



SATA-IP Device Demo Instruction on KC705

Rev1.0 20-Jun-13

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This document describes SATA-IP Device evaluation procedure on KC705 using SATA-IP Device reference design bit-file.

1 Environment

For real board evaluation of Device reference design, environment shown in Figure 1 is required.

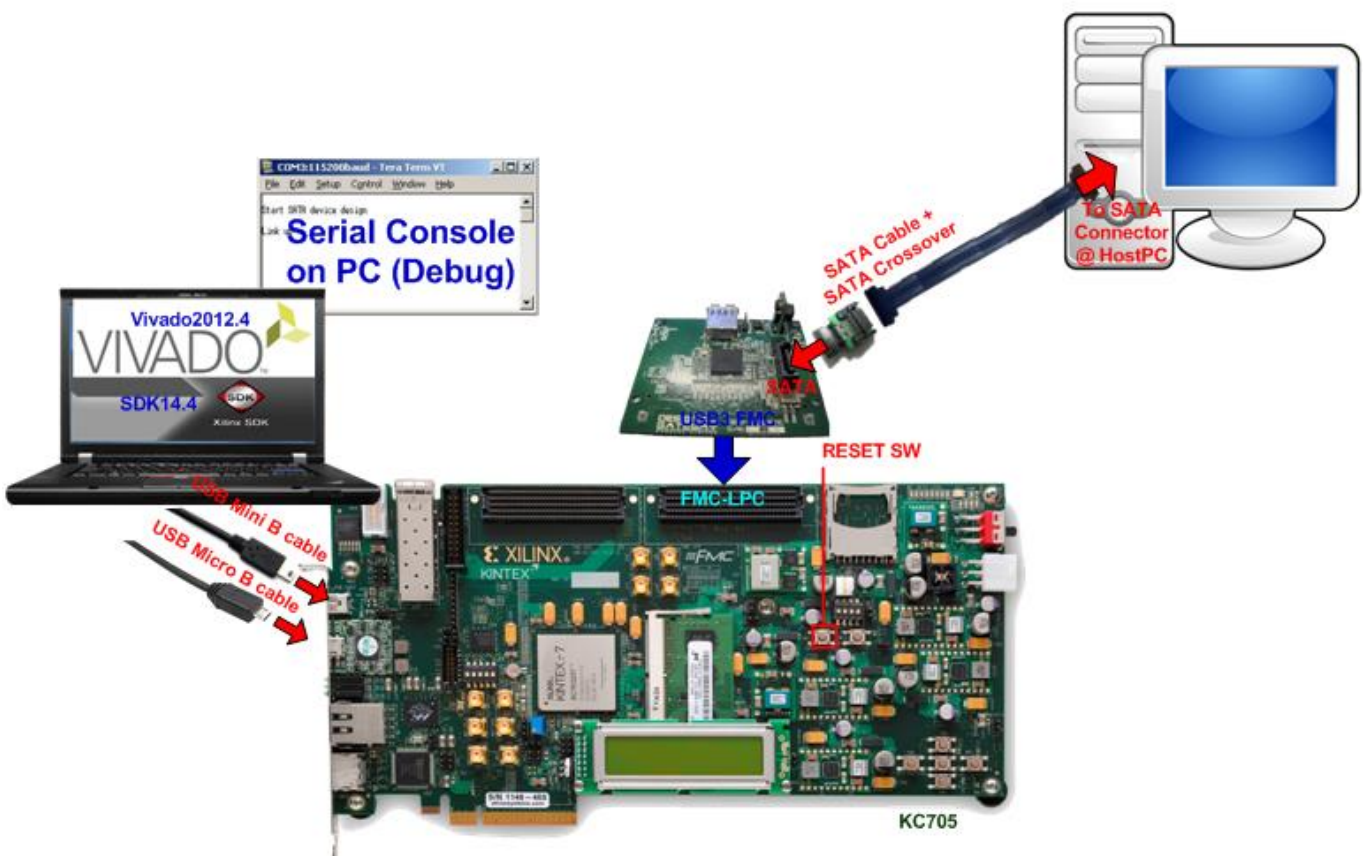


Figure 1 Device Evaluation environment using reference design bit-file

Note: For evaluation version, IP-Core has 1-hour time limitation to use. After 1-hour use, IP-core will stop any data transfer.

2 Evaluation procedure

- Check all system is power off
- Connect AB07-USB3FMC board, provided by Design Gateway to FMC-LPC connector (J2) to use SATA connector on the board
- Connect SATA cross cable or SATA standard cable with AB02-CROSSOVER, provided by Design Gateway, between SATA3 connector on Host PC and on USB3FMC.
- Connect USB mini B cable from J6 on KC705 to USB Port on PC for Serial Console
- Connect USB micro B cable on U29 of KC705 to USB Port on PC for JTAG programming
- Connect Power cable to KC705 board and then power up.
- Open serial monitoring software such as HyperTerminal. Terminal settings should be (Baud Rate=115,200 Data=8 bit Non-Parity Stop=1).
- Download bit-file to KC705 by using iMPACT Software.
- After FPGA start operation, check GPIO LEDs status on KC705 board at LED0-LED2 that all ON, as shown in Figure 2. Each LED description is described as follows.



Figure 2 LED status after system set up complete

| LED | ON | OFF |
|------|------------------------|---|
| LED0 | OK | 150 MHz of SATA clock on FMC SATA RAID cannot lock. Please check 150 MHz clock source on FMC SATA RAID board. |
| LED1 | OK | SATA-IP cannot detect SATA device. Please check SATA device and the connection. |
| LED2 | SATA-III | Not supported in current version |
| LED3 | BLINK : 1-hour timeout | |

Table 1 LED Status of device reference design on KC705 board

- At serial console on PC, “Start SATA device design” and “Link up” will be displayed as shown in Figure 3. Now new disk is ready for Host PC.



Figure 3 Main Menu of host demo

3 Operation Test on OS

- Open Device Manager on Windows7. New SATA-Device disk (DG2013 SATA Device) will be shown in “Disk drives” if the Motherboard enables Hot-plug support.
- In case Motherboard does not support auto-detect device from Hot-plug, right-click mouse at Disk drives icon and then select “Scan for hardware changes” to start new disk detection.

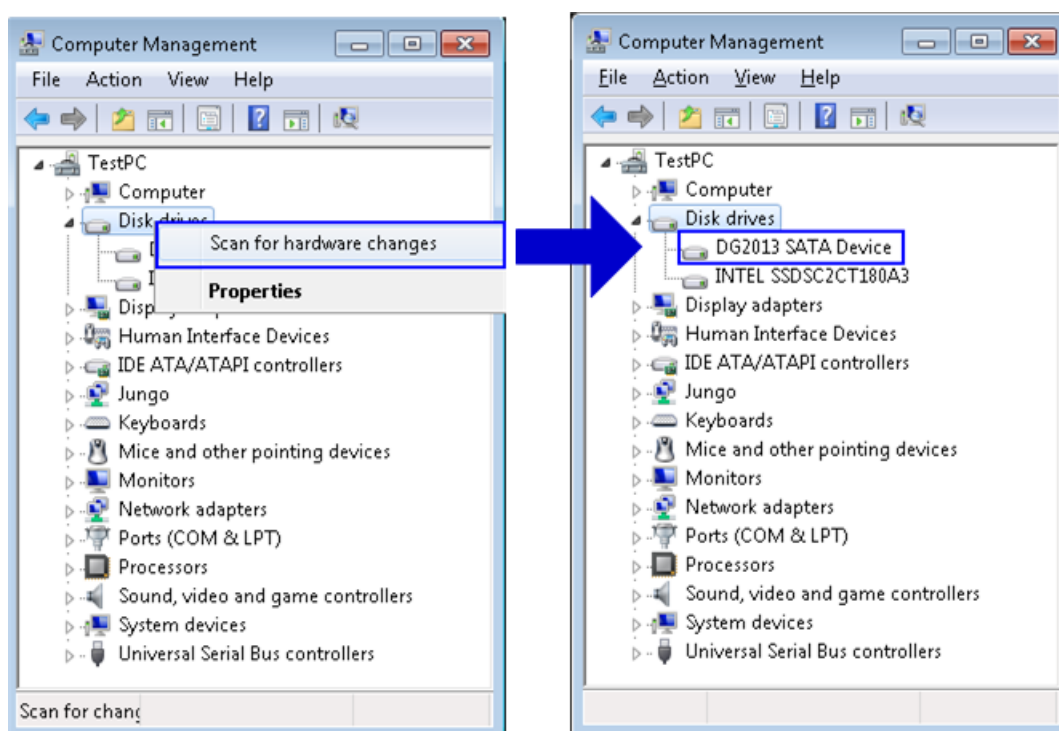


Figure 4 New disk detected on Windows7

- Select Computer Management -> Disk Management and Pop-up menu will be displayed as shown in Figure 5. Click “OK” button to start initialize disk.
Note: If this pop-up menu is not displayed, please try to close and reopen Disk Management again.

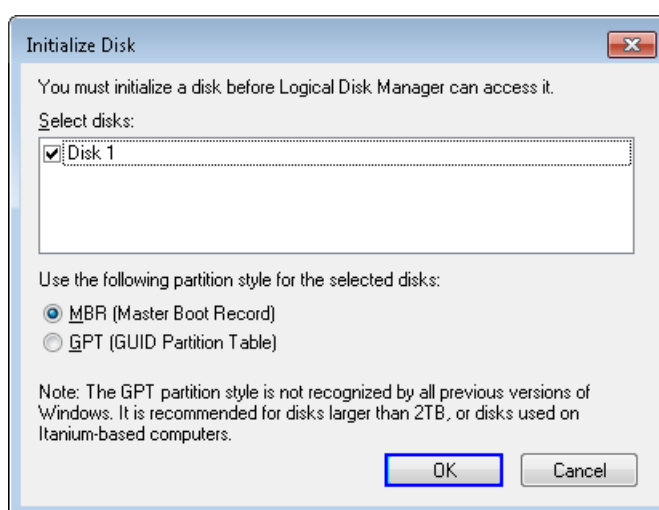


Figure 5 Initialize New Disk

- After that, new 768 MB disk which is unallocated will be displayed as shown in Figure 6.

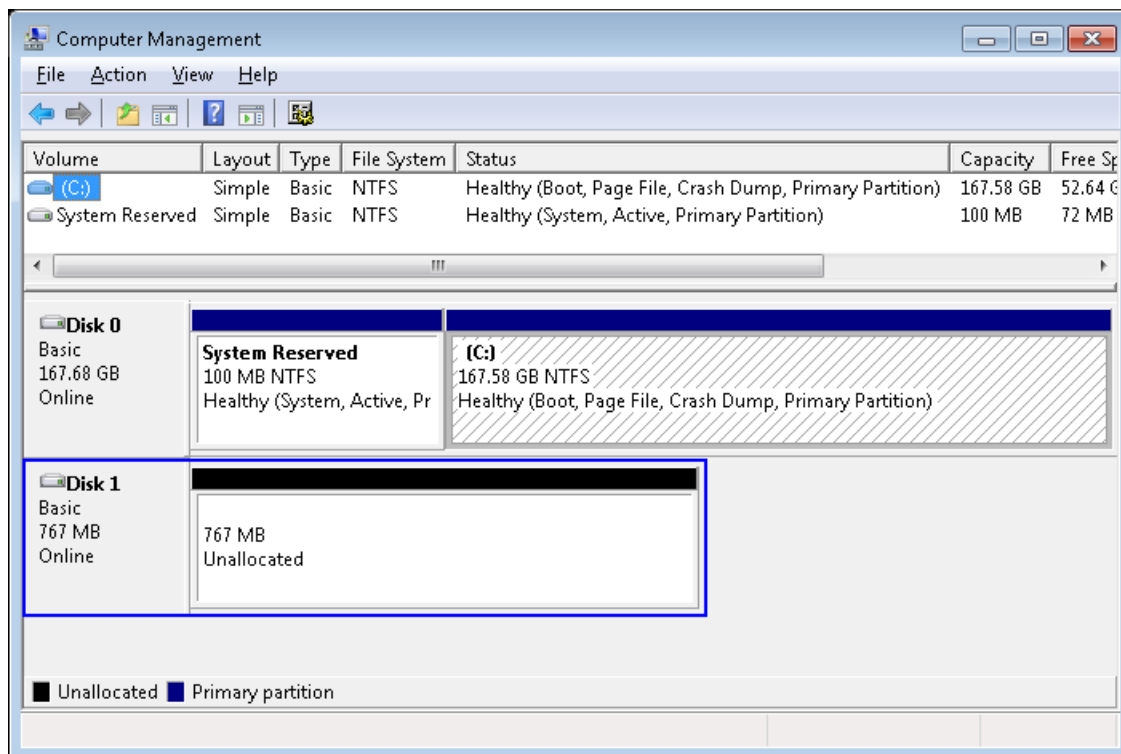


Figure 6 Initialize Disk Completed

- Create new partition by right-click mouse at unallocated disk, and select “New Simple Volume...”. After that, “New Simple Volume Wizard” will be displayed. Click “Next” button to continue next step.

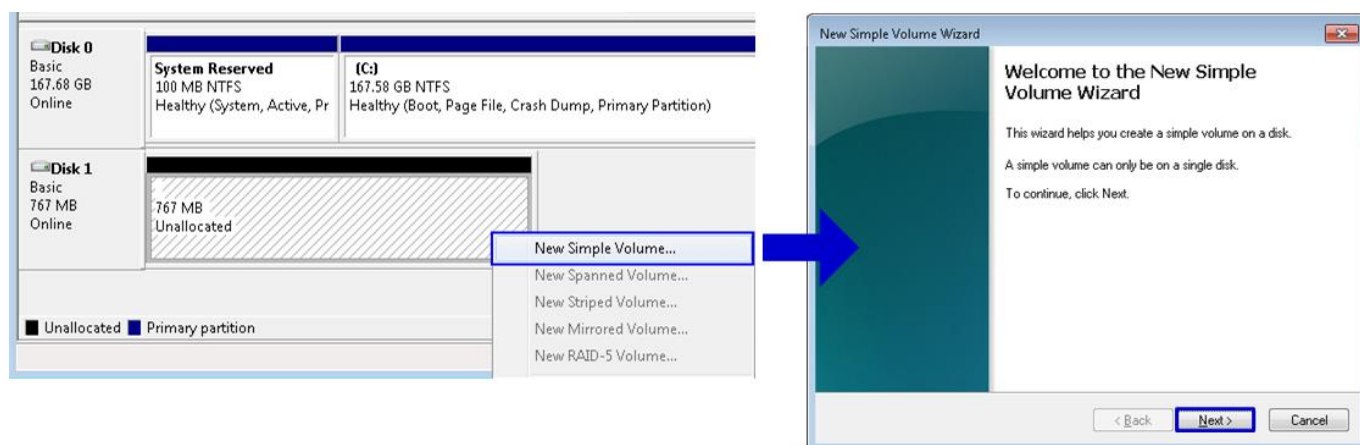


Figure 7 Create New Partition on New Disk

- Click “Next” button for 3 times to continue next step, and then click “Finish” button for last step to start Format disk.

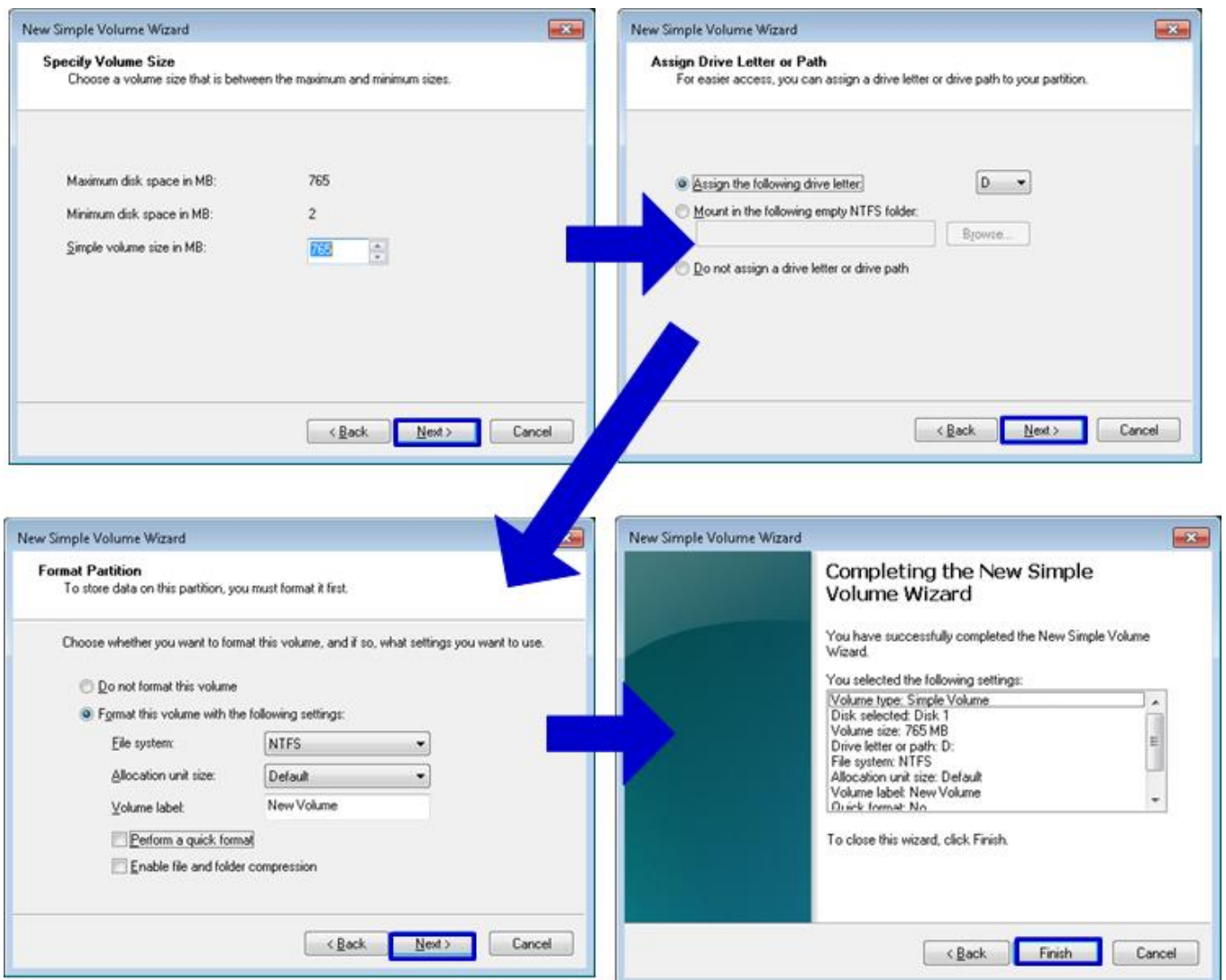


Figure 8 Format menu setup

- Wait until format completed, new drive is ready to use, as shown in Figure 9.

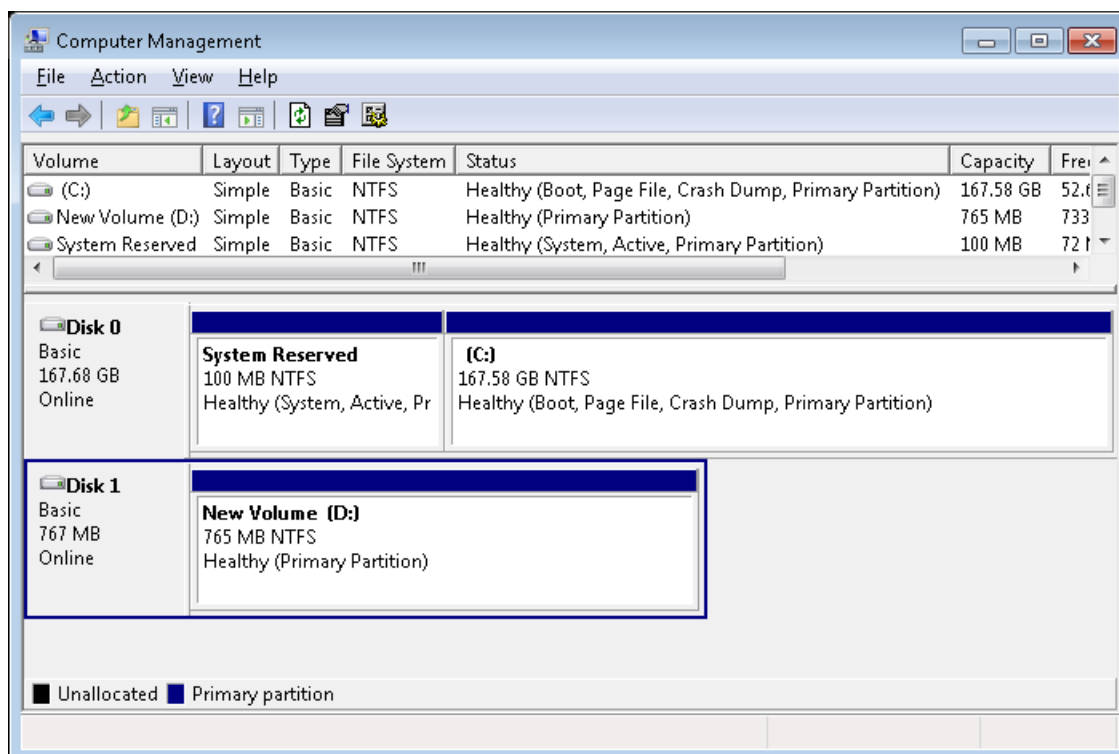


Figure 9 Format Complete

- Now disk can be read/write by file system operation. Figure 10 shows disk performance by using CrystalDiskMark benchmark.

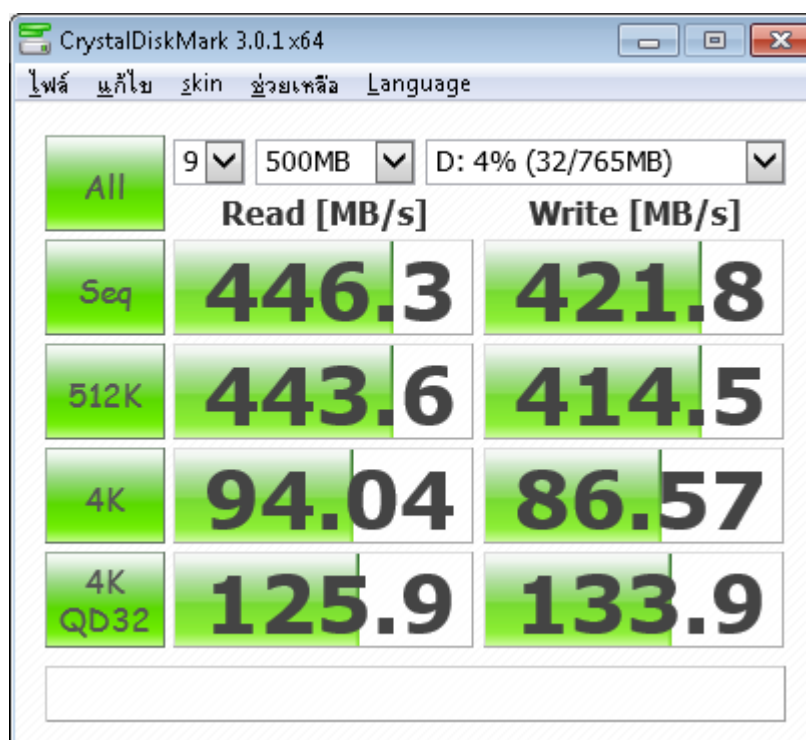


Figure 10 Disk performance test by benchmark

4 Revision History

| Revision | Date | Description |
|----------|-----------|-------------------------|
| 1.0 | 20-Jun-10 | Initial version release |
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