	Android MC 2019 Progress Report																		
Lead	Topic	Wins	Work	Work "wins" as of June 2020	Losses														
Sandeep	Generic Kernel Image (GRI) progress			- stable symbols are based on whitelists															
			Scepticism about: - What symbols to cover (observable, whitelist,	submitted by partners - "Ix modversions" is being investigated. Temporary solution is to trim exports to															
				<ul> <li>"fix modversions" is being investigated.</li> <li>Temporary solution is to trim exports to</li> </ul>															
		General interest in mechanisms to stabilize the in-kernel ABI. Multiple parties seem interested to collaborate on this.	To what extent, API can be covered by AII     checks.	only include whitelated symbols so modules using un-whitelated symbols fail															
		interested to collaborate on this.		to load															
			Expressed interest for a _working_number	- All checks to have some holes (eg.															
Mathias	Monitoring and Stabilizing the In-Kernel ABI		creek (in model and a)	<ul> <li>ABI checks to have some holes (eg. enums). Still investigating. May have something to talk about at LPC</li> </ul>															
				Changes that have landed.															
				- tw_devink teature to partie D1 and create device links															
				- fe_devink*permissive enabled by															
				- Support for several DT bindings: "clocks"															
				"interconnects", "iommus", "mboxes", "io-															
				"power-domains", "hwlocks", "extcon", "-															
				supply", "-gpio", "-gpics".															
		Overall the of dealers series was well	- Work meeted for adding support for other common OT bandrugs.	cycles in DT dependencies. This is a step															
		received. DT and driver core maintainers were mostly happy with the patches.	Common DT bindings.	towards enabling fw_devlink+on by default															
		were mostly happy with the patches. Regulator and GPID maintainers raised	<ul> <li>Question was relead how we plan to handle non-genetic dependencies (0); carrenzimada pipelne). No great answer. Pointed out that a 'depende-on' binding was proposed acty on, but wasn't well received by DT mainteiners.</li> </ul>	- sync_state() support landed.															
		some questions but were in general okay	"depende-on" binding was proposed early on,	<ul> <li>following busses: platform bus, Gc,</li> </ul>															
		with the idea	but wasn't well received by DT maintainers.	slimbus, pci, etc.															
				<ul> <li>significant optimization to tw_beview D1 parsing code</li> </ul>															
				Upstream changes in progress: -Adding sync_state() support to regulator															
				framework - Adding surg. state() support to 100															
			and the second	framework - Adding sync_state() support to ICC framework (discussions with ICC															
			and the second	maintainer) - Exposing device link and sync_state() details in systs															
Saravana	Solving issues associated with modules and supplier-consumer dependencies		and the second second second	details in systs															
		Interest in working on upstream virtio driver	- Mexico as many last and of Archest efforts	- Worked upstream to ratify virtio_and,	-Viork on vitio gpio was not prioritized.														
		for gpic. Support of virtio strategy for Android emulation	Moving as many features of Android reference virtual platform to upstream virtio as possible	<ul> <li>vitio_video and vitio_rpmb.</li> <li>Switched to vitio_gou and vitio_console</li> <li>Vulkan over vitio_gou was landed.</li> </ul>	But this is still of interest and it will happe this year.														
Allabir	Android Virtualization (eep. Camera, DRM)	Ibramera la a cantidata in implement	- Ibnamers is inspeed under the LGRI -2 OA to	- vuican over vinto_gpu was landed.															
		the host side of camera virtualization for	avoid closed-source vendor forks. Find out how	- CStreamer element															
		Cutlefish.	avoid closed-source vendor forks. Find out how to handle Android Ciense requirements. - Start discussions with the Android camera feam to exchange feedbacks on libcamera and	- V4L2 compatibility layer (allowing V4L2 application to use libramere															
			team to exchange feedbacks on libcamera and	transparently through LD_PRELOAD)															
			the Android camera HAL.	- Support for new platforms															
				implementation of the image															
				processing algorithms) - LMX7															
				Android HAL and AOSP Integration still ongoing and possibly topic for discussion															
Laurent	libcamera: Unifying camera support on all Linux systems			Android HAL and AOSP integration still ongoing and possibly topic for discussion at 2020 LPC. Interest from two major mobile SoC vendors.															
Daniel	Emulated storage features (eg sdcardfs)																		
Ashish	Eliminating WrapFS hackery in Android with ExtFUSE (eBPF/FUSE)																		
			perhaps we'll get some collaboration with Linaro on testing and/or with beagle rack test		minht have been the aroon could be the														
Maze	How we're using ebpf in Android networking		Linaro on testing and/or with beagle rack test boards		might have been the wrong crowd for the presentation (not networking & ebpt folks)														
				There are runs against the upstream RC cycle. Likewise the work to boot and run Android on consumer device continues. The Picos F1 and Pical3 have continued to be ready useful. (Plug for demo with Picos F1															
				cycle. Likewise the work to															
				continues. The Poco F1 and	a da ser a ser														
				Poel3 have continued to be really useful. (Plug for demo with Poco F1															
				mene ()															
				I did share a few reports with Greg privately from the RC cycle rules but they seemed to get directed to															
				privately from the RC cycle rules															
				The most effective crude seams in he most															
				with mainline kernel rcs and															
				dev boards / consumer hardware checking in to make sure things haven't	· · · · · · · · · · · · · · · · · · ·														
		These sectors had a black and had a barrent barr	Confermed KASAN and clang sanitizers are a logical next step. Prospects of including Android as part of the RC cycle on linux-stable are sented force on an external forbreak	The most effective route seems to be more with mainline kernel no and dev boards / consumer bardware checking in to make sure things haven't mayresed. This has the positive attribute a that everything is in the coen.	n an														
		as input, and does some level of analysis looking for anomyles. Followup post LPC.	Android as part of the RC cycle on linux-stable																
		looking for anomyles. Followup post LPC.	were raised however no comment for lagainst was received.	The LTS RC cycle Android Testing is less than great because is order to perform tests, we have no choice but to bland out of thee Android Common Palches with the candidate LTS															
				than great because in order															
				to perform tests, we have no choice but to blend out of tree Android															
				Common Patches with the candidate LTS															
			and the second	RC patches. It's a sort of Frankenstein that only a small audience															
			and the second second second	cares about.															
			and the second	For a future LTS, (5.97, 5.107) Fm hopeful															
			and the second second second	For a future LTS, (5.92, 5.107) I'm hopeful well have a boot to UI android for a device or two. With that, THEN we could as a community be effective listing android as part of the upstrasm LTS RC cycle with just the pure LTS RC, posting results since these work the month of															
			and the second second	THEN we could as a community be effective instance and of the															
			and the second second	upstream LTS RC cycle with															
				just the pure LTS RC, posting results since there would be no out of															
Tom	Linaro Kernel Functional Testing (LKFT): functional testing of android common kernels		and the second second second	tree patches. Time will tell.	a de la companya de l														
			Need ICN usage accounted in Imid kill decklons     process_madvise() should be designed to support vectors for performance reasons.	ION accounting was improved in the next.															
		No pushback against new syscall	- process_medvise() should be designed to	ION accounting was improved in the next Android release which reports it separately now.															
		Introduction.	support vectors for performance reasons. Maybe 2 versions? Error handling is still a question.	process_madvise with vector support got accepted into mm tree.															
Suren	Handling memory pressure on Android		question.	accepted into mm tree.															
			- Need to agree on clearing out dma-but API	DMA-BUF Heaps, taking longer then expected, finally landed upstheam in 5.6 - Vendors starting to migrate from ION to DMA BUF Heaps - Work at Google ongoing for helper															
		Overall a good session, with clear	usage around enforcing exclusive ownership boundaries between cou and device.	- Vendors starting to migrate from ION to															
		recognition of issues we raised, specifically around partial cache flushing, and need to	- Heap discovery needs to be discussed in	- Work at Google ongoing for helper															
		sort the CMOs for ARM devices.	Need to discuss Android need for Kernel	Ibraries for userland transition															
		for the drue-but heaps design philosophy.	Graphics Buffers (dma-buf+mets data), and	Function and conception of the intervention     Further discussions continuing around     heap limitations and continuing issues with     consistent cache handling behavior															
Sumt	DWAIL/F Developments		usage around enforcing exclusive evenethip boundaries between cyp and device. - Heap discovery needs to be discussed in context of ACSP - Need to discuss Android need for Kemel Cosphics Buffers (draw bull-reak data), and investigate if that can be handled using dram founce and format modifiers.	consistent cache handling behavior															
		Proposals from densidem-misc maintainers			Internet in the lateral house														
		to backport upstream (e.g. 5.4) version of dm.com to older kernels for Android In	affecting userspace like deniocil. The		Unfortunately the Android kernel team did not have the bandwidth this year to require DRMNMS. We plan to require this need														
		help decrease fragmentation of upstream	Android/GKI kernels might need to take firmer steps than upstream to ensure baseline		CROWNES. We plan to require this next														
Alatair	DRMIKMS for Android, adoption and upstreaming	and non-upstream GPUIdisplay drivers.	functionality/extensions are present																
Suren	scheduler, uclamo usage on Android		100 C	User space support for uctamp usage is in place in the next Android release.															
		The proposed Kernel Interface for		and the second sec															
		userspace support of the Memory Tagging Extension seems understood and	- Deploy the inial patcheet. Expected comments.																
Vincenzo	Memory tagging	reasonably accepted.																	
	Notes:																		
	"Wins" is any progress or agreement that has been made about the topic during the MC																		
	"Work" is any work that was identified as being required to be done as a result of NC dis "Loses" is for highlighting issues which are clearly at an impass and are not forseen to be	cussion																	
	"Loses" is for highlighting issues which are clearly at an impass and are not forseen to be It's suggested to put major takeaways in bold. If, for example, within the 3 categories a g		forest and in the second set down descent 7	de alternation libra analian librati ( 1977)	and will have marking it also have for 1 and	For instance 1997	add depending in the	and the second se	adding that had on his is	and an indication in the second	The sead that has been as		the states		a and it is hadd -	allela and alle	market in the Co	at and so they ?	an in held
	the weggenery to put major takeaways in bold. It, for example, within the 3 categories a g	reen woo of important enough that it should a	www.com.comeaningrumess (especially to outsi	we wave with then making it boid (or underli	we we having it opyous rat a glance"	roa instance, if We	AN DESCRIPTION TH	wywabie under cor	menor stat teature too is made to	use existing xernel A	<ul> <li>and that's operand an</li> </ul>	ryvidit azvanceme		~ a good reason to	ryes it in post. Post	wwwy end or week	reacouts should ju	e call out the Ben	e == 5010.