

LAIKAWiki > Sandbox Web > TestTopic1 (09 Nov 2015, MitchPrater)

Attachable		
Type	Name	Description
coshader multiple float color point vector normal utility	AOV	Creates any number of AOV's, each with a given Name and Type when accessed by a Material shader,
volume	Air	A simple distance based atmosphere. Tints the scene based on how far away objects are from the camera.
light	Area	A plausible Area light.
coshader	BakeObj	Will use bake3d() to write out the Material shader's uPolygons to a Wavefront .obj format file.
materialeffector	Bump	Lets you create an arbitrary network to alter the Material's response normals prior to being lit.
displacement displace	BumpDisp	Combines bumping and displacement with independent control of each. Float inputs move the surface along the Direction parameter. Vector inputs move the surface in their own direction. Both should be current space vectors.
materialeffector	BumpDisp	Lets you create an arbitrary network to alter the Material's surface point and response normal prior to being lit.
coshader displace	BumpDisp	Applied over all Material layers, and can itself be layered. Combines bumping and displacement with independent control of each. Float inputs move the surface along the Direction parameter. Vector inputs move the surface in their own direction. Both should be current space vectors.
materialeffector	ColorCorrect	Alters the Material's response colors prior to being lit using the various controls. Corrections are applied in the order they're shown.
coshader override	ColorOutput	This coshader's Output value can be connected to a PrmanShadingNode input parameter in Katana: ColorOutput -> ColorInput.
materialeffector	Color	Lets you create an arbitrary network to alter the Material's response colors prior to being lit.
lighteffector	Cube	Creates a cube-shaped field defined by the Cube Control coordinate systems.
lighteffector	CutOnOff	Creates a cut on and cut off distance-based variation along the Z axis of the Control Space coordinate system.
materialeffector	DeathRay	Use a coordinate system to project an opacity texture into the scene in order to remove geometry by altering its opacity.

materialeffector	Disp	Lets you create an arbitrary network to alter the Material's surface point prior to being lit.
light	Env	A plausible Environment light.
lighteffector	ExponFalloff	Uses an exponential falloff curve to alter the light's color. Distance is measured from the origin of the Control Space coordinate system and is measured in units of that space.
coshader override	FloatOutput	This coshader's Output value can be connected to a PrmanShadingNode input parameter in Katana: FloatOutput -> FloatInput.
arealight	GeoArea	A Geometric Area light.
arealight	GeoEnv	A Geometric Environment light.
arealight	GeoMaterial	A Geometric Area light with Material surface shading. A Material is defined by the material's Opacity/Transparency, a Bump Disp, and an aggregate of Responses organized in Layers. Materials can be used either as a surface shader, or applied as a coshader to layer one material over another using as many Material coshaders as you wish.
geolighteffector	Gobo	A texture map that light will shine through.
volumematerial	HenyeGreenstein	Henye-Greenstein volume scattering.
coshader override	ManifoldOutput	This coshader's Output value can be connected to a PrmanShadingNode input parameter in Katana: ManifoldOutput -> ManifoldInput.
material	Material	The foundation of all surface shading. Used as a shader or coshader. When attached as a coshader, it becomes a physical layer of material applied over the underlying Material shader. Any number of coshader layers may be used, in which case they are applied in the order they're attached. A Material itself is defined by its set of Responses, which are organized into three micro-strata layers, its Opacity/Transparency, its Bump Disp, and its Shadowing behavior.
shadingmodel	MatrixToSM	Matrix to SM.
lighteffector	OrthoCard	Orthographically projects a "card" within the scene based on a given coordinate system.

coshader override	PointOutput	This coshader's Output value can be connected to a PrmanShadingNode input parameter in Katana: PointOutput -> PointInput.
geolighteffector	Portal	A Portal is a window through which light must pass. Specifying portals gives the renderer important information about where it should sample.
geolighteffector	Region	Uses superellipse controls to define a region of space in which to effect a geometry light.
lighteffector	Sausage	Creates an sausage-shaped field defined by a coordinate system.
lighteffector	Smoothstep	Creates a smoothstep() ramp along the Z axis defined by the coordinate system(s) listed in the Control Space parameter.
lighteffector	Sphere	Creates an sphere-shaped field defined by a coordinate system.
coshader override	StringOutput	This coshader's Output value can be connected to a PrmanShadingNode input parameter in Katana: StringOutput -> StringInput.
shadingmodel	StringToSM	String to SM.
lighteffector	Tint	Simply tints the light.
coshader override	VectorOutput	This coshader's Output value can be connected to a PrmanShadingNode input parameter in Katana: VectorOutput -> VectorInput.
volumematerial	Volume	General purpose volume shader.

Type	Subordinate	
	Name	Description
AOV_s	AOV	Writes an AOV value with the given Name and Type.
csAOV_s	AOV	Writes an AOV value with the given Name and Type.
bxdfV7AS_s	AS	The Ashikhmin-Shirley response.
bxdf		
float	Add	Adds any number of float values together.
utility		
float	Average	Returns the average of all the input values.
utility		
bxdfV7Backlit_s	Backlit	A Backlit response: effected by illumination on the back side of the surface.
bxdf		
multiple	Bake	Bakes any number of values of any type into whatever format of bake file you choose. Each baked parameter is passed through to its own output when baking. Or you can choose to bypass baking and reading altogether. When reading, the bake inputs are ignored (not executed) and the baked data read from the file(s) is output.
float color point vector normal utility		
point	Blend	Combine the Base Layer with the Blend Layer using the selected Blend Mode.
utility		
coreV7blend_s	BlendKrKt	Directly set the Middle and Lower intensities.
coreV7blend_s	BlendMix	A simple mix of the available irradiance between the Middle and Lower Layers.
coreV7blend_s	BlendSelector	Returns the Blend function of your Choice.
utility		

color utility	Blend	Combine the Base Layer with the Blend Layer using the selected Blend Mode.
normal utility	Blend	Combine the Base Layer with the Blend Layer using the selected Blend Mode.
vector utility	Blend	Combine the Base Layer with the Blend Layer using the selected Blend Mode.
float utility	Blend	Combine the Base Layer with the Blend Layer using the selected Blend Mode.
multiple float color pattern	Bomber	Bombs the input Pattern Texture: generates a randomly placed set of copies of the Pattern. The bombed patterns are non-intersecting (in the absence of Rotation).
volumeBD_s displace	BumpDisp	Bumps and/or Displaces a Volume.
multiple materialeffector	BumpDispSocket	This template is used in conjunction with Bump and Disp Material Effectors to alter the surface shading point and response normals. Connect this template's Socket to the Socket parameter of a Bump or Disp template, and its Network outputs to the start of a point/normal manipulation network. The result of the network is then connected to the Network Result parameters of the Bump and Disp templates. Only a single instance of this template is needed.
multiple displace point vector manifold manifoldn bumpdisp	BumpDisp	Combines bumping and displacement with independent control of each. Float inputs move the surface along the Direction parameter. Vector inputs move the surface in their own direction. Both should be current space vectors.

bumpdisp_s displace	BumpDisp	Adds Bump and Displacement to a Material shader. Combines bumping and displacement with independent control of each. Float inputs move the surface along the surface normal. Vector inputs move the surface in their own direction.
vector utility	CalculateNormal	Given a Point, calculate its normal. Note the result is normalized and will be in the same space as the input Point.
multiple float pattern	Cloth	Generates cloth weave patterns, producing data for the warp and weft threads, as well as the overall weave. Note: There is no filtering. The results should be saved in texture files, where the texture filtering will provide the necessary anti-aliasing for its use.
multiple float color point vector normal utility	Color	Outputs the color Value as any number of types.
multiple color utility insertable	ColorCorrect	Alters the Input and Input Average colors using the various controls. The inputs are assumed to be RGB colors. Corrections are applied in the order they're shown.
color override	ColorInput	Takes a color Input value, and outputs that value to another Slim template's parameter, but allows a Katana PrmanShadingNode (a Katana Connection coshader) to override it in Katana: ColorOutput -> ColorInput.
color utility	ColorReplace	Replaces one color with another. sRGB inputs and output.
multiple materialeffector	ColorSocket	This template is used in conjunction with a Color Material Effector to alter the responses' color. Connect this template's Socket to the Socket parameter of a Color template, and its

		Network output to the start of a color manipulation network. The result of the network is then connected to the Network Result parameter of the Color template.
manifold	ColorToManifold	Color to Manifold.
manifold_s	ColorToManifold_s	Color to Manifold.
normal	ColorToNormal	Color to Normal.
point	ColorToPoint	Color to Point.
vector	ColorToVector	Color to Vector.
point utility	Combine	Combines any number of point values using the selected operators.
color utility	Combine	Combines any number of color values using the selected operators.
vector utility	Combine	Combines any number of vector values using the selected operators.
float utility	Combine	Combines any number of float values using the selected operators.
string utility	Concat	Concatenates any number of input strings together.
bxdfV7Constant_s bxdf	Constant	A Constant response. Computed in postlighting(), so does not influence the diffuse cache.
color utility	ConstructColor	Outputs the three Input values as a Color.
manifoldn manifold point vector utility	ConstructManifoldN	Outputs the four Input values as a ManifoldN.

point utility	ConstructPoint	Outputs the X, Y, and Z values as a Point.
vector utility	ConstructVector	Outputs the X, Y, and Z values as a Vector.
vector utility	CrossProduct	Returns the cross product of the two input vectors.
float pattern	Curvature	Produces Gaussian or Prater curvature, along with the derivative of N.
multiple float color utility	DeconstructColor	Outputs the three components of the Input color as floats.
multiple manifold point vector utility	DeconstructManifold	Outputs the three components of the Input manifold.
multiple float point utility	DeconstructPoint	Outputs the X, Y, and Z components of the Input as floats.
multiple float vector utility	DeconstructVector	Outputs the X, Y, and Z components of the Input as floats.
vector	DensityGradient	Uses the gradient of the Density value to compute a vector suitable for use as a volume normal: -vector(Du(Density), Dv(Density), Dw(Density)).
float utility vector	DotProduct	Returns the dot product of the two input vectors. The various modifications are applied in the order they're listed.
float pattern	EdgeRegion	Provides a measure of where the silhouette of the surface is. Rather than being based on N and I, this uses the aspect ratio of the min and max filterregion sizes of the given point. So the silhouette will be based on the dicing camera rather than the

		view camera.
point utility insertable	Expand	Expands (or contracts) the range of Input values around the Center value by the given amount.
color utility insertable	Expand	Expands (or contracts) the range of Input values around the Center value by the given amount.
vector utility insertable	Expand	Expands (or contracts) the range of Input values around the Center value by the given amount.
float utility insertable	Expand	Expands (or contracts) the range of Input values around the Center value by the given amount.
float utility	ExposureIntensity	Provides an linear Exposure control and outputs an sRGB Intensity value. Also provides utilities for converting Intensity and Exposure values to each other.
vector utility	Faceforward	Ensure the given vector points toward the camera.
point utility insertable	Fit	Fit converts the Input value's range to a new range of values. Uses two values from the Input and two from the Output to define the mapping. There are also various controls for adjusting how the mapping occurs.
color utility insertable	Fit	Fit converts the Input value's range to a new range of values. Uses two values from the Input and two from the Output to define the mapping. There are also various controls for adjusting how the mapping occurs.
vector utility insertable	Fit	Fit converts the Input value's range to a new range of values. Uses two values from the Input and two from the Output to define the mapping. There are also various controls for adjusting how the mapping occurs.
float	Fit	Fit converts the Input value's range to a new range of values. Uses two

utility insertable		values from the Input and two from the Output to define the mapping. There are also various controls for adjusting how the mapping occurs.
multiple	Float	Outputs the float Value as any number of types.
float color point vector normal utility		
float	FloatInput	Takes a float Input value, and outputs that value to another Slim template's parameter, but allows a Katana PrmanShadingNode (a Katana Connection coshader) to override it in Katana: FloatOutput -> FloatInput.
override		
point	Flow	Reproduces a Mari Flow Procedural using the input Base Pattern and Flow Field texture.
pattern		
FlowManifold_s	FlowManifold	Returns the point currently being sampled by the Flow template. Connect this template to both the Flow template and the Base Pattern generation network. Otherwise, you'll just get a single Layer.
manifold		
manifold	FlowManifoldToManifold	FlowManifold_s to manifold.
manifold_s	FlowManifoldToManifold_s	FlowManifold_s to manifold_s
color	Flow	Reproduces a Mari Flow Procedural using the input Base Pattern and Flow Field texture.
pattern		
vector	Flow	Reproduces a Mari Flow Procedural using the input Base Pattern and Flow Field texture.
pattern		
float	Flow	Reproduces a Mari Flow Procedural using the input Base Pattern and Flow Field texture.
pattern		
string	Format	Convert a float to a string. You specify the output format.
utility		
point	Fractal	Produces a fractal using noise.

pattern		
color	Fractal	Produces a fractal using noise.
pattern		
vector	Fractal	Produces a fractal using noise.
pattern		
float	Fractal	Produces a fractal using noise.
pattern		
point	Fractalizer	Produces a fractal using the input Pattern as the fractal basis. The Pattern is generated repeatedly and accumulated according to the fractal parameters.
pattern		
FractalizerManifold_s	FractalizerManifold	Returns the point currently being sampled by the Fractalizer template. Connect this template to both the Fractalizer and the Base Pattern generation network you're Fractalizing. Otherwise, you'll just get a single Layer.
manifold		
manifold	FractalizerManifoldToManifold	FractalizerManifold_s to manifold.
manifold_s	FractalizerManifoldToManifold_s	FractalizerManifold_s to manifold_s
color	Fractalizer	Produces a fractal using the input Pattern as the fractal basis. The Pattern is generated repeatedly and accumulated according to the fractal parameters.
pattern		
vector	Fractalizer	Produces a fractal using the input Pattern as the fractal basis. The Pattern is generated repeatedly and accumulated according to the fractal parameters.
pattern		
float	Fractalizer	Produces a fractal using the input Pattern as the fractal basis. The Pattern is generated repeatedly and accumulated according to the fractal parameters.
pattern		

coreV7fresnel_s	FresnelKrKt	Not view dependent. Directly sets the Kr and Kt values.
coreV7fresnel_s	FresnelMinMax	Controls the response using simple Min and Max intensity controls rather than a refractive index.
coreV7fresnel_s	FresnelMix	Not view dependent. A simple mix between Upper and Middle/Lower responses.
coreV7fresnel_s	FresnelSchlick	Returns the Schlick approximation to Fresnel. This is useful for metals, as the Fresnel can incorporate the metal's reflected color.
coreV7fresnel_s utility	FresnelSelector	Returns the Fresnel function of your Choice.
coreV7fresnel_s	FresnelShininess	Uses an exponential Shininess control to set the refractive index used, allowing for a very wide range of responses from dielectrics to metals.
multiple utility	FresnelToColor	Access the Fresnel Kr and Kt results.
coreV7fresnel_s	Fresnel	Returns the results from the fresnel() function.
color utility insertable	Functions	Produces the selected Function of the input(s).
float utility insertable	Functions	Simple functions of one or two variables.
bxdfV7Fuzz_s bxdf	Fuzz	A Fuzz response: pseudo-scattering of the illumination in a boundary layer on the surface. The fuzz is modeled as fibers oriented in the direction of the shading normal.
float pattern	FuzzOcclusion	Uses raytracing to generate occlusion for the Fuzz brdf. Since the Fuzz uses a non-standard illumination response direction, the built-in shadowing done in the lights can't be

		used. This template creates the Fuzz-specific occlusion based on only the geometry.
bxdfV7GCL_s	GCLDiff	The Generalized Cosine Lobe surface response.
bxdf		
bxdfV7GCL_s	GCLSpec	The Generalized Cosine Lobe surface response.
bxdf		
bxdfV7Ghost_s	Ghost	Ghost refraction effect.
bxdf		
bxdfV7HG_s	HG	The Henyey-Greenstein volume scattering response.
bxdf		
bxdfV7HairDiffuse_s	HairDiffuse	Diffuse hair response based on Goldman fake fur rendering paper.
bxdf		
bxdfV7HairSpecular_s	HairSpecular	Specular hair response.
bxdf		
multiple	HerringWorley	Produces various herringbone basis Worley/Voronoi patterns. These are all based on the distances between random points.
float color manifold pattern		
manifold	ImplicitManifoldToManifold	ImplicitManifold_s to manifold.
manifold_s	ImplicitManifoldToManifold_s	ImplicitManifold_s to manifold_s
ImplicitManifold_s	ImplicitPrefManifold	Used in conjunction with the ImplicitSurface template. Defines the space in which the Implicit Surface is generated. Must also be used as the manifold of the pattern generator connected to the ImplicitSurface's Field parameter.
manifold		
ImplicitManifold_s	ImplicitSpaceManifold	Used in conjunction with the ImplicitSurface template. Defines the space in which the Implicit Surface is generated. Must also be used as the manifold of the pattern generator
manifold		

		connected to the ImplicitSurface's Field parameter.
multiple displace	ImplicitSurface	Creates an Implicit Surface by sampling the Field function along the view ray. The geometry bounds the effect, and the Field function is sampled throughout its interior. Connect Mask to Opacity; and "Imp N" to the N Surface Override of a Material's BumpDisp.
manifold	ImplicitSurfaceManifoldToManifold	ImplicitSurfaceManifold_s to manifold.
manifold_s	ImplicitSurfaceManifoldToManifold_s	ImplicitSurfaceManifold_s to manifold_s
bxdfV7Lambert_s bxdf	Lambert	A Lambert surface response.
float pattern	Lattice	Produces an alternating field in one, two, or three dimensions.
point utility insertable	Linear	Linear interpolation. Produces a 0 to 1 range of values between the Zero and One parameter settings based on the value of Input.
color utility insertable	Linear	Linear interpolation. Produces a 0 to 1 range of values between the Zero and One parameter settings based on the value of Input.
vector utility insertable	Linear	Linear interpolation. Produces a 0 to 1 range of values between the Zero and One parameter settings based on the value of Input.
float utility insertable	Linear	Linear interpolation. Produces a 0 to 1 range of values between the Zero and One parameter settings based on the value of Input.
manifold_s override	ManifoldInput	Takes a manifold_s Input value, and outputs that value to another Slim template's parameter, but allows a Katana PrmanShadingNode (a Katana Connection coshader) to

		override it in Katana: ManifoldOutput -> ManifoldInput.
color	ManifoldToColor	Manifold to Color.
manifold_s	ManifoldToManifold_s	Manifold_s to Manifold.
normal	ManifoldToNormal	Manifold to Normal.
point	ManifoldToPoint	Manifold to Point.
vector	ManifoldToVector	Manifold to Vector.
color	Manifold_sToColor	Manifold_s to Color.
manifold	Manifold_sToManifold	Manifold to Manifold_s.
point	Manifold_sToNormal	Manifold_s to Normal.
point	Manifold_sToPoint	Manifold_s to Point.
point	Manifold_sToVector	Manifold_s to Vector.
matrix	MatrixObject	Returns a current to object space transformation matrix.
matrix	MatrixShader	Returns a current to shader space transformation matrix.
matrix	MatrixSpace	Returns a matrix that transforms from current space to the given space.
matrix	MatrixWorld	Returns a current to world space transformation matrix.
float	Max	Returns the max() of all the input values.
utility		
manifold_s	MayaCamera	Creates a space based on a Maya camera's attributes. Can be used to project a texture into a scene based on the view through a Maya camera.
manifold		
manifold	MayaPlace3D	Creates a manifold from a Maya 3D placement node.

float	Mean	Returns the geometric mean of all the input values.
utility		
float	Min	Returns the min() of all the input values.
utility		
manifold	Mix	Linearly interpolates between the Zero and One parameter values as the Input varies between 0 and 1.
utility		
color	MixColor	Linearly interpolates between the Zero and One parameter component values as the Input components vary between 0 and 1.
utility		
manifold	MixManifold	Linearly interpolates between the Zero and One parameter values as the Input components vary between 0 and 1.
utility		
point	MixPoint	Linearly interpolates between the Zero and One parameter component values as the Input components vary between 0 and 1.
utility		
vector	MixVector	Linearly interpolates between the Zero and One parameter component values as the Input components vary between 0 and 1.
utility		
point	Mix	Linearly interpolates between the Zero and One parameter values as the Input varies between 0 and 1.
utility		
shadingcomponent	Mix	Linearly interpolates between the Zero and One parameter values as the Input varies between 0 and 1.
color	Mix	Linearly interpolates between the Zero and One parameter values as the Input varies between 0 and 1.
utility		
vector	Mix	Interpolates between the Zero and One parameter values as the Input varies between 0 and 1. The output is not normalized. However, when using Spherical Linear interpolation, the inputs should be normalized, and if so, the output will also be normalized.
utility		

float utility insertable	Mix	Linearly interpolates between the Zero and One parameter values as the Input varies between 0 and 1.
point utility insertable	Modulate	Modulates the range of Input values around the Center value by the given amount. The Modulator is a 0 to 1 ranged value.
color utility insertable	Modulate	Modulates the range of Input values around the Center value by the given amount. The Modulator is a 0 to 1 ranged value.
vector utility insertable	Modulate	Modulates the range of Input values around the Center value by the given amount. The Modulator is a 0 to 1 ranged value.
float utility insertable	Modulate	Modulates the range of Input values around the Center value by the given amount. The Modulator is a 0 to 1 ranged value.
multiple float color point vector utility	Multiplex	Add any number of parameters of any type here, and you can access them all from this node. Provides a collection point in your network for a set of values. Set the parameter values with a connection to another template, or just use the default values. Lets you label the parameters anything you want to make them easy to identify.
float utility	Multiply	Multiplies any number of float values together.
multiple vector normal utility	N	Returns N in any number of spaces.
vector	Ng	Ng: the geometric normal.
point pattern	Noise	Produces Wavelet or a Gabor-like noise.

color pattern	Noise	Produces Wavelet or a Gabor-like noise.
normal pattern	Noise	Produces Wavelet or a Gabor-like noise.
vector pattern	Noise	Produces Wavelet or a Gabor-like noise.
float pattern	Noise	Produces Wavelet or a Gabor-like noise.
multiple color point vector normal utility	Normal	Outputs the normal Value as any number of types.
color	NormalToColor	Normal to Color.
manifold	NormalToManifold	Normal to Manifold.
manifold_s	NormalToManifold_s	Normal to Manifold.
point	NormalToPoint	Normal to Point.
vector	NormalToVector	Normal to Vector.
vector utility	Normalize	Normalize a vector.
vector manifold	Nref	Returns the current space value of the Primitive Variable in the rib, or if it doesn't exist, current space N. These are both suitable for shading. If you want a normal in a Pref space, use CalculateNormal connected to the Pref.
multiple color vector pattern	Occlusion	Produces occlusion effects.

multiple point manifold point	P	Returns the current point being shaded in any number of 3D or 2D spaces.
float utility	PRManDoubleshaded	Returns the value of the sides:doubleshaded attribute.
float utility	PRManFace	Which geometric face is this: 0 = back; 1 = front.
multiple float utility	PRManFloats	Returns various prman float values: u, v, s, t, du, dv, time, dtime, frame number, and ncomps (number of color components).
float utility	PRManOrientation	Returns the orientation of the surface: the value of the orientation bit. 0 = not flipped. 1 = flipped. This actually depends on the handedness of the scene. In a standard prman (left handed) world, such as Slim, this is true. In a Maya/RMS (right handed) world, it's the opposite: 0 = flipped; 1 = not flipped.
float utility	PRManOutside	Are we seeing the outside=1 or inside=0 of the surface?
float utility	PRManSide	Which shading side of the surface is this: 0 = back; 1 = front. This actually depends on the handedness of the scene. In a standard prman (left handed) world, such as Slim, this is true. In a Maya/RMS (right handed) world, it's the opposite: 0 = front; 1 = back.
float utility	PRManTwosided	Returns the value of the Sides attribute. Sides = 2 returns 1. Sides = 1 returns 0.
multiple vector utility	PRManVectors	Returns various vector values. V = -I. Nf = faceforward N. Ns = shading normal. R = reflected view. T = transmitted (refracted) view. Tu = tangent u. Tv = tangent v.

manifold_s point manifold	P_NDC	The surface point P (or Ps if in a light shader) in NDC space.
manifold_s point manifold	P_camera	The surface point P (or Ps if in a light shader) in camera space.
manifold_s point manifold	P_current	The surface point P (or Ps if in a light shader) in current space.
manifold_s point manifold	P_object	The surface point P (or Ps if in a light shader) in object space.
manifold_s point manifold	P_raster	The surface point P (or Ps if in a light shader) in raster space.
manifold_s point manifold	P_screen	The surface point P (or Ps if in a light shader) in screen space.
manifold_s point manifold	P_shader	The surface point P (or Ps if in a light shader) in shader space.
manifold_s point manifold	P_world	The surface point P (or Ps if in a light shader) in world space.
string utility	PassFileName	Given the name of a Pass, returns the filename associated with it using [PassFileName Pass].
multiple string utility	PassInfo	Returns various types of information about the render pass. Class: possible return values are things like Final, RenderRadiosity, Shadow, DeepShadow, SSRender, etc. ID: the name of the pass. Camera: the name of the camera used to render the pass. Crew: optionally used in baking passes. Flavor: optionally used in baking passes.
multiple float pattern	PatternedInOutRamp	Uses a Transition Pattern to break up an in-out Ramp.

multiple float pattern	PatternedRamp	Uses a Transition Pattern to break up a simple Ramp.
manifold matrix	Pmatrix	Creates a manifold by transforming P by the matrix primitive variable named Pmatrix.
multiple color point vector normal utility	Point	Outputs the point Value as any number of types.
point override	PointInput	Takes a point Input value, and outputs that value to another Slim template's parameter, but allows a Katana PrmanShadingNode (a Katana Connection coshader) to override it in Katana: PointOutput -> PointInput.
color	PointToColor	Point to Color.
manifold	PointToManifold	Point to Manifold.
manifold_s	PointToManifold_s	Point to Manifold.
normal	PointToNormal	Point to Normal.
vector	PointToVector	Point to Vector.
manifold_s point manifold	Pref	Returns the value of the Primitive Variable in the rib, or if it doesn't exist, object space P.
multiple float color point vector normal string matrix utility	PrimAttrOpt	Accesses any number of Primitive Variables, Attributes, or Options.
float pattern manifold	Projection1D	Converts a point to a float by projecting the 3D space into one dimension.
color	RGBAToColor	RGBA to Color.

float	RGBAToFloat	RGBA to Float.
bxdfV7Radiance_s bxdf	Radiance	A simple radiant, light emitting material: incandescence.
multiple float pattern	RampPattern	Ramps a Pattern from non-existent to fully present based on an input Ramp.
bxdfV7Refraction_s bxdf	Refraction	Simple Refraction. Must set the Specular Hit Mode to Shader.
multiple float color utility	RenderRadiosity	Reads the _radiosity, _area, and Cs data channels of a point data file, such as the type created by an RMS RenderRadiosity Pass.
string utility	SLBox	Roll your own SL code
color	SMTToColor	Shadingmodel to Color.
color utility	SSDiffuse	Reads the _ssdiffusion data channel of a point data file, such as the type created by an RMS SSDiffuse Pass.
manifold utility	Scale	Scale the manifold: multiply the X, Y, and Z component values.
point utility	Scale	Scale the point: multiply the X, Y, and Z component values.
vector utility	Scale	Scale the vector: multiply its X, Y, and Z component values.
bxdfV7Scatter_s bxdf	Scatter	Scatter is modeled as a scattering medium in a boundary layer of the surface, like dust or a random jumble of fibers.
color pattern utility	ScreenVelocity	Produces the screen space velocity per second of the surface.

point	Selector	Returns the value of your Choice.
utility		
point	SelectorNumeric	Returns one of the possible choices based on a numeric value (such as an object ID PrimVar).
utility		
color	SelectorNumeric	Returns one of the possible choices based on a numeric value (such as an object ID PrimVar).
utility		
vector	SelectorNumeric	Returns one of the possible choices based on a numeric value (such as an object ID PrimVar).
utility		
float	SelectorNumeric	Returns one of the possible choices based on a numeric value (such as an object ID PrimVar).
utility		
string	SelectorNumeric	Returns one of the possible choices based a numeric value (such as an object ID PrimVar).
utility		
shadingcomponent	Selector	Returns the value of one of the inputs.
utility		
color	Selector	Returns the value of your Choice.
utility		
vector	Selector	Returns the value of your Choice.
utility		
float	Selector	Returns the value of your Choice.
utility		
string	Selector	Returns the value of your Choice.
utility		
vector	ShadingNormal	Produces the normalized surface shading normal.
coreV7shadow_s	ShadowCenterEdge	Controls the appearance of a Material's shadow.
coreV7shadow_s	ShadowColor	Controls the appearance of a Material's shadow.

manifold_s	ShadowProjection	
manifold		
manifold_s	Shear	Shear the space along the selected axis. Useful for projecting certain kinds of 2d textures into three dimensions. Wood grain is the perfect example.
manifold utility		
point	Shuffle	Shuffle the X, Y, and Z components.
manifold utility		
color	Smoothstep	Produces a smoothstep between the Min and Max values of the Input.
utility insertable		
float	Smoothstep	Produces a smoothstep between the Min and Max values of the Input.
utility insertable		
point	Step	Produces various step and filtered step functions.
utility insertable		
color	Step	Produces various step and filtered step functions.
utility insertable		
vector	Step	Produces various step and filtered step functions.
utility insertable		
float	Step	Produces various step and filtered step functions.
utility insertable		
string	String	Returns the string.
utility		
string	StringInput	Takes a string Input value, and outputs that value to another Slim template's parameter, but allows a Katana PrmanShadingNode (a Katana Connection coshader) to override it in Katana: StringOutput -> StringInput.
override		

bxdfV7Subsurface_s bxdf	Subsurface	A Subsurface Scattering material response.
multiple float color map	TextureColor	Access a single texture file or set of files generated by Mari or Mudbox.
multiple float map	TextureFloat	Access a single texture file or set of files generated by Mari or Mudbox.
vector displace map	TextureNormalMap	Reads a Normal Map texture, and produces the proper data for a BumpDisp Vector connection.
multiple float vector map	TextureVector	Access a single texture file or set of files generated by Mari or Mudbox.
multiple color float utility insertable	Transform	Transforms the Input color from one space to another. "This to That" transforms define a color alteration that transforms one color to another.
point manifold utility	Transform	Transform the Input from one space to another using the transform() function.
normal utility	Transform	Transform the Input from one space to another using the ntransform() function.
vector utility	Transform	Transform the Input from one space to another using the vtransform() function.
point manifold utility	Translate	Translate the point: add offsets to the X, Y, and Z component values.
bxdfV7Translucence_s bxdf	Translucence	Simple Translucence. Must do the following: Set the Material Specular Hit Mode to Shader. The geometry should be Single Sided, Double Shaded, with Backfacing and Hidden face culling off. If Density will be used, the geometry should also be closed.

coreV7fresnel_s	TranslucenceFresnel	Produces a fake Fresnel that's more suitable for scattering translucent materials than simple refractive transparent ones.
multiple manifold vector	Turbulence	Produces a distortion of the given input Manifold that resembles turbulence. The turbulence is created by distorting the Manifold in circular motions. Multiple layers of these motions are combined together to produce the final effect. The sizes of the layers are controlled with typical fractal parameters, along with an overall Turbulence Scale. The speed of motion of the layers is controlled with the Motion and Motion Rate parameters.
manifold_s manifold	UV	Returns st or Maya UV Set data with various manipulations applied to the result.
vector	UVTangent	Uses the selected UV Set as a uv space and generates a tangent vector from that. Useful for defining the direction of anisotropy. Note that RMS puts the first Maya UV Set into s and t. Any other Maya UV Sets can be specified with the Maya UV Set parameter.
multiple color point vector normal utility	Vector	Outputs the vector Value as any number of types.
vector override	VectorInput	Takes a vector Input value, and outputs that value to another Slim template's parameter, but allows a Katana PrmanShadingNode (a Katana Connection coshader) to override it in Katana: VectorOutput -> VectorInput.
color	VectorToColor	Vector to Color.

manifold	VectorToManifold	Vector to Manifold.
manifold_s	VectorToManifold_s	Vector to Manifold.
normal	VectorToNormal	Vector to Normal.
point	VectorToPoint	Vector to Point.
bxdfV7Velvet_s	Velvet	A Velvet (asperity) response.
bxdf		
float	VolumeField	Returns the value of the VolumeField shader variable.
pattern		
vector	VolumeNormal	For use with blobby volumes. Uses the VolumeField variable to create a volume density orientation vector (in current space). The vector is perpendicular to the camera view direction, and is oriented in the direction where the volume's density changes most rapidly.
multiple	Worley	Produces various Worley/Voronoi patterns. These are all based on the distances between random points.
float color manifold pattern		
float	dV	Produces an output proportional to how rapidly the Input vector changes. Useful for detecting certain kinds of curvature in the geometry.
pattern		
manifold_s	manifold	struct manifold_s
struct		
rgba_s	rgba	A struct containing an rgb (color) triple and a color alpha value.
struct		

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