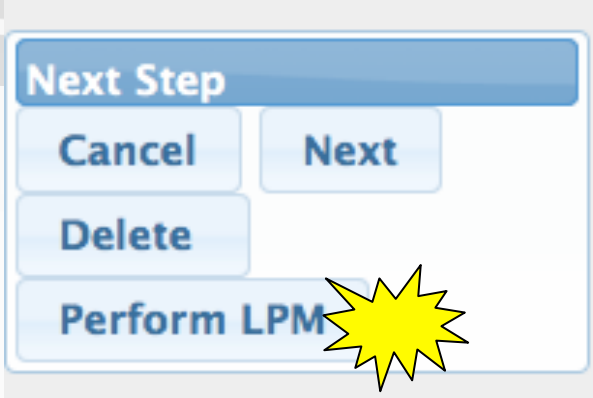
When moving the partitions back to the original managed system, the tool will restore the virtual adapter numbers and shared proc pools and HBA mappings that were originally being used before the managed system was evacuated

LPM Return – choose partitions



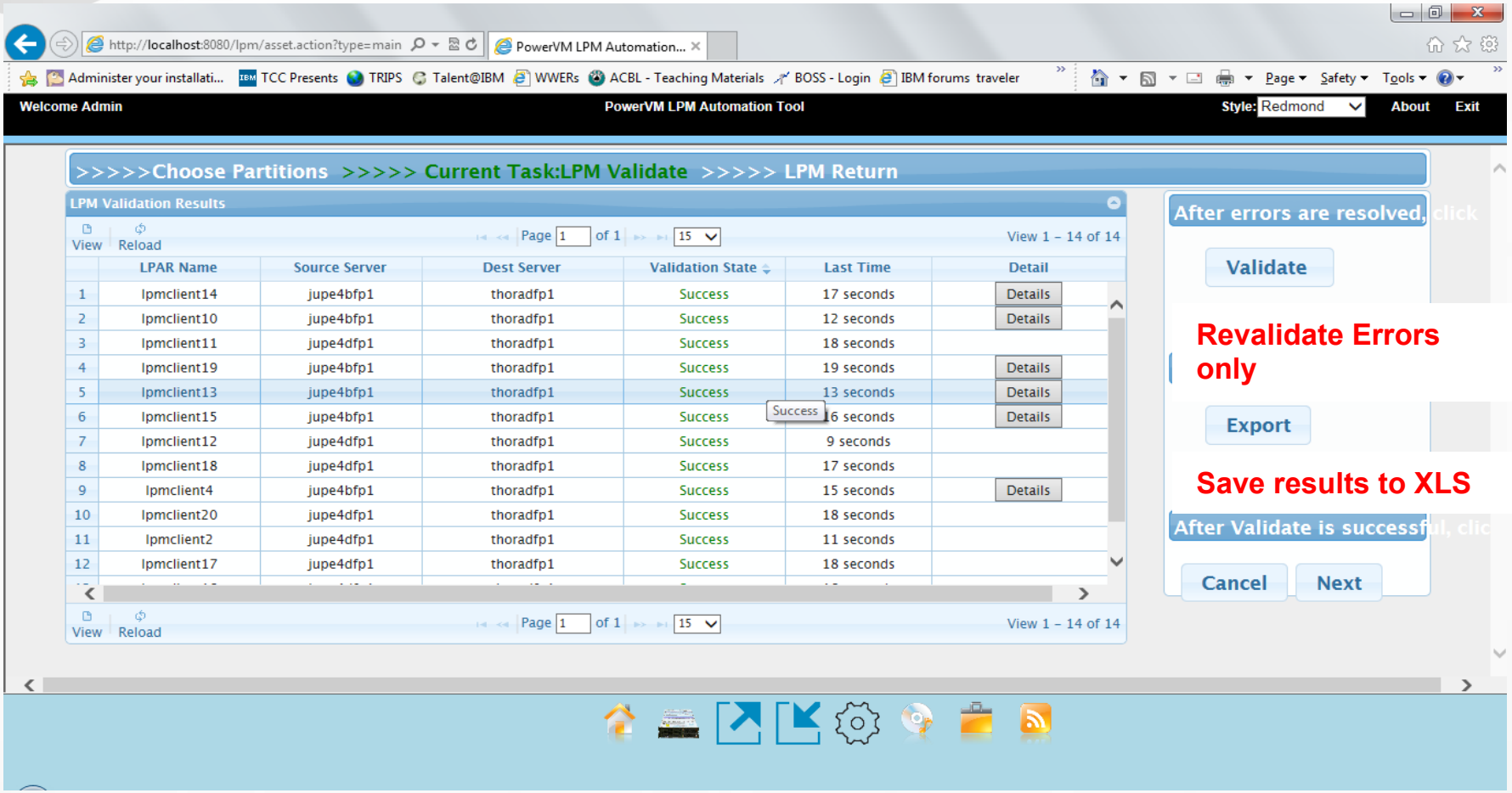
You don't have to return all partitions at once. Default is ALL partitions. Just check the LPARs that you want to do an Action on.

LPM Return Options

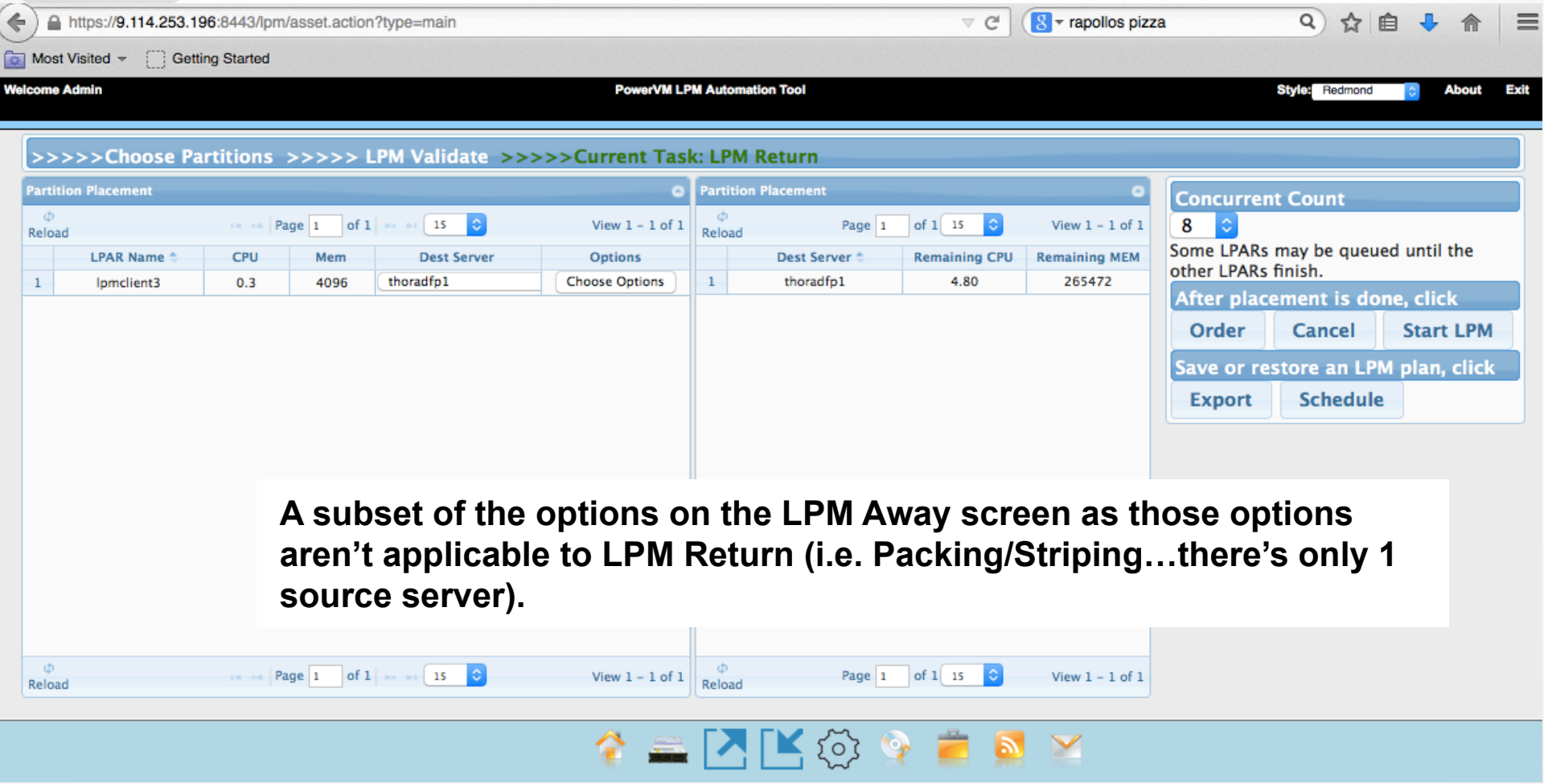


Cancel Button – leave this screen and go back to HOME screen
Next Button – for the LPARs you selected, go to Validation screen and then go to Placement Screen
Delete Button – for the LPARs you selected, Delete these LPARs source server and mappings and all remnants from the tools database (you don't want to return this LPAR to the source server)
Perform LPM – for the LPARs you selected, skip the Validation step and the Placement panel and just start the LPM. This is a huge timesaver if you are returning lots of LPARs and a validation will be done as part of the LPM anyways.

LPM Return Validate Panel



LPM Return – Options screen



A subset of the options on the LPM Away screen as those options aren't applicable to LPM Return (i.e. Packing/Striping…there's only 1 source server).

Exporting/Importing Plans

- The tool is designed so that a customer can create plans, MODIFY them outside of the tool, and import those changed plans into the tool.
- The plan is an Excel spreadsheet where many of the fields can be modified and imported back into the tool.
- The plan includes both the LPM Away functionality and the LPM Return functionality on a different worksheet.
- You can import plans on either the LPM Away GUI or the LPM Return GUI. It will read the appropriate worksheet (“LPM Away” or “LPM Return”) and load that into the tool.

Advanced LPM and SRR features

- Designing GUIs for the many advanced features of LPM and SRR would be challenging so the tool uses plans to expose these advanced features to customers.
- While many customers are happy with just the GUI panels, some customers need a lot of control when performing LPM and SRR.
- The spreadsheet is a superset of the GUI capabilities.
- Anything on the GUI can be changed in the spreadsheet.
- Items that are not on the GUI but can be modified in plans are –
  - Vfc mappings (both LPM and SRR)
  - Vscsi mappings (only LPM)
  - SR-IOV VNIC mappings (only LPM)
  - Group IDs (only LPM)

Advantages of LPM Plans

- The customer can build stages of plans. For example, they want to do some moves on Monday (one set of application LPARs) and then Tuesday (another set of application LPARs), etc. They build a plan for each day and can import those plans the following week.
- Since each plan can stand on its own, you can execute them in any order.
- You can make many changes in the plan with Excel and then import those changes back into the tool.
- The HMC Command Line (CL) that is executed for each LPM operation is shown in the plan.
  - This can be useful if someone wants to extract the HMC CL and build their own scripts.
  - It can also be used to perform the moves in the unlikely event the tool fails. The customer can save the plan. Then if there is a problem, can manually execute those commands on the HMC console.
- When you import a plan, the LPM validation is done with the specific parameters/values you specified in the plan (i.e. slot numbers, msps, etc) and if you have an incorrect value, the validation fails.

Exporting Plans – new limits in V8.5

For those advanced virtual adapter customers

- The spreadsheet now supports unlimited virtual fibre channel adapters and vscsi adapters in V8.5. It used to support 63 VFC adapters in the spreadsheet

- The tool also now will move and return virtual fibre channel adapters that are mapped to a vfchost but do not have a FCS port specified. This case has come up with a couple of customers that will dynamically map virtual tapes to vfchosts.

© Copyright IBM Corporation 2014

LPM Away Excel worksheet

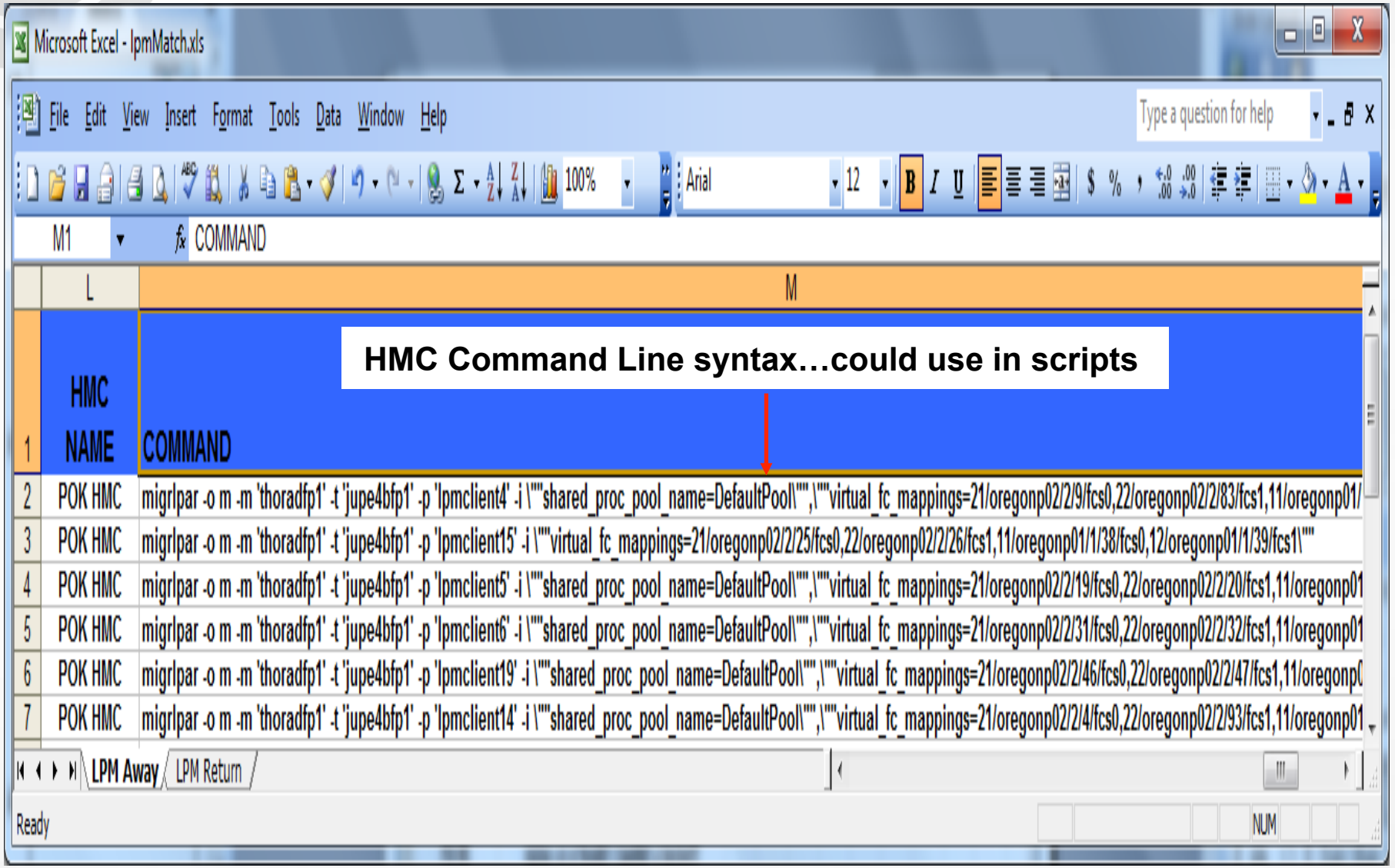
Yellow Columns can be changed and be imported into tool

apply_all.xls [Compatibility Mode] - Excel

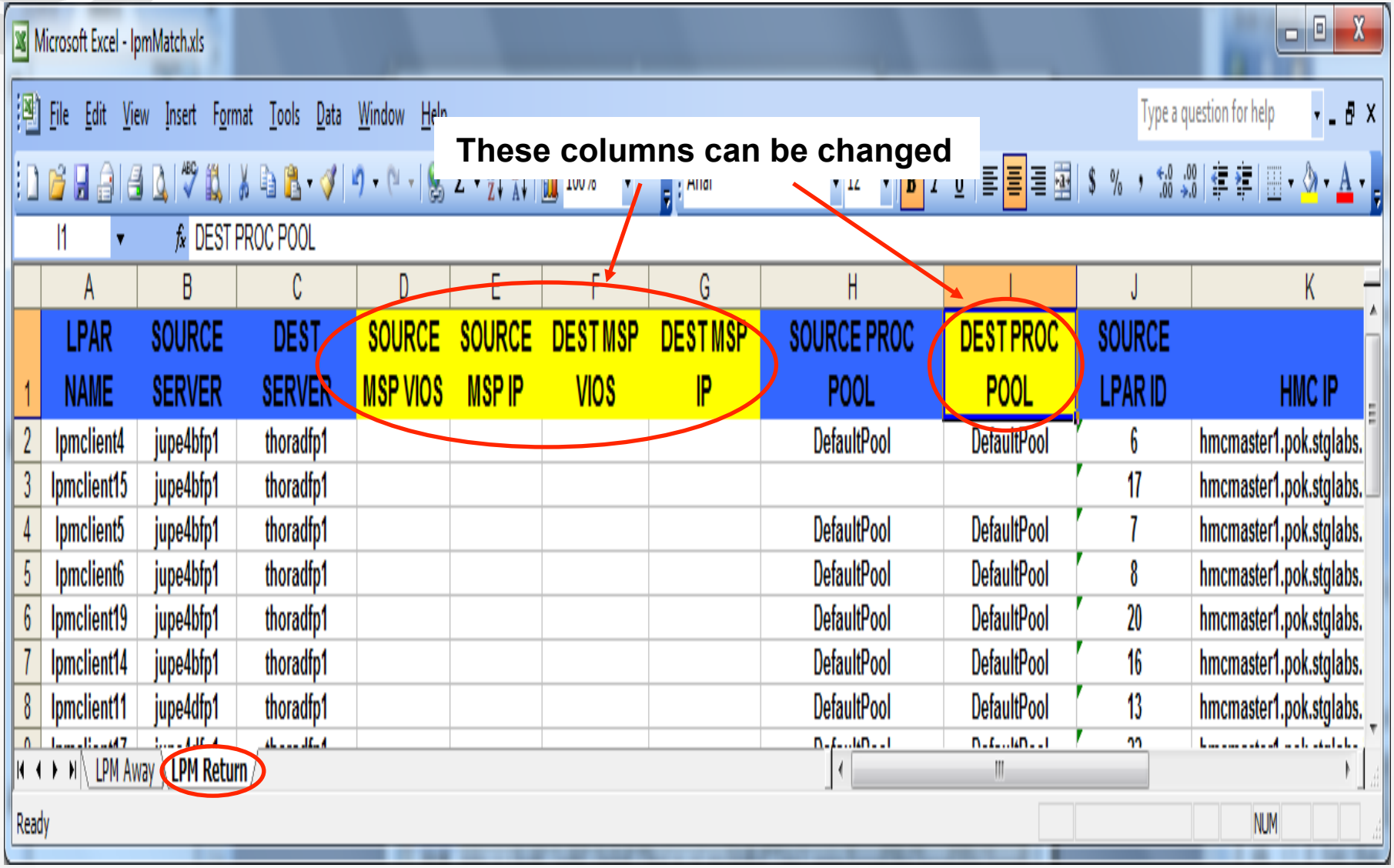
ME INSERT PAGE LAYOUT FORMULAS DATA REVIEW VIEW

A	B	C	D	E	F	G	H
R NAME	SOURCE SERVER	DEST SERVER	DEST LPAR ID	SOURCE MSP VIOS	SOURCE MSP IP	DEST MSP VIOS	DEST MSP IP
olkit_client1	thoradfp1	None					
client22	thoradfp1	None					
client4	thoradfp1	jupe4bfp1		oregonp01	9.114.252.212	vios1	9.114.253.162
client15	thoradfp1	jupe4bfp1		oregonp01	9.114.252.212	vios1	9.114.253.162
client10	thoradfp1	jupe4bfp1		oregonp01	9.114.252.212	vios1	9.114.253.162
client5	thoradfp1	jupe4bfp1		oregonp01	9.114.252.212	vios1	9.114.253.162
client14	thoradfp1	jupe4bfp1		oregonp01	9.114.252.212	vios1	9.114.253.162
client19	thoradfp1	jupe4bfp1		oregonp01	9.114.252.212	vios1	9.114.253.162
client1	thoradfp1	jupe4bfp1		oregonp01	9.114.252.212	vios1	9.114.253.162
client11	thoradfp1	jupe4bfp1		oregonp01	9.114.252.212	vios1	9.114.253.162
client17	thoradfp1	jupe4dfp1		oregonp02	9.114.252.213	jigp02	9.114.253.184
client8	thoradfp1	jupe4bfp1		oregonp01	9.114.252.212	vios1	9.114.253.162
client13	thoradfp1	jupe4bfp1		oregonp01	9.114.252.212	vios1	9.114.253.162
client3	thoradfp1	jupe4bfp1		oregonp01	9.114.252.212	vios1	9.114.253.162
client20	thoradfp1	jupe4dfp1		oregonp02	9.114.252.213	jigp02	9.114.253.184
client7	thoradfp1	jupe4dfp1		oregonp02	9.114.252.213	jigp02	9.114.253.184
client9	thoradfp1	jupe4dfp1		oregonp02	9.114.252.213	jigp02	9.114.253.184
client18	thoradfp1	jupe4dfp1		oregonp02	9.114.252.213	jigp02	9.114.253.184
client12	thoradfp1	jupe4dfp1		oregonp02	9.114.252.213	jigp02	9.114.253.184
client2	thoradfp1	jupe4dfp1		oregonp02	9.114.252.213	jigp02	9.114.253.184
client16	thoradfp1	jupe4dfp1		oregonp02	9.114.252.213	jigp02	9.114.253.184

LPM Away command syntax

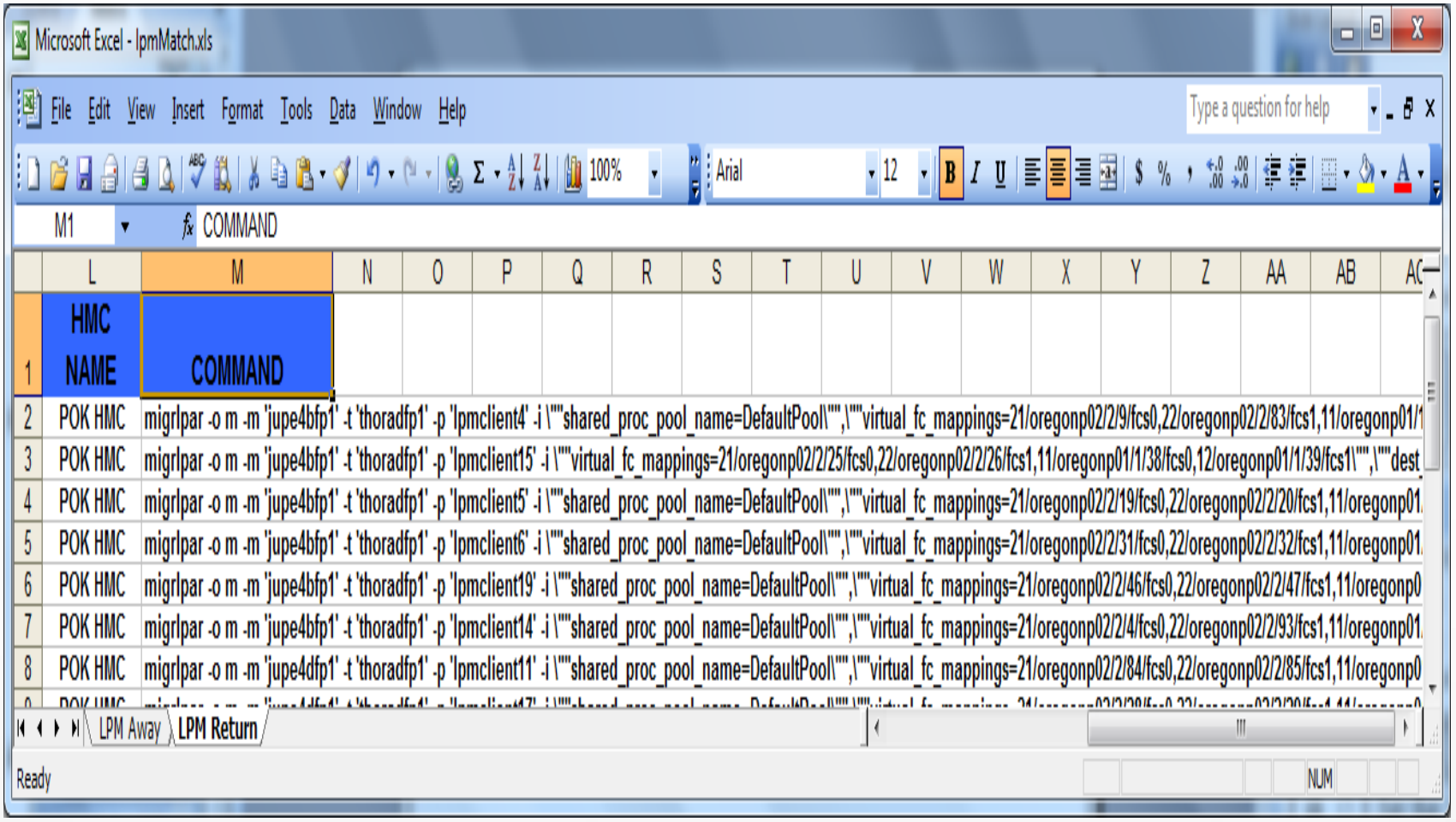


LPM Return Excel worksheet



	A	B	C	D	E	F	G	H	I	J	K
1	LPAR NAME	SOURCE SERVER	DEST SERVER	SOURCE MSP VIOS	SOURCE MSP IP	DEST MSP VIOS	DEST MSP IP	SOURCE PROC POOL	DEST PROC POOL	SOURCE LPAR ID	HMC IP
2	lpmclient4	jupe4bfp1	thoradfp1					DefaultPool	DefaultPool	6	hmcmaster1.pok.stglabs.
3	lpmclient15	jupe4bfp1	thoradfp1							17	hmcmaster1.pok.stglabs.
4	lpmclient5	jupe4bfp1	thoradfp1					DefaultPool	DefaultPool	7	hmcmaster1.pok.stglabs.
5	lpmclient6	jupe4bfp1	thoradfp1					DefaultPool	DefaultPool	8	hmcmaster1.pok.stglabs.
6	lpmclient19	jupe4bfp1	thoradfp1					DefaultPool	DefaultPool	20	hmcmaster1.pok.stglabs.
7	lpmclient14	jupe4bfp1	thoradfp1					DefaultPool	DefaultPool	16	hmcmaster1.pok.stglabs.
8	lpmclient11	jupe4dfp1	thoradfp1					DefaultPool	DefaultPool	13	hmcmaster1.pok.stglabs.

LPM Return command syntax

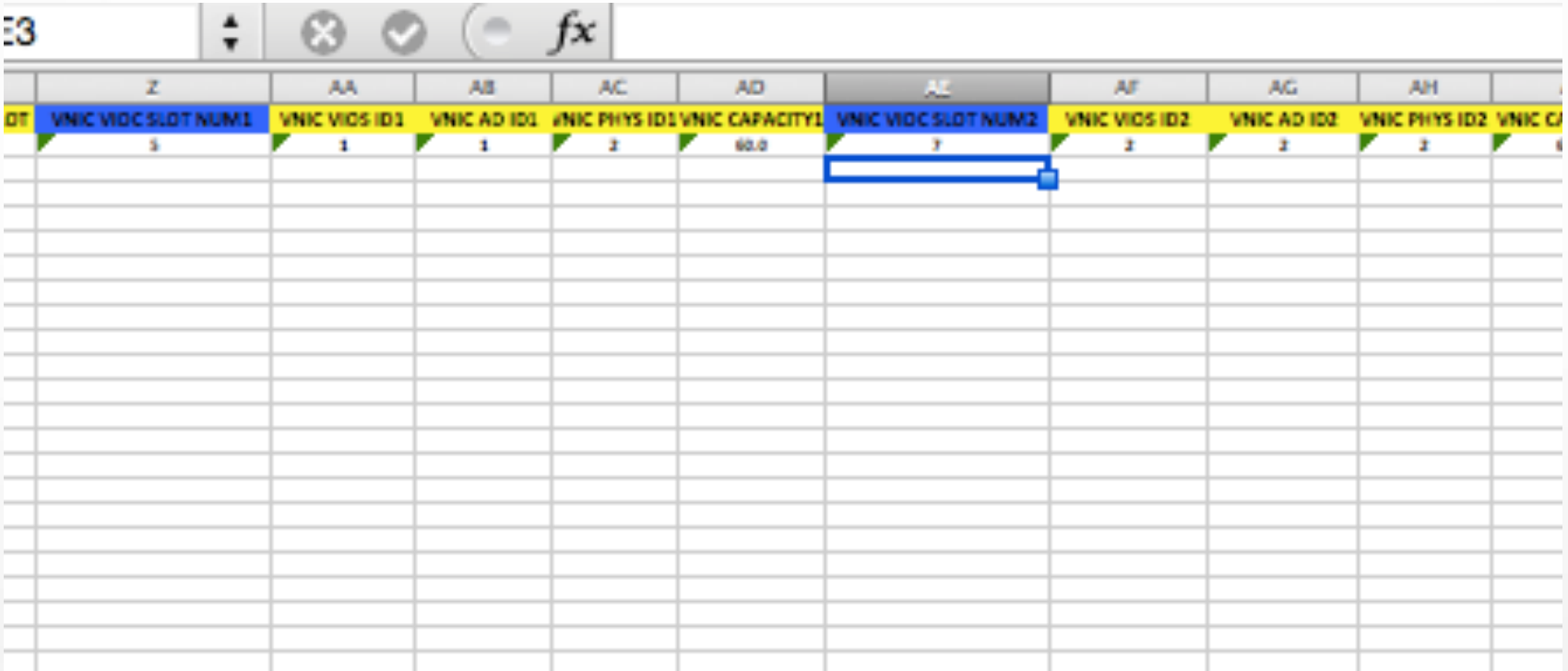


	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1	HMC NAME	COMMAND																
2	POK HMC	migrlpar -o m -m 'jupe4bfp1' -t 'thoradfp1' -p 'lpmclient4' -i \""shared_proc_pool_name=DefaultPool\"",\""virtual_fc_mappings=21/oregonp02/2/9/fcs0,22/oregonp02/2/83/fcs1,11/oregonp01/1																
3	POK HMC	migrlpar -o m -m 'jupe4bfp1' -t 'thoradfp1' -p 'lpmclient15' -i \""virtual_fc_mappings=21/oregonp02/2/25/fcs0,22/oregonp02/2/26/fcs1,11/oregonp01/1/38/fcs0,12/oregonp01/1/39/fcs1\"",\""dest																
4	POK HMC	migrlpar -o m -m 'jupe4bfp1' -t 'thoradfp1' -p 'lpmclient5' -i \""shared_proc_pool_name=DefaultPool\"",\""virtual_fc_mappings=21/oregonp02/2/19/fcs0,22/oregonp02/2/20/fcs1,11/oregonp01																
5	POK HMC	migrlpar -o m -m 'jupe4bfp1' -t 'thoradfp1' -p 'lpmclient6' -i \""shared_proc_pool_name=DefaultPool\"",\""virtual_fc_mappings=21/oregonp02/2/31/fcs0,22/oregonp02/2/32/fcs1,11/oregonp01																
6	POK HMC	migrlpar -o m -m 'jupe4bfp1' -t 'thoradfp1' -p 'lpmclient19' -i \""shared_proc_pool_name=DefaultPool\"",\""virtual_fc_mappings=21/oregonp02/2/46/fcs0,22/oregonp02/2/47/fcs1,11/oregonp0																
7	POK HMC	migrlpar -o m -m 'jupe4bfp1' -t 'thoradfp1' -p 'lpmclient14' -i \""shared_proc_pool_name=DefaultPool\"",\""virtual_fc_mappings=21/oregonp02/2/4/fcs0,22/oregonp02/2/93/fcs1,11/oregonp01																
8	POK HMC	migrlpar -o m -m 'jupe4dfp1' -t 'thoradfp1' -p 'lpmclient11' -i \""shared_proc_pool_name=DefaultPool\"",\""virtual_fc_mappings=21/oregonp02/2/84/fcs0,22/oregonp02/2/85/fcs1,11/oregonp0																

SR-IOV VNIC for LPM Away/Return – V8.5

You can specify the one or all of the values for a VNIC adapter

virtual-slot-number
vios-lpar-ID
sriov-adapter-ID
sriov-physical-port-ID
capacity



Support for Power Enterprise Pools

What are Power Enterprise Pools

- Mobile processor and memory activations may be re-allocated to any system within a defined pool
  - Systems with different clock speeds can coexist in the same pool
  - Activation assignment and resource movement is controlled by the HMC
- POWER8 systems may interoperate in the same pool with POWER7 systems
  - High-end pool for POWER7+ 780, Power 795 & Power E880 systems
  - Midrange pool for POWER7+ 770 systems & Power E870
- Activations can be moved within a pool at any time, without contacting IBM
  - No limit to the number of times activations can be moved
- Movement of activations is *instant, dynamic* and *non-disruptive*
  - Ideal for workload balancing and optimizing application availability

The tool can do placement based on Power Enterprise Pools and move the mobile processor/memory as part of the LPM operations.

The best P8 feature you never knew you had

- Live Partition Mobility has made the Power platform stand out for its functionality to help customers to do planned maintenance and easy migrations and workload balancing
- But if you have an “unplanned outage” (IBM speak for your server crashed), you can get those partitions back up and running on another server
- No waiting for IBM to get the server back online, no waiting for IBM support to get back to you, just no waiting.

- You restart the workload on other servers and get your business back up and running in minutes!!!

This feature is SRR

- SRR is Simplified Remote Restart
- This PowerVM Enterprise Edition feature allows you to restart your LPM-capable LPARs on another server.
- You can restart it on a server in your data center, or if configured for cross-site LPM, you can restart it on a server in another data center with the first data center completely offline!
- How hard is it to implement? Click a box on the HMC and its implemented.

Unplanned outage with SRR phone call

- Unplanned outage using P8 Enterprise Edition - scenario 1
- Admin calls Boss...the conversation is as such
- Admin - Hello Boss....we just lost a P8 frame...it crashed and I've called IBM Support and they are on their way.
- Boss – Which applications are affected and how long does IBM think the server will be down?
- Admin – Well, I've already Remote Restarted our most critical partitions and now am restarting the lower priority partitions....shouldn't be long now.
- Boss - Remote Restarted - I thought we could only LPM when the server is up.
- Admin - Yep...This SRR is like LPM but for when the system is crashed
- Boss - okay.....once the IBM SSR fixes the server...call me and then we can start to move those running partitions back to the failed server
- Admin - No problem

- This is how we would like an unplanned outage to go!

Same outage without SRR – phone call

- Admin - Hello Boss....we just lost a P8 frame...it crashed and I've called IBM Support and they are on their way.
- Boss – Which applications are affected and how long does IBM think the server will be down?
- Admin - Well that server hosted some web servers for or Social Media sites and our payment system and our new Samsung launch app developers and repair time is TBD.
- Boss - OMG - we can't pay folks and our new cell phone launch is only 1 week away....we need this up fast as the developers are already behind

- Let’s now go forward in time…next slide please

Outage follow-up w/o SRR

A few days later and its now the Post Crit Sit phone call with IBMers and customers including a VP in charge of IT.

- IBM - We've done the analysis of the failure and understand its nature and it won't happen again.
- Customer VP - We need to have some way to mitigate this in the future.
- IBM - You could have enabled SRR and just moved those workloads to your other servers
- Customer VP - What do I need to get this SRR?
- IBM - You have had this capability on your boxes since day 1.
- Customer VP - Hummm...interesting....okay what do I need to do enable this?
- IBM - Shutdown all your partitions again and set this bit on each lpar and restart...
- Customer VP - I HAVE TO SHUTDOWN ALL MY WORKLOADS AGAIN THAT CRASHED EARLIER THIS WEEK TO DO THIS….
- The rest of the conversation is left to your imagination.

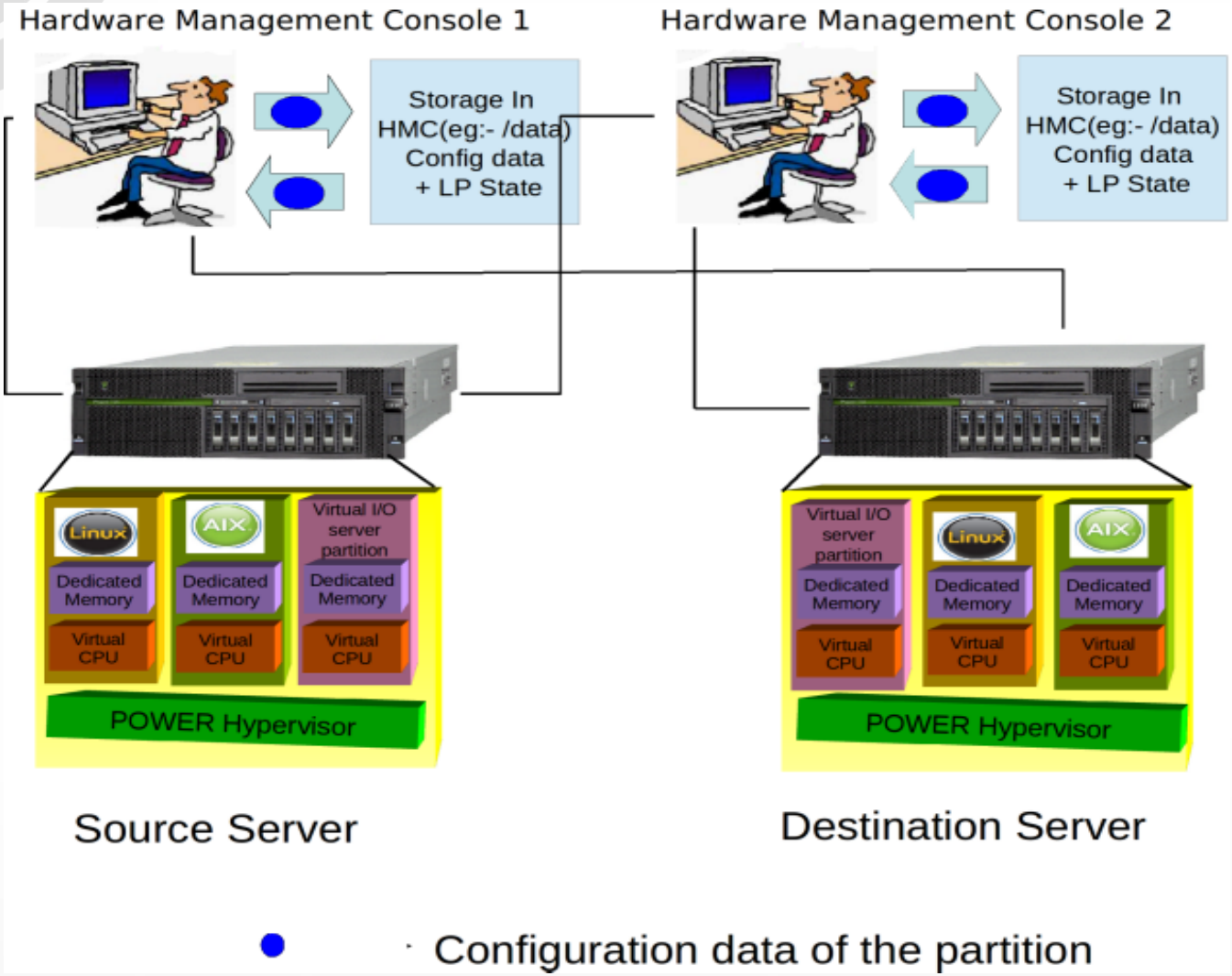
Why customers don't think they need SRR

- All my production LPARs are clustered so failover will work.
  - Yes, you should have clustered prod LPARs, but sometimes the failover doesn't work…
  - app developers have hard-coded ip addresses or other config information that is only exposed when a failure occurs
  - Failover hasn't been tested
- My non-prod workload can be down during an unplanned outage.
  - Many customers tell me their "non-prod is the new prod"
  - Many developers are working 24x5 WW on the non-prod lpars
  - Non-prod is rarely clustered in customer environments
- I don't have enough spare resources to SRR a failed server
  - You don't have to restart all the LPARs from a failed server
  - You can shutdown non-important LPARs on other servers and move the important LPARs from the failed server

What is Simplified Remote Restart

- Remote Restart
  - High availability option for partitions to recover from a server outage
  - Preserves Partition's resource configuration, partition restarted with most recent configuration
  - Faster re-provisioning of partitions upon server outage
  - Prevents configuration loss & saves time & effort in re-creating the original configuration
  - Reduced downtime for workloads
- Simplified Remote Restart (SRR)
  - Introduced with HMC V8 R8.2.0, Firmware 820 & VIOS 2.2.3.4
  - Removes the requirement of reserved storage device for each partition.
  - Reduced complexity in setting up environment & usage

Simplified Remote Restart Configuration

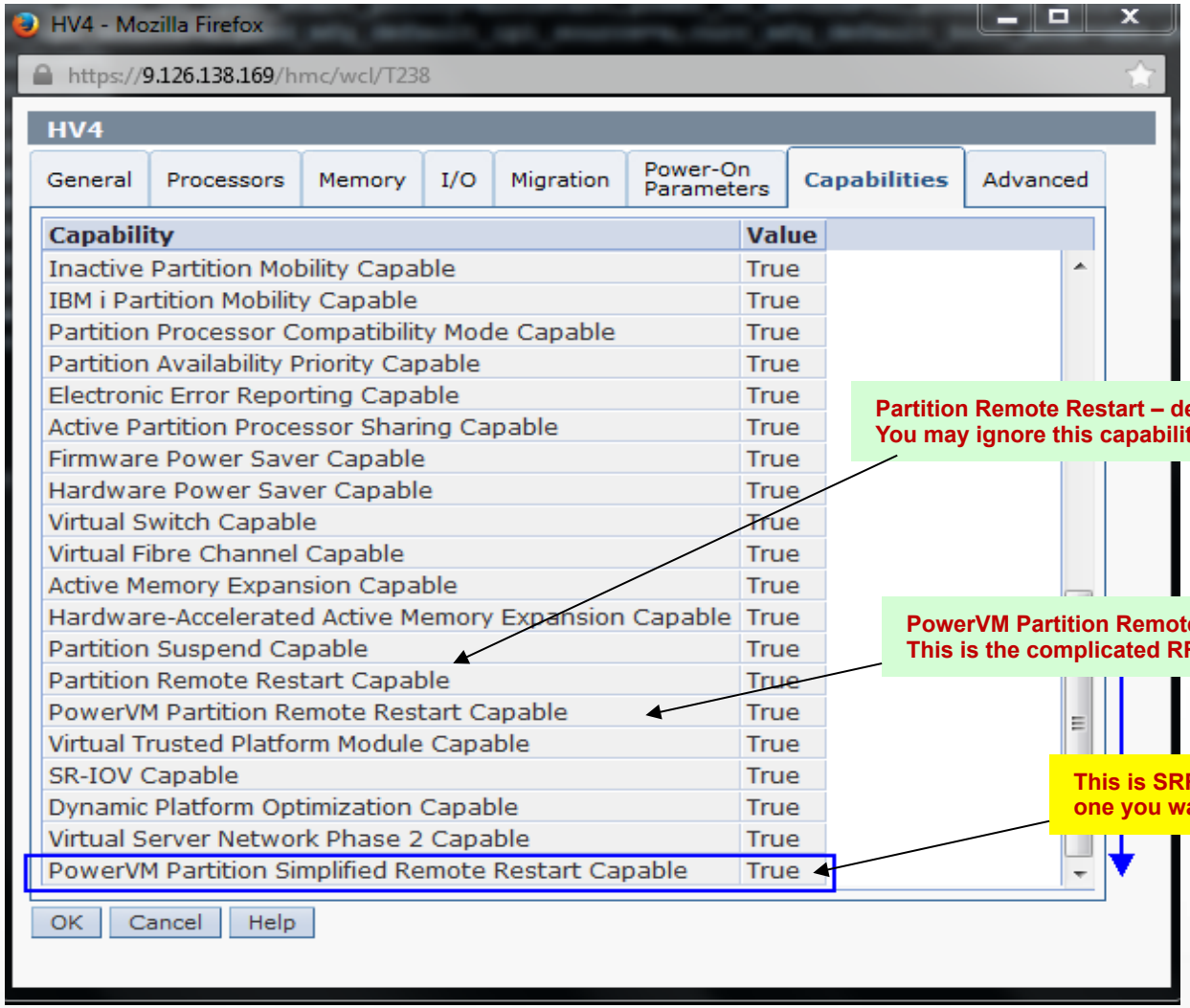


Note: Partition should use Virtual IO only

How to enable SRR

- SRR can be enabled the following ways
- At partition creation time
  - Classic GUI has checkbox on first panel of Create Partition Wizard (all HMC versions)
  - Enhanced GUI has partition templates with SRR enabled (HMC 8.8.5 version)
  - Enhanced GUI can capture SRR partition and create new template (HMC 8.8.5 version)
- When partition is powered off
  - Enhanced GUI has checkbox on Partition Properties (HMC 8.8.5 version)
  - Via HMC Command line (all HMC versions)
  - `chsyscfg -r lpar -m managed-system -i "name=partition name, simplified_remote_restart_capable=1”`
- During LPM operations – as partition is moved (between P7/P8 or P8/P8)
  - Via HMC Command line (HMC 8.8.5 version)
  - `migrlpar --requirerr 2 -o m -m src_system -t dest_system`
- The tool will enable SRR during LPM by default. This is a user controlled feature.

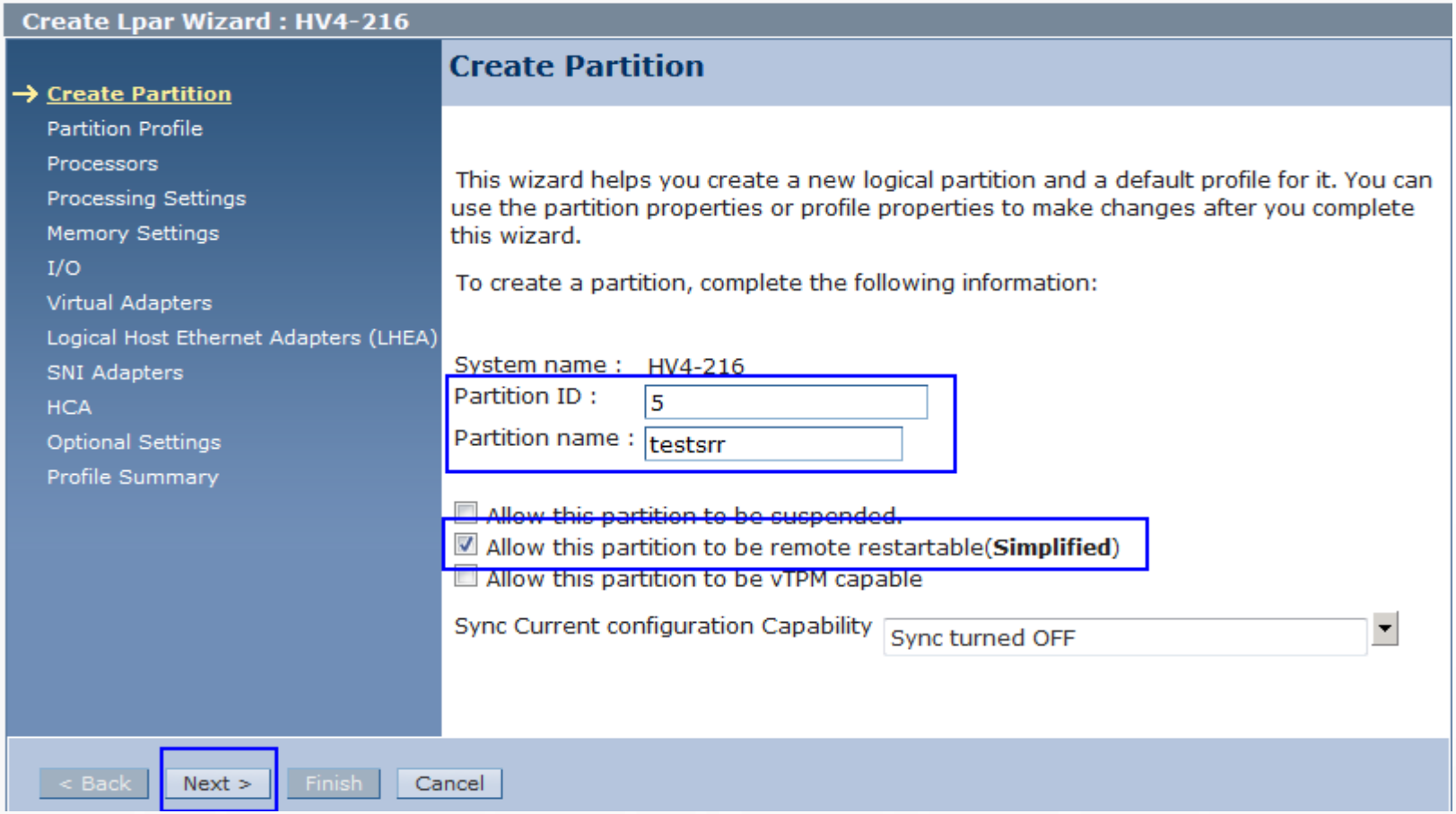
All the different types of RR



Simplified Remote Restart Enhancements

- Cross MC Remote Restart
  - Source & Target systems managed by different HMCs
- Remote Restart with no connection to system
  - Complete server outage with FSP also not available
- Live Partition Mobility Override
  - Migrating Simplified RR capable partitions between P7 & P8
- Manage Partition UI & Template
  - Templates for creating partition with Simplified RR capability
  - Manage Partition (Enhanced UI) to enable/disable Simplified RR capability
- Auto cleanup on source system after successful remote restart
- User Specifications/Overrides
  - Shared Processor Pool
  - Virtual FC Mappings

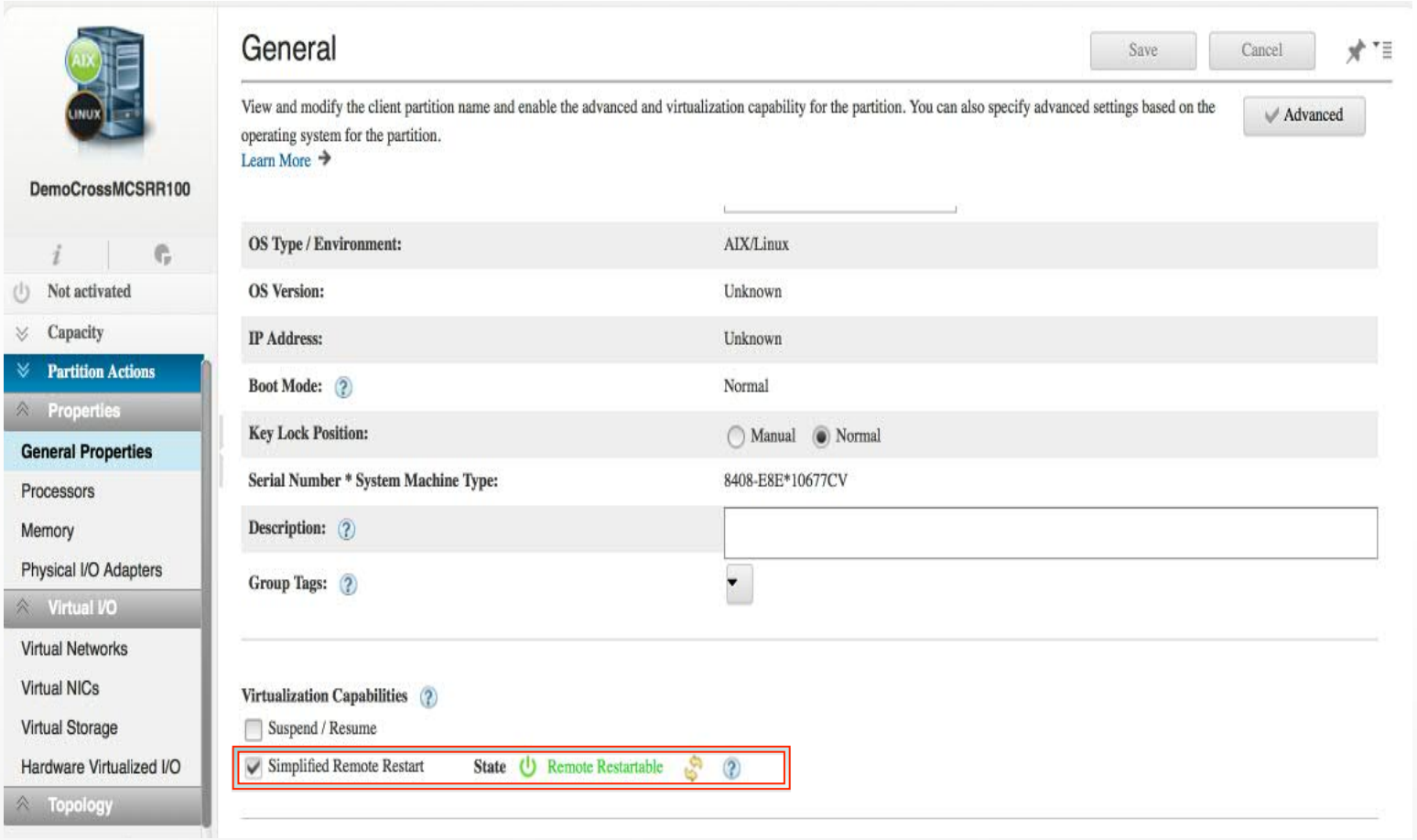
Simplified RR LPAR Creation



This option is only shown on the Create Partition wizard If you don't set it now, you will have to change shutdown the LPAR and change this value and then reboot the LPAR

Manage Partition Enhanced HMC GUI

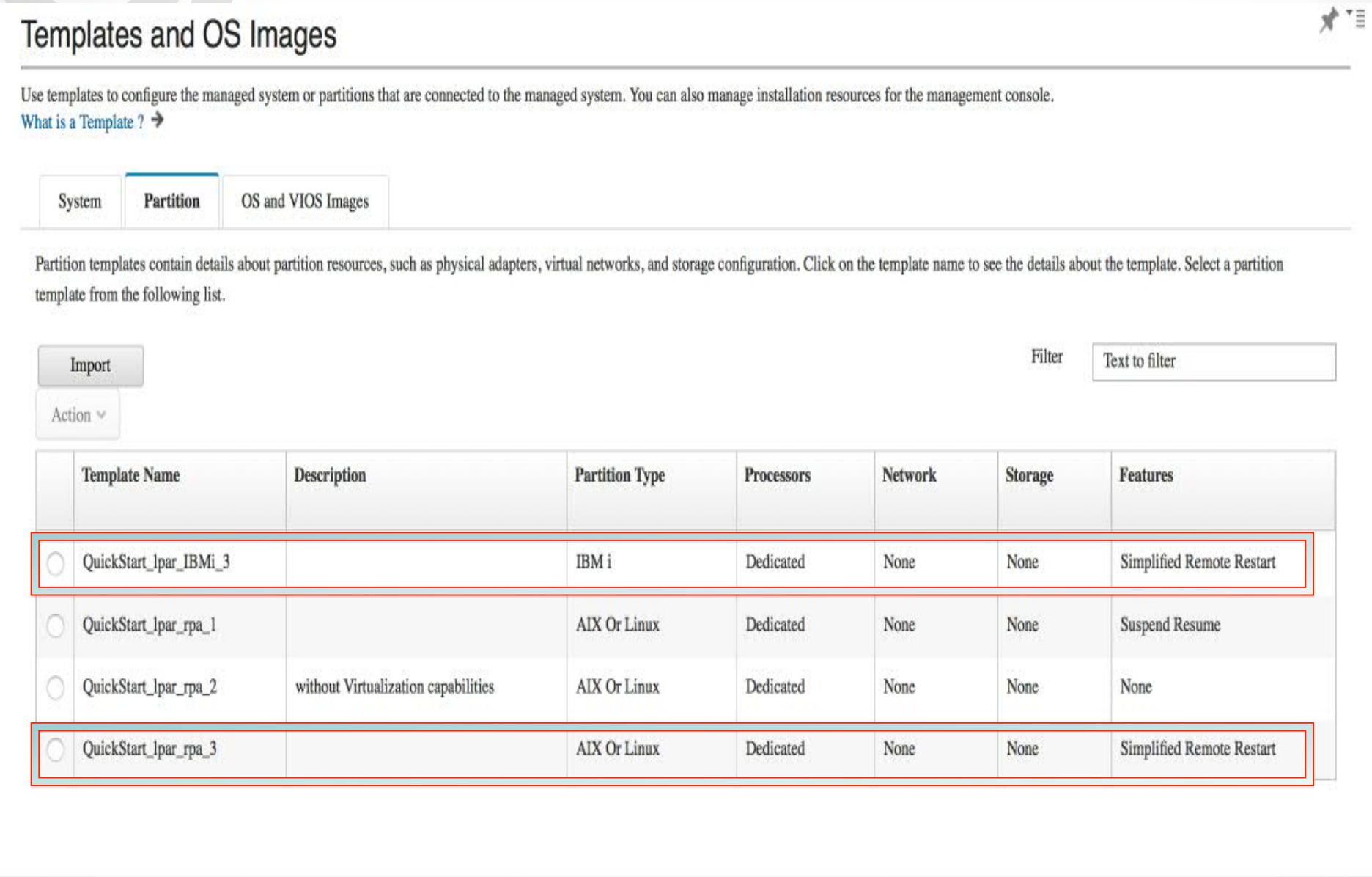
- New options in Manage Partition UI (Enhanced+ Login)
  - SRR capability can be enabled/disabled when partition is not active
    - If system supports Simplifed RR, only Simplified RR option is shown in the UI even if the partition is enabled with Remote Restart.
  - Remote Restart State is displayed
  - Option to refresh configuration data stored for SRR.



Partition Templates – Enhanced HMC GUI

- Starter/Pre-defined partition template with Simplified Remote Restart Enabled
- Capture a partition enabled with Simplified RR as a template
- Deploy Partition with Simplified RR capability from templates
  - Enabled
    - Partition is deployed with SRR capability if system supports Simplified RR
    - Template Deploy fails if system doesn't support Simplified RR
  - Disable
    - Partition is deployed without SRR capability
  - Enable If Possible
    - Partition is deployed with SRR capability if system supports SRR.
    - Partition is deployed without SRR capability if system doesn't support SRR

Partition Templates – Enh'd HMC GUI

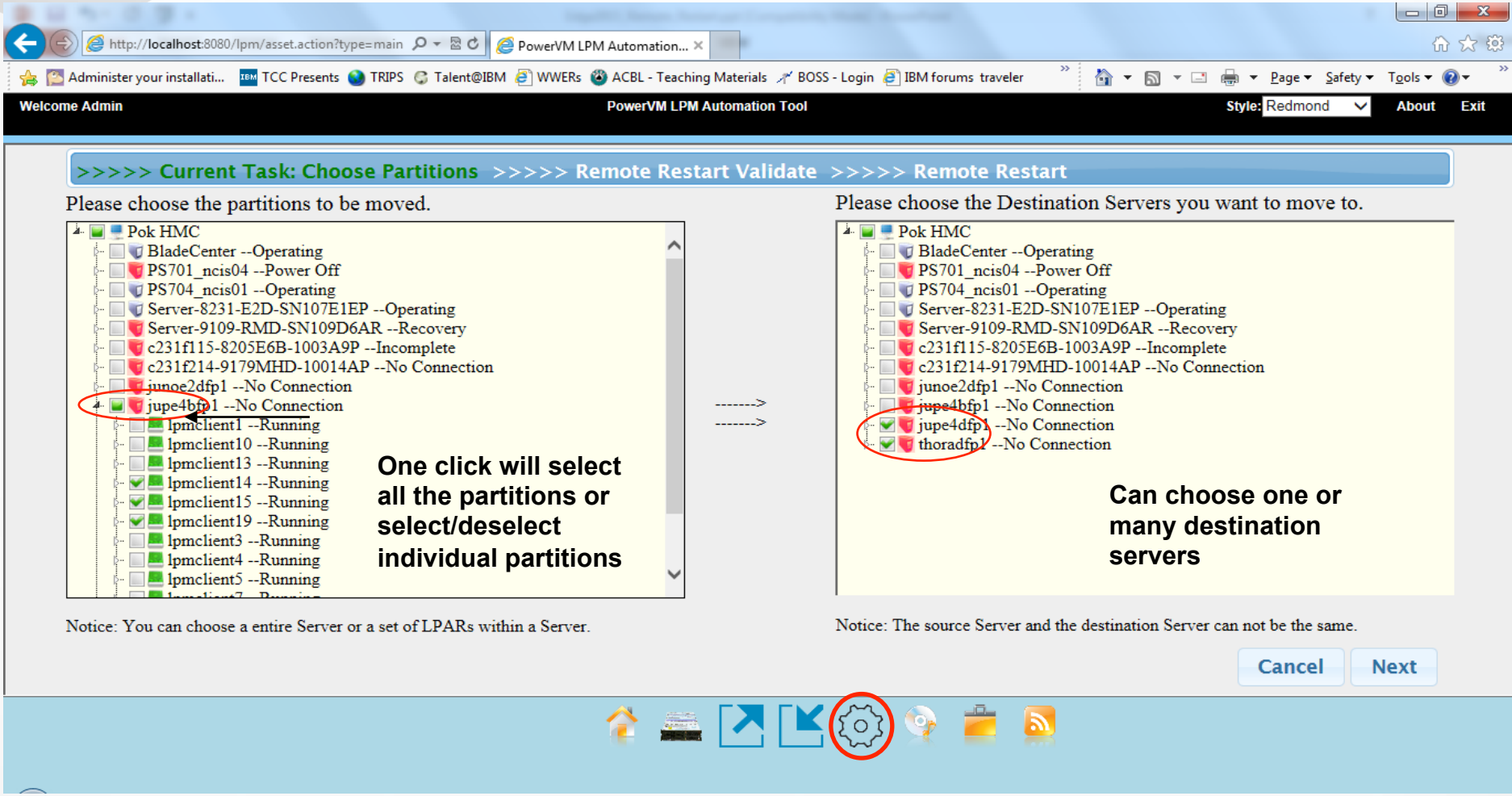


Auto Cleanup

- Automatic cleanup of a remote restarted partition on source system
- Auto Cleanup is performed when
  - Source system state comes back be operating state
  - Partition remote restart status is “Remote Restarted”
  - RMC for the VIOS partitions serving the clients is active
- Auto Cleanup is done without force
- User can trigger the manual cleanup as well using the rrstartlpar command
- When PowerVC is used to orchestrate Remote Restart
  - Auto cleanup can be disabled
  - By default, auto cleanup is enabled
  - Setting is maintained across upgrades, but not on fresh install.
  - CLI :
    - rrstartlpar –o set -r mc –i “auto_cleanup_enabled=0|1”
    - lsrrstartlpar –r mc

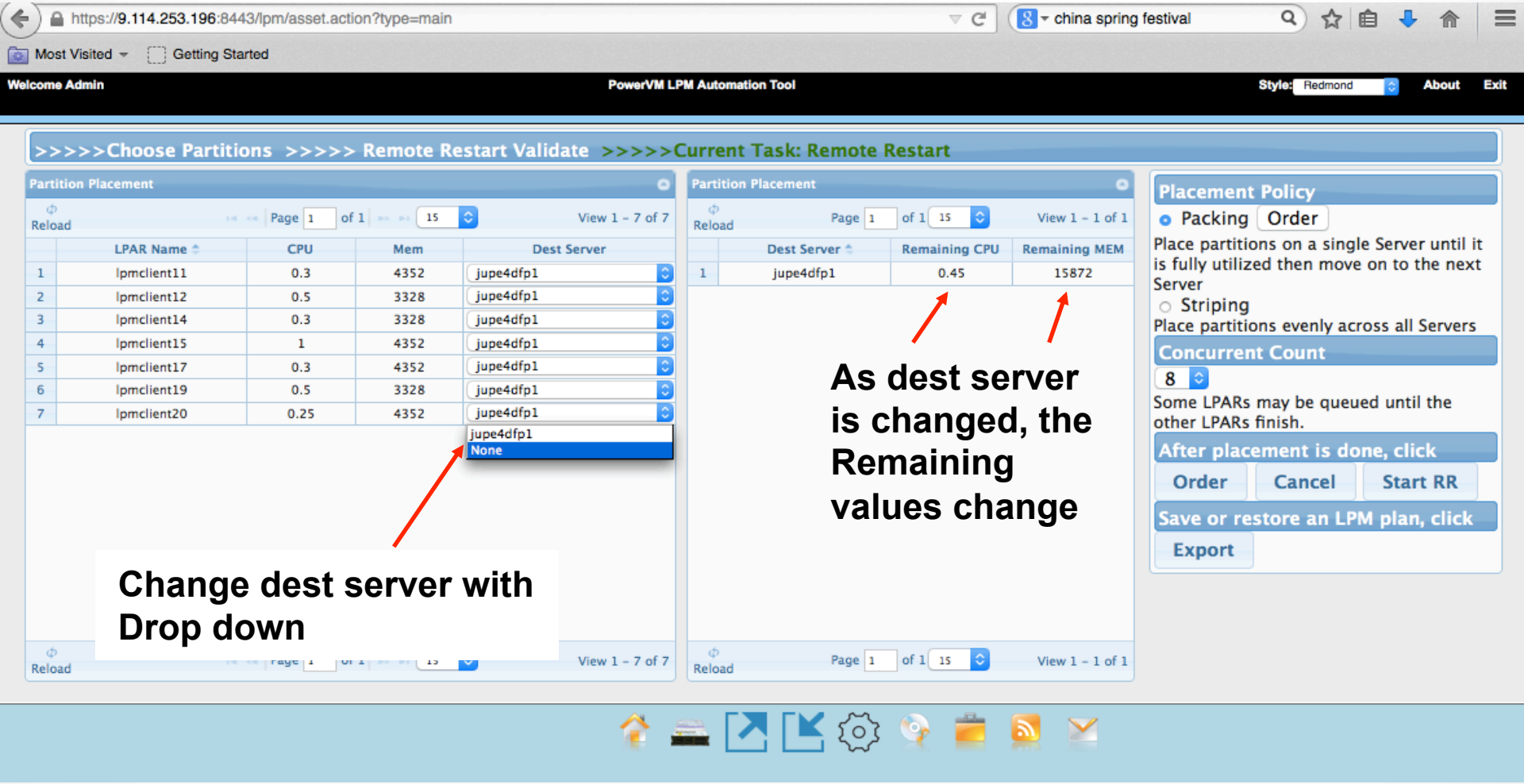
    auto_cleanup_enabled=0|1

LPM Automation tool also supports SRR

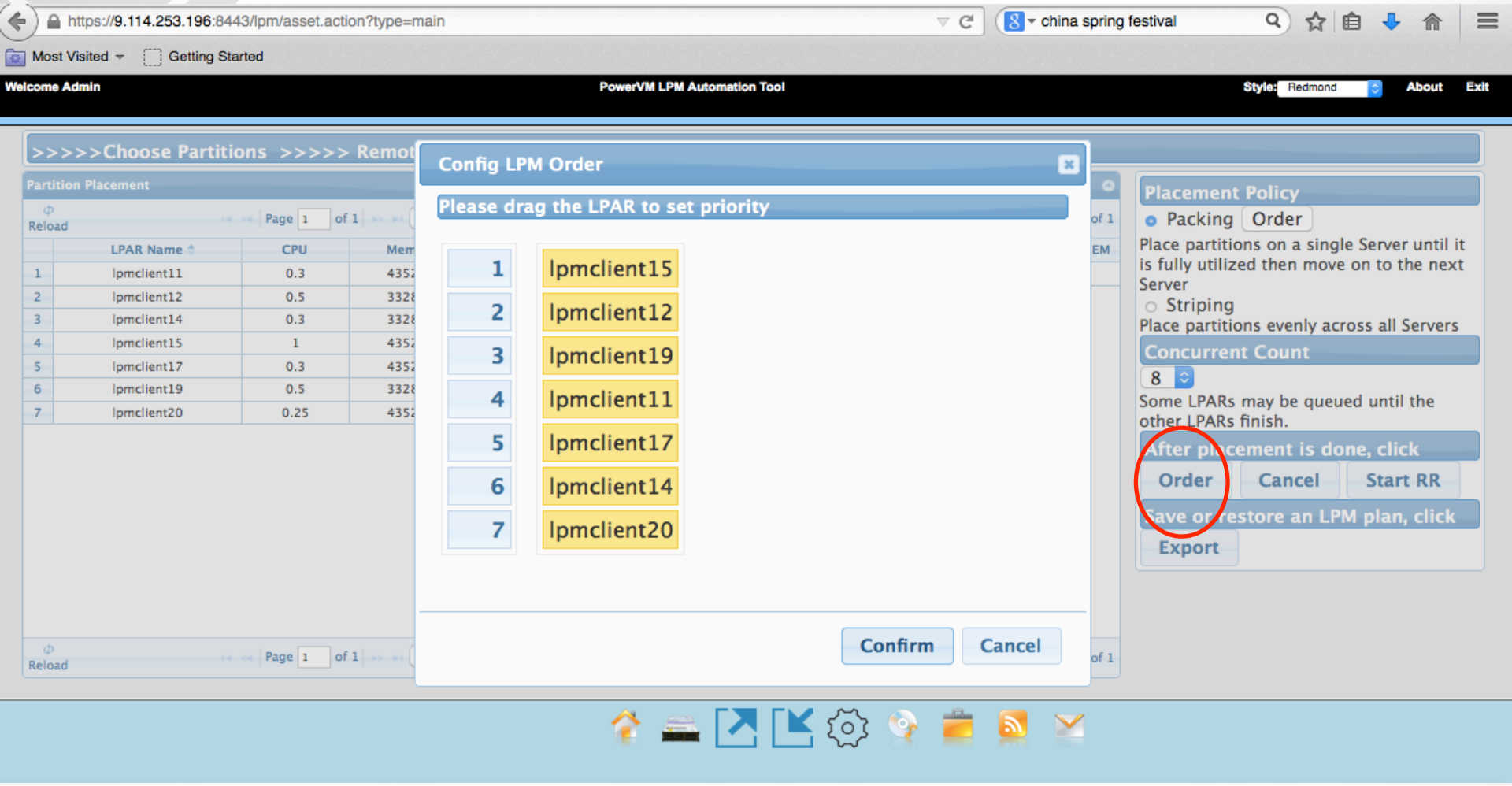


This icon gets you to this screen

Remote/Restart – Placement



Ability to change partition remote/restart order



Click and drag a partition name up or down. 1 goes first, then 2, etc

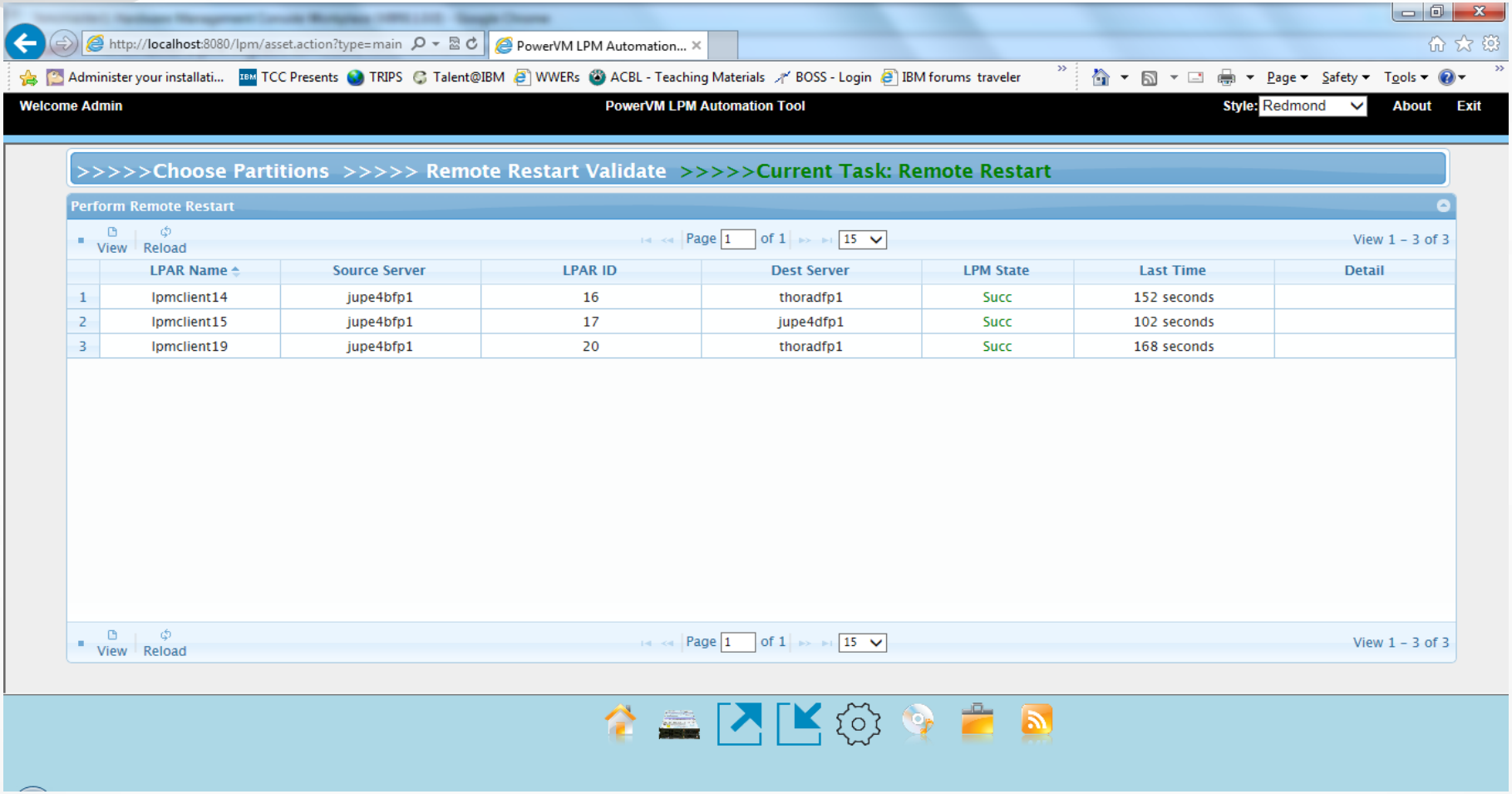
Creating Plans – changes for V8.5

- After you are done with the Placement Panel, you can Export that plan and continue to edit it further.
- Currently only the Destination Server can be editted in the plan

	A	B	C	D	E	F	G
1	LPAR NAME	SOURCE SERVER	DEST SERVER	SOURCE LPAR ID	HMC IP	HMC NAME	COMMAND
2	lpmclient11	thoradfp1	jupe4dfp1	15	mcmaster1.pok.stglabs.ibm.cor	Pok HMC	rrstartlpar -o restart -m thoradfp1 -p lpmclient11 -t jupe4dfp1
3	lpmclient12	thoradfp1	jupe4dfp1	6	mcmaster1.pok.stglabs.ibm.cor	Pok HMC	rrstartlpar -o restart -m thoradfp1 -p lpmclient12 -t jupe4dfp1
4	lpmclient14	thoradfp1	jupe4dfp1	9	mcmaster1.pok.stglabs.ibm.cor	Pok HMC	rrstartlpar -o restart -m thoradfp1 -p lpmclient14 -t jupe4dfp1
5	lpmclient15	thoradfp1	jupe4dfp1	8	mcmaster1.pok.stglabs.ibm.cor	Pok HMC	rrstartlpar -o restart -m thoradfp1 -p lpmclient15 -t jupe4dfp1
6	lpmclient17	thoradfp1	jupe4dfp1	4	mcmaster1.pok.stglabs.ibm.cor	Pok HMC	rrstartlpar -o restart -m thoradfp1 -p lpmclient17 -t jupe4dfp1
7	lpmclient19	thoradfp1	jupe4dfp1	13	mcmaster1.pok.stglabs.ibm.cor	Pok HMC	rrstartlpar -o restart -m thoradfp1 -p lpmclient19 -t jupe4dfp1
8	lpmclient20	thoradfp1	jupe4dfp1	12	mcmaster1.pok.stglabs.ibm.cor	Pok HMC	rrstartlpar -o restart -m thoradfp1 -p lpmclient20 -t jupe4dfp1
9							

- Version 8.5 will allow you to specify vfc_mappings and shared processor pool settings

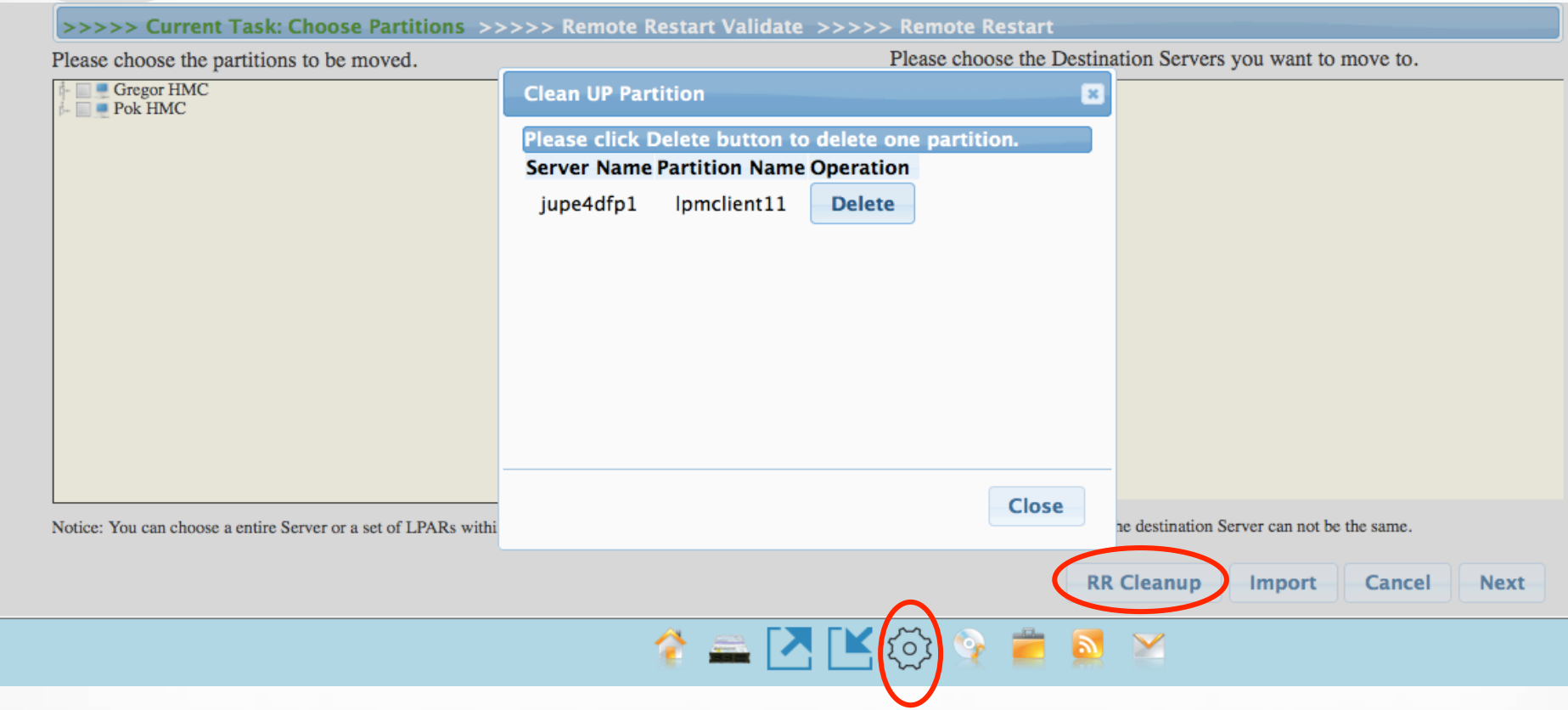
Remote Restart Completed



Cleaning up after Remote Restart

- After the tool has Remote Restarted the LPARs on other servers, the old LPARs configurations need to be cleaned up on the failed server.
- Once the failed server is repaired and is back up running, the LPARs will still be on the server but you won't be able to activate them. You can view their configurations/profiles/VIOS mappings but you must use the RR Cleanup button to remove them from that repaired server.
- The tool has a GUI to do the cleanup named "RR Cleanup" (see next page for screen shots)

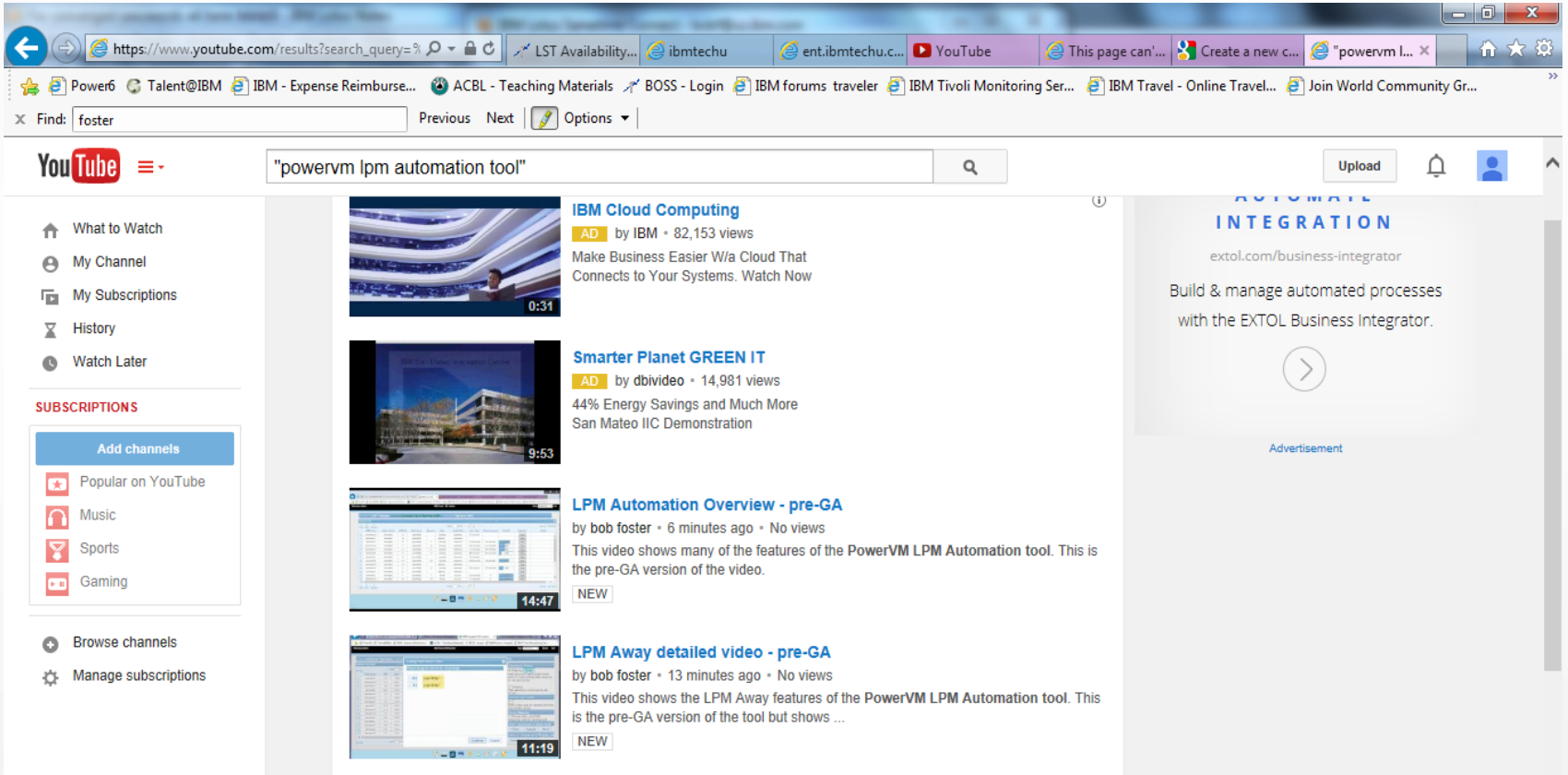
RR Cleanup


>>>>> Current Task: Choose Partitions >>>>> Remote Restart Validate >>>>> Remote Restart
Please choose the partitions to be moved.
Please choose the Destination Servers you want to move to.
Gregor HMC
Pok HMC
Clean UP Partition
Please click Delete button to delete one partition.
Server Name Partition Name Operation
jupe4dfp1 lpmclient11 Delete
Close
Notice: You can choose a entire Server or a set of LPARs withi
he destination Server can not be the same.
RR Cleanup
Import
Cancel
Next

Videos on youtube.com

These URLs are case-sensitive

ibm.biz/SRR_benefits
ibm.biz/LPM_overview
ibm.biz/LPM_scheduler
ibm.biz/SRR_tool
ibm.biz/LPM_PEP
Ibm.biz/SRR_bikeride fun video of an Admin performing SRR during lunch



Getting support and updates

- This tool is delivered as-is. You can email me for any problems/ enhancements you would like.
- The goal is to fix any issues as quick as possible but depending on our availability, it may take some time.
- However, with the Excel Plans, even if the tool is broken, you should be able to complete a maintenance window by using the HMC commands in the Excel spreadsheet.
- The tool will be loaded into Resource Link which IBM customers have access to.
- Updates to the tool will be loaded into Resource Link
- The customer can subscribe to updates on the web site.
- The customer has unlimited use of the tool throughout their enterprise without maintenance or license fees

IBM Systems Lab Services

Missioned to help your clients Deploy and Exploit IBM's technology

- Accelerate adoption of systems and storage with infrastructure services
- **Differentiate with deep technical skills, methodologies, and assets**
- Deploy systems and storage infrastructure on-site with clients
- Execute on a unique cost recovery business model rather than a P&L, with great emphasis on 1) client satisfaction and 2) skills enablement

Team of 1100+ consultants WW, able to engage where required

Power Systems
(NEW! includes Migration Factory)

- Storage
  (includes Platform Computing)
- zSystems
  (includes LinuxOne)
- Executive Advisory Practices

IBM Systems Lab Services and Business Partners

IBM Systems Lab Services

- Helps BPs **progress sales and accelerate adoption** of IBM Systems
- **Engages with and compliments** the skills/capabilities of our BP teams
- **Does not compete** with or look to replace BP services (or follow-on opp)
- Ensures **BPs retain control** of their client relationships at all times

Working with IBM Systems Lab Services:

- Gives BPs **direct access to proven expertise** from top IBM consultants
- Provides short-term, on-site IBM services designed to solve complex challenges and then **transfer skills and best practices to BPs** / clients
- Helps BPs **grow sales and extend business scope** without the need to invest in advanced skills for every single new & emerging technology
- Utilizing Lab Services – at cost – can help BPs compete for more strategic opportunities, **reduce risk**, and maximize profits from services operations

IBM Systems Lab Services Contacts

- **Worldwide Systems Lab Services generic e-mail**
  - ibmsls@us.ibm.com
- **North America AIX Opportunity Manager, Stephen Brandenburg** sbranden@us.ibm.com
- **North America Linux Opportunity Manager, Linda Hoben** hoben@us.ibm.com
- **North America IBM i Opportunity Manager, Mark Even** even@us.ibm.com